Systems Network Architecture
Management Services Formats

GC31-8302-01

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Note!

See “Notices” on page v.

| **Second Edition (March 1998)**

| This is a revision of GC31-8302-00. **Changes to the previous edition are indicated by change bars in the lefthand margin.**

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About This Book

This book describes the Systems Network Architecture Management Services (SNA/MS) formats used between nodes in subarea networks, and between nodes implementing Advanced Peer-to-Peer Networking (APPN) and/or low-entry networking (LEN) protocols.

Softcopy Availability

This book will also be made available on an electronic bookshelf as part of *IBM Networking Systems Softcopy Collection Kit* (SK2T-6012) on compact disk read-only memory (CD-ROM).

How This Book is Organized

This book identifies the formats and meanings of the bytes that SNA/MS uses.

Chapter 1 introduces the different SNA/MS formats described in detail in the remainder of the book.

Chapter 2 identifies the formats and meanings of the bytes in SNA/MS request units.

Chapter 3 identifies the formats and meanings of the general data stream (GDS) variables that are specific to the SNA/MS infrastructure for transporting management data.

Chapter 4 identifies the formats and meanings of the management services vectors and GDS variables that represent management data in request units.

Chapter 5 contains SNA/MS Alerts defined for specific environments.

Chapter 6 contains names of service transaction programs defined by SNA/MS.

Appendix A provides a summary of SNA character sets and symbol-string types.

Appendix B lists the common structures for SNA condition reports.

Related Publications

Related publications, providing overview and protocol information, are:

- *Systems Network Architecture Technical Overview* (GC30-3073)
- *IBM Synchronous Data Link Control Concepts* (GA27-3093)
- *Systems Network Architecture Format and Protocol Reference Manual: Architectural Logic* (SC30-3112)
- *Systems Network Architecture Formats* (GA27-3136)
- *Systems Network Architecture APPN Architecture Reference* (SC30-3422)
- *Systems Network Architecture APPN Branch Extender Architecture Reference* (SV40-0129) — available in softcopy only on the CD-ROM described in "Softcopy Availability"

- *Systems Network Architecture APPN Dependent LU Requester Architecture Reference* (SV40-1010) — available in softcopy only on the CD-ROM described in “Softcopy Availability”
- *Systems Network Architecture APPN Extended Border Node Architecture Reference* (SV40-1018) — available in softcopy only on the CD-ROM described in “Softcopy Availability” on page vii
- *Systems Network Architecture APPN High-Performance Routing Architecture Reference* (SV40-1018) — available in softcopy only on the CD-ROM described in “Softcopy Availability” on page vii
- *Systems Network Architecture: Sessions Between Logical Units* (GC20-1868)
- *Systems Network Architecture: Transaction Programmer's Reference Manual for LU Type 6.2* (GC30-3084)
- *Systems Network Architecture Format and Protocol Reference Manual: Architecture Logic for LU Type 6.2* (SC30-3269)
- *Systems Network Architecture LU 6.2 Reference: Peer Protocols* (SC31-6808)
- *Systems Network Architecture Sync Point Services Reference* (SC31-8134)
- *Systems Network Architecture/Distribution Services Reference* (SC30-3098)
- *Systems Network Architecture/File Services Reference* (SC31-6807)
- *Systems Network Architecture/Management Services Reference* (SC30-3346)
- *Token-Ring Network Architecture Reference* (SC30-3374)
- *Document Interchange Architecture: Technical Reference* (SC23-0781)
- *IBM Implementation of X.21 Interface General Information Manual* (GA27-3287)
- *Inside APPN and HPR: The Essential Guide to New SNA* (SG24-3669)

Summary of Changes

| **Major additions and changes for GC31-8302-01**:

| This edition introduces SNA/MS formats for the APPN Branch Extender function. It also includes various
| other updates to Chapter 3, “SNA/MS GDS Variables,” Chapter 4, “SNA/MS Encodings,” Chapter 5,
| “Alerts Defined for Specific Environments,” and Chapter 6, “Management Services Transaction Program
| Names.”

| Change bars indicate technical material that has not appeared previously in GC31-8302-00.

Chapter 1. SNA/MS Introduction

Introduction

SNA/Management Services Communication Paths

There are three communication paths used by SNA/Management Services:

- Communications between an SSCP and a PU using SNA/MS *request-response units* (RUs)
- Communications using the multiple-domain support (MDS) infrastructure
- Communications for the Change Management discipline using the infrastructure provided by SNA/Distribution Services (SNA/DS) and SNA/File Services (SNA/FS).

The remainder of this chapter provides an overview of the SNA/MS formats used on each of these paths.

SNA/MS RUs on the SSCP-PU Session

Request-response unit (RU) is a generic term for a request unit or a response unit. A request unit is a message unit that contains control information. A response unit is a message unit that acknowledges a request unit; it may contain prefix information received in a request unit. If positive, the response unit may contain additional information (such as route status in response to NMVT), or, if negative, contain the sense data identifying the exception condition.

Different NS headers identify the different RUs. This book documents SNA/MS RUs that flow between an SSCP and a type 2 node; these RUs are also exchanged by an SSCP and a type 4 node. SNA/MS RUs that flow *only* between an SSCP and a type 4 node are described in *SNA Network Product Formats*.

The primary SNA/MS RU is the Network Management Vector Transport (NMVT), illustrated in Figure 1-1. Externally, the NMVT is no different from any other RUs that flow on the SSCP-PU session: its NS header identifies it as an NMVT, and it contains management data. The distinctive feature of an NMVT, the fact that this management data is encoded according to the management services major vector scheme, is of no significance for the NMVT's transport on the SSCP-PU session.

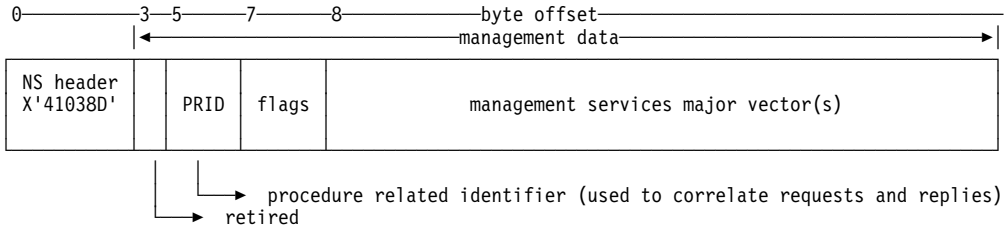

Figure 1-1. Format of the NMVT Management Services RU

The Control Point Management Services Unit GDS Variable

The SNA/MS encodings that flow on CP-CP or LU-LU sessions are general data stream (GDS) variables, which adhere to the encoding rules for GDS variables. They may contain other GDS variables, control vectors, or MS major vectors. Figure 1-2 illustrates the format of the Control Point Management Services Unit (CP-MSU) GDS variable, which is used both for MDS communications and when Change Management uses the infrastructure provided by SNA/DS and SNA/FS.

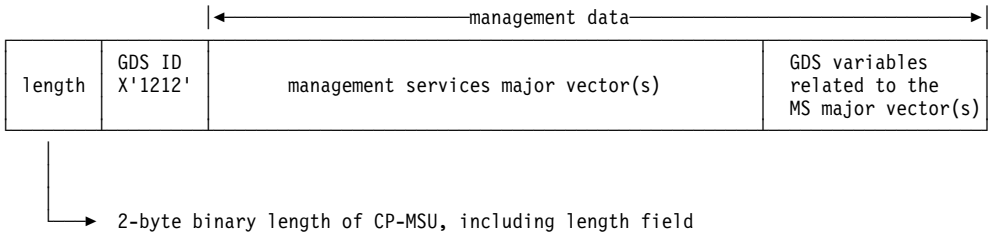

Figure 1-2. Format of the CP-MSU Management Services GDS Variable. The 2-byte length field of a GDS variable actually consists of a 1-bit flag followed by a 15-bit integer, so that the maximum length is 32767 bytes. Note, however, that the length is restricted by multiple-domain support to 31743 bytes.

The Multiple-Domain Support Message Unit GDS Variable

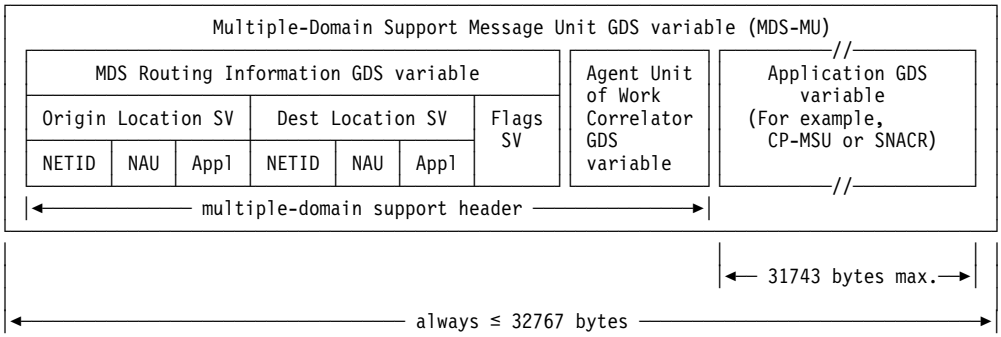

Figure 1-3. Structure of the Multiple-Domain Support Message Unit (MDS-MU)

Figure 1-3 is a conceptual view of the format used by multiple-domain support, the MDS-MU (X'1310') GDS variable. The MDS-MU contains:

- Multiple-domain support header

  The header is not a GDS variable itself, but consists of the following GDS variables:

  – MDS Routing Information (X'1311') GDS variable

  – Agent Unit-of-Work Correlator (X'1549') GDS variable

- MS application program data

  The MS application program data is a GDS variable supplied by the MS application program. It may be a CP-MSU (X'1212') GDS variable, an SNA Condition Report (X'1532') GDS variable, or some other GDS variable.

MDS-MU Message Size:

The maximum size permitted for the application program GDS variable in the MDS-MU is 31743 (X'7BFF') bytes. This restriction is imposed to simplify implementation design, so that the entire MDS-MU (MDS header and application program GDS variable) will always be ≤ 32767 (X'7FFF') in length.

The high-order bit (bit 0) of a GDS variable length field is not part of the length, but is a length continuation (or not-last segment) indicator. This capability to segment large data records into multiple logical records is described in *SNA LU 6.2 Reference: Peer Protocols*. MDS, however, does not support this function for the MDS-MU. For MDS-MUs, the length continuation indicator is always set to 0.

Formats for SNA/DS

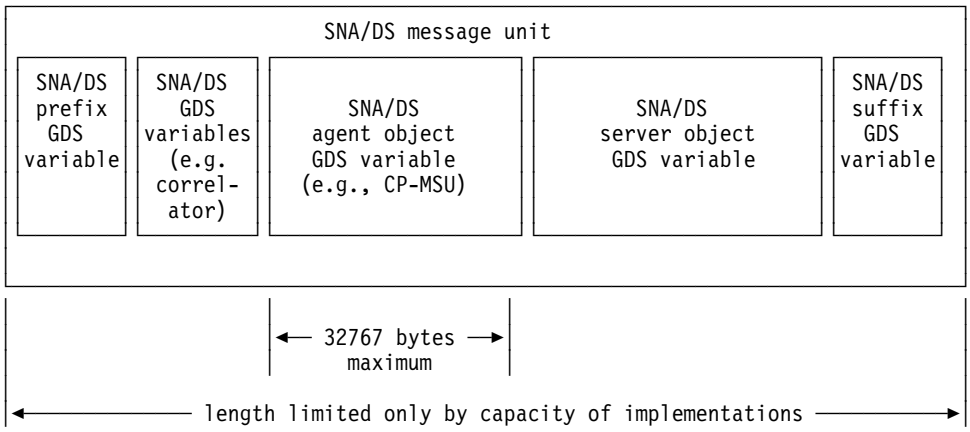

Figure 1-4. Structure of the SNA/DS Message Unit Used by SNA/MS. The SNA/DS message unit contains control information used by SNA/DS, and GDS variables containing application data such as a correlator, an agent object containing agent-to-agent instructions, and a server object containing file control information and a file.

Figure 1-4 is a conceptual view of the encoding used by SNA/DS, the message unit. The message unit contains the following SNA/DS GDS variables:

- SNA/DS prefix and suffix GDS variables to delimit the message unit.
- An SNA/DS agent object, present if agent-to-agent instructions are required by the MS application program. For example, an instruction to retrieve a file is carried in the agent object, but when the file is returned no agent object is necessary.

  There are two types of agent-to-agent instructions:

  1. SNA/MS commands or reports, contained within a CP-MSU; and
  2. SNA/FS commands or reports, contained with an SNA/FS GDS variable.

- An SNA/DS server object, present if the MS application program requires use of SNA/FS for a particular request. An MS application program may use SNA/DS to transport commands and replies that do not require bulk data.

  The server object always contains SNA/FS GDS variables containing file control information, but may or may not contain the file in addition. For example, a

request to retrieve a file contains a server object with file control information only.

SNA/DS Message Size:

The maximum size permitted for the agent object is 32767 (X'7FFF') bytes. This is because it is to carry agent-to-agent instructions rather than bulk data. The size of the server object that does carry the bulk data is constrained only by implementation limits; therefore, so is the size of the message unit containing the server object.

End of Chapter 1

Chapter 2. SNA/MS Request/Response Units (RUs)

Introduction

This section contains detailed formats of the request units used by SNA Management Services.[1] Each format description begins with the following heading:

"ABBREVIATED RU NAME (RU NAME)
Origin-NAU → Destination-NAU, Normal (Norm) or Expedited (Exp) Flow; RU Category"

Notes:

1. "RU Category" is abbreviated as follows:

DFC	data flow control
SC	session control
NC	network control
FMD NS(c)	function management data, network services, configuration services
FMD NS(ma)	function management data, network services, management services (Note: formerly maintenance services) All of the SNA/MS RUs described in this book fall into this category.
FMD NS(s)	function management data, network services, session services

2. All values for field-formatted requests that are not defined in this section are reserved. (The formats of character-coded FMD NS requests are implementation dependent.)
3. The request-code value X'FF' and the NS-header values X'(3|7|B|F)F****' and X'**(3|7|B|F)F**' are set aside for implementation internal use, and will not be otherwise defined in SNA.
4. Throughout the format descriptions, *reserved* is used as follows:
   - Reserved bits, or fields, are ones that currently are set to 0's (unless explicitly stated otherwise).
   - Reserved values are those that currently are invalid.

   Correct usage of reserved fields is enforced by the sender; no receive checks are made on these fields.
5. Throughout the format descriptions, *retired* fields and values are those that were once defined in SNA but are no longer defined. To accommodate implementations of back-level SNA, current implementations of SNA treat retired fields as follows: send checks enforce the setting of retired fields to all 0's except where other unique values are required (described individually); no receive checks are made on these fields, thereby accepting back-level settings of these fields. Special handling of retired fields, such as echoing or passing on retired fields as received, is discussed where appropriate.
6. The character sets referred to in the descriptions of names and other symbol strings in this chapter are defined in Appendix A, "SNA Character Sets and Symbol-String Types."

[1] SNA/MS request units that flow only between an SSCP and a type 4 node are listed here, but their formats are not described. See *SNA Network Product Formats* for the formats of these request units.

7. A type 2.1 (T2.1) node contains a control point (CP) rather than a physical unit (PU). However, it can support SSCP-PU T2.0 flows, in which case the designations "SSCP ←→ PU T2" or "SSCP ←→ PU" in the RU descriptions should be assumed to apply to the T2.1 node as well.

Request Unit Summary Information

The following is a list of SNA/MS RU abbreviations, followed by a list of RUs indexed by NS headers and request codes.

Summary of Request RUs by Category

Request RUs prefixed by an asterisk (*) require response RUs that, if positive, have an extended format containing data in addition to the NS header or request code. The RUs prefixed by a dagger (†) symbol are retired from SNA; see product documentation for information on support. Those followed by a plus sign (+) flow only between an SSCP and a type 4 node; see *SNA Licensed Product Formats* for the detailed formats of these RUs.

FMD NS(ma) Requests

ACTTRACE+	NMVT	RECTRD+
DACTTRACE+	RECFMS	†REQECHO+
DISPSTOR+	†RECMS+	REQMS
†ECHOTEST+	RECSTOR+	*ROUTE-TEST+
ER-TESTED+	RECTD+	SETCV+
EXECTEST+	RECTR+	TESTMODE+

Index of RUs by NS Headers and Request Codes

Within DFC, NC, SC, or any specific FMD NS category, the request code is unique. However, while a request code has only one meaning in a specific category, a given code (e.g., X'05') can represent different requests in separate categories (e.g., DFC, NC, and configuration services).

FMD NS Headers (third byte is the request code)

X'010301'	EXECTEST
X'010302'	ACTTRACE
X'010303'	DACTTRACE
X'010311'	SETCV (FMD NS(ma))
X'010331'	DISPSTOR
X'010334'	RECSTOR
X'010381'	RECMS
X'010382'	RECTD
X'010383'	RECTRD
X'410304'	REQMS
X'410305'	TESTMODE
X'410307'	ROUTE-TEST
X'410384'	RECFMS
X'410385'	RECTR
X'410386'	ER-TESTED
X'41038D'	NMVT
X'810387'	REQECHO
X'810389'	ECHOTEST

Descriptions of Request Units

NMVT (NETWORK MANAGEMENT VECTOR TRANSPORT)

SSCP ←→ PU Norm; FMD NS(ma)

NMVT carries management services (MS) requests and replies between an SSCP and a PU.

NMVT (NETWORK MANAGEMENT VECTOR TRANSPORT)

Byte	Bit	Content
0–2		X'41038D' NS header
3–4		Retired: Set to network address by subarea node sender; set to 0, the PU local address, by peripheral node sender; ignored by receivers implementing the current level of SNA
5–6	0–1	Reserved
	2–3	Retired: Set to 01 by subarea PU sender; set to 00 by peripheral node sender; ignored by receivers implementing the current level of SNA
	4–15	Procedure related identifier (PRID) *Note:* For unsolicited replies (byte 7, bit 0 = 0), the PRID field contains X'000'. For solicited replies (byte 7, bit 0 = 1), the PRID field echoes the PRID from the NMVT RU request. For requests that need no replies, this field contains X'000'.
7		Flags:
	0	Solicitation indicator: used only for PU-to-SSCP flow (reserved for SSCP-to-PU flow): 0 unsolicited NMVT 1 solicited NMVT
	1–2	Sequence field—used only for PU-to-SSCP flow (reserved for SSCP-to-PU flow): 00 only NMVT for this PRID 01 last NMVT for this PRID 10 first NMVT for this PRID 11 middle NMVT for this PRID
	3	SNA Address List subvector indicator: 0 *For the SSCP-to-PU flow:* MS major vector in this NMVT does not contain an SNA Address List subvector *For the PU-to-SSCP flow:* MS major vector in this NMVT does not contain an SNA Address List subvector, or it contains an SNA Address List subvector that does not require address-to-name translation by the SSCP 1 *For the SSCP-to-PU flow:* MS major vector in this NMVT contains an SNA Address List subvector *For the PU-to-SSCP flow:* MS major vector in this NMVT contains an SNA Address List subvector that requires address-to-name translation by the SSCP
	4–7	Reserved
8–m		One or more MS major vectors, as described (using 0-origin indexing) in the table in Chapter 4, “SNA/MS Encodings” on page 4-1.

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

PU → SSCP, Norm; FMD NS(ma)

RECFMS has been retired from SNA for T2 nodes.

RECFMS permits the passing of maintenance related information from a PU to management services at the SSCP.

Consult product documentation for further information on product support.

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
0–2		X'410384' NS header
3–4		CNM target ID, as specified in bytes 5–6, bits 2–3
5–6	0–1	Reserved
	2–3	CNM target ID descriptor: 00 byte 4 contains a local address for a PU or LU in a T2 node or an LSID for a PU or LU in a T1 node; byte 3 is reserved 01 bytes 3–4 contain the element address of a link, adjacent link station, PU, or LU in the origin subarea, if ENA is supported; otherwise, its network address
	4–15	Procedure related identifier (PRID) (see Note below)
7		Request-Specific Information
	0	Solicitation indicator: 0 unsolicited request 1 reply request
	1	Not-last request indicator: 0 last request in a series of related unsolicited or reply requests, e.g., last reply request in a series corresponding to a single soliciting request 1 not last request
	2–7	Request-specific type code (see below)
Note:		For reply (i.e., solicited) requests, bytes 3–6 and byte 7, bits 2–7, echo the corresponding fields in the CNM header received in the request that solicited the reply requests. For unsolicited requests, these fields—the CNM target ID descriptor, the CNM target ID, the PRID, and the request-specific information—are generated by the request sender. For unsolicited requests, the PRID field contains X'000'. The PU does not interleave requests belonging to different series of related unsolicited requests from the same target.
8–13		Node Identification
8–11	0–11	Block number: an IBM product-specific number; see the individual product specifications for the specific values used
	12–31	ID number: a binary value that, together with the block number, identifies a specific station uniquely within a customer network installation; the ID number can be assigned in various ways, depending on the product; see the individual product specifications for details
12–13		Reserved
7–n		Alert (retired: supported only for PUs not at the current level of SNA)
7	0–1	00 (only value defined—Alert is always sent unsolicited and as a single RU)
	2–7	Type code: 000000
8–13		Node Identification

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
8–11	0–11	Block number
	12–31	ID number
12–13		Reserved
14–19		Alert Classification
14	0–1	Format: 01 format 1 (only value defined)
14	2–7	Reserved
15	0–3	Alert type: indicates the reason for the Alert being generated and differentiates between errors, operational problems, performance problems, and other exceptional conditions; valid Alert types are: X'1' permanent error: cannot be retried or recovered without help external to the SNA node X'2' temporary error: recovered within recovery procedure limit X'3' performance: exceeded performance parameter threshold X'4' operational or procedure: unsupported or invalid use, busy X'5' application generated X'6' operator triggered X'7' SNA summary: exceeded threshold count of SNA negative responses
	4–7	Major probable cause: indicates the general category of the probable cause, e.g., hardware, software, or protocol failure; valid major probable cause (details of these causes are given in specific implementation documentation): X'1' hardware X'2' software X'3' link connection: characterized by transmission medium, modem, DTE-DCE cable, drivers, X'4' protocol: invalid response or command sequence, system definition error X'5' environment: thermal, installation restriction X'6' removable media, e.g., paper, cards, tape, pack, diskette X'7' hardware or software X'8' logical X'9' operator of sending product X'F' undetermined
16		Minor probable cause: indicates the lowest level category with which the Alert may be associated, e.g., printer, power, program, X.25 network; valid minor probable cause (details of these causes are given in specific implementation documentation): X'01' base processor X'02' service processor for support of maintenance services X'03' microcode *Note:* Microcode may be classified as IBM Licensed Internal Code. See “Notices” at the beginning of this document for more information. X'04' main storage X'05' DASD drive X'06' printer X'07' card reader/punch X'08' tape drive X'09' keyboard X'0A' selector pen X'0B' magnetic stripe reader X'0C' display or printer X'0D' display unit X'0E' remote product: error attributed to product at adjacent link station on this link X'0F' power internal to this product X'10' I/O attached controller if distinguishable from drive

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content	
		X'11'	communications controller scanner
		X'12'	communications link adapter
		X'13'	link adapter
		X'14'	channel adapter: secondary attachment to System/390 channel
		X'15'	loop adapter: attachment to loop communication link
		X'16'	adapter for directly attaching devices
		X'17'	miscellaneous adapter
		X'18'	System/390 channel
		X'19'	link: transmission medium—ownership unknown
		X'1A'	link: common carrier transmission medium
		X'1B'	link: customer transmission medium
		X'1C'	loop: transmission medium—ownership unknown
		X'1D'	loop: common carrier transmission medium
		X'1E'	loop: customer transmission medium
		X'1F'	X.21 link connection external to this product
		X'20'	X.25 network external to this product
		X'21'	local X.21 interface: DTE-DCE
		X'22'	local X.25 interface: DTE-DCE
		X'23'	local modem
		X'24'	remote modem
		X'25'	local modem interface: DTE-DCE
		X'26'	remote modem interface: DTE-DCE
		X'27'	local probe
		X'28'	remote probe
		X'29'	local probe interface
		X'2A'	remote probe interface
		X'2B'	network connection
		X'2C'	IBM host program if not distinguishable as control program, application, or access method
		X'2D'	IBM host application program supplied by IBM
		X'2E'	IBM host telecommunication access method
		X'2F'	customer host application program
		X'30'	IBM communication controller program
		X'31'	IBM control program
		X'32'	remote modem interface or remote product
		X'33'	transmission medium or remote modem
		X'34'	SDLC format exception
		X'35'	BSC format exception
		X'36'	start/stop format exception
		X'37'	SNA format exception
		X'38'	power external to product
		X'39'	thermal
		X'3A'	paper
		X'3B'	tape
		X'3C'	DASD: removable media
		X'3D'	card
		X'3E'	magnetic stripe card
		X'3F'	negative SNA response
		X'40'	system definition error (whether diskette loaded, keyed, or otherwise customized)
		X'41'	installation restrictions
		X'42'	adjacent link station offline: no status received
		X'43'	adjacent link station busy (switched link)
		X'44'	controller or device
		X'45'	local probe or modem
		X'46'	tape or drive
		X'47'	card reader/punch or display/printer
		X'48'	controller application program

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
		X'49' keyboard or display X'4A' storage control unit X'4B' channel or storage control unit X'4C' storage control unit or controller X'4D' control unit X'4E' DASD data or media or drive X'4F' DASD data or media X'50' diskette X'51' diskette or drive X'FF' undetermined
17		Reserved
18		User action code: 0 reserved ¬0 a code associated with predefined text that describes user actions appropriate to the cause
19		Reserved
20–m		Appended CNM vectors (described at the end of this RU): zero or more CNM vectors may be appended to the request to convey data available to the PUMS when the Alert event was originated; appended vectors are ordered according to the binary value of the Vector Type field (nondescending) *Note:* The sending of information in appended CNM vectors does *not* cause reset of any counters.
m+1(=n)		X'00' indicating end of appended vectors
7–17		SDLC Test Command/Response Statistics
7	0 1 2–7	Solicitation indicator (see above) Not-last request indicator (see above) Type code: 000001; the CNM target ID identifies a PU T1|2
8–13	 0–11 12–31	Node identification Block number ID number
12–13		Reserved
14–15		Counter: the number of times the secondary SDLC station has received an SDLC Test command with or without a valid FCS
16–17		Counter: the numberof times the secondary SDLC station has received an SDLC Test command with a valid FCS and has transmitted an SDLC Test response *Note:* All counters are in binary.
7–22		Summary error data
7	0 1 2–7	Solicitation indicator (see above) Not-last request indicator (see above) Type code: 000010; the CNM target ID identifies a PU
8–13	 0–11 12–31	Node identification Block number ID number
12–13		Reserved
14–16		Summary counter validity mask:

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
14	0	Set to 1 if product error counter is valid
	1	Set to 1 if communication adapter error counter is valid
	2	Set to 1 if SNA negative response counter is valid
	3–7	Reserved
15		Reserved
16	0–6	Reserved
	7	Communications adapter error flag for products implementing unsolicited RECFMS types 02 or 03; otherwise, reserved: 0 no cumulative communication adapter errors 1 indicates presence of communication adapter errors not yet reported by RECFMS 03
17–18		Product error counter: a count for the product identified by the Node Identification field (bytes 8–13) of certain product-detected hardware errors whose origins are failures designated as internal by that product's own logic capability (The identified product has the responsibility for further isolation of these failures using its own product-specific problem determination and maintenance procedures.)
19–20		Communication adapter error counter for communication adapter errors whose source is either external or internal to the product identified by the node ID; this field is reserved in products reporting counter overflows via unsolicited RECFMS type 02 or 03
21–22		Count of SNA negative responses originating at this node *Note:* All counters are in binary.
7–n		Communication Adapter Error Statistics: counts of selected errors, useful for problem determination, that have been supplied by the communication adapter (For these errors, the RECFMS Type 000010 communication adapter error counter is always incremented; the RECFMS Type 000010 product error counter is also incremented for those errors classified as internal errors by the product identified by the node ID.)
7	0	Solicitation indicator (see above)
	1	Not-last request indicator (see above)
	2–7	Type code: 000011; the CNM target ID identifies a PU T1|2
8–13		Node identification
	0–11	Block number
	12–31	ID number
12–13		Reserved
14		Communication adapter error counter sets: X'01' counter set 1 X'02' counter set 2 X'03' counter set 3 X'04' counter set 4 X'05' counter set 5 (retired: supported only for PUs not at the current level of SNA) X'06' counter set 6 (retired: supported only for PUs not at the current level of SNA)
15–n		Data for Counter Sets 1 and 2
15–17		Communication adapter counter validity mask bytes

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
15		Mask byte 1 (bit is set to 1 if the counter is valid):
	0	Nonproductive time-out or receive overrun counter
	1	Idle time-out counter
	2	Write retry counter
	3	Overrun counter
	4	Underrun counter
	5	Connection problem counter
	6	FCS error counter
	7	Primary station abort counter
16		Mask byte 2 (bit is set to 1 if the counter is valid):
	0	Command reject counter
	1	SDLC DCE error counter
	2	Write time-out counter
	3	Invalid status counter
	4	Communication adapter machine check counter
	5–7	Reserved
17		Reserved
18		Nonproductive time-out counter: no valid SDLC frames have been received within the time interval specified by the communication adapter; or receive overrun counter: the line is "hung" or insufficient buffer space has been allocated *Note:* Receive overrun applies only to counter set 2.
19		Idle time-out counter: no SDLC Flag octets received for *n* seconds, where *n* is specified by the communication adapter
20		Write retry counter: the number of retransmissions of one or more SDLC I-frames
21		Overrun counter: the number of times one or more received characters have been overlaid
22		Underrun counter: the number of times one or more characters have been transmitted more than once
23		Connection problem counter: incremented by *1* for every *n* retries of commands that establish connection with a station, when RLSD drops, or whenever write retry is updated—*n* is specified by the communication adapter
24		FCS error counter: the number of times a received SDLC frame had an invalid FCS
25		Primary station abort counter: number of times seven or more consecutive *1* bits have been received
26		SDLC command reject counter
27		DCE error counter: number of DCE interrupts or other unexpected conditions (e.g., "data set ready" drops)
28		Write time-out counter: number of time-outs during write operations, e.g., because of transmit clock failures
29		Invalid status counter: number of times status generated by the adapter was not meaningful
30(=n)		Communication adapter machine check counter: number of times the communication adapter has been identified as causing a machine check *Note:* All counters are in binary.
15–n		Data for Counter Set 3
15–17		Communication adapter counter validity mask (bit is set to 1 if the counter is valid):

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
15	0	Total transmitted I-frames counter
	1	Write retry counter
	2	Total received I-frames counter
	3	FCS error counter
	4	SDLC command reject counter
	5	DCE error counter
	6	Nonproductive time-out counter
	7	Reserved
16–17		Reserved
18–19		Total transmitted I-frames counter: the total number of SDLC I-frames transmitted successfully
20–21		Write retry counter: the number of retransmissions of one or more SDLC I-frames
22–23		Total received I-frames counter: the number of SDLC I-frames successfully received
24–25		FCS error counter: the number of SDLC frames received with FCS errors
26–27		SDLC command reject counter
28–29		DCE error counter: the number of DCE interrupts and other unexpected conditions (e.g., "data set ready" drops)
30–31(=n)		Nonproductive time-out counter: the number of times an SDLC frame has not been received within the time interval specified by the adapter *Note:* All counters are in binary.
15–n		Data for Counter Set 4 *Note:* For a definition of adapter, control unit, and System/390 channel commands, and orders see implementation documentation.
15–17		Adapter counter validity mask bytes
15		Mask byte 1 (bit is set to 1 if the counter is valid):
	0	Command-reject-while-not-initialized counter
	1	Command-not-recognized counter
	2	Sense-while-not-initialized counter
	3	Channel-parity-check-during-selection-sequence counter
	4	Channel-parity-check-during-data-write-sequence counter
	5	Output-parity-check-at-control-unit counter
	6	Input-parity-check-at-control-unit counter
	7	Input-parity-check-at-adapter counter
16		Mask byte 2 (bit is set to 1 if the counter is valid):
	0	Data-error-at-adapter counter
	1	Data-stop-sequence counter
	2	Short-frame-or-length-check counter
	3	Connect-received-when-already-connected counter
	4	Disconnect-received-while-PU-active counter
	5	Long-RU counter
	6	Connect-parameter-error counter
	7	Read-Start-Old-received counter
17		Reserved
18		Command-reject-while-not-initialized counter: an initial Control command containing a valid Connect order was not received prior to a Restart Reset, Read Start 0/1, Write Start 0/1, Read, Write, or Write Break command
19		Command-not-recognized counter: control unit channel adapter received a command code that it did not recognize (invalid or not supported)

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
20		Sense-while-not-initialized counter: Sense command was received in response to the initial asynchronous interrupt (device-end, unit check), or Sense command was received without a preceding unit check ending status
21		Channel-parity-check-during-selection-sequence counter: control unit channel adapter detected a parity error from the channel during the selection sequence from the channel
22		Channel-parity-check-during-data-write-sequence counter: control unit channel adapter detected a parity error on channel bus-out during a channel Write operation
23		Output-parity-check-at-control-unit counter: control unit channel adapter detected a control unit parity error during a channel Write operation
24		Input-parity-check-at-control-unit counter: control unit detected a control unit parity error during a channel Read operation
25		Input-parity-check-at-adapter counter: control unit channel adapter detected that it transmitted bad parity on channel bus-in during a channel Read operation
26		Data-error-at-adapter counter: control unit detected a channel adapter error during an internal channel adapter cycle-steal operation
27		Data-stop-sequence counter: the number of data bytes accepted by the System/390's Read command was less than that specified in Connect
28		Short-frame-or-length-check counter: a minimum four bytes have not been transferred as a link header; or the byte count specified in the first two bytes of the header did not equal the number of bytes received during a Control, Write, or Write Break operation
29		Connect-received-when-already-connected counter: a Connect was received when the control unit was already connected; this is an error condition and the PU is deactivated
30		Disconnect-received-while-PU-active counter: a Disconnect order was received from the System/390 while the PU is active (i.e., with no DACTPU preceding the Disconnect); this is an error condition
31		Long-RU counter: primary link station has sent an RU greater than the secondary link station can accept
32		Connect-parameter-error counter: the Connect was rejected because it specified an odd-number buffer length, or it specified a buffer size insufficient to hold the link header, TH, RH, and at least a 64-byte RU
33(=n)		Read-Start-Old-received counter: the secondary link station received a Read Start Old command *Note:* All counters are in binary.
15–n		Data for Counter Set 5 (for X.25 physical circuit) (retired: supported only for PUs not at the current level of SNA) *Note:* Sent only from the primary end of an X.25 physical circuit.
15–17		Communication adapter counter validity mask
15		Mask byte 1 (bit is set to 1 if the counter is valid):
	0	Number of I-frames transmitted counter
	1	Number of I-frames received counter
	2	Number of RR frames transmitted counter
	3	Number of RR frames received counter
	4	Number of RNR frames transmitted counter
	5	Number of RNR frames received counter
	6	Number of REJ frames transmitted counter
	7	Number of REJ frames received counter

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
16		Mask byte 2 (bit is set to 1 if the counter is valid):
	0	Number of retransmissions counter
	1	Number of frames received with FCS errors counter
	2	Number of errors on receive side counter
	3	Number of overruns on receive side counter
	4	Number of underruns on transmit side counter
	5–7	Reserved
17		Reserved
18–19		Number of I-frames transmitted
20–21		Number of I-frames received
22–23		Number of RR frames transmitted
24–25		Number of RR frames received
26–27		Number of RNR frames transmitted
28–29		Number of RNR frames received
30–31		Number of REJ frames transmitted
32–33		Number of REJ frames received
34–35		Number of retransmissions
36–37		Number of frames received with FCS errors
38–39		Number of errors on receive side
40–41		Number of overruns on receive side
42–43(=n)		Number of underruns on transmit side *Note:* All counters are in binary.
15–n		Data for Counter Set 6 (for X.25 virtual circuit) (retired: supported only for PUs not at the current level of SNA) *Note:* Sent only from the primary end of an X.25 virtual circuit.
15–17		Communication adapter counter validity mask
15		Mask byte 1 (bit is set to 1 if the counter is valid):
	0	Number of data packets transmitted counter
	1	Number of data packets received counter
	2	Number of RR packets transmitted counter
	3	Number of RR packets received counter
	4	Number of RNR packets transmitted counter
	5	Number of RNR packets received counter
	6	Number of interrupt packets transmitted counter
	7	Number of interrupt packets received counter
16		Mask byte 2 (bit is set to 1 if the counter is valid):
	0	Number of connection requests counter
	1	Number of connections counter
	2	Number of reset indications counter
	3	Number of clear indications counter
	4	Number of data packets with D-bit transmitted counter
	5	Number of data packets with D-bit received counter
	6–7	Reserved
17		Reserved
18–19		Number of I packets transmitted

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
20–21		Number of I packets received
22–23		Number of RR packets transmitted
24–25		Number of RR packets received
26–27		Number of RNR packets transmitted
28–29		Number of RNR packets received
30–31		Number of interrupt packets transmitted
32–33		Number of interrupt packets received
34–35		Total number of connection requests (call request and incoming calls)
36–37		Total number of connections (calls connected and accepted)
38–39		Number of reset indications
40–41		Number of clear indications
42–43		Number of data packets with D-bit transmitted
44–45(=n)		Number of data packets with D-bit received *Note:* All counters are in binary.
7–n		PU/LU Dependent Data
7	0 1 2–7	Solicitation indicator (see above) Not-last request indicator (see above) Type code: 000100; the CNM target ID identifies a PU|LU
8–13	 0–11 12–31	Node identification Block number ID number
12–13		Reserved
14–n		PU/LU dependent data
7–n		Engineering Change Levels
7	0 1 2–7	Solicitation indicator (see above) Not-last request indicator (see above) Type code: 000101; the CNM target ID identifies a PU
8–13	 0–11 12–31	Node identification Block number ID number
12–13		Reserved
14–n		Implementation defined data describing hardware, microcode, and programming levels
7–n		Link Connection Subsystem Data (retired: supported only for PUs not at the current level of SNA)
7	0 1 2–7	Solicitation indicator (see above) Not-last request indicator (see above) Type code: 000110; the CNM target ID identifies an adjacent link station in the origin subarea
8–13	 0–11 12–31	Node identification: Block number ID number
12–13		Reserved

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
14		Data selection, echoed from the soliciting REQMS command: X'02' link status command sequence X'03' remote DTE interface status X'04' remote modem self test
15		Link connection subsystem type: X'01' link type 1 (links that use 3863, 3864, or 3865 modems; also links that use 5865, 5866, or 5868 modems running LPDA-1) X'02' link type 2 (3867 link diagnostic unit)
16–17		Validity indicators, bits 0–9 (how the PU sending this RU views the data): *Note:* The values to follow are used in each of the validity indicator fields. 00 data valid, from the modem 01 data invalid, no response from the modem 10 data invalid, response in error from the modem 11 data invalid, execution not attempted by the PU sending this RU
	0–1	Remote modem status
	2–3	Local modem status
	4–5	Modem self test *Note:* If byte 14 = X'02', bits 4–5 are for local modem self-test. If byte 14 = X'04', bits 4–5 are for remote modem self-test.
	6–7	Reserved
	8–9	Remote DTE interface status
	10–13	Reserved
	14–15	Link connection subsystem data format indicator: 00 format 0 01 format 1: same as format 0, plus; remote modem self test results, channelization status, local and remote modem status extensions, and general status extensions
18–19		Remote modem status:
	0–5	Hit count (noise spikes) for link type 1, reserved for link type 2 *Note:* For bits 6–7 and 12–14, when the condition exists, the bit value will be 1.
	6	Modem reinitialization was performed
	7	Loss of receive line signal
	8–11	Quadratic error value for link type 1, number of byte errors during test for link type 2
	12	Remote DTE power off detected
	13	Data Terminal Ready loss detected
	14	Switched-Network-Back-Up connected
	15	DTE streaming condition detected
20–21		Local modem status:
	0–5	Hit count (noise spike) for link type 1, reserved for link type 2 *Note:* For bits 6–7 and 12–14, when the condition exists, the bit value will be 1.
	6	Modem reinitialization was performed
	7	Loss of receive line signal
	8–11	Quadratic error value for link type 1, number of byte errors during test for link type 2
	12	Remote modem power loss detected
	13	Speed,for link type 1 (always full for link type 2): 0 half 1 full
	14	Switched-Network-Back-Up connected
	15	Reserved
22–24		Local Modem Self-Test and Remote-Tone Results, Remote Modem Self-Test Results: *Note:* If byte 14 is X'02', link status command sequence, then bytes 22–24 pertain to the local modem. If byte 14 is X'04', remote modem self-test, then bytes 22–24 pertain to the remote modem.

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
	0–2	Model bits, concatenated to the right of the bit-string formed by bits 18, 19, 8, and 15 (in this order) represents the modem model returned as modem self-test result in the bit-string formed by bits 2 and 3 of byte 3, bits 0 and 7 of byte 2, and bits 0, 1, and 2 of byte 1 (in this order), see "LPDA-1 Results Message Information Fields" in *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, SY33-2048.
	3	Link connection type: 0 nonswitched 1 switched
	4	Configuration: 0 point to point 1 multipoint
	5	Modem role: 0 primary or control modem 1 secondary or tributary modem
	6	Clear To Send delay for link type 1 (reserved for link type 2): 0 normal 1 exceptional
	7	Received line signal detector sensitivity for link type 1 (reserved for link type 2): 0 normal 1 limited
	8	Model bit, see bits 0–2 specification
	9	Modem self-test result: 0 passed 1 failed
	10	Remote tone test result for local modem self test (reserved for remote modem self test): 0 passed 1 failed *Note:* For the following bits, when the condition exists, the bit value will be 1.
	11	Feature card suspected in error
	12	Receiver card suspected in error for link type 1 (reserved for link type 2)
	13	Receiver card extension suspected in error for link type 1 (reserved for link type 2)
	14	Front end card is suspected in error for link type 1 (reserved for type 2)
	15	Model bit, see bits 0–2 specification
	16	Feature card installed (tone alarm card installed if nonswitched link connection; integral protection coupler installed if switched link connection)
	17	Switched-Network-Back-Up installed
	18	Model bit, see bits 0–2 specification; also if its value is 1 then channelization feature installed
	19	Model bit, see bits 0–2 specification; also if its value is 1 then fan-out feature installed
	20–23	Microcode EC level
25–26		Remote DTE Interface Status
25		Current state of the RS-232C or V.24 interface leads (for bits 0–5 and 7, when the condition exists, the bit value is set to 1):
	0	Request To Send
	1	Clear To Send
	2	Reserved
	3	Transmit Data
	4	Reserved
	5	Data Terminal Ready
	6	Speed: 0 half 1 full
	7	DTE power loss
26		Indication of transition of RS-232C or V.24 leads since last test occurrence (for the following bits, when the condition exists, the bit value is set to 1):

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
	0	Request To Send changed at least once
	1	Clear To Send changed at least once
	2	Received Data changed state
	3	Transmit Data changed state
	4	Received Line Signal loss was detected at least once
	5	Data Terminal Ready dropped at least once
	6	Modem speed was changed at least once
	7	DTE power loss was detected at least once

End of format 0, Format 1 continues below.

27–29		Channelization status
27		Channelization and tailing flags (for the following bits, when the condition exists, the bit value is set to 1):
	0	This data is associated with a channelized modem
	1	This data is associated with a tailed link of a channelized modem
	2	This data is associated with channel A of a channelized modem
	3–7	Reserved
28–29		Channelization correlation number: a user assigned value used to correlate link connections with a channelized modem. The same value may be assigned to each of the link connections of a channelized modem so that those link connections can be associated with that particular modem
30–37		Local Modem Status Extension
30		Local modem receive dB level (with all code points representing dB units):
	X'00'	function not supported
	X'01'–X'40'	ignore data
	X'41'	not available
	X'42'–X'4B'	< -48 dB
	X'4C'	-48 dB
	X'4D'	-47 dB
	X'4E'–X'60'	-46 dB to -28 dB
	X'61'	-27 dB
	X'62'–X'6B'	-26 dB to -17 dB
	X'6C'	-16 dB
	X'6D'–X'75'	-15 dB to - 7 dB
	X'76'	- 6 dB
	X'77'–X'7D'	- 5 dB to + 1 dB
	X'7E'	+ 2 dB
	X'7F'	> + 2 dB
	X'80'–X'FF'	ignore data
31–37		Reserved
38–45		Remote Modem Status Extension
38		Remote modem receive dB level (with all code points representing dB units):
	X'00'	function not supported
	X'01'–X'40'	ignore data
	X'41'	not available
	X'42'–X'4B'	< -48 dB
	X'4C'	-48 dB
	X'4D'	-47 dB
	X'4E'–X'60'	-46 dB to -28 dB
	X'61'	-27 dB
	X'62'–X'6B'	-26 dB to -17 dB
	X'6C'	-16 dB
	X'6D'–X'75'	-15 dB to - 7 dB

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
		X'76' - 6 dB X'77'–X'7D' - 5 dB to + 1 dB X'7E' + 2 dB X'7F' > + 2 dB X'80'–X'FF' ignore data
39–45		Reserved
46–53(=n)		General status extension
46		Link-level address used to address the remote modem
47		Remote DTE Interface Extension
48–53(=n)		Reserved
CNM Vectors (described 0-origin)		
(Retired: CNM vectors are supported only for PUs not at the current level of SNA)		
0		Vector length: a binary count of the length in bytes of this vector (bytes 1–n)
1		Type field:
	0–1	Reserved
	2–7	Vector type: an identifier of the information contained in bytes 2–n.
2–n		Vector data
0–n		Embedded Text Vector
0		Vector length: a binary count of the length in bytes of this vector (bytes 1–n)
1		Type field:
	0–1	Reserved
	2–7	Vector type: 000000 the vector contains a text message, composed of SCS characters (only value defined)
2–n		Vector data in SCS text
0–n		Embedded Name List Vector
0		Vector length: a binary count of the length in bytes of this vector (bytes 1–n)
1		Type field:
	0–1	Reserved
	2–7	Vector type: 001100
2		Hierarchy name options: X'01' reserved X'02' only value defined X'03' retired
3		Number of name entries to follow
4–n		Hierarchy name list: identifies network elements for which there is no name known to the controlling SSCP; examples of such elements are disk drive, display head; the hierarchy name list can contain up to five entries in hierarchy sequence; first is nearest to the PU; each entry has the following format:
0		Binary count of the length in bytes of the name
1–m		Name in EBCDIC (any SCS character string)

RECFMS (RECORD FORMATTED MAINTENANCE STATISTICS)

Byte	Bit	Content
m+1–m+4		Resource type: if byte m+1 is not equal to X'00', no translation is required and the resource type is the EBCDIC value of the four bytes (e.g., "loop," "disk," or "adap"); if byte m+1=X'00' and byte m+2=X'00', bytes m+3 and m+4 are assumed to contain an encoded value that can be translated into resource type; if byte m+1=X'00' and byte m+2=X'01', bytes m+3 and m+4 are qualifiers of the Alert originator block number, creating a unique type code by product
0–n		User Action Qualifier
0		Vector length: a binary count of the length in bytes of this vector (bytes 1–n)
1		Type field:
	0–1	Reserved
	2–7	Vector type: 001101
2–n		User action qualifier: a product-defined value represented in SCS characters that is to distinguish, for example, among multiple instances of an element (e.g., reporting which scanner of several has failed)

REQMS (REQUEST MAINTENANCE STATISTICS)

SSCP → PU, Norm; FMD NS(ma)

REQMS has been retired from SNA for T2 nodes.

REQMS requests the management services associated with the PU to provide maintenance statistics for the resource indicated by the CNM target ID in the CNM header.

Consult product documentation for further information on product support.

REQMS (REQUEST MAINTENANCE STATISTICS)

Byte	Bit	Content
0–2		X'410304' NS header
3–4		CNM target ID, as specified in bytes 5–6, bits 2–3
5–6	0–1	Reserved
	2–3	CNM target ID descriptor: 00 byte 4 contains a local address for a PU or LU in a T2 node or an LSID for a PU or LU in a T1 node; byte 3 is reserved 01 bytes 3–4 contain the element address of a link, adjacent link station, PU, or LU in the destination subarea, if ENA is supported; otherwise, its network address
	4–15	Procedure related identifier (PRID): a CNM application program generated value for CNM application program correlation, or an SSCP generated value for SSCP routing
7		Request-Specific Information
	0	Reset indicator (or reserved, as shown below for each Type code): 0 do not reset data when RECFMS is sent in reply 1 reset data when RECFMS is sent in reply
	1	Reserved
	2–7	Request-specific type code (see below)

REQMS (REQUEST MAINTENANCE STATISTICS)

Byte	Bit	Content
Note:		For reply (i.e., solicited) requests, bytes 3–6 and byte 7, bits 2–7, echo the corresponding fields in the CNM header received in the request that solicited the reply requests.
7		SDLC Test Command/Response Statistics
	0	Reset indicator
	1	Reserved
	2–7	Type code: 000001; the CNM target ID identifies a PU T1|2
7		Summary Error Data
	0	Reset indicator
	1	Reserved
	2–7	Type code: 000010; the CNM target ID identifies a PU
7		Communication Adapter Data
	0	Reset indicator
	1	Reserved
	2–7	Type code: 000011; the CNM target ID identifies a PU T1|2
7–n		PU- or LU-Dependent Data
7	0	Reset indicator
	1	Reserved
	2–7	Type code: 000100; the CNM target ID identifies a PU|LU
8–n		PU- or LU-dependent request parameters: implementation-dependent information (See CNM application product specifications for details).
7		Engineering Change Levels
	0–1	Reserved
	2–7	Type code: 000101; the CNM target ID identifies a PU
7–8		Link Connection Subsystem Data (retired: supported only for PUs not at the current level of SNA)
7	0	Reset indicator
	1	Reserved
	2–7	Type code: 000110; the CNM target ID identifies an adjacent link station in the destination subarea
8		Data selection requested: X'02' link status command sequence X'03' remote DTE interface status X'04' remote modem self test

End of Chapter 2

Chapter 3. SNA/MS GDS Variables

Introduction

This chapter contains formats for three SNA/MS GDS variables that transport SNA/MS data. Two other GDS variables transport SNA/MS data as well as SNA/DS and SNA/FS data; these are documented in Appendix B, “Common Structures.” Chapter 1, “SNA/MS Introduction” describes the roles that the various GDS variables play in transporting SNA/MS data.

Other GDS variables contain SNA/MS data related to a specific discipline or context. These GDS variables are documented in Chapter 4, “SNA/MS Encodings.”

Control Point Management Services Unit (X'1212') GDS Variable

CP-MSU carries MS requests and data in general data stream (GDS) format.

Control Point Management Services Unit (X'1212') GDS Variable

Byte	Bit	Content
0–1		Length (m+1), in binary, of the CP-MSU
2–3		GDS ID: X'1212'
4–m		One or more MS major vectors, as described (using 0-origin indexing) in Chapter 4, “SNA/MS Encodings,” and/or one or more of the following GDS variables if appropriate: X'1532' SNA Condition Report: documented in Appendix B, “Common Structures.” Present if an SNA-registered condition was recognized by the management services application program or SNA/DS agent at the sending node, except in the case of SNA/File Services errors (when the report is contained within the FS Action Summary). X'1548' FS Action Summary: defined by SNA/File Services. Present in a management services reply MU if a server object requesting SNA/FS action was present in the management services request MU. X'1549' Agent Unit Of Work: defined by SNA/File Services. Present in a management services request MU if a Request Cancellation (X'8076') major vector refers to another request MU, using its correlation value as its identifier. *Note:* For some conditions (for example, parsing errors where the command is not recognized, or SNA/File Services errors that occur prior to MS command execution), the major vector may be omitted.

SNMP-over-SNA (X'1222') GDS Variable

The SNMP-over-SNA (X'1222') GDS variable is used to transport an SNMP PDU on an LU 6.2 session. In addition to the SNMP PDU, the GDS variable conveys the sender's transaction program name, so that the receiver can send its responses back to the sender.

SNMP-over-SNA (X'1222') GDS Variable

Byte	Bit	Content
0–1		Length (n+1), in binary, of the GDS variable, including this length field
2–3		GDS ID: X'1222'
4–n		GDS variable data: both of the following context-dependent GDS structured fields, in this order: X'FF00' SNMP-over-SNA Side Information X'FF01' SNMP-over-SNA Protocol Data Unit Each of these structured fields is described in zero-origin form below.

SNMP-over-SNA Side Information (X'FF00') GDS Structured Field

SNMP-over-SNA Side Information (X'FF00') GDS Structured Field

Byte	Bit	Content
0–1		Length, in binary, of this GDS structured field, including this length field
2–3		GDS ID: X'FF00'
4–n		The following subfield: X'00' Sender TP Name subfield (always present) The format of this subfield is shown below.

Sender TP Name (X'00') Subfield

Sender TP Name (X'00') Subfield

Byte	Bit	Content
0		Length (m+1), in binary, of this subfield
1		Type: X'00'

Sender TP Name (X'00') Subfield

Byte	Bit	Content
2–m		Sender TP name: the SNA-registered or unregistered TP name of the sender of the SNMP PDU By default, SNMP-over-SNA uses the following four registered TP names: X'23F0F0F3' The TP at an SNMP manager that sends an SNMP request to an agent. This will be the destination TP for the response. It is identified in the registry as the "SNMP_PORT_00160_registered" transaction program. X'23F0F0F4' The agent TP to which a manager sends an SNMP request. This TP corresponds to the well-known UDP port 161. It is identified in the registry as the "SNMP_PORT_00161_registered transaction program." X'23F0F0F5' The TP at an SNMP manager to which an agent sends a trap. This TP corresponds to the well-known UDP port 162. It is identified in the registry as the "SNMP_PORT_00162_registered" transaction program. X'23F0F0F6' The TP at an SNMP agent that sends a trap. This will be the destination TP for the inform confirming receipt of the trap. It is identified in the registry as the "SNMP_PORT_00163_registered" transaction program. In addition to these four registered TP names, a format for unregistered names is recommended for use in situations where the registered TP names are not sufficient. (One such situation is when multiple SNMP managers or agents are installed on the same LU for development, testing, or migration.) These names have the following form: `SNMP_PORT_ppppp[_ccc...ccc]` where "ppppp" represents in EBCDIC a five-digit decimal port number, padded with EBCDIC 0's (X'F0' characters) on the left (if necessary), and "ccc...ccc" indicates an optional EBCDIC character string of up to 48 characters. Examples of names with this structure include "SNMP_PORT_01234_testing" and "SNMP_PORT_01234_production." All unregistered TP names are encoded in EBCDIC using coded graphic character set 00640-00500.

SNMP-over-SNA Protocol Data Unit (X'FF01') GDS Structured Field

SNMP-over-SNA Protocol Data Unit (X'FF01') GDS Structured Field

Byte	Bit	Content
0–1		Length, in binary, of this GDS structured field, including this length field
2–3		GDS ID: X'FF01'
4–n		One SNMP protocol data unit, as specified in *SNMP over SNA using APPC*. This document is available on the Internet using the following URL: `ftp://www.raleigh.ibm.com/pub/standards/aiw/snasnmp/snmpsna.txt`

Node Address Service (X'1223') GDS Variable

The Node Address Service (X'1223') GDS variable is used to request from a service transaction program having the registered TP name X'23F0F0F7' (referred to as the NODE_ADDRESS_SERVER), running on an APPN node's control point, a list of one or more non-SNA addresses for the node's SNMP agent. It is also used as the reply on which the addresses are returned; the reply is returned to the TP identified in the Sender TP Name subfield of the request.

This function is used by a program that knows an APPN node's control point name, but needs to communicate with the node via some non-SNA protocol such as TCP/IP.

By default, the request GDS variable flows on a session with the SNASVCMG mode name. It can, however, flow on any session supported by an APPN control point, except for those using the CPSVCMG or CPSVRMGR modes. The reply returns on a session using the same mode as the request.

Node Address Service (X'1223') GDS Variable

Byte	Bit	Content
0–1		Length (n+1), in binary, of the GDS variable, including this length field
2–3		GDS ID: X'1223'
4–n		GDS variable data: one of the following context-dependent GDS structured fields. The first of these structured fields is included in a request for address information. The second structured field is included in the reply. X'FF00' Node Address Service Side Information X'FF01' Address List Each of these structured fields is described in zero-origin form below.

Node Address Service Side Information (X'FF00') GDS Structured Field

Node Address Service Side Information (X'FF00') GDS Structured Field

Byte	Bit	Content
0–1		Length, in binary, of this GDS structured field, including this length field
2–3		GDS ID: X'FF00'
4–n		The following subfield: X'00' Sender TP Name subfield (always present) The format of this subfield is shown below.

Sender TP Name (X'00') Subfield

Sender TP Name (X'00') Subfield

Byte	Bit	Content
0		Length (m+1), in binary, of this subfield
1		Type: X'00'
2–m		Sender TP name: the SNA-registered or unregistered TP name of the sender of the request for address information. This will be the destination TP of the Node Address Service reply containing the addresses. By default, an application program requesting a node's list of non-SNA addresses uses as its own name the registered TP name: X'23F0F0F8' NODE_ADDRESS_REQUESTER. However, any registered or unregistered TP name may be sent in this field. All unregistered TP names are encoded using coded graphic character set 00640-00500.

Address List (X'FF01') GDS Structured Field

Address List (X'FF01') GDS Structured Field

Byte	Bit	Content
0–1		Length, in binary, of this GDS structured field, including this length field
2–3		GDS ID: X'FF01'
4–n		Zero or more pairs of the following two subfields. In each pair the first subfield indicates the type of address being returned, and the second contains the address itself. An Address List with no entries in it indicates that no SNMP agent exists at the APPN node and therefore no non-SNA address is available for it. Address Type (X'01') subfield Address Type (X'02') subfield

Address Type (X'01') Address List Subfield

This subfield identifies the type of address contained in the X'02' subfield that immediately follows it.

Address Type (X'01') Address List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Address Type subfield
1		Key: X'01'
2(=q)		Address Type: a code point indicating the type of address in the X'02' subfield that immediately follows this subfield. Defined codes are: X'00' IP version 4-address X'01' IP version 6-address

Address (X'02') Address List Subfield

This subfield transports a single non-SNA address. The encoding and, in some cases, the length of this subfield are determined by the value in the X'01' subfield that immediately precedes it.

Address (X'02') Address List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Address subfield
1		Key: X'02'
2–q		Address

MDS Message Unit (X'1310') GDS Variable

Multiple-Domain Support Message Unit (MDS-MU) transports routing and control information and data for management services application programs.

Multiple-Domain Support Message Unit (X'1310') GDS Variable

Byte	Bit	Content
0–1		Length (m+1), in binary, of the MDS-MU
2–3		GDS ID: X'1310'
4–m		The following general data stream (GDS) variables as indicated:

General Data Stream (GDS) Variables	Presence in MDS-MU (X'1310') GDS variable	
MDS Routing Information (X'1311')	P	Note 1
Agent Unit of Work Correlator (X'1549')	P	Note 2
SNA Condition Report (X'1532')	CP	Note 3
CP-MSU (X'1212')	CP	Note 4
MDS-MU (X'1310')	CP	Note 5

Key:

P Present one time
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. MDS Routing Information is always the first structure in the MDS-MU.
2. Agent Unit of Work Correlator is always the second structure in the MDS-MU. See Appendix B, “Common Structures” for the format of this GDS variable.
3. SNA Condition Report is always present if the MDS message type is X'02' (MDS error message), as indicated in byte 2 of the Flags (X'90') MDS Routing Information subvector. It is optionally present for other MDS message types (see next Note). See Appendix B, “Common Structures” for the format of this GDS variable.
4. CP-MSU is optionally present for MDS message types X'00' (MDS request) and X'01' (MDS reply). It may not be present for message type X'02' (MDS error message).

   For MDS requests and replies, a single GDS variable may be included after the Agent Unit of Work Correlator. This GDS variable, which is supplied by the origin MS application program, may be one of the following:

   a. CP-MSU
   b. SNA Condition Report
   c. Some other GDS variable, not currently defined by management services architecture.

Multiple-domain support considers this GDS variable to be application data, with no restrictions except the following:

a. At most, one application GDS variable may be present.
b. The length of the application GDS variable may not exceed 31743 (X'7BFF') bytes.

5. Another MDS-MU is included within the MDS-MU only under the following conditions:

   a. The MDS message type is X'02' (MDS error message)
   b. The Application ID (X'03') SF of both the Origin Location Name (X'81') SV and the Destination Location Name (X'82') SV contains the value X'23F0F1F0' (MDS_ROUTER).
   c. The SNA Condition Report is present, and the SNA Report Code (X'7D') SV contains the value X'08A8 0009' (Destination not supported by reporting network node).

   The presence of this GDS variable is explicitly prohibited in all other circumstances.

MDS Routing Information (X'1311') GDS Variable

Multiple-Domain Support (MDS) Routing Information contains routing and control information for the Multiple-Domain Support Message Unit (MDS-MU) containing it.

MDS Routing Information (X'1311') GDS Variable

Byte	Bit	Content
0–1		Length (m+1), in binary, of the MDS Routing Information GDS variable
2–3		GDS ID: X'1311'
4–m		The following MDS subvectors: X'81' Origin Location Name (always first) X'82' Destination Location Name (always second) X'90' Flags (always third)

Origin Location Name (X'81') MDS Routing Information Subvector

This subvector identifies the origin NAU and application program for the Multiple-Domain Support Message Unit (MDS-MU) that contains it.

Origin Location Name (X'81') MDS Routing Information Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Origin Location Name subvector
1		Key: X'81'
2–p		Three subfields containing data identifying the origin of the record, as described below. X'01' NETID (always first) X'02' NAU Name (always second) X'03' Application ID (always third)

NETID (X'01') Origin Location Name Subfield

This subfield contains the network identifier portion of the network-qualified name of the NAU that originated the management services record containing it.

NETID (X'01') Origin Location Name Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the NETID subfield
1		Key: X'01'
2–q		NETID: a 1- to 8-byte type-1134 symbol string name; trailing space (X'40') characters may be present, but are insignificant; leading or embedded space characters are not permitted.

NAU Name (X'02') Origin Location Name Subfield

This subfield contains the unqualified name of the NAU that originated the management services record containing it. This is a CP or LU name.

NAU Name (X'02') Origin Location Name Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the NAU Name subfield
1		Key: X'02'
2–q		NAU name: a 1- to 8-byte type-1134 symbol string name; trailing space (X'40') characters may be present, but are insignificant; leading or embedded space characters are not permitted.

Application ID (X'03') Origin Location Name Subfield

This subfield contains either a 4-byte application program name defined by the management services architecture or a 1- to 8-byte installation-defined name.

Application ID (X'03') Origin Location Name Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Application Identification subfield
1		Key: X'03'
2–q		Application identification: Either a 1- to 8-byte type-1134 symbol string name, or one of the 4-byte architecturally defined values for management services application programs, listed in *SNA/Management Services Reference*. Trailing space (X'40') characters may be present, but are insignificant; leading or embedded space characters are not permitted.

Destination Location Name (X'82') MDS Routing Information Subvector

This subvector identifies the destination NAU and application program for the Multiple-Domain Support Message Unit (MDS-MU) that contains it.

Destination Location Name (X'82') MDS Routing Information Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Destination Location Name subvector
1		Key: X'82'

Destination Location Name (X'82') MDS Routing Information Subvector

Byte	Bit	Content
2–p		Three subfields containing data identifying the destination of the record, as described below. X'01' NETID (always first) X'02' NAU Name (always second) X'03' Application ID (always third)

NETID (X'01') Destination Location Name Subfield

This subfield contains the network identifier portion of the network-qualified name of the NAU to which the management services record containing it is being sent.

NETID (X'01') Destination Location Name Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the NETID subfield
1		Key: X'01'
2–q		NETID: a 1- to 8-byte type-1134 symbol string name; trailing space (X'40') characters may be present, but are insignificant; leading or embedded space characters are not permitted.

NAU Name (X'02') Destination Location Name Subfield

This subfield contains the unqualified name of the NAU to which the management services record containing it is being sent. This is a CP or LU name.

NAU Name (X'02') Destination Location Name Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the NAU Name subfield
1		Key: X'02'
2–q		NAU name: a 1- to 8-byte type-1134 symbol string name; trailing space (X'40') characters may be present, but are insignificant; leading or embedded space characters are not permitted.

Application ID (X'03') Destination Location Name Subfield

This subfield contains either a 4-byte application program name defined by the management services architecture or a 1- to 8-byte installation-defined name.

Application ID (X'03') Destination Location Name Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Application Identification subfield
1		Key: X'03'
2–q		Application identification: Either a 1- to 8-byte type-1134 symbol string name, or one of the 4-byte architecturally defined values for management services application programs, listed in *SNA/Management Services Reference*. Trailing space (X'40') characters may be present, but are insignificant; leading or embedded space characters are not permitted.

Flags (X'90') MDS Routing Information Subvector

This subvector contains various flags related to the transport of data between management services application programs.

Flags (X'90') MDS Routing Information Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Flags subvector
1		Key: X'90'
2		MDS message type: X'00' MDS request X'01' MDS reply X'02' MDS error message
3–4(=p)		Flags:
	0	First MDS message indicator: 0 MDS message is not the first message for the current unit of work 1 MDS message is the first message for the current unit of work. This value is required for an MDS error message. If the last MDS message indicator is also 1, then the message is the only one for the current unit of work.
	1	Last MDS message indicator: 0 MDS message is not the last message for the current unit of work 1 MDS message is the last (or only) message for the current unit of work. This value is required for an MDS error message.
	2	Routing verification indicator: 0 MDS-MU was routed based on unverified directory information 1 MDS-MU was routed based on verified directory information
	3–4	Application-level UOW context
	5–15	Reserved

End of Chapter 3

Chapter 4. SNA/MS Encodings

Introduction

The following table shows, by key value, the MS major vectors and the the message-unit structures that can carry these major vectors:

Key	MS Major Vector	Applicable Message-Unit Structures
X'0000'	Alert	NMVT, CP-MSU
X'0001'	Link Event	NMVT
X'0002'	Resolution	NMVT, CP-MSU
X'0010'	Trace	NMVT
X'0020'	Reply Modem LCS Diagnosis	NMVT
X'0025'	PD Statistics	NMVT
X'0050'	Change Control	CP-MSU
X'0061'	Reply to Execute Command	NMVT, CP-MSU
X'0062'	Reply to Analyze Status	NMVT, CP-MSU
X'0063'	Reply to Query Resource Data	NMVT, CP-MSU
X'0064'	Reply to Test Resource	NMVT, CP-MSU
X'0066'	Activation Acceptance	CP-MSU
X'0067'	Activation	CP-MSU
X'0068'	Initiation	CP-MSU
X'006F'	Send Message To Operator	NMVT, CP-MSU
X'0070'	Operate Report	CP-MSU
X'0071'	Deactivation Acceptance	CP-MSU
X'0072'	Deactivation	CP-MSU
X'0075'	Set Clock Report	CP-MSU
X'0076'	Cancelation	CP-MSU
X'0077'	Routing/Parsing Report	CP-MSU
X'0080'	RTM	NMVT
X'0090'	Reply Product Set ID	NMVT
X'0091'	Reply Modem LCS Operator Control	NMVT
X'00A0'	Reply Link Resource Control	NMVT
X'132F'	BER Envelope	NMVT, CP-MSU
X'1330'	Management Association	NMVT, CP-MSU
X'1332'	Link Configuration Data	NMVT
X'8010'	Request Trace	NMVT
X'8020'	Request Modem LCS Diagnosis	NMVT
X'8025'	Request PD Statistics	NMVT
X'8050'	Request Change Control	CP-MSU
X'8061'	Execute Command	NMVT, CP-MSU
X'8062'	Analyze Status	NMVT, CP-MSU
X'8063'	Query Resource Data	NMVT, CP-MSU
X'8064'	Test Resource	NMVT, CP-MSU
X'8066'	Request Activation	CP-MSU
X'8068'	Request Initiation	CP-MSU
X'8070'	Operate	CP-MSU
X'8071'	Request Deactivation	CP-MSU
X'8075'	Set Clock	CP-MSU
X'8076'	Request Cancelation	CP-MSU
X'8080'	Request RTM	NMVT
X'8090'	Request Product Set ID	NMVT
X'8091'	Request Modem LCS Operator Control	NMVT
X'80A0'	Request Link Resource Control	NMVT
X'80F0'	MS Capabilities	CP-MSU
X'9000'	Management Data Bundling	CP-MSU

The following table shows, by key value, the MS parameter major vectors and the message-unit structures that can carry these parameter major vectors:

Key	MS Parameter Major Vector	Applicable Message-Unit Structures
X'1300'	Text Data	NMVT, CP-MSU
X'1307'	Structured Data	NMVT, CP-MSU
X'1309'	Transparent Coded Datastream	NMVT, CP-MSU
X'130A'	Begin Data Parameters	NMVT, CP-MSU
X'130B'	End Parameter Data	NMVT, CP-MSU
X'1730'	Initiate Agent Request	CP-MSU
X'1731'	Initiate Agent Report	CP-MSU

Note: The major vectors and parameter major vectors are defined as follows (using 0-origin indexing):

- The description of each major vector includes a matrix indicating the subvectors that may be included within it.
- Subvectors with keys X'80' through X'FE' have a meaning that is unique only to the major vector in which they are used. They are defined following each major vector.
- Subvectors with keys X'00' through X'7F' are referred to as common subvectors. Their meaning is independent of the major vector in which they are used. They are defined in “MS Common Subvectors” on page 4-400.
- Subvectors may appear in any order within a major vector unless otherwise stated.

The following table shows, by key value, the MS GDS Variables and the message-unit structures that can carry these GDS Variables:

Key	MS GDS Variables	Applicable Message-Unit Structures
X'1320'	Text Command	CP-MSU
X'1321'	Partial Format Processing Method	CP-MSU
X'1322'	Display Datastream	CP-MSU
X'1323'	Context-Identified Values	CP-MSU
X'1324'	Context Identifier Group	CP-MSU
X'1325'	Context Identifier	CP-MSU
X'1326'	Value Group	CP-MSU
X'1327'	Character Value Descriptor	CP-MSU
X'1328'	Value Processing Method	CP-MSU
X'1329'	Value	CP-MSU
X'132A'	Hexadecimal Value Descriptor	CP-MSU
X'132B'	Nested Value Processing Method	CP-MSU
X'1331'	Value Instance Identifier	CP-MSU
X'1333'	OSI Session Layer Protocol Data Unit	CP-MSU
X'154D'	Routing and Targeting Instructions	CP-MSU
X'1732'	Command	CP-MSU
X'1735'	Job Element Spec	CP-MSU
X'1736'	Submission Type	CP-MSU
X'1739'	Job Element State	CP-MSU
X'173A'	Object Number	CP-MSU
X'1741'	Report Data Prefix	CP-MSU
X'1746'	Report Data Suffix	CP-MSU
X'1747'	Object Disposition	CP-MSU
X'1748'	Completion Report	CP-MSU
X'1749'	Command Procedure Parameters	CP-MSU

MS Major Vector Formats

Alert (X'0000') MS Major Vector

PU → SSCP, CP → CP

This major vector provides unsolicited notification of a problem or impending problem, type of problem, identification of the cause, and identification of the component that caused the problem.

Alert (X'0000') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0000'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Alert MS Subvectors” on page 4-18 for subvector keys X'80'–X'FE'. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Alert (X'0000') Major Vector		
	NMVT	CP-MSU	Notes
Text Message (X'00')	O	O	Note 1
Date/Time (X'01')	CP	P	Note 2
Hierarchy Name List (X'03')	O	—	Note 3
SNA Address List (X'04')	CP	—	Note 4
Hierarchy/Resource List (X'05')	CP	P	Note 5
Product Set ID (X'10')	P(n)	P(n)	Note 6
Self-Defining Text Msg. (X'31')	O(n)	O(n)	
User Data (X'33')	O	O	
Nested Alert Focal Point Data Forwarding (X'34')	O(n)	O(n)	
Relative Time (X'42')	CP	CP	Note 7
MSU Correlation (X'47')	CP	CP	Note 8
Supporting Data Corr. (X'48')	CP	CP	Note 9
Incident Identification (X'4A')	O(n)	O(n)	Note 10
Token-Ring LAN Link Connection Subsystem Data (X'51')	CP	CP	Note 11
LCS Configuration Data (X'52')	CP(n)	CP	Note 12
LAN Media Access Control Data (X'5D')	CP	CP(2)	Note 13
Frame Relay CLLM Message Data (X'5E')	CP(n)	CP(n)	Note 14
Link Station Data (X'8C')	CP	CP	Note 12
Basic Alert (X'91')	O	O	Note 15
Generic Alert Data (X'92')	P	P	
Probable Causes (X'93')	P	P	
User Causes (X'94')	CP	CP	Note 16
Install Causes (X'95')	CP	CP	Note 16
Failure Causes (X'96')	CP	CP	Note 16
Cause Undetermined (X'97')	CP	CP	Note 17
Detailed Data (X'98')	O	O	
Symptom String (X'99')	CP(n)	CP(n)	Note 18
Detail Qualifier(X'A0' or X'A1')	O(n)	O(n)	Note 19

Key:

—	Not present
P	Present one time
P(n)	Present one or more times
CP	Conditionally present one time (See Notes for conditions)
CP(n)	Conditionally present one or more times (See Notes for conditions)
O	Optionally present one time
O(n)	Optionally present one or more times

Notes:

1. This subvector may be optionally included by an Alert sender, to transport text in a single Alert major vector that can be processed by both a non-generic Alert and a generic Alert focal point. If this subvector is present, the X'91' subvector must also be present.
2. If the PU sending the Alert major vector has the capability of providing it, it places this subvector in the NMVT. See Note 7. It is always present in a CP-MSU.
3. This subvector may be optionally included in the NMVT by an Alert sender in order to create a single Alert major vector that can be processed by both a non-generic Alert and a generic Alert focal point. When it is present, this subvector identifies an origin of the Alert condition that is not an SNA network addressable unit. If this subvector is present, the X'91' subvector must also be present.
4. This subvector is present when it is necessary to identify, with an SNA address, the origin of the Alert condition. If the origin of the Alert condition is the PU sending the Alert, this subvector is not present.
5. This subvector is present in the NMVT instead of, or in addition to, the SNA Address List (X'04') subvector if the origin (other than the PU sending the Alert) of the Alert condition cannot be represented in the SNA Address List (X'04') subvector. This subvector is always present in a CP-MSU.
6. An instance of this subvector describing the PU or CP sending the Alert is always present. A second instance is present if the origin of the Alert condition is a hardware or software product, and is not the PU or CP sending the Alert. If a second instance is present, it is placed immediately after the first instance of the X'10' subvector.

   In an Alert containing two instances of the Product Set ID subvector, the following terms refer, respectively, to these two instances:

   - “Alert Sender PSID” identifies the PU sending the Alert
   - “Indicated Resource PSID” identifies the resource on which the Alert is reporting

   In an Alert with only one instance of the Product Set ID, this instance is referred to both as the Alert Sender Product Set ID and as the Indicated Resource Product Set ID.
7. If the PU sending the Alert cannot provide a Date/Time (X'01') subvector, it places this subvector in the NMVT instead.
8. This subvector is present if the Alert sender is including a token for correlating the Alert with another MSU reporting on the same resource as the Alert.
9. This subvector is present if the Alert sender has preserved supporting data, e.g., a storage dump, to which the Alert must be correlated.
10. If the Alert sender supports resending Alerts or sending Resolution major vectors, this subvector may be optionally included in order to correlate the Alert with the resent Alert providing additional problem information or the Resolution major vector reporting that the Alert condition has been resolved.
11. This subvector is present when the Alert reports an error on a Token-Ring LAN segment or when the Alert reports an error on a logical link that traverses a Token-Ring (TR) LAN segment, and the node sending the Alert is attached to

the Token-Ring LAN segment. This subvector and the X'5D' subvector are not both present in the same major vector.

12. This subvector is present when the Alert reports a problem with a logical link using the SDLC, LAN LLC, X.25, ISDN or Frame Relay protocols.
13. This subvector is present when the Alert reports a error on a non-Token-Ring LAN segment or when the Alert reports a error on a logical link that traverses a non-Token-Ring LAN segment, and the node sending the Alert is attached to that LAN segment. This subvector and the X'51' subvector are not both present in the same major vector.
14. This subvector is present when the Alert reports receipt of a CLLM message from a Frame Relay network. Each instance of this subvector can report up to 122 two-byte DLCIs from the CLLM message. If more than 122 DLCIs were included in the CLLM message, than multiple instances of this subvector are included in the Alert.
15. This subvector may be optionally included by an Alert sender in order to create a single Alert major vector that can be processed by both a non-generic Alert and a generic Alert focal point.
16. Any or all of these subvectors are present in an Alert, depending on the probable causes of the Alert condition identified by the Alert sender.
17. This subvector is present in an Alert if and only if none of the X'94', X'95', and X'96' subvectors is present.
18. This subvector is present one or more times if the Alert sender is including symptom strings related to the problem being reported. Multiple instances of the subvector are included if the sender has too much symptom string data to fit into one instance, but the distribution of subfields among the instances has no significance: the Alert receiver should treat the symptom string data as a single collection of subfields.

    Among all of the symptom string subfields in the Alert major vector, one primary symptom string is required, zero or more secondary symptom strings may be present, and one product set ID index is required if any of the symptom string subfields uses a product-unique format.
19. Up to a total of three instances of these subvectors may be optionally included by an Alert sender, in order to create a single Alert major vector that can be processed by both a non-generic Alert and a generic Alert focal point. If either of these subvectors is present, the X'91' subvector is also present.

Alert MS Subvectors

Link Station Data (X'8C') Alert MS Subvector

This subvector transports information about the link station at the time of failure.

Link Station Data (X'8C') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Link Station Data subvector
1		Key: X'8C'

Link Station Data (X'8C') Alert MS Subvector

Byte	Bit	Content
2–p		Subfields containing link station data (listed by key value below and described in detail following): X'01' Current N(S)/N(R) Counts X'02' Outstanding Frame Counts X'03' Last Data Link Control Field Received X'04' Last Data Link Control Field Sent X'05' Sequence Number Modulus X'06' Link Station State X'07' Data Link Reply Timer Expiration Count X'08' Last Received N(R) Count

Current N(S)/N(R) Counts (X'01') Link Station Data Subfield

This subfield transports the current N(S) and N(R) counts for a link station.

Current N(S)/N(R) Counts (X'01') Link Station Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Current N(S)/N(R) Counts subfield
1		Key: X'01'
2		N(S) count, in binary
3(=q)		N(R) count, in binary

Outstanding Frame Count (X'02') Link Station Data Subfield

This subfield transports the outstanding frame count.

Outstanding Frame Count (X'02') Link Station Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Outstanding Frame Count subfield
1		Key: X'02'
2(=q)		Outstanding frame count, in binary

Last Data Link Control Field Received (X'03') Link Station Data Subfield

This subfield transports the last data link control field received from the adjacent data link station before the error occurred.

Last Data Link Control Field Received (X'03') Link Station Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Last Data Link Control Field Received subfield
1		Key: X'03'
2–3(=q)		Last data link control field received; if the data link control field is only one byte long then byte 3 value is X'00'.

Last Data Link Control Field Sent (X'04') Link Station Data Subfield

This subfield transports the last data link control field sent to the adjacent data link station before the error occurred.

Last Data Link Control Field Sent (X'04') Link Station Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Last Data Link Control Field Sent subfield
1		Key: X'04'
2–3(=q)		Last data link control field sent; if the data link control field is only one byte long then byte 3 value is X'00'.

Sequence Number Modulus (X'05') Link Station Data Subfield

This subfield transports the modulus of the sequence number for the data link station.

Sequence Number Modulus (X'05') Link Station Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Sequence Number Modulus subfield
1		Key: X'05'
2(=q)		Modulus, in binary

Link Station State (X'06') Link Station Data Subfield

This subfield indicates busy conditions at the local or remote data link station.

Link Station State (X'06') Link Station Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Link Station State subfield
1		Key: X'06'
2(=q)		Link station states:
	0	State of the local link station: 0 local link station not busy 1 local link station busy (RNR sent)
	1	State of the remote link station: 0 remote link station not busy 1 remote link station busy (RNR received)
	2–7	Reserved

Data Link Reply Timer Expiration Count (X'07') Link Station Data Subfield

This subfield transports the number of times the Data Link Reply Timer expired.

Data Link Reply Timer Expiration Count (X'07') Link Station Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Data Link Reply Timer Expiration Count subfield
1		Key: X'07'
2–3(=q)		Count, in binary, of Data Link Reply Timer expirations

Last Received N(R) Count (X'08') Link Station Data Subfield

This subfield transports the most recently received N(R) count.

Link Station Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Last Received N(R) Count subfield
1		Key: X'08'
2(=q)		N(R) count, in binary

Basic Alert (X'91') Alert MS Subvector

This subvector transports Alert information, including an index to predefined screens.

Basic Alert (X'91') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Basic Alert subvector
1		Key: X'91'
2		Flags:
	0	Initiation indicator: 0 Alert not directly initiated by an operator action 1 Alert initiated by an operator action
	1	Held-Alert indicator: 0 Alert was sent when the problem was detected. 1 Alert condition was detected earlier, but the Alert was not sent at that time because no session was available to send it on.
	2–3	Reserved
	4–7	Retired (see page 4-26)
3		Alert type: X'01' permanent loss of availability: a loss of availability to the end user that is not recovered from without intervention external to the reporting product X'02' temporary loss of availability: a momentary loss of availability that will probably be noticed by the end user, yet is recovered from without intervention external to the reporting product X'03' performance: a recognized measurement of response time has exceeded a predetermined threshold X'04' operator intervention required: the intervention of an operator is required to restore proper operational capability to the resource X'05'–X'09' retired (see page 4-26) X'0A' notification: a loss of availability to the end user is impending but has not yet happened X'0B'–X'0E' retired (see page 4-26) X'0F' delayed: the sender is reporting a previously detected alertable condition that prevented reporting when detected
4		General cause code: indicates the general classification and cause of the exception condition: X'01' hardware or microcode (not distinguished): the Alert condition was caused by either a hardware (machine or equipment) failure, or a microcode failure, but the specific cause cannot be determined. X'02' software: the Alert condition was caused by a software (programming) failure or malfunction. X'03' retired (see page 4-26) X'04'–X'05' reserved X'06' media (e.g., tape, disk, diskette, paper): a failure, imperfection, or defect in the media *Note:* This code is used for cases where a particular area of a tape, disk or diskette cannot be read or written but other areas are operational. It is also used for torn or jammed forms or paper. It is *not* used for cases where the medium is not present or the wrong medium, e.g., the wrong size forms, are present; these cases are indicated by X'17' (operator intervention required). X'07' hardware or software (not distinguished): the Alert condition was caused by either a hardware (machine or equipment) failure, or a software (programming) failure but the specific cause cannot be determined. X'08'–X'09' retired (see page 4-26) X'0A' media or hardware (not distinguished): the Alert condition was caused by either a hardware (machine or equipment) failure, or a failure, imperfection, or defect in the media, but the specific cause cannot be determined. X'0B' hardware: the Alert condition was caused by a hardware (machine or equipment) failure or malfunction.

Basic Alert (X'91') Alert MS Subvector

Byte	Bit	Content
		X'0C' microcode: the Alert condition was caused by a microcode failure or malfunction. *Note:* This code is *not* used for ROS chips that are packaged in field replaceable units (FRUs) or customer replaceable units (CRUs) and are serviced in the same manner as hardware logic is serviced. X'0B' (hardware) is used in those cases.
		X'0D' protocol above link level: the Alert condition was caused by an SNA protocol error above the link level. *Note:* This code point reports protocol errors that are caused by incorrect programming, for example, failure to include a BB bit on the first RU when in BETB state on a session that uses bracket protocol.
		X'0E' link-level protocol: the Alert condition was caused by a link-level protocol error. *Note:* Errors such as send/receive count errors that can be caused by missing a message because line hits do not fall into this category; they are indicated by X'0B' (hardware).
		X'0F' undetermined: the cause of the Alert condition cannot be determined.
		X'10' external facilities change or restriction: the number called is temporarily unobtainable. *Note:* This code point is used by X.21 networks.
		X'11' user: the Alert condition was caused by an incorrect action taken by a user. *Note:* Unavailability due to a device being varied offline does not fall into this category; it is indicated by X'13' (component offline).
		X'12' system generation, customization, or installation consistency problem: the Alert condition was caused by an invalid system definition or customizing parameter, or by a mismatch between a system definition or customizing parameter and the hardware. *Note:* This code is used only in those cases that typically are not corrected by the action of the local operator.
		X'13' component offline: the Alert condition was caused by a component being offline.
		X'14' component busy: the Alert condition was caused by a component being busy.
		X'15' external power failure: the Alert condition was caused by an external power failure.
		X'16' thermal problem: the Alert condition was caused by temperature that is not within recommended specifications.
		X'17' operator intervention required: the Alert condition was caused because action is required by an operator. *Note:* Unattended devices will always signal Alert when operator intervention is required. Attended devices will not signal Alert until the local operator has time to perform the required action. After the device-allocated time has expired for attended devices, the device has the option of sending an Alert.
		X'18' microcode or software (not distinguished): the Alert condition was caused by either a software (programming) failure or malfunction or a microcode failure but the specific cause cannot be determined.
5–6		Specific component code: indicates the generic type of component, subcomponent, or logical resource that can be most closely related to the exception condition. The component indicated may be the generic type of the "target" or it may be a subcomponent of the target. The terms "local" and "remote" used below, refer to the perspective of the Alert originator. Defined codes are: X'0001' base processor X'0002' service processor X'0003' reserved X'0004' main storage X'0005' disk device X'0006' printer X'0007' card reader and/or punch X'0008' tape device X'0009' keyboard X'000A' selector pen

Basic Alert (X'91') Alert MS Subvector

Byte	Bit	Content	
		X'000B'	magnetic stripe reader
		X'000C'	display/printer
		X'000D'	display device
		X'000E'	remote product: used when a product to which the Alert generator is linked (in any form) has caused an Alert condition and the generic product type cannot be determined
		X'000F'	power supply internal to this product
		X'0010'	I/O attached controller
		X'0011'	communication controller scanner
		X'0012'	communication link adapter
		X'0013'	reserved
		X'0014'	channel adapter
		X'0015'	loop adapter
		X'0016'	adapter for directly attaching devices
		X'0017'	reserved
		X'0018'	channel (direct memory access channel)
		X'0019'	link: used only when common-carrier equipment cannot be distinguished from customer equipment
		X'001A'	link: common-carrier equipment
		X'001B'	link: customer equipment
		X'001C'	loop: used only when common-carrier equipment cannot be distinguished from customer equipment
		X'001D'	loop: common-carrier equipment
		X'001E'	loop: customer equipment
		X'001F'	X.21 link connection external to this product
		X'0020'	X.25 network connection external to this product
		X'0021'	local X.21 interface (DTE-DCE)
		X'0022'	local X.25 interface (DTE-DCE)
		X'0023'	local modem
		X'0024'	remote modem
		X'0025'	local modem interface (DTE-DCE)
		X'0026'	remote modem interface (DTE-DCE)
		X'0027'	local modem link monitor
		X'0028'	remote modem link monitor
		X'0029'	local modem link monitor interface
		X'002A'	remote modem link monitor interface
		X'002B'–X'0031'	reserved
		X'0032'	remote modem or modem interface or remote product
		X'0033'	transmission medium or remote modem
		X'0034'	SDLC data link control component
		X'0035'	BSC data link control component
		X'0036'	start/stop data link control component
		X'0037'–X'0043'	reserved
		X'0044'	cluster controller or device
		X'0045'	local link monitor or modem interface
		X'0046'	reserved
		X'0047'	card reader/punch or display/printer
		X'0048'	controller application program
		X'0049'	keyboard or display
		X'004A'	storage control unit
		X'004B'	storage control unit or storage control unit channel
		X'004C'	storage control unit or controller
		X'004D'	control unit (other than storage control unit)
		X'004E'–X'0051'	reserved
		X'0052'	maintenance device
		X'0053'	maintenance device interface
		X'0054'	reserved

Basic Alert (X'91') Alert MS Subvector

Byte	Bit	Content
		X'0055' control program X'0056' application subsystem on top of control program X'0057' telecommunication access method X'0058' application program (other than application subsystem) X'0059' communication controller program X'005A'–X'005F' reserved X'0060' X.25 network interface: DCE to first interface node in X.25 network X'0061' disk device with nonremovable media X'0062' disk device with removable media X'0063' control tailed modem X'0064' reserved X'0065' remote tailed modem X'0066' remote tailed modem interface X'0067' sensor I/O unit X'0068' magnetic stripe reader/encoder X'0069' check (bank) reader X'006A' document feed mechanism X'006B' coin feed mechanism X'006C' envelope depository X'006D' timer adapter X'006E' encryption/decryption adapter X'006F' outboard, user programmable processor X'0070' cable connecting local device to local adapter X'0071'–X'007F' reserved X'0080' token-ring LAN error X'0081' Carrier-Sense-Multiple-Access/Collision-Deletion (CSMA/CD) LAN error X'0082'–X'00FE' reserved X'00FF' undetermined (the problem cannot be isolated to one of the above generic component types)
7–8		Alert description code: a code that provides an index to predefined text that explains the condition that caused the Alert *Note:* This field is product dependent.
9–10		User Action Code: a code that provides an index to predefined screens that can include predefined text and variable fields for MS User Action Qualifier subvectors *Note:* This field is product dependent.
11–12		Detail text reference code: a code that provides an index to predefined screens that can include predefined text and variable fields for MS Detail Qualifier subvectors *Note:* This field is product dependent.
13(=p)		Retired (see page 4-26)

Basic Alert (X'91') Alert MS Subvector

Byte	Bit	Content
Retired Fields		The following bytes and bits from this subvector (X'91') are retired, but can exist in old products. They should not be used in new or changed products. They are documented here only to give their text and meaning should they be found in an old Basic Alert (X'91') subvector.
2		Flags:
	4–7	category of the component being reported about: X'0' IBM product—as above, bits 0-3 X'1' customer provided component X'2' third-party OEM provided component X'3' undetermined component
3		Alert type: X'05'–X'08' reserved X'09' unavailable: a network component has become unavailable when its services have been required and there is no information to classify the unavailable condition as a more specific error X'0B' environmental problem: a physical environment problem X'0C' installation consistency problem: a system definition or other incompatibility problem between components that typically requires other than an operator procedure to correct X'0D' operational procedural error: the inability to access a logical or physical resource, the loss of a resource, or the inability to perform requested function because of operational or procedural error X'0E' security: used to report system detected incidents that indicate exposure to security problems
4		General cause code: X'03' link connection component X'08' logical X'09' operator: initiated as a result of a node operator entering a status message
13(=p)		Alert repetition count: the number, in binary, of instances of consecutive identical Alert conditions that have occurred since the last identical Alert was sent

Generic Alert Data (X'92') Alert MS Subvector

This subvector transports Alert information in the form of code points that correspond to strings of text stored at the Alert receiver. It also transports an Alert ID Number that uniquely identifies a particular Alert.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Generic Alert Data subvector
1		Key: X'92'
2–3		Flags:
	0	Initiation indicator: 0 Alert not directly initiated by an operator action 1 Alert initiated by an operator action

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content
	1	Held Alert indicator: 0 Alert was sent when the problem was detected. 1 Alert condition was detected earlier, but the Alert was not sent at that time because no session was available to send it on.
	2	Delayed Alert indicator: 0 Sender is not reporting a previously detected Alert condition that prevented reporting when detected. 1 Sender is reporting a previously detected Alert condition that prevented reporting when detected. *Note:* If the delayed Alert indicator is set to 1, the held Alert indicator is also set to 1.
	3	FFST Architecture indicator: 0 Alert was not built using FFST architecture. 1 Alert was built using FFST architecture. *Note:* If the FFST Architecture indicator is set to 1, at least one Symptom String (X'99') Alert MS Subvector (documented on page 4-149) is present.
	4	SNMP Trap indicator: 0 Alert was not built based on an SNMP Trap. 1 Alert was built based on an SNMP Trap.
	5	OSI Systems Management Alarm indicator: 0 Alert was not built based on an OSI Systems Management Alarm. 1 Alert was built based on an OSI Systems Management Alarm.
	6	Resent Alert indicator: 0 Alert initially reporting the original problem. 1 Resent Alert providing additional information about original problem. *Note:* The original Alert may be resent by a problem resolution facility to communicate new causes and/or recommended actions. The Alert Description Code point must be either the original Alert Description Code point, or it may be the X'B20n' code point. This resent Alert MUST contain a X'4A' Subvector. Correlation to the original Alert may be through either this X'4A' Subvector or a X'47' Subvector.
	7	Tivoli Event indicator: 0 Alert was not built based on a Tivoli Event. 1 Alert was built based on a Tivoli Event.
	8–15	Reserved
4		Alert type: a hexadecimal value indicating the severity of the Alert condition: X'01' permanent loss of availability: a loss of availability to the end user that is not recovered from without intervention external to the reporting product X'02' temporary loss of availability: a momentary loss of availability that will probably be noticed by the end user, yet is recovered from without intervention external to the reporting product X'03' performance: performance below what is considered an acceptable level X'06' user: the Alert was initiated by a terminal operator X'08' intensive mode recording: the Alert is a result of a user's invoking intensive mode recording at the Alert sender. When intensive mode recording has been invoked, an Alert is generated each time the sender goes through an error recovery X'0A' notification: a loss of availability to the end user is impending but has not yet happened, or a change to a network or system component has occurred for which an operator notification is required X'0D' procedure: a requested function could not be performatd due to an operation or procedural error X'0E' security: the Alert reports an incident that might indicate an exposure to a security problem X'10' permanently affected resource: the originator of this Alert has determined that the target resource is lost because of a persistent error in a resource other than the target X'11' impending problem: a loss of availability to the end user impending but that has not yet happened

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content
		X'12' unknown: the severity of the Alert condition not assessable X'13' retired X'14' bypassed: the loss of availability to the end user has been circumvented to allow the resource or an alternate resource to be used. The original problem still exists and the recovery may or may not be noticed by the end user. The recovery may be accomplished by intervention, internal or external to the reporting product. X'15' redundancy lost: redundant hardware and/or software provided to ensure continued operation in the event of a failure has experienced a malfunction. As a result, failure of the remaining operational hardware and/or software will result in a loss of corresponding services. X'16' monitored situation event: A monitoring application has detected a situation for which sending an Alert is specified. *Note:* Do not use this code point if a more specific code point applies. Also see X'12'—Unknown.
5–6		Alert Description Code: A code point that provides an index to predefined text describing the Alert condition. An Alert receiver has two options for selecting text to display. It can display the English text documented with each code point, or its national language equivalent; or, for a presentation to an operator of a lower skill level, it can choose the following simpler text (shown all capitalized), or its national language equivalent, based only on the first digit of the code point: X'1xxx' HARDWARE X'2xxx' SOFTWARE X'3xxx' COMMUNICATIONS X'4xxx' PERFORMANCE X'5xxx' CONGESTION X'6xxx' MICROCODE X'7xxx' OPERATOR X'8xxx' SPECIFICATION X'9xxx' INTERVENTION REQUIRED X'Axxx' retired X'Bxxx' NOTIFICATION X'Cxxx' SECURITY X'Exxx' RESERVED X'Fxxx' UNDETERMINED Specific defined codes and the corresponding displayed text (shown all capitalized) are listed below. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). X'1000' EQUIPMENT MALFUNCTION: An internal machine error has occurred X'1001' CONTROL UNIT MALFUNCTION X'1002' DEVICE ERROR *Note:* This code point is used only if the Alert sender is unable to determine the nature of the affected device. X'1003' CPC HARDWARE FAILURE: A hardware failure has occurred in a central processor complex (CPC). X'1004' TIME OF DAY CLOCK FAILURE: A failure in a mechanism which keeps time. X'1005' BACK-UP RESOURCE FAILURE: A failure on a resource which has been designated as a back-up. The back-up capability has been lost. X'1006' OPTICAL SYSTEM BUS FAILURE

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content		
			X'1007'	SERIAL LINK SWITCH ERROR: An internal error has occurred in a serial link switch.
			X'1008'	MULTIPLEXER PROBLEM
			X'1009'	PUMP FAILURE
			X'100A'	SERVICE PROCESSOR FAILURE: A failure has occurred in the maintenance, service, and support processor; sometimes called a processor controller.
			X'100B'	PROCESSOR PROBLEM
			X'100C'	AGENT COMMUNICATION WITH RESOURCE LOST: Communication between the agent process and the resource it manages has been lost.
			X'1010'	ADAPTER ERROR: A hardware error has occurred in an adapter, making it inoperable
			X'1020'	BACK-UP DEVICE FAILURE: A device providing back-up for a system or subsystem has failed, and is unable to perform its function.
			X'1021'	BACK-UP DEVICE FAILED DURING BACK-UP: A device providing back-up for a system or subsystem has failed during a back-up attempt; the system or subsystem requiring the back-up has not been restored.
		X'1100'	INPUT DEVICE ERROR	
			X'1101'	MICR READER/SORTER ERROR: An error has been detected in a magnetic ink character recognition reader/sorter
		X'1200'	OUTPUT DEVICE ERROR	
			X'1201'	PRINTER ERROR
			X'1202'	PRINTER CASSETTE ERROR
		X'1300'	INPUT/OUTPUT DEVICE ERROR	
			X'1301'	LOCAL CONSOLE ERROR
			X'1302'	REMOTE CONSOLE ERROR *Note:* "Local" and "remote" are defined with respect to the system with which the console communicates.
			X'1311'	DISK FAILURE: A disk unit is no longer usable
			X'1312'	DISK OPERATION ERROR: A disk operation has failed, but the unit may still be usable
			X'1321'	DISKETTE DEVICE FAILURE: A diskette unit is no longer usable
			X'1322'	DISKETTE OPERATION ERROR: A diskette operation has failed, but the unit may still be usable
			X'1331'	TAPE DRIVE FAILURE: A tape drive is no longer usable
			X'1332'	TAPE OPERATION ERROR: A tape operation has failed, but the tape drive may still be usable
			X'1340'	DASD MIRRORING LOST: Access to one or more of the DASD units involved in mirrored (redundant) DASD has been lost. Mirroring protection has been lost and failure of the remaining DASD unit or units will result in an operational failure.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content	
		X'1400'	LOSS OF ELECTRICAL POWER: A source of electrical power, internal or external, has been lost
		X'1401'	LOSS OF CHANNEL ADAPTER ELECTRICAL POWER
		X'1402'	LOSS OF LINE ADAPTER ELECTRICAL POWER
		X'1403'	LOSS OF LIC UNIT ELECTRICAL POWER
		X'1404'	LOSS OF MOSS ELECTRICAL POWER
		X'1410'	LOSS OF EXTERNAL ELECTRICAL POWER
		X'1411'	POWER OFF DETECTED: A network component has detected a notification signal announcing that the power of another component was lost or turned off
		X'1412'	LOSS OF ALL SOURCES OF ELECTRICAL POWER
		X'1413'	AN ELECTRICAL POWER SOURCE LOST
		X'1414'	LOSS OF DC POWER ON EXTERNAL CHASSIS
		X'1415'	LOSS OF DC POWER ON SCSI CHASSIS: DC power has been lost on the system's Small Computer System Interface (SCSI) chassis.
		X'1416'	LOSS OF AC POWER ON UPS: AC power to an uninterruptible power supply has been lost.
		X'1417'	LOW BATTERY ON UPS: A low battery condition has been detected on an uninterruptible power supply.
		X'1418'	IMMEDIATE POWER OFF: A system or system component has experienced an immediate power off condition.
		X'1500'	LOSS OF EQUIPMENT COOLING OR HEATING: A loss of equipment cooling or heating has occurred *Note:* If loss of power has not been ruled out as a cause for the loss of heating or cooling, then X'1400' (LOSS OF ELECTRICAL POWER) should be sent instead of this code point.
		X'1501'	LOSS OF EQUIPMENT COOLING
		X'1502'	LOSS OF MOSS EQUIPMENT COOLING
		X'1503'	HEATING/VENTILATION/COOLING SYSTEM PROB: Heating or Ventilation or Cooling System Problem.
		X'1600'	SUBSYSTEM FAILURE: A failure in a set of components that jointly provide a specified function; typically a subsystem includes a controller, one or more interface adapters, physical connection media, and attached devices
		X'1601'	STORAGE SUBSYSTEM FAILURE: A failure in a subsystem that supports locally-attached storage devices, such as hard disk (DASD), diskette, and tape
		X'1602'	WORKSTATION SUBSYSTEM FAILURE: A failure in a subsystem that supports workstations directly attached to a node, i.e., workstations not attached via telecommunications links
		X'1603'	COMMUNICATIONS SUBSYSTEM FAILURE: A failure in a subsystem that supports communication over telecommunications links; these links may be implemented via leased telephone lines, an X.25 network, a token-ring LAN, or otherwise
		X'1604'	XID NEGOTIATION TERMINATED
		X'1605'	WRONG LINK MODE SETTING COMMAND RECEIVED
		X'1606'	TOPOLOGY CAPACITY EXCEEDED
		X'1607'	TOPOLOGY PROTOCOL ERROR
		X'1608'	SERVICE SUBSYSTEM FAILURE: A failure in a subsystem that performs IPL functions, maintenance functions, machine initialization or recovery, and provides problem determination capabilities.
		X'1609'	SUBSYSTEM JOB TERMINATED
		X'160A'	DASD SUBSYSTEM DATA CHECK

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content	
		X'160B'	WIRELESS BASE START-UP FAILURE
		X'160C'	WIRELESS WORKSTATION START-UP FAILURE
		X'1611'	IMPENDING STORAGE SUBSYSTEM FAILURE
		X'1612'	IMPENDING WORKSTATION SUBSYSTEM FAILURE
		X'1613'	IMPENDING COMM SUBSYSTEM FAILURE
		X'1614'	APPLICATION SUBSYSTEM FAILURE
		X'1620'	VOICE RESPONSE UNIT SUBSYSTEM FAILURE
		X'1621'	VOICE EQUIPMENT FAILURE: Equipment providing support for voice traffic has failed.
		X'2000'	SOFTWARE PROGRAM ABNORMALLY TERMINATED: A software program has abnormally terminated due to some unrecoverable error condition *Note:* See also code point X'6000' (MICROCODE PROGRAM ABNORMALLY TERMINATED).
		X'2001'	CPC ENTERED HARD WAIT: A failure has occurred which resulted in all central processing units (CPU's) of a central processing complex (CPC) entering into a wait state with interrupts disabled.
		X'2002'	SNAPSHOT TABLE PROCESSING FAILURE
		X'2003'	REQUESTED SOFTWARE TRAP OCCURRED: A program has stopped execution due to previously setup controls.
		X'2004'	RPU PROCESS FAILED: A remote program upload (RPU) process has failed.
		X'2005'	AGENT PROGRAM TERMINATED
		X'2006'	IPL FAILURE: An initial program load (IPL) has failed.
		X'2100'	SOFTWARE PROGRAM ERROR: An error has occurred within a software program that has caused incorrect results, but the program has not terminated *Note:* See also code point X'6100' (MICROCODE PROGRAM ERROR).
		X'2101'	PROGRAM PROCEDURE IS INCORRECT: A set of instructions which originated in a computer program and are intended to direct the operation of a device are incorrect.
		X'2102'	DISTRIBUTED PROCESS FAILED: Some software component for a distributed unit of work failed. This is an internal error in a software component.
		X'2103'	REQUIRED SOFTWARE ATTEMPTED TERMINATION
		X'2104'	CANNOT LOAD TASK: A processor could not load a task into memory.
		X'2105'	PROGRAM PARAMETER IS INCORRECT
		X'2106'	FILE ACCESS ERROR
		X'2107'	DATABASE UNAVAILABLE
		X'2108'	DISK ACCESS ATTEMPT FAILED
		X'2109'	NODE TO NODE COMMUNICATIONS NOT POSSIBLE
		X'210A'	SOFTWARE OPERATION NOT STARTED
		X'210B'	SOFTWARE PROGRAM WILL NOT TERMINATE
		X'210C'	RESOURCE RECOVERY FAILURE
		X'210D'	RECOVERY CANCELLED FOR ERROR DURING IPL
		X'210E'	ERRORS CANNOT BE LOGGED
		X'210F'	SOFTWARE ERROR
		X'2110'	VIRTUAL ROUTE HAS GONE OUT-OF-SEQUENCE: This error condition, caused by an unknown software problem, can cause more serious problems later if left unreported.
		X'2111'	REQUESTED OPERATION CANNOT BE PERFORMED: A program or process has requested an operation that the target cannot recognize or is not capable of performing.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content	
		X'2120'	NO RESPONSE FROM RPU SERVER: No response was received from a remote program upload (RPU) server.
		X'2121'	RPU LOAD FILE UNAVAILABLE
		X'2122'	IP DYNAMIC ROUTING DATA NOT RECEIVED: IP routing data was not received, causing permanent loss of dynamic routing capability in part of the IP network.
		X'2123'	MAIL SERVER FRAMEWORK FAILURE: A framework for routing mail. The mail server framework is used to route generic mail.
		X'2124'	STATE INCONSISTENCY DETECTED: A program or process has detected an inconsistency in the status of a component.
		X'2125'	DATA INCONSISTENCY DETECTED: A program or process has detected an inconsistency in the data store value for a component.
		X'2130'	MANAGER FAILED TO ACCESS RESOURCE: A network manager has attempted to access a managed resource and has failed.
		X'2200'	SOFTWARE OPERATION FAILURE: A hardware component error has caused an operation on a file, volume, or some other unit of stored data, to fail.
		X'2201'	POSSIBLE FILE CORRUPTION
		X'2202'	FILE SERVER VOLUME INACCESSIBLE
		X'2203'	FILE DIRECTORY MAY BE CORRUPTED
		X'2204'	FILE ALLOCATION TABLE MAY BE CORRUPT
		X'2205'	SYSTEM FILE UNUSABLE
		X'2206'	CORRUPT DATA
		X'2207'	FILE ERROR
		X'2208'	ERROR IN RPU LOAD FILE
		X'2209'	LOGIN CURRENTLY DISABLED
		X'220A'	BACK-UP OPERATION FAILED
		X'220B'	FILE SERVER COULD NOT BE TAKEN OFFLINE
		X'220C'	ACCOUNTING DATA LOG CORRUPTED: Part or all of an accounting data repository or log has been corrupted.
		X'3000'	COMMUNICATION PROTOCOL ERROR: An architecturally defined communication protocol has been violated *Note:* This code point is not used if one that identifies the particular protocol involved is available.
		X'3001'	DIRECTORY SERVICES PROTOCOL ERROR
		X'3002'	SESSION SERVICES PROTOCOL ERROR
		X'3100'	SNA PROTOCOL ERROR: An SNA protocol has been violated
		X'3110'	XID PROTOCOL ERROR: A protocol error related to XID exchange has been detected
		X'3111'	INVALID XID RECEIVED: An XID has been received that contains either a format error or a value unacceptable to the receiver
		X'3112'	SNA SESSION SETUP FAILURE: Session setup or session termination failed.
		X'3113'	CP-CP SESSION FAILURE
		X'3114'	MANAGEMENT SERVICES PROTOCOL ERROR: Management Services received a message which cannot be processed because it detected a protocol violation.
		X'3115'	LU6.2 RECEIVED NEGATIVE BIND RESPONSE
		X'3116'	LU6.2 SENT NEGATIVE BIND RESPONSE
		X'3117'	LU6.2 SESSION ACTIVATION REJECTED
		X'3118'	LU6.2 UNBIND REQUEST SENT
		X'3119'	LU6.2 UNBIND REQUEST RECEIVED
		X'3120'	LU6.2 SESSION FAILURE

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content		
			X'3121'	APPN-HPR PROTOCOL ERROR: A protocol error was detected by the Rapid Transport Protocol component in APPN High Performance Routing, causing communications to be terminated.
			X'3122'	APPN-DLUR PROTOCOL ERROR: A product implementing the APPN dependent LU requester (DLUR) function has detected a protocol problem that may impact users.
			X'3123'	APPN TOPOLOGY DATABASE UPDATE (TDU) WAR
			X'3124'	DLUS FAILED TO ACTIVATE PU
			X'3130'	SNA PASS-THROUGH SESSION FAILURE
		X'3200'		LAN ERROR: An error has been detected on a local area network
			X'3203'	LOOP ERROR: An error has been detected on a communication loop
			X'3204'	LOOP OPEN
			X'3205'	LOOP ADAPTER INOPERATIVE
			X'3210'	INITIALIZATION FAILURE: A LAN adapter has detected a problem while being initialized
			X'3211'	OPEN FAILURE: A LAN adapter has detected a problem during the insertion process; the insertion process did not complete
			X'3212'	WIRE FAULT: An error condition caused by a break in the wires or a short between the wires (or shield) in a segment of cable has been detected *Note:* The term “wire fault” applies only to failures on the lobes of a token-ring LAN.
			X'3213'	AUTO REMOVAL: A station's adapter has left a LAN token-ring or bus as part of an automatic-recovery process. For token-rings, this process is known as the beacon automatic-recovery process.
			X'3214'	REMOVE ADAPTER COMMAND RECEIVED: The reporting station received a Remove Adapter command from a LAN manager and, as a result, left the LAN.
			X'3215'	TOKEN-RING INOPERATIVE: After the onset of beaconing, a token-ring attempted and failed auto recovery; the token-ring has been beaconing for more than 52 seconds, and is still beaconing.
			X'3216'	TOKEN-RING TEMPORARY ERROR: The token-ring was in a beaconing state for less than 52 seconds and then recovered; the Alert sender has no knowledge whether a station was removed to bypass the fault or the fault was temporary.
			X'3218'	BACK-UP PATH INOPERATIVE: The back-up path of a subsystem has failed leaving only the main path operational.
			X'3219'	MAIN PATH WRAPPED TO BACK-UP PATH: The main path has failed and the back-up path is being used to continue operation.
			X'321A'	LAN LLC PROTOCOL ERROR
			X'321B'	DUPLICATE MAC ADDRESS ON TOKEN-RING
			X'3220'	CSMA/CD BUS INOPERATIVE
			X'3221'	CSMA/CD LAN COMMUNICATIONS LOST: A station is unable to communicate over a CSMA/CD LAN *Note:* The problem may be local to the Alert sender, or it may apply to the entire bus to which the Alert sender is attached.
			X'3230'	LAN MANAGEMENT DATA LOST: A LAN management server has become congested or incapacitated so it cannot handle its data input. As a result, management data from LAN stations has been discarded.
			X'3231'	MONITORED STATION LEFT LAN: A monitored station is one that an operator at the LAN Manager has designated as a critical resource. The station is monitored for its disappearance from the LAN.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content	
		X'3238'	FDDI CONNECTION ERROR
		X'3240'	TOKEN-BUS COMMUNICATIONS LOST
		X'3250'	NETWORK ADDRESSING CONFLICT
		X'3251'	LAN COMMUNICATIONS LOST
		X'3252'	LAN SEGMENT NUMBER MISMATCH: The Ring Parameter Server has a segment number for the ring that does not match the segment number that the bridge has for the ring.
		X'3253'	NO LINK TO WIRELESS NETWORK PROGRAM
		X'3254'	DEREGISTRATION COMMAND RECEIVED
		X'3255'	EXCESSIVE SINGLE FREQUENCY INTERFERENCES
		X'3256'	EXCESSIVE MULTIFREQUENCY INTERFERENCES
		X'3260'	BACK-UP PATH STATUS CHANGE
		X'3261'	PATH WRAP STATUS CHANGE
		X'3262'	FORCE REMOVE IGNORED
		X'3263'	ACCESS UNIT CORRECTED TOKEN-RING ERROR
		X'3270'	UNABLE TO CONTACT DOMAIN CONTROLLER
		X'3300'	LINK ERROR: An error has occurred on a network communication link *Note:* This default code point covers all of the following: Connections between subarea nodes, connections between subarea nodes and peripheral nodes, connections between peripheral nodes, and connections between peripheral nodes and the devices that are hierarchically below them. If the link is implemented by a local area network, one of the X'32xx' code points is used instead. Specific ISDN-related errors should be reported with code points in the X'34xx' range.
		X'3301'	REMOTE SUPPORT FACILITY LINK ERROR: An error has occurred on a communication link with the IBM Remote Support Facility
		X'3302'	UNABLE TO COMMUNICATE WITH DEVICE
		X'3303'	UNABLE TO COMMUNICATE WITH PRINTER
		X'3304'	UNABLE TO COMMUNICATE WITH DISPLAY
		X'3305'	UNABLE TO COMMUNICATE WITH REMOTE NODE
		X'3306'	INBOUND CONNECTION ATTEMPT FAILED: A failure occurred when another node attempted to establish a connection with the reporting node.
		X'3307'	OUTBOUND CONNECTION ATTEMPT FAILED: A failure occurred when the reporting node attempted to establish a connection with another node.
		X'3308'	RECEIVE FAILURE
		X'3309'	TRANSMIT FAILURE
		X'330A'	REMOTE NODE TRANSMISSION ERROR
		X'330B'	LOCAL NODE TRANSMISSION ERROR
		X'330C'	ERROR RECEIVING IP DYNAMIC ROUTING DATA: A noticeable loss of end user availability has occurred in part of the IP network that may or may not be recoverable.
		X'3310'	X.21 ERROR: An error has been detected on a communication link operating according to the X.21 protocols.
		X'3311'	X.21 ERROR — SNA SECONDARY: An error has prevented an SNA secondary link station from establishing an X.21 connection
		X'3312'	X.21 ERROR — SNA PRIMARY: An error has prevented an SNA primary link station from establishing an X.21 connection
		X'3313'	X.21 CONNECTION CLEARED
		X'3320'	X.25 ERROR: An error has been detected on a communication link operating according to the X.25 protocols

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content		
			X'3330'	MANAGEMENT SERVER REPORTING LINK ERROR: A LAN manager has detected an error on one of its reporting links with a LAN management server
			X'3340'	IDLC ERROR: An error has been detected on a communication link operating according to the Q.922 protocol which may be used for both ISDN and non-ISDN services.
			X'3350'	TCP/IP CONNECTION FAILURE
			X'3351'	MANAGER TO GATEWAY COMMUNICATION FAILURE: A network manager was unable to communicate with a network management gateway.
			X'3352'	MANAGEMENT GATEWAY FAILURE: A component providing communication access between a network manager and a managed network has failed.
			X'3353'	TRANSMISSION LINE EVENT RECEIVED: A communication line or link has received a diagnostic or maintenance event, indicating a problem or the need for a maintenance operation.
		X'3400'	ISDN ERROR: An error has occurred on an Integrated Services Digital Network (ISDN) connection	
			X'3401'	D-CHANNEL ISDN ERROR
			X'3402'	B-CHANNEL ISDN ERROR
			X'3403'	R-INTERFACE ISDN ERROR
			X'3404'	ISDN PHYSICAL LAYER ERROR
			X'3405'	ISDN PHYSICAL LAYER ACTIVATION ERROR
			X'3406'	ISDN CALL CONTROL ERROR
			X'3407'	ISDN CALL TERMINATED UNEXPECTEDLY
		X'3500'	LOCAL CONNECTION ERROR: An error has occurred on a local channel connection	

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content	
		X'3600'	LINK CONNECTION ERROR *Note:* A *link connection* includes the interface between the DTE and the DCE, any protocol used to communicate between the DTE and the DCE (such as LPDA, the IBM Command Set, the AT Command Set, etc.) and DCE provided information about the link.
		X'3601'	NO LPDA RESPONSE RECEIVED
		X'3602'	BAD FCS IN LPDA RESPONSE
		X'3603'	INTERFACE ERROR DURING LPDA
		X'3604'	CONFIGURATION MISMATCH
		X'3605'	MODEM CONFIGURATION ERROR
		X'3606'	DSU/CSU CONFIGURATION ERROR
		X'3607'	MODEM ERROR
		X'3608'	DSU/CSU ERROR
		X'3609'	EQUIPMENT INCOMPATIBILITY
		X'360A'	MODEM REINITIALIZED
		X'360B'	DSU/CSU REINITIALIZED
		X'360C'	MODEM FAILURE DETECTED
		X'360D'	DSU/CSU FAILURE DETECTED
		X'360E'	MODEM SPEEDS MISMATCH
		X'360F'	TEST IN PROGRESS
		X'3610'	STREAMING DETECTED
		X'3611'	DTR DROPPED
		X'3612'	EXTERNAL CLOCK NOT RUNNING
		X'3613'	BAD LINE QUALITY
		X'3614'	RLSD OFF DETECTED
		X'3615'	EXCESSIVE IMPULSE HITS DETECTED
		X'3616'	EXCESSIVE BIPOLAR CODE ERRORS
		X'3617'	DCE INTERFACE ERROR
		X'3618'	UNEXPECTED RECEIVED CARRIER DETECTED
		X'3619'	NO LINE SIGNAL
		X'361A'	OUT OF FRAME RECEIVED BY LOCAL DSU/CSU
		X'361B'	OUT OF FRAME RECEIVED BY REMOTE DSU/CSU
		X'361C'	OUT OF SERVICE RECEIVED BY LOCAL DSU/CSU
		X'361D'	OUT OF SERVICE RECEIVED BY REMOTE DSU/CSU
		X'361E'	DDS LOOPBACK DETECTED BY LOCAL DSU/CSU
		X'361F'	DDS LOOPBACK DETECTED BY REMOTE DSU/CSU
		X'3620'	FORBIDDEN CALL — CALL REJECTED
		X'3621'	DELAYED CALL — CALL REJECTED
		X'3622'	LOCAL MODEM AUTO-CALL TIME-OUT
		X'3623'	LOCAL DTE AUTO-CALL TIME-OUT
		X'3624'	CALL FAILURE — CALLED NUMBER BUSY
		X'3625'	CALL FAILURE — NO ANSWER
		X'3626'	CALL FAILURE — ANSWER TONE NOT DETECTED
		X'3627'	CALL COLLISION
		X'3628'	INVALID/UNSUPPORTED MODEM COMMAND
		X'3629'	NETWORK PHYSICAL LAYER ERROR
		X'362A'	RECEIVER FAILURE
		X'362B'	TRANSMITTER FAILURE
		X'362C'	DEGRADED SIGNAL
		X'362D'	FRAMING ERROR
		X'362E'	LOSS OF FRAME
		X'362F'	DTE/DCE INTERFACE ERROR
		X'3630'	CNM ADAPTER CONFIGURATION ERROR
		X'3631'	CNM ADAPTER ERROR
		X'3632'	CNM ADAPTER REINITIALIZED

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content		
			X'3633'	CNM ADAPTER FAILURE DETECTED
			X'3634'	EXCESSIVE LINE CODE ERRORS
			X'3635'	LINK DOWN DETECTED BY LOCAL CNM ADAPTER
			X'3636'	LINK DOWN DETECTED BY REMOTE CNM ADAPTER
			X'3637'	OUT OF SERVICE RECEIVED BY LOCAL CNMA: A CNMA is a communication network management adapter.
			X'3638'	OUT OF SERVICE RECEIVED BY REMOTE CNMA: A CNMA is a communication network management adapter.
			X'3639'	LOOPBACK DETECTED BY LOCAL CNM ADAPTER
			X'363A'	LOOPBACK DETECTED BY REMOTE CNM ADAPTER
			X'363B'	CALL ESTABLISHMENT ERROR
			X'363C'	LOSS OF SIGNAL: Use this code point instead of the X'3619' code point when the signal was acquired and then lost rather than never acquired.
			X'363D'	CALL FAILURE — DIAL TONE ERROR
			X'363E'	DTE INTERFACE ERROR
			X'3640'	MODEM SYNCHRONIZATION FAILED: Use this code point rather than X'360E' when the modem is unable to synchronize or match speed with a remote modem (V.25bis call failure indication). Code point X'360E' should be used if the modems appear to be configured for different (incompatible) speeds.
			X'3641'	LOGICAL LINK ACTIVATION FAILURE
			X'3642'	PROTECTION SWITCH: A network terminal protection switch has occurred. A primary on-line network terminal has switched to a backup (protection) network terminal due to a failure or degradation of the primary network terminal or line.
			X'3643'	LINE LOOPBACK FAILURE: A loopback test issued on the transmission or communication line has been unsuccessful, indicating a communication fault.
		X'3700'	NBBS COMMUNICATIONS ERROR: A failure has occurred in the Networking BroadBand Services (NBBS) communications transport network service.	
			X'3701'	CONNECTION START FAILURE: An operator initiated or scheduled connection start has failed.
			X'3702'	CONNECTION CHANGE FAILURE: An attempt to change a connection has been made but due to transport network conditions or the requested characteristics of the connection, the change has failed.
			X'3703'	CONNECTION FAILURE: An active connection has failed due to transport network conditions, lack of appropriate resources or the connection control processes.
			X'3705'	CONNECTION BANDWIDTH ALLOCATION ERROR: An error has been detected in the process of allocating bandwidth to a connection.
			X'3706'	QUALITY OF SERVICE ALLOCATION ERROR: An error has been detected in the process of allocating quality of service to a connection.
			X'3707'	CONNECTION RESOURCE CONFIGURATION ERROR: An error has been detected in the specifying or locating the source or target resource of a connection.
			X'3708'	CONNECTION PATH ALLOCATION ERROR: An error has been detected in the specifying or assigning a path through the transport network for a connection.
			X'3709'	MULTIPLE CONNECTION TERMINATION: Several transport network connections have been terminated.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content		
			X'370A'	CONNECTION CONFIGURATION ERROR: The configuration definition for a connection is either non-existent or contains an error.
			X'370B'	CONNECTION CONTROL PROCESS: The process that oversees the setup, maintenance, and termination of a network connection.
			X'370C'	CONNECTION TERMINATION: An active connection has terminated due to operator intervention, scheduled stoppage, or normal connection control processes.
			X'370D'	CONNECTION PATH SETUP: A new connection or an active connection has been designated for a path setup or reroute.
			X'370E'	CONNECTION PATH TAKEDOWN: An active connection has been designated for a connection path takedown.
			X'3710'	TRUNK CONNECTION FAILURE: A link supporting a trunk connection has failed due to a parameter negotiation failure or a link keep alive message process has timed out.
			X'3711'	ALGORITHM FAILURE: An algorithm failure has occurred in a software program.
			X'3712'	CONTROL POINT FAILURE: The control point function of a Networking BroadBand Services (NBBS) network has failed.
			X'3713'	SPANNING TREE FAILURE: A failure has occurred on the spanning tree.
			X'3714'	TOPOLOGY DATABASE FAILURE: A failure has occurred in the topology database.
			X'3715'	TRUNK ACTIVATION FAILURE: A trunk activation has been attempted, but has failed.
			X'3716'	VOICE SERVICES UNAVAILABLE: A voice server access agent function is not available.
		X'3800'		ATM COMMUNICATIONS ERROR: A failure has occurred in the Asynchronous Transfer Mode (ATM) communications transport network
		X'4000'		PERFORMANCE DEGRADED: Service or response time exceeds what is considered an acceptable level
			X'4001'	EXCESSIVE TOKEN-RING ERRORS: Soft errors are occurring on a token ring at an excessive rate *Note:* The token-ring LAN term “soft error” is defined as an intermittent error on a network that causes data to have to be transmitted more than once to be received. The condition identified by this code point is detected by Ring Error Monitor (REM); REM also provides a fault domain to indicate the location of most of the soft errors.
			X'4002'	RESPONSE TIME EXCESSIVE
			X'4003'	EXCESSIVE CONTROL UNIT ERRORS
			X'4004'	RETRANSMISSION RATE EXCESSIVE
			X'4005'	EXCESSIVE APPN-HPR PACKET ERRORS: An APPN High Performance Routing intermediate node has detected an excessive number of errors resulting in discarded packets. The APPN High Performance Routing endpoint nodes will recover from lost packets by retransmission or by switching to an alternate communications route, but both recovery actions may impact end user performance.
			X'4010'	ERROR TO TRAFFIC RATIO EXCEEDED: A computed ratio of errors to total traffic has exceeded a specified threshold
			X'4011'	THRESHOLD HAS BEEN EXCEEDED
			X'4012'	THRESHOLD HAS BEEN REACHED
			X'4021'	EXCESSIVE STORAGE SUBSYSTEM ERRORS

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content		
			X'4022'	EXCESSIVE WORKSTATION SUBSYSTEM ERRORS
			X'4023'	EXCESSIVE COMMUNICATIONS SUBSYST ERRORS
		X'4500'	FUNCTION DEGRADED: A hardware or software system is functioning below its normal level.	
			X'4501'	CLOCK DEGRADED
		X'5000'	CONGESTION: A system or network component has either reached its capacity or is approaching it	
			X'5001'	NETWORK CONGESTION: There is excessive traffic in the network
			X'5002'	RESOURCE NEARING CAPACITY: A resource is approaching its capacity; it is still usable, but it threatens to become unusable unless corrective action is taken
			X'5003'	CAPACITY EXCEEDED: A request has been received by a component that, if granted, would require more resources than the component has available to it
			X'5004'	OUT OF RESOURCES: A component has no more resources available; it is no longer able to function
			X'5005'	WORKSTATION LIMIT EXCEEDED: More workstations than the workstation subsystem supports being powered on have attempted to power on simultaneously
			X'5006'	ALMOST OUT OF RESOURCES
			X'5007'	QUEUE SIZE EXCEEDED
			X'5008'	OUT OF MEMORY
			X'5009'	NETWORK CONGESTION OR FAILURE
			X'500C'	VIRTUAL ROUTE HELD TIME LIMIT REACHED: A congested virtual route has been in the held state (i.e. a virtual route pacing response has not been received) for longer than a defined time limit.
			X'500D'	VR PACING WITHHELD TIME LIMIT REACHED: A congested virtual route endpoint has not sent a virtual route pacing response for longer than a defined time limit.
			X'500E'	HELD VR DEACTIVATION TIME LIMIT REACHED: A congested virtual route has been deactivated since it was in the held state (i.e. a virtual route pacing response had not been received) for longer than a defined time limit.
			X'500F'	VIRTUAL ROUTE TRANSMIT QUEUE OVERRUN: The size of a virtual route transmit queue has exceeded a defined threshold for longer than a defined time limit.
			X'5010'	COMMUNICATIONS UNDERRUN: A link station element is unable to write data to an adapter rapidly enough
			X'5011'	COMMUNICATIONS OVERRUN: A MAC service user is unable to read data from an adapter rapidly enough
			X'5012'	RECEIVE QUEUE OVERRUN: A receive queue in a node is unable to receive data from a link station in the node rapidly enough
			X'5013'	SLOWDOWN: A device has exhausted its supply of available buffers and has stopped accepting inbound data until it can handle all outbound requests
			X'5014'	TIMING PROBLEM
			X'5015'	STORAGE CAPACITY PROBLEM
			X'5020'	FILE NEEDS REORGANIZATION A file is approaching its capacity, and will soon be unusable unless it is reorganized
		X'5100'	CONFIGURABLE CAPACITY LIMIT REACHED	

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content	
		X'5101'	FILE DIRECTORY ENTRY LIMIT EXCEEDED
		X'5102'	FILE LOCK THRESHOLD REACHED
		X'5103'	RECORD LOCK THRESHOLD REACHED
		X'5104'	MEMORY THRESHOLD REACHED
		X'5105'	MEMORY USAGE THRESHOLD REACHED
		X'5106'	DIRECTORY SEARCH THRESHOLD REACHED
		X'5107'	ERROR LOG LIMIT REACHED
		X'5108'	AUDIT LOG LIMIT REACHED
		X'5109'	ERROR LOG FILE ALMOST FULL
		X'510A'	AUDIT LOG FILE ALMOST FULL
		X'510B'	ACCOUNT LIMIT REACHED
		X'510C'	FILE SERVER ERROR LIMIT REACHED
		X'510D'	NETWORK I/O ERROR LIMIT REACHED
		X'510E'	SYSTEM RESOURCE LIMIT REACHED
		X'510F'	REQUESTER RESOURCE LIMIT REACHED
		X'5110'	MAXIMUM STORAGE LIMIT EXCEEDED
		X'5111'	NETWORK CONTROL BLOCK LIMIT REACHED
		X'5112'	THREAD LIMIT REACHED
		X'5113'	CPU CYCLES LIMIT EXCEEDED
		X'5114'	AUTHORIZED SOFTWARE USAGE EXCEEDED
		X'5115'	CONNECTIONS THRESHOLD REACHED
		X'5116'	DIRECTORY ENTRY THRESHOLD REACHED
		X'5117'	VOLUME SPACE THRESHOLD REACHED
		X'5118'	SOFTWARE LICENSE LIMIT REACHED: Warning of a pending loss of product caused by reaching a contracted limit.
		X'5119'	SOFTWARE LICENSE LIMIT EXCEEDED: A loss-of-product error if the contracted limit was a "hard" limit. A warning that the software provider has been notified if the contracted limit was “soft.”
		X'511A'	BANDWIDTH CAPACITY EXCEEDED: The bandwidth capacity of a resource has exceeded or will exceed its configured limits with a new request.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content
		X'6000' MICROCODE PROGRAM ABNORMALLY TERMINATED: A microcode program has abnormally terminated due to some unrecoverable error condition *Note:* See also code point X'2000' (SOFTWARE PROGRAM ABNORMALLY TERMINATED).
		X'6100' MICROCODE PROGRAM ERROR: An error has occurred within a microcode program that has caused incorrect results, but the program was not terminated *Note:* See also code point X'2100' (SOFTWARE PROGRAM ERROR).
		X'6101' ERROR DETECTED BY MICROCODE AT POWER-ON
		X'6300' MICROCODE PROGRAM MISMATCH: The microcode program is down-level and will cause an interface mismatch error if an attempt is made to interface with it.
		X'7000' OPERATOR PROCEDURAL ERROR: An operator has attempted to initiate an incorrect procedure, or has initiated a procedure incorrectly
		X'7001' RESOURCES NOT ACTIVE: An operator has deactivated, or failed to activate, resources required for a requested operation
		X'7002' MONITORED FILE HAS BEEN MODIFIED
		X'7003' MONITORED FILE HAS BEEN DELETED
		X'7004' MONITORED FILE HAS BEEN CREATED
		X'7005' MONITORED PROCESS HAS BEEN STOPPED
		X'7006' MONITORED PROCESS HAS BEEN STARTED
		X'7007' MONITORED PROCESS FAILED TO START
		X'8000' CONFIGURATION OR CUSTOMIZATION ERROR: A system or device generation or customization parameter has been specified incorrectly, or is inconsistent with the actual configuration
		X'8001' CUSTOMIZATION IMAGE WARNING: A customization image parameter is incorrect and has been replaced by a valid value.
		X'8002' PASSWORD ENCRYPTION ERROR
		X'8003' TELEPHONE NUMBER NOT STORED
		X'8004' SESSION SET-UP PARAMETER MISMATCH
		X'8005' REQUIRED SOFTWARE FEATURE NOT INSTALLED
		X'8006' VERSION MISMATCH
		X'8007' SNA PASS-THROUGH CONFIGURATION ERROR
		X'8008' SOFTWARE LICENSE MAY BE VIOLATED: Pending loss of software product resource caused by increase to number of users. New limit may exceed contracted limit.
		X'8009' APPN-HPR CONFIGURATION ERROR: Done incorrectly or communicating products are incompatible.
		X'800A' APPN-DLUR CONFIGURATION ERROR: A product implementing the APPN dependent LU requester (DLUR) function has detected a configuration problem that may impact users.
		X'800B' DATABASE INCONSISTENT WITH ADAPTER VPD: A communication and management database vital product data entry is inconsistent with the VPD information supplied by the hardware adapter to which the entry applies.
		X'800C' NETWORK LEVEL MISMATCH
		X'9000' OPERATOR INTERVENTION REQUIRED: A condition has occurred indicating that operator intervention is required, and an operator has not responded *Note:* The X'90xx' code points are used only for conditions that (1) require *on-site* intervention, and (2) can be resolved by personnel that do not possess a high level of technical skill.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content	
		X'9001'	PRINTER RIBBON JAM
		X'9002'	PAPER JAM
		X'9003'	BILL OR DOCUMENT JAM
		X'9004'	COIN JAM
		X'9005'	FILM OR VIDEOTAPE NOT MOVING
		X'9010'	DEVICE NOT READY: A device has indicated that it is not ready for use, due to an unspecified intervention-required condition
		X'9011'	PRINTER NOT READY: A printer has indicated that it is not ready for use, due to an unspecified intervention-required condition
		X'9030'	OUT OF FOCUS
		X'9031'	SERVICE DOOR OPENED *Note:* Security and/or safety considerations may preclude normal operation until the door is closed.
		X'9032'	DEVICE NOT CALIBRATED
		X'9033'	ENCLOSURE DOOR OPEN
		X'9100'	STOCK LOW: The stock of some required material (e.g., paper, ink, coins) is low, but is not yet exhausted
		X'9101'	LOW ON INK
		X'9102'	LOW ON PAPER
		X'9103'	LOW ON BILLS OR DOCUMENTS
		X'9104'	LOW ON COINS
		X'9105'	LOW ON FILM OR VIDEOTAPE
		X'9106'	LOW ON TONER
		X'9107'	LOW ON FUSER OIL
		X'9108'	LOW ON STAPLES
		X'9109'	DISKETTE FILE NEARLY FULL: An output file being written to a diskette is almost full. Continued operation may result in the file becoming full, which may result in abnormal operation of the device.
		X'910A'	LOW ON ENVELOPES
		X'9200'	STOCK EXHAUSTED: The stock of some required material (e.g., paper, ink, coins) has been exhausted
		X'9201'	OUT OF INK
		X'9202'	OUT OF PAPER
		X'9203'	OUT OF BILLS OR DOCUMENTS
		X'9204'	OUT OF COINS
		X'9205'	OUT OF FILM OR VIDEOTAPE
		X'9206'	OUT OF TONER
		X'9207'	OUT OF FUSER OIL
		X'9208'	OUT OF STAPLES
		X'920A'	OUT OF ENVELOPES
		X'9300'	DEPOSITORY FULL: A depository has become full, and thus cannot receive any more deposits

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content
		X'9301' DEPOSITORY APPROACHING CAPACITY: A depository is nearing its capacity; if it is not emptied shortly, it will become completely filled
		X'A000'–X'AFFF' retired *Note:* The two code points from this range are retired but can exist in old products. They should not be used in new or changed products. They were used at one time to indicate problem resolution. They are documented here only to give their text and meaning should they be found in an old Generic Alert. New products are directed to the Resolution (X'0002') Major Vector for indicating problem resolution. The two code points are: "X'A000' PROBLEM RESOLVED: A problem has been resolved" and "X'A001' IMPENDING COOLING PROBLEM RESOLVED: An impending cooling problem, reported earlier by an Alert, has been resolved without ever having impacted the availability of any resource".
		X'B000' OPERATOR NOTIFICATION: Problem-related information is being conveyed to a network operator *Note:* A X'B0xx' code point is used only if no more specific one is available.
		X'B001' MAINTENANCE PROCEDURE: A resource has been taken offline for maintenance *Note:* This code point is used to notify a network operator about a disruptive maintenance procedure that was invoked locally; otherwise, there would be an unexplained loss of a resource.
		X'B002' OPERATOR TOOK PRINTER OFFLINE
		X'B003' LAN BRIDGE TAKEN OFFLINE
		X'B004' RESOURCES REQUIRE ACTIVATION: Some resources are not active. The operator must activate these resources to make the system fully operational.
		X'B005' SERVICE SUBSYSTEM TAKEN OFFLINE
		X'B006' LINE ADAPTER DISCONNECTED
		X'B007' TOKEN RING ADAPTER DISCONNECTED
		X'B008' HIGH SPEED LINE ADAPTER DISCONNECTED
		X'B009' CHANNEL ADAPTER MAINTENANCE PROCEDURE: A channel adapter has been taken offline for maintenance.
		X'B00A' TIMED IPL TO OCCUR SOON: An automatic initial program load (IPL) of a machine has been scheduled at a date and time that will occur soon (e.g. in 30 or 60 minutes).
		X'B00B' CSMA/CD ADAPTER DISCONNECTED
		X'B00C' SNMP RESOURCE PROBLEM: A problem has occurred with an SNMP resource. This code point is used when the problem could not be specifically identified.
		X'B00D' PRESSURE UNACCEPTABLE: A fluid or gas pressure is not within acceptable limits.
		X'B00E' BANDWIDTH REDUCED
		X'B00F' IDLE TIME THRESHOLD EXCEEDED
		X'B010' FILE SERVER TAKEN OFFLINE
		X'B011' REQUESTER TAKEN OFFLINE
		X'B012' MONITORED SITUATION EXISTS: A monitoring application has detected a defined situation that specifies sending an Alert. *Note:* The specific situation causing this Alert is identified in the detailed data subfield of one of the causes subvectors.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content		
			X'B013'	MONITORED SITUATION CLEARED: A monitoring application has detected that a defined situation that specifies sending an Alert no longer exists. *Note:* The specific situation causing this Alert is identified in the detailed data subfield of one of the causes subvectors.
			X'B014'	UNSUCCESSFUL APPN-HPR ROUTE SWITCH: APPN High Performance Routing attempted to switch a Rapid Transport Protocol connection to a new route in order to bypass a network problem, but was unsuccessful. Sessions using the connection are affected.
			X'B015'	APPN-HPR ROUTE SWITCHED: A Rapid Transport Protocol connection has been successfully switched to a new path. Sessions using the connection will be switched automatically. However, this may impact performance.
			X'B016'	FAILURE CAUSED AUTOMATIC RESET: A system or subsystem failure has caused an automatic component or system reset to be performed.
			X'B017'	SERVICE CALL FAILED: A service call placed to a maintenance service center to report a system or subsystem problem has failed.
			X'B018'	AUTOMATIC SERVICE CALL TO RETAIN FAILED: An service call to the RETAIN system from the node detecting the problem either was not placed or was not completed successfully.
			X'B019'	SWITCH TO BACK-UP COMPLETED
			X'B01A'	SWITCH TO PRIMARY COMPLETED
			X'B01B'	ACTIVATION FAILURE
			X'B01C'	POSSIBLE LOSS OF ACCOUNTING DATA
		X'B100'	ENVIRONMENTAL PROBLEM	
			X'B101'	EXCESSIVE VIBRATION: Vibratory or seismic limits have been exceeded.
			X'B102'	FIRE DETECTED
			X'B103'	FLOOD DETECTED
			X'B104'	HUMIDITY UNACCEPTABLE
			X'B105'	TEMPERATURE UNACCEPTABLE
			X'B106'	LEAK DETECTED
			X'B107'	TOXIC LEAK DETECTED
			X'B108'	HIGH TEMPERATURE DETECTED: MAIN CHASSIS
			X'B109'	HIGH TEMPERATURE DETECTED: EXTERNAL
			X'B10A'	HIGH TEMPERATURE DETECTED: SCSI: High temperature was detected on the system's Small Computer System Interface (SCSI) chassis.
		X'B200'	RESENT ALERT WITH UPDATED INFORMATION: Can be used by the automatic problem resolution facility in the node or product originating an Alert when an event has occurred during its resolution of a problem which requires communicating new causes or recommended actions to continue or complete problem resolution. *Note:* Code points in this range can only be used in a resent Alert flagged with the Resent Alert indicator.	
			X'B201'	NO ACCESS TO PROBLEM RESOLUTION FACILITY: The automatic problem resolution facility in the node or product originating an Alert has detected a condition preventing access to or further use of a resource required to automatically resolve the problem, e.g., the Remote Support Facility. This resent Alert also provides information which was not provided in the original Alert and which is now needed for manual resolution.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content	
			X'B202' PROBLEM RESOLUTION THRESHOLD EXCEEDED
			X'B203' PROBLEM RESOLUTION HALTED
			X'B204' PROBLEM RESOLUTION ERROR
			X'B205' PROBLEM RESOLUTION RESTARTED
		X'C000'	SECURITY EVENT: An event indicative of a possible security exposure has been detected
			X'C001' INVALID REPORTING LINK PASSWORD
			X'C002' UNAUTHORIZED LAN INSERTION ATTEMPTED
			X'C003' UNAUTHORIZED NETWORK CHANGE ATTEMPTED: An end node CP, without authorization, has attempted to delete a resource.
			X'C004' UNAUTHORIZED ACCESS ATTEMPTED — BIND: A BIND was received from an end node that this network node does not serve.
			X'C005' UNKNOWN OSI MANAGEMENT SERVICES REQUEST: An unrecognized OSI management services request was received from another system.
			X'C006' INVALID PASSWORD
			X'C007' UNAUTHORIZED ACCESS ATTEMPTED
			X'C008' ACCESS TO DOMAIN CONTROLLER DENIED
			X'C009' SYSTEM NOT SECURE
			X'C00A' POSSIBLE UNAUTHORIZED ACCESS ATTEMPTED
			X'C00B' ACCESS GRANTED TO REMOTE USER
			X'C00C' PUBLIC ACCESS GRANTED TO REMOTE USER
			X'C00D' REMOTE SYSTEM RESTART INITIATED
			X'C00E' REMOTE SYSTEM RESTART REQUEST REJECTED
			X'C00F' REMOTE SERVICE START REQUEST RECEIVED
			X'C010' REMOTE SERVICE START REQUEST REJECTED
		X'E000'–X'EFFF'	Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range.
		X'FE00'	UNDETERMINED ERROR: An error condition has occurred that cannot be related to a more specific error category
			X'FE01' RESOURCE UNAVAILABLE: A resource has become unavailable, but the Alert sender has no indication of why this has happened *Note:* This code point should be used only if the Alert sender cannot determine, with any degree of certainty, that another Alert description code is applicable to the event being reported.
			X'FE02' UNDERLYING RESOURCE UNAVAILABLE
			X'FE03' REVIEW EVENT DETAIL FOR ALERT DESCRIPTION *Note:* Instead of displaying this text, an Alert receiver may optionally locate the indicated text and display it as the Alert Description. The text is included by the Alert sender in a Self-Defining Text Message (X'31') subvector with the value X'21' (Alert Description) in its Sender ID (X'21') subfield.

Generic Alert Data (X'92') Alert MS Subvector

Byte	Bit	Content
7–10(=p)		Alert ID number: A 4-byte hexadecimal value computed as follows: Stage 1: Assemble (in order) the following input from the Alert major vector: • Alert Type • Alert Description Code code point • All Probable Causes code points, in order • The delimiter X'FFFF' • All User Causes code points, in order, if any are present • The delimiter X'FFFF' • All Install Causes code points, in order, if any are present • The delimiter X'FFFF' • All Failure Causes code points, in order, if any are present Stage 2: Apply to this input the 32-bit CRC algorithm: $$\frac{x^{32}I(x) + x^{k}L(x)}{G(x)} = Q(x) + \frac{R(x)}{G(x)}$$ where: L(x) $\sum_{i=0}^{31} x^{i}$ G(x) $\sum_{i} x^{i}$ for i = 32, 26, 23, 22, 16, 12, 11, 10, 8, 7, 5, 4, 2, 1, 0 I(x) The polynomial represented by the input to the CRC algorithm (with the convention that the first bit of the input represents the coefficient of this polynomial's *highest*-order term) k number of bits in the input polynomial I(x) The Alert ID number is the *complement* of the remainder polynomial R(x) (sometimes represented as *Alert ID* = $\overline{\mathrm{R}(x)}$). The reader should remember that all arithmetic is modulo 2, and that the degree of the remainder polynomial, R(x), is less than 32.

Probable Causes (X'93') Alert MS Subvector

This subvector contains one or more code points denoting probable causes of the Alert condition. The probable causes appear in order of decreasing probability.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Probable Causes subvector
1		Key: (X'93')

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content
2–p		One or more two-byte probable cause code points, defined below. Each code point provides an index to predefined text denoting the probable cause. An Alert receiver has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point (not indented) above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are listed below. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). X'0000' PROCESSOR: The equipment used to interpret and process programmed instructions. These instructions may be programmed in either software or microcode X'0001' MOSS (Maintenance and Operation Subsystem): A service processor for a communication controller X'0002' VECTOR PROCESSOR: The vector processing element associated with a central processing unit (CPU) X'0003' PROCESSOR SWITCH: A component within a hardware product used to switch buses and the resources attached to them among processors X'0004' CONTROL PANEL X'0005' SYSTEM I/O BUS X'000A' SERVICE PROCESSOR: The maintenance, service, and support processor; sometimes called a processor controller. X'000B' NETWORK ADMINISTRATION STATION: A communication and management administration station performing a management agent role for a system or subsystem. X'0010' LAN MANAGER: A network component responsible for managing a local area network X'0011' PRINTER SERVER: A network component that controls the operation of a printer *Note:* In the current implementation, the printer server is a PC that stands between a printer and the host applications that communicate with it. X'0012' FILE SERVER X'0013' OPTICAL SYSTEM BUS CONTROLLER X'0030' SYSTEM MICROCODE: The specific microcode was not identified. X'0031' SYSTEM STORAGE MICROCODE *Note:* See also code point X'0421' (STORAGE CONTROLLER MICROCODE) X'0032' SYSTEM DISPLAY MICROCODE *Note:* See also code point X'0422' (WORKSTATION CONTROLLER MICROCODE) X'0033' SYSTEM COMMUNICATION MICROCODE *Note:* See also code point X'0423' (COMM SUBSYSTEM CONTROLLER MICROCODE) X'0034' SYSTEM PRINTER MICROCODE *Note:* See also code point X'0422' (WORKSTATION CONTROLLER MICROCODE) X'0040' INITIAL PROGRAM LOAD X'0041' IPL IS ALREADY IN PROGRESS: The boot or IPL of a system or subsystem has already been initiated.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
			X'0050' TERMINAL EMULATOR SUBSYSTEM MICROCODE
		X'0100'	STORAGE: The random access memory (RAM) or read only memory (ROM) accessible by a processor and by peripheral devices
			X'0101' MAIN STORAGE: Storage from which instructions and other data can be loaded directly into registers for subsequent execution or processing
			X'0102' AUXILIARY STORAGE: Storage that can not be directly addressed by a processor, such as external or secondary storage
			X'0103' NON-VOLATILE STORAGE
			X'0104' EXPANDED STORAGE: A specific type of auxiliary storage used for data and program paging
			X'0105' CRITICAL SYSTEM STORAGE: A specific portion of main storage used only by the machine
			X'0106' MEMORY
			X'0107' TRANSMIT/RECEIVE BUFFERS
			X'0108' DASD CACHE
			X'0109' LAN NETWORK MANAGER BUFFERS
		X'0200'	POWER SUBSYSTEM: The subsystem within a hardware product that provides electrical power to the different components within the product that require it
			X'0201' INTERNAL POWER UNIT: An element of the power subsystem providing electrical power to a specific component
			X'0202' INTERNAL POWER CONTROL UNIT: An element of the power subsystem that controls the internal power units
			X'0203' POWER CABLE
			X'0204' POWER CORD
			X'0205' POWER SUBSYSTEM PROCESSOR: A processor within the power subsystem responsible for its operation
			X'0206' POWER CORD UNPLUGGED
			X'0210' BATTERY
			X'0211' MOSS BATTERY
			X'0212' UNINTERRUPTIBLE POWER SUPPLY
			X'0220' MAIN AC POWER SUPPLY
			X'0221' INTERNAL AC/DC POWER UNIT: An internally configured power component capable of either alternating or direct current power.
			X'0222' INTERNAL DC POWER UNIT: An internally configured power component that provides direct current.
			X'0240' INTERNAL CLOCK: A mechanism which keeps time.
		X'0300'	COOLING OR HEATING SUBSYSTEM: The subsystems within a hardware product responsible for maintaining a temperature at which the product can operate
			X'0301' COOLING FAN
			X'0302' AIR FILTER
			X'0310' AIR FLOW DETECTOR
			X'0311' THERMAL DETECTOR
		X'0400'	SUBSYSTEM CONTROLLER: A unit within a subsystem that interfaces between a processor and the devices in the subsystem *Note:* See Alert Description X'1600', SUBSYSTEM FAILURE, for descriptions of the particular subsystems mentioned here

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'0401'	STORAGE CONTROLLER *Note:* This code point is contrasted with X'3131', DASD CONTROL UNIT and X'3132', TAPE CONTROL UNIT. A storage controller is typically a component within a larger node that provides for the node's communication with a variety of storage devices; a DASD or tape control unit is typically a separate device providing communication with storage devices.
			X'0402'	WORKSTATION CONTROLLER
			X'0403'	COMMUNICATIONS SUBSYSTEM CONTROLLER *Note:* This code point should be contrasted with X'3111', COMMUNICATION CONTROLLER. A communication controller is typically a stand-alone node within a network, for example, a 3725; a communications subsystem controller is typically a component within a larger node that provides for the node's communication with nodes remote from it.
			X'0421'	STORAGE CONTROLLER MICROCODE
			X'0422'	WORKSTATION CONTROLLER MICROCODE
			X'0423'	COMM SUBSYSTEM CONTROLLER MICROCODE
			X'0424'	TAPE CONTROLLER MICROCODE: A library device (tape library) is being added and a failure has occurred in the tape controller microcode.
			X'0441'	STORAGE CONTROLLER INTERFACE: The interface between a storage controller and the main processor in its node
			X'0442'	WORKSTATION CONTROLLER INTERFACE: The interface between a workstation controller and the main processor in its node
			X'0443'	COMM SUBSYSTEM CONTROLLER INTERFACE: The interface between a communications subsystem controller and the main processor in its node
		X'0500'	SUBSYSTEM: A set of components that jointly provide a specified function; typically a subsystem includes a controller, one or more interface adapters, physical connection media, and attached devices *Note:* See Alert Description X'1600', SUBSYSTEM FAILURE, for descriptions of the particular subsystems mentioned here	
			X'0501'	STORAGE SUBSYSTEM
			X'0502'	WORKSTATION SUBSYSTEM
			X'0503'	COMMUNICATIONS SUBSYSTEM
			X'0504'	LOGICAL X.25 DCE: A communications subsystem which is configured as a logical DCE, as opposed to a network DCE.
			X'0505'	X.25 DTE: A communications subsystem which is configured as a DTE.
			X'0506'	CHANNEL SUBSYSTEM: A subsystem that processes channel operations, routes I/O interruptions and moves data between main storage and an I/O interface
			X'0507'	CALLER PROCESSING SUBSYSTEM: The telephone interface subsystem which processes touch-tone input and voice input. It resides between the telephone system and an application processor.
			X'0509'	COMMUNICATIONS SYSTEM SERVICES
			X'0510'	SERVICE BUS INTERFACE: The communications interface used for service communication among the locally attached devices or adapters of a node or subsystem.
			X'0511'	NETWORK INTERFACE DEVICE: A device that provides communication access to a resource for the purpose of network management; the device is commonly referred to as a NID.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'1000'	SOFTWARE PROGRAM: A program implemented in software, as distinguished from one implemented in microcode *Note:* For this code point, and for the replacement code points under it, an Alert receiver has two options: It may display the English text (or its national language equivalent) documented with the code points, or it may display the software product common name from the first software Product Identifier (X'11') subvector within the indicated resource Product Set ID.
		X'1001'	APPLICATION PROGRAM: A program written for or by a user that applies to the user's work. A program used to connect and communicate with devices in a network, enabling users to perform application-orientated activities
		X'1002'	LOADABLE SOFTWARE MODULE: Software that may be loaded or unloaded as a containable unit.
		X'1003'	SYNCHRONIZATION POINT MANAGER
		X'1004'	ENCRYPTION PROGRAM
		X'1005'	VOICE RESPONSE UNIT PROGRAM
		X'1006'	LAN OVER WAN COMMUNICATIONS PROGRAM
		X'1010'	HOST PROGRAM: A program running in a host processor that is a primary or controlling program in a system
		X'1011'	PRINTER SERVER PROGRAM: A program running in a printer server that controls a printer *Note:* See also Probable Cause X'0011' (PRINTER SERVER).
		X'1012'	SOFTWARE DEVICE DRIVER: A program designed to control a device.
		X'1013'	MEDIA LIBRARY DEVICE DRIVER: A library device (tape library) is being added and a failure has occurred in the actual device driver.
		X'1014'	MAC DRIVER FAILURE: The Medium Access Control physical layer device driver has failed.
		X'1020'	CONTROL PROGRAM: A computer program designed to schedule and supervise the execution of programs in a computer system
		X'1021'	COMMUNICATION CONTROLLER CONTROL PROGRAM: A software program designed to schedule and supervise the execution of programs in a communication controller
		X'1022'	COMMUNICATIONS PROGRAM: A software program designed to provide direct assistance to a node in communicating with other nodes
		X'1023'	COMMUNICATIONS PROGRAM IN REMOTE NODE
		X'1024'	COMMUNICATION ACCESS METHOD
		X'1025'	COMMUNICATIONS PROGRAM IN LOCAL NODE
		X'1026'	INVALID UDP DATAGRAM CHECKSUM: The checksum was calculated incorrectly or corrupted during transit.
		X'1027'	WIRELESS NETWORK PROGRAM DATA LOST
		X'1028'	SNA CROSS-DOMAIN RESOURCE MANAGER
		X'1030'	LAN MANAGER PROGRAM: The software program in a LAN manager

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'1031'	LAN MANAGEMENT SERVER: A data collection and distribution point for a single LAN segment token-ring or bus. A LAN management server forwards data received from stations on its token-ring or bus and possibly results from preliminary analysis performed by the server (on that data) to the LAN manager. LAN management servers also send data to stations on their token-rings or busses. *Note:* The LAN management servers that are currently defined are: Ring Error Monitor (REM), Configuration Report Server (CRS), Ring Parameter Server (RPS), LAN Bridge Server(LBS), and LAN Reporting Mechanism (LRM).
		X'1040'	I/O ACCESS METHOD
		X'1050'	AGENT PROGRAM: An agent has experienced a permanent error condition. This is an internal error in a software component.
		X'1051'	COMMAND NOT RECOGNIZED: An internal command encountered at a software component was not recognized. This is an internal error in a software component.
		X'1052'	CONVERSATION PROTOCOL: A conversation protocol error was encountered by a software component. This is an internal error in a software component.
		X'1053'	DATA DESCRIPTOR: The description of the data defined in a distributed unit of work was in error. This is an internal error in a software component.
		X'1054'	INVALID DATA STRUCTURE: The data structure encountered by a software component was in error. This is an internal error in a software component.
		X'1055'	INVALID CURSOR STATE: The cursor state during a query operation against a relational data base was invalid. This is an internal error in a software component.
		X'1056'	RELATIONAL DATABASE ACCESS: An error was encountered while accessing a relational database. This is an internal error in a software component.
		X'1057'	RESOURCE LIMIT REACHED
		X'1058'	OBJECT ACCESS AUTHORIZATION
		X'1059'	OBJECT DEFINITION DROPPED: An example of the use of this code point is that the definition of a database object was expected to exist. It did not, so a process operating on the object failed.
		X'105A'	SYNCHRONIZATION PROCESSING
		X'105B'	COMMAND NOT AUTHORIZED
		X'105C'	PARTNER COLD START
		X'105D'	WARM START RECONNECTION FAILURE
		X'105E'	LIBRARY MANAGER PROGRAM: A library device (tape library) is being added and a failure has occurred in the library manager program.
		X'105F'	INTERNAL SYSTEM RESOURCE NOT AVAILABLE: Used when some internal resource is not available.
		X'1060'	QUEUE ALLOCATION FAILURE
		X'1061'	QUEUE OPERATION FAILURE
		X'1062'	FILE CREATE FAILURE
		X'1063'	FILE ACCESS FAILURE
		X'1064'	FILE PROCESSING FAILURE
		X'1065'	TIME-OUT
		X'1066'	CRITICAL ERROR THRESHOLD EXCEEDED: Enough critical errors have occurred to cause the program to terminate.
		X'1067'	FREQUENT ERROR THRESHOLD EXCEEDED: Errors occurring within a short period of time have reached the point where the network operator may need to be concerned about a possible device problem.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'1068'	INFREQUENT ERROR THRESHOLD EXCEEDED: Errors occurring over a longer period of time have reached the point where the network operator should be informed of a possible impending problem.
			X'1069'	USER EXIT PROGRAM FAILED
			X'106A'	BACK-UP RESOURCE IN USE
			X'106B'	BACK-UP INCOMPLETE
			X'106C'	DISCONNECT TIMER EXPIRED: An active connection has been terminated due to the expiration of the disconnect timer.
			X'106D'	CONNECTION REFRESH TIMEOUT: An active connection has been terminated due to the expiration of the connection refresh timer.
			X'106E'	LINK KEEP ALIVE TIMEOUT: A trunk connection has failed due to a non-receipt of the link keep alive message within the prescribe time period.
			X'106F'	LINK TIMEOUT: The test CP-CP connection associated with the link has failed due to a link timeout.
			X'1070'	INSUFFICIENT STORAGE: There was insufficient storage available for the request to be satisfied.
			X'1071'	ABNORMAL COMPLETION: An initial program load (IPL) has failed causing an abnormal completion.
			X'1072'	UNRECOGNIZED RETURN CODE OR ERROR CODE: A program or process has received a return code or error code that it does not recognize.
			X'1073'	EXECUTION BLOCKED OR INHIBITED: A program or process has been blocked or inhibited from completing its normal task activity.
			X'1074'	CONTROL POINT SWITCH OVER: An attempt to switch over from a primary control point program to a backup program has failed.
			X'1075'	TWO CONTROL POINTS ACTIVE: A system or subsystem activity or configuration has resulted in two active control point programs.
		X'1100'	OPERATING SYSTEM: Software that controls the execution of programs. An Operating system may provide services such as resource allocation, scheduling, I/O control, and data management.	

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'2000'	COMMUNICATIONS: The facility used to permit data flow from one location to another *Note:* This code point, and the replacement code points under it, is used only when a more appropriate probable cause cannot be determined.
		X'2001'	START-STOP COMMUNICATIONS: Asynchronous transmission in which a group of signals representing a character is preceded by a start element and is followed by a stop element; for example, ASCII
		X'2002'	BINARY SYNCHRONOUS COMMUNICATIONS: Synchronous transmission of binary-coded data between stations, using a standard set of control characters and control character sequences
		X'2003'	SNA COMMUNICATIONS: Communication according to the Systems Network Architecture formats, protocols, and operational sequences
		X'2004'	SDLC COMMUNICATIONS: (Synchronous Data Link Control)—synchronous, code-transparent, serial-by-bit information transfer over a link connection
		X'2005'	X.21 NETWORK: A network implementing the X.21 protocols. These protocols define an interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for synchronous operation on circuit switched public data networks
		X'2006'	X.25 NETWORK: A packet switching data network implemented according to the recommendation developed by the CCITT which provides a standard interface for the connection of processing equipment
		X'2007'	LAN LLC COMMUNICATIONS: (Logical Link Control)—error-free, in sequence information transfer over a LAN
		X'2008'	X.25 COMMUNICATIONS: Communications according to CCITT recommendation X.25 for a packet switching data network. *Note:* Use code point X'2006' (X.25 NETWORK) if the problem is known to be in X.25 network.
		X'2009'	X.21 COMMUNICATIONS: Communications according to CCITT recommendation X.21 for a circuit switching data network. *Note:* Use code point X'2005' (X.21 NETWORK) if the problem is known to be in X.21 network.
		X'200A'	ISDN NETWORK: A network implementing the Integrated Services Digital Network protocols
		X'200B'	OSI COMMUNICATIONS: Communications according to OSI and CCITT standards
		X'200C'	NETBIOS COMMUNICATIONS: A protocol error occurred in the NETBIOS interface
		X'200D'	FRAME RELAY COMMUNICATIONS: Communications according to the Frame Relay protocols for a packet switching data network.
		X'200E'	FRAME RELAY LLC ERROR: (Logical Link Control)—error.
		X'200F'	LMI PROCEDURES: A protocol used to perform layer management interface (LMI) functions for frame relay communications.
		X'2010'	DDS NETWORK: A network implementing the Digital Data Service, e.g., DATAPHONE[1] Digital Service (DDS). [1] DATAPHONE is the Registered Service Mark of AT&T Company.
		X'2011'	SWITCHED NETWORK: This could be (but is not limited to) a public switched telephone network
		X'2012'	SERIAL NETWORK
		X'2013'	DS1 NETWORK

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'2014'	ILMI PROCEDURES: A protocol used to perform Interim Layer Management Interface (ILMI) functions for Asynchronous Transfer Mode (ATM) communications.
			X'2015'	DIGITAL NETWORK
			X'2016'	INCORRECT FILE RECEIVED
			X'2017'	CRC ERROR
			X'2018'	APPN-HPR COMMUNICATIONS: Communications according to the APPN High Performance Routing protocols.
			X'2019'	APPN COMMUNICATIONS
			X'201A'	IDLC COMMUNICATIONS: Communications according to the Data Link Control Protocol defined by Q.922 which may be used by ISDN and non-ISDN services.
			X'201B'	LOCAL SNA PASS-THROUGH COMMUNICATIONS
			X'201C'	REMOTE SNA PASS-THROUGH COMMUNICATIONS
			X'201D'	LOGICAL CHANNEL
			X'201E'	IPX COMMUNICATIONS
			X'201F'	FRAME RELAY NETWORK
			X'2021'	BANKING LOOP: A network configuration, specifically designed for the finance industry, in which there is a single path between all devices and the path is a closed circuit terminating in a controller
			X'2022'	STORE LOOP: A network configuration, specifically designed for the retail industry, in which there is a single path between all devices and the path is a closed circuit terminating in a controller
			X'2023'	TRANSIT NETWORK: An intermediate network used to complete a communication call or data network path.
			X'2024'	FRAME RELAY CONNECTION FAILURE
			X'2031'	LINE: The telephone line or transmission link connecting two or more components in the network *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with a Failure Cause.
			X'2032'	LOCAL LINK STATION: Specifies that a protocol error has occurred within the local link station.
			X'2033'	LINE/REMOTE MODEM: A line or the modem on it remote from the Alert sender
			X'2034'	LINE/REMOTE LDM: A line or the limited distance modem on it remote from the Alert sender
			X'2035'	LINE/REMOTE DIGITAL DATA DEVICE: A line or the digital data device (DDD) on it remote from the Alert sender
			X'2036'	LINE/REMOTE DCE A line or the Data Circuit-Terminating Equipment (DCE) on it remote from the Alert sender *Note:* This code point is used only if the Alert sender is unable to determine whether the DCE is a modem or a DDD; see code points X'2033' and X'2035'.
			X'2037'	DCE-DSE CONNECTION: The telephone line connecting the calling DCE to its local DSE
			X'2040'	INTER-EXCHANGE NETWORK: A network providing services between two local exchange areas
			X'2041'	PRIVATE NETWORK REACHED: The private network containing the called DTE
			X'2042'	DS1/DS3 COMMUNICATIONS NETWORK
			X'2043'	COMMUNICATIONS NETWORK TESTING: The communications network is undergoing testing.
			X'2044'	ISDN B-CHANNEL DESYNCHRONIZATION
			X'2045'	TRUNK CONNECTION BACKUP
			X'2046'	NUMBER NOT GUARANTEED BY ISDN NETWORK

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'2050'	PACKET LAYER CONTROL
		X'2051'	LINK ACCESS PROTOCOL BALANCED
		X'2052'	LOGICAL LINK CONTROL
		X'2058'	SERIAL LINK
		X'2080'	HOST COMMUNICATIONS *Note:* If the Alert sender is aware of the protocol being used for communication with the host, it uses a code point identifying that protocol.
		X'2081'	TCP/IP NETWORK
		X'2082'	IP GATEWAY: A subsystem providing IP connectivity for different IP address domains.
		X'20A2'	PBX LINE: A communication line serving a Private Branch Exchange (PBX).
		X'20A3'	OUTBOUND SONET / SDH LINE: A SONET or SDH communication transmission F2 sublayer operating in the transmit direction.
		X'20A4'	INBOUND SONET / SDH LINE: A SONET or SDH communication transmission F2 sublayer operating in the receive direction.
		X'20A5'	OUTBOUND SONET / SDH PATH: A SONET or SDH communication transmission F3 sublayer operating in the transmit direction.
		X'20A6'	INBOUND SONET / SDH PATH: A SONET or SDH communication transmission F3 sublayer operating in the receive direction.
		X'20A7'	OUTBOUND LINE: The equipment that connects the transmit circuits of the local DCE (i.e., the DCE local to the node sending error notification) to the receive circuits of the remote DCE.
		X'20A8'	INBOUND LINE: The equipment that connects the receive circuits of the local DCE (i.e., the DCE local to the node sending the error notification) to the transmit circuits of the remote DCE.
		X'20A9'	NBBS COMMUNICATIONS: The Networking BroadBand Services (NBBS) communications transport network service.
		X'20AA'	OUTBOUND PATH: The equipment that connects the transmit circuits of the local DCE (i.e., the DCE local to the node sending error notification) to the receive circuits of the remote DCE.
		X'20AB'	INBOUND PATH: The equipment that connects the receive circuits of the local DCE (i.e., the DCE local to the node sending the error notification) to the transmit circuits of the remote DCE.
		X'20B1'	ISDN CALL CLEARED BY NBBS
		X'20B2'	DESTINATION PORT NOT FOUND: The destination port, endpoint of a specific connection/link, can not be found.
		X'20B3'	DESTINATION PORT NOT ACTIVE: The destination port, endpoint of a specific connection/link, is not active.
		X'20B4'	CONNECTION ROUTE: Unable to establish a connection due to a connection route failure.
		X'20B5'	PARAMETER NEGOTIATION: A parameter negotiation has failed due to inconsistent or incompatible values.
		X'20B6'	CONNECTION PREEMPTED: A connection failed when its route was preempted and no other connection route could be established.
		X'20B7'	CONNECTION REROUTE UNSUCCESSFUL: An attempt was made to reroute a connection and it failed.
		X'20B8'	RECEIVING UNFRAMED SIGNAL: A signal is being received with an invalid framing pattern.
		X'20B9'	ATM COMMUNICATIONS: An error in the Asynchronous Transfer Mode (ATM) communications transport network or protocol component of an ATM network.
		X'20BA'	CHANGE OF FRAME ALIGNMENT
		X'20C0'	NBBS PORT: The NBBS port has experienced a failure.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'20C1'	CONNECTION AGENT: The connection agent component has failed.
		X'20C2'	CONTROL POINT: The control point function has failed.
		X'20C3'	DATA LINK PROCEDURES NOT SUPPORTED: Connection-oriented LLC is not required as a result of the link initialization, but one of the nodes has sent a SABME.
		X'20C4'	DIRECTORY AGENT: The directory agent component has failed.
		X'20C5'	INVALID LINK STATE: Requested link state is invalid given the current link state.
		X'20C6'	LINK KEEP ALIVE TEST PROCEDURE: A link supporting a trunk connection has failed due to a failure in the link keep alive test procedure.
		X'20C7'	LINK: A link has failed.
		X'20C8'	LINK INITIALIZATION: The initialization of a link between two adjacent nodes has failed.
		X'20C9'	NO ACTIVE PARTNER: The line test failed to detect an active partner.
		X'20CA'	NODE: Node has failed. Some of the possible reasons for this failure are: NBBS topology database has reached its maximum size or a hardware malfunction.
		X'20CB'	RAPID TRANSPORT PROTOCOL: There has been a problem with the rapid transport protocol.
		X'20CC'	SPANNING TREE: There has been a spanning tree failure. Possible reasons for this failure are: a spanning tree algorithm failure or a communication protocol error has occurred.
		X'20CD'	TOPOLOGY DATABASE: The topology database has failed due one of the following: algorithm failure, topology database protocol error or insufficient storage.
		X'20CE'	TRANSIT CONNECTION MANAGER: The transit connection manager in a NBBS node has failed.
		X'20CF'	TRUNK CONNECTION: A link supporting a trunk connection has failed.
		X'20D0'	JOIN NOT CANCELED OR COMPLETED: A spanning tree join has not been canceled or completed.
		X'20D1'	PHYSICAL LAYER OUTAGE: A outage in the physical media.
		X'20D2'	UNEXPECTED MESSAGE: A message was recieved that was not expected in the current state of the component.
		X'20D3'	AIS OAM EVENT RECEIVED: An Alarm Indication Signal (AIS) Operations Administration Maintenance (OAM) event has been received.
		X'20D4'	AIS OAM EVENT SENT: An Alarm Indication Signal (AIS) Operations Administration Maintenance (OAM) event has been sent.
		X'20D5'	CONTINUITY CHECK OAM EVENT: A continuity check Operations Administration Maintenance (OAM) event has occurred.
		X'20D6'	FERF OAM EVENT RECEIVED: A Far End Receive Failure (FERF) Operations Administration Maintenance (OAM) event has been received.
		X'20D7'	FERF OAM EVENT SENT: A Far End Receive Failure (FERF) Operations Administration Maintenance (OAM) event has been sent.
		X'20D8'	LOOPBACK OAM EVENT: A loop-back Operations Administration Maintenance (OAM) event has occurred.
		X'20D9'	PERFORMANCE MONITORING OAM EVENT: A performance monitoring Operations Administration Maintenance (OAM) event has occurred.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'20DA'	RAI OR RDI RECEIVED: A network terminal has declared a Remote Alarm Indicator (RAI) or Remote Defect Indicator (RDI) failure.
		X'20DB'	AIS EVENT RECEIVED: A network terminal has declared an Alarm Indication Signal (AIS) failure.
		X'20DC'	TWO MANAGEMENT GATEWAYS ACTIVE: A network configuration activity has resulted in the operation of two communication gateways for manager to agent communication.
		X'20DD'	NO MANAGEMENT GATEWAY ACTIVE: A network configuration activity has resulted in the operation of no communication gateways for manager to agent communication.
		X'2100'	COMMUNICATIONS/REMOTE NODE: Either a communications facility denoted by a X'20xx' code point or a remote node denoted by a X'22xx' code point *Note:* This code point is used only when a more specific probable cause cannot be determined.
		X'2101'	START-STOP COMMUNICATIONS/REMOTE NODE
		X'2102'	BSC COMMUNICATIONS/REMOTE NODE
		X'2104'	SDLC COMMUNICATIONS/REMOTE NODE
		X'2105'	X.21 COMMUNICATIONS/CALLED DTE
		X'2106'	X.25 COMMUNICATIONS/REMOTE NODE
		X'2107'	LAN LLC COMMUNICATIONS/REMOTE NODE
		X'210A'	ISDN COMMUNICATIONS/REMOTE NODE
		X'210B'	IDLC COMMUNICATIONS/REMOTE NODE
		X'2130'	LINE/REMOTE NODE
		X'2131'	COMMUNICATIONS PROGRAM IN ADJACENT NODE
		X'2132'	SERVER NOT AVAILABLE
		X'2133'	LOADER NOT AVAILABLE
		X'2134'	NBBS COMMUNICATIONS-REMOTE NODE: The Networking BroadBand Services (NBBS) communications transport network service located in the connection destination node.
		X'2200'	REMOTE NODE: The node at the remote end of a link connection *Note:* “Remote”file defined from the point of view of the node detecting the Alert condition.
		X'2201'	CALLED DTE: On a switched telephone connection, the data terminal equipment (DTE) to which the telephone call to establish the connection was placed
		X'2202'	REMOTE NODE OUT OF RANGE
		X'2204'	OTHER REMOTE NODE: On a multipoint link, the remote node interfering with the link activity but not part of the logical connection for which the error was detected
		X'2205'	TDU CORRUPTED BY REMOTE NETWORK NODE
		X'2206'	NODE SENDING ALERT OR OTHER NETWORK NODE
		X'2300'	CONNECTION NOT ESTABLISHED: A telephone connection required for the requested operation has not been established
		X'2301'	CALLED NUMBER BUSY: The telephone number dialed for a teleprocessing connection was busy
		X'2302'	CALLED NUMBER DID NOT ANSWER: The telephone number dialed for a teleprocessing connection did not answer
		X'2303'	CALLED NUMBER OUT OF ORDER: The telephone number dialed for a teleprocessing connection is inoperative
		X'2304'	INCORRECT NUMBER CALLED: The telephone number dialed for a teleprocessing connection was incorrect

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'2305'	MANUAL DIAL REQUIRED: The operator must establish a manual dial connection to a remote device before normal operation can continue
			X'2306'	CHANGED NUMBER: The called DTE has recently been assigned a new number (unique X.21 status provides this information)
			X'2307'	INVALID REQUEST: In the course of attempting to set up a telephone connection, the caller has made an invalid request
			X'2308'	ACCESS BARRED: The calling DTE is not allowed to connect to the called DTE
			X'2309'	LINK AND/OR AUTO-CALL UNIT IN USE: An auto-call attempt failed because either the link or the attached auto-call unit was in use.
			X'230A'	CALL COLLISION: An outgoing call was not completed because it collided with an incoming call on the same link.
			X'230B'	LINK SET UP FAILURE
			X'230C'	SERVICE NOT AVAILABLE OR NOT SUPPORTED
			X'230D'	UNRECOGNIZED V.25BIS FAILURE INDICATION
			X'230E'	TONE DIAL WAS USED ON A PULSE DIAL LINE
			X'230F'	INVALID DIAL DIGITS
			X'2310'	BANDWIDTH REQUEST REJECTED: A connection request for initial bandwidth allocation or a request to change connection bandwidth has been rejected.
			X'2311'	CONNECTION ALREADY ACTIVE: An attempt to start a connection has been made but the connection is already active.
			X'2312'	CONNECTION FAILURE RETRY IN PROGRESS: An attempt to start or change a connection has been made but the original attempt has not been successful and the activity to start or change the connection requires further connection setup attempts to be made.
			X'2313'	CONNECTION RETRY EXCEEDED: An attempt to start or change a connection has been made but the connection retry limit has been exhausted and the connection has not been started or the connection change has not been made.
			X'2314'	NETWORK REJECTED SETUP: An attempt to start a connection has been made but the connection has been rejected by processing components within the transport or transit network.
			X'2315'	NO PATH AVAILABLE AT QUALITY OF SERVICE: No path through the transport network can be provided for a connection at the requested quality of service.
			X'2316'	NO PATH AT REQUESTED BANDWIDTH: No path through the transport network can be provided for a connection at the requested bandwidth.
			X'2317'	PRECONFIGURED PATH INVALID: The preconfigured path selected is not accurate or invalid given transport network conditions.
			X'2318'	TARGET REJECTED SETUP: The target of the connection rejected the connection attempt.
			X'2319'	TARGET NOT AVAILABLE: The target of the connection was busy or out of order.
			X'231A'	TARGET NOT FOUND: The target of the connection could not be located by the transport network.
			X'231B'	BANDWIDTH OF THE DESTINATION EXCEEDED: The bandwidth of the transport connection destination has been exceeded or would be exceeded by a connection request and the connection request has been rejected.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'231C'	BANDWIDTH OUT OF RANGE: The bandwidth amount requested for the connection is either too small or too large for the transport network traffic profiles.
			X'231D'	LINK FAILURE: A transport network link has failed.
			X'231E'	CONNECTION LIMIT REACHED: The transport network resource has reached its connection limit.
			X'231F'	ORIGIN CONNECTION LIMIT REACHED: The transport network resource at the connection origin has reached its connection limit.
			X'2320'	DESTINATION CONNECTION LIMIT REACHED: The transport resource at the connection destination has reached its connection limit.
			X'2321'	CONNECTION PATH PREEMPTION: An active connection has been designated for connection path preemption.
			X'2322'	BANDWIDTH INCREASE: A change to an active connection has been made, the connection bandwidth has been increased due to connection's traffic requirements.
			X'2323'	BANDWIDTH DECREASE: A change to an active connection has been made, the connection bandwidth has been decreased due to the connection's traffic requirements.
			X'2324'	OPERATOR TERMINATION: An active connection has terminated due to operator intervention, scheduled stoppage, or normal connection control processes by operator termination.
			X'2325'	NORMAL TERMINATION: An active connection has terminated due to operator intervention, scheduled stoppage, or normal connection control processes for normal reasons.
			X'2326'	SCHEDULED TERMINATION: An active connection has terminated due to operator intervention, scheduled stoppage, or normal connection control processes by scheduled termination.
			X'2327'	COMMUNICATION PROBLEM WITH RETAIN: An automatic call to RETAIN was unsuccessful, either because of a problem with establishing the connection, or because of subsequent communication problems that prevented the creation of a complete problem report.
		X'2400'	BUSY: A requested resource was unavailable because it was in use	
			X'2401'	DATA LINK CONTROL IDENTIFIER IN USE: The Data Link Control Identifier (DLCI) used to identify a in frame relay communications channel is in use.
			X'2410'	SNA PASS-THROUGH DEVICE BUSY
		X'2600'	ELECTRICAL INTERFERENCE: An electrical disturbance in a communication system that interferes with or prevents reception of a signal or of information	
			X'2601'	CELL ENVIRONMENT INTERFERENCES
		X'3000'	CHANNEL: The equipment that is used to direct data to and from input/output devices and locally-attached control units *Note:* This code point applies only to the channel itself. If the channel interface cable is intended, code point X'3411' (CHANNEL INTERFACE CABLE) is used instead.	
			X'3001'	CHANNEL PHYSICAL LINE
			X'3002'	CHANNEL LOGICAL LINE
			X'3003'	CHANNEL STATION

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'3100'	CONTROLLER: A communication device that controls other devices and the flow of information to and from them *Note:* For this code point, and for the replacement code points under it, an Alert receiver has two options: It may display the English text (or its national language equivalent) documented with the code points; or it may display the machine type, or, if one is present, the hardware product common name, from the first hardware Product Identifier (X'11') subvector within the indicated resource Product Set ID.
		X'310F'	COMMUNICATION CONTROLLER RECOVERY: A process which recovers resources from a back-up processor in a communication controller. *Note:* This code point is used to notify the network operator about a maintenance procedure that was invoked locally or initiated automatically which results in the availability of additional resources.
		X'3110'	COMMUNICATION CONTROLLER BACK-UP: A process which switches resources from one processor to a back-up processor in a communication controller. *Note:* This code point is used to notify the network operator about a maintenance procedure that was invoked locally or initiated automatically which results in the availability of additional resources.
		X'3111'	COMMUNICATION CONTROLLER: A communication device that controls the transmission of data over links in a network *Note:* In SNA, a communication controller is a type 4 node.
		X'3112'	SENDING NODE: The node detecting the error and sending the error notification for it.
		X'3113'	SENDING NODE AND MODEMS CONFIGURATION
		X'3114'	SENDING NODE AND DSU/CSU'S CONFIGURATION
		X'3115'	SENDING NODE/TAILED-CIRCUIT CABLE: The error notification sender configuration is incorrect or the tailed-circuit attachment cable is not connected or present
		X'3116'	SENDING NODE/CNM ADAPTER'S CONFIGURATION
		X'3121'	TERMINAL CONTROL UNIT: A communication device that controls the transmission of data to and from terminals *Note:* In SNA, a terminal control unit is a type 2.0 or 2.1 node.
		X'3122'	FINANCE CONTROLLER: A terminal control unit specifically designed for the banking industry
		X'3123'	STORE CONTROLLER: A terminal control unit specifically designed for the retail industry
		X'3131'	DASD CONTROL UNIT: A device that controls the transfer of data to and from a direct access storage device such as disk or drum
		X'3132'	TAPE CONTROL UNIT: A device that controls the transfer of data to and from tape drives

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content
		X'3200' COMMUNICATIONS INTERFACE: The equipment connecting a node to the component in a link connection with which it exchanges physical control signals *Note:* This code point covers (1) the receivers and drivers in the node, (2) the cable, and (3) the component in the link connection that responds to the physical control signals from the node (e.g., a modem). This code point is used only when a more specific probable cause cannot be determined. X'3220' LOCAL TOKEN-RING ADAPTER INTERFACE: The programming interface for the local token-ring adapter X'3221' CSMA/CD ADAPTER INTERFACE: The programming interface for the local CSMA/CD adapter X'3222' ISDN ADAPTER INTERFACE: The programming interface for the local ISDN adapter X'3223' TOKEN-RING ADAPTER INTERFACE: The programming interface for a token-ring adapter X'3224' LOCAL AUTO-CALL UNIT INTERFACE X'3225' ISDN-R INTERFACE X'3226' FDDI ADAPTER INTERFACE: The programming interface for a FDDI adapter X'32D1' LOCAL DCE COMMUNICATIONS INTERFACE: The communications interface between the Alert sender and the local Data Circuit-Terminating Equipment (DCE) X'32D2' REMOTE DCE COMMUNICATIONS INTERFACE: The communications interface between the Data Circuit-Terminating Equipment (DCE) remote from the Alert sender and the remote node X'32D3' DCE EMULATION INTERFACE: The communications interface between the Alert sender and the DCE emulation cable that attaches it to a device's DCE interface cable
		X'3300' ADAPTER: The part of a device that interfaces between a processor in the device and one or more attached devices *Note:* The processor referred to here could be either the main processor in the node containing the adapter or a processor in, e.g., a communication subsystem controller. X'3301' CHANNEL ADAPTER X'3302' COMMUNICATIONS ADAPTER X'3309' LINE ADAPTER *Note:* A line adapter in a communication controller is often referred to as a scanner. X'330F' HPTSS ADAPTER: A high-speed processor transmission subsystem adapter in a communication controller X'3310' LOCAL ISDN ADAPTER: An adapter that attaches the Alert sender to an ISDN network *Note:* See also code point X'3532' LOCAL ISDN TERMINAL ADAPTER. A terminal adapter is distinguished from an ISDN adapter by the presence of a defined interface (e.g., RS-232C) between itself and the node that it serves; an ISDN adapter is typically integrated within its node. X'3311' REMOTE ISDN ADAPTER: An adapter that attaches to an ISDN network a node with which the Alert sender has a logical connection using the network *Note:* See also code point X'3533' REMOTE ISDN TERMINAL ADAPTER. X'3312' LOCAL DS1 ADAPTER X'3320' LOCAL TOKEN-RING ADAPTER: An adapter that attaches the Alert sender to a token-ring LAN

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'3321'	REMOTE TOKEN-RING ADAPTER: An adapter that attaches a node other than the Alert sender to a token-ring node
			X'3322'	LOCAL CSMA/CD ADAPTER: An adapter that attaches the Alert sender to a CSMA/CD LAN
			X'3323'	REMOTE CSMA/CD ADAPTER: An adapter that attaches a node other than the Alert sender to a CSMA/CD LAN
			X'3325'	CSMA/CD ADAPTER
			X'3326'	TOKEN BUS ADAPTER
			X'3328'	3270 ADAPTER
			X'3330'	ADAPTER HARDWARE: The hardware comprising an adapter
			X'3331'	ADAPTER MICROCODE: The microcode executing in an adapter
			X'3333'	LINE CONNECTION BOX
			X'3340'	LOCAL LAN ADAPTER
			X'3350'	PCNET ADAPTER
			X'3351'	FDDI ADAPTER
			X'3352'	T1 ADAPTER
			X'3353'	T3 ADAPTER
			X'3354'	HSSI ADAPTER: A high-speed serial interface adapter
			X'3355'	E1 ADAPTER
			X'3356'	J1 ADAPTER
			X'3360'	PARALLEL CHANNEL ADAPTER
			X'3361'	SERIAL OPTICAL CHANNEL ADAPTER
			X'336F'	CONTROLLER BUS ADAPTER
			X'3370'	OPTICAL SYSTEM BUS ADAPTER
			X'3380'	ROTARY GROUP: A number of ports on a device that are all reached via the same telephone number; a rotary group is sometimes referred to as MLSA (multiple lines at same address)
			X'3381'	X.21 ROTARY GROUP
			X'3382'	VOICE COMPRESSION MODULE: A communication component providing voice compression service.
			X'3390'	WIRELESS ADAPTER CONTROLLER CARD
			X'33C1'	LINE ADAPTER HARDWARE
			X'33C2'	LINE ADAPTER MICROCODE
			X'33C3'	LINE INTERFACE COUPLER (LIC)
			X'33C4'	VOICE SERVER PROCESSOR: A voice server adapter has experienced a processor component failure.
		X'3400'	CABLE: A cable or its connectors used to electrically connect devices together	
			X'3401'	LOCAL DCE INTERFACE CABLE: The cable, or its connectors, between the Alert sender and the local Data Circuit-Terminating Equipment (DCE)
			X'3403'	REMOTE DCE INTERFACE CABLE: The cable, or its connectors, between the Alert sender's remote DCE and the device attached to it. (The device could be another DCE, e.g., the local DCE on a second link segment.) *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with a Failure Cause.
			X'3404'	DCE EMULATION CABLE: The cable, or its connectors, between the Alert sender and a DCE interface cable attached to a device *Note:* The end of the DCE emulation cable remote from the Alert sender plugs directly into the DCE interface cable attached to the device.
			X'3411'	CHANNEL INTERFACE CABLE: The cable or cables, or their connectors, between a channel and a locally attached device

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'3412'	LINE INTERFACE COUPLER TO LCB CABLE: The cable which attaches a Line Interface Coupler (LIC) to a line connection box (LCB), e.g., LIC11.
			X'3413'	REMOTE DTE INTERFACE CABLE
			X'3426'	CSMA/CD LAN CABLES: The cables of a CSMA/CD LAN. These include the cable attaching the Alert sender to the CSMA/CD bus and the bus itself.
			X'3430'	FDDI CABLE
			X'3436'	LOCAL CSMA/CD ADAPTER CABLE: The cable attaching the Alert sender to the CSMA/CD bus
			X'3441'	LOOP CABLE: A cable connecting the nodes attached to a communication loop
			X'3451'	DEVICE CABLE: A cable connecting a device directly to a communication controller or a control unit *Note:* This code point also covers any passive distribution assembly that, externally, is indistinguishable from the cable itself.
			X'3452'	STORAGE DEVICE CABLE: A cable directly connecting a local storage device to its adapter/controller
			X'3460'	INTERNAL CABLE
			X'3461'	CABLE TERMINATOR
			X'3462'	LOCAL DCE LOOP: the DCE loop local to the error notification sender. *Note:* A DCE loop is the equipment comprised of cables, converters, etc., that connect the DCE with the nearest central office exchange; this equipment does not include the customer premises wiring.
			X'3463'	REMOTE DCE LOOP: The DCE loop remote from the error notification sender.
			X'3464'	TELECOMMUNICATION CABLE CONNECTION: The connection of the telecommunication cable with the local DCE or with the telephone connecting block provided by the telecommunications facility.
			X'3465'	PREMISES WIRING
			X'3466'	WRAP PLUG: A cable or communication port termination used in loopback.
			X'3470'	OPTICAL SYSTEM BUS CABLE
		X'3500'		COMMUNICATION EQUIPMENT: External equipment used to connect devices or other system components *Note:* If the attaching equipment is known to be a modem, then a modem code point (X'36xx') is sent instead of this code point. *Note:* LAN components are not reported with X'35xx' code points; see the X'3700' code point for a discussion of how they are reported.
			X'3501'	PROTOCOL CONVERTER: A device that converts one protocol data stream to another
			X'3502'	TERMINAL MULTIPLEXER: The equipment used to connect multiple devices to a single cable
			X'3503'	LINE SWITCH: A device that on demand allows Data Circuit-terminating Equipment (DCE) to be attached to different Data Terminal Equipment (DTE) ports. The device supports both digital switching for the DCE-DTE interface and also the switching of the analog interface between the DCE and the communication facility (transmission medium).

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'3504'	TIME DIVISION MULTIPLEXER: A device that combines digital data streams from different tributary channels into one data stream on a common channel; a separate periodic time interval is allocated to each tributary channel in the common channel. It also performs the reverse process of demultiplexing the composite data stream from the common channel into its constituent component data streams for the tributary channels
		X'3505'	STATISTICAL MULTIPLEXER: A device that combines digital data streams from different tributary channels into one data stream for the common channel; it takes advantage of the bursty nature of information on the tributary channels to interleave information from these channels onto the common channel. It also performs the reverse process of demultiplexing the composite data stream into its constituent component data streams
		X'3506'	LOCAL DIGITAL DATA DEVICE: The digital data device (DDD) connected to the Alert sender
		X'3507'	REMOTE DIGITAL DATA DEVICE: The digital data device (DDD) remote from the Alert sender
		X'3508'	LOCAL AUTO-CALL UNIT
		X'3509'	SERIAL NODE
		X'350A'	NETWORK COMPONENT
		X'350B'	SERIAL LINK SWITCH
		X'350C'	ACTIVE REMOTE CONNECTOR
		X'3510'	CALLED DCE *Note:* See also code point X'3542' REMOTE DCE. X'3510' is used when reporting a problem encountered during an attempt to establish a switched connection. X'3542' is used when the problem is not related to the establishment of a switched connection.
		X'351F'	DS1 NETWORK COMPONENT
		X'352F'	ISDN TE-NT CONNECTION
		X'3530'	ISDN NETWORK COMPONENT
		X'3531'	ISDN NETWORK TERMINATION EQUIPMENT (NT1): A device, normally residing on the user's premises, that provides conversion, for basic-rate ISDN service, between the 4-wire interface seen by the user and the 2-wire interface seen by the ISDN service provider
		X'3532'	LOCAL ISDN TERMINAL ADAPTER: The terminal adapter local to the Alert sender *Note:* See also code point X'3310' LOCAL ISDN ADAPTER. A terminal adapter is distinguished from an ISDN adapter by the presence of a defined interface (e.g., RS-232C) between itself and the node that it serves; an ISDN adapter is typically integrated within its node.
		X'3533'	REMOTE ISDN TERMINAL ADAPTER: The terminal adapter that attaches to an ISDN network a node with which the Alert sender has a logical connection utilizing the network *Note:* See also code point X'3311' REMOTE ISDN ADAPTER.

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Byte	Bit	Content		
			X'3534'	LOCAL DSU/CSU: The DSU/CSU local to the error notification sender *Note:* DSU/CSU is a signal converter which implements the function of a Data Service Unit (DSU) and Channel Service Unit (CSU) to provide the DTE interface and the line interface, respectively, with a Digital Data Service (DDS). *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with a Failure Cause.
			X'3535'	REMOTE DSU/CSU: The DSU/CSU remote from the error notification sender. *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with a Failure Cause.
			X'3536'	LOCAL AND REMOTE DSU/CSU'S *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with a Failure Cause.
			X'3537'	LOCAL CNM ADAPTER: The Communications Network Management (CNM) adapter local to the Alert sender.
			X'3538'	REMOTE CNM ADAPTER: The Communications Network Management (CNM) adapter remote from the Alert sender.
			X'3541'	LOCAL DCE: The Data Circuit-Terminating Equipment (DCE) connected to the Alert sender *Note:* This code point is used only if the Alert sender is unable to determine whether the DCE is a modem or a DDD; see code points X'3506' and X'3601'.
			X'3542'	REMOTE DCE: The Data Circuit-Terminating Equipment (DCE) remote from the Alert sender *Note:* This code point is used only if the Alert sender is unable to determine whether the DCE is a modem or a DDD; see code points X'3507' and X'3603'. See also code point X'3510' CALLED DCE.
			X'3543'	REMOTE VOICE SERVER: A remote partner providing support for voice traffic on a network connection.
			X'3544'	COMMUNICATION PORT
			X'3545'	COMMUNICATION PORT NOT ACCESSIBLE

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
		X'3600'	MODEM: A device or functional unit that modulates and demodulates signals transmitted over data communication facilities
		X'3601'	LOCAL MODEM: On a particular link segment, the modem nearer to the Alert sender *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with a Failure Cause.
		X'3602'	LOCAL LINK DIAGNOSTIC UNIT: A device that connects to both sides of a local modem and provides Link Problem Determination Aid (LPDA) data for digital and analog links with non-intelligent IBM or non-IBM modems
		X'3603'	REMOTE MODEM: On a particular link segment, the modem farther from the Alert sender *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with a Failure Cause.
		X'3604'	REMOTE LINK DIAGNOSTIC UNIT: A device that connects to both sides of a remote modem and provides Link Problem Determination Aid (LPDA) data for digital and analog links with non-intelligent IBM or non-IBM modems
		X'3605'	LOCAL AND REMOTE MODEMS *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with a Failure Cause.
		X'3611'	LOCAL LDM: The limited distance modem nearer to the Alert sender
		X'3613'	REMOTE LDM: The limited distance modem farther from the Alert sender
		X'3621'	LOCAL ENHANCED MODEM: The enhanced modem connected to the Alert sender *Note:* An enhanced modem is a modem that can provide functions other than modulation/demodulation, such as establishing switched connections and storing dial digits.
		X'3630'	WIRELESS TRANSCEIVER
		X'3700'	LAN COMPONENT: A component of a local area network. On a token-ring LAN, the LAN components include the adapters, bridges, access units, repeaters, repeater/amplifiers, and the LAN cable. On a CSMA/CD LAN, the LAN components include the adapters, bridges, cables, taps, splitters, amplifiers, and translator units. On a FDDI LAN, the LAN components include the adapters, bridges, concentrators, and the LAN (FDDI) cable. *Note:* This default code point is used to indicate that some unspecified LAN component is a probable cause. Individual LAN components are denoted by replacement code points under X'3700', with the exception of the LAN adapters, which fall under ADAPTER (X'3300'), and the CSMA/CD LAN cables, which fall under CABLE (X'3400').
		X'3701'	TOKEN-RING LAN COMPONENT
		X'3702'	TOKEN-RING LOBE: An adapter, the lobe cables connecting it to its access unit, and a portion of the access unit

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'3703'	TOKEN-RING FAULT DOMAIN: An adapter, its nearest active upstream neighbor, and the token-ring media between them; the token-ring media consists of the lobe cables, portions of one or more access units, and possibly a portion of the LAN cable
			X'3704'	TOKEN-RING DUPLICATE STATION ADDRESS
			X'3705'	TOKEN-RING REMOVE COMMAND RECEIVED: An adapter received a Remove Ring Station MAC frame
			X'3706'	OPTICAL FIBER CONVERTER: A device which converts electrical signals into optical signals and vice-versa
			X'3707'	TOKEN-RING LAN CABLES
			X'3708'	DOMAIN CONTROLLER
			X'3709'	LAN REMOVE COMMAND RECEIVED
			X'370A'	TOKEN-BUS LAN
			X'370B'	TOKEN-BUS DUPLICATE MAC ADDRESS: MAC sublayer fault indicated when the MAC sublayer has detected that there is another MAC entity on the network which has the same MAC address as the current value of the variable in this station.
			X'370C'	SIGNAL LOSS
			X'370D'	REQUEST PARAMETER FAILED
			X'370E'	RING FAILURE PURGE FAILED
			X'370F'	FUNCTION FAILURE LOBE TEST
			X'3710'	LOBE WIRE FAULT
			X'3711'	TOKEN-RING PHYSICAL LINE
			X'3714'	REMOTE TOKEN-RING LOBE: A lobe attaching a node other than the Alert sender to the token-ring
			X'3715'	TOKEN-RING STATION
			X'3716'	CHANGED MULTIPORT BRIDGE PORT STATUS: Status of the port on a multiport bridge has changed due to a network management application linking to the bridge or due to some problem at the bridge.
			X'371B'	WIRELESS DUPLICATE MAC ADDRESS: MAC sublayer fault indicated when the MAC sublayer has detected that there is another MAC entity on the network which has the same MAC address as the current value of the variable in this station.
			X'3721'	CSMA/CD LAN COMPONENT
			X'3724'	CSMA/CD DUPLICATE STATION ADDRESS
			X'3725'	CSMA/CD REMOVE COMMAND RECEIVED
			X'3730'	FDDI LAN COMPONENT
			X'3731'	REMOTE FDDI LAN COMPONENT: A FDDI LAN component in a node other than the Alert sender
			X'3732'	DUPLICATE FDDI ADDRESS
			X'3733'	FDDI FAULT DOMAIN: An adapter, its nearest active upstream neighbor, and the FDDI media between them.
			X'3734'	FDDI LAN PORT
			X'3736'	FDDI CONCENTRATOR
			X'3740'	LAN BRIDGE: A network component that interconnects, at the medium access sublayer (of the DLC layer, two token-rings, two busses, or a token-ring and a bus *Note:* The busses involved may use either the CSMA/CD protocol or the token bus protocol
			X'3750'	TOKEN-RING CAU ATTACHMENT MODULE: An interface to the wire lobes connecting workstations to a token-ring network.
			X'3751'	TOKEN-RING ACCESS UNIT
		X'4000'	PERFORMANCE DEGRADED	
			X'4001'	STORAGE SUBSYSTEM OVERLOADED

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Byte	Bit	Content	
			X'4002' WORK STATION SUBSYSTEM OVERLOADED
			X'4003' COMMUNICATIONS SUBSYSTEM OVERLOADED
			X'4004' DEGRADED VOICE SERVER AVAILABILITY: A voice server adapter is operating in a degraded mode.
			X'4005' ERROR RATE THRESHOLD EXCEEDED: The error rate threshold for a process has been exceeded, indicating performance degradation.
			X'4006' CONGESTION EXPERIENCED ON CALL SETUP: A delay has been experienced in call request processing, due to congested facilities.
		X'5000'	MEDIA: A tape, disk, diskette, or paper (or other data medium) that is required to read data from or write data on
			X'5001' DASD MEDIA: The media used in a direct access storage device; it may be either removable or non-removable
			X'5002' DISKETTE: A thin, flexible magnetic disk in a semi-rigid protective jacket, in which the disk is permanently enclosed; also termed a floppy diskette
			X'5003' TAPE: A recording medium in the form of a ribbon that has one or more tracks along its length; magnetic recordings can be made on either one or both sides
			X'5004' OPTICAL DISK: A DASD medium on which data is encoded optically
			X'5005' ID RECORDING SURFACE: The recording media on an Identification Card Reader (ICR) card is defective, missing or the reading device has failed.
		X'6000'	DEVICE: An input, output, or input/output device (e.g., a terminal or disk drive) *Note:* An Alert sender may be unable to distinguish a directly-attached device from an attached protocol converter or media conversion unit by which devices are attached to it. Thus this code point covers these additional components as well.
			X'6001' SNA PASS-THROUGH DEVICE: A logical device that is used to establish an SNA pass-through session.
			X'6003' DEVICE NOT AVAILABLE
		X'6100'	INPUT DEVICE: A device that is used to enter data into a system
			X'6110' KEYBOARD: An arrangement of alphanumeric, special character and function keys laid out in a specified manner and used to enter information into a terminal, and thereby into a system
			X'6111' KEYPAD: A specialized keyboard with an arrangement of a limited number of alphanumeric, special character and/or function keys
			X'6112' SELECTOR PEN: A light sensitive pen used in display operations
			X'6113' MICR READER/SORTER: A magnetic ink character recognition reader/sorter
			X'6114' MAGNETIC STRIPE READER: A device that reads data from, and in some cases writes data to, a card containing a magnetic stripe
			X'6115' ID CARD READER: An Identification Card Reader (ICR) is a device which can read data from or write data to a magnetic stripe or an electronic chip on a consumer's identification card.
			X'6116' OPTICAL DOCUMENT READER
		X'6200'	OUTPUT DEVICE: A device that receives data from a system

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'6210'	PRINTER: An output device that produces durable and optically viewable output in the form of characters (and optionally graphics) by a means other than by drawing with one or more pens *Note:* Contrast with code point X'6213' PLOTTER.
			X'6211'	COPIER: An output device that produces one or more copies of an original without affecting the original
			X'6212'	CAMERA: An output device that combines electronic data with a visual image on a single visual medium
			X'6213'	PLOTTER: An output device that produces graphic and/or character output by means of one or more pens that draw on the surface of the output medium *Note:* Contrast with code point X'6210' PRINTER.
			X'6220'	PRINTER CASSETTE: A removable container for inputting paper to a printer
		X'6300'	INPUT/OUTPUT DEVICE: A device whose parts can be performing an input process and output process at the same time, such as a card reader/punch	
			X'6301'	DISPLAY/PRINTER: A device that has either of the characteristics of a display or printer or both. This code point is used only when the Alert sender cannot determine whether the attached device is a display or printer
			X'6302'	DISPLAY: A workstation that requires a host connection in order to function; typically a display includes both a monitor and a keyboard
			X'6310'	DASD DEVICE: A device in which the access time is effectively independent of the location of the data. The device may use either removable or non-removable media
			X'6311'	DISKETTE DEVICE: A direct access storage device that uses a diskette as the storage medium
			X'6312'	OPTICAL DISK DEVICE: A direct access storage device that uses an optical disk as the storage medium. The disk may be either removable or non-removable
			X'6313'	TERMINAL: A device in a system or network at which data can either enter or leave. A terminal is usually equipped with a keyboard and a display device, and is capable of sending and receiving information
			X'6314'	TAPE DRIVE: An input/output device used for moving magnetic tape and controlling its movement
			X'6315'	CONSOLE: A terminal used for communication between an operator and a processor
			X'6316'	TOUCH-SENSITIVE SCREEN
			X'6318'	ENCRYPTION DEVICE
			X'6319'	MEDIA LIBRARY DEVICE: A library device (tape library) is being added and an actual device failure has occurred.
			X'631A'	LIBRARY MANAGER HARDWARE: A library device (tape library) is being added and a failure in the library manager hardware has occurred.
			X'631B'	LIBRARY VISION SYSTEM: A library device (tape library) is being added and a failure in the library vision system has occurred.
			X'6330'	DISK DRIVE ELECTRONICS: The electronic components of a DASD device
		X'6400'	DEPOSITORY: A device that receives items into a system	

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content	
			X'6401' ENVELOPE DEPOSITORY: A device that receives into a system items sealed in an envelope. The envelope is not opened, nor are its contents examined by the system; the envelope is stored for human action
			X'6402' CHECK DEPOSITORY: A device that receives checks into a system, then reads and retains them. It may also transfer information to a check and return the check to a user
			X'6403' CARD DEPOSITORY: A device that retains credit, personal banking, or other cards used to access a personal banking machine (PBM)
			X'6404' DOCUMENT DEPOSITORY
		X'6500'	DISPENSER: A device that dispenses items to a user of a system
			X'6501' DOCUMENT DISPENSER: A device that dispenses documents, primarily bills
			X'6502' TICKET DISPENSER
			X'6503' KEY DISPENSER
			X'6504' COIN DISPENSER
			X'6505' ENVELOPE DISPENSER
		X'6600'	SELF-SERVICE TERMINAL: A device that allows a customer of a business to perform a transaction that would otherwise require assistance by personnel of the business
			X'6601' PERSONAL BANKING MACHINE: A self-service terminal for financial transactions
			X'6630' TELLER ASSIST UNIT: A terminal that assists a financial teller in transactions *Note:* This device does not fit the strict definition of a self-service terminal, since it is used by personnel of a financial institution; it is included in this range because it is very close in function to other self-service terminals.
		X'6700'	SECURITY PROBLEM
			X'6701' AUDIBLE ALARM: A device which emits an audible sound.
			X'6702' PROTECTIVE DOOR: An electronically or mechanically operated covering for access to a device.
			X'6703' SECURITY PROCEDURE
			X'6704' BINDERY FILES CLOSED: A bindery is a database on which a file server's login security mechanisms are built.
			X'6705' PARTNER NOT AUTHENTICATED: Authentication attempt has failed because the node was unable to authenticate its partner.
		X'7000'	PERSONNEL: Action on the part of customer, service, or other personnel
			X'7001' LOCAL SYSTEM OPERATOR: A person (or program) co-located with a system and responsible for the operation of all or part of it, or responsible for performing system orientated procedures
			X'7002' REMOTE SYSTEM OPERATOR: A person (or program) not co-located with a system and responsible for the operation of all or part of it, or responsible for performing system orientated procedures
			X'7003' NETWORK OPERATOR: A person (or program) responsible for the operation of all or part of the network, or responsible for performing network orientated procedures
			X'7004' USER: Anyone who requires the services of a computer system, such as an “end user”
			X'7005' SYSTEM PROGRAMMER

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'7006'	CUSTOMER PERSONNEL
			X'7007'	SERVICE REPRESENTATIVE
			X'7008'	RESOURCE ADMINISTRATOR
			X'7010'	PRINTER OPERATOR
			X'7011'	TERMINAL CONTROL UNIT OPERATOR
			X'7012'	LAN BRIDGE OPERATOR
			X'7013'	LAN MANAGER OPERATOR
			X'7014'	LAN TRACE TOOL OPERATOR: A person (or program) responsible for the operation of a tool that allows a LAN user to monitor the traffic on the LAN.
			X'7030'	FILE SERVER USER
			X'7031'	LOGGED IN USERS
		X'8000'	CONFIGURATION	
			X'8001'	STORAGE CONFIGURATION
			X'8002'	WORK STATION CONFIGURATION
			X'8003'	COMMUNICATION CONFIGURATION
			X'8004'	CUSTOMIZATION IMAGE: The set of rules which helps direct the operation of a device is suspected of causing the Alert condition.
			X'8005'	SERVER CONFIGURATION
			X'8006'	LAN CONFIGURATION TABLE
			X'8007'	LAN BRIDGE TABLE
			X'8008'	CONFIGURATION OBJECT NOT IN VALID STATE
			X'8009'	INCORRECT NAME SPECIFIED
			X'800A'	OUT OF RESOURCES
			X'800B'	CRITICAL RESOURCE REDEFINED
			X'800C'	DOMAIN NAME CHANGED
			X'800D'	COMMUNICATION LINK TYPE CHANGED
			X'800E'	BRIDGE UNLINKED
			X'800F'	CONFIGURATION DATABASE: A data base containing information used for the configuration of one or more components.
			X'8010'	FILE DIRECTORY STRUCTURE
			X'8011'	DISK PARTITION TOO SMALL
			X'8020'	FILE SERVER ACCOUNT SYSTEM FILE
			X'8021'	DOMAIN CONTROLLER ACCOUNT SYSTEM FILE
			X'8030'	SNA PASS-THROUGH GROUP DOES NOT EXIST
			X'8031'	SNA PASS-THROUGH CONFIGURATION MISMATCH
			X'8040'	WIRELESS NETWORK CONFIGURATION
			X'8050'	INCONSISTENT BRIDGE CONFIGURATION DATA: User-entered data does not match the configuration data held by the LAN Manager.
			X'8060'	ORIGIN CONFIGURATION: The configuration definition for a connection at the connection origin is either non-existent or contains an error.
			X'8061'	DESTINATION CONFIGURATION: The configuration definition for a connection at the connection destination is either non-existent or contains an error.
			X'8062'	TARGET RESOURCE ID: The target of a connection is either non-existent or contains an error.
			X'8063'	SOURCE RESOURCE ID: The source of a connection is either non-existent or contains an error.
			X'8064'	LOCAL TRAFFIC ID NOT IN RANGE: The identifier for the local traffic source or sink, channel or subchannel, configured at a processor or subsystem, at the connection origin or at the connection destination, is not within the configured range for the resource.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'8065'	DESTINATION LOCAL TRAFFIC ID: The identifier for the local traffic source or sink, channel or subchannel, at the connection destination, is in error.
			X'8066'	ORIGIN LOCAL TRAFFIC ID: The identifier for the local traffic source or sink, channel or subchannel, at the connection origin, is in error.
			X'8067'	LOCAL TRAFFIC ID NOT PROVIDED: The identifier for the local traffic source or sink, channel or subchannel, configured at a processor or subsystem, at the connection origin or at the connection destination, has not been provided.
			X'8068'	QUALITY OF SERVICE RECORD NOT PROVIDED: No quality of service for the connection has been provided.
			X'8069'	ORIGIN TO DESTINATION PARAMETERS: The configuration, bandwidth, quality of service or path for the connection path from the origin to the destination is in error.
			X'806A'	DESTINATION TO ORIGIN PARAMETERS: The configuration, bandwidth, quality of service or path for the connection path from the destination to the origin is in error.
			X'806B'	QUALITY OF SERVICE VALUE INAPPROPRIATE: The quality of service specified for the connection is inappropriate for the connection traffic type.
			X'806C'	TRAFFIC TYPE MISMATCH: A conflict in the traffic type exists between the connection origin and connection destination.
			X'806D'	BANDWIDTH CHANGE NOT ALLOWED: The dynamic adjustment of bandwidth was not requested as a connection feature and is not allowed.
			X'806E'	PATH CHANGE NOT ALLOWED: The dynamic path reconfiguration or non-disruptive path switch (NDPS) was not requested as a connection feature and is not allowed.
			X'806F'	INVALID OR UNRECOGNIZED NUMBERING PLAN: The source and target information format identified by the numbering plan is invalid or the numbering plan is not recognized.
			X'8070'	BANDWIDTH NOT SPECIFIED OR INCORRECT: A bandwidth value component is missing or inappropriate for configuration of a connection.
			X'8071'	INVALID QUALITY OF SERVICE: A connection startup has failed due to an error in the quality of service specified by either the destination or origin port.
			X'8072'	RESOURCE ALREADY IN USE: A connection startup has failed because a resource is already in use.
			X'8073'	DLCI NOT CONFIGURED: The configuration of the Data Link Control Identifier (DLCI) used in frame relay communications has not occurred.
			X'8074'	VPC NOT CONFIGURED: The configuration of the Virtual Path Connection (VPC) used in Asynchronous Transfer Mode communications has not occurred.
			X'8075'	VCC NOT CONFIGURED: The configuration of the Virtual Channel Connection (VCC) used in Asynchronous Transfer Mode communications has not occurred.
			X'8076'	SET UP INFORMATION NOT PROVIDED: The information necessary to set up a connection has not been provided.
			X'8077'	REQUIRED MAXIMUM PACKET SIZE INVALID: The required maximum packet size requested is less than the defined minimum maximum packet size.
			X'8078'	CONFIGURATION PARAMETER MISMATCH: The configuration parameters on one side of a connection do not match those on the other side of that connection.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content		
			X'8079'	DUPLICATE NODE IDENTIFIERS: The node identifiers of two nodes are the same.
			X'807A'	INVALID NETWORK IDENTIFIER: The network identifier of two adjacent nodes are not the same and neither of the nodes is a border node.
			X'807B'	DUPLICATE ROOTS DETECTED: Two duplicate roots have been detected on the spanning tree.
			X'807C'	RESOURCE ADMINISTRATIVELY LOCKED: A resource has been administratively locked and is restricted from performing normal function.
			X'807D'	DUPLICATE CONNECTION NAME: Two connections have been given the same name.
			X'807E'	TRAFFIC TYPE: Name or indicator of the type of traffic or protocol communicated is missing or incorrect.
			X'807F'	NUMBERING TYPE NOT SUPPORTED BY NETWORK
			X'8080'	ADDRESS REGISTRATION: An address registration error has occurred.
			X'8081'	MAXIMUM VPI BITS EXCEEDED: The Virtual Path Identifier (VPI) bits defined for the Virtual Path Connection (VPC) have exceeded the configured maximum and the connection setup has failed.
			X'8082'	MAXIMUM VCI BITS EXCEEDED: The Virtual Channel Identifier (VCI) bits defined for the Virtual Channel Connection (VCC) have exceeded the configured maximum and the connection setup has failed.
			X'8083'	MAXIMUM VPCS EXCEEDED: The Virtual Path Connections (VPCs) have exceeded the configured maximum and the connection cannot be started.
			X'8084'	MAXIMUM VCCS EXCEEDED: The Virtual Channel Connections (VCCs) have exceeded the configured maximum and the connection cannot be started.
			X'8085'	VPC IN USE: A connection start-up has failed because the Virtual Path Identifier (VPI) is already in use.
			X'8086'	VCC IN USE: A connection start-up has failed because the Virtual Channel Identifier (VCI) is already in use.
			X'8087'	DEVICE OR COMPONENT IN TEST MODE: A device or component has been placed in a test mode and is not available to perform its normal function.
			X'8088'	DATABASE INFORMATION MISMATCH: A communication and management configuration database has detected an information mismatch between its information and that from a configured component.
			X'8089'	NETWORK INTERFACE DEVICE CONFIGURATION: The network interface device (NID) configuration is incorrect.
			X'808A'	DEFAULT PARAMETERS ARE INCORRECT: A system or subsystem has been automatically configured with default parameters in an environment where they are not correct.
			X'808B'	OUT OF B-CHANNEL RESOURCES: There are not enough B-Channels currently available to process a connection request.
		X'8100'	SOFTWARE LICENSE MANAGEMENT	
			X'8102'	LICENSE USAGE THRESHOLD EXCEEDED: A customer-set limit has been reached or exceeded. Used as a warning that a contracted limit is about to be reached.
			X'8103'	LICENSE USAGE LIMIT REACHED: Warning of a pending loss of product caused by reaching a contracted limit.

Probable Causes (X'93') Alert MS Subvector

Byte	Bit	Content
		X'8104' LICENSE USAGE LIMIT EXCEEDED: A loss-of-product error if the contracted limit was a "hard" limit. A warning that the software provider has been notified if the contracted limit was "soft".
		X'8105' LICENSE USAGE LIMIT MAY VIOLATE CONTRACT: Pending loss of software product resource caused by increase to number of users. New limit may exceed contracted limit.
		X'9000' MONITORED EVENT: An event has been reported for a monitored situation but a specific probable cause is not identified. *Note:* The specific situation causing this Alert is identified in the detailed data subfield of a User, Install or Failure Causes subvector.
		X'E000'–X'EFFF' Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range.
		X'FE00' UNDETERMINED: No probable cause can be determined for this Alert condition
		X'FE01' UNEXPECTED ERROR
		X'FE03' REVIEW EVENT DETAIL FOR PROBABLE CAUSE *Note:* Instead of displaying this text, an Alert receiver may optionally locate the indicated text and display it as the Probable Cause. The text is included by the Alert sender in a Self-Defining Text Message (X'31') subvector with the value X'22' (Alert Probable Cause) in its Sender ID (X'21') subfield.
		X'FFFF' Reserved

User Causes (X'94') Alert MS Subvector

This subvector transports code points for stored text detailing the probable user causes for the Alert condition and the recommended actions to be taken in connection with these causes. It may also transport additional detailed data, to be inserted into the text indexed by the user cause and/or recommended action code points.

User Causes (X'94') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the User Causes subvector
1		Key: X'94'
2–p		Two or more subfields containing user cause data, as described below for keys X'00'–X'7F' and in “Network Alert (X'0000') Common Subfields” on page 4-153 for keys X'80'–X'FE'. X'01' User Causes X'81' Recommended Actions X'82' Detailed Data X'83' Product Set ID Index

User Causes (X'94') Alert MS Subvector

Byte	Bit	Content
		X'84' Resource List Index X'85' Detailed Data Extended *Note:* Subfields X'01' and X'81' are always present and the X'01' always precedes the X'81'. Depending on the code points present in the X'01' and X'81' subfields: • The X'83' and X'84' subfields may be present one or more times. • Either the X'82' or the X'85' subfield may be present one or more times. The X'82' and X'85' subfields are mutually exclusive within a subvector.

User Causes (X'01') User Causes Subfield

This subfield contains one or more code points denoting probable user causes of the Alert condition, listed in order of decreasing probability. A user cause is defined to be a condition that an operator can resolve without contacting any service organization.

User Causes (X'01') User Causes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the User Causes subfield
1		Key: X'01'
2–q		Two-byte user cause code points. Each code point provides an index to predefined text, describing the user cause, that is displayed at the focal point. An Alert receiver has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are listed below. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). The expression “(detailed data qualifier)” in the English text indicates a variable-length gap, to be filled in with data passed in a Detailed Data (X'82') subfield or a Detailed Data Extended (X'85') subfield. The one or more necessary X'82' or X'85' subfields follow this subfield in the X'94' subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield. **Note:** The X'82' and X'85' subfields *cannot* both be used in the same subvector. The expression “(sf83 product text)” in the English text similarly indicates a variable-length gap, to be filled in with product identification data from the Product Identifier X'11' subvector indicated by a Product Set ID Index (X'83') subfield. The necessary X'83' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.

User Causes (X'01') User Causes Subfield

Byte	Bit	Content

The expression “(sf84 resource text)” in the English text indicates a variable-length gap, to be filled in with resource identification data from a location indicated by a Resource List Index (X'84') subfield. The necessary X'84' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.

The third digit of each user cause code point indicates the number of succeeding detailed data qualifiers that are associated with the code point, and whether a X'83' or X'84' subfield is associated with it, as follows:

X'xx0x'–X'xx9x':	No detailed data qualifiers.
X'xxAx'–X'xxBx':	One detailed data qualifier.
X'xxCx':	Two detailed data qualifiers.
X'xxDx':	Three detailed data qualifiers.
X'xxEx':	One X'83' subfield.
X'xxFx':	One X'84' subfield.

Defined user cause codes are:

X'0100' STORAGE CAPACITY EXCEEDED: A request has been received requiring more storage than is currently available

- X'0102' INSUFFICIENT STORAGE MEDIA SPACE
- X'0106' INSUFFICIENT MEMORY
- X'0111' THE PORTION OF MAIN STORAGE MADE AVAILABLE BY THE USER FOR A PARTICULAR OPERATION HAS BEEN EXHAUSTED
- X'0112' A USER-SPECIFIED THRESHOLD, INDICATING THAT AVAILABLE AUXILIARY STORAGE IS NEARLY FULL, HAS BEEN REACHED
- X'01A0' DYNAMIC ALLOCATION OF A CONTROL BLOCK FAILED: TOO CLOSE TO (detailed data qualifier)
  Note: The qualifier identifies the THRESHOLD PARAMETER causing the failure.

X'0200' POWER OFF: The equipment is powered off and will require operator action to power on and prepare equipment for use

- X'0201' LOCAL DCE POWER OFF
- X'0202' REMOTE DCE POWER OFF
- X'0203' LOCAL DIGITAL DATA DEVICE POWER OFF
- X'0204' REMOTE DIGITAL DATA DEVICE POWER OFF
- X'0205' LOCAL MODEM POWER OFF
- X'0206' REMOTE MODEM POWER OFF
- X'0207' LOCAL LINK DIAGNOSTIC UNIT POWER OFF
- X'0208' REMOTE LINK DIAGNOSTIC UNIT POWER OFF
- X'0209' REMOTE DEVICE POWER OFF
- X'020A' LOCAL TERMINAL ADAPTER (TA) POWER OFF
- X'020B' REMOTE TERMINAL ADAPTER (TA) POWER OFF
- X'020C' LOCAL CONTROLLER POWER OFF
- X'020D' REMOTE CONTROLLER POWER OFF
- X'020E' PRINTER POWER OFF
- X'020F' COMMUNICATION EQUIPMENT POWER OFF
- X'0210' CALLING DCE POWER OFF
- X'0211' CALLED DCE POWER OFF
- X'0212' CALLED DTE POWER OFF
- X'0213' MODEM POWER OFF

User Causes (X'01') User Causes Subfield

Byte	Bit	Content		
			X'0214'	TERMINAL MULTIPLEXER POWER OFF
			X'0215'	LOCAL NT1 POWER OFF
			X'0216'	SERVICE PROCESSOR POWER OFF
			X'0220'	DEVICE POWER OFF
			X'0221'	CONSOLE POWER OFF
			X'0222'	LAN MANAGER POWER OFF
			X'0223'	REMOTE NODE POWER OFF
			X'0224'	LOCAL DSU/CSU POWER OFF
			X'0225'	REMOTE DSU/CSU POWER OFF
			X'0226'	OPTICAL FIBER CONVERTER POWER OFF: A device which converts electrical signals into optical signals and vice-versa.
			X'0227'	SERVER HAS BEEN POWERED OFF LOCALLY, WITH THE SWITCH ON THE FRONT PANEL
			X'02A1'	(detailed data qualifier) LOCAL MODEM POWER OFF *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
			X'02A2'	(detailed data qualifier) REMOTE MODEM POWER OFF *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.
			X'02A3'	(detailed data qualifier) LOCAL DSU/CSU POWER OFF *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
			X'02A4'	(detailed data qualifier) REMOTE DSU/CSU POWER OFF *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
			X'02C0'	(detailed data qualifier) LOCAL (detailed data qualifier) POWER OFF *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
			X'02C1'	(detailed data qualifier) REMOTE (detailed data qualifier) POWER OFF *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
		X'2200'	REMOTE NODE: The node at the remote end of a link connection *Note:* "Remote" is defined from the point of view of the node detecting the Alert condition.	
			X'2201'	CALLED DTE TAKEN OUT OF SERVICE
			X'2210'	REMOTE NODE CONTROL PROGRAM IPL HAS OCCURRED
		X'2300'	CONNECTION NOT ESTABLISHED: A telephone connection required for the requested operation has not been established	
			X'2301'	CALLED NUMBER BUSY
			X'2302'	INCORRECT NETWORK SERVICE ACCESS POINT CALLED
			X'2303'	ACCESS TO CALLED NETWORK SERVICE ACCESS POINT NOT ACTIVATED
			X'2304'	INCORRECT TELEPHONE NUMBER SPECIFIED
			X'2305'	INCORRECT CALL USER DATA
			X'2306'	NEW TELEPHONE NUMBER ASSIGNED TO CALLED DTE
			X'2307'	INCORRECT PARAMETER SPECIFIED
			X'2308'	CALLING DTE DOES NOT SUBSCRIBE TO THIS FACILITY: The calling DTE has requested a service that it does not subscribe to.
			X'230A'	USER CLASSES OF SERVICE INCOMPATIBLE
			X'230D'	SERVICE OR SUBSCRIPTION PARAMETER ERROR

User Causes (X'01') User Causes Subfield

Byte	Bit	Content	
		X'2310'	X.21 CONNECTION INTENTIONALLY CLEARED BY TERMINAL CONTROL UNIT OPERATOR
		X'2313'	INCOMPLETE OR MALFORMED CALL SETUP MESSAGE
		X'2315'	FACILITY PARAMETER INVALID OR NOT SUPPORTED
		X'2316'	LOGICAL PATH NOT ESTABLISHED
		X'23A0'	CONNECTION NOT ESTABLISHED — (detailed data qualifier) *Note:* The qualifier indicates the telephone number for the connection that could not be established.
		X'23A1'	INCORRECT TELEPHONE NUMBER — (detailed data qualifier) *Note:* The qualifier indicates the telephone number called
		X'23A2'	INCORRECT MEMORY ADDRESS — (detailed data qualifier) *Note:* The qualifier indicates the memory address at which a telephone number is stored in a modem.
		X'23A3'	INVALID MODEM COMMAND — (detailed data qualifier) *Note:* The qualifier indicates the modem command that is invalid.
		X'23A4'	CALLED NUMBER BUSY — (detailed data qualifier) *Note:* The qualifier indicates the telephone number called.
		X'23A5'	CONNECTION NOT ESTABLISHED FOR (detailed data qualifier) *Note:* The qualifier indicates the type of call.
		X'23A6'	SERVICE CALL CANNOT COMPLETE FOR (detailed data qualifier) *Note:* The qualifier indicates the type of service call.

User Causes (X'01') User Causes Subfield

Byte	Bit	Content	
		X'2400'	BUSY: A requested resource was unavailable because it was in use
		X'2401'	THE MAXIMUM NUMBER OF WORKSTATIONS SUPPORTABLE BY THE LOCAL WORKSTATION CONTROLLER HAS BEEN EXCEEDED
		X'2402'	THE MAXIMUM NUMBER OF USERS SUPPORTABLE BY THE SERVER HAS BEEN EXCEEDED
		X'2403'	MAXIMUM NUMBER OF LINES ALLOWED ALREADY IN USE
		X'2410'	ASSOCIATED SNA PASS-THROUGH DEVICE ALREADY IN SESSION WITH ANOTHER DEVICE
		X'2500'	LINE NOT ENABLED: A communication link has not been prepared for data transmission
		X'2501'	PORT DEACTIVATED
		X'2502'	LINK NOT ENABLED
		X'2510'	LINE NOT ENABLED AT CALLED DTE
		X'2511'	PORT DEACTIVATED AT CALLED DTE
		X'2520'	LINE NOT VARIED ON
		X'3300'	ADAPTER NOT READY: An adapter has not been made ready for use
		X'3380'	AN OPERATOR HAS DEACTIVATED ALL PORTS IN A ROTARY GROUP
		X'3381'	AN OPERATOR HAS DEACTIVATED ALL PORTS IN A ROTARY GROUP USED BY AN X.21 SHORT HOLD MODE SESSION
		X'33A1'	ADAPTER (detailed data qualifier) AWAITING DOWNLOAD *Note:* The qualifier indicates either the adapter card number, the card name, or the card location.
		X'3400'	CABLE NOT CONNECTED: A cable is either loose or disconnected
		X'3401'	CABLING INSTALLED INCORRECTLY
		X'3402'	KEYBOARD UNPLUGGED
		X'3403'	LINE SWITCHED TO INCORRECT POSITION
		X'3451'	DEVICE CABLE NOT CONNECTED
		X'34A0'	CABLE NOT CONNECTED: (detailed data qualifier) *Note:* The qualifier specifies the disconnected cable, by, for example, specifying the number of the port to which it should be attached.
		X'34A1'	CABLE NOT INSTALLED: (detailed data qualifier) *Note:* The qualifier specifies the cable that was not installed.
		X'34A2'	CABLE UNPLUGGED: (detailed data qualifier) *Note:* The qualifier specifies the cable that is unplugged.
		X'3800'	LPDA DCE: A DCE that supports link problem determination aid functions, e.g., IBM LPDA-2 modem and IBM LPDA-2 DSU/CSU.
		X'3801'	SNBU HAS BEEN DISCONNECTED
		X'3802'	TC LEAD ACTIVE ON REMOTE NODE INTERFACE
		X'3803'	TC LEAD ACTIVE ON OTHER REMOTE NODE INTERFACE
		X'3804'	REMOTE DSU/CSU IN TEST MODE
		X'38A1'	SPEED MISMATCH BETWEEN MODEMS ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the modems belong.
		X'38A2'	SPEED MISMATCH BETWEEN DSU/CSU'S ON (detailed data qualifier) *Note:* The qualifier identifies the the link segment level (LSL) on which the DSU/CSUs belong.

User Causes (X'01') User Causes Subfield

Byte	Bit	Content	
		X'38A3'	(detailed data qualifier) LOCAL MODEM IN TEST MODE *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'38A4'	(detailed data qualifier) LOCAL DSU/CSU IN TEST MODE *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
		X'38A5'	(detailed data qualifier) REMOTE MODEM IN TEST MODE *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.
		X'38A6'	(detailed data qualifier) REMOTE DSU/CSU IN TEST MODE *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
		X'38A7'	(detailed data qualifier) LOCAL MODEM REINITIALIZED *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'38A8'	(detailed data qualifier) LOCAL DSU/CSU REINITIALIZED *Note:* The qualifier identifies the link segment level (LSL) on which the local DSI/CSU belongs.
		X'38A9'	(detailed data qualifier) LOCAL DSU/CSU DETECTED DDS LOOPBACK ACTIVE IN THE LAST 2 MINUTES *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
		X'38AA'	(detailed data qualifier) REMOTE DSU/CSU DETECTED DDS LOOPBACK ACTIVE IN THE LAST 2 MINUTES *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
		X'38AB'	(detailed data qualifier) LOCAL MODEM POWER OFF THEN ON *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'38AC'	(detailed data qualifier) REMOTE MODEM POWER OFF THEN ON *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.
		X'38AD'	(detailed data qualifier) LOCAL DSU/CSU POWER OFF THEN ON *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
		X'38AE'	(detailed data qualifier) REMOTE DSU/CSU POWER OFF THEN ON *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
		X'38AF'	(detailed data qualifier) REMOTE DSU/CSU IN CONFIGURATION MODE *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
		X'38B0'	(detailed data qualifier) LOCAL DSU/CSU IN CONFIGURATION MODE *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
		X'38B1'	(detailed data qualifier) LOCAL DSU/CSU IN LOOPBACK MODE *Note:* The qualifier provides additional information about the DSU/CSU, for example its serial number or the link segment level on which it belongs.
		X'38C0'	(detailed data qualifier) LOCAL (detailed data qualifier) IN TEST MODE *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).

User Causes (X'01') User Causes Subfield

Byte	Bit	Content		
			X'38C1'	(detailed data qualifier) REMOTE (detailed data qualifier) IN TEST MODE *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
			X'38C2'	(detailed data qualifier) LOCAL (detailed data qualifier) DETECTED NETWORK LOOPBACK TEST *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the Data Circuit-Terminating Equipment (DCE).
			X'38C3'	(detailed data qualifier) REMOTE (detailed data qualifier) DETECTED NETWORK LOOPBACK TEST *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the Data Circuit-Terminating Equipment (DCE).
			X'38C4'	(detailed data qualifier) LOCAL (detailed data qualifier) POWERED OFF THEN ON *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
			X'38C5'	(detailed data qualifier) REMOTE (detailed data qualifier) POWERED OFF THEN ON *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
			X'38C6'	(detailed data qualifier) REMOTE (detailed data qualifier) IN CONFIGURATION MODE *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
		X'4000'	PERFORMANCE DEGRADED	
			X'4001'	STORAGE SUBSYSTEM OVERLOADED: The number of attached devices is not sufficient to handle the current work load without performance degradation.
			X'4002'	WORK STATION SUBSYSTEM OVERLOADED: The combination of work stations attached and/or the current applications are causing an excessive work load resulting in performance degradation.
			X'4003'	COMMUNICATION SUBSYSTEM OVERLOADED: The number of lines, maximum aggregate data rate, or number of attached devices is in excess of that which can be handled without performance degradation.
		X'5100'	MEDIA DEFECTIVE: The medium (tape, disk, diskette, paper, e.g.) is defective and must be replaced or corrected to continue processing	
			X'5101'	IMPROPER DISKETTE INSERTED: There is a usable diskette in the diskette drive, but it is not the required one
			X'5102'	NO DISKETTE OR DEFECTIVE DISKETTE INSERTED: There is no diskette in the diskette drive, or the diskette in the drive is unusable
			X'5110'	NON-DUPLEX PAPER IN CASSETTE
			X'5111'	ID CARD RECORDING SURFACE: The recording media on an Identification Card Reader (ICR) card is defective, missing or the reading device has failed.

User Causes (X'01') User Causes Subfield

Byte	Bit	Content
		X'5200' MEDIA JAM: The medium (usually paper, forms, or cards) is jammed in the machine and operator action is required to correct the problem
		X'5201' CARD JAM
		X'5202' FORMS JAM
		X'5203' PAPER JAM
		X'5204' FILM JAM: There is a jam condition in the media for a camera device.
		X'5300' MEDIA SUPPLY EXHAUSTED: The medium (usually paper, forms, or cards) supply has been consumed and operator action is required to replenish the supply and continue operation
		X'5301' OUT OF CARDS
		X'5302' OUT OF FORMS
		X'5303' OUT OF PAPER
		X'5304' OUT OF FILM: The media for a camera device has been exhausted.
		X'5305' OUT OF BILLS OR DOCUMENTS: The media for a document feeding device has been exhausted.
		X'5306' OUT OF ENVELOPES
		X'5313' CASSETTE OUT OF PAPER
		X'5400' OUT OF SUPPLIES: A device is out of supplies required for it to perform its function
		X'5401' END OF RIBBON ENCOUNTERED: A printer has encountered the end of the print ribbon
		X'5402' OUT OF INK
		X'5403' OUT OF TONER
		X'5404' OUT OF FUSER OIL
		X'5405' OUT OF STAPLES
		X'5500' MEDIA SUPPLY LOW: The medium (usually paper, forms, or cards) supply is low and operator action is required to replenish the supply and continue operation
		X'5501' LOW ON CARDS
		X'5502' LOW ON FORMS
		X'5503' LOW ON PAPER
		X'5504' LOW ON FILM: The media for a camera device is nearly exhausted.
		X'5505' LOW ON BILLS OR DOCUMENTS: The media for a document feeding device is nearly exhausted.
		X'5506' LOW ON ENVELOPES
		X'5600' LOW ON SUPPLIES: A device is low on supplies required for it to perform its function
		X'5602' LOW ON INK
		X'5603' LOW ON TONER
		X'5604' LOW ON FUSER OIL
		X'5605' LOW ON STAPLES
		X'6000' DEVICE NOT READY: A device has not been made ready for operation
		X'6001' DEVICE OFFLINE: The device requested has been varied offline by the operator and must be varied online for processing to continue
		X'6002' REMOTE DEVICE OFFLINE
		X'6010' DASD DEVICE NOT READY

User Causes (X'01') User Causes Subfield

Byte	Bit	Content		
			X'6011'	DISKETTE NOT READY
			X'6012'	TAPE NOT READY
			X'6013'	PRINTER NOT READY
			X'6014'	BIN COVER OPEN
			X'6015'	PRINTER DOOR OPEN
			X'6016'	OUTPUT HOPPER FULL
			X'6017'	TELEPHONE SET NOT IN DATA MODE
			X'6018'	REMOTE NODE OFFLINE
			X'6019'	REMOTE NODE REINITIALIZED
			X'601A'	DOMAIN CONTROLLER STOPPED OR POWERED OFF
			X'6020'	SERVICE DOOR OPEN: The door which provides access to the interior of the machine has been opened.
			X'6021'	MODEM NOT IN DATA MODE
			X'6022'	LOCAL MODEM POWERED OFF THEN ON
		X'6400'	DEPOSITORY: A device that receives items into a system.	
			X'6401'	DEPOSITORY NEARLY FULL: A cartridge or other container used to collect items such as checks, envelopes, or documents is approaching the limit of it's capacity.
			X'6402'	DEPOSITORY FULL: A cartridge or other container used to collect items such as checks, envelopes, or documents has reached it's capacity.

User Causes (X'01') User Causes Subfield

Byte	Bit	Content	
		X'7000'	OPERATOR: Operator action is required to return the machine to operational status
		X'7001'	NO CASSETTE IN PRINTER
		X'7002'	CARTRIDGE NOT INSTALLED CORRECTLY: A cartridge used to collect or dispense documents is not installed correctly.
		X'7003'	OUT OF FOCUS: An operator is required to make an adjustment to a camera device.
		X'7004'	USER NEEDS ASSISTANCE: Someone who uses the services of a computer system, such as an “end user,” requires assistance in this usage.
		X'7005'	DEVICE IS NOT IN THE PROPER POSITION: A device is not in the correct operating position when an attempt is made to use it.
		X'7006'	NETWORK OPERATOR
		X'7010'	CALL AUTHORIZATION REQUIRED
		X'70A0'	ADDRESS COMPARE DETECTED ON (detailed data qualifier) *Note:* The qualifier identifies the resource.
		X'70A1'	ADDRESS COMPARE STOP ON (detailed data qualifier) *Note:* The qualifier identifies the resource.
		X'70A2'	SERVICE CALL AUTHORIZATION REQUIRED FOR CALL TYPE (detailed data qualifier) *Note:* The qualifier identifies the type of service call.
		X'7100'	INCORRECT PROCEDURE: An appropriate procedure was not followed
		X'7101'	TOKEN-RING REMOVE ADAPTER COMMAND RECEIVED
		X'7102'	PAPER INSTALLED INCORRECTLY
		X'7103'	LAN MANAGER OPERATOR ENTERED INCORRECT PASSWORD
		X'7104'	UNAUTHORIZED ACCESS TO LAN MANAGEMENT SERVER ATTEMPTED
		X'7105'	UNAUTHORIZED USER ATTEMPTED INSERTION INTO LAN
		X'7106'	ADAPTER ADDRESS NOT ENTERED IN AUTHORIZATION LIST
		X'7107'	CSMA/CD REMOVE ADAPTER COMMAND RECEIVED
		X'7108'	OPERATOR ENTERED INCORRECT PASSWORD
		X'7109'	LAN BRIDGE OPERATOR TOOK BRIDGE OFFLINE *Note:* When this condition occurs, the bridge can no longer forward frames.
		X'710A'	LAN MANAGER OPERATOR TOOK BRIDGE OFFLINE *Note:* When this condition occurs, the bridge can no longer forward frames.
		X'710B'	USER INCAPACITATED LAN MANAGEMENT SERVER PROGRAM: A user has caused the LAN management server program to become inactive, but its processor is still able to process interrupts
		X'710C'	UNAUTHORIZED TRACE TOOL IN LAN: A tool that allows a LAN user to monitor the traffic on the LAN has not been authorized to be used.
		X'710D'	ADAPTER NOT AT EXPECTED ADDRESS
		X'710E'	AUTHORIZATION LIST CONTAINS INCORRECT TIME AND DAY ENTRIES
		X'710F'	INCORRECT ADDRESS ASSIGNED
		X'7110'	LOCAL X.25 PROCEDURE ERROR: An error has occurred at the side of the X.25 network nearer the Alert sender during an attempt by the Alert sender to establish an X.25 connection

User Causes (X'01') User Causes Subfield

Byte	Bit	Content		
			X'7111'	REMOTE X.25 PROCEDURE ERROR: An error has occurred at the side of the X.25 network remote from the Alert sender during an attempt by the Alert sender to establish an X.25 connection
			X'7112'	DESTINATION RESOURCE NOT OPEN
			X'7113'	INVALID CONTROL BLOCK TYPE
			X'7114'	MANUFACTURING AUTOMATION PROTOCOL NOT STARTED
			X'7115'	INVALID/INCORRECT SPECIFICATION OF ORIGINATOR RESOURCE The originator resource has been defined incorrectly or was not the expected resource.
			X'7116'	PRINTER CONTROL BLOCK STOPPED AND PURGED
			X'7117'	USER HAS ANOTHER TABLE MEMBER LOCKED
			X'7118'	MAXIMUM NUMBER OF OPERATING SYSTEM FILES ALREADY OPEN
			X'7119'	MAXIMUM NUMBER OF PRINTER CONTROL BLOCKS ALREADY STARTED
			X'711A'	MAXIMUM NUMBER OF RESOURCES ALREADY STARTED
			X'711B'	FILE SERVER PASSWORD CHANGED
			X'711C'	DIFFERENCE BETWEEN SYSTEM CLOCK TIMES UNACCEPTABLE: The difference between the system clock times is either too large or too small.
			X'711D'	PARTNER RESTARTED WITHOUT RECOVERY LOG INFORMATION
			X'711E'	LOG NAME MISMATCH
			X'711F'	INCONSISTENT HEURISTIC DECISION
			X'7120'	INCORRECT TEST TOOL USED: The test tool used for servicing the device is incorrect.
			X'7121'	USER'S LOGON TIME LIMIT EXCEEDED
			X'7122'	ALREADY ACTIVATED BY ANOTHER USER
			X'7123'	UNAUTHORIZED USER ATTEMPTED INSERTION INTO WIRELESS NETWORK
			X'7124'	INCORRECT TAPE LOADED: Tape loaded into drive which does not support specific tape length or format.
			X'7125'	INCOMPATIBLE COMPACTION ALGORITHM: Tape loaded into drive which has a different compaction algorithm.
			X'7130'	MULTIPLE ADAPTERS ATTACHED TO ONE LOBE
			X'7131'	TELEPHONE ANSWERED BY OTHER THAN COMMUNICATIONS EQUIPMENT
			X'7132'	PRINTER ALREADY STARTED UNDER ANOTHER PRINTER CONTROL BLOCK
			X'7133'	TASK ALREADY LOADED: An attempt was made to load a task that was already loaded. The task may be invalid or unavailable, causing an error.
			X'7140'	OPERATOR DEACTIVATED THE SESSION
			X'7141'	OPERATOR TOOK PROGRAM OFFLINE
			X'7142'	NETWORK INTERFACE NOT VARIED ON
			X'7143'	CONTROLLER DESCRIPTION OBJECT NOT VARIED ON
			X'7144'	RESOURCE NOT AVAILABLE
			X'7145'	RESOURCE NOT AVAILABLE AT AN INTERMEDIATE NODE
			X'7150'	LOCAL ISDN PROCEDURE ERROR: A procedure error occurred at the local (Alert sender) end of an attempted ISDN connection.
			X'7151'	REMOTE ISDN PROCEDURE ERROR: A procedure error occurred at the end of an attempted ISDN connection that is remote from the Alert sender.

User Causes (X'01') User Causes Subfield

Byte	Bit	Content		
			X'7152'	LOCAL PROCEDURE ERROR: A procedure error occurred at the local (Alert sender) end of an attempted communication connection. *Note:* Use this code point only when a more specific code point is not available (e.g. X'7110' or X'7150').
			X'7153'	REMOTE PROCEDURE ERROR: A procedure error occurred at the end of an attempted communication connection that is remote from the Alert sender. *Note:* Use this code point only when a more specific code point is not available (e.g. X'7111' or X'7151').
			X'7199'	UNAUTHORIZED ACCESS ATTEMPTED
			X'71A0'	UNAUTHORIZED ACCESS ATTEMPTED ON (detailed data qualifier) *Note:* The qualifier identifies the account.
			X'71A1'	RESOURCE (detailed data qualifier) NOT STARTED IN REMOTE NODE *Note:* The qualifier identifies the resource.
			X'71A2'	(detailed data qualifier) NOT STARTED *Note:* The qualifier identifies the resource.
			X'71A3'	SYSTEM RESOURCE (detailed data qualifier) LOCKED: A required resource is locked preventing continuation of a function or application. *Note:* The qualifier identifies the locked resource.
			X'71A4'	(detailed data qualifier) REACHED ACCOUNT LIMITATION *Note:* The qualifier identifies the user.
			X'71A5'	NETWORK CONTROL BLOCK (NCB) RESOURCE SHORTAGE ON (detailed data qualifier) *Note:* The qualifier identifies the network.
			X'71A6'	OPERATOR DELETED (detailed data qualifier)
			X'71A7'	OPERATOR DELETED (detailed data qualifier) IN ADJACENT NODE
			X'71A8'	OPERATOR REQUESTED ALTERNATE ROUTE FOR APPN HIGH PERFORMANCE ROUTING TRAFFIC TO (detailed data qualifier) *Note:* The qualifier identifies the remote node.
			X'71A9'	PU ACTIVATION FAILED BECAUSE A SWITCHED MAJOR NODE AT DLUS (detailed data qualifier) WAS NOT ACTIVE
			X'71C0'	(detailed data qualifier) EXCEEDED STORAGE LIMIT ON (detailed data qualifier) *Note:* The qualifiers identify the user and server respectively.
		X'7200'	DUMP REQUESTED: A machine readable copy of processor storage has been obtained at the request of an operator, user, or programmed procedure	
			X'7201'	MICROCODE DUMP REQUESTED
			X'7202'	SOFTWARE DUMP REQUESTED
		X'7300'	FILE FULL: A requested operation cannot be performed because the file to be used for the operation does not have space available to contain the data	
			X'7301'	DISKETTE OR DIRECTORY FULL: There is no more diskette space or directory space on the diskette.
			X'73A0'	FILE FULL (detailed data qualifier): A requested operation cannot be performed because the file to be used for the operation does not have space available to contain the data *Note:* The qualifier specifies the name, or other unique identifier, of the file that is full.

User Causes (X'01') User Causes Subfield

Byte	Bit	Content	
			X'73A1' FILE NEEDS REORGANIZATION (detailed data qualifier): A file is approaching its capacity, and will soon be unusable unless it is reorganized *Note:* The qualifier specifies the name, or other unique identifier, of the file needing reorganization.
			X'73A2' FILE DIRECTORY TABLE FULL ON (detailed data qualifier) *Note:* The qualifier identifies the volume.
			X'73A3' FILE ALMOST FULL (detailed data qualifier) *Note:* The qualifier identifies the file name.
		X'7400'	CONTAMINATION: Dirt or some other contamination is suspected as the cause of the problem. The operator should perform routine cleaning actions required for this equipment
			X'7401' DIRTY READ/WRITE HEAD
			X'74A1' BLOCKED AIR FILTER (detailed data qualifier) *Note:* The qualifier identifies the air filter number.
		X'8100'	SOFTWARE LICENSE MANAGEMENT
			X'81C2' LICENSE USAGE THRESHOLD EXCEEDED FOR (detailed data qualifier) (detailed data qualifier): A customer-set limit has been reached or exceeded. Used as a warning that a contracted limit is about to be reached. *Note:* The qualifiers identify the product and feature.
			X'81C3' LICENSE USAGE LIMIT REACHED FOR (detailed data qualifier) (detailed data qualifier): Warning of a pending loss of product caused by reaching a contracted limit. *Note:* The qualifiers identify the product and feature.
			X'81C4' LICENSE USAGE LIMIT EXCEEDED FOR (detailed data qualifier) (detailed data qualifier): A loss-of-product error if the contracted limit was a "hard" limit. A warning that the software provider has been notified if the contracted limit was "soft". *Note:* The qualifiers identify the product and feature.
			X'81C5' LICENSE USAGE LIMIT INCREASE MAY VIOLATE CONTRACT FOR (detailed data qualifier) (detailed data qualifier): Pending loss of software product resource caused by increase to number of users. New limit may exceed contracted limit. *Note:* The qualifiers identify the product and feature.
		X'E000'–X'EFFF'	Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range. *Note:* The following code points specify extended messages, that provide additional information on one or more user causes that have already been specified. An Alert receiver that displays only default text provides no display for these code points.
		X'F000'	(no display): Additional message data
			X'F001' INVALID TRANSIT NETWORK ROUTING SELECTED
			X'F002' CHANNEL REQUEST INVALID
			X'F003' THERE ARE NO DELETED FILES USING STORAGE SPACE
			X'F004' USER ACCOUNT ADDED
			X'F005' USER PASSWORD CHANGED
			X'F006' CONFIGURATION UPDATED VIA NETWORK
			X'F007' CONFIGURATION UPDATED VIA DISKETTE
			X'F008' CONFIGURATION UPDATED VIA OPERATOR INTERFACE

User Causes (X'01') User Causes Subfield

Byte	Bit	Content	
			X'F0A0' INSUFFICIENT STORAGE MEDIA SPACE AVAILABLE FOR (detailed data qualifier) *Note:* The qualifier identifies the volume. X'F0A1' (detailed data qualifier) KILOBYTES OF STORAGE IS IN USE BY DELETED FILES THAT CANNOT BE PURGED YET *Note:* The qualifier identifies the amount of storage in kilobytes.
		X'F800'	(no display): Additional message data *Note:* The X'F8xx' range is used for additional messages that are identical for User, Install, and Failure Causes.
			X'F8A0' PROBLEM DETECTED BY (detailed data qualifier) *Note:* The qualifier identifies the file server. X'F8C0' FAILING COMPONENT IS IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the failing component by means of its logical location, e.g., its port number and device address. X'F8C1' REQUEST ORIGINATED FROM (detailed data qualifier) ON (detailed data qualifier) *Note:* The qualifiers identify the node and network. X'F8D0' PROBLEM IS RELATED TO THE CONTROLLER LOCATED AT (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the controller location as follows: Q1 = RACK Q2 = UNIT (within a rack) Q3 = CARD SLOT (within a unit) X'F8D2' FAILING COMPONENT IS IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) X'F8E0' FAILING COMPONENT IS IDENTIFIED BY (sf83 product text)
		X'FFFF'	Reserved

Install Causes (X'95') Alert MS Subvector

This subvector transports code points for stored text detailing the probable install causes for the Alert condition and the recommended actions to be taken in connection with these causes. It may also transport additional detailed data, to be inserted into the text indexed by the install cause and/or recommended action code points.

Install Causes (X'95') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Install Causes subvector
1		Key: X'95'

Install Causes (X'95') Alert MS Subvector

Byte	Bit	Content
2–p		Two or more subfields containing install cause data, as described below for keys X'00'–X'7F' and in "Network Alert (X'0000') Common Subfields" on page 4-153 for keys X'80'–X'FE'. X'01' Install Causes X'81' Recommended Actions X'82' Detailed Data X'83' Product Set ID Index X'84' Resource List Index X'85' Detailed Data Extended *Note:* Subfields X'01' and X'81' are always present and the X'01' always precedes the X'81'. Depending on the code points present in the X'01' and X'81' subfields: • The X'83' and X'84' subfields may be present one or more times. • Either the X'82' or the X'85' subfield may be present one or more times. The X'82' and X'85' subfields are mutually exclusive within a subvector.

Install Causes (X'01') Install Causes Subfield

This subfield contains one or more code points denoting probable install causes of the Alert condition, listed in order of decreasing probability. An install cause is defined to be a condition that resulted from the initial installation or set-up of some equipment.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Install Causes subfield
1		Key: X'01'
2–q		2-byte install cause code points. Each code point provides an index to predefined text, describing the install cause, that is displayed at the Alert receiver. An Alert receiver has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are listed below. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). The expression "(detailed data qualifier)" in the English text indicates a variable-length gap, to be filled in with data passed in a Detailed Data (X'82') subfield or a Detailed Data Extended (X'85') subfield. The one or more necessary X'82' or X'85' subfields follow this subfield in the X'95' subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield. **Note:** The X'82' and X'85' subfields *cannot* both be used in the same subvector.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content

The expression “(sf83 product text)” in the English text similarly indicates a variable-length gap, to be filled in with product identification data from the Product Identifier X'11' subvector indicated by a Product Set ID Index (X'83') subfield. The necessary X'83' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.

The expression “(sf84 resource text)” in the English text indicates a variable-length gap, to be filled in with resource identification data from a location indicated by a Resource List Index (X'84') subfield. The necessary X'84' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.

The third digit of each install cause code point indicates the number of succeeding detailed data qualifiers that are associated with the code point, and whether a X'83' or X'84' subfield is associated with it, as follows:

X'xx0x'–X'xx9x': No detailed data qualifiers.

X'xxAx'–X'xxBx': One detailed data qualifier.

X'xxCx': Two detailed data qualifiers.

X'xxDx': Three detailed data qualifiers.

X'xxEx': One X'83' subfield.

X'xxFx': One X'84' subfield.

Defined install cause codes are:

X'1200' INCORRECT HARDWARE CONFIGURATION: The hardware has been installed incorrectly and the requested function cannot be performed

- X'1201' OPTICAL FIBER CONVERTER CONFIGURATION: A device which converts electrical signals into optical signals and vice-versa, is not configured correctly.
- X'1202' LOCAL MODEM: The modem connected to the Alert sender
- X'1203' REMOTE MODEM: The modem remote from the Alert sender
- X'1204' LOCAL DIGITAL DATA DEVICE: The digital data device (DDD) connected to the Alert sender
- X'1205' REMOTE DIGITAL DATA DEVICE: The digital data device (DDD) remote from the Alert sender
- X'1206' LOCAL DCE: The Data Circuit-Terminating Equipment (DCE) connected to the Alert sender
  Note: This code point is used only if the Alert sender is unable to determine whether the DCE is a modem or a DDD; see code points X'1202' and X'1204'.
- X'1207' REMOTE DCE: The Data Circuit-Terminating Equipment (DCE) remote from the Alert sender
  Note: This code point is used only if the Alert sender is unable to determine whether the DCE is a modem or a DDD; see code points X'1203' and X'1205'.
- X'1208' DEVICE NOT CALIBRATED
- X'1209' DISK STORAGE FULL: The disk(s) in question cannot store the normally required amount of data.

X'1300' INCORRECT SOFTWARE GENERATION: A program has been installed incorrectly and the requested function cannot be performed

- X'1301' COMMUNICATIONS PROGRAM: Required communication program cannot be started.
- X'1302' REQUIRED SOFTWARE FEATURES NOT INSTALLED
- X'13E1' INCORRECT SOFTWARE GENERATION: (sf83 product text)

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'1400'	MISMATCH BETWEEN HARDWARE AND SOFTWARE: A conflict exists between the hardware configuration and software
		X'1401'	MISMATCH BETWEEN HARDWARE CONFIGURATION AND SOFTWARE GENERATION
		X'1402'	MISMATCH BETWEEN HARDWARE AND SOFTWARE CONFIGURATIONS: The hardware configuration represented in a software product does not match the actual hardware configuration.
		X'1403'	ADAPTER TYPE NOT RECOGNIZED: The adapter type is not recognized by the system or subsystem in which the adapter is situated.
		X'1410'	MEMORY IMAGE FILE AND MEMORY OF DEVICE ARE NOT EQUAL
		X'1500'	MISMATCH BETWEEN HARDWARE AND MICROCODE: A conflict exists between the hardware configuration and microcode
		X'1501'	INCORRECT CUSTOMIZATION PARAMETERS
		X'1502'	INCORRECT MICROCODE FIX
		X'1503'	ADAPTER MICROCODE LEVEL DOES NOT MATCH REGISTERED LEVEL: The microcode level reported by a communication adapter is inconsistent with the configuration information registered for the adapter.
		X'1600'	MISMATCH BETWEEN SOFTWARE AND MICROCODE: A conflict exists between a software program and a microcode program
		X'1601'	INCORRECT CUSTOMIZATION IMAGE: The software customization image is incompatible with the actual microcode configuration
		X'1602'	INCORRECT APPLICATION PROGRAM: An application software program is at the wrong level for the actual microcode configuration, or the wrong application software program is attempting to communicate with the microcode
		X'16A1'	INCORRECT SOFTWARE LEVEL (detailed data qualifier) *Note:* The qualifier specifies a generation parameter.
		X'16A2'	INCORRECT MICROCODE LEVEL (detailed data qualifier)
		X'1700'	INCORRECT VALUE SPECIFIED: An incorrect value has been specified for a system operational parameter
		X'1701'	INTERVENTION TIMER VALUE TOO SMALL
		X'1702'	RTS ACTIVATION LIMIT PARAMETER OF THE SENDING NODE IS INCORRECT
		X'1703'	REMOTE NODE TEST TIMEOUT TOO SHORT
		X'1704'	OTHER REMOTE NODE TEST TIMEOUT TOO SHORT
		X'1705'	REMOTE NODE HOLDING RTS ACTIVE
		X'1706'	OTHER REMOTE NODE HOLDING RTS ACTIVE
		X'1707'	MULTIPOINT TRIBUTARIES WITH SAME ADDRESS
		X'1708'	MISMATCH BETWEEN 2-WIRE, HALF DUPLEX COUPLER ON MODEMS AND RTS CONFIGURED FOR FULL DUPLEX BY REMOTE NODE
		X'1709'	SYSTEM FILE LOCK THRESHOLD SET TOO LOW
		X'170A'	SYSTEM RECORD LOCK THRESHOLD SET TOO LOW
		X'170B'	FILE LOCK THRESHOLD FOR WORKSTATIONS SET TOO LOW
		X'170C'	RECORD LOCK THRESHOLD FOR WORKSTATIONS SET TOO LOW
		X'170D'	CONCURRENT DIRECTORY SEARCH THRESHOLD FOR WORKSTATIONS SET TOO LOW

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content		
			X'170E'	MEMORY THRESHOLD SET TOO LOW
			X'170F'	SYSTEM TRANSMIT/RECEIVE BUFFER THRESHOLD SET TOO LOW
			X'1710'	MEMORY LOWER LIMIT SET TOO HIGH
			X'1711'	INVALID PROTOCOL PARAMETER IN COMMUNICATION CONTROL BLOCK
			X'1712'	INVALID TASK NUMBER
			X'1713'	SYSTEM TRACE FILE DEFINED WITH INVALID RECORD LENGTH
			X'1714'	CLASS OF SERVICE AND/OR TRANSMISSION PRIORITY PARAMETER IS INCORRECT
			X'1715'	MINIMUM FREE DISK SPACE THRESHOLD SET TOO HIGH
			X'1716'	LOGON VIOLATION THRESHOLD SET TOO LOW
			X'1717'	ATTEMPTED RESOURCE ACCESS VIOLATIONS THRESHOLD SET TOO LOW
			X'1718'	ERROR LOG SIZE SET TOO LOW
			X'1719'	AUDIT LOG SIZE SET TOO LOW
			X'171A'	USER ACCOUNT LIMIT SET TOO LOW
			X'171B'	PREDEFINED RESOURCE THRESHOLD SET TOO LOW
			X'171C'	FILE SERVER ERROR THRESHOLD SET TOO LOW
			X'171D'	NETWORK I/O ERROR THRESHOLD SET TOO LOW
			X'171E'	DSU/CSU ERRORED SECONDS THRESHOLD SET TOO LOW
			X'171F'	LIMIT FOR DLUR CONTROL SESSIONS EXCEEDED: A dependent LU requester node is unable to accept additional DLUR control sessions. This condition is probably the result of a configuration error, with a single DLUR product supporting resources for too many dependent LU servers. The configuration must be changed so that fewer control sessions are required.
			X'1720'	INCORRECT THRESHOLD VALUE
			X'1721'	INCORRECT MONITORING INTERVAL VALUE
			X'1722'	SOFTWARE CUSTOMIZATION ERROR
			X'1723'	COMPONENT RELEASE LEVEL DOES NOT MATCH VALUE IN CONFIGURATION DATABASE
			X'1724'	COMPONENT'S VITAL PRODUCT DATA NOT RECOGNIZED BY SYSTEM: A component's vital product data (VPD) is not recognized by the system or subsystem in which the component is situated.
			X'1725'	INVALID ASSIGNMENT OF VCI RANGES: There is a conflict in the assignment of the Virtual Channel Identifiers (VCIs) allocated to a trunk.
			X'1726'	TRUNK SPEED INSUFFICIENT FOR VOICE QUALITY: There is not enough bandwidth allocated to a trunk to support voice traffic.
			X'17A0'	DIRECTORY SIZE LIMIT TOO LOW ON (detailed data qualifier) *Note:* The qualifier identifies the volume.
			X'17A1'	COMMUNICATION ACCESS CONTROL BLOCK FOR ADAPTER (detailed data qualifier) IS ALREADY STARTED *Note:* The qualifier identifies the adapter card number.
			X'17A2'	ADAPTER (detailed data qualifier) NOT RECOGNIZED BY COMMUNICATION DRIVER *Note:* The qualifier identifies the adapter card number.
			X'17A3'	NOT ENOUGH BUFFERS FOR ADAPTER (detailed data qualifier) *Note:* The qualifier identifies the adapter card number.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content		
			X'17C0'	THRESHOLD VALUE SET TOO LOW (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the configuration object/record which contains the parameter. The second qualifier identifies the threshold parameter that is set to low.
			X'17C1'	(detailed data qualifier) IS SET AT (detailed data qualifier) *Note:* The first qualifier identifies the configuration parameter and the second qualifier specifies the threshold parameter.
		X'1800'	SERVER/CLIENT MISMATCH	
			X'1801'	CLIENT APPLICATION PROGRAM SENT AN UNENCRYPTED PASSWORD TO A SERVER CONFIGURED FOR ENCRYPTED PASSWORDS ONLY

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'2600'	SYSTEM OR TRANSMISSION MEDIA INSTALLED NEAR ELECTRICAL INTERFERENCE
		X'3400'	CABLE INSTALLED INCORRECTLY: A cable has been incorrectly installed
		X'3401'	LOCAL DCE INTERFACE CABLE INSTALLED INCORRECTLY
		X'3402'	LINE ADAPTER MULTIPLEXER CABLE INSTALLED INCORRECTLY
		X'3403'	REMOTE DCE INTERFACE CABLE INSTALLED INCORRECTLY
		X'3404'	DCE EMULATION CABLE INSTALLED INCORRECTLY
		X'3405'	LOCAL TELECOMMUNICATION CABLE NOT PROPERLY CONNECTED
		X'3406'	REMOTE TELECOMMUNICATION CABLE NOT PROPERLY CONNECTED
		X'3407'	PHYSICAL LINE CONNECTIONS
		X'3408'	OPTICAL FIBER CABLE INSTALLED INCORRECTLY
		X'3409'	LOCAL DTE CABLE NOT PROPERLY CONNECTED
		X'3451'	DEVICE CABLE INSTALLED INCORRECTLY
		X'3460'	VOICE LINE CABLE INSTALLED INCORRECTLY: The cable connecting a Voice Response Unit and a PBX was improperly installed.
		X'34A0'	(detailed data qualifier) LOCAL DCE INTERFACE CABLE NOT PROPERLY CONNECTED *Note:* The qualifier identifies the link segment level (LSL) on which the local DCE belongs.
		X'34A1'	(detailed data qualifier) REMOTE DCE INTERFACE CABLE NOT PROPERLY CONNECTED *Note:* The qualifier identifies the link segment level (LSL) on which the remote DCE belongs.
		X'3500'	COMMUNICATION EQUIPMENT INSTALLED INCORRECTLY: Some communication equipment has been installed incorrectly; the Alert sender cannot determine the precise nature of this equipment
		X'3501'	MULTI-SEGMENT LINK DEFINED AND TAILED-CIRCUIT ATTACHMENT CABLE NOT CONNECTED
		X'3502'	ADAPTER INSTALLED INCORRECTLY: An adapter has either been installed in an incorrect location, or has a bad connection with its system or subsystem.
		X'3509'	LINE SPEED MISMATCH: A mismatch has been detected in communication line speeds.
		X'35A0'	(detailed data qualifier) LOCAL MODEM EXTERNAL CLOCK NOT PROVIDED *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'35A1'	(detailed data qualifier) REMOTE MODEM EXTERNAL CLOCK NOT PROVIDED *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.
		X'35A2'	2-WIRE, HALF DUPLEX COUPLER ON THE (detailed data qualifier) LOCAL MODEM ON A 4-WIRE, FULL DUPLEX LINE *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.
		X'35A3'	(detailed data qualifier) MODEMS SPEED MISMATCH *Note:* The qualifier identifies the link segment level (LSL) on which the modems belong.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'35A4'	(detailed data qualifier) DSU/CSU'S SPEED MISMATCH *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSUs belong.
		X'35A5'	(detailed data qualifier) INCOMPATIBLE MODEMS *Note:* The qualifier identifies the link segment level (LSL) on which the modems belong.
		X'35A6'	SENDING NODE AND (detailed data qualifier) MODEMS CONFIGURATION MISMATCH *Note:* The qualifier identifies the link segment level (LSL) on which the modems belong.
		X'35A7'	SENDING NODE AND (detailed data qualifier) DSU/CSU'S CONFIGURATION MISMATCH *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSUs belong.
		X'35A8'	(detailed data qualifier) LOCAL DSU/CSU EXTERNAL CLOCK NOT PROVIDED *Note:* The qualifier provides additional information about the DSU/CSU, for example its serial number or the link segment level on which it belongs.
		X'35C0'	SENDING NODE AND (detailed data qualifier) (detailed data qualifier) CONFIGURATION MISMATCH *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
		X'35C1'	CONFIGURATION MISMATCH BETWEEN LOCAL (detailed data qualifier) AND LOCAL (detailed data qualifier)
		X'35C2'	CONFIGURATION MISMATCH BETWEEN REMOTE (detailed data qualifier) AND REMOTE (detailed data qualifier)
		X'3700'	LAN CONFIGURATION ERROR: A configuration parameter for a local-area network has been specified incorrectly
		X'3701'	FILE SERVER ASSIGNED DUPLICATE LAN LOGICAL ADDRESS
		X'3702'	FILE SERVER ASSIGNED INCORRECT LAN LOGICAL IDENTIFIER
		X'3703'	ADAPTER/RING SPEED MISMATCH
		X'3704'	TOKEN-RING DUPLICATE STATION ADDRESS ASSIGNED
		X'3724'	CSMA/CD DUPLICATE STATION ADDRESS ASSIGNED
		X'3732'	DUPLICATE FDDI ADDRESS ASSIGNED
		X'3800'	LPDA CONFIGURATION ERROR: A configuration parameter for an LPDA link has been specified incorrectly
		X'38A0'	(detailed data qualifier) LOCAL MODEM ADDRESS INCORRECT *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'38A1'	(detailed data qualifier) LOCAL DSU/CSU ADDRESS INCORRECT *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
		X'38A2'	(detailed data qualifier) REMOTE MODEM ADDRESS INCORRECT *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'38A3'	(detailed data qualifier) REMOTE DSU/CSU ADDRESS INCORRECT *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
		X'38A4'	(detailed data qualifier) LOCAL MODEM LPDA-2 DISABLED *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'38A5'	(detailed data qualifier) LOCAL DSU/CSU LPDA-2 DISABLED *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
		X'38A6'	(detailed data qualifier) LOCAL MODEM NOT CONFIGURED *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'38A7'	(detailed data qualifier) REMOTE MODEM NOT CONFIGURED *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.
		X'38A8'	(detailed data qualifier) LOCAL DSU/CSU NOT CONFIGURED *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
		X'38A9'	(detailed data qualifier) REMOTE DSU/CSU NOT CONFIGURED *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
		X'38AA'	(detailed data qualifier) LOCAL MODEM CONFIGURED AS SECONDARY OR TRIBUTARY *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'38AB'	(detailed data qualifier) LOCAL DSU/CSU CONFIGURED AS SECONDARY OR TRIBUTARY *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
		X'38AC'	(detailed data qualifier) LOCAL MODEM CONFIGURED AS CONTROL *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
		X'38AD'	(detailed data qualifier) LOCAL DSU/CSU CONFIGURED AS CONTROL *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
		X'38C0'	SPEED MISMATCH BETWEEN (detailed data qualifier) AND (detailed data qualifier) *Note:* The qualifiers identify the link segment levels (LSL) where the speed mismatch is.
		X'38C1'	(detailed data qualifier) LOCAL MODEM HAS A 2-WIRE COUPLER AND THE (detailed data qualifier) REMOTE MODEM HAS A 4-WIRE COUPLER *Note:* The qualifiers identify the link segment levels (LSL) where the modems belong.
		X'38C2'	(detailed data qualifier) LOCAL (detailed data qualifier) ADDRESS INCORRECT *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
		X'38C3'	(detailed data qualifier) REMOTE (detailed data qualifier) ADDRESS INCORRECT *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'38C4'	(detailed data qualifier) LOCAL (detailed data qualifier) LPDA-2 DISABLED *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
		X'38C5'	(detailed data qualifier) LOCAL (detailed data qualifier) NOT CONFIGURED *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
		X'38C6'	(detailed data qualifier) REMOTE (detailed data qualifier) NOT CONFIGURED *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).
		X'38C7'	(detailed data qualifier) LOCAL (detailed data qualifier) CONFIGURED AS SECONDARY OR TRIBUTARY *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communication network management adapter (CNM ADAPTER).

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'8000'	CONFIGURATION ERROR: A system or device generation or customization parameter has been specified incorrectly or is inconsistent with the actual configuration.
		X'8001'	TOPOLOGY STORAGE EXCEEDED: The node table is full.
		X'8002'	INSUFFICIENT STORAGE FOR DIRECTORY SERVICES: Deadlock detected between directory services components in two nodes.
		X'8003'	COMMUNICATIONS SUBSYSTEM DEFINITION: Deadlock detected between directory services components in two nodes.
		X'8004'	REMOTE NODE DEFINITION ERROR: BIND received from an end-node that this network-node does not serve.
		X'8005'	SYSTEM DEFINITION ERROR: BIND received from an end-node that this network-node does not serve.
		X'8006'	LOCAL MODEM CLOCK SIGNAL NOT PROVIDED TO DTE
|		X'8007'	ADAPTER CONFIGURED INCORRECTLY
|		X'8008'	DEFAULT PARAMETERS AUTOMTICALLY CONFIGURED
		X'8011'	SUBNET/SYSTEM CONFIGURATION FILE EMPTY
		X'8012'	BUFFER ALLOCATION ERROR
		X'8013'	BASE LOGGER NODE INFORMATION BLOCK NOT FOUND
		X'8014'	COMMUNICATION NODE INFORMATION BLOCK NOT FOUND
		X'8015'	CONFIGURATION NODE INFORMATION BLOCK NOT FOUND
		X'8016'	COMMUNICATION CONTROL BLOCK NOT DEFINED IN RESOURCE DIRECTORY
		X'8017'	DESTINATION RESOURCE NOT DEFINED IN CONTROL BLOCK FILE
		X'8018'	DATA TRANSPARENCY NOT ENABLED
		X'8019'	DESTINATION RESOURCE NOT DEFINED IN RESOURCE DIRECTORY
		X'801A'	DESTINATION RESOURCE NOT PURGED
		X'801B'	DESTINATION RESOURCE SERVER NOT DEFINED
		X'801C'	DEVICE NAME NOT FOUND IN DEVICE COMMUNICATIONS SERVER TABLE
		X'801D'	FILE NOT FOUND IN PATH SPECIFIED
		X'801E'	INBOUND SERVER NOT DEFINED IN RESOURCE DIRECTORY
		X'801F'	INCORRECT COMMUNICATIONS DRIVER INSTALLATION
		X'8020'	INVALID OR UNSUPPORTED CODE PAGE IN SYSTEM CONFIGURATION FILE
		X'8021'	INVALID COUNTRY CODE IN SYSTEM CONFIGURATION FILE
		X'8022'	INVALID CONTROL BLOCK TYPE
		X'8023'	LOGICAL DEVICE NOT FOUND
		X'8024'	MESSAGE FILE ERROR
		X'8025'	MESSAGE NOT FOUND
		X'8026'	MAXIMUM NUMBER OF THREADS EXCEEDED
		X'8027'	DATABASE NODE INFORMATION BLOCK NOT LOADED
		X'8028'	NODE INFORMATION BLOCK NOT FOUND
		X'8029'	NOT ENOUGH MEMORY IN CONTROL BLOCK MEMORY POOL
		X'802A'	NOT ENOUGH MEMORY IN MESSAGE MEMORY POOL
		X'802B'	NOT ENOUGH MEMORY IN CO-PROCESSOR CONTROL BLOCK MEMORY POOL
		X'802C'	NOT ENOUGH MEMORY IN CO-PROCESSOR MESSAGE MEMORY POOL
		X'802D'	NOT ENOUGH MEMORY IN CO-PROCESSOR WORK MEMORY POOL
		X'802E'	NOT ENOUGH MEMORY IN WORK MEMORY POOL
		X'802F'	NOT ENOUGH MEMORY ON VIRTUAL DISK

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'8030'	NOT ENOUGH MEMORY ON VIRTUAL MACHINE
		X'8031'	NO MEMORY AVAILABLE FOR REQUEST
		X'8032'	NETWORK CONTROL NODE INFORMATION BLOCK NOT FOUND
		X'8033'	ORIGINATOR NODE NOT FOUND IN SYSTEM CONFIGURATION FILE
		X'8034'	ORIGINATOR RESOURCE NOT CONNECTED
		X'8035'	ORIGINATOR RESOURCE NOT DEFINED
		X'8036'	OUTBOUND SERVER NOT DEFINED IN RESOURCE DIRECTORY
		X'8037'	ORIGINATOR NODE NOT FOUND IN SUBNET CONFIGURATION FILE
		X'8038'	PHYSICAL RESOURCE NOT DEFINED FOR ALIAS NAME CONTROL BLOCK
		X'8039'	PRINTER CONTROL BLOCK STOPPED AND PURGED
		X'803A'	CO-PROCESSOR DISPATCHER NOT LOADED
		X'803B'	RESOURCE INFORMATION IN RESOURCE DIRECTORY DOES NOT MATCH TABLES AND QUEUES DEFINITION FILE
		X'803C'	REMOTE CONTROL BLOCK NOT A REMOTE COMMUNICATION CONTROL BLOCK
		X'803D'	REMOTE CONTROL BLOCK NOT DEFINED IN COMMUNICATION CONTROL BLOCK
		X'803E'	RESOURCE NOT DEFINED IN SYSTEM
		X'803F'	RESOURCE NOT DEFINED IN TABLES AND QUEUES DEFINITION FILE
		X'8040'	RESOURCE NOT STARTED
		X'8041'	SECURITY NOT ENABLED IN NODE INFORMATION BLOCK CONFIGURATION SEGMENT
		X'8042'	SERVER RESOURCE NOT DEFINED IN RESOURCE DIRECTORY
		X'8043'	SYSTEM TEMPLATE FILE ERROR
		X'8044'	TASK NUMBER NOT AVAILABLE
		X'8045'	TASK NUMBER NOT FOUND
		X'8046'	TIMEOUT VALUE SET TOO LOW IN APPLICATION CONTROL BLOCK
		X'8047'	TIMEOUT VALUE SET TOO LOW IN DATABASE CONTROL BLOCK
		X'8048'	TIMEOUT VALUE SET TOO LOW IN LINE CONTROL BLOCK
		X'8049'	TIMEOUT VALUE SET TOO LOW IN REQUEST
		X'804A'	TIMER NOT AVAILABLE
		X'804B'	VIDEO NODE INFORMATION BLOCK NOT FOUND
		X'804C'	DESTINATION RESOURCE NOT DEFINED IN CONTROL BLOCK POOL
		X'804D'	CONFIGURATION PROBLEM WITH DATABASE COMPONENT
		X'804E'	ALTERNATE SYSTEM TRACE FILE CONFIGURATION
		X'8050'	INVALID BRIDGE CUSTOMIZATION DATA
		X'8051'	ERROR ACCESSING SECURED RESOURCE TABLE
		X'8052'	ERROR ACCESSING SECURED VIEW IDENTIFICATION TABLE
		X'8053'	ERROR STARTING MONITOR APPLICATION CONTROL BLOCK
		X'8054'	INVALID WIRELESS WORKSTATION SECURITY CODE
		X'8055'	INVALID WIRELESS BASE SECURITY CODE
		X'8056'	CONFIGURATION MISMATCH WITH REMOTE NODE - LINK WILL OPERATE WITH APPN PROTOCOL - NOT APPN-HPR: Incompatible parameters in one or both communicating APPN High Performance Routing products must be corrected before the APPN-HPR protocol will operate on the link.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content		
			X'8057'	ANOTHER NETWORK NODE HAS THE SAME CP NAME AS THE NODE SENDING THIS ALERT
			X'8058'	FRAME FORMAT IS NOT CONFIGURED CORRECTLY
			X'8059'	LINE CODE IS NOT CONFIGURED CORRECTLY
			X'805A'	A CPSVRMGR SESSION CANNOT BE ESTABLISHED OVER A PATH HAVING A BRANCH UPLINK AS AN INTERMEDIATE HOP
			X'805B'	X.25 DTE TO DCE CONFIGURATION INCORRECT: An X.25 DCE providing network service has detected a configuration mismatch between itself and an attached X.25 DTE.
			X'805C'	DEVICE NOT REGISTERED IN RETAIN DATABASE
			X'805D'	TELEPHONE NUMBER FOR RETAIN INCORRECT
			X'805E'	INCORRECT TRAFFIC SHAPER SPEED: The traffic rate or speed specified for the traffic-shaping filter to or from a network device is incorrect.
			X'8060'	ISDN LAYER 2 PROTOCOL ROLE CONFLICT: The ISDN layer 2 protocol role of user or network is incorrectly configured for the interface.
			X'8061'	REQUESTED BEARER SERVICE PROFILE NOT AVAILABLE
			X'8062'	INVALID ASSIGNMENT OF VPI RANGE
			X'8063'	MISMATCH IN BACKUP ROLE
			X'8064'	LINK TYPE MISMATCH
			X'8065'	ATM EMULATION MODE MISMATCH
			X'80A0'	(detailed data qualifier) NOT DEFINED AS SYSTEM TRACE FILE *Note:* The qualifier identifies the file name.
			X'80A1'	(detailed data qualifier) NOT DEFINED IN RESOURCE DIRECTORY *Note:* The qualifier identifies the resource name.
			X'80A2'	(detailed data qualifier) NODE INFORMATION BLOCK NOT FOUND *Note:* The qualifier identifies the segment number.
			X'80A3'	(detailed data qualifier) NOT FOUND IN PATH SPECIFIED *Note:* The qualifier identifies the file name.
			X'80A4'	CONTROL NODE (detailed data qualifier) NOT FOUND IN SYSTEM CONFIGURATION FILE *Note:* The qualifier identifies the node name.
			X'80A5'	COUNTRY CODE INFORMATION IN SYSTEM CONFIGURATION FILE DOES NOT MATCH (detailed data qualifier) *Note:* The qualifier identifies the file name.
			X'80A6'	CODE PAGE INFORMATION IN SYSTEM CONFIGURATION FILE DOES NOT MATCH (detailed data qualifier) *Note:* The qualifier identifies the file name.
			X'80A7'	CONTROL NODE (detailed data qualifier) NOT FOUND IN SUBNET FILE *Note:* The qualifier identifies the node name.
			X'80A8'	DUPLICATE (detailed data qualifier) DEFINED IN CONTROL BLOCK FILE *Note:* The qualifier identifies the resource name.
			X'80A9'	DUPLICATE REGISTRATION NAME (detailed data qualifier) ON DESTINATION COMMUNICATION CONTROL BLOCK *Note:* The qualifier identifies the communication control block name.
			X'80AB'	LOGON PANEL (detailed data qualifier) NOT FOUND *Note:* The qualifier identifies the logon panel name.
			X'80AC'	NO MEMORY AVAILABLE FOR (detailed data qualifier) *Note:* The qualifier identifies one of the following: Buffer name, Utility name, or function name.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'80AE'	NODE (detailed data qualifier) IS IN BOTH SYSTEM AND SUBNET CONFIGURATION FILES *Note:* The qualifier identifies the node name.
		X'80AF'	NODE (detailed data qualifier) NOT FOUND IN CONFIGURATION FILE *Note:* The qualifier identifies the node name.
		X'80B0'	SUBSERVIENT NODE (detailed data qualifier) NOT FOUND IN SUBNET FILE *Note:* The qualifier identifies the node name.
		X'80B1'	SYSTEM NODE (detailed data qualifier) NOT FOUND IN SUBNET FILE *Note:* The qualifier identifies the node name.
		X'80B2'	SYSTEM NODE (detailed data qualifier) NOT FOUND IN SYSTEM FILE *Note:* The qualifier identifies the node name.
		X'80B3'	SESSION NOT ESTABLISHED WITH (detailed data qualifier) *Note:* The qualifier identifies the node name with which communications could not be established.
		X'80B4'	(detailed data qualifier) NOT DEFINED IN ADJACENT NODE
		X'80B5'	SNA PASS-THROUGH GROUP NOT CONFIGURED FOR (detailed data qualifier) *Note:* The qualifier identifies the SNA pass-through device for which a group is not configured.
		X'80B6'	ASSOCIATED SNA PASS-THROUGH DEVICE NOT CONFIGURED FOR (detailed data qualifier) *Note:* The qualifier identifies the pass-through device that an associated device is not configured for.
		X'80B7'	SNA PASS-THROUGH DEVICE (detailed data qualifier) CONFIGURATION NOT COMPATIBLE WITH EQUIVALENT CONFIGURATION IN ADJACENT NODE *Note:* The qualifier identifies the incompatibly configured SNA pass-through device.
		X'80B8'	PREALLOCATED (detailed data qualifier) STORAGE DEPLETED *Note:* The qualifier identifies the depleted RESOURCE.
		X'80B9'	NODE (detailed data qualifier) WAS INCORRECTLY SPECIFIED AS A DEPENDENT LU SERVER: A network administrator has specified the name of a dependent LU requester instead of the name of a dependent LU server. The configuration error must be corrected before the DLUR function can operate.
		X'80BA'	NODE (detailed data qualifier) WAS INCORRECTLY SPECIFIED AS A DEPENDENT LU REQUESTER: A network administrator has specified the name of a dependent LU server instead of the name of a dependent LU requester. The configuration error must be corrected before the DLUR function can operate.
		X'80BB'	NODE (detailed data qualifier) DOES NOT SUPPORT A DEPENDENT LU SERVER WITH A DIFFERENT NETWORK ID: A dependent LU requester node is unable to accept control sessions with a dependent LU server (DLUS) that has a different network ID. This is a limitation of the DLUR product. The network administrator must change the configuration so that the DLUR node can communicate with a DLUS in the same SNA subnetwork (same network ID).
		X'80C0'	CONFIGURATION OBJECT DOES NOT EXIST (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the configuration object's name and type, respectively.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content		
			X'80C1'	STORAGE CONFIGURATION ERROR (detailed data qualifier) (detailed data qualifier): The actual device configuration does not match the configuration records. *Note:* The first qualifier identifies the configuration object/record. The second qualifier identifies the incorrect configuration parameter.
			X'80C2'	LOCAL WORK STATION CONFIGURATION ERROR (detailed data qualifier) (detailed data qualifier): The actual controller and/or work station configuration does not match the configuration records. *Note:* The first qualifier identifies the configuration object/record. The second qualifier identifies the incorrect configuration parameter.
			X'80C3'	REMOTE WORK STATION CONFIGURATION ERROR (detailed data qualifier) (detailed data qualifier): The actual controller and/or work station configuration does not match the configuration records. *Note:* The first qualifier identifies the configuration object/record. The second qualifier identifies the incorrect configuration parameter.
			X'80C4'	COMMUNICATION CONFIGURATION ERROR (detailed data qualifier) (detailed data qualifier): The actual communication configuration does not match the configuration records. *Note:* The first qualifier identifies the configuration object/record. The second qualifier identifies the incorrect configuration parameter.
			X'80C5'	(detailed data qualifier) NAME NOT DEFINED FOR (detailed data qualifier) *Note:* The first qualifier identifies the resource type. The second qualifier identifies the resource name.
			X'80C6'	LOCAL COMMUNICATION CONTROL BLOCK (detailed data qualifier) NOT DEFINED FOR COMMUNICATION ACCESS CONTROL BLOCK (detailed data qualifier) *Note:* The first qualifier identifies the local communication control block name. The second qualifier identifies the communication access control block name.
			X'80C7'	LOCAL COMMUNICATION CONTROL BLOCK (detailed data qualifier) NOT STARTED FOR COMMUNICATION ACCESS CONTROL BLOCK (detailed data qualifier) *Note:* The first qualifier identifies the local communication control block name. The second qualifier identifies the communication access control block name.
			X'80C8'	REMOTE COMMUNICATION CONTROL BLOCK (detailed data qualifier) NOT DEFINED FOR COMMUNICATION ACCESS CONTROL BLOCK (detailed data qualifier) *Note:* The first qualifier identifies the remote communication control block name. The second qualifier identifies the communication access control block name.
			X'80C9'	REMOTE COMMUNICATION CONTROL BLOCK (detailed data qualifier) NOT STARTED FOR COMMUNICATION ACCESS CONTROL BLOCK (detailed data qualifier) *Note:* The first qualifier identifies the remote communication control block name. The second qualifier identifies the communication access control block name.

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
		X'80CA'	SNA PASS-THROUGH GROUP (detailed data qualifier) SPECIFIED FOR (detailed data qualifier) DOES NOT EXIST. *Note:* The first qualifier identifies the SNA pass-through group. The second qualifier identifies the an SNA pass-through device.
		X'80CB'	SNA PASS-THROUGH (detailed data qualifier) AND (detailed data qualifier) ARE NOT COMPATIBLE. *Note:* The first qualifier identifies a SNA pass-through device. The second qualifier identifies an associated SNA pass-through device.
		X'E000'–X'EFFF'	Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range.
		Note: The following code points specify extended messages, that provide additional information on one or more install causes that have already been specified. An Alert receiver that displays only default text provides no display for these code points.	
		X'F000'	(no display): Additional message data
		X'F001'	THE ALERT SENDER IS THE OWNER OF THE BRANCH UPLINK
		X'F004'	IDENTITY OF OFFENDING SERVER IS UNKNOWN
		X'F005'	PARAMETER VALUES SAVED FROM LOCATE DO NOT MATCH THOSE RECEIVED ON BIND
		X'F006'	BIND WAS PROCESSED AND SESSION SET-UP WAS ALLOWED TO PROCEED
		X'F007'	PARAMETER MISMATCH INDICATES A POSSIBLE SECURITY EXPOSURE
		X'F008'	ASSOCIATED RESOURCE ENTRY IDENTIFIES THE CONTROL POINT IN THE PLU DIRECTION
		X'F0A0'	NAME OF THE DLUR OR DLUS FOR WHICH THE ATTEMPT WAS MADE TO ESTABLISH THE SESSION IS (detailed data qualifier)
		X'F0A3'	(detailed data qualifier) MEMORY ALLOCATION REQUESTS FAILED *Note:* The qualifier identifies the number of failed allocation requests.
		X'F0A4'	(detailed data qualifier) DUPLICATES LOGICAL LAN ADDRESS OF ALERT ORIGINATOR *Note:* The qualifier identifies the file server.
		X'F0A5'	(detailed data qualifier) CURRENTLY USED *Note:* The qualifier identifies a resource.
		X'F0C0'	ERROR PROCESSING (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the system message code and the return code, respectively.
		X'F0D0'	FILE SERVER AT (detailed data qualifier) ASSIGNED (detailed data qualifier) — ALERT ORIGINATOR ASSIGNMENT ON SAME NETWORK IS (detailed data qualifier) *Note:* The qualifiers identify the following: Q1 = NODE Q2 = NETWORK Q3 = NETWORK

Install Causes (X'01') Install Causes Subfield

Byte	Bit	Content	
			X'F0D1' ERROR (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the following: Q1 = Database table name Q2 = Node name Q3 = Return code
		X'F800'	(no display): Additional message data *Note:* The X'F8xx' range is used for additional messages that are identical for User, Install, and Failure Causes.
			X'F8A0' PROBLEM DETECTED BY (detailed data qualifier) *Note:* The qualifier identifies the file server.
			X'F8C0' FAILING COMPONENT IS IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the failing component by means of its logical location, e.g., its port number and device address.
			X'F8C1' REQUEST ORIGINATED FROM (detailed data qualifier) ON (detailed data qualifier) *Note:* The qualifiers identify the node and network.
			X'F8D0' PROBLEM IS RELATED TO THE CONTROLLER LOCATED AT (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the controller location as follows: Q1 = RACK Q2 = UNIT (within a rack) Q3 = CARD SLOT (within a unit)
			X'F8D2' FAILING COMPONENT IS IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) (detailed data qualifier)
			X'F8E0' FAILING COMPONENT IS IDENTIFIED BY (sf83 product text)
		X'FFFF'	Reserved

Failure Causes (X'96') Alert MS Subvector

This subvector transports code points for stored text detailing the probable failure causes for the Alert condition and the recommended actions to be taken in connection with these causes. It may also transport additional detailed data, to be inserted into the text indexed by the failure cause and/or recommended action code points.

Failure Causes (X'96') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Failure Causes subvector
1		Key: X'96'

Failure Causes (X'96') Alert MS Subvector

Byte	Bit	Content
2–p		Two or more subfields containing failure cause data, as described below for keys X'00'–X'7F' and in "Network Alert (X'0000') Common Subfields" on page 4-153 for keys X'80'–X'FE'. X'01' Failure Causes X'81' Recommended Actions X'82' Detailed Data X'83' Product Set ID Index X'84' Resource List Index X'85' Detailed Data Extended *Note:* Subfields X'01' and X'81' are always present and the X'01' always precedes the X'81'. Depending on the code points present in the X'01' and X'81' subfields: • The X'83' and X'84' subfields may be present one or more times. • Either the X'82' or the X'85' subfield may be present one or more times. The X'82' and X'85' subfields are mutually exclusive within a subvector.

Failure Causes (X'01') Failure Causes Subfield

This subfield contains one or more code points denoting probable failure causes of the Alert condition, listed in order of decreasing probability. A failure cause is defined to be a condition resulting from the failure of a resource.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Failure Causes subfield
1		Key: X'01'
2–q		Two-byte failure cause code points. Each code point provides an index to predefined text, describing the failure cause, that is displayed at the Alert receiver. An Alert receiver has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are listed below. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). The expression "(detailed data qualifier)" in the English text indicates a variable-length gap, to be filled in with data passed in a Detailed Data (X'82') subfield or a Detailed Data Extended (X'85') subfield. The one or more necessary X'82' or X'85' subfields follow this subfield in the X'96' subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield. **Note:** The X'82' and X'85' subfields *cannot* both be used in the same subvector.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content

The expression “(sf83 product text)” in the English text similarly indicates a variable-length gap, to be filled in with product identification data from the Product Identifier X'11' subvector indicated by a Product Set ID Index (X'83') subfield. The necessary X'83' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.

The expression “(sf84 resource text)” in the English text indicates a variable-length gap, to be filled in with resource identification data from a location indicated by a Resource List Index (X'84') subfield. The necessary X'84' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.

The third digit of each failure cause code point indicates the number of succeeding detailed data qualifiers that are associated with the code point, and whether a X'83' or X'84' subfield is associated with it, as follows:

X'xx0x'–X'xx9x':	No detailed data qualifiers.
X'xxAx'–X'xxBx':	One detailed data qualifier.
X'xxCx':	Two detailed data qualifiers.
X'xxDx':	Three detailed data qualifiers.
X'xxEx':	One X'83' subfield.
X'xxFx':	One X'84' subfield.

Defined failure cause codes are:

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'0000'	PROCESSOR: The equipment used to interpret and process programmed instructions
		X'0001'	MOSS HARDWARE: A hardware failure in MOSS (Maintenance and Operation Subsystem), the service processor for a communication controller
		X'0002'	MOSS MICROCODE: A microcode failure in MOSS (Maintenance and Operation Subsystem), the service processor for a communication controller
		X'0003'	PROCESSOR SWITCH: A component within a hardware product used to switch busses and the resources attached to them among processors
		X'0004'	CONTROL PANEL
		X'0005'	SYSTEM I/O BUS
		X'0006'	PROCESSOR MACHINE CHECK: A failure in the processor which precludes it from continuing operation.
		X'0007'	CARD ENCLOSURE AND/OR BOARD: The enclosure and boards used to hold circuit cards and provide power and/or signal connections for the cards.
		X'0008'	VECTOR PROCESSOR: The vector processing element associated with a central processing unit (CPU) has failed and is in a reserved state.
		X'0009'	SYSTEM CHECK STOP
		X'000A'	SERVICE PROCESSOR: A maintenance, service and support processor; sometimes called a process controller
		X'0010'	LAN MANAGER PROCESSOR
		X'0011'	PRINTER SERVER: A network component that controls the operation of a printer *Note:* In the current implementation, the printer server is a PC that stands between a printer and the host applications that communicate with it.
		X'0013'	OPTICAL SYSTEM BUS CONTROLLER
		X'0020'	EXCESSIVE LOAD ON PROCESSOR: The processor is not able to keep up with incoming requests for service. Internal buffers may be filled with queued tasks and not able to accept more requests, which may be asynchronous, and thus, discarded.
		X'0030'	SYSTEM MICROCODE: The specific microcode was not identified.
		X'0031'	SYSTEM STORAGE MICROCODE *Note:* See also code point X'0421' (STORAGE CONTROLLER MICROCODE)
		X'0032'	SYSTEM DISPLAY MICROCODE *Note:* See also code point X'0422' (WORK STATION CONTROLLER MICROCODE)
		X'0033'	SYSTEM COMMUNICATION MICROCODE *Note:* See also code point X'0423' (COMM SUBSYSTEM CONTROLLER MICROCODE)
		X'0034'	SYSTEM PRINTER MICROCODE
		X'0050'	TERMINAL EMULATOR SUBSYSTEM MICROCODE
		X'00E1'	(sf83 product text) PROCESSOR
		X'0100'	STORAGE: The random access memory (RAM) or read only memory (ROM) accessible by a processor and by peripheral devices
		X'0101'	MAIN STORAGE: Storage from which instructions and other data can be loaded directly into registers for subsequent execution or processing

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
			X'0102' AUXILIARY STORAGE: Storage that can not be directly addressed by a processor, such as external or secondary storage
			X'0103' MAIN STORAGE MACHINE CHECK: A failure in main storage which precludes it from continuing operation.
			X'0104' EXPANDED STORAGE: A specific type of auxiliary storage used for data and program paging
			X'0108' DASD CACHE
			X'0110' STORAGE CONTROL: The component that controls access to storage
			X'0111' NUMBER OF LAN MANAGEMENT FRAMES RECEIVED EXCEEDS BUFFER CAPACITY: Management frames from stations on a local LAN token-ring or bus are arriving faster than the LAN management server can process them
			X'01E1' (sf83 product text) MAIN STORAGE
		X'0200'	POWER SUBSYSTEM: The subsystem within a hardware product that provides electrical power to the different components within the product that require it
			X'0201' INTERNAL POWER UNIT: An element of the power subsystem providing electrical power to a specific component
			X'0202' INTERNAL POWER CONTROL UNIT: An element of the power subsystem that controls the internal power units
			X'0203' POWER CABLE
			X'0204' POWER CORD
			X'0205' POWER SUBSYSTEM PROCESSOR: A processor within the power subsystem responsible for its operation
			X'0210' BATTERY
			X'0211' MOSS BATTERY
			X'0212' COMMUNICATION WITH UNINTERRUPTIBLE POWER SUPPLY DISRUPTED
			X'0220' MAIN AC POWER SUPPLY
			X'02C0' INTERNAL POWER UNIT FOR (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the adapter numbers of the adapters served by the failing internal power unit.
			X'0230' POWER DISTRIBUTION UNIT
			X'0231' MOTOR GENERATOR
			X'0240' INTERNAL CLOCK: A mechanism which keeps time.
		X'0300'	COOLING OR HEATING SUBSYSTEM: The subsystems within a hardware product responsible for maintaining a temperature at which the product can operate
			X'0301' COOLING FAN
			X'0302' AIR FILTER
			X'0310' AIR FLOW DETECTOR
			X'0311' THERMAL DETECTOR
			X'0320' COOLANT DISTRIBUTION UNIT: A unit that distributes chilled water for cooling purposes, usually circulated in a closed system, has failed.
			X'0321' THERMAL LIMITS EXCEEDED: The acceptable thermal limits for normal operation have been exceeded.
		X'0400'	SUBSYSTEM CONTROLLER: A unit within a subsystem that interfaces between a processor and the devices in the subsystem *Note:* See Alert Description X'1600', SUBSYSTEM FAILURE, for descriptions of the particular subsystems mentioned here.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'0401'	STORAGE CONTROLLER
		X'0402'	WORKSTATION CONTROLLER
		X'0403'	COMMUNICATIONS SUBSYSTEM CONTROLLER *Note:* Contrast this code point with X'3111', COMMUNICATION CONTROLLER. A communication controller is typically a stand-alone node within a network, for example, a 3725; a communication subsystem controller is typically a component within a larger node that provides for the node's communication with nodes remote from it.
		X'0411'	INTERMITTENT STORAGE CONTROLLER ERROR
		X'0412'	INTERMITTENT WORKSTATION CONTROLLER ERROR
		X'0413'	INTERMITTENT COMMUNICATIONS SUBSYSTEM CONTROLLER ERROR
		X'0421'	LOADABLE STORAGE CONTROLLER MICROCODE
		X'0422'	LOADABLE WORKSTATION CONTROLLER MICROCODE
		X'0423'	LOADABLE COMMUNICATIONS SUBSYSTEM CONTROLLER MICROCODE
		X'0424'	TAPE CONTROLLER MICROCODE
		X'0441'	STORAGE CONTROLLER INTERFACE: The interface between a storage controller and the main processor in its node
		X'0442'	WORKSTATION CONTROLLER INTERFACE: The interface between a workstation controller and the main processor in its node
		X'0443'	COMMUNICATIONS SUBSYSTEM CONTROLLER INTERFACE: The interface between a communication subsystem controller and the main processor in its node.
		X'0444'	INTERCONNECT CONTROLLER
		X'0500'	SUBSYSTEM: A set of components that jointly provide a specified function; typically a subsystem includes a controller, one or more interface adapters, physical connection media, and attached devices *Note:* See Alert Description X'1600', SUBSYSTEM FAILURE, for descriptions of the particular subsystems mentioned here
		X'0501'	STORAGE SUBSYSTEM
		X'0502'	WORKSTATION SUBSYSTEM
		X'0503'	COMMUNICATIONS SUBSYSTEM
		X'0506'	CHANNEL SUBSYSTEM: A channel subsystem or a shared element within a channel subsystem has failed. The failing resource consists of more than just a single channel path.
		X'0507'	CALLER PROCESSING SUBSYSTEM: The telephone interface subsystem which processes touch tone input and voice output. It resides between the telephone system and an application processor.
		X'0508'	SPEECH SYNTHESIS SUBSYSTEM: The subsystem which maps host data and programmed phrases to digitized speech for output to the caller.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'1000'	SOFTWARE PROGRAM: A program implemented in software, as distinguished from one implemented in microcode
		X'1001'	APPLICATION PROGRAM
		X'1002'	LOADABLE SOFTWARE MODULE
		X'1003'	WIRELESS NETWORK ADMINISTRATION PROGRAM
		X'1004'	ENCRYPTION PROGRAM
		X'1005'	VOICE RESPONSE UNIT PROGRAM
		X'1006'	LAN OVER WAN COMMUNICATIONS PROGRAM
		X'1007'	REFRESH TIMER EXPIRED: An active connection has been terminated due to the expiration of the connection refresh timer.
		X'100A'	COMMUNICATIONS PROGRAM ABNORMALLY TERMINATED
		X'100F'	PROGRAM CHECK: An error in a program, detected by a processor's circuitry or microcode or by another software program, that would cause erroneous or catastrophic results if allowed to execute uncorrected.
		X'1010'	HOST PROGRAM: A program running in a host processor that is a primary or controlling program in a system
		X'1011'	PRINTER SERVER PROGRAM: A program running in a printer server that controls a printer *Note:* See also Failure Cause X'0011', PRINTER SERVER.
		X'1012'	SOFTWARE DEVICE DRIVER: A program designed to control a device.
		X'1013'	COMMUNICATIONS/LAN DEVICE DRIVER
		X'1014'	MAC DRIVER FAILURE: The Medium Access Control physical layer device driver has failed.
		X'1015'	MEDIA LIBRARY DEVICE DRIVER
		X'1021'	COMMUNICATION CONTROLLER CONTROL PROGRAM: A software program that is designed to schedule and supervise the execution of programs in a communication controller
		X'1022'	COMMUNICATIONS PROGRAM: A software program designed to provide direct assistance to a node in communicating with other nodes
		X'1023'	COMMUNICATIONS PROGRAM IN REMOTE NODE
		X'1024'	COMMUNICATIONS ACCESS METHOD: A software program in a host that provides access to a telecommunications network
		X'1025'	COMMUNICATIONS PROGRAM IN LOCAL NODE
		X'1030'	LAN MANAGER PROGRAM: The software program in a LAN manager
		X'1031'	LAN MANAGEMENT SERVER: A data collection and distribution point for a single LAN token-ring or bus. A LAN management server forwards data received from stations on its LAN token-ring or bus and possibly results from preliminary analysis performed by the server (on that data) to the LAN manager. LAN management servers also send data to stations on their LAN token-rings or busses *Note:* The LAN management servers that are currently defined are Ring Error Monitor (REM), Configuration Report Server (CRS), Ring Parameter Server (RPS), LAN Bridge Server (LBS), and LAN Reporting Mechanism (LRM).
		X'1032'	RING ERROR MONITOR: The LAN management server responsible for receiving and processing error reports from the stations on its token-ring
		X'1040'	I/O ACCESS METHOD ERROR: An error in a program that provides access to I/O (e.g., DASD, tape, terminals, printer, telecommunications network, etc.).

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'1050'	AGENT ERROR: An agent has experienced a permanent error condition. This is an internal error in a software component.
			X'1051'	COMMAND NOT RECOGNIZED: An internal command encountered at a software component was not recognized. This is an internal error in a software component.
			X'1052'	CONVERSATION PROTOCOL ERROR: A conversation protocol error was encountered by a software component. This is an internal error in a software component.
			X'1053'	DATA DESCRIPTOR ERROR: The description of the data defined in a distributed unit of work was in error. This is an internal error in a software component.
			X'1054'	INVALID DATA STRUCTURE ERROR: The data structure encountered by a software component was in error. This is an internal error in a software component.
			X'1055'	INVALID CURSOR STATE: The cursor state during a query operation against a relational data base was invalid. This is an internal error in a software component.
			X'1056'	RELATIONAL DATABASE ACCESS ERROR: An error was encountered while accessing a relational database. This is an internal error in a software component.
			X'1057'	BLOCKING PROTOCOL ERROR: Data blocking protocols were violated. This is an internal error in a software component.
			X'1058'	CHAINING PROTOCOL ERROR: Data chaining protocols were violated. This is an internal error in a software component.
			X'1059'	RELATIONAL DATABASE PACKAGE IS INOPERATIVE
			X'105A'	RELATIONAL DATABASE SNAPSHOT DATA OUT OF DATE
			X'105B'	SNAPSHOT TABLE TIMESTAMP OUT OF SYNC WITH BASE TABLE
			X'105C'	SNAPSHOT TABLE EXISTENCE MISMATCH WITH BASE TABLE
			X'105D'	SNAPSHOT TABLE OPTIONS MISMATCH WITH BASE TABLE
			X'105E'	LIBRARY MANAGER PROGRAM
			X'1061'	MESSAGE RECEIVED IS NOT AN ACKNOWLEDGEMENT MESSAGE
			X'1062'	BUFFER ALLOCATION ERROR
			X'1063'	ALL COMPONENT RESOURCE EXECUTION MODULES NOT STOPPED SUCCESSFULLY
			X'1065'	COMMUNICATIONS DRIVER ERROR
			X'1066'	CONTROL BLOCK CHAINING ERROR
			X'1067'	ENCODING/DECODING ERROR
			X'1068'	DESTINATION RESOURCE SERVER STOPPED
			X'1069'	DESTINATION RESOURCE STOPPED
			X'1070'	DEVICE COMMAND ERROR
			X'1071'	DEVICE COMMUNICATIONS SERVER TABLE ERROR
			X'1072'	DEVICE DATA MANAGEMENT SUPPORT SERVER NOT FOUND IN PROCESSOR
			X'1073'	DESTINATION RESOURCE NOT DEFINED IN CONTROL BLOCK POOL
			X'1074'	DESTINATION RESOURCE NOT STOPPED
			X'1075'	DESTINATION RESOURCE PAUSED
			X'1076'	DESTINATION RESOURCE PURGED
			X'1077'	DESTINATION RESOURCE SERVER PAUSED
			X'1078'	DESTINATION RESOURCE SERVER PURGED
			X'1079'	DISTRIBUTION SNAPSHOT FILE ERROR
			X'107A'	ERROR ACCESSING FILE
			X'107B'	DEVICE LOCKED BY ANOTHER TASK
			X'107C'	DEVICE LOCKED BY ANOTHER USER
			X'107D'	DISK QUEUE SERVER RESOURCE STOPPED

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'107E'	DISTRIBUTION FAILED
			X'107F'	DISTRIBUTION SESSION NOT CREATED
			X'1080'	ERROR GENERATING TEMPLATE FOR DATA DEFINITION
			X'1081'	ERROR CONTROL DATA LITERAL FILE
			X'1082'	ERROR OPENING FILE
			X'1083'	ERROR ACCESSING SECURED RESOURCE TABLE
			X'1084'	ERROR CLOSING FILE
			X'1085'	ERROR CLOSING TEMPORARY JOURNAL FILE
			X'1086'	ERROR DELETING TEMPORARY JOURNAL FILE
			X'1087'	ERROR RENAMING TEMPORARY JOURNAL FILE
			X'1088'	ERROR SENDING MAILBOX SERVICES MESSAGE TO DEVICE COMMUNICATION PROTOCOL PROGRAM
			X'1089'	FILE SUPPORT ERROR
			X'108A'	FILE SUPPORT RESOURCE NOT STARTED
			X'108B'	THREAD CREATION ERROR
			X'108C'	FILE CONTROL TABLE FULL
			X'108D'	FILE FULL
			X'108E'	FILE IS CORRUPT
			X'108F'	INBOUND SERVER RESOURCE STOPPED
			X'1090'	INCORRECT ENVIRONMENT STATUS RECEIVED FROM ORIGINATOR
			X'1091'	INPUT/OUTPUT ERROR — JOURNAL FILE
			X'1092'	DEVICE DATA MANAGEMENT SUPPORT PROGRAM ERROR
			X'1093'	INVALID DEVICE NAME
			X'1094'	INVALID LINE NAME
			X'1095'	INVALID LOCK ON RECORDS IN FILE
			X'1096'	INVALID MEMORY ADDRESS
			X'1097'	INVALID MEMORY POOL
			X'1098'	INVALID MEMORY REQUEST SIZE
			X'1099'	JOURNAL LOCKED
			X'109A'	INVALID ACKNOWLEDGEMENT IN REQUEST DATA STRUCTURE
			X'109B'	INVALID COMMAND CODE
			X'109C'	ERROR DURING FILE SEEK
			X'109D'	ERROR DURING BUFFER FLUSH
			X'109E'	INTERCONNECT CONTROLLER PROGRAM
			X'109F'	COMMAND VIOLATION
			X'10A0'	SOFTWARE SUBSYSTEM (detailed data qualifier) *Note:* The qualifier identifies the name of the software subsystem.
			X'10A1'	UNABLE TO BUILD ALERT REQUESTED BY (detailed data qualifier) *Note:* An Alert builder utility could not complete a request from the program identified by the qualifier.
			X'10A2'	(detailed data qualifier) FILE ERROR *Note:* The qualifier identifies the file name.
			X'10A3'	(detailed data qualifier) IS CORRUPT *Note:* The qualifier identifies the corrupt entity.
			X'10A4'	(detailed data qualifier) NOT FOUND *Note:* The qualifier identifies the entity not found.
			X'10A5'	ERROR SENDING NOTIFY NEW NODE MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
			X'10A6'	ERROR SENDING OPEN ACKNOWLEDGEMENT MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'10A7'	ERROR SENDING OPEN SESSION MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10A8'	ERROR SENDING QUERY NODE MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10A9'	ERROR SENDING QUERY REPLY MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10AA'	ERROR SENDING REQUEST HEARTBEAT MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10AB'	ERROR SENDING ADD NODE MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10AC'	ERROR SENDING DELETE NODE MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10AD'	ERROR SENDING GET NEW NODE MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10AE'	ERROR SENDING HEARTBEAT MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10AF'	ERROR SENDING LOAD APPLICATIONS MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10B0'	ERROR SENDING NODE ABORT MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10B1'	ERROR SENDING SUBNET ABORT MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10B2'	ERROR SENDING SWITCH REPLY MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10B3'	ERROR SENDING SWITCH NODE MESSAGE — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10B4'	SUBNET CONTROL NODE (detailed data qualifier) SWITCH FAILED *Note:* The qualifier identifies the node name.
		X'10B5'	SYSTEM CONTROL NODE (detailed data qualifier) SWITCH FAILED *Note:* The qualifier identifies the node name.
		X'10B6'	STRUCTURED QUERY LANGUAGE ERROR (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10B7'	DATA TRANSPARENCY ERROR — (detailed data qualifier) *Note:* The qualifier identifies the return code.
		X'10B8'	DISK ERROR CLOSING (detailed data qualifier) *Note:* The qualifier identifies the file name.
		X'10B9'	DISK ERROR READING (detailed data qualifier) *Note:* The qualifier identifies the file name or drive.
		X'10BA'	CODE PAGE ERROR — (detailed data qualifier) *Note:* The qualifier identifies the return code.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'10BB'	COMMUNICATIONS DRIVER SENT INCORRECT CARD NUMBER (detailed data qualifier) *Note:* The qualifier identifies the card number.
		X'10BC'	COMMUNICATIONS DRIVER SENT INCORRECT CONTROL BLOCK TYPE (detailed data qualifier) *Note:* The qualifier identifies the control block.
		X'10BD'	CONFIGURATION PACKAGE ACKNOWLEDGEMENT NOT RECEIVED FROM (detailed data qualifier) *Note:* The qualifier identifies the node name.
		X'10BE'	CONTROL NODE (detailed data qualifier) FAILED TO RESPOND *Note:* The qualifier identifies the node name.
		X'10BF'	SOFTWARE SUBTASK (detailed data qualifier) *Note:* The qualifier identifies the name of the software subtask.
		X'10C1'	(detailed data qualifier) UNABLE TO FORWARD ALERT ORIGINALLY SENT BY (detailed data qualifier) *Note:* The first qualifier identifies the CP that could not forward the Alert originally sent by the CP named in the second qualifier.
		X'10C2'	COMMUNICATION PROTOCOL PROGRAM ERROR (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the primary return code. The second qualifier identifies the secondary return code.
		X'10C3'	JOURNAL ERROR (detailed data qualifier) CONNECTION NAME (detailed data qualifier) *Note:* The first qualifier identifies the journal resource variable. The second qualifier identifies the connection name.
		X'10C4'	OPERATION ERROR (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the operation type. The second qualifier identifies either a system call or a return code.
		X'10C5'	CANNOT CREATE OPERATOR INTERFACE LOG FILE (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the file name. The second qualifier identifies the return code.
		X'10C6'	CANNOT WRITE TO OPERATOR INTERFACE LOG FILE (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the file name. The second qualifier identifies the return code.
		X'10C7'	ERROR STARTING (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers indicate the resource name and return code, respectively.
		X'10C8'	ERROR OPENING (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers indicate the resource name and the operating system return code, respectively.
		X'10C9'	ERROR READING (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers indicate the member name and the return code, respectively.
		X'10CA'	ERROR SEEKING (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers indicate the file name and the operating system return code, respectively.
		X'10CB'	ERROR WAITING FOR REPLY FROM (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers indicate the resource name and the return code, respectively.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'10CC'	ERROR FREEING BUFFER AT (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers indicate the address and the return code, respectively.
			X'10CD'	ERROR SENDING TO (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers indicate the resource name and the return code, respectively.
			X'10CE'	DEVICE ERROR — (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the device name. The second qualifier identifies either a system call or a return code.
			X'10D0'	ERROR ON EVENT SCANNER (detailed data qualifier) CONNECTION NAME (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the event scanner process. The second qualifier identifies connection name, and the third qualifier identifies the return code.
			X'10E1'	SOFTWARE PROGRAM (sf83 product text)
		X'1100'	OPERATING SYSTEM: Software that controls the execution of programs. An operating system may provide services such as resource allocation, scheduling, I/O control , and data management.	

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'1200'	SOFTWARE PROGRAM: A program implemented in software, as distinguished from one implemented in microcode.
		X'1201'	REQUIRED NODES ARE NOT ACTIVE
		X'1203'	COMMUNICATION PROTOCOL PROGRAM SENT AN INVALID COMMAND
		X'1204'	ERROR CALLING INDUSTRIAL COMPUTER LANGUAGE EXTENSIONS LIBRARY
		X'1205'	MANUFACTURING AUTOMATION PROTOCOL COMMUNICATIONS PROTOCOL
		X'1206'	TCP/IP COMMUNICATIONS PROTOCOL
		X'1207'	PROTOCOL VIOLATION DURING RESYNCHRONIZATION PROCESSING
		X'1208'	PROTOCOL VIOLATION DURING SYNCHRONIZATION POINT PROCESSING
		X'1209'	INVALID PATH SPECIFIED
		X'120A'	INVALID PATH SPECIFIED IN CONFIGURATION FILE
		X'120C'	INVALID PARAMETER IN REQUEST DATA STRUCTURE
		X'120D'	INVALID PARAMETER IN REQUEST WORK AREA
		X'120F'	LOGICAL DEVICE INTERFACE PROCEDURES (LDIP) PROGRAM SENT AN INVALID COMMAND
		X'1210'	INVALID PRIORITY
		X'1211'	INVALID PRIORITY IN REQUEST DATA STRUCTURE
		X'1212'	INVALID QUEUE NUMBER IN REQUEST
		X'1213'	INVALID REQUEST TYPE
		X'1214'	INVALID TASK NUMBER
		X'1215'	INVALID TIMEOUT VALUE IN REQUEST DATA STRUCTURE
		X'1216'	INVALID TRANSACTION NUMBER
		X'1217'	MESSAGE SIZE EXCEEDS ALLOCATED BUFFER SIZE
		X'1218'	ERROR ATTEMPTING TO ACCESS MESSAGE FILE
		X'121A'	MANUFACTURING AUTOMATION PROTOCOL APPLICATION PROGRAM INTERFACE ALLOCATION TABLE FULL
		X'121B'	TABLE MEMBER LOCKED BY ANOTHER USER
		X'121C'	TABLE RESOURCE EMPTY
		X'121D'	INVALID NODE INFORMATION BLOCK REQUEST
		X'121E'	MESSAGE TOO LONG FOR COMMUNICATION PROTOCOL PROGRAM TO TRANSMIT
		X'1220'	DATABASE MONITOR TIME-OUT DURING START-UP OR SHUT-DOWN OF DATABASE RESOURCES
		X'1221'	NEW SUBNET CONTROL NODE NOT FOUND IN CONFIGURATION FILE
		X'1222'	NEW SYSTEM CONTROL NODE NOT FOUND IN CONFIGURATION FILE
		X'1223'	ORIGINATOR RESOURCE PURGED
		X'1224'	NOT ENOUGH MEMORY STORAGE IN RESOURCE FOR NEW MEMBER
		X'1225'	PRINT SPOOLER CONTROL FILE ERROR
		X'1226'	PRINT SPOOLER CONTROL FILE FULL
		X'1227'	PROGRAM INITIALIZATION FAILED
		X'1228'	RESOURCE INITIALIZATION FAILED
		X'122A'	REQUESTED DEVICE CONTROL BLOCK FAILED TO START SUCCESSFULLY
		X'122B'	REQUESTED LINE CONTROL BLOCK FAILED TO START SUCCESSFULLY
		X'122C'	REQUESTED VIDEO CONTROL BLOCK FAILED TO START SUCCESSFULLY

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'122E'	RESOURCE NOT SHUT DOWN
			X'122F'	RESOURCE NOT STARTED
			X'1230'	SERVER RESOURCE INVALID
			X'1231'	INCONSISTENCY DETECTED: A mismatch between data values or component states has been detected.
			X'1232'	EXECUTION BLOCKED OR INHIBITED: A program or process has been blocked or inhibited from completing its normal task activity.
			X'1233'	UNRECOGNIZED RETURN CODE OR ERROR CODE: A program or process has received a return code or error code that it does not recognize.
			X'1236'	TIME-OUT EXPIRED WHILE WAITING FOR RESPONSE FROM DESTINATION RESOURCE
			X'1237'	TIMED OUT WAITING FOR COMMUNICATION PROTOCOL PROGRAM EVENT
			X'1239'	TIMED OUT WAITING FOR HARDWARE I/O PORT ACCESS
			X'123C'	SYSTEM TEMPLATE FILE ERROR
			X'123D'	TABLE RESOURCE LOCKED BY ANOTHER USER
			X'123E'	TABLE RESOURCE NOT AVAILABLE
			X'1240'	TASK NUMBER NOT AVAILABLE
			X'1241'	TIME-OUT EXPIRED WHILE WAITING FOR COMPLETION OF PRINT REQUEST
			X'1242'	TIME-OUT EXPIRED WHILE WAITING FOR RESPONSE FROM REMOTE NODE
			X'1243'	TIME-OUT EXPIRED WHILE WAITING FOR COMPLETION OF SPOOL REQUEST
			X'1244'	TIME-OUT EXPIRED WHILE WAITING FOR SUBNET CONFIG-URATION PACKAGE
			X'1245'	VM ACCESS COMMAND FAILED
			X'1246'	VM LINK COMMAND FAILED
			X'1247'	VM RELEASE COMMAND FAILED
			X'1248'	DATABASE SESSION NOT DISCONNECTED
			X'1249'	DATABASE SESSION TERMINATED — REQUEST REJECTED
			X'124A'	INVALID PARAMETER
			X'124B'	USER EXIT PROGRAM
			X'124C'	BACK-UP INCOMPLETE
			X'124D'	LIBRARY BACK-UP LIST IN USE
			X'124E'	DISCONNECT TIMER EXPIRED: An active connection has been terminated due to the expiration of the disconnect timer.
			X'1250'	ALGORITHM FAILURE: An algorithm failure has occurred in a software program.
			X'1251'	LINK TIMEOUT: The test CP-CP connection associated with a link has failed due to a link timeout.
			X'1252'	IPL FAILURE: An initial load program (IPL) has failed.
			X'1253'	INSUFFICIENT STORAGE: There was insufficient storage avail-able for the request to be satisfied.
			X'1254'	A NETWORK NODE IS CONTENDING WITH THE NODE SENDING THIS ALERT OVER THE INFORMATION FOR A TOPOLOGY RESOURCE
			X'1255'	A NETWORK NODE OTHER THAN THE NODE SENDING THIS ALERT IS BUILDING A TDU INCORRECTLY
			X'12A0'	ERROR OPENING AUXILIARY DISK (detailed data qualifier) *Note:* The qualifier identifies the return code.
			X'12A1'	ERROR OPENING PRINCIPAL DISK (detailed data qualifier) *Note:* The qualifier identifies the return code.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'12A2'	ERROR OPENING DISTRIBUTION GROUP TABLE (detailed data qualifier) *Note:* The qualifier identifies the return code.
			X'12A3'	ERROR SENDING ENVIRONMENT STATUS MESSAGE TO (detailed data qualifier) *Note:* The qualifier identifies the node.
			X'12A4'	ERROR SENDING MESSAGE TO APPLICATION (detailed data qualifier) *Note:* The qualifier identifies the application.
			X'12A5'	ERROR SENDING MESSAGE TO CONTROL NODE (detailed data qualifier) *Note:* The qualifier identifies the node.
			X'12A6'	DISK ERROR WRITING (detailed data qualifier) *Note:* The qualifier identifies the file.
			X'12A7'	TABLES AND QUEUES DEFINITION FILE ERROR (detailed data qualifier) *Note:* The qualifier identifies the operating system return code. The file containing descriptive information about software tables and various system queues contains an error.
			X'12A8'	ERROR DECODING MESSAGE (detailed data qualifier) *Note:* The qualifier identifies the return code.
			X'12A9'	ERROR ATTEMPTING TO DELETE (detailed data qualifier) *Note:* The qualifier identifies the file.
			X'12AA'	ERROR IN SECONDARY INDEX FILE (detailed data qualifier)
			X'12AB'	ERROR CLOSING (detailed data qualifier) *Note:* The qualifier identifies the file.
			X'12AC'	ERROR OPENING (detailed data qualifier) *Note:* The qualifier identifies the file.
			X'12AD'	(detailed data qualifier) RESTORED AND NOT SYNCHRONIZED *Note:* The qualifier identifies the file.
			X'12AE'	COMMUNICATION HAS BEEN LOST WITH SNA CROSS-DOMAIN RESOURCE MANAGER (detailed data qualifier)
			X'12AF'	INVALID/UNSUPPORTED CODE PAGE SPECIFIED IN (detailed data qualifier) *Note:* The qualifier identifies the file.
			X'12B0'	INVALID/UNSUPPORTED COUNTRY CODE SPECIFIED IN (detailed data qualifier) *Note:* The qualifier identifies the file.
			X'12B1'	ERROR SENDING TO PRINT SERVER (detailed data qualifier) *Note:* The qualifier identifies the resource name.
			X'12B3'	INVALID PATH/MINIDISK (detailed data qualifier) SPECIFICATION *Note:* The qualifier identifies either the path or minidisk.
			X'12B4'	DISTRIBUTION SNAPSHOT FILE ERROR (detailed data qualifier) *Note:* The qualifier identifies the return code. A distribution file contains information that is to be distributed among certain nodes. A snapshot file, or the distribution file's status at some point in time, contains an error.
			X'12B5'	INDUSTRIAL COMPUTER EVENT (detailed data qualifier) OCCURRED *Note:* The qualifier identifies the event.
			X'12B6'	UNSOLICITED MESSAGE RECEIVED FROM (detailed data qualifier) *Note:* The qualifier identifies the device.
			X'12B7'	INITIALIZATION ERROR (detailed data qualifier) *Note:* The qualifier identifies the return code.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'12B8'	TIMEOUT OCCURRED WHILE WAITING FOR SESSION (detailed data qualifier) TO STOP *Note:* The qualifiers identify the session.
			X'12B9'	SUBSERVIENT NODE (detailed data qualifier) FAILED TO RESPOND *Note:* The qualifier identifies the node.
			X'12BA'	INVALID PARAMETER (detailed data qualifier) *Note:* The qualifier identifies the parameter.
			X'12BB'	MEMORY ALLOCATION ERROR (detailed data qualifier) *Note:* The qualifier identifies the return code.
			X'12BC'	NETBIOS COMMUNICATION ERROR — ORIGINATING PROGRAM (detailed data qualifier) *Note:* The qualifier identifies the program.
			X'12BD'	NO MEMORY AVAILABLE TO RECEIVE MESSAGE FOR (detailed data qualifier) *Note:* The qualifier identifies the device.
			X'12BE'	NODE (detailed data qualifier) FAILED TO HEARTBEAT *Note:* The qualifier identifies the node.
			X'12BF'	UNEXPECTED MESSAGE (detailed data qualifier) *Note:* The qualifier identifies the command code.
			X'12C0'	ERROR ON VARIABLE POLLER (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the variable poller process and the return code, respectively.
			X'12C1'	MANUFACTURING AUTOMATION PROTOCOL ERROR (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the function and the return code, respectively.
			X'12CA'	ERROR WRITING TO (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the file and the operating system return code, respectively.
			X'12CB'	ERROR DETECTED ON CONNECTION TO (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the connection name and the return code, respectively.
			X'12D1'	ERROR ON JOURNAL (detailed data qualifier) CONNECTION NAME (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the journal resource name, the connection name, and the return code, respectively. A journal (as used here) is used to record information about device events. The connection is the connection between a logical device and an application.
		X'2000'	COMMUNICATIONS ERROR: An error has occurred on a communication facility	
			X'2001'	START-STOP COMMUNICATIONS ERROR
			X'2002'	BINARY SYNCHRONOUS COMMUNICATIONS ERROR
			X'2003'	SNA COMMUNICATIONS ERROR
			X'2004'	SDLC COMMUNICATIONS ERROR
			X'2005'	X.21 NETWORK
			X'2006'	X.25 COMMUNICATIONS ERROR
			X'2007'	LAN COMMUNICATIONS ERROR
			X'2008'	BANKING LOOP ERROR
			X'2009'	STORE LOOP ERROR
			X'200A'	ISDN COMMUNICATIONS ERROR

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'200B'	LINK
			X'200D'	FRAME RELAY COMMUNICATIONS ERROR
			X'200E'	LOCAL DCE LOOP: the DCE loop local to the error notification sender. *Note:* A DCE loop is the equipment comprised of cables, converters, and the like that connect the DCE with the nearest central office exchange; this equipment does not include the customer premises wiring.
			X'200F'	REMOTE DCE LOOP: The DCE loop remote from the error notification sender.
			X'2010'	DDS NETWORK: A network implementing the Digital Data Services, e.g., the DATAPHONE[1] Digital Service (DDS). [1] DATAPHONE is the Registered Service Mark of AT&T Company.
			X'2011'	SWITCHED NETWORK: This could be (but is not limited to) a public switched telephone network
			X'2012'	SERIAL NETWORK
			X'2013'	DS1 NETWORK
			X'2014'	DS1 COMMUNICATIONS ERROR
			X'2015'	DIGITAL NETWORK
			X'2016'	INCORRECT FILE RECEIVED
			X'2017'	CRC ERROR
			X'2018'	NBBS COMMUNICATIONS ERROR: A communication procedure, protocol, or function which is part of the Networking BroadBand Services architecture.
			X'2019'	ATM COMMUNICATIONS: An error in the transport network or protocol component of Asynchronous Transfer Mode (ATM) communications.
			X'201A'	IDLC COMMUNICATIONS: Communications according to the Data Link Control Protocol defined by Q.922 which may be used by ISDN and non-ISDN services.
			X'201B'	LMI PROCEDURES: A protocol used to perform Layer Management Interface (LMI) functions for frame relay communications.
			X'201C'	ILMI PROCEDURES: A protocol used to perform Interim Layer Management Interface (ILMI) functions for Asynchronous Transfer Mode (ATM) communications.
			X'201D'	CONNECTION START FAILURE: A connection startup has failed. This failure could be for many different reasons, i.e., due to missing QOS information, connection record is missing, traffic type is different at the origination port than one at destination port, no path is available for requested QOS, difference in QOS in the origination and destination ports, QOS is inappropriate for the connection traffic type, target of connection has rejected connection attempt, target of the connection was not found, connection retry limit has been exceeded, destination port was not found or not active, resource is already in use, requested bandwidth was out of range or connection is already active.
			X'201E'	CONNECTION CHANGE FAILURE: A connection change has failed. This failure could be for many different reasons, i.e., different route cannot be found, no path available with the requested QOS, connection retry limit has been exceeded, requested change in bandwidth was rejected, bandwidth of the destination would be exceeded with additional bandwidth requested, or bandwidth requested was out of range.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'201F'	CONNECTION FAILURE: An active connection has failed. This failure could be for many different reasons, i.e., because the required NBBS protocols were not exchanged while the connection was opening, an undetermined reason or the inability to reroute the connection as a result of a bandwidth request.
			X'2020'	NBBS PORT FAILURE: The NBBS port has experienced a failure.
			X'2021'	CONNECTION AGENT: The connection agent component has failed.
			X'2022'	DIRECTORY AGENT: The directory agent component has failed.
			X'2023'	TRANSIT CONNECTION MANAGER FAILURE: The transit connection manager has failed.
			X'2024'	TRUNK ACTIVATION FAILURE: A trunk activation has been attempted, but has failed.
			X'2025'	TRUNK CONNECTION FAILURE: A link supporting a trunk connection has failed.
			X'2026'	CONTROL POINT FAILURE: The control point function has failed.
			X'2027'	LINK FAILURE: A link has failed.
			X'2028'	NODE FAILURE: A NBBS node has failed. Some of the possible reasons for this failure are: topology database has reached maximum size or a hardware malfunction.
			X'2029'	RAPID TRANSPORT PROTOCOL FAILURE: There has been a problem with the rapid transport protocol.
			X'202A'	SPANNING TREE FAILURE: A failure has occurred on the spanning tree.
			X'202B'	UNEXPECTED MESSAGE RECEIVED: A message was received that was not expected in the current state of the component.
			X'202C'	APPN COMMUNICATIONS FAILURE
			X'202D'	D CHANNEL ACTIVATION FAILURE: Activation has failed for an ISDN D channel.
			X'2040'	INTER-EXCHANGE NETWORK: A network providing services between two local exchange areas
			X'2041'	PRIVATE NETWORK REACHED: The private network containing the called DTE
			X'2042'	LOSS OF SIGNAL
			X'2043'	LOSS OF FRAME
			X'2044'	TRANSIT NETWORK OUT OF ORDER: A transit network required to complete a communication path for a call is not operatonal.
			X'2045'	SECONDARY CLOCK IN USE
			X'2046'	INTERNAL OSCILLATOR CLOCKING IN USE: A communication clock degradation with no secondary clock back-up has resulted in the use of the internal oscillator to supply the clock function.
			X'2047'	DS3 NETWORK HAS INITIATED A TEST LOOP: A DS3 line has been placed into a test mode for loopback by the service provider or by the network side of the line.
			X'2048'	DIGITAL NETWORK HAS INITIATED A TEST LOOP: A digital line has been placed into a test mode for loopback by the service provider or by the network side of the line.
			X'2049'	DS1 NETWORK HAS INITIATED A TEST LOOP
			X'204A'	EXCESSIVE DELAY IN PUBLIC NETWORK
			X'2050'	X.21 NETWORK HAS INITIATED A TEST LOOP *Note:* The different test loops defined for X.21 networks are documented in the CCITT X.150 Recommendation.
			X'2051'	ISDN NETWORK HAS INITIATED A TEST LOOP
			X'2052'	X.25 NETWORK HAS INITIATED A TEST LOOP

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'2053'	COMMUNICATIONS PROGRAM ABNORMALLY TERMINATED: Abend of a DLC or path control component.
			X'2054'	INSUFFICIENT STORAGE FOR INTERMEDIATE SESSION SETUP: Session Connector is unable to allocate storage for processing.
			X'2055'	LOGICAL LINK CONTROL
			X'2056'	B-CHANNEL ISDN ERROR
			X'2057'	D-CHANNEL ISDN ERROR
			X'2058'	SERIAL LINK
			X'2060'	REQUEST FOR SESSION CONNECT REJECTED
			X'2061'	REQUEST TIMED OUT
			X'2062'	LOSS OF CLOCK SYNCHRONIZATION
			X'2064'	NEW CLOCK REFERENCE IN USE
			X'2070'	ALARM INDICATION SIGNAL (AIS) OPERATIONS ADMINISTRATION MAINTENANCE (OAM) EVENT RECEIVED: An Alarm Indication Signal (AIS) Operations Administration Maintenance (OAM) event has been received.
			X'2071'	ALARM INDICATION SIGNAL (AIS) OPERATIONS ADMINISTRATION MAINTENANCE (OAM) EVENT SENT: An Alarm Indication Signal (AIS) Operations Administration Maintenance (OAM) event has been sent.
			X'2072'	CONTINUITY CHECK OPERATIONS ADMINISTRATION MAINTENANCE (OAM) EVENT: A continuity check Operations Administration Maintenance (OAM) event has occurred.
			X'2073'	FAR END RECEIVE FAILURE (FERF) OPERATIONS ADMINISTRATION MAINTENANCE (OAM) EVENT RECEIVED: A Far End Receive Failure (FERF) Operations Administration Maintenance (OAM) event has been received.
			X'2074'	FAR END RECEIVE FAILURE (FERF) OPERATIONS ADMINISTRATION MAINTENANCE (OAM) EVENT SENT: A Far End Receive Failure (FERF) Operations Administration Maintenance (OAM) event has been sent.
			X'2075'	LOOPBACK OPERATIONS ADMINISTRATION MAINTENANCE (OAM) EVENT: A loop-back Operations Administration Maintenance (OAM) event has occurred.
			X'2076'	PERFORMANCE MONITORING OPERATIONS ADMINISTRATION MAINTENANCE (OAM) EVENT: A performance monitoring Operations Administration Maintenance (OAM) event has occurred.
			X'2077'	LOSS OF MULTIFRAME ALIGNMENT: A synchronous transmission system using a multiframe pattern for frame alignment has been unable to determine or recover the multiframe alignment pattern, and has therefore lost signal synchronization.
			X'2078'	FERF INDICATION RECEIVED: A physical line Far End Remote Failure (FERF) indication has been received.
			X'2079'	PLCP OUT OF FRAME: A frame delimiter for a received Physical Layer Convergence Protocol (PLCP) frame was not recognized
			X'207A'	PLCP RAI RECEIVED: A remote alarm indication (RAI) was sent by the Physical Layer Convergence Protocol (PLCP) remote end.
			X'2081'	TCP/IP NETWORK
			X'2082'	DS1/DS3 COMMUNICATIONS NETWORK
			X'2083'	CLLM MESSAGE RECEIVED FROM FRAME RELAY NETWORK
			X'2090'	FRAME REJECT RECEIVED: The local data link protocol station has received a frame reject command, indicating a problem in a frame it had previously transmitted.
			X'2091'	X.25 DIAGNOSTIC PACKET SENT
			X'2092'	X.25 CLEAR PACKET RECEIVED

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Byte	Bit	Content		
			X'2093'	X.25 CLEAR PACKET SENT
			X'2094'	X.25 N2 RETRY COUNT EXCEEDED
			X'2095'	IDLE RECEIVE SIGNAL: An idle packet, frame, or line pattern has been detected without data transfer, and a connection timeout has resulted.
			X'2096'	TERMINAL-AVAILABLE SIGNAL DROPPED: The high-speed serial interface (HSSI) terminal-available signal has not been received.
			X'2097'	COMMUNICATION-AVAILABLE SIGNAL DROPPED: The high-speed serial interface (HSSI) communication-available signal has not been received.
			X'20A0'	NO RESPONSE FROM THE X.21 NETWORK — (detailed data qualifier) EXPIRED *Note:* The qualifier specifies the X.21 timer that has expired.
			X'20A1'	NO RESPONSE FROM THE ISDN NETWORK — (detailed data qualifier) EXPIRED *Note:* The qualifier specifies the ISDN timer that has expired.
			X'20A2'	OSI PROTOCOL ERROR (detailed data qualifier) *Note:* The qualifier specifies the protocol code that defines the error condition which has occurred.
			X'20A3'	SNA COMMUNICATIONS ERROR (detailed data qualifier)
			X'20A4'	NO RESPONSE FROM THE X.25 NETWORK — (detailed data qualifier) EXPIRED *Note:* The qualifier specifies the X.25 timer that has expired.
			X'20A5'	NO RESPONSE FROM THE X.25 NETWORK — (detailed data qualifier) RETRY COUNT EXPIRED *Note:* The qualifier specifies the X.25 timer for which the retry count has expired.
			X'20A6'	(detailed data qualifier) LINE: The telephone line or transmission link connecting two or more components in the network *Note:* The qualifier identifies the link segment level (LSL) on which the line belongs.
			X'20A7'	(detailed data qualifier) OUTBOUND LINE: The equipment that connects the transmit circuits of the local DCE (i.e., the DCE local to the error notification sending node) to the receive circuits of the remote DCE. *Note:* The qualifier identifies the link segment level (LSL) on which the inbound line belongs.
			X'20A8'	(detailed data qualifier) INBOUND LINE: The equipment that connects the receive circuits of the local DCE (i.e., the DCE local to the error notification sending node) to the transmit circuits of the remote DCE. *Note:* The qualifier identifies the link segment level (LSL) on which the outbound line belongs.
			X'20A9'	COMMUNICATIONS ERROR DURING IPL WITH AUTOMATED REPLY FUNCTION ACTIVE — (detailed data qualifier) *Note:* The qualifier identifies the failing resource.
			X'20AA'	ERROR ON ASSOCIATED SNA PASS-THROUGH DEVICE (detailed data qualifier) *Note:* The qualifier identifies the failing SNA pass-through device.
			X'20AB'	APPN HIGH PERFORMANCE ROUTING COMMUNICATIONS FAILED TO NODE (detailed data qualifier) *Note:* The qualifier specifies the remote node with which the communication is lost.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'20B1'	X.25 COMMUNICATIONS ERROR — THE FOLLOWING DIAGNOSTIC PACKET WAS RECEIVED FROM THE NETWORK (detailed data qualifier) *Note:* The qualifier specifies the diagnostic code.
		X'20B2'	X.25 PROTOCOL VIOLATION DETECTED (detailed data qualifier) *Note:* The qualifier specifies the diagnostic code.
		X'20B3'	NO RESPONSE RECEIVED — (detailed data qualifier) EXPIRED *Note:* The qualifier specifies the timer that has expired.
		X'20C0'	COMMUNICATIONS ERROR OCCURRED WITH UNLIMITED RETRIES SPECIFIED — (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the failing resource and corresponding configuration parameter.
		X'20C1'	X.25 COMMUNICATIONS ERROR — THE FOLLOWING INDICATION PACKET WAS RECEIVED FROM THE NETWORK (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the packet type (reset, restart, or clear) and the cause code. The second qualifier specifies the diagnostic code. This code point is sent when an error is detected after end-to-end LLC communication has been established. Contrast with code point X'23C1'.
		X'20C2'	X.25 COMMUNICATIONS ERROR — THE DTE SENT THE FOLLOWING REQUEST PACKET TO THE NETWORK (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the packet type (reset, restart, or clear) and the cause code. The second qualifier specifies the diagnostic code. This code point is sent when an error is detected after end-to-end LLC communication has been established. Contrast with code point X'23C2'.
		X'20C3'	X.25 COMMUNICATIONS ERROR — THE FOLLOWING DIAGNOSTIC PACKET WAS RECEIVED FROM THE NETWORK (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the diagnostic code and the second qualifier specifies the diagnostic explanation.
		X'20C4'	X.25 COMMUNICATIONS ERROR — THE FOLLOWING INDICATION PACKET WAS SENT BY THE NETWORK (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the packet type (reset, restart, or clear) and cause code and the second qualifier specifies the diagnostic code.
		X'20C5'	X.25 COMMUNICATIONS ERROR — THE NETWORK RECEIVED THE FOLLOWING REQUEST PACKET FROM THE DTE (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the packet type (reset, restart, or clear) and cause code and the second qualifier specifies the diagnostic code.
		X'20C6'	(detailed data qualifier) — (detailed data qualifier) CONNECTION NOT AVAILABLE AT THIS TIME *Note:* The qualifiers indicate the node names at either end of the connection.
		X'20C7'	APPC COMMUNICATIONS ERROR (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers indicate the primary and secondary return codes, respectively.

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Byte	Bit	Content	
		X'20C8'	X.25 COMMUNICATIONS ERROR — THE FOLLOWING INDICATION PACKET WAS RECEIVED (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the packet type (reset, restart, or clear) and the cause code. The second qualifier specifies the diagnostic code.
		X'20C9'	X.25 COMMUNICATIONS ERROR — THE FOLLOWING REQUEST PACKET WAS SENT (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the packet type (reset, restart, or clear) and the cause code. The second qualifier specifies the diagnostic code.
		X'20D1'	NO RESPONSE FROM THE X.25 NETWORK — (detailed data qualifier) EXPIRED (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the timer. The second qualifier specifies the retry count and the third qualifier specifies the timer setting.
		X'20D2'	(detailed data qualifier) (detailed data qualifier) WAS ABOVE (detailed data qualifier) *Note:* The first qualifier identifies the configuration parameter and the second qualifier specifies the parameter value. The third qualifier specifies the threshold parameter.
		X'20D3'	(detailed data qualifier) (detailed data qualifier) WAS BELOW (detailed data qualifier) *Note:* The first qualifier identifies the configuration parameter and the second qualifier specifies the parameter value. The third qualifier specifies the threshold parameter.
		X'2100'	COMMUNICATIONS/REMOTE NODE: Either a communication facility denoted by a X'20xx' code point or a remote node denoted by a X'22xx' code point *Note:* This code point is used only when a more specific probable cause cannot be determined.
		X'2101'	START-STOP COMMUNICATIONS/REMOTE NODE
		X'2102'	BINARY SYNCHRONOUS COMMUNICATIONS/REMOTE NODE
		X'2104'	SDLC COMMUNICATIONS/REMOTE NODE
		X'2107'	LAN LLC COMMUNICATIONS/REMOTE NODE
		X'210A'	ISDN COMMUNICATIONS/REMOTE NODE
		X'210B'	IDLC COMMUNICATIONS/REMOTE NODE
		X'210C'	NBBS COMMUNICATIONS-REMOTE NODE: A communication procedure, protocol, or function which is part of the Networking BroadBand Services architecture.
		X'2132'	SERVER NOT AVAILABLE
		X'2133'	LOADER NOT AVAILABLE
		X'2200'	REMOTE NODE: The node at the remote end of a link connection *Note:* "Remote" is defined from the point of view of the node detecting the Alert condition.
		X'2201'	CALLED DTE
		X'2202'	CALLED DTE SIGNALLING CONTROLLED NOT READY: The called DTE has indicated that it is temporarily unable to accept incoming calls for circuit-switched service *Note:* This condition is unique to X.21.
		X'2203'	CALLED DTE SIGNALLING UNCONTROLLED NOT READY: The called DTE has indicated that it is unable to enter an operational state for accepting an incoming call *Note:* This condition is unique to X.21.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'2204'	OTHER REMOTE NODE: On a multidrop link, the remote node interfering with the link activity but not part of the logical connection for which the error was detected.
			X'2205'	TOPOLOGY PROTOCOL ERROR: Format error in a topology database update GDS variable.
			X'2206'	DIRECTORY PROGRAM REMOTE NODE: Protocol violation on a LOCATE request.
			X'2207'	UNAUTHORIZED NETWORK CHANGE ATTEMPTED: An end-node CP without authorization has attempted to delete a resource.
			X'2208'	COMMUNICATIONS PROGRAM IN ADJACENT NODE: Session Connector received an invalid RU.
			X'2209'	SESSION SERVICES PROGRAM IN REMOTE NODE
			X'220A'	REMOTE NETWORK TERMINAL
			X'22A0'	REMOTE NODE (detailed data qualifier)
			X'22A1'	COMMUNICATIONS PROGRAM IN REMOTE NODE (detailed data qualifier) *Note:* The qualifier identifies the remote node.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'2300'	CONNECTION NOT ESTABLISHED: A telephone connection required for the requested operation has not been established
		X'2302'	CALLED NUMBER DID NOT ANSWER
		X'2303'	APPROPRIATE NUMBERING PLAN TABLE NOT AVAILABLE
		X'2306'	NEW TELEPHONE NUMBER ASSIGNED TO CALLED DTE
		X'2307'	CALLED NUMBER OUTSIDE OF NUMBERING PLAN OR UNKNOWN BY THE NETWORK
		X'2308'	ACCESS BARRED: The calling DTE is not allowed to connect to the called DTE
		X'2309'	SPEED CLASSES INCOMPATIBLE: The called DTE is operating at a different speed from the calling DTE
		X'230A'	USER CLASSES OF SERVICE INCOMPATIBLE: The user class of service of the called DTE is incompatible with that of the calling DTE
		X'230B'	TERMINAL EQUIPMENT IDENTIFIER (TEI) ASSIGNMENT
		X'230C'	CALL REJECTED BY CALLED DTE
		X'230D'	CONNECTION ATTEMPT FAILED — UNRECOGNIZED V.25BIS FAILURE INDICATION
		X'230E'	TONE DIAL WAS USED ON A PULSE DIAL LINE
		X'2310'	CALLED DTE NOT RESPONDING
		X'2311'	SERVICE NOT AVAILABLE OR NOT SUPPORTED
		X'2312'	CALL REFERENCE NUMBER ERROR
		X'2314'	ISDN TO NON-ISDN OPERATION ERROR: The interconnection of services between ISDN and non-ISDN networks has failed or is not available.
		X'2315'	CALL COLLISION: An outgoing call was not completed because it collided with an incoming call on the same link
		X'2316'	LINE OR LINES NOT IN VALID STATE FOR CALL: The line (or all possible lines) is not in a valid state to place or accept a call, i.e., the line is in an error state, unavailable because it is is use, or is not varied on.
		X'2317'	NETWORK INTERFACE NOT IN VALID STATE FOR CALL: The network interface is not in a valid state to be used to place or accept a call, i.e., it is in an error state or is not varied on.
		X'2318'	INCOMING CALL REFUSED — PATH UNAVAILABLE
		X'2319'	OUTGOING CALL REFUSED — LLC TYPE INVALID
		X'2320'	NOT ENOUGH ACTIVE LOGICAL LINKS AVAILABLE FOR INCOMING CALL
		X'2321'	DLCI NOT CONFIGURED: The configuration of the Data Link Control Identifier (DLCI) used in frame relay communications has not occurred.
		X'2322'	DLCI IN USE: The Data Link Control Identifier (DLCI) used to identify a in frame relay communications channel is currently in use.
		X'2323'	VPC NOT CONFIGURED: The configuration of the Virtual Path Connection (VPI) used in Asynchronous Transfer Mode communications has not occurred.
		X'2324'	VCC NOT CONFIGURED: The configuration of the Virtual Channel Connection (VCI) used in Asynchronous Transfer Mode communications has not occurred.
		X'2325'	DLCI IN USE: The Data Link Control Identifier (DLCI) used to identify a in frame relay communications channel is in use.
		X'2326'	VPC IN USE: The Virtual Path Connection (VPC) used in Asynchronous Transfer Mode communications is in use.

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Byte	Bit	Content		
			X'2327'	VCC IN USE: The Virtual Channel Connection (VCC) used in Asynchronous Transfer Mode communications is in use.
			X'2328'	REQUIRED CONNECTION SETUP INFORMATION MISSING: A connection setup component is missing or inappropriate for the configuration of a connection.
			X'2329'	BANDWIDTH NOT SPECIFIED OR INCORRECT: A bandwidth value component is missing or inappropriate for the configuration of a connection.
			X'232A'	QUALITY OF SERVICE NOT SPECIFIED OR INCORRECT: A quality of service component is missing or inappropriate for the configuration of a connection.
			X'232B'	REQUESTED QUALITY OF SERVICE NOT AVAILABLE
			X'232C'	NOT ENOUGH MEMORY IN ADAPTER FOR ADDITIONAL CONNECTIONS
			X'232D'	MEMORY DEPLETED
			X'23B1'	V.25BIS CONNECTION FAILURE (detailed data qualifier) *Note:* The qualifier identifies the failure indication provided by the V.25bis modem.
			X'23C1'	X.25 COMMUNICATIONS NOT ESTABLISHED — THE FOLLOWING INDICATION PACKET WAS RECEIVED FROM THE NETWORK (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the packet type (reset, restart, or clear) and the cause code. The second qualifier specifies the diagnostic code. This code point is sent when an error is detected before end-to-end LLC communication has been established. Contrast with code point X'20C1'.
			X'23C2'	X.25 COMMUNICATIONS NOT ESTABLISHED — THE DTE SENT THE FOLLOWING REQUEST PACKET TO THE NETWORK (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier specifies the packet type (reset, restart, or clear) and the cause code. The second qualifier specifies the diagnostic code. This code point is sent when an error is detected before end-to-end LLC communication has been established. Contrast with code point X'20C2'.
		X'2600'	INTERFERENCE: An electric disturbance in a communication system that interferes with or prevents reception of a signal or of information	
		X'3000'	CHANNEL FAILURE: The equipment that is used to direct data to and from input/output devices and locally attached control units has experienced a failure	
			X'3001'	CHANNEL PHYSICAL LINE
			X'3002'	CHANNEL LOGICAL LINE
			X'3003'	CHANNEL STATION
		X'3100'	CONTROLLER FAILURE: A communication device that controls other devices and the flow of information to and from them has experienced a failure	
			X'3110'	COMMUNICATION CONTROLLER BACK-UP: A process which switches resources from one processor to a back-up processor in a communication controller. *Note:* This code point is used to notify the network operator about a maintenance procedure that was invoked locally or initiated automatically which results in the availability of additional resources.
			X'3111'	COMMUNICATION CONTROLLER: A communication device that controls the transmission of data over lines in a network *Note:* In SNA a communication controller is a type 4 node.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'3121'	TERMINAL CONTROL UNIT: A communication device that controls the transmission of data to and from terminals
		X'3131'	DASD CONTROL UNIT: A device that controls the transfer of data to and from a direct access storage device such as a disk or drum
		X'3133'	STORAGE DEVICE CONTROLLER
		X'3200'	COMMUNICATIONS INTERFACE: The equipment connecting a node to the component in a link connection with which it exchanges physical control signals
		X'3220'	LOCAL TOKEN-RING ADAPTER INTERFACE: The programming interface for the local token-ring adapter
		X'3221'	CSMA/CD ADAPTER INTERFACE: The programming interface for the local CSMA/CD adapter
		X'3225'	ISDN-R INTERFACE
		X'32D1'	LOCAL DCE COMMUNICATIONS INTERFACE (detailed data qualifier) (detailed data qualifier) (detailed data qualifier): The communication interface between the Alert sender and the local Data Circuit-Terminating Equipment (DCE) *Note:* The qualifiers identify the standards, protocols, and other characteristics that characterize the interface, e.g., RS-232C, 1200 BPS, V.24.
		X'32D2'	REMOTE DCE COMMUNICATIONS INTERFACE (detailed data qualifier) (detailed data qualifier) (detailed data qualifier): The communication interface between the Data Circuit-Terminating Equipment (DCE) remote from the Alert sender and the remote node *Note:* The qualifiers identify the standards, protocols, and other characteristics that characterize the interface, e.g., RS-232C, 1200 BPS, V.24.
		X'32D3'	REMOTE DCE COMMUNICATIONS INTERFACE (detailed data qualifier) (detailed data qualifier) (detailed data qualifier): The communication interface between the Alert sender and the DCE emulation cable that attaches it to a device's DCE interface cable *Note:* The qualifiers identify the standards, protocols, etc. that characterize the interface, e.g., RS-232C, 1200 BPS, V.24.
		X'3300'	ADAPTER: The part of a device that interfaces between a processor in the device and one or more attached devices *Note:* The processor referred to here could be either the main processor in the node containing the adapter or a processor in, e.g., a communication subsystem controller.
		X'3301'	CHANNEL ADAPTER
		X'3302'	COMMUNICATIONS ADAPTER
		X'3303'	DASD ADAPTER
		X'3304'	DISPLAY/PRINTER ADAPTER
		X'3305'	DIRECT-ATTACHED ADAPTER
		X'3306'	DISKETTE ADAPTER
		X'3307'	ENCRYPTION/DECRYPTION ADAPTER
		X'3309'	LINE ADAPTER
		X'330A'	LOOP ADAPTER
		X'330B'	PARALLEL INTERFACE ADAPTER
		X'330C'	SERIAL INTERFACE ADAPTER
		X'330D'	TAPE ADAPTER
		X'330E'	CONSOLE ADAPTER
		X'330F'	HPTSS ADAPTER: A high-speed processor transmission subsystem adapter in a communication controller

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'3310'	LOCAL ISDN ADAPTER: An adapter that attaches the Alert sender to an ISDN network *Note:* See also code point X'3532' LOCAL ISDN TERMINAL ADAPTER. A terminal adapter is distinguished from an ISDN adapter by the presence of a defined interface (e.g., RS-232C) between itself and the node that it serves; an ISDN adapter is typically integrated within its node.
			X'3311'	REMOTE ISDN ADAPTER: An adapter that attaches to an ISDN network a node with which the Alert sender has a logical connection utilizing the network *Note:* See also code point X'3533' REMOTE ISDN TERMINAL ADAPTER.
			X'3312'	LOCAL DS1 ADAPTER
			X'3313'	WIRELESS ADAPTER CONTROLLER CARD
			X'3314'	LOCAL WIRELESS ADAPTER
			X'3315'	REMOTE WIRELESS ADAPTER
			X'3320'	LOCAL TOKEN-RING ADAPTER: An adapter that attaches the Alert sender to a token-ring LAN
			X'3321'	REMOTE TOKEN-RING ADAPTER: An adapter that attaches a node other than the Alert sender to a token-ring LAN
			X'3322'	LOCAL CSMA/CD ADAPTER: An adapter that attaches the Alert sender to a CSMA/CD LAN
			X'3323'	REMOTE CSMA/CD ADAPTER: An adapter that attaches a node other than the Alert sender to a CSMA/CD LAN
			X'3324'	TOKEN-RING ADAPTER: An adapter that attaches a node to a token-ring LAN
			X'3325'	CSMA/CD ADAPTER: An adapter that attaches a node to a CSMA/CD LAN
			X'3326'	TOKEN BUS ADAPTER
			X'3327'	DEFECTIVE TRANSMITTER
			X'3328'	3270 ADAPTER
			X'3329'	LOCAL FRAME RELAY ADAPTER: An adapter that attaches the Alert sender to a Frame Relay network
			X'3330'	ADAPTER HARDWARE
			X'3331'	ADAPTER MICROCODE
			X'3333'	LINE CONNECTION BOX
			X'3340'	LOCAL LAN ADAPTER
			X'3341'	STORAGE DEVICE ADAPTER
			X'334F'	REMOTE FDDI ADAPTER: An adapter that attaches a node other than the Alert sender to a FDDI LAN
			X'3351'	FDDI ADAPTER
			X'3352'	T1 ADAPTER
			X'336F'	CONTROLLER BUS ADAPTER
			X'3370'	OPTICAL SYSTEM BUS ADAPTER
			X'33A0'	LINE ADAPTER MULTIPLEXER (detailed data qualifier): A line adapter (scanner) multiplexer in a communication controller *Note:* The qualifier identifies the line address for the failing multiplexer.
			X'33A5'	LAN ADAPTER — (detailed data qualifier) *Note:* The qualifier identifies the type.
			X'33C0'	LINE ADAPTER (detailed data qualifier) (detailed data qualifier): A line adapter (scanner) in a communication controller *Note:* The qualifiers identify the line adapter number and the line address range for the failing adapter.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'33C1'	LINE ADAPTER HARDWARE (detailed data qualifier) (detailed data qualifier): The hardware comprising a line adapter (scanner) in a communication controller *Note:* The qualifiers identify the line adapter number and the line address range for the failing adapter.
			X'33C2'	LINE ADAPTER MICROCODE (detailed data qualifier) (detailed data qualifier): The microcode executing in a line adapter (scanner) in a communication controller *Note:* The qualifiers identify the line adapter number and the line address range for the failing adapter.
			X'33C3'	LINE INTERFACE COUPLER (LIC) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the line address and the LIC position for the failing LIC.
		X'3400'	CABLE LOOSE OR DEFECTIVE: A cable or its connectors used to electrically connect devices together is loose or defective	
			X'3401'	LOCAL DCE INTERFACE CABLE: The cable, or its connectors, between the Alert sender and the local Data Circuit-Terminating Equipment (DCE)
			X'3403'	REMOTE DCE INTERFACE CABLE: The cable, or its connectors, between the Alert sender's remote DCE and the device attached to it.
			X'3404'	DCE EMULATION CABLE: The cable, or its connectors, between the Alert sender and a DCE interface cable attached to a device *Note:* The end of the DCE emulation cable remote from the Alert sender plugs directly into the DCE interface cable attached to the device.
			X'3405'	LOCAL DTE INTERFACE CABLE: The cable, or its connectors, between the Alert sender's DTE (Data Terminal Equipment) and the DSU (Digital Service Unit).
			X'3411'	CHANNEL INTERFACE CABLE: The cable or cables, or their connectors, between a channel and a locally attached device
			X'3413'	REMOTE DTE INTERFACE CABLE
			X'3426'	CSMA/CD LAN CABLES: The cables in a CSMA/CD LAN. These include the cable attaching the alert sender to the CSMA/CD bus and the bus itself
			X'3430'	FDDI CABLE
			X'3434'	LOCAL LOBE CABLES: The cables between the reporting node and its access unit on a token-ring LAN
			X'3435'	REMOTE LOBE CABLES: The cables between a remote node and its access unit on a token-ring LAN
			X'3436'	LOCAL CSMA/CD ADAPTER CABLE: The cable attaching the Alert sender to the CSMA/CD bus
			X'3441'	LOOP CABLE: A cable connecting the nodes attached to a communication loop
			X'3451'	DEVICE CABLE: A cable connecting a device directly to a communication controller or a control unit
			X'3452'	STORAGE DEVICE CABLE: A cable directly connecting a local storage device to its adapter/controller
			X'3460'	INTERNAL CABLE
			X'3461'	LINE ADAPTER MULTIPLEXER CABLE
			X'3465'	PREMISES WIRING
			X'3470'	OPTICAL SYSTEM BUS CABLE
			X'3480'	TWINAXIAL CABLE DISTRIBUTION ASSEMBLY

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'34A0'	(detailed data qualifier) LOCAL DCE INTERFACE CABLE: On a particular link segment, the DCE interface cable nearer to the error notification sender *Note:* The qualifier identifies the link segment level (LSL) on which the DCE belongs.
		X'34A1'	(detailed data qualifier) REMOTE DCE INTERFACE CABLE On a particular link segment, the DCE interface cable farther from the error notification sender *Note:* The qualifier identifies the link segment level (LSL) on which the DCE belongs.
		X'34A2'	(detailed data qualifier) LINE INTERFACE COUPLER TO LINE CONNECTION BOX CABLE *Note:* The qualifier identifies the name of a specific Line Interface Coupler cable, e.g., LIC11.
		X'3500'	COMMUNICATION EQUIPMENT: External equipment used to connect devices or other system components *Note:* If the attaching equipment is known to be a modem, then a modem code point (X'36xx') is sent instead of this code point.
		X'3501'	PROTOCOL CONVERTER: A device that converts one protocol data stream to another. This code point applies to a protocol converter providing conversion between any two data streams regardless of whether attached via a communications link and/or a local attachment link such as 327X coaxial link or 525X twinaxial link. Protocols involved can include SDLC, BISYNC, ASYNC, 327X and 525X. *Note:* This code point is not to be used for a X.25 Packet Assembler-Disassembler (X.25 Pad).
		X'3502'	TERMINAL MULTIPLEXER: The equipment used to connect multiple devices to a single cable
		X'3503'	LINE SWITCH: A device that on demand allows Data Circuit-Terminating Equipment (DCE) to be attached to different Data Terminal Equipment (DTE) ports. The device supports both digital switching for the DCE-DTE interface and also the switching of the analog interface between the DCE and the communication facility (line).
		X'3504'	AUTO-CALL UNIT: A stand-alone or integrated unit used to establish connection on a switched communication line and connected in parallel with the modem used for data transmission but connected to the DTE via a separate interface (i.e., EIA-366/CCITT V.25).
		X'3506'	LOCAL DIGITAL DATA DEVICE: On a particular link segment, the digital data device (DDD) nearer to the Alert sender *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with Failure Cause X'F0A3', FAILURE OCCURRED ON (detailed data qualifier).
		X'3507'	REMOTE DIGITAL DATA DEVICE: On a particular link segment, the digital data device (DDD) farther from the Alert sender *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with Failure Cause X'F0A3', FAILURE OCCURRED ON (detailed data qualifier).
		X'3509'	SERIAL NODE
		X'350B'	SERIAL LINK SWITCH
		X'350C'	ACTIVE REMOTE CONNECTOR

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'3510'	CALLED DCE
			X'3511'	LINE: The telephone line or transmission link connecting two or more components in the network *Note:* For a multi-segment link connection, this text does not indicate which segment is involved. This information is typically communicated by means of a qualifier associated with Failure Cause X'F0A3', FAILURE OCCURRED ON (detailed data qualifier).
			X'3512'	THE CONNECTION BETWEEN THE CALLING DCE AND ITS LOCAL DSE
			X'3513'	LOCAL LOOP ASSOCIATED WITH THE CALLED DTE
			X'351E'	DS3 NETWORK COMPONENT
			X'351F'	DS1 NETWORK COMPONENT
			X'3520'	X.21 NETWORK COMPONENT
			X'3521'	TEMPORARY LACK OF RESOURCES IN THE X.21 NETWORK
			X'3522'	LONG-TERM LACK OF RESOURCES IN THE X.21 NETWORK
			X'352F'	ISDN TE-NT CONNECTION
			X'3530'	ISDN NETWORK COMPONENT
			X'3531'	ISDN NETWORK TERMINATION EQUIPMENT (NT1): A device, normally residing on the user's premises, that provides conversion, for basic-rate ISDN service, between the 4-wire interface seen by the user and the 2-wire interface seen by the ISDN service provider
			X'3532'	LOCAL ISDN TERMINAL ADAPTER: The terminal adapter local to the Alert sender *Note:* See also code point X'3310' LOCAL ISDN ADAPTER. A terminal adapter is distinguished from an ISDN adapter by the presence of a defined interface (e.g., RS-232C) between itself and the node that it serves; an ISDN adapter is typically integrated within its node.
			X'3533'	REMOTE ISDN TERMINAL ADAPTER: The terminal adapter that attaches to an ISDN network a node with which the Alert sender has a logical connection utilizing the network *Note:* See also code point X'3311' REMOTE ISDN ADAPTER.
			X'3534'	TEMPORARY LACK OF RESOURCES IN THE ISDN NETWORK
			X'3535'	LONG-TERM LACK OF RESOURCES IN THE ISDN NETWORK
			X'3536'	ISDN NETWORK TERMINATION DEVICE
			X'3537'	REMOTE ISDN NETWORK INTERFACE: The ISDN interface at the remote partner of a communication connection is malfunctioning.
			X'3541'	LOCAL DCE: The Data Circuit-Terminating Equipment (DCE) nearer to the error notification sender *Note:* This code point is used only if the Alert sender is unable to determine whether the DCE is a modem or a DDD; see code points X'3506' and X'3601'.
			X'3542'	REMOTE DCE: The Data Circuit-Terminating Equipment (DCE) farther from the error notification sender *Note:* This code point is used only if the Alert sender is unable to determine whether the DCE is a modem or a DDD; see code points X'3507' and X'3603'.
			X'3550'	X.25 NETWORK COMPONENT
			X'3551'	SHORT-TERM CONGESTION IN THE X.25 NETWORK
			X'3552'	LONG-TERM CONGESTION IN THE X.25 NETWORK
			X'3553'	CONGESTION IN TRANSIT NETWORK
			X'35A0'	(detailed data qualifier) LOCAL DSU/CSU: On a particular link segment, the DSU/CSU nearer to the error notification sender *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.

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Byte	Bit	Content		
			X'35A1'	(detailed data qualifier) REMOTE DSU/CSU: On a particular link segment, the DSU/CSU farther from the error notification sender *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
			X'35A2'	(detailed data qualifier) LOCAL DCE: On a particular link segment, the DCE nearer to the error notification sender *Note:* The qualifier identifies the link segment level (LSL) on which the DCE belongs.
			X'35A3'	(detailed data qualifier) REMOTE DCE: On a particular link segment, the DCE farther from the error notification sender *Note:* The qualifier identifies the link segment level (LSL) on which the DCE belongs.
			X'35C0'	(detailed data qualifier) LOCAL (detailed data qualifier) *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communications network management adapter (CNM ADAPTER) or the DCE.
			X'35C1'	(detailed data qualifier) REMOTE (detailed data qualifier) *Note:* The first qualifier identifies the link segment level (LSL). The second qualifier identifies the communications network management adapter (CNM ADAPTER) or the DCE.
		X'3600'	MODEM: A device or functional unit that modulates and demodulates signals transmitted over data communication facilities	
			X'3601'	LOCAL MODEM: The modem connected to the error notification sender
			X'3602'	LOCAL LINK DIAGNOSTIC UNIT: A device that connects to both sides of a local modem and provides Link Problem Determination Aid (LPDA) data for digital and analog links with non-intelligent IBM or non-IBM modems
			X'3603'	REMOTE MODEM: The modem remote from the error notification sender
			X'3604'	REMOTE LINK DIAGNOSTIC UNIT: A device that connects to both sides of a remote modem and provides Link Problem Determination Aid (LPDA) data for digital and analog links with non-intelligent IBM or non-IBM modems
			X'3605'	OTHER WIRELESS NETWORK OR MICROWAVE EQUIPMENT
			X'3606'	WIRELESS TRANSCEIVER
			X'3621'	LOCAL ENHANCED MODEM: The enhanced modem connected to the Alert sender *Note:* An enhanced modem can provide functions in addition to modulation/demodulation, such as establishing switched connections and storing dial digits.
			X'36A0'	(detailed data qualifier) LOCAL MODEM: On a particular link segment, the modem nearer to the error notification sender *Note:* The qualifier identifies the link segment level (LSL) on which the modem belongs.
			X'36A1'	(detailed data qualifier) REMOTE MODEM: On a particular link segment, the modem farther from the error notification sender *Note:* The qualifier identifies the link segment level (LSL) on which the modem belongs.
			X'36A2'	(detailed data qualifier) LOCAL MODEM FEATURE(S) *Note:* The qualifier identifies the link segment level (LSL) on which the modem belongs.
			X'36A3'	(detailed data qualifier) REMOTE MODEM FEATURE(S) *Note:* The qualifier identifies the link segment level (LSL) on which the modem belongs.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'3700'	LAN COMPONENT: A component of a local area network. On a token-ring LAN, the LAN components include the adapters, bridges, access units, repeaters, repeater/amplifiers, and the LAN cable. On a CSMA/CD LAN, the LAN components include the adapters, bridges, LAN cables, taps, splitters, amplifiers, and translator units. On a FDDI LAN, the LAN components include the adapters, bridges, concentrators, and the LAN (FDDI) cable. *Note:* This default code point is used to indicate that some unspecified LAN component is a failure cause. Individual LAN components are denoted by replacement code points under X'3700', with the exception of the LAN cable, which falls under CABLE LOOSE OR DEFECTIVE (X'3400'), and the LAN adapters, which fall under ADAPTER (X'3300').
		X'3701'	TOKEN-RING LAN COMPONENT
		X'3703'	TOKEN-RING FAULT DOMAIN: An adapter, its nearest active upstream neighbor, and the token-ring media between them; the token-ring media consists of the lobe cables, portions of one or more access units, and possibly a portion of the LAN cable
		X'3706'	OPTICAL FIBER CONVERTER: A device which converts electrical signals into optical signals and vice-versa
		X'3707'	TOKEN-RING LAN CABLES
		X'3708'	DOMAIN CONTROLLER
		X'370C'	INVALID SYMBOL RECEIVED FROM MAC: The physical layer transmits symbols presented to it by the medium access control (MAC) sublayer entity. This fault is issued when the physical layer cannot encode one of the MAC symbols as specified in the IEEE 802.4 standard.
		X'370D'	CONCENTRATOR CONTROL CARTRIDGE
		X'370E'	CONCENTRATOR RING INTERFACE CARTRIDGE
		X'370F'	CONCENTRATOR STATION INTERFACE CARTRIDGE
		X'3711'	LOCAL ACCESS UNIT: The access unit by which the Alert sender is attached to a token-ring LAN *Note:* An access unit is an active or passive wiring concentrator on a token-ring LAN.
		X'3712'	LOCAL TOKEN-RING LOBE: A token-ring lobe attaching the Alert sender to a token-ring
		X'3713'	REMOTE ACCESS UNIT: An access unit by which a node other than the Alert sender is attached to a token-ring LAN
		X'3716'	STATUS OF A MULTIPORT BRIDGE PORT HAS CHANGED: Status of the port on a multiport bridge has changed due to LNM linking to the bridge or due to some problem at the bridge.
		X'3721'	CSMA/CD LAN COMPONENT
		X'3722'	CSMA/CD LAN TRANSLATOR UNIT: A component at the head end of a CSMA/CD bus, which accepts input at one frequency and transmits the same data at a different frequency
		X'3730'	FDDI LAN COMPONENT
		X'3733'	FDDI FAULT DOMAIN: An adapter, its nearest active upstream neighbor, and the FDDI media between them.
		X'3734'	FDDI LAN PORT
		X'3735'	FDDI LAN MAC
		X'3741'	CONGESTION IN LAN BRIDGE: Frames are arriving at a bridge faster than they can be forwarded by that bridge and, as a result, some frames are discarded
		X'3750'	TOKEN-RING CAU ATTACHMENT MODULE: An interface to the wire lobes connecting workstations to a Token Ring network.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
			X'3752' BASE UNIT INTERNAL ERROR: An error has occurred on the Controlled Access Unit component that directs the operation of the lobe attachment modules and interacts with the Token Ring network.
			X'3760' FILE SERVER
		X'4000'	PERFORMANCE DEGRADED
		X'40A0'	(detailed data qualifier) THRESHOLD REACHED *Note:* The qualifier identifies the counter.
		X'5000'	MEDIA: A tape, disk, diskette, or paper (or other data medium) that is required to read data from or write data on
			X'5001' DASD MEDIA: The medium used in a direct access storage device; it may be either removable or non-removable
			X'5002' DISKETTE: A thin, flexible magnetic disk in a semi-rigid protective jacket, in which the disk is permanently enclosed; also termed a floppy diskette
			X'5003' TAPE: A recording medium in the form of a ribbon that has one or more tracks along its length; magnetic recordings can be made on either one or both sides
		X'5200'	MEDIA JAM: The medium (usually paper, forms or cards) is jammed in the machine and operator action is required to correct the problem.
			X'5201' CARD JAM
			X'5202' FORMS JAM
			X'5203' PAPER JAM
			X'5204' FILM JAM
		X'6000'	DEVICE: An input, output, or input/output device (e.g., a terminal or disk drive)
			X'6001' SNA PASS-THROUGH DEVICE: A logical device that is used to establish an SNA pass-through session.
			X'6002' SNA PASS-THROUGH GROUP: A group of logical devices that can provide an SNA pass-through session.
			X'6010' NO TROUBLE FOUND IN PRIMARY DEVICE: After a switch to backup operation was performed, the primary device was tested and found to have no detectable problem.
		X'6100'	INPUT DEVICE: A device that is used to enter data into a system
			X'6110' KEYBOARD: An arrangement of alphanumeric, special character, and function keys laid out in a specified manner and used to enter information into a terminal, and thereby into a system
			X'6111' KEYPAD: A specialized keyboard with an arrangement of a limited number of alphanumeric, special character, and/or function keys
			X'6112' SELECTOR PEN: A light-sensitive pen used in display operations
			X'6113' MICR READER/SORTER: A magnetic ink character recognition reader/sorter
			X'6114' MAGNETIC STRIPE READER (MSR): A device that reads data from a card containing a magnetic stripe
			X'6115' ID CARD READER: An Identification Card Reader (ICR) is a device which can read data from or write data to a magnetic stripe or an electronic chip on a consumer's identification card.
			X'6116' OPTICAL DOCUMENT READER
		X'6200'	OUTPUT DEVICE: A device that receives data from a system

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'6210'	PRINTER: An output device that produces durable and optically viewable output in the form of characters (and optionally graphics) by a means other than by drawing with one or more pens *Note:* Contrast with code point X'6213' PLOTTER.
			X'6211'	COPIER: An output device that produces one or more copies of an original without affecting the original
			X'6212'	CAMERA: An output device that combines electronic data with a visual image on a single visual medium
			X'6213'	PLOTTER: An output device that produces graphic and/or character output by means of one or more pens that draw on the surface of the output medium *Note:* Contrast with code point X'6210' PRINTER.
			X'6220'	PRINTER CASSETTE: A removable container for feeding paper to a printer
		X'6300'	INPUT/OUTPUT DEVICE: A device whose parts can be performing an input process and output process at the same time, such as a card reader/punch	
			X'6301'	DISPLAY/PRINTER: A device that has either of the characteristics of a display or printer or both. This code point is used only when the Alert sender cannot determine whether the attached device is a display or printer
			X'6302'	DISPLAY: A workstation that requires a host connection in order to function; typically a display includes both a monitor and a keyboard
			X'6309'	STORAGE DEVICE: The device cannot be specifically identified as disk, tape, optical, etc.
			X'6310'	DISK DRIVE: The primarily mechanical component of a DASD device, directly involved with transferring data to and from the medium
			X'6311'	DISKETTE DRIVE: The primarily mechanical component of a diskette device, directly involved with transferring data to and from the medium
			X'6312'	OPTICAL DISK DEVICE: A direct access storage device that uses an optical disk as the storage medium. The disk may be either removable or non-removable
			X'6313'	TERMINAL: A device in a system or network at which data can either enter or leave. A terminal is usually equipped with a keyboard and a display device, and is capable of sending and receiving information
			X'6314'	TAPE DRIVE: The primarily mechanical component of a tape drive, directly involved with transferring data to and from the medium
			X'6315'	CONSOLE: A terminal used for communication between an operator and a processor
			X'6316'	TOUCH-SENSITIVE SCREEN
			X'6317'	MAGNETIC STRIPE READER/ENCODER: A device that reads data from, and in some cases writes data to, a card containing a magnetic stripe
			X'6318'	ENCRYPTION DEVICE
			X'6319'	MEDIA LIBRARY DEVICE
			X'631A'	LIBRARY MANAGER HARDWARE
			X'631B'	LIBRARY VISION SYSTEM
			X'6330'	DISK DRIVE ELECTRONICS: The electronic components of a DASD device
			X'6350'	LOCAL CONSOLE

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
			X'6351' REMOTE CONSOLE *Note:* "Local" and "remote" are defined with respect to the system with which the console communicates. X'63A0' STORAGE DEVICE — (detailed data qualifier) *Note:* The qualifier identifies the type.
		X'6400'	DEPOSITORY: A device that receives items into a system
			X'6401' ENVELOPE DEPOSITORY: A device that receives into a system items sealed in an envelope. The envelope is not opened, nor are its contents examined by the system; the envelope is stored for human action X'6402' CHECK DEPOSITORY: A device that receives checks into a system, then reads and retains them. It may also transfer information to a check and return the check to a user X'6403' CARD DEPOSITORY: A device that retains credit, personal banking, or other cards used to access a PBM
		X'6500'	DISPENSER: A device that dispenses items to a user of a system
			X'6501' DOCUMENT DISPENSER: A device that dispenses documents, primarily bills X'6502' TICKET DISPENSER X'6503' KEY DISPENSER X'6504' COIN DISPENSER
		X'6600'	SELF-SERVICE TERMINAL: A device that allows a customer of a business to perform a transaction that would otherwise require assistance by personnel of the business
			X'6601' PERSONAL BANKING MACHINE: A self-service terminal for financial transactions X'6630' TELLER ASSIST UNIT: A terminal that assists a financial teller in transactions *Note:* This device does not fit the strict definition of a self-service terminal, since it is used by personnel of a financial institution; it is included in this range because it is very close in function to other self-service terminals.
		X'6700'	SECURITY PROBLEM
			X'6701' AUDIBLE ALARM: A device which emits an audible sound X'6702' PROTECTIVE DOOR: An electronically or mechanically operated covering for access to a device.
		X'8000'	CONFIGURATION ERROR: A static or dynamic configuration or reconfiguration has caused a problem
			X'8001' COMMUNICATIONS MANAGER NOT CONFIGURED TO ENABLE REMOTE PROGRAM UPDATE FUNCTION X'8002' RESOURCE ALREADY IN USE: A Connection startup has failed because a resource is already in use. X'8003' CONFIGURATION CAPACITY LIMIT REACHED: A configured capacity limit was reached for this component. X'8004' DUPLICATE ROOTS DETECTED: The node identifiers which represent a spanning tree root are identical. X'8005' DUPLICATE NODE IDENTIFIERS: The node identifiers of two nodes are identical. X'8006' RESOURCE ADMINISTRATIVELY LOCKED: A resource has been administratively locked and is restricted from performing normal function.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'8007'	DUPLICATE CONNECTION NAME: Two connections have been given the same name.
			X'8008'	ADDRESS REGISTRATION: An address registration error has occurred.
			X'8009'	MAXIMUM VPI BITS EXCEEDED: The Virtual Path Identifier (VPI) bits defined for the Virtual Path Connection (VPC) have exceeded the configured maximum and the connection setup has failed.
			X'800A'	MAXIMUM VCI BITS EXCEEDED: The Virtual Channel Identifier (VCI) bits defined for the Virtual Channel Connection (VCC) have exceeded the configured maximum and the connection setup has failed.
			X'800B'	MAXIMUM VPCs EXCEEDED: The Virtual Path Connections (VPCs) have exceeded the configured maximum and the connection cannot be started.
			X'800C'	MAXIMUM VCCs EXCEEDED: The Virtual Channel Connections (VCCs) have exceeded the configured maximum and the connection cannot be started.
			X'8010'	MAXIMUM TRAFFIC SHAPER CONNECTIONS REACHED: The maximum number of connections for which the traffic shaping process can be invoked on the system or subsystem has been reached.
			X'8011'	INSUFFICIENT NUMBER OF PRECONFIGURED TRUNKS
			X'8012'	NETWORK-PROVIDED CALLING NUMBERS NOT SUPPORTED
			X'8013'	CONTROL POINT CAPACITY EXCEEDED
		X'9000'	MONITORED EVENT	
			X'90A0'	MONITORED SITUATION (detailed data qualifier) DETECTED
			X'90A1'	MONITORED SITUATION (detailed data qualifier) NO LONGER EXISTS
		X'E000'–X'EFFF'	Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range. *Note:* The following code points specify extended messages, that provide additional information on one or more failure causes that have already been specified. An Alert receiver that displays only default text provides no display for these code points.	
		X'F000'	(no display): Additional message data	
			X'F001'	UNSOLICITED INTERRUPT RECEIVED
			X'F002'	DATA LOST DURING RESTORE TO DISK
			X'F003'	IPL OCCURRED DUE TO A HARD WAIT
			X'F004'	NODE WILL SHUT DOWN
			X'F005'	NETWORK INTENTIONALLY SENDING CORRUPTED CRC TO THE NT1
			X'F006'	NETWORK REQUESTING THE NT1 TO INTENTIONALLY SEND CORRUPTED CRC
			X'F007'	IN-DOUBT LOGICAL UNIT OF WORK
			X'F008'	RESOURCE RECOVERY CANCELLED TO AVOID INFINITE RETRIES
			X'F009'	SOFTWARE PROBE EXECUTION FREQUENCY THRESHOLD REACHED — PROBE DISABLED
			X'F00A'	RETRY LIMIT REACHED
			X'F00C'	CRC/LRC RETRY LIMIT REACHED
			X'F00D'	IDLE DETECT TIMEOUT RETRY LIMIT REACHED

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'F00E'	NON-PRODUCTIVE RECEIVE TIMEOUT RETRY LIMIT REACHED
			X'F00F'	RNR RECEIVED THRESHOLD REACHED
			X'F010'	FRAME REJECT RECEIVED: INVALID/UNSUPPORTED COMMAND OR RESPONSE SENT
			X'F011'	FRAME REJECT RECEIVED: I-FIELD SENT WHEN NOT PERMITTED
			X'F012'	FRAME REJECT RECEIVED: INVALID N(R) SENT
			X'F013'	FRAME REJECT RECEIVED: MAXIMUM I-FIELD LENGTH EXCEEDED
			X'F014'	FRAME REJECT RECEIVED: NO REASON SPECIFIED
			X'F015'	SNRM RECEIVED WHILE IN NRM
			X'F016'	SABME RECEIVED WHILE IN ABME
			X'F017'	POLL COUNT EXHAUSTED
			X'F018'	XID POLL COUNT EXHAUSTED
			X'F019'	INACTIVITY TIMER EXPIRED
			X'F01A'	DM RECEIVED
			X'F01B'	RECEIVE WINDOW SIZE EXCEEDED
			X'F01C'	LLC LEVEL CRC OR CHECKSUM ERROR THRESHOLD REACHED
			X'F01D'	LREJ RECEIVED THRESHOLD REACHED
			X'F01E'	LREJ SENT THRESHOLD REACHED
			X'F01F'	PASSWORD NOT FOUND
			X'F020'	INVALID/UNSUPPORTED COMMAND OR RESPONSE RECEIVED
			X'F021'	I-FIELD RECEIVED WHEN NOT PERMITTED
			X'F022'	INVALID N(R) RECEIVED
			X'F023'	RECEIVED I-FIELD EXCEEDED MAXIMUM LENGTH
			X'F024'	SEGMENTED DATA NOT EXPECTED
			X'F025'	U-FORMAT LPDU MISSING DATA WAS RECEIVED
			X'F026'	RECEIVED I-FIELD TOO SHORT
			X'F027'	REJECT RECEIVED: INVALID N(S) SENT
			X'F028'	DISC RECEIVED
			X'F029'	UNEXPECTED UA OR RR RECEIVED
			X'F02A'	RECEIVED XID OUT OF SEQUENCE
			X'F02B'	FRAME REJECT RECEIVED: S OR U FORMAT FRAME CONTAINING UNEXPECTED DATA RECEIVED
			X'F02C'	LLC SET_MODE COMMAND RECEIVED WHILE IN THE OPENED STATE
			X'F030'	CTS DROPPED
			X'F031'	CTS FAILED TO DROP
			X'F032'	DSR FAILED TO DROP
			X'F033'	RTS NOT RAISED BUT CTS IS ACTIVE
			X'F034'	CTS FAILED TO RISE
			X'F035'	DSR DROPPED
			X'F036'	DSR IS PRESENT BEFORE DTR IS RAISED
			X'F037'	DSR NOT PRESENT AFTER DTR IS RAISED
			X'F038'	CARRIER DETECT LOST
			X'F039'	DLO INITIALLY ON
			X'F03A'	DLO DID NOT COME ACTIVE DURING CALL REQUEST
			X'F03B'	PND FAILED TO COME ACTIVE IN THE REQUIRED TIME
			X'F03C'	DSC DID NOT COME ACTIVE AFTER A CALL REQUEST WAS COMPLETED
			X'F03D'	DSR DID NOT COME ACTIVE WHILE ATTEMPTING AN AUTO-CALL CONNECTION
			X'F03E'	CTS TIMEOUT
			X'F03F'	DSR TIMEOUT

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'F040'	TRANSMISSION UNDERRUN THRESHOLD REACHED
			X'F041'	EXCESSIVE TRANSMIT PROCEDURE TIMEOUTS
			X'F042'	RECEIVE OVERRUN THRESHOLD REACHED
			X'F043'	EXCESSIVE RECEIVE PROCEDURE TIMEOUTS
			X'F044'	RECEIVE QUEUE OVERRUN
			X'F045'	DTR DROPPED
			X'F046'	DTR TIMEOUT
			X'F047'	RTS DROPPED
			X'F048'	RTS TIMEOUT
			X'F049'	DTE NOT READY
			X'F050'	DCE NOT READY
			X'F051'	DCE CLEAR INDICATION DURING CALL ESTABLISHMENT
			X'F052'	PERSISTENT DCE CLEAR INDICATION DURING CALL ESTABLISHMENT (T6 TIMER EXPIRED)
			X'F053'	DCE CONTROLLED NOT READY DURING CALL ESTABLISHMENT
			X'F054'	PERSISTENT DCE CONTROLLED NOT READY DURING CALL ESTABLISHMENT (T6 TIMER EXPIRED)
			X'F055'	DCE FAULT CONDITION DURING CALL ESTABLISHMENT
			X'F056'	DCE CLEAR INDICATION RECEIVED DURING DATA PHASE
			X'F057'	PERSISTENT DCE CLEAR INDICATION RECEIVED DURING DATA PHASE (T6 TIMER EXPIRED)
			X'F058'	UNRECOGNIZED CALL PROGRESS SIGNAL RECEIVED FROM THE NETWORK
			X'F059'	INVALID CALL PROGRESS SIGNAL RECEIVED FROM THE NETWORK
			X'F05A'	DSR OR CTS DROPPED
			X'F05B'	FAN-OUT FEATURE IN ERROR
			X'F05C'	TOKEN RING BEGAN OR TERMINATED BEACONING
			X'F05D'	LAN WRAPPED TO CIRCUMVENT FAILING COMPONENT
			X'F060'	DATA BLOCKS IN ERROR THRESHOLD REACHED
			X'F061'	TTD'S TRANSMITTED THRESHOLD REACHED
			X'F062'	WACK'S TRANSMITTED THRESHOLD REACHED
			X'F063'	SYNC TIMEOUT THRESHOLD REACHED
			X'F064'	CONTINUOUS SYNC TIMEOUT RETRY LIMIT REACHED
			X'F065'	NO SYNC RECEIVED TIMEOUT RETRY LIMIT REACHED
			X'F066'	NO DATA RECEIVED TIMEOUT RETRY LIMIT REACHED
			X'F067'	INVALID RESPONSE TO TTD RETRY LIMIT REACHED
			X'F068'	INVALID RESPONSE TO WACK RETRY LIMIT REACHED
			X'F069'	TTD/WACK NO RESPONSE TIMEOUT RETRY LIMIT REACHED
			X'F06A'	TRANSMIT RETRY LIMIT REACHED
			X'F06B'	ENQ RECEIVED TO ACK SENT RETRY LIMIT REACHED
			X'F06C'	UNRECOGNIZABLE DATA RECEIVED RETRY LIMIT REACHED
			X'F06D'	ISOLATED PACING MESSAGE FAILURE
			X'F06E'	INVALID PIU (PATH INFORMATION UNIT) RECEIVED
			X'F06F'	SYNCHRONIZATION LOST AND NOT RECOVERED
			X'F070'	FILE WRITE PRE-READ ERROR
			X'F071'	FILE WRITE ERROR
			X'F072'	FILE READ ERROR
			X'F073'	FILE NAME INACCESSIBLE
			X'F074'	DETAILED DATA CONTAINS PATH INFORMATION FOR THE FILE — PATH SHOWN MAY BE INCOMPLETE
			X'F075'	SERVER REQUESTED OPERATION
			X'F076'	SYSTEM FILE LOCK THRESHOLD REACHED
			X'F077'	SYSTEM RECORD LOCK THRESHOLD REACHED
			X'F078'	WORKSTATION FILE LOCK THRESHOLD REACHED
			X'F079'	WORKSTATION RECORD LOCK THRESHOLD REACHED

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'F07A'	ABNORMAL SERVER SHUTDOWN MAY OCCUR
			X'F07B'	WORKSTATION CONCURRENT DIRECTORY SEARCH THRESHOLD REACHED
			X'F07C'	BACK-UP BATTERY CRITICALLY LOW — SERVER WILL BE SHUT DOWN UNLESS COMMERCIAL POWER IS RESTORED
			X'F07D'	TRANSMIT/RECEIVE BUFFER LIMIT REACHED — BUFFERS ARE NOT BEING RELEASED
			X'F07E'	SERVER SOFTWARE COMPONENT MAY HAVE EXCESSIVE MEMORY REQUIREMENTS
			X'F080'	CSMA/CD ADAPTER WOULD NOT COMPLETE DIRECT MEMORY ACCESS
			X'F081'	CSMA/CD ADAPTER WOULD NOT RESET
			X'F082'	SERVICE CONDITION — HARDWARE FAILURE, NO APPLICATIONS AFFECTED
			X'F083'	MODERATE CONDITION — REDUNDANT HARDWARE FAILURE, POSSIBLE PERFORMANCE DEGRADATION
			X'F084'	SERIOUS CONDITION — PRIMARY I/O SUBSYSTEM RESOURCE DISABLED
			X'F085'	ACUTE CONDITION — MAJOR I/O SUBSYSTEM RESOURCE DISABLED
			X'F086'	MODE SETTING COMMAND FAILURE
			X'F087'	ALL DEVICES IN SNA PASS-THROUGH GROUP ARE UNAVAILABLE
			X'F088'	RING CONGESTION, EXCESSIVE SOFT ERRORS
			X'F089'	INTERMITTENT LOSS OF INPUT SIGNAL
			X'F08A'	INITIALIZATION MODE SETTING RECEIVED
			X'F08B'	INITIALIZATION MODE RESPONSE RECEIVED
			X'F090'	YELLOW ALARM SIGNAL RECEIVED: A Yellow Alarm signal has been received or is being transmitted by SONET or SDH communication equipment, indicating the detection of a remote physical layer impairment. Each SONET or SDH sublayer: line, STS path, Virtual Tributary path, and DS0 path may generate its respective Yellow Alarm.
			X'F091'	LINE ALARM INDICATION SIGNAL RECEIVED: SONET or SDH line terminating (F2 sublayer) telecommunication equipment has received the Line Alarm Indication Signal (RLAIS) impairment signal.
			X'F092'	PATH ALARM INDICATION SIGNAL RECEIVED: SONET or SDH path terminating (F3 sublayer) telecommunication equipment has received the Path Alarm Indication Signal (RPAIS) impairment signal.
			X'F093'	LINE REMOTE DEFECT INDICATION RECEIVED: SONET or SDH line terminating (F2 sublayer) telecommunication equipment has received the Line Remote Defect Indication (LRDI) impairment signal, indicating far end receive failure.
			X'F094'	PATH REMOTE DEFECT INDICATION RECEIVED: SONET or SDH path terminating (F3 sublayer) telecommunication equipment has received the Path Remote Defect Indication (PRDI) impairment signal indicating far end receive failure.
			X'F095'	RECEIVE PATH LOSS OF POINTER: SONET or SDH path terminating (F3 sublayer) telecommunication equipment has detected the Receive Path Loss of Pointer (RPLOP) impairment signal, indicating that a physical layer payload location cannot be determined in the SONET / SDH stream.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'F096'	CELL DELINEATION BLOCK LOSS OF FRAME: SONET or SDH path terminating (F3 sublayer) telecommunication equipment has received (or experienced) a Cell Delineation Block Loss of Frames (CDBLOF) impairment signal, indicating that physical layer framing indicators have been corrupted, which causes a loss of frame in the SONET / SDH stream.
			X'F097'	MULTIPLE FRAME ALIGNMENT LOSS: SONET or SDH path terminating (F3 sublayer) telecommunication equipment has received (or experienced) a Multiple Frame Alignment Loss (MFAL), indicating a physical layer impairment.
			X'F0A0'	DEFECTIVE DISK SECTOR CIRCUMVENTED ON (detailed data qualifier) *Note:* The qualifier identifies the drive.
			X'F0A1'	ERROR OCCURRED READING FROM FILE (detailed data qualifier)
			X'F0A2'	ERROR OCCURRED WRITING TO FILE (detailed data qualifier)
			X'F0A3'	FAILURE OCCURRED ON (detailed data qualifier) *Note:* The qualifier identifies the location of the failure being reported. It may identify the processor on which a failure occurred, e.g., the failing communication control unit in a communication controller. It may also identify a particular link segment within a multi-segment link connection.
			X'F0A4'	XID NEGOTIATION FAILED WITH (detailed data qualifier) *Note:* The qualifier specifies the SNA sense data identifying why the negotiation failed.
			X'F0A5'	COMPONENT OF (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the equipment or service belongs.
			X'F0A6'	BAD LINE QUALITY ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the line belongs.
			X'F0A7'	BOTH MODEMS DETECTED IMPULSE HITS ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the impulse hits were detected.
			X'F0A8'	NO LPDA RESPONSE FROM THE LOCAL MODEM ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.
			X'F0A9'	NO LPDA RESPONSE FROM THE REMOTE MODEM ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.
			X'F0AA'	NO LPDA RESPONSE FROM THE LOCAL DSU/CSU ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
			X'F0AB'	NO LPDA RESPONSE FROM THE REMOTE DSU/CSU ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
			X'F0AC'	INCORRECT LPDA RESPONSE FROM THE LOCAL DSU/CSU ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'F0AD'	INCORRECT LPDA RESPONSE FROM THE REMOTE DSU/CSU ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
			X'F0AE'	BIPOLAR ERRORS DETECTED BY LOCAL DSU/CSU ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the local DSU/CSU belongs.
			X'F0AF'	BIPOLAR ERRORS DETECTED BY REMOTE DSU/CSU ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the remote DSU/CSU belongs.
			X'F0B0'	IMPULSE HITS DETECTED BY THE LOCAL MODEM ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the hits were detected.
			X'F0B1'	LOCAL DSU/CSU DETECTED REMOTE DSU/CSU FAILURE ALARM ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the modems belong.
			X'F0B2'	LOCAL MODEM DETECTED REMOTE MODEM FAILURE TONE ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the modems belong.
			X'F0B3'	MODEMS ON (detailed data qualifier) IN BACK-UP SPEED *Note:* The qualifier identifies the link segment level (LSL) on which the modems belong.
			X'F0B4'	(detailed data qualifier) LOCAL DSU/CSU RECEIVED OUT OF FRAME DDS NETWORK CODE *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
			X'F0B5'	(detailed data qualifier) REMOTE DSU/CSU RECEIVED OUT OF FRAME DDS NETWORK CODE *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
			X'F0B6'	(detailed data qualifier) LOCAL DSU/CSU RECEIVED OUT OF SERVICE DDS NETWORK CODE *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
			X'F0B7'	(detailed data qualifier) REMOTE DSU/CSU RECEIVED OUT OF SERVICE DDS NETWORK CODE *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
			X'F0B8'	(detailed data qualifier) LOCAL DSU/CSU DETECTED DDS NETWORK LOOPBACK ACTIVE *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
			X'F0B9'	(detailed data qualifier) REMOTE DSU/CSU DETECTED DDS NETWORK LOOPBACK ACTIVE *Note:* The qualifier identifies the link segment level (LSL) on which the DSU/CSU belongs.
			X'F0BA'	INCORRECT LPDA RESPONSE FROM THE LOCAL MODEM ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the local modem belongs.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'F0BB'	INCORRECT LPDA RESPONSE FROM THE REMOTE MODEM ON (detailed data qualifier) *Note:* The qualifier identifies the link segment level (LSL) on which the remote modem belongs.
		X'F0BC'	BIND REJECTED WITH (detailed data qualifier) *Note:* The qualifier identifies the SNA sense data that describes the error.
		X'F0BD'	TRANSMISSION SYSTEM (detailed data qualifier) RECEIVED *Note:* The qualifier identifies the alarm signal.
		X'F0BE'	BIND PROCESSING FAILED WITH (detailed data qualifier) *Note:* The qualifier identifies the SNA sense data that describes the error.
		X'F0BF'	ERROR WRITING TO DIRECTORY ON (detailed data qualifier) *Note:* The qualifier identifies the volume.
		X'F0C0'	RESOURCE LIMIT REACHED (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the resource name and the reason code.
		X'F0C1'	(detailed data qualifier) ON (detailed data qualifier) REQUESTED OPERATION *Note:* The qualifiers identify the user and the connection.
		X'F0C2'	UNABLE TO OPEN/CREATE (detailed data qualifier) ON (detailed data qualifier) *Note:* The qualifiers identify the file name and volume.
		X'F0C3'	UNABLE TO WRITE TO (detailed data qualifier) ON (detailed data qualifier) *Note:* The qualifiers identify the file name and volume.
		X'F0C4'	(detailed data qualifier) PERCENT OF (detailed data qualifier) IN USE *Note:* The first qualifier is a number. The second qualifier identifies a resource.
		X'F0C5'	SERVICE POINT SENDING ALERT — (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the service point. For example, they may identify the node and userid of the service point.
		X'F0C6'	LINE CODE ERRORS DETECTED BY LOCAL (detailed data qualifier) ON (detailed data qualifier) *Note:* The first qualifier identifies the DCE. The second qualifier identifies the link segment level (LSL).
		X'F0D0'	LOCAL (detailed data qualifier) DETECTED REMOTE (detailed data qualifier) FAILURE ALARM ON (detailed data qualifier) *Note:* The first and second qualifiers identify an communications network management adapter (CNM ADAPTER). The third qualifier identifies the link segment level (LSL).

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content	
		X'F100'	(no display): Additional message data
		X'F101'	SERVER IS RUNNING ON BATTERY POWER
		X'F1A0'	ERROR WRITING NEWLY ALLOCATED DIRECTORY BLOCK ON (detailed data qualifier) *Note:* The qualifier identifies the volume.
		X'F1A1'	DISK WRITE ERRORS ON (detailed data qualifier) *Note:* The qualifier identifies the volume.
		X'F1A2'	ERROR WRITING FILE ALLOCATION TABLE FOR (detailed data qualifier) *Note:* The qualifier identifies the volume.
		X'F1A3'	(detailed data qualifier) LOCK REQUESTS FAILED *Note:* The qualifier identifies the number of lock violations.
		X'F1A6'	SERVER IS RUNNING ON BATTERY POWER — (detailed data qualifier) MINUTES REMAIN *Note:* The qualifier identifies the number of minutes of remaining battery power.
		X'F1A7'	(detailed data qualifier) HAS BEEN SHUT DOWN *Note:* The qualifier identifies the file server name.
		X'F1A8'	(detailed data qualifier) INACCESSIBLE DUE TO LAN ADAPTER FAILURE *Note:* The qualifier identifies the number of failed memory allocation requests.
		X'F1A9'	(detailed data qualifier) DISMOUNTED DUE TO HARDWARE FAILURE *Note:* The qualifier identifies the volume.
		X'F1AA'	(detailed data qualifier) RECEIVED *Note:* The qualifier identifies the maintenance indicator.
		X'F1AB'	UNSOLICITED RESPONSE FROM (detailed data qualifier) *Note:* The qualifier identifies the resource name.
		X'F1AC'	(detailed data qualifier) NOT IN VALID STATE
		X'F1AD'	(detailed data qualifier) PRIMARY PARTITION NOT FOUND *Note:* The qualifier identifies the drive.
		X'F1AE'	(detailed data qualifier) SECONDARY PARTITION NOT FOUND *Note:* The qualifier identifies the drive.
		X'F1AF'	COMPARE OF MIRRORED PARTITIONS ON (detailed data qualifier) FAILED *Note:* The qualifier identifies the drive.
		X'F1B0'	PARTITION FAILURE AND SHUTDOWN ON (detailed data qualifier) *Note:* The qualifier identifies the drive.
		X'F1B1'	EXCESSIVE DISK FAILURES ON (detailed data qualifier) *Note:* The qualifier identifies the drive.
		X'F1B2'	COMPLETE DISK FAILURE ON (detailed data qualifier) *Note:* The qualifier identifies the drive.
		X'F1B3'	(detailed data qualifier) MAY NOT BE AVAILABLE FOR BACKUP
		X'F800'	(no display): Additional message data *Note:* The X'F8xx' range is used for additional messages that are identical for User, Install, and Failure Causes.
		X'F8A0'	PROBLEM DETECTED BY (detailed data qualifier) *Note:* The qualifier identifies the file server name.
		X'F8C0'	FAILING COMPONENT IS IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the failing component by means of its logical location, e.g., its port number and device address.

Failure Causes (X'01') Failure Causes Subfield

Byte	Bit	Content		
			X'F8D0'	PROBLEM IS RELATED TO THE CONTROLLER LOCATED AT (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the controller location as follows: Q1 = RACK Q2 = UNIT (within a rack) Q3 = CARD SLOT (within a unit)
			X'F8D1'	PROBLEM IS RELATED TO DEVICE IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the following: Q1 = CARD SLOT Q2 = CONTROLLER ID Q3 = DEVICE ID
			X'F8D2'	FAILING COMPONENT IS IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) (detailed data qualifier)
			X'F8E0'	FAILING COMPONENT IS IDENTIFIED BY (sf83 product text)
		X'FE00'		UNDETERMINED: The reason for the failure cannot be determined.
		X'FFFF'		Reserved

Cause Undetermined (X'97') Alert MS Subvector

This subvector transports code points for stored text detailing the recommended actions to be taken when no probable user, install, or failure causes for the Alert condition can be identified. It may also transport additional detailed data, to be inserted into the text indexed by the recommended action code points.

Cause Undetermined (X'97') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Cause Undetermined subvector
1		Key: X'97'
2–p		One or more subfields containing recommended action data, as described in “Network Alert (X'0000') Common Subfields” on page 4-153. X'81' Recommended Actions X'82' Detailed Data X'83' Product Set ID Index X'84' Resource List Index X'85' Detailed Data Extended *Note:* Subfield X'81' is always present. Depending on the code points present in the X'81' subfield: • The X'83' and X'84' subfields may be present one or more times. • Either the X'82' or the X'85' subfield may be present one or more times. The X'82' and X'85' subfields are mutually exclusive within a subvector.

Detailed Data (X'98') Alert MS Subvector

This subvector transports product specific detailed data.

Detailed Data (X'98') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Detailed Data subvector
1		Key: X'98'
2–p		One or more subfields containing detailed data, as described below for keys X'00'-X'7F' and in "Network Alert (X'0000') Common Subfields" on page 4-153 for keys X'80'-X'FE': X'01' Qualified Message Data X'82' Detailed Data X'85' Detailed Data Extended *Note:* Any number of instances of the X'01' subfield may be present. Any number of instances of either the X'82' or the X'85' subfield may be present (the X'82' and X'85' subfields are mutually exclusive within a subvector). Each X'01' subfield contains a number indicating how many subsequent X'82'/X'85' subfields are associated with it. It is not required that every X'82'/X'85' subfield be associated with a X'01' subfield.

Qualified Message Data (X'01') Detailed Data Subfield

This subfield contains an index to a complete message stored at an Alert receiver, as well as an indication of how many qualifiers are to be inserted into the message.

Qualified Message Data (X'01') Detailed Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Qualified Message Data subfield
1		Key: X'01'
2		Product ID code: The structure of this field is identical to that present in the Product Set ID Index (X'83') subfield.
	0–3	Product ID subvector code: a code point that specifies (1) the type of Product ID subvector being indexed (hardware or software), and (2) the particular data to be extracted from this subvector *Note:* See "Product Identifier (X'11') MS Common Subvector" on page 4-430 for the criteria distinguishing hardware and software Product ID subvectors. X'0'–X'1' reserved X'2' machine type or hardware product common name from a hardware Product ID subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'5' machine type or hardware product common name plus model number from a hardware Product ID subvector

Qualified Message Data (X'01') Detailed Data Subfield

Byte	Bit	Content
		Note: The hardware product common name is used if it is present; otherwise, the machine type is used. X'9' software product common name from a software Product ID subvector
	4	Product set ID indicator: An indication of which Product Set ID (PSID) contains the Product ID subvector being indexed 0 Alert sender PSID 1 indicated resource PSID
	5–7	Count: A 3-digit binary number that indicates which Product ID subvector, of the type specified by the Product ID Subvector Code, is being indexed within the PSID specified by the Product Set ID Indicator. *Note:* This count applies only to Product ID Subvectors of the type specified by the Product ID Subvector Code. If, for example, the code is X'2' (specifying a hardware Product ID) then only hardware X'11's are counted: a count of X'3' would thus index the third hardware Product ID within the PSID indicated by the Product Set ID Indicator.
3		Data ID: A code point indicating the type of the message to be constructed from the data carried in the subfield. The English text associated with each code point, or its national language equivalent, is displayed in conjunction with the message. Defined codes are: X'01' OPERATOR ERROR MESSAGE X'E0'–X'EF' Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range.
4		Message code encoding: a code point indicating how the accompanying message code is encoded. This data is included because an Alert receiver has the option of displaying the message code itself in addition to the message that it indexes. Defined codes are: X'00' hexadecimal: the message code is to be displayed as hexadecimal digits X'11' Coded Graphic Character Set 00640–00500 plus: The data is to be decoded using Coded Graphic Character Set 00640–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," plus three additional code points: X'5B' = "$" (dollar sign); X'7B' = "#" (pound or number sign); X'7C' = "@" (at sign)
5		Qualifier count: a binary number indicating how many qualifiers are associated with this message *Note:* The qualifiers are specified in either X'82' or X'85' subfields following this X'01' subfield, and are substituted into the message in the order in which the X'82' or X'85' subfields are present.
6–q		Message code, encoded as specified in byte 4 above *Note:* This message code is limited to eight bytes.

Symptom String (X'99') Alert MS Subvector

This subvector transports one or more symptom strings.

Symptom String (X'99') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Symptom String subvector
1		Key: X'99'

Symptom String (X'99') Alert MS Subvector

Byte	Bit	Content
2–p		One or more subfields containing symptom string data, as described below for keys X'00'–X'7F' and in "Network Alert (X'0000') Common Subfields" on page 4-153 for keys X'80'–X'FE'.

Note: The following subfield keys are used as indicated:

Subfield	Presence in Symptom String (X'99') Alert MS Subvector	
Primary Symptom String (X'01')	CP	Note 1
Secondary Symptom String (X'02')	CP(n)	Note 1
Product Set ID Index (X'83')	CP	Note 1

Key:

CP Conditionally present one time
CP(n) Conditionally present one or more times

Notes:

1. Multiple instances of this subvector may appear in a major vector, if there is too much symptom string data to fit in one instance. In this case, distribution of subfields across the instances has no significance.

   See the major vector conditions of presence for this subvector, for the conditions of presence of the subfields among all of the instances of this subvector present in the major vector.

Primary Symptom String (X'01') Symptom String Subfield

This subfield contains one primary symptom string. The primary symptom string uniquely identifies a failure. It contains data that *does not* vary for any occurrence of a specific error.

Primary Symptom String (X'01') Symptom String Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Primary Symptom String subfield
1		Key: X'01'
2		Symptom String format

Primary Symptom String (X'01') Symptom String Subfield

Byte	Bit	Content
		X'01' Keyword/value pair format. For this format a symptom string is comprised of a series of keyword/value pairs. Each pair is of the form kkkk/vvvvvvvvvv, where kkkk is a keyword and vvvvvvvvvv is the value associated with the keyword. Each keyword consists solely of uppercase alphabetic characters. Each value must be at least 1 character in length, and may contain uppercase and lowercase alphabetic characters, numeric characters, and the following characters: "@," "$," and "#." The "/" character is required between the keyword and value. The length of each keyword/value pair cannot exceed 15 characters (the length includes the length of the keyword, the slash character, and the length of the value). Primary symptom strings are limited to at most 10 keyword/value pairs. There is no restriction on the number of keyword/value pairs in a secondary symptom string. Note that the keyword/value pairs in a symptom string must be separated by at least one blank, but the pairs themselves may not include blanks. For a list of the defined keywords and their associated values see *FASTService for MVS User's Guide* (LC33-1014). All the characters used for this format must be encoded with code page 00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types."
		X'02' Product specific *character* format for the product identified by the Product Set ID Index (X'83') subfield. This format must solely consist of characters from Coded Graphic Character Set 00640–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types." However *no* further guidelines or restrictions for this format are defined by this architecture. Product specific formats are also *not* documented within this architecture. It is the responsibility of sending and receiving products to coordinate usage of product specific formats, and to document the product specific formats as needed.
		X'03' Product specific *hexadecimal* format for the product identified by the Product Set ID Index (X'83') subfield. *No* further guidelines or restrictions for this format are defined by this architecture. Product specific formats are also *not* documented within this architecture. It is the responsibility of sending and receiving products to coordinate usage of product specific formats, and to document the product specific formats as needed.
		X'04'–X'DF' reserved X'E0'–X'EF' reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range. X'F0'–X'FF' reserved
3–q		One primary symptom string in the format identified by byte 2 of this subfield.

Secondary Symptom String (X'02') Symptom String Subfield

This subfield contains one secondary symptom string. A secondary symptom string contains additional information that could vary across multiple instances of the same error.

Secondary Symptom String (X'02') Symptom String Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Secondary Symptom String subfield
1		Key: X'02'
2		Symptom String format
		The defined values for this byte are identical to those for byte 2 of the Primary Symptom String (X'01') Symptom String Subfield.
3–q		One secondary symptom string in the format identified by byte 2 of this subfield.

Detail Qualifier (EBCDIC) (X'A0') Alert MS Subvector

This subvector supplies variables for the Alert function in EBCDIC form that can be inserted on the Alert Detail screens. This subvector and the Detail Qualifier (hexadecimal) subvector (X'A1') are identical in function and format except that this subvector contains EBCDIC codes. *Note:* The Detail Qualifier (X'A0'-X'A1') subvectors are displayed in the order that they appear in the Alert major vector.

Detail Qualifier (EBCDIC) (X'A0') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Detail Qualifier subvector
1		Key: X'A0'
2–p		Detail qualifier: a type-AE symbol-string that qualifies a reference on the Alert Detail screen *Note:* Each qualifier is p-1 bytes in length, but only one qualifier is used per Detail Qualifier subvector. All qualifiers include only codes, numbers, or internationally recognized terms that do not require translation. The coding is not interpreted by the Alert display mechanism.

Detail Qualifier (Hexadecimal) (X'A1') Alert MS Subvector

This subvector supplies variables for the Alert function in hexadecimal form that can be inserted on the Alert Detail screens. This subvector and the Detail Qualifier (EBCDIC) subvector (X'A0') are identical in function and format except that this subvector contains codes in hexadecimal. *Note:* The Detail Qualifier (X'A0'–X'A1') subvectors are displayed in the order that they appear in the Alert major vector.

Detail Qualifier (Hexadecimal) (X'A1') Alert MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Detail Qualifier subvector
1		Key: X'A1'

Detail Qualifier (Hexadecimal) (X'A1') Alert MS Subvector

Byte	Bit	Content
2–p		Detail qualifier: a type-G symbol-string

Network Alert (X'0000') Common Subfields

The following table shows, by key value, the subfields common to the Network Alert subvectors, and the subvectors in which each can occur.

Key	Subfield	Applicable Network Alert Subvectors
X'81'	Recommended Actions	User Causes subvector, Install Causes subvector, Failure Causes subvector, Cause Undetermined subvector
X'82'	Detailed Data	User Causes subvector, Install Causes subvector, Failure Causes subvector, Cause Undetermined subvector, Detailed Data subvector
X'83'	Product Set ID Index	User Causes subvector, Install Causes subvector, Failure Causes subvector, Cause Undetermined subvector
X'84'	Resource List Index	User Causes subvector, Install Causes subvector, Failure Causes subvector, Cause Undetermined subvector
X'85'	Detailed Data Extended	User Causes subvector, Install Causes subvector, Failure Causes subvector, Cause Undetermined subvector, Detailed Data subvector

Recommended Actions (X'81') Network Alert Common Subfield

This subfield contains code points for stored text describing recommended actions to be taken to rectify an Alert condition.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Recommended Actions subfield
1		Key: X'81'
2–q		2-byte recommended action code points. Each code point provides an index to predefined text, describing the recommended action, that is displayed at the Alert receiver. An Alert receiver has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are listed below. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules).

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content

The expression “(detailed data qualifier)” in the English text indicates a variable-length gap, to be filled in with data passed in a Detailed Data (X'82') subfield or a Detailed Data Extended (X'85') subfield. The one or more necessary X'82' or X'85' subfields follow this subfield in the X'94' - X'97' subvectors, in the order in which they are to be associated with the gaps specified in the X'81' subfield. **Note:** The X'82' and X'85' subfields *cannot* both be used in the same subvector.

The expression “(sf83 product text)” in the English text similarly indicates a variable-length gap, to be filled in with product identification data from the Product Identifier X'11' subvector indicated by a Product Set ID Index (X'83') subfield. The necessary X'83' subfields follow the X'81' subfield in the same subvector, in the order in which they are to be associated with the gaps specified in the X'81' subfield.

The expression “(sf84 resource text)” in the English text indicates a variable-length gap, to be filled in with resource identification data from a location indicated by a Resource List Index (X'84') subfield. The necessary X'84' subfields follow the X'81' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'81' subfield.

The third digit of each recommended action code point indicates the number of succeeding detailed data qualifiers that are associated with the code point, and whether a X'83' or X'84' subfield is associated with it, as follows:

X'xx0x'–X'xx9x':	No detailed data qualifiers.
X'xxAx'–X'xxBx':	One detailed data qualifier.
X'xxCx':	Two detailed data qualifiers.
X'xxDx':	Three detailed data qualifiers.
X'xxEx':	One X'83' subfield.
X'xxFx':	One X'84' subfield.

Defined codes are:

X'0000' PERFORM PROBLEM DETERMINATION PROCEDURES: Refer to the problem determination documentation provided for this condition and follow the specified procedures

X'0001'	RUN ONLINE PROBLEM DETERMINATION
X'0002'	INVOKE INTENSIVE MODE RECORDING
X'0003'	DETERMINE THE REASON FOR THE LINE SHUTDOWN
X'0004'	DETERMINE THE REASON FOR THE LOOP SHUTDOWN
X'0005'	PERFORM SNA DATA STREAM PROBLEM DETERMINATION PROCEDURES
X'0006'	USE MICROCODE DUMP AND SYSTEM PROCEDURES TO CREATE AN APAR
X'0007'	PERFORM REMOTE MODEM PROBLEM DETERMINATION
X'0008'	PERFORM REMOTE DSU/CSU PROBLEM DETERMINATION
X'0009'	PERFORM OUTBOUND LINE PROBLEM DETERMINATION
X'000A'	PERFORM INBOUND LINE PROBLEM DETERMINATION
X'000B'	DETERMINE RESOURCE NAME OF THE OTHER REMOTE NODE
X'000C'	RUN MODEM SELF TEST WITH WRAP PLUG FROM KEYPAD
X'000D'	RUN DSU/CSU SELF TEST WITH WRAP PLUG FROM CONTROL PANEL
X'000E'	RUN MODEM AND LINE STATUS TEST
X'000F'	RUN DSU/CSU AND LINE STATUS TEST
X'0010'	RUN LINE TEST
X'0011'	RUN LINE ANALYSIS TEST

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'0012'	RUN TRANSMIT/RECEIVE TEST
			X'0013'	RUN REMOTE NODE TEST
			X'0014'	RUN REMOTE NODE-DCE INTERFACE WRAP TEST
			X'0015'	INVESTIGATE INTERFERENCE FROM OTHER PORT ON LOCAL MODEM, IF FAN-OUT INSTALLED
			X'0016'	REVIEW MODEM AND LINE STATUS DATA
			X'0017'	RUN VERIFY COMMAND
			X'0018'	REVIEW USER'S DISK STORAGE USAGE
			X'0019'	REVIEW STATISTICS ASSOCIATED WITH THE LINK
			X'001A'	DETERMINE REASON FOR REMOVE COMMAND
			X'001B'	IDENTIFY THE OTHER CONTENDING NETWORK NODE
			X'001C'	DETERMINE WHICH NETWORK NODE IS AT FAULT
			X'001D'	RUN LINE TEST WITH WRAP PLUG: Perform the line test function with a wrap plug attached to the component.
			X'00A0'	PERFORM TRANSMISSION LINE PROBLEM DETERMINATION PROCEDURES ON (detailed data qualifier) *Note:* The qualifier identifies the failing transmission line.
			X'00A1'	REVIEW (detailed data qualifier) *Note:* The qualifier identifies the entity to be reviewed.
			X'00A2'	PERFORM REMOTE (detailed data qualifier) PROBLEM DETERMINATION *Note:* The qualifier identifies the entity for which problem determination should be performed.
			X'00A3'	RUN (detailed data qualifier) SELF TEST WITH WRAP PLUG FROM CONTROL PANEL *Note:* The qualifier identifies the entity on which to run the self test.
			X'00A4'	RUN (detailed data qualifier) AND LINE STATUS TEST *Note:* The qualifier identifies the entity to test in addition to the line.
			X'00A5'	TEST ROUTE BETWEEN ALERT SENDER AND (detailed data qualifier) *Note:* The route to be tested is that between the Alert sender and the network entity identified by the qualifier.
			X'00B0'	PERFORM PROBLEM DETERMINATION PROCEDURE FOR (detailed data qualifier) *Note:* The qualifier identifies a value, such as a system reference code, that selects a problem determination procedure to be performed.
			X'00B1'	PERFORM PROBLEM DETERMINATION PROCEDURE AT THE REPORTING LOCATION FOR (detailed data qualifier) *Note:* This code point differs from X'00B0' in that it specifies that the indicated problem determination procedure is one that must be performed locally, at the site of the failure.
			X'00B2'	RUN THE FOLLOWING AT THE REPORTING LOCATION (detailed data qualifier) *Note:* The qualifier identifies the command, program, error recovery procedure, etc.
			X'00B3'	PERFORM (detailed data qualifier) PROBLEM DETERMINATION VIA A REMOTE CONSOLE SESSION: Interactive product error analysis is required. *Note:* The qualifier identifies the scope the problem determination procedure is expected to be.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'00C0'	RUN SELF TEST WITH WRAP PLUG ON (detailed data qualifier) REMOTE MODEM AND (detailed data qualifier) LOCAL MODEM FROM MODEM KEYPADS *Note:* The qualifiers identify the link segment level (LSL) on which the modems belong.
			X'00C1'	RUN SELF TEST WITH WRAP PLUG ON (detailed data qualifier) REMOTE DSU/CSU AND (detailed data qualifier) LOCAL DSU/CSU FROM DSU/CSU CONTROL PANELS *Note:* The qualifiers identify the link segment level (LSL) on which the DSU/CSUs belong.
			X'00C2'	RUN SELF TEST WITH WRAP PLUG ON (detailed data qualifier) REMOTE MODEM (FROM KEYPAD) AND (detailed data qualifier) LOCAL DSU/CSU (FROM CONTROL PANEL) *Note:* This code point is used on a multi-segment link with modems on one segment and DSU/CSUs on the other segment.
			X'00C3'	RUN SELF TEST WITH WRAP PLUG ON (detailed data qualifier) REMOTE DSU/CSU (FROM CONTROL PANEL) AND (detailed data qualifier) LOCAL MODEM (FROM KEYPAD) *Note:* The qualifiers identify the link segment level (LSL) on which the equipment belongs. This code point is used on a multi-segment link with modems on one segment and DSU/CSUs on the other segment.
			X'00C4'	RUN DSU/CSU AND LINE STATUS TEST ON (detailed data qualifier) AND (detailed data qualifier) *Note:* The qualifiers identify the link segment level (LSL) on which the lines belong.
			X'00C5'	RUN DCE AND LINE STATUS TEST ON (detailed data qualifier) AND (detailed data qualifier) *Note:* The qualifiers identify the link segment level (LSL) on which the lines belong.
			X'00C6'	PERFORM PROBLEM DETERMINATION PROCEDURES AT (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the LU name and the Network ID of the node on which problem determination procedures should be run.
			X'00E1'	PERFORM (sf83 product text) PROBLEM DETERMINATION PROCEDURES

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
		X'0100'	VERIFY	
			X'0101'	VERIFY X.25 SUBSCRIPTION NUMBER
			X'0102'	VERIFY ADAPTER ADDRESS DEFINITION
			X'0103'	VERIFY TELEPHONE NUMBER
			X'0104'	CHECK FOR CORRECT MICROCODE FIX
			X'0105'	REQUEST VERIFICATION OF MANAGEMENT SERVER REPORTING LINKS
			X'0106'	CHECK REMOTE NODE FOR TC ACTIVE
			X'0107'	CHECK OTHER REMOTE NODE FOR TC ACTIVE
			X'0108'	CHECK REMOTE NODE FOR RTS ACTIVE
			X'0109'	CHECK OTHER REMOTE NODE FOR RTS ACTIVE
			X'010A'	CHECK CONFIGURATION OF THE SENDING NODE
			X'010B'	CHECK CONFIGURATION OF THE SENDING NODE AND OF THE MODEMS
			X'010C'	CHECK CONFIGURATION OF THE SENDING NODE AND OF THE DSU/CSU'S
			X'010D'	CHECK CONFIGURATION OF THE REMOTE NODE
			X'010E'	CHECK FOR CONFIGURATION MISMATCH BETWEEN APPLICATION CONTROL BLOCK AND CARD NUMBER
			X'010F'	CHECK CONFIGURATION OF THE OTHER REMOTE NODE
			X'0110'	CHECK CONFIGURATION OF THE REMOTE NODE AND REMOTE MODEM
			X'0111'	CHECK RTS GENERATION PARAMETER
			X'0112'	VERIFY THAT THE FAN-OUT FEATURE IS INSTALLED
			X'0113'	VERIFY THAT REMOTE NODE PROVIDES THE DCE EXTERNAL CLOCK
			X'0114'	CHECK FILE DIRECTORY STRUCTURE
			X'0115'	REVIEW MEMORY USAGE
			X'0116'	VERIFY APPLICATION PROGRAM LOCK USAGE
			X'0117'	CHECK FOR CONFIGURATION MISMATCH BETWEEN APPLICATION CONTROL BLOCK AND PROGRAM
			X'0118'	CHECK FOR CONFIGURATION MISMATCH BETWEEN RESOURCE DIRECTORY AND TABLES AND QUEUES DEFINITION FILE The file containing descriptive information about software tables and various system queues conflicts with the resource directory entries.
			X'0119'	CHECK PROCESSES IN MESSAGE MEMORY POOL
			X'011A'	CHECK PROCESSES IN CO-PROCESSOR MESSAGE MEMORY POOL
			X'011B'	CHECK PROCESSES IN WORK MEMORY POOL
			X'011C'	VERIFY ACCESS AUTHORITY
			X'011D'	VERIFY ADAPTER INSTALLATION
			X'011E'	VERIFY DESTINATION RESOURCE IS DEFINED
			X'011F'	VERIFY DESTINATION RESOURCE IS DEFINED IN RESOURCE DIRECTORY
			X'0120'	VERIFY APPLICATION PROGRAM DIRECTORY SEARCH USAGE
			X'0121'	IDENTIFY OFFENDING SOFTWARE COMPONENT
			X'0122'	VERIFY DESTINATION RESOURCE IS VALID
			X'0123'	REVIEW SOFTWARE COMPONENT MEMORY USAGE
			X'0124'	VERIFY DESTINATION RESOURCE NAME
			X'0125'	VERIFY COMMAND
			X'0126'	VERIFY COMMUNICATION ACCESS CONTROL BLOCK CONFIGURATION
			X'0127'	VERIFY COMMUNICATION PATH IS WORKING

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'0128'	VERIFY COMMUNICATION PROTOCOL PROGRAM IS WORKING
			X'0129'	VERIFY COMMUNICATION PATH DEFINITION
			X'012A'	VERIFY CONTROL BLOCK TYPE
			X'012B'	VERIFY CONTROL NODE IS ACTIVE
			X'012C'	VERIFY CORRECT MEMORY IMAGE FILE SPECIFIED IN COMMAND
			X'012D'	VERIFY DESTINATION NODE IS ACTIVE
			X'012F'	VERIFY FILE IS DEFINED
			X'0130'	VERIFY SIZE OF MEMORY POOLS
			X'0131'	VERIFY FILE PATH
			X'0132'	VERIFY FILE EXISTS AND IS NOT IN USE
			X'0133'	CHECK COMMUNICATION DRIVER CONFIGURATION FILE
			X'0134'	VERIFY FILE WAS CREATED WITH FILE SUPPORT: Verify the file was created as required with the file support function.
			X'0135'	VERIFY FILE IS VALID
			X'0136'	VERIFY FILE SUPPORT IS STARTED
			X'0137'	VERIFY DESTINATION RESOURCE SERVER NAME
			X'0138'	VERIFY DESTINATION SERVER IS DEFINED
			X'0139'	VERIFY DEVICE CONFIGURATION
			X'013A'	VERIFY DEVICE DATA MANAGEMENT SUPPORT IS OPERATING CORRECTLY
			X'013C'	VERIFY DEVICE NAME IS VALID
			X'013D'	VERIFY DIRECTORY REQUEST
			X'013E'	VERIFY ORIGINATOR RESOURCE IS DEFINED IN RESOURCE DIRECTORY
			X'013F'	VERIFY ORIGINATOR RESOURCE IS DEFINED IN SUBNET CONFIGURATION
			X'0140'	VERIFY MEMORY LOCATION AND CORRECT IF NECESSARY
			X'0141'	VERIFY ORIGINATOR RESOURCE IS DEFINED IN SYSTEM CONFIGURATION
			X'0142'	VERIFY ORIGINATOR RESOURCE IS STARTED
			X'0143'	VERIFY ORIGINATOR RESOURCE IS VALID
			X'0144'	VERIFY LINE NAME
			X'0145'	VERIFY LOGICAL ADDRESS IS DEFINED
			X'0146'	VERIFY MANUFACTURING AUTOMATION PROTOCOL IS LOADED
			X'0147'	VERIFY MAXIMUM MESSAGE SIZE IN NODE INFORMATION BLOCK
			X'0148'	VERIFY MESSAGE FILE IS DEFINED
			X'0149'	VERIFY MESSAGE IS DEFINED
			X'014A'	VERIFY MINIDISK REQUEST
			X'014B'	VERIFY ORIGINATOR RESOURCE IS DEFINED
			X'014C'	VERIFY DESTINATION RESOURCE IS STOPPED
			X'014D'	VERIFY SECURITY SUBNET CONFIGURATION FOR CONTROL NODE
			X'014E'	VERIFY APPLICATION INITIALIZATION/SHUT-DOWN SEQUENCE
			X'014F'	VERIFY SERVER RESOURCE IS DEFINED
			X'0150'	VERIFY SERVER RESOURCE IS VALID
			X'0151'	VERIFY LOGON PANEL IS DEFINED IN OPERATOR INTERFACE PANEL LIBRARY
			X'0152'	VERIFY ORIGINATOR RESOURCE NAME
			X'0153'	VERIFY PARAMETER
			X'0154'	VERIFY PHYSICAL RESOURCE IS DEFINED
			X'0155'	VERIFY PROGRAM IS LOADED
			X'0156'	VERIFY QUEUE NUMBER IS VALID

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
		X'0157'	VERIFY REMOTE NODE IS ACTIVE
		X'0158'	VERIFY REMOTE DEVICE IS VARIED ON
		X'0159'	VERIFY VIDEO CONTROL BLOCK IS VALID
		X'015A'	VERIFY SUBNET CONFIGURATION IS VALID
		X'015B'	VERIFY SUBSERVIENT NODE IS ACTIVE
		X'015C'	VERIFY CONFIGURATION FILE
		X'015D'	VERIFY SYSTEM CONFIGURATION IS VALID
		X'015E'	VERIFY TABLE DISTRIBUTION GROUP EXISTS ON NODE WHERE FAILURE OCCURRED
		X'015F'	VERIFY TABLE IS DEFINED
		X'0160'	VERIFY TABLES AND QUEUES DEFINITION FILE The file containing descriptive information about software tables and various system queues should be checked for errors.
		X'0161'	VERIFY TASK NUMBER
		X'0162'	VERIFY VIDEO CONTROL BLOCK IS DEFINED
		X'0163'	VERIFY BACK-UP D-CHANNEL OPERATION
		X'0164'	REVIEW SERVER AUDIT TRAIL
		X'0165'	CHECK SIZE AND CHANGE IF SET TOO LOW
		X'0166'	INCREASE USER ACCOUNT LIMITATION
		X'0167'	REVIEW SERVER ERROR LOG
		X'0168'	CHECK DOMAIN CONTROLLER
		X'0169'	CHECK FOR CORRECT LOAD MODULE
		X'016A'	CHECK CONFIGURATION OF SNA PASS-THROUGH DEVICES IN REPORTING AND ADJACENT NODES
		X'016B'	CHECK FOR OTHER MESSAGES ABOUT THE FAILING DEVICE OR GROUP
		X'016C'	CHECK FOR MESSAGES ABOUT LINKS TO OTHER NODES
		X'016D'	VERIFY CONNECTION TARGET INFORMATION: Check to ensure that the connection target is defined and configured in the directory information.
		X'016E'	VERIFY CONNECTION SOURCE INFORMATION: Check to ensure that the connection source is defined and configured in the directory information.
		X'016F'	VERIFY CONNECTION SETUP INFORMATION: Check to ensure that the connection setup information is correctly specified.
		X'0170'	VERIFY IMPENDING EVENT SHOULD OCCUR
		X'0171'	CHECK FOR SYSTEM CONTENTION
		X'0172'	CHECK DASD SUBSYSTEM UNIT ENVIRONMENT FOR EXCESSIVE TEMPERATURE
		X'0173'	VERIFY LOGICAL PATH
		X'0174'	CHECK CHANNEL STATE
		X'0175'	CHECK DSU/CSU CONFIGURATION
		X'0176'	CHECK DSU/CSU CONTROL PANEL
		X'0177'	VERIFY THAT THE FOLLOWING CONTACT WAS MADE
		X'0178'	VERIFY CONNECTION INFORMATION AT DESTINATION: Check to ensure that the connection information needed to complete a network connection is correct at the connection destination.
		X'0179'	VERIFY CONNECTION INFORMATION AT ORIGIN: Check to ensure that the connection information needed to complete a network connection is correct at the connection origin.
		X'017A'	VERIFY DIRECTORY INFORMATION FOR RESOURCE: Check to ensure that the resource used for the origin or destination of the network connection has correct directory information.
		X'017B'	CHECK FANS
		X'017C'	CHECK AMBIENT AIR TEMPERATURE

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
		X'017D'	VERIFY THAT WRAP PLUG IS INSTALLED: Verify that the connector termination of the communication port or cable contains a wrap plug suitable for loopback.
		X'017E'	CHECK CONNECTION PATH STATUS
		X'017F'	CHECK CONNECTION STATE
		X'0180'	VERIFY SNA PASS-THROUGH GROUP NAME IS VALID
		X'0181'	CHECK QUALITY OF SERVICE OFFERED BY BEARER SERVICES: Check the quality of service (QoS) permitted by the ingress network, the egress network, and the transit network.
		X'0190'	VERIFY CORRECT LICENSE USAGE LIMIT
		X'0191'	UPDATE LICENSE USAGE LIMIT
		X'0192'	VERIFY CONSISTENCY OF THE INFORMATION IN THE CONFIGURATION DATABASE
		X'0193'	CHECK STATUS AND ACTIVATE REQUIRED RESOURCES: Ensure that the resources needed to perform an activity or function are activated and available.
		X'0194'	CHECK CUSTOMER SUBSCRIPTION INFORMATION: Ensure that the customer is permitted to use the resources that are being requested.
		X'0195'	CHECK NETWORK DESIGN AGAINST CONTROL POINT CAPACITY LIMITS
		X'0196'	CHECK END-TO-END FRAME RELAY CONNECTION
		X'01A0'	CALL (detailed data qualifier) AND CHECK VOICE RECORDING *Note:* The qualifier identifies the telephone number that will be answered by the voice response unit.
		X'01A1'	VERIFY (detailed data qualifier) *Note:* The qualifier identifies the entity to be verified.
		X'01A2'	VERIFY (detailed data qualifier) IN RESOURCE DIRECTORY *Note:* The qualifier identifies the resource name.
		X'01A3'	VERIFY (detailed data qualifier) IS DEFINED *Note:* The qualifier identifies the resource type.
		X'01A4'	VERIFY (detailed data qualifier) IS DEFINED IN SUBNET CONFIGURATION *Note:* The qualifier identifies the node name.
		X'01A5'	VERIFY (detailed data qualifier) IS DEFINED IN SYSTEM CONFIGURATION *Note:* The qualifier identifies the node name.
		X'01A6'	CHECK FOR CONFIGURATION MISMATCH BETWEEN SYSTEM CONFIGURATION FILE AND (detailed data qualifier) *Note:* The qualifier identifies the file name.
		X'01A7'	VERIFY (detailed data qualifier) IS VARIED ON *Note:* The qualifier identifies the entity required to be varied on.
		X'01A8'	VERIFY (detailed data qualifier) WAS CREATED *Note:* The qualifier identifies the entity which should have been created.
		X'01A9'	VERIFY (detailed data qualifier) IS ACCESSIBLE *Note:* The qualifier identifies the entity which should be accessible, for example a file.
		X'01AA'	CHECK CONFIGURATION OF THE SENDING NODE AND OF THE (detailed data qualifier) *Note:* The qualifier identifies an entity whose configuration should be checked, for example a communications network management adapter (CNM ADAPTER).

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'01AB'	VERIFY THE CURRENT EXPOSURE USING (detailed data qualifier) AT THE REPORTING LOCATION *Note:* The qualifier identifies the command EDTRCYAP, which allows viewing and possibly adjusting the access path recovery time, which may be needed as a result of adding 'System Managed Access Path Protection' to OS/400.
			X'01C0'	CHECK FOR CONFIGURATION MISMATCH BETWEEN THE (detailed data qualifier) REMOTE MODEM AND (detailed data qualifier) LOCAL MODEM *Note:* The qualifiers identify the link segment level (LSL) on which the modems belong.
			X'01C1'	CHECK FOR CONFIGURATION MISMATCH BETWEEN THE (detailed data qualifier) REMOTE MODEM AND (detailed data qualifier) LOCAL DSU/CSU *Note:* The qualifiers identify the link segment level (LSL) on which the modem and the DSU/CSU belong. This code point is used on a multi-segment link with modems on one segment and DSU/CSUs on the other segment.
			X'01C2'	VERIFY CONFIGURATION OF (detailed data qualifier) AND (detailed data qualifier) *Note:* The qualifiers identify the entities to be verified.
			X'01D0'	VERIFY (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the entities to be verified.
			X'01E1'	VERIFY (sf83 product text) IS RUNNING
		X'0200'	CHECK POWER: Check the electrical power supply for the device	
			X'0201'	CHECK POWER CONTROL MODE: Check the power control mode for the device, i.e. is the device set to be powered on/off locally from the control panel, remotely from the host, remotely from the network, etc.
			X'0202'	CHECK POWER CORD
			X'0203'	CHECK FUSES
			X'0204'	CHECK MAIN AC POWER SUPPLY
		X'0300'	CHECK FOR DAMAGE: Check for damage to the specified resource	
			X'0301'	CHECK CABLE AND ITS CONNECTIONS
			X'0302'	CHECK CABLES AND THEIR CONNECTIONS
			X'0303'	CHECK PHYSICAL INSTALLATION
			X'0306'	CHECK TAPE PATH TO READ/WRITE HEAD FOR OBSTRUCTION
			X'0310'	CHECK UNINTERRUPTIBLE POWER SUPPLY
		X'0400'	RUN APPROPRIATE TEST: Refer to the appropriate documentation for this condition and run the tests specified for this problem	
			X'0401'	RUN CONSOLE TEST
			X'0402'	RUN CONSOLE LINK TEST
			X'0403'	RUN MODEM TESTS
			X'0404'	RUN ADAPTER TEST
			X'0405'	RUN ATM LOOPBACK TEST: Prepare the system or subsystem for a loopback test of the appropriate ATM communication sublayer, and run the test.
		X'0500'	RUN APPROPRIATE TRACE: Refer to the appropriate documentation for this condition and run the traces specified for this problem.	

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
			X'0501' RUN COMMUNICATION LINE DATA TRACE
		X'0600'	OBTAIN DUMP: Perform the required operations to obtain a storage dump (copy to external storage of the processor main storage). The dump will be required by support personnel or service personnel in order to resolve the problem
			X'0601' TRANSFER AND PRINT MOSS DUMP X'0602' TRANSFER AND PRINT CONTROL PROGRAM DUMP X'0603' TRANSFER AND PRINT LINE ADAPTER DUMP X'0604' TRANSFER AND PRINT CHANNEL ADAPTER DUMP X'0605' TRANSFER AND PRINT TOKEN RING COUPLER DUMP X'0610' DUMP CONTROL PROGRAM X'0611' DUMP CHANNEL ADAPTER MICROCODE X'0612' DUMP LINE ADAPTER MICROCODE X'0613' DUMP MOSS MICROCODE X'0614' DUMP TOKEN RING COUPLER
		X'0700'	NO ACTION NECESSARY: For a given cause, no action is necessary, e.g., the problem caused was transitory
			X'0701' IF SNBU JUST DISCONNECTED THEN IGNORE X'0702' RETRY AT ORIGINATING NODE WILL BE SUCCESSFUL WHEN RESOURCE BECOMES AVAILABLE X'0703' IF THIS WAS AN AUTHORIZED INCREASE NO ACTION IS NECESSARY X'0704' COMMUNICATIONS PROBLEM BYPASSED BY AUTOMATIC SWITCH TO ALTERNATE ROUTE: The bypassed problem requires operator attention to correct. X'0705' NO ACTION NECESSARY, SINCE AUTOMATIC RESET WAS PERFORMED X'0706' NO ACTION NECESSARY — AUTOMATED RECOVERY IN PROGRESS X'07A0' CONTROL NODE (detailed data qualifier) NOW RESPONDING *Note:* The qualifier identifies the resource name. X'07A1' APPLICATION (detailed data qualifier) NOW RESPONDING *Note:* The qualifier identifies the resource name. X'07A2' PRINT SERVER (detailed data qualifier) NOW RESPONDING *Note:* The qualifier identifies the resource name.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
		X'1000'	PERFORM PROBLEM RECOVERY PROCEDURES: Refer to the problem recovery documentation provided for this condition and follow the specified procedures
		X'1001'	REFER TO OPERATOR'S GUIDE FOR CORRECTIVE ACTION
		X'1002'	FOLLOW LOCAL BACKUP PROCEDURE
		X'1003'	PERFORM LOOP PROBLEM RECOVERY PROCEDURES
		X'1004'	PERFORM LAN PROBLEM RECOVERY PROCEDURES
		X'1005'	PERFORM DISK FILE ERROR RECOVERY PROCEDURES
		X'1006'	FOR SINGLE DRIVE FAILURES, MOVE PACK TO ANOTHER DRIVE AND RERUN SAME JOB
		X'1007'	REQUEST RESET OF RING ERROR MONITOR COMPONENT
		X'1008'	REQUEST REINITIALIZATION OF LAN MANAGER
		X'1009'	ATTEMPT TO REOPEN THE ADAPTER AFTER 30 SECONDS
		X'100A'	REORGANIZE THE FILE
		X'100B'	LEAVE THE ADDITIONAL WORKSTATION POWERED OFF
		X'100C'	POWER OFF ANOTHER WORKSTATION ATTACHED TO THIS CONTROLLER
		X'100D'	TRANSFER THE ADDITIONAL WORKSTATION TO ANOTHER CONTROLLER
		X'100E'	LOCATE AND ELIMINATE THE SOURCE OF ELECTRICAL INTERFERENCE
		X'100F'	CHANGE REGISTRATION NAME OF ONE OF THE COMMUNICATION CONTROL BLOCKS
		X'1010'	REDUCE AMOUNT OF AUXILIARY STORAGE USED
		X'1011'	INCREASE AMOUNT OF AUXILIARY STORAGE AVAILABLE
		X'1012'	INCREASE AMOUNT OF MAIN STORAGE AVAILABLE
		X'1013'	POWER OFF REMOTE MODEM
		X'1014'	POWER OFF REMOTE DSU/CSU
		X'1015'	POWER OFF THEN POWER ON AUTO-CALL UNIT
		X'1016'	REDUCE THE NUMBER OF LINES/DEVICES ATTACHED TO THE SUBSYSTEM: The subsystem is overloaded.
		X'1017'	INSTALL ADDITIONAL MEMORY
		X'1018'	INSTALL ADDITIONAL FILE SERVERS
		X'1019'	PURGE UNUSED FILES
		X'101A'	PRINT THEN CLEAR ERROR LOG
		X'101B'	PRINT THEN CLEAR AUDIT LOG
		X'101C'	DELETE SECOND APPLICATION CONTROL BLOCK FOR MONITOR
		X'101D'	REDUCE TYPES OF AUDIT ENTRIES LOGGED
		X'101E'	CORRECT LOGICAL DEVICE INTERFACE PROCEDURES (LDIP) PROBLEM
		X'101F'	CREATE APPLICATION CONTROL BLOCK FOR INBOUND SERVER
		X'1020'	INCREASE STORAGE MEDIA CAPACITY
		X'1021'	CREATE APPLICATION CONTROL BLOCK FOR OUTBOUND SERVER
		X'1022'	CREATE COMMUNICATION CONTROL BLOCK FOR COMMUNICATION ACCESS CONTROL BLOCK
		X'1023'	CREATE TABLE DISTRIBUTION GROUP TABLE
		X'1024'	DELETE JOBS
		X'1025'	CORRECT CONFIGURATION TO ENABLE DATA TRANSPARENCY IN NODE INFORMATION BLOCK
		X'1026'	CORRECT CONFIGURATION TO ENABLE SECURITY IN NODE INFORMATION BLOCK
		X'1027'	INCREASE NUMBER OF TASK NUMBERS

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'1028'	INCREASE NUMBER OF TIMERS
			X'1029'	INCREASE SIZE OF CONTROL BLOCK MEMORY POOL
			X'102A'	INCREASE SIZE OF DRIVER BUFFER
			X'102B'	GIVE CONTROL OF ONE COMMUNICATION CONTROL BLOCK TO ANOTHER COMMUNICATION ACCESS CONTROL BLOCK
			X'102C'	HALT DESTINATION RESOURCE To halt, in this sense, means to purge control blocks associated with the resource.
			X'102D'	INCREASE AMOUNT OF VIRTUAL STORAGE AVAILABLE
			X'102E'	INCREASE BUFFER ALLOCATION IN LINE CONTROL BLOCK
			X'102F'	INCREASE TIMEOUT VALUE IN LINE CONTROL BLOCK
			X'1030'	UNLOAD DEPENDENT SOFTWARE PROGRAMS THEN UNLOAD INDICATED PROGRAM
			X'1031'	UNLOAD OFFENDING SOFTWARE COMPONENT
			X'1032'	INCREASE TIMEOUT VALUE IN REQUEST
			X'1033'	INCREASE SIZE OF MESSAGE MEMORY POOL
			X'1034'	INCREASE SIZE OF CO-PROCESSOR CONTROL BLOCK MEMORY POOL
			X'1035'	INCREASE SIZE OF CO-PROCESSOR MESSAGE MEMORY POOL
			X'1036'	INCREASE SIZE OF CO-PROCESSOR WORK MEMORY POOL
			X'1037'	INCREASE SIZE OF RESOURCE
			X'1038'	INCREASE SIZE OF WORK MEMORY POOL
			X'1039'	TERMINATE USER SESSION
			X'103A'	INCREASE TIMEOUT VALUE IN APPLICATION CONTROL BLOCK
			X'103B'	INCREASE TIMEOUT VALUE IN DATABASE CONTROL BLOCK
			X'103C'	RELEASE ALL LOCKED RECORDS
			X'103D'	SYNCHRONIZE PASSWORDS AT FILE SERVER AND DOMAIN CONTROLLER
			X'103E'	OPEN RESOURCE
			X'103F'	SYNCHRONIZE SYSTEM CLOCK TIMES
			X'1040'	LOG OFF LOW PRIORITY USERS
			X'1041'	RESOLVE IN-DOUBT LOGICAL UNITS OF WORK
			X'1042'	RELEASE LOCKED MEMBER
			X'1043'	PRINT JOBS
			X'1044'	USE DEVICE DATA MANAGEMENT SUPPORT HELP FACILITY FOR MORE INFORMATION ON RETURN CODES
			X'1045'	SELECT VALID MEMORY POOL
			X'1046'	SELECT VALID PARAMETER
			X'1047'	USE ANOTHER DATABASE CONTROL BLOCK
			X'1048'	SELECT VALID REQUEST SIZE
			X'1049'	STOP THEN START LINE CONTROL BLOCK
			X'104A'	STOP PRINTER CONTROL BLOCK
			X'104B'	STOP PRINTER CONTROL BLOCKS NOT IN USE
			X'104C'	STOP THEN START DEVICE CONTROL BLOCK
			X'104D'	DELETE FILE
			X'104E'	RENAME FILE
			X'104F'	LOAD COMMUNICATIONS SUBSYSTEM CONTROLLER
			X'1050'	LOAD CO-PROCESSOR DISPATCHER: Start the co-processor dispatcher resource for the associated co-processor adapter.
			X'1051'	DECREASE REQUEST SIZE
			X'1052'	REDUCE NUMBER OF APPLICATIONS EXECUTING
			X'1053'	RESIZE AND COPY FILE
			X'1054'	CLOSE ANY FILES WHICH ARE NOT IN USE
			X'1055'	FREE SPACE ON DESIGNATED DISK DRIVE
			X'1056'	RE-CREATE FILE
			X'1057'	RESTORE OR RESET FILE

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'1058'	REMOVE PROCESSES FROM SYSTEM
			X'1059'	DELETE MEMBERS FROM TABLE OR QUEUE
			X'105A'	DISCONNECT FROM DATABASE THEN CONNECT TO ANOTHER DATABASE
			X'105B'	DISCONNECT FROM DATABASE THEN CONNECT TO ANOTHER DATABASE
			X'105C'	INCREASE NETWORK CONTROL BLOCKS FOR NETWORK DRIVER
			X'105D'	FORMAT FIXED DISK
			X'105E'	INSTALL FIX FOR CURRENT PROBLEM, IF AVAILABLE
			X'105F'	DELETE DYNAMICALLY ADDED RESOURCES (PUS, LUS, AND SESSIONS)
			X'1060'	ENSURE THAT ACCESS IS AUTHORIZED FOR ATTEMPTED USE OF PROBLEM RESOLUTION FACILITY
			X'1061'	WAIT FOR FIX - PROBLEM RECORDED - RESOLUTION UNDER STUDY
			X'1062'	INSTALL FIX SENT FOR REPORTED KNOWN PROBLEM
			X'1063'	ADJUST IF NECESSARY
			X'1064'	CLEAN TAPE DRIVE: Problem reading/writing tape data. Perform drive cleaning procedure.
			X'1065'	REPLACE POWER SUPPLY
			X'1066'	RESTORE MAIN AC POWER SUPPLY
			X'1067'	ATTEMPT TO REOPEN THE ADAPTER AFTER 30 SECONDS WITH ALTERNATE SPEED
			X'1068'	INCREASE NETWORK CAPACITY TO CARRY MORE CONNECTIONS
			X'1069'	INCREASE CONNECTION BANDWIDTH
			X'106A'	INCREASE PORT BANDWIDTH
			X'106B'	INCREASE MACHINE RESOURCE CAPACITY
			X'106C'	REDUCE NUMBER OF ACTIVE CONNECTIONS
			X'106D'	RESET RESOURCE FROM CONTROL PANEL
			X'106E'	INCREASE NODE CAPACITY TO SUPPORT MORE TRUNKS
			X'106F'	REDUCE AMOUNT OF RESOURCES CONFIGURED FOR FRAME RELAY OVER ISDN
			X'1070'	INCREASE THE NUMBER OF PRECONFIGURED TRUNKS FOR BACKUP
			X'1071'	ALIGN CONFIGURATION ON BOTH SIDES OF THE RESOURCE
			X'10A0'	RESTORE (detailed data qualifier) FROM BACKUP *Note:* The qualifier identifies the entity to be restored, for example a file.
			X'10A1'	PERFORM (detailed data qualifier) *Note:* The qualifier specifies a problem recovery procedure to be performed.
			X'10A2'	FOLLOW PROBLEM RECOVERY PROCEDURE INDICATED AT PRINTER FOR (detailed data qualifier) *Note:* The qualifier specifies a value that indexes a local problem recovery procedure.
			X'10A3'	FOLLOW PROBLEM RECOVERY PROCEDURE INDICATED AT PRINTER SERVER FOR (detailed data qualifier) *Note:* The qualifier specifies a value that indexes a local problem recovery procedure.
			X'10A4'	FOR CORRECTIVE ACTION REFER TO (detailed data qualifier) *Note:* The qualifier identifies the publication number of a document where corrective actions are described and may only be used when the implementing product will provide a single version of the publication (i.e., the publication will never be translated and therefore the publication number will never be changed).

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
		X'10A5'	REVIEW (detailed data qualifier) AND UPDATE AS REQUIRED *Note:* The qualifier identifies the file to be reviewed. Any data id describing a type of file may be used in this context.
		X'10A6'	CREATE NEW (detailed data qualifier) *Note:* The qualifier identifies the file. Any data id describing a type of file may be used in this context.
		X'10A7'	RESTORE (detailed data qualifier) ON DOMAIN CONTROLLER AND FILE SERVER FROM BACKUP FILE *Note:* The qualifier identifies the file. Any data id describing a type of file may be used in this context.
		X'10A8'	STOP (detailed data qualifier) *Note:* The qualifier identifies the node name.
		X'10A9'	FOLLOW PROBLEM HANDLING PROCEDURES FOR (detailed data qualifier) *Note:* The qualifier identifies the resource.
		X'10AA'	POWER OFF THEN POWER ON (detailed data qualifier) *Note:* The qualifier identifies the resource.
		X'10AB'	RESTORE (detailed data qualifier) LICENSED INTERNAL CODE *Note:* The qualifier identifies the resource.
		X'10AC'	SAVE (detailed data qualifier) *Note:* The qualifier identifies the entity to be saved.
		X'10AD'	RUN (detailed data qualifier) AND MIRROR THE DRIVE *Note:* The qualifier identifies a command or program.
		X'10AE'	RUN (detailed data qualifier) AND RECOVER DETACHED SECONDARY *Note:* The qualifier identifies a command or program.
		X'10AF'	RUN (detailed data qualifier) AND CORRECT ALL ERRORS *Note:* The qualifier identifies a command or program.
		X'10B0'	POWER OFF REMOTE (detailed data qualifier) *Note:* The qualifier identifies an entity to be powered off, for example a device.
		X'10C0'	DELETE JOURNAL (detailed data qualifier) CONNECTION NAME (detailed data qualifier) *Note:* The first qualifier identifies the journal resource variable. The second qualifier identifies the connection name variable. A journal (as used here) is used to record information about device events. The connection is the connection between a logical device and an application.
		X'10C1'	INITIALIZE JOURNAL (detailed data qualifier) CONNECTION NAME (detailed data qualifier) *Note:* The first qualifier identifies the journal resource variable. The second qualifier identifies the connection name variable. A journal (as used here) is used to record information about device events. The connection is the connection between a logical device and an application.
		X'10C2'	RE-CREATE JOURNAL (detailed data qualifier) CONNECTION NAME (detailed data qualifier) *Note:* The first qualifier identifies the journal resource variable. The second qualifier identifies the connection name variable. A journal (as used here) is used to record information about device events. The connection is the connection between a logical device and an application.
		X'10C3'	RUN (detailed data qualifier) ON FILE CONTAINED IN (detailed data qualifier) *Note:* The first qualifier identifies a command or program. The second qualifier identifies the disk block number.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'10C4'	INCREASE THE VALUE OF (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the parameter whose value should be increased. The second qualifier optionally identifies the location of this parameter.
			X'10C5'	DECREASE THE VALUE OF (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the parameter whose value should be decreased. The second qualifier optionally identifies the location of this parameter.
			X'10E0'	STOP (sf83 product text)
		X'1100'	VARY OFFLINE	
		X'1200'	RETRY	
			X'1201'	MOVE THE PAGING DATA SETS TO ANOTHER SUBSYSTEM
			X'1202'	MOVE PACK TO ANOTHER DRIVE AND RERUN THE SAME JOB
			X'1203'	RESTART JOB
			X'1204'	ATTEMPT TO REESTABLISH THE CONNECTION
			X'1205'	RERUN THE APPLICATION PROGRAM
			X'1206'	WAIT THEN RETRY
			X'1207'	RETRY — DIAL NUMBER MANUALLY
			X'1208'	RETRY REQUEST
			X'1209'	RETRY AT THE ORIGINAL REQUESTING NODE
			X'120A'	RETRY JOB ON ALTERNATE DRIVE OR PATH: To isolate failure to a drive or media problem, or to run the job, try the job on another drive or down a different path.
			X'12C0'	RETRY AFTER (detailed data qualifier) (detailed data qualifier) *Note:* The two qualifiers indicate a date and time after which the operation should be retried.
		X'1300'	CORRECT THEN RETRY: The operator should correct the condition referred to and retry the operation	
			X'1301'	READY THE DEVICE THEN RETRY
			X'1302'	RESET PRINT SPOOLER CONTROL FILE
			X'1303'	RESET VALUE WITHIN THE VALID RANGE
			X'1304'	CORRECT NODE INFORMATION BLOCK CONFIGURATION
			X'1305'	REACTIVATE B-CHANNEL RESOURCE
			X'1306'	RELEASE HELD JOBS THEN RETRY
			X'1309'	CORRECT THEN RETRY AT THE ORIGINAL REQUESTING NODE
			X'130A'	MOVE TAPE TO COMPATIBLE TAPE DRIVE: Run job on a drive which supports the specific tape length, tape format, and correct compaction algorithm.
			X'1310'	VERIFY THAT AIR VENTS ARE NOT COVERED
			X'1311'	CHECK FOR DIRTY FILTER
			X'1320'	CHECK CABLE CONNECTION AND RETRY
			X'1330'	ACTIVATE PORT THEN RETRY
			X'1331'	ENABLE LINE THEN RETRY
			X'1332'	REACTIVATE LINE
			X'1333'	CLEAR CONNECTIONS
			X'1340'	CORRECT THEN RETRY OFFENDING SOFTWARE COMPONENT

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'1341'	CORRECT CONNECTION SETUP INFORMATION AND TRY AGAIN: Correct the connection setup information and try to restart the connection again.
			X'1342'	UNLOCK RESOURCE AND RETRY
			X'1350'	ACTIVATE SWITCHED MAJOR NODE THEN RETRY
			X'13A0'	ACTIVATE ONE OR MORE PORTS IN THE ROTARY GROUP ASSOCIATED WITH (detailed data qualifier) *Note:* The qualifier identifies the telephone number associated with the rotary group.
			X'13A1'	ACTIVATE RESOURCES ATTACHED TO (detailed data qualifier)
			X'13A2'	DEACTIVATE RESOURCES ATTACHED TO (detailed data qualifier)
			X'13A3'	REPEAT CALL WITH (detailed data qualifier) *Note:* The qualifier identifies the new number.
			X'13A4'	RUN (detailed data qualifier) AND VERIFY DRIVE *Note:* The qualifier identifies a command or program.
			X'13A5'	RUN (detailed data qualifier) AND VERIFY MIRRORED DRIVE(S) *Note:* The qualifier identifies a command or program.
			X'13A6'	CHECK (detailed data qualifier) VOLUME STATUS *Note:* The qualifier identifies the name of a specific volume.
		X'1400'	RESTART: Perform the appropriate restart operation on the indicated resource	
			X'1401'	RE-IML MOSS: Reload the MOSS microcode
			X'1402'	RE-IPL THE COMMUNICATION CONTROLLER: Reload the system software program in the communication controller
			X'1403'	RE-IPL THE SECONDARY FINANCE CONTROLLER
			X'1404'	RE-IML THE CONTROL UNIT
			X'1405'	REACTIVATE LAN MANAGEMENT SERVER PROGRAM
			X'1406'	FOLLOW ALERT SENDERS PROCEDURES FOR RESOURCE ACTIVATION
			X'1407'	ACTIVATE THE SESSION
			X'1408'	RESTART DEVICE DATA MANAGEMENT SUPPORT
			X'1409'	RESTART DEVICE DATA MANAGEMENT SUPPORT SERVER
			X'140A'	RESTART DISTRIBUTION SERVER: Restart the server responsible for distributing information among nodes.
			X'140B'	RESTART PRINT SPOOLER
			X'140C'	RESTART PRINTER CONTROL BLOCK
			X'140D'	RESTART COMMUNICATION PROTOCOL PROGRAM
			X'140E'	RESTART DESTINATION SERVER
			X'140F'	RESTART PROGRAM
			X'1410'	RESUME OPERATION ON BACKUP PU: Automatic problem bypass has been successful, and a backup PU is now available; operation should be resumed using this PU
			X'1411'	RESTART COMMUNICATIONS SUBSYSTEM CONTROLLER
			X'1412'	RESTART RESOURCE
			X'1413'	RESUME DESTINATION RESOURCE Remove the destination resource from the paused state.
			X'1414'	RESUME RESOURCE Remove the resource from the paused state.
			X'1415'	START COMMUNICATION CONTROL BLOCK
			X'1416'	START DESTINATION RESOURCE
			X'1417'	START DEVICE DATA MANAGEMENT SUPPORT SERVER
			X'1418'	START DISK QUEUE SERVER
			X'1419'	START FILE SUPPORT
			X'141A'	START INBOUND SERVER

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'141B'	START ONLY ONE COMMUNICATION CONTROL BLOCK AT A TIME
			X'141C'	START OUTBOUND SERVER
			X'141D'	POWER ON OR RESTART
			X'141E'	STOP / RESTART SERVER LOGON SERVICE
			X'141F'	RESTART SOFTWARE SUBSYSTEM

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'1420'	RESTART SOFTWARE SUBTASK
			X'1421'	RESTART MESSAGE LOGGING
			X'1422'	RESTART SERVER
			X'1423'	RESTART RESOURCE WHEN INCIDENT RESOLVED
			X'1424'	IPL THE SYSTEM AT THE REPORTING LOCATION: This is a result of adding 'System Managed Access Path Protection' to OS/400.
			X'1425'	WHEN CONVENIENT, MANUALLY DEACTIVATE THEN REACTIVATE RESOURCE
			X'14A0'	VARY OR CONNECT (detailed data qualifier) ONLINE: Start the identified element via local target system control program facilities. *Note:* The qualifier identifies the target element.
			X'14A1'	IML THE (detailed data qualifier): Initialize the central processor complex (CPC) or a resource within the CPC. *Note:* The qualifier identifies the IML target element.
			X'14A2'	ACTIVATE (detailed data qualifier): Issue the Activate command to attempt to bring the target system online. *Note:* The qualifier identifies the activation target.
			X'14A4'	START (detailed data qualifier) *Note:* The qualifier identifies the resource name.
			X'14A5'	RESTART (detailed data qualifier) *Note:* The qualifier identifies the resource name.
			X'14D0'	IPL (detailed data qualifier) FROM (detailed data qualifier) WITH (detailed data qualifier): Load the system control program. *Note:* The first qualifier identifies the IPL target CPU. The second qualifier identifies the IPL device address and the third qualifier identifies an IPL parameter.
			X'14E0'	RESTART (sf83 product text)
		X'1500'	CORRECT INSTALLATION PROBLEM: It will be necessary to correct the installation error before continuing operation	
			X'1501'	CORRECT GENERATION PROBLEM
			X'1502'	CORRECT CUSTOMIZATION PARAMETERS
			X'1503'	CORRECT CONFIGURATION
			X'1504'	APPLY CORRECT SOFTWARE LEVEL
			X'1505'	LOAD THE REQUIRED OPTIONAL MODULE
			X'1506'	INCREASE INTERVENTION TIMER VALUE
			X'1507'	CORRECT ADDRESS FROM MODEM KEYPAD
			X'1508'	CORRECT ADDRESS FROM DSU/CSU CONTROL PANEL
			X'1509'	ENABLE LPDA-2 FROM MODEM KEYPAD
			X'150A'	ENABLE LPDA-2 FROM DSU/CSU CONTROL PANEL
			X'150B'	CONFIGURE MODEM
			X'150C'	CONFIGURE DSU/CSU
			X'150D'	CONFIGURE LOCAL MODEM AS PRIMARY OR CONTROL
			X'150E'	CONFIGURE LOCAL DSU/CSU AS PRIMARY OR CONTROL
			X'150F'	CHECK THRESHOLD LIMIT AND CHANGE IF SET TOO LOW
			X'1510'	CORRECT THE ADDRESS
			X'1511'	CHECK THRESHOLD LIMIT AND CHANGE IF SET TOO HIGH
			X'1512'	CHANGE CALL SETUP PARAMETERS
			X'1513'	UPDATE CLIENT APPLICATION PROGRAM TO PROVIDE PASSWORD ENCRYPTION
			X'1514'	CHANGE SERVER CONFIGURATION TO ACCEPT UNENCRYPTED PASSWORDS
			X'1515'	CHECK LOWER LIMIT AND CHANGE IF SET TOO HIGH
			X'1516'	INSTALL LATEST MICROCODE LEVEL
			X'1517'	APPLY LATEST SERVICE LEVEL

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'1518'	INCREASE NUMBER OF CONTROL BLOCKS IN GENNED POOL
			X'1519'	INCREASE NUMBER OF USERS IN IEEE 802.2 PROFILE
			X'151A'	INCREASE NUMBER OF SAPS IN IEEE 802.2 PROFILE
			X'1520'	INCREASE MAXIMUM NUMBER OF CONNECTIONS ALLOWED ON THIS NODE
			X'1521'	ADD DESTINATION RESOURCE TO RESOURCE DIRECTORY
			X'1522'	ADD ORIGINATOR RESOURCE TO SUBNET DIRECTORY
			X'1523'	ADD ORIGINATOR RESOURCE TO SYSTEM CONFIGURATION
			X'1524'	ADD RESOURCE TO TABLE AND QUEUES DEFINITION FILE Add an entry to the file containing descriptive information about software tables and various system queues.
			X'1525'	ADD DESTINATION RESOURCE TO CONTROL BLOCK FILE
			X'1526'	CORRECT APPROPRIATE CONFIGURATION PARAMETERS
			X'1527'	PERFORM ONLINE CONFIGURATION AND UPDATE CONFIGURATION DATABASE
			X'1528'	CHANGE DEFAULT CONFIGURATION PARAMETERS TO APPROPRIATE VALUES
			X'1530'	DEFINE RESOURCE TO SYSTEM
			X'1531'	REMOVE RESOURCE FROM APPLICATION DEFINITIONS
			X'1532'	SET PROBLEM RESOLUTION FACILITY FLAG ON FOR RESOURCE
			X'1540'	IF THIS WAS AN UNAUTHORIZED INCREASE THEN DO THE FOLLOWING
			X'1541'	CHANGE THE LICENSE USAGE LIMIT BACK TO THE AUTHORIZED LIMIT
			X'1542'	DISCONNECT ONE NETWORK NODE FROM THE NETWORK AND GIVE IT A NEW CP NAME
			X'1543'	INCREASE BANDWIDTH OR REMOVE VOICE SUPPORT ON THE TRUNK
			X'1544'	UPGRADE VOICE SERVER TO CORRECT LEVEL
			X'15A0'	ADD (detailed data qualifier) TO RESOURCE DIRECTORY *Note:* The qualifier identifies the resource.
			X'15A1'	ADD (detailed data qualifier) TO SUBNET CONFIGURATION *Note:* The qualifier identifies the node name.
			X'15A2'	ADD (detailed data qualifier) TO SYSTEM CONFIGURATION *Note:* The qualifier identifies the node name.
			X'15A3'	CONFIGURE LOCAL (detailed data qualifier) AS PRIMARY OR CONTROL *Note:* The qualifier identifies a communications network management adapter (CNM ADAPTER).
			X'15A4'	CONFIGURE (detailed data qualifier) *Note:* The qualifier identifies the entity which should be configured, for example a device.
			X'15A5'	CORRECT ADDRESS FROM (detailed data qualifier) CONTROL PANEL *Note:* The qualifier identifies a communications network management adapter (CNM ADAPTER).
			X'15A6'	ENABLE LPDA-2 FROM (detailed data qualifier) CONTROL PANEL *Note:* The qualifier identifies a communications network management adapter (CNM ADAPTER).

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
			X'15C0' INCREASE (detailed data qualifier) ON (detailed data qualifier) *Note:* The first qualifier identifies the GENERATION PARAMETER to increase. The second qualifier identifies the GENERATION PARAMETER containing the GENERATION PARAMETER to be increased.
		X'1600'	REPLACE MEDIA
			X'1601' FOR REMOVABLE MEDIA, CHANGE MEDIA AND RETRY X'1602' PLACE BACKUP DISKETTE IN DRIVE X'1603' CHANGE DISKETTE AND RETRY X'1604' PUT CORRECT PAPER IN CASSETTE X'1605' PUT CASSETTE IN PRINTER X'1606' ADD PAPER
		X'1700'	REPLENISH SUPPLIES
			X'1701' REPLACE RIBBON X'1702' ADD INK X'1703' ADD TONER X'1704' CHANGE ALL AIR FILTERS X'1705' ADD FUSER OIL X'1706' ADD STAPLES
		X'1800'	REPLACE DEFECTIVE EQUIPMENT
			X'1801' REPLACE KEYBOARD X'1802' REPLACE MODULE X'1803' REPLACE CARD X'1804' REPLACE DEVICE X'1805' REPLACE BATTERY X'1806' REPLACE PRINTER X'1807' REPLACE DISPLAY CONTROL MODULE X'1808' REPLACE MSR OR MSRE: Replace the magnetic stripe reader or magnetic stripe reader/encoder X'1811' REPLACE STORAGE CONTROLLER X'1812' REPLACE WORKSTATION CONTROLLER X'1813' REPLACE COMMUNICATIONS SUBSYSTEM CONTROLLER X'18A0' REPLACE THE CARD IDENTIFIED BY (detailed data qualifier) *Note:* The qualifier identifies the card to be replaced, e.g., by its part number. X'18A1' REPLACE CABLE IDENTIFIED BY (detailed data qualifier) X'18A2' REPLACE (detailed data qualifier) *Note:* The qualifier identifies the entity which should be replaced, for example a device. X'18C0' REPLACE THE BATTERY IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) *Note:* The two qualifiers identify the battery to be replaced, e.g., by giving its type and location.
		X'1900'	PERFORM PROBLEM BYPASS PROCEDURES: Refer to the problem bypass documentation provided for this condition and follow the specified procedures
			X'1901' REPLACE MODEM X'1902' REPLACE DSU/CSU X'1903' CHANGE TO BACKUP SPEED X'1904' ACTIVATE SNBU, IF AVAILABLE X'1905' DISCONNECT AND RE-DIAL SNBU LINE X'1906' USE ALTERNATE PORT OR LINE X'1907' BACKUP THE DRIVE AT SERVER

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
			X'1908' REMOVE THE FAULTY NETWORK NODE FROM THE NETWORK
			X'19A0' QUIESCE AND MOVE THE (detailed data qualifier) WORKLOAD TO ANOTHER SYSTEM: Move work to another equivalent resource prior to imminent shutdown or until the resource is restored. *Note:* The qualifier identifies the system image name.
			X'19A1' PERFORM MANUAL FALLBACK TO (detailed data qualifier) *Note:* The qualifier identifies the communication control unit (CCU) within the communication controller to which the fallback is to be done.
			X'19A2' REMOVE (detailed data qualifier) FROM SERVICE AND RESUME OPERATIONS IF POSSIBLE *Note:* The qualifier identifies the resource.
			X'19A3' BACKUP, REFORMAT, AND RESTORE (detailed data qualifier) *Note:* The qualifier identifies the drive.
			X'19A4' BACKUP DATA BEFORE POWERING OFF (detailed data qualifier) *Note:* The qualifier identifies the device.
		X'1A00'	REMOVE MEDIA: The medium (usually paper, forms, or cards) supply needs to be removed and operator action is required to remove the medium in order to continue operation.
			X'1A01' REMOVE DOCUMENTS
			X'1A02' REMOVE CARDS
		X'1B00'	PREPARE: Preparations should be made to handle a particular situation.
			X'1B11' PREPARE FOR SERVER SHUTDOWN
			X'1B12' PREPARE FOR AUTOMATIC SYSTEM SHUTDOWN
		X'1C00'	REPLY TO MESSAGE: Function is waiting for or requires a reply in order to continue or complete.
			X'1C01' REPLY TO OUTSTANDING MESSAGE
		X'1D00'	INACTIVATE OR DISABLE: A switch or function must be inactivated to correct the problem.
			X'1D01' INACTIVATE FORCE RESOURCE
		X'2000'	(Review detailed data): Refer to the detailed data presentation for additional messages and information *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.
			X'2001' (Report detailed data): Report the information that was transported in the Detailed Data subvector *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure. *Note:* An Alert receiver has the option of displaying the data from the Detailed Data (X'82') subvector either in conjunction with this text or in another display that can be reached from the display containing this text.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'2002'	(Review most recent traffic statistics): Report the information in the statistics subvectors kept for the link stations *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.
			X'2010'	(Review link detailed data): Review the information that was transported in the X'5x' and/or X'8C' subvectors flowing in this Alert. *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.
			X'2011'	(Review hexadecimal display of the Alert record): Review the screens providing a hexadecimal display of the entire Alert record *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.
			X'2012'	(Review associated resources): Review the information that was transported in the Associated Resources (X'11') subfield of the Hierarchy/Resource List subvector in this Alert *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.
			X'2013'	(Review Supporting Data Correlation): Review the information that was transported in the Supporting Data Correlation (X'48') subvector in this Alert *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content
		X'2100' (Review recent Alerts for this resource) *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.
		X'2101' (Review recent statistical records for this resource) *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.
		X'2102' (Review correlated Alerts) *Note:* There is no text string defined for this code point; the Alert receiver indicates the action to be taken in terms of its own screen design and command structure.
		X'2110' REVIEW RECENT ALERTS FROM OTHER NODES FOR THE SAME PROBLEM AND RELATED ALERTS FROM THE REPORTING NODE
		X'21A1' FIND ORIGINAL REQUESTING NODE--REVIEW RECENT ALERTS ON (detailed data qualifier) FOR SNA PASS-THROUGH ERRORS *Note:* The qualifier identifies the resource that generated the Alert.
		X'21C1' REVIEW RECENT ALERTS FOR (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the LU name and the Network ID of the node on which problem determination procedures should be run.
		X'2200' REVIEW DATA LOGS: Review the specified records in one or more data logs
		X'2201' REVIEW REMOTE DEVICE LOGS
		X'2202' REVIEW DEVICE STATISTICAL LOG AT ALERT SENDER
		X'2203' REVIEW SUPPORTING DATA AT ALERT SENDER
		X'2204' REVIEW NETWORK LOG AT ALERT FORWARDER
		X'2205' RELY ON ACCOUNTING DATA FROM REMOTE CONNECTION PARTNER
		X'2210' REVIEW PROBLEM RESOLUTION FACILITY STATUS
		X'22A1' REVIEW MESSAGES FOR (detailed data qualifier) AT THE ALERT SENDER
		X'22C0' REVIEW SENDING DEVICE LOG — (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier is the log identification and the second qualifier is the data to be reviewed (i.e., System Message Log).
		X'22C1' REVIEW PARTNER'S RECOVERY LOG — (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers further define the log data to be reviewed. For example the first qualifier could be the log identification and the second the log record number.
		X'3000' CONTACT APPROPRIATE SERVICE REPRESENTATIVE: This Alert condition has been caused by a hardware or software failure. The operator is directed to contact the person, organization, or vendor responsible to provide service for this product.
		X'3001' CONTACT CONSUMER SERVICE REPRESENTATIVE: Contact the customer representative who is responsible for dealing with consumer users of the device.
		X'3002' CONTACT SECURITY CONTROL REPRESENTATIVE: Contact the customer representative who is responsible for dealing with security concerns for the device.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'3003'	CONTACT SERVICE REPRESENTATIVE FOR LIST OF REMAINING PART NUMBERS
			X'3004'	PLACE SERVICE CALL TO RETAIN IF THE RETAIN SERVICE IS SUPPORTED
			X'3005'	PLACE SERVICE CALL TO APPROPRIATE SERVICE REPRESENTATIVE
			X'30A0'	DIAL (detailed data qualifier) AND REPORT THE MACHINE INFORMATION: Hardware remote support was unable to contact the service organization. *Note:* The qualifier identifies a telephone number to call for hardware service.
			X'30A1'	CALL (detailed data qualifier) FROM DESIGNATED PHONE: *Note:* The qualifier identifies a service resource to be called and may or may not be a phone number. If the qualifier is not a phone number, installation-specific procedures on contacting the indicated service resource should be followed. If the qualifier is a phone number, the need to perform the manual dial may be a recovery procedure in lieu of an automatic dial function.
			X'30E0'	PROVIDE REMOTE SERVICE CALL AUTHORIZATION FOR (sf83 product text): Hardware remote support requires authorization to proceed with the automatic call for service.
			X'30E1'	CONTACT SERVICE REPRESENTATIVE FOR (sf83 product text)
		X'3100'	CONTACT ADMINISTRATIVE PERSONNEL: Contact personnel with administrative responsibility for one or more network resources	
			X'3101'	CONTACT TOKEN-RING ADMINISTRATOR RESPONSIBLE FOR THIS LAN
			X'3102'	CONTACT CSMA/CD ADMINISTRATOR RESPONSIBLE FOR THIS LAN
			X'3103'	CONTACT LAN ADMINISTRATOR RESPONSIBLE FOR THIS LAN
			X'3104'	CONTACT NETWORK INFORMATION SERVICE FOR PRIVATE NETWORK CALLED
			X'3105'	CONTACT X.21 NETWORK INFORMATION SERVICE
			X'3106'	CONTACT ISDN NETWORK INFORMATION SERVICE
			X'3107'	CONTACT X.25 NETWORK INFORMATION SERVICE
			X'3108'	CONTACT RELATIONAL DATABASE ADMINISTRATOR
			X'3109'	CONTACT PERSONNEL RESPONSIBLE FOR CONNECTION TO ISDN NETWORK
			X'310A'	CONTACT SERVER ADMINISTRATOR
			X'310B'	CONTACT NETWORK ADMINISTRATOR
			X'310C'	CONTACT ADMINISTRATOR OF AFFECTED RESOURCES
			X'310E'	CONTACT DS1 NETWORK INFORMATION SERVICE
			X'310F'	CONTACT PERSONNEL RESPONSIBLE FOR CONNECTION TO DS1 NETWORK
			X'3110'	CONTACT COMMUNICATIONS SYSTEMS PROGRAMMER
			X'3111'	CONTACT OPERATOR RESPONSIBLE FOR ALERT SENDER
			X'3112'	CONTACT SYSTEMS PROGRAMMER
			X'3113'	CONTACT PERSONNEL RESPONSIBLE FOR DASD SUPPORT
			X'3114'	CONTACT NBBS NETWORK ADMINISTRATOR: Contact the personnel responsible for the Networking BroadBand Services (NBBS) network.
			X'3115'	CONTACT FRAME RELAY NETWORK ADMINISTRATOR: Contact the personnel responsible for the attachment to frame relay interfaces or networks.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'3116'	CONTACT ATM NETWORK ADMINISTRATOR: Contact the personnel responsible for the attachment to Asynchronous Transfer Mode (ATM) interfaces or networks.
			X'3117'	CONTACT PERSONNEL RESPONSIBLE FOR CONNECTION TO DS3 NETWORK
			X'3118'	CONTACT PERSONNEL RESPONSIBLE FOR TRANSIT NETWORK
			X'3119'	CONTACT OPERATOR FOR SUBNET IN THE PLU DIRECTION
			X'311A'	CONTACT PERSONNEL RESPONSIBLE FOR THE PBX
			X'3120'	CONTACT PRINTER OPERATOR
			X'3121'	CONTACT TERMINAL CONTROL UNIT OPERATOR
			X'3122'	CONTACT CALLED DTE'S OPERATOR
			X'3123'	CONTACT REMOTE DTE'S OPERATOR
			X'3124'	CONTACT PBM NETWORK OPERATOR: Contact the operator who has specific responsibility for controlling the personal banking machine (PBM) network for the reporting device.
			X'3125'	CONTACT REMOTE LINK STATION OPERATOR
			X'3126'	CONTACT CALLING DTE'S OPERATOR
			X'3127'	CONTACT SOFTWARE PROVIDER TO AUTHORIZE INCREASE
			X'3128'	CONTACT THE SOFTWARE PROVIDER IF AN INCREASE IS NECESSARY
			X'31D0'	IF REQUIRED, QUERY (detailed data qualifier) AT (detailed data qualifier) ABOUT (detailed data qualifier) *Note:* The first qualifier identifies the contact id. The second qualifier identifies the location name and the third qualifier identifies the system name.
			X'31E0'	CONTACT SYSTEMS ADMINISTRATOR FOR (sf83 product text)
		X'3200'		REPORT THE FOLLOWING *Note:* Since replacement code points for reporting one, two, and three (detailed data qualifier)'s are all required, the X'32xx' code points violate the usual rule of defining only one replacement code point, in the range indicating three qualifiers. Three separate replacement code points are defined, and should be used by Alert senders, depending on the number of qualifiers to be passed.
			X'32A0'	REPORT THE FOLLOWING (detailed data qualifier)
			X'32C0'	REPORT THE FOLLOWING (detailed data qualifier) (detailed data qualifier)
			X'32D0'	REPORT THE FOLLOWING (detailed data qualifier) (detailed data qualifier) (detailed data qualifier)
			X'32D1'	REPORT THE FOLLOWING LOGICAL UNIT OF WORK IDENTIFIER (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The first qualifier identifies the network-qualified LU name. The second qualifier identifies the instance and sequence number and the third qualifier may be used for possible extensions to the logical unit of work identifier.
		X'3300'		IF PROBLEM REOCCURS THEN DO THE FOLLOWING: After performing the previous actions, try the operation again. If you experience another problem, then perform the following actions
			X'3301'	IF PROBLEM PERSISTS THEN DO THE FOLLOWING
			X'3302'	IF PROBLEM CONTINUES TO OCCUR REPEATEDLY THEN DO THE FOLLOWING

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
			X'3303' IF UNSUCCESSFUL THEN DO THE FOLLOWING
		X'3400'	WAIT FOR ADDITIONAL MESSAGE BEFORE TAKING ACTION: An additional message will be forthcoming, indicating the action to be taken
			X'3401' EXPECT A CALL FROM THE SERVICE ORGANIZATION TO PROVIDE AN ESTIMATED TIME OF ARRIVAL
		X'3500'	REFER TO PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION
			X'3501' REFER TO MODEM DOCUMENTATION FOR ADDITIONAL INFORMATION
			X'3502' REFER TO INDUSTRIAL COMPUTER EXTENSIONS LIBRARY FOR ADDITIONAL INFORMATION
			X'35A0' REFER TO (detailed data qualifier) FOR ADDITIONAL INFORMATION
			X'35E0' REFER TO (sf83 product text) PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION
		X'E000'–X'EFFF'	Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range. *Note:* The following code points specify extended messages. An Alert receiver that displays only default text provides no display for these code points.
		X'F000'	(no display): Additional message data
			X'F001' MULTIPLE FAILURES INDICATE CHANNEL FAILURE
			X'F002' MULTIPLE FAILURES INDICATE CONTROLLER FAILURE
			X'F003' MULTIPLE DRIVE FAILURES ON SAME CONTROLLER INDICATE CONTROLLER FAILURE
			X'F004' MULTIPLE FAILURES INDICATE CONTROL UNIT FAILURE
			X'F005' MULTIPLE FAILURES INDICATE TERMINAL MULTIPLEXER FAILURE
			X'F006' REOCCURRENCE OF SAME ERROR INDICATES MEDIA FAILURE
			X'F007' REOCCURRENCE OF PROBLEM INDICATES DEVICE OR ATTACHMENT ERROR
			X'F008' REOCCURRENCE INDICATES MEDIA PROBLEM
			X'F009' NON REOCCURRENCE OF FAILURE INDICATES ORIGINAL DRIVE FAILURE
			X'F00A' MULTIPLE FAILURES INDICATE LINE ADAPTER MULTIPLEXER FAILURE
			X'F00B' DO ONE OF THE FOLLOWING: *Note:* This code point is to precede two or more recommended actions. It and the actions following it should be the last actions for a particular cause.
			X'F00C' NOTIFY USER
			X'F00D' HIGH ERROR RATE BETWEEN THE FOLLOWING NODES
			X'F00E' LINK FAILURE BETWEEN THE FOLLOWING NODES
			X'F00F' LINK CONNECTED TO THE FOLLOWING NODE FAILED
			X'F010' OTHER NODE IN THE LINK IS ONE OF THE FOLLOWING NODES
			X'F011' NO FURTHER ACTION REQUIRED UNLESS PROBLEM PERSISTS
			X'F012' THIS ALERT IDENTIFIES THE CAUSE OF A PREVIOUS ERROR WHICH HAS BEEN RECOVERED

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content		
			X'F013'	SERVICE CAN BE SCHEDULED AT A LATER TIME UNLESS REPEATED FAILURES PREVENT NORMAL OPERATION
			X'F014'	RESUME OPERATION
			X'F015'	HEURISTIC DAMAGE
			X'F016'	COORDINATOR COMMITTED
			X'F017'	COORDINATOR BACKED OUT
			X'F018'	AGENT COMMITTED
			X'F019'	AGENT BACKED OUT
			X'F01A'	AGENT IN-DOUBT
			X'F01B'	DASD HDA POWER SEQUENCE FAULT
			X'F01C'	ADDITIONAL ANALYSIS (BY SERVICE PERSONNEL) IS REQUIRED TO DETERMINE REPAIR IMPACT
			X'F01D'	REPAIRING REDUNDANT EQUIPMENT WILL NOT CAUSE A LOSS OF FUNCTION
			X'F01E'	REPAIR WILL DISABLE PROTOCOL CONVERTER
			X'F01F'	EXCEPTION ON PROTOCOL CONVERTER
			X'F020'	AUTOMATIC ADAPTER (RE)INITIALIZATION ATTEMPTED
			X'F021'	RESOURCES HAVE BEEN LOST, BUT THEY COULD NOT BE SPECIFICALLY IDENTIFIED
			X'F022'	FORMAT ERROR
			X'F023'	PROTOCOL ERROR
			X'F025'	LINK INCIDENT ANALYSIS IN PROGRESS
			X'F026'	LINK CONNECTED TO THE FOLLOWING NODE HAS A HIGH ERROR RATE
			X'F027'	RECORD MAY BE INCORRECT IN THE TOPOLOGY DATA-BASE, BUT WILL BE CORRECTED AUTOMATICALLY WITHIN ONE HOUR
			X'F04F'	NO IML CAPABILITIES
			X'F050'	IPL CAPABILITIES LIMITED
			X'F051'	NO IPL CAPABILITIES
			X'F052'	NORMAL OPERATIONS CAN CONTINUE BUT IF AUXILIARY STORAGE IS EXHAUSTED ON-SITE ACTION WILL BE NECES-SARY
			X'F060'	TO RECOVER LOST RESOURCE
			X'F061'	DATA IS NOT AVAILABLE FROM MAIN OR AUXILIARY STORAGE
			X'F062'	DATA IS AVAILABLE FROM AUXILIARY STORAGE
			X'F063'	DATA FROM ALL OTHER TRACKS IS AVAILABLE FROM AUX-ILIARY STORAGE
			X'F064'	PROBABLE TEMPORARY POWER SOURCE DISRUPTION: System disruption may have occurred during a temporary dis-ruption from the power source (wall plug). No service action required.
			X'F065'	MIRRORED DEVICE
			X'F066'	DYNAMIC SPARING INITIATED
			X'F067'	AFTER SUCCESSFUL COMPLETION
			X'F068'	CONDITION MAY REFLECT NORMAL OPERATIONS - FOR EXAMPLE, TERMINATION OF A DIAL-UP CONNECTION
			X'F069'	A SERVICE CALL HAS BEEN AUTOMATICALLY PLACED TO RETAIN
			X'F0A0'	FOR (detailed data qualifier)
			X'F0A1'	(detailed data qualifier) HAS BEEN RESTORED FROM BACKUP FILE *Note:* The qualifier identifies the restored file. Any data id describing a type of file may be used in this context.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
		X'F0A2'	NO BACKUP AVAILABLE FOR (detailed data qualifier) *Note:* The qualifier identifies the file. Any data id describing a type of file may be used in this context.
		X'F0A3'	NODE (detailed data qualifier) *Note:* The qualifier identifies an attribute of the node, for example the node's name or number.
		X'F0A4'	COORDINATOR (detailed data qualifier) *Note:* The qualifier identifies the coordinator. For example the qualifier could be the relational database name, the logical unit name, etc.
		X'F0A5'	(detailed data qualifier) UNSUCCESSFUL ACCESS ATTEMPTS *Note:* The qualifier specifies a number.
		X'F0A7'	(detailed data qualifier) DEGRADED
		X'F0A8'	(detailed data qualifier) DISABLED
		X'F0A9'	(detailed data qualifier) ENABLED
		X'F0AA'	CONTENDING TDU RECEIVED FROM ADJACENT NETWORK NODE (detailed data qualifier) - TDU MAY NOT HAVE ORIGINATED FROM THIS NODE Note: The qualifier identifies by CP name the adjacent network node that sent the contending TDU to the Alert sender.
		X'F0AB'	INCORRECT TDU INFORMATION: (detailed data qualifier) Note: The qualifier contains the incorrect control vectors from the TDU. The Data ID field in the qualifier is set to X'0000' (no display).
		X'F0AC'	NETWORK NODE RECORD BEING CONTENDED OVER IS (detailed data qualifier) Note: The qualifier identifies an APPN control point.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
		X'F0C0'	TRANSMISSION PRIORITY FOR SUBNET (detailed data qualifier) IS (detailed data qualifier) *Note:* The qualifiers identify the subnet and the transmission priority field setting for that subnet, respectively.
		X'F0C1'	DASD CACHE EXCEPTION — (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers specify information related to the failing cache, for example the subsystem id and storage path.
		X'F0C2'	VALUES SAVED FROM LOCATE (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers specify the Class of Service and Transmission Priority values from the Locate.
		X'F0C3'	VALUES RECEIVED ON BIND (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers specify the Class of Service and Transmission Priority values from the BIND.
		X'F0C4'	ORIGIN NODE DATA (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers specify the origin NetId and origin location name for the session.
		X'F0C5'	DESTINATION NODE DATA (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers specify the destination NetId and destination location name for the session.
		X'F0D0'	FAILING COMPONENT LOCATION (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the failing component location in one of two ways: Method 1: Q1 = RACK Q2 = UNIT (within a rack) Q3 = CARD SLOT (within a unit) Method 2: Q1 = RACK/UNIT (with no delimiter between the rack and unit numbers) Q2 = CARD SLOT (within a unit) Q3 = CABLE POSITION (on a card) Method 2 is used only in those cases where cable position on a card is meaningful.
		X'F0D1'	ORIGIN NODE DATA: (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the originator's netid, location name, and class of service, respectively.
		X'F0D2'	DESTINATION NODE DATA: (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the destination netid, location name, and class of service, respectively.
		X'F0D3'	NODE DATA: (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the interface, service action code, and problem data, respectively.

Recommended Actions (X'81') Network Alert Common Subfield

Byte	Bit	Content	
		X'F0D4'	MEDIA EXCEPTION ON (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the entity which had the media exception. For example they could specify the subsystem id, volume, and device address.
		X'F0D5'	ADDITIONAL DATA — (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers provide additional information about or related to the problem being reported. For example, the qualifiers could specify the device address, cylinder, and head for a DASD error.
		X'F0D6'	DASD CONTROL UNIT EXCEPTION ON (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the control unit. For example they could specify the subsystem id, storage cluster, and device path.
		X'F0D7'	REPAIR WILL DISABLE (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the entities which would be disabled by repairs. For example they could specify the subsystem id, storage cluster, and device.
		X'F0D8'	DEVICE EXCEPTION ON (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify the device. For example they could specify the subsystem id, volume, and device address.
		X'F0D9'	AFFECTED RESOURCE IS IDENTIFIED BY (detailed data qualifier) (detailed data qualifier) (detailed data qualifier) *Note:* The qualifiers identify an affected resource.
		X'F0DA'	AND (detailed data qualifier) (detailed data qualifier) (detailed data qualifier)
		X'F0DB'	TG RECORD BEING CONTENDED OVER IS (detailed data qualifier), FROM (detailed data qualifier) TO (detailed data qualifier) Note: The first qualifier identifies an APPN transmission group. The second qualifier identifies the APPN node that owns it. The third qualifier identifies the APPN node at the other end of the transmission group.
		X'F0E0'	FOR (sf83 product text)
		X'F0E1'	PREPARE FOR AUTOMATIC SHUTDOWN OF (sf83 product text)
		X'F0E2'	NODE (sf83 product text)
		X'F0F0'	FOR (sf84 resource name)
		X'F0F1'	RESOURCE ASSOCIATED WITH THE ALERT CONDITION (sf84 resource name)
		X'FFFF'	Reserved

Detailed Data (X'82') Network Alert Common Subfield

This subfield contains product specific detailed data to be displayed at an Alert receiver. Since it provides additional function, the Detailed Data Extended (X'85') subfield should be used instead of the Detailed Data (X'82') subfield when possible.

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Detailed Data subfield *Note:* Length = X'02' indicates that the Product ID Code, Data ID, Data Encoding, and Detailed Data fields are not present.
1		Key: X'82'
2		Product ID code: a code indicating what product identification, if any, must be displayed in conjunction with the data type and data. The structure of this field is identical to that present in the Product Set ID Index (X'83') subfield. A value of X'00' in this byte indicates that no product identification data is displayed in conjunction with the data type and detailed data.
	0–3	Product ID subvector code: a code point that specifies (1) the type of Product ID subvector being indexed (hardware or software), and (2) the particular data to be extracted from this subvector *Note:* See "Product Identifier (X'11') MS Common Subvector" on page 4-430 for the criteria distinguishing hardware and software Product ID subvectors. X'0'–X'1' reserved X'2' (machine type or hardware product common name) from a hardware Product ID Subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'5' (machine type or hardware product common name) plus model number from a hardware Product ID Subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'9' software product common name from a software Product ID subvector
	4	Product set ID indicator: an indication of which Product Set ID (PSID) contains the Product ID subvector being indexed 0 Alert sender PSID 1 Indicated resource PSID
	5–7	Count: a 3-digit binary number that indicates which Product ID subvector, of the type specified by the Product ID subvector code, is being indexed within the PSID specified by the Product Set ID Indicator. *Note:* This count applies only to Product ID subvectors of the type specified by the Product ID subvector code. If, for example, the code is X'2' (specifying a hardware Product ID) then only hardware X'11's are counted: a count of X'3' would thus index the third hardware Product ID within the PSID indicated by the Product Set ID Indicator.
3		Data ID: a code point indicating the type of data carried in the subfield. The English text associated with each code point, or its national language equivalent, is displayed in conjunction with the detailed data. Defined codes are: X'00' (no display) X'01' ABEND CODE X'02' ADAPTER CHECK STATUS X'03' ADAPTER RETURN CODE X'04' BOP CODE X'05' PROTOCOL CODE X'06' COMMAND CODE X'07' ERROR CODE X'08' OPERATING SYSTEM RETURN CODE X'09' EVENT CODE X'0A' LLC ERROR CODE X'0B' MACHINE CHECK CODE X'0C' MALFUNCTION CODE X'0D' PROGRAM CHECK CODE X'0E' REASON CODE X'0F' RETURN CODE

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content	
		X'10'	SENSE CODE
		X'11'	SENSE DATA
		X'12'	SOFTWARE ERROR CODE
		X'13'	STATUS CODE
		X'14'	SYMPTOM CODE
		X'15'	SNA SENSE DATA
		X'16'	BUS STATUS CODE
		X'17'	RING STATUS CODE
		X'18'	CALL PROGRESS SIGNAL: A notification from a network to a DTE, indicating why a connection could not be established
		X'19'	FILE
		X'1A'	X.25 CLEAR PACKET, CAUSE CODE: A code to or from an X.25 network indicating the reason that a CLEAR request or indication packet was sent *Note:* This indicates the reason that a network connection was lost or could not be established.
		X'1B'	X.25 RESET PACKET, CAUSE CODE: A code to or from an X.25 network indicating the reason that a RESET request or indication packet was sent *Note:* This indicates the reason that a network connection was lost or could not be established.
		X'1C'	X.25 RESTART PACKET, CAUSE CODE: A code to or from an X.25 network indicating the reason that a RESTART request or indication packet was sent *Note:* This indicates the reason that a network connection was lost or could not be established.
		X'1D'	X.25 DIAGNOSTIC CODE: A code to or from an X.25 network providing additional information about why a Diagnostic packet or a Clear, Reset, or Restart request or indication packet was sent.
		X'1E'	DIAGNOSTIC EXPLANATION
		X'1F'	DATABASE RETURN CODE
		X'20'	MESSAGE CODE
		X'21'	PANEL ERROR MESSAGE CODE
		X'22'	SYSTEM MESSAGE CODE
		X'23'	MESSAGE SEVERITY
		X'24'	WAIT STATE CODE
		X'25'	PRIMARY RETURN CODE
		X'26'	SECONDARY RETURN CODE
		X'27'	FUNCTION
		X'28'	SOCKET NUMBER: The TCP/IP endpoint for the communication connection
		X'29'	DRIVE
		X'2A'	V.25BIS INDICATION
		X'2B'	ICA SENSE CODE
		X'2C'	MAINTENANCE INDICATOR
		X'2D'	ACCESS UNIT ID
		X'2E'	CONTROLLED ACCESS UNIT LOBE NUMBER
		X'2F'	D-CHANNEL NUMBER
		X'30'	REFERENCE CODE
		X'31'	SYSTEM REFERENCE CODE
		X'32'	REPLACEABLE UNIT CODE
		X'33'	COMPONENT ID
		X'34'	COMMUNICATION CONTROL UNIT
		X'35'	TYPE
		X'36'	LOCATION
		X'37'	PART NUMBER
		X'38'	DESTINATION
		X'39'	ORIGINATOR
		X'3A'	RACK/UNIT
		X'3B'	RACK
		X'3C'	UNIT

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content	
		X'3D'	CARD SLOT
		X'3E'	CABLE POSITION
		X'3F'	INTERCONNECT CONTROLLER
		X'40'	ERROR RECOVERY PROCEDURE
		X'41'	PDP CODE
		X'42'	BACKUP PATH STATUS
		X'43'	WRAP STATUS
		X'44'	ATTACHMENT MODULE STATUS
		X'45'	CONFIGURATION DATA
		X'46'	LOBES DEACTIVATED
		X'47'	ATTACHMENT MODULE NUMBER
		X'48'	NUMBER OF LINKS LOST
		X'49'	NUMBER OF NETBIOS SESSIONS LOST
		X'4A'	NETID
		X'4B'	LOCATION NAME
		X'4C'	CLASS OF SERVICE
		X'4D'	BACK-UP D-CHANNEL NUMBER
		X'4E'	ROUTE AFFECTED
		X'4F'	ACTIVE ROUTE
		X'50'	CHANNEL UNIT ADDRESS
		X'51'	DEVICE ADDRESS
		X'52'	LINE ADDRESS
		X'53'	LINE ADDRESS RANGE
		X'54'	ADAPTER AT ADDRESS
		X'55'	LINE
		X'56'	DTE ADDRESS CALLED
		X'57'	DTE ADDRESS CALLING
		X'58'	LOCAL DTE ADDRESS
		X'59'	CHANNEL
		X'5A'	SERVER
		X'5B'	CARD NUMBER
		X'5C'	CARD NAME
		X'5D'	CARD LOCATION
		X'5E'	LAN BRIDGE ID
		X'5F'	TOKEN-RING ID
		X'60'	PORT NUMBER
		X'61'	ADAPTER NUMBER
		X'62'	CHANNEL ADAPTER NUMBER
		X'63'	LINE ADAPTER NUMBER
		X'64'	LINE INTERFACE COUPLER (LIC) POSITION
		X'65'	BUS NUMBER
		X'66'	TOKEN RING INTERFACE COUPLER NUMBER
		X'67'	LOCALLY-INITIATED LOGICAL CHANNEL
		X'68'	REMOTELY-INITIATED LOGICAL CHANNEL
		X'69'	CONTROLLER ID
		X'6A'	DEVICE ID
		X'6B'	DEVICE
		X'6C'	TRANSMISSION PRIORITY FIELD
		X'6D'	PROGRAM STATUS WORD
		X'6E'	DOMAIN CONTROLLER
		X'6F'	PEER SERVER
		X'70'	GENERATION PARAMETER
		X'71'	THRESHOLD PARAMETER
		X'72'	CONFIGURATION OBJECT/RECORD: Identifies the configuration object or record which contains one or more user settable parameters.
		X'73'	CONFIGURATION PARAMETER
		X'74'	IPL PARAMETER

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content	
		X'75'	PARAMETER VALUE
		X'76'	SECURITY DATABASE FILE
		X'77'	REQUESTER
		X'78'	ACCOUNT SYSTEM FILE
		X'79'	SUBSTITUTE PART NUMBER
		X'7A'	CENTRAL PROCESSOR COMPLEX
		X'7B'	CENTRAL PROCESSING UNIT: The CPU includes its associated vector element processor.
		X'7C'	LOGICAL PARTITION NAME
		X'7D'	SUBCHANNEL NUMBER
		X'7E'	CHANNEL PATH ID
		X'7F'	I/O PROCESSING ELEMENT ID

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content	
		X'80'	NODE
		X'81'	LINK STATION
		X'82'	CP
		X'83'	PU
		X'84'	LU
		X'85'	TRANSACTION PROGRAM
		X'86'	LSL: Link Segment Level of a multi-segment link connection *Note:* In a multi-segment link connection, link segments are numbered in ascending order, from the error notification sender outwards; thus the link segment immediately adjacent to the error notification sender is Link Segment Level 1, the one adjacent to it is Link Segment Level 2, etc.
		X'87'	RELATIONAL DATABASE
		X'88'	STORAGE
		X'89'	FULLY QUALIFIED PCID
		X'8A'	PACKAGE
		X'8B'	TABLE
		X'8C'	VOLUME
		X'8D'	DIRECTORY
		X'8E'	LOGICAL PARTITIONS
		X'8F'	VECTOR PROCESSOR
		X'90'	YEAR/MONTH/DAY
		X'91'	TIME
		X'92'	JULIAN DATE
		X'93'	MINUTES
		X'94'	ACCOUNT
		X'95'	FILE SERVER
		X'96'	DATA STREAM
		X'97'	DATA STREAM OFFSET
		X'98'	USER
		X'99'	CONNECTION
		X'9A'	NETWORK
		X'9B'	SERVICE PROCESSOR
		X'9C'	EXPANDED STORAGE
		X'9D'	CENTRAL PROCESSOR COMPLEX IMAGE
		X'9E'	SERVICE UPDATE
		X'9F'	CUSTOMER PROBLEM REPORT
		X'A0'	BYTE OFFSET
		X'A1'	BIT OFFSET
		X'A2'	DETECTING MODULE
		X'A3'	FAILING MODULE
		X'A4'	MAINTENANCE LEVEL
		X'A5'	COMMAND
		X'A6'	PROGRAM
		X'A7'	RESOURCE
		X'A8'	MAXIMUM NUMBER OF NODE TABLE ENTRIES
		X'A9'	MODE NAME
		X'AA'	UNBIND TYPE
		X'AB'	INBOUND CALL
		X'AC'	SYSTEM ERROR
		X'AD'	REMOTE SUPPORT FACILITY
		X'AE'	CENTRAL OPERATIONS
		X'AF'	CONTROL PROGRAM
		X'B0'	EIA STANDARD
		X'B1'	CCITT STANDARD
		X'B2'	CHANNEL SUBSYSTEM
		X'B3'	MESSAGE LOG
		X'B4'	OPERATING SYSTEM LOG

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content
		X'B5' DUMP
		X'B6' RETRY COUNT
		X'B7' TIMER SETTING
		X'B8' LINE SPEED (BITS PER SECOND)
		X'B9' LINE SPEED (KILOBITS PER SECOND)
		X'BA' LINE SPEED (MEGABITS PER SECOND)
		X'BB' OPERATION NUMBER
		X'BC' OPERATION PRIORITY
		X'BD' OPERATION INPUT ARRIVAL TIME
		X'BE' SNA SENSE DATA RECEIVED IN XID
		X'BF' APPLICATION INPUT ARRIVAL TIME
		X'C0' COUNTER
		X'C1' ALARM SIGNAL
		X'C2' JOB NUMBER
		X'C3' ISDN CAUSE CODE
		X'C4' CONTROLLER DESCRIPTION OBJECT
		X'C5' COMMUNICATION LINE DESCRIPTION OBJECT
		X'C6' LOGICAL DEVICE DESCRIPTION OBJECT
		X'C7' NETWORK INTERFACE DESCRIPTION OBJECT
		X'C8' NETWORK INTERFACE NAME
		X'C9' NAME
		X'CA' JOB NAME
		X'CB' LINE NAME
		X'CC' MESSAGE FILE NAME
		X'CD' MESSAGE QUEUE NAME
		X'CE' MESSAGE REFERENCE KEY
		X'CF' REMOTE LOCATION NAME
		X'D0' FILE NAME
		X'D1' LOG RECORD NUMBER
		X'D2' CARTRIDGE: A component that holds items to be dispensed
		X'D3' AIR FILTER NUMBER
		X'D4' TELEPHONE NUMBER
		X'D5' CALLING TELEPHONE NUMBER
		X'D6' TELEPHONE NUMBER CALLED
		X'D7' REPORTING TELEPHONE NUMBER: The telephone number of the Alert sender
		X'D8' TIMER
		X'D9' LOG RECORD TYPE
		X'DA' LOG ID
		X'DB' PUBLICATION NUMBER
		X'DC' NEW NUMBER
		X'DD' APPLICATION NAME
		X'DE' NUMBER
		X'DF' WORKSTATION ID
		X'E0'–X'EF' reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range.
		X'F0' PRODUCT ALERT REFERENCE CODE: A code that identifies an Alert in a user-friendly way. The product Alert reference code is used to index documentation provided by the Alert sending product. This documentation can group the Alerts into natural categories and provide extended explanations or diagnostic information.
		X'F1' QUEUE
		X'F2' INTERFACE
		X'F3' SERVICE ACTION CODE
		X'F4' PROBLEM MANAGEMENT HARDWARE NUMBER
		X'F5' PROBLEM DATA

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content
		X'F6' DISK BLOCK NUMBER X'F7' CONTROLLER BUS ADAPTER X'F8' ENTERPRISE X'F9' CONTACT ID X'FA' SNMP GENERIC-TRAP NUMBER X'FB' SNMP SPECIFIC-TRAP NUMBER X'FC' SNMP MIB VARIABLE NAME X'FD' SNMP MIB VARIABLE VALUE X'FE' INTERNET PROTOCOL ADDRESS X'FF' SERVICE POINT APPLICATION
4		Data Encoding: a code point indicating how the accompanying detailed data is encoded, and, thus, how it is to be displayed. Defined code are: X'00' hexadecimal: The data is to be displayed as hexadecimal digits. X'01' binary: The data is the binary representation of an unsigned integer value (8, 16, 24, or 32 bits in length). The decimal equivalent is to be displayed. For example, the value B'11111111' (X'FF') is to be displayed as 255. X'10' hexadecimal code point: The data is a two-byte hexadecimal code point which is used to index a text string stored at the Alert receiver. The text string will be displayed in place of the hexadecimal code point that was transported in the Alert. X'11' Coded Graphic Character Set 00640–00500 plus: The data is to be decoded using Coded Graphic Character Set 00640–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," plus three additional code points: X'5B' = "$" (dollar sign) X'7B' = "#" (number sign) X'7C' = "@" (at sign) *Note:* Detailed data encoded in this way is limited to codes, numbers, or internationally recognized terms that do not require translation.
5–q		Detailed data, encoded as specified when byte offset 4 = X'00', X'01', or X'11'.
Or		
5–6		Detailed data, encoded as specified when byte offset 4 = X'10' (hexadecimal code point). The hexadecimal code point has a length of two bytes, and provides an index to predefined text that is displayed at the Alert receiver. An Alert receiver has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent. The method chosen must be consistent with the language of the code point text that "imbeds" the X'82' subfield text. These code points are logically grouped, one group per Data ID code point. Within a group, a code point may have only one text string associated with it. But, the same code point may have different text strings associated with it in other groups. The Data ID determines the "table" that is searched by the Alert receiver in order to find the appropriate text string. **Note:** The X'E000'–X'EFFF' range of code points in each table is reserved. Neither IBM products nor non-IBM products may assign a code point in this range. Specific defined codes and the corresponding displayed text are listed below for each group. **Group: Maintenance Indicator (Data ID = X'2C')** The code point assignments below are valid when used with the Data ID value of X'2C' (Maintenance Indicator). Defined hexadecimal codes are: X'0001' SC2-PSB — NT1 BACKUP OR BATTERY POWER FAILURE X'0002' SC2-PPB — NT1 PRIMARY SOURCE FAILURE

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content
		X'0003' SC2-LB1N — NT1 LOOPBACK TOWARD NETWORK ON B1 CHANNEL
		X'0004' SC2-LB2N — NT1 LOOPBACK TOWARD NETWORK ON B2 CHANNEL
		X'0005' SC2-LBDN — NT1 LOOPBACK TOWARD NETWORK ON B1, B2 AND D CHANNELS
		X'0006' PRIMARY RATE PAYLOAD LOOPBACK SIGNAL
		X'0007' PRIMARY RATE IA LINE LOOPBACK SIGNAL
		X'0008' PRIMARY RATE IB LINE LOOPBACK SIGNAL
		X'0009' PRIMARY RATE NETWORK LOOPBACK SIGNAL
		Group: Counter Names (Data ID = X'C0')
		The code point assignments below are valid when used with the Data ID value of X'C0' (Counter). Defined hexadecimal codes are:
		X'0001' LOSS OF FRAME ALIGNMENT
		X'0002' DETECTED ACCESS TRANSMISSION SYSTEM ERRORS (DTSE) IN
		X'0003' DETECTED ACCESS TRANSMISSION SYSTEM ERRORS (DTSE) OUT
		X'0004' TE-DETECTED CODE VIOLATIONS
		X'0005' NT-DETECTED CODE VIOLATIONS
		X'0006' CRC ERRORS RECEIVED
		X'0007' CRC ERRORS TRANSMITTED
		X'0008' ERRORED SECONDS
		X'0009' SEVERELY ERRORED SECONDS
		X'000A' COLLISION DETECT
		X'000B' SHORT FRAMES RECEIVED
		X'000C' TRANSMIT OVERRUN
		X'000D' RECEIVE UNDERRUN
		X'000E' TA ASYNCHRONOUS ERRORS
		X'000F' TA SYNCHRONOUS ERRORS
		X'0010' ABORTED FRAMES RECEIVED
		X'0011' ABORTED FRAMES TRANSMITTED
		X'0012' MISADDRESSED FRAMES RECEIVED
		X'0013' UNBOUNDED FRAMES RECEIVED
		X'0014' NON-INTEGRAL FRAMES RECEIVED
		X'0015' TOTAL FRAMES TRANSMITTED
		X'0016' TOTAL FRAMES RECEIVED
		X'0017' PDUS RETRANSMITTED
		X'0018' RECEIVE SEQUENCE ERRORS
		X'0019' TOTAL BYTES TRANSMITTED
		X'001A' TOTAL BYTES RECEIVED
		X'001B' TOTAL BYTES RETRANSMITTED
		X'001C' TOTAL INCOMING CALLS
		X'001D' TOTAL OUTGOING CALLS
		X'001E' INCOMING CALLS REJECTED
		X'001F' OUTGOING CALLS REJECTED
		X'0020' INFORMATION FRAMES TRANSMITTED
		X'0021' INFORMATION FRAMES RECEIVED
		X'0022' PDUS DISCARDED
		X'0023' TOTAL CONNECTIONS
		X'0024' UNNUMBERED INFORMATION FRAMES TRANSMITTED
		X'0025' UNNUMBERED INFORMATION FRAMES RECEIVED
		X'0026' LAN TYPE 3 FRAMES TRANSMITTED
		X'0027' LAN TYPE 3 FRAMES RECEIVED
		X'0028' LAN TYPE 3 FRAMES RETRANSMITTED
		X'0029' LAN TYPE 2 ACKNOWLEDGMENT TIMER TIMEOUTS
		X'002A' LOCAL BUSY OCCURRENCES
		X'002B' TOKEN RING MAC LINE ERRORS
		X'002C' TOKEN RING MAC BURST ERRORS

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content	
		X'002D'	TOKEN RING MAC A/C ERRORS
		X'002E'	TOKEN RING MAC INTERNAL ERRORS
		X'002F'	TOKEN RING MAC LOST FRAME ERRORS
		X'0030'	TOKEN RING MAC RECEIVE CONGESTION ERRORS
		X'0031'	TOKEN RING MAC FRAME-COPIED ERRORS
		X'0032'	TOKEN RING MAC TOKEN ERRORS
		X'0033'	TOKEN RING MAC FREQUENCY ERRORS
		X'0034'	UNRECOGNIZED PDUS
		X'0035'	TEST COMMANDS RECEIVED
		X'0036'	TEST RESPONSES TRANSMITTED
		X'0037'	TIMER (SECONDS)
		X'0038'	FRAME-LOSS SECONDS NEAR-END
		X'0039'	FRAME-LOSS SECONDS FAR-END
		X'003A'	RESTART MESSAGES RECEIVED
		X'003B'	STATUS ENQUIRY MESSAGES RECEIVED
		X'003C'	ERRORED SECONDS NEAR-END
		X'003D'	ERRORED SECONDS FAR-END
		X'003E'	BURSTY ERRORED SECONDS NEAR-END
		X'003F'	BURSTY ERRORED SECONDS FAR-END
		X'0040'	SEVERELY ERRORED SECONDS NEAR-END
		X'0041'	SEVERELY ERRORED SECONDS FAR-END
		X'0042'	SLIP SECONDS NEAR-END
		X'0043'	SLIP SECONDS FAR-END
		X'0044'	BADLY FORMED FRAMES
		X'0045'	TOTAL POLLS TRANSMITTED
		X'0046'	TOTAL POLLS RECEIVED
		X'0047'	TOTAL UNNUMBERED FRAMES TRANSMITTED
		X'0048'	TOTAL UNNUMBERED FRAMES RECEIVED
		X'0049'	TOTAL SUPERVISORY FRAMES TRANSMITTED
		X'004A'	TOTAL SUPERVISORY FRAMES RECEIVED
		X'004B'	CLASS 0 CAUSE CODE
		X'004C'	CLASS 1 CAUSE CODE
		X'004D'	CLASS 2 CAUSE CODE
		X'004E'	CLASS 3 CAUSE CODE
		X'004F'	CLASS 4 CAUSE CODE
		X'0050'	CLASS 5 CAUSE CODE
		X'0051'	CLASS 6 CAUSE CODE
		X'0052'	CLASS 7 CAUSE CODE
		X'0053'	RAI SECONDS RECEIVED
		X'0054'	RAI SECONDS TRANSMITTED
		X'0055'	AIS SECONDS RECEIVED
		X'0056'	PATH CODE VIOLATIONS
		X'0057'	LINE ERRORED SECONDS
		X'0058'	ERRORED SECOND CRC
		X'0059'	UNAVAILABLE SECONDS
		X'005A'	EXCESSIVE ZEROS COUNT
		X'005B'	PROTECTION SWITCH COUNT
		X'005C'	SENT REJECT (REJ) PDUS
		X'005D'	RECEIVED REJECT (REJ) PDUS
		X'005E'	COMMAND IMPLEMENTATION PERMANENT (IP)
		X'005F'	COMMAND IMPLEMENTATION TEMPORARY (IT)
		X'0060'	COMMAND OK
		X'0061'	COMMAND PROTOCOL ERROR (PE)
		X'0062'	COMMAND RESPONSE STATUS (RS)
		X'0063'	COMMAND UNAVAILABLE (UN)
		X'0064'	INVALID PDUS DISCARDED
		X'0065'	LOCAL BUSY OCCURRENCES

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content	
		X'0066'	NO RESPONSE
		X'0067'	PDUS DISCARDED 2
		X'0068'	RECEIVED ABBREVIATED TEST RESPONSE
		X'0069'	RECEIVED AC COMMAND
		X'006A'	RECEIVED DISCONNECT (DISC)
		X'006B'	RECEIVED DISCONNECTED MODE (DM)
		X'006C'	RECEIVED FRAME REJECT (FRMR)
		X'006D'	RECEIVED RECEIVE NOT READY (RNR)
		X'006E'	RECEIVED RECEIVE READY(RR)
		X'006F'	RECEIVED SET ASYNCHRONOUS BALANCE MODE EXTENDED (SABME)
		X'0070'	RECEIVED TEST COMMAND
		X'0071'	RECEIVED UNNUMBERED ACKNOWLEDGMENT (UA)
		X'0072'	RECEIVED EXCHANGE IDENTIFICATION (XID) COMMANDS
		X'0073'	RECEIVE EXCHANGE IDENTIFICATION (XID) RESPONSE
		X'0074'	REMOTE BUSY
		X'0075'	RESPONSE IMPLEMENTATION PERMANENT (IP)
		X'0076'	RESPONSE IMPLEMENTATION TEMPORARY (IT)
		X'0077'	RESPONSE NEVER SUBMITTED (NE)
		X'0078'	RESPONSE NOT REQUESTED (NR)
		X'0079'	RESPONSE OK
		X'007A'	RESPONSE RESPONSE STATUS (RS)
		X'007B'	RESPONSE USER ERROR (UE)
		X'007C'	RESPONSE UNAVAILABLE (UN)
		X'007D'	SENT ABBREVIATED TEST RESPONSE
		X'007E'	SENT AC COMMAND
		X'007F'	SENT DISCONNECT (DISC)
		X'0080'	SENT DISCONNECTED MODE (DM)
		X'0081'	SENT FRAME REJECT (FRMR)
		X'0082'	SENT RECEIVE READY (RR)
		X'0083'	SENT RECEIVE NOT READY (RNR)
		X'0084'	SENT SET ASYNCHRONOUS BALANCED MODE EXTENDED (SABME)
		X'0085'	SENT TEST COMMAND
		X'0086'	SENT UNNUMBERED ACKNOWLEDGMENT (UA)
		X'0087'	SENT EXCHANGE IDENTIFICATION (XID) COMMANDS
		X'0088'	SENT EXCHANGE IDENTIFICATION (XID) RESPONSE
		X'0089'	TYPE2 BUSY-STATE TIMER TIMEOUT
		X'008A'	TYPE2 POLL (P) -BIT TIMER TIMEOUT
		X'008B'	TYPE2 REJECT TIMER TIMEOUT
		X'008C'	TYPE2 VIOLATION
		X'008D'	TYPE3 VIOLATION
		X'008E'	HPR FRAMES SENT
		X'008F'	HPR BYTES SENT
		X'0090'	HPR FRAMES RECEIVED
		X'0091'	HPR BYTES RECEIVED
		X'0092'	HPR FRAMES NOT SENT AND DISCARDED
		X'0093'	HPR FRAMES RECEIVED AND DISCARDED
		X'F000'	FRAME RECEIVE PROCESSING TIME (IN MILLISECONDS)
		X'F001'	FRAME TRANSMIT PROCESSING TIME (IN MILLISECONDS)
		X'F002'	BYTE RECEIVE PROCESSING TIME (IN MILLISECONDS)
		X'F003'	BYTE TRANSMIT PROCESSING TIME (IN MILLISECONDS)

Group: Alarm Signal (Data ID = X'C1')

The code point assignments below are valid when used with the Data ID value of X'C1' (Alarm Signal). Defined hexadecimal codes are:

X'0001'	SC1-DOI — DISRUPTIVE OPERATION INDICATION
X'0002'	SC2-RDEA — RECEIVING VALID DEACTIVATION

Detailed Data (X'82') Network Alert Common Subfield

Byte	Bit	Content
		X'0003' SC2-RACT — RECEIVING VALID ACTIVATION X'0004' SC2-NAI — NETWORK ALARM INDICATION X'0005' SC2-RSET — NT1 IS IN RESET STATE X'0006' RAI — REMOTE ALARM INDICATION X'0007' AIS — ALARM INDICATION SIGNAL

Product Set ID Index (X'83') Network Alert Common Subfield

This subfield contains a code point and a count that jointly specify a particular Product ID (X'11') subvector within a particular Product Set ID (X'10') subvector in the Alert major vector.

Product Set ID Index (X'83') Network Alert Common Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Product Set ID Index subfield
1		Key: X'83'
2(=q)		Product ID code
	0–3	Product ID subvector code: a code point that specifies (1) the type of Product ID subvector being indexed (hardware or software), and (2) the particular data to be extracted from this subvector *Note:* See "Product Identifier (X'11') MS Common Subvector" on page 4-430 for the criteria distinguishing hardware and software Product ID subvectors. X'0'–X'1' reserved X'2' (machine type or hardware product common name) from a hardware Product ID subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'3' serial number or repair ID number, whichever is present, from a hardware Product ID subvector X'4' (machine type or hardware product common name) plus serial number or repair ID number, whichever is present, from a hardware Product ID subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'5' (machine type or hardware product common name) plus model number from a hardware Product ID subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'6' (machine type or hardware product common name) plus model number plus serial number or repair ID number, whichever is present, from a hardware Product ID subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'9' software product common name from a software Product ID subvector
	4	Product set ID indicator: An indication of which Product Set ID contains the Product ID subvector being indexed 0 Alert sender PSID 1 indicated resource PSID

Product Set ID Index (X'83') Network Alert Common Subfield

Byte	Bit	Content
	5–7	Count: a three-digit binary number that indicates which Product ID subvector, of the type specified by the Product ID Subvector Code, is being indexed within the PSID specified by the Product Set ID Indicator. *Note:* This count applies only to Product ID subvectors of the type specified by the Product ID Subvector Code. If, for example, the code is X'2' (specifying a hardware Product ID) then only hardware X'11's are counted: a count of X'3' would thus index the third hardware Product ID within the PSID indicated by the Product Set ID Indicator.

Resource List Index (X'84') Network Alert Common Subfield

This subfield contains data identifying a single resource within a resource list subvector in the Alert major vector.

Resource List Index (X'84') Network Alert Common Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource List Index subfield
1		Key: X'84'
2		Resource list subvector key: The key of the subvector containing the identification of the resource being indexed
3		Subfield key: Within the subvector identified in byte 2, the key of the subfield containing the identification of the resource being indexed
4		Entry count: Within the subfield identified in byte 3, the count of the resource entry being indexed. Only entries having their Resource List Indexing Flag set are counted. (In the Hierarchy Name List (X'10') and Associated Resources (X'11') subfields of the Hierarchy/Resource List (X'05') subvector, this flag is bit 2 of byte r+1 of the entry.)
5(=q)		Requested data: For the resource entry identified in byte 4, a code point indicating what data is to be displayed: X'00' resource name X'01' resource type and name X'02' resource type

Detailed Data Extended (X'85') Network Alert Common Subfield

This subfield contains product specific detailed data to be displayed at an Alert receiver. Since it provides additional function (namely additional Data ID encodings), the Detailed Data Extended (X'85') subfield should be used instead of the Detailed Data (X'82') subfield when possible.

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Detailed Data Extended subfield *Note:* Length = X'02' indicates that the Product ID Code, Reserved, Data ID, Data Encoding, and Detailed Data fields are not present.
1		Key: X'85'
2		Product ID code: a code indicating what product identification, if any, must be displayed in conjunction with the data type and data. The structure of this field is identical to that present in the Product Set ID Index (X'83') subfield. A value of X'00' in this byte indicates that no product identification data is displayed in conjunction with the data type and detailed data.
	0–3	Product ID subvector code: a code point that specifies (1) the type of Product ID subvector being indexed (hardware or software), and (2) the particular data to be extracted from this subvector *Note:* See "Product Identifier (X'11') MS Common Subvector" on page 4-430 for the criteria distinguishing hardware and software Product ID subvectors. X'0'–X'1' reserved X'2' (machine type or hardware product common name) from a hardware Product ID Subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'5' (machine type or hardware product common name) plus model number from a hardware Product ID Subvector *Note:* The hardware product common name is used if it is present; otherwise, the machine type is used. X'9' software product common name from a software Product ID subvector
	4	Product set ID indicator: an indication of which Product Set ID (PSID) contains the Product ID subvector being indexed 0 Alert sender PSID 1 Indicated resource PSID
	5–7	Count: a 3-digit binary number that indicates which Product ID subvector, of the type specified by the Product ID subvector code, is being indexed within the PSID specified by the Product Set ID Indicator. *Note:* This count applies only to Product ID subvectors of the type specified by the Product ID subvector code. If, for example, the code is X'2' (specifying a hardware Product ID) then only hardware X'11's are counted: a count of X'3' would thus index the third hardware Product ID within the PSID indicated by the Product Set ID Indicator.
3		Reserved, must be X'00'. *Note:* This field is reserved for future architectural extensions, **not** product specific uses.
4–5		Data ID: a code point indicating the type of data carried in the subfield. The English text associated with each code point, or its national language equivalent, is displayed in conjunction with the detailed data. Defined codes are: X'0000' (no display) X'0001' ABEND CODE X'0002' ADAPTER CHECK STATUS X'0003' ADAPTER RETURN CODE X'0004' BOP CODE X'0005' PROTOCOL CODE X'0006' COMMAND CODE X'0007' ERROR CODE X'0008' OPERATING SYSTEM RETURN CODE X'0009' EVENT CODE X'000A' LLC ERROR CODE X'000B' MACHINE CHECK CODE

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content	
		X'000C'	MALFUNCTION CODE
		X'000D'	PROGRAM CHECK CODE
		X'000E'	REASON CODE
		X'000F'	RETURN CODE
		X'0010'	SENSE CODE
		X'0011'	SENSE DATA
		X'0012'	SOFTWARE ERROR CODE
		X'0013'	STATUS CODE
		X'0014'	SYMPTOM CODE
		X'0015'	SNA SENSE DATA
		X'0016'	BUS STATUS CODE
		X'0017'	RING STATUS CODE
		X'0018'	CALL PROGRESS SIGNAL: A notification from a network to a DTE, indicating why a connection could not be established
		X'0019'	FILE
		X'001A'	X.25 CLEAR PACKET, CAUSE CODE: A code to or from an X.25 network indicating the reason that a CLEAR request or indication packet was sent *Note:* This indicates the reason that a network connection was lost or could not be established.
		X'001B'	X.25 RESET PACKET, CAUSE CODE: A code to or from an X.25 network indicating the reason that a RESET request or indication packet was sent *Note:* This indicates the reason that a network connection was lost or could not be established.
		X'001C'	X.25 RESTART PACKET, CAUSE CODE: A code to or from an X.25 network indicating the reason that a RESTART request or indication packet was sent *Note:* This indicates the reason that a network connection was lost or could not be established.
		X'001D'	X.25 DIAGNOSTIC CODE: A code to or from an X.25 network providing additional information about why a Diagnostic packet or a Clear, Reset, or Restart request or indication packet was sent.
		X'001E'	DIAGNOSTIC EXPLANATION
		X'001F'	DATABASE RETURN CODE
		X'0020'	MESSAGE CODE
		X'0021'	PANEL ERROR MESSAGE CODE
		X'0022'	SYSTEM MESSAGE CODE
		X'0023'	MESSAGE SEVERITY
		X'0024'	WAIT STATE CODE
		X'0025'	PRIMARY RETURN CODE
		X'0026'	SECONDARY RETURN CODE
		X'0027'	FUNCTION
		X'0028'	SOCKET NUMBER: The TCP/IP endpoint for the communication connection
		X'0029'	DRIVE
		X'002A'	V.25BIS INDICATION
		X'002B'	ICA SENSE CODE
		X'002C'	MAINTENANCE INDICATOR
		X'002D'	ACCESS UNIT ID
		X'002E'	CONTROLLED ACCESS UNIT LOBE NUMBER
		X'002F'	D-CHANNEL NUMBER
		X'0030'	REFERENCE CODE
		X'0031'	SYSTEM REFERENCE CODE
		X'0032'	REPLACEABLE UNIT CODE
		X'0033'	COMPONENT ID
		X'0034'	COMMUNICATION CONTROL UNIT
		X'0035'	TYPE
		X'0036'	LOCATION
		X'0037'	PART NUMBER
		X'0038'	DESTINATION

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content	
		X'0039'	ORIGINATOR
		X'003A'	RACK/UNIT
		X'003B'	RACK
		X'003C'	UNIT
		X'003D'	CARD SLOT
		X'003E'	CABLE POSITION
		X'003F'	INTERCONNECT CONTROLLER
		X'0040'	ERROR RECOVERY PROCEDURE
		X'0041'	PDP CODE
		X'0042'	BACKUP PATH STATUS
		X'0043'	WRAP STATUS
		X'0044'	ATTACHMENT MODULE STATUS
		X'0045'	CONFIGURATION DATA
		X'0046'	LOBES DEACTIVATED
		X'0047'	ATTACHMENT MODULE NUMBER
		X'0048'	NUMBER OF LINKS LOST
		X'0049'	NUMBER OF NETBIOS SESSIONS LOST
		X'004A'	NETID
		X'004B'	LOCATION NAME
		X'004C'	CLASS OF SERVICE
		X'004D'	BACK-UP D-CHANNEL NUMBER
		X'004E'	ROUTE AFFECTED
		X'004F'	ACTIVE ROUTE
		X'0050'	CHANNEL UNIT ADDRESS
		X'0051'	DEVICE ADDRESS
		X'0052'	LINE ADDRESS
		X'0053'	LINE ADDRESS RANGE
		X'0054'	ADAPTER AT ADDRESS
		X'0055'	LINE
		X'0056'	DTE ADDRESS CALLED
		X'0057'	DTE ADDRESS CALLING
		X'0058'	LOCAL DTE ADDRESS
		X'0059'	CHANNEL
		X'005A'	SERVER
		X'005B'	CARD NUMBER
		X'005C'	CARD NAME
		X'005D'	CARD LOCATION
		X'005E'	LAN BRIDGE ID
		X'005F'	TOKEN-RING ID
		X'0060'	PORT NUMBER
		X'0061'	ADAPTER NUMBER
		X'0062'	CHANNEL ADAPTER NUMBER
		X'0063'	LINE ADAPTER NUMBER
		X'0064'	LINE INTERFACE COUPLER (LIC) POSITION
		X'0065'	BUS NUMBER
		X'0066'	TOKEN RING INTERFACE COUPLER NUMBER
		X'0067'	LOCALLY-INITIATED LOGICAL CHANNEL
		X'0068'	REMOTELY-INITIATED LOGICAL CHANNEL
		X'0069'	CONTROLLER ID
		X'006A'	DEVICE ID
		X'006B'	DEVICE
		X'006C'	TRANSMISSION PRIORITY FIELD
		X'006D'	PROGRAM STATUS WORD
		X'006E'	DOMAIN CONTROLLER
		X'006F'	PEER SERVER
		X'0070'	GENERATION PARAMETER
		X'0071'	THRESHOLD PARAMETER

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content	
		X'0072'	CONFIGURATION OBJECT/RECORD: Identifies the configuration object or record which contains one or more user settable parameters.
		X'0073'	CONFIGURATION PARAMETER
		X'0074'	IPL PARAMETER
		X'0075'	PARAMETER VALUE
		X'0076'	SECURITY DATABASE FILE
		X'0077'	REQUESTER
		X'0078'	ACCOUNT SYSTEM FILE
		X'0079'	SUBSTITUTE PART NUMBER
		X'007A'	CENTRAL PROCESSOR COMPLEX
		X'007B'	CENTRAL PROCESSING UNIT: The CPU includes its associated vector element processor.
		X'007C'	LOGICAL PARTITION NAME
		X'007D'	SUBCHANNEL NUMBER
		X'007E'	CHANNEL PATH ID
		X'007F'	I/O PROCESSING ELEMENT ID
		X'0080'	NODE
		X'0081'	LINK STATION
		X'0082'	CP
		X'0083'	PU
		X'0084'	LU
		X'0085'	TRANSACTION PROGRAM
		X'0086'	LSL: Link Segment Level of a multi-segment link connection *Note:* In a multi-segment link connection, link segments are numbered in ascending order, from the error notification sender outwards; thus the link segment immediately adjacent to the error notification sender is Link Segment Level 1, the one adjacent to it is Link Segment Level 2, etc.
		X'0087'	RELATIONAL DATABASE
		X'0088'	STORAGE
		X'0089'	FULLY QUALIFIED PCID
		X'008A'	PACKAGE
		X'008B'	TABLE
		X'008C'	VOLUME
		X'008D'	DIRECTORY
		X'008E'	LOGICAL PARTITIONS
		X'008F'	VECTOR PROCESSOR
		X'0090'	YEAR/MONTH/DAY
		X'0091'	TIME
		X'0092'	JULIAN DATE
		X'0093'	MINUTES
		X'0094'	ACCOUNT
		X'0095'	FILE SERVER
		X'0096'	DATA STREAM
		X'0097'	DATA STREAM OFFSET
		X'0098'	USER
		X'0099'	CONNECTION
		X'009A'	NETWORK
		X'009B'	SERVICE PROCESSOR
		X'009C'	EXPANDED STORAGE
		X'009D'	CENTRAL PROCESSOR COMPLEX IMAGE
		X'009E'	SERVICE UPDATE
		X'009F'	CUSTOMER PROBLEM REPORT
		X'00A0'	BYTE OFFSET
		X'00A1'	BIT OFFSET
		X'00A2'	DETECTING MODULE
		X'00A3'	FAILING MODULE
		X'00A4'	MAINTENANCE LEVEL

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content	
		X'00A5'	COMMAND
		X'00A6'	PROGRAM
		X'00A7'	RESOURCE
		X'00A8'	MAXIMUM NUMBER OF NODE TABLE ENTRIES
		X'00A9'	MODE NAME
		X'00AA'	UNBIND TYPE
		X'00AB'	INBOUND CALL
		X'00AC'	SYSTEM ERROR
		X'00AD'	REMOTE SUPPORT FACILITY
		X'00AE'	CENTRAL OPERATIONS
		X'00AF'	CONTROL PROGRAM
		X'00B0'	EIA STANDARD
		X'00B1'	CCITT STANDARD
		X'00B2'	CHANNEL SUBSYSTEM
		X'00B3'	MESSAGE LOG
		X'00B4'	OPERATING SYSTEM LOG
		X'00B5'	DUMP
		X'00B6'	RETRY COUNT
		X'00B7'	TIMER SETTING
		X'00B8'	LINE SPEED (BITS PER SECOND)
		X'00B9'	LINE SPEED (KILOBITS PER SECOND)
		X'00BA'	LINE SPEED (MEGABITS PER SECOND)
		X'00BB'	OPERATION NUMBER
		X'00BC'	OPERATION PRIORITY
		X'00BD'	OPERATION INPUT ARRIVAL TIME
		X'00BE'	SNA SENSE DATA RECEIVED IN XID
		X'00BF'	APPLICATION INPUT ARRIVAL TIME
		X'00C0'	COUNTER
		X'00C1'	ALARM SIGNAL
		X'00C2'	JOB NUMBER
		X'00C3'	ISDN CAUSE CODE
		X'00C4'	CONTROLLER DESCRIPTION OBJECT
		X'00C5'	COMMUNICATION LINE DESCRIPTION OBJECT
		X'00C6'	LOGICAL DEVICE DESCRIPTION OBJECT
		X'00C7'	NETWORK INTERFACE DESCRIPTION OBJECT
		X'00C8'	NETWORK INTERFACE NAME
		X'00C9'	NAME
		X'00CA'	JOB NAME
		X'00CB'	LINE NAME
		X'00CC'	MESSAGE FILE NAME
		X'00CD'	MESSAGE QUEUE NAME
		X'00CE'	MESSAGE REFERENCE KEY
		X'00CF'	REMOTE LOCATION NAME
		X'00D0'	FILE NAME
		X'00D1'	LOG RECORD NUMBER
		X'00D2'	CARTRIDGE: A component that holds items to be dispensed
		X'00D3'	AIR FILTER NUMBER
		X'00D4'	TELEPHONE NUMBER
		X'00D5'	CALLING TELEPHONE NUMBER
		X'00D6'	TELEPHONE NUMBER CALLED
		X'00D7'	REPORTING TELEPHONE NUMBER: The telephone number of the Alert sender
		X'00D8'	TIMER
		X'00D9'	LOG RECORD TYPE
		X'00DA'	LOG ID
		X'00DB'	PUBLICATION NUMBER
		X'00DC'	NEW NUMBER

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content
		X'00DD' APPLICATION NAME
		X'00DE' NUMBER
		X'00DF' WORKSTATION ID
		X'00E0'–X'00EF' Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range.
		X'00F0' PRODUCT ALERT REFERENCE CODE: A code that identifies an Alert in a user-friendly way. The product Alert reference code is used to index documentation provided by the Alert sending product. This documentation can group the Alerts into natural categories and provide extended explanations or diagnostic information.
		X'00F1' QUEUE
		X'00F2' INTERFACE
		X'00F3' SERVICE ACTION CODE
		X'00F4' PROBLEM MANAGEMENT HARDWARE NUMBER
		X'00F5' PROBLEM DATA
		X'00F6' DISK BLOCK NUMBER
		X'00F7' CONTROLLER BUS ADAPTER
		X'00F8' ENTERPRISE
		X'00F9' CONTACT ID
		X'00FA' SNMP GENERIC-TRAP NUMBER
		X'00FB' SNMP SPECIFIC-TRAP NUMBER
		X'00FC' SNMP MIB VARIABLE NAME
		X'00FD' SNMP MIB VARIABLE VALUE
		X'00FE' INTERNET PROTOCOL ADDRESS
		X'00FF' SERVICE POINT APPLICATION
		X'0100' SYSTEM NAME
		X'0101' CORRELATION ID
		X'0102' TRACE RECORD SEQUENCE NUMBER
		X'0103' SUBSYSTEM ID
		X'0104' PHYSICAL DEVICE
		X'0105' CYLINDER
		X'0106' HEAD
		X'0107' MEDIA MAINTENANCE PROCEDURE
		X'0108' STORAGE CLUSTER
		X'0109' DEVICE PATH
		X'010A' STORAGE PATH
		X'010B' NONVOLATILE STORAGE FUNCTION
		X'010C' DUAL COPY FUNCTION
		X'010D' CACHE FUNCTION
		X'010E' CONTROLLER
		X'010F' RESOURCE MANAGER ID
		X'0110' PRODUCT ALARM REFERENCE CODE: This codepoint is used in an Alert that was originally an OSI alarm. The Product Alarm Reference Code is used to index documentation provided by the alarm sending product. This documentation can group the alarms into natural categories and provide extended explanation of diagnostic information.
		X'0111' LUWID: Logical-Unit-of-Work Identifier
		X'0112' PROBE ID
		X'0113' PROBE SEVERITY CODE
		X'0114' PHYSICAL LINE NUMBER
		X'0115' LOGICAL LINE NUMBER
		X'0116' STATION NUMBER
		X'0117' DLCI: Data Link Connection Identifier
		X'0118' MICROCODE

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content
		X'0119' HARDWARE X'011A' DATA MODULE X'011B' MANUFACTURING SEQUENCE NUMBER X'011C' ENGINEERING CHANGE NUMBER X'011D' CHANNEL COUPLER NUMBER X'011E' LASER X'011F' LED X'0120' CNM ADAPTER: Communications Network Management Adapter X'0121' DCE: Data Circuit-Terminating Equipment X'0122' SERIAL NUMBER X'0123' ERROR LABEL X'0124' RESOURCE NAME X'0125' FRU NUMBER: Field Replaceable Unit number X'0126' USER CODE X'0127' EC LEVEL: Engineering Change Level X'0128' SNMP INTERFACE INDEX X'0129' SERVICE ACCESS POINT (SAP) X'012A' FREQUENCY X'012B' WIRELESS TRANSCEIVER NUMBER X'0130' PRODUCT X'0131' FEATURE X'0132' FAULT TOLERANCE DISABLED FOR DEVICE: Last physical device providing back-up storage has failed. Next failure could cause data loss. X'0133' TRACKS WITH IRRECOVERABLE ERRORS: A specified number of tracks on a back-up device and the device being backed-up have failed. X'0134' TRANSMISSION GROUP NUMBER X'0135' LOGICAL CHANNEL X'0136' CALLING SUBADDRESS X'0137' SUBADDRESS CALLED X'E000'–X'EFFF' Reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range.
6		Data Encoding: a code point indicating how the accompanying detailed data is encoded, and, thus, how it is to be displayed. Defined code are: X'00' hexadecimal: The data is to be displayed as hexadecimal digits. X'01' binary: The data is the binary representation of an unsigned integer value (8, 16, 24, or 32 bits in length). The decimal equivalent is to be displayed. For example, the value B'11111111' (X'FF') is to be displayed as 255. X'10' hexadecimal code point: The data is a two-byte hexadecimal code point which is used to index a text string stored at the Alert receiver. The text string will be displayed in place of the hexadecimal code point that was transported in the Alert. X'11' Coded Graphic Character Set 00640–00500 plus: The data is to be decoded using Coded Graphic Character Set 00640–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," plus three additional code points: X'5B' = "$" (dollar sign) X'7B' = "#" (number sign) X'7C' = "@" (at sign) *Note:* Detailed data encoded in this way is limited to codes, numbers, or internationally recognized terms that do not require translation.

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content
7–q		Detailed data, encoded as specified when byte offset 6 = X'00', X'01', or X'11'.
Or		
7–8		Detailed data, encoded as specified when byte offset 6 = X'10' (hexadecimal code point). The hexadecimal code point has a length of two bytes, and provides an index to predefined text that is displayed at the Alert receiver. An Alert receiver has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent. The method chosen must be consistent with the language of the code point text that "imbeds" the X'85' subfield text. These code points are logically grouped, one group per Data ID code point. Within a group, a code point may have only one text string associated with it. But, the same code point may have different text strings associated with it in other groups. The Data ID determines the "table" that is searched by the Alert receiver in order to find the appropriate text string. **Note:** The X'E000'–X'EFFF' range of code points in each table is reserved. Neither IBM products nor non-IBM products may assign a code point in this range. Specific defined codes and the corresponding displayed text are listed below for each group. **Group: Maintenance Indicator (Data ID = X'002C')** The code point assignments below are valid when used with the Data ID value of X'002C' (Maintenance Indicator). Defined hexadecimal codes are: X'0001' SC2-PSB — NT1 BACKUP OR BATTERY POWER FAILURE X'0002' SC2-PPB — NT1 PRIMARY SOURCE FAILURE X'0003' SC2-LB1N — NT1 LOOPBACK TOWARD NETWORK ON B1 CHANNEL X'0004' SC2-LB2N — NT1 LOOPBACK TOWARD NETWORK ON B2 CHANNEL X'0005' SC2-LBDN — NT1 LOOPBACK TOWARD NETWORK ON B1, B2 AND D CHANNELS X'0006' PRIMARY RATE PAYLOAD LOOPBACK SIGNAL X'0007' PRIMARY RATE IA LINE LOOPBACK SIGNAL X'0008' PRIMARY RATE IB LINE LOOPBACK SIGNAL X'0009' PRIMARY RATE NETWORK LOOPBACK SIGNAL **Group: Counter Names (Data ID = X'00C0')** The code point assignments below are valid when used with the Data ID value of X'00C0' (Counter). Defined hexadecimal codes are: X'0001' LOSS OF FRAME ALIGNMENT X'0002' DETECTED ACCESS TRANSMISSION SYSTEM ERRORS (DTSE) IN X'0003' DETECTED ACCESS TRANSMISSION SYSTEM ERRORS (DTSE) OUT X'0004' TE-DETECTED CODE VIOLATIONS X'0005' NT-DETECTED CODE VIOLATIONS X'0006' CRC ERRORS RECEIVED X'0007' CRC ERRORS TRANSMITTED X'0008' ERRORED SECONDS X'0009' SEVERELY ERRORED SECONDS X'000A' COLLISION DETECT X'000B' SHORT FRAMES RECEIVED X'000C' TRANSMIT OVERRUN X'000D' RECEIVE UNDERRUN X'000E' TA ASYNCHRONOUS ERRORS X'000F' TA SYNCHRONOUS ERRORS X'0010' ABORTED FRAMES RECEIVED

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content	
		X'0011'	ABORTED FRAMES TRANSMITTED
		X'0012'	MISADDRESSED FRAMES RECEIVED
		X'0013'	UNBOUNDED FRAMES RECEIVED
		X'0014'	NON-INTEGRAL FRAMES RECEIVED
		X'0015'	TOTAL FRAMES TRANSMITTED
		X'0016'	TOTAL FRAMES RECEIVED
		X'0017'	PDUS RETRANSMITTED
		X'0018'	RECEIVE SEQUENCE ERRORS
		X'0019'	TOTAL BYTES TRANSMITTED
		X'001A'	TOTAL BYTES RECEIVED
		X'001B'	TOTAL BYTES RETRANSMITTED
		X'001C'	TOTAL INCOMING CALLS
		X'001D'	TOTAL OUTGOING CALLS
		X'001E'	INCOMING CALLS REJECTED
		X'001F'	OUTGOING CALLS REJECTED
		X'0020'	INFORMATION FRAMES TRANSMITTED
		X'0021'	INFORMATION FRAMES RECEIVED
		X'0022'	PDUS DISCARDED
		X'0023'	TOTAL CONNECTIONS
		X'0024'	UNNUMBERED INFORMATION FRAMES TRANSMITTED
		X'0025'	UNNUMBERED INFORMATION FRAMES RECEIVED
		X'0026'	LAN TYPE 3 FRAMES TRANSMITTED
		X'0027'	LAN TYPE 3 FRAMES RECEIVED
		X'0028'	LAN TYPE 3 FRAMES RETRANSMITTED
		X'0029'	LAN TYPE 2 ACKNOWLEDGMENT TIMER TIMEOUTS
		X'002A'	LOCAL BUSY OCCURRENCES
		X'002B'	TOKEN RING MAC LINE ERRORS
		X'002C'	TOKEN RING MAC BURST ERRORS
		X'002D'	TOKEN RING MAC A/C ERRORS
		X'002E'	TOKEN RING MAC INTERNAL ERRORS
		X'002F'	TOKEN RING MAC LOST FRAME ERRORS
		X'0030'	TOKEN RING MAC RECEIVE CONGESTION ERRORS
		X'0031'	TOKEN RING MAC FRAME-COPIED ERRORS
		X'0032'	TOKEN RING MAC TOKEN ERRORS
		X'0033'	TOKEN RING MAC FREQUENCY ERRORS
		X'0034'	UNRECOGNIZED PDUS
		X'0035'	TEST COMMANDS RECEIVED
		X'0036'	TEST RESPONSES TRANSMITTED
		X'0037'	TIMER (SECONDS)
		X'0038'	FRAME-LOSS SECONDS NEAR-END
		X'0039'	FRAME-LOSS SECONDS FAR-END
		X'003A'	RESTART MESSAGES RECEIVED
		X'003B'	STATUS ENQUIRY MESSAGES RECEIVED
		X'003C'	ERRORED SECONDS NEAR-END
		X'003D'	ERRORED SECONDS FAR-END
		X'003E'	BURSTY ERRORED SECONDS NEAR-END
		X'003F'	BURSTY ERRORED SECONDS FAR-END
		X'0040'	SEVERELY ERRORED SECONDS NEAR-END
		X'0041'	SEVERELY ERRORED SECONDS FAR-END
		X'0042'	SLIP SECONDS NEAR-END
		X'0043'	SLIP SECONDS FAR-END
		X'0044'	BADLY FORMED FRAMES
		X'0045'	TOTAL POLLS TRANSMITTED
		X'0046'	TOTAL POLLS RECEIVED
		X'0047'	TOTAL UNNUMBERED FRAMES TRANSMITTED
		X'0048'	TOTAL UNNUMBERED FRAMES RECEIVED
		X'0049'	TOTAL SUPERVISORY FRAMES TRANSMITTED

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content	
		X'004A'	TOTAL SUPERVISORY FRAMES RECEIVED
		X'004B'	CLASS 0 CAUSE CODE
		X'004C'	CLASS 1 CAUSE CODE
		X'004D'	CLASS 2 CAUSE CODE
		X'004E'	CLASS 3 CAUSE CODE
		X'004F'	CLASS 4 CAUSE CODE
		X'0050'	CLASS 5 CAUSE CODE
		X'0051'	CLASS 6 CAUSE CODE
		X'0052'	CLASS 7 CAUSE CODE
		X'0053'	RAI SECONDS RECEIVED
		X'0054'	RAI SECONDS TRANSMITTED
		X'0055'	AIS SECONDS RECEIVED
		X'0056'	PATH CODE VIOLATIONS
		X'0057'	LINE ERRORED SECONDS
		X'0058'	ERRORED SECOND CRC
		X'0059'	UNAVAILABLE SECONDS
		X'005A'	EXCESSIVE ZEROS COUNT
		X'005B'	PROTECTION SWITCH COUNT
		X'005C'	SENT REJECT (REJ) PDUS
		X'005D'	RECEIVED REJECT (REJ) PDUS
		X'005E'	COMMAND IMPLEMENTATION PERMANENT (IP)
		X'005F'	COMMAND IMPLEMENTATION TEMPORARY (IT)
		X'0060'	COMMAND OK
		X'0061'	COMMAND PROTOCOL ERROR (PE)
		X'0062'	COMMAND RESPONSE STATUS (RS)
		X'0063'	COMMAND UNAVAILABLE (UN)
		X'0064'	INVALID PDUS DISCARDED
		X'0065'	LOCAL BUSY OCCURRENCES
		X'0066'	NO RESPONSE
		X'0067'	PDUS DISCARDED 2
		X'0068'	RECEIVED ABBREVIATED TEST RESPONSE
		X'0069'	RECEIVED AC COMMAND
		X'006A'	RECEIVED DISCONNECT (DISC)
		X'006B'	RECEIVED DISCONNECTED MODE (DM)
		X'006C'	RECEIVED FRAME REJECT (FRMR)
		X'006D'	RECEIVED RECEIVE NOT READY (RNR)
		X'006E'	RECEIVED RECEIVE READY(RR)
		X'006F'	RECEIVED SET ASYNCHRONOUS BALANCE MODE EXTENDED (SABME)
		X'0070'	RECEIVED TEST COMMAND
		X'0071'	RECEIVED UNNUMBERED ACKNOWLEDGMENT (UA)
		X'0072'	RECEIVED EXCHANGE IDENTIFICATION (XID) COMMANDS
		X'0073'	RECEIVE EXCHANGE IDENTIFICATION (XID) RESPONSE
		X'0074'	REMOTE BUSY
		X'0075'	RESPONSE IMPLEMENTATION PERMANENT (IP)
		X'0076'	RESPONSE IMPLEMENTATION TEMPORARY (IT)
		X'0077'	RESPONSE NEVER SUBMITTED (NE)
		X'0078'	RESPONSE NOT REQUESTED (NR)
		X'0079'	RESPONSE OK
		X'007A'	RESPONSE RESPONSE STATUS (RS)
		X'007B'	RESPONSE USER ERROR (UE)
		X'007C'	RESPONSE UNAVAILABLE (UN)
		X'007D'	SENT ABBREVIATED TEST RESPONSE
		X'007E'	SENT AC COMMAND
		X'007F'	SENT DISCONNECT (DISC)
		X'0080'	SENT DISCONNECTED MODE (DM)
		X'0081'	SENT FRAME REJECT (FRMR)
		X'0082'	SENT RECEIVE READY (RR)

Detailed Data Extended (X'85') Network Alert Common Subfield

Byte	Bit	Content	
		X'0083'	SENT RECEIVE NOT READY (RNR)
		X'0084'	SENT SET ASYNCHRONOUS BALANCED MODE EXTENDED (SABME)
		X'0085'	SENT TEST COMMAND
		X'0086'	SENT UNNUMBERED ACKNOWLEDGMENT (UA)
		X'0087'	SENT EXCHANGE IDENTIFICATION (XID) COMMANDS
		X'0088'	SENT EXCHANGE IDENTIFICATION (XID) RESPONSE
		X'0089'	TYPE2 BUSY-STATE TIMER TIMEOUT
		X'008A'	TYPE2 POLL (P) -BIT TIMER TIMEOUT
		X'008B'	TYPE2 REJECT TIMER TIMEOUT
		X'008C'	TYPE2 VIOLATION
		X'008D'	TYPE3 VIOLATION
		X'008E'	HPR FRAMES SENT
		X'008F'	HPR BYTES SENT
		X'0090'	HPR FRAMES RECEIVED
		X'0091'	HPR BYTES RECEIVED
		X'0092'	HPR FRAMES NOT SENT AND DISCARDED
		X'0093'	HPR FRAMES RECEIVED AND DISCARDED
		X'F000'	FRAME RECEIVE PROCESSING TIME (IN MILLISECONDS)
		X'F001'	FRAME TRANSMIT PROCESSING TIME (IN MILLISECONDS)
		X'F002'	BYTE RECEIVE PROCESSING TIME (IN MILLISECONDS)
		X'F003'	BYTE TRANSMIT PROCESSING TIME (IN MILLISECONDS)
		Group: Alarm Signal (Data ID = X'00C1')	
		The code point assignments below are valid when used with the Data ID value of X'00C1' (Alarm Signal). Defined hexadecimal codes are:	
		X'0001'	SC1-DOI — DISRUPTIVE OPERATION INDICATION
		X'0002'	SC2-RDEA — RECEIVING VALID DEACTIVATION
		X'0003'	SC2-RACT — RECEIVING VALID ACTIVATION
		X'0004'	SC2-NAI — NETWORK ALARM INDICATION
		X'0005'	SC2-RSET — NT1 IS IN RESET STATE
		X'0006'	RAI — REMOTE ALARM INDICATION
		X'0007'	AIS — ALARM INDICATION SIGNAL

Link Event (X'0001') MS Major Vector

PU T4 → SSCP, CP → CP

This major vector provides unsolicited notification of a problem on a link and transports link connection and link station data to be used to identify the component that caused the problem. This major vector also transports the notification data as a result of a link deactivation (DACTLINK) of the unconditional reset type.

Link Event (X'0001') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0001'
4–n		MS subvectors, as described in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Link Event MS Subvectors" on page 4-208 for subvector keys X'80'–X'FE'.

Note: The following subvector keys may be used as indicated:

Subvector	Presence in Link Event (X'0001') Major Vector		
	NMVT	CP-MSU	Notes
Date/Time (X'01')	CP	P	Note 1
SNA Address List (X'04')	P	—	
Hierarchy/Resource List (X'05')	CP	P	Note 2
Product Set ID (X'10')	P	CP	Note 3
Product-unique Data Forwarding (X'34')	O(n)	O(n)	
Relative Time (X'42')	CP	CP	Note 4
LPDA-2 Link Connection Subsystem Data (X'50')	CP(2)	CP(2)	Note 5
Link Connection Subsystem Configuration Data (X'52')	P	P	
SDLC Link Station Counters (X'53')	CP	CP	Note 6
Binary Synchronous Link Station Counters (X'54')	CP	CP	Note 7
Additional SDLC Counters (X'56')	CP	CP	Note 8
LCS Product-Specific Hexadecimal Data (X'58')	O	O	
LCS Product-Specific EBCDIC Data (X'59')	O	O	
Sense Data (X'7D')	CP(2)	CP(2)	Note 9
Link Failure Notification Status (X'8A')	P	P	
SDLC Link Station Data (X'8C')	CP	CP	Note 10

Key:

P Present one time

CP	Conditionally present one time (See Notes for conditions.)
CP(2)	Conditionally present once or twice (see Notes for conditions.)
O	Optionally present one time
O(n)	Optionally present one or more times

Notes:

1. If the PU sending the Link Event Major Vector has the capability of providing it, this subvector is placed in the NMVT. See Note 3. If the PU did not provide it, the CP in whose domain the PU resides creates it.
2. This subvector is present when a link station error has occurred on an SDLC peripheral link.
3. This subvector is present in the data CP-MSU if and only if the CP-MSU was built from an NMVT.
4. If the PU sending the NMVT cannot provide a Date/Time subvector, it places this subvector in the NMVT instead.
5. One or two instances, each instance is the reply to the DCE and Line Status Command (e.g., Modem and Line Status Command) targeted to an LPDA-2 link segment (for details, see *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, Document number SY33–2048), order of instances is significant. If the LPDA-2 link segment could not return the LPDA-2 data the Sense Data is present instead, see Note 9.
6. This subvector is present when the SDLC protocol is used for the link for which this NMVT is sent and the notification is for a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
7. This subvector is present when the Binary Synchronous Data Link (BSC) protocol is used for the link for which this NMVT is sent and the notification is for a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
8. This subvector is present when the SDLC protocol is used for the link for which this NMVT is sent and the notification is for a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
9. One or two instances, order of the instances is significant, of this subvector are present when the link connection contains one or two LPDA-2 link segments respectively and they could not return the LPDA-2 data, see Note 5

   This subvector is sent instead of the X'50' if the node sending the Link Event has the secondary station of the link for which the NMVT is sent.
10. This subvector is present when the SDLC protocol is used for the link for which this NMVT is sent and the notification is for a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.

Link Event MS Subvectors

Link Failure Notification Status (X'8A') Link Event MS Subvector

This subvector specifies the type of problem detected, i.e., whether the notification is for a link connection or a link station problem; it also specifies the link related operation in progress and the errors that occurred when the problem was detected.

Link Event Status (X'8A') Link Event MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Link Event Status subvector
1		Key: X'8A'
2–p		Two subfields containing link event data (listed by key value below and described in detail following): X'01' Link Failure Link Event X'02' Link Station Failure Link Event X'03' Link Event Error Description *Note:* The X'03' subfield is always present, and either the X'01' or the X'02' is present.

Link Failure Link Event (X'01') Link Event Status Subfield

This subfield specifies that the NMVT is sent for a link connection problem.

Link Failure Link Event (X'01') Link Event Status Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Link Failure Link Event subfield
1(=q)		Key: X'01'

Link Station Failure Link Event (X'02') Link Event Status Subfield

This subfield specifies that the NMVT is sent for a link station problem.

Link Station Failure Link Event (X'02') Link Event Status Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Link Station Failure Link Event subfield
1(=q)		Key: X'02'

Link Event Error Description (X'03') Link Event Status Subfield

This subfield transports error information associated with the link connection or link station problem.

Link Event Error Description (X'03') Link Event Status Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Link Event Error Description subfield
1		Key: X'03'
2		Operation code: specifies the link operation that was in progress when the link connection or link station problem occurred. The following operation codes can be specified: X'01' enable: sets the Data Terminal Ready (DTR) circuit and monitors for the Data Set Ready (DSR) to be set by the DCE. (This operation takes place after the SSCP sends ACTLINK to the PU.) The error conditions that can take place are modem error (major error code X'01') and DSR failed to raise (minor error code X'09'). Both of these error conditions are reported as a link connection problem, i.e., the X'01' subfield is present in the X'8A' subvector. X'02' disable: resets the DTR circuit and monitors for the DSR to be reset by the DCE. (This operation takes place after the SSCP sends ABCONN or ABCONIN to the PU for a switched link.) The error conditions that can take place are modem error (major error code X'01') and DSR failed to drop (minor error code X'0A'). Both of these error conditions are reported as a link connection problem, i.e., the X'01' subfield is present in the X'8A' subvector. X'04' LPDA test: tests the link connection with IBM LPDA modems The error condition that occurs on that link is a modem error (major error code X'01'). It is reported as a link connection problem, i.e., the X'01' subfield is present in the X'8A' subvector. X'05' wrap test: tests the link connection by sending and receiving to and from the adjacent link station one or more frames The error condition that occurs on that link is a modem error (major error code X'01'). It is reported as a link connection problem, i.e., the X'01' subfield is present in the X'8A' subvector. X'06' retired X'07' write: sends SDLC frames or BSC text blocks to the adjacent link station The error conditions that can take place are time-out error (major error code X'07'), BSC protocol error (major error code X'08'), and retries error (major error code X'0E' with minor error codes: X'01' and X'02'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector. X'08' read: receives SDLC frames or BSC text blocks from the adjacent link station The error conditions that can take place are communications error (major error code X'06'), BSC protocol error (major error code X'08'), SDLC protocol error (major error code X'09'), SDLC frame reject (major error code X'0A'), received invalid address (major error code X'0B'), retries errors (major error code X'0E' and possible minor errors: X'03', X'04', and X'05'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector. X'09' retired

Link Event Error Description (X'03') Link Event Status Subfield

Byte	Bit	Content	
		X'0A'	retired
		X'0B'	poll: link operation (e.g., SDLC protocol), invites stations, one at a time, to transmit
			The error conditions that can occur are listed under write (X'07') and read (X'08') operations, as this operation involves sending and receiving a frame or a text block. It is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
		X'0C'	retired
		X'20'	write initial: sends inquire sequence in BSC protocol and receives response
			The error conditions that can occur are communications error (major error code X'06'), time-out error (major error code X'07'), and BSC protocol error (major error code X'08'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
		X'21'	write continue: BSC request, sends data block sequence and receives response
			The error conditions that can occur are communications error (major error code X'06'), time-out error (major error code X'07'), and BSC protocol error (major error code X'08'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
		X'22'	write recover: BSC request, sends inquire sequence, receives responses, sends EOT (end of transmission), or sends data block sequence and receives responses
			The error conditions that can occur are communications error (major error code X'06'), time-out error (major error code X'07'), and BSC protocol error (major error code X'08'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
		X'23'	retired
		X'24'	read initial: BSC operation, for point-to-point configuration, sends EOT, receives enquire, and receives data; for multipoint configuration, sends EOT, sends ACK0 or poll, and receives data
			The error conditions that can occur are communications error (major error code X'06'), time-out error (major error code X'07'), and BSC protocol error (major error code X'08'). It is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
		X'25'	read continue: BSC request, sends ACK0 or ACK1, and receives response
			The error conditions that can occur are communications error (major error code X'06'), time-out error (major error code X'07'), and BSC protocol error (major error code X'08'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
		X'26'	write EOT: BSC request, sends EOT character
			The error condition that can occur is the time-out error (major error code X'07'). It is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
		X'27'	write control: tests BSC link connection components
			The error condition that can occur is modem error (major error code X'01'). It is reported as a link connection problem, i.e., the X'01' subfield is present in the X'8A' subvector.
		X'28'	read status: BSC request, sends EOT character, sends enquire, and receives response
			The error conditions that can occur are communications error (major error code X'06'), time-out error (major error code X'07'), and BSC protocol error (major error code X'08'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
		X'29'	retired
		X'2A'	retired

Link Event Error Description (X'03') Link Event Status Subfield

Byte	Bit	Content
		X'2B' retired X'40' run: performs any SDLC operation on the link Any of the error conditions for the SDLC links could occur. They are reported as a link station or a link connection problem depending upon the nature of the error. X'41' run initial: secondary SDLC station operation, receives frames. The error condition that can occur is the communications error (major error code X'06'). It is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector. X'44' retired X'45' retired X'46' retired X'81' transmit: LAN operation, transmits LAN LLC frames to other nodes The error conditions that can occur are time-out error (major error code X'07'), SDLC protocol errors (major error code X'09'), and SDLC frame reject (major error code X'0A'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector. X'82' retired X'83' receive: LAN operation, receives LAN LLC frames from other nodes The error conditions that can occur are time-out error (major error code X'07'), SDLC protocol error (major error code X'09'), and SDLC frame reject (major error code X'0A'). Any of these error conditions is reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector. X'84' retired X'85' retired X'86' retired X'87' retired X'88' retired X'89' retired X'F0' no operation code recorded: used if no LLC operation was recorded by the using node The error conditions that can occur are listed under LAN transmit and receive operations. They are reported as a link station problem, i.e., the X'02' subfield is present in the X'8A' subvector.
3–4		Initial error: 2-byte encoding, specifies the first error occurred while performing the operation specified in byte 2 of the subfield
3		Initial error major code (see “Major Error Codes” below)
4		Initial error minor code (see “Minor Error Codes” below)
5–6		Final error: 2-byte encoding, specifies the last error occurred if the operation was retried, or the first error if the operation was not retried
5		Final error major code (see “Major Error Codes” below)
6(=q)		Final error minor code (see “Minor Error Codes” below)
		Major Error Codes: **Note:** Error codes X'01' through X'05', unless specified otherwise, are reported as link connection problems, i.e., the X'01' subfield is present in the X'8A' subvector. Error codes X'06' through X'0F', unless specified otherwise, are reported as link station problems, i.e., the X'02' subfield is present in the X'8A' subvector.

Link Event Error Description (X'03') Link Event Status Subfield

Byte	Bit	Content

The following major error codes are defined:

X'01' modem error
X'02' no EIA cable installed
X'03' modem in test
X'06' communications error
X'07' time-out
X'08' binary synchronous protocol error
X'09' SDLC protocol error
X'0A' SDLC frame reject (FRMR response) received
X'0B' received invalid address
X'0C' retired
X'0E' retries
X'0F' forced deactivation, i.e., link deactivation of unconditional reset type
X'F0' error not recorded (for final error only)
X'FF' undetermined (the error cannot be specified by one of the above generic major error codes); it could be used for both the link connection and the link station problem

Minor Error Codes:

Minor error codes defined for Modem Error (X'01'):

X'01' CTS drop
X'02' DSR drop
X'03' DSR/CTS drop
X'05' clock error
X'06' clock or CTS error (not distinguished)
X'07' CTS failed to raise
X'08' CTS failed to drop
X'09' DSR failed to raise
X'0A' DSR failed to drop
X'0B' line adapter check (could be also a link station error)

Minor error codes defined for No EIA Cable Installed (X'02'):

X'00' (no minor code)

Minor error codes defined for Modem in Test (X'03'):

X'00' (no minor code)

Minor error codes defined for Communications Error (X'06'):

X'01' data check
X'02' FCS error
X'03' lost data
X'04' cutoff
X'05' abort
X'06' data not expected
X'07' break in text
X'08' sub-block error flag
X'09' poll stop
X'0A' break in transmit
X'0B' format exception

Minor error codes defined for Timeout Error (X'07'):

X'01' no data received
X'02' some data received
X'03' link activity time-out
X'04' idle time-out during read
X'05' line quiet time-out
X'06' group time-outs

Link Event Error Description (X'03') Link Event Status Subfield

Byte	Bit	Content

Minor error codes defined for BSC Protocol Error (X'08'):

X'01' wrong ACK
X'02' received sub-block end
X'03' WACK received
X'04' invalid SOH
X'05' invalid test SOH
X'06' invalid SOH type
X'07' DLE-EOT received
X'08' EOT send after WACK
X'09' DLE format exception
X'0A' text in control mode
X'0B' DLE control end

Minor error codes defined for SDLC Protocol Error (X'09'):

X'01' REJ received
X'02' DM received
X'03' DISC received
X'04' SNRM or SABME received
X'05' RIM or SIM received
X'06' UA or RR received
X'07' unexpected NSI
X'08' U format frame without information received
X'09' received invalid command
X'0A' received invalid N(R) count
X'0B' received frame too short
X'0C' received frame too long
X'0D' XID3 received out of sequence

Minor error codes defined for SDLC Frame Reject Received Error (X'0A'):

X'01' invalid N(R) count
X'02' frame too long
X'03' data in S or U format
X'04' invalid command
X'05' permanent error—affected device

Minor error codes defined for Received Invalid Address Error (X'0B'):

X'01' invalid device address in SOH

Minor error codes defined for Retries Error (X'0E'):

X'01' write retries exceeded
X'02' supervisory retries exceeded
X'03' negative acknowledgment
X'04' partial or negative acknowledgment
X'05' monitor count overflow

Minor error codes defined for Forced Deactivate Condition (X'0F'):

X'00' (no minor code)

Minor error codes defined for Error not Recorded Condition (X'F0'):

X'01' error not recorded (final error only)

Minor error codes defined for Undetermined Condition (X'FF'):

X'00' (no minor code)

SDLC Link Station Data (X'8C') Link Event MS Subvector

This subvector transports SDLC or LAN LLC link station failure information.

Note: The format of this subvector is defined under the Alert (X'0000') major vector.

Resolution (X'0002') MS Major Vector

PU → SSCP, CP → CP

This major vector provides unsolicited notification of the resolution of a problem previously reported by an Alert. It contains an identification of the type of problem resolution, and an identification of the actual failing resource.

Resolution (X'0002') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0002'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Resolution MS Subvectors” on page 4-217 for subvector keys X'80'–X'FE'.
		The following subvector keys may be used as indicated:

Subvector	Presence in Resolution (X'0002') Major Vector		
	NMVT	CP-MSU	Notes
Date/Time (X'01')	CP	P	Note 1
SNA Address List (X'04')	CP	—	Note 2
Hierarchy/Resource List (X'05')	CP	P	Note 3
Product Set ID (X'10')	P(n)	P(n)	Note 4
Self-Defining Text Msg. (X'31')	O(n)	O(n)	
Nested Alert Focal Point Data Forwarding (X'34')	O(n)	O(n)	
Relative Time (X'42')	CP	CP	Note 5
Incident Identification (X'4A')	O(n)	O(n)	Note 6
Resolution Data (X'92')	P	P	
Actual Causes (X'93')	P	P	
Actual User Causes (X'94')	CP	CP	Note 7
Actual Install Causes (X'95')	CP	CP	Note 7
Actual Failure Causes (X'96')	CP	CP	Note 7
Actual Cause Undetermined (X'97')	CP	CP	Note 8
Detailed Data (X'98')	O	O	
Symptom String (X'99')	CP(n)	CP(n)	Note 9

Key:

—	Not present
P	Present one time
P(n)	Present one or more times
CP	Conditionally present one time (See Notes for conditions)
CP(n)	Conditionally present one or more times (See Notes for conditions)
O	Optionally present one time
O(n)	Optionally present one or more times

Notes:

1. If the PU sending the Resolution major vector has the capability of providing it, it places this subvector in the NMVT. See Note 5. It is always present in a CP-MSU.
2. This subvector is present when it is necessary to identify, with an SNA address, the origin of the resolved problem. If the origin of the resolved problem is the PU sending the Resolution major vector, this subvector is not present.
3. This subvector is present in the NMVT instead of, or in addition to, the SNA Address List (X'04') subvector if the origin (other than the PU sending the Resolution major vector) of the resolved problem cannot be represented in the SNA Address List (X'04') subvector. This subvector is always present in a CP-MSU.
4. An instance of this subvector describing the PU or CP sending the Resolution major vector is always present. A second instance is present if the origin of the resolved problem is a hardware or software product, and is not the PU or CP

sending the Resolution major vector. If a second instance is present, it is placed immediately after the first instance of the X'10' subvector.

In a Resolution major vector containing two instances of the Product Set ID subvector, the following terms refer, respectively, to these two instances:

- "Resolution Notification Sender PSID"—identifies the PU or CP sending the resolution notification
- "Indicated Resource PSID"—identifies the resource whose problem has been resolved

In a Resolution major vector with only one instance of the Product Set ID, this instance is referred to both as the Resolution Notification Sender Product Set ID and as the Indicated Resource Product Set ID.

5. If the PU sending the Resolution major vector cannot provide a Date/Time (X'01') subvector, it places this subvector in the NMVT instead.
6. This subvector may be optionally included in order to correlate the Resolution major vector (reporting a resolved problem) with the Alert that originally reported the problem. The subvector provides the correlation via a unique token, the incident identifier. Note it is possible that the resolved problem originally appeared to be several problems, and thus caused a group of Alerts to be sent. In this case the incident identifier from each of the Alerts sent may be included in this subvector. If the incident identifiers do not fit within a single X'4A' subvector, then multiple X'4A' subvectors may be present.
7. Any or all of these subvectors may be present in a Resolution major vector, depending on the ability of the sender to relate the actual causes of the resolved problem.
8. This subvector is present in a Resolution major vector if and only if none of the X'94', X'95', and X'96' subvectors is present.
9. This subvector is present one or more times if the Resolution sender is including symptom strings related to the resolved problem. Multiple instances of the subvector are included if the sender has too much symptom string data to fit into one instance, but the distribution of subfields among the instances has no significance: the Alert receiver should treat the symptom string data as a single collection of subfields.

   Among all of the symptom string subfields in the Resolution major vector, one primary symptom string is required, zero or more secondary symptom strings may be present, and one product set ID index is required if any of the symptom string subfields uses a product-unique format.

Resolution MS Subvectors

Resolution Data (X'92') Resolution MS Subvector

This subvector transports information related to the resolution of an Alert condition in the form of code points that correspond to strings of text stored at the receiver of this flow.

Resolution Data (X'92') Resolution MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Resolution Data subvector
1		Key: X'92'
2		Resolution type: a hexadecimal value indicating the type of resolution that occurred: X'01' resolved due to service X'02' resolved due to permanent bypass X'03' resolved due to temporary bypass X'04' resolved (component permanently placed offline) X'05' resolved with no action X'06' incident closed, but problem still exists X'07' resolved for unknown reason X'08' resolved into duplicate incident
3–4		Resolution Description Code: A code point that provides an index to predefined text describing the condition that has been resolved. A receiver of this subvector has two options for selecting text to display. It can display the English text documented with each code point, or its national language equivalent; or, for a presentation to an operator of a lower skill level, it can choose the following simpler text (shown all capitalized), or its national language equivalent, based only on the first digit of the code point: X'1xxx' HARDWARE X'2xxx' SOFTWARE X'3xxx' COMMUNICATIONS X'4xxx' PERFORMANCE X'5xxx' CONGESTION X'6xxx' MICROCODE X'7xxx' OPERATOR X'8xxx' SPECIFICATION X'9xxx' INTERVENTION REQUIRED X'Bxxx' NOTIFICATION X'Cxxx' SECURITY X'Fxxx' UNDETERMINED Specific defined codes and the corresponding displayed text (shown all capitalized) are listed under the Alert Description Code field in the “Generic Alert Data (X'92') Alert MS Subvector” on page 4-26. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules).
5–6		Flags:
	0	Initiation indicator: 0 Resolution notification not directly initiated by an operator action. 1 Resolution notification initiated by an operator action.
	1	Held indicator: 0 Resolution notification was sent when the problem was resolved. 1 The problem was resolved earlier, but the resolution notification was not sent at that time because no session was available to send it on.
	2–3	Reserved
	4	SNMP Trap indicator: 0 Resolution notification was not built based on an SNMP Trap. 1 Resolution notification was built based on an SNMP Trap.
	5	OSI Systems Management Alarm indicator: 0 Resolution notification was not built based on an OSI Systems Management Alarm. 1 Resolution notification was built based on an OSI Systems Management Alarm.
	6	Reserved

Resolution Data (X'92') Resolution MS Subvector

Byte	Bit	Content
	7–15	Reserved

Actual Causes (X'93') Resolution MS Subvector

This subvector contains one or more code points denoting the actual causes of the resolved Alert condition. Correction of these causes resulted in the generation of the Resolution major vector. The actual causes are not reported as probabilities, therefore the order of the actual cause code points is not meaningful.

Actual Causes (X'93') Resolution MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Actual Causes subvector
1		Key: (X'93')
2–p		One or more two-byte actual cause code points. Each code point provides an index to predefined text denoting an actual cause which has been corrected. A receiver of this subvector has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point (not indented) above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are the same as those used in the Probable Causes (X'93') Alert MS Subvector, documented on page 4-46. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules).

Actual User Causes (X'94') Resolution MS Subvector

This subvector transports code points for stored text detailing the actual user causes of the resolved Alert condition, and the actual actions taken to correct these causes. It may also transport additional detailed data, to be inserted into the text indexed by the actual user cause and/or actual action code points.

Actual User Causes (X'94') Resolution MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Actual User Causes subvector
1		Key: X'94'
2–p		Two or more subfields containing actual user cause data, as described below for keys X'00'–X'7F' and in “Resolution (X'0002') Common Subfields” on page 4-225 for keys X'80'–X'FE'. X'01' Actual User Causes X'82' Detailed Data

Actual User Causes (X'94') Resolution MS Subvector

Byte	Bit	Content
		X'83' Product Set ID Index X'84' Resource List Index X'85' Detailed Data Extended X'86' Actual Actions *Note:* Subfields X'01' and X'86' are always present and the X'01' always precedes the X'86'. Depending on the code points present in the X'01' and X'86' subfields: • The X'83' and X'84' subfields may be present one or more times. • Either the X'82' or the X'85' subfield may be present one or more times. The X'82' and X'85' subfields are mutually exclusive within a subvector.

Actual User Causes (X'01') Actual User Causes Subfield

This subfield contains one or more code points denoting actual user causes of the resolved Alert condition. The actual user causes are not reported as probabilities, therefore the order of the actual user cause code points is not meaningful. An actual user cause is defined to be a condition that originally caused the (now resolved) Alert condition, and which was resolved by an operator without contacting any service organization.

Actual User Causes (X'01') Actual User Causes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Actual User Causes subfield
1		Key: X'01'
2–q		Two-byte actual user cause code points. Each code point provides an index to predefined text, describing the actual user cause, that is displayed at the focal point. A receiver of this subvector has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are the same as those used in the User Causes (X'94') Alert MS Subvector, documented on page 4-74. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). The expression “(detailed data qualifier)” in the English text indicates a variable-length gap, to be filled in with data passed in a Detailed Data (X'82') subfield or a Detailed Data Extended (X'85') subfield. The one or more necessary X'82' or X'85' subfields follow this subfield in the X'94' subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield. **Note:** The X'82' and X'85' subfields can *not* be both used in the same subvector.

Actual User Causes (X'01') Actual User Causes Subfield

Byte	Bit	Content
		The expression “(sf83 product text)” in the English text similarly indicates a variable-length gap, to be filled in with product identification data from the Product Identifier X'11' subvector indicated by a Product Set ID Index (X'83') subfield. The necessary X'83' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.
		The expression “(sf84 resource text)” in the English text indicates a variable-length gap, to be filled in with resource identification data from a location indicated by a Resource List Index (X'84') subfield. The necessary X'84' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.
		The third digit of each user cause code point indicates the number of succeeding detailed data qualifiers that are associated with the code point, and whether a X'83' or X'84' subfield is associated with it, as follows: X'xx0x'–X'xx9x': No detailed data qualifiers. X'xxAx'–X'xxBx': One detailed data qualifier. X'xxCx': Two detailed data qualifiers. X'xxDx': Three detailed data qualifiers. X'xxEx': One X'83' subfield. X'xxFx': One X'84' subfield.

Actual Install Causes (X'95') Resolution MS Subvector

This subvector transports code points for stored text detailing the actual install causes of the resolved Alert condition, and the actual actions taken to correct these causes. It may also transport additional detailed data, to be inserted into the text indexed by the actual install cause and/or actual action code points.

Actual Install Causes (X'95') Resolution MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Actual Install Causes subvector
1		Key: X'95'
2–p		Two or more subfields containing actual install cause data, as described below for keys X'00'–X'7F' and in “Resolution (X'0002') Common Subfields” on page 4-225 for keys X'80'–X'FE'. X'01' Actual Install Causes X'82' Detailed Data X'83' Product Set ID Index X'84' Resource List Index X'85' Detailed Data Extended

Actual Install Causes (X'95') Resolution MS Subvector

Byte	Bit	Content
		X'86' Actual Actions *Note:* Subfields X'01' and X'86' are always present and the X'01' always precedes the X'86'. Depending on the code points present in the X'01' and X'86' subfields: • The X'83' and X'84' subfields may be present one or more times. • Either the X'82' or the X'85' subfield may be present one or more times. The X'82' and X'85' subfields are mutually exclusive within a subvector.

Actual Install Causes (X'01') Actual Install Causes Subfield

This subfield contains one or more code points denoting actual install causes of the resolved Alert condition. The actual install causes are not reported as probabilities, therefore the order of the actual install cause code points is not meaningful. An actual install cause is defined to be a condition that originally caused the (now resolved) Alert condition and resulted from the initial installation or set-up of some equipment.

Actual Install Causes (X'01') Actual Install Causes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Actual Install Causes subfield
1		Key: X'01'
2–q		Two-byte actual install cause code points. Each code point provides an index to predefined text, describing the actual install cause, that is displayed at the focal point. A receiver of this subvector has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are the same as those used in the Install Causes (X'95') Alert MS Subvector, documented on page 4-88. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). The expression "(detailed data qualifier)" in the English text indicates a variable-length gap, to be filled in with data passed in a Detailed Data (X'82') subfield or a Detailed Data Extended (X'85') subfield. The one or more necessary X'82' or X'85' subfields follow this subfield in the X'95' subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield. **Note:** The X'82' and X'85' subfields can *not* be both used in the same subvector. The expression "(sf83 product text)" in the English text similarly indicates a variable-length gap, to be filled in with product identification data from the Product Identifier X'11' subvector indicated by a Product Set ID Index (X'83') subfield. The necessary X'83' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.

Actual Install Causes (X'01') Actual Install Causes Subfield

Byte	Bit	Content

The expression "(sf84 resource text)" in the English text indicates a variable-length gap, to be filled in with resource identification data from a location indicated by a Resource List Index (X'84') subfield. The necessary X'84' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield.

The third digit of each install cause code point indicates the number of succeeding detailed data qualifiers that are associated with the code point, and whether a X'83' or X'84' subfield is associated with it, as follows:

X'xx0x'–X'xx9x':	No detailed data qualifiers.
X'xxAx'–X'xxBx':	One detailed data qualifier.
X'xxCx':	Two detailed data qualifiers.
X'xxDx':	Three detailed data qualifiers.
X'xxEx':	One X'83' subfield.
X'xxFx':	One X'84' subfield.

Actual Failure Causes (X'96') Resolution MS Subvector

This subvector transports code points for stored text detailing the actual failure causes of the resolved Alert condition, and the actual actions taken to correct these causes. It may also transport additional detailed data, to be inserted into the text indexed by the actual failure cause and/or actual action code points.

Actual Failure Causes (X'96') Resolution MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Actual Failure Causes subvector
1		Key: X'96'
2–p		Two or more subfields containing actual failure cause data, as described below for keys X'00'–X'7F' and in "Resolution (X'0002') Common Subfields" on page 4-225 for keys X'80'–X'FE'. X'01' Actual Failure Causes X'82' Detailed Data X'83' Product Set ID Index X'84' Resource List Index X'85' Detailed Data Extended X'86' Actual Actions *Note:* Subfields X'01' and X'86' are always present and the X'01' always precedes the X'86'. Depending on the code points present in the X'01' and X'86' subfields: • The X'83' and X'84' subfields may be present one or more times. • Either the X'82' or the X'85' subfield may be present one or more times. The X'82' and X'85' subfields are mutually exclusive within a subvector.

Actual Failure Causes (X'01') Actual Failure Causes Subfield

This subfield contains one or more code points denoting actual failure causes of the resolved Alert condition. The actual failure causes are not reported as probabilities, therefore the order of the actual failure cause code points is not meaningful. An actual failure cause is defined to be a condition that originally caused the (now resolved) Alert condition and resulted from the failure of a resource.

Actual Failure Causes (X'01') Actual Failure Causes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Actual Failure Causes subfield
1		Key: X'01'
2–q		Two-byte actual failure cause code points. Each code point provides an index to predefined text, describing the actual failure cause, that is displayed at the focal point. A receiver of this subvector has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are the same as those used in the Failure Causes (X'96') Alert MS Subvector, documented on page 4-104. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). The expression “(detailed data qualifier)” in the English text indicates a variable-length gap, to be filled in with data passed in a Detailed Data (X'82') subfield or a Detailed Data Extended (X'85') subfield. The one or more necessary X'82' or X'85' subfields follow this subfield in the X'96' subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield. **Note:** The X'82' and X'85' subfields can *not* be both used in the same subvector. The expression “(sf83 product text)” in the English text similarly indicates a variable-length gap, to be filled in with product identification data from the Product Identifier X'11' subvector indicated by a Product Set ID Index (X'83') subfield. The necessary X'83' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield. The expression “(sf84 resource text)” in the English text indicates a variable-length gap, to be filled in with resource identification data from a location indicated by a Resource List Index (X'84') subfield. The necessary X'84' subfields follow the X'01' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'01' subfield. The third digit of each failure cause code point indicates the number of succeeding detailed data qualifiers that are associated with the code point, and whether a X'83' or X'84' subfield is associated with it, as follows: X'xx0x'–X'xx9x': No detailed data qualifiers. X'xxAx'–X'xxBx': One detailed data qualifier. X'xxCx': Two detailed data qualifiers. X'xxDx': Three detailed data qualifiers. X'xxEx': One X'83' subfield. X'xxFx': One X'84' subfield.

Actual Cause Undetermined (X'97') Resolution MS Subvector

This subvector transports code points for stored text detailing the actual actions taken to correct the (now resolved) Alert condition when no actual user, install, or failure causes of the Alert condition could be determined. It may also transport additional detailed data, to be inserted into the text indexed by the actual action code points.

Actual Cause Undetermined (X'97') Resolution MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Actual Cause Undetermined subvector
1		Key: X'97'
2–p		One or more subfields containing actual action data, as described in "Resolution (X'0002') Common Subfields." X'82' Detailed Data X'83' Product Set ID Index X'84' Resource List Index X'85' Detailed Data Extended X'86' Actual Actions *Note:* Subfield X'86' is always present. Depending on the code points present in the X'86' subfield: • The X'83' and X'84' subfields may be present one or more times. • Either the X'82' or the X'85' subfield may be present one or more times. The X'82' and X'85' subfields are mutually exclusive within a subvector.

Detailed Data (X'98') Resolution MS Subvector

This subvector transports product specific detailed data.

Note: The format of this subvector is identical to that of the Detailed Data (X'98') Alert MS Subvector (documented on page 4-148), except that the Product Set ID Indicator (in each subfield) set to 0 indicates the resolution notification sender PSID (instead of the Alert sender PSID).

Symptom String (X'99') Resolution MS Subvector

This subvector transports one or more symptom strings.

Note: The format of this subvector is identical to that of the Symptom String (X'99') Alert MS Subvector (documented on page 4-149), except that the Product Set ID Indicator (in the X'83' subfield) set to 0 indicates the resolution notification sender PSID (instead of the Alert sender PSID).

Resolution (X'0002') Common Subfields

The following table shows, by key value, the subfields common to subvectors that can occur within the Resolution major vector, and the subvectors in which each can occur.

Key	Subfield	Applicable Resolution Subvectors
X'82'	Detailed Data	Actual User Causes subvector, Actual Install Causes subvector, Actual Failure Causes subvector, Actual Cause Undetermined subvector, Detailed Data subvector
X'83'	Product Set ID Index	Actual User Causes subvector, Actual Install Causes subvector, Actual Failure Causes subvector, Actual Cause Undetermined subvector
X'84'	Resource List Index	Actual User Causes subvector, Actual Install Causes subvector, Actual Failure Causes subvector, Actual Cause Undetermined subvector
X'85'	Detailed Data Extended	Actual User Causes subvector, Actual Install Causes subvector, Actual Failure Causes subvector, Actual Cause Undetermined subvector, Detailed Data subvector
X'86'	Actual Actions	Actual User Causes subvector, Actual Install Causes subvector, Actual Failure Causes subvector, Actual Cause Undetermined subvector

Detailed Data (X'82') Resolution Common Subfield

This subfield contains product specific detailed data to be displayed at a resolution notification receiver. Since it provides additional function, the Detailed Data Extended (X'85') subfield should be used instead of the Detailed Data (X'82') subfield when possible.

Note: The format of this subfield is identical to that of the Detailed Data (X'82') Network Alert Common Subfield (documented on page 4-182), except that the Product Set ID Indicator set to 0 indicates the resolution notification sender PSID (instead of the Alert sender PSID).

Product Set ID Index (X'83') Resolution Common Subfield

This subfield contains a code point and a count that jointly specify a particular Product ID (X'11') subvector within a particular Product Set ID (X'10') subvector in the Resolution major vector.

Note: The format of this subfield is identical to that of the Product Set ID Index (X'83') Network Alert Common Subfield (documented on page 4-193), except that the Product Set ID Indicator set to 0 indicates the resolution notification sender PSID (instead of the Alert sender PSID).

Resource List Index (X'84') Resolution Common Subfield

This subfield contains data identifying a single resource within a resource list subvector in the Resolution major vector.

Note: The format of this subfield is identical to that of the Resource List Index (X'84') Network Alert Common Subfield, documented on page 4-194.

Detailed Data Extended (X'85') Resolution Common Subfield

This subfield contains product specific detailed data to be displayed at an resolution notification receiver. Since it provides additional function (namely additional Data ID encodings), the Detailed Data Extended (X'85') subfield should be used instead of the Detailed Data (X'82') subfield when possible.

Note: The format of this subfield is identical to that of the Detailed Data Extended (X'85') Network Alert Common Subfield (documented on page 4-194), except that the Product Set ID Indicator set to 0 indicates the resolution notification sender PSID (instead of the Alert sender PSID).

Actual Actions (X'86') Resolution Common Subfield

This subfield contains code points for stored text describing actions that were taken to rectify the Alert condition identified in the Resolution major vector.

Actual Actions (X'86') Resolution Common Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Actual Actions subfield
1		Key: X'86'
2–q		2-byte actual action code points. Each code point provides an index to predefined text, describing the action that occurred to resolve the incident, that is displayed at the Alert receiver. An Alert receiver has the option of displaying, for each code point it receives: either the text associated with that code point, or its national language equivalent; or the text associated with the default code point above it, or its national language equivalent. Specific defined codes and the corresponding displayed text (shown all capitalized) are listed below. Note that the codes are grouped by the high-order two hex digits; a low-order 2-digit value of X'00' represents a more general description than a non-X'00'; for this reason, the non-X'00' codes are shown indented, but any of the codes can be sent. The receiver displays the more general text (corresponding to X'**00' code points) if it does not recognize the more specific code point (e.g., because of different release schedules). The expression “(detailed data qualifier)” in the English text indicates a variable-length gap, to be filled in with data passed in a Detailed Data (X'82') subfield or a Detailed Data Extended (X'85') subfield. The one or more necessary X'82' or X'85' subfields follow this subfield in the enclosing subvector, in the order in which they are to be associated with the gaps specified in the X'86' subfield. **Note:** The X'82' and X'85' subfields can *not* be both used in the same subvector.

Actual Actions (X'86') Resolution Common Subfield

Byte	Bit	Content

The expression “(sf83 product text)” in the English text similarly indicates a variable-length gap, to be filled in with product identification data from the Product Identifier X'11' subvector indicated by a Product Set ID Index (X'83') subfield. The necessary X'83' subfields follow the X'86' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'86' subfield.

The expression “(sf84 resource text)” in the English text indicates a variable-length gap, to be filled in with resource identification data from a location indicated by a Resource List Index (X'84') subfield. The necessary X'84' subfields follow the X'86' subfield, in the same subvector, in the order in which they are to be associated with the gaps specified in the X'86' subfield.

The third digit of each actual action code point indicates the number of succeeding detailed data qualifiers that are associated with the code point, and whether a X'83' or X'84' subfield is associated with it, as follows:

X'xx0x'–X'xx9x':	No detailed data qualifiers.
X'xxAx'–X'xxBx':	One detailed data qualifier.
X'xxCx':	Two detailed data qualifiers.
X'xxDx':	Three detailed data qualifiers.
X'xxEx':	One X'83' subfield.
X'xxFx':	One X'84' subfield.

Defined codes are:

X'0000' AUTOMATIC HARDWARE RECOVERY SUCCESSFUL

A non-manual recovery procedure corrected the problem that was caused by a failing hardware or microcode component

X'1000' MANUAL HARDWARE RECOVERY SUCCESSFUL

A manual recovery procedure corrected the problem that was caused by a failing hardware component

- X'1001' FAILING COMPONENT REPLACED
- X'10D0' FAILING COMPONENT REPLACED BY (detailed data qualifier) (detailed data qualifier) (detailed data qualifier)
- X'10E0' MANUAL HARDWARE RECOVERY SUCCESSFUL FOR (sf83 product text)

X'2000' AUTOMATIC CONFIGURATION RECOVERY SUCCESSFUL

A non-manual recovery procedure corrected the problem that was caused by improper configuration of the failing component.

X'3000' MANUAL CONFIGURATION RECOVERY SUCCESSFUL

A manual recovery procedure corrected the problem that was caused by improper configuration of the failing component.

X'4000' AUTOMATIC SOFTWARE RECOVERY SUCCESSFUL

A non-manual recovery procedure corrected the problem that was caused by a failing software component

X'5000' MANUAL SOFTWARE RECOVERY SUCCESSFUL

A manual recovery procedure corrected the problem that was caused by a failing software component

Actual Actions (X'86') Resolution Common Subfield

Byte	Bit	Content	
		X'6000'	AUTOMATIC ENVIRONMENTAL RECOVERY SUCCESSFUL A non-manual recovery procedure corrected the problem that was caused by a factor external to the failing component that contributed to the failure.
		X'7000'	MANUAL ENVIRONMENTAL RECOVERY SUCCESSFUL A manual recovery procedure corrected the problem that was caused by a factor external to the failing component that contributed to the failure.
		X'7001'	VOLUME REORGANIZED OR SIZE INCREASED
		X'7002'	CONNECTIONS CLEARED
		X'7003'	THRESHOLD LEVEL RAISED
		X'7005'	LOGIN ENABLED
		X'7006'	ALERT RESOLVED DUE TO RESOURCE DETACH: The problem has been resolved by the deletion of a monitored resource.
		X'70A0'	(detailed data qualifier) VOLUME MOUNTED
		X'70E0'	ALERT RESOLVED DUE TO (detailed data qualifier) OPERATOR ACTION: The problem has been resolved by the named operator performing one of these actions: the monitor threshold or the exception destination was altered, resolution mode for the collection was turned off or stopped, or NPM was terminated.
		X'8000'	PROBLEM RECOVERY SUCCESSFUL
		X'8001'	NO ACTIONS WERE REQUIRED TO RESOLVE THE PROBLEM
		X'8002'	UNKNOWN ACTIONS RESOLVED THE PROBLEM
		X'8003'	NETWORK OPERATOR ACTIONS
		X'F000'	(no display): Additional message data
		X'F0A0'	FOR (detailed data qualifier)
		X'F0A1'	ACTIVATE RESOURCES ATTACHED TO (detailed data qualifier)
		X'F0A2'	REFER TO (detailed data qualifier) FOR ADDITIONAL INFORMATION
		X'F0DA'	AND (detailed data qualifier) (detailed data qualifier) (detailed data qualifier)
		X'FFFF'	Reserved

Request Trace (X'8010') MS Major Vector

SSCP → PU T4

This major vector transports a request for session information trace data or a request that a session information trace be enabled or disabled.

Request Trace (X'8010') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8010'
4–n		MS subvectors, as described (using zero-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Request Trace MS Subvectors” on page 4-231 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request Trace (X'8010') Major Vector	
	NMVT	Notes
SNA Address List (X'04')	CP	Note 1
*Modify SIR Control (X'81')	CP	Note 2
*Query SIR Data (X'83')	CP	Note 3
*Query Flow Control SIR Data (X'9B')	CP	Note 4

Key:

* Command Subvector (for PU parsing)
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. This subvector is present in the NMVT when modifying SIR control for a single session or for a specific NAU (when the X'01' or X'05' subfield of the X'81' subvector is present), or when requesting SIR data (when a X'83' subvector is present).
2. This subvector is present when an operator requests that the session information retrieval (SIR) function be enabled or disabled. If present, the X'83' subvector is not present.
3. This subvector is present when requesting session information. If present, the X'81' subvector is not present.
4. This subvector is present when requesting flow control information. If present, the X'81' and X'83'subvectors are not present.

Request Trace MS Subvectors

Modify SIR Control (X'81') Request Trace MS Subvector

This subvector enables or disables the tracing of session information through the node receiving this request.

Modify SIR Control (X'81') Request Trace MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Modify SIR Control subvector
1		Key: X'81'
2–p		One subfield containing SIR modification data (listed by Key value below and described in detail following): X'01' Single-Session Control X'02' Network-Interconnection Sessions Control X'03' BF Sessions Control X'04' All Sessions Control X'05' Specific-NAU Sessions Control

Single-Session Control (X'01') Modify SIR Control Subfield

This subfield enables or disables the SIR function for a single session through the node receiving this request.

Single-Session Control (X'01') Modify SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Single-Session Control subfield
1		Key: X'01'
2(=q)		Command type: X'01' enable SIR function for single session X'02' disable SIR function for single session

Network-Interconnection Sessions Control (X'02') Modify SIR Control Subfield

This subfield enables or disables the SIR function for all network-interconnected sessions through the node receiving this request.

Network-Interconnection Sessions Control (X'02') Modify SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Network-Interconnection Sessions Control subvector
1		Key: X'02'
2(=q)		Command type: X'01' enable SIR function for all network-interconnected sessions through the node receiving this request X'02' disable SIR function for all network-interconnected sessions through the node receiving this request

BF Sessions Control (X'03') Modify SIR Control Subfield

This subfield enables or disables the SIR function for all boundary function sessions through the node receiving this request.

BF Sessions Control (X'03') Modify SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the BF Sessions Control subfield
1		Key: X'03'
2(=q)		Command type: X'01' enable SIR function for all boundary function sessions through the node receiving this request X'02' disable SIR function for all boundary function sessions through the node receiving this request

All Sessions Control (X'04') Modify SIR Control Subfield

This subfield enables or disables the SIR function for all sessions (both network-interconnection and boundary function sessions) through the node receiving this request.

All Sessions Control (X'04') Modify SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the All Sessions Control subfield
1		Key: X'04'
2(=q)		Command type: X'01' enable SIR function for all sessions through the node receiving this request X'02' disable SIR function for all sessions through the node receiving this request

Specific-NAU Sessions Control (X'05') Modify SIR Control Subfield

This subfield enables or disables the SIR function for all sessions through a specified NAU.

Specific-NAU Sessions Control (X'05') Modify SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Specific-NAU Sessions Control subfield
1		Key: X'05'
2(=q)		Command type: X'01' enable SIR function for all sessions through a specified NAU. X'02' disable SIR function for all sessions through a specified NAU.

Query SIR Data (X'83') Request Trace MS Subvector

This subvector requests session-information data from the node receiving this request.

Query SIR Data (X'83') Request Trace MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'83'
2–p		One subfield containing query data (listed by Key value below and described in detail following): X'01' Single-Session

Single-Session (X'01') Query SIR Data Subfield

This subfield requests session-information data for a single session.

Single-Session (X'01') Query SIR Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1(=q)		Key: X'01'

Query Flow Control SIR Data (X'9B') Request Trace MS Subvector

This subvector requests flow control data from the node receiving this request.

Query Flow Control SIR Data (X'9B') Request Trace MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'9B'
2–p		One subfield containing query data (listed by Key value below and described in detail following): X'01' Single-Session by Address Pair

Single-Session (X'01') Query Flow Control SIR Data Subfield

This subfield requests flow control data for a single session based on a pair of addresses present in the SNA Address List (X'04') subvector.

Single-Session (X'01') Query Flow Control SIR Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1(=q)		Key: X'01'

Trace (X'0010') MS Major Vector

PU T4 → SSCP

This major vector transports session-information trace data. The information can be sent in reply to a Request Trace (X'8010') major vector, or on deactivation of a session with a trace started.

Trace (X'0010') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0010'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Trace MS Subvectors" on page 4-236 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Trace (X'0010') Major Vector	
	NMVT	Notes
Date/Time (X'01')	CP	Note 1
SNA Address List (X'04')	CP	Note 2
Relative Time (X'42')	CP	Note 3
Sense Data (X'7D')	CP	Note 4
Reply SIR Control (X'82')	CP	Note 5
SIR Common Data (X'84')	CP	Note 6
SIR Control Block Data (X'86')	CP(n)	Note 7
SIR Flow Control Data (X'9C')	CP	Note 8

Key:

CP Conditionally present one time (See Notes for conditions.)
CP(n) Conditionally present one time or more times (See Notes for conditions.)

Notes:

1. If the PU sending the X'0010' major vector has the capability of providing it, it places this subvector in the NMVT.
2. This subvector is present in the NMVT when acknowledging the execution of a previously sent SIR modify control command for a single session or for a specific NAU (when the X'01' or X'05' subfield of the X'82' subvector is present). It is also present when returning SIR data (when the X'84' subvector is present), either as the result of a request, or unsolicited as the result of a session deactivation while a SIR function was enabled.
3. If the PU sending the X'0010' major vector cannot provide a Date/Time subvector, it places this subvector in the NMVT instead.

4. This subvector is present when the PU sending the X'0010' major vector is unable to return session information requested in a X'8010' major vector and has elected to send sense data in a reply instead of a negative response.
5. This subvector is present when acknowledging a successful enable or disable request of the SIR function (X'81'subvector in a X'8010' major vector). If present, the X'84' and X'86' subvectors are not present.
6. This subvector is present in reply to a request for session information (X'83' subvector in a X'8010' major vector), or unsolicited as the result of a session deactivation while the SIR function was enabled. If present, the X'82' subvector is not present.
7. This subvector is present when there is control block data to transport (present once for each control block). If present, the X'84' subvector is also present, and the X'82' subvector is not present.
8. This subvector is present in reply to a request for flow control data (X'9B' subvector in a X'8010' major vector).

Trace MS Subvectors

Reply SIR Control (X'82') Trace MS Subvector

This subvector transports the acknowledgment of the execution of a previously sent Modify SIR Control request.

Reply SIR Control (X'82') Trace MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reply SIR Control subvector
1		Key: X'82'
2–p		One subfield containing SIR command acknowledgment data (listed by Key value below and described in detail following): X'01' Reply Single-Sessions Control X'02' Reply Network-Interconnection Sessions Control X'03' Reply BF Sessions Control X'04' Reply All Sessions Control X'05' Reply Specific-NAU Sessions Control

Reply Single-Session Control (X'01') Reply SIR Control Subfield

This subfield acknowledges the execution of a Modify SIR Command request for a single session through the node receiving the request.

Reply Single-Session Control (X'01') Reply SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Single-Session Control subfield
1		Key: X'01'

Reply Single-Session Control (X'01') Reply SIR Control Subfield

Byte	Bit	Content
2(=q)		Command type: X'01' SIR function has been enabled for a single session X'02' SIR function has been disabled for a single session

Reply Network-Interconnection Sessions Control (X'02') Reply SIR Control Subfield

This subfield acknowledges the execution of a Modify SIR Command request for all network-interconnection sessions through the node receiving the request.

Reply Network-Interconnection Sessions Control (X'02') Reply SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply Network-Interconnection Sessions Control subfield
1		Key: X'02'
2(=q)		Command type: X'01' SIR function has been enabled for all network-interconnection sessions X'02' SIR function has been disabled for all network-interconnection sessions

Reply BF Sessions Control (X'03') Reply SIR Control Subfield

This subfield acknowledges the execution of a Modify SIR Command request for all boundary function sessions through the node receiving the request.

Reply BF Sessions Control (X'03') Reply SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply BF Sessions Control subfield
1		Key: X'03'
2(=q)		Command type: X'01' SIR function has been enabled for all boundary function sessions X'02' SIR function has been disabled for all boundary function sessions

Reply All Sessions Control (X'04') Reply SIR Control Subfield

This subfield acknowledges the execution of a Modify SIR Command request for all sessions through the node receiving the request.

Reply All Sessions Control (X'04') Reply SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply All Sessions Control subfield
1		Key: X'04'
2(=q)		Command type: X'01' SIR function has been enabled for all sessions X'02' SIR function has been disabled for all sessions

Reply Specific-NAU Sessions Control (X'05') Reply SIR Control Subfield

This subfield acknowledges the execution of a Modify SIR Command request for all sessions for a specific NAU

Reply Specific-NAU Sessions Control (X'05') Reply SIR Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply Specific-NAU Sessions Control subfield
1		Key: X'05'
2(=q)		Command type: X'01' SIR function has been enabled for all sessions for a specific NAU X'02' SIR function has been disabled for all sessions for a specific NAU

SIR Common Data (X'84') Trace MS Subvector

This subvector transports data, common to the SIR control blocks, for a specific session.

SIR Common Data (X'84') Trace MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'84'
2–p		One subfield containing SIR common data (listed by Key value below and described in detail following): X'01' Sequence Numbers

Sequence Numbers (X'01') SIR Common Data subfield

This subfield transports PIU sequence numbers.

Sequence Numbers (X'01') SIR Common Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Sequence Numbers subfield
1		Key: X'01' *Note:* NAU2 is the address of the subarea LU residing in the node receiving the trace request. NAU1 is its session partner.
2–3		Sequence number of last PIU sent from NAU2 to NAU1
4–5		Sequence number of next-to-last PIU sent from NAU2 to NAU1
6–7		Sequence number of last PIU sent from NAU1 to NAU2
8–9		Sequence number of next-to-last PIU sent from NAU1 to NAU2
10(=q)		Flow indicator mask: a value of 0 indicates that the sequence number represents a normal-flow PIU; a value of 1 indicates that the sequence number represents an expedited-flow PIU
	0	Flow indicator of last PIU sent from NAU2 to NAU1
	1	Flow indicator of next-to-last PIU sent from NAU2 to NAU1
	2	Flow indicator of last PIU sent from NAU1 to NAU2
	3	Flow indicator of next-to-last PIU sent from NAU1 to NAU2
	4–7	Reserved

SIR Control Block Data (X'86') Trace MS Subvector

This subvector transports session control block data.

SIR Control Block Data (X'86') Trace MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the SIR Control Block Data subvector
1		Key: X'86'
2–p		One instance of each subfield containing control block data (listed by Key value below and described in detail following): X'01' Control Block Name X'02' Control Block Level X'03' Control Block Data

Control Block Name (X'01') SIR Control Block Data subfield

This subfield identifies the name of the control block whose data is in the Control Block Data (X'03') subfield (see below).

Control Block Name (X'01') SIR Control Block Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Control Block Name subfield
1		Key: X'01'

Control Block Name (X'01') SIR Control Block Data subfield

Byte	Bit	Content
2–q		Control block name: up to eight type-A symbol-string characters

Control Block Level (X'02') SIR Control Block Data subfield

This subfield identifies the level of changes made to the control block named in the Control Block Name (X'01') subfield.

Control Block Level (X'02') SIR Control Block Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Control Block Level subfield
1		Key: X'02'
2(=q)		Control block level, in binary

Control Block Data (X'03') SIR Control Block Data subfield

This subfield contains the data of the control block specified in the Control Block Name (X'01') subfield.

Control Block Data (X'03') SIR Control Block Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Control Block Data subfield
1		Key: X'03'
2–q		Control block data

SIR Flow Control Data (X'9C') Trace MS Subvector

This subvector transports SIR flow control data.

SIR Flow Control Data (X'9C') Trace MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'9C'

SIR Flow Control Data (X'9C') Trace MS Subvector

Byte	Bit	Content
2–p		One or more subfields containing flow control data (listed by Key value below and described in detail following): X'10' Primary Session Stage Most Recent PIUs X'11' Secondary Session Stage Most Recent PIUs X'30' Primary Session Stage Pacing Data X'31' Secondary Session Stage Pacing Data X'60' Network-qualifed PCID

Primary Session Stage Most Recent PIUs (X'10') SIR Flow Control Data subfield

This subfield transports the Response Header (RH) and Transmission Header (TH) of the last sent and last received PIUs on the primary session stage. This subfield is always present for intermediate nodes and the SLU endpoint and is not allowed for the PLU endpoint.

Primary Session Stage Most Recent PIUs (X'10') SIR Flow Control Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'10'
2–10		RH and TH of the last sent PIU
11–19		RH and TH of the last received PIU

Secondary Session Stage Most Recent PIUs (X'11') SIR Flow Control Data subfield

This subfield transports the Response Header (RH) and Transmission Header (TH) of the last sent and last received PIUs on the secondary session stage. This subfield is always present for intermediate nodes and the PLU endpoint and is not allowed for the SLU endpoint.

Secondary Session Stage Most Recent PIUs (X'11') SIR Flow Control Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'11'
2–10		RH and TH of the last sent PIU
11–19		RH and TH of the last received PIU

Primary Session Stage Pacing Data (X'30') SIR Flow Control Data subfield

This subfield transports the primary session stage pacing data. This subfield is always present for intermediate nodes and the SLU endpoint and is not allowed for the PLU endpoint.

Primary Session Stage Pacing Data (X'30') SIR Flow Control Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Primary Session Stage Pacing Data subfield
1		Key: X'30'
2–7		Last IPM sent with exception of acknowledgements
8–11		Pacing request sender data
8–9		Residual pacing count: number, in binary, of pacing requests remaining in the send window
10–11		Next send window size, in binary
12–15		Pacing request receiver data
12–13		Residual pacing count: number, in binary, of pacing requests remaining in the receive window
14–15		Next receive window size, in binary
16–17(=q)		Number, in binary, of messages in pacing queue

Secondary Session Stage Pacing Data (X'31') SIR Flow Control Data subfield

This subfield transports the secondary session stage pacing data. This subfield is always present for intermediate nodes and the PLU endpoint and is not allowed for the SLU endpoint.

Secondary Session Stage Pacing Data (X'31') SIR Flow Control Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Secondary Session Stage Pacing Data subfield
1		Key: X'31'
2–17(=q)		Same as bytes 2–17 of X'30' subfield

Fully-Qualified PCID (X'60') SIR Flow Control Data subfield

This subfield specifies the fully-qualified procedure correlation identifier used to uniquely identify a session. This subfield is always present.

Fully-Qualified PCID (X'60') SIR Flow Control Data subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Fully-Qualified PCID subfield
1		Key: X'60'
2–9		PCID
10		Length of network-qualified CP name (values 3 to 17 are valid)
11–q		Network-qualified CP name (network ID is not elided)

Request Modem LCS Diagnosis (X'8020') MS Major Vector

SSCP → PU T4

This major vector transports a request for IBM LPDA-2 modem link connection subsystem diagnostic information.

Request Modem LCS Diagnosis (X'8020') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8020'
4–n		MS subvectors, as described in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Request Modem LCS Diagnosis MS Subvectors" on page 4-245 for subvector keys X'80'–X'FE'. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request Modem LCS Diagnosis (X'8020') Major Vector	
	NMVT	Notes
SNA Address List (X'04')	P	
*Test Modem LCS (X'81')	P	

Key:

*	Command subvector (for PU parsing)
P	Present one time

Request Modem LCS Diagnosis MS Subvectors

Test Modem LCS (X'81') Request Modem LCS Diagnosis MS Subvector

This subvector transports the test request for a link connection with IBM LPDA-2 modems.

Test Modem LCS (X'81') Request Modem LCS Diagnosis MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Test Modem Link Connection Subsystem subvector
1		Key: X'81'
2–p		Two subfields containing test information (listed by key value below and described in detail following): X'01' Timeout Value X'02' Modem Test Command Data

Timeout Value (X'01') Test Modem LCS

This subfield transports a timeout value for a modem test.

Timeout Value (X'01') Test Modem LCS

Byte	Bit	Content
0		Length (q+1), in binary, of the Timeout Value subfield
1		Key: X'01'
2–3(=q)		Number of 100-millisecond increments, in binary, to elapse before the modem test is considered to have had no response

Modem Test Command Data (X'02') Test Modem LCS

This subfield transports modem test command data.

Modem Test Command Data (X'02') Test Modem LCS

Byte	Bit	Content
0		Length (q+1), in binary, of the Modem Test Command Data subfield
1		Key: X'02'
2–q		Modem test command data, in binary *Note:* For more detail, see Problem Determination Commands section in *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, SY33–2048.

Reply Modem LCS Diagnosis (X'0020') MS Major Vector

PU T4 → SSCP

This major vector transports LPDA-2 problem data solicited by the Request Modem LCS Diagnosis (X'8020') major vector.

Reply Modem LCS Diagnosis (X'0020') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0020'
4–n		MS subvectors, as described in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Reply Modem LCS Diagnosis (X'0020') Major Vector	
	NMVT	Notes
Date/Time (X'01')	CP	Note 1
SNA Address List (X'04')	P	
Relative Time (X'42')	CP	Note 2
LPDA-2 Link Connection Subsystem Data (X'50')	CP	Note 3
Link Connection Subsystem Configuration Data (X'52')	P	
Sense Data (X'7D')	CP	Note 4

Key:

P Present one time
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. If the PU sending the Reply Modem LCS Diagnosis has the capability of providing it, it places this subvector in the NMVT. See Note 2.
2. If the PU sending the Reply Modem LCS Diagnosis cannot provide Date/Time subvector, it places the Relative Time subvector in the NMVT instead.
3. Reply to the LPDA-2 Problem Determination Command (e.g., Modem and Line Status Command) targeted to an LPDA-2 link segment (for details, see *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, SY33-2048. If the LPDA-2 link segment could not return the LPDA-2 data the Sense Data subvector is present instead.
4. This subvector is present when the PU sending the X'0020' major vector is unable to perform the command requested in the X'8020' major vector.

Request PD Statistics (X'8025') MS Major Vector

SSCP → PU T4

This major vector transports a request for link connection subsystem data for problem management of links with IBM LPDA-1 modems.

Request PD Statistics (X'8025') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8025'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Request PD Statistics Subvectors” on page 4-248 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request PDSTATS (X'8025') Major Vector	
	NMVT	Notes
SNA Address List (X'04')	P	
*Request Link Connection Subsystem Data (X'95')	P	

Key:

*	Command Subvector (for PU parsing)
P	Present one time

Request PD Statistics Subvectors

Request Link Connection Subsystem Data (X'95') Request PD Statistics MS Subvector

This subvector requests that a link connection subsystem LPDA-1 test be performed and the results returned.

Request Link Connection Subsystem Data (X'95') Request PD Statistics MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Request Link Connection Subsystem Data subvector
1		Key: X'95'
2		Reserved
3(=p)		Data selection requested: X'02' link status command sequence; results in local and remote modem status and a local modem self test and remote modem tone test X'03' remote DTE interface status X'04' remote modem self test

PD Statistics (X'0025') MS Major Vector

PU T4 → SSCP

This major vector transports problem determination statistics (counters) or link connection subsystem data. This major vector can be sent when a data link traffic counter threshold is exceeded, as a result of a permanent error, or in reply to a Request PD Statistics (X'8025') major vector.

PD Statistics (X'0025') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0025'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “PD Statistics Subvectors” on page 4-252 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in PDSTATS (X'0025') Major Vector		
	NMVT	CP-MSU	Notes
Date/Time (X'01')	CP	P	Note 1
SNA Address List (X'04')	P	—	
Hierarchy/Resource List (X'05')	CP	CP	Note 2
Product Set ID (X'10')	P	P	
Relative Time (X'42')	CP	CP	Note 3
Data Reset Flag (X'45')	CP	CP	Note 4
LPDA-2 Link Connection Subsystem Data (X'50')	CP(2)	CP(2)	Note 5
Token-Ring LAN Link Connection Subsystem Data (X'51')	CP	CP	Note 6
Link Connection Subsystem Configuration Data (X'52')	CP	CP	Note 7
SDLC Link Station Counters (X'53')	CP	CP	Note 8
Binary Synchronous Link Station Counters (X'54')	CP	CP	Note 9
Additional SDLC Counters (X'56')	CP	CP	Note 10
LAN Physical Link Station Counters (X'57')	CP	CP	Note 11
LCS Product-Specific Hexadecimal Data (X'58')	O	O	
LCS Product-Specific EBCDIC Data (X'59')	O	O	
CSMA/CD Counters (X'5C')	CP	CP	Note 12
LAN Media Access Control Data (X'5D')	CP	CP	Note 13
Sense Data (X'7D')	CP(2)	CP(2)	Note 14
X.25 Counters (X'96')	CP	CP	Note 15
Link Connection Subsystem Data (X'98')	CP	CP	Note 16
Data Link Traffic Counters (X'9A')	CP	CP	Note 17

Key:

—	Not present
P	Present one time
CP	Conditionally present one time (See Notes for conditions.)
CP(2)	Conditionally present once or twice (see Notes for conditions.)
O	Optionally present one time

Notes:

1. If the PU sending the X'0025' major vector has the capability of providing it, this subvector is placed in the NMVT. If the PU did not provide it, the CP in whose domain the PU resides creates it. In either case it is always present in the CP-MSU.
2. This subvector is present in the NMVT when a link station error has occurred on an SDLC peripheral link.

3. If the PU sending the X'0025' major vector cannot provide a Date/Time subvector, it places this subvector in the NMVT instead. If the CP finds this subvector present in the NMVT, it transfers it to the CP-MSU.
4. This subvector is present when a set of counters has been reset. It is present if and only if the X'96' or X'9A' subvector is present.
5. One or two instances, each instance is the reply to the DCE and Line Status Command (e.g., Modem and Line Status Command) targeted to an LPDA-2 link segment (for details, see *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, Document number SY33–2048), order of instances is significant. If the LPDA-2 link segment could not return the LPDA-2 data the Sense Data is present instead, see Note 14.
6. This subvector is present when a Token-Ring (TR) LAN is part of the link for which the NMVT is sent and the node sending the PDSTATS is attached to the LAN. This subvector and the X'5D' subvector are not both present in the same major vector.
7. This subvector is present when a LAN or LPDA-2 modems are part of the link for which the NMVT is sent and, if LAN, the node sending the PDSTATS is attached to the LAN.
8. This subvector is present when either the SDLC protocol and IBM LPDA-2 modems or LAN LLC protocol are used for the link for which this NMVT is sent.
9. This subvector is present when the Binary Synchronous Data Link (BSC) protocol and IBM LPDA-2 modems are used for the link for which this NMVT is sent.
10. This subvector is present when the SDLC protocol and IBM LPDA-2 modems are used for the link for which this NMVT is sent.
11. This subvector is present when a LAN is part of the link for which the NMVT is sent and the node sending the PDSTATS is attached to the LAN.
12. This subvector is present when a CSMA/CD LAN segment is part of the link for which the NMVT is sent and the node sending the PDSTATS is attached to that LAN segment.
13. This subvector is present when a non-TR LAN segment is part of the link for which the NMVT is sent and the node sending the PDSTATS is attached to that LAN segment. This subvector and the X'51' subvector are not both present in the same major vector.
14. One or two instances, order of the instances is significant, of this subvector are present when the link connection contains one or two LPDA-2 segments respectively and they could not return the LPDA-2 data, see Note 9. This subvector is sent instead of the X'50' if the node sending the PDSTATS has the secondary station of the link for which the NMVT is sent.

    This subvector is also present once when a Request PD Statistics major vector could not be processed, or when requested data could not be gathered for a link with IBM LPDA-1 modems and the PU sending this major vector has elected to send sense data in a reply instead of a negative response.

    One instance of this subvector is used when the control point is unable to forward a X'8025' major vector.
15. This subvector is present when X.25 counters are sent unsolicited.

16. This subvector will be present either in reply to a Request PD Statistics (X'8025') major vector or when link connection subsystem data from a link with IBM LPDA-1 modems is sent unsolicited.
17. This subvector is present when BSC or SDLC data link traffic counter information is sent unsolicited for links with IBM LPDA-1 modems.

PD Statistics Subvectors

X.25 Counters (X'96') PD Statistics MS Subvector

This subvector transports X.25 counter data. The data is sent unsolicited when a traffic counter threshold is reached.

X.25 Counters (X'96') PD Statistics MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Request X.25 Counters subvector
1		Key: X'96'
2–3		Reserved
4		Counter sets: X'05' counter set 5 (for X.25 physical circuit) X'06' counter set 6 (for X.25 virtual circuit)
5–33		Data for Counter Set 5 (for X.25 physical circuit) *Note:* This data is sent only from the physical circuit at the primary end of an X.25 virtual circuit.
5–7		Counter validity mask
5		Mask byte 1 (bit is set to 1 if the counter is valid):
	0	Number of I-frames transmitted counter
	1	Number of I-frames received counter
	2	Number of RR frames transmitted counter
	3	Number of RR frames received counter
	4	Number of RNR frames transmitted counter
	5	Number of RNR frames received counter
	6	Number of REJ frames transmitted counter
	7	Number of REJ frames received counter
6		Mask byte 2 (bit is set to 1 if the counter is valid):
	0	Number of retransmissions counter
	1	Number of frames received with FCS errors counter
	2	Number of errors on receive side counter
	3	Number of overruns on receive side counter
	4	Number of underruns on transmit side counter
	5–7	Reserved
7		Reserved
8–9		Number of I-frames transmitted
10–11		Number of I-frames received
12–13		Number of RR frames transmitted
14–15		Number of RR frames received
16–17		Number of RNR frames transmitted
18–19		Number of RNR frames received

X.25 Counters (X'96') PD Statistics MS Subvector

Byte	Bit	Content
20–21		Number of REJ frames transmitted
22–23		Number of REJ frames received
24–25		Number of retransmissions
26–27		Number of frames received with FCS errors
28–29		Number of errors on receive side
30–31		Number of overruns on receive side
32–33		Number of underruns on transmit side *Note:* All counters are in binary.
5–35		Data for Counter Set 6 (for X.25 virtual circuit) *Note:* This data is sent only from the primary end of an X.25 virtual circuit.
5–7		Counter validity mask
5		Mask byte 1 (bit is set to 1 if the counter is valid):
	0	Number of I-packets transmitted counter
	1	Number of I-packets received counter
	2	Number of RR packets transmitted counter
	3	Number of RR packets received counter
	4	Number of RNR packets transmitted counter
	5	Number of RNR packets received counter
	6	Number of interrupt packets transmitted counter
	7	Number of interrupt packets received counter
6		Mask byte 2 (bit is set to 1 if the counter is valid):
	0	Number of connection requests counter
	1	Number of connections counter
	2	Number of reset indications counter
	3	Number of clear indications counter
	4	Number of data packets with D-bit transmitted counter
	5	Number of data packets with D-bit received counter
	6–7	Reserved
7		Reserved
8–9		Number of I-packets transmitted
10–11		Number of I-packets received
12–13		Number of RR packets transmitted
14–15		Number of RR packets received
16–17		Number of RNR packets transmitted
18–19		Number of RNR packets received
20–21		Number of interrupt packets transmitted
22–23		Number of interrupt packets received
24–25		Total number of connection requests (calls requested and incoming calls)
26–27		Total number of connections (calls connected and accepted)
28–29		Number of reset indications
30–31		Number of clear indications
32–33		Number of data packets with D-bit transmitted

X.25 Counters (X'96') PD Statistics MS Subvector

Byte	Bit	Content
34–35(=p)		Number of data packets with D-bit received *Note:* All counters are in binary.

Link Connection Subsystem Data (X'98') PD Statistics MS Subvector

This subvector transports LPDA-1 link connection subsystem data. The data can be sent in reply to a Request Link Connection Subsystem Data (X'95') subvector, or it can be sent unsolicited.

Link Connection Subsystem Data (X'98') PD Statistics MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Link Connection Subsystem Data subvector
1		Key: X'98'
2		Data selection (if this data is solicited, the data selection is echoed from the Request Link Connection Subsystem Data (X'95') subvector of the Request PD Statistics (X'8025') major vector): X'01' abbreviated link status command sequence; results in a local and remote modem status and receive dB level (may be sent unsolicited only) X'02' link status command sequence; results in a local and remote modem status, and receive dB level a local modem self test and remote modem tone test (may be sent either solicited or unsolicited) X'03' remote DTE interface status (may be sent only solicited) X'04' remote modem self test (may be sent only solicited)
3		Link connection subsystem type: X'01' IBM LPDA-1 modem link connection X'02' IBM LPDA-1 link diagnostic unit link connection
4		Link-level address used to address the remote modem
5		Reserved
6–7		Validity indicators, bits 0–9 (how the PU sending this RU views the data): *Note:* The values that follow are used in each of the validity indicator fields. 00 data valid, from the modem 01 data invalid, no response from the modem 10 data invalid, response in error from the modem 11 data invalid, execution not attempted by the PU sending this RU
	0–1	Remote modem status (reserved if byte 2 ≠ X'01' or X'02')
	2–3	Local modem status (reserved if byte 2 ≠ X'01' or X'02')
	4–5	Local modem self test (reserved if byte 2 ≠ X'02')
	6–7	Remote modem self test (reserved if byte 2 ≠ X'04')
	8–9	Remote DTE interface status (reserved if byte 2 ≠ X'03')
	10–15	Reserved

Link Connection Subsystem Data (X'98') PD Statistics MS Subvector

Byte	Bit	Content
8–9		Remote modem status (reserved if byte 2 ≠ X'01' or X'02'):
	0–5	Hit count (noise spikes) for link connection subsystem type 1, reserved for link connection subsystem type 2 *Note:* For bits 6–7 and 12–15, when the condition exists, the bit value is set to 1.
	6	Modem reinitialization was performed
	7	Loss of receive line signal
	8–11	Quadratic error value for link connection subsystem type 1, number of byte errors during test for link connection subsystem type 2
	12	Remote DTE power-off detected
	13	Data Terminal Ready loss detected
	14	Switched-Network-Back-Up connected
	15	DTE streaming condition detected
10		Remote modem receive dB level (reserved if byte 2 ≠ X'01' or X'02'): *Note:* All code points have been defined, representing dB units; throughout this chapter, 1 dB is identical to 1 dBm (dB milli-watt). X'00' function not supported X'01'–X'40' ignore data X'41' not available X'42'–X'4B' < -48 dB X'4C' -48 dB X'4D' -47 dB X'4E'–X'60' -46 dB to -28 dB X'61' -27 dB X'62'–X'6B' -26 dB to -17 dB X'6C' -16 dB X'6D'–X'75' -15 dB to - 7 dB X'76' - 6 dB X'77'–X'7D' - 5 dB to + 1 dB X'7E' + 2 dB X'7F' > + 2 dB X'80'–X'FF' ignore data
11–12		Local modem status (reserved if byte 2 ≠ X'01' or X'02'):
	0–5	Hit count (noise spikes) for link connection subsystem type 1, reserved for link connection subsystem type 2 *Note:* For bits 6–7 and 12–14, when the condition exists, the bit value is set to 1.
	6	Modem reinitialization was performed
	7	Loss of receive line signal
	8–11	Quadratic error value for link connection subsystem type 1, number of byte errors during test for link connection subsystem type 2
	12	Remote modem power loss detected
	13	Speed, for link connection subsystem type 1 (always set to 1 for link connection subsystem type 2): 0 half speed 1 full speed
	14	Switched-Network-Back-Up connected
	15	Reserved

Link Connection Subsystem Data (X'98') PD Statistics MS Subvector

Byte	Bit	Content
13		Local modem receive dB level (reserved if byte 2 ≠ X'01' or X'02'): *Note:* All code points have been defined, representing dB units. X'00' function not supported X'01'–X'40' ignore data X'41' not available X'42'–X'4B' < -48 dB X'4C' -48 dB X'4D' -47 dB X'4E'–X'60' -46 dB to -28 dB X'61' -27 dB X'62'–X'6B' -26 dB to -17 dB X'6C' -16 dB X'6D'–X'75' -15 dB to - 7 dB X'76' - 6 dB X'77'–X'7D' - 5 dB to + 1 dB X'7E' + 2 dB X'7F' > + 2 dB X'80'–X'FF' ignore data
14–16		Local modem self test and remote tone results (reserved if byte 2 ≠ X'02'):
	0–2	Model bits, concatenated to the right of the bit-string formed by bits 18, 19, 8, and 15 (in this order) represents the modem model returned as modem self-test result in the bit-string formed by bits 2 and 3 of byte 3, bits 0 and 7 of byte 2, and bits 0, 1, and 2 of byte 1 (in this order), see “LPDA-1 Results Message Information Fields” in *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, SY33-2048.
	3	Link connection type: 0 nonswitched 1 switched
	4	Configuration: 0 point to point 1 multipoint
	5	Modem role: 0 primary or control modem 1 secondary or tributary modem
	6	Clear To Send delay for link connection subsystem type 1 (reserved for link connection subsystem type 2): 0 normal 1 exceptional
	7	Received line signal detector sensitivity for link connection subsystem type 1 (reserved for link connection subsystem type 2): 0 high sensitivity 1 low sensitivity
	8	Model bit, see bits 0–2 specification
	9	Local modem self-test result: 0 passed 1 failed
	10	Remote tone test result: 0 passed 1 failed *Note:* For the following bits, when the condition exists, the bit value is set to 1.
	11	Feature card suspected in error
	12	Receiver card suspected in error for link connection subsystem type 1 (reserved for link connection subsystem type 2)
	13	Receiver card extension suspected in error for link connection subsystem type 1 (reserved for link connection subsystem type 2)

Link Connection Subsystem Data (X'98') PD Statistics MS Subvector

Byte	Bit	Content
	14	Front end card is suspected in error for link connection subsystem type 1 (reserved for link connection subsystem type 2)
	15	Model bit, see bits 0–2 specification
	16	Feature card installed (test alarm card installed if nonswitched link connection; integral protection coupler installed if switched link connection)
	17	Switched-Network-Back-Up feature installed
	18	Model bit, see bits 0–2 specification; also if its value is 1, data multiplexing feature installed
	19	Model bit, see bits 0–2 specification; also if its value is 1, fan-out feature installed
	20–23	LPDA microcode level, in binary
17–19		Remote modem self test results (reserved if byte 2 ≠ X'04'):
	0–2	Model bits, concatenated to the right of the bit-string formed by bits 18, 19, 8, and 15 (in this order) represents the modem model returned as modem self-test result in the bit-string formed by bits 2 and 3 of byte 3, bits 0 and 7 of byte 2, and bits 0, 1, and 2 of byte 1 (in this order), see "LPDA-1 Results Message Information Fields" in *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, SY33-2048.
	3	Link connection type: 0 nonswitched 1 switched
	4	Configuration: 0 point to point 1 multipoint
	5	Modem role: 0 primary or control modem 1 secondary or tributary modem
	6	Clear To Send delay for link connection subsystem type 1 (reserved for link connection subsystem type 2): 0 normal 1 exceptional
	7	Received line signal detector sensitivity for link connection subsystem type 1 (reserved for link connection subsystem type 2): 0 high sensitivity 1 low sensitivity
	8	Model bit, see bits 0–2 specification
	9	Remote modem self-test result: 0 passed 1 failed
	10	Reserved *Note:* For the following bits, when the condition exists, the bit value is set to 1.
	11	Feature card suspected in error
	12	Receiver card suspected in error for link connection subsystem type 1 (reserved for link connection subsystem type 2)
	13	Receiver card extension suspected in error for link connection subsystem type 1 (reserved for link connection subsystem type 2)
	14	Front end card is suspected in error for link connection subsystem type 1 (reserved for link connection subsystem type 2)
	15	Model bit, see bits 0–2 specification
	16	Feature card installed (test alarm card installed if nonswitched connection; integral protection coupler installed if switched link connection)
	17	Switched-Network-Back-Up installed
	18	Model bit, see bits 0–2 specification; also if its value is 1, then data multiplexing feature installed
	19	Model bit, see bits 0–2 specification; also if its value is 1, then fan-out feature installed
	20–23	LPDA microcode level, in binary
20–22		Remote DTE Interface Status (reserved if byte 2 ≠ X'03')

Link Connection Subsystem Data (X'98') PD Statistics MS Subvector

Byte	Bit	Content
20		Current state of the RS-232C or V.24 leads: *Note:* For bits 0–5 and 7, when the condition exists, the bit value is set to 1.
	0	Request To Send
	1	Clear To Send
	2	Reserved
	3	Transmit Data
	4	Reserved
	5	Data Terminal Ready
	6	Speed: 0 half 1 full
	7	DTE power loss
21		Indication of transition of RS-232C or V.24 leads since last test occurrence *Note:* For the following bits, when the condition exists, the bit value is set to 1.
	0	Request To Send changed at least once
	1	Clear To Send changed at least once
	2	Received Data changed state
	3	Transmit Data changed state
	4	Received Line Signal loss was detected at least once
	5	Data Terminal Ready dropped at least once
	6	Modem speed was changed at least once
	7	DTE power loss was detected at least once
22		Remote DTE Interface Extension *Note:* The value of this byte is X'01' if and only if the modems are Limited Distance Modems (LDM); otherwise, the value of this byte ix X'00'.
23–25		Data multiplexing status
23		Data multiplexing and tailing flags: *Note:* For the following bits, when the condition exists, the bit value is set to 1.
	0	This data is associated with a data multiplexing modem
	1	This data is associated with a tailed link of a data multiplexing modem
	2	This data is associated with channel A of a data multiplexing modem
	3–7	Reserved
24–25(=p)		Channelization (port-to-modem) correlation number: a user-assigned type-G symbol-string value used to correlate link connections with a data multiplexing modem. The same value is assigned to each of the link connections of a data multiplexing modem so that those link connections can be associated with that particular modem.

Data Link Traffic Counters (X'9A') PD Statistics MS Subvector

This subvector transports the data link control type and data link traffic counter data.

Data Link Traffic Counters (X'9A') PD Statistics MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Data Link Traffic Counters subvector
1		Key: X'9A'
2		Data link control type: X'01' start-stop X'02' BSC X'03' SDLC
3–15		Data Link Traffic Counter Information
3		Mask byte 1 (bit is set to a 1 if the counter is valid):
	0	Transmit data counter
	1	Poll counter (set to 0 for start-stop, BSC)
	2	Transmit temporary error counter
	3	Receive data counter
	4	Receive temporary error counter
	5–7	Reserved
4–5		Reserved
6–7		Transmit data counter
8–9		Poll counter (valid only for SDLC)
10–11		Transmit temporary error counter
12–13		Receive data counter
14–15(=p)		Receive temporary error counter *Note:* All counters are in binary.

Request Change Control (X'8050') MS Major Vector

LU → LU

This major vector is used to request that a change control function be performed.

Request Change Control (X'8050') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8050'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Request Change Control MS Subvectors" on page 4-261 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request Change Control (X'8050') Major Vector	
	CP-MSU	**Notes**
Execution Window Timing (X'0B')	O	
Install (X'81')	CP	Note 1
Remove (X'83')	CP	Note 2
Accept (X'85')	CP	Note 3
Corequisite Change (X'87')	O(n)	Note 4

Key:

CP	Conditionally present one time (See notes for conditions.)
O	Optionally present one time
O(n)	Optionally present one or more times

Notes:

1. This subvector is used to install changes. If this subvector is present, the X'83' and X'85' subvectors are not present.
2. This subvector is used to remove changes. If this subvector is present, the X'81' and X'85' subvectors are not present.
3. This subvector is used to accept changes. If this subvector is present, the X'81' and X'83' subvectors are not present.
4. This subvector is used to name a corequisite change. It is optionally present one to six times, but if present, the X'81' subvector must be present.

Request Change Control MS Subvectors

Install (X'81') Request Change Control MS Subvector

The Install subvector requests that a change be installed, and carries relevant parameters.

Install (X'81') Request Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Install subvector
1		Key: X'81'
2–p		One or more subfields (listed by Key value below and described in detail following): X'20' Removability X'30' Activation Use X'40' Pre-Test X'50' Automatic Removal X'60' Post-Test X'70' Automatic Acceptance X'80' Alter Active Components X'90' Change Object Disposition

Removability (X'20') Install Subfield

This subfield indicates the type of removability requested. It is present once. If the Activation Use (X'30') Install subfield specifies Trial (X'10'), then Removability Yes (X'10') must be specified in this subfield.

Removability (X'20') Install Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Removability subfield
1		Key: X'20'
2(=q)		Removability: X'10' Yes X'20' Desired X'30' No

Activation Use (X'30') Install Subfield

This subfield indicates which type of activation will cause components altered by this change to be used. It is present once.

Activation Use (X'30') Install Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Activation Use subfield
1		Key: X'30'
2(=q)		Activation Use: X'10' Trial - the altered components are used during trial activation (only), instead of production versions X'20' Production - the altered components are used during any activation unless superseded by trial versions

Pre-Test (X'40') Install Subfield

This subfield indicates the type of pre-test requested. It is present once.

Pre-Test (X'40') Install Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Pre-Test subfield
1		Key: X'40'
2(=q)		Pre-Test: X'10' Yes X'20' Desired X'30' No

Automatic Removal (X'50') Install Subfield

This subfield indicates the type of automatic removal requested. It is present once, unless removability is prohibited.

Automatic Removal (X'50') Install Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Automatic Removal subfield
1		Key: X'50'
2(=q)		Automatic Removal: X'10' Yes X'20' Desired X'30' No

Post-Test (X'60') Install Subfield

This subfield indicates the type of post-test requested. It is present once.

Post-Test (X'60') Install Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Post-Test subfield
1		Key: X'60'
2(=q)		Post-Test: X'10' Yes X'20' Desired X'30' No

Automatic Acceptance (X'70') Install Subfield

This subfield indicates the type of automatic acceptance requested. It is present once, unless removability is prohibited.

Automatic Acceptance (X'70') Install Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Automatic Acceptance subfield
1		Key: X'70'
2		Automatic Acceptance X'10' Yes X'20' Desired X'30' No
3(=q)		Delay: optional binary number of days to wait before automatically accepting. If a 0 value is specified or if Delay is absent (2=q), immediate action is requested.

Alter Active Components (X'80') Install Subfield

This subfield indicates whether the target node is allowed to apply the installed changes to the components in the active system or if a subsequent activation is required to effect the installed changes in the active system. It is optionally present once, unless the target node is known not to support this subfield. When absent, the target node is allowed to alter active components unless activation use of trial is specified. Alteration of active components is never allowed when trial activation use is indicated.

Alter Active Components (X'80') Install Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Alter Active Components subfield
1		Key: X'80'
2(=q)		Alter Active Components X'20' Allowed X'30' No

Change Object Disposition (X'90') Install Subfield

This subfield indicates whether the target node should keep or delete the change object after it has been successfully installed. If installation fails, this subfield has no effect on the disposition of the change object. It is optionally present once, unless the target node is known not to support this subfield. When absent, determination of the change object's disposition is deferred to the target node.

Change Object Disposition (X'90') Install Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Change Object Disposition subfield
1		Key: X'90'
2(=q)		Change Object Disposition X'10' Keep X'30' Delete

Remove (X'83') Request Change Control MS Subvector

The Remove subvector requests that a change be removed, and carries relevant parameters.

Remove (X'83') Request Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Remove subvector
1		Key: X'83'
2–p		One subfield (listed by Key value below and described in detail following): X'60' Post-Test X'80' Alter Active Components

Post-Test (X'60') Remove Subfield

This subfield indicates the type of post-test requested. It is present once.

Post-Test (X'60') Remove Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Post-Test subfield
1		Key: X'60'
2(=q)		Post-Test: X'10' Yes X'20' Desired X'30' No

Alter Active Components (X'80') Remove Subfield

This subfield indicates whether the target node is allowed to apply the restored components to the active system or if a subsequent activation is required to effect the restored components in the active system. It is optionally present once, unless the target node is known not to support this subfield. When absent, the target node is allowed to alter active components.

Alter Active Components (X'80') Remove Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Alter Active Components subfield
1		Key: X'80'
2(=q)		Alter Active Components: X'20' Allowed X'30' No

Accept (X'85') Request Change Control MS Subvector

The Accept subvector requests that resources necessary to maintain removability of a change be relinquished (immediately).

Accept (X'85') Request Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Accept subvector
1(=p)		Key: X'85'

Corequisite Change (X'87') Request Change Control MS Subvector

This subvector identifies the SNA/File Services file name of a corequisite change (a change that must be handled as part of the same process as that required to handle the change file identified in the server object).

Corequisite Change (X'87') Request Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Corequisite Change subvector
1		Key: X'87'
2–p		An SNA/File Services file name, as defined by SNA/File Services within the registered GDS variable X'1538' (does not include the LLID for Data Object Identifier or the encapsulating LT for Token String, starts with the LT for First Identifier)

Change Control (X'0050') MS Major Vector

LU → LU

This major vector is used to return the results of a change that was requested by a focal point in a Request Change Control (X'8050') major vector, or to report locally requested changes to a focal point in an unsolicited manner.

Change Control (X'0050') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0050'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Change Control MS Subvectors" on page 4-269 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Change Control (X'0050') Major Vector	
	CP-MSU	**Notes**
Date/Time (X'01')	P	
Reporting Installation (X'82')	CP	Note 1
Reporting Removal (X'84')	CP	Note 2
Reporting Acceptance (X'86')	CP	Note 3
Reported Change Name (X'88')	CP(n)	Note 4
Reporting Secondary Installation (X'8A')	CP	Note 5
Secondary Installation Change Name (X'8C')	CP(n)	Note 6
Reporting Back-Level (X'8E')	CP	Note 7
Back-Level Change Name (X'90')	CP(n)	Note 8
Reporting Deletion (X'92')	CP	Note 9
Deleted Change Name (X'94')	CP(n)	Note 10
Change Object Class (X'96')	CP	Note 11
Detailed Data (X'98')	O(n)	Note 12

Key:

P	Present one time
CP	Conditionally present one time
CP(n)	Conditionally present more than one time (See notes for conditions.)
O(n)	Optionally present more than one time

Notes:

1. This subvector is used to report installation of changes. If this subvector is present, the X'84' and X'86' subvectors are not present.

2. This subvector is used to report removal of changes. If this subvector is present, the X'82' and X'86' subvectors are not present.
3. This subvector is used to report that a change was accepted. If this subvector is present, the X'82' and X'84' subvectors are not present.
4. This subvector is present unless the X'82', X'84' or X'86' subvector (one of which is always present) indicates a status of not attempted or will attempt. An instance of this subvector is present for each change referred to in the request and for each of its corequisites (note that corequisites may be defined on an install request or by the change object itself).
5. This subvector is present if a change neither referred to in the request nor one of its corequisites was installed as part of the operation being reported. If it is present, then one or more Secondary Installation Change Name (X'8C') subvectors are present.
6. This subvector is conditionally present one or more times. An instance of this subvector is present for each change not referred to in the request, but installed as part of the operation being reported. The number of instances allowed is only limited by the maximum CP-MSU size supported by the MU in which it flows (e.g. 32767, in the case of an SNA/Distribution Services MU).
7. This subvector is present if a change not referred to in the request nor one of its corequisites was put into back-level state as part of the operation being reported. If it is present, then one or more Back-Level Change Name (X'90') subvectors are present.
8. This subvector is conditionally present one or more times. An instance of this subvector is present for each change not referred to in the request, but put into back-level state as part of the operation being reported. The number of instances allowed is only limited by the maximum CP-MSU size supported by the MU in which it flows (e.g. 32767, in the case of an SNA/Distribution Services MU).
9. This subvector is present if a change not referred to in the request nor one of its corequisites was deleted as part of the operation being reported. If it is present, then one or more Deleted Change Name (X'94') subvectors are present.
10. This subvector is conditionally present one An instance of this subvector is present for each change not referred to in the request, but deleted as part of the operation being reported. The number of instances allowed is only limited by the maximum CP-MSU size supported by the MU in which it flows (e.g. 32767, in the case of an SNA/Distribution Services MU).
11. This subvector is present if the SNA/File Services name in any Reported Change Name (X'88') subvector has a value other than “MCODE” or “MCUST” as its first token.
12. This subvector may be optionally included up to a total of 255 times to report unique product errors.

Change Control MS Subvectors

Reporting Installation (X'82') Change Control MS Subvector

The Reporting Installation subvector reports the results of an Install request.

Reporting Installation (X'82') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Installation subvector
1		Key: X'82'
2–p		One or more subfields (listed by Key value below and described in detail following): X'10' Installation Status X'20' Removability Status X'30' Activation Use Status X'40' Pre-Test Status X'50' Automatic Removal Status X'60' Post-Test Status X'70' Automatic Acceptance Status

Installation Status (X'10') Reporting Installation Subfield

This subfield reports the results of an install. It is always present once.

Installation Status (X'10') Reporting Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Installation Status subfield
1		Key: X'10'
2		Status: X'10' Successful X'20' Attempted, but not successful -- recovery to previous state was effected X'28' Attempted, but not successful -- recovery to previous state was not effected X'30' Not attempted and will not attempt X'40' Will attempt
3(=q)		When effective: X'10' Changed components are now in use X'20' Components are changed, but activation is required X'30' Not applicable (because install not attempted)

Removability Status (X'20') Reporting Installation Subfield

This subfield reports the removability status. It is present once.

Removability Status (X'20') Reporting Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Removability Status subfield
1		Key: X'20'
2(=q)		Status: X'10' Installed removably X'20' Installed, but not removably X'30' Not installed

Activation Use Status (X'30') Reporting Installation Subfield

This subfield indicates which type of activation will cause components altered by this change to be used. It is present once.

Activation Use Status (X'30') Reporting Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Activation Use subfield
1		Key: X'30'
2(=q)		Activation use: X'10' Trial X'20' Production X'30' Installation was unsuccessful

Pre-Test Status (X'40') Reporting Installation Subfield

This subfield reports the results of a pre-test. It is present once if a pre-test was required or desired.

Pre-Test Status (X'40') Reporting Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Pre-Test Status subfield
1		Key: X'40'
2(=q)		Status: X'10' Successful X'20' Not successful X'30' Not attempted

Automatic Removal Status (X'50') Reporting Installation Subfield

This subfield reports the results of an automatic removal. It is present once if automatic removal was required or desired.

Automatic Removal Status (X'50') Reporting Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Automatic Removal Status subfield
1		Key: X'50'
2		Status: X'10' Successful X'20' Attempted, but not successful -- recovery to previous state was effected X'28' Attempted, but not successful -- recovery to previous state was not effected X'30' Not attempted
3(=q)		When effective: X'10' Changed components are now in use X'20' Components are changed, but activation is required X'30' Not applicable (because automatic removal was not attempted)

Post-Test Status (X'60') Reporting Installation Subfield

This subfield reports the results of a post-test. It is present once if a post-test was required or desired.

Post-Test Status (X'60') Reporting Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Post-Test Status subfield
1		Key: X'60'
2(=q)		Status: X'10' Successful X'20' Not successful X'30' Not attempted

Automatic Acceptance Status (X'70') Reporting Installation Subfield

This subfield reports the results of an automatic acceptance. It is present once if automatic acceptance was required or desired.

Automatic Acceptance Status (X'70') Reporting Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Automatic Acceptance Status subfield
1		Key: X'70'
2(=q)		Status: X'10' Successful X'20' Not successful X'30' Not attempted and will not attempt X'40' Will attempt at the end of the delay specified

Reporting Removal (X'84') Change Control MS Subvector

The Reporting Removal subvector reports the results of a Remove request.

Reporting Removal (X'84') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Removal subvector
1		Key: X'84'
2–p		One or more subfields (listed by Key value below and described in detail following): X'10' Removal Status X'60' Post-Test Status

Removal Status (X'10') Reporting Removal Subfield

This subfield reports the results of the removal. It is always present once.

Removal Status (X'10') Reporting Removal Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Removal Status subfield
1		Key: X'10'
2		Status: X'10' Successful X'20' Attempted, but not successful -- recovery to previous state was effected X'28' Attempted, but not successful -- recovery to previous state was not effected X'30' Not attempted and will not attempt X'40' Will attempt
3(=q)		When effective: X'10' Changed components are now in use X'20' Components are changed, but activation is required X'30' Not applicable (because remove not attempted)

Post-Test Status (X'60') Reporting Removal Subfield

This subfield reports the results of a post-test. It is present once if a post-test was required or desired.

Post-Test Status (X'60') Reporting Removal Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Post-Test Status subfield
1		Key: X'60'
2(=q)		Status: X'10' Successful X'20' Not successful X'30' Not attempted

Reporting Acceptance (X'86') Change Control MS Subvector

This subvector reports the results of an Accept request.

Reporting Acceptance (X'86') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Acceptance subvector
1		Key: X'86'
2–p		One subfield (listed by Key value below and described in detail following): X'10' Accept Status

Accept Status (X'10') Reporting Acceptance Subfield

This subfield reports the results of an accept. It is always present once.

Accept Status (X'10') Reporting Acceptance Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Accept Status subfield
1		Key: X'10'
2(=q)		Status: X'10' Successful X'20' Attempted, but not successful X'30' Not attempted and will not attempt X'40' Will attempt

Reported Change Name (X'88') Change Control MS Subvector

This subvector identifies the SNA/File Services file name of the change file that is being reported on.

Reported Change Name (X'88') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reported Change Name subvector
1		Key: X'88'
2–p		An SNA/File Services file name, as defined by SNA/File Services within the Data Object Global Name (X'1538') GDS variable (does not include the LLID for Data Object Identifier or the encapsulating LT for Token String, starts with the LT for First Identifier)

Reporting Secondary Installation (X'8A') Change Control MS Subvector

The Reporting Secondary Installation subvector reports installation of a change that resulted from a request referring to a different change.

Reporting Secondary Installation (X'8A') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Secondary Installation subvector
1		Key: X'8A'
2–p		One or more subfields (listed by Key value below and described in detail following): X'10' Installation Status X'30' Activation Use Status

Installation Status (X'10') Reporting Secondary Installation Subfield

This subfield reports the results of an install. It is always present once.

Installation Status (X'10') Reporting Secondary Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Installation Status subfield
1		Key: X'10'
2		Status: X'10' Successful
3(=q)		When effective: X'10' Changed components are now in use X'20' Components are changed, but activation is required

Activation Use Status (X'30') Reporting Secondary Installation Subfield

This subfield indicates which type of activation will cause components altered by this change to be used. It is always present once.

Activation Use Status (X'30') Reporting Secondary Installation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Activation Use subfield
1		Key: X'30'
2(=q)		Activation Use: X'10' Trial X'20' Production

Secondary Installation Change Name (X'8C') Change Control MS Subvector

This subvector identifies the SNA/File Services file name of the change file that is being reported on.

Secondary Installation Change Name (X'8C') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Secondary Installation Change Name subvector
1		Key: X'8C'
2–p		An SNA/File Services file name, as defined by SNA/File Services within the Data Object Global Name (X'1538') GDS variable (does not include the LLID for Data Object Identifier or the encapsulating LT for Token String, starts with the LT for First Identifier)

Reporting Back-Level (X'8E') Change Control MS Subvector

The Reporting Back-Level subvector reports that a change was put in back-level state as the result of a request referring to a different change.

Reporting Back-Level (X'8E') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Back-Level subvector
1		Key: X'8E'
2–p		One subfield (listed by Key value below and described in detail following): X'10' Back-Level

Back-Level (X'10') Reporting Back-Level Subfield

This subfield reports the back-level. It is always present once.

Back-Level (X'10') Reporting Back-Level Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Back-Level subfield
1(=q)		Key: X'10'

Back-Level Change Name (X'90') Change Control MS Subvector

This subvector identifies the SNA/File Services file name of the change file that is being reported on.

Back-Level Change Name (X'90') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Back-Level Change Name subvector
1		Key: X'90'
2–p		An SNA/File Services file name, as defined by SNA/File Services within the Data Object Global Name (X'1538') GDS variable (does not include the LLID for Data Object Identifier or the encapsulating LT for Token String, starts with the LT for First Identifier)

Reporting Deletion (X'92') Change Control MS Subvector

The Reporting Deletion subvector reports that a change was deleted as the result of a request referring to a different change.

Reporting Deletion (X'92') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Deletion subvector
1		Key: X'92'
2–p		One subfield (listed by Key value below and described in detail following): X'10' Deletion

Deletion (X'10') Reporting Deletion Subfield

This subfield reports the deletion. It is always present once.

Deletion (X'10') Reporting Deletion Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Deletion subfield
1(=q)		Key: X'10'

Deleted Change Name (X'94') Change Control MS Subvector

This subvector identifies the SNA/File Services file name of the change file that is being reported on.

Deleted Change Name (X'94') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Deleted Change Name subvector
1		Key: X'94'
2–p		An SNA/File Services file name, as defined by SNA/File Services within the Data Object Global Name (X'1538') GDS variable (does not include the LLID for Data Object Identifier or the encapsulating LT for Token String, starts with the LT for First Identifier)

Change Object Class (X'96') Change Control MS Subvector

This subvector identifies the SNA/File Services class of the change objects being reported on. It applies to reports on change objects identified in the Reported Change Name (X'88') and any secondary effects (X'8C', X'90', X'94') subvectors.

Change Object Class (X'96') Change Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Change Object Class subvector
1		Key: X'96'
2–5(=p)		An SNA/File Services data object class, as defined by SNA/File Services within the Data Object Attributes (X'1537') GDS variable (does not include the LLID for Data Object Acceptance or the encapsulating LT for Data Object Class)

Detailed Data (X'98') Change Control MS Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector on page 4-148.

Execute Command (X'8061') MS Major Vector

SSCP → PU, CP → CP

This major vector requests that the message associated with it be interpreted and executed as a command.

Execute Command (X'8061') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8061'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00' - X'7F'. When the Self Defining Text Message (X'31') subvector is not present in this MS major vector, this MS major vector is followed by one of the following management services parameter major vectors: X'1300' Text Data X'1307' Structured Data X'1309' Transparent Coded Datastream *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Execute Command (X'8061') Major Vector		
	CP-MSU	NMVT	Notes
Name List (X'06')	P	P	
Self-Defining Text Msg (X'31')	CP	CP	

Key:

P Present one time
CP Conditionally present one time (See Note for conditions.)

Note:

1. This subvector is present when the command to be executed is not contained in a parameter major vector. When it is present, no MS parameter major vectors follow the Execute Command (X'8061') MS major vector.

Reply to Execute Command (X'0061') MS Major Vector

PU → SSCP, CP → CP

This major vector transports the reply provided in response to a previous Execute Command. It is followed by a management services parameter major vector except when it returns sense data.

Reply to Execute Command (X'0061') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0061'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00' - X'7F'.

When the Sense Data (X'7D') subvector is not present, this major vector is followed by one of the following management services parameter major vectors:

X'1300' Text Data
X'1307' Structured Data
X'1309' Transparent Coded Datastream

Note: The following subvector keys may be used as indicated:

Subvector	Presence in Reply to Execute Command (X'0061') Major Vector		
	NMVT	CP-MSU	Notes
Sense Data (X'7D')	CP	CP	Note 1
NMVT Count (X'44')	CP	—	Note 2

Key:

— Not present.
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. This subvector is present only when sense data is returned to the requesting application. When it is present, no other subvectors are present and no MS parameter major vectors follow the Reply to Execute Command (X'0061') MS major vector.
2. This subvector is present only when a single reply to a command is being returned to the requesting application and the reply data spans multiple NMVTs. It appears in the first NMVT, which always contains the Reply to Execute Command (X'0061') MS major vector.

Analyze Status (X'8062') MS Major Vector

SSCP → PU, CP → CP

This major vector requests the gathering of information about one or more listed resources, analysis of that information, and the return of the result in a reply that reports the joint state of all indicated resources.

Analyze Status (X'8062') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8062'
4–n		MS subvector, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00' - X'7F'. *Note:* The following subvector key is used as indicated:

Subvector	Presence in Analyze Status (X'8062') Major Vector		
	NMVT	CP-MSU	Notes
Name List (X'06')	P	P	

Key:

P Present one time

Reply to Analyze Status (X'0062') MS Major Vector

PU → SSCP, CP → CP

This major vector transports the reply to a previous Analyze Status request. It is followed by management services parameter major vectors except when it is used to return sense data.

Reply to Analyze Status (X'0062') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0062'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00' - X'7F'.

When the Sense Data (X'7D') subvector is not present, this major vector is followed by the following management services parameter major vectors. The Begin Data Parameters (X'130A') is used to begin the set, one Structured Data (X'1307') is present for each resource included in the report, and the set is terminated with the End Parameter Data (X'130B').

X'130A' Begin Data Parameters
X'1307' Structured Data (zero or more)
X'130B' End Parameter Data

Note: The following subvector keys may be used as indicated:

Subvector	Presence in Reply to Analyze Status (X'0062') Major Vector		
	NMVT	CP-MSU	Notes
Sense Data (X'7D')	CP	CP	Note 1
NMVT Count (X'44')	CP	—	Note 2

Key:

— Not present.
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. This subvector is present only when sense data is returned to the requesting application. When it is present, no other subvectors are present and no MS parameter major vectors follow the Reply to Analyze Status (X'0062') MS major vector.
2. This subvector is present only when a single reply to a request is being returned to the requesting application and the reply data spans multiple NMVTs. It appears in the first NMVT, which always contains the Reply to Analyze Status (X'0062') MS major vector.

Query Resource Data (X'8063') MS Major Vector

SSCP → PU, CP → CP

This major vector requests the gathering of information from one or more resources and reporting of that information in a reply.

Query Resource Data (X'8063') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8063'
4–n		MS subvector, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F'. *Note:* The following subvector key is used as indicated:

Subvector	Presence in Query Resource Data (X'8063') Major Vector		
	NMVT	CP-MSU	Notes
Name List (X'06')	P	P	

Key:

P Present one time

Reply to Query Resource Data (X'0063') MS Major Vector

PU → SSCP, CP → CP

This major vector transports the reply to a previous Query Resource Data request. It is followed by management services parameter major vectors except when it is used to return sense data.

Reply to Query Resource Data (X'0063') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0063'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00' - X'7F'.

When the Sense Data (X'7D') subvector is not present, this major vector is followed by the following management services parameter major vectors. The Begin Data Parameters (X'130A') is used to begin the set, one Structured Data (X'1307') is present for each resource included in the report, and the set is terminated with the End Parameter Data (X'130B').

X'130A' Begin Data Parameters
X'1307' Structured Data (one or more)
X'130B' End Parameter Data

At least one Structured Data (X'1307') major vector must be present between the X'130A' and X'130B' major vectors.
Note: The following subvector keys may be used as indicated:

Subvector	Presence in Reply to Query Resource Data (X'0063') Major Vector		
	NMVT	**CP-MSU**	**Notes**
Sense Data (X'7D')	CP	CP	Note 1
NMVT Count (X'44')	CP	—	Note 2

Key:

— Not present.
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. This subvector is present only when sense data is returned to the requesting application. When it is present, no other subvectors are present and no MS parameter major vectors follow the Reply to Query Resource Data (X'0063') MS major vector.
2. This subvector is present only when a single reply to a request is being returned to the requesting application and the reply data spans multiple NMVTs. It appears in the first NMVT, which always contains the Reply to Query Resource Data (X'0063') MS major vector.

Test Resource (X'8064') MS Major Vector

SSCP → PU, CP → CP

This major vector requests the testing of one or more resources, the gathering of information from the test and provision of the results as a reply which reports the state of each resource.

Test Resource (X'8064') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8063'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Test Resource Subvectors" on page 4-286 for subvector keys X'80'–X'FF'. *Note:* The following subvector keys are used as indicated:

Subvector	Presence in Test Resource (X'8064') Major Vector		
	NMVT	CP-MSU	Notes
Name List (X'06')	P	P	
Test Setup Data (X'80')	P	P	

Key:

P Present one time

Test Resource Subvectors

Test Setup Data (X'80') Test Resource MS Subvector

This Test Resource subvector transports the details of the requested test to be performed.

Test Setup Data (X'80') Test Resource MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Test Setup Data subvector
1		Key: X'80'
2–p		One subfield containing the number of times the test is to be executed *Note:* The following subfield key is used as described in detail following: X'01' Test Request Count

Test Request Count (X'01') Test Setup Data Subfield

This subfield transports the count of iterations requested for the test.

Test Request Count (X'01') Test Setup Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Test Request Count subfield
1		Key: X'01'
2–3(=q)		Test request count: an integer value from 1 to 32727. The receiver is requested to repeat the identified test this many times or until a failure is detected.

Reply to Test Resource (X'0064') MS Major Vector

PU → SSCP, CP → CP

This major vector transports the reply to a previous Test Resource request. It is followed by management services parameter major vectors except when it returns sense data.

Reply to Test Resource (X'0064') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0064'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00' - X'7F', and in "Reply to Test Resource Subvectors" on page 4-288 for subvector keys X'80' - X'FF'. When the Sense Data (X'7D') subvector is not present, this major vector is followed by the following management services parameter major vectors. The Begin Data Parameters (X'130A') is used to begin the set, one Structured Data (X'1307') is present for each resource included in the report, and the set is terminated with the End Parameter Data (X'130B'). X'130A' Begin Data Parameters X'1307' Structured Data (0 or more) X'130B' End Parameter Data *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Reply to Test Resource (X'0064') Major Vector		
	NMVT	CP-MSU	Notes
Sense Data (X'7D')	CP	CP	Note 1
Test Result Data (X'81')	CP	CP	Note 2
NMVT Count (X'44')	CP	—	Note 3

Key:

— Not present.
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. This subvector is present only when sense data is returned to the requesting application. When it is present, no other subvectors are present and no MS parameter major vectors follow the Reply to Test Resource (X'0064') MS major vector.
2. This subvector is present only when the receiving application has executed the specified test.
3. This subvector is present only when a single reply to a request is being returned to the requesting application and the reply data spans multiple

NMVTs. It appears in the first NMVT, which always contains the Reply to Test Resource (X'0064') MS major vector.

Reply to Test Resource Subvectors

Test Result Data (X'81') Reply to Test Resource MS Subvector

This subvector transports the results of a requested test that was performed.

Test Result Data (X'81') Reply to Test Resource MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Test Result Data subvector
1		Key: X'81'
2–p		Subfields containing the test type and test results *Note:* The following subfield keys are used as described in detail following: X'02' Test Type X'03' Test Request Count X'04' Test Executed Count

Test Execution Result (X'01') Test Result Data Subfield

This subfield transports the result of the requested test.

Test Execution Result (X'01') Test Result Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Test Execution Result subfield
1		Key: X'01'
2(=q)		Test execution result: X'00' no errors detected X'01' errors detected X'02' indeterminate results

Test Type (X'02') Test Result Data Subfield

This subfield transports the type of test requested.

Test Type (X'02') Test Result Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Test Type subfield

Test Type (X'02') Test Result Data Subfield

Byte	Bit	Content
1		Key: X'02'
2(=q)		Test type: a code that indicates which type of test is requested. X'00' background self-test (a test of the resource is to be scheduled at the first opportunity that will be nondisruptive to normal operation). X'01' immediate self-test (the resource is to be tested immediately even if such action will be disruptive).

Test Request Count (X'03') Test Result Data Subfield

This subfield transports the count of iterations requested for the test.

Test Request Count (X'03') Test Result Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Test Request Count subfield
1		Key: X'03'
2–3(=q)		Test request count: an integer value from 1 to 32727. This returns the value contained in the matching request.

Test Executed Count (X'04') Test Result Data Subfield

This subfield transports the count of iterations executed for the test.

Test Executed Count (X'04') Test Result Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Test Executed Count subfield
1		Key: X'04'
2–3(=q)		Test executed count: an integer value from 1 to 32727. This returns the number of executions of the test attempted before failure occurred. If no failure occurred it is the same value as Test Request Count.

Request Activation (X'8066') MS Major Vector

LU → LU, CP → CP

This major vector is used to request that an activation procedure be performed.

Request Activation (X'8066') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8066'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Request Activation MS Subvectors” on page 4-291 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request Activation (X'8066') Major Vector	
	CP-MSU	Notes
Configuration Name (X'07')	O	
Reporting Level (X'09')	O	
Execution Window Timing (X'0B')	O	
Activate (X'81')	P	

Key:

P Present one time
O Optionally present one time

Request Activation MS Subvectors

Activate (X'81') Request Activation MS Subvector

The Activate subvector requests MS to cause reactivation of the node in which its LU resides. For example, an “initial microprogram load (IML)” of the node containing the LU may be performed.

Activate (X'81') Request Activation MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Activate subvector
1		Key: X'81'
2–p		One or more subfields (listed by Key value below and described in detail following): X'10' Force Indication X'20' Change Management Activation Use

Force Indication (X'10') Activate Subfield

This subfield indicates whether to perform the activation based on the quiesced state of the target node. It is always present.

Force Indication (X'10') Activate Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Force Indication subfield
1		Key: X'10'
2		Force indicator: X'10' No (do not force) - reject if not quiesced, otherwise activate X'20' Yes (force) - activate even if not quiesced
3–5(=q)		Delay: optional binary number (bytes 3 and 4) and units (byte 5) of minutes, seconds or hours (X'00', X'01' or X'02' respectively) representing the maximum allowed wait time to quiesce (if not already quiesced) before either rejecting or forcing activation. If a zero value is specified or Delay is absent (2=q), immediate action is requested.

Change Management Activation Use (X'20') Activate Subfield

This subfield indicates which installed changes to activate. It is present once, unless the target node is known not to support this subfield in particular, or the change management architecture in general.

Change Management Activation Use (X'20') Activate Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Change Management Activation Use subfield
1		Key: X'20'
2(=q)		Activation use: X'10' Trial and production - use changes that are installed on a trial basis before using changes installed in production X'20' Production only - use changes that are installed in production only X'30' Last used - use whatever was previously set, Trial and production or Production only. If the entry point does not support change management activation use, then "last used" is effectively treated as "production only" and the command report to the focal point includes sense code X'080C 0015'.

Activation Acceptance (X'0066') MS Major Vector

LU → LU, CP → CP

This major vector is used to reply to Request Activation (X'8066'), to indicate initial acceptance or rejection of the request. After activation is successful, an entry point notifies its focal point using Activation (X'0067').

Activation Acceptance (X'0066') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0066'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Activation Acceptance MS Subvectors" on page 4-294 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Activation Acceptance (X'0066') Major Vector	
	CP-MSU	**Notes**
Date/Time (X'01')	P	
Activation Acceptance (X'82')	P	
Detailed Data (X'98')	O(n)	Note 1

Key:

P Present one time
O(n) Optionally present one or more times

Notes:

1. This subvector may be optionally included up to a total of 255 times to report unique product errors.

Activation Acceptance MS Subvectors

Activation Acceptance (X'82') Activation Acceptance MS Subvector

The Activation Acceptance subvector reports whether or not an activation will be attempted as requested.

Activation Acceptance (X'82') Activation Acceptance MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Activation Acceptance subvector
1		Key: X'82'
2–p		One or more subfields (listed by Key value below and described in detail following): X'10' Attempt Status X'14' Additional Reports

Attempt Status (X'10') Activation Acceptance Subfield

This subfield reports whether or not activation will be attempted as requested. It is always present once.

Attempt Status (X'10') Activation Acceptance Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Attempt Status subfield
1		Key: X'10'
2(=q)		Acceptance: X'10' Will attempt X'20' Will not attempt

Additional Reports (X'14') Activation Acceptance Subfield

This subfield indicates that one or more additional reports will be generated as a result of the requested operation. It is present when additional reports are to be generated and if the target node is responsible for determining the level of reporting to be provided.

Additional Reports (X'14') Activation Acceptance Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Additional Reports subfield
1(=q)		Key: X'14'

Detailed Data (X'98') Activation Acceptance MS Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector on page 4-148. However, no Qualified Message Data (X'01') subfields may be present.

Activation (X'0067') MS Major Vector

LU → LU, CP → CP

This major vector is used by an entry point to return the results of an activation to a focal point. Activation may have been requested either by the focal point or locally.

Activation (X'0067') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0067'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Activation MS Subvectors" on page 4-297 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Activation (X'0067') Major Vector	
	CP-MSU	Notes
Date/Time (X'01')	P	
Reporting Activation (X'82')	P	
Detailed Data (X'98')	O(n)	Note 1

Key:

P	Present one time
O(n)	Optionally present one or more times

Notes:

1. This subvector may be optionally included up to a total of 255 times to report unique product errors.

Activation MS Subvectors

Reporting Activation (X'82') Activation MS Subvector

The Reporting Activation subvector indicates whether or not activation was successful.

Reporting Activation (X'82') Activation MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Activation subvector
1		Key: X'82'
2–p		One or more subfields (listed by Key value below and described in detail following): X'10' Activation Status X'18' Activation Stage X'20' Change Management Activation Use Status

Activation Status (X'10') Reporting Activation Subfield

This subfield reports whether or not activation was successful. It is always present once.

Activation Status (X'10') Reporting Activation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Activation Status subfield
1		Key: X'10'
2(=q)		Activation status: X'10' Successful X'20' Not successful X'50' Intermediate. The activation is not yet complete, but information concerning the activation process is available and is being reported.

Activation Stage (X'18') Reporting Activation Subfield

This subfield indicates what stage of entry point activation has been achieved. It is present when the activation status is successful, with the following exception for implementations that do not build this subfield: If this subfield is not present, then the target of the activation request is assumed to be successfully activated in compliance with the parameters supplied (or optionally referenced) in the activation request.

Activation Stage (X'18') Reporting Activation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Activation Stage subfield
1		Key: X'18'
2(=q)		Activation Stage: X'00' Initial connectivity complete X'10' Target hardware active, target software not yet active X'20' Target application function has reached a point where quiesce of that function is required prior to any disruptive command execution X'30' Target has been successfully activated in compliance with the parameters supplied (or optionally referenced) in the activation request

Change Management Activation Use Status (X'20') Reporting Activation Subfield

This subfield reports whether trial components were searched during activation and optionally, whether a special activation-related condition prevails at the reporting node. Alternately, it may indicate that change management or the change management activation use function are not supported at the reporting node. It is present when the activation status is successful.

Change Management Activation Use Status (X'20') Reporting Activation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Change Management Activation Use Status subfield
1		Key: X'20'
2		Activation use: X'10' Trial and production: trial components were searched and used if found X'20' Production only: trial components were not searched X'30' Not supported: change management or the change management activation use function are not supported X'40' The components searched were those searched in the last activation. Both trial and production components were searched. X'50' The components searched were those searched in the last activation. Only production components were searched.
3(=q)		Special condition: optional indicator specifying whether a special activation-related condition prevails at the reporting node. If absent (2=q), no special condition is being reported. X'10' One of the following special conditions exists at the reporting node: • When the CMAU parameter in the request was set to 'trial and production' (or set to 'last', with the previous activation having specified 'trial and production'), only production components were found despite having searched for trial and production components. • The original request execution failed. The CMAU parameter in the original request was set to 'trial and production' (or set to 'last', with the previous activation having specified 'trial and production'). However, a local activation has been performed, using only production components, thus overriding the failed remote trial activation.

Detailed Data (X'98') Activation MS Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector on page 4-148. However, no Qualified Message Data (X'01') subfields may be present.

Request Initiation (X'8068') MS Major Vector

LU → LU

This major vector is used to request the target node initiate a command procedure (also referred to as a job element). It is followed by a management services parameter major vector.

Request Initiation (X'8068') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8068'
4–n		MS subvectors, as described (using zero-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F'. This major vector is followed by the Initiate Agent Request (X'1730') management services parameter major vector. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request Initiation (X'8068') Major Vector	
	CP-MSU	Notes
Execution Window Timing (X'0B')	O	

Key:

O Optionally present one time

Initiation (X'0068') MS Major Vector

LU → LU

This major vector is used by an entry point to return the results of an initiation to a focal point. It is followed by a management services parameter major vector.

Initiation (X'0068') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0068'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F'.
		This major vector is followed by the Initiate Agent Report (X'1731') management services parameter major vector.
		Note: The following subvector keys may be used as indicated:

Subvector	Presence in Initiation (X'0068') Major Vector	
	CP-MSU	Notes
Date/Time (X'01')	P	
Detailed Data (X'98')	O(n)	Note 1

Key:

P	Present one time
O(n)	Optionally present one or more times

Notes:

1. This subvector may be optionally included up to a total of 255 times to report unique product errors.

Initiation MS Subvectors

Detailed Data (X'98') Initiation MS Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector on page 4-148. However, no Qualified Message Data (X'01') subfields may be present.

Send Message to Operator (X'006F') MS Major Vector

PU → SSCP, CP → CP

This major vector sends an unsolicited request to the host operator named. It is followed by a management services parameter major vector.

Send Message to Operator (X'006F') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'006F'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F'.
		This major vector is followed by one of the following management services parameter major vectors: X'1300' Text Data X'1307' Structured Data X'1309' Transparent Coded Datastream *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Send Message to Operator (X'006F') Major Vector		
	NMVT	CP-MSU	Notes
Name List (X'06')	P	P	

Key:

P Present one time

Operate (X'8070') MS Major Vector

CP → CP

This major vector is used to indicate that an implementation-specific command, within the same CP-MSU as the Operate major vector, is present. The Operate major vector carries information relative to node configuration, reporting requirements, and execution timing.

Operate (X'8070') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8070'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Operate MS Subvectors" on page 4-305 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Operate (X'8070') Major Vector	
	CP-MSU	Notes
Configuration Name (X'07')	O	
Reporting Level (X'09')	O	
Execution Window Timing (X'0B')	O	
Operate Command (X'81')	P	

Key:

P Present one time
O Optionally present one time

Operate MS Subvectors

Operate Command (X'81') Operate MS Subvector

The presence of the Operate Command subvector indicates to the target that implementation-specific commands (not interpreted but transported by MS) are included in GDS variables within the same CP-MSU.

Operate Command (X'81') Operate MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Operate Command subvector
1		Key: X'81'
2–p		Zero or more subfields (listed by Key value below and described in detail following): X'10' Force Indication X'20' Change Management Activation Use *Note:* The following subfield keys may be used as indicated:

Subfield	Presence in Operate Command (X'81') Operate MS Subvector	
Force Indication (X'10')	O	
Change Management Activation Use (X'20')	O	

Key:

O Optionally present one time

Force Indication (X'10') Operate Command Subfield

This subfield indicates whether to perform the operate command based on the quiesced state of the target node. If not present, then Force(No) is implied and the command is executed only if the target is quiesced.

Force Indication (X'10') Operate Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Force Indication subfield
1		Key: X'10'
2		Force indicator: X'10' No (do not force) - reject if not quiesced, otherwise perform the operate command X'20' Yes (force) - perform the operate command even if not quiesced
3–5(=q)		Delay: optional binary number (bytes 3 and 4) and units (byte 5) of minutes, seconds or hours (X'00', X'01' or X'02' respectively) representing the maximum allowed wait time to quiesce (if not already quiesced) before either rejecting or forcing the operate command. If a zero value is specified or Delay is absent (2=q), immediate action is requested.

Change Management Activation Use (X'20') Operate Command Subfield

This subfield indicates which installed changes to activate. command contains a product-specific activation command. It is present once, unless the target node is known not to support this subfield in particular, or the change management architecture in general, or the command is not a product-specific activation command.

Change Management Activation Use (X'20') Operate Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Change Management Activation Use subfield
1		Key: X'20'
2(=q)		Activation use: X'10' Trial and production - use changes that are installed on a trial basis before using changes installed in production X'20' Production only - use changes that are installed in production only X'30' Last used - use whatever was previously set, Trial and production or Production only. If the entry point does not support change management activation use, then "last used" is effectively treated as "production only" and the command report to the focal point includes sense code X'080C 0015'.

Operate Report (X'0070') MS Major Vector

CP → CP

This major vector is used to indicate the acceptance, rejection, success, or failure of an Operate command. It may also be sent to report an intermediate condition related to command execution, or as an unsolicited ancillary report.

Operate Report (X'0070') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0070'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Operate Report MS Subvectors" on page 4-308 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Operate Report (X'0070') Major Vector	
	CP-MSU	**Notes**
Date/Time (X'01')	O	
Default Character Set ID (X'32')	O	
Reporting Operation (X'82')	P	
Detailed Data (X'98')	O(n)	

Key:

P	Present one time
O	Optionally present one time
O(n)	Optionally present one or more times

Operate Report MS Subvectors

Reporting Operation (X'82') Operate Report MS Subvector

The Reporting Operation subvector indicates the status of an Operate request.

Reporting Operation (X'82') Operate Report MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Operation subvector
1		Key: X'82'
2–p		Zero or more subfields (listed by Key value below and described in detail following): X'10' Operation Status X'20' Change Management Activation Use Status *Note:* The following subfield keys may be used as indicated:

Subfield	Presence in Reporting Operation (X'82') Operate Report MS Subvector	
Operation Status (X'10')	O	
Change Management Activation Use Status (X'20')	O	

Key:

O Optionally present one time

Operation Status (X'10') Reporting Operation Subfield

This subfield indicates whether or not an operate request was successful or not, accepted or not, or whether the command is proceeding but not yet complete (intermediate). Additionally, an ancillary status may be reported. The ancillary report type is the default; therefore, if this subfield is not present, the receiver knows that the report type is ancillary. An ancillary report is sent after a request has finished executing, the execution having caused the sender to enter or exit some state that normally causes the creation of one or more ancillary reports. The contents of the reports are implementation-specific, and are contained in GDS variables within the Operate Report CP-MSU.

Operation Status (X'10') Reporting Operation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Operation Status subfield
1		Key: X'10'
2(=q)		Operation Request Status: X'10' Successful

Operation Status (X'10') Reporting Operation Subfield

Byte	Bit	Content
		X'20' Unsuccessful
		X'30' Rejected
		X'40' Accepted
		X'50' Intermediate. The execution is not yet complete, but information concerning the operation process is available and is being reported.
		X'60' Ancillary. An application program has information concerning the state it has entered after the operate command has been successfully executed. This is the default value. The sender may choose to build the subfield with this value, or not build the subfield and therefore imply that the report is an ancillary report.

Change Management Activation Use Status (X'20') Reporting Operation Subfield

This subfield is defined under the Activation (X'0067') major vector.

Detailed Data (X'98') Reporting Operation Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector. However, no Qualified Message Data (X'01') subfields may be present.

Request Deactivation (X'8071') MS Major Vector

CP → CP

This major vector is used to request the target to perform a deactivation procedure.

Request Deactivation (X'8071') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8071'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Request Deactivation MS Subvectors” on page 4-311 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request Deactivation (X'8071') Major Vector	
	CP-MSU	Notes
Configuration Name (X'07')	O	
Reporting Level (X'09')	O	
Execute Window Timing (X'0B')	O	
Deactivate Command (X'81')	P	

Key:

P Present one time
O Optionally present one time

Request Deactivation MS Subvectors

Deactivate Command (X'81') Request Deactivation Subvector

The Deactivate Command subvector requests the target to deactivate one more network resources.

Deactivate Command (X'81') Request Deactivation Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Deactivate Command subvector
1		Key: X'81'
2–p		One subfield (optionally present one time and listed by Key value below): X'10' Force Indication

Force Indication (X'10') Deactivate Command Subfield

This subfield indicates whether to perform the deactivation based on the quiesced state of the target node. If not present, Force(NO) is implied and the command is executed only if the target is quiesced.

Force Indication (X'10') Deactivate Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Force Indication subfield
1		Key: X'10'
2		Force indicator: X'10' No (do not force) - reject if not quiesced, otherwise deactivate X'20' Yes (force) - deactivate even if not quiesced
3–5(=q)		Delay: optional binary number (bytes 3 and 4) and units (byte 5) of minutes, seconds or hours (X'00', X'01' or X'02' respectively) representing the maximum allowed wait time to quiesce (if not already quiesced) before either rejecting or forcing deactivation. If a zero value is specified or Delay is absent (2=q), immediate action is requested.

Deactivation Acceptance (X'0071') MS Major Vector

CP → CP

This major vector is used to indicate the acceptance or rejection of a Deactivation command.

Deactivation Acceptance (X'0071') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0071'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Deactivation Acceptance MS Subvectors" on page 4-313 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Deactivation Acceptance (X'0071') Major Vector	
	CP-MSU	**Notes**
Date/Time (X'01')	P	
Deactivation Acceptance (X'82')	P	
Detailed Data (X'98')	O(n)	

Key:

P Present one time
O(n) Optionally present one or more times

Deactivation Acceptance MS Subvectors

Deactivation Acceptance (X'82') Deactivation Acceptance Subvector

The Deactivation Acceptance subvector indicates whether or not a deactivation will be attempted as requested.

Deactivation Acceptance (X'82') Deactivation Acceptance Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Deactivation Acceptance subvector
1		Key: X'82'
2–p		One required subfield (listed by Key value below and described in detail following): X'10' Attempt Status

Attempt Status (X'10') Deactivation Acceptance Subfield

This subfield indicates whether or not a deactivation will be attempted as requested.

Attempt Status (X'10') Deactivation Acceptance Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Attempt Status subfield
1		Key: X'10'
2(=q)		Acceptance:
		X'10' Will attempt
		X'20' Will not attempt

Detailed Data (X'98') Deactivation Acceptance Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector. However, no Qualified Message Data (X'01') subfields may be present.

Deactivation (X'0072') MS Major Vector

CP → CP

This major vector is used to indicate success or failure in the execution of a Deactivation command.

Deactivation (X'0072') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vect
2–3		Key: X'0072'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Deactivation MS Subvectors” on page 4-315 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Deactivation (X'0072') Major Vector	
	CP-MSU	Notes
Date/Time (X'01')	P	
Reporting Deactivation (X'82')	P	
Detailed Data (X'98')	O(n)	

Key:

P	Present one time
O(n)	Optionally present one or more times

Deactivation MS Subvectors

Reporting Deactivation (X'82') Deactivation Subvector

The Reporting Deactivation subvector indicates whether or not a deactivation was successful. If the deactivation is proceeding (but not yet complete), an "intermediate" indication is given.

Reporting Deactivation (X'82') Deactivation Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Deactivation subvector
1		Key: X'82'
2–p		One required subfield (listed by Key value below and described in detail following): X'10' Deactivation Status

Deactivation Status (X'10') Reporting Deactivation Subfield

This subfield indicates whether or not a deactivation was successful. If the deactivation is proceeding (but not yet complete), an "intermediate" indication is given.

Deactivation Status (X'10') Reporting Deactivation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Deactivation Status subfield
1		Key: X'10'
2(=q)		Deactivation Status: X'10' Successful X'20' Unsuccessful X'50' Intermediate. The activation is not yet complete, but information concerning the deactivation process is available and is being reported.

Detailed Data (X'98') Reporting Deactivation Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector. However, no Qualified Message Data (X'01') subfields may be present.

Set Clock (X'8075') MS Major Vector

CP → CP

This major vector is used to request the target node set a clock or adjust the clock offset from GMT.

Set Clock (X'8075') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8075'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Set Clock MS Subvectors” on page 4-317 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Set Clock (X'8075') Major Vector	
	CP-MSU	Notes
Reporting Level (X'09')	O	
Execution Window Timing (X'0B')	O	
Set Clock Command (X'81')	P	

Key:

P Present one time
O Optionally present one time

Set Clock MS Subvectors

Set Clock Command (X'81') Set Clock Subvector

The Set Clock Command subvector requests the target to set its internal clock or adjust the GMT offset maintained by the clock.

Set Clock Command (X'81') Set Clock Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Set Clock Command subvector
1		Key: X'81'
2–p		One or more subfields (listed by Key value below and described in detail following): X'10' Force Indication X'15' Clock Name X'20' Timing Source Name X'30' Date/Time to Set X'40' GMT Offset X'50' Increment/Decrement Interval *Note:* The following subfield keys may be used as indicated:

Subfield	Presence in Set Clock Command (X'81') Set Clock Subvector	
Force Indication (X'10')	O	
Clock Name (X'15')	O	
Timing Source Name (X'20')	CP	Note 1
Date/Time to Set (X'30')	CP	Note 2
GMT Offset (X'40')	CP	Note 2
Increment/Decrement Interval (X'50')	CP	Note 1

Key:

O Optionally present one time
CP Conditionally present one time

Notes:

1 Not present if the Date/Time to Set (X'30') subfield or the GMT Offset (X'40') subfield is present. Otherwise, it is optionally present.
2 Not present if the Timing Source Name (X'20') subfield is present. Otherwise, it is optionally present.

Force Indication (X'10') Set Clock Command Subfield

This subfield indicates whether to perform the set clock command based on the quiesced state of the target node. If not present, Force(NO) is implied and the command is executed only if the target is quiesced.

Force Indication (X'10') Set Clock Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Force Indication subfield
1		Key: X'10'
2		Force indicator: X'10' No (do not force) - reject if not quiesced, otherwise execute the set clock command X'20' Yes (force) - set the clock even if not quiesced
3–5(=q)		Delay: optional binary number (bytes 3 and 4) and units (byte 5) of minutes, seconds or hours (X'00', X'01' or X'02' respectively) representing the maximum allowed wait time to quiesce (if not already quiesced) before either rejecting or forcing the set clock command. If a zero value is specified or Delay is absent (2=q), immediate action is requested.

Clock Name (X'15') Set Clock Command Subfield

The Clock Name subfield identifies which clock to set. Timing sources may also be set, in which case Clock Name is the name of the timing source. Coded graphic character set global ID to be used is 01134-00500. No leading or imbedded blanks are allowed. Trailing blanks are allowed.

Clock Name (X'15') Set Clock Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Clock Name subfield
1		Key: X'15'
2–17		Clock name. If a timing source time is being modified, the timing source name is specified.

Timing Source Name (X'20') Set Clock Command Subfield

The Timing Source Name subfield identifies which timing source to use to set a clock. The timing source named is used but never set. For example, the timing source value may be incremented or decremented to obtain a new value with which to set the clock named in the Clock Name subfield; however, the actual timing source is left unchanged. Coded graphic character set global ID to be used is 01134-00500. No leading or imbedded blanks are allowed. Trailing blanks are allowed.

Timing Source Name (X'20') Set Clock Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Timing Source Name subfield
1		Key: X'20'
2–17(=q)		Timing source name.

Date/Time to Set (X'30') Set Clock Command Subfield

The Date/Time to Set subfield indicates both the date and time the target is to set its clock to.

Date/Time to Set (X'30') Set Clock Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Date/Time to Set subfield
1		Key: X'30'
2–3		Year in hexadecimal
4		Month in hexadecimal
5		Day in hexadecimal
6		Hour in hexadecimal
7		Minute in hexadecimal
8		Local time or GMT indicator:
		X'10' Local Time
		X'20' Greenwich Mean Time (GMT)

GMT Offset (X'40') Set Clock Command Subfield

If the receiver's clock is set to local time, the GMT Offset subfield indicates the offset value the receiver is to set in its clock for purposes of calculating Greenwich Mean Time (GMT). If the receiver's clock is set to GMT, the GMT Offset subfield indicates the offset value the receiver is to set in its clock for purposes of calculating the local time.

GMT Offset (X'40') Set Clock Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the GMT Offset subfield
1		Key: X'40'
2–3		GMT Offset
	0	Adjustment indicator
		0 adjustment to be added to the local time to obtain GMT or subtracted from GMT to obtain local time (i.e., all time zones westward, between the Greenwich time zone and the International Date Line)
		1 adjustment to be subtracted from the local time to obtain GMT or added to GMT to obtain local time (i.e., all time zones eastward, between Greenwich time zone and the International Date Line)
	1–3	reserved

GMT Offset (X'40') Set Clock Command Subfield

Byte	Bit	Content
	4–7	number of hours of adjustment, in binary.
	8–15	number of minutes of adjustment, in binary.

Increment/Decrement Interval (X'50') Set Clock Command Subfield

The Increment/Decrement Interval subfield indicates how many hours, minutes, and seconds to increment or decrement the current time in the clock named in the Clock Name (X'15') Set Clock Command Subfield. This subfield may also be used to increment or decrement the timing source value named in the Timing Source Name (X'20') Set Clock Command Subfield.

Increment/Decrement Interval (X'50') Set Clock Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Increment/Decrement Interval subfield
1		Key: X'50'
2		Adjustment
		X'01' Increment
		X'02' Decrement
3		Hours (in hexadecimal) to adjust (X'00'–X'17')
4		Minutes (in hexadecimal) to adjust (X'00'–X'3B')
5		Seconds (in hexadecimal) to adjust (X'00'–X'3B')
6(=q)		Scope
		X'10' Adjust only the clock
		X'20' Adjust both the clock and the GMT offset (by equal amounts)

Set Clock Report (X'0075') MS Major Vector

CP → CP

This major vector is used to indicate the acceptance, rejection, success, or failure of a Set Clock command.

Set Clock Report (X'0075') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0075'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Set Clock Report MS Subvectors" on page 4-322 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Set Clock Report (X'0075') Major Vector	
	CP-MSU	Notes
Date/Time (X'01')	O	
Reporting Set Clock (X'82')	P	
Detailed Data (X'98')	O(n)	

Key:

P	Present one time
O	Optionally present one time
O(n)	Optionally present one or more times

Set Clock Report MS Subvectors

Reporting Clock Set (X'82') Set Clock Report Subvector

The Reporting Clock Set subvector indicates the status of a Set Clock request.

Reporting Clock Set (X'82') Set Clock Report Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Clock Set subvector
1		Key: X'82'
2–p		One required subfield (listed by Key value below and described in detail following): X'10' Set Clock Status

Set Clock Status (X'10') Reporting Clock Set Subfield

This subfield indicates whether or not a set clock request was successful or not, accepted or not, or whether the command is proceeding but not yet complete (intermediate).

Set Clock Status (X'10') Reporting Clock Set Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Set Clock Status subfield
1		Key: X'10'
2(=q)		Set clock request status:
		X'10' Successful
		X'20' Unsuccessful
		X'30' Accepted
		X'40' Rejected
		X'50' Intermediate. The execution is not yet complete, but information concerning the set clock process is available and is being reported.

Detailed Data (X'98') Reporting Clock Set Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector. However, no Qualified Message Data (X'01') subfields may be present.

Request Cancelation (X'8076') MS Major Vector

LU → LU, CP → CP

This major vector is used to request the target node cancel one or more outstanding requests.

Request Cancelation (X'8076') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8076'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Request Cancelation MS Subvectors” on page 4-324 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request Cancelation (X'8076') Major Vector	
	CP-MSU	Notes
Reporting Level (X'09')	O	
Cancel (X'81')	P	

Key:

P Present one time
O Optionally present one time

Request Cancelation MS Subvectors

Cancel (X'81') Request Cancelation MS Subvector

The Cancel subvector requests MS at the target node to stop or prevent the execution of one or more requests previously accepted at the node.

Cancel (X'81') Request Cancelation MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Cancel subvector
1		Key: X'81'
2–p		One of three mutually exclusive subfields (listed by Key value below and described in detail following): X'10' Cancel Specific Tasks X'20' Cancel All X'30' Cancel All Deferred

Cancel Specific Tasks (X'10') Cancel Subfield

This subfield indicates a specific request to be canceled. It is mutually exclusive with the Cancel All (X'20') and Cancel All Deferred (X'30') subfields, but is always present when either the Cancel All or the Cancel All Deferred subfield is not present. This subfield may appear twice within the Cancel (X'81') subvector in order to specify both the (X'30') and (X'40') code variants.

Cancel Specific Tasks (X'10') Cancel Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cancel Specific Tasks subfield
1		Key: X'10'
2		One of the following values identifying the request to be canceled: X'10' Cancel the requests identified by the Agent Unit of Work Correlator (X'1549') GDS variables contained in the same CP-MSU as the Request Cancelation MS major vector. Each Agent Unit of Work Correlator within the CP-MSU corresponds to a request that is to be canceled. X'20' Cancel the request currently executing under control of the agent identified in the Routing and Targeting Instructions GDS (registered codepoint X'154D') contained in the same CP-MSU as the Request Cancelation MS major vector. In this case, the Agent Unit of Work Correlator GDS is not present in the CP-MSU.

Cancel Specific Tasks (X'10') Cancel Subfield

Byte	Bit	Content
		X'30' Cancel the currently running request received by a named application program. The name of the application program begins at offset 3 of this subfield. The application program name may be either EP_OPERATIONS_MGMT, EP_CHANGE_MGMT, or some other non-SNA/MS registered application program name. The request against which a cancel is attempted is the request which was received by the named application program and which is still executing under control of the named application program. The named application program may or may not be the same as the application program to which the cancel address is addressed. The named application program must be located at the same entry point as the application program to which the cancel request is addressed. It is not stated whether the application program receiving the cancel request actually performs the cancel action, or otherwise causes the named application program to perform the cancel action.
		X'40' Cancel the currently running request sent by a named application program. The name of the application program begins at offset 3 of this subfield. The application program name may be the name of the operations management focal point or the change management focal point, or some other non-SNA/MS registered application program name. The request against which a cancel is attempted is the request which was sent by the named application program and which is currently executing under control of the receiver of the cancel request. The application program name is used as a search argument against the requests held by the receiver.
3–10(=q)		Conditionally present application program name (may be SNA/MS registered or not). A registered name is recognized when the first character of the name is less than X'40'. This application program name is present if the indicator at byte offset 2 is set to X'30' or X'40'. Otherwise it is not present.

Cancel All (X'20') Cancel Subfield

This subfield is the vehicle to be used for canceling all requests meeting certain criteria. It is mutually exclusive with the Cancel Specific Tasks (X'10') and Cancel All Deferred (X'30') subfields, but is present whenever the Cancel Specific Tasks or the Cancel All Deferred subfield is not present. The Agent Unit of Work Correlator (X'1549') GDS variable is never present in the CP-MSU when this subfield is used. This subfield may appear twice within the Cancel (X'81') subvector in order to specify both the (X'30') and (X'40') code variants.

Cancel All (X'20') Cancel Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cancel All subfield
1		Key: X'20'
2		Cancel All Indicators: X'10' Cancel all requests received by an application program, namely the one which has received the cancel request. The set of requests against which a cancel is attempted consists of those requests which the receiver of the cancel request had previously received and which are still held by the receiver of the cancel request.

Cancel All (X'20') Cancel Subfield

Byte	Bit	Content	
		X'20'	Cancel all requests sent by the sending second level application program of the cancel request, regardless of the node of the sender. The criteria to search the set of requests currently at the receiver are: • The origin application program name (OAN) of a candidate request to be canceled must match the OAN of the application program sending the cancel request. • The origin instance identifier (OII) of a candidate request to be canceled must match the OII of the application program sending the cancel request. If the OII is not present in the Routing and Targeting Instructions (X'154D') GDS variable of the cancel request, then an OII match is not necessary to otherwise have a successful match. • Information from the transport mechanism concerning the origin is not used in this attempt to match. Note that this statement is independent of the nature of the transport mechanism. The set of requests against which a cancel is attempted consists of those requests which satisfy the stated criteria regarding origin and which are still held by the receiver of the cancel request.
		X'21'	Cancel all requests sent by the sending second level application program of the cancel request, regardless of the node of the sender. The criteria to search the set of requests currently at the receiver are: • The origin application program name (OAN) of a candidate request to be canceled must match the OAN of the application program sending the cancel request. • The origin instance identifier (OII) of a candidate request, if present, is disregarded. • Information from the transport mechanism concerning the origin is not used in this attempt to match. Note that this statement is independent of the nature of the transport mechanism. The set of requests against which a cancel is attempted consists of those requests which satisfy the stated criteria regarding origin and which are still held by the receiver of the cancel request.
		X'28'	Cancel all requests sent by the sender of the cancel request. The criteria to search the set of requests currently at the receiver are: • The origin application program name (OAN) of a candidate request to be canceled must match the OAN of the application program sending the cancel request. • The origin instance identifier (OII) of a candidate request to be canceled must match the OII of the application program sending the cancel request. If the OII is not present in the Routing and Targeting Instructions (X'154D') GDS variable of the cancel request, then an OII match is not necessary to otherwise have a successful match. • The node identification and other applicable transport mechanism identification data of a candidate request to be canceled must match the same transport mechanism identification data of the sender of the cancel request. When the MDS transport is the transport mechanism, then the net-id, NAU-name and the MS Application name of a candidate request must match the net-id, NAU-name and MS Application name of the sender of the cancel request. The set of requests against which a cancel is attempted consists of those requests which satisfy the stated criteria regarding origin and which are still held by the receiver of the cancel request.

Cancel All (X'20') Cancel Subfield

Byte	Bit	Content	
		X'29'	Cancel all requests sent by the sender of the cancel request. The criteria to search the set of requests currently at the receiver are: • The origin application program name (OAN) of a candidate request to be canceled must match the OAN of the application program sending the cancel request. • The origin instance identifier (OII) of a candidate request, if present, is disregarded. • The node identification and other applicable transport mechanism identification data of a candidate request to be canceled must match the same transport mechanism identification data of the sender of the cancel request. When the MDS transport is the transport mechanism, then the net-id, NAU-name and the MS Application name of a candidate request must match the net-id, NAU-name and MS Application name of the sender of the cancel request. The set of requests against which a cancel is attempted consists of those requests which satisfy the stated criteria regarding origin and which are still held by the receiver of the cancel request.
		X'30'	Cancel all requests received by a named application program. The name of the application program begins at byte offset 3 of this subfield. The application program name may be either EP_OPERATIONS_MGMT, EP_CHANGE_MGMT, or some other non-SNA/MS registered application program name. The set of requests against which a cancel is attempted consists of those requests which were received by the named application program and which are still held by the named application program. The named application program may or may not be the same application program to which the cancel request is addressed. The named application program must be located at the same entry point as the application program to which the cancel request is addressed. It is not stated whether the application program receiving the cancel request actually performs the cancel action, or otherwise causes the named application program to perform the cancel action.
		X'40'	Cancel all requests sent by the named application program. The name of the application program begins at byte offset 3 of this subfield. The application program name may be the name of the operations management focal point or the change management focal point, or some other non-SNA/MS registered application program name. The set of requests against which a cancel is attempted consists of those requests which were sent by the named application program and which are still held by the receiver of the cancel request. The application program name is used as a search argument against the requests held by the receiver.
		X'50'	Cancel all requests received by both EP_OPERATIONS_MGMT and EP_CHANGE_MGMT. The set of requests against which a cancel is attempted consists of those requests that were received and are still held by EP_OPERATIONS_MGMT and EP_CHANGE_MGMT. The cancel request may or may not be addressed to either EP_OPERATIONS_MGMT or EP_CHANGE_MGMT. It is not stated whether the application program receiving the cancel request actually performs the cancel action, or otherwise causes EP_OPERATIONS_MGMT or EP_CHANGE_MGMT to perform the cancel action.
		X'60'	Cancel all requests sent by both the operations management and change management focal points. The set of requests against which the cancel is attempted consists of those requests which were sent by both the operations management and change management focal points and which are still help by the receiver of the cancel request.

Cancel All (X'20') Cancel Subfield

Byte	Bit	Content
		X'70' Cancel all requests received by any of the following: • EP_OPERATIONS_MGMT • All second-level application programs served by EP_OPERATIONS_MGMT • EP_CHANGE_MGMT The set of requests against which a cancel is attempted consists of those requests which were received by all of the application programs meeting any of the criteria listed above and which are still held by each application program. The application programs include the application program to which the cancel request is addressed. The application programs must be located at the same entry point as the application program to which the cancel request is addressed. It is not stated whether the application program receiving the cancel request actually performs the cancel action, or otherwise causes each application program to perform the cancel action.
3–10(=q)		Conditionally present application program name (may be SNA/MS registered or not). A registered name is recognized when the first character of the name is less than X'40'. This application program name is present if the indicator at byte offset 2 is set to X'30' or X'40'. Otherwise it is not present.

Cancel All Deferred (X'30') Cancel Subfield

This subfield is the vehicle to be used for canceling all deferred requests meeting certain criteria. Deferred requests are defined as those requests which have been accepted for execution but deferred according to the Execution Window Timing (X'0B') subvector parameters in the request. It is mutually exclusive with the Cancel Specific Tasks (X'10') and Cancel All (X'20') subfields, but is present whenever the Cancel Specific Tasks or the Cancel All subfield is not present. The Agent Unit of Work Correlator (X'1549') GDS variable is never present in the CP-MSU when this subfield is used. This subfield may appear twice within the Cancel (X'81') subvector in order to specify both the (X'30') and (X'40') code variants.

Cancel All Deferred (X'30') Cancel Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cancel All Deferred subfield
1		Key: X'30'
2		Cancel All Deferred Indicators: X'10' Cancel all deferred requests received by an application program, namely the one which has received the cancel request. The set of requests against which a cancel is attempted consists of those deferred requests which the receiver of the cancel request had previously received and which are still held by the receiver of the cancel request.

Cancel All Deferred (X'30') Cancel Subfield

Byte	Bit	Content	
		X'20'	Cancel all deferred requests sent by the sending second level application program of the cancel request, regardless of the node of the sender. The criteria to search the set of requests currently at the receiver are: • The origin application program name (OAN) of a candidate request to be canceled must match the OAN of the application program sending the cancel request. • The origin instance identifier (OII) of a candidate request to be canceled must match the OII of the application program sending the cancel request. If the OII is not present in the Routing and Targeting Instructions (X'154D') GDS variable of the cancel request, then an OII match is not necessary to otherwise have a successful match. • Information from the transport mechanism concerning the origin is not used in this attempt to match. Note that this statement is independent of the nature of the transport mechanism. The set of requests against which a cancel is attempted consists of those deferred requests which satisfy the stated criteria regarding origin and which are still held by the receiver of the cancel request.
		X'21'	Cancel all deferred requests sent by the sending second level application program of the cancel request, regardless of the node of the sender. The criteria to search the set of requests currently at the receiver are: • The origin application program name (OAN) of a candidate request to be canceled must match the OAN of the application program sending the cancel request. • The origin instance identifier (OII) of a candidate request, if present, is disregarded. • Information from the transport mechanism concerning the origin is not used in this attempt to match. Note that this statement is independent of the nature of the transport mechanism. The set of requests against which a cancel is attempted consists of those deferred requests which satisfy the stated criteria regarding origin and which are still held by the receiver of the cancel request.
		X'28'	Cancel all deferred requests sent by the sender of the cancel request. The criteria to search the set of requests currently at the receiver are: • The origin application program name (OAN) of a candidate request to be canceled must match the OAN of the application program sending the cancel request. • The origin instance identifier (OII) of a candidate request to be canceled must match the OII of the application program sending the cancel request. If the OII is not present in the Routing and Targeting Instructions (X'154D') GDS variable of the cancel request, then an OII match is not necessary to otherwise have a successful match. • The node identification and other applicable transport mechanism identification data of a candidate request to be canceled must match the same transport mechanism identification data of the sender of the cancel request. When the MDS transport is the transport mechanism, then the net-id, NAU-name and the MS Application name of a candidate request must match the net-id, NAU-name and MS Application name of the sender of the cancel request. The set of requests against which a cancel is attempted consists of those deferred requests which satisfy the stated criteria regarding origin and which are still held by the receiver of the cancel request.

Cancel All Deferred (X'30') Cancel Subfield

Byte	Bit	Content	
		X'29'	Cancel all deferred requests sent by the sender of the cancel request. The criteria to search the set of requests currently at the receiver are: • The origin application program name (OAN) of a candidate request to be canceled must match the OAN of the application program sending the cancel request. • The origin instance identifier (OII) of a candidate request, if present, is disregarded. • The node identification and other applicable transport mechanism identification data of a candidate request to be canceled must match the same transport mechanism identification data of the sender of the cancel request. When the MDS transport is the transport mechanism, then the net-id, NAU-name and the MS Application name of a candidate request must match the net-id, NAU-name and MS Application name of the sender of the cancel request. The set of requests against which a cancel is attempted consists of those deferred requests which satisfy the stated criteria regarding origin and which are still held by the receiver of the cancel request.
		X'30'	Cancel all deferred requests received by a named application program. The name of the application program begins at byte offset 3 of this subfield. The application program name may be either EP_OPERATIONS_MGMT, EP_CHANGE_MGMT, or some other non-SNA/MS registered application program name. The set of requests against which a cancel is attempted consists of those deferred requests which were received by the named application program and which are still held by the named application program. The named application program may or may not be the same application program to which the cancel request is addressed. The named application program must be located at the same entry point as the application program to which the cancel request is addressed. It is not stated whether the application program receiving the cancel request actually performs the cancel action, or otherwise causes the named application program to perform the cancel action.
		X'40'	Cancel all deferred requests sent by the named application program. The name of the application program begins at byte offset 3 of this subfield. The application program name may be the name of the operations management focal point or the change management focal point, or some other non-SNA/MS registered application program name. The set of requests against which a cancel is attempted consists of those deferred requests which were sent by the named application program and which are still held by the receiver of the cancel request. The application program name is used as a search argument against the requests held by the receiver.
		X'50'	Cancel all deferred requests received by both EP_OPERATIONS_MGMT and EP_CHANGE_MGMT. The set of requests against which a cancel is attempted consists of those deferred requests that were received and are still held by EP_OPERATIONS_MGMT and EP_CHANGE_MGMT. The cancel request may or may not be addressed to either EP_OPERATIONS_MGMT or EP_CHANGE_MGMT. It is not stated whether the application program receiving the cancel request actually performs the cancel action, or otherwise causes EP_OPERATIONS_MGMT or EP_CHANGE_MGMT to perform the cancel action.

Cancel All Deferred (X'30') Cancel Subfield

Byte	Bit	Content
		X'60' Cancel all deferred requests sent by both the operations management and change management focal points. The set of requests against which the cancel is attempted consists of those deferred requests which were sent by both the operations management and change management focal points and which are still help by the receiver of the cancel request.
		X'70' Cancel all deferred requests received by any of the following: • EP_OPERATIONS_MGMT • All second-level application programs served by EP_OPERATIONS_MGMT • EP_CHANGE_MGMT The set of requests against which a cancel is attempted consists of those deferred requests which were received by all of the application programs meeting any of the criteria listed above and which are still held by each application program. The application programs include the application program to which the cancel request is addressed. The application programs must be located at the same entry point as the application program to which the cancel request is addressed. It is not stated whether the application program receiving the cancel request actually performs the cancel action, or otherwise causes each application program to perform the cancel action.
3–10(=q)		Conditionally present application program name (may be SNA/MS registered or not). A registered name is recognized when the first character of the name is less than X'40'. This application program name is present if the indicator at byte offset 2 is set to X'30' or X'40'. Otherwise it is not present.

Cancelation (X'0076') MS Major Vector

CP → CP

This major vector is used by an entry point to return the results of a cancelation to a focal point. Cancelation may have been requested by the focal point or locally.

Cancelation (X'0076') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0076'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Cancelation MS Subvectors” on page 4-333 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Cancelation (X'0076') Major Vector	
	CP-MSU	Notes
Date/Time (X'01')	O	
Reporting Cancelation (X'82')	P	
Detailed Data (X'98')	O(n)	

Key:

P	Present one time
O	Optionally present one time
O(n)	Optionally present one or more times

Cancelation MS Subvectors

Reporting Cancelation (X'82') Cancelation MS Subvector

The Reporting Cancelation subvector indicates whether or not a cancel request has been accepted for execution. It is also used to indicate (if the cancelation is accepted) success or failure of the execution. This subvector may also be used to report intermediate status concerning the cancelation process.

Reporting Cancelation (X'82') Cancelation MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Cancelation subvector
1		Key: X'82'
2–4(=p)		The Cancelation Status (X'10') subfield.

Cancelation Status (X'10') Reporting Cancelation Subfield

This subfield reports whether or not cancelation was successful. It is always present once.

Cancelation Status (X'10') Reporting Cancelation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cancelation Status subfield
1		Key: X'10'
2(=q)		Cancelation status: X'10' Successful X'20' Attempted, but not successful X'30' Not attempted and will not attempt X'40' Will attempt X'50' Intermediate. The cancelation is not yet complete, but information concerning the cancelation process is available and is being reported.

Detailed Data (X'98') Cancelation MS Subvector

This subvector transports product-specific detailed data.

Note: The format of this subvector is defined under the Alert (X'0000') major vector. However, no Qualified Message Data (X'01') subfields may be present.

Routing/Parsing Report (X'0077') MS Major Vector

CP → CP

This major vector is used to report an error associated with the routing of an MDS-MU to or from an application program served by a focal point or entry point application program in the same node. It may also be used to indicate parsing errors associated with those same MDS-MUs. It is not used for reporting or transporting MDS error messages. Other formats within the same CP-MSU as the Routing/Parsing Report MS Major Vector contain details of the error.

Routing/Parsing Report (X'0077') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3(=n)		Key: X'0077'

Request Response Time Monitor (X'8080') MS Major Vector

SSCP → PU T2

This major vector enables or disables response time monitoring, transports RTM parameters, and transports a request for RTM data and status from a device.

Request Response Time Monitor (X'8080') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8080'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Request Response Time Monitor Subvectors" on page 4-336 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request RTM (X'8080') Major Vector		
	CP-MSU	NMVT	Notes
SNA Address List (X'04')	—	CP	Note 1
Name List (X'06')	CP	—	Note 1
*RTM Request (X'92')	P	P	
RTM Control (X'94')	CP	CP	Note 2

Key:

*	Command Subvector (for PU parsing)
—	Not present
P	Present one time
CP	Conditionally present one time (See Notes for conditions.)

Notes:

1. This subvector is present in an X'8080' major vector when the request is for a specific LU (i.e., identified in the X'04' subvector) associated with the PU processing the request. This subvector is not present when the request is to apply to all LUs associated with the PU processing the request.
2. This subvector is present when RTM parameters are being set. If present, it immediately follows the RTM Request (X'92' subvector).

Request Response Time Monitor Subvectors

RTM Request (X'92') Request RTM MS Subvector

This subvector requests RTM data and status or accompanies an RTM control subvector.

RTM Request (X'92') Request RTM MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'92'
2		Request indicators (bit is set to 1 to request that the function be performed):
	0	Reset RTM data for the target LU upon reply transmission or immediately if no reply is requested.
	1	Retrieve data and status for all LUs with accumulated RTM data. See Figure 4-1.
	2	Retired
	3	Retrieve data and status for the LU specified in the SNA Address List (X'04') MS common subvector also included in this major vector. See Figure 4-1.
	4	Apply the RTM Control (X'94') MS subvector also included in this major vector to all LUs. *Note:* If this bit is set to 1, the RTM Control (X'94') MS subvector will be present. If this bit is set to 0 and the RTM Control (X'94') subvector is present, the SNA Address List (X'04') MS common subvector will be present.
	5–6	Retired
3(=p)		Reserved

Figure 4-1. Setting of Bits 1 and 3 of Byte 2 of the RTM Request (X'92') Subvector

Request Type	Subvectors present in the Request RTM (X'8080') major vector	Bits	
		B1	B2
Retrieve data for all LUs with accumulated data	92	1	0
Retrieve for specified LU	92, 04	0	1
Set parameters for all LUs	92, 94	0	0
Set parameters for specified LU	92, 94, 04	0	0

RTM Control (X'94') Request RTM MS Subvector

This subvector controls RTM data accumulation.

RTM Control (X'94') Request RTM MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'94'
2–3		RTM status and control change mask (bit is set to 1 if the setting specified by the corresponding RTM status and control indicator in bytes 4–5 should be used):
	0–8	Mask bits corresponding respectively to indicator bits 0–8 in bytes 4–5
	9–15	Reserved
4–5		RTM status and control indicators (bit is set to 1 to activate the function or 0 to deactivate it):
	0	RTM measurement active
	1	Return data unsolicited on session deactivation
	2	Return data unsolicited on counter overflow
	3	Retired
	4	Set the RTM measurement definition using byte 8
	5	Set the RTM response time measurement boundaries using bytes 9 and 16–m
	6	Retired
	7	Local display of RTM data
	8	Retired
	9–15	Reserved
6		Reserved
7		Retired
8		RTM measurement definition—defines when the response-time measurement will begin and end for each exchange between session partners: X'01' measured from the Attention or Action key depression to the arrival back at the LU of the first character that can alter the presentation space X'02' measured from the Attention or Action key depression until the LU is ready to accept input from its end user X'03' measured from the Attention or Action key depression to the receipt and processing back at the LU of Change Direction (CD) or End Bracket (EB) or CEB X'04' measured from the Attention or Action key depression to the receipt of the last character of the last message received prior to the next Attention or Action key depression
9		Response-time unit of measure: X'00' 100 milliseconds X'01'–X'7F' retired X'90' retired X'A0' retired X'C0' retired X'D0' retired
10–15		Reserved
16		RTM data collection parameters:
	0–3	Reserved
	4–7	Binary number of 2-byte boundaries in bytes 17-p

RTM Control (X'94') Request RTM MS Subvector

Byte	Bit	Content
17–p		A set of response-time measurement boundaries, specified in binary (as units of response-time units of measure described by byte 9) and increasing in order of magnitude; thus, response-time data is collected for intervals (0 < r1 ≤ b1×u), (b1×u < r2 ≤ b2×u), ... up to (b4 < r5), where bi is the value of the boundary i, ri is the response-time being measured for interval i, and u is the unit of measure described by byte 9.
17–18		Boundary 1
19–20		Boundary 2
21–p		Additional boundaries as required (the total number is defined by byte 16, bits 4–7), up to a maximum of 4

Response Time Monitor (X'0080') MS Major Vector

PU T2 → SSCP

This major vector transports RTM data. This data includes the collected response time data and current RTM status.

Response Time Monitor (X'0080') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0080'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Response Time Monitor Subvectors" on page 4-340 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in RTM (X'0080') Major Vector		
	NMVT	CP-MSU	Notes
Date/Time (X'01')	CP	P	Note 1
SNA Address List (X'04')	CP	CP	Note 2
Hierarchy/Resource List (X'05')	—	P	
Relative Time (X'42')	CP	CP	Note 3
Data Reset Flag (X'45')	CP	CP	Note 4
Sense Data (X'7D')	CP	CP	Note 5
RTM Status Reply (X'91')	CP	CP	Note 6
RTM Data (X'93')	CP	CP	Note 7

Key:

—	Not present
P	Present one time
CP	Conditionally present one time (See Notes for conditions.)

Notes:

1. If the PU sending the X'0080' major vector has the capability of providing it, this subvector is placed in the NMVT. If the PU did not provide it, the CP in whose domain the PU resides creates it. In either case it is always present in the CP-MSU.
2. This subvector is present when positively replying to a request for RTM data and status, or when RTM data and status are sent unsolicited.
3. If the PU sending the X'0080' cannot provide a Date/Time subvector, it places this subvector in the NMVT instead. If the CP finds this subvector present in the NMVT, it transfers it to the CP-MSU.
4. This subvector is present in an X'0080' major vector when a set of counters has been reset, either as a result of a request or when sent unsolicited.

5. This subvector is present when the PU sending the X'0080' major vector is unable to gather requested data or process the request in an X'8080' major vector, and has elected to send sense data in a reply instead of a negative response.
6. This subvector is present when positively replying to a request for RTM data and status, or when RTM data and status are sent unsolicited.
7. This subvector is present when positively replying to a request for RTM data and status if RTM data has been accumulated, or when RTM data and status are sent unsolicited.

Response Time Monitor Subvectors

RTM Status Reply (X'91') RTM MS Subvector

This subvector transports the current status of RTM function for a device.

RTM Status Reply (X'91') RTM MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'91'
2		Reply indicators (bit is set to 1 to indicate that the assertion is true):
	0	Reserved
	1	Data not included
	2	An RTM data request has been issued for an LU that has its RTM function disabled
	3	This is the first RTM reply since session activation (used to initiate a recording of the session partner names and the correlation value in bytes 7–8 of this subvector while there is reasonable assurance that the session is active); on subsequent replies, the correlation value will be used to associate data from the same LU-LU session
	4	An LU-LU session activation or deactivation has occurred at least once while the included RTM data was being accumulated
	5–7	Reserved
3		Reason for unsolicited reply, if any (bit is set to 1 to indicate the appropriate reason):
	0	The session for this resource has ended and is enabled unsolicited-reply-on-session-deactivation
	1	A counter for this LU has overflowed and unsolicited-reply-on-counter-overflow is enabled
	2	Retired
	3–5	Reserved
	6	Retired
	7	Reserved
4		Reason for potential loss of RTM data, if any (bit is set to 1 to indicate the reason):
	0	Reserved
	1	An overflow has occurred on at least one counter and updating for all of this LU's counters has been stopped to retain the relative significance of the data
	2	This LU has been reset since the last reply was sent
	3	A new session was activated before data for the previous session could be transmitted: loss of data for the new session may have occurred; updating for all of this LU's counters has been stopped to retain the relative significance of the data
	4	The RTM definition or response time measurement boundaries have been changed by a request that did not solicit the RTM data and RTM accumulation was active for this LU: any data collected since the last data request has been lost
	5–7	Reserved

RTM Status Reply (X'91') RTM MS Subvector

Byte	Bit	Content
5–6		RTM status when this subvector was constructed (a bit set to 1 indicates that the function was active):
	0	RTM measurement active
	1	Data to be sent unsolicited on session deactivation
	2	Data to be sent unsolicited on counter overflow
	3	Retired
	4	RTM definition was set by the control point
	5	RTM boundaries were set by the control point
	6	Retired
	7	Local display of RTM data
	8	Retired
	9–15	Reserved
7–8(=p)		Correlation value: a unique 2-byte value, generated by the PU, that is retained and used in all RTM replies dealing with the same LU-LU session from session activation through the subsequent session deactivation

RTM Data (X'93') RTM MS Subvector

This subvector transports solicited or unsolicited RTM data.

RTM Data (X'93') RTM MS Subvector

Byte	Bit	Content
0		Length (q+9), in binary, of this subvector
1		Key: X'93'
2		RTM measurement definition in effect: X'01' measured from the Attention or Action key depression to the arrival back at the LU of the first character that can alter the presentation space X'02' measured from the Attention or Action key depression until the LU is ready to accept input from its end user X'03' measured from the Attention or Action key depression to the receipt and processing back at the LU of Change Direction (CD) or End Bracket (EB) X'04' measured from the Attention or Action key depression to the receipt of the last character of the last message received prior to the next Attention or Action key depression.
3		Response time unit of measure: X'00' 100 milliseconds X'01'–X'7F' retired X'90' retired X'A0' retired X'C0' retired X'D0' retired
4–5		Reserved
6–7		Retired

RTM Data (X'93') RTM MS Subvector

Byte	Bit	Content
8		RTM data collection parameters:
	0–3	The number, in binary, of response time measurement boundaries returned; all boundaries that were set previously will be returned in this subvector
	4–7	The number, in binary, of boundary sets for which valid data was collected (overflow data—a count of response times exceeding the maximum boundary—is not included in this number but is always present)
9–p		A set of response-time measurement boundaries as previously set at the LU or by the RTM Control (X'94') MS subvector (specified in binary as units of response-time units of measure described by byte 9) and increasing in order of magnitude; thus, response-time data is collected for intervals ($0 < r1 \le 1 \times u$), ($b1 \times u < r2 \le b2 \times u$), ... up to ($b4 \times u < r5$), where bi is the value of the boundary i, ri is the response-time being measured for interval i, and u is the unit of measure described by byte 9
9–10		Boundary 1
11–12		Boundary 2
13–p		Additional boundaries as required to equal the number of boundaries set previously and specified by byte 8, bits 0–3
p+1–q		The number of measured exchanges for each response-time interval: the number of exchanges whose duration was within an interval's boundaries is reported in binary separately for each interval
p+1–p+2		Number of exchanges in the (0,b1) range
p+3–p+4		Number of exchanges in the (b1+1,b2) range
p+5–q		Additional exchange counts to satisfy the number of boundaries defined , up to a maximum of 4
q+1–q+2		Overflow: the number of exchange durations greater than the maximum boundary specified
q+3–q+6		Total of all individual times for all exchanges measured and reported by this record, including overflow, in the measurement units defined by byte 3
q+7–q+8		Last measured exchange duration in the measurement units defined by byte 3

Request Product Set ID (X'8090') MS Major Vector

SSCP → PU , CP → CP

This major vector transports a request for product identification from a network component.

Request Product Set ID (X'8090') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8090'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Request Product Set ID Subvectors" on page 4-344 for subvector keys X'80'–X'FE'. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request PSID (X'8090') Major Vector		
	CP-MSU	NMVT	Notes
*Node Identification (X'81')	CP	CP	Note 1
*Node and Port-Attached Device Identification (X'83')	CP	CP	Note 2
Unsolicited_Criteria (X'85')	CP	CP	Note 3

Key:

*	Command subvector for parsing by the receiver
CP	Conditionally present one time. (See notes for conditions.)

Notes:

1. This subvector is present when requesting the PSID for just the node (PU or CP) the major vector is sent to. The PSID is returned in a solicited Reply PSID major vector. Additionally, unsolicited Reply PSID major vectors may be returned when both the X'81X' and X'85' subvectors are present.
2. This subvector is present when requesting the PSID for the node (PU or CP) the major vector is sent to *and* its port-attached devices. The PSIDs are returned in solicited Reply PSID major vectors. Additionally, unsolicited Reply PSID major vectors may be returned when both the X'83X' and X'85' subvectors are present.
3. This subvector is present when requesting the target to send unsolicited Reply PSID major vectors when specific criteria are met. This subvector specifies those criteria. This subvector may be present with either the X'81' or X'83' command subvector. If this X'85' subvector is absent in the Request major vector, unsolicited Reply PSID major vectors shall not be sent by the Request target to the requesting CP.

   Independent of the presence of the X'85' subvector, solicited PSID is returned since either the X'81' or X'83' subvector shall be included in the Request PSID major vector.

Request Product Set ID Subvectors

Node Identification (X'81') Request PSID MS Subvector

This subvector requests product identification from the node receiving the request. The presence of the X'85' subvector may cause additional Reply PSID major vectors to be sent after the node is reported on with a single Reply PSID major vector.

Node Identification (X'81') Request PSID MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1(=p)		Key: X'81'

Node and Port-Attached Devices ID (X'83') Request PSID MS Subvector

This subvector requests product identification from the node the major vector is sent to. The node must build one Reply Product Set ID (X'0090') major vector for itself and one for each port-attached device for which the node has product identification. The presence of the X'85' subvector may cause additional Reply PSID major vectors to be sent after the node and all port-attached devices are reported on.

Node and Port-Attached Devices ID (X'83') Request PSID MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1(=p)		Key: X'83'

Unsolicited Criteria (X'85') Request PSID MS Subvector

This subvector specifies the criteria which the Request PSID target uses to determine if a Reply PSID major vector is to be sent when a product's identification changes. If this subvector is present with the X'81' command subvector, unsolicited Reply PSID major vectors are sent when the node (implementing the PU) changes and the criteria specified in X'85' are satisfied. If this subvector is present with the X'83' command subvector, unsolicited Reply PSID major vectors are sent when the node (implementing the PU) changes or when port-attached products change and criteria specified in X'85' are satisfied.

Unsolicited Criteria (X'85') Request PSID MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'85'
2 (=p)		Criteria for sending unsolicited PSID: X'01' send Reply PSID major vector each time a hardware product powers on or off.

Reply Product Set ID (X'0090') MS Major Vector

PU → SSCP, CP → CP

This major vector transports product identification information that was requested by the Request Product Set ID (X'8090') major vector. The Reply PSID major vector flows unsolicited when the criteria specified in the Unsolicited Criteria (X'85') subvector (of the Request PSID major vector) are met.

The Reply major vector also flows unsolicited when “Unsolicited Reply PSID major vector support” is indicated in the PU Capabilities (X'80') control vector of the ACTPU RU.

Reply Product Set ID (X'0090') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0090'
4–n		MS subvectors, as described (using zero-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and in “Reply PSID MS Subvectors” on page 4-347 for subvector keys X'80'–X'FE'. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Reply PSID (X'0090') Major Vector		
	NMVT	CP-MSU	Notes
Date/Time (X'01')	CP	P	Note 1
SNA Address List (X'04')	CP	CP	Note 2
Hierarchy/Resource List (X'05')	—	P	
Product Set ID (X'10')	P	P	
Relative Time (X'42')	CP	CP	Note 3
Port-Attached Device Configuration Description (X'82')	CP	CP	Note 4
Product Set Attributes (X'84')	O	O	
Additional Product Set Attributes (X'86')	O(n)	O(n)	
Detailed Data (X'88')	O(n)	O(n)	

Key:

—	Not present
P	Present one time
CP	Conditionally present one time (See Notes for conditions.)
O	Optionally present one time
O(n)	Optionally present one or more times

Notes:

1. If the PU sending the X'0090' major vector has the capability of providing it, this subvector is placed in the NMVT. If the PU did not provide it, the CP in

whose domain the PU resides creates it. In either case it is always present in the CP-MSU.

2. This subvector is present when the major vector is reporting on a port-attached device. This subvector contains multiple LU addresses if more than one LU is associated with the port.
3. If the PU sending the X'0090' cannot provide a Date/Time subvector, it places this subvector in the NMVT instead. If the CP finds this subvector present in the NMVT, it transfers it to the CP-MSU.
4. This subvector is present when the major vector is reporting on a port-attached device.

Reply PSID MS Subvectors

Port-Attach Devices Configuration Description (X'82') Reply PSID MS Subvector

This MS subvector describes the configuration of a device port-attached to the node to which the Request PSID major vector was sent.

Port-Attach Devices Configuration Description (X'82') Reply PSID MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector.
1		Key: X'82'
2–p		The following subfields are required: X'10' Port number X'20' Power-on status X'30' Power-on since last solicitation

Port Number (X'10') Port-Attached Device Config. Des. Subfield

This subfield contains the port number the device is attached to. The port number is associated with the "parent" node (the node to which the Request Product Set ID major vector was sent). Port is a generic term. It may be a physical port which is the attached device's interface to the product containing the PU sending the Reply PSID major vector. Alternatively, bytes 2-q of this subfield may carry a logical interface number. For example, when multiple physical devices share a single physical port, bytes 2-q may contain a logical address (e.g., physical port 2/station 5).

Port Number (X'10') Port-Attached Device Config. Des. Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'10'
2–q		Number of the port the device is attached to: numeric characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types.”

Power-on Status (X'20') Port-Attached Device Config. Des. Subfield

This subfield transports the power-on status of the attached device.

Power-on Status (X'20') Port-Attached Device Config. Des. Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'20'
2(=q)		Power-on Status of the device: X'01' device is currently powered on X'02' device is currently powered off

Power-on Since Last Solicitation (X'30') Port-Attached Device Config. Des. Subfield

This subfield states whether the device was powered on since the last solicitation (i.e., since the last time a Reply PSID major vector was sent by this node).

Power-on Since Last Solicitation (X'30') Port-Attached Device Config. Des. Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'30'
2(=q)		Power-on since last solicitation X'01' device was powered on (from a power-off position) at least once X'02' device was not powered on (although it may have been powered on before the previous solicitation and remained powered on) since the last solicitation

Product Set Attributes (X'84') Reply PSID MS Subvector

This MS subvector transports attributes describing the product set.

Product Set Attributes (X'84') Reply PSID MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector.
1		Key: X'84'
2–p		One or both of the the following subfields: X'00' Physical location X'10' LAN Universally-Administered Address

Physical Location (X'00') Product Set Attributes Subfield

This subfield contains the physical location of the product set (e.g, city/room/building).

Physical location (X'00') Product Set Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'00'
2–q		Physical location of the product set: up to 50 characters from Coded Graphic Character Set 00640–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types.”

LAN Universally-Administered Address (X'10') Product Set Attributes Subfield

This subfield contains the LAN universally-administered address.

LAN Universally-Administered Address (X'10') Product Set Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'10'
2–q		6 bytes (12 hexadecimal digits) identifying the LAN universally-administered MAC Address. No blanks are allowed. The 6 bytes are unique across all LAN adapters whose addresses are controlled by the IEEE. If the MAC Address identifies a Token-Ring or FDDI LAN Station, the address is in most significant bit (MSB) format. For other LAN types, the address is in least significant bit (LSB) format.

Additional Product Set Attributes (X'86') Reply PSID MS Subvector

This MS subvector transports additional data describing the product set. The data is labeled and is user-defined. This subvector is to be used to pass product set data not defined by the architecture (i.e., not in the X'84' subvector). Sample values of X'00' and X'10' subfields are “LESSOR=” and “XYZ, INC.,” respectively.

Additional Product Set Attributes (X'86') Reply PSID MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector
1		Key: X'86'

Additional Product Set Attributes (X'86') Reply PSID MS Subvector

Byte	Bit	Content
2–p		One Label (X'00') subfield followed by one Data (X'10') subfield

Label (X'00') Additional Product Set Attributes Subfield

This subfield contains the label which describes the data in the Data (X'10') subfield.

Label (X'00') Additional Product Set Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'00'
2–q		Label describing the data in the X'10' subfield: Up to 25 characters from Coded Graphic Character Set 00640–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types.”

Data (X'10') Additional Product Set Attributes Subfield

This subfield contains the data which is described by the Label (X'00' subfield) immediately preceding this subfield.

Data (X'10') Additional Product Set Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of this subfield
1		Key: X'10'
2–q		Up to 224 characters from Coded Graphic Character Set 00640-00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types.”

Detailed Data (X'88') Reply PSID MS Subvector

This MS subvector describes detailed data about a product.

Detailed Data (X'88') Reply PSID MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of this subvector.
1		Key: X'88'

Detailed Data (X'88') Reply PSID MS Subvector

Byte	Bit	Content
2		Product ID index: a 1-origin binary number that indicates which Product Identifier (X'11') subvector, contained within the accompanying Product Set ID (X'10') subvector, the detailed data is describing. The value of this field is a binary 1 when the X'10' subvector contains only one X'11' subvector.
3–4		Data ID: a code point indicating the type of data carried in the subfield. When the receiver displays the detailed data, the labels associated with the code points shall be used. The English text associated with each code point, or its national language equivalent, is displayed in conjunction with the detailed data. Defined codes are: X'0001' reserved X'0002' reserved X'0003' Keyboard ID: The identification of the keyboard. X'0004' Extended Keyboard ID X'0005' reserved X'0006' reserved X'0007' reserved X'0008' reserved
5		Data Encoding: a code point indicating how the accompanying detailed data is encoded. This field is useful when the receiver will display the detailed data. Defined codes are: X'00' hexadecimal: The data is to be displayed as hexadecimal digits. X'01' reserved X'11' reserved
6–7		Reserved
8–p		Detailed data, encoded as specified in byte 5 *Note:* Maximum length of the detailed data is 100 bytes.

Request Modem LCS Operator Control (X'8091') MS Major Vector

SSCP → T4

This major vector transports a request for operator control functions for IBM LPDA-2 modem link connection subsystem.

Request Modem LCS Operator Control (X'8091') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'8091'
4–n		MS subvectors, as described in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Request Modem LCS Operator Control MS Subvectors" for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request Modem LCS Operator Control (X'8091') Major Vector	
	NMVT	Notes
SNA Address List (X'04')	P	
*Modem LCS Operator Control Command (X'81')	P	

Key:

* Command subvector (for PU parsing)
P Present one time

Request Modem LCS Operator Control MS Subvectors

Modem LCS Operator Control Command (X'81') Request Modem LCS Operator Control MS Subvector

This subvector transports an operator control command for a link connection subsystem with IBM LPDA-2 modems.

Modem LCS Operator Control Command (X'81') Request Modem LCS Operator Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Modem LCS Operator Control Command subvector
1		Key: X'81'
2–p		Two subfields containing operator control information (listed by key value below and described in detail following): X'01' Time-out Value X'02' Modem LCS Command Data

Time-out Value (X'01') Modem LCS Operator Control Command Subfield

This subfield transports a time-out value for a modem test.

Time-out Value (X'01') Modem LCS Operator Control Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Time-out Value subfield
1		Key: X'01'
2–3(=q)		Number of 100-millisecond increments, in binary, to elapse before the modem command is considered to have had no response

Modem LCS Command Data (X'02') Modem LCS Operator Control Command Subfield

This subfield transports modem LCS command data.

Modem LCS Command Data (X'02') Modem LCS Operator Control Command Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Modem LCS Command Data subfield
1		Key: X'02'
2–q		Modem LCS command data. *Note:* For more detail, see Modem Configuration Commands section in *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, SY33-2048.

Reply Modem LCS Operator Control (X'0091') MS Major Vector

PU T4 → SSCP

This major vector transports operator control functions for IBM LPDA-2 link connection subsystems that were requested by the Request Modem LCS Operator Control (X'8091') major vector.

Reply Modem LCS Operator Control (X'0091') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'0091'
4–n		MS subvectors, as described in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Reply Modem LCS Operator Control (X'0091') Major Vector	
	NMVT	**Notes**
Date/Time (X'01')	CP	Note 1
SNA Address List (X'04')	P	
Relative Time (X'42')	CP	Note 2
LPDA-2 Link Connection Subsystem Data (X'50')	CP	Note 3
Link Connection Subsystem Configuration Data (X'52')	P	
Sense Data (X'7D')	CP	Note 4

Key:

P Present one time
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. If the PU sending the X'0091' major vector has the capability of providing it, it places this subvector in the NMVT. See Note 2.
2. If the PU sending the Reply Modem LCS Operator cannot provide Date/Time subvector, it places the Relative Time subvector in the NMVT instead.
3. Reply to the LPDA-2 Configuration Command (e.g., Modem Configuration Command) targeted to an LPDA-2 link segment (for details, see *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, SY33–2048). If the command can not be executed, the LPDA-2 data the Sense Data is present instead.
4. This subvector is present when the PU sending the X'0091' major vector is unable to perform the command requested in a X'8091' major vector.

Request Link Resource Control (X'80A0') MS Major Vector

SSCP → PU T4

This major vector transports a request to query or set parameter values within a network device.

Request Link Resource Control (X'80A0') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector.
2–3		Key: X'80A0'
4–n		MS subvectors, as described (using zero-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Request Link Resource Control MS Subvectors" on page 4-356 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Request LRC (X'80A0') Major Vector	
	NMVT	**Notes**
SNA Address List (X'04')	P	
*Set Link Station Attributes (X'81')	CP	Note 1
*Query Link Station Attributes (X'83')	CP	Note 2
*Set Link Attributes (X'85')	CP	Note 3
*Query Link Attributes (X'87')	CP	Note 4

Key:

*	Command Subvector (for PU parsing)
P	Present one time
CP	Conditionally present one time (See Notes for conditions.)

Notes:

1. This subvector is used to set link station parameters such as threshold values, and to enable or disable the LPDA function support for a link station. If this subvector is present, the X'83', X'85', or X'87' subvectors are not present.
2. This subvector is used to query link station parameters such as threshold values, and LPDA support status. If this subvector is present, the X'81', X'85', or X'87' subvectors are not present.
3. This subvector is used to specify the type of LPDA support, i.e., the type of modem support, for a link. If this subvector is present, the X'81', X'83', or X'87' subvectors are not present.
4. This subvector is used to query the type of LPDA support, i.e., the type of modem support, for a link. If this subvector is present, the X'81', X'83', or X'85' subvectors are not present.

Request Link Resource Control MS Subvectors

Set Link Station Attributes (X'81') Request Link Resource Control MS Subvector

This subvector sets link station parameters, such as threshold values, and enables or disables the LPDA function support for a link station.

Set Link Station Attributes (X'81') Request Link Resource Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Set Link Station Attributes subvector
1		Key: X'81'
2–p		One or more subfields containing link station attribute modification data (listed by Key value below and described in detail following): X'01' Set Transmit Data Threshold X'02' Set Transmit Error Threshold X'03' Set Receive Data Threshold X'04' Set Receive Error Threshold X'05' retired X'20' Set LPDA Status

Set Transmit Data Threshold (X'01') Set Link Station Attributes Subfield

This subfield sets the transmit data threshold for a link station.

Set Transmit Data Threshold (X'01') Set Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Set Transmit Data Threshold subfield
1		Key: X'01'
2–q		Threshold value, in binary, must be 4 bytes

Set Transmit Error Threshold (X'02') Set Link Station Attributes Subfield

This subfield sets the transmit error threshold for a link station.

Set Transmit Error Threshold (X'02') Set Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Set Transmit Error Threshold subfield
1		Key: X'02'
2–q		Threshold value, in binary, not to exceed 4 bytes

Set Receive Data Threshold (X'03') Set Link Station Attributes Subfield

This subfield sets the receive data threshold for a link station.

Set Receive Data Threshold (X'03') Set Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Set Receive Data Threshold subfield
1		Key: X'03'
2–q		Threshold value, in binary, not to exceed 4 bytes

Set Receive Error Threshold (X'04') Set Link Station Attributes Subfield

This subfield sets receive error threshold for a link station.

Set Receive Error Threshold (X'04') Set Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Set Receive Error Threshold subfield
1		Key: X'04'
2–q		Threshold value, in binary, not to exceed 4 bytes

Set LPDA Status (X'20') Set Link Station Attributes Subfield

This subfield inhibits or allows the LPDA support defined for the link for a link station.

Set LPDA Status (X'20') Set Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Set LPDA Status subfield
1		Key: X'20'
2(=q)		LPDA status: X'00' inhibit link station LPDA support X'01' allow link station LPDA support

Query Link Station Attributes (X'83') Request Link Resource Control MS Subvector

This subvector queries link station parameters such as threshold values and LPDA support type and status.

Query Link Station Attributes (X'83') Request Link Resource Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Query Link Station Attributes subvector
1		Key: X'83'
2–p		One or more subfields containing query information data (listed by Key value below and described in detail following): X'01' Query Thresholds X'20' Query LPDA Status

Query Thresholds (X'01') Query Link Station Attributes Subfield

This subfield queries the thresholds for a link station.

Query Thresholds (X'01') Query Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Query Thresholds subfield
1(=q)		Key: X'01'

Query LPDA Status (X'20') Query Link Station Attributes Subfield

This subfield queries the LPDA status for a link station, and the LPDA support type and modem link connection subsystem configuration for its associated link.

Query LPDA Status (X'20') Query Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Query LPDA subfield
1(=q)		Key: X'20'

Set Link Attributes (X'85') Request Link Resource Control MS Subvector

This subvector specifies the type of LPDA function support (i.e., type of modem support) for a link.

Set Link Attributes (X'85') Request Link Resource Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Set Link Attributes subvector
1		Key: X'85'
2–p		One subfield containing link attribute modification data (listed by Key value below and described in detail following): X'20' Set LPDA Support

Set LPDA Support (X'20') Set Link Attributes Subfield

This subfield sets the LPDA support type for a link.

Set LPDA Support (X'20') Set Link Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Set LPDA Support subfield
1		Key: X'20'
2(=q)		LPDA support type: X'00' LPDA support inhibited X'01' LPDA-1 support for IBM modems X'02' LPDA-1 support for IBM link diagnostic unit X'03' LPDA-2 support for IBM modems

Query Link Attributes (X'87') Request Link Resource Control MS Subvector

This subvector queries the LPDA support type (i.e., type of modem support) and modem link connection subsystem configuration for a link.

Query Link Attributes (X'87') Request Link Resource Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Query Link Attributes subvector
1		Key: X'87'
2–p		One subfield containing query information data (listed by Key value below and described in detail following): X'20' Query LPDA Support

Query LPDA Support (X'20') Query Link Attributes Subfield

This subfield queries the LPDA support type, i.e., type of modem support, and modem link connection subsystem configuration for a link.

Query LPDA Support (X'20') Query Link Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Query LPDA Support subfield
1(=q)		Key: X'20'

Reply Link Resource Control (X'00A0') MS Major Vector

PU T4 → SSCP

This major vector transports parameter values within a network device that were requested by the Request Link Resource Control (X'80A0') major vector.

Reply Link Resource Control (X'00A0') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector.
2–3		Key: X'00A0'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and in "Reply Link Resource Control MS Subvectors" on page 4-362 for subvector keys X'80'–X'FE' *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Reply LRC (X'00A0') Major Vector	
	NMVT	Notes
Date/Time (X'01')	CP	Note 1
SNA Address List (X'04')	P	
Relative Time (X'42')	CP	Note 2
Sense Data (X'7D')	CP	Note 3
Reply Link Station Attributes (X'82')	CP	Note 4
Reply Link Attributes (X'84')	CP	Note 5

Key:

P Present one time
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. If the PU sending the X'00A0' major vector has the capability of providing it, it places this subvector in the NMVT.
2. If the PU sending the X'00A0' cannot provide a Date/Time subvector, it places this subvector in the NMVT instead.
3. This subvector is present when the PU sending the X'00A0' major vector is unable to execute the LRC function requested in a X'80A0' major vector and the PU sending this major vector has elected to send sense data in a reply instead of a negative response.
4. This subvector is used to return link station parameters such as threshold values and LPDA status that were requested with X'80A0' major vector containing a X'81' or X'83' subvector. If this subvector is present, the X'84' subvector is present only if this reply is the result of a request with a X'83' subvector containing a X'20' (Query LPDA Status) subfield.

5. This subvector is used to return the link LPDA support type that was requested with X'80A0' major vector containing a X'85' or X'87' subvector, or a X'83' subvector containing a X'20' (query LPDA Status) subfield. If this subvector is present, the X'82' subvector is present only if this reply is the result of a request with a X'83' subvector containing a X'20' (Query LPDA Status) subfield.

Reply Link Resource Control MS Subvectors

Reply Link Station Attributes (X'82') Reply Link Resource Control MS Subvector

This subvector transports parameters such as threshold values and LPDA status that were requested with the Set Link Station Attributes (X'81') or Query Link Station Attributes (X'83') subvectors.

Reply Link Station Attributes (X'82') Reply Link Resource Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reply Link Station Attributes subvector
1		Key: X'82'
2–p		One or more subfields containing link station attribute data (listed by Key value below and described in detail following): X'01' Reply Transmit Data Threshold X'02' Reply Transmit Error Threshold X'03' Reply Receive Data Threshold X'04' Reply Receive Error Threshold X'05' retired X'20' Reply LPDA status

Reply Transmit Data Threshold (X'01') Reply Link Station Attributes Subfield

This subfield transports the transmit data threshold for a link station.

Reply Transmit Data Threshold (X'01') Reply Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply Transmit Data Threshold subfield
1		Key: X'01'
2–q		Threshold value, in binary, not to exceed 4 bytes

Reply Transmit Error Threshold (X'02') Reply Link Station Attributes Subfield

This subfield transports the transmit error threshold for a link station.

Reply Transmit Error Threshold (X'02') Reply Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply Transmit Error Threshold subfield
1		Key: X'02'
2–q		Threshold value, in binary, not to exceed 4 bytes

Reply Receive Data Threshold (X'03') Reply Link Station Attributes Subfield

This subfield transports the receive data threshold for a link station.

Reply Receive Data Threshold (X'03') Reply Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply Receive Data Threshold subfield
1		Key: X'03'
2–q		Threshold value, in binary, not to exceed 4 bytes

Reply Receive Error Threshold (X'04') Reply Link Station Attributes Subfield

This subfield transports the receive error threshold for a link station.

Reply Receive Error Threshold (X'04') Reply Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply Receive Error Threshold subfield
1		Key: X'04'
2–q		Threshold value, in binary, not to exceed 4 bytes

Reply LPDA Status (X'20') Reply Link Station Attributes Subfield

This subfield transports the LPDA status for a link station.

Reply LPDA Status (X'20') Reply Link Station Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply LPDA Status subfield
1		Key: X'20'

Reply LPDA Status (X'20') Reply Link Station Attributes Subfield

Byte	Bit	Content
2(=q)		LPDA status: X'00' LPDA inhibited X'01' LPDA allowed

Reply Link Attributes (X'84') Reply Link Resource Control MS Subvector

This subvector transports LPDA support parameters, modem Link Connection Subsystem (LCS) configuration data, and Communication Subsystem (CSS) Link Attribute data that were requested with the Set Link Attributes (X'85'), or Query Link Attributes (X'87') subvectors, or the Query Link Station Attributes (X'83') subvector with a X'20' subfield.

Reply Link Attributes (X'84') Reply Link Resource Control MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reply Link Attributes subvector
1		Key: X'84'
2–p		The following subfields containing link attribute data (listed by Key value below and described in detail following): X'20' Reply LPDA Support X'30' Reply Modem LCS Configuration

Reply LPDA Support (X'20') Reply Link Attributes Subfield

This subfield identifies the LPDA support type for a link.

Reply LPDA Support (X'20') Reply Link Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply LPDA Support subfield
1		Key: X'20'
2(=q)		LPDA support: X'00' LPDA support inhibited X'01' LPDA-1 support for IBM modems X'02' LPDA-1 support for IBM link diagnostic unit X'03' LPDA-2 support for IBM modems

Reply Modem LCS Configuration (X'30') Reply Link Attributes Subfield

This subfield identifies the modem link connection subsystem (LCS) configuration.

Reply Modem LCS Configuration (X'30') Reply Link Attributes Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reply Modem LCS Configuration subfield
1		Key: X'30'
2		Modem features:
	0	Reserved
	1–7	Reserved
3(=q)		Number, in binary, of link segments active on this link connection, per link station; if reported for a link connection attributes only, the value is X'FF' (i.e., it does not apply)

MS Capabilities (X'80F0') MS Major Vector

CP → CP

This major vector is used to establish focal-point/entry-point relationships, as well as to convey current focal-point information.

MS Capabilities (X'80F0') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'80F0'
4–n		MS subvectors, as described (using zero-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00'–X'7F', and immediately below for subvector keys X'80'–X'FE'. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in MS Capabilities (X'80F0') Major Vector	
	CP-MSU	Notes
Focal Point Identification (X'21')	P	Note 1
Additional Backup Focal Points (X'22')	CP(n)	Note 7
Focal Point Authorization Request (X'61')	CP	Note 2
Focal Point Authorization Reply (X'62')	CP	Note 3
Entry Point Authorization Request (X'63')	CP	Note 4
Entry Point Authorization Reply (X'64')	CP	Note 5
Focal Point Notification (X'E1')	CP	Note 6

Key:

P	Present one time (See Notes for conditions.)
CP	Conditionally present one time (See Notes for conditions.)
CP(n)	Conditionally present one or more times (See Notes for conditions.)

Notes:

1. This subvector is always present and is always last for senders at the current level of SNA. Previous implementations, which are supported for migration, do not include this subvector. For those implementations, the identity of the focal point is understood to be the session partner that sends an MS Capabilities request. The only request supported by back-level focal-point implementations is the Focal Point Authorization Request (X'61') subvector. The only reply supported by back-level entry-point implementations is the Focal Point Authorization Reply (X'62') subvector.
2. This subvector is present when the request is sent from a focal point to an entry point. It is sent by a focal point to request that an entry point be in its sphere of control.

3. This subvector is present in the response to an MS Capabilities major vector containing the Focal Point Authorization Request (X'61') subvector. It is also present in an unsolicited MS Capabilities major vector sent to revoke a focal point.
4. This subvector is present when the request is sent from an entry point to a focal point. It is sent by an entry point to request services from a focal point.
5. This subvector is present in response to receipt of an MS Capabilities major vector containing an Entry Point Authorization Request (X'63') subvector.
6. This subvector is present when the request is sent from a network node server client end node.
7. This subvector is optionally present one or more times when the Focal Point Authorization Request (X'61') subvector is sent and a backup focal point is already identified within the Focal Point Identification (X'21') subvector. Each occurrence of this subvector (X'22') identifies one or more additional backup focal points for the category.

MS Capabilities MS Subvectors

Focal Point Notification (X'E1') MS Capabilities Subvector

The Focal Point Notification subvector flows from a network node server to a client end node. It, together with the Focal Point Identification (X'21') MS common subvector, indicates the name of the current focal point for the specified MS Category.

Focal Point Notification (X'E1') MS Capabilities Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Focal Point Notification subvector
1(=p)		Key: X'E1'

BER Envelope (X'132F') MS Major Vector

PU → SSCP, CP → CP

This MS major vector envelopes one OSI Application PDU, encoded according to the Basic Encoding Rules (ISO/IEC 8825:1990), for transmission on the SSCP-PU or CP-CP session. The particular APDUs enveloped are the Remote Operations APDUs (from ISO-IEC 9072-2:1989), as used by CMIP (ISO/IEC 9596-1:1991).

BER Envelope(X'132F') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'132F'
4–n		A single Application PDU (APDU), encoded according to the Basic Encoding Rules.

Management Association (X'1330') MS Major Vector

PU → SSCP, CP → CP

This major vector accompanies a BER Envelope (X'132F') major vector in an NMVT or CP-MSU. It contains SNA/MS information related to the resource identified in the BER Envelope major vector.

Management Association (X'1330') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'1330'
4–n		MS subvectors, as described (using 0-origin indexing) in "MS Common Subvectors" on page 4-400 for subvector keys X'00'–X'7F', and immediately below for subvector keys X'80'–X'FE'.

Note: The following subvector keys may be used as indicated:

Subvector	Presence in Management Association (X'1330') Major Vector		
	NMVT	CP-MSU	Notes
SNA Address List (X'04')	CP		Note 1
Hierarchy/Resource List (X'05')	CP	P	Note 2
Distinguished Name Extension (X'0C')	CP(n)	CP(n)	Note 3
Product Set ID (X'10')	P	P	
Nested Alert Focal Point Data Forwarding (X'34')	O(n)	O(n)	
Directed Action (X'81')	P	P	

Key:

P	Present one time
CP	Conditionally present one time (See Notes below for conditions)
CP(n)	Conditionally present one or more times (See Notes below for conditions)
O(n)	Optionally present one or more times

Notes:

1. This subvector is present when there is an SNA address associated with the resource identified in the accompanying BER Envelope (X'132F') major vector, as extended by the Distinguished Name Extension (X'0C') subvector.
2. This subvector is present on PU → SSCP sessions when the resource involved is an SDLC peripheral link.
3. One or more instances of this subvector are present if the name of the object represented in the accompanying BER Envelope (X'132F') major vector is not a full distinguished name. When multiple copies of this subvector are present,

order is significant, with earlier subvectors containing higher-order RDNs than later subvectors.

Directed Action (X'81')

This subvector indicates to the receiver the nature of the BER-encoded data in the accompanying BER Envelope (X'132F') MS major vector, so that the receiver can take an appropriate action without having to decode this BER-encoded data.

Directed Action (X'81')

Byte	Bit	Content
0		Length (p+1), in binary, of the Directed Action subvector
1		Key: X'81'
2		Directed Action X'00' unspecified - no special action requested X'01' CMIP alarm - process in the same way as an SNA/MS Alert

Link Configuration Data (X'1332') MS Major Vector

PU T4 → SSCP

This major vector transports link configuration data about one or more listed resources.

Link Configuration Data (X'1332') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'1332'
4–n		MS subvector, as described (using 0-origin indexing) “MS Common Subvectors” on page 4-400 for subvector keys X'00' - X'7F'. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Link Configuration Data (X'1332') Major Vector	
	NMVT	**Notes**
Date/Time (X'01')	CP	Note 1
SNA Address List (X'04')	P	
Hierarchy/Resource List (X'05')	CP	Note 2
Product Set ID (X'10')	P	
Relative Time (X'42')	CP	Note 3
LCS Configuration Data (X'52')	P(n)	Note 4

Key:

P	Present one time
P(n)	Present one or more times
CP	Conditionally present one time (See Notes for conditions)

Notes:

1. If the PU sending this major vector has the capability of providing it, it places this subvector in the NMVT. See Note 3.
2. This subvector is present in the NMVT when data for an associated resource is included.
3. If the PU sending the NMVT cannot provide a Date/Time (X'01') subvector, it places this subvector in the NMVT instead.
4. Each instance of this subvector will return link configuration data, DLCI status, and/or FRSE Subport Set status for a frame relay connection.

Management Data Bundling (X'9000') MS Major Vector

CP → CP

This major vector provides for bundling of management services data in a single CP-MSU, to improve performance when a sender has several items to send. To simplify the receiver's parsing, the immediate contents of this major vector are a set of one or more CP-MSUs. An example of the overall structure of an MDS-MU containing the Management Data Bundling major vector is the following:

```
MDS-MU
  CP-MSU
    Management Data Bundling MV
      bundled CP-MSU-1
         <one or more MVs>
      bundled CP-MSU-2
         <one or more MVs>
      bundled CP-MSU-3
         <one or more MVs>
```

The bundled CP-MSUs may contain any combination of management services major vectors, parameter major vectors, and GDS variables that appear in a CP-MSU, except for the Management Data Bundling major vector itself.

A receiver that does not support bundling of management services data with this major vector responds with SNA sense data X'080C 0005', indicating that it does not support this management services major vector key.

Management Data Bundling (X'9000') MS Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'9000'
4–n		One or more Control Point Management Services Unit (CP-MSU) GDS variables containing management data. Any management services major vector, parameter major vector, or GDS variable allowed in a CP-MSU may appear in the CP-MSUs within this major vector, except for the Management Data Bundling major vector itself.

MS Parameter Major Vector Formats

Text Data (X'1300') MS Parameter Major Vector

SSCP → PU, PU → SSCP, CP → CP

This MS parameter major vector accompanies one of three MS major vectors: Execute Command (X'8061'), Reply to Execute Command (X'0061') and Send Message to Operator (X'006F'). It transports one or more messages.

Text Data (X'1300') MS Parameter Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'1300'
4–n		MS subvectors, as described (using 0-origin indexing) in “MS Common Subvectors” on page 4-400 for subvector keys X'00' - X'7F'. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Message Data Parameters (X'1300') Major Vector		
	NMVT	CP-MSU	Notes
Qualified Message (X'0A')	CP(n)	CP(n)	Note 1
Self-Defining Text Message (X'31')	CP(n)	CP(n)	Note 2

Key:

CP(n) Conditionally present one or more times (See Notes for conditions.)

Notes:

1. This subvector is present one or more times when the Self-Defining Text Message subvector is not present. One of the two is required.
2. This subvector is present one or more times when the Qualified Message subvector is not present. One of the two is required.

Structured Data (X'1307') MS Parameter Major Vector

SSCP → PU, PU → SSCP, CP → CP

This MS parameter major vector accompanies one of six MS major vectors: Execute Command (X'8061'), Reply to Execute Command (X'0061'), Reply to Analyze Status (X'0062'), Reply to Query Resource Data (X'0063'), Reply to Test Resource (X'0064'), and Send Message to Operator (X'006F'). It transports one or more resource data items.

Structured Data (X'1307') MS Parameter Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'1307'
4–n		MS subvectors, as described (using 0-origin indexing) below for subvector keys X'80'–X'FE', and in “MS Common Subvectors” on page 4-400 for subvector keys X'00' - X'7F'. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Structured Data (X'1307') Major Vector		
	NMVT	CP-MSU	Notes
Hierarchy/Resource List (X'05')	CP	CP	Note 1
Resource Data (X'80')	CP(n)	CP(n)	Note 2

Key:

CP Conditionally present one time. (See Notes for conditions.)
CP(n) Conditionally present one or more times. (See Notes for conditions.)

Notes:

1. This subvector is present when the Structured Data MS parameter major vector follows the Reply to Analyze Status (X'0062') MS major vector in order to identify the resource or set of resources associated with the subvectors in the Begin Data Parameters (X'130A') MS parameter major vector. Otherwise it may be optionally included to identify the content of the resource data transported in its associated Resource Data (X'80') subvector.
2. This subvector is present one or more times when the Structured Data MS parameter major vector follows the Execute Command (X'8061') MS major vector, Reply To Execute Command (X'0061') MS major vector, Reply To Query Resource Data (X'0063') MS major vector, Reply To Test Resource (X'0064') MS major vector or Send Message to Operator (X'006F') MS major vector.

Structured Data Subvectors

Resource Data (X'80') Structured Data MS Subvector

This Structured Data subvector transports data about a single resource.

Resource Data (X'80') Structured Data MS Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Resource Data subvector
1		Key: X'80'
2–p		Subfield containing a resource name, a resource address or a resource data identifier and a subfield containing data related to the resource. One of the X'01' subfield, the X'10' subfield, or the X'11' subfield is always present. One of the four value (X'02'–X'05') subfields is also present. *Note:* The following subfield keys are used as indicated: (X'01') Resource Item Name (X'02') Resource Item Hex Value (X'03') Resource Item Character Value (X'04') Resource Item Integer Value (X'05') Resource Item Bit String Value (X'10') Resource Item Address (X'11') Resource Item Data ID

Resource Item Name (X'01') Resource Data Subfield

This subfield transports the name of the resource data item, i.e. a label.

Resource Item Name (X'01') Resource Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource Item Name subfield
1		Key: X'01'

Resource Item Name (X'01') Resource Data Subfield

Byte	Bit	Content
2–q		Resource Item Name - a string of characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types”

Resource Item Hex Value (X'02') Resource Data Subfield

This subfield transports hexadecimal data to be displayed as hex digits.

Resource Item Hex Value (X'02') Resource Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource Item Hex Value subfield
1		Key: X'02'
2–q		Resource Item Hex Value - a string of hexadecimal bytes.

Resource Item Character Value (X'03') Resource Data Subfield

This subfield transports character data.

Resource Item Character Value (X'03') Resource Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource Item Character Value subfield
1		Key: X'03'
2–q		Resource Item Character Value - a string of characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types”

Resource Item Integer Value (X'04') Resource Data Subfield

This subfield transports integer data.

Resource Item Integer Value (X'04') Resource Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource Item Integer Value subfield
1		Key: X'04'
2–q		Resource Item Integer Value - a one to four byte integer value.

Resource Item Bit String Value (X'05') Resource Data Subfield

This subfield transports hexadecimal data to be displayed as a string of 1's and 0's.

Resource Item Bit String Value (X'05') Resource Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource Item Bit String Value subfield
1		Key: X'05'
2–q		Resource Item Bit String Value - a string of hexadecimal bytes.

Resource Item Address (X'10') Resource Data Subfield

This subfield transports the hexadecimal name of the resource data item, i.e. an address.

Resource Item Address (X'10') Resource Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource Item Address subfield
1		Key: X'10'
2–q		Resource Item Address - a string of hexadecimal bytes.

Resource Item Data ID (X'11') Resource Data Subfield

This subfield transports an index to a table of predefined data identifiers, i.e. labels.

Resource Item Data ID (X'11') Resource Data Subfield

Byte	Bit	Content
0		Length (X'04'), in binary, of the Resource Item Data ID subfield
1		Key: X'11'
2–3		Resource Item Data ID - a code point indicating the type of data carried in the companion subfield. The English text associated with the code point, or its national national language equivalent, is displayed. Defined codes are found under the Data ID codes for the Detailed Data Extended (X'85.') subfield of the Network Alert (X'0000') major vector.

Transparent Coded Datastream (X'1309') MS Parameter Major Vector

SSCP → PU, PU → SSCP, CP → CP

This MS parameter major vector accompanies one of three MS major vectors: Execute Command (X'8061'), Reply to Execute Command (X'0061') and Send Message to Operator (X'006F'). It contains data whose structure is not defined by SNA Management Services, but which is known by the sending and receiving applications.

Transparent Coded Datastream(X'1309') MS Parameter Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'1309'
4–n		Data of an architecturally undefined structure.

Begin Data Parameters (X'130A') MS Parameter Major Vector

PU → SSCP, CP → CP

This MS parameter major vector accompanies one of three MS major vectors: Reply to Analyze Status (X'0062'), Reply to Query Resource Data (X'0063'), and and Reply to Test Resource (X'0064'). It serves as a starting delimiter for a sequence of other MS parameter major vectors, as well as transporting failure data itself.

Begin Data Parameters (X'130A') MS Parameter Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'130A'
4–n		MS subvectors, as described below. *Note:* The following subvector keys may be used as indicated:

Subvector	Presence in Begin Data Parameters (X'130A') Major Vector		
	NMVT	CP-MSU	Notes
Resource State (X'82')	CP	CP	Note 1
Probable Causes (X'93')	CP	CP	Note 1

Key:

CP Conditionally present one time. (See Note for conditions.)

Note:

1. This subvector is present one time whenever the Begin Data Parameters MS parameter major vector follows the Reply To Analyze Status (X'0062') MS major vector.

Begin Data Parameters Subvectors

Resource State (X'82') Begin Data Parameters MS Subvector

This Begin Data Parameters subvector transports the state of an analyzed resource or set of resources.

Resource State (X'82') Begin Data Parameters MS Subvector

Byte	Bit	Content
0		Length (x'03') in binary, of the Resource State subvector
1		Key: X'82'
2		A value indicating the resource state. X'00' no failure detected X'01' detected failure with failing resource isolated X'02' detected failure with location not isolated X'03' detected failure upstream from the managed resource set X'04' detected failure within the managed resource set X'05' detected failure downstream from the managed resource set

Probable Causes (X'93') Begin Data Parameters MS Subvector

This subvector contains one or more code points denoting probable causes of a failure. The probable causes appear in order of decreasing probability.

Note: The format of this subvector is defined under the Alert (X'0000') major vector.

End Parameter Data (X'130B') MS Parameter Major Vector

PU → SSCP, CP → CP

This MS parameter major vector accompanies one of three MS major vectors: Reply to Analyze Status (X'0062'), Reply to Query Resource Data (X'0063'), and and Reply to Test Resource (X'0064'). It serves as an ending delimiter for a sequence of other MS parameter major vectors.

End Parameter Data (X'130B') MS Parameter Major Vector

Byte	Bit	Content
0–1		Length (4), in binary, of this MS major vector
2–3		Key: X'130B'

Initiate Agent Request (X'1730') MS Parameter Major Vector

LU → LU

This MS parameter major vector accompanies the Request Initiation (X'8068') MS major vector. It contains an Initiate command and associated parameters.

Initiate Agent Request (X'1730') MS Parameter Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS parameter major vector
2–3		Key: X'1730'
4–n		MS GDS variables, as described below. *Note:* The following GDS variables may be used as indicated:

GDS Variable	Presence in Initiate Agent Request (X'1730') Parameter Major Vector	
	CP-MSU	Notes
Command (X'1732')	P	
Job Element Spec (X'1735')	P	

Key:

P Present one time

Initiate Agent Request GDS Variables

Command (X'1732') Initiate Agent Request GDS Variable

This GDS variable contains the command. It is always the first GDS variable in the parameter major vector.

Command (X'1732') Initiate Agent Request GDS Variable

Byte	Bit	Content
0–1		Length (p+1), in binary, of the Command GDS variable
2–3		Key: X'1732'
4(=p)		A value that identifies the command: X'01' Initiate job element

Job Element Spec (X'1735') Initiate Agent Request GDS Variable

This GDS variable contains parameters for the job element to be initiated. It always follows the Command (X'1732') GDS variable in the Initiate Agent Request (X'1730') parameter major vector.

Job Element Spec (X'1735') Initiate Agent Request GDS Variable

Byte	Bit	Content
0–1		Length (p+1), in binary, of the Job Element Spec GDS variable
2–3		Key: X'1735'
4–p		GDS variables containing the job element specifications. *Note:* The following GDS variables may be used as indicated and in the order shown: X'1736' Submission Type X'173A' Object Number X'1747' Object Disposition X'1749' Command Procedure Parameters

Submission Type (X'1736') Job Element Spec GDS variable

This GDS variable specifies the type of job element initiation the target agent is to perform. It is present one time.

Submission Type (X'1736') Job Element Spec GDS variable

Byte	Bit	Content
0–1		Length (q+1), of the Submission Type GDS variable
2–3		Key: X'1736'
4(=q)		A value that identifies the type of job element submission: X'01' Run_CL (run command language)

Object Number (X'173A') Job Element Spec GDS variable

This GDS variable specifies the relative sequence of this job element in a series of job elements to be initiated. It is present one time.

Object Number (X'173A') Job Element Spec GDS variable

Byte	Bit	Content
0–1		Length (q+1), of the Object Number GDS variable
2–3		Key: X'173A'
4–5(=q)		Two byte binary sequence number. Its value is always X'0001'.

Object Disposition (X'1747') Job Element Spec GDS variable

This GDS variable specifies whether the target agent should keep or delete the job element object after having initiated it. It is optionally present. When absent, the target agent determines the disposition of the object.

Object Disposition (X'1747') Job Element Spec GDS variable

Byte	Bit	Content
0–1		Length (q+1) of the Object Disposition GDS variable
2–3		Key: X'1747'
4(=q)		A value that specifies the disposition of the object. X'01' Keep X'03' Delete

Command Procedure Parameters (X'1749') Job Element Spec GDS variable

This GDS variable carries one or more system specific parameters, and the codepage and character set from which their encoded, to be passed to the command procedure when initiated. It is optionally present one time.

Command Procedure Parameters (X'1749') Job Element Spec GDS variable

Byte	Bit	Content
0–1		Length (q+1) of the Command Procedure Parameters GDS variable
2–3		Key: X'1749'
4–n		System Specific Parameters. *Note:* The following subfields are used in the order shown: X'10' CCSID X'20' Parameter Data

CCSID (X'10') Command Procedure Parameters Subfield

This subfield specifies a Coded_Character_Set_ID identifying the codepage and character set in which the Parameter Data (X'20') subfield(s) are encoded. It is present one time.

CCSID (X'10') Command Procedure Parameters Subfield

Byte	Bit	Content
0		Length (r+1) of the CCSID subfield
1		Key: X'10'
2–3(=r)		A two byte CCSID as documented in *Code Page Architecture - Stage 1, CPA-S1-AD-8909-00*.

Parameter Data (X'20') Command Procedure Parameters Subfield

This subfield specifies parameter data to be passed to the command procedure when initiated. It is present one or more times.

Parameter Data (X'20') Command Procedure Parameters Subfield

Byte	Bit	Content
0		Length (s+1) of the Parameter Data subfield
1		Key: X'20'
2–s		Up to 253 bytes of system specific parameter data encoded according to the codepage and character set identified in the CCSID (X'10') subfield.

Initiate Agent Report (X'1731') MS Parameter Major Vector

LU → LU

This MS parameter major vector accompanies the Initiation (X'0068') MS major vector. It contains the requested Initiate command and its associated report data.

Initiate Agent Report (X'1731') MS Parameter Major Vector

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS parameter major vector
2–3		Key: X'1731'
4–n		MS GDS variables, as described below. *Note:* The following GDS variables may be used as indicated:

GDS Variable	Presence in Initiate Agent Request (X'1731') Parameter Major Vector	
	CP-MSU	Notes
Command (X'1732')	P	
Report Data Prefix (X'1741')	P	
Job Element State (X'1739')	P	
Completion Report (X'1748')	CP	Note 1
Report Data Suffix (X'1746')	P	

Key:

P Present one time
CP Conditionally present one time. (See Notes for conditions.)

Notes:

1. This subvector is present one time whenever the agent does not encounter any SNA-registered exception conditions in processing the request MU (i.e. the job element was initiated or is scheduled for initiation). When present, the SNA Condition Report (X'1532') GDS variable is not present in the agent object.

Initiate Agent Report GDS Variables

Command (X'1732') Initiate Agent Report GDS Variable

This GDS variable contains the command. It is always the first GDS variable in the parameter major vector.

Command (X'1732') Initiate Agent Report GDS Variable

Byte	Bit	Content
0–1		Length (p+1), in binary, of the Command GDS variable
2–3		Key: X'1732'
4(=p)		A value that identifies the command: X'01' Initiate job element

Report Data Prefix (X'1741') Initiate Agent Report GDS Variable

This GDS variable serves as a prefix for the report data. It immediately follows the Command (X'1732') GDS variable in the Initiate Agent Report (X'1731') parameter major vector.

Report Data Prefix (X'1741') Initiate Agent Report GDS Variable

Byte	Bit	Content
0–1		Length (p+1), in binary, of the Report Data Prefix GDS variable
2–3(=p)		Key: X'1741'

Job Element State (X'1739') Initiate Agent Report GDS Variable

This GDS variable contains the state of the job element. It immediately follows the Report Data Prefix (X'1741') GDS variable.

Job Element State (X'1739') Initiate Agent Report GDS Variable

Byte	Bit	Content
0–1		Length (p+1), in binary, of the Job Element State GDS variable.
2–3		Key: X'1739'
4(=p)		A value that identifies job element state. X'03' Accepted for initiation X'07' Ended (either successfully or not)

Completion Report (X'1748') Initiate Agent Report GDS Variable

This GDS variable contains the completion code of the initiated job element. When present, it immediately follows the Job Element State (X'1739') GDS variable.

Completion Report (X'1748') Initiate Agent Report GDS Variable

Byte	Bit	Content
0–1		Length (p+1), in binary, of the Completion Report GDS variable
2–3		Key: X'1748'
4–5(=p)		Two byte binary completion code from the initiated job element, or zeros in the case when the job element's state is accepted for initiation.

Report Data Suffix (X'1746') Initiate Agent Report GDS Variable

This GDS variable serves as a suffix for the report data. It immediately follows either the Job Element State (X'1739') GDS variable or, when present, the Completion Report (X'1748') GDS variable.

Report Data Suffix (X'1746') Initiate Agent Report GDS Variable

Byte	Bit	Content
0–1		Length (p+1), in binary, of the Report Data Suffix GDS variable
2–3(=p)		Key: X'1746'

MS GDS Variable Formats

The MS GDS Variables are defined as follows:

Text Command (X'1320') GDS Variable

Text Command (X'1320') GDS Variable

Description:	The Text Command GDS variable contains one or more operator commands in text form destined for processing at an MS entry point. Neither the syntax nor the semantic of the text command is defined by MS.
Format:	Implementation-defined

Byte	Content
0-3	LLID Header
4-n	One or more Self-Defining Text Message (X'31') MS Common Subvectors

Partial Format Processing Method (X'1321') GDS Variable

Partial Format Processing Method (X'1321') GDS Variable

Description:	The Partial Format Processing Method GDS variable specifies the format type (for transparent coded datastream) or the display datastream type (for a display datastream) of the data enveloped by the sender in the MS partial format.
Condition of Presence:	Present only if either the Transparent Coded Datastream (X'1309') or Display Datastream (X'1322') GDS variables are present in the CP-MSU.

Figure 4-2. The Partial Format Processing Method GDS Variable

Structure Name	Struct Ref Page	Struct Class	ID/T	Length	Occur-rences	Children			
						Unrec	Order	Num	Subtab
Partial Format Processing Method	4-390	ID	1321	≥7	—	Y	N	1	—
Coded Datastream Proc. Method	4-390	T	10	3-18	0-1	—	—	0	—
Display Datastream Proc. Method	4-391	T	20	3-18	0-1	—	—	0	—

Coded Datastream Processing Method (X'10') Field

Description:	The Coded Datastream Processing Method identifies the format type of the binary data contained in an MS partial format.
Condition of Presence:	Present if the Transparent Coded Datastream (X'1309') GDS variable is present in the CP-MSU.
Format:	Character String, 01134-00500

Display Datastream Processing Method (X'20') Field

Description:	The Display Datastream Processing Method subvector identifies the format type of the display datastream contained in an MS partial format.
Condition of Presence:	Present if the Display Datastream (X'1322') GDS variable is present in the CP-MSU.
Format:	Character string, 01134-00500

Display Datastream (X'1322') GDS Variable

Display Datastream (X'1322') GDS Variable

Description:	The Display Datastream GDS variable contains a display datastream not defined by MS (but qualified by the Partial Format Processing Method (X'1321') GDS variable).
Format:	Character String. If a coded character set identification is required, it will be specified using the Default Character Set ID (X'32') MS common subvector.

Byte	Content
0-3	LLID Header
4-n	Display Datastream (not defined by MS)

Context-Identified Values (X'1323') GDS Variable

Context-Identified Values (X'1323') GDS Variable

Description: The Context-Identified Values GDS variable contains values identified by another special value that specifies the context in which the values should be interpreted. The values are not defined by MS.

Figure 4-3. The Context-Identified Values GDS Variable

Structure Name	Struct Ref Page	Struct Class	ID/T	Length	Occur-rences	Children			
						Unrec	Order	Num	Subtab
Context-Identified Values	4-392	ID	1323	≥13	—	N	Y	≥1	—
Value Processing Method	4-394	ID	1328	7-18	0-1	N	N	1-2	—
Value Type	4-394	T	01	3	1	—	—	0	—
Coded Character Set ID	4-395	T	02	6	0-1	—	—	0	—
National Language ID	4-395	T	12	5	0-1	—	—	0	—
Context Identifier Group	4-393	ID	1324	9-221	1	N	N	1-2	—
Value Processing Method	4-394	ID	1328	7-18	0-1	N	N	1-2	—
Value Type	4-394	T	01	3	1	—	—	0	—
Coded Character Set ID	4-395	T	02	6	0-1	—	—	0	—
National Language ID	4-395	T	12	5	0-1	—	—	0	—
Context Identifier	4-393	ID	1325	5-204	1	—	—	0	—
Value Group	4-393	ID	1326	≤31722	≥0	N	Y	≥1	—
Character Value Descriptor	4-393	ID	1327	5-20	0-1	—	—	0	—
Hexadecimal Value Descriptor	4-396	ID	132A	5-20	0-1	—	—	0	—
Value Instance Identifier	4-397	ID	1331	5-20	0-1	—	—	0	—
Nested Value Processing Method	4-396	ID	132B	7-24	0-1	N	N	1-2	—
Nested Value Type	4-396	T	01	3	1	—	—	0	—
Coded Character Set ID	4-395	T	02	6	0-1	—	—	0	—
Array Entry Length	4-397	T	03	3-6	0-1	—	—	0	—
National Language ID	4-395	T	12	5	0-1	—	—	0	—
Value	4-395	ID	1329	≤31713	0-1	—	—	≥0	—

Context Identifier Group (X'1324') GDS Variable

Context Identifier Group (X'1324') GDS Variable

Description:	The Context Identifier Group GDS variable contains a context identifier and, optionally, information describing how to process it.

Context Identifier (X'1325') GDS Variable

Context Identifier (X'1325') GDS Variable

Description:	The Context Identifier GDS variable contains a value that sets the context for other values in the Context-Identified Values (X'1323') GDS variable.
Condition of Presence:	The Context Identifier GDS variable is required, and must precede any Value Group (X'1326') GDS variables.

Value Group (X'1326') GDS Variable

Value Group (X'1326') GDS Variable

Description:	The Value Group GDS variable contains a value descriptor and a value, and optionally, processing information about the value.

Character Value Descriptor (X'1327') GDS Variable

Character Value Descriptor (X'1327') GDS Variable

Description:	The Character Value Descriptor GDS variable contains a short character text field describing the value.
Condition of Presence:	Required if Hexadecimal Value Descriptor (X'132A') GDS variable is not present. Not allowed if Hexadecimal Value Descriptor (X'132A') GDS variable is present.
Format:	Character String

Value Processing Method (X'1328') GDS Variable

Value Processing Method (X'1328') GDS Variable

Description:	The Value Processing Method GDS variable contains instructions as to how to process a value or context identifier.
Condition of Presence:	Optional. If *specified before* the Context Identifier Group (X'1324') GDS variable, it establishes a default processing method for the Context Identifier (X'1325') GDS variable and any related Value (X'1329') GDS variables in the Context-Identified Value (X'1323') GDS variable. If *not specified before* the Context Identifier Group (X'1324') GDS variable, a default processing method of type hexadecimal (X'01') is implied for the Context Identifier (X'1325') GDS variable and any related Value (X'1329') GDS variables in the Context-Identified Value (X'1323') GDS variable. If specified in a Context Identifier Group (X'1324') GDS variable, the default processing method, described above, is overridden for the associated Context Identifier (X'1325') GDS variable.

Value Type (X'01') Field

Description:	The Value Type field indicates what type of value is to be processed. For character values, the Coded Character Set ID (X'02') field is also present.

Byte	Content	
0-1	LT Header	
2	Value type. Defined codes are:	
	X'01'	Hexadecimal. Hexadecimal data is packaged as a string of 8-bit bytes.
	X'02'	Character. Character data is packaged as a string of characters. A single-byte character set (SBCS) has each character occupying a single byte. A double-byte character set (DBCS) has each character occupying two bytes where the most significant bit of a character code point is the leftmost bit position of a two-byte field, and the least significant bit of a character code point is the rightmost bit position of a two-byte field. A DBCS character set definition may permit transitions between DBCS and SBCS which results in a transition between the two sets of rules.
	X'03'	Unsigned decimal integer. An unsigned decimal integer is packaged as its hexadecimal equivalent.
	X'04'	Bit string. A string of bits is encoded as if it were a binary number.
	X'05'	Processing method implied by context identifier. A context-specific encoding scheme is defined by the particular context whenever such encoding applies.

Coded Character Set ID (X'02') Field

Description:	The Coded Character Set ID field identifies the character set and code page of the value.
Condition of Presence:	Present if the Value Type (X'01') subfield is "character" *and* one of the following is true: • The Default Character Set ID (X'32') MS common subvector *is not* present in the CP-MSU. • The Default Character Set ID (X'32') MS common subvector *is* present in the CP-MSU but does not apply to this value.
Format:	01134-00500

Byte	Content
0-1	LT Header
2-5	Coded character set ID: two 4-digit hexadecimal numbers that specify uniquely the coded character set in which the accompanying user text message is encoded. Receivers are responsible for documenting the coded character set IDs, as well as the coded character sets themselves, that they support in this subvector.
2-3	A 4-digit hexadecimal number identifying a character set
4-5	A 4-digit hexadecimal number identifying a code page

National Language ID (X'12') subfield

Description:	This subfield is defined in the description of the Self-Defining Text Message (X'31') MS Common Subvector.

Value (X'1329') GDS Variable

Value (X'1329') GDS Variable

Description:	The Value GDS variable contains a value not defined by MS.
Condition of Presence:	If there is only one Value Group (X'1326') GDS variable present, only one Value (X'1329') GDS may be present. If there is more than one Value Group (X'1326') GDS variable present (i.e., “nested” X'1326' GDS variables), there can be one X'1329' GDS variable per nested X'1326' GDS variable.

Hexadecimal Value Descriptor (X'132A') GDS Variable

Hexadecimal Value Descriptor (X'132A') GDS Variable

Description:	The Hexadecimal Value Descriptor GDS variable contains a short hexadecimal field describing the value.
Condition of Presence:	Required if Character Value Descriptor (X'1327') GDS variable is not present. Not allowed if Character Value Descriptor (X'1327') GDS variable is present.

Format: Hexadecimal string.

Nested Value Processing Method (X'132B') GDS Variable

Nested Value Processing Method (X'132B') GDS Variable

Description:	The Nested Value Processing Method GDS Variable contains instructions as to how to process the Value (X'1329') which follows it. The Value may, but not necessarily, contain nested Value Groups (X'1326').
Condition of Presence:	Optional. If present, it overrides the default that was set earlier by any previous occurrence of the Value Processing Method (X'1328') GDS Variable in the Context-Identified Values (X'1323') GDS Variable.

Nested Value Type (X'01') Field

Description:	The Nested Value Type Field is similar to the Value type field. The difference occurs in the addition of another type which allows definition of the structure for the associated Value Variable (X'1329').

Byte	Content	
0-1	LT Header	
2	Nested Value Type. Defined Values are:	
	X'01'	Hexadecimal. Hexadecimal data is packaged as a string of 8-bit bytes.
	X'02'	Character. Character data is packaged as a string of characters. A single-byte character set (SBCS) has each character occupying a single byte. A double-byte character set (DBCS) has each character occupying two bytes where the most significant bit of a character code point is the leftmost bit position of a two-byte field, and the least significant bit of a character code point is the rightmost bit position of a two-byte field. A DBCS character set definition may permit transitions between DBCS and SBCS which results in a transition between the two sets of rules.
	X'03'	Unsigned decimal integer. An unsigned decimal integer is packaged as its hexadecimal equivalent.
	X'04'	Bit string. A string of bits is encoded as if it were a binary number.

X'05'	Processing method implied by context identifier. A context-specific encoding scheme is defined by the particular context whenever such encoding applies.
X'06'	Value is composed of one or more Nested Value Group (X'1326') GDS Variables

Array Entry Length (X'03') Field

Description: The Array Entry Length Field, if present, indicates that the content of the associated Value (X'1329') GDS variable is a one-dimensional array of elements. Each element is equal in length to all other elements. In addition, the value of this field specifies the length (number of bytes) of each element in the array.

Byte	Content
0-1	LT Header
2-5	Unsigned integer value (hex) specifying length of array element.

National Language ID (X'12') Field

Description: This subfield is defined in the description of the Self-Defining Text Message (X'31') MS Common Subvector.

Value Instance Identifier (X'1331') GDS Variable

Value Instance Identifier (X'1331') GDS Variable

Description: The Value Instance Identifier GDS variable, when present, may be used to uniquely identify a Value Group (X'1326') GDS variable. The format of the content is implementation-specific and therefore not defined by SNA/MS.

Condition of Presence: Optional. If present, there is only one Value Instance Identifier for a particular Value Group.

OSI Session Layer Protocol Data Unit (X'1333') GDS Variable

CP → CP

This MS GDS variable transports an OSI Session Layer protocol data unit, encoded according to the OSI session layer protocol standard, for the purpose of sending Common Management Information Protocol (CMIP) protocol data units across the SNA/MS multiple-domain support (MDS) transport. The data portion of the Session Layer PDU is encoded according to the Basic Encoding Rules (BER) standard. See *IBM SystemView Mapping of OSI Upper Layers to MDS for CMIP over SNA* (SC31-7137) for details.

OSI Session Layer Protocol Data Unit(X'1333') GDS Variable

Byte	Bit	Content
0–1		Length (n+1), in binary, of this MS major vector
2–3		Key: X'1333'
4–n		An OSI Session Layer protocol data unit, encoded according to OSI session layer protocol standard.

Routing and Targeting Instructions (X'154D') GDS Variable

Routing and Targeting Instructions (X'154D') GDS Variable

Description: The Routing and Targeting Instructions GDS variable carries the Name List (X'06') MS Common Subvector which contains the names of one or more second-level resources. The named resources may constitute both the route an MDS-MU is to take to get to a second-level target (after reaching the MS entry point or focal point), as well as the target itself. Alternatively, the second-level target alone may be named. Additionally, the Correlator Control (X'0D') MS Common Subvector may be included to specify how the Agent Unit of Work Correlator (X'1549') GDS Variable in the MDS header (or an implementation-specific correlator carried in the Correlator Control subvector) is to be interpreted by the second-level application programs involved.

Byte	Content
0-3	LLID Header
4-n	MS subvectors, as described below.

Note: The following subvector keys may be used as indicated:

Subvector	Presence in Routing and Targeting Instructions (X'154D') GDS Variable	
	CP-MSU	Notes
Name List (X'06')	P	
Correlator Control (X'0D')	O	

Key:

P Present one time
O Optionally present one time

MS Common Subvectors

The common MS subvectors are defined as follows (using 0-origin indexing):

Text Message (X'00') MS Common Subvector

This MS common subvector transports EBCDIC data.

Text Message (X'00') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Text Message subvector
1		Key: X'00'
2–p		Text message in EBCDIC *Note:* The coded character set that may be transported in this field is dependent on the implementation that provided the text or allowed an operator to input the text, as well as the output device used by the Alert processor. The installation management ensures the compatibility of these products.

Date/Time (X'01') MS Common Subvector

This MS common subvector is used by PUMS or CPMS for time-stamping the NMVT or CP-MSU in which it is carried.

Date/Time (X'01') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Date/Time subvector
1		Key: X'01'
2–p		One or more of the following subfields: X'10' Local Date/Time (required subfield) X'20' Greenwich Mean Time Offset

Local Date/Time (X'10') Date/Time Subfield

This subfield transports the local date and time of the creation of the major vector.

Local Date/Time (X'10') Date/Time Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Date/Time subfield
1		Key: X'10'
2–4		Local date
2		Year, in binary, consisting of the last two digits of the year
		Note: Since a sender supplies only the last two digits of the year, the receiver must convert the year into 4-digit format before performing any operation that requires a 4-digit year. This conversion uses a sliding window based on the receiver's understanding of the current date. The window extends from 90 years prior to the receiver's current date to 10 years in the future. The receiver determines which operations require conversion to 4-digit years, such as whether or not to convert to 4-digit format before displaying a year to an operator.
3		Month, in binary (X'01'–X'0C')
4		Day, in binary (X'01'–X'1F')
5–q		Local time
5		Hours, in binary (X'00'–X'17')
6		Minutes, in binary (X'00'–X'3B')
7		Seconds, in binary (X'00'–X'3B')
8–q		Optional extension of time: a binary value to provide finer granularity than seconds

Greenwich Mean Time Offset (X'20') Date/Time Subfield

This subfield transports the Greenwich Mean Time (GMT) offset of the node that originated the management services RU (i.e., the origin node). It is optionally included in a major vector by the origin node or by the control point in whose domain the origin node resides.

Greenwich Mean Time Offset (X'20') Date/Time Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Greenwich Mean Time Offset subfield
1		Key: X'20'
2–3(=q)		Time zone adjustment to Greenwich Mean Time: an interval of time to be added to, or subtracted from, the local time given in the Local Date/Time (X'10') subfield to adjust that time to Greenwich Mean Time
	0	Positive or negative adjustment indicator: 0 adjustment to be added to the local time (i.e., all time zones westward, between the Greenwich time zone and the International Date Line) 1 adjustment to be subtracted from the local time (i.e., all time zones eastward, between the Greenwich time zone and the International Date Line)
	1–3	Reserved
	4–7	Number of hours of adjustment, in binary (X'0'–X'C')
	8–15	Number of minutes of adjustment, in binary (X'00'–X'3B')

Hierarchy Name List (X'03') MS Common Subvector

This MS common subvector identifies target resources, other than the reporting PU, that are within the same domain as the origin PU, but cannot be represented in the SNA Address List subvector.

Note: This subvector has been superseded in current implementations by the Hierarchy/Resource List (X'05') subvector.

Hierarchy Name List (X'03') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Hierarchy Name List subvector
1		Key: X'03'
2		Reserved
3		Number, in binary, of name entries in the hierarchy name list.
4–p		Hierarchy Name List Entries (1 to 5 entries may be present)
Note:		Each entry contains a Name field and a Resource Type field, and has the following form (shown 0-origin):
0		Length (q+1), in binary, of the following name plus this Length field
1–q		Name of resource in upper-case alphanumeric EBCDIC characters *Note:* Resource name never exceeds eight characters.
q+1–q+4		Resource type identifier: category in which the resource (named in bytes 1–q) belongs: X'C1C4C1D7' adapter X'C2D9C4C7' LAN bridge X'C3C2E740' computerized branch exchange X'C3C2E4E2' carrier-sense multiple-access with collision detection (CSMA/CD) bus X'C3C8C1D5' channel X'D3C9D5C5' communication link X'C3E3D9D3' controller X'C4C9E2D2' disk X'C4E2D2E3' diskette X'D2E8C2C4' keyboard X'D3C1D540' local-area network (LAN) X'D3C3D6D5' link connection *Note:* This value is used for logical link connections not known to SNA, such as a LAN manager's connection with a management server. X'D3D6D6D7' loop X'D7C2D440' personal banking machine X'D7D6E240' point-of-sale unit X'D7C2E740' private branch exchange X'D7D3E3D9' plotter X'D7D9E3D9' printer X'D9C9D5C7' token-ring X'E2D74040' service point X'E3F1D9D4' T1 resource manager X'E3C1D7C5' tape X'E3C1E440' teller assist unit X'E3C2E4E2' token bus X'E3C5D9D4' terminal X'C4C5E540' unspecified device

SNA Address List (X'04') MS Common Subvector

This MS common subvector is used in both request and data NMVTs. In a request NMVT, it identifies one or more destinations of the MS request when the destination is not the PU addressed in the transmission header (TH). In a data NMVT, it identifies the resource associated with the data when the resource is not the PU addressed in the TH.

If present, this subvector is the first subvector within the MS major vector.

SNA Address List (X'04') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the SNA Address List subvector
1		Key: X'04'
2		Address Count: For address entity format types X'00', X'40', X'80', and X'C0', a binary number indicating the number of individual addresses present in the X'04' subvector. This field is set to X'00' for all other address entity format types. *Note:* This field provides a count of individual addresses; thus, for format X'40', each pair of addresses counts as two.
3		Address entity format type: X'00' address format is one or more single local addresses X'40' address format is one or more pairs of session-partner local addresses, each pair identifying a session X'80' address format is one or more single network addresses X'A0' address format is one or more network-qualified address pairs, each pair identifying a session X'C0' address format is one or more pairs of session partner network addresses, each pair identifying a session
4–p		Address entities: one or more address entities, each having one of the formats defined below (0-origin):
For a single local address (byte 3 = X'00'):		
0–4		Reserved
5		Local address
For a pair of session-partner local addresses (byte 3 = X'40'):		
0–4		Reserved
5		Local address of SLU
6		X'00'
7–11		Reserved
12		Session index (local address of PLU)
For a single network address (byte 3 = X'80'):		
0–5		Network address
For a network-qualified address pair (byte 3 = X'A0'):		
0–5		Network address of NAU1
6–11		Network address of NAU2
12–19		Network ID of the subnetwork in which the above addresses are valid

SNA Address List (X'04') MS Common Subvector

Byte	Bit	Content
For a pair of session-partner network addresses (byte 3 = X'C0'):		
0–5		Network address 1
6		X'80'
7–12		Network address 2

Hierarchy/Resource List (X'05') MS Common Subvector

This MS common subvector flows in management services units (MSU's) to communicate resource names between MS components in nodes. When flowing in an MSU to a focal point, the HRL includes the names of the resources of the domain hierarchy for the affected resource. The HRL containing the complete domain hierarchy is built from configuration knowledge in the control point and the TH. The Hierarchy/Resource List subvector also carries the hierarchy of control points that received, processed, and forwarded a CP-MSU, and, in some cases, the names of one or more resources. e.g., session partners, logically associated with the reported hierarchy. If the sender is a PU, then this subvector identifies resources, hierarchically below the sending PU, that cannot be represented in the SNA Address List subvector.

Hierarchy/Resource List (X'05') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Hierarchy/Resource List subvector
1		Key: X'05'
2–p		One or more subfields containing a hierarchical list of resources, or a list of resources of the same type (listed by key value below and described in detail following): X'01' Resource Identifier X'10' Hierarchy Name List X'11' Associated Resources X'20' Processing Node List

Resource Identifier (X'01') Hierarchy/Resource List Subfield

This subfield uniquely identifies a resource for which information is being reported.

Resource Identifier (X'01') Hierarchy/Resource List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource Identifier subfield
1		Key: X'01'
2		Length of resource type field which follows (acceptable values range from 1 to 8)
3–m		Resource type - a string of 1 to 8 characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types”
m+1		Length of resource name field which follows (acceptable values range from 1 to 8)
m+2–n(=q)		Name of resource - a string of 1 to 8 characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types”

Hierarchy Name List (X'10') Hierarchy/Resource List Subfield

This subfield contains a list specifying the names of resources in a hierarchy. The last name in the list specifies the resource to which the data present in the major vector pertains.

Hierarchy Name List (X'10') Hierarchy/Resource List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Hierarchy Name List subfield
1		Key: X'10'
2		
	0	Hierarchy complete indicator. The hierarchy sent from a control point should always be complete, the hierarchy sent from a type 2 or type 4 node should never be complete. 0 The end receiver must not modify the Hierarchy Name List (X'10') subfield 1 The end receiver must modify the Hierarchy Name List (X'10') subfield by appending its name, the name of the link from this receiver to the sending PU, and the name of the sending PU; above the names already contained in the Hierarchy Name List subfield.
	1–7	Reserved, must be 0.
3–q		Hierarchy Name List Entries (entries left to right indicate resources down the hierarchy)
Note:		Each entry contains a Length field, a Name field, a Flags byte and a Resource Type field, and has the following form (shown 0-origin):
0		Length (r+1), in binary, of the following name plus this length field
1–r		Name of resource in upper-case alphanumeric EBCDIC characters *Note:* Resource name never exceeds eight characters.
r+1		Flags
	0	Reserved
	1	Display resource name indicator: 0 This name should be displayed if the receiver elects to display a single resource name and type as part of its presentation of the MSU containing this subvector. 1 This name should not be displayed if the receiver elects to display a single resource name and type as part of its presentation of the MSU containing this subvector.
	2	Resource list indexing flag: 0 Do not count this entry for resource list indexing, as defined in the Resource List Index (X'84') Network Alert common subfield 1 Do count this entry for resource list indexing
	3–7	Reserved
r+2		Resource type identifier: category to which the resource (named in bytes 1–r) belongs: X'00' unspecified device X'11' disk X'13' printer X'16' tape X'17' terminal X'18' transaction program X'19' program product X'1A' modem X'1B' operating system X'20' storage device X'21' adapter X'22' optical media library

Hierarchy Name List (X'10') Hierarchy/Resource List Subfield

Byte	Bit	Content	
		X'23'	tape media library
		X'24'	optical device
		X'25'	diskette
		X'27'	loop
		X'29'	keyboard
		X'2A'	self-service terminal
		X'2B'	plotter
		X'2C'	transmission group
		X'2D'	line group
		X'2E'	token-ring
		X'2F'	computerized branch exchange
		X'30'	T1 resource manager
		X'31'	private branch exchange
		X'32'	carrier-sense multiple-access with collision detection (CSMA/CD) bus
		X'33'	token bus
		X'34'	printer server
		X'35'	personal banking machine
		X'36'	teller assist unit
		X'37'	point-of-sale unit
		X'38'	local controller
		X'39'	local area network (LAN)
		X'3A'	LAN bridge
		X'3B'	logical link connection *Note:* See also Resource Type Identifier X'F9' (link). Identifier X'3B' is used for logical link connections not known to SNA, such as a LAN manager's connection with a management server. Identifier X'F9' is used for logical link connections that are known to SNA.
		X'3C'	management server
		X'3D'	line
		X'3E'	domain
		X'3F'	port
		X'40'	application
		X'41'	relational data base
		X'42'	requester
		X'43'	server
		X'44'	Frame Relay link
		X'45'	serial link switch
		X'46'	switch
		X'47'	digital access cross-connection system (DACS)
		X'48'	multiplexer (MUX)
		X'49'	statistical multiplexer
		X'4A'	satellite
		X'4B'	earth station
		X'4C'	microwave station
		X'4D'	multipoint line
		X'55'	interconnect controller
		X'56'	protocol converter
		X'57'	access unit
		X'58'	facsimile device
		X'59'	router
		X'80'	controller
		X'81'	service point
		X'82'	communication controller
		X'83'	central processing unit
		X'84'	programmable work station (PWS)
		X'85'	reserved
		X'86'	reserved

Hierarchy Name List (X'10') Hierarchy/Resource List Subfield

Byte	Bit	Content
		X'87' SNA gateway X'90' frame relay DLCI X'91' IP host X'E0'–X'EF' reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range. X'F0' boundary function physical unit X'F1' physical unit X'F2' OSI management server X'F3' logical unit X'F4' control point X'F5' network ID X'F7' link station X'F8' SNA channel X'F9' link X'FA' D-channel X'FB' B-channel X'FC' SNMP device X'FD' OSI managed object

Associated Resources (X'11') Hierarchy/Resource List Subfield

This subfield contains one or more entries identifying resources associated with the reported condition that may not be related hierarchically to the sender of the major vector. The entries are used by the receiver to correlate this major vector with other data associated with the resources that the entries identify. The resources identified in this subfield are not hierarchically related to each other.

Associated Resources (X'11') Hierarchy/Resource List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Associated Resources subfield
1		Key: X'11'
2		Reserved
3–q		Associated Resource Entries
Note:		Each entry contains a Length field, a Name field, a Flags byte, and a Resource Type field, and has the following form (shown 0-origin):
0		Length (r+1), in binary, of the following name plus this length field
1–r		Name of resource in upper-case alphanumeric EBCDIC characters *Note:* Resource name never exceeds 56 characters.
r+1		Flags
	0–1	Reserved
	2	Resource list indexing flag: 0 Do not count this entry for resource list indexing, as defined in the Resource List Index (X'84') Network Alert common subfield 1 Do count this entry for resource list indexing
	3–7	Reserved
r+2		Resource type identifier: category to which the resource (named in bytes 1–r) belongs: X'00' unspecified device X'11' disk X'13' printer X'16' tape X'17' terminal X'18' transaction program X'19' program product X'1A' modem X'1B' operating system X'20' storage device X'21' adapter X'22' optical media library X'23' tape media library X'24' optical device X'25' diskette X'27' loop X'29' keyboard X'2A' self-service terminal X'2B' plotter X'2C' transmission group X'2D' line group X'2E' token-ring X'2F' computerized branch exchange

Associated Resources (X'11') Hierarchy/Resource List Subfield

Byte	Bit	Content
		X'30' T1 resource manager
		X'31' private branch exchange
		X'32' carrier-sense multiple-access with collision detection (CSMA/CD) bus
		X'33' token bus
		X'34' printer server
		X'35' personal banking machine
		X'36' teller assist unit
		X'37' point-of-sale unit
		X'38' local controller
		X'39' local area network (LAN)
		X'3A' LAN bridge
		X'3B' logical link connection *Note:* See also Resource Type Identifier X'F9' (link). Identifier X'3B' is used for logical link connections not known to SNA, such as a LAN manager's connection with a management server. Identifier X'F9' is used for logical link connections that are known to SNA.
		X'3C' management server
		X'3D' line
		X'3E' domain
		X'3F' port
		X'40' application
		X'41' relational data base
		X'42' requester
		X'43' server
		X'44' Frame Relay link
		X'45' serial link switch
		X'46' switch
		X'47' digital access cross-connection system (DACS)
		X'48' multiplexer (MUX)
		X'49' statistical multiplexer
		X'4A' satellite
		X'4B' earth station
		X'4C' microwave station
		X'4D' multipoint line
		X'55' interconnect controller
		X'56' protocol converter
		X'57' access unit
		X'58' facsimile device
		X'59' router
		X'80' controller
		X'81' service point
		X'82' communication controller
		X'83' central processing unit
		X'84' programmable work station (PWS)
		X'85' reserved
		X'86' reserved
		X'87' SNA gateway
		X'90' frame relay DLCI
		X'91' IP host
		X'E0'–X'EF' reserved *Note:* This range of code points is reserved for use by non-IBM products and customer written applications. No IBM product will send a code point from within this range.
		X'F0' boundary function physical unit
		X'F1' physical unit
		X'F2' OSI management server
		X'F3' logical unit
		X'F4' control point

Associated Resources (X'11') Hierarchy/Resource List Subfield

Byte	Bit	Content
		X'F5' network ID X'F7' link station X'F8' SNA channel X'F9' link X'FA' D-channel X'FB' B-channel X'FC' SNMP device X'FD' OSI managed object

Processing Node List (X'20') Hierarchy/Resource List Subfield

This subfield contains a list specifying the names of nodes that have received, processed, and forwarded an MSU. When required to add its name to the list, a node places its name at the front of the list.

Processing Node List (X'20') Hierarchy/Resource List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Processing Node List subfield
1		Key: X'20'
2		Reserved
3–q		Processing Node List Entries
Note:		Each entry contains a Length field, a Name field, a reserved byte and a Resource Type field, and has the following form (shown 0-origin):
0		Length (r+1), in binary, of the following name plus this length field
1–r		Name of resource in upper-case alphanumeric EBCDIC characters *Note:* Resource name never exceeds eight characters.
r+1		Reserved
r+2		Resource type identifier: category to which the resource (named in bytes 1–r) belongs: X'EF' control point serving as a focal point

Name List (X'06') MS Common Subvector

This MS common subvector is used in requests, to identify one or more resources to which the request pertains. It may also contain the name of a network management application or network operator to which the receiver is to route the request.

Name List (X'06') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Name List subvector
1		Key: X'06'
2–p		One or more subfields containing a hierarchy and/or a list of peer resources (listed by key value below and described in detail following): X'01' Associated Resource Name List X'10' Cascaded Resource Name List X'30' Destination Name List X'50' Destination Application Name X'60' Origin Application Name X'70' Destination Instance Identifier X'80' Origin Instance Identifier

Associated Resource Name List (X'01') Name List Subfield

This subfield contains a list specifying the names of associated resources. The relationship among the resources is not defined.

Associated Resource Name List (X'01') Name List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Associated Resource Name List subfield
1		Key: X'01'
2–q		Associated Resource Name List Entries
Note:		Each entry contains Length and Name fields and has the following form (shown 0-origin):
0		Length (r+1), in binary, of the following name field plus this length field
1–r		Name of resource - a string of characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” *Note:* Resource name never exceeds eight characters. Trailing blanks are allowed; leading and embedded blanks are not.

Cascaded Resource Name List (X'10') Name List Subfield

Cascaded Resource Name List (X'10') Name List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cascaded Resource Name List subfield
1		Key: X'10'
2		Reserved
3–q		Cascaded Resource Name List Entries
Note:		Each entry contains Length, Flag, and Name fields and has the following form (shown 0-origin):
0		Length (r+1), in binary, of the following flag and name fields plus this length field
1		Flags:
	0	Resource indicator, always set to 0 in a request major vector. When this subfield is present in a data (reply) major vector, the bit is set as follows: 0 indicator off 1 indicator on *Note:* Sense Data (X'7D') subvector specifies the meaning of the resource indicator bit
	1	Reserved
	2	SNA resource indicator 0 this resource is not an SNA resource for which name-to-address translation is required 1 this resource is an SNA resource for which name-to-address translation is required
	3–7	Reserved
2–r		Name of resource in upper-case alphanumeric EBCDIC characters *Note:* Resource name never exceeds eight characters. Trailing blanks are allowed; leading and embedded blanks are not.

Destination Name List (X'30') Name List Subfield

This subfield contains a list specifying the names of peer resources. The request present in the major vector pertains to the resources named in this list.

Destination Name List (X'30') Name List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Destination Name List subfield
1		Key: X'30'
2–q		Destination Name List Entries
Note:		Each entry contains Length, Flag, and Name fields and has the following form (shown 0-origin):
0		Length (r+1), in binary, of the following flag and name fields plus this length field

Destination Name List (X'30') Name List Subfield

Byte	Bit	Content
1		Flags:
	0	Resource indicator, always set to 0 in a request major vector. When this subfield is present in a data (reply) major vector, the bit is set as follows: 0 indicator off 1 indicator on *Note:* Sense Data (X'7D') subvector specifies the meaning of the resource indicator bit
	1	Session partner indicator 0 this resource is not a session partner with the next resource in this list 1 this resource is a session partner with the next resource in this list
	2	SNA resource indicator 0 this resource is not an SNA resource for which name-to-address translation is required 1 this resource is an SNA resource for which name-to-address translation is required
	3–7	Reserved
2–r		Name of resource in upper-case alphanumeric EBCDIC characters *Note:* Resource name never exceeds eight characters. Trailing blanks are allowed; leading and embedded blanks are not.

Destination Application Name (X'50') Name List Subfield

This subfield identifies either a network management application or a network/system operator at the destination to which the request is to be routed.

Destination Application Name (X'50') Name List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Destination Application Name subfield
1		Key: X'50'
2–q		Name of destination application (or network/system operator) - a string of characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” *Note:* Application name never exceeds eight characters. Trailing blanks are allowed; leading and embedded blanks are not.

Origin Application Name (X'60') Name List Subfield

This subfield identifies the application program that is the originator of the request or report in which this subfield is contained.

Origin Application Name (X'60') Name List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Origin Application Name subfield
1		Key: X'60'

Origin Application Name (X'60') Name List Subfield

Byte	Bit	Content
2–q		Name of origin application program - a string of characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” *Note:* Application program name never exceeds eight characters. Trailing blanks are allowed; leading and embedded blanks are not.

Destination Instance Identifier (X'70') Name List Subfield

This subfield identifies an instance of an application program named in the Destination Application Name (X'50') subfield.

Destination Instance Identifier (X'70') Name List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Destination Instance Identifier subfield
1		Key: X'70'
2–q		Name of the destination application program instance - a string of characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” *Note:* Application program instance name never exceeds eight characters. Trailing blanks are allowed; leading and embedded blanks are not.

Origin Instance Identifier (X'80') Name List Subfield

This subfield identifies an instance of an application program named in the Origin Application Name (X'60') subfield.

Origin Instance Identifier (X'80') Name List Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Origin Instance Identifier subfield
1		Key: X'80'
2–q		Name of the origin application program instance - a string of characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” *Note:* Application program instance name never exceeds eight characters. Trailing blanks are allowed; leading and embedded blanks are not.

Configuration Name (X'07') MS Common Subvector

This MS common subvector identifies a set of resources at the receiving node to which the command applies. For example the configuration name could be one of the identification tokens in the SNA/File Services global name of a data object containing resource identification information and instructions to perform the command. If absent, applicability to the entire receiving node is implied.

Configuration Name (X'07') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Configuration Name subvector
1		Key: X'07'
2–p		Name of the configuration - a string of characters (with no leading, imbedded or trailing blanks) from Coded Graphic Character Set 01134–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types." *Note:* The name of the configuration never exceeds sixteen characters.

Reporting Level (X'09') MS Common Subvector

This MS common subvector is used to specify the type of reporting to be provided by the target node in reply to the command. If absent, architecturally defined defaults are implied.

Reporting Level (X'09') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Reporting Level subvector
1		Key: X'09'
2–p		One or more instances of the Reporting Requirement (X'10') subfield. Each instance identifies the specification for a particular type of report. The defaults are implied for report types not specified in an instance of the subfield.
Note:		If the target node is incapable of recognizing this subvector, the target node determines the type of reporting to be provided in reply to the command, whether or not this subvector is present. Reporting Level defaults do not apply in this case.

Reporting Requirement (X'10') Reporting Level Subfield

This subfield identifies the specification for a particular type of report.

Reporting Requirement (X'10') Reporting Level Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Reporting Requirement subfield
1		Key: X'10'
2		Report Classification: the type of report on which the specification is being given - it is one of the following values: X'10' Rejection X'20' Acceptance X'30' Success X'40' Failure X'50' Intermediate X'60' Ancillary
3(=q)		Report Specification: the specification for the identified type of report - it is one of the following values: X'10' Required (default for rejection, success and failure reports) X'20' Allowed (default for acceptance reports) X'30' Not Allowed (default for intermediate and ancillary reports)

Qualified Message (X'0A') MS Common Subvector

This MS common subvector contains a formatted identifier for a message stored at the receiver. It also contains a number of replacement text strings to be inserted into the message. The particular message being indexed determines how many text strings are included.

Qualified Message (X'0A') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Qualified Message subvector
1		Key: X'0A'
2–p		Subfields containing a formatted message identifier, and possibly one or more strings of text to be inserted into the message indexed by the identifier. *Note:* The following subfield keys are used as indicated:

Subfield	Presence in Qualified Message (X'0A') Common Subvector	
Message ID (X'01')	P	
Replacement Text (X'02')	CP(n)	Note 1

Key:

P Present one time
CP(n) Conditionally present one or more times (See notes for conditions.)

Notes:

1. The number of instances of this subfield present in the X'0A' subvector is determined by the number of strings of text required for insertion into the message indexed by the X'01' subfield.

Message ID (X'01') Qualified Message Subfield

This subfield contains a formatted identifier that indexes a message stored at the receiver. The exact format of the identifier is at the discretion of the sending and receiving applications.

Message ID (X'01') Qualified Message Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Message ID subfield
1		Key: X'01'
2–q		Message ID: A string of characters from Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types,” identifying a text message stored at the receiver. The format of the message ID is left up to the discretion of the sender and the receiver.

Replacement Text (X'02') Qualified Message Subfield

This subfield transports replacement text, to be substituted by the receiver into the message indexed by the Message ID (X'01') subfield.

Replacement Text (X'02') Qualified Message Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Text Message subfield
1		Key: X'02'
2–q		Replacement text: A string of characters from Coded Graphic Character Set 00640–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types,” to be substituted into the message indexed by the Message ID (X'01') subfield

Execution Window Timing (X'0B') MS Common Subvector

This MS common subvector is used to identify the earliest or latest time at which the target node may begin execution the command. If both times are specified, an explicit time window is established. If either the earliest time, or latest time, is specified, an implicit time window is established. If this subvector is absent, immediate command execution without repetition is requested.

Execution Window Timing (X'0B') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Execution Window Timing subvector
1		Key: X'0B'
2–p		An execute-not-before time subfield and/or execute-not-after time subfield and possibly a time interval subfield on which to base repeated executions. *Note:* The following subfield keys are used as indicated:

Subfield	Presence in Execution Window Timing (X'0B') Common Subvector	
Execute Not Before Time (X'10')	CP	Note 1
Execute Not After Time (X'20')	CP	Note 2
Time Interval (X'30')	O	
Execution Count (X'40')	CP	Note 3

Key:

O Optionally present one time
CP Conditionally present one time (See notes for conditions.)

Notes:

1. This subfield is present if the Execute Not After Time (X'20') subfield is not present. Otherwise, it is optional.
2. This subfield is present if the Execute Not Before Time (X'10') subfield is not present. Otherwise, it is optional.
3. This subfield is optionally present if the Time Interval (X'30') subfield is present. Otherwise, it is not present.

Execute Not Before Time (X'10') Execution Window Timing Subfield

This subfield identifies the earliest date and time that the command may be executed. It may not specify a time later than the Execute Not After Time (X'20') subfield, if present.

Execute Not Before Time (X'10') Execution Window Timing Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Execute Not Before Time subfield
1		Key: X'10'
2–3		Year in binary
4		Month in binary
5		Day in binary
6		Hour in binary
7		Minute in binary
8(=q)		GMT or local time indicator - it is one of the following values: X'10' Local Time X'20' Greenwich Mean Time (GMT)

Execute Not After Time (X'20') Execution Window Timing Subfield

This subfield identifies the latest date and time that the command may be executed. It may not specify a time earlier than the the Execute Not Before Time (X'10') subfield, if present.

Execute Not After Time (X'20') Execution Window Timing Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Execute Not After Time subfield
1		Key: X'20'
2–3		Year in binary
4		Month in binary
5		Day in binary
6		Hour in binary
7		Minute in binary
8(=q)		GMT or local time indicator - it is one of the following values: X'10' Local Time X'20' Greenwich Mean Time (GMT)

Time Interval (X'30') Execution Window Timing Subfield

This subfield identifies the base time and a time interval on which repetitive executions of the command are to be established. Repetitive executions may be established for explicit or implicit execution windows. In either case, after the command is executed, the time interval is added to the base, thus establishing a new base for the next execution. If repetitive execution windows are specified, the ending time of a window may not occur after the beginning time of the next window.

Time Interval (X'30') Execution Window Timing Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Time Interval subfield
1		Key: X'30'
2		Binary number of days in the interval
3		Binary number of hours in the interval
4(=q)		Binary number of minutes in the interval

Execution Count (X'40') Execution Window Timing Subfield

This subfield specifies the number of times the command is to be executed. It is used only in conjunction with the Time Interval (X'30') subfield. When not present, the number of execution iterations according to a specified time interval is considered to be indefinite until the request execution is cancelled by a command, or as the result of a pre-set timer value having been reached, or by some other means.

Execution Count (X'40') Execution Window Timing Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Execution Count subfield
1		Key: X'40'
2–3(=q)		Binary execution count

Distinguished Name Extension (X'0C') MS Common Subvector

This MS common subvector contains representations of one or more relative distinguished names (RDNs) that complete the partial distinguished name contained in the associated BER Envelope (X'132F') major vector. Each RDN is represented as two subfields: a Relative Distinguished Name Type (X'00') subfield immediately followed by a Relative Distinguished Name Value (X'01') subfield. If multiple RDNs are present, they are ordered from most significant to least significant. The RDNs in this subvector appear before those contained in the BER Envelope major vector in the completed distinguished name.

Distinguished Name Extension (X'0C') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Distinguished Name Extension subvector
1		Key: X'0C'
2–p		Pairs of subfields representing relative distinguished names (RDNs) that complete the partial distinguished name contained in the associated BER Envelope (X'132F') major vector.

Relative Distinguished Name Type (X'00') Distinguished Name Extension Subfield

This subfield contains the attribute type portion of the attribute value assertion for a relative distinguished name, encoded according to the Basic Encoding Rules (ISO/IEC 8825:1990). It is immediately followed by a Relative Distinguished Name Value (X'01') subfield that contains the corresponding attribute value.

Relative Distinguished Name Type (X'00') Distinguished Name Extension Subfield

Byte	Bit	Content	
0		Length (q+1), in binary, of the Relative Distinguished Name Type subfield	
1		Key: X'00'	
2–q		BER-encoded attribute type, consisting of the following three components:	
		identifier	Identifier portion of the encoded attribute type. This is always X'06', i.e., universal 6, which means object identifier.
		length	Length portion of the encoded attribute type. The short form encoding for length (from BER) is used, i.e., this component always consists of one byte representing the length of the following contents component.
		contents	Contents portion of the encoded attribute type. This component is always an object identifier, encoded as specified in Clause 22 of BER. For example, the object identifier 1.3.12.2.1004.552 is encoded as X'2B0C02876C8428'.

Relative Distinguished Name Value (X'01') Distinguished Name Extension Subfield

This subfield contains the attribute value portion of the attribute value assertion for a relative distinguished name, encoded according to the Basic Encoding Rules (ISO/IEC 8825:1990). It is immediately preceded by a Relative Distinguished Name Type (X'00') subfield that contains the corresponding attribute type.

Relative Distinguished Name Value (X'01') Distinguished Name Extension Subfield

Byte	Bit	Content	
0		Length (q+1), in binary, of the Relative Distinguished Name Value subfield	
1		Key: X'01'	
2–q		BER-encoded attribute value, consisting of the following three components:	
		identifier	Identifier portion of the encoded attribute value. This value of this component is determined by the value of the object identifier contained in the contents component of the associated X'00' subfield. For example, if the object identifier identifies an attribute with syntax octetString, then the value of this component will be X'04', i.e., universal 4, which means octetString.
		length	Length portion of the encoded attribute value. The short form encoding for length (from BER) is used, i.e., this component always consists of one byte representing the length of the following contents component.
		contents	Contents portion of the encoded attribute value.

Correlator Control (X'0D') MS Common Subvector

The Correlator Control MS Common Subvector indicates how an Agent Unit of Work Correlator (AUOWC, X'1549') GDS variable, or an implementation-defined correlator, is to be interpreted/used by the second-level application programs named in the Routing and Targeting Instructions (X'154D') GDS Variable. Indications are given as to whether, for a particular request (or reply), it is the first use of the correlator by the application programs, or not the first. Similarly, an indication is given as to whether it is the last (or not last) use of the correlator by these application programs. In this way, requests and their associated replies (both immediate and delayed) can be tracked as second-level application program units of work without affecting MDS Transport units of work. This subvector also indicates where the correlator is located.

Correlator Control (X'0D') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Correlator Control subvector
1		Key: X'0D'
2–p		One or more subfields (listed by Key value below and described in detail following): X'01' Application Correlator Control X'02' Application Correlator *Note:* The following subfield keys may be used as indicated:

Subfield	Presence in Correlator Control (X'0D') MS Common Subvector	
Application Correlator Control (X'01')	P	
Application Correlator (X'02')	CP	Note 1

Key:

P Present one time
CP Conditionally present one time

Notes:

1 Present if the Application Correlator Control subfield indicates that the AUOWC is not in the MDS header.

Application Correlator Control (X'01') Correlator Control Subfield

This subfield contains indicators specifying the usage of the correlator by a second-level application program.

Application Correlator Control (X'01') Correlator Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Application Correlator Control subfield
1		Key: X'01'
2(=q)		Correlation Indicators:
	0	Correlation First Message Indicator 0 Not the first use of the correlator 1 First use of the correlator
	1	Correlation Last Message Indicator 0 Not the last use of the correlator 1 Last use of the correlator
	2	Correlation Iteration Indicator 0 Not the last use of the correlator for the current execution iteration (report); or, not part of any iteration (reply) 1 Last use of the correlator for the current execution iteration (report) **Note:** Bit offset 2 is significant only when bit offset 1 = 0. When bit offset 1 = 1, the correlator is not used again, so iteration distinction has no meaning.
	3	Correlator Location Indicator 0 Correlator is an AUOWC and is found in the MDS header of the MDS-MU containing this subvector 1 Correlator (AUOWC or implementation-defined) is found in the Application Correlator (X'02') subfield of this subvector.
	4–7	reserved

Application Correlator (X'02') Correlator Control Subfield

The Application Correlator subfield contains a second-level application correlator, which may be an AUOWC. If it is not an AUOWC, then the format of this correlator is defined and agreed to by the communicating products.

Application Correlator (X'02') Correlator Control Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Application Correlator subfield
1		Key: X'02'
2–q		Implementation-defined second-level application correlator, or an AUOWC.

Product Set ID (X'10') MS Common Subvector

This MS common subvector identifies one or more products that implement a network component.

Product Set ID (X'10') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Product Set ID subvector
1		Key: X'10'
2		Retired
3–p		Network product identifier consisting of one or more Product ID (X'11') MS common subvectors, as described below (using 0-origin indexing). Each Product ID (X'11') MS Common Subvector uniquely identifies a product. Products fall into two categories: hardware (with or without microcode) and software.

Product Identifier (X'11') MS Common Subvector

This MS common subvector uniquely identifies a single product. A product may consist of electronic circuitry (hardware), executable instructions (software), or both (in the case of hardware containing microcode).

Product Identifier (X'11') MS Common Subvector

Byte	Bit	Content
0		Length (q+1), in binary, of the Product Identifier subvector
1		Key: X'11'
2	0–3	Reserved
	4–7	Product classification: X'1' IBM hardware X'3' IBM or non-IBM hardware (not distinguished) X'4' IBM software X'9' non-IBM hardware X'C' non-IBM software X'E' IBM or non-IBM software (not distinguished)
3–q		One or more subfields containing product- and installation-specific information on hardware, microcode, and software. *Note:* The subfields may be used as indicated in the table on the following page.

Conditions of Subfield Presence in Product Identifier Subvector									
Sub-field	X'11' Type (Note 1)	X'0000' Alert (Note 2)		X'0001' Link Event	X'0025' PD Stats	X'0090' QPI	XID3 (Note 3)	FMH7 (LU 6.2)	Notes
		Sender	Resource						
X'00'	HW	P	P	P	P	P	P	P	
X'01'	HW	CP	CP	CP	CP	CP	CP	CP	Note 4
X'02'	SW	CP	CP	CP	CP	CP	CP	CP	Note 5
X'04'	SW	CP	CP	CP	CP	CP	CP	CP	Note 6
X'06'	SW	P	P	P	P	P	O	P	
X'07'	SW	—	CP	—	—	CP	O	CP	Note 7
X'08'	SW	CP	CP	CP	CP	CP	CP	CP	Note 6
X'09'	SW	—	CP	—	—	CP	O	CP	Note 7
X'0B'	HW	O	O	O	O	O	O	O	
X'0E'	HW	O	O	O	O	O	O	O	
X'0F'	SW or HW	—	—	—	—	O	O	O	Note 8

Key:

—	Not present
P	Present one time
CP	Conditionally present one time
O	Optionally present one time

Subfield Names:

X'00' – Hardware Product Identifier
X'01' – Emulated Product Identifier
X'02' – Software Product Serviceable Component Identifier
X'04' – Software Product Common Level
X'06' – Software Product Common Name
X'07' – Software Product Customization Identifier
X'08' – Software Product Program Number
X'09' – Software Product Customization Date and Time
X'0B' – Microcode EC Level
X'0E' – Hardware Product Common Name
X'0F' – Vendor Identification

Notes:

1. The hardware (HW) X'11' Product Identifier subvector is present when the Product Classification field (byte 2, bits 4–7) is X'1', X'3', or X'9'. The software (SW) X'11' Product Identifier subvector is present when this field is X'4', X'C', or X'E'.
2. If a node is sending an Alert for itself, a single Product Set ID (X'10') subvector is present. This is the “Indicated Resource” for purposes of reading this matrix. If the node is reporting on an Alert for an attached device, two X'10' subvectors are present, in the following order:
   a. “Alert Sender”—identifies the node sending the Alert
   b. “Indicated Resource”—identifies the resource that the Alert is reporting upon

3. In XID3, the Hardware and Software X'11' subvectors are carried in the X'10' control vector rather than the X'10' MS Common subvector.
4. This subfield is present in the hardware X'11' when a product is emulating another hardware product.
5. This subfield is present in the software X'11' for IBM products assigned a component ID by the IBM National Service Division. For products not assigned a component ID, the X'04' and X'08' subfields are present. See Note 6.
6. The X'04' and X'08' subfields are present in the software X'11' if the X'02' subfield is not present. They are optional when the X'02' is present. See Note 5. If, however, the software identified is a customer-written application, only the X'08' subfield is present.
7. At least one of the X'07' and X'09' subfields is required in the software X'11' for software products modified by the customer.
8. The X'0F' subfield is present for non-IBM products. Therefore, the X'0F' subfield must be present if bits 4–7 of byte 2 of the Product Identifier (X'11') MS Common Subvector are X'9' or X'C'.

Note: Unless otherwise indicated, characters in these subfields are to be decoded using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types."

Hardware Product Identifier (X'00') Product ID Subfield

This subfield uniquely identifies an instance of a hardware product.

Hardware Product Identifier (X'00') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Hardware Product Identifier subfield
1		Key: X'00'
2		Format type: X'10' product instance is identified by a serial number (i.e., plant of manufacture and sequence number) unique by machine type X'11' product instance is identified by a serial number (i.e., plant of manufacture and sequence number) unique by machine type and model number X'12' product instance is identified by a serial number (i.e., plant of manufacture and sequence number) unique by machine type (as in format X'10' above). This format provides the model number not to uniquely identify a product instance but, for the purpose of additional information only. X'13' retired X'20' product instance is identified by a repair ID number (i.e., plant of manufacture and sequence number) unique by machine type X'21' product instance is identified by a repair ID number (i.e., plant of manufacture and sequence number) unique by machine type and model number X'22' product instance is identified by a repair ID number (i.e., plant of manufacture and sequence number) unique by machine type (as in format X'10' above). This format provides the model number not to uniquely identify a product instance but for the purpose of additional information only. X'40' retired X'41' retired

Hardware Product Identifier (X'00') Product ID Subfield

Byte	Bit	Content
3–r		Product identification *Note:* The originator of a message unit (e.g., NMVT, XID), reporting for another product that does not supply information required for the Hardware Product Identifier subfield, inserts binary 0's into the appropriate fields (except for the Machine Type field where EBCDIC 0's [X'F0'] are inserted) of the Product Identification field to indicate that no identification information is available.
Format X'10'		
3–6		Machine type: four numeric characters
7–8		Plant of manufacture: two characters
9–15(=r)		Sequence number: seven characters, right-justified, with EBCDIC 0's (X'F0') fill on the left
Format X'11'		
3–6		Machine type: four numeric characters
7–9		Machine model number: three characters
10–11		Plant of manufacture: two characters
12–18(=r)		Sequence number: seven characters, right-justified, with EBCDIC 0's (X'F0') fill on the left
Format X'12'		
3–6		Machine type: four numeric characters
7–9		Machine model number: three characters
10–11		Plant of manufacture: two characters
12–18(=r)		Sequence number: seven characters, right-justified, with EBCDIC 0's (X'F0') fill on the left
Format X'20'		
3–6		Machine type: four numeric characters
7–8		Plant of manufacture: two characters
9–15(=r)		Sequence number: seven characters, right-justified, with EBCDIC 0's (X'F0') fill on the left
Format X'21'		
3–6		Machine type: four numeric characters
7–9		Machine model number: three characters
10–11		Plant of manufacture: two characters
12–18(=r)		Sequence number: seven characters, right-justified, with EBCDIC 0's (X'F0') fill on the left
Format X'22'		
3–6		Machine type: four numeric characters
7–9		Machine model number: three characters
10–11		Plant of manufacture: two characters
12–18(=r)		Sequence number: seven characters, right-justified, with EBCDIC 0's (X'F0') fill on the left

Emulated Product Identifier (X'01') Product ID Subfield

This subfield identifies the hardware of the product being emulated in sufficient detail to allow problem determination.

Emulated Product Identifier (X'01') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Emulated Product Identifier subfield
1		Key: X'01'
2–5		Machine type of product being emulated: four numeric characters
6–8(=r)		Model number of product being emulated: three characters

Software Product Serviceable Component Identifier (X'02') Product ID Subfield

This subfield transports the serviceable component identifier and release level as assigned by service personnel.

Software Product Serviceable Component Identifier (X'02') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Serviceable Component Identifier subfield
1		Key: X'02'
2–10		Serviceable component identifier: nine characters
11–13(=r)		Serviceable component release level: three numeric characters

Software Product Common Level (X'04') Product ID Subfield

This subfield transports the common version, release, and modification level numbers as given in the product announcement documentation.

Software Product Common Level (X'04') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Common Level subfield
1		Key: X'04'
2–3		Common version identifier: numeric characters, right-justified with X'F0' fill on left
4–5		Common release identifier: numeric characters, right-justified with X'F0' fill on left
6–7(=r)		Common modification identifier: numeric characters, right-justified with X'F0' fill on left

Software Product Common Name (X'06') Product ID Subfield

This subfield transports the software common name as given in the product announcement documentation.

Software Product Common Name (X'06') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Common Name subfield
1		Key: X'06'
2–r		Up to thirty characters identifying the software product common name. The name is to be decoded using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," plus three additional code points: X'48' = "." (period); X'60' = "-" (minus sign); X'61' = "/" (slash).

Software Product Customization Identifier (X'07') Product ID Subfield

This subfield identifies a set of executable instructions, customized to the user's environment.

Software Product Customization Identifier (X'07') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Customization Identifier subfield
1		Key: X'07'
2–r		Customization identifier: up to eight characters

Software Product Program Number (X'08') Product ID Subfield

This subfield transports either the program product number as assigned by distribution personnel, or a substitute value supplied by a user-written software program.

Software Product Program Number (X'08') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Program Number subfield
1		Key: X'08'

Software Product Program Number (X'08') Product ID Subfield

Byte	Bit	Content
2–8(=r)		Program product number: seven characters *Note for Basic Alert (X'91' subvector) senders only*: A user-written application program does not send a program product number in this field. Instead it sends one of 16 substitute values comprised of seven characters from Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," having the following form: characters 1–4 are the letters USER; character 5 is one of the characters 0–9, or A-F; characters 6–7 are space (X'40') characters. Installation managers have the sole responsibility for managing the usage of these substitute values within their networks.

Software Product Customization Date and Time (X'09') Product ID Subfield

This subfield identifies the date and time that a set of executable instructions was customized to the user's environment.

Software Product Customization Date and Time (X'09') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Customization Date and Time subfield.
1		Key: X'09'
2		Year in unsigned packed decimal (i.e., one hex digit for each decimal digit)
3–4		Julian day in unsigned packed decimal, right-justified with 0's as fill
5		Hour in unsigned packed decimal (24-hour clock)
6(=r)		Minute in unsigned packed decimal

Microcode EC Level (X'0B') Product ID Subfield

This subfield identifies the engineering change (EC) level of the failing microcode component (e.g., microcode feature EC level or microcode subsystem level such as channel, power, or storage)

Microcode EC Level (X'0B') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Microcode EC Level subfield.
1		Key: X'0B'
2–r		Microcode EC Level: up to eight characters

Hardware Product Common Name (X'0E') Product ID Subfield

This subfield provides the hardware common name as given in the product announcement documentation.

Hardware Product Common Name (X'0E') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Hardware Product Common Name subfield
1		Key: X'0E'
2–r		Up to fifteen characters identifying the hardware product common name. The name is to be decoded using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," plus three additional code points: X'48' = "." (period); X'60' = "-" (minus sign); X'61' = "/" (slash).

Vendor Identification (X'0F') Product ID Subfield

This subfield provides the vendor name, e.g., name of corporation.

Vendor Identification (X'0F') Product ID Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of this subfield.
1		Key: X'0F'
2–r		Up to 16 characters identifying the vendor.

Focal Point Identification (X'21') MS Common Subvector

The Focal Point Identification subvector is included in all MS Capabilities (X'80F0') major vector requests and replies to indicate the current focal point (NETID, NAU name, and application program name) and to optionally identify the backup focal point (NETID, NAU name, and application program name). This subvector is always the last subvector in the major vector.

Focal Point Identification (X'21') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Focal Point Identification subvector
1		Key: X'21'
2–p		The following subfields as indicated:

Subfield	Presence in Focal Point Identification (X'21') MS Common Subvector	
MS Category (X'01')	P	
Focal Point Identification Flags (X'02')	P	
Focal Point NETID (X'10')	P	Note 1
Focal Point NAU Name (X'11')	P	Note 1
Focal Point Application Name (X'12')	P	Note 1
Backup Focal Point NETID (X'20')	O	Note 2
Backup Focal Point NAU Name (X'21')	O	Note 2
Backup Focal Point Application Name (X'22')	O	Note 2

Key:

P	Present one time
CP	Conditionally present one time (See Notes for conditions.)
O	Optionally present one time (See Notes for conditions.)

Notes:

1. These subfields together represent the identification of the focal point. They are present in the following order in relation to each other: X'10' is always first, X'11' is always second, and X'12' is always third. These subfields are present in every MS Capabilities major vector. These subfields may be empty to indicate there is no current focal point, but they may not be omitted. An empty subfield is either one with a length of 2 (consisting of just the length and key fields), or one that contains a name with no significant characters (all space characters).
2. These subfields together represent the identification of the backup focal point. They are present in the following order in relation to each other when they are present: X'20' is always first, X'21' is always second, and X'22' is always third. They are optionally present in MS Capabilities exchanges containing the

X'61' subvector to convey backup focal point information to an entry point. They are not present with the X'62', X'63', X'64', or X'E1' subvectors.

MS Category (X'01') Focal Point Identification Subfield

This subfield specifies the MS Category for which authorization is being requested.

MS Category (X'01') Focal Point Identification Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the MS Category subfield
1		Key: X'01'
2–q		MS Category code: indicates the category of management services that applies to the focal point in this subvector. Either a 1-to-8 character installation-defined application name, defined using Coded Graphic Character Set 01134–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," or one of the 4-byte architecturally-defined values for management services application programs that use MS Capabilities exchanges, listed in *SNA/Management Services Reference*. Trailing space (X'40') characters may be present, but are insignificant. Leading or embedded space characters may not be present.

Focal Point Identification Flags (X'02') Focal Point Identification Subfield

This subfield contains flags related to focal point identification.

Focal Point Identification Flags (X'02') Focal Point Identification Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Focal Point Identification Flags subfield
1		Key: X'02'

Focal Point Identification Flags (X'02') Focal Point Identification Subfield

Byte	Bit	Content
2–3(=q)		Flags
	0	Backup focal points **Note:** This flag is defined only when the Focal Point Identification (X'21') subvector is present in an MS Capabilities major vector containing the Focal Point Authorization Request (X'61') subvector. Otherwise, this bit is reserved. 0 Normal processing: backup focal points identified by the X'20', X'21', and X'22' subfields are accepted. If backup focal-point subfields are not present, current backup focal-point names are deleted. 1 Keep current backup focal points, if any. This flag is used if no X'20', X'21', and X'22' subfields are present, but the sender does not want the receiver to delete any existing backup focal-point entries, if there are any.
	1	Cancel focal point nesting flag **Note:** This flag is interpreted only by focal point applications in a nested focal point. It is ignored by entry point applications. For focal point applications, it is significant only if the the X'10', X'11', and X'12' subfields are all present and all empty. 0 Loss of higher-level focal point. This focal point has lost communications with a higher-level focal point for the indicated category. This should be treated as an error case, i.e., error recovery functions such as switch to backup and holding of Alerts should be invoked. 1 Focal-point nesting cancelled. The relationship between the focal point and its higher-level focal point has been cancelled. This should not be treated as an error case.
	2–15	Reserved

Focal Point NETID (X'10') Focal Point Identification Subfield

This subfield contains the NETID portion of the network-qualified name of the focal point.

Focal Point NETID (X'10') Focal Point Identification Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Focal Point NETID subfield
1		Key: X'10'
2–q		A 1-to-8 character NETID (encoded using Coded Graphic Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types”). Trailing space characters may be present, but are insignificant. Leading or embedded space characters may not be present. This subfield may be empty to indicate there is no current focal point. An empty subfield is either one with a length of 2 (consisting of just the Length and Key fields), or one that contains a NAU Name field with no significant characters (all space characters).

Focal Point NAU Name (X'11') Focal Point Identification Subfield

This subfield contains the unqualified portion of the NAU name of the focal point. It is a CP or LU name.

Focal Point NAU Name (X'11') Focal Point Identification Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Focal Point NAU Name subfield
1		Key: X'11'
2–q		A 1-to-8 character NAU name (encoded using Coded Graphic Character Set 01134–00500 documented in Appendix A, "SNA Character Sets and Symbol-String Types"). Trailing space characters may be present, but are insignificant. Leading or embedded space characters may not be present. This subfield may be empty to indicate there is no current focal point. An empty subfield is either one with a length of 2 (consisting of just the Length and Key fields), or one that contains a NAU Name field with no significant characters (all space characters).

Focal Point Application ID (X'12') Focal Point Identification Subfield

This subfield specifies the application program name of the focal point.

Focal Point Application ID (X'12') Focal Point Identification Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Focal Point Application ID subfield
1		Key: X'12'
2–q		Either a 1-to-8 character installation-defined application program name, defined using Coded Graphic Character Set 01134–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," or one of the 4-byte architecturally-defined values for management services application programs, listed in *SNA/Management Services Reference*. Trailing space characters may be present, but are insignificant. Leading or embedded space characters may not be present. This subfield may be empty to indicate there is no current focal point. An empty subfield is either one with a length of 2 (consisting of just the Length and Key fields), or one that contains a NAU Name field with no significant characters (all space characters).

Backup Focal Point NETID (X'20') Focal Point Identification Subfield

This subfield contains the NETID portion of the network-qualified name of the backup focal point.

Backup Focal Point NETID (X'20') Focal Point Identification Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Backup Focal Point NETID subfield
1		Key: X'20'

Backup Focal Point NETID (X'20') Focal Point Identification Subfield

Byte	Bit	Content
2–q		A 1-to-8 character NETID (encoded using Coded Graphic Character Set 01134–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types"). Trailing space characters may be present, but are insignificant. Leading or embedded space characters may not be present. This subfield may be empty to indicate there is no backup focal point. An empty subfield is either one with a length of 2 (consisting of just the Length and Key fields), or one that contains a NAU Name field with no significant characters (all space characters).

Backup Focal Point NAU Name (X'21') Focal Point Identification Subfield

This subfield contains the unqualified name of the backup focal point.

Backup Focal Point NAU Name (X'21') Focal Point Identification Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Backup Focal Point NAU Name subfield
1		Key: X'21'
2–q		A 1-to-8 character NAU name (encoded using Coded Graphic Character Set 01134–00500 documented in Appendix A, "SNA Character Sets and Symbol-String Types"). Trailing space characters may be present, but are insignificant. Leading or embedded space characters may not be present. This subfield may be empty to indicate there is no backup focal point. An empty subfield is either one with a length of 2 (consisting of just the Length and Key fields), or one that contains a NAU name field with no significant characters (all space characters).

Backup Focal Point Application ID (X'22') Focal Point Identification Subfield

This subfield specifies the application program name of the backup focal point.

Backup Focal Point Application ID (X'22') Focal Point Identification Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Backup Focal Point Application ID subfield
1		Key: X'21'

Backup Focal Point Application ID (X'22') Focal Point Identification Subfield

Byte	Bit	Content
2–q		Either a 1-to-8 character installation-defined application program name, defined using Coded Graphic Character Set 01134–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," or one of the 4-byte architecturally-defined values for management services application programs, listed in *SNA/Management Services Reference*. Trailing space characters may be present, but are insignificant. Leading or embedded space characters may not be present. This subfield may be empty to indicate there is no backup focal point. An empty subfield is either one with a length of 2 (consisting of just the Length and Key fields), or one that contains a NAU Name field with no significant characters (all space characters).

Self-Defining Text Message (X'31') MS Common Subvector

This MS common subvector transports a text message, additional data identifying the nature of the message sender, the language of the message, and how the message is encoded.

Self-Defining Text Message (X'31') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Self-Defining Text Message subvector
1		Key: X'31'
2–p		Subfields containing a text message, as well as additional information characterizing the message. *Note:* The following subfield keys are used as indicated:

Subfield	Presence in Self-Defining Text Message (X'31') Common Sub-vector	
Coded Character Set ID (X'02')	P	
National Language ID (X'12')	CP	Note 1
Sender ID (X'21')	CP	Note 1
Text Message (X'30')	P	

Key:

P Present one time
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. This subfield is present in an Alert.

Coded Character Set ID (X'02') Self-Defining Text Message Subfield

This subfield identifies the coded character set in which the text message is encoded.

Coded Character Set ID (X'02') Self-Defining Text Message Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Coded Character Set ID subfield
1		Key: X'02'

Coded Character Set ID (X'02') Self-Defining Text Message Subfield

Byte	Bit	Content
2–5(=q)		Coded character set ID: two 4-digit hexadecimal numbers that specify uniquely the coded character set in which the accompanying user text message is encoded. Bytes 2–3 contain a 4-digit hexadecimal number identifying a character set, while bytes 4–5 contain a 4-digit hexadecimal number identifying a code page. For example, Coded Graphic Character Set and Code Page 01134-00500 would be encoded as X'046E01F4'. Receivers are responsible for documenting the coded character set IDs, as well as the coded character sets themselves, that they support in this subvector.

National Language ID (X'12') Self-Defining Text Message Subfield

This subfield identifies the coded national language in which the text message is written.

National Language ID (X'12') Self-Defining Text Message Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the National Language ID subfield
1		Key: X'12'
2–4(=q)		National Language Code: a code point indicating the national language in which the text message is written. A national language is identified by three upper-case alpha EBCDIC characters from Coded Graphic Character Set 01134–00500. The three character IDs are defined in Volume 2 of the *National Language Information and Design Guide*, SE09–8002. For example, American English would be identified in this field as X'C5D5E4', which is decoded as ENU. Other examples are: DEU for German, FRC for Canadian French and ENG for UK English. Receivers are responsible for documenting the national language IDs that they support in this subvector.

Sender ID (X'21') Self-Defining Text Message Subfield

This subfield identifies, in generic terms, the nature of the entity that sent the text message. This information will be displayed by the receiver of the message.

Sender ID (X'21') Self-Defining Text Message Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Sender ID subfield
1		Key: X'21'

Sender ID (X'21') Self-Defining Text Message Subfield

Byte	Bit	Content
2(=q)		Sender ID code: a code point characterizing the sender of the text message. Defined codes are: X'01' terminal user: A person who, when entering the message, is solely a consumer of system resources, i.e., plays no role in providing them X'02' operator: A person who, when entering the message, is in some way involved in providing or managing system resources X'11' application program: A program written for or by an end user that applies to the end user's work *Note:* This program may be implemented in either software or microcode. X'12' control program: A program that controls other system resources. *Note:* This program may be implemented in either software or microcode X'21' Alert Description X'22' Alert Probable Cause

Text Message (X'30') Self-Defining Text Message Subfield

This subfield transports a text message.

Text Message (X'30') Self-Defining Text Message Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Text Message subfield
1		Key: X'30'
2–q		Text message

Default Character Set ID (X'32') MS Common Subvector

The Default Character Set ID subvector establishes a character set and code page, and optionally a national language ID, that is to be used to interpret character fields throughout an MS structure if that structure has none of this information specified for it otherwise.

Default Character Set ID (X'32') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Default Character Set ID subvector
1		Key: X'32'
2–p		One or more subfields (listed by Key value below and described in detail following): X'02' Coded Character Set ID X'12' National Language ID *Note:* The following subfield keys may be used as indicated:

Subfield	Presence in Default Character Set ID (X'32') MS Common Subvector	
Coded Character Set ID (X'02')	P	
National Language ID (X'12')	O	

Key:

P Present one time
O Optionally present one time

Coded Character Set ID (X'02') Default Character Set ID Subfield

This subfield is defined in the description of the Self-Defining Text Message (X'31') MS Common Subvector.

National Language ID (X'12') Default Character Set ID Subfield

This subfield is defined in the description of the Self-Defining Text Message (X'31') MS Common Subvector.

User Data (X'33') MS Common Subvector

This MS common subvector transports user-specific data. This data can be used to enable enterprise-specific processing of SNA/MS MSUs (e.g., routing Generic Alerts within an enterprise). Since the architecture makes no attempt to control the types and values within the subfields provided, other tools are provided to allow the user to manage this data (e.g., the National Language ID subfield is provided to facilitate language translation of textual data if desired).

Note: This subvector is reserved for use by customer written applications. No IBM product will send or modify this subvector.

The data carried by this subvector is specific to an enterprise and should not be used by either IBM or non-IBM products as flexible ways around existing architecture.

User Data (X'33') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the User Data subvector
1		Key: X'33'
2–p		Subfields containing user data and typing of that data as well as supporting subfields to help manage that data, if desired. *Note:* The following subfield keys are used as indicated:

Subfield	Presence in User Data (X'33') Common Sub-vector	
Coded Character Set ID (X'02')	P	
National Language ID (X'12')	O	Notes 1,2
User Enterprise (X'20')	O	Note 1
User Data (X'30')	P(n)	

Key:

O	Optionally present one time
P	Present one time
P(n)	Present one or more times (See Notes for conditions.)

Notes:

1. This subfield can optionally be present to qualify the information in the User Data (X'30') subfield.
2. This field applies to occurrences of User Data (X'30') that contain textual data.

Coded Character Set ID (X'02') User Data Subfield

This subfield identifies the coded character set in which all text-based user data in this subvector is encoded.

Note: The format of this subfield is identical to that of the Coded Character Set ID (X'02') Self-Defining Text Message Subfield (documented on page 4-444).

National Language ID (X'12') User Data Subfield

This subfield identifies the coded national language in which all text-based user data is written.

Note: The format of this subfield is identical to that of the National Language ID (X'12') Self-Defining Text Message Subfield (documented on page 4-444).

User Enterprise (X'20') User Data Subfield

This subfield contains a mechanism for identifying the enterprise that has defined the User Types and User Data. This mechanism is provided to help avoid semantic collisions of the User Data (X'30') subfield.

User Enterprise (X'20') User Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the User Enterprise subfield
1		Key: X'20'
2		User Enterprise Encoding: identifies the technique used to encode the User Enterprise bytes. There are multiple techniques for encoding a User Enterprise. Each technique is identified with a single byte code that qualifies the succeeding User Enterprise. One of the following values may be entered in this field: X'01' BER-encoded Object Identifier X'02' IBM-registered NETID X'03' Other (user is responsible for guaranteeing uniqueness)
3–q		User Enterprise: a value (maximum unspecified) that uniquely identifies the enterprise that defines the User Data (X'30'). The User Enterprise value should be globally unique (e.g., OSI object identifier) so that receivers in other enterprises are guaranteed not to confuse the semantic meaning of the User Data. ***Warning:*** It is recommended that this field be used if there is a possibility that the user data will cross enterprise boundaries.

User Data (X'30') User Data Subfield

This subfield contains a mechanism for encoding the type and value of user data.

User Data (X'30') User Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the User Data subfield
1		Key: X'30'
2–5		User Data Type: a 4-byte value that defines the type of data in the accompanying User Data. The values for this subfield are not provided or managed by this architecture. ***Warning:*** Since type values are not known or managed by the architecture, the users of this subfield are responsible for avoiding and/or handling collisions that may occur in the assigned values.
6–q		User Data

Nested Alert Focal Point Data Forwarding (X'34') MS Common Subvector

The Nested Alert Focal Point Data Forwarding (X'34') MS common subvector may optionally be present in Alert (X'0000'), Link Event (X'0001'), Resolution (X'0002'), and Management Association (X'1330') MS MAjor Vectors. It is optionally created and added to a major vector by the first (lowest-level) nested Alert focal point to receive the major vector, and it contains information related to this lowest-level nested Alert focal point, such as product name, version/release level, etc..

Nested Alert Focal Point Data Forwarding (X'34') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Nested Alert Focal Point Data Forwarding subvector
1		Key: X'34'
2–p		Subfields containing product-unique data, a product identifier and a focal point node list. *Note:* The following subfield keys are used as indicated:

Subfield	Presence in Nested Alert Focal Point Data Forwarding (X'34') Common Subvector	
Software Product Common Level (X'04')	CP	Note 1
Software Product Common Name (X'06')	CP	Note 1
Software Product Program Number (X'08')	P	Note 2
Processing Node List NAU Name (X'20')	CP	Note 3
Processing Node List NETID (X'21')	CP	Note 3
Product-Unique Data (X'31')	CP	Note 4

Key:

P Present one time
CP Conditionally present one time (See Notes for conditions.)

Notes:

1. These subfields are present in the first of a set of Nested Alert Focal Point Data Forwarding (X'34') MS Common Subvectors included in a major vector, and not present in succeeding X'34' subvectors. They are used to identify the level and common name of the software product that builds X'34' subvector.
2. This subfield is present in all Nested Alert Focal Point Data Forwarding (X'34') MS Common Subvectors in a major vector. It is used to identify the program product that builds the subvectors.
3. These subfields are present in the first of a set of Nested Alert Focal Point Data Forwarding (X'34') MS Common Subvectors included in a major vector, and not present in succeeding X'34' subvectors. They are used to identify the NAU name of the node where the first (lowest-level) nested Alert focal point resides. Each Alert focal point which receives the major vector adds its NAU name to the front of the list.

Note: These subfields are mutually exclusive with the Processing Node List (X'20') subfield of the Hierarchy/Resource List (X'05') MS Common Subvector. The first (lowest-level) nested Alert focal point either creates subfield X'20' of subvector X'05', or it creates subfield X'21' and subfield X'20' of subvector X'34', but not both.

4. This subfield is optionally present in the first of a set of Nested Alert Focal Point Data Forwarding (X'34') MS Common Subvectors, but must be present in every succeeding X'34' subvector in the major vector.

Software Product Common Level (X'04') Nested Alert Focal Point Data Forwarding Subfield

This subfield transports the common version, release, and modification level numbers of a software product, as given in the product announcement documentation.

Software Product Common Level (X'04') Nested Alert Focal Point Data Forwarding Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Common Level subfield
1		Key: X'04'
2–3		Common version identifier: numeric characters, right-justified with X'F0' fill on left
4–5		Common release identifier: numeric characters, right-justified with X'F0' fill on left
6–7(=r)		Common modification identifier: numeric characters, right-justified with X'F0' fill on left

Software Product Common Name (X'06') Nested Alert Focal Point Data Forwarding Subfield

This subfield transports the software common name as given in the product announcement documentation.

Software Product Common Name (X'06') Nested Alert Focal Point Data Forwarding Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Common Name subfield
1		Key: X'06'
2–r		Up to thirty characters identifying the software product common name. The name is to be decoded using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," plus three additional code points: X'48' = "." (period); X'60' = "-" (minus sign); X'61' = "/" (slash).

Software Product Program Number (X'08') Nested Alert Focal Point Data Forwarding Subfield

This subfield transports either the program product number as assigned by distribution personnel, or a substitute value supplied by a user-written software program.

Software Product Program Number (X'08') Nested Alert Focal Point Data Forwarding Subfield

Byte	Bit	Content
0		Length (r+1), in binary, of the Software Product Program Number subfield
1		Key: X'08'
2–8(=r)		Program product number: seven characters

Processing Node List NAU Name (X'20') Nested Alert Focal Point Data Forwarding Subfield

This subfield contains a list specifying the unqualified portion of the NAU name of the processing nodes that have received, processed, and forwarded an MSU, including the first (lowest-level) nested Alert focal point's NAU name. It is a CP or LU name. When the first (lowest-level) nested Alert focal point initially creates MS common subvector X'34' and adds it to the major vector, subfield X'20' contains only the first (lowest-level) nested Alert focal point's NAU name. This nested Alert focal point may then send the major vector on to a higher level Alert focal point, and each Alert focal point which receives the major vector adds its name to the front of the list. The list therefore consists of the NAU names of the lowest-level and intermediate node Alert focal points.

Note: Subfield X'20' of subvector X'34' is mutually exclusive with subfield X'20' of subvector X'05'. It is not permitted for both to be present.

Processing Node List NAU Name (X'20') Nested Alert Focal Point Data Forwarding Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Processing Node List NAU Name subfield
1		Key: X'20'
2		Reserved
3–q		Processing Node List NAU Name Entries
Note:		Each entry contains a Length field, a Name field, a reserved byte and a Resource Type field, and has the following form (shown 0-origin):
0		Length (r+1), in binary, of the following name plus this length field
1–r		A 1-to-8 character NAU name (encoded using Coded Graphic Character Set 01134–00500 documented in Appendix A, “SNA Character Sets and Symbol-String Types”). Trailing space characters may be present, but are insignificant. Leading or embedded space characters may not be present.
r+1		Reserved
r+2		Resource type identifier: category to which the resource (named in bytes 1–r) belongs:

Processing Node List NAU Name (X'20') Nested Alert Focal Point Data Forwarding Subfield

Byte	Bit	Content
		X'EF' network accessible unit (NAU) serving as a focal point

Processing Node List NETID (X'21') Nested Alert Focal Point Data Forwarding Subfield

This subfield contains a list specifying the NETID portion of the network-qualified name corresponding to the Processing Node List NAU Name (X'20') subfield. When the first (lowest-level) nested Alert focal point initially creates MS common subvector X'34' and adds it to the major vector, subfield X'21' contains only the first (lowest-level) nested Alert focal point's NETID. This nested Alert focal point may then send the major vector on to an Alert focal point, and each Alert focal point which receives the major vector adds its NETID to the front of the list. The list therefore consists of the NETID's of the lowest-level and intermediate node Alert focal points.

Note: Subfield X'21' of subvector X'34' is mutually exclusive with subfield X'20' of subvector X'05'. It is not permitted for both to be present.

Processing Node List NETID (X'21') Nested Alert Focal Point Data Forwarding Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Processing Node List NETID subfield
1		Key: X'21'
2–q		Processing Node List NETID Entries
Note:		Each entry contains a Length field and a Name field, and has the following form (shown 0-origin):
0		Length (r+1), in binary, of the following name plus this length field
1–r		A 1-to-8 character NETID (encoded using Coded Graphic Character Set 01134–00500 documented in Appendix A, “SNA Character Sets and Symbol-String Types”).
		Trailing space characters may be present, but are insignificant. Leading or embedded space characters may not be present.

Product-unique Data (X'31') Nested Alert Focal Point Data Forwarding Subfield

This subfield contains product-unique data. When multiple X'34' subvectors are present, intermediate Alert focal points must not change the order of the X'34' subvectors when they forward the major vector on to their Alert focal point.

Product-unique Data (X'31') Nested Alert Focal Point Data Forwarding Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Product-unique Data subfield
1		Key: X'31'

Product-unique Data (X'31') Nested Alert Focal Point Data Forwarding Subfield

Byte	Bit	Content
2–q		Product-unique Data

Relative Time (X'42') MS Common Subvector

This MS common subvector indicates when a record was created relative to other records created by the originating component.

Relative Time (X'42') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Relative Time subvector
1		Key: X'42'
2		Time units: X'00' tenths of a second X'01'–X'7F' a number that, when divided into the timer data (in bytes 3–6), converts the value to seconds X'90' microseconds X'A0' milliseconds X'C0' minutes (not used in Alerts) X'D0' hours (not used in Alerts) X'EF' indicates time value is purely a sequence indicator showing relative order only
3–6(=p)		Time, in binary, in the units defined by byte 2

NMVT Count (X'44') MS Common Subvector

The NMVT Count subvector is an MS common subvector that is sent in the first NMVT of a single reply to an NMVT request, when the reply data spans multiple NMVTs. The subfields in this subvector are used to determine the size of the entire reply.

NMVT Count (X'44') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the NMVT Count subvector
1		Key: X'44'
2–p		The following subfields: X'01' Number of Replies X'10' Number of NMVTs X'11' Maximum Size of NMVTs

Number of Replies (X'01') NMVT Count Subfield

This subfield specifies the number of replies that pertain to the soliciting request. This subfield is always present.

Number of Replies (X'01') NMVT Count Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Number of Replies subfield
1		Key: X'01'
2–3(=q)		Reply Count: the number of replies, in binary, that pertain to the soliciting request. This field always has a value of X'0001'.

Number of NMVTs (X'10') NMVT Count Subfield

This subfield specifies the number of NMVTs that comprise the reply. This subfield is always present.

Number of NMVTs (X'10') NMVT Count Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Number of NMVTs subfield
1		Key: X'10'
2–5(=q)		NMVT count: the number, in binary, of NMVTs that comprise the reply

Maximum Size of NMVTs (X'11') NMVT Count Subfield

This subfield specifies the maximum NMVT size of each of the NMVTs in the reply. This subfield is always present.

Maximum Size of NMVTs (X'11') NMVT Count Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Maximum Size of NMVTs subfield
1		Key: X'11'
2–5(=q)		Maximum NMVT size: the maximum size, in binary, of each NMVT in the reply.

Data Reset Flag (X'45') MS Common Subvector

This MS common subvector acknowledges that the reset function has been performed.

Data Reset Flag (X'45') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Data Reset Flag subvector
1(=p)		Key: X'45'

MSU Correlation (X'47') MS Common Subvector

This MS common subvector transports one or more tokens to be used by a receiver for correlating Management Services Units from different senders pertaining to the same condition. Each correlation token is an *entire* subfield, including the length and key.

MSU Correlation (X'47') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the MSU Correlation subvector
1		Key: X'47'
2–p		Subfields containing one or more correlation tokens *Note:* The following subfield keys are used as indicated:

Subfield	Presence in MSU Correlation (X'47') Common Subvector				
	Session Errors	**Link Errors**	**Shared Hardware Resource Errors**	**LAN Link Errors**	**Notes**
Link Instance Identifier (X'01')	—	CP	—	—	Note 1
Resource Instance Identifier (X'10')	—	—	CP	—	Note 2
LAN Link Connection Identifier (X'11')	CP	CP	CP	CP	Note 3
Logical Unit of Work Correlation Token (X'20')	—	—	—	—	Note 4
Fully Qualified PCID (X'60')	P	—	—	—	Note 5

Key:

—	Not present
P	Present one time
CP	Conditionally present one time

Notes:

1. This subfield is present in an MSU reporting a link or link station error if XID 3 exchange on the link has been completed.
2. This subfield is present when the MSU reports a condition requiring correlation of data sent by multiple senders concerning a hardware resource they share.
3. This subfield is present when the MSU reports an error about the LAN Link Connection and two ends of the LAN Link Connection have successfully exchanged the LSAP Pair Correlator, described in *Heterogeneous LAN Management Architecture Reference, SC30-3539*.
4. This subfield is present when the MSU reports a condition requiring correlation of data sent by multiple senders concerning a logical unit of work they are commonly involved with.

5. This subfield is present when the MSU reports an error related to a session.

Link Instance Identifier (X'01') MSU Correlation Subfield

This subfield is present in an MSU reporting a problem for a link or link station after an XID format 3 exchange for that link has taken place. Of the names of the control points at the two ends of the link, it contains the one that occurs earlier in the alphabet. It also contains a unique 4-byte value assigned to the link instance by that control point. With this data, MSUs sent from both sides of a link can be correlated, because they have identical Link Instance Identifier subfields.

Link Instance Identifier (X'01') MSU Correlation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Link Instance Identifier subfield
1		Key: X'01'
2–5		Link instance index: A 4-byte value assigned by the control point named in bytes 6–q. This value is unique, through time, across all of the link instances between this control point and any other node
6–q		Network-qualified control point name *Note:* The format of this name is identical to that in the Network Name (X'0E') control vector, with the restriction that the NETID must be present and trailing blanks are not allowed.

Resource Instance Identifier (X'10') MSU Correlation Subfield

This subfield is present in an MSU reporting a condition present in shared hardware resources. It contains the failing resource name and number, which, together with a sequence number, uniquely identifies a single instance of failure that is reported by multiple senders.

Resource Instance Identifier (X'10') MSU Correlation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Resource Instance Identifier subfield
1		Key: X'10'
2–33		Resource name: The name of the resource experiencing the failure. The name is to be decoded using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol- String Types".
34–37		Resource number: A number that uniquely identifies a single piece of hardware con tained in the resource named in byte offset 2-33.
38–q		Sequence number: A number that is incremented each time a new reportable conditio n occurs in the resource identified in byte offset 34-37. Each resource has a sequence number associated with it. This sequence number may or may not have the same value as other resources' sequence numbers at any given time.

LAN Link Connection Identifier (X'11') MSU Correlation Subfield

This subfield is present in a MSU reporting a problem about LAN link connection. This subfield uniquely identifies the instance of the LAN Link Connection. It contains the unique correlator exchanged between the two ends of the Link Connection. With this data, MSUs sent from both sides of the LAN link connection can be correlated.

LAN Link Connection Identifier (X'11') MSU Correlation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the LAN Link Connection Identifier subfield
1		Key: X'11'
2–17(=q)		LAN Link Connection Correlator: The correlator exchanged between the two ends of the LAN Link Connection via the LAN Station Manager, as described in *Heterogeneous LAN Management Architecture Reference (SC30-3539)*

Logical Unit of Work Correlation Token (X'20') MSU Correlation Subfield

This subfield is present when the MSU reports a condition requiring correlation of data sent by multiple senders concerning a logical unit of work they are commonly involved with. This subfield can transport the logical unit of work ID as defined by LU6.2.

Logical Unit of Work Correlation Token (X'20') MSU Correlation Subfield

Byte	Bit	Content
0		Length (y+10), in binary, of the Logical Unit of Work Correlation Token subfield
1		Key: X'20'
2–x		NETID: A NETID occupying up to 8 bytes (encoded using Coded Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types”).
x+1		X'4B' The EBCDIC period.
x+2–y		LU Name: A LU Name occupying up to 8 bytes (encoded using Coded Character Set 01134–00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types”).
y+1		X'4B' The EBCDIC period.
y+2–y+7		Instance Number: The instance number occupies 6 bytes. The Instance Number along with the Sequence Number uniquely identifies the correlation token from a given NETID and LU Name.
y+8–y+9		Sequence number: The Sequence Number occupies 2 bytes. The Sequence Number along with the Instance Number uniquely identifies the correlation token from a given NETID and LU Name.

Fully-qualified Session PCID (X'60') MSU Correlation Subfield

This subfield specifies the fully-qualified procedure correlation identifier used to uniquely identify a session.

Fully-qualified Session PCID (X'60') MSU Correlation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Fully-qualified Session PCID subfield
1		Key: X'60'
2–9		PCID
10		Length, in binary, of network-qualified CP name (values 3 to 17 are valid)
11–q		Network-qualified CP name *Note:* The format of this name is identical to that in the Network Name (X'0E') control vector, with the restriction that the NETID must be present and trailing blanks are not allowed.

Supporting Data Correlation (X'48') MS Common Subvector

This MS common subvector transports one or more tokens to be used by a receiver for retrieval of additional data related to the event reported by the Management Services Unit containing this subvector.

Supporting Data Correlation (X'48') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Supporting Data Correlation subvector
1		Key: X'48'
2–p		One or more subfields, each containing one correlation token *Note:* The following subfield keys are used as indicated:

Subfield	Presence in Supporting Data Correlator (X'48') Common Subvector	
Fully-Qualified Session PCID (X'60')	O	Note 1
Detailed Data (X'82')	O(n)	Notes 2, 3
Detailed Data Extended (X'85')	O(n)	Notes 2, 3

Key:

O Optionally present one time
O(n) Optionally present one or more times

Notes:

1. This subfield is present to indicate that the Alert sender has stored supporting data that can be accessed by use of the fully-qualified PCID present in the subfield. The techniques needed to access or retrieve supporting data by means of the identifier contained in this subfield are not defined by the architecture.
2. This subfield is present to indicate that the Alert sender has stored supporting data that can be accessed by use of the file or record identifier present in the subfield. The techniques needed to access or retrieve supporting data by means of the identifier contained in this subfield are not defined by the architecture.
3. The X'82' and X'85' subfields can *not* be both used in the same subvector.

Fully-Qualified Session PCID (X'60') Supporting Data Correlation Subfield

This subfield specifies the fully-qualified procedure correlation identifier used to uniquely identify a session.

Fully-qualified Session PCID (X'60') Supporting Data Correlation Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Fully-Qualified Session PCID subfield
1		Key: X'60'
2–9		PCID value in hex.
10		Length, in binary, of the network-qualified CP name (values 3 to 17 are valid)
11–q		Network-qualified CP name: a 3-to-17 byte name consisting of a mandatory 1-to-8 byte type 1134 symbol-string network identifier (NETID) concatenated with a period to a 1-to-8 byte type 1134 symbol-string name (CGCSID: 01134-00500).

Detailed Data (X'82') Supporting Data Correlation Subfield

This subfield identifies either a file containing supporting data, or one or more records within such a file. In both cases the identifications are meaningful to the Alert sender. The techniques needed to access or retrieve supporting data by means of the identifier contained in this subfield are not defined by the architecture.

Note: The format of this subfield is defined under the Alert (X'0000') major vector, in the section entitled “Network Alert (X'0000') Common Subfields” on page 4-153.

Detailed Data Extended (X'85') Supporting Data Correlation Subfield

This subfield identifies either a file containing supporting data, or one or more records within such a file. In both cases the identifications are meaningful to the Alert sender. The techniques needed to access or retrieve supporting data by means of the identifier contained in this subfield are not defined by the architecture.

Note: The format of this subfield is defined under the Alert (X'0000') major vector, in the section entitled “Network Alert (X'0000') Common Subfields” on page 4-153.

Incident Identification (X'4A') MS Common Subvector

This MS subvector transports one or more tokens used to identify the incidents (Alert conditions) to which the containing major vector is related. Multiple major vectors containing the same incident identifier token can be considered to deal with the same incident.

Incident Identification (X'4A') Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Incident Identification subvector
1		Key: X'4A'
2–p		Subfields containing identification tokens The following subfield keys are used as indicated:

Subfield	Presence in the Incident Identification (X'4A') Subvector		
	Alert	Resolution	Notes
Incident Identifier (X'01')	P	P(n)	Note 1

Key:

P Present one time
P(n) Present one or more times

Notes:

1. This subfield is present once when the X'4A' subvector is in an Alert major vector to uniquely identify the Alert condition (incident) being reported.

   This subfield is present one or more times when the X'4A' subvector is in a Resolution major vector to identify the incidents (Alert conditions) which were corrected. All of the incidents were corrected by fixing the one problem the Resolution major vector is reporting as resolved. Multiple incidents are corrected by resolving a single problem when the problem originally appeared to be several problems, or the same problem occurred at different points in time, thus causing multiple Alerts to be sent. If multiple subfields are present, all other information contained within the Resolution major vector can be assumed to apply to all identified incidents.

Incident Identifier (X'01') Incident Identification Subfield

This subfield is present in an MSU that reports information concerning an Alert condition or incident. All MSUs related to the same incident are to contain identical incident identifier subfields. A receiver can make no assumptions as to the structure of information contained within this subfield.

Incident Identifier (X'01') Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Incident Identifier subfield
1		Key: X'01'
2		Encoding Scheme: A single-byte value denoting the encoding format of the remainder of this subfield.
Encoding Scheme = X'01'		
		Note: Character strings in this encoding scheme are decoded using Coded Graphic Character Set 01134-00500 (documented in Appendix A, "SNA Character Sets and Symbol-String Types"), and padded with trailing blanks (X'40'). Leading and embedded blanks are not allowed.
3–10		Network ID: Character string containing the ID of the network in which the application generating the identifier is located.
11–18		Network Addressable Unit: Character string identifying the network addressable unit on which the application generating the identifier is located.
19–26		Application Name: Character string containing the name of the application generating the identifier.
27–q		Uniqueness Token: variable-length (1 to 16 bytes, in binary) uniqueness key that is guaranteed to be unique by the application identified in bytes 3 through 26. GMT time may be used in this field, as may a sequence number that is remembered across IPLs of the machine that generates the identifier.
Encoding Scheme = X'02' (to be used only by IBM products)		
		Note: Characters in this encoding scheme are decoded using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types."
3–6		Machine type of the failing resource: four numeric characters
7–9		Model number of the failing resource: three characters
10–11		Plant of manufacture of the failing resource: two characters
12–18		sequence number of the failing resource: seven characters, right-justified, with EBCDIC 0's (X'F0') fill on the left
19–q		Uniqueness Token: variable-length (1 to 16 bytes, in binary) uniqueness key that is guaranteed to be unique by the application that is reporting the incident on behalf of the failing resource. GMT time may be used in this field, as may a sequence number that is remembered across IPLs of the machine that generates the identifier.
Encoding Scheme = X'03' (to be used only by IBM products)		
		Note: Characters in this encoding scheme are decoded using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types."
3–6		Machine type of the failing resource: four numeric characters
7–8		Plant of manufacture of the failing resource: two characters
9–15		sequence number of the failing resource: seven characters, right-justified, with EBCDIC 0's (X'F0') fill on the left
16–q		Uniqueness Token: variable-length (1 to 16 bytes, in binary) uniqueness key that is guaranteed to be unique by the application that is reporting the incident on behalf of the failing resource. GMT time may be used in this field, as may a sequence number that is remembered across IPLs of the machine that generates the identifier.
Encoding Scheme = X'04'		

Incident Identifier (X'01') Subfield

Byte	Bit	Content
		Note: Characters in this encoding scheme are decoded using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types."
3–8		Machine type of the failing resource: six characters
9–11		Model number of the failing resource: three characters
12–14		Manufacturer: three characters identifying the manufacturer of the failing resource
15–16		Plant of manufacture of the failing resource: two characters
17–28		sequence number of the failing resource: twelve characters
29–q		Uniqueness Token: variable-length (1 to 16 bytes, in binary) uniqueness key that is guaranteed to be unique by the application that is reporting the incident on behalf of the failing resource. GMT time may be used in this field, as may a sequence number that is remembered across IPLs of the machine that generates the identifier.
Encoding Scheme = X'05'		
		Note: Character strings in this encoding scheme are decoded using Coded Graphic Character Set 01134-00500 (documented in Appendix A, "SNA Character Sets and Symbol-String Types"), and padded with trailing blanks (X'40'). Leading and embedded blanks are not allowed.
3–10		Network ID: Character string containing the ID of the network in which the application generating the identifier is located.
11–18		Network Addressable Unit: Character string identifying the network addressable unit on which the application generating the identifier is located.
19–26		Application Name: Character string containing the name of the application generating the identifier.
27–36		Uniqueness Token: fixed-length (10 bytes, in binary) uniqueness key that is guaranteed to be unique by the application identified in bytes 3 through 26. It is necessary that this key be unique even across IPLs of the machine or application that generates the identifier.

LPDA-2 Link Connection Subsystem Data (X'50') MS Common Subvector

This MS common subvector transports IBM LPDA-2 link connection subsystem data.

LPDA-2 Link Connection Subsystem Data (X'50') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the LPDA-2 Link Connection Subsystem Data subvector
1		Key: X'50'
2–p		IBM LPDA-2 link connection subsystem data, in binary. *Note:* For details, see "Report General Format" section, chapter 3, in *IBM 5865/5866 Modem Models 2, 3 Maintenance Information and Parts Catalog*, SY33-2048. For the content of the X'50' subvector see the major vector in which this subvector is present.

Token-Ring LAN Link Connection Subsystem Data (X'51') MS Common Subvector

This MS common subvector transports data on the elements of the LAN link connection.

Token-Ring LAN Link Connection Subsystem Data (X'51') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Token-Ring LAN Link Connection Subsystem Data subvector
1		Key: X'51'
2–p		One or more subfields containing data specific to the link connection elements (listed by Key value below and described in detail following): X'01' LAN Identifier X'02' Ring or Bus Identifier X'03' Local Individual MAC Address X'04' Remote Individual MAC Address X'05' LAN Routing Information X'06' Ring Fault Domain Description X'07' Beaconing Data X'08' Single MAC Address X'09' Fault Domain Error Weight Pair X'0A' Bridge Identifier X'23' Local Individual MAC Name X'24' Remote Individual MAC Name X'26' Fault Domain Names X'28' Single MAC Name

LAN Identifier (X'01') Token-Ring LLC Subsystem Data Subfield

This subfield identifies a local-area network. This is necessary when one box can have several LAN adapters, each with the same individual MAC address, but on different LANs - and hence different MAC address spaces.

LAN Identifier (X'01') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the LAN identifier subfield
1		Key: X'01'
2–q		LAN identifier

Ring or Bus Identifier (X'02') Token-Ring LLC Subsystem Data Subfield

This subfield transports the ring number (for a token-ring LAN) or the bus number (for a CSMA or token-bus LAN).

Ring or Bus Identifier (X'02') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the ring or bus identifier subfield
1		Key: X'02'
2–3(=q)		Ring or bus number, in hexadecimal

Local Individual MAC Address (X'03') Token-Ring LLC Subsystem Data Subfield

This subfield transports the address of the MAC within the node sending the MS major vector.

Local Individual MAC Address (X'03') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the local individual MAC address subfield
1		Key: X'03'
2–7(=q)		Local individual MAC address, in hexadecimal

Remote Individual MAC Address (X'04') Token-Ring LLC Subsystem Data Subfield

This subfield transports the address of the MAC, part of the link connection, within the adjacent node.

Remote Individual MAC Address (X'04') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the remote individual MAC address subfield
1		Key: X'04'
2–7(=q)		Remote individual MAC address, in hexadecimal

LAN Routing Information (X'05') Token-Ring LLC Subsystem Data Subfield

This subfield transports the routing information used by a link.

LAN Routing Information (X'05') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the LAN routing information subfield
1		Key: X'05'

LAN Routing Information (X'05') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
2–q		Routing information, not to exceed 18 bytes, in hexadecimal. For details, see the Routing Information field in *IBM Token-Ring Network Architecture Reference*, SC30-3374.

Fault Domain Description (X'06') Token-Ring LLC Subsystem Data Subfield

This subfield identifies a pair of LAN token-ring stations as a fault domain, i.e., the upstream and the downstream LAN token-ring stations and the cable between them.

Fault Domain Description (X'06') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Ring Fault Domain Description subfield
1		Key: X'06'
2–7		Individual MAC address of downstream station, in hexadecimal
8–13(=q)		Individual MAC address of upstream station, in hexadecimal

Beaconing Data (X'07') Token-Ring LLC Subsystem Data Subfield

This subfield specifies the type of beacon detected by the LAN adapter.

Beaconing Data (X'07') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Beaconing Data subfield
1		Key: X'07'
2(=q)		Beaconing type: X'01' type 1, recovery mode set X'02' type 2, signal loss X'03' type 3, streaming signal

Single MAC Address (X'08') Token-Ring LLC Subsystem Data Subfield

This subfield transports the address of the MAC element associated with the failure.

Single MAC Address (X'08') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Single MAC Address subfield
1		Key: X'08'
2–7(=q)		Single MAC address, in hexadecimal

Fault Domain Error Weight Pair (X'09') Token-Ring LLC Subsystem Data Subfield

This subfield indicates the severity of the problems reported by two MAC elements (LAN stations) belonging to a fault domain.

Fault Domain Error Weight Pair (X'09') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Fault Domain Error Weight Pair subfield
1		Key: X'09'
2–3		Severity weight, in binary, for the downstream MAC element (LAN station) problems
4–5(=q)		Severity weight, in binary, for the upstream MAC element (LAN station) problems

Bridge Identifier (X'0A') Token-Ring LLC Subsystem Data Subfield

This subfield transports the bridge identifier of a LAN bridge.

Bridge Identifier (X'0A') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Bridge Identifier subfield
1		Key: X'0A'
2–5		Bridge identifier, composed of three hexadecimal parts: a ring or bus number, followed by a bridge number, followed by another ring or bus number. The ring or bus with the lower number is always identified first. The bridge identifier occupies less than 4 bytes, the amount less depending on the partitioning of the LAN routing information field. The bridge identifier is left-justified, with the remaining portion of the subfield being 0's. **Note:** The partitioning of this field into its three parts is not specified, but is necessarily unique within a LAN.

Local Individual MAC Name (X'23') Token-Ring LLC Subsystem Data Subfield

This subfield transports the name of the MAC element within the sending node.

Local Individual MAC Name (X'23') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Individual MAC Name subfield
1		Key: X'23'
2–q		Local individual MAC name: is defined using Coded Graphic Character Set 01134-00500 documented in Appendix A, "SNA Character Sets and Symbol-String Types" and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

Remote Individual MAC Name (X'24') Token-Ring LLC Subsystem Data Subfield

This subfield transports the name of the MAC element, part of the link connection, within the adjacent node.

Remote Individual MAC Name (X'24') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Remote Individual MAC Name subfield
1		Key: X'24'
2–q		Remote individual MAC name: is defined using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types" and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

Fault Domain Names (X'26') Token-Ring LLC Subsystem Data Subfield

This subfield transports the names of the upstream and the downstream LAN ring stations belonging to a fault domain.

Fault Domain Names (X'26') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Ring Fault Domain Names subfield
1		Key: X'26'

Fault Domain Names (X'26') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
2–q		Pair of Entries **Note:** Each entry contains a Length field and a Name field; the first entry is for the downstream MAC element, and the second entry is for the upstream MAC element. Each entry has the following form (shown 0-origin).
0		Length (r+1), in binary, of the following name plus this length field
1–r		Individual MAC name: is defined using Coded Graphic Character Set 01134-00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

Single MAC Name (X'28') Token-Ring LLC Subsystem Data Subfield

This subfield transports the name of the MAC related to the failure.

Single MAC Name (X'28') Token-Ring LLC Subsystem Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Single MAC Name subfield
1		Key: X'28'
2–q		Single MAC name: is defined using Coded Graphic Character Set 01134-00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

Link Connection Subsystem Configuration Data (X'52') MS Common Subvector

This MS common subvector transports data for link connections.

Link Connection Subsystem Configuration Data (X'52') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the LCS Configuration Data subvector
1		Key: X'52'
2–p		One or more subfields containing LCS configuration data (listed by key value below and described in detail following): X'01' Port Address X'02' Remote Device Address X'03' Modem LCS Topology X'04' Local Device Address X'05' Modem LCS Correlation Number X'06' LCS Link Station Attributes X'07' LCS Link Attributes X'08' LPDA Fault LSL Descriptor X'09' Remote Telephone Number X'0A' Local Telephone Number X'0B' Adapter Number X'0C' Channel Number X'0D' CSS Link Configuration Data X'0E' Frame Relay DLCI Status X'0F' FRSE Subport Set Status

Port Address (X'01') Link Connection Subsystem Config. Data Subfield

This subfield transports the port address of the link connection.

Port Address (X'01') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Port Address subfield
1		Key: X'01'
2–3(=q)		Port address, in hexadecimal

Remote Device Address (X'02') Link Connection Subsystem Config. Data Subfield

This subfield transports the DLC address of the remote link station.

Remote Device Address (X'02') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Remote Device Address subfield
1		Key: X'02'
2(=q)		Remote link station DLC address, in hexadecimal; e.g., for a LAN, the destination link service access point (DSAP) address

Modem LCS Topology (X'03') Link Connection Subsystem Config. Data Subfield

This subfield transports the LPDA-2 modem LCS topology.

Modem LCS Topology (X'03') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Modem LCS Topology subfield
1		Key: X'03'
2		Reserved
3(=q)		Number, in binary, of link segments active on this link connection for a given link station; the value is X'00' if reported for the link connection (e.g., no link station is active)

Local Device Address (X'04') Link Connection Subsystem Config. Data Subfield

This subfield transports the address of the local link station.

Local Device Address (X'04') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Device Address subfield
1		Key: X'04'
2–q		Local link station DLC address, in hexadecimal. For a LAN, this is the one-byte source service access point (SSAP) address; thus q = 2. For ISDN, this is the data link control identifier (DLCI) for LAPE and the service access point identifier (SAPI) and terminal equipment identifier (TEI) for LAPD; thus q = 3.

Modem LCS Correlation Number (X'05') Link Connection Subsystem Config. Data Subfield

This subfield identifies the modem LCS correlation number for a modem with the multiplexed links feature active.

Modem LCS Correlation Number (X'05') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Modem LCS Correlation Number subfield
1		Key: X'05'
2–3(=q)		Data multiplexed modem correlation number, in binary

LCS Link Station Attributes (X'06') Link Connection Subsystem Config. Data Subfield

This subfield identifies link station attributes.

LCS Link Station Attributes (X'06') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the LCS Link Station Attributes subfield
1		Key: X'06'
2		Link station role: X'01' primary X'02' secondary X'03' negotiable
3(=q)		Node type for the remote link station: X'01' type 1 X'02' type 2.0 X'03' type 4 X'04' type 2.1 X'80' non-SNA, e.g., used for BSC links

LCS Link Attributes (X'07') Link Connection Subsystem Config. Data Subfield

This subfield transports LCS link connection attributes.

LCS Link Attributes (X'07') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the LCS Link Attributes subfield
1		Key: X'07'
2		Link connection type used: X'01' nonswitched X'02' switched X'03' packet switched
3		Half- or full-duplex: X'01' half-duplex X'02' full-duplex

LCS Link Attributes (X'07') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
4		DLC protocol type: X'00' unknown X'01' SDLC X'02' BSC X'03' start-stop X'04' LAPB X'05' LAPD X'06' LAPE X'07' LAN LLC
5		Point-to-point or multipoint: X'01' point-to-point X'02' multipoint
6(=q)		MAC type: X'01' Frame Relay

LPDA Fault LSL Descriptor Subfield (X'08') Link Connect. Subsys. Config. Data Subfield

This subfield transports the link segment identifier, also referred to as level, of the multi-segment LPDA link where the failure occurred.

LPDA Fault LSL Descriptor Subfield (X'08') Link Connect. Subsys. Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the LPDA Fault LSL Descriptor subfield
1		Key: X'08'
2		LPDA fault link segment level (LSL) descriptor value, in binary

Remote Telephone Number (X'09') Link Connection Subsystem Config. Data Subfield

This subfield transports the telephone number of the remote node.

Remote Telephone Number (X'09') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Remote Telephone Number subfield
1		Key: X'09'
2		Telephone number encoding used: X'00' IA5-EBCDIC (the data is to be decoded using Coded Graphic Character Set 001169–00500) X'01' Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Remote Telephone Number (X'09') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
3–q		Remote telephone number

Local Telephone Number (X'0A') Link Connection Subsystem Config. Data Subfield

This subfield transports the telephone number of the local node.

Local Telephone Number (X'0A') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Telephone Number subfield
1		Key: X'0A'
2		Telephone number encoding used: X'00' IA5-EBCDIC (the data is to be decoded using Coded Graphic Character Set 001169–00500) X'01' Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)
3–q		Local telephone number

Adapter Number (X'0B') Link Connection Subsystem Config. Data Subfield

This subfield transports the adapter number of the adapter used for the link connection.

Adapter Number (X'0B') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Adapter Number subfield
1		Key: X'0B'
2–3(=q)		Adapter number, in hexadecimal

Channel Number (X'0C') Link Connection Subsystem Config. Data Subfield

This subfield transports the channel number of the B channel used by the link connection.

Channel Number (X'0C') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Channel Number subfield
1		Key: X'0C'
2–3(=q)		Channel number, in hexadecimal

CSS Link Configuration Data (X'0D') Link Connection Subsystem Config. Data Subfield

This subfield identifies Communication Subsystem (CSS) link configuration attributes.

CSS Link Configuration Data (X'0D') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the CSS Link Configuration Data subfield
1		Key: X'0D'
2(=q)	0-3	CSS Line Descriptor: X'1' Physical Line X'2' Logical Line
	4-7	CSS Link Descriptor: X'1' RVX SDLC Link X'2' SOCA Link X'3' LAN Link X'4' ISDN Link X'5' T1TDM Link X'6' X.25 Link X'7' X.21 SHM Link

Frame Relay DLCI Status (X'0E') Link Connection Subsystem Config. Data Subfield

This subfield transports statuses of Frame Relay connections identified by DLCIs (Data Link Connection Identifiers).

Frame Relay DLCI Status (X'0E') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Frame Relay DLCI Status subfield
1		Key: X'0E'
2–9		Physical Line Name
10–q		DLCI Status Entries
Note:		Each entry has a Resource name field, a DLCI number field, and DLCI status field, and has the following form (shown 0-origin):

Frame Relay DLCI Status (X'0E') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0–7		Resource name
8–9		DLCI number
10	0–7	DLCI status:
	0	Reserved
	1	0 no unsupported DLCI(s) exist in adjacent node
		1 unsupported DLCI(s) exist in adjacent node
	2	0 no resource failure associated with DLCI status
		1 resource failure associated with inactive DLCI status
	3	Reserved
	4	0 previously defined connection
		1 new connection
	5	0 connection present
		1 connection not present
	6	0 inactive connection
		1 active connection
	7	Reserved

FRSE Subport Set Status (X'0F') Link Connection Subsystem Config. Data Subfield

This subfield transports configuration data and segment statuses for FRSE (Frame Relay Switching Equipment) subport sets.

FRSE Subport Set Status (X'0F') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FRSE Subport Set Status subfield
1		Key: X'0F'
2–q		Subport Set Configuration
Note:		One or more entries, each containing a Length field and a subport set configuration in the following form (shown 0-origin):
0		Length (r+1), in binary, of the subport set configuration plus this length field
1		Active segment: X'00' no active segment X'01' subport A - subport B X'02' subport A - substitute subport B X'03' subport B - substitute subport A X'04' invalid configuration
2–41		Subport A and B entries
2–9		Physical line name of subport A
10–17		Resource name of subport A
18		Resource status of subport A
19–20		DLCI number of subport A
21		DLCI status of subport A

FRSE Subport Set Status (X'0F') Link Connection Subsystem Config. Data Subfield

Byte	Bit	Content
22–29		Physical line name of subport B
30–37		Resource name of subport B
38		Resource status of subport B
39–40		DLCI number of subport B
41		DLCI status of subport B
42–81		Optionally present, substitute subport entries:
42–49		Physical line name of substitute subport A
50–57		Resource name of substitute subport A
58		Resource status of substitute subport A
59–60		DLCI number of substitute subport A
61		DLCI status of substitute subport A
62–69		Physical line name of substitute subport B
70–77		Resource name of substitute subport B
78		Resource status of substitute subport B
79–80		DLCI number of substitute subport B
81(=r)		DLCI status of substitute subport B
Resource status:		
		X'00' not present
		X'01' inactive
		X'02' active
DLCI status:		
	0	Reserved
	1	Reserved
	2	0 no resource failure associated with DLCI status
		1 resource failure associated with inactive DLCI status
	3	Reserved
	4	0 previously defined connection
		1 new connection
	5	0 connection present
		1 connection not present
	6	0 inactive connection
		1 active connection
	7	0 connection status known
		1 connection status unknown

SDLC Link Station Counters (X'53') MS Common Subvector

This MS common subvector transports SDLC or LAN LLC link station counters.

SDLC Link Station Counters (X'53') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the SDLC Link Station Counters subvector
1		Key: X'53'
2–p		Four subfields containing link station counter data (listed by key value below and described in detail following): X'01' Cause Code X'02' Transmit Counter X'03' Transmit Error Counter X'04' Receive Counter X'05' Receive Error Counter

Cause Code (X'01') SDLC Link Station Counters Subfield

This subfield indicates why counters are being reported.

Cause Code (X'01') SDLC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cause Code subfield
1		Key: X'01'
2(=q)		Cause code: X'01' retired X'02' retired X'03' deactivation in progress X'04' transmit counter reached threshold X'05' receive error counter reached threshold X'06' retired X'07' retired X'08' retired X'09' transmit error counter reached threshold X'0A' receive counter reached threshold X'0B' an additional SDLC counter reached threshold *Note:* The Cause Code (X'01') subfield is not present in the Link Event major vector.

Transmit Counter (X'02') SDLC Link Station Counters Subfield

This subfield transports the transmit counter for an SDLC link station. (The transmit counter counts only the I-frames.)

Transmit Counter (X'02') SDLC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Transmit Counter subfield
1		Key: X'02'
2–q		Counter value, in binary, not to exceed 4 bytes

Transmit Error Counter (X'03') SDLC Link Station Counters Subfield

This subfield transports the transmit error counter for an SDLC link station. (The transmit error counter counts only the I-frames.)

Transmit Error Counter (X'03') SDLC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Transmit Error Counter subfield
1		Key: X'03'
2–q		Counter value, in binary, not to exceed 4 bytes

Receive Counter (X'04') SDLC Link Station Counters Subfield

This subfield transports the receive counter for an SDLC link station. (The receive counter counts only the I-frames.)

Receive Counter (X'04') SDLC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Receive Counter subfield
1		Key: X'04'
2–q		Counter value, in binary, not to exceed 4 bytes

Receive Error Counter (X'05') SDLC Link Station Counters Subfield

This subfield transports the receive error counter for an SDLC link station. (The receive error counter counts only the I-frames.)

Receive Error Counter (X'05') SDLC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Receive Error Counter subfield

Receive Error Counter (X'05') SDLC Link Station Counters Subfield

Byte	Bit	Content
1		Key: X'05'
2–q		Counter value, in binary, not to exceed 4 bytes

BSC Link Station Counters (X'54') MS Common Subvector

This MS common subvector transports BSC link station counters.

BSC Link Station Counters (X'54') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the BSC Link Station Counters subvector
1		Key: X'54'
2–p		Five subfields containing BSC link station counter data (listed by key value below and described in detail following): X'01' Cause Code X'02' Transmit Count X'03' Transmit Error Count X'04' Receive Count X'05' Receive Error Count

Cause Code (X'01') BSC Link Station Counters Subfield

This subfield indicates why counters are being reported.

Cause Code (X'01') BSC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cause Code subfield
1		Key: X'01'
2(=q)		Cause code: X'01' transmit counter reached threshold X'02' transmit error counter reached threshold X'03' deactivation in progress X'04' receive counter reached threshold X'05' receive error counter reached threshold *Note:* The Cause Code (X'01') subfield is not present in the Link Event major vector.

Transmit Count (X'02') BSC Link Station Counters Subfield

This subfield transports the total number of blocks transmitted, including retransmissions.

Transmit Count (X'02') BSC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Transmit Count subfield
1		Key: X'02'

Transmit Count (X'02') BSC Link Station Counters Subfield

Byte	Bit	Content
2–q		Count value, in binary, not to exceed 4 bytes

Transmit Error Count (X'03') BSC Link Station Counters Subfield

This subfield transports the number of retransmitted blocks, it is incremented when a NACK control character is received.

Transmit Error Count (X'03') BSC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Transmit Error Count subfield
1		Key: X'03'
2–q		Count value, in binary, not to exceed 4 bytes

Receive Count (X'04') BSC Link Station Counters Subfield

This subfield transports the total number of blocks that were received and acknowledged with ACK0, ACK1, WACK, or RVI control characters.

Receive Count (X'04') BSC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Receive Count subfield
1		Key: X'04'
2–q		Count value, in binary, not to exceed 4 bytes

Receive Error Count (X'05') BSC Link Station Counters Subfield

This subfield transports the number of blocks received and acknowledged negatively with the NACK control character.

Receive Error Count (X'05') BSC Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Receive Error Count subfield
1		Key: X'05'
2–q		Count value, in binary, not to exceed 4 bytes

Additional SDLC Link Station Counters (X'56') MS Common Subvector

This MS common subvector transports additional SDLC link station counters.

Additional SDLC Link Station Counters (X'56') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Additional SDLC Link Station Counters subvector
1		Key: X'56'
2–p		Subfields containing SDLC link station counter data (listed by key value below and described in detail following): X'01' Cause Code X'02' Total Frames Transmitted X'03' Total Errors Retried X'04' Information Frames Acknowledged X'05' Supervisory Frames Received X'06' Information Frames Received X'07' Frames Not Copied Remotely

Cause Code (X'01') Additional SDLC Link Sta. Counters Subfield

This subfield indicates why counters are being reported.

Cause Code (X'01') Additional SDLC Link Sta. Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cause Code subfield
1		Key: X'01'
2		Cause code: X'01' total frames transmitted counter reached threshold X'02' total errors retried counter reached threshold X'03' retired X'04' retired X'05' retired X'06' supervisory frames received counter reached threshold X'07' information frames acknowledged counter reached threshold X'08' information frames received counter reached threshold X'09' retired X'0A' retired X'0B' retired X'0C' no optional SDLC counter threshold was reached X'0D' frames not copied remotely counter reached threshold *Note:* The Cause Code subfield is not present in the Link Event major vector.

Total Frames Transmitted (X'02') Additional SDLC Link Sta. Counters Subfield

This subfield transports the total frames transmitted counter for an SDLC link station.

Total Frames Transmitted (X'02') Additional SDLC Link Sta. Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Transmit Counter subfield
1		Key: X'02'
2–q		Counter value,in binary,not to exceed 4 bytes

Total Errors Retried (X'03') Additional SDLC Link Sta. Counters Subfield

This subfield transports the total errors retried counter for an SDLC link station.

Total Errors Retried (X'03') Additional SDLC Link Sta. Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Total Errors Retried Counter subfield
1		Key: X'03'
2–q		Counter value,in binary,not to exceed 4 bytes

Information Frames Acknowledged (X'04') Additional SDLC Link Sta. Counters Subfield

This subfield transports the information frames acknowledged counter for an SDLC link station.

Information Frames Acknowledged (X'04') Additional SDLC Link Sta. Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Information Frames Acknowledged Counter subfield
1		Key: X'04'
2–q		Counter value, in binary, not to exceed 4 bytes

Supervisory Frames Received (X'05') Additional SDLC Link Sta. Counters Subfield

This subfield transports the supervisory frames received (error-free) counter for an SDLC link station.

Supervisory Frames Received (X'05') Additional SDLC Link Sta. Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Supervisory Frames Received Counter subfield
1		Key: X'05'
2–q		Counter value, in binary, not to exceed 4 bytes

Information Frames Received (X'06') Additional SDLC Link Sta. Counters Subfield

This subfield transports the information frames received (error free) counter for an SDLC link station.

Information Frames Received (X'06') Additional SDLC Link Sta. Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Information Frames Received Counter subfield
1		Key: X'06'
2–q		Counter value, in binary, not to exceed 4 bytes

Frames Not Copied Remotely (X'07') Additional SDLC Link Sta. Counters Subfield

This subfield transports the counter of frames not copied remotely for an SDLC link station.

Frames Not Copied Remotely (X'07') Additional SDLC Link Sta. Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Frames Not Copied Remotely Counter subfield
1		Key: X'07'
2–q		Counter value, in binary, not to exceed 4 bytes

LAN Physical Link Station Counters (X'57') MS Common Subvector

This MS common subvector transports LAN ring station counters.

LAN Physical Link Station Counters (X'57') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the LAN Physical Link Station Counters subvector
1		Key: X'57'
2–p		Subfields containing LAN physical link station counter data (listed by key value below and described in detail following): X'01' Cause Code X'02' Receive Congestion Counter

Cause Code (X'01') LAN Physical Link Station Counters Subfield

This subfield indicates why counters are being reported.

Cause Code (X'01') LAN Physical Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cause Code subfield
1		Key: X'01'
2		Cause code: X'01' deactivation in progress X'02' receive congestion counter reached threshold

Receive Congestion Counter (X'02') LAN Physical Link Station Counters Subfield

This subfield transports the local receive congestion counter (Frames Not Copied Locally counter) for a ring station.

Receive Congestion Counter (X'02') LAN Physical Link Station Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Receive Congestion Counter subfield
1		Key: X'02'
2–q		Counter value in binary, not to exceed 4 bytes

LCS Product-Specific Hexadecimal Data (X'58') MS Common Subvector

This MS common subvector transports product-specific data pertaining to a link.

LCS Product-Specific Hexadecimal Data (X'58') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the LCS Product-Specific Hexadecimal Data subvector
1		Key: X'58'
2–p		Product-specific data, in hexadecimal

LCS Product-Specific EBCDIC Data (X'59') MS Common Subvector

This MS common subvector transports product-specific data, in US EBCDIC, pertaining to a link.

LCS Product-Specific EBCDIC Data (X'59') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the LCS Product-Specific EBCDIC Data subvector
1		Key: X'59'
2–p		Product-specific data, in US EBCDIC

X.25 Link Connection Data (X'5B') MS Common Subvector

This MS common subvector transports data for X.25 link connections. It contains both the X.25 host and the X.25 terminal connection information. In cases where an X.25 host communicates to an X.25 host the sender of this subvector is designated as the host. Since either the Public Switched Packet Data Networks (PSPDN), Public Switched Telephone Networks (PSTN), Integrated Services Digital Networks (ISDN), or private X.25 networks such as XI can be used for X.25 connections, all connection cases are defined but only a particular set of connection information described here is applicable per connection

X.25 Link Connection Data (X'5B') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the LCS Configuration Data subvector
1		Key: X'5B'
2–p		One or more subfields containing X.25 connection data (listed by key value below and described in detail following): X'01' X.25 Component Type X'02' Local Device Type X'03' Access Mode X'04' Local Access XI Address X'05' Local Access Logical Channel Number X'06' Local Access PSPDN Address X'07' Local Access Address Extension X'08' Local Access ISDN Number X'09' Local Access ISDN Number Selected X'0A' Local Access ISDN B-Channel Number X'0B' Local Access PSTN Address X'0C' Remote Party ISDN Number X'0D' Remote Device Address X'0E' Remote Device Address Extension

X.25 Component Type (X'01') X.25 Link Connection Data Subfield

This subfield describes the X.25 software component type sending this subvector: DCE, DTE, DTE-to-DTE, SNA_X.25_LLC, Non-SNA_X.25_SNS, or XI Internal Data Equipment (XI-IDE).

X.25 Component Type (X'01') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the X.25 Component Type subfield
1		Key: X'01'

X.25 Component Type (X'01') X.25 Link Connection Data Subfield

Byte	Bit	Content
2(=q)		X.25 Component Type: X'01' DCE X'02' DTE X'03' DTE-to-DTE X'04' SNA_X.25_LLC X'05' Non-SNA_X.25_SNS X'06' XI-Internal Data Equipment (XI-IDE)

Local Device Type (X'02') X.25 Link Connection Data Subfield

This subfield transports the network connection role of the device sending this subvector: DCE, DTE, or DTE-to-DTE.

Local Device Type (X'02') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Device Type subfield
1		Key: X'02'
2(=q)		Local Device Type: X'01' DCE X'02' DTE X'03' DTE-to-DTE

Access Mode (X'03') X.25 Link Connection Data Subfield

This subfield describes how the local device is accessed from the network used for the X.25 connections; there are six possibilities: Leased Direct XI Networking Connection, Lease XI Interconnection, Public Switched Packet Data Network (PSPDN), Public Switched Telephone Network (PSTN), ISDN Switched Mode, and ISDN Packet Mode.

Access Mode (X'03') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Access Mode subfield
1		Key: X'03'
2(=q)		Access Modes: X'01' leased direct XI access mode X'02' leased XI interconnect access mode X'03' packet data network access mode X'04' telephone switched network access mode X'05' ISDN switched access mode X'06' ISDN packet access mode

Local Access XI Address (X'04') X.25 Link Connection Data Subfield

This subfield transports the XI address of the device sending this subvector.

Local Access XI Address (X'04') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Access XI Address subfield
1		Key: X'04'
2–6(=q)		Local XI address, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Local Access Logical Channel Number (X'05') X.25 Link Connection Data Subfield

This subfield transports the local layer 3 connection address, of the device sending this subvector.

Local Access Logical Channel Number (X'05') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Access Logical Channel Number subfield
1		Key: X'05'
2–3(=q)		Local Access Logical Channel Number, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Local Access PSPDN Address (X'06') X.25 Link Connection Data Subfield

This subfield transports the Public Switched Packet Data Network (PSPDN) access address in the CCITT Recommendation X.121 format consisting of: Data Network Identification Code (DNIC) and Network Terminal Number (NTN) or Data Country Code (DCC) and National Number (NN), for the device sending this subvector.

Local Access PSPDN Address (X'06') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Access PSPDN Address subfield
1		Key: X'06'

Local Access PSPDN Address (X'06') X.25 Link Connection Data Subfield

Byte	Bit	Content
2–8(=q)		Local Access PSPDN Address, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Local Access Address Extension (X'07') X.25 Link Connection Data Subfield

This subfield identifies the Local Access Address Extension according to the information carried in the Calling Address Extension (AEF) field for outbound calls from the device sending this subvector or the Called Address Extension field for inbound calls to the device sending this subvector.

Local Access Address Extension (X'07') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Access Address Extension subfield
1		Key: X'07'
2		Local Access Address Extension format types: X'00' X.213/ISO 8348 AD2 Address Format X'01' Other Address Format
3–22(=q)		Local Access Address Extension, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Local Access ISDN Number (X'08') X.25 Link Connection Data Subfield

This subfield transports Local Access ISDN Number of the device sending this subvector. It is specified in CCITT Recommendation E.164 format which consists of: Country Code (CC), National Destination Code (NDC), and Subscriber Number (SN).

Local Access ISDN Number (X'08') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Access ISDN Number subfield
1		Key: X'08'
2–9(=q)		Local Access ISDN Number, in the Recommendation E.164 format consisting of Country Code, National Destination Code, and Subscriber Number, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Local Access ISDN Number Selected (X'09') X.25 Link Connection Data Subfield

This subfield transports the Local Access ISDN Number Selected of the device sending this subvector. It is derived from the Called Party Number information element and specified in CCITT Recommendation E.164 format which consists of: Country Code (CC), National Destination Code (NDC), and Subscriber Number, (SN). The SN may include the Direct-Dialing-In (DDI) number.

Local Access ISDN Number Selected (X'09') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Access ISDN Number Selected subfield
1		Key: X'09'
2–9(=q)		Local Access ISDN Number Selected, in the E.164 format consisting of: Country Code, National Destination Code, and Subscriber Number including Direct-Dialing-In Number if present, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Local Access ISDN B-Channel Number (X'0A') X.25 Link Connection Data Subfield

This subfield transports the number of the B (bearer) channel used for X.25 connection by the device sending this subvector.

Local Access ISDN B-Channel Number (X'0A') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Access ISDN B-Channel Number subfield
1		Key: X'0A'
2–3(=q)		Local Access ISDN B-Channel Number, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Local Access PSTN Number (X'0B') X.25 Link Connection Data Subfield

This subfield transports Local Access Public Switched Telephone Network (PSTN) Number of the device sending this subvector. This telephone number is specified according to the CCITT Recommendation E.163.

Local Access PSTN Address (X'0B') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Access PSTN Address subfield
1		Key: X'0B'

Local Access PSTN Address (X'0B') X.25 Link Connection Data Subfield

Byte	Bit	Content
2–7(=q)		Local Access PSTN Address in CCITT Recommendation E.163 format, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Remote ISDN Number (X'0C') X.25 Link Connection Data Subfield

This subfield transports the ISDN Number of the remote ISDN party contained in the Called Party Number information element for outbound calls from the device sending this subvector or the Calling Party Number information element for inbound calls to the device sending this subvector in the in the case of ISDN switched access mode.

Remote Party ISDN Number (X'0C') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Remote Party ISDN Number subfield
1		Key: X'0C'
2		Remote Party ISDN Number format types: X'00' Network Specific (unknown) format X'11' ISDN Numbering Plan E.164
3–10(=q)		Remote Party ISDN Number, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Remote Device Address (X'0D') X.25 Link Connection Data Subfield

This subfield transports Remote Device Address contained in the Called DTE Address field for outbound calls from the device sending this subvector or in the the Calling DTE Address field for inbound calls to the device sending this subvector.

Remote Device Address (X'0D') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Remote Device Address subfield
1		Key: X'0D'
2		Remote Access Address format types: X'00' Network Specific (unknown) format X'01' Telephony Numbering Plan E.163 X'11' ISDN Numbering Plan E.164 X'13' Data Numbering Plan X.121

Remote Device Address (X'0D') X.25 Link Connection Data Subfield

Byte	Bit	Content
3–10(=q)		Remote Device Address, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

Remote Device Address Extension (X'0E') X.25 Link Connection Data Subfield

This subfield identifies the Remote Device Address Extension according to the information carried in the Called Address Extension (AEF) field for outbound calls from the device sending this subvector or the Calling Address Extension field for inbound calls to the device sending this subvector.

Remote Device Address Extension (X'0E') X.25 Link Connection Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Remote Device Address Extension subfield
1		Key: X'0E'
2		Remote Access Address Extension format types: X'00' X.213/ISO 8348 AD2 Address Format X'01' Other Address Format
3–22(=q)		Remote Device Address Extension, in Binary Coded Decimal (i.e. an unsigned number with one hex digit for each decimal digit padded with one X'F' after the last digit in cases of odd number of digits)

CSMA/CD Counters (X'5C') MS Common Subvector

This MS common subvector transports CSMA/CD counters.

CSMA/CD Counters (X'5C') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the CSMA/CD Counters subvector
1		Key: X'5C'
2–p		Subfields containing CSMA/CD counter data (listed by key value below and described in detail following): X'01' Cause Code X'02' Total Frames Transmitted X'03' Total Frames Received X'04' Total Transmit Errors X'05' Total Receive Errors X'06' Excessive Collisions X'07' Late Collisions X'08' Receive Congestion Errors X'09' CRC Errors X'0A' Framing Errors X'0B' Receive Size Errors X'0C' Transmit Deferred X'0D' One Collision Errors X'0E' Multiple Collision Errors

Cause Code (X'01') CSMA/CD Counters Subfield

This subfield indicates why counters are being reported.

Cause Code (X'01') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Cause Code subfield
1		Key: X'01'

Cause Code (X'01') CSMA/CD Counters Subfield

Byte	Bit	Content
2		Cause code: X'02' total frames transmitted counter reached threshold X'03' total frames received counter reached threshold X'04' total transmit error counter reached threshold X'05' total receive error counter reached threshold X'06' excess collision error reached threshold X'07' late collision error counter reached threshold X'08' receive congestion error counter reached threshold X'09' CRC error counter reached threshold X'0A' framing error counter reached threshold X'0B' receive size error counter reached threshold X'0C' transmit deferred counter reached threshold X'0D' one collision counter threshold was reached X'0E' multiple collision counter reached threshold X'80' adapter deactivation in progress X'81' permanent line error

Total Frames Transmitted (X'02') CSMA/CD Counters Subfield

This subfield transports the total frames transmitted counter for a CSMA/CD MAC. The total frames transmitted counter includes frames transmitted successfully and frames lost during transmission.

Total Frames Transmitted (X'02') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Total Frames Transmitted Counter subfield
1		Key: X'02'
2–q		Counter value, in binary, not to exceed 4 bytes

Total Frames Received (X'03') CSMA/CD Counters Subfield

This subfield transports the total frames received counter for a CSMA/CD MAC. The total frames received counter includes frames received successfully and receive frames lost.

Total Frames Received (X'03') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Total Frames Received Counter subfield
1		Key: X'03'
2–q		Counter value, in binary, not to exceed 4 bytes

Total Transmit Error (X'04') CSMA/CD Counters Subfield

This subfield transports the total transmit error counter for a CSMA/CD MAC. The total transmit error counter includes all transmit frames lost. This count includes Excessive Collisions errors and Late Collision errors.

Total Transmit Errors(X'04') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Total Transmit Error Counter subfield
1		Key: X'04'
2–q		Counter value, in binary, not to exceed 4 bytes

Total Receive Errors (X'05') CSMA/CD Counters Subfield

This subfield transports the total receive error counter for a CSMA/CD MAC. The total receive error counter includes all receive frames that were lost, such as receive congestion error, CRC error, framing error, and receive size error.

Total Receive Errors (X'05') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Total Receive Error Counter subfield
1		Key: X'05'
2–q		Counter value, in binary, not to exceed 4 bytes

Excessive Collisions (X'06') CSMA/CD Counters Subfield

This subfield transports the excessive collisions counter for a CSMA/CD MAC. An excessive collision error occurs when 16 attempts to transmit a frame fail because of collisions detected on the media. It also transports the value of Time Domain Reflectometry which is the signal propagation delay between a CSMA/CD adapter to the point on the media where there is a fault that is causing signals to be reflected.

Excessive Collisions (X'06') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Excessive Collisions Counter subfield
1		Key: X'06'

Excessive Collisions (X'06') CSMA/CD Counters Subfield

Byte	Bit	Content
2–3		Time Domain Reflectometry, in decimal, specifying units of .1 microsecond
4–q		Counter value, in binary, not to exceed 4 bytes

Late Collisions (X'07') CSMA/CD Counters Subfield

This subfield transports the late collision counter for a CSMA/CD MAC. A late collision error occurs when a transmit frame is lost because of a collision that takes place after the maximum time that should be required to detect a collision.

Late Collisions (X'07') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Late Collisions Counter subfield
1		Key: X'07'
2–q		Counter value, in binary, not to exceed 4 bytes

Receive Congestion Errors (X'08') CSMA/CD Counters Subfield

This subfield transports the receive congestion error counter for a CSMA/CD MAC. A receive congestion error occurs when the adapter is unable to receive a frame because its buffers are filled.

Receive Congestion Errors (X'08') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Receive Congestion Error Counter subfield
1		Key: X'08'
2–q		Counter value, in binary, not to exceed 4 bytes

CRC Errors (X'09') CSMA/CD Counters Subfield

This subfield transports the CRC error counter for a CSMA/CD MAC. A CRC error occurs when a receive frame is discarded because of a problem detected with the cyclic redundancy check.

CRC Errors (X'09') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the CRC Errors Counter subfield
1		Key: X'09'
2–q		Counter value, in binary, not to exceed 4 bytes

Framing Errors (X'0A') CSMA/CD Counters Subfield

This subfield transports the framing error counter for a CSMA/CD MAC. A framing error occurs when a received frame does not end on a byte boundary.
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Framing Errors (X'0A') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Framing Error Counter subfield
1		Key: X'0A'
2–q		Counter value, in binary, not to exceed 4 bytes

Receive Size Errors (X'0B') CSMA/CD Counters Subfield

This subfield transports the receive size error counter for a CSMA/CD MAC. A receive size error occurs when a receive frame is longer than the maximum allowed frame size for the media.

Receive Size Errors (X'0B') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Receive Size Error Counter subfield
1		Key: X'0B'
2–q		Counter value, in binary, not to exceed 4 bytes

Transmit Deferred (X'0C') CSMA/CD Counters Subfield

This subfield transports the transmit deferred counter for a CSMA/CD MAC. The transmit deferred counter is incremented when transmission of a frame is deferred because carrier was sensed on the media.

Transmit Deferred (X'0C') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Transmit Deferred Counter subfield
1		Key: X'0C'
2–q		Counter value, in binary, not to exceed 4 bytes

One Collision Errors (X'0D') CSMA/CD Counters Subfield

This subfield transports the one collision error counter for a CSMA/CD MAC. The one collision error counter is incremented when there is exactly one collision before a frame is successfully transmitted.

One Collision Errors (X'0D') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the One Collision Error Counter subfield
1		Key: X'0D'
2–q		Counter value, in binary, not to exceed 4 bytes

Multiple Collision Error (X'0E') CSMA/CD Counters Subfield

This subfield transports the multiple collision error counter for a CSMA/CD MAC. The multiple collision counter is incremented when there was more than one collision before a frame was transmitted successfully.

Multiple Collision Errors (X'0E') CSMA/CD Counters Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the One Collision Error Counter subfield
1		Key: X'0E'
2–q		Counter value, in binary, not to exceed 4 bytes

LAN Media Access Control Data (X'5D') MS Common Subvector

This MS common subvector transports data on the elements of the LAN media access control (MAC) for LAN segments other than Token Ring (e.g. CSMA/CD, Token Bus, FDDI).

LAN Media Access Control Data (X'5D') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the LAN Link Connection Subsystem Data subvector
1		Key: X'5D'
2–p		One or more subfields containing data specific to the link connection elements (listed by Key value below and described in detail following): X'01' LAN Identifier X'02' Ring or Bus Identifier X'03' Local Individual MAC Address X'04' Remote Individual MAC Address X'05' LAN Routing Information X'06' Ring Fault Domain Description X'07' Beaconing Data X'08' Single MAC Address X'09' Fault Domain Error Weight Pair X'0A' Bridge Identifier X'23' Local Individual MAC Name X'24' Remote Individual MAC Name X'26' Fault Domain Names X'28' Single MAC Name X'29' MAC Type X'2A' FDDI Station Id X'2B' FDDI Frame Error Data X'2C' FDDI Not Copied Data X'2D' FDDI Duplicate Address Condition X'2E' FDDI Link Error Rate Data X'30' FDDI Configuration Change Data X'31' FDDI Undesired Connection Data X'32' FDDI Trace Status X'33' FDDI Elasticity Buffer Error Counter X'34' FDDI Hold State X'35' FDDI MAC Index X'36' FDDI Port Index X'37' FDDI Path Index X'38' FDDI Station Name X'39' FDDI Peer Wrap Data X'3A' FDDI Neighbor Change Data X'3B' FDDI MAC Path Change Data X'3C' FDDI Port Path Change Data X'40' Address Format **Note:** Subfield X'29' must be present. Subfield X'40' must be present if any subfield containing a MAC address is present.

LAN Identifier (X'01') LAN Media Access Control Data Subfield

This subfield identifies a local-area network. This is necessary when one box can have several LAN adapters, each with the same individual MAC address, but on different LANs - and hence different MAC address spaces.

LAN Identifier (X'01') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the LAN identifier subfield
1		Key: X'01'
2–q		LAN identifier

Ring or Bus Identifier (X'02') LAN Media Access Control Data Subfield

This subfield transports the ring number (for an FDDI LAN) or the bus number (for a CSMA/CD or token-bus LAN).

Ring or Bus Identifier (X'02') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the ring or bus identifier subfield
1		Key: X'02'
2–3(=q)		Ring or bus number, in hexadecimal

Local Individual MAC Address (X'03') LAN Media Access Control Data Subfield

This subfield transports the address of the MAC within the node sending the MS major vector.

Local Individual MAC Address (X'03') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the local individual MAC address subfield
1		Key: X'03'
2–7(=q)		Local individual MAC address, in hexadecimal

Remote Individual MAC Address (X'04') LAN Media Access Control Data Subfield

This subfield transports the address of the MAC, part of the link connection, within the adjacent node.

Remote Individual MAC Address (X'04') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the remote individual MAC address subfield
1		Key: X'04'
2–7(=q)		Remote individual MAC address, in hexadecimal

LAN Routing Information (X'05') LAN Media Access Control Data Subfield

This subfield transports the routing information used by a link.

LAN Routing Information (X'05') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the LAN routing information subfield
1		Key: X'05'
2–q		Routing information, not to exceed 18 bytes, in hexadecimal. For details, see the Routing Information field in *IBM Token-Ring Network Architecture Reference*, SC30-3374.

Ring Fault Domain Description (X'06') LAN Media Access Control Data Subfield

This subfield identifies a pair of LAN token-ring stations as a fault domain, i.e., the upstream and the downstream LAN token-ring stations and the cable between them.

Fault Domain Description (X'06') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Ring Fault Domain Description subfield
1		Key: X'06'
2–7		Individual MAC address of downstream station, in hexadecimal
8–13(=q)		Individual MAC address of upstream station, in hexadecimal

Beaconing Data (X'07') LAN Media Access Control Data Subfield

This subfield specifies the type of beacon detected by the LAN adapter.

Beaconing Data (X'07') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Beaconing Data subfield
1		Key: X'07'
2(=q)		Beaconing type: X'01' type 1, recovery mode set X'02' type 2, signal loss X'03' type 3, streaming signal

Single MAC Address (X'08') LAN Media Access Control Data Subfield

This subfield transports the address of the MAC element associated with the failure.

Single MAC Address (X'08') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Single MAC Address subfield
1		Key: X'08'
2–7(=q)		Single MAC address, in hexadecimal

Fault Domain Error Weight Pair (X'09') LAN Media Access Control Data Subfield

This subfield indicates the severity of the problems reported by two MAC elements (LAN stations) belonging to a fault domain.

Fault Domain Error Weight Pair (X'09') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Fault Domain Error Weight Pair subfield
1		Key: X'09'
2–3		Severity weight, in binary, for the downstream MAC element (LAN station) problems
4–5(=q)		Severity weight, in binary, for the upstream MAC element (LAN station) problems

Bridge Identifier (X'0A') LAN Media Access Control Data Subfield

This subfield transports the bridge identifier of a LAN bridge.

Bridge Identifier (X'0A') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Bridge Identifier subfield
1		Key: X'0A'
2–5(=q)		Bridge identifier, composed of three hexadecimal parts: a ring or bus number, followed by a bridge number, followed by another ring or bus number. The ring or bus with the lower number is always identified first. The bridge identifier occupies less than 4 bytes, the amount less depending on the partitioning of the LAN routing information field. The bridge identifier is left-justified, with the remaining portion of the subfield being 0's. **Note:** The partitioning of this field into its three parts is not specified, but is necessarily unique within a LAN.

Local Individual MAC Name (X'23') LAN Media Access Control Data Subfield

This subfield transports the name of the MAC element within the sending node.

Local Individual MAC Name (X'23') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Local Individual MAC Name subfield
1		Key: X'23'
2–q		Local individual MAC name: is defined using Coded Graphic Character Set 01134-00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

Remote Individual MAC Name (X'24') LAN Media Access Control Data Subfield

This subfield transports the name of the MAC element, part of the link connection, within the adjacent node.

Remote Individual MAC Name (X'24') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Remote Individual MAC Name subfield

Remote Individual MAC Name (X'24') LAN Media Access Control Data Subfield

Byte	Bit	Content
1		Key: X'24'
2–q		Remote individual MAC name: is defined using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types" and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

Fault Domain Names (X'26') LAN Media Access Control Data Subfield

This subfield transports the names of the upstream and the downstream LAN ring stations belonging to a fault domain.

Fault Domain Names (X'26') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Ring Fault Domain Names subfield
1		Key: X'26'
2–q		Pair of Entries **Note:** Each entry contains a Length field and a Name field; the first entry is for the downstream MAC element, and the second entry is for the upstream MAC element. Each entry has the following form (shown 0-origin).
0		Length (r+1), in binary, of the following name plus this length field
1–r		Individual MAC name: is defined using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types" and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

Single MAC Name (X'28') LAN Media Access Control Data Subfield

This subfield transports the name of the MAC related to the failure.

Single MAC Name (X'28') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Single MAC Name subfield
1		Key: X'28'

Single MAC Name (X'28') LAN Media Access Control Data Subfield

Byte	Bit	Content
2–q		Single MAC name: is defined using Coded Graphic Character Set 01134-00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types" and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

MAC Type (X'29') LAN Media Access Control Data Subfield

This subfield identifies the type of MAC (e.g. FDDI, Ethernet, 802.3, token bus) to which the sender is attached. This subfield is required.

MAC Type (X'29') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the MAC Type subfield
1		Key: X'29'
2(=q)		MAC Type: X'01' CSMA/CD X'02' FDDI X'03' 802.4 Token Bus

FDDI Station Id (X'2A') LAN Media Access Control Data Subfield

This subfield contains a unique identifier of the FDDI station transmitting the Station Management (SMT) frame.

FDDI Station Id (X'2A') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI Station Id subfield
1		Key: X'2A'
2–9		FDDI station Id
2–3		Implementer-defined data: X'0000' through X'FFFF'
4–9(=q)		The Universally Administered address of the node in MSB hexadecimal representation.

FDDI Frame Error Data (X'2B') LAN Media Access Control Data Subfield

This subfield is generated when the Frame Error Threshold is exceeded.

FDDI Frame Error Data (X'2B') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI Frame Error Data subfield
1		Key: X'2B'
2–13		Frame Error Data
2–5		Frame Counter - the count of all frames received. In hexadecimal.
6–9		Error Counter - the count of reportable frame errors. In hexadecimal.
10–13(=q)		Lost Counter - the count of frames detected as lost. In hexadecimal.

FDDI Not Copied Data (X'2C') LAN Media Access Control Data Subfield

This subfield is generated when the Not Copied Threshold is exceeded.

FDDI Not Copied Data (X'2C') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the frame error data subfield
1		Key: X'2C'
2–9		FDDI Not Copied Data
2–5		Not Copied Counter - The count of frames that should have been copied but were not. For example, this might occur due to local buffer congestion. In hexadecimal.
6–9(=q)		Copied Counter - The count of frames successfully received into the station's receive buffers by a MAC. Note that this count does not include the frames that are not copied. In hexadecimal.

FDDI Duplicate Address Condition (X'2D') LAN Media Access Control Data Subfield

This subfield contains information generated when a MAC's address is determined to be a duplicate or when the MAC's upstream neighbor indicates that it has a duplicate address.

FDDI Duplicate Address Condition (X'2D') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the condition subfield
1		Key: X'2D'

FDDI Duplicate Address Condition (X'2D') LAN Media Access Control Data Subfield

Byte	Bit	Content
2–8		FDDI Duplicate Address Condition
2		Duplicate address condition
	0	Local station (MAC has the same address as another MAC on the FDDI ring) 0 no duplicate address 1 duplicate address
	1	Upstream Neighbor (MAC has the same address as another MAC on the FDDI ring) 0 no duplicate address 1 duplicate address
	2–7	reserved
3–8(=q)		Upstream Neighbor Address Duplicate Address

FDDI Link Error Rate Data (X'2E') LAN Media Access Control Data Subfield

This data becomes active when the value of link error rate estimate is less than or equal to the link error alarm.

FDDI Link Error Rate Data (X'2E') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the link error rate subfield
1		Key: X'2E'
2–12		FDDI Link error rate data
2		Link error rate cutoff - the link error rate at which a connection will be flagged as faulty. The number represents the power, base 10, of total bits per bit in error. The number is in hexadecimal.
3		Link error rate alarm - the link error rate at which a link connection exceeds a preset alarm threshold. The number represents the power, base 10, of total bits per bit in error. The number is in hexadecimal.
4		Link error rate estimate - a long term average link error rate. When estimate is greater than link error rate alarm an alarm condition occurs. The number represents the power, base 10, of total bits per bit in error. The number is in hexadecimal.
5–8		Link error monitor reject counter - the number of times a link is removed due to exceeding the threshold test. In hexadecimal.
9–12(=q)		Link error monitor counter - the aggregate link error monitor error count, set to zero only on station initialization. In hexadecimal.

FDDI Configuration Change Data (X'30') LAN Media Access Control Data Subfield

This subfield contains date created due to a configuration change at a station or concentrator. Not intended for use with SMT revisions later than revision 6.2.

FDDI Configuration Change Data (X'30') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI configuration state subfield
1		Key: X'30'
2-3		Configuration change data
2		Configuration State X'00' Isolated X'01' Wrap_S X'02' Wrap_A X'03' Wrap_B X'04' Wrap_AB X'05' Through
3(=q)		Paths Available X'00' Primary X'01' Secondary X'02' Local

FDDI Undesired Connection Data (X'31') LAN Media Access Control Data Subfield

This subfield is generated when an undesired connection attempt has been made.

FDDI Undesired Connection Data (X'31') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the undesired connection data subfield
1		Key: X'31'
2–5		undesired connection data
2		PC Type: port connector type X'00' A - A port X'01' B - B port X'02' S - Slave port X'03' M - Master port
3		Connect State X'00' disabled X'01' connecting X'02' standby X'03' active
4		PC Neighbor: port connector neighbor X'00' A - A port X'01' B - B port X'02' S - Slave port X'03' M - Master port X'04' Unknown

FDDI Undesired Connection Data (X'31') LAN Media Access Control Data Subfield

Byte	Bit	Content
5(=q)		Connection Accepted X'00' no X'01' yes

FDDI Trace Status (X'32') LAN Media Access Control Data Subfield

This subfield contains the current trace status of the path.

FDDI Trace Status (X'32') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the trace status subfield
1		Key: X'32'
2(=q)		FDDI trace status X'00' no current trace X'01' trace initiated X'02' trace propagated X'03' trace terminated

FDDI Elasticity Buffer Error Counter (X'33') LAN Media Access Control Data Subfield

This subfield contains the number of times an elasticity buffer error has occurred.

FDDI Elasticity Buffer Error Counter (X'33') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI elasticity buffer error counter subfield
1		Key: X'33'
2–5(=q)		FDDI elasticity buffer error counter counts the times an elasticity buffer error has occurred. In hexadecimal.

FDDI Hold State (X'34') LAN Media Access Control Data Subfield

This subfield indicates the current state of the hold function.

FDDI Hold State (X'34') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the hold state subfield

FDDI Hold State (X'34') LAN Media Access Control Data Subfield

Byte	Bit	Content
1		Key: X'34'
2(=q)		FDDI Hold state - X'00' not holding - no holding on either primary or secondary rings. X'01' holding-prm - set if the primary ring is operational and the recovery enable flag is clear. X'02' holding-sec - set if the secondary ring is operational and the recovery enable flag is clear.

FDDI MAC Index (X'35') LAN Media Access Control Data Subfield

This subfield contains identification of a particular instance of MAC within a station.

FDDI MAC Index (X'35') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI MAC index subfield
1		Key: X'35'
2-3(=q)		FDDI MAC Index: identification of a particular instance of MAC within a station, in hexadecimal.

FDDI Port Index (X'36') LAN Media Access Control Data Subfield

This subfield contains identification of a particular instance of Port within a station.

FDDI Port Index (X'36') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI Port index subfield
1		Key: X'36'
2-3(=q)		FDDI Port Index: identification of a particular instance of Port within a station, in hexadecimal.

FDDI Path Index (X'37') LAN Media Access Control Data Subfield

This subfield contains identification of a particular instance of Path within a station.

FDDI Path Index (X'37') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI Path index subfield
1		Key: X'37'
2-3(=q)		FDDI Path Index: identification of a particular instance of Path within a station, in hexadecimal.

FDDI Station Name (X'38') LAN Media Access Control Data Subfield

This subfield contains the station name of the originating station.

FDDI Station Name (X'38') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI station name subfield
1		Key: X'38'
2–q		FDDI Station Name: is defined using Coded Graphic Character Set 01134-00500, documented in Appendix A, “SNA Character Sets and Symbol-String Types” and four additional code points: X'5B' = $ (dollar sign) X'6C' = % (percent sign) X'7B' = # (pound or number sign) X'7C' = @ (at sign)

FDDI Peer Wrap Data (X'39') LAN Media Access Control Data Subfield

This subfield is generated by a dual-attachment node while wrapped and in Peer-connection mode. (Not intended for use with SMT 6.2.)

FDDI Peer Wrap Data (X'39') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI Peer Wrap Data subfield
1		Key: X'39'

FDDI Peer Wrap Data (X'39') LAN Media Access Control Data Subfield

Byte	Bit	Content
2(=q)		CF-State (configuration state) (reference: FDDI SMT specification, revision 7.3, section 9.7.2.2 and figure 9-5) X'00' isolated X'01' local_A X'02' local_B X'03' local_AB X'04' local_S X'05' wrap_A X'06' wrap_B X'07' wrap_AB X'08' wrap_S X'09' concatenated_wrap_A X'0A' concatenated_wrap_B X'0B' concatenated_wrap_S X'0C' through

FDDI Neighbor Change Data (X'3A') LAN Media Access Control Data Subfield

This subfield is generated when the FDDI Neighbor Notification protocol detects a UNA (Upstream Neighbor Address) or DNA (Downstream Neighbor Address) change for any MAC in a station.

FDDI Neighbor Change Data (X'3A') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI Neighbor Change subfield
1		Key: X'3A'
2–33		Neighbor change data
2		Neighbor Address condition
	0	Upstream Neighbor Address change
		0 no change occurred 1 change occurred
	1	Downstream Neighbor Address change
		0 no change occurred 1 change occurred
	2–7	reserved
3–8		old Upstream Neighbor Address, in hexadecimal
9–14		new Upstream Neighbor Address, in hexadecimal
15–20		old Downstream Neighbor Address, in hexadecimal
21–26		new Downstream Neighbor Address, in hexadecimal

FDDI Neighbor Change Data (X'3A') LAN Media Access Control Data Subfield

Byte	Bit	Content
27		current path X'00' isolated X'01' local X'02' secondary X'03' primary X'04' concatenated X'05' through
28–33(=q)		SMT address, in hexadecimal

FDDI MAC Path Change Data (X'3B') LAN Media Access Control Data Subfield

This subfield is generated when the value of Current Path changes from or to either primary or secondary for any MAC (Media Access Control function) in a station.

FDDI MAC Path Change Data (X'3B') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI MAC Path Change subfield
1		Key: X'3B'
2–4		MAC path change data
2	0–7	available paths (reference: FDDI SMT specification, revision 7.3, section 9.7.2.3 and figure 9-5)
	0	primary path 0 not available 1 available
	1	secondary path 0 not available 1 available
	2	local path 0 not available 1 available
	3–7	reserved
3		current path (reference: FDDI SMT specification, revision 7.3, section 9.7.2.2 and figure 9-5) X'00' isolated X'01' local X'02' secondary X'03' primary X'04' concatenated X'05' through
4(=q)	0–7	requested paths (reference: FDDI SMT specification, revision 7.3, section 9.7.2.4)

FDDI MAC Path Change Data (X'3B') LAN Media Access Control Data Subfield

Byte	Bit	Content
	0	local path
		0 not requested 1 requested
	1	secondary-alternate path
		0 not requested 1 requested
	2	primary-alternate path
		0 not requested 1 requested
	3	concatenated-alternate path
		0 not requested 1 requested
	4	secondary-preferred path
		0 not requested 1 requested
	5	primary-preferred path
		0 not requested 1 requested
	6	concatenated-preferred path
		0 not requested 1 requested
	7	through path
		0 not requested 1 requested

FDDI Port Path Change Data (X'3C') LAN Media Access Control Data Subfield

This subfield is generated when the value of Current Path changes from or to either primary or secondary for any Port in a station.

FDDI Port Path Change Data (X'3C') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the FDDI Port Path Change subfield
1		Key: X'3C'
2–8		Port path change data
2	0–7	available paths (reference: FDDI SMT specification, revision 7.3, section 9.7.2.3 and figure 9-5)
	0	primary path
		0 not available 1 available

FDDI Port Path Change Data (X'3C') LAN Media Access Control Data Subfield

Byte	Bit	Content
	1	secondary path 0 not available 1 available
	2	local path 0 not available 1 available
	3–7	reserved
3		current path (reference: FDDI SMT specification, revision 7.3, section 9.7.2.2 and figure 9-5) X'00' isolated X'01' local X'02' secondary X'03' primary X'04' concatenated X'05' through
4	0–7	requested paths, none (reference: FDDI SMT specification, revision 7.3, section 9.7.2.4)
	0	local path 0 not requested 1 requested
	1	secondary-alternate path 0 not requested 1 requested
	2	primary-alternate path 0 not requested 1 requested
	3	concatenated-alternate path 0 not requested 1 requested
	4	secondary-preferred path 0 not requested 1 requested
	5	primary-preferred path 0 not requested 1 requested
	6	concatenated-preferred path 0 not requested 1 requested
	7	through path 0 not requested 1 requested
5	0–7	requested paths, tree (reference: FDDI SMT specification, revision 7.3, section 9.7.2.4)
	0	local path 0 not requested 1 requested

FDDI Port Path Change Data (X'3C') LAN Media Access Control Data Subfield

Byte	Bit	Content
	1	secondary-alternate path 0 not requested 1 requested
	2	primary-alternate path 0 not requested 1 requested
	3	concatenated-alternate path 0 not requested 1 requested
	4	secondary-preferred path 0 not requested 1 requested
	5	primary-preferred path 0 not requested 1 requested
	6	concatenated-preferred path 0 not requested 1 requested
	7	through path 0 not requested 1 requested
6	0–7	requested paths, peer (reference: FDDI SMT specification, revision 7.3, section 9.7.2.4)
	0	local path 0 not requested 1 requested
	1	secondary-alternate path 0 not requested 1 requested
	2	primary-alternate path 0 not requested 1 requested
	3	concatenated-alternate path 0 not requested 1 requested
	4	secondary-preferred path 0 not requested 1 requested
	5	primary-preferred path 0 not requested 1 requested

FDDI Port Path Change Data (X'3C') LAN Media Access Control Data Subfield

Byte	Bit	Content
	6	concatenated-preferred path 0 not requested 1 requested
	7	through path 0 not requested 1 requested
7		my port type X'00' A port X'01' B port X'02' S port X'03' M port X'04' none (none of the other port types definable in this field)
8(=q)		neighbor port type (neighbor port is port in adjacent node to which 'my port' is connected via a fiber or copper medium) X'00' A port X'01' B port X'02' S port X'03' M port X'04' none (none of the other port types definable in this field)

Address Format (X'40') LAN Media Access Control Data Subfield

This subfield identifies the format (bit ordering) of the MAC addresses sent in the MAC address subfields in this subvector. The address format is either most significant bit first or least significant bit first (also known as canonical format). This subfield is required if any subfields containing MAC addresses are present.

Canonical format means that the least significant bit in every byte of a MAC address is transmitted first on the LAN. In canonical format, the Individual/Group (I/G) bit is defined to be the least significant bit in the first byte of a MAC Address. The most significant bit (MSB) first format means that the most significant bit in every byte of a MAC address is transmitted first. In the MSB format, the I/G Address is defined to be the most significant bit.

So, given the address:

0011 0101 0111 1011 0001 0010 0000 0000 0000 0000 0000 0001

where the left-most bit is the I/G bit and the first bit transmitted on the LAN medium (in the MAC header), the canonical form of that address is AC-DE-48-00-00-80. The most significant bit form is 35-7B-12-00-00-01.

Address Format (X'40') LAN Media Access Control Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Address Format subfield

Address Format (X'40') LAN Media Access Control Data Subfield

Byte	Bit	Content
1		Key: X'40'
2(=q)		Address Format: X'01' Canonical Format (least significant bit first) X'02' Most significant bit first

Frame Relay CLLM Message Data (X'5E') MS Common Subvector

This MS common subvector transports data received in a Frame Relay CLLM message.

Frame Relay CLLM Message Data (X'5E') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Frame Relay CLLM Message Data subvector
1		Key: X'5E'
2		Cause code from the CLLM message. The following values are defined: X'02' Network congestion due to excessive traffic - short term
		X'03' Network congestion due to excessive traffic - long term
		X'06' Facility or equipment failure - short term
		X'07' Facility or equipment failure - long term
		X'0A' Maintenance action - short term
		X'0B' Maintenance action - long term
		X'10' Unknown - short term
		X'11' Unknown - long term
		All other values are reserved.
3–10		Physical Line Name
11–p		The list of two-byte DLCIs received in the CLLM message. If a CLLM message contains more than 122 DLCIs, then multiple instances of the X'5E' subvector are used to report them all. *Note:* Currently Frame-Relay equipment supports only two-byte DLCIs. If, in the future, DLCIs of other lengths are supported, then a different SNA/MS structure will be defined to carry them.

Focal Point Authorization Request (X'61') MS Common Subvector

The Focal Point Authorization Request subvector carries a request from a focal point to an entry point in its sphere of control, to receive unsolicited management service units (MSUs) for the specified MS category, from that entry point and its domain.

Focal Point Authorization Request (X'61') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Focal Point Authorization Request subvector
1		Key: X'61'
2–p		One of the following subfields: X'10' Primary Authorization Request X'20' Default Authorization Request

Primary Authorization Request (X'10') Focal Point Authorization Request Subfield

This subfield identifies this request as being from a primary focal point. It specifies the value X'0000' or X'FFFF' depending on the value in the MS Category (X'01') subfield of the Focal Point Identification (X'21') subvector.

Primary Authorization Request (X'10') Focal Point Authorization Request Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Primary Authorization Request subfield
1		Key: X'10'
2–3		A value, for migration, loosely coupled with the MS category code in the (X'01') subfield of the Focal Point Identification (X'21') subvector, as defined below: X'0000' if MS category = X'23F0F3F1' X'FFFF' if MS category ≠ X'23F0F3F1'
4(=q)	0	MS Capabilities recovery responsibility: set by the focal point to indicate which party (focal point or entry point) is responsible for recovery of the focal-point/entry-point relationship after a failure (such as loss of connectivity). 0 Focal point will perform recovery by resending MS Capabilities with the X'61' subvector after a failure. 1 The explicit primary focal point name, found in the Focal Point Identification (X'21') MS common subvector that accompanies this subvector in the MS Capabilities (X'80F0') MS major vector, will be saved by the entry point as its new implicit primary focal point. After a failure, the entry point will perform recovery by sending MS Capabilities with the X'63' subvector, thus establishing an implicit primary focal point relationship with the focal point that was previously its explicit primary. Refer to *SNA Management Services Reference* for specific information about focal point recovery.
	1–7	Reserved.

Default Authorization Request (X'20') Focal Point Authorization Request Subfield

This subfield identifies this request as being from a default focal point. It specifies the value X'0000' or X'FFFF', depending on the value in the MS category (X'01') subfield of the Focal Point Identification (X'21') subvector.

Default Authorization Request (X'20') Focal Point Authorization Request Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Default Authorization Request subfield
1		Key: X'20'
2–3		A value, for migration, loosely coupled with the MS category code in the (X'01') subfield of the Focal Point Identification (X'21') subvector, as defined below: X'0000' if MS category = X'23F0F3F1' X'FFFF' if MS category ≠ X'23F0F3F1'
4(=q)		Reserved

Focal Point Authorization Reply (X'62') MS Common Subvector

The Focal Point Authorization Reply subvector flows from an entry point to its focal point to indicate the status of the focal-point/entry-point relationship for the specified MS Category.

Focal Point Authorization Reply (X'62') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Focal Point Authorization Reply subvector
1		Key: X'62'
2–p		The following subfields as indicated: X'10' Authorization Request Accepted X'20' Authorization Request Rejected X'30' Authorization Revoked X'40' Current Focal Point NAU Name X'41' Current Focal Point Application Name

Authorization Request Accepted (X'10') Focal Point Authorization Reply Subfield

This subfield indicates that the authorization request has been accepted. It specifies the value X'0000' or X'FFFF' depending on the value in the MS Category (X'01') subfield of the Focal Point Identification (X'21') subvector.

Authorization Request Accepted (X'10') Focal Point Authorization Reply Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Authorization Request Accepted subfield
1		Key: X'10'
2–3		A value, for migration, loosely coupled with the MS category code in the (X'01') subfield of the Focal Point Identification (X'21') subvector, as defined below: X'0000' if MS category = X'23F0F3F1' X'FFFF' if MS category ≠ X'23F0F3F1'
4(=q)	0	Indicates whether multiple backup focal points are supported or not. 0 Does not support multiple backup focal points 1 Supports multiple backup focal points
	1–7	Reserved

Authorization Request Rejected (X'20') Focal Point Authorization Data Subfield

This subfield indicates that the request for authorization has been rejected. It specifies the value X'0000' or X'FFFF' depending on the value in the MS Category (X'01') subfield of the Focal Point Identification (X'21') subvector and indicates the reason for the rejection of the request.

Authorization Request Rejected (X'20') Focal Point Authorization Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Authorization Request Rejected subfield
1		Key: X'20'
2–3		A value, for migration, loosely coupled with the MS category code in the (X'01') subfield of the Focal Point Identification (X'21') subvector, as defined below: X'0000' if MS category = X'23F0F3F1' X'FFFF' if MS category ≠ X'23F0F3F1'
4		Reserved
5(=q)		Authorization status code: indicates the reason authorization for the specified category was not granted. One of the following code points is present: X'01' Authorization rejected: function not supported X'02' Authorization rejected: the request was from a focal point of lower rank and priority than the focal point this node currently has. When this code point is used, the Current Focal Point NAU Name (X'40') subfield and Current Focal Point Application Name (X'41') subfield are always also present in the X'62' subvector. The X'40' and X'41' subfields specify the entry point's current focal point for the requested category. X'03' Authorization rejected: the receiving node is an end node and does not support maintaining a focal point for the requested MS category.

Authorization Revoked (X'30') Focal Point Authorization Data Subfield

This subfield indicates that focal-point authorization has been revoked. It specifies the value X'0000' or X'FFFF', depending on the value in the MS Category (X'01') subfield of the Focal Point Identification (X'21') subvector, and the reason for the revocation.

Authorization Revoked (X'30') Focal Point Authorization Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Authorization Revoked subfield
1		Key: X'30'
2–3		A value, for migration, loosely coupled with the MS category code in the (X'01') subfield of the Focal Point Identification (X'21') subvector, as defined below: X'0000' if MS category = X'23F0F3F1' X'FFFF' if MS category ≠ X'23F0F3F1'
4		Reserved
5(=q)		Authorization status code: indicates the reason authorization for the specified category was revoked. One of the following code points is present: X'60' Authorization revoked: the focal point receiving this subfield was replaced as this node's focal point. When this code point is used, the Current Focal Point NAU Name (X'40') subfield and the Current Focal Point Application Name (X'41') subfield must also be present in the X'62' subvector. The X'40' and X'41' subfields identify the currently active focal point. X'61' Authorization revoked: the focal point receiving this subfield is revoked due to an explicit command from an operator at the entry point. The X'40' and X'41' subfields are not present for this authorization status code.

Current Focal Point NAU Name (X'40') Focal Point Authorization Data Subfield

This subfield specifies the name of the current focal point for the node sending the subfield. The MS category for which the focal point is authorized to receive unsolicited data is identified in either the Authorization Request Rejected (X'20') or Authorization Revoked (X'30') subfield also present in this X'62' subvector.

Current Focal Point NAU Name (X'40') Focal Point Authorization Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Current Focal Point NAU Name subfield
1		Key: X'40'
2		Length of network-qualified NAU name (values 3 to 17 are valid)
3–q		Network-qualified NAU name (NETID always present). The NETID and NAU name are defined using Coded Graphic Character Set 01134–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," and they are separated by a period (X'4B') Trailing space characters may be present, but are not significant. Leading or embedded space characters may not be present.

Current Focal Point Application Name (X'41') Focal Point Authorization Data Subfield

This subfield specifies the application program name of the current focal point for the node sending the subfield.

Current Focal Point Application Name (X'41') Focal Point Authorization Data Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Current Focal Point Application Name subfield
1		Key: X'41'
2–q		Either an 8-byte installation-defined application name, defined using Coded Graphic Character Set 01134–00500, documented in Appendix A, "SNA Character Sets and Symbol-String Types," or one of the 4-byte architecturally-defined values for management services application programs, listed in *SNA/Management Services Reference*. Trailing space characters may be present, but are not significant. Leading or embedded space characters may not be present.

Entry Point Authorization Request (X'63') MS Common Subvector

The Entry Point Authorization Request subvector carries a request from an entry point to a focal point to request primary focal-point services for the unsolicited management service units (MSUs) associated with a specified MS category.

Entry Point Authorization Request (X'63') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Entry Point Authorization Request subvector
1		Key: X'63'
2–p		One of the following subfields: X'10' Primary Authorization Request X'30' Backup Authorization Request

Primary Authorization Request (X'10') Entry Point Authorization Request Subfield

This subfield specifies that the request is for services of a primary focal point.

Primary Authorization Request (X'10') Entry Point Authorization Request Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Primary Authorization Request subfield
1(=q)		Key: X'10'

Backup Authorization Request (X'30') Entry Point Authorization Request Subfield

This subfield specifies that the request is for services of a backup focal point.

Backup Authorization Request (X'30') Entry Point Authorization Request Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Backup Authorization Request subfield
1(=q)		Key: X'30'

Entry Point Authorization Reply (X'64') MS Common Subvector

The Entry Point Authorization Reply subvector flows from a focal point to an entry point to indicate the authorization status of the entry point for a specified MS category.

Entry Point Authorization Reply (X'64') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Entry Point Authorization Reply subvector
1		Key: X'64'
2–p		One of the following subfields: X'10' Authorization Request Accepted X'20' Authorization Request Rejected

Authorization Request Accepted (X'10') Entry Point Authorization Reply Subfield

This subfield specifies that request for authorization has been accepted.

Authorization Request Accepted (X'10') Entry Point Authorization Reply Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Authorization Request Accepted subfield
1(=q)		Key: X'10'

Authorization Request Rejected (X'20') Entry Point Authorization Reply Subfield

This subfield specifies that the request for authorization has been rejected, and indicates the reason for that rejection.

Authorization Request Rejected (X'20') Entry Point Authorization Reply Subfield

Byte	Bit	Content
0		Length (q+1), in binary, of the Authorization Request Rejected subfield
1		Key: X'20'
2(=q)		Authorization status code: indicates the reason authorization for the specified category was not granted. One of the following code points is present: X'01' Authorization rejected: function not supported X'02' Authorization rejected: this node not a focal point for that category X'03' Authorization rejected: not able to support request at this time

Sense Data (X'7D') MS Common Subvector

This MS common subvector transports error information back to the control point that initiated an MS request. The subvector contains a 4-byte field for sense data.

Sense Data (X'7D') MS Common Subvector

Byte	Bit	Content
0		Length (p+1), in binary, of the Sense Data subvector
1		Key: X'7D'
2–5(=p)		Sense data, as defined in *SNA Formats*

End of Chapter 4

Chapter 5. Alerts Defined for Specific Environments

This chapter contains several groups of Alerts defined for specific environments. For each Alert, the following information is provided:

- The 32-bit Alert ID Number, calculated by means of the algorithm described in “Generic Alert Data (X'92') Alert MS Subvector” on page 4-26
- The Alert Type
- The Alert Description
- The Probable Causes
- The User, Install, and Failure Causes (as appropriate), together with their associated qualifiers
- A partial list of the additional subvectors to be included in the Alert; required subvectors such as the Product Set ID are not listed

For certain Alerts, the Recommended Actions associated with the User, Install, and Failure Causes are also included. For other Alerts, the actions cannot be specified, since they are dependent on characteristics of the particular Alert sender, e.g., how the product is serviced, whether it is attended, or whether it is locally or remotely attached to the Alert receiver.

Many of the Alerts contain one or more instances of the Detailed Data (X'82') subfield. Since it provides additional function, the Detailed Data Extended (X'85') subfield should be used instead of the X'82' subfield when possible. The X'85' and X'82' subfields are mutually exclusive in a subvector.

The Alerts described in this chapter are those sent by nodes receiving management services support on an SSCP-PU session. Alerts sent in an APPN environment by nodes receiving management services support over the CP-CP and LU-LU sessions used by multiple-domain support (MDS) are the same as those described below except for the Hierarchy/Resource List (X'05') subvector:

- In the Alerts in which a Hierarchy/Resource List subvector is not present, the Alert sender includes one containing its own CP name in the Hierarchy Name List (X'10') subfield.
- In the Alerts that already contain a Hierarchy/Resource List subvector, the Alert sender also includes its own CP name as the first entry in the Hierarchy Name List (X'10') subfield.

In addition, in the APPN environment, the hierarchy complete indicator in the Hierarchy Name List subfield is set to 0, indicating that the hierarchy is complete. It is set to 1 in the hierarchical environment.

Alerts for Local Area Networks

Token-Ring LAN Alerts

This section documents the Alerts that should be sent by LAN managers, type 4 nodes, and boundary-function-attached type 2.1 nodes. The following table defines which Alerts are sent by which nodes.

A “Yes” in a column means that the Alert with this number is always sent by this type of node. A “No” in a column means that the Alert with this number is never sent by this type of node.

Figure 5-1. Token-Ring Alert Sending Products

Alert Number	LAN Manager	Type 4 and BF-attached Type 2.1 Nodes
01	Note 1	Note 1
02	Note 1	Note 1
03	Note 1	Note 1
04	Note 1	Note 1
05	Note 1	Note 1
06	Yes	Yes
07	Yes	Yes
08	Yes	Yes
09	Note 3	Note 2
10	Note 3	No
11	No	Note 2
12	Note 3	Note 2
13	Note 3	Note 2

Notes:

1. This Alert flows if the sending product is unattended at the time of the error.
2. This Alert flows if a token-ring LAN manager is not present in the LAN to report errors on this ring.
3. If there are several token-ring LAN managers in a LAN, only one sends this Alert for each ring.

Token-Ring LAN Alert 1

Alert Condition:

The adapter detected a problem on its lobe during the wrap-test portion of the insertion process. The insertion process did not complete.

Alert ID Number		X'55BF3E1C'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open Failure
Probable Causes	X'3702'	Token-ring lobe
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3320' X'3711' X'3434'	Local token-ring adapter Local access unit Local lobe cables
Actions	X'1009' X'3301' X'2010' X'3101' X'32C0' X'82' SF X'82' SF	Attempt to re-open the adapter after 30 seconds If problem persists then do the following: Review link detailed data Contact token-ring administrator responsible for this LAN Report the following: (Adapter Number) (Error Code)
Additional SVs	X'51' SV X'03' SF X'23' SF	TR LAN LCS Data Local Individual MAC Address Local Individual MAC Name (Optional)

Token-Ring LAN Alert 2

Alert Condition:

The adapter detected a beaconing condition on the ring during the insertion process. The insertion process did not complete.

Alert ID Number		X'CAF3C58A'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open Failure
Probable Causes	X'3703'	Token-ring fault domain
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3703'	Token-ring fault domain
Actions	X'1009' X'3301' X'2010' X'3101' X'32C0' X'82' SF X'82' SF	Attempt to re-open the adapter after 30 seconds If problem persists then do the following: Review link detailed data Contact token-ring administrator responsible for this LAN Report the following: (Adapter Number) (Error Code)
Additional SVs	X'51' SV X'06' SF X'26' SF X'07' SF X'05' SV X'10' SF	TR LAN LCS Data Token-Ring Fault Domain Description Fault Domain Names (Optional) Beacon Data Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=RINGhhhh or 'UNKNOWN' Type=X'2E' (RING)

Token-Ring LAN Alert 3

Alert Condition:

The adapter detected the presence of a station with its individual address on the ring during the insertion process. The insertion process did not complete.

Alert ID Number		X'D615A61E'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open Failure
Probable Causes	X'3704'	Token-ring duplicate station address
User Causes	(none)	
Install Causes	X'3704'	Token-ring duplicate station addresses assigned
Actions	X'2010' X'3101' X'32C0' X'82'SF X'82'SF	Review link detailed data Contact token-ring administrator responsible for this LAN Report the following: (Adapter Number) (Error Code)
Failure Causes	(none)	
Additional SVs	X'51' SV X'03' SF X'23' SF X'05' SV X'10' SF	TR LAN LCS Data Local Individual MAC Address Local Individual MAC Name (Optional) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN)

Token-Ring LAN Alert 4

Alert Condition:

The adapter received a Remove Ring Station MAC frame during the insertion process. The insertion process did not complete.

Alert ID Number		X'44D1AD86'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open Failure
Probable Causes	X'3705'	Token-ring remove command received
User Causes	X'7101'	Token-ring remove adapter command received
Actions	X'2010' X'3101' X'32C0' X'82'SF X'82'SF	Review link detailed data Contact token-ring administrator responsible for this LAN Report the following (Adapter Number) (Error Code)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'51' SV X'03' SF X'23' SF	TR LAN LCS Data Local Individual MAC Address Local Individual MAC Name (Optional)

Token-Ring LAN Alert 5

Alert Condition:

An error was detected during the insertion process that is not defined in “Token-Ring LAN Alert 1,” “Token-Ring LAN Alert 2,” “Token-Ring LAN Alert 3,” or “Token-Ring LAN Alert 4.” These conditions are not expected to occur, so they are included within one Alert definition. The insertion process did not complete.

Alert ID Number		X'016E5F4E'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open failure
Probable Causes	X'3702' X'3701'	Token-ring lobe Token-ring LAN component
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3712' X'3701' X'2600'	Local token-ring lobe Token-ring LAN component Interference
Actions	X'2010' X'3101' X'32C0' X'82'SF X'82'SF	Review link detailed data Contact token-ring administrator responsible for this LAN Report the following: (Adapter Number) (Error Code)
Additional SVs	X'51' SV X'03' SF X'23' SF X'05' SV X'10' SF	TR LAN LCS Data Local Individual MAC Address Local Individual MAC Name (Optional) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=RINGhhhh or 'UNKNOWN' Type=X'2E' (RING)

Token-Ring LAN Alert 6

Alert Condition:

The reporting station's adapter detected a wire-fault condition on the ring.

Alert ID Number		X'A676B230'
Alert Type	X'01'	Permanent
Alert Description	X'3212'	Wire fault
Probable Causes	X'3702'	Token-ring lobe
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3711' X'3434' X'3320'	Local access unit Local lobe cables Local token-ring adapter
Actions	X'2010' X'3101' X'0105' X'32C0' X'82' X'82'	Review link detailed data Contact token-ring administrator responsible for this LAN Request verification of management server reporting links (note 1) Report the following: (Adapter Number) (Error Code)
Additional SVs	X'51' SV X'03' SF X'23' SF X'05' SV X'10' SF	TR LAN LCS Data Local Individual MAC Address Local Individual MAC Name (Optional) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=RINGhhhh (Hex ring ID) Type=X'2E' (RING)

Notes:

1. This code point is present if the sending product is a LAN manager and has reporting links with remote management servers.

Token-Ring LAN Alert 7

Alert Condition:

The reporting station's adapter has left the ring as part of the beacon automatic-recovery process. That is, the reporting station's adapter was a member of the beacon fault domain and removed itself from the ring to perform a self test, which was unsuccessful.

Alert ID Number		X'EB61E14F'
Alert Type	X'01'	Permanent
Alert Description	X'3213'	Auto-removal
Probable Causes	X'3702'	Token-ring lobe
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3320' X'3711' X'3434'	Local token-ring adapter Local access unit Local lobe cables
Actions	X'2010' X'3101' X'0105' X'32C0' X'82' X'82'	Review link detailed data Contact token-ring administrator responsible for this LAN Request verification of management server reporting links (note 1) Report the following: (Adapter Number) (Error Code)
Additional SVs	X'51' SV X'03' SF X'23' SF X'05' SV X'10' SF	TR LAN LCS Data Local Individual MAC Address Local Individual MAC Name (Optional) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=RINGhhhh (Hex ring ID) Type=X'2E' (RING)

Notes:

1. This code point is present if the sending product is a LAN manager and has reporting links with remote management servers.

Token-Ring LAN Alert 8

Alert Condition:

The reporting station's adapter received a Remove Adapter command from a LAN manager and, as a result, left the LAN.

Alert ID Number		X'59F32622'
Alert Type	X'01'	Permanent
Alert Description	X'3214'	Remove adapter command received
Probable Causes	X'7013'	LAN manager operator
User Causes	X'7101'	Token-ring remove adapter command received
Actions	X'2010' X'3101' X'0105' X'32C0' X'82' X'82'	Review link detailed data Contact token-ring administrator responsible for this LAN Request verification of management server reporting links (note 1) Report the following: (Adapter Number) (Error Code)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'51' SV X'02' SF X'03' SF X'23' SF	TR LAN LCS Data Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional)

Notes:

1. This code point is present if the sending product is a LAN manager and has reporting links with remote management servers.

Token-Ring LAN Alert 9

Alert Condition:

The ring has been beaconing for a time longer than the hard-error detection timer. Manual intervention is necessary to recover the ring.

Alert ID Number		X'2102FCEB'
Alert Type	X'01'	Permanent
Alert Description	X'3215'	Token-ring inoperative
Probable Causes	X'3703'	Token-ring fault domain
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3703'	Token-ring fault domain
Actions	X'2010' X'3101' X'0105' X'32A0' X'82'SF	Review link detailed data Contact token-ring administrator responsible for this LAN Request verification of management server reporting links (note 1) Report the following: (Ring Status)
Additional SVs	X'51' SV X'06' SF X'26' SF X'07' SF X'05' SV X'10' SF	TR LAN LCS Data Token-Ring Fault Domain Description Fault Domain Names (Optional) Beacon Data Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=RINGhhhh (Hex ring ID) Type=X'2E' (RING)

Notes:

1. This code point is present if the sending product is a LAN manager and has reporting links with remote management servers.

Token-Ring LAN Alert 10

Alert Condition:

The ring was in a beaconing condition for a time shorter than the hard-error detection timer. When the stations in the beacon fault domain were queried, one or both of them had left the ring.

Alert ID Number		X'698CCD51'
Alert Type	X'01'	Permanent
Alert Description	X'3213'	Auto removal
Probable Causes	X'3714'	Remote token-ring lobe
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3321' X'3713' X'3435'	Remote token-ring adapter Remote access unit Remote lobe cables
Actions	X'2010' X'3101' X'0105'	Review link detailed data Contact token-ring administrator responsible for this LAN Request verification of management server reporting links (note 1)
Additional SVs	X'51' SV X'06' SF X'26' SF X'08' SF X'28' SF X'05' SV X'10' SF	TR LAN LCS Data Fault Domain Description (CP) (note 2) Fault Domain Names (CP) (note 3) Single Individual MAC Address (CP) (note 4) Single Individual MAC Name (CP) (note 5) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=RINGhhhh (Hex ring ID) Type=X'2E' (RING)

Notes:

1. This code point is present if the sending product is a LAN manager and has reporting links with remote management servers.
2. This subfield is present if the sending product has determined that both beacon fault domain stations left the ring as part of the automatic recovery process.
3. This subfield is optionally present, but only present if the sending product has determined that both beacon fault domain stations left the ring as part of the automatic recovery process.
4. This subfield is present if the sending product has determined that only one of the beacon fault domain stations left the ring as part of the automatic recovery process.
5. This subfield is optionally present, but only present if the sending product has determined only one of the beacon fault domain stations left the ring as part of the automatic recovery process.

Token-Ring LAN Alert 11

Alert Condition:

The ring was in a beaconing condition for less than 52 seconds and then recovered. The sender of this Alert either knows that neither station in the fault domain left the ring, or has no knowledge about whether a station removed itself from the ring in order to bypass the fault.

Alert ID Number		X'2F36696E'
Alert Type	X'01'	Permanent
Alert Description	X'3216'	Token-ring temporary error
Probable Causes	X'3703'	Token-ring fault domain
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3703'	Token-ring fault domain
Actions	X'2010' X'3101' X'0105'	Review link detailed data Contact token-ring administrator responsible for this LAN Request verification of management server reporting links (note 1)
Additional SVs	X'51' SV X'06' SF X'26' SF X'07' SF X'05' SV X'10' SF	TR LAN LCS Data Token-Ring Fault Domain Description Fault Domain Names (Optional) Beacon Data Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=RINGhhhh (Hex ring ID) Type=X'2E' (RING)

Notes:

1. This code point is present if the sending product is a LAN manager and has reporting links with remote management servers.

Token-Ring LAN Alert 12

Alert Condition:

The ring error monitor (REM) has detected excessive soft errors for the ring.

Alert ID Number		X'A9998C16'
Alert Type	X'11'	Impending problem
Alert Description	X'4001'	Excessive token-ring errors
Probable Causes	X'3703'	Token-ring fault domain
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3703'	Token-ring fault domain
Actions	X'2010' X'3101'	Review link detailed data Contact token-ring administrator responsible for this LAN
Additional SVs	X'51' SV X'06' SF X'26' SF X'09' SF X'05' SV X'10' SF	TR LAN LCS Data Token-Ring Fault Domain Description Fault Domain Names (Optional) Fault Domain Error Weight Pair Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=RINGhhhh (Hex ring ID) Type=X'2E' (RING)

Token-Ring LAN Alert 13

Alert Condition:

The ring error monitor (REM) has detected that an adapter is experiencing excessive congestion and is discarding a significant number of frames.

Alert ID Number		X'57D16A21'
Alert Type	X'03'	Performance
Alert Description	X'5011'	Communication overrun
Probable Causes	X'3223'	Token-ring adapter interface
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'3324'	Communication program Token-ring adapter
Actions	X'2010' X'3101'	Review link detailed data Contact token-ring administrator responsible for this LAN
Additional SVs	X'51' SV X'02' SF X'08' SF X'28' SF X'05' SV X'10' SF	TR LAN LCS Data Ring or Bus Identifier Single Individual MAC Address Single Individual MAC Name Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN)

CSMA/CD LAN Alerts

This section documents the Alerts that should be sent by LAN managers and boundary-function attached T2.1 nodes for problems detected on CSMA/CD LANs. The following table defines which Alerts are sent by LAN managers and boundary-function attached T2.1 nodes.

A 'Yes' in a column means that the Alert with this number is always sent by this type of station. A 'No' in a column means that the Alert with this number is never sent by this type of station.

Figure 5-2. CSMA/CD LAN Alert Senders

Alert Number	LAN Manager	BF-Attached Type 2.1 Nodes
01	Note 1	Note 1
02	Note 1	Note 1
03	Note 1	Note 1
04	Note 1	Note 1
05	Yes	Yes
06	Note 3	Note 2
07	Yes	Yes
08	Yes	Yes
09	Yes	Yes
10	Yes	No
11	Yes	No

Notes:

1. This Alert flows if the sending product is unattended at the time of the error.
2. This Alert flows if a CSMA/CD LAN manager is not present in the LAN to report errors on this bus.
3. If there are several CSMA/CD LAN managers in a LAN, only one sends this Alert for each bus.

CSMA/CD LAN Alert 1

Alert Condition:

The adapter could not detect a carrier signal on the CSMA/CD network during the insertion process. The insertion process did not complete.

Alert ID Number		X'75CB6673'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open failure
Probable Causes	X'3436'	Local CSMA/CD LAN cable
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3436' X'3721'	Local CSMA/CD LAN cable CSMA/CD LAN component
Actions	X'1320' X'2010' X'3102' X'32A0' X'82'SF	Check cable connection and retry Review link detailed data Contact CSMA/CD administrator responsible for this LAN Report the following: (Adapter Number)
Additional SVs	X'5D' SV X'02' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Ring/Bus Identifier MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=CBUShhhh (Hex bus number) or 'UNKNOWN' Type=X'32' (CBUS)

CSMA/CD LAN Alert 2

Alert Condition:

The adapter detected the presence of a station with its address on the CSMA/CD LAN bus during the insertion process. The insertion process did not complete.

Alert ID Number		X'DD8A0144'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open failure
Probable Causes	X'3724'	CSMA/CD duplicate station address
User Causes	(none)	
Install Causes	X'3724'	Duplicate station address assigned
Actions	X'2010' X'3102' X'32A0' X'82'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN Report the following: (Adapter Number)
Failure Causes	(none)	
Additional SVs	X'5D' SV X'03' SF X'23' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Local Individual MAC Address Local Individual MAC Name (Optional) MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=CBUShhhh (Hex bus number) or 'UNKNOWN' Type=X'32' (CBUS)

CSMA/CD LAN Alert 3

Alert Condition:

The adapter received a Remove Station command during the insertion process. The insertion process did not complete.

Alert ID Number		X'C6B5D6A5'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open failure
Probable Causes	X'3725'	CSMA/CD remove adapter command received
User Causes	X'7107'	CSMA/CD remove adapter command received
Actions	X'2010' X'3102' X'32A0' X'82'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN Report the following: (Adapter Number)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'5D' SV X'02' SF X'03' SF X'23' SF X'29' SF X'40' SF	LAN MAC Data Ring/Bus Identifier (note 1) Local Individual MAC Address Local Individual MAC Name (Optional) MAC Type Address Format

Notes:

1. This subfield is present only if the station has completed the portion of the open process during which it learns the ring identifier.

CSMA/CD LAN Alert 4

Alert Condition:

An error was detected during the insertion process that is not defined in “CSMA/CD LAN Alert 1,” “CSMA/CD LAN Alert 2,” or “CSMA/CD LAN Alert 3.” The insertion process did not complete.

Alert ID Number		X'8B1836C5'
Alert Type	X'01'	Permanent
Alert Description	X'3211'	Open failure
Probable Causes	X'3721'	CSMA/CD LAN component
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3721'	CSMA/CD LAN component
Actions	X'1320' X'2010' X'3102' X'32C0' X'82' X'82'	Check cable connection and retry Review link detailed data Contact CSMA/CD administrator responsible for this LAN Report the following: (Adapter Number) (Error Code)
Additional SVs	X'5D' SV X'03' SF X'23' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Local Individual MAC Address Local Individual MAC Name (Optional) MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=CBUShhhh (Hex Bus Name) or 'UNKNOWN' Type=X'32' (CBUS)

CSMA/CD LAN Alert 5

Alert Condition:

The reporting node's adapter received a Remove Adapter command from a LAN manager and, as a result, left the CSMA/CD LAN.

Alert ID Number		X'EB1D6ABB'
Alert Type	X'01'	Permanent
Alert Description	X'3214'	Remove adapter command received
Probable Causes	X'7013'	LAN manager operator
User Causes	X'7107'	CSMA/CD remove adapter command received
Actions	X'2010' X'3102' X'32A0' X'82'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN Report the following: (Adapter Number)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'5D' SV X'02' SF X'03' SF X'23' SF X'29' SF X'40' SF	LAN MAC Data Ring/Bus Identifier Local Individual MAC Address Local Individual MAC Name (Optional) MAC Type Address Format

CSMA/CD LAN Alert 6

Alert Condition:

A continuous-carrier condition has been detected on the CSMA/CD bus and the sending product's adapter is not the cause of the error.

Alert ID Number		X'3CDEF8F5' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3220'	CSMA/CD bus inoperative
Probable Causes	X'3330'	Adapter hardware
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3323'	Remote CSMA/CD adapter
Actions	X'2010' X'3102'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN
Additional SVs	X'5D' SV X'02' SF X'08' SF X'28' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Ring/Bus Identifier Single MAC Address (note 2) Single MAC Name (note 3) MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=CBUShhhh (Hex bus number) Type=X'32' (CBUS)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'43AAE16E'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. This subfield is present if the sending product has isolated the continuous carrier to a single station address (not its own).
3. This subfield is optionally present, but only present if the sending product has isolated the continuous carrier to a single station address.

CSMA/CD LAN Alert 7

Alert Condition:

A no-carrier condition was detected on the CSMA/CD bus.

Alert ID Number		X'668E036D'
Alert Type	X'01'	Permanent
Alert Description	X'3221'	CSMA/CD LAN communications lost
Probable Causes	X'3426'	CSMA/CD LAN cables
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3436' X'3426' X'3721'	Local CSMA/CD adapter cable CSMA/CD LAN cables CSMA/CD LAN component
Actions	X'2010' X'3102' X'32A0' X'82'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN Report the following: (Adapter Number)
Additional SVs	X'5D' SV X'03' SF X'23' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Local Individual MAC Address Local Individual MAC Name (Optional) MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=CBUShhhh (Hex bus number) Type=X'32' (CBUS)

CSMA/CD LAN Alert 8

Alert Condition:

A continuous-carrier condition has been detected on the CSMA/CD bus and the source of the condition has been isolated to the local adapter.

Alert ID Number		X'176D9CDF'
Alert Type	X'01'	Permanent
Alert Description	X'3220'	CSMA/CD bus inoperative
Probable Causes	X'3322'	Local CSMA/CD adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3322' X'3722'	Local CSMA/CD adapter CSMA/CD LAN translator unit
Actions	X'2010' X'3102'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN
Additional SVs	X'5D' SV X'03' SF X'23' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Local Individual MAC Address Local Individual MAC Name (Optional) MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=CBUShhhh (Hex bus number) Type=X'32' (CBUS)

CSMA/CD LAN Alert 9

Alert Condition:

A continuous-carrier condition has been detected on the CSMA/CD bus and the source of the condition cannot be isolated.

Alert ID Number		X'F7A377AE'
Alert Type	X'01'	Permanent
Alert Description	X'3220'	CSMA/CD bus inoperative
Probable Causes	X'3325'	CSMA/CD adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3325' X'3722'	CSMA/CD adapter CSMA/CD LAN translator unit
Actions	X'2010' X'3102'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN
Additional SVs	X'5D' SV X'02' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Ring or Bus Identifier MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=CBUShhhh (Hex bus number) Type=X'32' (CBUS)

CMSA/CD LAN Alert 10

Alert Condition:

The LAN manager has detected that an adapter is experiencing excessive congestion and is discarding a significant number of frames.

Alert ID Number		X'A48865FD' (note 1)
Alert Type	X'03'	Performance
Alert Description	X'5011'	Communication overrun
Probable Causes	X'3221'	CSMA/CD Adapter Interface
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'3325'	Communication program CSMA/CD adapter
Actions	X'2010' X'3102'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN
Additional SVs	X'5D' SV X'02' SF X'08' SF X'28' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Ring or Bus Identifier Single Individual MAC Address Single Individual MAC Name MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'1A56BAAE'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

CSMA/CD LAN Alert 11

Alert Condition:

A continuous-carrier condition has been detected on the CSMA/CD bus and the source of the condition has been isolated to a remote adapter. The remote adapter automatically removed itself from the LAN and the error has been bypassed.

Alert ID Number		X'C1A08052'
Alert Type	X'01'	Permanent
Alert Description	X'3213'	Auto removal
Probable Causes	X'3323'	Remote CSMA/CD adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3325'	CSMA/CD adapter
Actions	X'2010' X'3102'	Review link detailed data Contact CSMA/CD administrator responsible for this LAN
Additional SVs	X'5D' SV X'04' SF X'24' SF X'29' SF X'40' SF X'05' SV X'10' SF	LAN MAC Data Remote Individual MAC Address Remote Individual MAC Name MAC Type Address Format Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=CBUShhhh (Hex bus number) Type=X'32' (CBUS)

Bridged LAN Alerts

This section defines the Alerts sent for problems associated with bridged LANs. These Alerts are sent only by LAN managers.

Bridged LAN Alert 1

Alert Condition:

An abnormally large percentage of frames are being discarded at a bridge. The bridge server has calculated the ratio of the number of frames it discarded to the number of frames it copied for forwarding and this ratio exceeded a threshold. Only the controlling LAN manager sends this Alert.

Alert ID Number		X'EE64FB52'
Alert Type	X'01'	Permanent
Alert Description	X'4010'	Error-to-traffic ratio exceeded
Probable Causes	X'3740'	LAN bridge
User Causes	X'7109' X'710A'	LAN bridge operator took bridge offline LAN manager operator took bridge offline
Install Causes	(none)	
Failure Causes	X'3700' X'3741' X'2007'	LAN component Congestion in LAN bridge LAN communications error
Actions	X'2010' X'3103'	Review link detailed data Contact LAN administrator responsible for this LAN
Additional SVs	X'51' or X'5D' SV X'0A' SF X'29' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Bridge Identifier MAC Type (note 2) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=(bridge name) Type=X'3A' (BRDG)

Notes:

1. Subvector X'51' is present when the bridge is attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the bridge is attached to a non-TR LAN segment.
2. This subfield is present only if encompassing subvector is X'5D'.

Bridged LAN Alert 2

Alert Condition:

The LAN bridge was taken off-line by an operator. Shut-down was orderly and the LAN bridge server issued a frame warning the LAN managers that it was being removed from the LAN. Bridge frame forwarding functions were terminated. That is, either an operator at the bridge or at a LAN manager issued a Set Bridge Parameters frame to set the Route Active parameter of the bridge server to cause the bridge not to forward frames. Only the controlling LAN manager sends this Alert.

Alert ID Number		X'355A1EC7' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'B003'	LAN bridge taken offline
Probable Causes	X'7012' X'7013'	LAN bridge operator LAN manager operator
User Causes	X'7109' X'710A'	LAN bridge operator took bridge offline LAN manager operator took bridge offline
Actions	X'2010' X'3103'	Review link detailed data Contact LAN administrator responsible for this LAN
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'51' or X'5D' SV X'0A' SF X'29' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 2) Bridge Identifier MAC Type (note 3) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: Name=(bridge name) Type=X'3A' (BRDG)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'608A29AF'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. Subvector X'51' is present when the bridge is attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the bridge is attached to a non-TR LAN segment.
3. This subfield is present only if encompassing subvector is X'5D'.

Bridged LAN Alert 3

Alert Condition:

A LAN reporting link to remote management servers has been lost. The remote link station does not respond. The inactivity timer (Ti) has expired, causing the remote station to be polled. The remote station does not respond to the poll.

The controlling LAN manager sends this Alert when it loses reporting links and its local ring was not in a beaconing condition for a pre-determined period before the link was lost. The default for this pre-determined period is one minute, but it is configurable. Only the controlling LAN manager sends this Alert.

Alert ID Number		X'841206FE'
Alert Type	X'01'	Permanent
Alert Description	X'3330'	Management server reporting link error
Probable Causes	X'2107'	LAN LLC communications/remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2107' X'F017'	LAN LLC communications/remote node Poll count exhausted
Actions	X'2010' X'3103' X'32C0' X'82' SF X'82' SF	Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 4

Alert Condition:

A LAN reporting link to remote management servers has been lost. The remote link station sent a Disconnect Mode to the local link station. The LAN manager tried to re-establish the link after a pre-determined time and the attempt was unsuccessful. Only the controlling LAN manager sends this Alert.

Alert ID Number		X'B1D9A4C5'
Alert Type	X'01'	Permanent
Alert Description	X'3300'	Management server reporting link error
Probable Causes	X'2007'	LAN LLC communications
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2007' X'F01A'	LAN LLC communications DM received
Actions	X'2010' X'3103' X'32C0' X'82' SF X'82' SF	Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' (LAN) Second resource below sender: (note 4) Name=(bridge name) Type=X'3A' (BRDG) Second resource below sender: (note 5) Name=(management server name) Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 5

Alert Condition:

A LAN reporting link to remote management servers has been lost. The local link station sent an invalid or unsupported frame to the remote link station. This resulted in the remote link station returning a Frame Reject. The LAN manager tried to re-establish the link after a pre-determined time and the attempt was unsuccessful.

Alert ID Number		X'8A5B2D2C'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1000'	LAN LLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F010'	Software program Frame reject received: Invalid/unsupported command or response sent
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 6

Alert Condition:

A LAN reporting link to remote management servers has been lost. The local link station sent an I-frame when not permitted to the remote link station. This resulted in the remote link station returning a Frame Reject. The LAN manager tried to re-establish the link after a pre-determined time and the attempt was unsuccessful.

Alert ID Number		X'8E9A309B'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1000'	LAN LLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F011'	Software program Frame reject received: I-frame sent when not permitted
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 7

Alert Condition:

A LAN reporting link to remote management servers has been lost. The local link station sent a frame with an invalid N(r). This resulted in the remote link station returning a Frame Reject. The LAN manager tried to re-establish the link after a pre-determined time and the attempt was unsuccessful.

Alert ID Number		X'83D91642'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1000'	LAN LLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F012'	Software program Frame reject received: invalid N(r) sent
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 1)
	X'40' SF	Address Format (note 1)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 8

Alert Condition:

A LAN reporting link to remote management servers has been lost. The local link station sent a frame with an I-field that was too long. This resulted in the remote link station returning a Frame Reject.

Alert ID Number		X'87180BF5'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1000'	LAN LLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F013'	Software program Frame reject received: Maximum I-field length exceeded
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 9

Alert Condition:

A LAN reporting link to remote management servers has been lost. The remote link station sent an invalid or unsupported frame to the local link station. This resulted in the local link station returning a Frame Reject. The LAN manager tried to re-establish the link after a pre-determined time and the attempt was unsuccessful.

Alert ID Number		X'28EF2B5D'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F020'	Communications program in remote node Invalid/unsupported command or response received
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 10

Alert Condition:

A LAN reporting link to remote management servers has been lost. The remote link station sent an I-frame when not permitted to the local link station. This resulted in the local link station returning a Frame Reject. The LAN manager tried to re-establish the link after a pre-determined time and the attempt was unsuccessful.

Alert ID Number		X'2C2E36EA'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F021'	Communications program in remote node I-Frame received when not permitted
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 11

Alert Condition:

A LAN reporting link to remote management servers has been lost. The remote link station sent a frame with an invalid N(r). This resulted in the local link station returning a Frame Reject. The LAN manager tried to re-establish the link after a pre-determined time and the attempt was unsuccessful.

Alert ID Number		X'216D1033'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F022'	Communications program in remote node Invalid N(r) received
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1) LAN LCS Data
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 12

Alert Condition:

A LAN reporting link to remote management servers has been lost. The remote link station sent a frame with an I-field that was too long. This resulted in the local link station returning a Frame Reject. The LAN manager tried to re-establish the link after a pre-determined time and the attempt was unsuccessful.

Alert ID Number		X'25AC0D84'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F023'	Communications program in remote node Received I-field exceeded maximum length
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)

Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Name=(LAN name)
		Type=X'39' (LAN)
		Second resource below sender: (note 4)
		Name=(bridge name)
		Type=X'3A' (BRDG)
		Second resource below sender: (note 5)
		Name=(management server name)
		Type=X'3C' (MSVR)

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. This subfield is present if the lost link traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the link was lost were located in a LAN bridge.
5. This subfield is present if the management servers with which the link was lost were not located in a LAN bridge.

Bridged LAN Alert 13

Alert Condition:

The remote management server has been unable to receive data on the link and has been sending Receiver Not Ready frames contiguously for more than 30 seconds.

Alert ID Number		X'6CEB625D'
Alert Type	X'01'	Permanent
Alert Description	X'5004'	Out of resources
Probable Causes	X'1023' X'1031'	Communications program in remote node LAN management server
User Causes	X'710B'	User incapacitated LAN management server program
Actions	X'1405'	Reactivate LAN management server program
Install Causes	(none)	
Failure Causes	X'0020' X'0111' X'1031'	Excessive load on processor Number of LAN mgmt. frames received exceeds buffer capacity LAN management server
Actions	X'2010' X'3103'	Review link detailed data Contact LAN administrator responsible for this LAN
Additional SVs	X'51' or X'5D' SV X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) Hierarchy/Resource List (CP) Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' LAN Second resource below sender: (note 4) Name=(bridge name) Type=X'3A' BRDG Second resource below sender: (note 5) Name=(management server name) Type=X'3C' MSVR

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers attached to a non-TR LAN segment.
2. This subfield is present if the link about which this Alert pertains traversed a LAN bridge.
3. These subfields are present only if encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the LAN manager was communicating via the link identified in this Alert were located in a LAN bridge.

5. This subfield is present if the management servers with which the LAN manager was communicating via the link identified in this Alert were not located in a LAN bridge.

Bridged LAN Alert 14

Alert Condition:

The remote management server has been congested and, as a result, has probably discarded management data.

Alert ID Number		X'E73AA8E1'
Alert Type	X'03'	Performance
Alert Description	X'3230'	LAN management data lost
Probable Causes	X'1031' X'1023'	LAN management server Communications program in remote node
User Causes	X'710B'	User incapacitated LAN management server program
Actions	X'1405'	Reactivate LAN management server program
Install Causes	(none)	
Failure Causes	X'0020' X'0111' X'1031'	Excessive load on processor Number of LAN mgmt. frames received exceeds buffer capacity LAN management server
Actions	X'2010' X'3103'	Review link detailed data Contact LAN administrator responsible for this LAN
Additional SVs	X'51' or X'5D' SV X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) Hierarchy/Resource List (CP) Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' LAN Second resource below sender: (note 4) Name=(bridge name) Type=X'3A' BRDG Second resource below sender: (note 5) Name=(management server name) Type=X'3C' MSVR

Notes:

1. Subvector X'51' is present when the management server is attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the bridge is attached to a non-TR LAN segment.
2. This subfield is present if the link about which this Alert pertains traversed a LAN bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.
4. This subfield is present if the management servers with which the LAN manager was communicating via the link identified in this Alert were located in a LAN bridge.

5. This subfield is present if the management servers with which the LAN manager was communicating via the link identified in this Alert were not located in a LAN bridge.

Bridged LAN Alert 15

Alert Condition:

A LAN manager attempted to establish a reporting link with management servers, but was rejected because it used an invalid password. Only the controlling LAN manager sends this Alert.

Note: This may be changed from an Alert to a Security Management record.

Alert ID Number		X'91C0A9A7'
Alert Type	X'12'	Unknown
Alert Description	X'C001'	Invalid reporting link password
Probable Causes	X'7013'	Remote LAN manager operator
User Causes	X'7103' X'7104'	LAN manager operator entered incorrect password Unauthorized access to LAN management server attempted
Actions	X'3301' X'2010' X'3103'	If problem persists then do the following: Review link detailed data Contact LAN administrator responsible for this LAN
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'51' or X'5D' SV X'08' SF X'28' SF X'29' SF X'40' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Single MAC Address Single MAC Name (Optional) MAC Type (note 2) Address Format (note 2) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Type=X'39' LAN

Notes:

1. Subvector X'51' is present when the management servers are attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the management servers are attached to a non-TR LAN segment.
2. These subfields are present only if encompassing subvector is X'5D'.

Bridged LAN Alert 16

Alert Condition:

The LAN bridge has detected an error that caused it to terminate the communication link with the LAN manager. Only the controlling LAN manager sends this Alert.

Alert ID Number		X'F431E3D4'
Alert Type	X'01'	Permanent
Alert Description	X'B003'	LAN bridge taken offline
Probable Causes	X'3340' X'3600' X'1022'	Local LAN adapter Modem Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3340' X'3600' X'1031' X'3400'	Local LAN adapter Modem LAN management server Cable loose or defective
Actions	X'2010' X'3103'	Review link detail data Contact LAN administrator responsible for this LAN
Additional SVs	X'51' or X'5D' SV X'0A' SF X'29' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Bridge Identifier MAC Type (note 2) Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Name=(bridge name) Resource Type=X'3A' (BRDG)

Notes:

1. Subvector X'51' is present when the bridge is attached to a Token-Ring (TR) LAN segment. Subvector X'5D' is present when the bridge is attached to a non-TR LAN segment.
2. This subfield is present only if the encompassing subvector is X'5D'.

SDLC/LAN LLC Alerts

This section defines Alerts for problems associated with the LLC sublayer.

LAN LLC Alerts

LAN LLC Alert 1

Alert Condition:

A LAN logical link has been lost. The remote link station does not respond. The inactivity timer (Ti) or acknowledgement timer (T1) has expired, causing the remote station to be polled. The remote station does not respond to the poll.

Alert ID Number		X'5B8F5BA7'
Alert Type	X'01'	Permanent
Alert Description	X'3300'	Link error
Probable Causes	X'2107'	LAN LLC communications/remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2107' X'F017'	LAN LLC communications/remote node Poll count exhausted

Actions	X'3301'	If problem persists then do the following
	X'2010'	Review link detail data
	X'3103'	Contact LAN administrator responsible for this LAN
	X'32C0'	Report the following
	X'82' SF	(Adapter Number)
	X'82' SF	(Reference Code)
Additional SVs	X'51' or X'5D' SV	TR LAN LCS Data or LAN MAC Data (note 1)
	X'02' SF	Ring/Segment Identifier
	X'03' SF	Local Individual MAC Address
	X'23' SF	Local Individual MAC Name (Optional)
	X'04' SF	Remote Individual MAC Address
	X'24' SF	Remote Individual MAC Name (Optional)
	X'05' SF	LAN Routing Information (note 2)
	X'29' SF	MAC Type (note 3)
	X'40' SF	Address Format (note 3)
	X'52' SV	LCS Configuration
	X'02' SF	Remote Device Address
	X'04' SF	Local Device Address
	X'8C' SV	Link Station Data
	X'01' SF	Current Ns/Nr Counts
	X'02' SF	Outstanding Frame Count
	X'03' SF	Last Control Field Received
	X'04' SF	Last Control Field Sent
	X'05' SF	Sequence Number Modulus
	X'06' SF	Link Station State
	X'07' SF	LLC Reply Timer Expiration Count
	X'08' SF	Last Received Nr Count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender:
		Resource Name=(LAN name)
		Resource Type=X'39' (LAN)
		Second resource below sender:
		Resource Name=(CP name)
		Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 2

Alert Condition:

A LAN logical link has been lost. The remote link station sent a Disconnect Mode response to the local link station.

Alert ID Number		X'B1D9A4C5'
Alert Type	X'01'	Permanent
Alert Description	X'3300'	Link error
Probable Causes	X'2007'	LAN LLC communications
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2007' X'F01A'	LAN LLC communications DM received
Actions	X'3303' X'2010' X'3101' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 3

Alert Condition:

A LAN logical link has been lost. The remote link station sent a SABME command to the local link station which was already open (had been initialized via a SABME-UA exchange).

Alert ID Number		X'E65B0B7F'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F016'	Communications program in remote node SABME received while in ABME
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 4

Alert Condition:

A LAN logical link has been lost. The local link station sent an invalid or unsupported command or response to the remote link station. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'8A5B2D2C'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1000'	LAN LLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F010'	Software program Frame reject received: Invalid/unsupported command or response sent
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 5

Alert Condition:

A LAN logical link has been lost. The local link station sent an I-field when not permitted to the remote link station. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'8E9A309B'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1000'	LAN LLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F011'	Software program Frame reject received: I-field sent when not permitted
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 6

Alert Condition:

A LAN logical link has been lost. The local link station sent a frame with an invalid N(r). This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'83D91642'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1000'	LAN LLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F012'	Software program Frame reject received: invalid N(r) sent
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 7

Alert Condition:

A LAN logical link has been lost. The local link station sent a frame with an I-field that was too long. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'87180BF5'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1000'	LAN LLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F013'	Software program Frame reject received: maximum I-field length exceeded
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 8

Alert Condition:

A LAN logical link has been lost. The remote link station sent an invalid or unsupported command or response to the local link station. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'28EF2B5D'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F020'	Communications program in remote node Invalid/unsupported command or response received
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 9

Alert Condition:

A LAN logical link has been lost. The remote link station sent an I-field when not permitted to the local link station. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'2C2E36EA'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F021'	Communications program in remote node I-field received when not permitted
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 10

Alert Condition:

A LAN logical link has been lost. The remote link station sent a frame with an invalid N(r). This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'216D1033'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F022'	Communications program in remote node Invalid N(r) received
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if the encompassing subvector is X'5D'.

LAN LLC Alert 11

Alert Condition:

A LAN logical link has been lost. The remote link station sent a frame with an I-field that was too long. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'25AC0D84'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2007' X'1023'	LAN LLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F023'	Communications program in remote node Received I-field exceeded maximum length
Actions	X'3301' X'2010' X'3103' X'32C0' X'82' SF X'82' SF	If problem persists then do the following: Review link detail data Contact LAN administrator responsible for this LAN Report the following (Adapter Number) (Reference Code)
Additional SVs	X'51' or X'5D' SV X'02' SF X'03' SF X'23' SF X'04' SF X'24' SF X'05' SF X'29' SF X'40' SF X'52' SV X'02' SF X'04' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	TR LAN LCS Data or LAN MAC Data (note 1) Ring/Segment Identifier Local Individual MAC Address Local Individual MAC Name (Optional) Remote Individual MAC Address Remote Individual MAC Name (Optional) LAN Routing Information (note 2) MAC Type (note 3) Address Format (note 3) LCS Configuration Remote Device Address Local Device Address Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(LAN name) Resource Type=X'39' (LAN) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Notes:

1. Subvector X'51' is present if the LLC is attached to a Token-Ring MAC. Subvector X'5D' is present if the LLC is attached to a non-TR MAC.
2. This subfield is present if the lost logical link traversed a MAC bridge.
3. These subfields are present only if encompassing subvector is X'5D'.

SDLC Alerts

SDLC Alert 1

Alert Condition:

An SDLC logical link has been lost. The secondary link station does not respond to poll frames sent by the primary station.

Alert ID Number		X'32A37F1B'
Alert Type	X'01'	Permanent
Alert Description	X'3300'	Link error
Probable Causes	X'2104' X'2031'	SDLC communications/remote node Line
User Causes	X'0209'	Remote device power off
Actions	X'0200'	Check power
Install Causes	(none)	
Failure Causes	X'2104' X'3511' X'F017'	SDLC communications/remote node Line Poll count exhausted
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 2

Alert Condition:

An SDLC logical link has been lost. The secondary link station sent a Disconnect Mode response to the primary link station.

Alert ID Number		X'BD84C4C9'
Alert Type	X'01'	Permanent
Alert Description	X'3300'	Link error
Probable Causes	X'2004'	SDLC communications
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2004' X'F01A'	SDLC communications DM received
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 3

Alert Condition:

An SDLC logical link has been lost. The primary link station sent a SNRM command to the secondary link station while it was in NRM.

Alert ID Number		X'D635CA1E'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1023'	SDLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F015'	Communications program in remote node SNRM received while in NRM
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 4

Alert Condition:

An SDLC logical link has been lost. The primary link station sent an invalid or unsupported command to the secondary link station. This resulted in the secondary link station returning a Frame reject response.

Alert ID Number		X'B776CA94'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1000'	SDLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F010'	Software program Frame reject received: invalid/unsupported command or response sent
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 5

Alert Condition:

An SDLC logical link has been lost. The primary link station sent an I-field when not permitted to the secondary link station. This resulted in the secondary link station returning a Frame reject response.

Alert ID Number		X'B3B7D723'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1000'	SDLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F011'	Software program Frame reject received: I-field sent when not permitted
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 6

Alert Condition:

An SDLC logical link has been lost. The primary link station sent a frame with an invalid N(r). This resulted in the secondary link station returning a Frame reject response.

Alert ID Number		X'BEF4F1FA'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1000'	SDLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F012'	Software program Frame reject received: invalid N(r) sent
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 7

Alert Condition:

An SDLC logical link has been lost. The primary link station sent a frame with an I-field that was too long. This resulted in the secondary link station returning a Frame reject response.

Alert ID Number		X'BA35EC4D'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1000'	SDLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F013'	Software program Frame reject received: maximum I-field length exceeded
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 8

Alert Condition:

An SDLC logical link has been lost. The secondary link station sent an invalid or unsupported command to the primary link station. This resulted in the primary link station returning a Frame reject response.

Alert ID Number		X'15C2CCE5'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1023'	SDLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F020'	Communications program in remote node Invalid/unsupported command or response received
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 9

Alert Condition:

An SDLC logical link has been lost. The secondary link station sent an I-field when not permitted to the primary link station. This resulted in the primary link station returning a Frame reject response.

Alert ID Number		X'1103D152'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1023'	SDLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F021'	Communications program in remote node I-field received when not permitted
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 10

Alert Condition:

An SDLC logical link has been lost. The primary link station sent a frame with an invalid N(r). This resulted in the secondary link station returning a Frame reject response.

Alert ID Number		X'1C40F78B'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1023'	SDLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F022'	Communications program in remote node Invalid N(r) received
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 11

Alert Condition:

An SDLC logical link has been lost. The number of I-frames transmitted by the remote link station has exceeded the local link station's receive window size.

Alert ID Number		X'EABB6A14'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1023'	SDLC communications Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F01B'	Communications program in remote node Receive window size exceeded
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 12

Alert Condition:

An SDLC logical link has been lost. The secondary link station's inactivity timer has expired.

Alert ID Number		X'0E2DDF11'
Alert Type	X'01'	Permanent
Alert Description	X'3300'	Link error
Probable Causes	X'2104' X'2031'	SDLC communications/remote node Line
User Causes	X'0209'	Remote device power off
Actions	X'0200'	Check power
Install Causes	(none)	
Failure Causes	X'2104' X'3511' X'F019'	SDLC communications/remote node Line Inactivity timer expired
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 13

Alert Condition:

Link establishment has failed. The local link station's retry limit for XID has been exceeded.

Alert ID Number		X'0AECC2A6'
Alert Type	X'01'	Permanent
Alert Description	X'3300'	Link error
Probable Causes	X'2104' X'2031'	SDLC communications/remote node Line
User Causes	X'0209'	Remote device power off
Actions	X'0200'	Check power
Install Causes	(none)	
Failure Causes	X'2104' X'3511' X'F018'	SDLC communications/remote node Line XID poll count exhausted
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

SDLC Alert 14

Alert Condition:

An SDLC logical link has been lost. The secondary link station send a Frame reject response, but it contained no I-field indicating the reason for the rejection.

Alert ID Number		X'A472BC48'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'2004' X'1000'	SDLC communications Software program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1000' X'F014'	Software program Frame reject received: no reason specified
Actions		(Sender-specific actions)
Additional SVs	X'52' SV X'02' SF X'04' SF X'06' SF X'07' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF	LCS Configuration Remote Device Address Local Device Address Link Station Attributes Link Attributes Link Station Data Current Ns/Nr Counts Outstanding Frame Count Last Control Field Received Last Control Field Sent Sequence Number Modulus Link Station State LLC Reply Timer Expiration Count Last Received Nr Count Hierarchy/Resource List Hierarchy Name List First resource below sender: Resource Name=(Adapter number) Resource Type=X'21' (Adapter) Second resource below sender: Resource Name=(CP name) Resource Type=X'F4' (CP)

Alerts for Switched Link Connections

X.21 and X.21 Short-Hold Mode Alerts

This section documents the Alerts sent by nodes using X.21 and X.21 Short Hold Mode. These Alerts are sent by type 2 or boundary-function-attached type 2.1 nodes. These stations do not send Alerts for errors detected on the initial call, but only send Alerts for errors detected on reconnections. These Alerts are sent as delayed Alerts, and are sent at all only if the same type 4 node to which the reconnection attempt was directed is eventually reached.

X.21 Secondary Alert 1

Alert Condition:

The secondary station received a CPS01, but the X.21 network did not signal ready for data within a specified period of time (See GA27–3287 *IBM Implementation of X.21 Interface General Information Manual* for the value of the timer.) This indicates the outgoing call was signalled to the DTE, but no further response was received. This is sent as a delayed Alert by the secondary station.

Alert ID Number		X'861061E5'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2201'	Called DTE
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2201' X'2300'	Called DTE Connection not established
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 1

Alert Condition:

The reporting station received a CPS01, but the X.21 network did not signal ready for data within a specified period of time (See GA27–3287 *IBM Implementation of X.21 Interface General Information Manual* for the value of the timer.) This indicates the outgoing call was signalled to the DTE, but no further response was received.

Alert ID Number		X'6EB437E0'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2201'	Called DTE
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2201' X'2300'	Called DTE Connection not established
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 2

Alert Condition:

The secondary station received a CPS02, CPS03 or CPS05, but the X.21 network did not signal ready for data within a specified period of time (See GA27–3287 *IBM Implementation of X.21 Interface General Information Manual* for the value of the timer.) This indicates the outgoing call was received by the DTE, but no further response was received. This is sent as a delayed Alert by the secondary station.

Alert ID Number		X'D974044D'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2005' X'2300'	X.21 network Connection not established
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 2

Alert Condition:

The reporting station received a CPS02, CPS03, or CPS05, but the X.21 network did not signal ready for data within a specified period of time (See GA27–3287 *IBM Implementation of X.21 Interface General Information Manual* for the value of the timer.) This indicates the outgoing call was received by the DTE, but no further response was received.

Alert ID Number		X'31D05248'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2005' X'2300'	X.21 network Connection not established
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 3

Alert Condition:

The secondary station received a CPS04, but the X.21 network did not signal ready for data within a specified period of time (See GA27–3287 *IBM Implementation of X.21 Interface General Information Manual* for the value of the timer.) This indicates the outgoing call reached a private network, but no further response was received. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'5C1722E8' (note 1)
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2401'	Private network reached
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2041' X'2300'	Private network reached Connection not established
Actions	X'3302' X'3104' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact network information service for private network called Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'C05198EA'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Peer-to-Peer Alert 3

Alert Condition:

The reporting station received a CPS04, but the X.21 network did not signal ready for data within a specified period of time (See GA27–3287 *IBM Implementation of X.21 Interface General Information Manual* for the value of the timer.) This indicates the outgoing call reached a private network, but no further response was received.

Alert ID Number		X'28F5CEEF'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2041'	Private network reached
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2041' X'2300'	Private network Called Connection not established
Actions	X'3104' X'32D0' X'82' SF X'82' SF X'82' SF	Contact network information service for private network called Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 4

Alert Condition:

Retries have been exhausted and a CPS20 was received by the secondary station indicating the called number could not be connected. No cause was specified. This is sent as a delayed Alert by the secondary station.

Alert ID Number		X'B511541E'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'FE00'	Undetermined
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2005'	X.21 network
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 4

Alert Condition:

Retries have been exhausted and a CPS20 was received by the reporting station indicating the called number could not be connected. No cause was specified.

Alert ID Number		X'4CBDD3F0'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'FE00'	Undetermined
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2005'	X.21 network
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 5

Alert Condition:

The retries have been exhausted when trying to connect or reconnect a link and a CPS21 was received by the secondary station indicating the called number was busy. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'F230538E'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2301'	Called number busy
User Causes	X'2301'	Called number busy
Actions	X'3302' X'3122' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact called DTE's operator Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Install Causes	(none)	
Failure Causes	(none)	

X.21 Peer-to-Peer Alert 5

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS21 was received by the reporting station indicating the called number was busy.

Alert ID Number		X'0B9CD460' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2301'	Called number busy
User Causes	X'2301'	Called number busy
Actions	X'1206' X'3301' X'3122' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Wait Then Retry If Problem Persists Then Do the Following Contact called DTE's operator Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'3CD24384'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Secondary Alert 6

Alert Condition:

The retries have been exhausted when trying to connect or reconnect a link and a CPS22 was received by the secondary station indicating there was a procedure error in the selection signals. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'C2E9214F'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'3309'	Line adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3309'	Line adapter
Actions	X'3302' X'30E1' X'83' SF X'3503' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact the service representative for (Product Identifier) Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 6

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS22 was received by the reporting station indicating there was a procedure error with the selection signals.

Alert ID Number		X'3B45A6A1'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'3309'	Line adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3309'	Line adapter
Actions	X'30E1' X'83' SF X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact Service Representative for (Product Identifier) Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 7

Alert Condition:

The retries have been exhausted when trying to connect or reconnect a link and a CPS23 was received by the secondary station indicating there was a transmission error in the selection signals. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'9B1BDB20'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2036'	DCE-DSE connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3512'	The connection between the calling DCE and its DSE
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 7

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS23 was received by the reporting station indicating there was a transmission error in the selection signals.

Alert ID Number		X'62B75CCE'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2036'	DCE-DSE connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3512'	The connection between the calling DCE and its DSE
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 8

Alert Condition:

The retries have been exhausted when trying to connect or reconnect a link and a CPS41 was received by the secondary station. This indicates the calling DTE is not permitted connection to the called DTE. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'033AC8C8'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2308'	Access barred
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'0103'	Verify telephone number
Install Causes	(none)	
Failure Causes	X'2308'	Access barred
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 8

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS41 was received by the reporting station. This indicates the calling DTE is not permitted connection to the called DTE.

Alert ID Number		X'EB9E9ECD'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2308'	Access barred
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'0103'	Verify telephone number
Install Causes	(none)	
Failure Causes	X'2308'	Access barred
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 9

Alert Condition:

The retries have been exhausted when trying to connect or reconnect a link and a CPS42 was received by the secondary station. This indicates the called DTE has been assigned a new number. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'F0FE2CBD'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2306'	Changed Number
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'0103'	Verify telephone number
Install Causes	(none)	
Failure Causes	X'2306'	New Telephone Number Assigned to Called DTE
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 9

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS42 was received by the reporting station. This indicates the called DTE has been assigned a new number.

Alert ID Number		X'185A7AB8'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2306'	Changed Number
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'0103'	Verify telephone number
Install Causes	(none)	
Failure Causes	X'2306'	New Telephone Number Assigned to Called DTE
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 10

Alert Condition:

The retries have been exhausted when trying to connect or reconnect a link and a CPS43 was received by the secondary station. This indicates the called DTE address is out of the numbering plan or not assigned to any DTE. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'E8561A00'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2300'	Connection not established
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'0103'	Verify telephone number
Install Causes	(none)	
Failure Causes	X'2307'	Called number outside numbering plan or unknown by network
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 10

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS43 was received by the reporting station. This indicates the called DTE address is out of the numbering plan or not assigned to any DTE.

Alert ID Number		X'00F24C05'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2300'	Connection not established
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'0103'	Verify telephone number
Install Causes	(none)	
Failure Causes	X'2307'	Called number outside numbering plan or unknown by network
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Retry Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 11

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS44 was received by the secondary station. This indicates the called number is out of order. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'987DFF4D'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2201' X'3510' X'2005'	Called DTE Called DCE X.21 network
User Causes	X'0212' X'2510' X'0211'	Called DTE power off Line not enabled at called DTE Called DCE power off
Actions	X'1200' X'0200' X'1331'	Retry Check power Enable line then retry
Install Causes	(none)	
Failure Causes	X'2203' X'3513'	Called DTE signalling uncontrolled not ready Local loop associated with the called DTE
Actions	X'3302' X'3122' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact called DTE's operator Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 11

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS44 was received by the reporting station. This indicates the called number is out of order.

Alert ID Number		X'9E31D69D'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2201' X'3510' X'2005'	Called DTE Called DCE X.21 network
User Causes	X'0212' X'2510' X'0211'	Called DTE power off Line not enabled at called DTE Called DCE power off
Actions	X'1200' X'0200' X'1331'	Retry Check power Enable line then retry
Install Causes	(none)	
Failure Causes	X'2203' X'3513'	Called DTE signalling uncontrolled not ready Local loop associated with the called DTE
Actions	X'3301' X'3122' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following Contact called DTE's operator Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 12

Alert Condition:

The retries have been exhausted when trying to connect or reconnect a link and a CPS45 was received by the secondary station. This indicates the called DTE is signalling controlled not ready. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'9E6C217A'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2201'	Called DTE
User Causes	X'2511'	Port deactivated at called DTE
Actions	X'1330'	Activate port then retry
Install Causes	(none)	
Failure Causes	X'2202'	Called DTE signalling controlled not ready
Actions	X'3302' X'3122' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact called DTE's operator Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 12

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS45 was received by the reporting station. This indicates the called DTE is signalling controlled not ready.

Alert ID Number		X'76C8777F'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2201'	Called DTE
User Causes	X'2511'	Port deactivated at called DTE
Actions	X'1330'	Activate port then retry
Install Causes	(none)	
Failure Causes	X'2202'	Called DTE signalling controlled not ready
Actions	X'1200' X'3301' X'3122' X'32D0' X'82' SF X'82' SF X'82' SF	Retry If problem persists then do the following Contact called DTE's operator Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 13

Alert Condition:

A CPS45 with a date and time was received by the secondary station. This indicates the called DTE is signalling controlled not ready. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'FEBADD77'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2201'	Called DTE
User Causes	X'2201'	Called DTE taken out of service
Actions	X'12C0' X'82' SF X'82' SF	Retry after (Year/Month/Day) (Time)
Install Causes	(none)	
Failure Causes	X'2202'	Called DTE signalling controlled not ready
Actions	X'3301' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 13

Alert Condition:

A CPS45 with a date and time was received by the reporting station. This indicates the called DTE is signalling controlled not ready.

Alert ID Number		X'161E8B72'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2201'	Called DTE
User Causes	X'2201'	Called DTE taken out of service
Actions	X'12C0' X'82' SF X'82' SF	Retry after (Year/Month/Day) (Time)
Install Causes	(none)	
Failure Causes	X'2202'	Called DTE signalling controlled not ready
Actions	X'3301' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 14

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS46 was received by the secondary station. This indicates the called DTE is signalling uncontrolled not ready. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'7B66A32A'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2201'	Called DTE
User Causes	X'0212' X'2510'	Called DTE Line not enabled at called DTE
Actions	X'0200' X'1331'	Check power Enable line then retry
Install Causes	(none)	
Failure Causes	X'2203'	Called DTE signalling uncontrolled not ready
Actions	X'3302' X'3122' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact called DTE's operator Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 14

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS46 was received by the reporting station. This indicates the called DTE is signalling uncontrolled not ready.

Alert ID Number		X'A6694258'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2201'	Called DTE
User Causes	X'0212' X'2510'	Called DTE power off Line not enabled at called DTE
Actions	X'0200' X'1331'	Check power Enable line then retry
Install Causes	(none)	
Failure Causes	X'2203'	Called DTE signalling uncontrolled not ready
Actions	X'1200' X'3301' X'3122' X'32D0' X'82' SF X'82' SF X'82' SF	Retry If problem persists then do the following Contact called DTE's operator Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 15

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS47 was received by the secondary station. This indicates the called DCE does not have power. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'1630A02C' (note 1)
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'3510'	Called DCE
User Causes	X'0211'	Called DCE power off
Actions	X'0200'	Check power
Install Causes	(none)	
Failure Causes	X'3510'	Called DCE
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'ECECAA6D'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Peer-to-Peer Alert 15

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS47 was received by the reporting station. This indicates the called DCE does not have power.

Alert ID Number		X'FE94F629'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'3510'	Called DCE
User Causes Actions	X'0211' X'0200'	Called DCE power off Check power
Install Causes	(none)	
Failure Causes	X'3510'	Called DCE
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Retry Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 16

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS48 was received by the secondary station. This indicates the requested facility is detected as invalid by the DCE at the local DTE/DCE interface. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'9EBCF239' (note 1)
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2307'	Invalid request
User Causes	X'2300'	Calling DTE does not subscribe to this facility
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number)
Install Causes	(none)	
Failure Causes	(none)	

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'DF55F53F'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Peer-to-Peer Alert 16

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS48 was received by the reporting station. This indicates the requested facility is detected as invalid by the DCE at the local DTE/DCE interface.

Alert ID Number		X'26F972D1' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2307'	Invalid request
User Causes	X'2308'	Calling DTE does not subscribe to this facility
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'1CD57B79'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Secondary Alert 17

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS49 was received by the primary station. This indicates an error with the local loop associated with the called DTE. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'A5D509ED'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3513'	Local loop associated with the called DTE
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 17

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS49 was received by the reporting station. This indicates an error with the local loop associated with the called DTE.

Alert ID Number		X'5C798E03'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3513'	Local loop associated with the called DTE
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 18

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS51 was received by the primary station. This indicates the called number was busy and the network information service should be contacted for details. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'F230538E'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2301'	Called number busy
User Causes	X'2301'	Called number busy
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Install Causes	(none)	
Failure Causes	(none)	

X.21 Peer-to-Peer Alert 18

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS51 was received by the reporting station. This indicates the called number is temporarily busy and the network information service should be contacted for details.

Alert ID Number		X'0B9CD460' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2301'	Called number busy
User Causes	X'2301'	Called number busy
Actions	X'3301' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'3CD24384'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Secondary Alert 19

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS52 was received by the primary station. This indicates the called DTE belongs to a user class of service which is incompatible with that of the calling DTE. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'367EF253'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2304'	Incorrect number called
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'0103'	Verify telephone number
Install Causes	(none)	
Failure Causes	X'2309' X'230A'	Speed classes incompatible User classes of service incompatible
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 19

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS52 was received by the reporting station. This indicates the called DTE belongs to a user class of service which is incompatible with that of the calling DTE.

Alert ID Number		X'EB711321'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2304'	Incorrect number called
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'0103'	Verify telephone number
Install Causes	(none)	
Failure Causes	X'2309' X'230A'	Speed classes incompatible User classes of service incompatible
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 20

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS61 was received by the station. This indicates the network is temporarily congested. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'D55C05B3'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'5001'	Network congestion
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3521'	Temporary lack of resources in X.21 network
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 20

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS61 was received by the station. This indicates the network is temporarily congested.

Alert ID Number		X'D55C05B3'
Alert Type	X'01'	Permanent
Alert Description	X'5001'	Network congestion
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3521'	Temporary lack of resources in X.21 network
Actions	X'3301' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 21

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS71 was received by the station. This indicates a shortage of network resources. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'D81F236A'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'5001'	Network congestion
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3522'	Long term lack of resources in X.21 network
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 21

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS71 was received by the station. This indicates a shortage of network resources.

Alert ID Number		X'D81F236A'
Alert Type	X'01'	Permanent
Alert Description	X'5001'	Network congestion
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3522'	Long term lack of resources in X.21 network
Actions	X'3301' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 22

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS72 was received by the station. This indicates the RPOA nominated by the calling DTE is unable to forward the call. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'0138B506'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2040'	Inter-exchange network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2040'	Inter-exchange network
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 22

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and a CPS72 was received by the station. This indicates the RPOA nominated by the calling DTE is unable to forward the call.

Alert ID Number		X'F89432E8'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2040'	Inter-exchange network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2040'	Inter-exchange network
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 23

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and an invalid CPS was received by the secondary station. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'802A9670'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2036'	DCE-DSE connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3512' X'F059'	The connection between the calling DCE and its DSE Invalid CPS received from network
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 23

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and an invalid CPS was received by the reporting station.

Alert ID Number		X'688EC075'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2036'	DCE-DSE connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3512' X'F059'	The connection between the calling DCE and its DSE Invalid CPS received from network
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 24

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and an unexpected CPS was received by the secondary station. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'EEEFE65A'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'F058'	Unrecognized CPS received from the network
Actions	X'3302' X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 24

Alert Condition:

The retries have been exhausted trying to connect or reconnect a link and an unexpected CPS was received by the reporting station.

Alert ID Number		X'174361B4'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'F058'	Unrecognized CPS received from the network
Actions	X'3105' X'32D0' X'82' SF X'82' SF X'82' SF	Contact X.21 network information service Report the following (Call Progress Signal) (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 25

Alert Condition:

This Alert indicates one of the timers, T1, T2, or T3, expired. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'92C4D92C'
Alert Type	X'01'	Permanent
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20A0' X'82' SF	No response from X.21 network (sf82) expired (Timer)
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 25

Alert Condition:

This Alert indicates one of the timers, T1, T2, or T3, expired.

Alert ID Number		X'6B685EC2'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20A0' X'82' SF	No response from X.21 network (sf82) expired (Timer)
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 26

Alert Condition:

This Alert indicates timer T5 expired without receiving an expected response from the network. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'6B685EC2'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20A0' X'82' SF	No response from X.21 network (sf82) expired (Timer)
Actions	X'3302' X'3105' X'32A0' X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Reporting Telephone Number)

X.21 Peer-to-Peer Alert 26

Alert Condition:

This Alert indicates timer T5 expired without receiving an expected response from the network.

Alert ID Number		X'6B685EC2'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20A0' X'82' SF	No response from X.21 network (sf82) expired (Timer)
Actions	X'3105' X'32A0' X'82' SF	If problem persists then do the following Report the following (Reporting Telephone Number)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 27

Alert Condition:

This Alert indicates the calling DCE is signalling not ready. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'333F4124'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2005'	X.21 network
User Causes	X'0210'	Calling DCE power off
Actions	X'0200'	Check power
Install Causes	(none)	
Failure Causes	X'2050' X'3520' X'F050'	X.21 network has initiated test loop X.21 network component DCE not ready
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 27

Alert Condition:

This Alert indicates the calling DCE is signalling not ready.

Alert ID Number		X'24EC7079'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	X'0210'	Calling DCE power off
Actions	X'0200'	Check power
Install Causes	(none)	
Failure Causes	X'2050' X'3520' X'F050'	X.21 network has initiated test loop X.21 network component DCE not ready
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 28

Alert Condition:

A DCE clear indication was received by the secondary station during call establishment. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'3D061D5E'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2105'	X.21 communications/called node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'2201' X'F051'	X.21 network component Called DTE DCE not ready
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 28

Alert Condition:

A DCE clear indication was received by the primary station during call establishment.

Alert ID Number		X'E009FC2C'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2105'	X.21 communications/called node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'2201' X'F051'	X.21 network component Called DTE DCE not ready
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 29

Alert Condition:

A persistent DCE clear indication was received by the secondary station during call establishment. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'6332915A'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'F052'	X.21 network component Persistent DCE clear indication during call estab. (T6 exp)
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 29

Alert Condition:

A persistent DCE clear indication was received by the reporting station during call establishment.

Alert ID Number		X'8B96C75F'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'F052'	X.21 network component Persistent DCE clear indication during call estab. (T6 exp)
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 30

Alert Condition:

A DCE controlled not ready was received by the secondary station during call establishment. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'34842630'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2105'	X.21 communications/called node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'2201' X'F053'	X.21 network component Called DTE DCE controlled not ready during call Estab.
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 30

Alert Condition:

A DCE controlled not ready was received by the reporting station during call establishment.

Alert ID Number		X'E98BC742' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2105'	X.21 communications/called node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'2201' X'F053'	X.21 network component Called DTE DCE controlled not ready during call estab.
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'ED79EE47'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Secondary Alert 31

Alert Condition:

A persistent DCE controlled not ready was received by the secondary station during call establishment. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'79B4DCE8'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'F054'	X.21 network component Persistent DCE CNR during call estab. (T6 exp.)
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

X.21 Peer-to-Peer Alert 31

Alert Condition:

A persistent DCE controlled not ready was received by the reporting station during call establishment.

Alert ID Number		X'91108AED'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'F054'	X.21 network component Persistent DCE CNR during call estab. (T6 exp.)
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 32

Alert Condition:

A DCE fault condition was received by the secondary station during call establishment. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'B5260D14' (note 1)
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2036'	DCE-DSE connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3512' X'F055'	The connection between the calling DCE and its DSE DCE fault condition during call establishment
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'5E74704E'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Peer-to-Peer Alert 32

Alert Condition:

A DCE fault condition was received by the reporting station during call establishment.

Alert ID Number		X'5D825B11'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2036'	DCE-DSE connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3512' X'F055'	The connection between the calling DCE and its DSE DCE fault condition during call establishment
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 33

Alert Condition:

A persistent DCE clear indication was received by the secondary station during data phase. This Alert is sent as a delayed Alert by the secondary station.

Alert ID Number		X'74F7FA31' [1]
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3311'	X.21 error — SNA secondary
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'F057'	X.21 network component Persistent DCE clear indication received in data phase (T6 exp)
Actions	X'3302' X'3105' X'32C0' X'82' SF X'82' SF	If problem continues to occur then do the following Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'49DA1D89'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.21 Peer-to-Peer Alert 33

Alert Condition:

A persistent DCE clear indication was received by the primary station during data phase.

Alert ID Number		X'9C53AC34'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2005'	X.21 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3520' X'F057'	X.21 network component Persistent DCE clear indication received in data phase (T6 exp)
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Secondary Alert 34

Alert Condition:

This a delayed Alert sent by the secondary station to indicate that the terminal control unit was reset.

Alert ID Number		X'C14B8A4F'
Alert Type	X'01'	Permanent (Delayed)
Alert Description	X'3313'	X.21 connection cleared
Probable Causes	X'7011'	Terminal control unit operator
User Causes	X'2310'	X.21 connection intentionally cleared by term. control operator
Actions	X'3121'	Contact terminal control unit operator
Install Causes	(none)	
Failure Causes	(none)	

X.21 Peer-to-Peer Alert 34

Alert Condition:

All available resources are inactive at the reporting station.

Alert ID Number		X'F72A9045'
Alert Type	X'01'	Permanent
Alert Description	X'7001'	Resource not active
Probable Causes	X'3381'	X.21 rotary group
User Causes	X'3381'	An op. deact. ports in rotary group used X.21 SHM
Actions	X'13A0' X'82' SF	Activate ports in rotary group associated with (Telephone Number)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

X.21 Peer-to-Peer Alert 35

Alert Condition:

A DCE clear indication was received by the primary station during data phase.

Alert ID Number		X'BE261D6D'
Alert Type	X'01'	Permanent
Alert Description	X'3310'	X.21 error
Probable Causes	X'2105'	X.21 communications/remote node
User Causes	X'2310'	Connection intentionally cleared by term. control unit operator
Actions	X'3121'	Contact terminal control unit operator
Install Causes	(none)	
Failure Causes	X'3520' X'F056'	X.21 network component DCE clear indication received during data phase
Actions	X'3105' X'32C0' X'82' SF X'82' SF	Contact X.21 network information service Report the following (Calling Telephone Number) (Telephone Number Called)
Additional SVs	X'52' SV X'01' SF X'06' SF X'05' SV	Link Connection Subsystem Configuration Data Port Address Modem LCS Link Station Attributes Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(link name) Type=X'F9' (LINK) Second resource below sender: Name=(remote CP name) Type=X'F4' (CP)

Alerts for X.25 Link Connections

This section defines the Alerts sent by X.25 nodes.

Packet Layer Control (PLC)

X.25 PLC Alert 1

Alert Condition:

A CLEAR_INDICATION packet containing a DCE-Originated cause code and a diagnostic code was received by the DTE.

Alert ID Number		X'B5B412E5' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2006' X'2200'	Packet Layer Control X.25 Communications X.25 Network Remote Node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20C1' X'82' SF X'82' SF X'2006' X'2200'	X.25 Communications Error — The following indication packet was received from the network (packet type and cause code) (diagnostic code) X.25 Communications Error Remote Node
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF X'3123'	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel) Contact remote DTE's operator
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'D484ED27'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.25 PLC Alert 2

Alert Condition:

A RESTART_INDICATION packet containing a DCE-Originated cause code and a diagnostic code was received by the DTE.

Alert ID Number		X'CDA515B8'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2006'	Packet Layer Control X.25 Communications X.25 Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20C1' X'82' SF X'82' SF	X.25 Communications Error — The following indication packet was received from the network (packet type and cause code) (diagnostic code)
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 PLC Alert 3

Alert Condition:

A RESET_REQUEST packet containing a DTE-Originated cause code and a diagnostic code was sent by the DTE.

Alert ID Number		X'D3A1B295' (note 1)
Alert Type	X'02'	Temporary
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2200' X'2006'	Packet Layer Control X.25 Communications Remote Node X.25 Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20C2' X'82' SF X'82' SF X'2200' X'2006'	X.25 Communications Error — The DTE sent the following request packet to the network (packet type and cause code) (diagnostic code) Remote Node X.25 Communications Error
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF X'3123'	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel) Contact remote DTE's operator
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'6A837F72'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.25 PLC Alert 4

Alert Condition:

A CLEAR_REQUEST packet containing a DTE-Originated cause code and a diagnostic code was sent by the DTE.

Alert ID Number		X'056A9521'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008'	Packet Layer Control X.25 Communications
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20C2' X'82' SF X'82' SF	X.25 Communications Error — The DTE sent the following request packet to the network (packet type and cause code) (diagnostic code)
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 PLC Alert 5

Alert Condition:

A RESTART_REQUEST packet containing a DTE-Originated cause code and a diagnostic code was sent by the DTE.

Alert ID Number		X'056A9521'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008'	Packet Layer Control X.25 Communications
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20C2' X'82' SF X'82' SF	X.25 Communications Error — The DTE sent the following request packet to the network (packet type and cause code) (diagnostic code)
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 PLC Alert 6

Alert Condition:

Time-limit T20 expired at the DTE prior to receipt of a RESTART_CONFIRMATION packet following transfer of a RESTART_REQUEST packet.

Alert ID Number		X'F50A02F0'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2006'	Packet Layer Control X.25 Communications X.25 Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20D1' X'82' SF X'82' SF X'82' SF X'2006'	No response from the X.25 network — (timer) expired (retry count) (timer setting) X.25 Communications Error
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 PLC Alert 7

Alert Condition:

Time-limit T22 expired at the DTE prior to receipt of a RESET_CONFIRMATION packet following transfer of a RESET_REQUEST packet.

Alert ID Number		X'F50A02F0'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2006'	Packet Layer Control X.25 Communications X.25 Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20D1' X'82' SF X'82' SF X'82' SF X'2006'	No response from the X.25 network — (timer) expired (retry count) (timer setting) X.25 Communications Error
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 PLC Alert 8

Alert Condition:

Time-limit T21 expired at the DTE prior to receipt of a CALL_CONNECTED or CLEAR_INDICATION packet following transfer of a CALL_REQUEST packet.

Alert ID Number		X'F50A02F0'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2006'	Packet Layer Control X.25 Communications X.25 Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20D1' X'82' SF X'82' SF X'82' SF X'2006'	No response from the X.25 network — (timer) expired (retry count) (timer setting) X.25 Communications Error
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 PLC Alert 9

Alert Condition:

Time-limit T23 expired at the DTE prior to receipt of a CLEAR_CONFIRMATION packet following transfer of a CLEAR_REQUEST packet.

Alert ID Number		X'F50A02F0'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2006'	Packet Layer Control X.25 Communications X.25 Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20D1' X'82' SF X'82' SF X'82' SF X'2006'	No response from the X.25 network — (timer) expired (retry count) (timer setting) X.25 Communications Error
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 PLC Alert 10

Alert Condition:

A packet level protocol violation, on the part of the PSDN access node, was detected by the DTE. A specific diagnostic code, indicating the source and the reason for the exception, has been reported to a higher layer function.

Alert ID Number		X'BA5D4659'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2006'	Packet Layer Control X.25 Communications X.25 Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'20B2' X'82' SF X'2006'	X.25 Protocol Violation Detected (diagnostic code) X.25 Communications Error
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 PLC Alert 11

Alert Condition:

A DIAGNOSTIC packet, indicating a protocol violation on the part of the DTE, was sent by the PSDN or received by the DTE, or both.

Alert ID Number		X'4C323FE5'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2050' X'2008' X'2006'	Packet Layer Control X.25 Communications X.25 Network
User Causes	(none)	
Install Causes	X'8000'	Configuration Error
Actions	X'1503'	Correct Configuration
Failure Causes	X'20C3' X'82' SF X'82' SF	X.25 Communications Error — The following diagnostic packet was received from the network (diagnostic code) (diagnostic explanation)
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

Link Access Protocol Balanced (LAPB)

X.25 LAPB Alert 1

Alert Condition:

The local station received a frame with an I-field which was too long and sent an FRMR.

Alert ID Number		X'07B1E788'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051' X'8003' X'3500'	Link Access Protocol Balanced Communication Configuration Communication Equipment
User Causes	(none)	
Install Causes	X'80C4' X'82' SF X'82' SF	Communication Configuration Error (configuration object/record) (configuration parameter)
Actions	X'1503'	Correct Configuration
Failure Causes	X'F023'	Received I-field exceeded maximum length
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 2

Alert Condition:

The local station received a frame with an invalid N(R) value and sent an FRMR.

Alert ID Number		X'C0E4E919'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051' X'3500'	Link Access Protocol Balanced Communication Equipment
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'F022'	Invalid N(R) received
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 3

Alert Condition:

The local station has retried a command frame the maximum number of times without receiving the appropiate response. The local station enters disconnected state immediately.

Alert ID Number		X'A596712C' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051' X'8003' X'3401' X'3541' X'3500'	Link Access Protocol Balanced Communication Configuration Local DCE Interface Cable Local DCE Communication Equipment
User Causes	(none)	
Install Causes	X'80C4' X'82' SF X'82' SF	Communication Configuration Error (configuration object/record) (configuration parameter)
Actions	X'1503'	Correct Configuration
Failure Causes	X'2006'	X.25 Communications Error
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'CEA222A9'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.

X.25 LAPB Alert 4

Alert Condition:

An unexpected DISC command frame was received during information transfer.

Alert ID Number		X'985806E2'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051' X'3500'	Link Access Protocol Balanced Communication Equipment
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006'	X.25 Communications Error
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 5

Alert Condition:

The local station sent SABM to initialize the link and received a DM frame.

Alert ID Number		X'E13004C9'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051' X'230B' X'3500'	Link Access Protocol Balanced Link Set Up Failure Communication Equipment
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006'	X.25 Communications Error
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 6

Alert Condition:

A FRMR frame was received during information transfer state. The W-bit was on in the FRMR indicating receipt of a frame from the local station which had an invalid or unknown control field.

Alert ID Number		X'00891F75'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051' X'3500'	Link Access Protocol Balanced Communication Equipment
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F010'	X.25 Communications Error Frame Reject Received: Invalid/unsupported command or response sent
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 7

Alert Condition:

A FRMR frame was received during information transfer state. The X-bit was on in the FRMR indicating receipt of a frame from the local station which had an I-field which was not permitted.

Alert ID Number		X'CF6F806D'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051'	Link Access Protocol Balanced
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F011'	X.25 Communications Error Frame Reject Received: I-field sent when not permitted
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 8

Alert Condition:

A FRMR frame was received during information transfer state. The Y-bit was on in the FRMR indicating receipt of a frame which had an oversized I-field.

Alert ID Number		X'F5E40347'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051'	Link Access Protocol Balanced
User Causes	(none)	
Install Causes	X'80C4' X'82' SF X'82' SF	Communication Configuration Error (configuration object/record) (configuration parameter)
Actions	X'1503'	Correct Configuration
Failure Causes	X'2006' X'F013'	X.25 Communications Error Frame Reject Received: Maximum I-field length exceeded
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 9

Alert Condition:

A FRMR frame was received during information transfer state. The Z-bit was on in the FRMR indicating receipt of a frame which had an invalid N(R) specified.

Alert ID Number		X'C22CA6B4'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051'	Link Access Protocol Balanced
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F012'	X.25 Communications Error Frame Reject Received: Invalid N(R) sent
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 10

Alert Condition:

The local station received a frame with an invalid or unknown control field and sent an FRMR.

Alert ID Number		X'1F9CF04A'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051'	Link Access Protocol Balanced
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F020'	X.25 Communications Error Invalid/unsupported command or response received
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

X.25 LAPB Alert 11

Alert Condition:

The local station received a frame which had an I-field which was not permitted and sent an FRMR.

Alert ID Number		X'3FAE0180'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2051'	Link Access Protocol Balanced
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F021' X'1021'	X.25 Communications Error I-field received when not permitted Communication Controller Control Program
Actions	X'3302' X'3107' X'32A0' X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (local DTE address)
Additional SVs	X'52' SV X'07' SF X'05' SV X'10' SF	LCS Configuration Data LCS Link Attributes Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(adapter name) Type=X'21' (adapter) Second resource below sender: Name=(port name) Type=X'3F' (port)

Logical Link Control (LLC)

Note: For X.25 LLC protocol, protocol data units (PDUs) are the basic elements of information that are exchanged between logical link stations. For QLLC, a PDU = LLU (logical link unit), while for ELLC, a PDU = LPDU (LLC protocol data unit). When a FRMR response is mentioned in the following Alerts, it refers to an error condition of a PDU that is not recoverable at the X.25 LLC layer, by retransmission of the identical PDU.

X.25 LLC Alert 1

Alert Condition:

The local station received a Protocol Data Unit (PDU) with an I-field which was too long and sent an FRMR.

Alert ID Number		X'6460D9A9'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052' X'8003' X'3500'	Logical Link Control Communication Configuration Communication Equipment
User Causes	(none)	
Install Causes	X'80C4' X'82' SF X'82' SF	Communication Configuration Error (configuration object/record) (configuration parameter)
Actions	X'1503'	Correct Configuration
Failure Causes	X'F023'	Received I-field exceeded maximum length
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 2

Alert Condition:

The local station received a PDU with an invalid N(R) value and sent an FRMR.

Note: This Alert applies only to ELLC.

Alert ID Number		X'CED07C9C'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052' X'3500'	Logical Link Control Communication Equipment
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'F022'	Invalid N(R) received
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 3

Alert Condition:

The local station has retried a command PDU the maximum number of times without receiving the appropiate response. The local station enters disconnected state immediately.

Alert ID Number		X'EAC7612A'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052' X'8003' X'2200'	Logical Link Control Communication Configuration Remote Node
User Causes	(none)	
Install Causes	X'80C4' X'82' SF X'82' SF	Communication Configuration Error (configuration object/record) (configuration parameter)
Actions	X'1503'	Correct Configuration
Failure Causes	X'2200'	Remote Node
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 4

Alert Condition:

A FRMR PDU was received during information transfer state. The W-bit was on in the FRMR indicating receipt of a PDU from the local station which had an invalid or unknown control field.

Alert ID Number		X'3DA4F8CD'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052' X'3500'	Logical Link Control Communication Equipment
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F010'	X.25 Communications Error Frame Reject Received: Invalid/unsupported command or response sent
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 5

Alert Condition:

A FRMR PDU was received during information transfer state. The X-bit was on in the FRMR indicating receipt of a PDU from the local station which had an invalid I-field.

Alert ID Number		X'C15B15E8'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052'	Logical Link Control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F011'	X.25 Communications Error Frame Reject Received: I-field sent when not permitted.
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 6

Alert Condition:

A FRMR PDU was received during information transfer state. The Y-bit was on in the FRMR indicating receipt of a PDU which had an oversized I-field.

Alert ID Number		X'C8C9E4FF'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052'	Logical Link Control
User Causes	(none)	
Install Causes	X'80C4' X'82' SF X'82' SF	Communication Configuration Error (configuration object/record) (configuration parameter)
Actions	X'1503'	Correct Configuration
Failure Causes	X'2006' X'F013'	X.25 Communications Error Frame Reject Received: Maximum I-field length exceeded
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 7

Alert Condition:

A FRMR PDU was received during information transfer state. The Z-bit was on in the FRMR indicating receipt of a PDU which had an invalid N(R) specified.

Note: This Alert applies only to ELLC.

Alert ID Number		X'CC183331'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052'	Logical Link Control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F012'	X.25 Communications Error Frame Reject Received: Invalid N(R) sent
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 8

Alert Condition:

The local station received a PDU with an invalid or unknown control field and sent an FRMR.

Alert ID Number		X'11A865CF'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052'	Logical Link Control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F020'	X.25 Communications Error Invalid/unsupported command or response received
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 9

Alert Condition:

The local station received a PDU with an invalid I-field and sent an FRMR.

Alert ID Number		X'0283E638'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052'	Logical Link Control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2006' X'F021' X'1021'	X.25 Communications Error I-field received when not permitted Communication Controller Control Program
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

X.25 LLC Alert 10

Alert Condition:

The local station received a Set_Mode command while it was in the opened state. For QLLC, the command being reported is Q_Set_Mode. For ELLC, it is LSABME.

Alert ID Number		X'04F61B82'
Alert Type	X'01'	Permanent
Alert Description	X'3320'	X.25 Error
Probable Causes	X'2052'	Logical Link Control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F02C'	Communications program in remote node LLC Set_Mode command received while in the opened state
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'F0A0' X'82' SF X'82' SF	If the problem continues to occur repeatedly then do the following Contact X.25 Network Information Service Report the following (DTE address called) (DTE address calling) (local DTE address) For (locally-initiated logical channel) or (remotely-initiated logical channel)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name=(port name) Type=X'3F' (port) Second resource below sender: Name=(SNA control point name) Type=X'F4' (control point)

ISDN Alerts

B- and D-Channel Names in ISDN Alerts

Names for ISDN B- and D-channels appear in two places in the ISDN Alerts that follow:

- The D-channel name appears in the Hierarchy Name List (X'10') subfield of the Hierarchy/Resource List (X'05') subvector.
- Both D-channel and B-channel names appear in the Associated Resources (X'11') subfield of the Hierarchy/Resource (X'05') subvector.

Because of the different formats for these two subfields, and the different roles they play at the Alert receiver, different forms of the channel names are used in the two of them.

Channel Names in the Hierarchy Name List (X'10') Subfield

Since names in the Hierarchy Name List subfield are limited to 8 characters each, there is no way to make them globally unique throughout a network. This does not present a problem, though, since a name from this subfield is always interpreted within the context of a hierarchy of names above it.

A sender thus makes the D-channel name in this subfield unique only within that one sender. The format of this name is determined by each Alert sender. One possible format is:

```
A<adapter number>P<port number>C<channel number>
```

e.g., A1P2C01 might identify adapter 1, port 2, channel 1 within the sender.

While it is not required, a sender might find it convenient to use the same convention for this D-channel name that it uses for the last element of the globally-unique channel names used in the Associated Resources subfield. These names are described in the next section.

Channel Names in the Associated Resources (X'11') Subfield

In order to allow for proper correlation of ISDN Alerts, names of the D- and B-channels associated with an Alert condition are included in the Associated Resources (X'11') subfield of the Hierarchy/Resource List (X'05') subvector within the Alert. Since these names are compared to each other without regard to their location in a hierarchy, the names themselves must be unique within the network.

To insure its uniqueness in the network, each channel name has the following form:

```
TTTT[MMM]SSSSSSSID
```

where:

- TTTT is the machine type from the first hardware product identifier in the Alert sender's PSID.
- MMM is the model number from the first hardware product identifier in the Alert sender's PSID; this element is omitted if there is no model number present in this product identifier.
- SSSSSSS is the serial number from the first hardware product identifier in the Alert sender's PSID.

- ID is a value that uniquely identifies a channel within an instance of an Alert sender. The format of this element is determined by each Alert sender. One possible format is:

  A<adapter number>P<port number>C<channel number>

The overall length of the channel name is limited to 56 characters.

ISDN Basic and Primary Rate Physical Layer Alerts

ISDN Physical Layer Alert 1

Alert Condition:

ISDN Adapter Lost Frame Alignment - This Alert is generated when the Loss of Frame Alignment (X'0001') counter has reached its threshold. This indicates that there is a synchronization problem between TE and NT, even though the synchronization was recovered, the channel capacity loss due to the problem is not acceptable. This Alert applies to both Basic and Primary Rate ISDN.

Alert ID Number		X'BBF58700'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3530' X'3310'	ISDN Network Component Local ISDN Adapter
User Causes	(none)	
Install Causes	X'3405'	Local communication cable not properly connected
Actions	X'0301'	Check cable and its connections
Failure Causes	X'3536' X'3310' X'40A0' X'82' SF	ISDN Network Termination Device Local ISDN Adapter (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 3)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 2

Alert Condition:

ISDN Adapter Lost Synchronization - This Alert is generated when the synchronization is lost between the TE and the NT. A permanent loss is declared when the alignment has not occurred in a specified time. This Alert applies to both Basic and Primary Rate ISDN.

Alert ID Number		X'55DF0F61'
Alert Type	X'01'	Permanent
Alert Description	X'3404'	ISDN Physical Layer error
Probable Causes	X'3530' X'3310'	ISDN Network Component Local ISDN Adapter
User Causes	(none)	
Install Causes	X'3405'	Local communication cable not properly connected
Actions	X'0301'	Check cable and its connections
Failure Causes	X'F06F' X'3530' X'3310'	Synchronization lost and not recovered ISDN Network Component Local ISDN Adapter
Actions	X'3301' X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists, then do the following: Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 2)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN Physical Layer Alert 3

Alert Condition:

Excessive Transmission Error Detected by NT1 for Basic ISDN - This Alert is generated when the Detected Access Transmission System Errors (DTSE-In, X'0002') counter has reached its threshold. This indicates that there are excessive link errors detected by the NT1 across the U interface.

Alert ID Number		X'2F24E652'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3462' X'3531'	Local DCE loop ISDN Network Termination Equipment (NT1)
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200E' X'3531' X'40A0' X'82' SF	Local DCE loop ISDN Network Termination Equipment (NT1) (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact ISDN network information service Report the following Telephone number (note 3) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 4

Alert Condition:

Excessive Transmission Errors Were Detected by the Network for Basic ISDN - This Alert is generated when the Detected Access Transmission System Errors (DTSE-Out, X'0003') counter has reached its threshold. This indicates that there are excessive link errors detected by the carrier across the U interface.

Alert ID Number		X'94E915B8'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3531' X'3462'	ISDN Network Termination Equipment (NT1) Local DCE loop
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3531' X'200E' X'40A0' X'82' SF	ISDN Network Termination Equipment (NT1) Local DCE loop (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3109' X'32C0' X'82' SF X'82' SF X'3106' X'32A0' X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Contact ISDN network information service Report the following Telephone number (note 3)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 5

Alert Condition:

NT1 power off - This Alert indicates that there has been a power loss in the NT1 - The ISDN Basic Rate Standard specifies that the NT1 notify the attaching DTE when it is losing power. This condition may be detected in some other manner for Primary Rate ISDN where an NT1 is used as an interface device. This Alert applies to both Basic and Primary Rate ISDN.

Alert ID Number		X'B349DD7C'
Alert Type	X'01'	Permanent
Alert Description	X'1411'	Power off detected
Probable Causes	X'3531'	ISDN Network Termination Equipment (NT1)
User Causes	X'2115'	Local NT1 power off
Actions	X'0200'	Check power
Install Causes	(none)	
Failure Causes	X'3531'	ISDN Network Termination Equipment (NT1)
Actions	X'3301' X'3109' X'32C0' X'82' SF X'82' SF X'3106' X'32A0' X'82' SF	If problem persists then do the following Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Contact ISDN network information service Report the following Telephone number (note 2)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN Physical Layer Alert 6

Alert Condition:

Received Signal Lost - This Alert indicates a problem in the U-interface because no signals are being received at the NT1 from the carrier. This condition may also be detected by DTE's that attach directly to the ISDN network interface. This Alert applies to both Basic and Primary Rate ISDN.

Alert ID Number		X'76190DF4'
Alert Type	X'01'	Permanent
Alert Description	X'3619'	No line signal
Probable Causes	X'3462' X'200A'	Local DCE loop ISDN Network
User Causes	(none)	
Install Causes	X'3405'	Local communication cable not properly connected
Actions	X'0305'	Check cable and its connections
Failure Causes	X'200E' X'200A'	Local DCE loop ISDN Network
Actions	X'3301' X'3106' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact ISDN network information service Report the following Adapter number Telephone number (note 2)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN Physical Layer Alert 7

Alert Condition:

Excessive Unintended Code Violation were Detected by the NT1 for Basic ISDN. This Alert is generated when the TE-Detected Code Violations (X'0004') counter has reached its threshold. This indicates that there are excessive link errors between the TE and the NT1.

Alert ID Number		X'1A08523C'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3310' X'3531'	Local ISDN adapter ISDN Network Termination Equipment (NT1)
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3310' X'3531' X'40A0' X'82' SF	Local ISDN adapter ISDN Network Termination Equipment (NT1) (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 3)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 8

Alert Condition:

Excessive Code Violation as Detected by TE for Basic ISDN. This Alert is generated when the NT-Detected Code Violations (X'0005') counter has reached its threshold. This indicates that there are excessive link errors between the TE and the NT1.

Alert ID Number		X'1FA96E3D'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3531' X'3310'	ISDN Network Termination Equipment (NT1) Local ISDN adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3531' X'3310' X'40A0' X'82' SF	ISDN Network Termination Equipment (NT1) Local ISDN adapter (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 3)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 9

Alert Condition:

Excessive Transmission Errors Were Detected by the TE for Primary ISDN. This condition indicates that excessive link errors were detected by the TE across the ISDN primary interface.

This Alert is generated for ISDN Primary Rate when the following counters used to detect transmission problems have reached their thresholds:

- CRC Errors Received (X'0006')
- Frame Loss Seconds Near-End (X'0038')
- Errored Seconds Near-End (X'003C')
- Bursty Errored Seconds Near-End (X'003E')
- Severely Errored Seconds Near-End (X'0040')
- Slip Seconds Near-End (X'0042').

This Alert may be used by Basic Rate ISDN devices that have a built-in NT1 function to report degradation indicated by the following counters:

- CRC Errors Received (X'0006')
- Errored Seconds Near-End (X'003C')
- Severely Errored Seconds Near-End (X'0040').

Alert ID Number		X'1104601D' (note 1 on page 5-214)
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'200A' X'3310'	ISDN Network Local ISDN adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'3310' X'40A0' X'82' SF	ISDN Network Local ISDN adapter (sf 82) threshold reached Counter (note 2 on page 5-214)
Actions	X'3301' X'2002' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact ISDN network information service Report the following Telephone number (note 4 on page 5-214) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 3 on page 5-214)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 3 on page 5-214)) Type = X'FA'(D-channel)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'A276395A'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The hexadecimal table index of the counter name.
3. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
4. The telephone number associated with the port.

ISDN Physical Layer Alert 10

Alert Condition:

Excessive Transmission Errors Were Detected by the carrier or network provider for Primary ISDN. This condition indicates that excessive link errors were detected by the network provider and signaled to the TE across the ISDN primary interface.

This Alert is generated when the following counters used to detect transmission problems reach their thresholds:

- CRC Errors Transmitted (X'0007')
- Frame Loss Seconds Far-End (X'0039')
- Errored Seconds Far-End (X'003D')
- Bursty Errored Seconds Far-End (X'003F')
- Severely Errored Seconds Far-End (X'0041')
- Slip Seconds Far-End (X'0043').

This Alert can be used by Basic Rate ISDN devices that have a built-in NT1 function to report degradation indicated by the following counters:

- CRC Errors Transmitted (X'0007')
- Errored Seconds Far-End (X'003D')
- Severely Errored Seconds Far-End (X'0041').

Alert ID Number		X'EEF3487E'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3310' X'200A'	Local ISDN adapter ISDN Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3310' X'200A' X'40A0' X'82' SF	Local ISDN adapter ISDN Network (sf 82) threshold reached Counter (note 1 on page 5-216)
Actions	X'3301' X'2002' X'3109' X'32C0' X'82' SF X'82' SF X'3106' X'32A0' X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Contact ISDN network information service Report the following Telephone number (note 3 on page 5-216)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2 on page 5-216)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2 on page 5-216)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 11

Alert Condition:

NT1 Activation Failure to Network - This Alert is generated when NT1 connection to the network could not be achieved. This Alert applies to Basic Rate ISDN but may also apply in situations where an NT1 is used for Primary Rate ISDN.

Alert ID Number		X'E5B91C0F'
Alert Type	X'01'	Permanent
Alert Description	X'3405'	ISDN Physical Layer Activation Error
Probable Causes	X'3462' X'3531'	Local DCE loop ISDN Network Termination Equipment (NT1)
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200E' X'3531'	Local DCE loop ISDN Network Termination Equipment (NT1)
Actions	X'1206' X'3301' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	Wait and retry If problem persists then do the following Contact ISDN network information service Report the following Telephone number (note 2) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN Physical Layer Alert 12

Alert Condition:

TE Activation Failure to NT1 - This Alert is generated when TE connection to the NT1 could not be achieved. This Alert applies to Basic Rate ISDN but may also apply in situations where an NT1 is used for Primary Rate ISDN.

Alert ID Number		X'64BBFE11'
Alert Type	X'01'	Permanent
Alert Description	X'3405'	ISDN Physical Layer Activation Error
Probable Causes	X'3531' X'3463'	ISDN Network Termination Equipment (NT1) Premises wiring
User Causes	(none)	
Install Causes	X'3400'	Cabling installed incorrectly
Actions	X'0301'	Check cable and its connection
Failure Causes	X'3531' X'3463'	ISDN Network Termination Equipment (NT1) Premises wiring
Actions	X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 2)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN Physical Layer Alert 13

Alert Condition:

TE Activation Failure to Network - This Alert is generated when TE connection to the network could not be achieved. This Alert applies to Basic Rate and Primary Rate ISDN in situations where the NT1 function is incorporated in the ISDN TE.

Alert ID Number		X'2520F7B1'
Alert Type	X'01'	Permanent
Alert Description	X'3405'	ISDN Physical Layer Activation Error
Probable Causes	X'3462' X'200A' X'3310'	Local DCE loop ISDN Network Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200E' X'200A' X'3310'	Local DCE loop ISDN Network Local ISDN Adapter
Actions	X'1206' X'3301' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	Wait and retry If problem persists then do the following Contact ISDN network information service Report the following Telephone number (note 2) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1 on page 5-217)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN Physical Layer Alert 14

Alert Condition:

ISDN Network Under Test - This Alert is generated when a TE has received a physical layer test indication from the network indicating communication is disrupted for maintenance purposes. This alert describes the type of maintenance activity being performed. This Alert applies to both Basic and Primary Rate ISDN.

The ISDN Basic Rate Standard specifies the SC1 subchannel message Disruptive Operation Indication (DOI) to indicate that the network is performing a test on the NT1.

In addition, the ISDN Basic Rate Standard specifies the following SC2 subchannel messages to indicate test conditions which are reported by this alert:

- X'0003': SC1-LB1N — NT1 Loopback toward network on B1 channel,
- X'0004': SC1-LB2N — NT1 Loopback toward network on B2 channel,
- X'0005': SC1-LBDN — NT1 Loopback toward network on B1, B2 and D channels.

For ISDN Primary Rate the condition of maintenance testing is observed by a two stage procedure. First a loopback signal, such as, Payload loopback, Line loopback, or Network loopback is received. This is followed by an AIS signal while the loopback is operational. This Alert should signal the type of loopback signal observed just prior to the AIS signal according to the following maintenance indicators:

- X'0006' - Primary Rate Payload Loopback Signal
- X'0007' - Primary Rate Ia Line Loopback Signal
- X'0008' - Primary Rate Ib Line Loopback Signal
- X'0009' - Primary Rate Network Loopback Signal

Alert ID Number		X'6FF70E23'
Alert Type	X'02'	Temporary
Alert Description	X'3404'	ISDN Physical Layer error
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2051' X'F1AA' X'82' SF	ISDN Network has initiated a test loop (sf 82) received Maintenance indicator (note 1 on page 5-221)
Actions	X'3301' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact ISDN network information service Report the following Telephone number (note 3 on page 5-221) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number

Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2 on page 5-221)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2 on page 5-221)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the maintenance indicator name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 15

Alert Condition:

ISDN Physical Layer Alarm - This Alert is generated when a TE has received an alarm from the network indicating a physical failure or an condition that prevents normal operation of the physical layer. This Alert applies to both Basic and Primary Rate ISDN. Alarm conditions are reported in several different ways in overhead maintenance channels.

The ISDN Basic Rate alarms reported are:

- X'0001': SC1-DOI — Disruptive Operation Indication

  Receipt indicates that the network is performing a maintenance operation on the NT1 device.

- X'0002': SC2-Rdea — Receiving Valid Deactivation

  Receipt indicates that the network intends to deactivate the interface on the network side of the NT1.

- X'0003': SC2-Ract — Receiving Valid Activation

  Receipt indicates that the network has temporarily lost transparency and is not ready of layer-2 communication over the D-channel.

- X'0004': SC2-NAI — Network Alarm Indication

  Receipt indicates that the equipment providing the local loop or access to the serving office has experienced a fault condition.

- X'0005': SC2-Rset — NT1 is in RESET State

  Receipt indicates that the NT1 has been placed in either RECEIVE RESET or FULL RESET state. In both RESET states the NT1 is not transmitting to the network but may respond to start-up signals from the network. However, in RECEIVE RESET the NT1 may not initiate transmission to the network while in FULL RESET the NT1 may initiate transmission to the network to request service.

The ISDN Primary Rate alarms reported are:

- X'0006': (RAI) - Remote Alarm Indication

  Receipt of the Remote Alarm Indication (RAI) alarm signal indicates a transmission fault has occured on the transmit path.

- X'0007': (AIS) - Alarm Indication Signal

  Receipt of Alarm Indication Signal (AIS) indicates a transmission fault has occured on the receive path.

Alert ID Number		X'2D73B6C8'
Alert Type	X'02'	Temporary
Alert Description	X'3404'	ISDN Physical Layer error
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'3530' X'F0BD' X'82' SF	ISDN communications error ISDN network component Transmission system (sf 82) received Alarm signal (note 1)
Actions	X'3301' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact ISDN network information service Report the following Telephone number (note 3) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the alarm name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 16

Alert Condition:

NT1 power failing - This Alert indicates that either the primary or secondary power supply to the NT1 has failed or is marginal.

The ISDN Basic Rate Standard specifies the use of the SC2 subchannel indicators messages: PSb or PPb, to indicate secondary or primary power supply degradation or failure respectively. If primary power is available but secondary or battery power has been lost or is marginal then PSb indicator may be received. If primary power has been lost or is marginal but secondary power is available then PPb may be received. This alert reports the maintenance indications of the power failure by the maintenance indicators as follows:

- X'0001' SC2-PSb — NT1 backup or battery power failure
- X'0002' SC2-PPb — NT1 primary source failure

Alert ID Number		X'D09DD57B'
Alert Type	X'02'	Temporary
Alert Description	X'1413'	An electrical power source lost
Probable Causes	X'3531'	ISDN Network Termination Equipment (NT1)
User Causes	(none)	
Actions	X'0200'	Check power
Install Causes	(none)	
Failure Causes	X'3531' X'F1AA' X'82' SF	ISDN Network Termination Equipment (NT1) (sf 82) received Maintenance indicator (note 1)
Actions	X'3301' X'3109' X'32C0' X'82' SF X'82' SF X'3106' X'32A0' X'82' SF	If problem persists then do the following Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Contact ISDN network information service Report the following Telephone number (note 3)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the maintenance indicator name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Physical Layer Alert 17

Alert Condition:

ISDN Adapter Hardware Failure - This Alert is generated when an ISDN Adapter has experienced a hardware failure. This Alert applies to both Primary Rate and Basic Rate ISDN.

Alert ID Number		X'F7768B3C'
Alert Type	X'01'	Permanent
Alert Description	X'1010'	Adapter Error
Probable Causes	X'3330' X'3310'	Adapter Hardware Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3330' X'3310'	Adapter Hardware Local ISDN Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Physical Layer Alert 18

Alert Condition:

ISDN Adapter Microcode Failure - This Alert is generated when an ISDN Adapter has experienced a microcode failure. This Alert applies to both Primary Rate and Basic Rate ISDN.

Alert ID Number		X'1E0A71BE'
Alert Type	X'01'	Permanent
Alert Description	X'1010'	Adapter Error
Probable Causes	X'3331' X'3310'	Adapter Microcode Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3331' X'3310'	Adapter Microcode Local ISDN Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Physical Layer Alert 19

Alert Condition:

ISDN Network Under Test - This Alert is generated when a TE has received a physical layer test indication from the network indicating that the Network is preforming maintenance tests on the NT1. This Alert applies to Basic Rate ISDN.

The ISDN Basic Rate Standard specifies the SC1 subchannel message Disruptive Operation Indication (DOI) to indicate that the network is performing a test on the NT1.

In addition, the ISDN Basic Rate Standard specifies the following SC2 subchannel message, CcrcN, to indicate a test conditions in which the network is intentionally sending corrupted CRC to the NT1 to test operation of the CRC detection mechanism in the NT1.

Alert ID Number		X'748E244C'
Alert Type	X'02'	Temporary
Alert Description	X'3404'	ISDN Physical Layer error
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2051' X'F005'	ISDN Network has initiated a test loop Network intentionally sending corrupted CRC to the NT1
Actions	X'3301' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact ISDN network information service Report the following Telephone number (note 2) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN Physical Layer Alert 20

Alert Condition:

ISDN Network Under Test - This Alert is generated when a TE has received a physical layer test indication from the network indicating the network is performing an maintenance test on the line termination (LT) component for the local loop. This Alert applies to Basic Rate ISDN.

The ISDN Basic Rate Standard specifies the SC1 subchannel message Disruptive Operation Indication (DOI) to indicate that the network is performing a test on the NT1.

In addition, the ISDN Basic Rate Standard specifies the following SC2 subchannel message, CcrcR, to indicate a test conditions in which the network has requested the NT1 to intentionally issue corrupted CRC in order to test the line termination (LT) network component.

Alert ID Number		X'79CD0295'
Alert Type	X'02'	Temporary
Alert Description	X'3404'	ISDN Physical Layer error
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2051' X'F006'	ISDN Network has initiated a test loop Network requesting the NT1 to intentionally send corrupted CRC
Actions	X'3301' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact ISDN network information service Report the following Telephone number (note 2) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN R-Interface Alerts

ISDN R-interface Alert 1

Alert Condition:

Excessive R-interface Errors - This Alert is generated when the R-interface TA Asynchronous Error (X'000E') counter or the R-interface TA Synchronous Error (X'000F') counter has reached its threshold. This indicates that there are excessive link errors between two R-interface stations.

Alert ID Number		X'248A30D8'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3225' X'2052' X'3309'	ISDN R-interface Logical Link Control Line Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3225' X'40A0' X'82' SF	ISDN R-interface (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'3109' X'32C0' X'82' SF X'82' SF	If problem persists, then do the following: Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel) Name = (B-channel (note 2)) Type = X'FB'(B-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Layer 2 B-Channel DLC Alerts

The X'04' Subvector in ISDN Hierarchies

The hierarchies described in this section assume an APPN Alert sender. More precisely, they assume that the Alert sender knows the CP name of the node at the remote end of the B-channel to which the Alert applies, so that it can include this name as the second resource below the Alert sender in the X'10' subfield of the Hierarchy/Resource List. If the Alert sender does not know this name, if it is sending the Alert over an SSCP-PU session, and if the SSCP to which the Alert is being sent also knows the name of the node at the remote end of the B-channel, then the hierarchy is handled as follows:

- The SNA local address of the remote node is sent in the SNA Address List (X'04') subvector; the SSCP will perform address-to-name translation for this address.
- The 8-character locally-unique name of the D-channel associated with the failing B-channel is sent as the only entry in the Hierarchy Name List (X'10') subfield of the Hierarchy/Resource List (X'05') subvector. Special processing is required in the Alert receiver to place this entry above that derived from the SNA Address List, since it would ordinarily appear below it.
- The two entries in the Associated Resources (X'11') subfield of the Hierarchy/Resource List subvector are sent as shown.

The only ISDN Alerts that require the SNA Address List are the B-channel DLC Alerts.

ISDN B-Channel DLC Alert 1

Alert Condition:

Excessive B-Channel Receive Errors - This Alert is generated when the CRC Errors Received (X'0006') counter has reached its threshold. This indicates that there are excessive link errors between two DLC stations across the B channel.

Alert ID Number		X'2040E8A6'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2056' X'200A' X'40A0' X'82' SF	B-Channel ISDN error ISDN communications error (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2010' X'2002' X'3106'	If problem persists then do the following: (review link detail data) (review most recent traffic statistics) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel) Name = (B-channel (note 2)) Type = X'FB'(B-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 2

Alert Condition:

Excessive B-Channel Link Station Errors - This Alert is generated when either of the following station error counters have reached their thresholds: the PDUs Retransmitted (X'0017') or the Receive Sequence Errors (X'0018'). This indicates that there are excessive link errors between two DLC stations across the B channel.

Alert ID Number		X'79931598'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'210A' X'200A'	ISDN Communications/remote node ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2056' X'200A' X'40A0' X'82' SF	ISDN Communications/remote node Communications program in remote node B-Channel ISDN error ISDN communications error (sf 82) threshold reached Counter (note 1 on page 5-233)
Actions	X'3301' X'2010' X'2002' X'3106' X'3122'	If problem persists then do the following: (review link detail data) (review most recent traffic statistics) Contact ISDN network information service Contact called DTE's operator
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2 on page 5-233)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 2 on page 5-233)) Type = X'FA'(D-channel) Name = (B-channel (note 2 on page 5-233)) Type = X'FB'(B-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 3

Alert Condition:

Excessive B-Channel Invalid Frame Errors - This Alert is generated when the count of a type of invalid frame on the B-Channel has reached the assigned threshold. The invalid frame category includes the following: Short Frames Received (X'000B'), Misaddressed Frames Received (X'0012'), Unbounded Frames Received (X'0013'), Non-Integral Frames Received (X'0014'), Aborted Frames Received (X'0010'), Aborted Frames Transmitted (X'0011'), and the summary counter Badly Formed Frames (X'0044'). This indicates either that there are excessive link errors between two DLC stations across the B-Channel, or that the remote node is failing.

Alert ID Number		X'A77C91CB'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'210A' X'200A'	ISDN Communications/remote node ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3311' X'200A' X'40A0' X'82' SF	Remote ISDN Adapter ISDN communications error (sf 82) threshold reached Counter (note 1 on page 5-235)
Actions	X'3301' X'2010' X'2002' X'3106' X'3122'	If problem persists then do the following: (review link detail data) (review most recent traffic statistics) Contact ISDN network information service Contact called DTE's operator
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2 on page 5-235)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 2 on page 5-235)) Type = X'FA'(D-channel) Name = (B-channel (note 2 on page 5-235)) Type = X'FB'(B-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 4

Alert Condition:

ISDN Adapter Buffer Overrun/Underrun - Either the Buffer Overrun (X'000C') or Buffer Underrun (X'000D') counter has reached its threshold.

Alert ID Number		X'AD564CF0'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3310' X'3222'	Local ISDN adapter ISDN adapter interface
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3310' X'40A0' X'82' SF	Local ISDN adapter (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists, then do the following: (review most recent traffic statistics) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 3)
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel) Name = (B-channel (note 2)) Type = X'FB'(B-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN B-Channel DLC Alert 5

Alert Condition:

An ISDN Logical Link Has Been Lost - The local link station inactivity timer or acknowledgement timer has expired, causing the remote station to be polled. The remote station does not respond to the poll.

Alert ID Number		X'9C8449A0'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F019' X'F017'	ISDN communications/remote node Communications program in remote node Logical link control Inactivity timer expired Poll count exhausted
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network

Additional SVs	X'52' SV	LCS Configuration Data
	X'01' SF	Port Address
	X'04' SF	Local Device Address
	X'06' SF	LCS Link Station Attributes
	X'07' SF	LCS Link Attributes
	X'09' SF	Remote Telephone Number
	X'0A' SF	Local Telephone Number
	X'0B' SF	Adapter Number
	X'0C' SF	Channel Number
	X'8C' SV	Link station data
	X'01' SF	Current n(s)/n(r) counts
	X'02' SF	Outstanding frame count
	X'03' SF	Last Data Link control field received
	X'04' SF	Last Data Link control field sent
	X'05' SF	Sequence number modulus
	X'06' SF	Link station state
	X'07' SF	Data Link reply timer expiration count
	X'08' SF	Last received n(r) count
	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List
		First resource below sender
		Name = (D-channel (note 1 on page 5-238))
		Type = X'FA'(D-channel)
		Second resource below sender
		Name = (adjacent node)
		Type = X'F4'(CP)
	X'11' SF	Associated Resources
		Name = (D-channel (note 1 on page 5-238))
		Type = X'FA'(D-channel)
		Name = (B-channel (note 1 on page 5-238))
		Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 6

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent a Disconnect Mode (DM) response to the local link station.

Alert ID Number		X'3828C45A'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F01A'	ISDN communications/remote node Communications program in remote node Logical link control DM received
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-240)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-240)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-240)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 7

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote station sent a SABME command to the local link station which was already initialized.

Alert ID Number		X'0D245F3E'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F016'	ISDN communications/remote node Communications program in remote node Logical link control SABME received while in ABME
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-242)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-242)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-242)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 8

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the local link station sent an invalid or unsupported command or response to the remote link station. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'1179CD4A'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'1022' X'2052'	Communications program Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'2055' X'F010'	Communications program Logical link control Frame reject received: invalid/unsupported command or response sent
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-244)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-244)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-244)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 9

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the local link station sent an I-field when not permitted to the remote link station. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'15B8D0FD'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'1022' X'2052'	Communications program Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'2055' X'F011'	Communications program Logical link control Frame reject received: I field sent when not permitted
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-246)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-246)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-246)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 10

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the local link station sent a frame with an invalid N(r). This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'18FBF624'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'1022' X'2052'	Communications program Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'2055' X'F012'	Communications program Logical link control Frame reject received: invalid N(r) sent
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-248)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-248)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-248)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 11

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the local link station sent a frame with an I-field that was too long. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'1C3AEB93'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'1022' X'2052'	Communications program Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'2055' X'F013'	Communications program Logical link control Frame reject received: maximum I-field length exceeded
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adpater Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-250)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-250)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-250)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 12

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent an invalid or unsupported command or response to the local link station. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'C3907F1C'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F020'	ISDN communications/remote node Communications program in remote node Logical link control Invalid/unsupported command or response received
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-252)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-252)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-252)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 13

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent an I-field when not permitted to the local link station. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'C75162AB'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F021'	ISDN communications/remote node Communications program in remote node Logical link control I-field received when not permitted
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-254)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-254)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-254)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 14

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent a frame with an invalid N(r). This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'CA124472'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F022'	ISDN communications/remote node Communications program in remote node Logical link control Invalid N(r) received
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-256)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-256)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-256)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 15

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent a frame with an I-field that was too long. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'CED359C5'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F023'	ISDN communications/remote node Communications program in remote node Logical link control Received I-field exceeded maximum length
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1 on page 5-258)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1 on page 5-258)) Type = X'FA'(D-channel) Name = (B-channel (note 1 on page 5-258)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 16

Alert Condition:

Supporting D-channel Failure - This Alert is generated when a D-channel has failed and as a result the associated B-channels have failed. The logical configuration of the B-channels in the alert sender have taken place but the link connections may or not have been established. This alert applies to both Basic Rate and Primary Rate ISDN.

Alert ID Number		X'0FBD32FA'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'352F' X'210A' X'200A'	ISDN TE-NT connection ISDN communications/remote node ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'352F' X'2057' X'210A'	ISDN TE-NT connection D-Channel ISDN error ISDN communications/remote node
Actions	X'1305' X'3301' X'3106' X'32A0' X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	Reactivate B-channel resource If problem persists then do the following Contact ISDN network information service Report the following Telephone number (note 2) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel) Name = (B-channel (note 1)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN B-Channel DLC Alert 17

Alert Condition:

An ISDN logical link has been lost - This Alert is generated when the ISDN Network unexpectedly disconnects the ISDN call on the D-channel thereby dropping the B-channel and the established logical link connection(s). This situation occurs anytime the D-channel signaling procedures receive a disconnection message before the B-channel resources have been deactivated.

Alert ID Number		X'1C130D13'
Alert Type	X'01'	Permanent
Alert Description	X'3407'	ISDN call terminated unexpectedly
Probable Causes	X'200A' X'210A'	ISDN network ISDN communications/remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'210A' X'1023'	ISDN network ISDN communications/remote node ISDN communications program in remote node
Actions	X'1204' X'3301' X'3106' X'32A0' X'82' SF X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	Attempt to reestablish the connection If problem persists then do the following Contact ISDN network information service Report the following Telephone number (note 2) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Call Progress Signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel) Name = (B-channel (note 1)) Type = X'FB'(B-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN B-Channel DLC Alert 18

Alert Condition:

ISDN Logical Link Has Been Lost - This Alert is generated when an ISDN Adapter hardware failure has caused the Data Link layer processes that were supported by the Adapter to fail.

Alert ID Number		X'F777B55F'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'3330' X'3310'	Adapter Hardware Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3330' X'3310'	Adapter Hardware Local ISDN Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number
	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel) Name = (B-channel (note 1)) Type = X'FB'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN B-Channel DLC Alert 19

Alert Condition:

ISDN Logical Link Has Been Lost - This Alert is generated when an ISDN Adapter microcode failure has caused the Data Link layer processes that were supported by the Adapter to fail.

Alert ID Number		X'1E0B4FDD'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	B-Channel ISDN error
Probable Causes	X'3331' X'3310'	Adapter Microcode Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3331' X'3310'	Adapter Microcode Local ISDN Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number
	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel) Name = (B-channel (note 1)) Type = X'FB'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Layer 2 D-Channel LAPD Alerts

The D channel LAPD Alerts are for communication problems between the end-user and the ISDN Network Service provider and not for end-to-end problem reporting.

ISDN D-Channel LAPD Alert 1

Alert Condition:

Excessive D-Channel Receive Errors - This Alert is generated when the CRC Errors Received (X'0006') counter has reached its threshold. This indicates that there are excessive link errors between two DLC stations across the D channel.

Alert ID Number		X'C506D595'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3529'	ISDN TE-NT connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2057' X'3529' X'200E' X'40A0' X'82' SF	D-Channel ISDN error ISDN TE-NT connection Local DCE loop (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'2010' X'3106'	If problem persists then do the following: (review link detail data) (review most recent traffic statistics) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 2

Alert Condition:

Excessive D-Channel Link Station Errors - This Alert is generated when either of the following station error counters have reached their thresholds: the PDUs Retransmitted (X'0017'), or the Received Sequence Errors (X'0018'). This indicates that there are an excessive link errors between two DLC stations across the D channel.

Alert ID Number		X'1BBEA353'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'210A' X'3529'	ISDN Communications/remote node ISDN TE-NT connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2057' X'3529' X'200E' X'40A0' X'82' SF	ISDN Communications/remote node Communications program in remote node D-Channel ISDN error ISDN TE-NT connection Local DCE loop (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2010' X'2002' X'3106'	If problem persists then do the following: (review link detail data) (review most recent traffic statistics) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 3

Alert Condition:

Excessive D-Channel Invalid Frame Errors - This Alert is generated when the count of a type of invalid frame on the D-Channel has reached the assigned threshold. The invalid frame category includes the following: Short Frames Received (X'000B'), Misaddressed Frames Received (X'0012'), Unbounded Frames Received (X'0013'), Non-Integral Frames Received (X'0014'), Aborted Frames Received (X'0010'), Aborted Frames Transmitted (X'0011'), and. the summary counter Badly Formed Frames (X'0044'). This indicates that either there are excessive link errors between two DLC stations across the D-Channel or the remote node is failing.

Alert ID Number		X'AD6607B6'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'210A' X'3529'	ISDN Communications/remote node ISDN TE-NT connection
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3311' X'3529' X'40A0' X'82' SF	Remote ISDN Adapter ISDN TE-NT connection (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2010' X'2002' X'3106'	If problem persists then do the following: (review link detail data) (review most recent traffic statistics) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 4

Alert Condition:

ISDN Adapter Buffer Overrun/Underrun - Either the Buffer Overrun (X'000C') or the Buffer Underrun (X'000D') counter has exceeded its threshold.

Alert ID Number		X'AD564CF0'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'3310' X'3222'	Local ISDN adapter ISDN adapter interface
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3310' X'40A0' X'82' SF	Local ISDN adapter (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists, then do the following: (review most recent traffic statistics) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 3)
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN D-Channel LAPD Alert 5

Alert Condition:

An ISDN Logical Link Has Been Lost - The local link station inactivity timer or acknowledgement timer has expired, causing the remote station to be polled. The remote station does not respond to the poll.

Alert ID Number		X'965033D0'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F019' X'F017'	ISDN communications/remote node Communications program in remote node Logical link control Inactivity timer expired Poll count exhausted
Actions	X'1204' X'3301' X'2010' X'3106'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 6

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent a Disconnect Mode (DM) response to the local link station.

Alert ID Number		X'72238E39'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F01A'	ISDN communications/remote node Communications program in remote node Logical link control DM received
Actions	X'1204' X'3301' X'2010' X'3106'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 7

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote station sent a SABME command to the local link station which was already initialized.

Alert ID Number		X'472F155D'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F016'	ISDN communications/remote node Communications program in remote node Logical link control SABME received while in ABME
Actions	X'1204' X'3301' X'2010' X'3106'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 8

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the local link station sent an invalid or unsupported command or response to the remote link station. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'290C9EAD'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'1022' X'2052'	Communications program Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'2055' X'F010'	Communications program Logical link control Frame reject received: invalid/unsupported command or response sent
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 9

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the local link station sent an I-field when not permitted to the remote link station. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'2DCD831A'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'1022' X'2052'	Communications program Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'2055' X'F011'	Communications program Logical link control Frame reject received: I field sent when not permitted
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 10

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the local link station sent a frame with an invalid N(r). This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'208EA5C3'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'1022' X'2052'	Communications program Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'2055' X'F012'	Communications program Logical link control Frame reject received: invalid N(r) sent
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 11

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the local link station sent a frame with an I-field that was too long. This resulted in the remote link station returning a Frame Reject response.

Alert ID Number		X'244FB874'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'1022' X'2052'	Communications program Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'2055' X'F013'	Communications program Logical link control Frame reject received: maximum I-field length exceeded
Actions	X'1204' X'3301' X'2010' X'3109'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact personnel responsible for connection to ISDN network
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 12

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent an invalid or unsupported command or response to the local link station. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'899B357F'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F020'	ISDN communications/remote node Communications program in remote node Logical link control Invalid/unsupported command or response received
Actions	X'1204' X'3301' X'2010' X'3106'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 13

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent an I-field when not permitted to the local link station. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'8D5A28C8'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F021'	ISDN communications/remote node Communications program in remote node Logical link control I-field received when not permitted
Actions	X'1204' X'3301' X'2010' X'3106'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 14

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent a frame with an invalid N(r). This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'80190E11'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F022'	ISDN communications/remote node Communications program in remote node Logical link control Invalid N(r) received
Actions	X'1204' X'3301' X'2010' X'3106'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 15

Alert Condition:

An ISDN Logical Link Has Been Lost - This Alert indicates that the remote link station sent a frame with an I-field that was too long. This resulted in the local link station returning a Frame Reject response.

Alert ID Number		X'84D813A6'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'210A' X'1023' X'2052'	ISDN communications/remote node Communications program in remote node Logical link control
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'210A' X'1023' X'2055' X'F023'	ISDN communications/remote node Communications program in remote node Logical link control Received I-field exceeded maximum length
Actions	X'1204' X'3301' X'2010' X'3106'	Attempt to reestablish the connection If problem persists then do the following (review link detail data) Contact ISDN network information service
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF X'8C' SV X'01' SF X'02' SF X'03' SF X'04' SF X'05' SF X'06' SF X'07' SF X'08' SF X'05' SV X'10' SF X'11' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number Link station data Current n(s)/n(r) counts Outstanding frame count Last Data Link control field received Last Data Link control field sent Sequence number modulus Link station state Data Link reply timer expiration count Last received n(r) count Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 16

Alert Condition:

TEI Assignment Failure - This Alert is generated when the attempt to request a Terminal Equipment Identifier from the network has failed.

Alert ID Number		X'BE1F4058'
Alert Type	X'01'	Permanent
Alert Description	X'3401'	D-Channel ISDN error
Probable Causes	X'230B' X'3222' X'200A'	Link setup failure ISDN adapter interface ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'352F' X'200A' X'2055' X'230B'	ISDN TE-NT connection ISDN communications error Logical link control Terminal Equipment Identifier (TEI) assignment
Actions	X'1204' X'3301' X'3109' X'32D0' X'82' SF X'82' SF X'82' SF X'3106' X'32A0' X'82' SF	Attempt to reestablish the connection If problem persists, then do the following: Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 2) Contact ISDN network information service Report the following Telephone number (note 2)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
2. The telephone number associated with the port.

ISDN D-Channel LAPD Alert 17

Alert Condition:

Primary D-channel Failure, Backup D-channel Activated - This Alert is generated when a D-channel has failed but a Backup D-channel has been activated to carry the signaling load. The Backup D-channel number and location is determined by agreement with ISDN network provider at service subscription time. No B-channels should be affected by this procedure. Returning the primary D-channel to operation requires coordination with the network provider. This alert applies to Primary Rate ISDN.

Alert ID Number		X'8CC035A5' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3402'	D-Channel ISDN error
Probable Causes	X'352F' X'200A'	ISDN TE-NT connection ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'352F' X'2057' X'200A'	ISDN TE-NT connection D-Channel ISDN error ISDN network
Actions	X'0163' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Verify backup D-channel operation Contact ISDN network information service Report the following Telephone number (note 4) D-channel number (note 2) Backup D-channel number (note 2)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 3)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 3)) Type = X'FA'(D-channel)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'B9F1A620'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The D-channel or Backup D-channel number assigned at subscription time.
3. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
4. The telephone number associated with the port.

ISDN D-Channel LAPD Alert 18

Alert Condition:

ISDN Logical Link Has Been Lost - This Alert is generated when an ISDN Adapter hardware failure has caused the Data Link layer processes that were supported by the Adapter to fail.

Alert ID Number		X'F777B55F'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	D-Channel ISDN error
Probable Causes	X'3330' X'3310'	Adapter Hardware Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3330' X'3310'	Adapter Hardware Local ISDN Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number
	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN D-Channel LAPD Alert 19

Alert Condition:

ISDN Logical Link Has Been Lost - This Alert is generated when an ISDN Adapter microcode failure has caused the Data Link layer processes that were supported by the Adapter to fail.

Alert ID Number		X'1E0B4FDD'
Alert Type	X'01'	Permanent
Alert Description	X'3402'	D-Channel ISDN error
Probable Causes	X'3331' X'3310'	Adapter Microcode Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3331' X'3310'	Adapter Microcode Local ISDN Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'0A' SF X'0B' SF X'0C' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Local Telephone Number Adapter Number Channel Number
	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Layer 3 Q.931 Call Control Alerts

ISDN Q.931 Alert 1

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to cause code number 1, unassigned number. This cause indicates that the destination requested by the calling user cannot be reached because the number is not presently assigned.
- A call has been rejected due to cause code number 28, invalid number format(address incomplete). This cause indicates that the called user can not be reached because the called party number is not a valid format or is not complete.

Alert ID Number		X'50350202'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2304'	Incorrect number called
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'3122' X'0103' X'1204'	Contact called DTE's operator Verify telephone number Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'200A' X'2307'	ISDN communications error Called number outside numbering plan or unknown by network
Actions	X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 2

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to cause code number 2, No route to specific transit network. This cause indicates that the equipment sending the cause has received a request to route the call through a particular transit network which it does not recognize, either the transit network does not exist or while it does, it does not serve the equipment sending this cause.
- A call has been rejected due to cause code number 3, No route to destination. This cause indicates that the called user can not be reached because the network through which the call has been routed does not serve the destination desired.
- A call has been rejected due to cause code number 91, invalid transit network selection. This cause indicates that a transit network identification was received which is of an incorrect format.

Alert ID Number		X'B06E9FB3'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2307' X'2311'	Invalid request Service unavailable or not supported
User Causes	X'2307' X'F001'	Incorrect parameter specified Invalid transit network routing selected
Actions	X'3122' X'1512' X'1204'	Contact called DTE's operator Change call setup parameters Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'2311'	Service not available or not supported
Actions	X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 3

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to cause code number 6, channel unacceptable. This cause indicates that the channel most recently identified is not acceptable to the sender for use in this call.
- A call has been rejected due to resource unavailable, the cause code received is number 44, requested circuit/channel not available. This cause indicates that the circuit or channel requested by the user can not be provided by the other side of the interface.
- A call has been rejected due to cause code number 66, channel type not implemented. This cause indicates that the equipment generating this cause does not support the channel type requested.
- A call has been rejected due to cause code received is number 82, identified channel does not exist. This cause indicates that the equipment sending this cause has received a request to use a channel not activated on the interface for a call.

Alert ID Number		X'61972780'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2307' X'2311'	Invalid Request Service unavailable or not supported
User Causes	X'2307' X'F002'	Incorrect parameter specified Channel request invalid
Actions	X'1512' X'1204'	Change call setup parameters Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'2311'	Service unavailable or not supported
Actions	X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 4

Alert Condition:

This Alert is generated as a result of a call that has been rejected due to cause code number 17, user busy. This cause indicates that the called user does not have the ability to accept another call.

Alert ID Number		X'E4D34AA2'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2301'	Called number busy
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'3122' X'0103' X'1204'	Contact called DTE's operator Verify telephone number Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'2201' X'200A'	Called DTE ISDN communications error
Actions	X'1206' X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Wait and retry If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 5

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to cause code number 18, no user responding. This cause indicates that the called user does not respond to a call establishment message with either an alerting or connection indication within the prescribed period of time.
- A call has been rejected due to cause code number 19, user alerting, no answer. This cause indicates that the called user has provided an alerting indication but has not provided a connect indication within the prescribed period of time.

Alert ID Number		X'CC48E2E7'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2300'	Connection not established
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'3122' X'0103' X'1204'	Contact called DTE's operator Verify telephone number Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'2310' X'200A'	Called DTE not responding ISDN communications error
Actions	X'1206' X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Wait and retry If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 6

Alert Condition:

This Alert is generated as a result of a call that has been rejected due to cause code number 21, call rejected. This cause indicates that the equipment sending this cause does not wish to accept the call, although it could have accepted the call because the equipment sending this cause is neither busy nor incompatible.

Alert ID Number		X'D865FCB3'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2300'	Connection not established
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'3132' X'0103' X'1204'	Contact called DTE's operator Verify telephone number Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'230C' X'200A'	Call rejected by the called DTE ISDN communications error
Actions	X'1206' X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Wait and retry If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 7

Alert Condition:

This Alert is generated as a result of a call that has been rejected due to cause code number 22, number changed. This cause indicates that the called number is no longer assigned. The new number is included in the diagnostic field.

Alert ID Number		X'8ED0D26D'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2306'	Changed number
User Causes	X'2306'	New telephone number assigned to called DTE
Actions	X'13A3' X'82' SF	Repeat call with (sf 82) new number
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 8

Alert Condition:

This Alert is generated as a result of a call that has been rejected due to cause code number 26, non-selected user clearing. This cause indicates that the user has not been awarded the incoming call.

Alert ID Number		X'2534BDF0'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'200A' X'2201'	ISDN network Called DTE
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'3122' X'0103' X'1204'	Contact called DTE's operator Verify telephone number Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'200A' X'2201'	ISDN communications error Called DTE
Actions	X'1206' X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Wait and retry If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 9

Alert Condition:

This Alert is generated as a result of a call that has been rejected due to cause code number 27, destination out of order. This cause indicates that the destination can not be reached because the interface to the destination is not functioning correctly such that the signalling message was unable to be delivered to the destination. This could be a physical layer or data link layer failure in the destination.

Alert ID Number		X'85699B16'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2201' X'2303'	Called DTE Called number out of order
User Causes	X'2304'	Incorrect telephone number specified
Actions	X'3122' X'0103' X'1204'	Contact called DTE's operator Verify telephone number Attempt to reestablish the connection
Install Causes	X'3406'	Remote telecommunication cable not properly connected
Actions	X'0302'	Check cables and their connections
Failure Causes	X'2201' X'3302'	Called DTE Communications adapter
Actions	X'3109' X'32C0' X'82' SF X'82' SF X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Contact personnel responsible for connection to ISDN network Report the following Telephone number called Call progress signal Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 10

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to resource unavailable, the cause code received is number 34, no circuit/channel available. This cause indicates that there is no appropriate circuit/channel presently available to handle the call.
- A call has been rejected/terminated due to resource unavailable, the cause code received is number 41, temporary failure. This cause indicates that the network is not functioning correctly and that the condition is not likely to last a long period of time. User may wish to try another call attempt almost immediately.
- A call has been rejected due to resource unavailable, the cause code received is number 47, resource unavailable, unspecified. This cause indicates a resource unavailable event when no other cause in the resource unavailable class applies.

Alert ID Number		X'21DFF757'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'3534'	ISDN communications error Temporary lack of resources in the ISDN network
Actions	X'1206' X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Wait and retry If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 11

Alert Condition:

This Alert is generated as a result of a call that has been rejected due to cause code number 38, network out of order. This cause indicates that the network is not functioning correctly and that the condition is likely to last a relatively long period of time.

Alert ID Number		X'251EEAE0'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'3535'	ISDN communications error Long-term lack of resources in the ISDN network
Actions	X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 12

Alert Condition:

This Alert is generated as a result of a call that has been rejected due to cause code number 42, switching equipment congestion. This cause indicates that the switching equipment generating this cause is experiencing a period of high traffic.

Alert ID Number		X'C5EC0B8E'
Alert Type	X'01'	Permanent
Alert Description	X'5001'	Network congestion
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'3534'	ISDN communications error Temporary lack of resources in the ISDN network
Actions	X'1206' X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Wait and retry If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 13

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to cause code number 29, facility rejected. This cause indicates that a facility requested by the user cannot be provided by the network.
- A call has been rejected due to cause code number 50, invalid facility. This cause indicates that a facility requested by the user is invalid.

Alert ID Number		X'6CD51756'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'200A' X'2307'	ISDN network Invalid request
User Causes	X'2315'	Facility parameter invalid or not supported
Actions	X'1512' X'1204'	Change call setup parameters Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'200A' X'2311'	ISDN communications error Service not available or not supported
Actions	X'3106' X'32D0' X'82' SF X'82' SF X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal Contact personnel responsible for connection to ISDN network Report the following Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 14

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to cause code number 57, bearer capability not authorized. This cause indicates that the user has requested a bearer capability which is implemented by the equipment that generated this cause, but the user is not authorized to use it.
- A call has been rejected due to service/option not available, the cause code received is number 58, bearer capability not presently available. This cause indicates that the user has requested a bearer capability which is implemented by the equipment generated this cause but the user is not available at this time.
- A call has been rejected due to service/option not available, the cause code received is number 63, service/option not available, unspecified. This cause indicates that a service or option is not available but no other cause in the service/option not available class applies.
- A call has been rejected due to service/option not implemented, the cause code received is number 65, bearer capability not implemented. This cause indicates that the user has requested a bearer capability which is not implemented by the equipment generated this cause.
- A call has been rejected due to service/option not implemented, the cause code received is number 70, only restricted digital information bearer capability is available. This cause indicates that the user has requested an unrestricted bearer service but that the equipment sending this cause does only supports the restricted version of the requested bearer capability.
- A call has been rejected due to service/option not implemented, the cause code received is number 79, service/option not implemented. This cause indicates that a service/option not implemented event only when no other cause in the service/option not implemented class applies.

Alert ID Number		X'3385EA5E'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2307'	Invalid request
User Causes	X'230D' X'2308'	Service or Subscription parameter error Calling DTE does not subscribe to this facility
Actions	X'1512' X'1204'	Change call setup parameters Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'2311'	Service not available or not supported
Actions	X'3106' X'32D0' X'82' SF X'82' SF X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal Contact personnel responsible for connection to ISDN network Report the following Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 15

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to cause code number 81, invalid call reference value. This cause indicates that the equipment sending this cause has received a message with a call reference which is not currently in use on the user network interface.
- A call has been rejected due to cause code number 83, a suspended call exist, but this call identity does not. This cause indicates that a call resume has been attempted with a call identity which differs from that is in use for any presently suspended call(s).
- A call has been rejected due to cause code number 84, call identity in use. This cause indicates that a call suspend request contained a call identity which is already in use for a suspended call for another suspended call.
- A call has been rejected due to cause code number 85, no call suspended. This cause indicates that a call resume request has been received and it contained a call identity which does not identify any suspended call .
- A call has been rejected due to cause code number 86, call having the requested call identity that has been cleared. This cause indicates that a call resume request contained a call identity which once indicated a suspended call; however, that suspended call was cleared while suspended.

Alert ID Number		X'61A14221'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2307'	Invalid request
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2312'	Call reference number error
Actions	X'1204' X'3302' X'3106' X'32D0' X'82' SF X'82' SF X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	Attempt to reestablish the connection If problem continues to occur repeatedly then do the following Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal Contact personnel responsible for connection to ISDN network Report the following Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 16

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- A call has been rejected due to cause code number 95, invalid message, unspecified. This cause indicates that an invalid message event when no other cause in the invalid message class applies.
- A call that has been rejected due to cause code number 96, mandatory information element is missing. This cause indicates that the equipment sending this cause has received a message which is missing an information element which must be present before that message can be processed.
- A call has been rejected due to cause code number 97, message type non-existent or not implemented. This cause indicates that the equipment sending this cause has received a message with a message type it does not recognize either it is not defined or not implemented.
- A call has been rejected/terminated due to protocol error class, the cause code received is number 98, message type not compatible with call state or message type non-existent or not implemented. This cause indicates that the equipment sending this cause has received a message such that the procedures do not indicate that this is a permissible message to receive while in the call state.
- A call has been rejected/terminated due to protocol error class, the cause code received is number 99, information element non-existent or not implemented. This cause indicates that the equipment sending this cause has received a message which includes information element not recognized because the information element identifier is not defined or it is defined but not implemented by the equipment sending this cause.
- A call has been rejected/terminated due to protocol error class, the cause code received is number 100, invalid information element contents. This cause indicates that the equipment sending this cause has received an information element which it has implemented; however, one or more of the fields in the information element are coded in such a way which has not been implemented by the equipment sending this cause.
- A call has been rejected/terminated due to protocol error class, the cause code received is number 101, message not compatible with call state. This cause indicates that the message has been received which is incompatible with the call state.
- A call has been rejected due to cause code number 111, protocol error, unspecified. This cause indicates a protocol error event only when no other cause in the protocol error class applies.

Alert ID Number		X'6B440A05'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'200A'	ISDN Network
User Causes	X'2313'	Incomplete or malformed call setup message
Actions	X'3109' X'32C0' X'82' SF X'82' SF	Contact personnel responsible for connection to ISDN network Report the following Telephone number called Call progress signal
Install Causes	(none)	
Failure Causes	X'2311'	Service not available or not supported
Actions	X'3109' X'32C0' X'82' SF X'82' SF X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Contact personnel responsible for connection to ISDN network Report the following Telephone number called Call progress signal Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 17

Alert Condition:

This Alert is generated as a result of a call that has been rejected due to cause code number 88, incompatible destination. This cause indicates that the equipment sending this cause has received a request to establish a call which has low layer compatibility, high layer compatibility, or other compatibility attributes that can not be accommodated.

Alert ID Number		X'6E8813BD'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'2201' X'1022'	Called DTE Communications program
User Causes	X'2304' X'230A'	Incorrect telephone number specified User classes of service incompatible
Actions	X'3122' X'0103' X'1512' X'1204'	Contact called DTE's operator Verify telephone number Change call setup parameters Attempt to reestablish the connection
Install Causes	(none)	
Failure Causes	X'2201'	Called DTE
Actions	X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	Contact personnel responsible for connection to ISDN network Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 18

Alert Condition:

This Alert is generated as a result of one of the following conditions:

- This Alert is generated as a result of a call that has been rejected due to cause code number 102, recovery on timer expiration. This cause indicates that a procedure has been initiated by the expiration of a timer in association with call set-up error handling procedure.
- T308 timer was activated when Release was sent. It expired without receivng the Receive Complete or a Release from the network. The ISDN port will be put into the maintenance state.

Alert ID Number		X'946BDCC4'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'20A1' X'82' SF	ISDN communications error No response from ISDN network — (sf 82) expired Timer
Actions	X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 19

Alert Condition:

A call that has been rejected due to cause code number 127, interworking, unspecified. This cause indicates that there has been interworking problem with a network which does not provide causes for action it takes; thus the precise cause for a message that is being sent cannot be ascertained.

Alert ID Number		X'4C7B6502'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'200A'	ISDN network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'2314'	ISDN communications error ISDN to non-ISDN operation error
Actions	X'3106' X'32D0' X'82' SF X'82' SF X'82' SF	Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 20

Alert Condition:

A call has been rejected due to cause code number 43, access information discarded. This cause indicates that the network could not deliver access information to the remote user as requested; i.e., user-user information, low layer compatibility, high layer compatibility, or subaddress as indicated in the diagnostic.

Alert ID Number		X'36390AEE'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'200A' X'230C'	ISDN network Service not available or not supported
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'2311'	ISDN communications error Service not available or not supported
Actions	X'3106' X'32D0' X'82' SF X'82' SF X'82' SF X'3109' X'32C0' X'82' SF X'82' SF	Contact ISDN network information service Report the following Calling telephone number Telephone number called Call progress signal Contact personnel responsible for connection to ISDN network Report the following Telephone number called Call progress signal
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 21

Alert Condition:

Excessive Q.931 Protocol Errors Were Detected by the TE. This Alert is generated when the counter, Restart Messages Received (X'003A'), which is used to detect instability in the operation of the call control procedures by the network provider have reached its threshold.

The Q.931 Restart message clears the entire call processing interface and the activity associated with the B-channels. This alert indicates unstable network environment due to the forced termination of calls, interfaces and the B channnels supporting calls.

Alert ID Number		X'F2E2DAEE'
Alert Type	X'01'	Permanent
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'200A'	ISDN Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'40A0' X'82' SF	ISDN Network (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3106' X'32A0' X'82' SF X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact ISDN network information service Report the following Telephone number (note 3) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 3)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Q.931 Alert 22

Alert Condition:

Excessive Q.931 Protocol Errors Were Detected by the TE. This Alert is generated when the counter, Status Enquiry Messages Received (X'003B'), which may be used to detect instability in the operations of the the network provider have reached its threshold. While the receipt of a Status Enquiry message can occur as a matter of normal operation, the excessive receipt of this message may indicate networking problems.

Alert ID Number		X'4C3C05BD'
Alert Type	X'03'	Performance
Alert Description	X'4012'	Threshold has been reached
Probable Causes	X'200A'	ISDN Network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200A' X'40A0' X'82' SF	ISDN Network (sf 82) threshold reached Counter (note 1)
Actions	X'3301' X'2002' X'3106' X'32A0' X'82' SF X'3109' X'32D0' X'82' SF X'82' SF X'82' SF	If problem persists then do the following (review most recent traffic statistics) Contact ISDN network information service Report the following Telephone number (note 3) Contact personnel responsible for connection to ISDN network Report the following Adapter number Port number Telephone number (note 3)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 2)) Type = X'FA'(D-channel) Associated Resources Name = (D-channel (note 2)) Type = X'FA'(D-channel)

Notes:

1. The hexadecimal table index of the counter name.
2. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.
3. The telephone number associated with the port.

ISDN Q.931 Alert 23

Alert Condition:

ISDN Connection Has Been Dropped - This Alert is generated when an ISDN Adapter hardware failure has caused the ISDN circuit or packet connection to be dropped.

Alert ID Number		X'8E0B164E'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'3330' X'3310'	Adapter Hardware Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3330' X'3310'	Adapter Hardware Local ISDN Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number
	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel) Name = (B-channel (note 1)) Type = X'FB'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

ISDN Q.931 Alert 24

Alert Condition:

ISDN Connection Has Been Dropped - This Alert is generated when an ISDN Adapter microcode failure has caused the ISDN circuit or packet connection to be dropped.

Alert ID Number		X'6777ECCC'
Alert Type	X'01'	Permanent
Alert Description	X'3406'	ISDN Call Control error
Probable Causes	X'3331' X'3310'	Adapter Microcode Local ISDN Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3331' X'3310'	Adapter Microcode Local ISDN Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'52' SV X'01' SF X'04' SF X'06' SF X'07' SF X'09' SF X'0A' SF X'0B' SF X'0C' SF	LCS Configuration Data Port Address Local Device Address LCS Link Station Attributes LCS Link Attributes Remote Telephone Number Local Telephone Number Adapter Number Channel Number
	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (D-channel (note 1)) Type = X'FA'(D-channel) Second resource below sender Name = (adjacent node) Type = X'F4'(CP) Associated Resources Name = (D-channel (note 1)) Type = X'FA'(D-channel) Name = (B-channel (note 1)) Type = X'FB'(D-channel)

Notes:

1. See “B- and D-Channel Names in ISDN Alerts” on page 5-203 for the form of this channel name.

Physical / Transmission Layer Alerts

DS1 Physical Layer Alerts

DS1 Physical Layer Alert 1

Alert Condition:

DS1 Adapter Lost Synchronization - This Alert is generated when the synchronization is lost between the DS1 Adapter and the DS1 Network. A permanent loss is declared when the alignment has not occurred in a specified time.

Alert ID Number		X'8973C522'
Alert Type	X'01'	Permanent
Alert Description	X'3629'	Network Physical Layer Error
Probable Causes	X'351F' X'3312'	DS1 Network Component Local DS1 Adapter
User Causes	(none)	
Install Causes	X'3405'	Local communication cable not properly connected
Actions	X'0301'	Check cable and its connections
Failure Causes	X'351F' X'3312' X'F06F'	DS1 Network Component Local DS1 Adapter Synchronization lost and not recovered
Actions	X'3301' X'310F' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact personnel responsible for connection to DS1 network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (adapter name) Type = X'21'(adapter) Second resource below sender Name = (port name) Type = X'3F'(port)

DS1 Physical Layer Alert 2

Alert Condition:

Received Signal Lost - This Alert indicates a problem in the DS1 Network because no signals are being received at the DS1 Adapter from the carrier.

Alert ID Number		X'1DCB50F9'
Alert Type	X'01'	Permanent
Alert Description	X'3619'	No line signal
Probable Causes	X'3462' X'2013'	Local DCE loop DS1 Network
User Causes	(none)	
Install Causes	X'3405'	Local communication cable not properly connected
Actions	X'0305'	Check cable and its connections
Failure Causes	X'200E' X'2013'	Local DCE loop DS1 Network
Actions	X'3301' X'310E' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact DS1 network information service Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (adapter name) Type = X'21'(adapter) Second resource below sender Name = (port name) Type = X'3F'(port)

DS1 Physical Layer Alert 3

Alert Condition:

DS1 Physical Layer Alarm - This Alert is generated when a DS1 Adapter has received an alarm from the network indicating a physical failure or a condition that prevents normal operation of the physical layer.

The DS1 alarm signals reported are:

- X'0006'RAI — Remote Alarm Indication

  Receipt of this alarm signal indicates a transmission fault has occurred on the transmit path away from the Alert sender.

- X'0007'AIS — Alarm Indication Signal

  Receipt of this alarm signal indicates a transmission fault has occurred on the receive path toward the Alert sender.

Alert ID Number		X'A7347200'
Alert Type	X'02'	Temporary
Alert Description	X'3629'	Network Physical Layer Error
Probable Causes	X'2013'	DS1 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2014' X'351F' X'F0BD' X'82' SF	DS1 communications error DS1 network component Transmission system (sf 82) received Alarm signal (note 1)
Actions	X'3301' X'310E' X'310F' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact DS1 network information service Contact personnel responsible for connection to DS1 network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (adapter name) Type = X'21'(adapter) Second resource below sender Name = (port name) Type = X'3F'(port)

Notes:

1. The hexadecimal value for the alarm signal name.

DS1 Physical Layer Alert 4

Alert Condition:

DS1 Network Under Test - This Alert is generated when a DS1 Adpater has received a physical layer test indication from the network indicating communication is disrupted for maintenance purposes. This Alert describes the type of maintenance activity being performed.

- X'0008' - Primary Rate Payload Loopback Signal
- X'0009' - Primary Rate Ia Line Loopback Signal
- X'000A' - Primary Rate Ib Line Loopback Signal
- X'000B' - Primary Rate Network Loopback Signal

Alert ID Number		X'1D1713BA'
Alert Type	X'02'	Temporary
Alert Description	X'360F'	Test in Progress
Probable Causes	X'2013'	DS1 network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2049' X'F1AA' X'82' SF	DS1 Network has initiated a test loop (sf 82) received Maintenance indicator (note 1)
Actions	X'3301' X'310E' X'310F' X'32C0' X'82' SF X'82' SF	If problem persists then do the following Contact DS1 network information service Contact personnel responsible for connection to DS1 network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (adapter name) Type = X'21'(adapter) Second resource below sender Name = (port name) Type = X'3F'(port)

Notes:

1. The hexadecimal value for the maintenance indicator name.

DS1 Physical Layer Alert 5

Alert Condition:

DS1 Adapter Activation Failure to Network - This Alert is generated when DS1 Adapter connection to the network could not be achieved.

Alert ID Number		X'BD43F49E'
Alert Type	X'01'	Permanent
Alert Description	X'3307'	Outbound Connection Attempt Failed
Probable Causes	X'3462' X'2013' X'3312'	Local DCE loop DS1 Network Local DS1 Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'200E' X'2013' X'3312'	Local DCE loop DS1 Network Local DS1 Adapter
Actions	X'1206' X'3301' X'310E' X'310F' X'32C0' X'82' SF X'82' SF	Wait and retry If problem persists then do the following Contact DS1 network information service Contact personnel responsible for connection to DS1 network Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (adapter name) Type = X'21'(adapter) Second resource below sender Name = (port name) Type = X'3F'(port)

DS1 Physical Layer Alert 6

Alert Condition:

DS1 Adapter Hardware Failure - This Alert is generated when DS1 Adapter has experienced a hardware failure.

Alert ID Number		X'096CA239'
Alert Type	X'01'	Permanent
Alert Description	X'1010'	Adapter Error
Probable Causes	X'3330' X'3312'	Adapter Hardware Local DS1 Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3330' X'3312'	Adapter Hardware Local DS1 Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (adapter name) Type = X'21'(adapter) Second resource below sender Name = (port name) Type = X'3F'(port)

DS1 Physical Layer Alert 7

Alert Condition:

DS1 Adapter Microcode Failure - This Alert is generated when DS1 Adapter has experienced a microcode failure.

Alert ID Number		X'E01058BB'
Alert Type	X'01'	Permanent
Alert Description	X'1010'	Adapter Error
Probable Causes	X'3331' X'3312'	Adapter Microcode Local DS1 Adapter
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'3331' X'3312'	Adapter Microcode Local DS1 Adapter
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following Adapter number Port number
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender Name = (adapter name) Type = X'21'(adapter) Second resource below sender Name = (port name) Type = X'3F'(port)

Frame Relay Alerts

Frame Relay Alert 1

Alert Condition:

The reporting station received a CLLM message from the Frame Relay network, indicating either network congestion or the failure of a component in the network. The CLLM message contains a list of the affected DLCIs, which is reported in the Frame Relay CLLM Message Data (X'5E') MS common subvector.

Alert ID Number		X'DAF09CEE'
Alert Type	X'03'	Performance
Alert Description	X'5009'	Network congestion or failure
Probable Causes	X'201F'	Frame relay network
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2083'	CLLM message received from Frame Relay network
Actions	X'2010'	Review link detailed data
Additional SVs	X'5E' SV X'05' SV X'10' SF X'10' SV	Frame Relay CLLM Message Data (1 or more) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID

Alerts for APPN Nodes

This section defines Alerts sent by APPN node components.

Address Space Manager

Address Space Manager Alert CPAM001

Alert Condition:

Session setup failed with one of the following SNA sense data:

```
X'08A3 0004'    X'08A3 0005'    X'08A3 0006'
X'1001 0003'    X'2011 0001'    X'8007 0000'    X'800F 0000'
X'1002 0000'    X'2011 0002'    X'8007 0001'    X'800F 0001'
X'2011 0000'                    X'8007 0002'
```

Alert ID Number		X'B558D310' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3112'	SNA session setup failure
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F0BE' X'82' SF	Communications program in remote node BIND processing failed with (82) (SNA sense data)
Actions	X'3000' X'32A0' X'82' SF	Contact appropriate service representative Report the following: (Product Alert Reference Code) (note 2)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(Partner CP name) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'ABB3D962'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

Configuration Services

Configuration Services Alert CPCS001

Alert Condition:

XID negotiation was terminated by this node because the received XID was invalid in format, or contained unacceptable values. This Alert covers the following SNA sense data:

```
X'0806 002C'  X'0809 0054'  X'0809 0055'  X'0809 0069'
X'086F 0000'  X'088C nnyy'  X'088C 1000'  X'0891 0004'
X'0891 0005'  X'0895 xxyy'  X'0897 001B'  X'0897 001C'
X'0897 001D'  X'1015 0001'  X'1015 0002'
```

where

nn,yy = missing control vector key, Network Name Type

xx,yy = key of control vector in error, byte offset of error

In addition to the sense data listed above, this Alert covers all of the sense data in the X'1016 xxxx' range.

In addition to being signaled in the Alert, the sense data is sent in the XID frame.

Alert ID Number		X'EBEE390E' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3111'	Invalid XID received
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F0A4' X'82' SF	Communications program in remote node XID negotiation failed with (SNA sense data)
Actions	X'3110' X'32D0' X'82' SF X'82' SF X'82' SF	Contact communications systems programmer Report the following: (Product Alert Reference Code) (note 2) (Link Station) (Port Number)

Additional SVs	X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF X'10' SV	Supporting Data Correlation (note 3) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(Adapter number) Type=X'21' (ADAPTER) Second resource below sender: Name=(CP name taken from X'0E' CV) or 'UNKNOWN' (note 4) Type=X'F4' (CP) Indicated Resource Product Set ID (Received X'10' CV) (note 5)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'CF9E7A2F'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.
3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For most XID-related errors, the appropriate supporting data would be copies of the XIDs in question (both the XID sent and the one received).
4. The CP name, which is the second resource below the Alert sender, is taken from the Network Name (X'0E') CV (type X'F4') that was present in the received XID. For a back-level LEN node, this is the node identifier field from the received XID-3. However, for those cases in which the CP name is not available, this entry in the Hierarchy Name List (X'10') SF is 'UNKNOWN'.
5. The Product Set ID (X'10') SV is taken from the Product Set ID (X'10') CV that was present in the received XID. However, for those cases in which the PSID is not available, this SV is omitted.

Configuration Services Alert CPCS002

Alert Condition:

XID negotiation was terminated by this node because the remote node violated protocols for XID exchange. This Alert covers the following SNA sense data:

```
X'0809 003A'          X'0809 003F'          X'0809 0047'
X'0809 003B'          X'0809 0041'          X'0809 004E'
X'0809 003C'          X'0809 0042'
X'0809 003D'          X'0809 0045'
X'0809 003E'          X'0809 0046'
```

In addition to being signaled in the alert the sense data is sent in the XID frame.

Alert ID Number		X'034A6F0B' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3110'	XID protocol error
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F0A4' X'82' SF	Communications program in remote node XID negotiation failed with (SNA sense data)
Actions	X'3110' X'32D0' X'82' SF X'82' SF X'82' SF	Contact communications systems programmer Report the following: (Product Alert Reference Code) (note 2) (Link Station) (Port Number)
Additional SVs	X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF X'10' SV	Supporting Data Correlation (note 3) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(Adapter number) Type=X'21' (ADAPTER) Second resource below sender: Name=(CP name taken from X'0E' CV) or 'UNKNOWN' (note 4) Type=X'F4' (CP) Indicated Resource Product Set ID (Taken from X'10' CV) (note 5)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'3632FDC1'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may

also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For most XID-related errors, the appropriate supporting data would be copies of the XIDs in question (both the XID sent and the one received).
4. The CP name, which is the second resource below the Alert sender, is taken from the Network Name (X'0E') CV (type X'F4') that was present in the received XID. However, for those cases in which the CP name is not available, this entry in the Hierarchy Name List (X'10') SF is 'UNKNOWN'.
5. The Product Set ID (X'10') SV, is taken from the Product Set ID (X'10') CV that was present in the received XID. However, for those cases in which the PSID is not available, this SV is omitted.

Configuration Services Alert CPCS003

Alert Condition:

Invalid SET MODE was received. This Alert covers the following SNA sense data:

X'0809 0040'

The sense data is sent only in the alert.

Alert ID Number		X'0DF28A14' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'1605'	Wrong link mode setting command received
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023'	Communications program in remote node
Actions	X'3110' X'32A0' X'82' SF X'32D0' X'82' SF X'82' SF X'82' SF	Contact communications system programmer Report the following: (SNA sense data) Report the following: (Product Alert Reference Code) (note 2) (Link Station) (Port Number)
Additional SVs	X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF X'10' SV	Supporting Data Correlation (note 3) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(Adapter number) Type=X'21' (ADAPTER) Second resource below sender: Name=(CP name taken from X'0E' CV) or 'UNKNOWN' (note 4) Type=X'F4' (CP) Indicated Resource Product Set ID (Received X'10' CV) (note 5)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'5BEE4A45'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For this Alert, the supporting data is the SET MODE received.
4. The CP name, which is the second resource below the Alert sender, is taken from the Network Name (X'0E') CV (type X'F4') that was present in the received XID. For migration nodes, this is the node identifier field from the received XID-3. However, for those cases in which the CP name is not available, this entry in the Hierarchy Name List (X'10') SF is 'UNKNOWN'.
5. The Product Set ID (X'10') SV, is taken from the Product Set ID (X'10') CV that was present in the received XID. However, for those cases in which the PSID is not available, this SV is omitted.

Configuration Services Alert CPCS004

Alert Condition:

XID negotiation was terminated by the remote node. CV22 was received. This Alert covers the following SNA sense data:

X'0809 0049'

Alert ID Number		X'6D27D125' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'1604'	XID negotiation terminated
Probable Causes	X'1022' X'1023'	Communications program Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'F0A4' X'82' SF	Communications program XID negotiation failed with (SNA sense data)
Actions	X'3110' X'32A0' X'82' SF X'32D0' X'82' SF X'82' SF X'82' SF	Contact communications systems programmer Report the following: (SNA sense data received in XID) Report the following: (Product Alert Reference Code) (note 2) (Link Station) (Port Number)
Additional SVs	X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF X'10' SV	Supporting Data Correlation (note 3) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(Adapter number) Type=X'21' (ADAPTER) Second resource below sender: Name=(CP name taken from X'0E' CV) or 'UNKNOWN' (note 4) Type=X'F4' (CP) Indicated Resource Product Set ID (Taken from X'10' CV) (note 5)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'1E4395E7'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For most XID-related errors, the appropriate supporting data would be copies of the XIDs in question (both the XID sent and the one received).
4. The CP name, which is the second resource below the Alert sender, is taken from the Network Name (X'0E') CV (type X'F4') that was present in the received XID. However, for those cases in which the CP name is not available, this entry in the Hierarchy Name List (X'10') SF is 'UNKNOWN'.
5. The Product Set ID (X'10') SV, is taken from the Product Set ID (X'10') CV that was present in the received XID. However, for those cases in which the PSID is not available, this SV is omitted.

Configuration Services Alert CPCS005

Alert Condition:

XID negotiation was terminated by the Alert sender because no response was received and the XID retry limit was reached. This Alert covers the following SNA sense data:

X'083E 0001'
X'083E 0002'

Alert ID Number		X'F52A0C01'
Alert Type	X'01'	Permanent
Alert Description	X'3305'	Unable to communiate with remote node
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F018'	Communications program in remote node XID poll count exhausted
Actions	X'010D' X'1200'	Check configuration of the remote node Retry
Additional SVs	X'98' SV X'82' SF X'82' SF X'82' SF X'82' SF X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF X'10' SV	Detailed Data (Product Alert Reference Code) (note 1) (SNA sense data) (Link Station) (Port Number) Supporting Data Correlation (note 4) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(Adapter number) Type=X'21' (ADAPTER) Second resource below sender: Name=(CP name taken from X'0E' CV) or 'UNKNOWN' (note 2) Type=X'F4' (CP) Indicated Resource Product Set ID (Taken from X'10' CV) (note 3)

Notes:

1. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

2. The CP name, which is the second resource below the Alert sender, is taken from the Network Name (X'0E') CV (type X'F4') that was present in the

received XID. For back-level LEN nodes, this is the node identifier field from the received XID-3. However, for those cases in which the CP name is not available, this entry in the Hierarchy Name List (X'10') SF is 'UNKNOWN'.

3. The Product Set ID (X'10') SV, is taken from the Product Set ID (X'10') CV that was present in the received XID. However, for those cases in which the PSID is not available, this SV is omitted.
4. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. The appropriate supporting data in this case is a copy of the XID sent by this node.

Configuration Services Alert CPCS006

Alert Condition:

ABEND of a DLC or path control component. In the APPN model implementation, configuration services creates each instance of data link control and path control, and is notified if one of these instances ABENDs.

Alert ID Number		X'C9459F7E'
Alert Type	X'01'	Permanent
Alert Description	X'3305'	Unable to communicate with remote node
Probable Causes	X'1022'	Communications Program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2053'	Communications program abnormally terminated
Actions	X'3302' X'3110' X'32C0' X'82' SF X'82' SF	If problem continues to occur repeatedly then do the following Contact communications system programmer Report the following (Product Alert Reference Code) (note 1) (Failing Module)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

Configuration Services Alert CPCS007

Alert Condition:

XID negotiation was terminated by the Alert sender because one or more resources were unavailable. This Alert covers the following sense data:

```
X'0801 0012'
X'0806 002B'
X'0812 0019'
X'0812 001A'
X'0812 001B'
```

These sense data are sent only in the Alert.

Alert ID Number		X'E9D0BA9D'
Alert Type	X'01'	Permanent
Alert Description	X'1604'	XID negotiation terminated
Probable Causes	X'1022'	Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022' X'F0A4' X'82' SF	Communications program XID negotiation failed with (SNA sense data)
Actions	X'3000' X'32A0' X'82' SF	Contact appropriate service representative Report the following: (Product Alert Reference Code) (note 1)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

Configuration Services Alert CPCS008

Alert Condition:

A mismatch between configuration options was detected during processing of the HPR Capabilities Control Vector (X'61') in XID3. The link will operate with APPN protocol, not APPN/HPR. The system administrator must correct the mismatch between the two nodes if the link is to operate with APPN/HPR protocol. This Alert covers the following SNA sense data:

X'10160021'

Alert ID Number		X'32CDF4E2'
Alert Type	X'14'	Bypassed
Alert Description	X'8009'	APPN/HPR configuration error
Probable Causes	X'1023' X'1022'	Communication program in remote node Communication program
User Causes	(none)	
Install Causes	X'8056'	Configuration mismatch with remote node -- link will operate with APPN protocol, not APPN/HPR.
Actions (note 1)	X'3110' X'32C0' X'82' SF X'82' SF X'010A' X'010D'	Contact communications systems programmer Report the following: Data ID=X'15' (SNA sense data) Data ID=X'F0' (Product Alert Reference Code) (note 2) Check configuration of the sending node Check configuration of the remote node
Failure Causes	(none)	
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV X'10' SV X'48' SV X'82' SF X'82' SF	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: (note 3) Name=(Adapter number) Type=X'21' (ADAPTER) Second resource below sender: Name=(CP name taken from X'0E' CV) or 'UNKNOWN' (note 5) Type=X'F4' (CP) Alert Sender Product Set ID Indicated Resource Product Set ID (Taken from X'10' CV) (note 6) Supporting Data Correlation (note 4) Data ID=X'D0' (File Name) Data ID=X'D1' (Log Record Number)

Notes:

1. The recommended actions listed here are simply *recommended*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.
2. The Product Alert Reference Code (data ID=X'F0') is a label that a product may provide as a key to more detailed documentation about the Alert. This

documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name (data ID=X'A2').

If the Alert sender has no Product Alert Reference Code to provide, then Action Code Point X'32A0' should be used instead of X'32C0'.

3. Because product externals vary, an implementer may choose to identify the first resource below the Alert sender by something other than adapter number as shown here. For example, it may be more natural for a particular product to provide a link name or link station name rather than adapter number. The implementer should choose the resource type that is most appropriate for the users of the product.

4. The Supporting Data Correlation (X'48') subvector is present to report that diagnostic data for this Alert was stored by the Alert sender. For most XID-related errors, the appropriate supporting data would be copies of the XIDs in question (both the XID sent and the one received).

   The X'48' subvector provides a great deal of flexibility in terms of how supporting data may be identified. The use of "file name" and "log record number" shown here is just one example that may not be appropriate for all implementations. If an implementation is unable to capture any supporting data, this subvector may be omitted.

5. The CP name, which is the second resource below the Alert sender, is taken from the Network Name (X'0E') CV (type X'F4') which was present in the received XID. However, for those cases in which the CP name is not available, this entry in the Hierarchy Name List (X'10') SF is 'UNKNOWN'.

6. The Indicated Resource Product Set ID (X'10') subvector is taken from the Product Set ID (X'10') CV that was present in the received XID. However, for those cases in which the PSID is not available, this subvector is omitted.

Topology Database Manager

Topology and Routing Service Alert CPDB001

Alert Condition:

Format error detected in a topology database update (TDU) GDS variable. This Alert covers the following SNA sense data:

```
X'086C 4400'   X'0888 0013'   X'0895 47yy'   X'1002 0000'
X'086C 8000'   X'0895 44yy'   X'08A0 0004'   X'1003 000D'
X'086D 4580'   X'0895 45yy'   X'08A0 0005'   X'101A nnmm'
X'086D 4680'   X'0895 46yy'   X'08A0 0006'
```

The topology and routing services component instructs session services to deactivate the CP-CP session over which the TDU was received. The associated sense data is sent in the UNBIND. The TDU causing the Alert is ignored.

Alert ID Number		X'B8E072C2'
Alert Type	X'01'	Permanent
Alert Description	X'3113'	CP-CP Session Failure
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'2205'	Communications program in remote node Topology Protocol Error
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following: (SNA sense data) (Product Alert Reference Code) (note 1)
Additional SVs	X'98' SV X'82' SF X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF	Detailed Data (NetID) (note 2) Supporting Data Correlation (note 3) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(Partner CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

2. The network ID may be needed if an end node not having the same net ID as its network node server is sending the alert.
3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For this Alert, supporting data is the TDU (topology database update) that caused the error.

Topology and Routing Services Alert CPDB002

Alert Condition:

The node table is full. This condition may be the result of a system definition error (i.e., inadequate storage allocated for the table). If the node table is dynamically extendable, this may be a failure to obtain additional storage.

No SNA sense data is used in this Alert.

The TDU causing the Alert is ignored.

Alert ID Number		X'14CDF23C'
Alert Type	X'01'	Permanent
Alert Description	X'1606'	Topology capacity exceeded
Probable Causes	X'1022'	Communications program
User Causes	(none)	
Install Causes	X'8001'	Topology storage exceeded
Actions	X'3110' X'32C0' X'82' SF X'82' SF	Contact communications system programmer Report the following: (Maximum number of node table entries) (Product Alert Reference Code) (note 1)
Failure Causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

Topology and Routing Service Alert CPDB003

Alert Condition:

The architecturally allowed maximum for the resource sequence number (RSN) has been reached. The resource (a node or transmission group) is no longer available for use.

Note: This is not an error condition, but rather an architecturally allowed condition that can occur after some long period of time. At the rate of one TDU (topology database update) per second for any given resource, it will take 68 years for this condition to occur. However, certain error conditions can cause the RSN space to be used up faster than that.

No SNA sense data is used in this Alert.

The topology and routing services component continues to run but the TDU causing the Alert is discarded.

Alert ID Number		X'0CAB2FAE'
Alert Type	X'01'	Permanent
Alert Description	X'1607'	Topology Protocol error
Probable Causes	X'1022'	Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022'	Communications program
Actions	X'3110' X'32C0' X'82' SF X'82' SF	Contact communications system programmer Report the following: (Name of the resource causing the error) (Product Alert Reference Code) (note 1)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

Topology and Routing Service Alert CPDB004

Alert Condition:

The topology and routing services component notifies management services that a TDU war has been detected and stopped. The operator receiving this Alert needs to identify one or more network nodes causing this TDU war and remove the faulty nodes from the network, in order to prevent future TDU wars from occurring. The TDU information that caused this Alert to be sent is also included, to aid in identification of the nodes that caused the problem.

Alert ID Number		X'D937 6F1D'
Alert Type	X'01'	Permanent
Alert Description	X'3123'	APPN Topology Database Update (TDU) war
Probable Causes	X'2206'	Node sending Alert or other network node
User Causes	(none)	
Install Causes	X'8057'	Another network node has the same CP name as the node sending this Alert
Actions	X'001B' X'1542' X'F0AA' X'85' SF X'F0AC' X'85' SF X'F0DB' X'85' SF X'85' SF X'85' SF X'F0AB' X'85' SF X'F027'	Identify the other contending network node Disconnect one network node from the network and give it a new CP name Contending TDU received from adjacent network node (detailed data qualifier) - TDU may not have originated from this node Data ID = X'0082' (name of adjacent node sending TDU) Network node record being contended over is (detailed data qualifier) (note 1) Data ID = X'0082' (CP name - identity of resource) TG record being contended over is (detailed data qualifier) from (detailed data qualifier) to (detailed data qualifier) (note 1)(note 2) Data ID = X'0134' (TG number - identity of resource) Data ID = X'0082' (CP name - identity of TG owner) Data ID = X'0082' (CP name - identity of TG partner) Incorrect TDU information: (detailed data qualifier) Data ID = X'0000' (first 40 bytes of resource update information causing TDU war) Record may be incorrect in the topology database, but will be corrected automatically within one hour
Failure Causes	X'1254'	A network node is contending with the node sending this Alert over the information for a topology resource

Actions	X'001B'	Identify the other contending network node
	X'001C'	Determine which network node is at fault
	X'1908'	Remove the faulty network node from the network
	X'F0AA'	Contending TDU received from adjacent network node (detailed data qualifier) - TDU may not have originated from this node
	X'85' SF	Data ID = X'0082' (name of adjacent node sending TDU)
	X'F0AC'	Network node record being contended over is (detailed data qualifier) (note 1)
	X'85' SF	Data ID = X'0082' (CP name - identity of resource)
	X'F0DB'	TG record being contended over is (detailed data qualifier) from (detailed data qualifier) to (detailed data qualifier) (note 1)(note 2)
	X'85' SF	Data ID = X'0134' (TG number - identity of resource)
	X'85' SF	Data ID = X'0082' (CP name - identity of TG owner)
	X'85' SF	Data ID = X'0082' (CP name - identity of TG partner)
	X'F0AB'	Incorrect TDU information: (detailed data qualifier)
	X'85' SF	Data ID = X'0000' (first 40 bytes of resource update information causing TDU war)
	X'3000'	Contact appropriate service representative
	X'32A0'	Report the following:
	X'85' SF	Data ID = X'00F0' (product Alert reference code (note 3))
	X'F027'	Record may be incorrect in the topology database, but will be corrected automatically within one hour
Additional SVs	X'05' SV	Hierarchy/Resource List
	X'10' SF	Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)
	X'48' SV	Supporting Data Correlation (note 4)
	X'82' SF	Data ID = X'D0' (file name)
	X'82' SF	Data ID = X'D1' (log record number)

Notes:

1. Exactly one of these Recommended Actions is included in this subvector. X'F0AC' is included if the topology record being contended over identifies a network node. X'F0DB' is included if the topology record being contended over identifies a transmission group.
2. The first qualifier identifies an APPN transmission group. The second qualifier identifies the APPN node that owns it. The third qualifier identifies the APPN node at the other end of the transmission group.
3. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.
4. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. The X'48' subvector provides a great deal of flexibility in terms of how supporting data may be identified. The use of “file name” and “log record number” shown here is just one example, which may not be appropriate for all implementations. If an implementation is unable to capture any supporting data, this subvector may be omitted.

Topology and Routing Service Alert CPDB005

Alert Condition:

The topology and routing services component notifies management services that a TDU war has been detected and stopped. The operator receiving this Alert needs to identify one or more network nodes causing this TDU war and remove the faulty nodes from the network, in order to prevent future TDU wars from occurring. The TDU information that caused this Alert to be sent is also included, to aid in identification of the nodes that caused the problem.

Alert ID Number		X'8265 AD3A'
Alert Type	X'01'	Permanent
Alert Description	X'3123'	APPN Topology Database Update (TDU) war
Probable Causes	X'2205'	TDU corrupted by remote network node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1255'	A network node other than the node sending this Alert is building a TDU incorrectly
Actions	X'001C' X'F0AA' X'85' SF X'F0AC' X'85' SF X'F0DB' X'85' SF X'85' SF X'85' SF X'F0AB' X'85' SF X'1908' X'3000' X'32A0' X'85' SF X'F027'	Determine which network node is at fault Contending TDU received from adjacent network node (detailed data qualifier) - TDU may not have originated from this node Data ID = X'0082' (name of adjacent node sending TDU) Network node record being contended over is (detailed data qualifier) (note 1) Data ID = X'0082' (CP name - identity of resource) TG record being contended over is (detailed data qualifier) from (detailed data qualifier) to (detailed data qualifier) (note 1)(note 2) Data ID = X'0134' (TG number - identity of resource) Data ID = X'0082' (CP name - identity of TG owner) Data ID = X'0082' (CP name - identity of TG partner) Incorrect TDU information: (detailed data qualifier) Data ID = X'0000' (first 40 bytes of resource update information causing TDU war) Remove the faulty network node from the network Contact appropriate service representative Report the following: Data ID = X'00F0' (product Alert reference code (note 3)) Record may be incorrect in the topology database, but will be corrected automatically within one hour
Additional SVs	X'05' SV X'10' SF X'48' SV X'82' SF X'82' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Supporting Data Correlation (note 4) Data ID = X'D0' (file name) Data ID = X'D1' (log record number)

Notes:

1. Exactly one of these Recommended Actions is included in this subvector. X'F0AC' is included if the topology record being contended over identifies a network node. X'F0DB' is included if the topology record being contended over identifies a transmission group.
2. The first qualifier identifies an APPN transmission group. The second qualifier identifies the APPN node that owns it. The third qualifier identifies the APPN node at the other end of the transmission group.
3. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.
4. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. The X'48' subvector provides a great deal of flexibility in terms of how supporting data may be identified. The use of “file name” and “log record number” shown here is just one example, which may not be appropriate for all implementations. If an implementation is unable to capture any supporting data, this subvector may be omitted.

Directory Services

Directory Services Alert CPDN001

Alert Condition:

Protocol violation on a Locate or BIND request. This Alert covers the following SNA sense data:

Incorrect Locate request received (Find request not included). The Locate message must include a Find GDS variable. The Find was either left off by the originator of the Locate or deleted by a propagator of the Locate:

X'1010 A002'

Locate Procedure Status indicator bit was set to 1 (procedure is active, procedure correlation information is kept) in a reply to a broadcast, though reservation is not permitted on a broadcast:

X'1010 4004'

A broadcast search resulted in two or more conflicting positive replies that differ on the CP owning the target resource. Multiple replies are acceptable, as long as all indicate the same owning CP:

X'1010 0001'

Additional sense data:

X'0812 0016' X'0890 0080' X'0890 0048'
X'0891 0004' X'0895 0000' X'0897 0000'
X'1010 B080' X'1014 003C' X'1014 003D'
X'1014 0080' X'1014 023C' X'1014 A082'
X'1014 B280' X'FFFF 0002'

Alert ID Number		X'170F7710' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3001'	Directory Services Protocol Error
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2206'	Directory program remote node
Actions	X'3000' X'32C0' X'82' SF X'82' SF X'F0F1' X'84' SF	Contact appropriate service representative Report the following: (SNA sense data) (Product Alert Reference Code) (note 2) Resource associated with the Alert condition (Associated resource)

Additional SVs	X'48' SV X'60' SF X'82' SF X'82' SF X'05' SV X'10' SF X'11' SF	Supporting Data Correlation (note 3) (Fully Qualified Session PCID) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(adjacent node) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'598E4438'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.
3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For directory request errors, the whole request is included as supporting data.

Directory Services Alert CPDN002

Alert Condition:

Insufficient resources available for directory services. Deadlock detected between DS components in two nodes. When this condition is detected, DS will instruct SS to UNBIND the CP-CP session to the other node. If this problem reoccurs, it may indicate a node system definition error or a configuration problem. This Alert covers the following SNA sense data:

X'0812 000A'
X'0890 0060'

Alert ID Number		X'769022F0' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3113'	CP-CP Session Failure
Probable Causes	X'1022'	Communications program
User Causes	(none)	
Install Causes	X'8002' X'8003'	Insufficient storage for directory services Communications subsystem definition
Actions	X'3302' X'3110' X'32C0' X'82' SF X'82' SF	If problem continues to occur repeatedly then do the following Contact communications System Programmer Report the following: (SNA sense data) (Product Alert Reference Code) (note 2)
Failure Causes	(none)	
Additional SVs	X'48' SV X'60' SF X'82' SF X'82' SF X'05' SV X'10' SF X'11' SF	Supporting Data Correlation (note 3) (Fully Qualified Session PCID) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(adjacent node) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'7B5DEF8F'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For directory request errors, the whole request is included as supporting data.

Directory Services Alert CPDN003

Alert Condition:

An end node CP without authorization has attempted to delete a resource.

Probable cause is attempted network modification by an unauthorized user. This alert covers the following sense data:

X'080E 0009'

Alert ID Number		X'E1497660'
Alert Type	X'12'	Unknown
Alert Description	X'C003'	Unauthorized network change attempted
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2207'	Unauthorized network change attempted
Actions	X'3302' X'3110' X'32C0' X'82' SF X'82' SF	If problem continues to occur repeatedly then do the following Contact communications systems programmer Report the following: (SNA sense data) (Product Alert Reference Code) (note 1)
Additional SVs	X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF	Supporting Data Correlation (note 2) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(Partner CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

2. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For directory request errors, the whole request is included as supporting data.

Session Connector Manager

Session Connector Manager Alert CPIM001

Alert Condition:

ABEND of a session connector. This occurs when the session connector is unable to allocate storage for processing. Session connector manager deactivates the session. This Alert covers the following SNA sense data:

X'0812 000D'
X'085C 0003'

Alert ID Number		X'2110D168'
Alert Type	X'01'	Permanent
Alert Description	X'5004'	Out of resources
Probable Causes	X'1022'	Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2054'	Insufficient storage for intermediate session processing
Actions	X'3302' X'3110' X'32C0' X'82' SF X'82' SF	If problem continues to occur repeatedly then do the following Contact communications systems programmer Report the following: (SNA sense data) (Product Alert Reference Code) (note 1)
Additional SVs	X'48' SV X'60' SF X'05' SV X'10' SF	Supporting Data Correlation (Fully Qualified Session PCID) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

Session Connector Manager Alert CPIM002

Alert Condition:

Session connector received an invalid RU. Session connector signals session connector manager to deactivate the session. This Alert covers the following SNA sense data:

```
X'8007 0000'        X'1002 0000'        X'2011 0002'
X'083B 0002'        X'1022 0001'        X'2011 0003'
X'1001 0003'        X'2001 0000'        X'086F 0000'
X'8007 0003'
```

Alert ID Number		X'8FC7EF8D'
Alert Type	X'01'	Permanent
Alert Description	X'3100'	SNA protocol error
Probable Causes	X'2131'	Communications program in adjacent node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2208' X'F06D'	Communications program in adjacent node Isolated Pacing Message Failure
Actions	X'3110' X'32C0' X'82' SF X'82' SF X'F0F1' X'84' SF	Contact communications systems programmer Report the following: (SNA sense data) (Product Alert Reference Code) (note 1) Resource associated with the alert condition (Associated resource)
Additional SVs	X'48' SV X'60' SF X'05' SV X'10' SF X'11' SF	Supporting Data Correlation (note 2) (Fully Qualified Session PCID) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(name of intended destination of the BIND) Type=X'F3' (LU)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

2. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For this Alert the supporting data is the RU received.

Session Connector Manager Alert CPIM003

Alert Condition:

ABEND of a session connector for some reason other than “out of resources.” Session connector manager deactivates the session. This Alert covers the following SNA sense data:

X'085C 0000'

Alert ID Number		X'AB9BD79D'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'1022'	Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2053'	Communications program abnormally terminated
Actions	X'3302' X'3110' X'32D0' X'82' SF X'82' SF X'82' SF	If problem continues to occur repeatedly then do the following Contact communications systems programmer Report the following: (SNA sense data) (Product Alert Reference Code) (note 1) (ABEND code) (note 2)
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

2. ABEND code - ABEND code returned by implementation run-time component.

Management Services

Management Services Alert CPMS001

Alert Condition:

An invalid Alert signal was received from a node component, and the Alert major vector cannot be built. The Alert signal is discarded.

Alert ID Number		X'CB19C20E'
Alert Type	X'01'	Permanent
Alert Description	X'2100'	Software program error
Probable Causes	X'1000'	Software Program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'10A1' X'82' SF	Unable to build Alert requested by (Failing Module)
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following: (Product Alert Reference Code) (note 1) (Software Error Code)
Additional SVs	X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF	Supporting Data Correlation (note 2) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

2. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For this Alert the supporting data is the Alert signal that caused the error.

Management Services Alert CPMS002

Alert Condition:

Management Services protocol error. The received Multiple-domain support message unit (MDS-MU) cannot be processed. This Alert covers the following SNA sense data:

MDS Format Exceptions:

```
X'08AA 1310'   X'086C 9000'    X'086D 8202'
X'08AA 1311'   X'086D 8101'    X'086D 8203'
X'08AA 1549'   X'086D 8102'    X'086F 0002'
X'086C 8100'   X'086D 8103'    X'086F 8103'
X'086C 8200'   X'086D 8201'    X'086F 8203'
X'086F 8106'   X'086F 8206'    X'0870 9002'
X'0870 9003'
```

MS_Capabilities Format Exceptions:

```
X'080C 0005'   X'080C 0163'    X'086D 2111'
X'080C 0006'   X'080C 0164'    X'086D 2121'
X'080C 0012'   X'086C 2100'    X'086D 6240'
X'080C 01nn'   X'086D 2101'    X'086D 6241'
X'080C 0161'   X'086D 2102'    X'086F mm05'
X'080C 0162'   X'086D 2110'    X'086F 2105'
```

(nn = subvector id, mm = subfield id)

Alert ID Number		X'2313A399' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3114'	Management Services protocol error
Probable Causes	X'1023' X'1022'	Communication program in remote node Communication program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'1022'	Communication program in remote node Communication program
Actions	X'3000' X'32C0' X'82' SF X'82' SF	Contact appropriate service representative Report the following: (SNA sense data) (Product Alert Reference Code) (note 2)
Additional SVs	X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF	Supporting Data Correlation (note 3) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'39E8BB74'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.
3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For this Alert the supporting data is the received MDS-MU that caused the error.

Path Control

Path Control Alert CPPL001

Alert Condition:

SNA protocol violation. The received path information unit (PIU) is discarded. This Alert covers the following SNA sense data:

X'8006 0000'
X'4005 0000'
X'1002 0000'
X'800B 0000'
X'8005 0000'

Alert ID Number		X'C781E91E' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3100'	SNA protocol error
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'F06E'	Communications program in remote node Invalid PIU (path information unit) received
Actions	X'3110' X'32D0' X'82' SF X'82' SF X'82' SF	Contact communications systems programmer Report the following: (SNA sense data) (Product Alert Reference Code) (note 2) (User-specified link name) (note 3)
Additional SVs	X'48' SV X'82' SF X'82' SF X'05' SV X'10' SF	Supporting Data Correlation (note 4) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(TG over which the PIU was received) Type=X'2C' (transmission group) Second resource below sender: Name=(adjacent node) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'E6B578D3'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

3. If an implementation provides for a user-specified link name in addition to the TG number and CP name, include that name here. If not available, the name is omitted.
4. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. For this Alert the supporting data is the path information unit (PIU) rejected.

Session Services

Session Services Alert CPSS001

Alert Condition:

Required transaction program cannot be started (initiated by setup CP-CP session).

Alert ID Number		X'EDD0D10F' (note 1)
Alert Type	X'01'	Permanent
Alert Description	X'3113'	CP-CP Session Failure
Probable Causes	X'8003'	Communication configuration
User Causes	(none)	
Install Causes	X'1301'	Communications program
Actions	X'3110' X'32C0' X'82' SF X'82' SF	Contact communications systems programmer Report the following (Product Alert Reference Code) (note 2) (Transaction Program)
Failure Causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP)

Notes:

1. This Alert was previously documented with the incorrect Alert ID value of X'F60FBD84'. Alert receivers should be able to accept Alerts containing either the current, correct value or the old, incorrect value.
2. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

Session Services Alert CPSS002

Alert Condition:

BIND received from an end node that this network node does not serve. If the end node includes the APPN Route Selection control vector (RSCV) in the BIND, the network node does not make this check.

Alert ID Number		X'26F47FA9'
Alert Type	X'01'	Permanent
Alert Description	X'C004'	Unauthorized access attempted
Probable Causes	X'1023' X'1022'	Communications program in remote node Communications program
User Causes	none	
Install Causes	X'8004' X'8005'	Remote Node Definition Error System Definition Error
Actions	X'3110' X'32A0' X'82' SF X'F0F1' X'84' SF	Contact communications systems programmer Report the following (Product Alert Reference Code) (note 1) Resource associated with the alert condition (Associated resource)
Failure Causes	(none)	
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) First resource below sender: Name=(name of requesting CP) Type=X'F4' (CP) Second resource below sender: Name=(name of requesting LU) Type=X'F3' (LU) Associated Resources Name=(name of intended destination of the BIND) Type=X'F3' (LU)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

Session Services Alert CPSS003

Alert Condition:

Protocol violation on a Locate or BIND request.

This Alert covers the following SNA sense data:

```
X'086C 2B00'    X'086C 2C00'    X'086D 4680'
X'08A3 0002'    X'08A3 0003'    X'1010 5002'
X'1014 5046'
```

Alert ID Number		X'21745F28'
Alert Type	X'01'	Permanent
Alert Description	X'3002'	Session Services Protocol Error
Probable Causes	X'1023'	Communications program in remote node
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2209'	Session Services program in remote node
Actions	X'3000' X'32C0' X'82' SF X'82' SF X'F0F1' X'84' SF	Contact appropriate service representative Report the following: (SNA sense data) (Product Alert Reference Code) (note 1) Resource associated with the alert condition (Associated resource)
Additional SVs	X'48' SV X'60' SF X'82' SF X'82' SF X'05' SV X'10' SF X'11' SF	Supporting Data Correlation (note 2) (Fully Qualified Session PCID) (File Name) (Log Record Number) Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(adjacent node) Type=X'F4' (CP)

Notes:

1. The Product Alert Reference Code is a label that an implementation may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name.

2. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender.

LU6.2 Alerts

LU6.2 Alert LU62001

Alert Condition:

A partner LU that supports only nonextended BINDs detected an error causing it to send a -RSP(BIND). The LU receiving the -RSP(BIND) generates this Alert. The SNA sense data denotes the exact error condition detected.

Alert ID Number		X'FE1C42EB'
Alert Type	X'01'	Permanent
Alert Description	X'3115'	LU6.2 Received negative BIND response
Probable Causes	X'1023' X'1022'	Communications program in remote node Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'1022'	Communications program in remote node Communications program
Actions	X'3110' X'32C0' X'82' SF X'82' SF X'2012'	Contact communications systems programmer Report the following: (Mode name) (Note 1) (SNA sense data) (Review Associated Resources)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(First resource below sender, NQ Local LU name) Type=X'F3' (LU) Name=(Network-qualified partner LU name) (Note 2) Type=X'F3' (LU)

Notes:

1. Subfield contains the mode name associated with the deactivated session. If no mode name is available when the Alert is sent, the mode name is encoded in the subfield as eight X'40' bytes.
2. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

LU6.2 Alert LU62002

Alert Condition:

The LU has detected an error, causing it to send a -RSP(BIND) response to its partner LU. The SNA sense data denotes the exact error condition detected.

Alert ID Number		X'9DCD7CCA'
Alert Type	X'01'	Permanent
Alert Description	X'3116'	LU6.2 Sent negative BIND response
Probable Causes	X'1023' X'1022'	Communications program in remote node Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'1022'	Communications program in remote node Communications program
Actions	X'3110' X'32C0' X'82' SF X'82' SF X'2012'	Contact communications systems programmer Report the following: (Mode name) (Note 1) (SNA sense data) (Review Associated Resources)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(First resource below sender, NQ Local LU name) Type=X'F3' (LU) Name=(Network-qualified partner LU name) (Note 2) Type=X'F3' (LU)

Notes:

1. Subfield contains the mode name associated with the deactivated session. If no mode name is available when the Alert is sent, the mode name is encoded in the subfield as eight X'40' bytes.
2. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

LU6.2 Alert LU62003

Alert Condition:

The CP rejects the LU's request for assistance in the initiation of a session. SM informs RM that session activation has failed. The SNA sense data denotes the exact error condition being reported.

Alert ID Number		X'47302521'
Alert Type	X'01'	Permanent
Alert Description	X'3117'	LU6.2 Session activation rejected
Probable Causes	X'1022'	Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1022'	Communications program
Actions	X'3110' X'32C0' X'82' SF X'82' SF X'2012'	Contact communications systems programmer Report the following: (Mode name) (Note 1) (SNA sense data) (Review Associated Resources)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(First resource below sender, NQ Local LU name) Type=X'F3' (LU) Name=(Network-qualified partner LU name) (Note 2) Type=X'F3' (LU)

Notes:

1. Subfield contains the mode name associated with the deactivated session. If no mode name is available when the Alert is sent, the mode name is encoded in the subfield as eight X'40' bytes.
2. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

LU6.2 Alert LU62004

Alert Condition:

The LU has detected an error causing it to send an UNBIND to its partner LU. The SNA sense data denotes the exact error condition being reported.

Alert ID Number		X'A89646AA'
Alert Type	X'01'	Permanent
Alert Description	X'3118'	LU6.2 UNBIND request sent
Probable Causes	X'1023' X'1022'	Communications program in remote node Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'1022'	Communications program in remote node Communications program
Actions	X'3110' X'32D0' X'82' SF X'82' SF X'82' SF X'2012'	Contact communications systems programmer Report the following: (Mode name) (Note 1) (UNBIND type) (SNA sense data) (Review Associated Resources)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(First resource below sender, NQ Local LU name) Type=X'F3' (LU) Name=(Network-qualified partner LU name) (Note 2) Type=X'F3' (LU)

Notes:

1. Subfield contains the mode name associated with the deactivated session. If no mode name is available when the Alert is sent, the mode name is encoded in the subfield as eight X'40' bytes.
2. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

LU6.2 Alert LU62005

Alert Condition:

The partner LU (which supports extended BINDs) has rejected the BIND with an UNBIND. The SNA sense data denotes the exact error condition being reported.

Alert ID Number		X'7599A7D8'
Alert Type	X'01'	Permanent
Alert Description	X'3119'	LU6.2 UNBIND request received
Probable Causes	X'1023' X'1022'	Communications program in remote node Communications program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1023' X'1022'	Communications program in remote node Communications program
Actions	X'3110' X'32D0' X'82' SF X'82' SF X'82' SF X'2012'	Contact communications systems programmer Report the following: (Mode name) (Note 1) (UNBIND type) (SNA sense data) (Review Associated Resources)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Associated Resources Name=(First resource below sender, NQ Local LU name) Type=X'F3' (LU) Name=(Network-qualified partner LU name) (Note 2) Type=X'F3' (LU)

Notes:

1. Subfield contains the mode name associated with the deactivated session. If no mode name is available when the Alert is sent, the mode name is encoded in the subfield as eight X'40' bytes.
2. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

Sync Point Alerts

Sync Point Alert SP001

Alert Condition:

A protocol violation has been detected during two-phase commit processing. The protocol violation can be a result of either a format or protocol error; the type of error is specified in the Alert.

Alert ID Number		X'921F4F09'
Alert Type	X'01'	Permanent
Alert Description	X'210C'	Resource Recovery Failure
Probable Causes	X'1003'	Synchronization Point Manager
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1208'	Protocol violation during synchronization point processing
Actions	X'3110' X'32D0' X'85' SF X'85' SF X'85' SF X'3200' X'F022' X'F023' X'3200' X'F0A4' X'85' SF X'F016' X'F017' X'F018' X'F019' X'F01A' X'2012'	Contact communications systems programmer (note 1) Report the following: (Resource manager identifier) (Resource) (LUWID) Report the following Format error (note 2) Protocol error (note 2) Report the following Coordinator (note 3) (Name) Coordinator committed Coordinator backed out Agent committed Agent backed out Agent in-doubt (Review Associated Resources)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name = network-qualified local LU name Type = X'F3' (LU) Associated Resources Name = network-qualified partner LU name (note 4) Type = X'F3' (LU)

Notes:

1. Action X'3110' can be replaced, if necessary, with a code point that is more appropriate for a product's specific environment.
2. Code point indicating format or protocol error is included depending on the type of error encountered. This code point is not required if the type of error is unknown.

3. Actions with code points X'F0xx' can be tailored to fit the available information, as long as the usage is not contradictory. This note does not apply to code point X'F0A4'.
4. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

Sync Point Alert SP002

Alert Condition:

A protocol violation has been detected during resynchronization processing. The protocol violation can be the result of either a format or protocol error; the type of error is specified in the Alert.

Alert ID Number		X'AA50 F2B4'
Alert Type	X'01'	Permanent
Alert Description	X'210C'	Resource Recovery Failure
Probable Causes	X'1003'	Synchronization Point Manager
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'1207'	Protocol violation during resynchronization processing
Actions	X'3110' X'32D0' X'85' SF X'85' SF X'85' SF X'3200' X'F022' X'F023' X'2012'	Contact communications systems programmer (note 1) Report the following: (Resource manager identifier) (Resource) (LUWID) Report the following Format error (note 2) Protocol error (note 2) (Review Associated Resources)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name = network-qualified local LU name Type = X'F3' (LU) Associated Resources Name = network-qualified partner LU name (note 3) Type = X'F3' (LU)

Notes:

1. Action X'3110' can be replaced, if necessary, with a code point that is more appropriate for a product's specific environment.
2. Code point indicating format or protocol error is included depending on the type of error encountered. This code point is not required if the type of error is unknown.
3. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

Sync Point Alert SP003

Alert Condition:

Potential inconsistency of protected resources caused by inconsistent sync point decisions made in the same sync point tree. One or more of the decisions made is heuristic.

Alert ID Number		X'78C3E91A'
Alert Type	X'01'	Permanent
Alert Description	X'210C'	Resource Recovery Failure
Probable Causes	X'7008'	Resource Administrator
User Causes	X'711F'	Inconsistent heuristic decision
Actions	X'310C' X'32D0' X'85' SF X'85' SF X'85' SF X'3200' X'F015' X'F0A4' X'85' SF X'F016' X'F017' X'2012'	Contact administrator of affected resources Report the following: (Resource manager identifier) (Resource) (LUWID) Report the following Heuristic damage Coordinator (note 1) (Name) Coordinator committed Coordinator backed out (Review Associated Resources)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name = network-qualified local LU name Type = X'F3' (LU) Associated Resources Name = network-qualified partner LU name (note 2) Type = X'F3' (LU)

Notes:

1. Actions with code points X'F0xx' can be tailored to fit the available information, as long as the usage is not contradictory. This note does not apply to code point X'F0A4'.
2. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

Sync Point Alert SP004

Alert Condition:

Inability to contact protected resource manager, when resynchronization must be performed.

Alert ID Number		X'37B6EBB5'
Alert Type	X'01'	Permanent
Alert Description	X'210C'	Resource Recovery Failure
Probable Causes	X'2003'	SNA Communications
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'2003' X'F007'	SNA Communications In-doubt logical unit of work
Actions	X'310C' X'32D0' X'85' SF X'85' SF X'85' SF X'3200' X'F015' X'F0A4' X'85' SF X'F016' X'F017' X'F018' X'F019' X'F01A' X'2012'	Contact administrator of affected resources Report the following: (Resource manager identifier) (Resource) (LUWID) Report the following Heuristic damage Coordinator (note 1) (Name) Coordinator committed Coordinator backed out Agent committed Agent backed out Agent in-doubt (Review Associated Resources)
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name = network-qualified local LU name Type = X'F3' (LU) Associated Resources Name = network-qualified partner LU name (note 2) Type = X'F3' (LU)

Notes:

1. Actions with code points X'F0xx' can be tailored to fit the available information, as long as the usage is not contradictory. This note does not apply to code point X'F0A4'.
2. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

Sync Point Alert SP005

Alert Condition:

In a two-phase commit process where the partner cold-starts, certain in-doubt threads may require manual resolution. The recovery log information may not be available.

Alert ID Number		X'67346D44'
Alert Type	X'01'	Permanent
Alert Description	X'210C'	Resource Recovery Failure
Probable Causes	X'105C'	Partner cold start
User Causes	X'711D'	Partner restarted without Recovery Log information
Actions	X'3110' X'32C0' X'85' SF X'85' SF X'22C1' X'85' SF X'85' SF X'2012'	Contact communications systems programmer (note 1) Report the following: (Resource manager identifier) (Resource) Review partner's recovery log (log identifier) (empty) (Note 2) (Review Associated Resources)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name = network-qualified local LU name Type = X'F3' (LU) Associated Resources Name = network-qualified partner LU name (note 2) Type = X'F3' (LU)

Notes:

1. Action X'3110' can be replaced, if necessary, with a code point that is more appropriate for a product's specific environment.
2. Only length and key bytes are present.
3. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

Sync Point Alert SP006

Alert Condition:

Mismatch of recovery log names after the partner warm-started. Logs used for resynchronization must reflect the state of the two-phase commit process at the time the failure occurred.

Alert ID Number		X'4E236FB5'
Alert Type	X'01'	Permanent
Alert Description	X'210C'	Resource Recovery Failure
Probable Causes	X'105D'	Warm start reconnection failure
User Causes	X'711E'	Log name mismatch
Actions	X'3110' X'32C0' X'85' SF X'85' SF X'22C1' X'85' SF X'85' SF X'22C1' X'85' SF X'85' SF X'2012'	Contact communications systems programmer (note 1) Report the following: (Resource manager identifier) (Resource) Review partner's recovery log (log identifier) (empty) (Note 2) Review partner's recovery log (log identifier) (empty) (Note 2) (Review Associated Resources)
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'05' SV X'10' SF X'11' SF	Hierarchy/Resource List Hierarchy Name List First resource below sender: Name = network-qualified local LU name Type = X'F3' (LU) Associated Resources Name = network-qualified partner LU name (note 3) Type = X'F3' (LU)

Notes:

1. Action X'3110' can be replaced, if necessary, with a code point that is more appropriate for a product's specific environment.
2. Only length and key bytes are present.

   The first occurrence of X'22C1' in the Actions section displays the recovery log name specified in the warm start. The second one contains the log name for in-doubt resolution.
3. Network-qualified Partner LU Name and Type fields are not sent if unavailable.

Dependent LU Requester Alerts

APPN/DLUR Alert CPDL001

Alert Condition:

A protocol error was detected by the DLUR component of the APPN product, causing communications to be terminated. This Alert covers sense data:

```
X'0806 0000'
X'086C 5100'
X'086C 6000'
X'0877 0056'
X'1001 0000'
```

Alert ID Number		X'9E45 2D9C'
Alert Type	X'01'	Permanent
Alert Description	X'3122'	APPN-DLUR protocol error
Probable Causes	X'1023' X'1022'	Communication program in remote node Communication program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'22A1' X'82' SF	Communications program in remote node: Data ID=X'82' (CP)
Actions (note 1)	X'3110' X'32C0' X'82' SF X'82' SF	Contact communications systems programmer Report the following: Data ID=X'15' (SNA sense data) Data ID=X'F0' (Product Alert Reference Code) (note 2)
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV X'48' SV X'82' SF X'82' SF	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID Supporting Data Correlation (note 3) Data ID=X'D0' (File Name) Data ID=X'D1' (Log Record Number)

Notes:

1. The recommended actions listed here are simply *recommended*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.
2. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

   An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name (data ID=X'A2').
3. The Supporting Data Correlation (X'48') SV is present to report that diagnostic data for this Alert was stored by the Alert sender. The X'48' SV provides a great deal of flexibility in terms of how supporting data may be identified. The use of "file name" and "log record number" shown here is just one example that

may not be appropriate for all implementations. If an implementation is unable to capture any supporting data, this subvector may be omitted.

APPN/DLUR Alert CPDL002

Alert Condition:

While configuring this DLUR product, a network administrator has mistakenly specified as the server for one or more PUs a node that does not support the DLUS function. For example, the specified DLUS may in fact be a DLUR, or it may be an earlier release of a product that subsequently added support for DLUS. This Alert is sent by a DLUR node when a CPSVRMGR session that it initiated is unbound by the session partner with sense data X'088E 0009'. In that scenario, the session partner (the intended DLUS) has rejected the the DLUR/S Capabilities (X'51') control vector from this node. The most likely explanation is that the configuration error was made at the DLUR that initiated the CPSVRMGR session, not at the node that rejected it.

Alert ID Number		X'EBAA 3C4F'
Alert Type	X'01'	Permanent
Alert Description	X'800A'	APPN-DLUR configuration error
Probable Causes	X'1022' X'1023'	Communications program Communications program in remote node
User Causes	(none)	
Install Causes	X'80B9' X'82' SF	Node (detailed data qualifier) was incorrectly specified as a dependent LU server Data ID=X'82' (CP)
Actions (note 1)	X'1500'	Correct installation problem
Failure Causes	(none)	
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID

Notes:

1. The recommended actions listed here are simply *recommendations*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.

APPN/DLUR Alert CPDL003

Alert Condition:

CPSVRMGR Session Limit Exceeded

DLUR products will have the option to limit the number of concurrently active CP-SVR pipes (what number will be selected as the limit will also be a product option). If a limit is implemented and reached, any attempts to activate additional CP-SVR pipes will be rejected by sending an UNBIND request with sense data X'0812 0000'.

When a DLUR product reaches this limit, it should send this alert so that the network administrator will understand the implications of the problem and take the appropriate action.

Alert ID Number		X'754A EAE8'
Alert Type	X'01'	Permanent
Alert Description	X'800A'	APPN-DLUR configuration error
Probable Causes	X'1022' X'1023'	Communication program Communication program in remote node
User Causes	(none)	
Install Causes	X'171F'	Limit for DLUR control sessions exceeded
Actions (note 1)	X'1500'	Correct installation problem
Failure Causes	(none)	
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID

Notes:

1. The recommended actions listed here are simply *recommendations*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.

APPN/DLUR Alert CPDL004

Alert Condition:

While configuring this DLUS product, a network administrator has mistakenly specified the name of another DLUS node as the requester for one or more PUs. This alert is sent by a DLUS node when a CPSVRMGR session that it initiated is unbound by the session partner with sense data X'088E 000F'. In that scenario, the session partner (the intended DLUR) has rejected the the DLUR/S Capabilities (X'51') control vector from this node. The most likely explanation is that the configuration error was made at the DLUS that initiated the CPSVRMGR session, not at the DLUS node that rejected it.

Alert ID Number		X'E9C3 C9C6'
Alert Type	X'01'	Permanent
Alert Description	X'800A'	APPN-DLUR configuration error
Probable Causes	X'1022' X'1023'	Communication program Communication program in remote node
User Causes	(none)	
Install Causes	X'80BA' X'82' SF	Node (detailed data qualifier) was incorrectly specified as a dependent LU requester Data ID=X'82' (CP)
Actions (note 1)	X'1500'	Correct installation problem
Failure Causes	(none)	
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID

Notes:

1. The recommended actions listed here are simply *recommendations*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.

APPN/DLUR Alert CPDL005

Alert Condition:

CPSVRMGR Session Across Subnet Boundaries Not Supported

X'088E 000F' - An attempt was made to establish a CP-SVR pipe across a subnet boundary between a dependent LU server and a dependent LU requester with limited multi-subnet support. The network administrator will be advised of the configuration problem so that it can be corrected.

Alert ID Number		X'E3B7 48C9'
Alert Type	X'01'	Permanent
Alert Description	X'800A'	APPN-DLUR configuration error
Probable Causes	X'1023' X'1022'	Communication program in remote node Communication program
User Causes	(none)	
Install Causes	X'80BB' X'82' SF	Node (detailed data qualifier) does not support a dependent LU server with a different network ID. Data ID=X'82' (CP)
Actions (note 1)	X'1500'	Correct installation problem
Failure Causes	(none)	
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID

Notes:

1. The recommended actions listed here are simply *recommendations*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.

APPN/DLUR Alert CPDL006

Alert Condition:

CPSVRMGR Session Not Supported Across a Branch Downlink

X'0877 005B' - An attempt was made to establish a CP-SVR pipe across a branch downlink. The network administrator will be advised of the configuration problem so that it can be corrected.

Alert ID Number		X'2241 9C9D'
Alert Type	X'01'	Permanent
Alert Description	X'800A'	APPN-DLUR configuration error
Probable Causes	X'1023' X'1022'	Communication program in remote node Communication program
User Causes	(none)	
Install Causes	X'805A' X'F001' X'F0A0' X'82' SF	A CPSVRMGR session cannot be established over a path having a branch uplink as an intermediate hop The Alert sender is the owner of the branch uplink Name of the DLUR or DLUS for which the attempt was made to establish the session is Data ID=X'82' (CP)
Actions (note 1)	X'1500'	Correct installation problem
Failure Causes	(none)	
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID

Notes:

1. The recommended actions listed here are simply *recommendations*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.

APPN/DLUR Alert CPDL007

Alert Condition:

A request from a DLUR to a DLUS for activation of a PU failed because the switched major node for the PU was not active. The request can be retried once the correct switched major node has been activated.

Alert ID Number		X'1CB5 64E8'
Alert Type	X'02'	Temporary
Alert Description	X'3124'	DLUS failed to activate PU
Probable Causes	X'1023' X'1022'	Communications program in remote node Communication program
User Causes	X'71A9' X'82' SF	PU activation failed because a switched major node at DLUS (detailed data qualifier) was not active Data ID=X'82' (CP)
Actions (note 1)	X'1350'	Activate switched major node then retry
Install Causes	(none)	
Failure Causes	(none)	
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID

Notes:

1. The recommended actions listed here are simply *recommendations*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.

High Performance Routing Alerts

APPN/HPR Alert CPHP001

Alert Condition:

A protocol error was detected by a component of the APPN/HPR product, causing communications to be terminated.

For RTP protocol errors, this Alert covers sense data:

```
X'A0010003'  X'A0010004'  X'A0010008'  X'A001000B'  X'A001000C'
X'A001000D'  X'A001000E'  X'A001000F'  X'A0010014'  X'A0010016'
X'A0010017'  X'A0010018'  X'A0010019'  X'A001001E'  X'A0010022'
X'A001002D'  X'A0010032'  X'A0010033'  X'A0010035'  X'A0010037'
X'A001003A'  X'A018mmnn'  X'A018FFnn'  X'A019FFnn'  X'A01AFFnn'
X'A01Bmmnn'  X'A001FFnn'  X'A001003B'
```

Alert ID Number		X'A368CA24'
Alert Type	X'01'	Permanent
Alert Description	X'3121'	APPN/HPR protocol error
Probable Causes	X'1023' X'1022'	Communication program in remote node Communication program
User Causes	(none)	
Install Causes	(none)	
Failure Causes	X'22A1' X'82' SF	Communications program in remote node: Data ID=X'82' (CP)
Actions (note 1)	X'3110' X'32C0' X'82' SF X'82' SF	Contact communications systems programmer Report the following: Data ID=X'15' (SNA sense data) Data ID=X'F0' (Product Alert Reference Code) (note 2)
Additional SVs	X'01' SV X'05' SV X'10' SF X'10' SV X'48' SV X'82' SF X'82' SF	Date/Time Hierarchy/Resource List Hierarchy Name List Sending node: Name=(CP name) Type=X'F4' (CP) Alert Sender Product Set ID Supporting Data Correlation (note 3) Data ID=X'D0' (File Name) Data ID=X'D1' (Log Record Number)

Notes:

1. The recommended actions listed here are simply *recommended*. An implementation is encouraged to select different recommended actions if they are more meaningful for a particular product. For example, it is possible to identify product-unique configuration parameters in some recommended actions.
2. The Product Alert Reference Code is a label that a product may provide as a key to more detailed documentation about the Alert. This documentation may also include detailed product diagnostic information, such as identifying those program modules involved in the detection of the error.

An alternative to this latter use of the Product Alert Reference Code could be to include the detecting module name (data ID=X'A2').

If the Alert sender has no Product Alert Reference Code to provide, then Action Code Point X'32A0' should be used instead of X'32C0'.

3. The Supporting Data Correlation (X'48') subvector is present to report that diagnostic data for this Alert was stored by the Alert sender. The X'48' subvector provides a great deal of flexibility in terms of how supporting data may be identified. The use of "file name" and "log record number" shown here is just one example that may not be appropriate for all implementations. If an implementation is unable to capture any supporting data, this subvector may be omitted.

End of Chapter 5

Chapter 6. Management Services Transaction Program Names

Architecturally Defined MS Transaction Program Names

Figure 6-1 (Page 1 of 2). Architecturally Defined Management Services Transaction Programs

Name (hex)	Descriptive name	Notes
MS Service Transaction Programs		
These are programs that are the targets for the APPC ALLOCATE verb, so these names will appear in an LU 6.2 Attach.		
X'23F0F0F0'	MSU_HANDLER	Performs application program routing by MS major vector key (not current level of Multiple Domain Support)
X'23F0F0F1'	MDS_RECEIVE	Multiple Domain Support transaction program for receiving data.
X'23F0F0F2'	MDS_HP_RECEIVE	Multiple Domain Support transaction program for receiving data over user-mode sessions as defined in MULTIPLE_DOMAIN_SUPPORT Optional Subset 1 (High-Performance Option), in *SNA/Management Services Reference*.
X'23F0F0F3'	SNMP_PORT_00160_registered	The TP at an SNMP manager that sends an SNMP request to an agent. This will be the destination TP for the response.
X'23F0F0F4'	SNMP_PORT_00161_registered	The agent TP to which an SNMP manager sends a request. This TP corresponds to the well-known UDP port 161.
X'23F0F0F5'	SNMP_PORT_00162_registered	The TP at an SNMP manager to which an agent sends a trap. This TP corresponds to the well-known UDP port 162.
X'23F0F0F6'	SNMP_PORT_00163_registered	The TP at an SNMP agent that sends a trap. This will be the destination TP for the inform confirming receipt of the trap.
X'23F0F0F7'	NODE_ADDRESS_SERVER	The TP at an APPN control point that returns a list of one or more non-SNA addresses (for example, IP version-4 or IP version-6 addresses) at which the CP of the APPN node can be reached.
X'23F0F0F8'	NODE_ADDRESS_REQUESTER	The default name by which a TP requesting non-SNA addresses for an APPN node identifies itself to NODE_ADDRESS_SERVER. A requesting TP may, however, identify itself with any registered or unregistered TP name.
MS Cross-Discipline Application Programs		
These are programs that are targets for MDS-MUs. These names will appear only in the MDS Routing Information (X'1311') GDS variable. These programs are never the target for an APPC ALLOCATE verb, so they will not appear in an LU 6.2 Attach.		
X'23F0F1F0'	MDS_ROUTER	
X'23F0F1F1'	MS_CAPABILITIES	

Figure 6-1 (Page 2 of 2). Architecturally Defined Management Services Transaction Programs

Name (hex)	Descriptive name	Notes
X'23F0F1F8'	Session Layer Mapper for CMIP over SNA	MS application program name for CMIP over SNA (CMOS) MS application program that envelopes OSI session layer protocol data units within MDS-MUs.
X'23F0F1F9'	Session Layer Mapper for CMIP over SNA for migration	MS application program name for a migration CMIP over SNA (CMOS) MS application program that envelopes OSI session layer protocol data units within MDS-MUs.
MS Discipline-Specific Application Programs		
These are programs that are targets for MDS-MUs. These names will appear only in the MDS Routing Information (X'1311') GDS variable. These programs are never the target for an APPC ALLOCATE verb, so they will not appear in an LU 6.2 Attach.		
X'23F0F1F4'	EP_COMMON_OPS_SERVICES	
X'23F0F1F5'	COMMON_OPS_SERVICES_NETOP	
X'23F0F1F6'	EP_OPERATIONS_MGMT	
X'23F0F1F7'	OPERATIONS_MGMT_NETOP	Also used as MS category code by MS_CAPS function set.
X'23F0F3F0'	EP_ALERT	
X'23F0F3F1'	ALERT_NETOP	Also used as MS category code by MS_CAPS function set.

As new Function Set Groups are defined, additional names will be added.

End of Chapter 6

Appendix A. SNA Character Sets and Symbol-String Types

Introduction

This appendix describes the character sets and symbol-string types used, for example, for the following fields:

- LU name
- Network-qualified LU name
- Mode name
- COS name
- Transaction program name
- Access security information subfields
- Program initialization parameters (PIP) subfields
- Map name
- SNADS server, user (DGN, DEN), and service unit (RGN, REN) names

The detailed syntax of these strings is described in other chapters where their usage within individual message units is defined.

Symbol-String Type

The symbol-string type specifies the set of code points and corresponding characters from which the strings listed above are composed, as follows:

- Type A (Assembler oriented): a character string consisting of one or more characters from character set A. The first character of a type-A symbol string is not a numeric; i.e., it is different from X'F0', X'F1', ..., or X'F9'.
- Type 1134 (Type A subset): a character string consisting of one or more EBCDIC uppercase letters A through Z and numerics 0 through 9. For certain names, IBM implementation usage constrains the leading character to be alphabetic; these names include the following:
  - network ID
  - network name (e.g., LU name, link name)
  - mode name — SNA-defined user-session mode names are prefixed by X'7B' (represented by the "#" graphic character in U.S. EBCDIC fonts) to distinguish them from user-defined names
  - class-of-service name (COS name) — SNA-defined user-session COS names are prefixed by X'7B' (represented by the "#" graphic character in U.S. EBCDIC fonts) to distinguish them from user-defined names

  Earlier versions of the architecture permitted type-A symbol strings in network IDs and network names; this usage is now retired, but implementations must continue to support receipt of such strings from back-level partners.
- Type AE (A extended): a character string consisting of one or more characters from character set AE, with no restriction on the first character.
- Type 930 (distribution services oriented): a character string consisting of one or more characters from character set 930, with the following rules:
  - No leading space (X'40') characters are used, but no other restrictions exist on the first character.
  - Imbedded space (X'40') characters are significant.

  - Trailing space (X'40') characters are not significant.

- Type USS (unformatted system services oriented, used for character-coded requests): a character string consisting of one or more characters from character set USS, with no restriction on the first character.
- Type GR (EBCDIC graphics): a byte string consisting of one or more bytes within the range X'41' through X'FE', with no restriction on the first byte.
- Type G (general): a byte string consisting of one or more bytes within the range X'00' through X'FF', with no restriction on the first byte.
- Type DB (double byte): a byte-string consisting of an even number of four or more bytes beginning with a byte set to X'0E', followed by bytes having values in the range X'41' through X'FE', and ending with a byte set to X'0F'.

SNA Character Sets and Encodings

A character set is a set of graphic characters, such as letters, numbers, and special symbols. SNA formats make use of a variety of character sets. Character sets A, AE, 930, USS, 1134, and 640 define the characters that are allowed in the corresponding symbol-strings.

Each character set is encoded using a code page. A code page is the specification of code points, or hexadecimal values, for one or more character sets. All character sets used by SNA are encoded using IBM code page 00500, the relative encodings of which are shown in Figure A-1.

Character sets encoded using a specific code page are officially denoted by the concatenation of their character set and code page numbers, such as 00640-00500 and 01134-00500. The concatenation of these two numbers specifies a *coded graphic character set*. The older character sets—A, AE, 930, and USS—and their encodings continue to be supported but not for new formats, which now use 00640-00500 and 01134-00500.

Figure A-1 on page A-5 defines the character sets and encodings for A, AE, 930, USS, 01134-00500, and 00640-00500. The code points that do not belong to any of these sets are not shown.

Figure A-1 (Page 1 of 3). Character Sets A, AE, 930, USS, 1134, and 640

Hex Code	Graphic	Description	Set					
			A	AE	930	USS	1134	640
15		Line Feed				X		
40		Space			X	X		X
4B	.	Period		X	X	X		X
4C	<	Less Than Sign						X
4D	(	Left Parenthesis				X		X
4E	+	Plus Sign				X		X
50	&	Ampersand			X	X		X
59	ß	Sharp s			X			
5B	$	Dollar Sign	X	X	X	X		
5C	*	Asterisk				X		X
5D	)	Right Parenthesis				X		X
5E	;	Semicolon						X
60	-	Minus Sign			X	X		X
61	/	Slash			X	X		X
62	Â	A Circumflex, Capital			X			
63	Ä	A Diaeresis, Capital			X			
64	À	A Grave, Capital			X			
65	Á	A Acute, Capital			X			
66	Ã	A Tilde, Capital			X			
67	Å	A Overcircle, Capital			X			
68	Ç	C Cedilla, Capital			X			
69	Ñ	N Tilde, Capital			X			
6B	,	Comma			X	X		X
6C	%	Percent Sign						X
6D	_	Underline						X
6E	>	Greater Than Sign						X
6F	?	Question Mark						X
71	É	E Acute, Capital			X			
72	Ê	E Circumflex, Capital			X			
73	Ë	E Diaeresis, Capital			X			
74	È	E Grave, Capital			X			
75	Í	I Acute, Capital			X			
76	Î	I Circumflex, Capital			X			
77	Ï	I Diaeresis, Capital			X			
78	Ì	I Grave, Capital			X			
7A	:	Colon						X
7B	#	Number Sign	X	X	X	X		
7C	@	At Sign	X	X	X	X		
7D	'	Apostrophe			X	X		X
7E	=	Equal Sign				X		X
7F	"	Quotation Marks						X
80	Ø	O Slash, Capital			X			
81	a	a, Small		X				X
82	b	b, Small		X				X

Figure A-1 (Page 2 of 3). Character Sets A, AE, 930, USS, 1134, and 640

Hex Code	Graphic	Description	Set					
			A	AE	930	USS	1134	640
83	c	c, Small		X				X
84	d	d, Small		X				X
85	e	e, Small		X				X
86	f	f, Small		X				X
87	g	g, Small		X				X
88	h	h, Small		X				X
89	i	i, Small		X				X
91	j	j, Small		X				X
92	k	k, Small		X				X
93	l	l, Small		X				X
94	m	m, Small		X				X
95	n	n, Small		X				X
96	o	o, Small		X				X
97	p	p, Small		X				X
98	q	q, Small		X				X
99	r	r, Small		X				X
9A	ª	a Underscore, Small			X			
9B	º	o Underscore, Small			X			
9E	Æ	AE Dipthong, Capital			X			
A0	µ	Micro, Mu			X			
A2	s	s, Small		X				X
A3	t	t, Small		X				X
A4	u	u, Small		X				X
A5	v	v, Small		X				X
A6	w	w, Small		X				X
A7	x	x, Small		X				X
A8	y	y, Small		X				X
A9	z	z, Small		X				X
AC	Ð	D Stroke, Capital			X			
AD	Ý	Y Acute, Capital			X			
AE	Þ	Thorn, Capital			X			
C1	A	A, Capital	X	X	X	X	X	X
C2	B	B, Capital	X	X	X	X	X	X
C3	C	C, Capital	X	X	X	X	X	X
C4	D	D, Capital	X	X	X	X	X	X
C5	E	E, Capital	X	X	X	X	X	X
C6	F	F, Capital	X	X	X	X	X	X
C7	G	G, Capital	X	X	X	X	X	X
C8	H	H, Capital	X	X	X	X	X	X
C9	I	I, Capital	X	X	X	X	X	X
D1	J	J, Capital	X	X	X	X	X	X
D2	K	K, Capital	X	X	X	X	X	X
D3	L	L, Capital	X	X	X	X	X	X
D4	M	M, Capital	X	X	X	X	X	X

Figure A-1 (Page 3 of 3). Character Sets A, AE, 930, USS, 1134, and 640

Hex Code	Graphic	Description	Set					
			A	AE	930	USS	1134	640
D5	N	N, Capital	X	X	X	X	X	X
D6	O	O, Capital	X	X	X	X	X	X
D7	P	P, Capital	X	X	X	X	X	X
D8	Q	Q, Capital	X	X	X	X	X	X
D9	R	R, Capital	X	X	X	X	X	X
DF	ÿ	y Diaeresis, Small			X			
E2	S	S, Capital	X	X	X	X	X	X
E3	T	T, Capital	X	X	X	X	X	X
E4	U	U, Capital	X	X	X	X	X	X
E5	V	V, Capital	X	X	X	X	X	X
E6	W	W, Capital	X	X	X	X	X	X
E7	X	X, Capital	X	X	X	X	X	X
E8	Y	Y, Capital	X	X	X	X	X	X
E9	Z	Z, Capital	X	X	X	X	X	X
EB	Ô	O Circumflex, Capital			X			
EC	Ö	O Diaeresis, Capital			X			
ED	Ò	O Grave, Capital			X			
EE	Ó	O Acute, Capital			X			
EF	Õ	O Tilde, Capital			X			
F0	0	Zero	X	X	X	X	X	X
F1	1	One	X	X	X	X	X	X
F2	2	Two	X	X	X	X	X	X
F3	3	Three	X	X	X	X	X	X
F4	4	Four	X	X	X	X	X	X
F5	5	Five	X	X	X	X	X	X
F6	6	Six	X	X	X	X	X	X
F7	7	Seven	X	X	X	X	X	X
F8	8	Eight	X	X	X	X	X	X
F9	9	Nine	X	X	X	X	X	X
FB	Û	U Circumflex, Capital			X			
FC	Ü	U Diaeresis, Capital			X			
FD	Ù	U Grave, Capital			X			
FE	Ú	U Acute, Capital			X			

End of Appendix A

Appendix B. Common Structures

Introduction

This appendix contains the information about the SNA/DS, SNA/FS, and SNA/MS SNA Condition Report (SNACR). For more information on the SNACR, refer to the following books:

- *SNA/Distribution Services Reference*
- *SNA/File Services Reference*
- *SNA/Management Services Reference*

The format descriptions comprise two parts: header description tables and structure descriptions. A header description table contains the header information for each structure. A structure description contains a prose description of the structure, bit-level representations, and any presence rules or length restrictions associated with a particular structure.

Encoding Rules and Representations

The SNA Condition Report (SNACR) format is described in terms of encoded fields referred to as "structures" and the hierarchical relationship between these structures. In this document, the header description tables show each structure and its header. Elsewhere in this book, the header length is assumed not to be part of the overall structure length (e.g., *SNA_report_code*).

Structure Classifications

Fields and groupings of fields are known as structures. They are categorized in terms of their hierarchical position ("atomic," "child," or "parent"), the method by which their beginning and endings are determined, (length-bounded, delimited, or implied) and which kind of header is used to identify them (LT or LLID). Only certain combinations of characteristics are possible.

Length-bounded Structures

Length-bounded structures consist of a header and usually some following information. A header may be either two bytes in length, referred to as an "LT" (length and type), or four bytes in length, referred to as an "LLID" (length and GDS code point). In either case, the length byte(s) include the length of the header itself and the following information, if any.

Atomic Structures

In many cases, a structure consists only of its own header followed by data. These structures cannot be decomposed, and therefore they are called "atomic." Atomic structures are always length-bounded and may have either LT or LLID headers.

Parent and Child Structures

Structures can contain other structures within them. The containing structure is known as a parent structure and the contained structures are known as children. These terms are relative, since a non-atomic child structure itself contains other structures and is a parent to them. Children of the same parent are siblings of each other. Parent structures may be length-bounded, delimited, or implied; and may be identified by LTs or LLIDs.

Length-Bounded Parent Structures

In this case, the parent structure has its own header, either an LT or an LLID. Its length includes the lengths of all its children plus the length of its own header. A length-bounded parent exists both as a logical grouping of its children and as an explicit encoded structure at its own encoding level.

Delimited Parent Structures

Sometimes it is convenient to define a group of related structures as existing within a parent structure without having that parent structure appear as a length-bounded structure in the message. The beginning and end of the parent are defined by its first and last children. These children are known as delimiters, the first child is the prefix delimiter and the last is the suffix delimiter. Delimiter children are length-bounded and must be present. They may be null, that is, with an LT of length=2 or an LLID of length=4. When the children's headers are LTs, the parent is classified as a delimited LT structure. When they are LLIDs, the parent is a delimited LLID structure.

Implied Parent Structures

It is possible to define a set of related structures as children of a parent structure where the existence and boundaries of the parent are implied by the existence and order of certain child structures. This set of children may occur within the parent structure, either ordered or unordered, until a structure occurs that is not an element of this set. This break in sequence implies the boundary between parent structures. Depending on its children's headers, an implied parent is classified as either implied LT or implied LLID.

Segmented Structures

Length-bounded LLID structures may be either segmentable or non-segmentable. For segmentable structures, the most significant bit of the LL bytes indicates whether any particular segment is the last (bit is equal to 0) or not last (bit is equal to 1) segment of the structure. The ID bytes of the segmentable structure are present on the first segment only.

Properties of Parent Structures

Order

A parent structure may have either ordered or unordered children. Ordered children occur in the parent structure in the same order as they are described in the format description table. Unordered children may occur in the parent structure in any order.

Unrecognized Children

Future enhancements to the formats might add structures that will not be recognized by implementations of the current format definitions. The current format must specify for each parent whether or not unrecognized child structures are allowed. If they are allowed, the definition must specify how long they might be. When unrecognized structures are found where they are allowed, they must be passed through without change at intermediate locations and gracefully ignored at final destinations. Unrecognized structures are identified by either LT or LLID headers, being of the same type as their siblings.

Number of Children

The number of children within a parent may range from a required minimum to an allowed maximum. For example, a parent might have several children, each defined with an occurrence of 0-1, and a number of children defined as 1. This means that any one, but only one, child is allowed.

Header Description Table

The header information and primary syntax associated with each structure are formally described in tabular form. These header description tables represent the formatting information required to either parse or build the SNACR.

Structure Name

The first column of the header description table identifies the SNACR structures, by name, and illustrates their hierarchical relationship by indentation of the column entries. The order of the structure entries in the table represents, unless specified otherwise, the order in which the structures appear in the SNACR datastream.

Structure Reference (Struct Ref)

As header information and primary syntax are described in the header description of a particular table, the semantics, bit representations, presence rules, and other characteristics are described formally in the structure description. This column contains a reference page number to where this structure information is found.

Structure Class (Struct Class)

Structures are classified as either length-bounded LLIDs (ID), length-bounded LTs (T), delimited LLIDs (Del-ID), delimited LTs (Del-T), implied LLIDs (Imp-ID), or implied LTs (Imp-T).

A structure classified as delimited must contain at least two required, length-bounded children that act as the prefix (pfx) and suffix (sfx) of the delimited structure. The "/pfx" notation indicates the length-bounded child structure that serves as the prefix for its parent delimited structure. The "/sfx" notation indicates the length-bounded structure that serves as the suffix for its parent delimited structure.

A structure classified as implied uses an identified child to identify the beginning of a sequence of children. The "/idc" notation indicates the length-bounded structure that serves as an identified child of its parent implied structure.

The "/seg" notation indicates that segmentation is allowed.

ID/T

This column contains the ID or T value within the header, in hexadecimal. To indicate that a delimited structure is identified by its prefix, the notation "pfx" is used. To indicate that an implied structure is identified by one of its children, the notation "idc," for identified child, is used.

Length

This column describes the length verification that would be appropriate at presentation services time. The range of length values specifies the minimum and maximum lengths of structures which an implementation is required to receive. For structures that allow unrecognized children, the maximum length value accommodates the possibility of these yet-to-be-defined structures. On the sending side, the maximum length value for a particular structure may be determined by subtracting

the unrecognized reserve, if unrecognized children are allowed, from the maximum length.

Note: An asterisk denotes length restrictions for a particular structure. Length restrictions are detailed in the corresponding structure description.

Occurrences

Multiple occurrences of the SNACR structures may or may not be permitted. A value of "1 - <some number>" in this column indicates the allowed range of occurrences of the corresponding structure. A value of "≥1" indicates that there is no architecturally defined maximum. A value of "1" in this column indicates that only a single instance of the corresponding structure is appropriate. A value of "0 - 1" indicates that an instance of the corresponding structure is optional.

Note: An asterisk denotes presence rules for a particular structure. Presence rules are detailed in the corresponding structure description.

Children

Unrecognized Children Allowed (Unrec): An entry of "Y" in the "Unrec" column indicates that the corresponding structure tolerates unrecognized child structures. An entry of "N" indicates that the particular structure tolerates only the architecturally-defined child structures. An entry of "—" indicates that unrecognized children are not applicable to the particular structure. By definition, atomic structures do not contain children, recognized or not.

Order: A value of "Y" in this column indicates that children are ordered, a value of "N" indicates that children are unordered, and a value of "—" indicates that no children are present.

Note: If a structure is atomic, this column is not applicable.

Number (Num): Each parent structure contains a certain number of different children. This column specifies the minimum and maximum number of different children for a particular parent structure. The maximum number also accounts for unrecognized children, if they are allowed within the parent structure. This column does not account for multiple occurrences of a particular child structure within the parent structure. The number of occurrences of each child is indicated in the "Occurrences" column.

Subtable: Sometimes the need to divide large tables into subtables becomes apparent, particularly when common children appear frequently within different header description tables. This column contains a reference page number to where these common children are described.

Structure Description

The structure description is referenced by a page number appearing in the "Structure Reference" column corresponding to each structure in the header description table. This description contains information pertaining to the data portion of a particular structure. Prose descriptions, presence rules, and semantics associated with the corresponding entry in the header description table may appear in the structure description.

Overview

The SNA Condition Report is a means of encoding exception information for any type of SNA exception. Information about the exception and the location of the exception can be encoded in the SNA Condition Report for the purpose of reporting. The SNA Report Code contains the code and subcode that describe the exception. The location information is encoded in standard structure identification of the Structure Report. When needed, other structures can also be included in the SNA Condition Report to add any other necessary information about the exception.

The SNA Condition Report consists of the following major parts:

SNA_Report_Code
: The SNA_Report_Code is a required SNA registered code identifying the condition that is being reported. The primary report code is placed in bytes 2-3 and the subcode is placed in bytes 4-5.

Structure_Report
: The structure_report contains information about the structure involved in a format related exception.

Reported-On_Dest_List
: Contains the portion of the distribution destinations that are being reported on.

Reported-On_Agent
: Contains the name of the transaction program that is being reported on.

Reported-On_Token_String
: Contains the canonical identifier of a data object related to the detected condition.

Supplemental_Report
: Contains other information about the exception that could not be encoded in any of the structures described above.

The combination of the SNA registered report code and a standard structure identifier creates a powerful tool for reporting format exceptions. Both the reason for the exception and its location in the data stream can be described in a general, independent fashion. This has a secondary benefit of allowing similar exceptions to be reported on with the same report code, even if the exceptions occurred in entirely different data streams.

Header Description Tables for SNA Condition Report

Structure Name	Struct Ref Pg	Struct Class	ID/T	Length	Occur-rences	Children			
						Unrec	Order	Num	Sub Table
SNA_Condition_Report	B-10	ID	1532	10-32749	0-1*	Y	Y	1-10	—
SNA_Report_Code	B-10	T	7D	6	1	—	—	—	—
Structure_Report	B-10	T	01	14-255	0-10*	Y	Y	2-10	—
Structure_State	B-10	T	01	3	1	—	—	—	—
Structure_Contents	B-11	T	02	3-100	0-1*	—	—	—	—
Parent_Spec	B-11	T	03	5-17	0-7	N	Y	1-4	—
Parent_ID_Or_T	B-11	T	01	3-4	1	—	—	—	—
Parent_Class	B-11	T	02	3	0-1*	—	—	—	—
Parent_Position	B-12	T	03	4	0-1	—	—	—	—
Parent_Instance	B-12	T	04	4	0-1	—	—	—	—
Structure_Spec	B-12	T	04	5-17	0-1*	N	Y	1-4	—
Structure_ID_Or_T	B-12	T	01	3-4	0-1*	—	—	—	—
Structure_Class	B-13	T	02	3	0-1*	—	—	—	—
Structure_Position	B-13	T	03	4	0-1	—	—	—	—
Structure_Instance	B-13	T	04	4	0-1	—	—	—	—
Structure_Segment_Number	B-13	T	05	4	0-1*	—	—	—	—
Structure_Byte_Offset	B-14	T	06	4	0-1	—	—	—	—
Sibling_List	B-14	T	07	3-100	0-1*	—	—	—	—
Unrecognized_Reserve	B-17	T	—	2-241	—	—	—	—	—
Reported-On_Dest_List	B-14	Del-T	pfx	12-11268	0-1*	N	Y	3	—
Reported-On_Dest_Prefix	B-14	T/pfx	08	2	1	—	—	—	—
Reported-On_Dest	B-14	Imp/T	idc	8-5654	≥1	N	Y	1-2	—
Reported-On_Location_Name	B-14	T/idc	09	2-22	1	N	Y	0-2	—
Reported-On_NETID	B-15	T	01	3-10	0-1*	—	—	—	—
Reported-On_Node_ID	B-15	T	02	3-10	0-1*	—	—	—	—
Reported-On_User	B-15	T	0A	8-22	≥0*	N	Y	2	—
Reported-On_Naming_Auth	B-16	T	01	3-10	1	—	—	—	—
Reported-On_Individual_ID	B-16	T	02	3-10	1	—	—	—	—
Reported-On_Dest_Suffix	B-16	T/sfx	0B	2	1	—	—	—	—
Reported-On_Agent	B-16	T	04	3-10	0-1*	—	—	—	—
Reported-On_Token_String	B-16	T	02	5-182	0-10*	N	Y	1-10	B-9
Supplemental_Report	B-17	T	03	3-255	0-5*	—	—	—	—
Unrecognized_Reserve	B-17	T	—	2-15826	—	—	—	—	—

Note: * Refer to the structure description for presence rule(s) and length restriction.

Figure B-1. SNA_Condition_Report as Defined by SNA/FS and CM

Structure Name	Struct Ref Pg	Struct Class	ID/T	Length	Occur-rences	Children			
						Unrec	Order	Num	Sub Table Page
Tokens									
First_Token	B-17	T	01	3-18	1	—	—	—	—
Second_Token	B-17	T	02	3-18	0-1	—	—	—	—
Third_Token	B-18	T	03	3-18	0-1	—	—	—	—
Fourth_Token	B-18	T	04	3-18	0-1	—	—	—	—
Fifth_Token	B-18	T	05	3-18	0-1	—	—	—	—
Sixth_Token	B-18	T	06	3-18	0-1	—	—	—	—
Seventh_Token	B-18	T	07	3-18	0-1	—	—	—	—
Eighth_Token	B-18	T	08	3-18	0-1	—	—	—	—
Ninth_Token	B-18	T	09	3-18	0-1	—	—	—	—
Tenth_Token	B-18	T	0A	3-18	0-1	—	—	—	—

Figure B-2. Subtable Encoding of the Global Name Tokens.

SNA_Condition_Report

Description: The *SNA_condition_report* describes the condition being reported. The condition is always identified by an *SNA_report_code*.

Certain conditions can be more fully described by supplementary information. Conditions pertaining to one or more structures in a format can have the location and contents of each of those structures specified by a *structure_report*. Certain conditions arise from inconsistencies among multiple portions of the MU. Each portion is described by a separate *structure_report*.

Data objects related to the reported-on condition can be specified in a *reported-on_token_string*. Other information related to the condition can be specified in a *supplemental_report*.

Presence Rule: Occurs when a reportable condition was detected by the agent/server and the agent has determined that reporting is appropriate.

SNA_Report_Code

Description: The *SNA_report_code* is an SNA registered code identifying the condition that is being reported. Refer to the "Sense Data" chapter in the *SNA/Format* book for allowable values and descriptions.

Format: Byte string

Byte	Content
0-1	LT header
2-3	Primary report code
4-5	Subcode

Structure_Report

Description: The *structure_report* reports on a structure involved in a format-related condition. Depending on the condition, the *structure_report* may describe a structure that was present in, or absent from, the reported-on MU.

A format condition has its location in the MU pinpointed by a *structure_spec* and a list of *parent_spec*s that define a line-of-descent. The line-of-descent begins with the MU and continues down the parent-child hierarchy to a level as low as the particular condition warrants. A registered ID always appears in a *structure_report*; if the reported-on structure is not itself a registered ID, its line-of-descent is traced up to include a registered ancestor.

Presence Rule: The presence or absence of this structure is governed by the using architecture.

Structure_State

Description: The *structure_state* indicates whether the reported-on structure was present or absent.

Format: Hexadecimal code

Byte	Content
0-1	LT header
2	X'01' STRUCTURE_PRESENT
	X'02' STRUCTURE_ABSENT

Note: All other values are reserved.

Structure_Contents

Description: The *structure_contents* is the portion of the MU that is relevant to the detected condition. Typically, the *structure_contents* contains the header of the structure and at least the beginning of its contents. When the condition can be isolated to a portion of the structure, the *structure_contents* contains only that portion of the structure relevant to the condition. In this case, the *structure_segment_number* and *structure_byte_offset* locate the portion of the structure relevant to the condition.

Presence Rule: Allowed only when *structure_state* = STRUCTURE_PRESENT.

Format: Undefined byte string

Parent_Spec

Description: The *parent_specification* contains the identifier (ID or T) and the class of a parent structure. For a parent structure that occurs multiple times, the instance may also be included. The value of the *parent_instance* identifies the particular instance. The position of this parent structure within its parent (if one exists) may also be included. This would typically be done when this parent structure is an unordered child of its parent.

Parent_ID_Or_T

Description: The *parent_ID_or_T* is the ID or T value of a parent structure. ID values are the registered GDS code points. T values are architecture-specific values relative to the encompassing ID.

Format: Undefined byte string

Parent_Class

Description: The *parent_class* is the class of a parent structure.

Presence Rule: If absent, defaults to LENGTH-BOUNDED_LT_STRUCTURE.

Format: Hexadecimal code

Byte	Content	
0-1	LT header	
2	X'01'	LENGTH-BOUNDED_LLID_STRUCTURE (ID)
	X'02'	LENGTH-BOUNDED_LT_STRUCTURE (T) (default)
	X'03'	DELIMITED_LLID_STRUCTURE (DEL-ID)
	X'04'	DELIMITED_LT_STRUCTURE (DEL-T)
	X'05'	IMPLIED_LLID_STRUCTURE (IMP-ID)
	X'06'	IMPLIED_LT_STRUCTURE (IMP-T)

Note: All other values are reserved.

Parent_Position

Description: The *parent_position* is the position of this parent structure within its parent (if one exists) in this particular MU. Multiple consecutive instances of a repeatable parent structure share a single position, and can be distinguished by *parent_instance*.

Format: Signed binary integer

Parent_Instance

Description: The *parent_instance* is used when a parent structure occurs multiple times. The value of *parent_instance* identifies the particular instance within a position.

Format: Signed binary integer

Structure_Spec

Description: The *structure_specification* contains the identifier (ID or T) and the class of a structure. For a structure that occurs multiple times, the instance may also be included. The value of the *structure_instance* identifies the particular instance. The position of this structure within its parent structure may also be included. This would typically be done when the parent structure contains unordered children.

Presence Rule: Absent only when the *structure_class* is the default and the *sibling_list* contains all pertinent ID or T values.

Structure_ID_Or_T

Description: The *structure_ID_or_T* is the ID or T value of the structure. ID values are the registered GDS code points. T values are architecture-specific values relative to the encompassing ID.

Presence Rule: Required except when *sibling_list* contains all pertinent ID or T values. In this case, the structures specified by *sibling_list* are the structures being reported on.

Format: Undefined byte string

Structure_Class

Description:	The *structure_class* is the class of the reported-on structure and any siblings identified in *sibling_list*.
Presence Rule:	If absent, defaults to LENGTH-BOUNDED_LT_STRUCTURE.
Format:	Hexadecimal code

Byte	Content	
0-1	LT header	
2	X'01'	LENGTH-BOUNDED_LLID_STRUCTURE (ID)
	X'02'	LENGTH-BOUNDED_LT_STRUCTURE (T) (default)
	X'03'	DELIMITED_LLID_STRUCTURE (DEL-ID)
	X'04'	DELIMITED_LT_STRUCTURE (DEL-T)
	X'05'	IMPLIED_LLID_STRUCTURE (IMP-ID)
	X'06'	IMPLIED_LT_STRUCTURE (IMP-T)

Note: All other values are reserved.

Structure_Position

Description:	The *structure_position* is either the actual or expected position of this structure within its parent in this particular MU. Multiple consecutive instances of a repeatable structure share a single position, and can be distinguished by *structure_instance*.
Format:	Signed binary integer (1-origin)

Structure_Instance

Description:	The *structure_instance* is used when the structure is one of multiple occurrences of a repeatable structure. The value of *structure_instance* identifies the particular instance within a position.
Format:	Signed binary integer (1-origin)

Structure_Segment_Number

Description:	The *structure_segment_number* is the segment of the structure in which the condition was detected.
Presence Rule:	Occurs when the beginning of *structure_contents* was not contained in the first segment of the reported-on structure.
Format:	Signed binary integer (1-origin)

Structure_Byte_Offset

Description: The *structure_byte_offset* marks the start of *structure_contents* within the reported-on structure. If *structure_segment_number* is present, this value is the offset from the start of the indicated segment; otherwise, it is the offset from the beginning of the structure.

Format: Signed binary integer (0-origin)

Sibling_List

Description: The *sibling_list* contains a string of ID or T values necessary to describe the detected condition. The structures identified in *sibling_list* are children of the parent identified in *parent_spec* and/or siblings of the structure identified in *structure_spec*. The class of the sibling structures is the same as *structure_class*. The expected position, when applicable, is given by *structure_position*.

Presence Rule: The presence or absence of this structure is governed by the using architecture.

Format: Byte string

Reported-On_Dest_List

Description: The *reported-on_destination_list* contains the portion of the distribution destinations that are being reported on.

Presence Rule: The presence or absence of this structure is governed by the using architecture.

Reported-On_Dest_Prefix

Description: The *reported-on_destination_prefix* is the prefix of the *reported-on_destination_list*.

Reported-On_Dest

Description: The *reported-on_destination* associates *reported-on_user*s with a *reported-on_location_name* for those destinations specified in the original distribution request being reported on. For flat destination lists (i.e., lists containing only location names and/or location-user pairs), there are zero or one user names per location list. For factored destination lists, there can be multiple user names per location list.

Reported-On_Location_Name

Description: The *reported-on_location_name* is one of the original destination locations being reported on.

Reported-On_NETID

Description:	The *reported-on_NETID* is the first part of the name of one of the original destination locations being reported on.
Presence Rule:	Always present, unless the *reported-on_location_name* has passed through a SNA/DS FS1 node (or nodes), in which case the *reported-on_user* is present.
Format:	Character string

CGCSGID:	01134-00500 (character set AR)
String Conventions:	Leading and imbedded blanks are not allowed; however trailing blanks are allowed.

Note: In existing networks where network IDs are defined using SNA character set A (includes character set AR, plus the special characters @, #, and $), the RGN may contain any of the three special characters; however, these characters may not be available on keyboards in every country and should not be used in new network IDs.

Reported-On_Node_ID

Description:	The *reported-on_Node_ID* is the second part of the name of one of the original destination locations being reported on.
Presence Rule:	Always present, unless the *reported-on_location_name* has passed through a SNA/DS FS1 node (or nodes), in which case the *reported-on_user* is present.
Format:	Character string

CGCSGID:	01134-00500 (character set AR)
String Conventions:	Leading and imbedded blanks are not allowed; however trailing blanks are allowed.

Note: In existing networks where network IDs are defined using SNA character set A (includes character set AR, plus the special characters @, #, and $), the RGN may contain any of the three special characters; however, these characters may not be available on keyboards in every country and should not be used in new network IDs.

Reported-On_User

Description:	The *reported-on_user* is the name of one of the original destination users being reported on.
Presence Rule:	Required when the *reported-on_NETID reported-on_Node_ID* are not present.

Note: In existing networks where network IDs are defined using SNA character set A (includes character set AR, plus the special characters @, #, and $), the RGN may contain any of the three special characters; however, these characters may not be available on keyboards in every country and should not be used in new network IDs.

Reported-On_Naming_Auth

Description:	The *reported-on_naming_authority* is the first part of the name of one of the original destination users being reported on.
Format:	Character string

CGCSGID:	01134-00500 (character set AR)
String Conventions:	Leading and imbedded blanks are not allowed; however trailing blanks are allowed.

Reported-On_Individual_ID

Description:	The *reported-on_individual_ID* is the second part of the name of one of the original destination users being reported on.
Format:	Character string

CGCSGID:	01134-00500 (character set AR)
String Conventions:	Leading and imbedded blanks are not allowed; however trailing blanks are allowed.

Reported-On_Dest_Suffix

Description:	The *reported-on_destination_suffix* is the suffix of the *reported-on_destination_list*.

Reported-On_Agent

Description.	The *reported-on_agent* is the name of the transaction program that is being reported on.
Presence Rules:	Present if needed to identify the reported-on event and when not implied by the context.
Format	Character string, except for the first byte.

CGCSGID:	01134-00500 (Character Set AR)
String Convention:	Leading and imbedded blanks are not allowed; however trailing blanks are allowed. The first byte of an SNA-registered transaction program name ranges in value from X'00 to X'3F'. When the first byte ranges in value from X'41' to X'FF', the transaction program is not SNA-registered. X'40' is not a valid first-byte value.

Reported-On_Token_String

Description:	The *reported-on_token_string* contains the SNA/FS canonical identifier of a data object related to the detected condition.
Presence Rule:	The presence or absence of this structure is governed by the using architecture.

Supplemental_Report

Description: The *supplemental_report* contains other information pertaining to a condition. The contents of the *supplemental_report* are governed by the using architecture.

Presence Rule: The presence or absence of this structure is governed by the using architecture.

Unrecognized_Reserve

Description: The *unrecognized_reserve* is the number of bytes reserved for unrecognized structures. An unrecognized structure occurs within its parent structure. The number of unrecognized structures allowable for a particular parent structure is limited by the number of children allowable for that parent structure.

Format: Undefined byte string

First_Token

Description: The *first_token* is the highest level part of the data object name. Its values are assigned and registered by SNA.

Format: Character string

CGCSGID: 01134-00500 (Character Set AR)

String Conventions: Leading, imbedded, and trailing space (X'40') characters are not allowed.

Note: In existing networks where network IDs are defined using SNA character set A (includes character set AR, plus the special characters @, #, and $), the RGN may contain any of the three special characters; however, these characters may not be available on keyboards in every country and should not be used in new network IDs.

Second_Token

Description: The *second_token* is the second-highest level part of the data object name. The values of this token are assigned by the authority identified by the name in *first_token*.

Format: Character string

CGCSGID: 01134-00500 (Character Set AR)

String Conventions: Leading, imbedded, and trailing space (X'40') characters are not allowed.

Note: In existing networks where network IDs are defined using SNA character set A (includes character set AR, plus the special characters @, #, and $), the RGN may contain any of the three special characters; however, these characters may not be available on keyboards in every country and should not be used in new network IDs.

Third_Token-Tenth_Token

Description:	The *third_to_tenth_tokens* are the nth highest-level part of the data object name. The value of the nth token is assigned by the authority identified by the name in the (n-1)th token.
Format	Character string

CGCSGID: 01134-00500 (Character Set AR)

String Conventions: Leading, imbedded, and trailing space (X'40') characters are not allowed.

Note: In existing networks where network IDs are defined using SNA character set A (includes character set AR, plus the special characters @, #, and $), the RGN may contain any of the three special characters; however, these characters may not be available on keyboards in every country and should not be used in new network IDs.

Unit of Work Correlator—Overview

The Unit of Work Correlator carries enough information to be a network-wide correlator. It is used in situations where multiple requests may be sent over the network before replies are received. In such cases the responding agent uses the Unit of Work Correlator to identify the request that each reply corresponds to, thus allowing the requesting agent to match the responses to the requests.

The Unit of Work Correlator consists of the following parts:

Requester_Location_Name
The name of the location where the request originated.

Requester_User
The user name of the requester.

Requester_Agent
The transaction program that originated the request.

Seqno_DTM
The sequence number assigned to the request by the requesting agent.

Header Description Tables

Unit of Work Correlator

Figure B-3. Unit of Work Correlator as defined by SNA/FS and SNA/MS

Structure Name	Struct Ref Pg	Struct Class	ID/T	Length	Occur-rences	Children			
						Unrec	Order	Num	Sub Table Page
Agent_Unit_of_Work	B-21	ID	1549	27-128	1	Y	Y	2-8	—
Requester_Location_Name	B-21	T	01	8-22	1	N	Y	2	—
Requester_Netid	B-21	T	01	3-10	1	—	—	—	—
Requester_Node_ID	B-21	T	02	3-10	1	—	—	—	—
Requester_User	B-21	T	03	8-22	0-1	N	Y	2	—
Requester_Naming_Auth_ID	B-21	T	01	3-10	1	—	—	—	—
Requester_Individual_ID	B-22	T	02	3-10	1	—	—	—	—
Requester_Agent	B-22	T	04	3-10	0-1*	—	—	—	—
Seqno_DTM	B-22	T	02	15-17	1	—	—	—	—
Unrecognized_Reserve	B-23	T	—	2-53	—	—	—	—	—

Note: * Refer to the structure description for presence rule(s).

Structure Descriptions

Agent_Unit_of_Work

Description: The *agent_unit_of_work*, assigned by the requesting agent, provides the basis to track the progress of a particular defined task. The unit-of-work request is uniquely identified by the combination of *requester_location_name*, *requester_user*, *requester_agent*, and *sequence_number/date-time*.

Requester_Location_Name

Description: The *requester_location_name* is the name of the location at which the unit-of-work was requested.

Requester_Netid

Description: The *requester_netid* is the first part of the name of the location at which the unit-of-work was requested.

Format: Character string

CGCSGID: 01134-00500 (Character Set AR)

String Conventions: Leading and imbedded blanks are not allowed; however, trailing blanks are allowed.

Requester_Node_ID

Description: The *requester_node_ID* is the second part of the name of the location at which the unit-of-work was requested.

Format: Character string

CGCSGID: 01134-00500 (Character Set AR)

String Conventions: Leading and imbedded blanks are not allowed; however, trailing blanks are allowed.

Requester_User

Description: The *requester_user* is the user name of the originator of the unit-of-work request.

Requester_Naming_Auth_ID

Description: The *requester_naming_authority_ID* is the first part of the user name of the unit-of-work originator.

Format: Character string

CGCSGID: 01134-00500 (Character Set AR)

String Conventions: Leading and imbedded blanks are not allowed; however, trailing blanks are allowed.

Requester_Individual_ID

Description:	The *requester_individual_ID* is the second part of the user name of the unit-of-work originator.
Format:	Character string

CGCSGID:	01134-00500 (Character Set AR)
String Conventions:	Leading and imbedded blanks are not allowed; however, trailing blanks are allowed.

Requester_Agent

Description:	The *requester_agent* identifies the transaction program that originated the unit-of-work request.
Presence Rule:	When the *requester_agent* is absent, the originating agent specified in the distribution is the default.
Format:	Character string, except for first byte

CGCSGID:	01134-00500 (Character Set AR)
String Convention:	Leading and imbedded blanks are not allowed; however, trailing blanks are allowed. The first byte of an SNA-registered transaction program name ranges in value from X'00 to X'3F'. When the first byte ranges in value from X'41' to X'FF', the transaction program is not SNA-registered. X'40' is not a valid first-byte value.

Seqno_DTM

Description:	The sequence number is the number assigned to the unit-of-work request by the originating agent. The value ranges from 1 to (2^{31})-1. The date of the unit-of-work request is assigned by the *requester_agent*; the time of the unit-of-work request is assigned by the *requester_location_name*. The offset from GMT for local time is included.
Format:	Byte string

Byte	Contents
0-1	LT header
2-5	Sequence number Signed binary integer limited to (2^{31})-1.
	DATE
6-7	Year, in binary (e.g., year 1989 is encoded as X'07C5')
8	Month of the year, in binary (values from 1 to 12 are valid)
9	Day of the month, in binary (values from 1 to 31 are valid)
	TIME
10	Hour of the day, in binary (values from 0 to 23 are valid)
11	Minute of the hour, in binary (values from 0 to 59 are valid)
12	Second of the minute, in binary (values from 0 to 59 are valid)
13	Hundredth of the second, in binary (values from 0 to 99 are valid)
	GMT FLAG
14	Indicates that specified TIME is GMT and identifies whether offsets from GMT are required to calculate local time. (Equivalent EBCDIC characters are shown in parentheses.) X'E9' (Z) no offset required X'4E' (+) add required offset to GMT to get local time X'60' (–) subtract required offset from GMT to get local time
	OFFSET
15	Hour offset from GMT in binary, occurs when *GMT_flag* ≠ Z (values from 0 to 23 are valid)
16	Minute offset from GMT in binary, occurs when *GMT_flag* ≠ Z (values from 0 to 59 are valid)

Examples

A 9-byte date/time encoding is a date/time followed immediately by an EBCDIC 'Z', and is considered to be GMT. Thus, 12:00 GMT on 2 January 1988 would be

```
X'07C401020C000000E9'
  yyyymmddhhmmsshhZ
```

An 11-byte date/time encoding is a date/time followed immediately by an EBCDIC '+' or '-' and two one-byte binary numbers, and is considered to be GMT and the offset from GMT to local time. Thus, 7:00 a.m. on 2 January 1988 in New York would be 12:00 GMT - 5 hours, or

```
X'07C401020C000000600500'
  yyyymmddhhmmsshh- hhmm
```

Unrecognized_Reserve

Description:	The *unrecognized_reserve* is the number of bytes reserved for unrecognized structures. An unrecognized structure occurs within its parent structure. The number of unrecognized structures allowable for a particular parent structure is limited by the number of children allowable for that parent structure.
Format:	Undefined byte string

End of Appendix B

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