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**AS/400, S/38 AND PS/2 AS T2.1 NODES
IN A SUBAREA NETWORK**

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Abstract

Advanced Peer-to-Peer Networking (APPN) is the latest network implementation to connect peer systems. Today with the T2.1 implementation on VTAM V3R2 and NCP V4R3, V5R2 it is possible to attach APPN networks to a subarea network and use all the T2.1 advantages (for example, use of routing capabilities on the host, parallel and multiple session support).

This document contains information on this implementation of Advanced Peer-to-Peer Networking (APPN) in a network consisting of an AS/400, System/38, PS/2 and an S/370 SNA subarea network. It will also discuss some of the considerations which need to be made when a switched line, leased line or token-ring connection is used in this type of network.

The information is based on installation and operation experiences obtained during a residency project at the ITSC Raleigh.

You should treat this document only as a supplement to the standard IBM reference publications.

ASYS MSYS LSYS CSYS

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Preface

This document is intended to provide IBM system engineers and network specialists with the necessary information for guiding, planning, configuring and implementing an AS/400, S/38 and PS/2 as T2.1 nodes using an S/370 SNA subarea network.

In this document we will name the T2.1 support without the APPN extensions as LEN (Low Entry Network) support.

This document will also discuss the use of switched lines, leased lines or token-ring connections between T2.1 nodes and the S/370 SNA subarea network.

The APPN network and S/370 SNA subarea network that were implemented for this residency were tested using a combination of "Display Station Passthrough" and AS/400 PC Support. Results are detailed in the relevant chapters.

How the Document is Organized

This document is divided into the following chapters:

- Each "scenario" chapter can be used as a single guide for the relevant scenario setup, it contains the definitions, tests and traces for each scenario done in this residency.
- Chapter 1 "**Introduction**" gives an overview of the LU6.2 and T2.1 support available in the AS/400, S/38, PS/2 and S/370 subarea network. It will also give details of the residency project.
- Chapter 2 "**Concepts and Products**" discusses what is required to implement a network consisting of a PS/2, S/38, AS/400 and S/370 SNA subarea network and introduce the concepts and products used.
- Chapter 3 "**Network Definition Considerations**" provides the necessary information that personnel should be aware of when implementing this type of APPN network and S/370 SNA subarea network.
- Chapter 4 "**Scenario 1: AS/400 and S/38 Adjacent to the Host**" describes the functions and definitions when initiating a session either from an AS/400 or an S/38 through a S/370 subarea network to another S/38 or AS/400. The AS/400 will be connected to the host via a switched line.
- Chapter 5 "**Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host**" describes the functions and definitions when initiating a session from a PS/2 with AS/400 PC Support and DOS 3.3 to AS/400A and AS/400B through a S/370 SNA subarea network. The AS/400A and PS/2 will be connected to the host via SDLC leased lines and AS/400B is connected to the host via a token-ring.
- Chapter 6 "**Scenario 3: AS/400A, AS/400B and PS/2 Adjacent to the Host**" describes the functions and definitions when initiating a session from a PS/2 with AS/400 PC Support and DOS 3.3 to AS/400A and AS/400B through a S/370 SNA subarea network. AS/400A and AS/400B are connected via a token-ring to each other.
- Chapter 7 "**Scenario 4: AS/400A, AS/400B and PS/2 Adjacent to the Host**" describes the functions and definitions when initiating a session from a PS/2 with AS/400 PC Support and DOS 3.3 to AS/400A and then to AS/400B which is situated behind the S/370 subarea network.
- Chapter 8 "**Scenario 5: AS/400A, AS/400B and PS/2 Adjacent to the Host**" describes the functions and definitions when initiating a session from a PS/2 with OS/2 EE 1.2 (5250 WSF) to AS/400A and then to AS/400B which is situated behind the S/370 subarea network.
- Appendixes "**Definitions and Bibliography**" lists the necessary definitions and manuals used in this residency to implement this APPN network and S/370 subarea network.

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1.0 Introduction

Advanced Peer-to-Peer Networking (APPN) is an enhancement to the node T2.1 architecture that:

- Enables peer systems to control the network in which they participate without the need for a traditional SNA host.
- Facilitates dynamic routing of data from any node in the network to any other node without the need for the sender to manually configure the destination node and all intervening nodes. All nodes become logically adjacent even if they are not physically adjacent.

The latter ability distinguishes T2.1 nodes (with the APPN extensions) from Low Entry Network nodes. The table shown in Figure 1 serves to clarify this distinction:

NODE TYPE	FUNCTION PERFORMED	EXAMPLE IBM PRODUCT
T5	Session services and routing	Host with VTAM (or SSCP)
T4	Intermediate node routing	Communications Controller with NCP (e.g. IBM 37XX)
T2	Services for locally attached LUs (e.g. screens attached to an IBM 3174)	'Small' system or remote cluster controller (e.g. IBM S/38 or IBM 3174)
T2.1	Support for communications between peer computers in a network without the control of a T5 host	IBM PS/2 or PC, IBM S/36, IBM S/38, IBM AS/400. IBM 370 host with VTAM 3.2 and corresponding NCP appears as a T2.1 node to other T2.1 nodes.
LEN	A T2.1 node (without the APPN extensions)	See T2.1 but without the APPN extensions
APPN	Extends T2.1 so that sessions may be started between non-adjacent peers	S/36 with APPN, AS/400
LU6.2	Protocol for application-to-application communications between peer systems.	Supports APPC programs (IBM programs, e.g. DSPT, DDM, or user-written programs)
APPC	Also known as LU6.2	See LU6.2

Figure 1. Some SNA Node Types and Examples

The IBM S/370 networking products do not support APPN; however with VTAM V3R2 and NCP V4R3 or NCP V5R2 they appear as a Low Entry Network node to other T2.1 nodes.

This means that an S/370 host in a subarea network can only participate in an APPN network as a Low Entry Network node but with the possibility of performing intermediate routing between other nodes in the network.

The IBM S/38 now supports independent sessions to and through an S/370 SNA subarea network to host applications and to other T2.1 nodes behind the subarea network, for example AS/400, S/36 or another S/38. The S/38 can only participate in an APPN network or S/370 subarea network as a Low Entry Network node.

The PC or PS/2 using AS/400 PC Support appears to both the APPN network and S/370 subarea network as a Low Entry Network node. AS/400 PC support uses LU6.2 and because it has T2.1 support, it now can establish sessions to non-adjacent AS/400's even behind an S/370 SNA subarea network. The PC or PS/2 can only participate in an APPN network as a Low Entry Network node.

This document describes these environments.

1.1 APPN Terminology

APPN was initially implemented only on the S/36, although other devices with what was then known as APPC or LU6.2 and T2.1 support, including S/38, IBM Personal Computers and Series/1's, could participate as Low Entry Network nodes. APPN is now also implemented on the AS/400, where it has been enhanced to become a superset of S/36 APPN. This enhancement has brought with it some important changes in terminology, as used in this manual. These can be summarized as follows:

- What was previously called an **End Node** in an S/36 environment is now correctly called a **Low Entry Network node** to represent systems implementing the low entry networking node.
- Only an AS/400 may at present be a true APPN **End Node**, which is a totally new type of node.

Keep in mind that because of the changed terminology, there may be differences in the APPN terminology used.

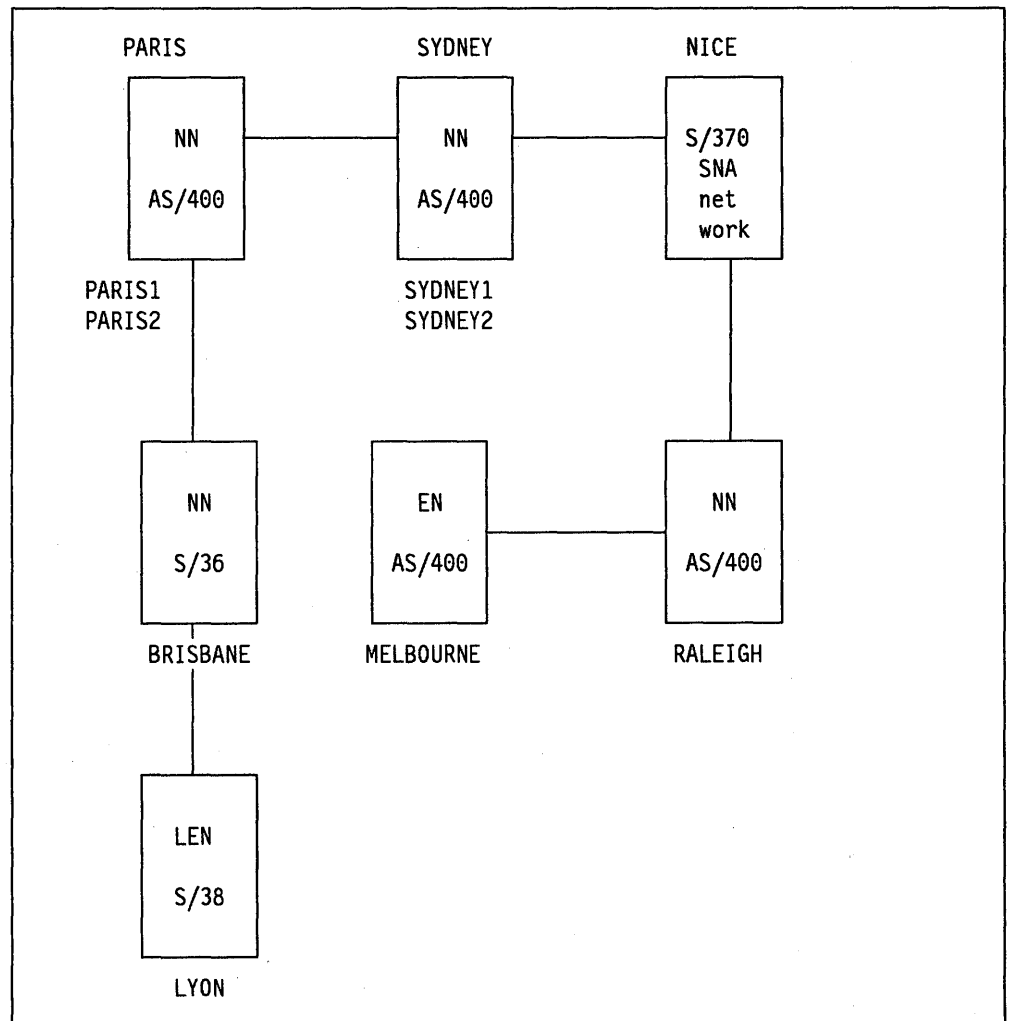


Figure 2. APPN Network including S/370 Host. SYDNEY, PARIS, BRISBANE, MELBOURNE, LYON, NICE and RALEIGH are control point (CP) names: PARIS1, PARIS2, SYDNEY1 and SYDNEY2 are additional local location names for the specific nodes.

Definitions for some of the terms you will find in this manual are presented in alphabetical order in the following section. These terms are applied to the AS/400 implementation of APPN. Figure 2 on page 3 should be referred to for an understanding of these definitions.

- **Adjacent Node**

A node that is immediately next to another node in the network. In Figure 2 on page 3, BRISBANE and SYDNEY are adjacent nodes to PARIS.

- **Class of Service (COS)**

In a communication network there may be several possible routes for a session between a local and a remote control point. Each route may include several different links and nodes. For APPN to choose the best possible route, a class-of-service table is used. This table is used to select which routes are acceptable for this session request and which route from this acceptable set yields the best available path.

There are five IBM-supplied modes and class of service tables included with the AS/400 operating system. The values in the COS tables may be modified to influence sessions routes.

- **Communications Line**

The physical path in data transmission.

- **Line Description (LIND)**

The description of a communications line of IBM AS/400 or S/38.

- **Control Unit Description (CUD)**

A description of the characteristics of a controller that is attached to the remote end of a communications line. Control unit descriptions are created on the AS/400 or S/38.

- **Control Point**

A node in an APPN network may contain a set of system tasks collectively referred to as a control point. The control point in a node is the manager of all APPN functions within that node and also enables communications to other control points in the network. The control point in a node enables it to perform route selection and directory searches.

- **Control Point Name**

A unique name given to each node in an APPN network, whether or not that node has a control point. It uniquely identifies the system in the network and is also by default a local location name. In Figure 2 on page 3, SYDNEY, RALEIGH, PARIS, etc., are all control point names to uniquely identify the respective nodes to other control points in the network.

- **Control Point (CP) Session**

In an APPN network, whenever the characteristics of a link or a node change (for example when a link is activated) details of such changes are passed between nodes (control points). Such information passes via a control point session. The CP - CP session which passes such topology updates and network searches uses a reserved IBM-supplied mode called CPSVCMG. Today, CP - CP sessions are only supported between AS/400's.

- **Conversation**

Once a communications session has been established between two nodes in a network, the APPC applications (including IBM-supplied applications such as DSPT) may communicate via this session; such a communication is called a conversation. A session may support many conversations serially but **only one at a time**.

- **Dependent Location (Dependent LU)**

A location (LU) where the host must send an Activate Logical Unit (ACTLU) command and establish a user session with a BIND command to, for example, an AS/400 LU (device). An example is AS/400 running, 3270 DE, RJEF, DHCF, etc. Any location where the location address is not specified to the host with '00' will be **dependent**.

- **Device Description (DEVD)**

The device description (LU) describes the characteristics of the logical connection between two locations (the local and remote location in the network).

- **Directory Services (DS)**

Directory services identifies the system that owns the remote location to which a session has been requested. Each system is identified by a combination of the network ID and the control point name. AS/400s configured as network nodes or as end nodes have a directory data base which records location names and associated control point names for:

- All locations on the local system - manually added to the local location list.
- Remote locations dynamically added when sessions are established with remote locations not previously in the data base, by means of a broadcast search; this is only valid for NN directory services.
- Remote locations on adjacent End Nodes with CP - CP session capability - passed each time the EN is activated and deleted when the CP-CP session with the EN terminates, this is only valid for NN Directory Services.
- Remote locations manually added to the APPN remote location list:
 - For adjacent Low Entry Network nodes
 - For adjacent End Nodes without CP-CP session capability
 - For locations beyond a host subarea network.

A request for a session with a remote location will initiate:

- No search request if the requested location name is also an NN CP name. (If the CP name of an end node or Low Entry Network node is use then a directed search is sent anyway.)
- A directed search request if the requested location name is found in the local directory data base and is not an NN CP name. (The second request for a particular remote location will always result in a directed search since the first request will have caused the directory data base to be updated with the requested remote location.)
- A broadcast search if the requested location name is not found in the local directory data base.

Note: Session establishment time can be longer if a network search is done, when the NN CP name was not specified as the remote location.

The IBM AS/400 location directory data base is stored across IPLs in the same way that the topology data base is stored. Thus, also like the topology data base, it need not be rebuilt at IPL time. This does not apply to the S/36, where the data base is rebuilt after every IPL.

- **Display Station Passthrough (DSPT)**

One of the APPC communications applications which can be used in an APPN environment. It allows a user on one node to gain access to an application on another non-adjacent peer node as if he was directly connected to that system.

- **Domain**

In an APPN network, a domain refers to the various portions of a network which includes a network node and its adjacent end nodes and/or Low Entry Network nodes. A network node must know about all the location names defined within its domain only (for location names outside of its domain it may perform network searches to find the owning CP name). To this end, end nodes (with a CP-CP session) register their local locations names with its adjacent network node server.

- **End Node (EN)**

A node that doesn't provide network services to other nodes, but may participate in the APPN network by using the services of an adjacent network node server.

An EN may reside only at the ends of an APPN network, as it cannot perform intermediate routing for other nodes. An EN can thus only participate as an origin or destination of a session. The advantage of an EN can be that less resources are used where network services are not required. The EN is a new concept for APPN, introduced with the AS/400, and is different from what was previously referred to as an end node or migration end node in S/36 publications.

An EN can only be:

- An IBM AS/400 configured with CP-CP session capability
- An IBM AS/400 configured without CP-CP session capability.

An EN can use the services of at least one NN server (up to five may be configured) to provide:

- For the EN with CP-CP capability:
 - Automatic registration of the EN's location names in the server's data base each time the CP-CP link to the EN is activated
 - Directory services and route selection (selected routes need not include the NN server).
- For the EN without CP-CP capability:
 - Manual registration of the EN's location names (other than the CP name) in the server's data base. (CP name here does not imply CP-CP session capability.)
 - Directory services and route selection.

- The first link in the route to any other location non-adjacent location (selected routes must include the NN server).

- **Independent Location (Independent LU)**

A location (LU) which performs T2.1 communications which do not **require** an SSCP - LU session. ACTLUs are not received and the AS/400 LU (device) can send the session BIND command to the partner LU on the host. The independent LU can act as a primary LU (when it is the sender of the bind) or as a secondary LU (when it is the receiver of the bind). Communications between APPN nodes are **independent**. The location address must be '00'.

- **Intermediate Routing Portion of the Network**

The intermediate routing portion of an APPN network consists of all the network nodes and the links between network nodes which are capable of performing intermediate session routing.

- **Intermediate Node**

An intermediate node is one which is "in between" at least two other nodes in a network. Intermediate nodes in an APPN network are capable of performing **intermediate session routing**; these nodes are called **network nodes**.

- **Intermediate Session Routing**

In Figure 2 on page 3, PARIS is adjacent to BRISBANE and SYDNEY. If BRISBANE establishes a communications session to SYDNEY then PARIS (an APPN network node) is capable of performing the necessary "session connecting" to enable BRISBANE to establish a session directly with SYDNEY. Such a function is called intermediate session routing; the session neither starts nor ends in the intermediate node but is routed through from session initiator to session destination.

- **Location Name**

In an APPN network every system has to be identified by a unique name. The name by which a node in an APPN network is uniquely identified is called the control point (CP) name. However, it may be required or preferred that a single node has to be known throughout the network by more than one name (or nickname). This means that AS/400 in an APPN network may be defined to have multiple nicknames; these nicknames are called **location names**. A control point name is also a location name. In Figure 2 on page 3, the CP names are PARIS, SYDNEY etc., while the location names are PARIS1, SYDNEY1, etc. A location name is traditionally referred to as an LU name in SNA (and IBM System/38) terminology. In the S/36 environment and AS/400 the term "location name" is used.

- **Low Entry Networking Node (LEN)**

A node that implements the Low Entry Network node LU6.2/T2.1 architecture without the APPN extensions.

A Low Entry Network node may reside only at the ends of an APPN network and cannot perform intermediate routing. Low Entry Network node is a new name for what was called an end node in the S/36 implementation of APPN. It cannot specify an adjacent NN as a network server, but an adjacent NN will perform directory and route selection services for the Low Entry Network node.

A Low Entry Network node must have defined, in its data base, all remote locations with which it wants to communicate. Moreover, the adjacent NN must manually configure the local location names of the Low Entry Network other than the CP name. (For a Low Entry Network node the CP name simply identifies the location in the network and does not imply a CP-CP session capability.)

A Low Entry Network node may be any node which supports T2.1 and LU6.2. Some examples are:

- An IBM System/38
- An IBM System/36 without the APPN feature
- An IBM 370 host with VTAM V3R2 and NCP V4R3 (or NCP V5R2 in the case of the 3745) appears as a Low Entry Network node to a T2.1 node.
- An IBM Personal Computer or PS/2 with APPC/PC, AS/400 PC Support or OS/2 EE 1.2.
- An IBM Series/1
- An IBM AS/400 with APPN (*NO) on the controller description.

Note: A S/370 appears as a Low Entry Network node but has the additional capability of performing intermediate routing between other nodes in the network.

- **Mode**

An IBM AS/400 mode is the same as an IBM System/38 mode or an IBM System/36 session group; it defines session characteristics such as:

- Maximum number of sessions.
- Maximum number of locally controlled sessions.
- Number of pre-established sessions.

On the System/38, the mode description was created and assigned only to a particular device description at configuration setup time. Now, on the AS/400, a mode is a separate object. It is created by the CRTMODD command, and is only associated with an APPC device, with APPN (*YES) specified in the device, at session establishment time. An IBM AS/400 mode must be associated with one particular APPC device with APPN(*NO) prior to varying the device description on.

Another task of a mode in the AS/400 environment is to specify a **class of service (COS)** object to be used for route selection.

- **Network Control Program (NCP)**

An IBM-licensed program that provides communication controller support for single-domain, multiple-domain and interconnected network capability.

- **Network Node (NN)**

An APPN network node (NN) provides all the following APPN functions:

- Intermediate session routing
- Route selection services
- Directory services.

An NN may provide these services to local users or to users on adjacent **End Nodes (EN)**, in which case the NN is called a network node server.

Only the following systems can be network nodes:

1. IBM AS/400
2. IBM System/36 with the APPN feature.

- **Node**

The systems in the APPN network between which communications sessions may be established; these can be any **peer system** capable of establishing a communications session. An IBM 370 host (with VTAM 3.2) can also be a node in an APPN network.

- **Node Type 2.1 (T2.1)**

A node T2.1 is a system, such as an IBM AS/400, IBM System/38, IBM System/36, or IBM PS/2 (with APPC/PC or AS/400 PC Support), which can participate in a peer-to-peer network. Type 2.1 support (T2.1 without APPN) is also called Low Entry Networking. (T2.1 was referred to in SNA as PU2.1.) Types of T2.1 nodes are:

1. Network Node (NN).
2. End Node (EN).
3. Low Entry Networking node (LEN).

Note: Network nodes and End nodes have the APPN extensions implemented.

- **Parallel Sessions**

Parallel sessions is the ability of T2.1 nodes to have two or more concurrently active sessions between the same two logical units using different pairs of network addresses. However, each session may have independent session parameters. One advantage of parallel sessions is that you don't have to define multiple LUs for each session.

- **Parallel Transmission Groups**

It is possible to have multiple logical connections (multiple TGs) between two nodes in a network. They are then said to have parallel TGs. Each TG is identified by an arbitrary number called a TG number. Any combination of SDLC leased or switched, X.25 PVCs, SVCs and token-ring is supported by the AS/400.

- **AS/400 PC Support**

It provides the same function of previous PC support implementations for the S/36 and S/38 and replaces virtual disk support by shared folder support. The architectural concept is different because the IBM AS/400 PC Support programs are now based on APPC. Moreover, this new implementation applies for SDLC, token-ring and twinaxial attachment. The AS/400 PC Support software package provides support to AS/400 users similar to the ECF package for S/370 users.

- **Peer System**

Systems that can have horizontal communication with "peer" systems on the same hierarchical level, for example T2.1 to T2.1.

- **RSCV**(route selection control vector)

A RSCV is a control vector which is attached to the BIND sent to initiate the session. The initiating system (or NN server for an EN without CP session capability) passes the BIND with RSCV to the first adjacent node specified in the RSCV. This node passes them to the next node specified in the RSCV, and so on until the destination node is reached.

The finite 255-byte length of the RSCV imposes a limitation on the number of nodes through which a BIND may be routed. The length of the CP names involved in the route will be a determining factor in the number of possible nodes (shorter names mean more potential links) in the route.

- **Session**

The logical connection between two nodes.

On an AS/400, the device status display shows active on the WRKCFGSTS display, when an APPC device is prepared to handle APPC sessions. The DSPMODSTS command must be used to display the status of any sessions. You may also use the DSPAPPNINF *SSN command.

On a S/36 the session can be ascertained by using the STATUS SUB-SYSTEM (D A) command with the number of sessions.

On the S/38, the logical connection exists when the line description, control unit description and device description show ACTIVE on each system.

- **Switched Line**

A telecommunication line in which the connection is established by dialing.

- **Token-Ring Network**

A network that uses a ring topology and that allows unidirectional data transmission between data stations. Such a local area network uses a token-passing procedure: tokens are passed in a circuit from node to node. A node that is ready to send can capture the token and insert data for transmission. Data returns to the transmitting station when they have made a complete circuit. Another token is generated and transmitted on the ring where it can be captured by the next node ready to transmit.

- **Topology**

The topology of a network is the network shape or the network configuration; it describes the nodes in a network and how they are linked.

- **Topology Data Base**

In order to choose the best route to a particular node in the network, TRS requires information about the network topology; this information is stored in a **topology data base**.

Each NN in an APPN network contains a complete topology data base. This data base contains information about the nodes in the network, the links between them and associated characteristics of these nodes and links.

When a **new** node or link is activated (or the characteristics of an existing node or link change) in an APPN network, the topology routing services in that node communicates with adjacent NNs using the CP-CP session. The two CPs then exchange information regarding the network topology and update their respective topology data bases. The information is then propagated around the network by an iterative process using CP-CP sessions throughout the network. Thus, all NNs in the (intermediate routing portion of

the) network will update their respective topology data bases with the information of the new node.

There are two types of T2.1 nodes which will not obtain updated topology information: APPN End Nodes (EN) which only contains a small topology data base containing information only about adjacent links, and Low Entry Network nodes which do not contain a topology data base at all.

- **Topology Routing Services (TRS)**

There may be many possible routes in an APPN network and the main function of TRS is to choose the best one when a session is requested.

The information used to determine the route is referred to as the class of service support (COS) and consists of the transmission group and node characteristics that are preferable for a given session. From among the applicable set of nodes and links the combination with the lowest weighting factor is selected.

- **Transmission Group**

Transmission group refers to the logical link between two systems. These TG characteristics are configured in the line description and apply to End Nodes as well as network nodes. They are used by APPN to select the best available route to satisfy the request for a session to the remote location. The TG numbers are represented in the controller descriptions in the adjacent nodes and should have the same value. The value of the transmission group number will be negotiated when the link is established.

- **Virtual Telecommunication Access Method (VTAM)**

A set of programs that maintain control of the communication between terminals and application programs running under the IBM VM/SP, MVS/SP and DOS/VSE operating systems.

- **X.25**

In data communication, X.25 is a recommendation of the CCITT that defines the interface between data terminal equipment and packet-switching networks.

1.2 ITSC Residency Project

The objective of this residency project was to implement and test an APPN network consisting of an AS/400, S/38 and PS/2 as T.1 nodes connected through an S/370 SNA subarea network. This required the following to be accomplished:

- Design and establish different networks as shown in the "Test Network" section.
- Test the APPN support across switched lines, leased lines and token-ring connections by using DSPT and AS/400 PC Support.
- Write down considerations that may be useful to IBM SEs and customers installing this type of network.

1.2.1 Test Network

Five scenarios were tested in this residency. They were:

- **Scenario 1: AS/400 and S/38 Adjacent to the Host**

We tested the AS/400 "switched disconnect" function when attached to the host via a switched line and the S/38 PTF which can support independent sessions through the host. Sessions were initiated from the AS/400 as well as the S/38 by using "Display Station Passthrough". The results are documented in Chapter 4.

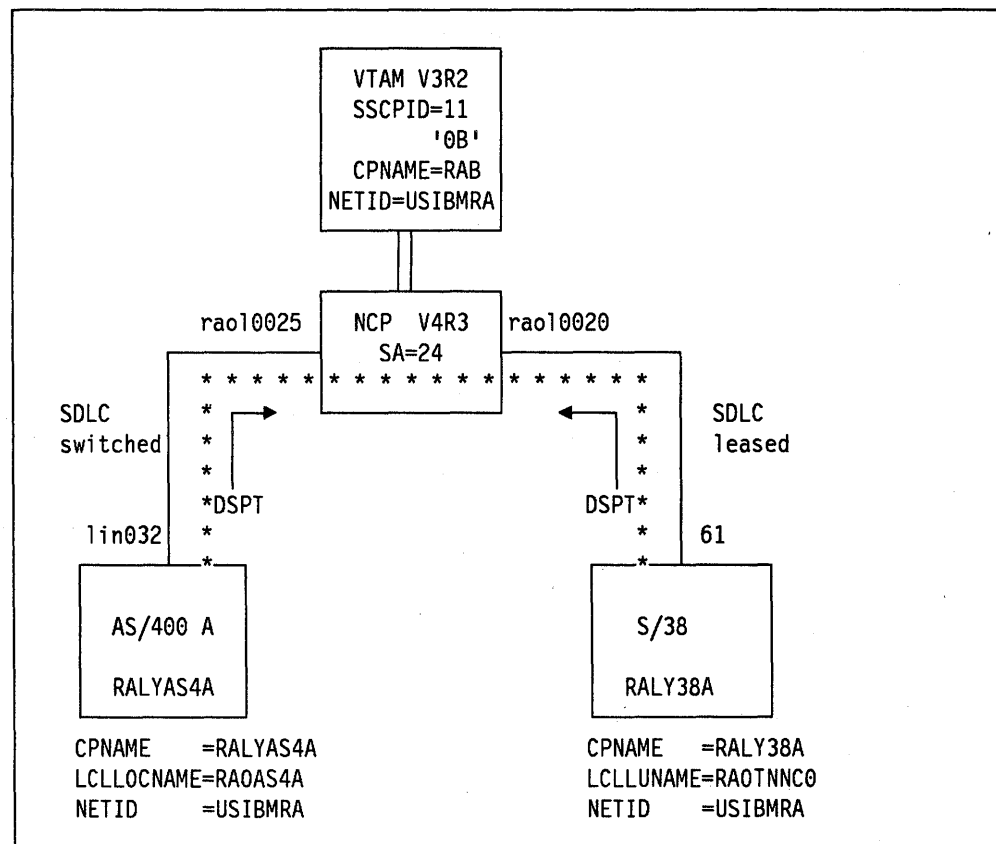


Figure 3. Scenario 1

Note: Due to APAR OY18594 for VTAM, we must give the CPNAME and LCLLUNAME or LCLLOCNAME a different name. When the APAR is fixed, you should also be able to use the same names for CPNAME and LCLLUNAME or LCLLOCNAME.

- **Scenario 2: AS/400,AS/400B and PS/2 Adjacent to the Host**

We tested the ability of the PS/2 to establish sessions, at the same time, with both AS/400's via the S/370 SNA subarea network by using AS/400 PC Support.

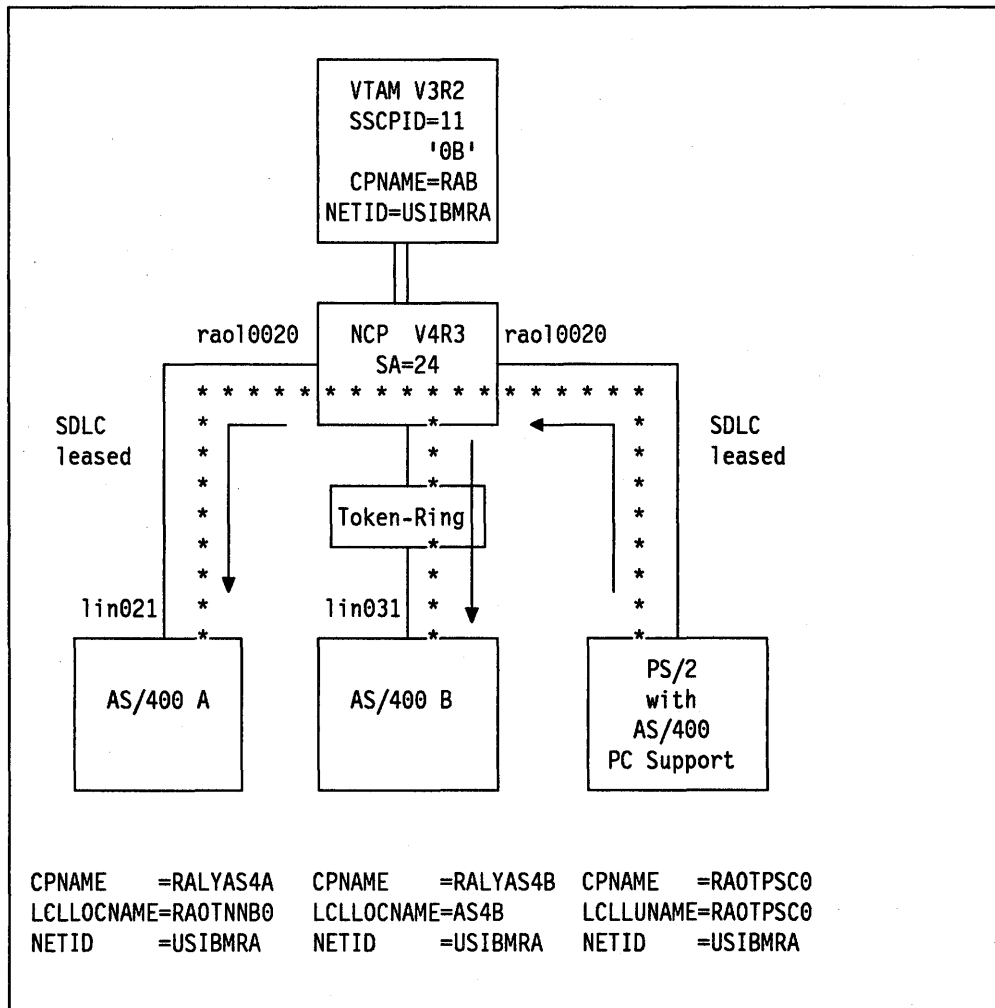


Figure 4. Scenario 2

Note: Due to APAR OY18594 for VTAM, we were not able to test the same scenario where the PS/2 is attached to the host through Token-Ring or switched line. When the APAR is fixed, you should also be able to attach the PS/2 to the host via Token Ring or SDLC switched line. The reason for this is that the PS/2 with AS/400 PC Support must have the CPNAME and Local Location name defined as the same name and this causes the problem in VTAM during the negotiation process.

- **Scenario 3: PS/2 and AS/400A Adjacent to the Host, where AS/400B is adjacent to AS/400A**

We tested the ability of the PS/2 with AS/400 PC Support to set up sessions with either AS/400A or AS/400B, both are behind the S/370 subarea network. The results are documented in Chapter 6.

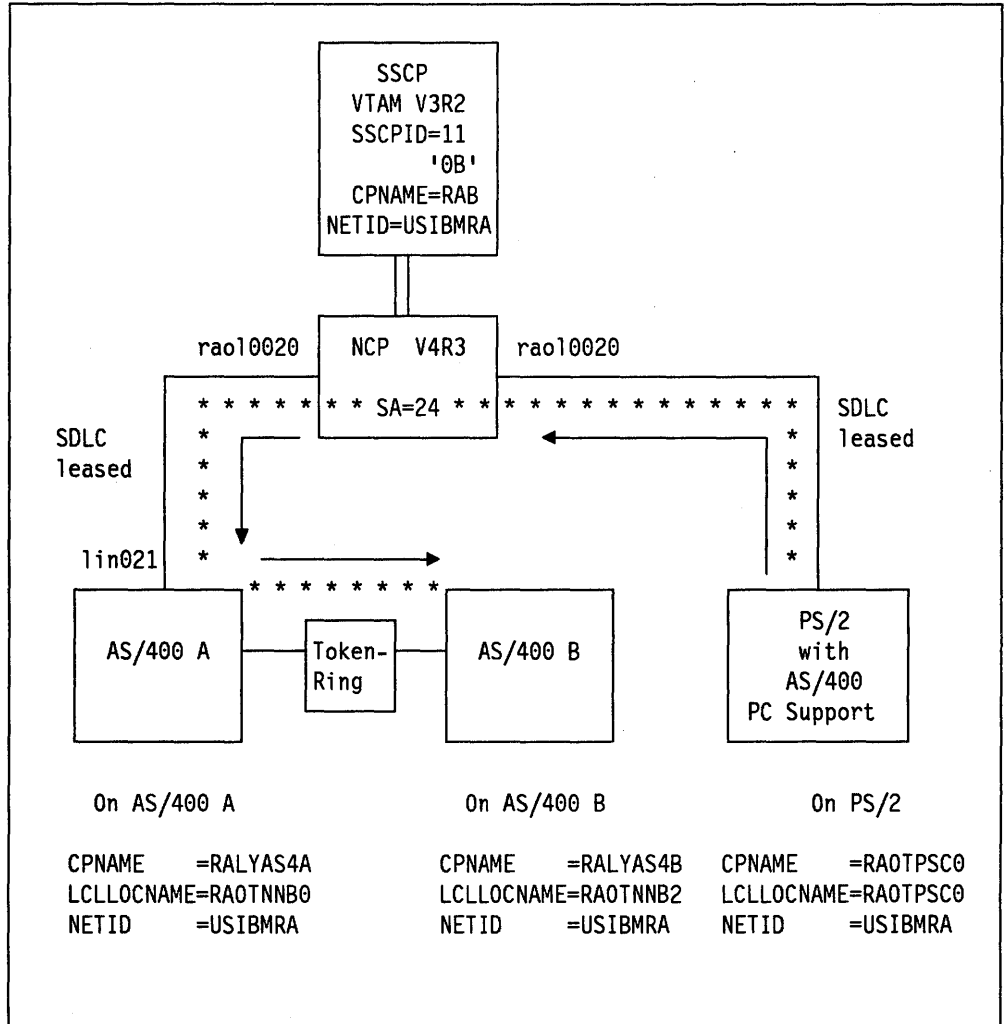


Figure 5. Scenario 3

Note: See the note explained for scenario 2.

- **Scenario 4: AS/400A and AS/400B Adjacent to the Host, where PS/2 is adjacent to AS/400A**

We tested the ability of the PS/2 with AS/400 PC Support to set up sessions with AS/400A and AS/400B which is situated behind the S/370 subarea network. The results are documented in Chapter 7.

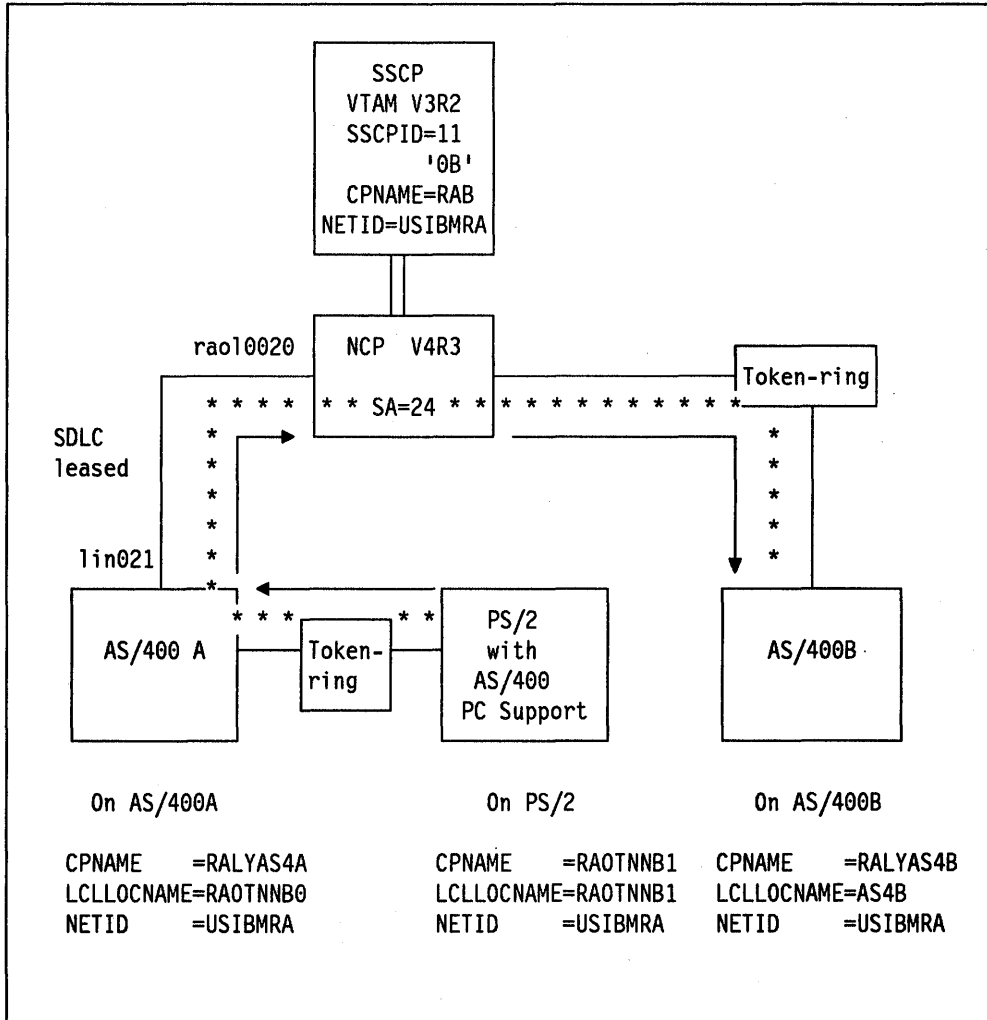


Figure 6. Scenario 4

- **Scenario 5: AS/400A and AS/400B Adjacent to the Host, where PS/2 is adjacent to AS/400A**

We tested the ability of the PS/2 with OS/2 EE 1.2 (5250 WSF) to set up sessions with AS/400A and AS/400B which is situated behind the S/370 subarea network. The results are documented in Chapter 8.

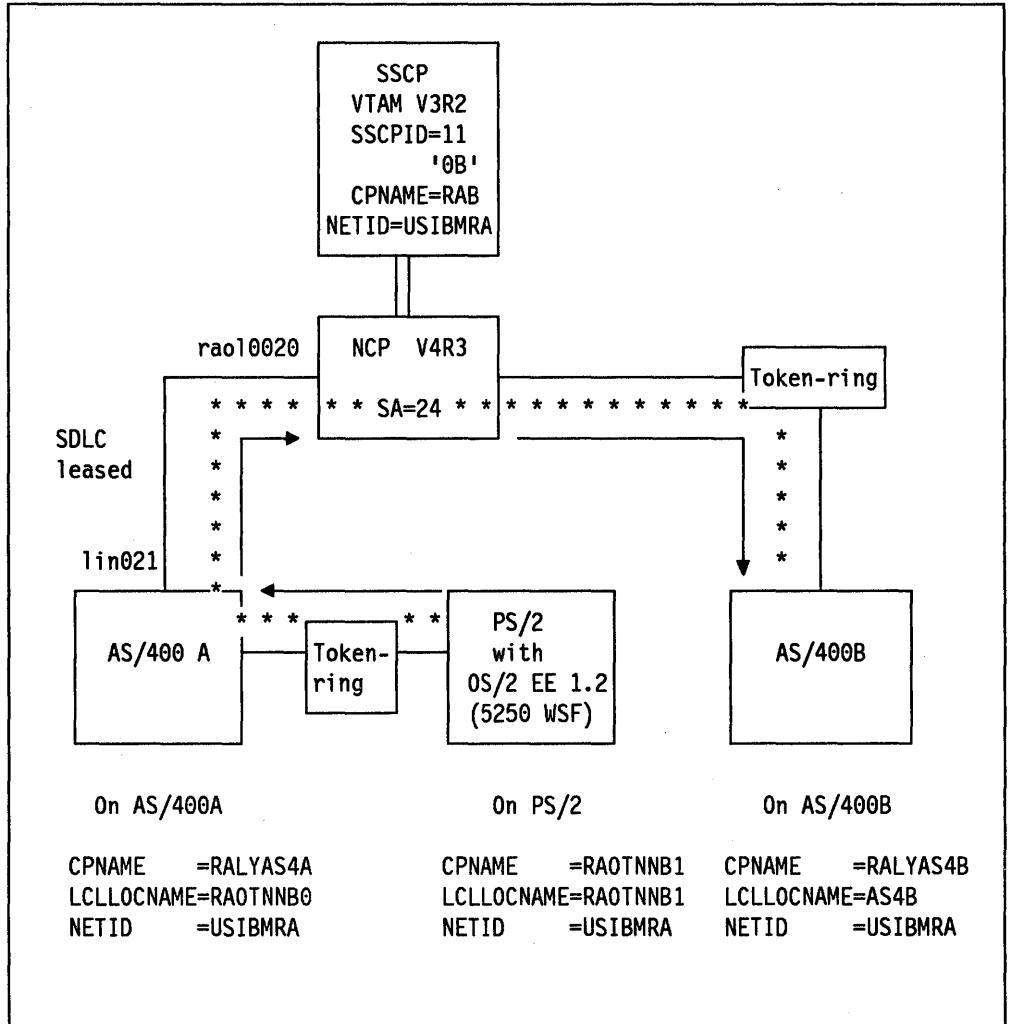


Figure 7. Scenario 5

2.0 Concepts and Products

This chapter will discuss the T2.1 support available in the following IBM systems:

- S/370
- AS/400
- S/38
- PS/2 or PC with AS/400 PC Support.

2.1 S/370 Subarea

2.1.1 Introduction

With the announcement of VTAM V3R2 and NCP V4R3/V5R2, the role of distributed systems such as the PS/2, System/36, System/38, and AS/400 has changed significantly.

Prior to this announcement, the PS/2, System/36, System/38 and AS/400 systems were defined in the subarea network as T2.0 nodes. This meant that once this node was connected to the subarea network, it was relegated to the role of a secondary logical unit and could only have a single session with an application in the subarea network. In fact, a PS/2, S/36, S/38 or AS/400, when connected to the subarea network, could not establish a session with another S/36, S/38 or AS/400 also connected to the subarea network. It could only be accomplished by connecting the systems directly. This meant that the subarea network could not be used by any of these systems (PS/2, System/36, System/38 or AS/400) to communicate with each other directly.

Now, with the announcement of T2.1 support for VTAM V3R2 and NCP V4R3/V5R2, sessions can be established between PS/2, S/36, S/38 and AS/400 systems using the S/370 subarea network.

2.1.2 Overview

With VTAM V3R2 and NCP V4R3/V5R2, a distributed system such as the PS/2, System/36, System/38, or AS/400 can be defined to the subarea as a T2.1 node. As a T2.1 node, the PS/2, System/36, System/38, and AS/400 can now fully exploit the connectivity possibilities of the subarea network. They can establish sessions with other System/36, System/38 or AS/400 using the subarea network. They are no longer relegated to the role of a secondary logical unit.

Low entry networking requires a T2.1 node to be capable of new logical, and session connectivity. The logical connectivity involves the dynamic exchange of identification information and capabilities. This is accomplished by a new format of exchange ID (XID), called XID3. This XID3 is used to exchange and negotiate node capabilities and link station role.

In this environment, sessions are established by the sending BINDs from these T2.1 nodes through the S/370 SNA subarea network, to other such T2.1 nodes, or to applications in the S/370 SNA subarea network. The need for ACTPU, ACTLU, INITSELF, or CINIT flows is eliminated. These nodes can be either

primary or secondary logical units, and can have multiple sessions with the same or different session partners. Multiple sessions with the same session partner are referred to as parallel sessions.

Because the S/370 appears as a Low Entry Network node to the T2.1 nodes directly attached, they will have only Low Entry Network node capabilities between each other. The supported attachment methods are SDLC leased or switched point-to-point lines, SDLC leased multipoint lines, token-ring LAN attachments, and X.25 NPSI.

2.1.3 Software Requirements

VTAM has to be at Version 3 Release 2 and NCP has to be at either Version 4 Release 3 or Version 5 Release 2 in order to support T2.1 nodes like the PS/2, System/36, System/38, or AS/400.

2.2 AS/400 APPN

2.2.1 Introduction

The AS/400 Advanced Peer-to-Peer Networking (APPN) support is the AS/400 implementation of extensions to the System Network Architecture (SNA) logical unit (LU) Type 6.2 and T2.1 architectures. AS/400 APPN provides the networking support that allows AS/400 to participate in and control a network of systems without requiring the network support traditionally provided by a host (S/370) system.

The AS/400, when connected to an S/370 SNA subarea network, can support both independent as well as dependent LUs on the same controller description. There is no line sharing restriction as we have with the System/36. Independent LUs to the host use LU6.2 protocol for parallel sessions between S/370 and AS/400 applications. LUs can use LU 0,1,2,3 and 6.2 protocol for single sessions between host and AS/400 applications. It depends on the application which will be used.

The AS/400 can implement the two types of APPN nodes: the AS/400 Network Node and AS/400 End node. It can also act as a Low Entry Networking node which in APPN terms is not an APPN node. Basically, the Network Node provides a full suite of AS/400 APPN functions while the End Node provides a subset of APPN functions. In particular, Low Entry Network and End nodes do not perform intermediate session routing. Please refer to Chapter 1 for more information on the supported nodes.

2.2.2 Overview

AS/400 APPN (NN) support gives you access to the full suite of APPN services:

- **Control Point Manager Services**

The control point as it relates to the AS/400 APPN support performs basically three functions. First, it is the overall manager of that node, controlling all the APPN functions and communicating with adjacent control points (CP) in other nodes. It must be noted also that the CP name uniquely identifies a node to other CPs. Secondly, it manages the CP-CP session between adjacent CPs. Finally, it controls/manages the automatic creation

of the device descriptions and attaching these definitions to the right controller.

- **Topology Routing Services**

If there are multiple routes between two locations, TRS is called upon to determine the best route to take. It must first compare information obtained from the topology data base. The topology data base contains information about nodes and links in the network and their respective characteristics. This data base is updated every time a new link is activated or deactivated. Secondly it compares this with user-defined link preferences in the Class-of-Service (COS) table to come up with the most preferred route.

- **Directory Services**

Directory Services provides a data base where all the remote and local location names are defined. So when a request is made for a location name it first checks its own directory data base and if it can't be found it will then send out a search across the network. It does this by contacting other CPs in the network until it finds that location. This search is known as a "broadcast" search. If the location name is found in the local directory data base it will send out a "directed" search to that remote CP.

- **Intermediate Routing Services**

The transport layer in the AS/400 provides the APPN support to enable non-adjacent nodes to appear adjacent, that is, perform intermediate routing for sessions for which it is not the origin or destination. This function is performed by intermediate routing services.

2.2.3 Software Requirements

The AS/400 has support for all APPN functions and node types in the Operating System/400 (OS/400) at Release 1.2 for the inclusion in an S/370 SNA subarea network.

2.3 S/38

2.3.1 Introduction

Prior to the development of PTF MT06007 (which includes a PTF for CPF and one for microcode), the S/38 was defined as a T2.0 node to a subarea network. Thus it could only support dependent LU implementation, and could only have a single session at a time with an application in the subarea network. A S/38 node could not establish a session with another T2.1 node through a subarea network.

This PTF allows the S/38 to implement the T2.1 node architecture. The S/38 now supports independent LUs and therefore can have parallel sessions and can initiate sessions to host applications and other T2.1 nodes behind a SNA S/370 subarea network.

A S/38 is a Low Entry Network node and therefore has no routing capabilities. It is always at the end of a network.

2.3.2 Overview of S/38 T2.1 Support

The S/38, when it is connected to a SNA S/370 subarea network, can support both independent and dependent LUs on the same controller. There is no line sharing restriction as we have with the System/36.

With independent LU support the S/38 can:

- Communicate with host APPC applications using parallel sessions.
- Communicate with any T2.1 node behind a S/370 subarea network, for example, from one T2.1 node to another.

With dependent LU support the S/38 can only communicate with host applications. For example:

- APPC applications (single session)
- DHCF
- SNA 3270 Device Emulation
- SNA Remote Job Entry Facility (RJEF).
- Etc.

2.3.3 Software Requirements

With CPF operating system Release 8, you must apply the following modification to have the support for independent LUs. This change is made up of two different PTFs, one for microcode and one for CPF itself. Their references are:

- CPF: APAR S339366 : fix # 18689
- Microcode: MTR MT06007: fix # T3792 (which requires Periodic 17)

2.4 PS/2 or PC with AS/400 PC Support

2.4.1 Introduction

IBM AS/400 PC Support is a software package that expands the power and the use of a personal computer by extending system resources and server functions. The implementation of the AS/400 PC Support programs are different from the PC Support programs used with System/36 and System/38.

AS/400 PC Support needs a prerequisite program on the personal computer called the router. The communications between AS/400 and a personal computer is based on APPC sessions. AS/400 PC Support provides the support in a PC or PS/2 for T2.1 nodes.

2.4.2 Overview

With AS/400 PC Support a PS/2 can be defined to the APPN network as T2.1 node. It can establish sessions with other T2.1 nodes, for example, to other AS/400's even behind the subarea network. Personal computers are no longer relegated to the role of dependent LUs to the S/370 host. AS/400 PC Support does not accept incoming BINDS or attach requests from other T2.1 nodes.

The main advantages of using AS/400 PC Support APPC support are:

- All functions, including T2.1 node implementation, are available in both environments: APPN network and subarea network.
- Multiple connectivities are supported between AS/400 and PS/2:
 - Token-ring network
 - SDLC
 - Twinax.

2.4.3 Software Requirements

- **For the AS/400 system**

AS/400 requires the Operating System/400 at Release 1.2 or later, and AS/400 PC Support (5728-PC1).

- **For the IBM PS/2 (DOS)**

PS/2 has support for T2.1 node functions with the following products:

- IBM Disk Operation System (DOS) version 3.30 or later compatible releases
- IBM Local Area Network Support Program (if the personal computer is connected to a token-ring network): P/N 83X7873.
- Note: AS/400 PC Support software packaging consists of two parts: one to be installed on the AS/400 and the other on the PS/2.

- **For the IBM PS/2 (OS/2)**

The PS/2 has support for T2.1 node functions with OS/2 Extended Edition 1.2. This release of OS/2 now includes the 5250 workstation feature (WSF) in the Communications Manager.

3.0 Network Definition Considerations

In this section we will discuss the following:

- Defining a T2.1 node to VTAM/NCP
- Defining a switched major node to VTAM
- Host routing support
- AS/400 switched line support
- Data flows between T2.1 Nodes and the Subarea
- Token-ring considerations
- X.25 considerations.

3.1 Defining a T2.1 node to VTAM/NCP

To define T2.1 nodes to a SNA S/370 host you must be familiar with the following macros and parameters in both the VTAM startup list and the NCP.

In the VTAM startup list the NETID and SSCPNAME are important.

- **VTAM Startup List**

- SSCPNAME=RAB

- This is the control point name (CPNAME) for VTAM and must match, for example, the remote CPNAME parameter you defined in the adjacent AS/400 host controller description.

- NETID=USIBMRA

- This is the network ID in which the S/370 host resides. It must match the remote NETID parameter you defined in the AS/400 host controller description.

To support an AS/400 as a T2.1 node with independent LUs, at least NCP V4R3 or NCP V5R2 is needed. Then the following NCP macros are used:

- **BUILD Macro**

- ADDSESS=n (default=0, max=5000)

- The additional number of boundary sessions that may be started through this NCP, in addition to the number of sessions defined for every independent LU by the RESSCB macro.

- AUXADDR=n (default=0, max=5000)

- The number of additional addresses for peripheral primary LUs. Each LU has automatically one address, but an independent LU, when being an PLU, would need an address for every additional session it starts. The total number of these addresses should be specified here.

- MAXSESS=n (default=5000, min=1, max=5000)

- Specifies the maximum number of sessions that each LU can have in this NCP. This value must be greater than(or equal to) any RESSCB on the LU macros.

- NAMTAB=n (default=30, min=10, max=5000)
Is specified to keep the network names table. The value should be at least the total number of networks, SSCPs and PU T2.1 nodes with which this NCP may concurrently have sessions.

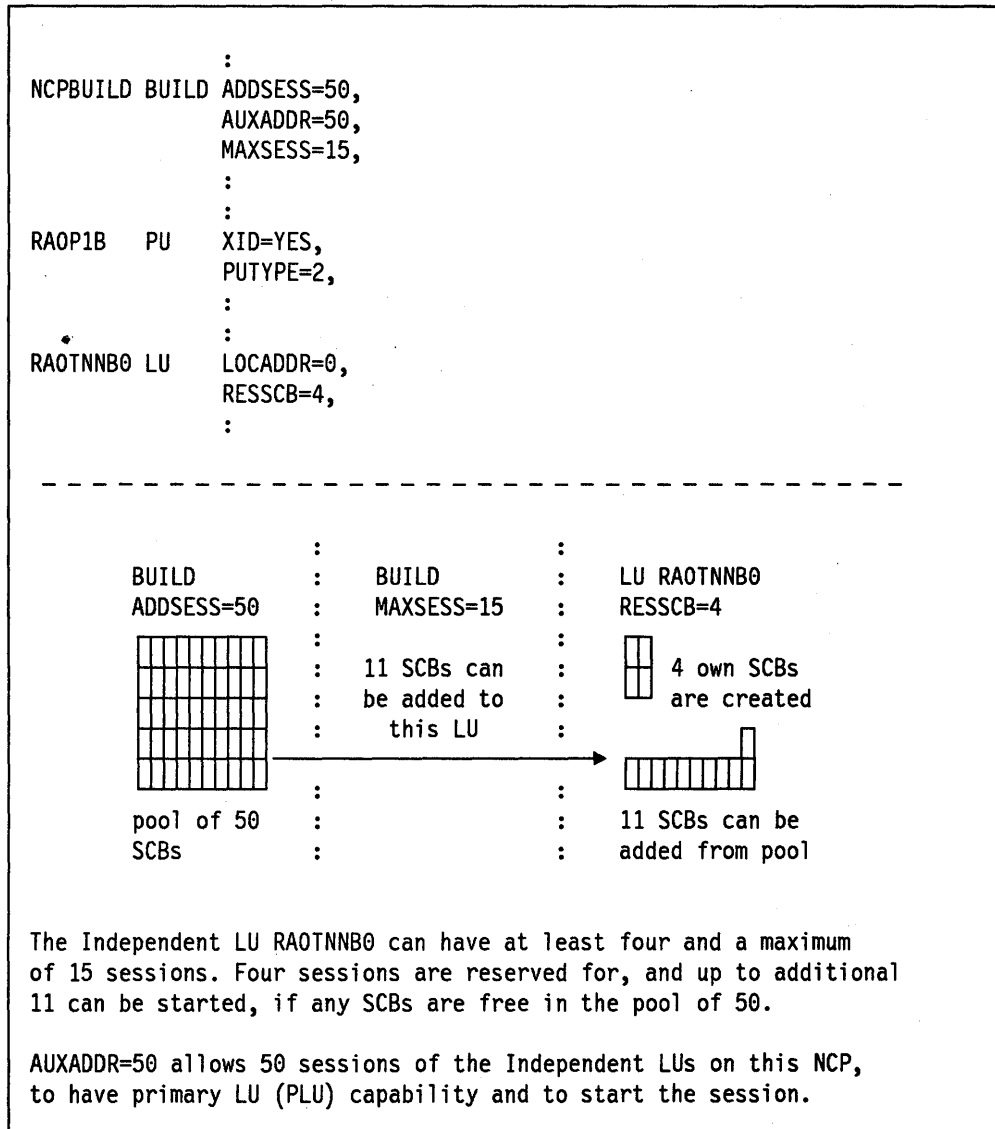


Figure 8. NCP Definitions and Number of Boundary Sessions

- **LUDRPOOL Macro**

- NUMILU=n (default=0, max=16381)
Specifies the number of independent LUs that may be added by dynamic reconfiguration.

- **PU Macro**

- XID=YES (default=YES)
Defines a PU's ability to receive and respond to an XID (exchange ID). XID=YES must be coded for PU T2.1 nodes.
- PUTYPE=2
PUTYPE=2 represents either a PU T2 or a PU T2.1.

- **LU Macro**

- **LOCADDR=0**
Defines an independent LU. Several independent LUs may be coded for a PU.
- **RESSCB=n** (default=0, max=MAXSESS)
Is to reserve session control blocks (SCB). Allocates the number of boundary sessions for this independent LU. Additional sessions may be started if ADDSESS is specified and if MAXSESS is greater than RESSCB for this LU. RESSCB cannot be greater than MAXSESS.

Figure 8 on page 26 shows the relationship between the parameters and the number of sessions possible for an independent LU.

3.2 Defining a Switched Major Node to VTAM

A switched major node contains definitions for potential switched connections. These can be switched connections to a subarea node or peripheral node, across SDLC lines, X.25 networks or token-ring networks. Remember to code **XID=YES** in the NCP PU macro for the switched line to support T2.1 nodes.

To define a switched major node to VTAM/NCP to support the AS/400 you should be familiar with the switched major node macros. Some of the important macros used are discussed below. For an extensive definition of these macros you should read *VTAM Installation and Resource Definition*.

- **VBUILD Statement**

- **TYPE=SWNET** defines a switched major node.

- **GROUP Macro**

- **DIAL=YES** specifies that the lines in this group require switched line protocols.

- **LINE Macro**

- **ANSWER=ON/OFF** specifies whether lines can be used for incoming calls. If **ANSWER=ON**, physical units can dial into VTAM when the line is activated.
- **CALL=IN/OUT/INOUT** specifies whether VTAM can initiate calls over the line. If it is only used for incoming calls code **CALL=IN**. If it is to be used for outgoing calls only code **CALL=OUT**. If it is used for both code **CALL=INOUT**.

- **PU Macro**

- **CPNAME** specifies the control point name of the remote T2.1 node. During establishment of a switched connection the CP name is used to find the PU and LU definition statements associated with this node. If you don't code the CP name here VTAM uses the IDBLK and IDNUM to verify the remote T2.1 node. Either CPNAME or both IDBLK and IDNUM are required. However, you may define all three.
- **DISCNT=(YES/NO,F/NF)**. YES/NO tells VTAM whether to physically disconnect the PU when the last logical unit terminates its session with its application program. That is, when there are no more LU-LU sessions.

For an AS/400 on a switched line, disconnection means that the dial connection is broken and the SSCP-PU session is terminated. Disconnection does not involve deactivating the PU or LUs. Therefore, when sessions are requested with those LUs again it causes the physical connection to be re-established.

- IDBLK=identification block is a three-digit hexadecimal number that denotes the remote device type. For example, the IDBLK for a S/36 is 03E, for a S/38 is 022 and for an AS/400 is 056.
- IDNUM=identification number is a five-digit number that identifies the specific remote device. The remote devices serial number is often used for the IDNUM.
- NETID=name identifies the network in which the subarea PU resides.
- PUTYPE=2 represents either T2.0 or T2.1 nodes.

• **PATH Macro**

- DIAL NO=telephone number defines the number used to dial out of VTAM/NCP. DIALNO must be specified for switched lines that can call out to a remote system. That is, lines which have CALL=OUT or IN/OUT coded in the line statement under the switched major node.

For a token-ring connection the format of the DIALNO for the system to be called is:

DIALNO = aabb4000ccccccc

- aa is the token-ring interface coupler (TIC) number of the controller.
- bb is the system-access-point address of the remote system.
- ccccccc is the last four bytes of the remote systems ring-station address.

• **LU Macro**

- LOCADDR=0 defines an independent LU.
- RESSCB=n is the number of session control blocks reserved by the NCP for the LU.

3.3 Host Routing Support

Because the S/370 host doesn't support CP-CP sessions, all the remote locations (LUs) with which it wants to have sessions with in an APPN network behind the S/370 subarea must be explicitly defined as if they were residing in the appropriate adjacent APPN node.

In the appropriate adjacent APPN node, all the locations from the APPN network must be explicitly defined in the remote location list for those locations (LUs) in the host or in the APPN nodes behind it as if they were all residing in the host. The host provides the logic to route the session through to the specified remote location.

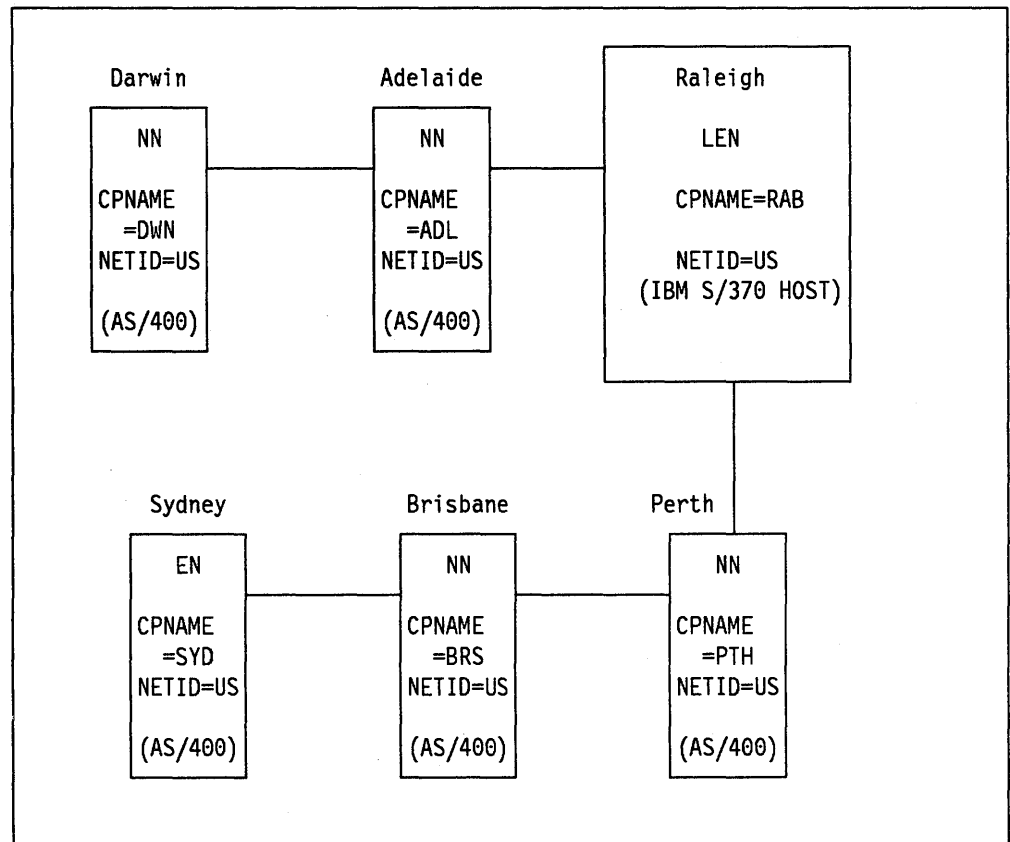


Figure 9. Advanced APPN Network including an IBM 370 Host. The host may participate in either of the two networks as a Low Entry Network node. However, the host is also capable of routing data between the two networks. The lines used are leased lines.

The one difference between a host and other Low Entry Network nodes in an APPN network is that a host is capable of performing intermediate routing between other nodes in the network.

Figure 9 describes how the host handles a request for intermediate routing.

If location US.Sydney wanted to establish a session with US.DWN, using remote location name US.Darwin, in network US, then:

1. US.PTH must have previously defined in its remote location list US.Darwin as a remote location name as if it resides in remote control point US.RAB.

This means that the remote control point name in the controller description on US.PTH that describes US.RAB must match the remote control point name in the remote location list entry for US.Darwin.

2. US.SYD will send a search request to US.BRS (the network server for US.SYD) which will search its directory data base and, if Darwin does not exist, send a broadcast search request to the network (if Darwin exists then US.BRS will send a directed request to US.PTH).
3. The search request will be returned with a positive response from US.PTH (which has Darwin configured, within its directory data base, as residing within the US.RAB).
4. An RSCV (containing routing information from US.SYD to US.RAB) will be calculated by US.BRS and returned to US.SYD.
5. US.SYD will send a BIND (with source and target names Sydney and Darwin, respectively) with the attached RSCV. The RSCV provides the routing information to enable the BIND to reach the host.
6. The host will provide a "virtual route" through which the BIND may pass to US.ADL. The host does not read the RSCV at all but must have Darwin defined as a location owned by US.ADL (since the host sees all locations in this network as being owned by US.ADL). The host must have the mode name specified which is in the BIND.
7. US.ADL will send either a directed or broadcast search, depending on the directory information in US.ADL in order to locate the location Darwin and will receive a positive response from US.DWN.
8. US.ADL creates a new RSCV which specifies the route information for the completion of the session establishment.

Note: The session request from Sydney to Darwin actually consisted of an RSCV from US.SYD to US.RAB, a virtual route through the host network(s) (one or more VTAMs and NCPs), and an RSCV from US.ADL to US.DWN.

Note: If the network identifier is different on both sides of the host then SNI gateway had to be used. VTAM will verify the NETID during XID.

3.3.1 Generic Location Routing

- **Generic Location Naming**

Within a host there are usually a large number of LUs to define. Because the host appears as a Low Entry Network node, all the location (LU) names must be defined in the adjacent APPN node to the host for all the locations residing in this APPN network which may request sessions with locations in the host or behind it. Generic location naming on the AS/400 allows you to configure a location name ending with an asterisk (*). This implies that any location name starting with the same characters proceeding the * will match this entry. This function is not available on the PS/2 or S/38.

For example, Perth NN in Figure 10 on page 31 can configure the remote location names for Darwin (DRW1, DRW2 and DRW3) as one single entry of DRW* in its APPN remote location list. Then all session requests for locations beginning with DRW will be routed there. The same can be done with the other locations.

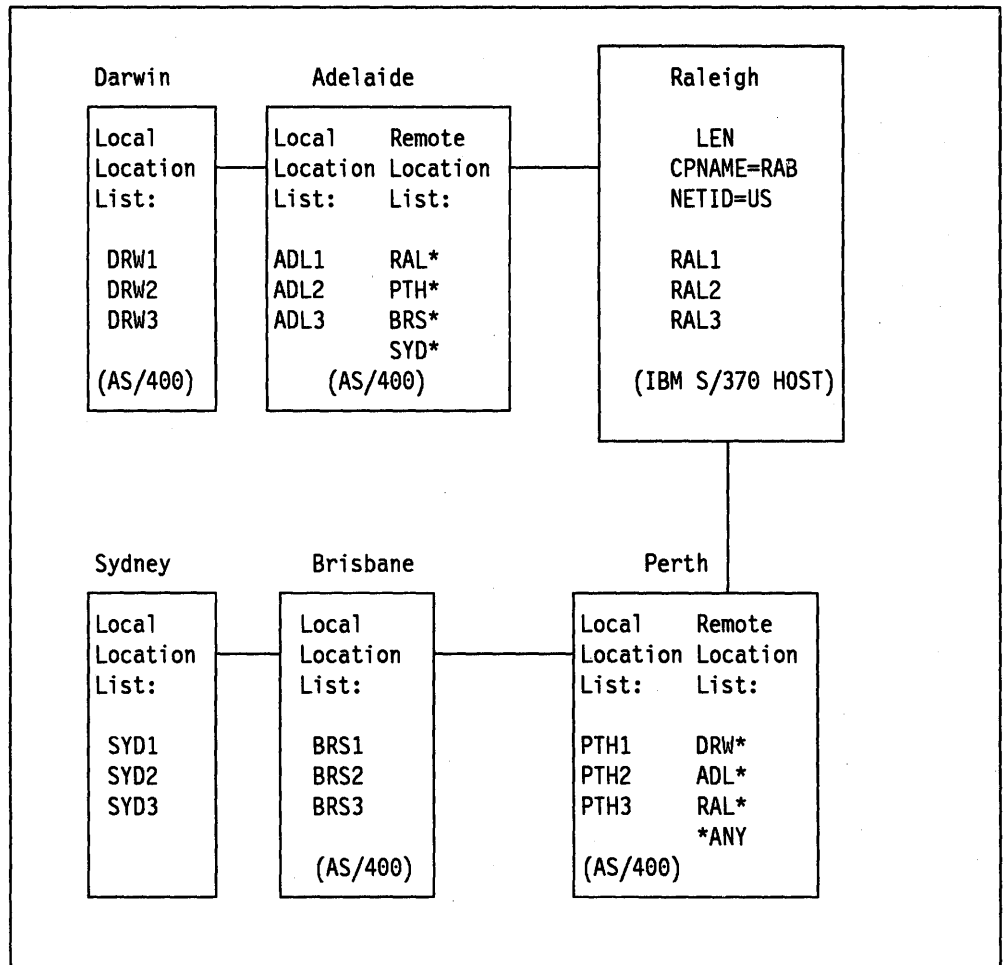


Figure 10. Advanced APPN Network including an IBM 370 Host

- **Wildcard Routing**

Wildcard routing allows you to specify *ANY as a location name in a remote location list. This means that when a session is requested for a location that does not match an explicit entry or a generic location name anywhere in the network, then that location will be assumed to reside in the control point associated with the *ANY entry.

There are some rules that need to be adhered to when using wildcard routing. These are:

- Only one wildcard entry can be defined in the same APPN network.
- A wildcard entry can only be specified for an adjacent node.

The use of "wildcards" are appropriate when you want to connect an IBM 370 host to an APPN network, because you may have many location names to be explicitly configured by the adjacent network node.

3.4 AS/400 Switched Line Support

There are some considerations that need to be made when switched lines are used across an APPN and S/370 SNA subarea networks. Remember that when we talk about switched lines we also include token-ring and X.25 switched virtual circuits.

Below we will look at these considerations:

3.4.1 AS/400 Automatic Disconnect

The automatic disconnection of switched lines occur when there are no sessions active for a particular controller. When you create your controller description for a switched connection you should be familiar with the following parameters:

- **APPN CP session support (CPSSN)** specifies whether a CP-CP session is allowed across a transmission group. If the XID is successful and you have CPSSN(*YES), a CP-CP session will be established when the line and controller descriptions are varied on. Once established the number of active sessions using this transmission group will never fall to zero because the CP-CP session will always be active.
- **Switched line disconnect (SWTDSC)** will enable a switched line to automatically disconnect when the number of sessions across the transmission group falls to zero. Even with this parameter defined as (*YES) it is possible that the line will not disconnect because of the active session caused by CPSSN(*YES). This is not a concern when an AS/400 is connected to a S/370 SNA subarea as no CP-CP session is supported. Therefore, this parameter will be very important to help cut switched line costs, where no CP-CP sessions are requested.
- **APPN disconnect timer (DSCTMR)** specifies the amount of time in milliseconds an APPC controller must wait before it automatically disconnects. The timer is started when the switched connection is established, and when the time has elapsed the system will check to see that there are no active sessions and, if not, disconnect the switched line. If sessions are still active when the time has elapsed, the line will disconnect when all active sessions are ended.

3.4.2 AS/400 Manual Dial

A connection for the manual dial switched line is used when the system starts the switched line connection and the automatic dial capability does not exist for that line. When you create the line description for the switched line you need to code AUTODIAL(*NO) and SWTCNN(*BOTH) or (*DIAL). When you create your controller you should be aware of the following parameters:

- SWITCHED(*YES) specifies that you are using a switched connection.
- SWTLINLST(name) specifies the existing line descriptions to be used.
- EXCHID(05622222) identifies the remote controller during XID processing.
- INLCNN(*DIAL) specifies that a dial connection is to be used. This does not prevent either manual or automatic answer connection methods.
- CNNNBR(234-5678) specifies the telephone number the operator must dial.

3.4.3 AS/400 Automatic Dialing

The AS/400 will use the automatic dial function whenever the AUTODIAL(*YES) and SWTCNN(*BOTH) or (*DIAL) is defined in the line description.

If the controller description is created with INLCNN(*DIAL), you must also attach an autodial unit to the line.

3.4.4 AS/400 Manual and Automatic Answer

When a remote system dials into an AS/400, the AS/400 can either manually or automatically answer the call. When you create the line description you must specify AUTOANS(*NO), SWTCNN(*BOTH) or (*ANS) for manual answer and AUTOANS(*YES) for automatic answer.

When you define INLCNN(*ANS) in the controller it will depend on how you have defined your line as to whether it will manually answer or automatically answer.

3.5 XID3 Exchange

3.5.1 Contents of XID3 Exchanged between NCP and AS/400

The following is a summary of the XID3 that is exchanged during PU activation on the AS/400 and NCP. The AS/400 XID3 would look different if the remote system were defined as peer or as host. Some of these values are defined in the IBM software and cannot be changed. Some are under user control and when specified in the VTAM/NCP and AS/400 definitions these values must be compatible.

Contents	Sent from AS/400 to NCP	Sent from NCP to AS/400
XID3 Format	PU Type 2 or 2.1	PU Type 4
XID3 node characteristics	INIT-SELF may not be sent to XID sender send ACTPU	XID sender cannot receive BIND PIU segments
XID negotiation	Negotiation proceeding	Negotiation proceeding
TG BIND pacing support	Full support of adaptive BIND pacing	One-way adaptive BIND pacing supported
L/S Role	Secondary link station	Primary link station
Trans/Recv. Capability	Two-way alternating (HDX)	Two-way simultaneous (FDX)
Max. BTU length	X'0109' = 265 bytes	X'13DA' = 5082 bytes
Modulo	8	8
Max.I-frame	7	7
Network Name Control Vector	CPNAME=USIBMRA.RALYAS4A Link Station Name = RAB	CP name = USIBMRA.RAB PU name = NCPA Link Station Name = RAOP1B

Figure 11. XID3 Contents

3.6 Token-Ring Considerations

The IBM token-ring LAN (TRLAN) physical interface is a supported interface between an S/370 host, AS/400 and the PS/2 so they may be nodes and stations on a TRLAN. The S/38 does not support the TRLAN interface.

The TRLAN is an any-to-any interface and the first thought you might come up with is why use APPN here because the intermediate routing of APPN becomes redundant in a TRLAN (all nodes in a TRLAN network may be considered adjacent). However, APPN provides other benefits which may be used in conjunction with TRLAN:

- Automatic configuration and activation of all peer devices in the network.
- Multiple location names (defined at local nodes only) and automatic searches (by remote nodes) when a session is requested to a particular location name.
- Intermediate routing through a host to another APPN network.
- Transmission priority.

These APPN functions are only provided by AS/400; however, when an S/38, PS/2 and host are attached, the AS/400 can still use the benefits of it.

3.7 X.25 Considerations

Besides the benefits of using a PSDN, the considerations in using X.25 together with APPN are more or less the same as for TRLAN.

4.0 Scenario 1: AS/400 and S/38 Adjacent to the Host

4.1 Environment Tested

In this chapter we will describe the definitions required to connect an AS/400 (via a switched line) and a S/38 (via a leased line) to a S/370 subarea network. We will also describe how multiple sessions can be established between the AS/400 and S/38 when they are connected to a S/370 subarea network.

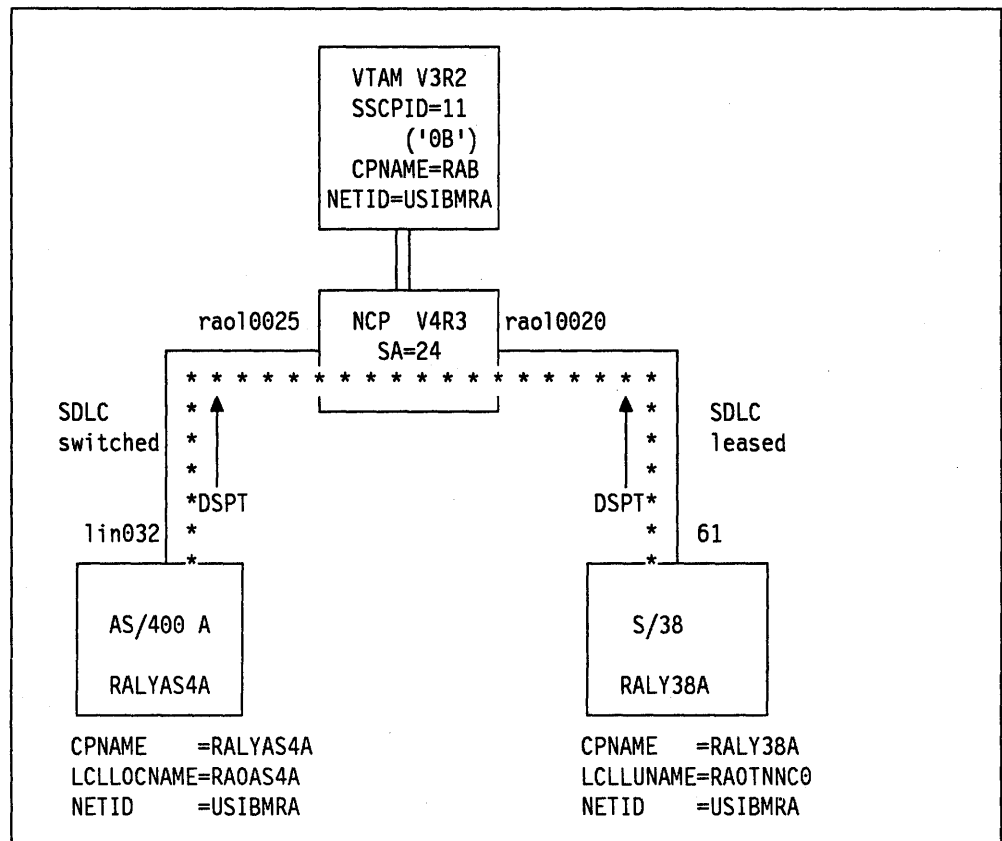


Figure 12. Network Diagram for Scenario 1

We tested the following:

- **Test 1: CPNAME/IDBLK/IDNUM**

In VTAM V3R2 there is a new parameter when defining a VTAM switched major node definition for the PU macro called CPNAME. The CPNAME can be used to identify a T2.1 node to VTAM. It is passed from the T2.1 node to VTAM during the establishment of a switched connection. If the CPNAME is not coded in the switched major node definition, VTAM will use the traditional IDBLK and IDNUM parameters for switched line establishment.

We tested the use of the CPNAME by connecting an AS/400 to the host via a SDLC switched line. We didn't use either the IDBLK or IDNUM parameters. In a T2.1 environment we recommend you use only the CPNAME when you are connecting APPN nodes to other APPN nodes or to a S/370 which is a Low Entry Network node. However, if you do wish to use both CPNAME and

IDBLK/IDNUM then they must match the corresponding parameters on the AS/400.

- **Test 2: Switched Disconnect**

When you create the S/370 host controller description on the AS/400 you have the option to define "switched disconnect" as *YES. This means when there are no active sessions on the line it will disconnect. This will leave the line on the AS/400 in "Connect Pending" state and the controller and devices to a "Vary on Pending" state.

We utilized this parameter when we defined the AS/400 switched connection to the S/370 host. When there are no active sessions on the line the AS/400 will send a "REQDISCONT" to NCP who will then start de-activating the LUs and finally the PU.

- **Test 3: SSCPID**

In this test we looked at the role of the SSCPID in the exchange identification (XID) sequence for switched connections. When you define the S/370 host controller description on the AS/400, you can have the "APPN node type" parameter set to *LENNODE (LEN), *ENDNODE (EN) or *NETNODE (NN). The AS/400 forced you to define an SSCPID when you defined the node type as Low Entry Network node but was not required for the node type of NN or EN. If you do define the SSCPID on the AS/400 then it is checked by VTAM at remote system identification sequence time and must match the SSCPID coded in the VTAM startup list.

- **Test 4 S/38 PTF**

We tested the S/38 PTF which allows the S/38 to support and initiate independent sessions to other T2.1 nodes behind the S/370 subarea network.

- **Test 5 Display Station Passthrough (DSPT)**

Once the network was set up we used DSPT to establish multiple sessions between the S/38 and AS/400. We initiated sessions from both the AS/400 and S/38.

This chapter will take you through the definition process, screen by screen. We have done this purely for presentation purposes only and would strongly recommend you create CL programs for creating your definitions. Examples of the CL programs are in Chapter 7 "Definitions".

4.2 Definitions on the AS/400 (RALYAS4A)

When you are going to configure an AS/400 as an APPN node to communicate to a S/370 subarea network you are required to perform the following steps:

- Check the network attributes
- Create line description from the AS/400 to VTAM/NCP
- Create a host controller description for the S/370 host on the AS/400
- Create an entry in both the local and remote location lists
- Create a mode description.

4.2.1 Network Attributes

The network attributes contain the AS/400's local system values for APPN. You can display these attributes by using the DSPNETA command or by going to menu "NETWORK".

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   90. Sign off
Selection or command
===> dspneta
F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 13. AS/400 Main Menu Screen

Type DSPNETA to display the network attributes.

```

                                Display Network Attributes
                                System:  RALYAS4A
Current system name . . . . . : RALYAS4A
Pending system name . . . . . :
Local network ID . . . . . : USIBMRA
Local control point name . . . . . : RALYAS4A
Default local location . . . . . : RALYAS4A
Default mode . . . . . : MODS361
Maximum number of conversations for a remote
location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . :
More...

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 14. Display Network Attributes Screen

Notice we have defined the local control point name, local network ID, default location name and APPN node type. You can change these parameters by the CHGNETA command or by taking option 2 from the "Display Network Attributes" menu.

```

                                Display Network Attributes
                                System:  RALYAS4A
Alert status . . . . . : *UNATTEND
Alert primary focal point . . . . . : *NO
Alert default focal point . . . . . : *NO
Alert logging status . . . . . : *ALL
Alert controller description . . . . . : P24025D
Message queue . . . . . : QSYSOPR
Library . . . . . : QSYS
Output queue . . . . . : QPRINT
Library . . . . . : QGPL
Job action . . . . . : *FILE
Maximum hop count . . . . . : 16
DDM request access . . . . . : *OBJAUT
PC Support request access . . . . . : *OBJAUT

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 15. Display Network Attributes Screen, (continued)

The alert controller description "P24025D" is the description which can be used to send alerts originating from the APPN network to NetView. Because this controller is attached to a switched line, the alerts will be held until the line becomes active. For more information on sending alerts to the host see *Management of AS/400 in SNA Subarea Network using NetView Products*.

4.2.2 Create Line Description

The first step in defining an AS/400 to a S/370 subarea network is to create the line description. You can do this by either following the screens documented or by using the CL command CRTLNSDLC.

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    90. Sign off

Selection or command
====> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 16. AS/400 Main Menu Screen

Select option 6 in Figure 16.

```
CMN                               Communications                               System:  RALYAS4A
Select one of the following:
    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs
    70. Related commands

Selection or command
====> 4

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 17. Communications Screen

Select option 4 in Figure 17 to configure communications.

```

CFGCMN          Configure Communications and Remote Hardware
                                     System:  RALYAS4A
Select one of the following:

  1. Lines
  2. Communications controllers
  3. Work station controllers
  4. Communications devices
  5. Printers
  6. Display stations
  7. Modes
  8. Classes-of-service
  9. Configure address and location lists

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
                                     (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 18. Configure Communications and Remote Hardware Screen

Select option 1 in Figure 18 to define your line description.

```

                                     Work with Line Descriptions
                                     System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Line      Type  Text
   L24020    *SDLC  SNA/SDLC Leased to SA24
                                     More...

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
                                     (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 19. Work with Line Descriptions Screen

Select option F6 in Figure 19 to create the line description.

```

                                     Create Line Description

Type choices, press Enter.

New line description  124025      Name
Line type . . . . . *sdlc      *ASYNC=Asynchronous communications
                                     *BSC=Binary synchronous communications
                                     *SDLC=Synchronous data link control
                                     *TDLC=Twinaxial data link control
                                     *TRLAN=Token-Ring local area network
                                     *X25=X.25 communications network

F3=Exit  F12=Previous

```

Figure 20. Create Line Description Screen

The line type we are using is *SDLC.

```

CRTLINSDLC          Create Line Desc (SDLC)

Type choices, press Enter.

Label . . . . .
Line description . . . . . > L24025      Name
Resource name . . . . . > LIN032       Name
Online at IPL . . . . . > *NO          *YES, *NO
Data link role . . . . . > *SEC        *NEG, *PRI, *SEC
Physical interface . . . . . *RS232V24  *RS232V24, *V35, *X21...
Connection type . . . . . > *SWTPP     *NONSWTPP, *SWTPP, *MP
                                                    Bottom
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 21. Create Line Desc (SDLC) Screen

The resource name is the name of the physical communications port on AS/400. It can be found with the command WRKHDWPRD using the "work with the rack configuration" option.

The data link role is always *SEC when the AS/400 is connected to a S/370 host.

We will be using a switched line so the connection type will be *SWTPP.

In Figure 22 we will be initiating the manual call to the host so we define autocal unit *NO and autodial *NO.

```

CRTLINSDLC          Create Line Desc (SDLC)

Type choices, press Enter.

Label . . . . .
Line description . . . . . > L24025      Name
Resource name . . . . . > LIN032       Name
Online at IPL . . . . . > *NO          *YES, *NO
Data link role . . . . . > *SEC        *NEG, *PRI, *SEC
Physical interface . . . . . *RS232V24  *RS232V24, *V35, *X21...
Connection type . . . . . > *SWTPP     *NONSWTPP, *SWTPP, *MP
Vary on wait . . . . . *NOWAIT         *NOWAIT, 15-180 (1 second)
Autocall unit . . . . . *NO            *NO, *YES
Exchange identifier . . . . . > *SYSGEN  05600000-056FFFFF, *SYSGEN
NRZI data encoding . . . . . *YES      *YES, *NO
Line speed . . . . . 9600             600, 1200, 2400, 4800...
Modem type supported . . . . . *NORMAL *NORMAL, *V54, *IBMRAP...
Switched connection type . . . . . *BOTH *BOTH, *ANS, *DIAL
Autoanswer . . . . . *YES            *YES, *NO
Autodial . . . . . *NO              *NO, *YES
                                                    More...
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 22. Create Line Desc (SDLC) Screen (continued)

The "Exchange identifier" parameter is not needed any more as VTAM V3R2 can also use the CPNAME in the controller description for switched line verification. Therefore, we see no reason to define IDNUM or IDBLK in the VTAM switched major node definition in a T.2.1 environment.

NRZI data encoding should match your NRZI parameter in the VTAM definitions.


```
CRTLINSDLC          Create Line Desc (SDLC)

Type choices, press Enter.

Station address . . . . . > 01          01-FE
Maximum frame size . . . . . > 265      265, 521, 1033, 2057
Duplex . . . . . > *HALF                *HALF, *FULL
Inactivity timer . . . . . 300          *NOHAX, 150-4200 (0.1 sec)
Poll response delay . . . . . 0         0-2048 (0.0001 seconds)
Text 'description' . . . . . > 'SNA/SDLC Switched to SA24'

Comment . . . . .

F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display
```

Figure 23. Create Line Desc (SDLC) Screen, (continued)

In our scenario the AS/400 is defined as secondary on a switched line and should therefore be defined as *HALF duplex.

Press enter to create your line description to the host. It will return you to the Work with Line Descriptions Menu.

4.2.3 Create Host Controller Description

Now you must create a host controller description which describes the S/370 host you are connecting to. Again, you can follow the screens or enter the CL command CRTCTLHOST.

```
CFGCMN          Configure Communications and Remote Hardware
                                     System:  RALYAS4A
Select one of the following:

    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
====> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
```

Figure 24. Configure Communications and Remote Hardware Screen

Select option 2 in Figure 24 to configure the host controller.

```
                                Work with Controller Descriptions
                                     System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
    2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Controller  Type  Text
    QESCTL      *HOST  Service Support controller
    QTICTL      *HOST  TIE, TIA, QA control unit description
    RSCSCTLD    *BSC   Ctl description for RSCS/PROFS Bridge
                                     More...

Parameters for option 2 or command
====>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
```

Figure 25. Work with Controller Descriptions Screen

Select F6 to create your host controller description.

```

                                Create Controller Description

Type choices, press Enter.

New controller
description . . . . . p24025d      Name

Controller type/class  *host      *APPC=Advanced program-to-program
                                communications
                                *ASync=Asynchronous communications
                                *BSC=Binary synchronous communications
                                *FNC=Finance
                                *HOST=SNA host

F3=Exit  F12=Previous

```

Figure 26. Create Controller Description Screen

Because this controller should be used by independent and dependent LUs we have to define the controller type as *HOST. However, it is possible to define the controller type to the host as *APPC but then this controller just supports independent LUs and cannot have dependent sessions with the host for example, alerts, 3270EM, RJEf. Recommended is controller type *HOST.

```

CRTCTLHOST          Create Ctl Desc (SNA Host)

Type choices, press Enter.

Label . . . . .
Controller description . . . . . > P24025D      Name
Link type . . . . . > *SDLC                    *SDLC, *TRLAN, *X25
Online at IPL . . . . . > *NO                   *YES, *NO
Switched line . . . . . > *YES                  *NO, *YES
APPN capable . . . . . > *YES                   *YES, *NO
Switched line list . . . . . > L24025          Name
      + for more values
Maximum frame size . . . . . > 265             *LINKTYPE, 265, 521, 1033...
Remote network identifier . . . > USIBMRA       Name, *NETATR, *NONE
Remote control point name . . . > RAB          Name
SSCP identifier . . . . . > 05000000000B      050000000000-05FFFFFFFF
Initial connection . . . . . *DIAL            *DIAL, *ANS
Connection number . . . . . > 2401
Station address . . . . . > 01                01-FE
APPN CP session support . . . . > *NO         *YES, *NO

More...
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 27. Create CTL Desc (SNA Host) Screen

In Figure 27 we will be defining "APPN capable" as *YES. The host device descriptions for independent LUs will be automatically created, varied on and attached to the right controller using the information defined in the network attributes, the associated mode description, the location list and the application program. It also means that the local system will appear as an End Node or Networ Node to the adjacent system.

The line name "L24025" is the line to be used with this controller description.

The remote network identifier, remote control point name and SSCP identifier must match those defined in the VTAM startup list. Remember that the S/370 subarea does not support CP-CP sessions so you must define "APPN CP session support" as *NO.

The station address must match the PU address in the VTAM switch major node PU macro.

```
CRTCTH0ST          Create Ctl Desc (SNA Host)

Type choices, press Enter.

APPN node type . . . . . > *LENNODE      *ENDNODE, *LENNODE...
APPN transmission grp number . . 1      1-20, *CALC
Text 'description' . . . . . > 'SNA CTL/PU on L24025'

                          Additional Parameters

Switched disconnect . . . . . > *YES      *NO, *YES
Comment . . . . .

                                                    Bottom
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display
```

Figure 28. Create Ctl Desc (SNA Host) Screen (continued)

A S/370 is defined as a *LENNODE in an APPN network. If you define APPN node type as *ENDNODE you don't have to define the SSCP identifier in Figure 27 on page 46. We recommend that you define the APPN node type as *LENNODE because in an APPN environment the S/370 is a Low Entry Network node.

Remember to press F10 for additional parameters so you can define the switched disconnect parameter. Switched disconnect *YES means that the line will be disconnected when there are no active sessions on the line.

Press Enter to create your host controller description.

4.2.4 Configure Local and Remote Location Lists

Since we defined our host controller with APPN(*YES), device descriptions will be automatically created for independent LUs. This also applies to the remote locations behind a S/370 subarea network which are defined in the APPN remote location list. After the automatic creation of the devices the AS/400 will vary them on and attach them to the correct controller in the following situations:

- When a session is requested and the route chosen and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name defined.
- When a BIND is received for a local location and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name defined.

AS/400 APPN usually doesn't require remote locations to be defined as this information is dynamically acquired through the network. However, when the AS/400 is connected to a Low Entry Network node (for example an S/370), entries need to be added in the remote location list for each LU with which we want to have sessions with, in the host or behind it. This information can't be obtained dynamically because the S/370 host doesn't support CP-CP sessions. Figure 29 will guide you through the creation of this APPN remote location list.

```
CFGCMM          Configure Communications and Remote Hardware
                                     System:  RALYAS4A
Select one of the following:

    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
===> 9

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
```

Figure 29. Configure Communications and Remote Hardware Screen

Select option 9 in Figure 29 to configure the location lists.

```

CFGLST                Configure Address and Location Lists                System:  RALYAS4A
Select one of the following:

    1. Asynchronous PAD network address lists
    2. Asynchronous remote location list
    3. APPN local location list
    4. APPN remote location list

Selection or command
===> 4

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

```

Figure 30. Configure Address and Location Lists Screen

Select option 4 in Figure 30 to configure the remote location list.

```

                                Work with Configuration Lists                System:  RALYAS4A
Position to . . . . .          Starting character(s)

Type options, press Enter.
    2=Change  4=Delete  5=Display  6=Print

Opt List      Type      Text
  2  QAPNRHT   *APPNRHT  APPN remote list

                                                                Bottom

Parameters for option 2 or command
===>

F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 31. Work with Configuration Lists Screen

Select option 2 in Figure 31 to change the already created APPN remote location list.

```

                                Define APPN Remote Locations

Type new/changed information, press Enter.

Remote   Remote   Local   Control  Control  Location  Secure
Location Network Location Point   Point   Location  Loc
Name     ID       Name    Name     Net ID   Password  *NO
RAOTNNC0 USIBMRA  RA0AS4A RAB      USIBMRA

F3=Exit  F11=Additional information  F12=Previous
F17=Top of list  F18=Bottom of list

```

Figure 32. Define APPN Remote Locations Screen

If we look at Figure 32 then we see the following: RAOTNNC0 is the remote location name for the S/38. Because the AS/400 and S/38 are communicating through the host (which is a Low Entry Network node but with routing capabilities), the LUs have to be defined on both sides of the line. This means that RAOTNNC0 must match the LU name defined in the NCP for the S/38 leased

line and also must match the local location name in the S/38 device description. The AS/400 "thinks" that any remote location resides in the host, therefore the control point name and NETID must match the SSCPNAME and NETID in the VTAM startup list. The local location name must match the LU name in the switched major node LU macro for this AS/400.

The local location list defines the locations that are residing on this AS/400. The following screens will add RAOAS4A to the list.

```

CFGLST                Configure Address and Location Lists                System:  RALYAS4A
Select one of the following:

    1. Asynchronous PAD network address lists
    2. Asynchronous remote location list
    3. APPN local location list
    4. APPN remote location list

Selection or command
===> 3

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 33. Configure Address and Location Lists Screen

Select option 3 in Figure 33 to configure an entry in the local location list.

```

                                Work with Configuration Lists                System:  RALYAS4A
Position to . . . . .           Starting character(s)
Type options, press Enter.
    2=Change  4=Delete  5=Display  6=Print

Opt List      Type      Text
  2 QAPPNLCL  *APPNLCL

                                                                Bottom
Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 34. Work with Configuration Lists Screen

Select option 2 in Figure 34 to add RAOAS4A to the local location list.

```

Define APPN Local Locations

Type new/changed information, press Enter.

Local          Local
Location Entry Location Entry
Name  Description Name  Description
RAOAS4A Local LU Name swtch
RAOTNNB0 Local LU for leased

F3=Exit  F12=Previous  F17=Top of list  F18=Bottom of list

More...

```

Figure 35. Define APPN Local Location List Screen

Enter the local location name and its description. RAOAS4A must match the LU name which is defined in the VTAM switched major node LU macro for the AS/400.

4.2.5 Create Mode Description

The mode description describes the session characteristics and number of sessions that will be used to negotiate the allowable values between the local and remote locations. A mode with the same name must exist at both end points. There must also be a mode entry with the same name in VTAM/NCP.

```
CFGCMN          Configure Communications and Remote Hardware
                                     System:  RALYAS4A
Select one of the following:

    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
===> 7

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
```

Figure 36. Configure Communications and Remote Hardware Screen

Select option 7 in Figure 36 to work with mode descriptions.

```
Work with Mode Descriptions
                                     System:  RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
    2=Change  3=Copy  4=Delete  5=Display  6=Print

Option  Mode      Text
#BATCH  This Mode is IBM Supplied
#BATCHSC This Mode is IBM Supplied
#INTER  This Mode is IBM Supplied
#INTERSC This Mode is IBM Supplied
BLANK   This Mode is IBM Supplied
More...

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 37. Work with Mode Descriptions Screen

Select F6 in Figure 37 to create a mode description MODS361.

```

CRTMODD                Create Mode Description

Type choices, press Enter.

Mode description . . . . . mods361      Name
Maximum sessions . . . . . 8            1-512
Maximum conversations . . . . . 8       1-512
Locally controlled sessions . . . . . 4  0-512
Pre-established sessions . . . . . 0     0-512
Inbound pacing value . . . . . 7        0-63
Outbound pacing value . . . . . 7        0-63
Max length of request unit . . . . . *CALC *CALC, 241, 245, 247, 256...
Text 'description' . . . . . Mode for USIBMRA network

                                                    Bottom
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 38. Create Mode Description Screen

The parameters defined here must match those defined on the remote location. Pre-established sessions must be "0" so that the switched disconnect parameter defined in the host controller description can work. You can define a different COS table than #CONNECT by pressing F10. If not it will default to #CONNECT.

4.3 Relationship between AS/400 and VTAM/NCP for a Switched Line

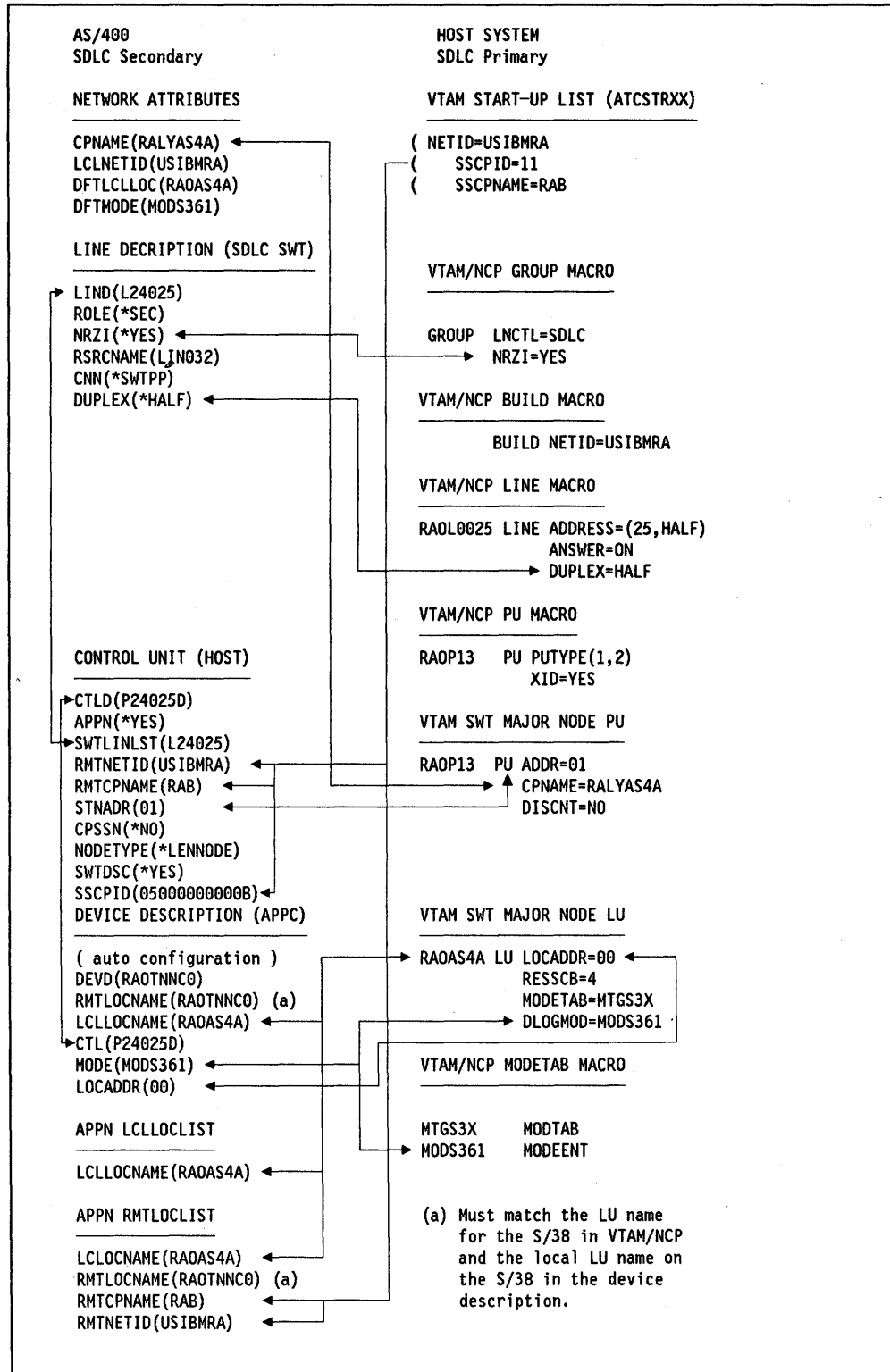


Figure 39. Defining a switched link between AS/400 and VTAM/NCP

4.4 Definitions on the S/38 (RALY38A)

When you configure an S/38 to communicate with the AS/400 behind the S/370 subarea network you need to create the following:

- A line description from the S/38 to the host.
- A control unit description for the S/370 on the S/38.
- A device description for the AS/400 on the S/38.
- A mode description for the device.
- A communications entry in the subsystem you are using for the device.

For information on setting up DSPT on the S/38 refer to *S/38 CPF Programmer's Guide*.

4.4.1 Create Line Description

To configure the S/38 to the network you must first create a line description from the S/38 to the S/370 host. You can do this by entering the CL command `CRTLIND + CMD 4` to prompt the parameters.

```
      Create Line Description (CRTLIND) Prompt      +++
Enter the following:
Label:
Line description name:      LIND      R      L24020
OU number of line port:    LINNBR    R      61
Line type:                  TYPE      R      *SDLCS
Connection type(*SWT *PP *MP):  CNN      R      *MP
Data rate:                  RATE      R      9600
Switched network backup?    SWNBKU          *NO
Speed select feature?      SELECT
NRZI decoding (*NO *YES):  NONRTNZ        *YES
S/38 provided clock(*NO *YES):  CLOCK          *NO
Autocall feature (*NO *YES):  AUTOCALL       *NO
Autoanswer feature (*NO *YES):  AUTOANS        *NO
S/38 answer tone (*NO *YES):  ANSTONE        *NO
Physical wire connection
  Normal wire type (2 4):          4
  Backup type, if SWNBKU (2 4):    2
Data comm equipment group:  DCEGRP
Non-IBM modem (*NO *YES):    OEMMDM          *NO
Switched connection type:    SWTCNN          *BOTH
Speed rate type (*FULL *HALF):  RATETYPE       *FULL
Dial mode (*MANUAL *AUTO):    DIALMODE
```

Figure 40. Create Line Description Prompt

In Figure 40 the LINNBR parameter identifies the physical port on the S/38. Because the S/38 is attached to the host, the line is always secondary which is defined by *SDLCS.

In our scenario the S/38 is attached to the host on a multipoint line which is defined by connection type *MP.

NONRTNZ=*YES has to match the NRZI parameter in the VTAM/NCP line definition.

```

Create Line Description (CRTLIND) Prompt      ***

Answer mode (*MANUAL *AUTO):      ANSMODE
Data terminal ready delay:         DTRDLY
Idle detection time:               IDLETIME
BSC receive timeout timer:        RCVTMR      15
Nonproductive receive time:        NONPRDRCV
Number of error retries:           RETRY      1
Online at CPF start(*YES *NO):    ONLINE     *YES
Nonswitched control units:        CTLU
BSC switched control units:        SWCTLU
+ for more
Station address:                   STNADR      C3
Exchange identifier in hex:        EXCHID      0222696A
Line code (*EBCDIC *ASCII):        CODE       *EBCDIC
Remote job entry (*NO *YES):       RJE        *NO
BSC switched line disconnect?     BSCSWTDSC  *YES
3270 device emulation?            EML3270   *NO
X.25 network type:                X25NETTYPE 0101
X.25 network local address:        LCLNETADR  *NONE
X.25 default packet size:         DFTPFSIZE  128
X.25 maximum packet size:         MAXPKFSIZE *DFTPFSIZE

```

Figure 41. Create Line Description (continued)

In Figure 41 the station address must match the PU address defined in the PU macro in the NCP. For more information on the other parameters see *S/38 Control Language Reference Manual*.

```

Create Line Description (CRTLIND) Prompt

X.25 default window size:         DFTWDSIZE  2
X.25 maximum PIU size:            NETMAXPIU   521
X.25 logical channel entries      LGLCHLE
Logical channel group nbr:
Logical channel channel nbr:
Logical channel type:
PVC control unit name:
+ for more
Public authority                   PUBAUT
(*NORMAL *ALL *NONE):             *NORMAL
Text 'description':               TEXT      'SNA Host line 124020 with sub
area 24'
Comment:

```

Figure 42. Create Line Description Prompt (continued)

Press Enter to create your line description.

4.4.2 Create Host Controller Description

The next step is to create a controller description to describe the communication characteristics of the S/370 remote system. Enter command CRTAUD and CMD 4 for prompting.

```
          Create Control Unit Desc (CRTAUD) Prompt      +++
Enter the following:
Label:
Control unit description name:  CUD          R  P24020C3
Control unit type:             TYPE         R  PU2
Model number:                  MODEL        R  0
Control unit address:          CTLADR       R  0061
Switched line (*NO *YES):      SWITCHED    *NO
Nonswitched line name:        LINE          L24020
Speed select feature?         SELECT       *NO
Switched telephone number:     TELNBR     *NONE
Switched initial connection:   INLCNN    *ANS
Exchange identifier in hex:    EXCHID     *NONE
BSC local identifier:          LCLID       *NONE
BSC remote identifiers:        RMTID       *NONE
                               + for more
SSCP identifier:               SSCPID
SSCP identifier checking?      SSCPIDCHK *NO
Online at CPF start(*YES *NO): ONLINE     *YES
Switched line names:          LINLST
                               + for more
Switched network backup?      SWNBKU   *NO
Allow delayed connection?     DLYFEAT  *NO
```

Figure 43. Create Control Unit Desc Prompt

The name of the controller description in Figure 43 is P24020C3.

Control unit type is PU2, after exchange identification the host will know that the S/38 is a T2.1 node and supports dependent and independent LUs on the same controller.

Control unit address is 0061, where 61 has to match the line port in the attached line description.

```
          Create Control Unit Desc (CRTAUD) Prompt      +++
Attached device names:         DEV
                               + for more
BSC device delay in sec:      DEVPLY     120
BSC program delay in sec:     PGMDLY     120
Remote job entry (*NO *YES):  RJE       *NO
  RJE host:                    RJEHOST     *NONE
RJE host 'signon'/'logon':    RJELOGON  *NONE

3270 device emulation?       EML3270  *NO
Maximum length PIU:          MAXLENPIU  521
Data compression:            DTACPR     *NO
Device wait timeout value:    DEWAIT    *TYPE
Link type:                    LINKTYPE    *NONE
Controller code:              CODE
X.25 address:                 X25ADR
X.25 default packet size:     DFTPKTSIZE *LIND
X.25 default window size:     DFTWDSIZE *LIND
X.25 LLC protocol:            NETPCL     *QLLC
X.25 response timer:          NETRSPTMR
```

Figure 44. Create Control Unit Desc (continued)

Press Enter to create this controller description.

```
      Create Control Unit Desc (CRTCUD) Prompt

X.25 reverse charging      NETRVSCRG
  Incoming calls:          *NO
  Outgoing calls:         *NO
X.25 closed user group ID: NETCUGID  *NONE
X.25 connection password: NETCNPWD  *NONE
X.25 user facilities:     NETUSRFCL  *NONE

Public authority          PUBAUT
  (*NORMAL *ALL *NONE):  *NORMAL
Text 'description':      TEXT        'SNA Host control unit P24020C
3 on L24020'
Comment:
```

Figure 45. Create Control Unit Desc (continued)

For more information on the other parameters see *S/38 Control Language Reference Manual*.

4.4.3 Create Device Description

The device description contains the characteristics of the logical device (LU) on the S/38 that the remote system will communicate with. This device (LU) will be used to communicate with the AS/400 behind the subarea network. Use the command CRTDEVD + CMD 4 for prompting.

```
          Create Device Description (CRTDEVD) Prompt      +++
Enter the following:
Label:
Device description name:      DEVD      R  RAONN
Device address:              DEVADR    R  000061
Device type code:            DEVTYPE   R  *PEER
Model identifier:            MODEL     R   0
Control unit name:          CTLU      P24020C3
Online at CPF start(*YES *NO):  ONLINE  *YES
Dkt/tape error retries      RETRY
Error type:
Maximum times to retry:      + for more
Dkt/tape error log threshold THRESHOLD
Threshold error type:
Number of errors allowed:    + for more
Drop line at signoff:        DROP      *YES
Associated work stn printer: PRINTER   *NONE
Message queue name:         MSGQ      QSYSOPR
Library name:                *LIBL
Print image name:           PRTIMG
Library name:                *LIBL
```

Figure 46. Create Device Description Prompt

The device description name in Figure 46 is RAONN. This is an arbitrary name and doesn't have to match any other parameters.

The device address is 000061, where the first two digits indicates the independent Lu support. It is possible to create more devices with "00" as the first two digits to the same controller. Digits three and four have to match the first two digits of controller description address and digits five and six have to match the port address of the line to be used.

P24020C3 is the name of the controller to which this device is attached.


```

Create Device Description (CRTDEVD) Prompt      +++

Print file name:          PRTFILE      QSYSVRT
Library name:            *LIBL
Work stn controller address: WSCADR      *NONE
Work stn controller keyboard: WSKBD      *NONE
Allow blink (*YES *NO):  ALWBLN      *YES
BSC contention resolution: CONTN
Local LU name:          LCLLU          RAOTNNC0
Remote LU name:         RMTLU          RAOAS4A
System validation password: SYSVDPWD    *NONE
Secure LU:             SECURELU       *NO
Font identification:    FONT
Form feed:             FORMFEED      *CONT
Emulation device type:  EMLDEVTYP     3277
Emulation keyboard type: EMLKBDTYP    *UPPER
Maximum length RU:     MAXLENRU      256
Auxiliary device       AUXDEV
Auxiliary device type: *NONE
Auxiliary device address:
+ for more
Network device address: NETDEVADR     *NONE

```

Figure 47. Create Device Description Prompt (continued)

In Figure 47 you are required to define your local and remote LU names. The local LU name is RAOTNNC0 and must match the LU name defined in the NCP LU macro to communicate with the S/38. The remote LU name defines the location (LU) with which it wants to communicate and therefore must match the local location name which resides in the local location list of the AS/400. Because the communication will use the host as an intermediate system the remote LU name must also match the LU name for the AS/400 in the VTAM switched major node.

```

Create Device Description (CRTDEVD) Prompt

Character Identifier      CHRID
Graphic character set:   *SYSVAL
Code page:
Public authority         PUBAUT
(*NORMAL *ALL *NONE):  *NORMAL
Text 'description':     TEXT          'Device Description for
RALYAS4A'
Comment:

```

Figure 48. Create Device Description Prompt (continued)

For more information on the other parameters see *S/38 Control Language Reference Manual*.

Press Enter to create the device description.

4.4.4 Create Mode Description

The mode description describes the session characteristics and number of sessions that will be used to negotiate the allowable values between the local and remote locations. A mode with the same name must exist at both end points. There must also be a mode entry with the same name in VTAM/NCP.

To define and add a mode description for device RAONN use the command ADDDEVMODE + CMD 4 for prompting.

```

Add Device Mode (ADDDEVMODE) Prompt
Enter the following:
Label:
Device description name:   DEVD      R   RAONN
Mode name:                 MODE      R   MODS361
Maximum number of sessions: MAXSSN   P   8
Number of prebound sessions: PREBNDSSN P   0
Maximum source sessions:  MAXSRCSSN P   4
Maximum conversations:    MAXCNV   P   8
Inbound pacing value:    INPACING   P   7
Outbound pacing value:   OUTPACING P   7
Maximum length RU:       MAXLENRU   P  256
Comment:                  /* Mode for Network USIBMRA */

```

Figure 49. Add Device Mode Prompt

```

Add Communications Entry (ADDCMNE) Prompt
Enter the following:
Subsystem description name: SBSDB      R   qsnads
Library name:              *LIBL
Device name:                DEV        R   raonn
Job description name:       JOBDB      P   qsnads
Library name:              qgp1
Default user profile name:  DFTUSR    P   qsnads
Mode name:                  MODE      *ANY
Max concurrently active jobs: MAXACT    *NOMAX

```

Figure 50. Add Communications Entry Prompt

To be able to use this device description for communications to the AS/400 you must add a communications entry in a subsystem on the S/38. We are using the subsystem name QSNADS for the device RAONN. To add your device to the subsystem you use the CL command ADDCMNE. You must make sure the subsystem is not active. If it is active you can enter the TRMSBS command. This will terminate your subsystem so you can make the necessary changes. Once you have added your communications entry you activate the subsystem again by using the STRSBS command. For more details on how to setup a communication environment on the S/38 see *S/38 Control Program Facility Programmers Guide*.

4.5 Relationship between S/38 and VTAM/NCP for a Leased Line

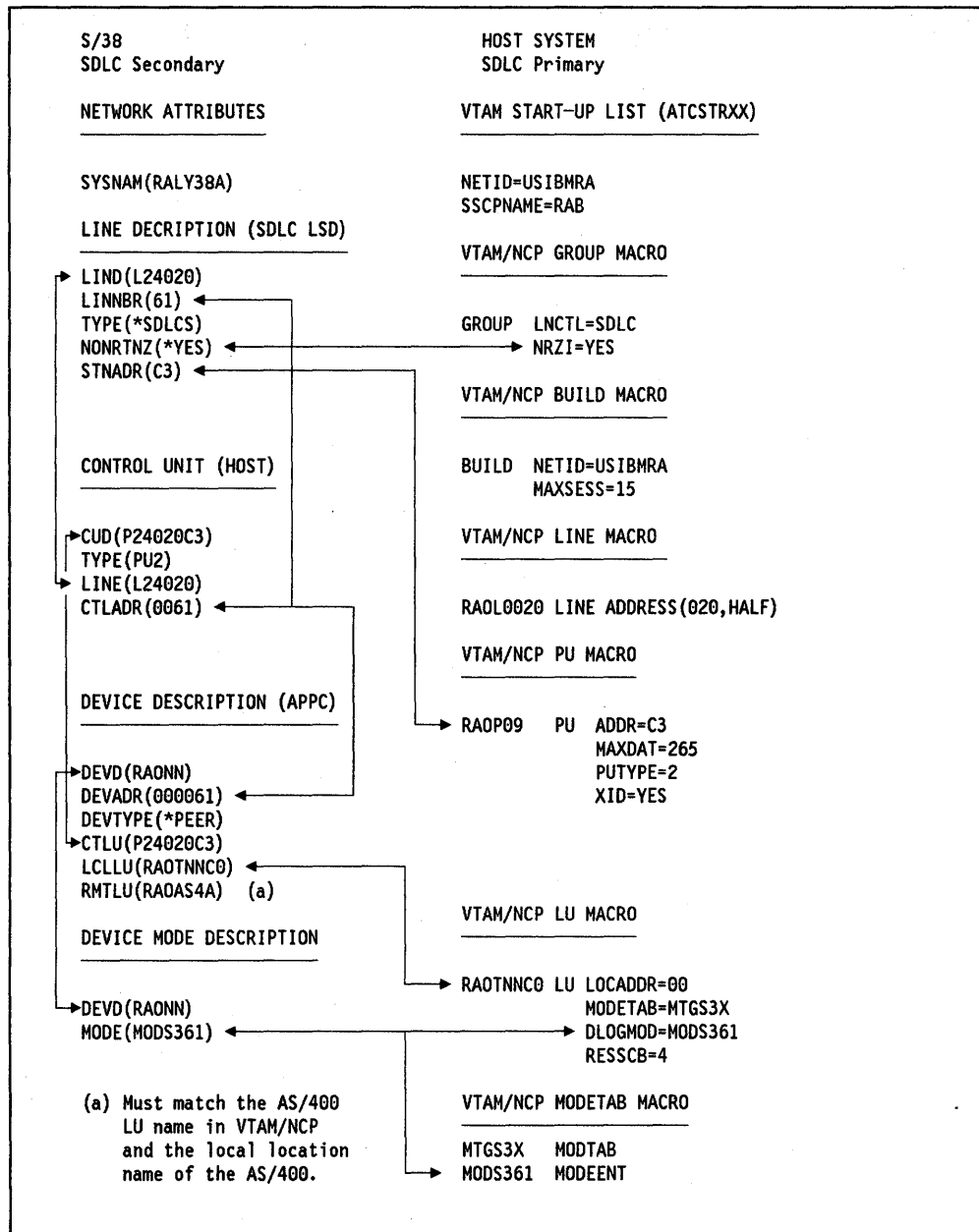


Figure 51. Defining a Leased Line between S/38 and VTAM/NCP

4.6 Definitions on the S/370 Host

4.6.1 VTAM Switched Major Node Definitions for the AS/400

```
*****
*          VTAM SWITCHED MAJOR NODE FOR NTRI WITH APPCLU          *
*****
          VBUILD MAXGRP=5,          REQUIRED          * X00010480
          MAXNO=12,                REQUIRED          * X00010490
          TYPE=SWNET              REQUIRED          * X00010500
RAOP13   PU  ADDR=01,              * X00010540
          CPNAME=RALYAS4A,        AS/400A NN      * X0
          DISCNT=NO,              * X00010570
          MAXOUT=1,              * X00010580
          MAXPATH=0,             * X00010590
          VPACING=0,             * X00010610
          PUTYPE=2,              * X00010620
          SSCPFM=USSSCS          * X00010630
          00010630
**
RAOAS4A  LU  LOCADDR=0,          FOR THE AS/400A : ILU  * X00010650
          RESSCB=4,              * X
          MODETAB=MTGS3X,        * X
          DLOGMOD=MODS361
```

Figure 52. VTAM Switched Major Node Definitions for the AS/400

The PU macro Figure 52 specifies RALYAS4A as the CP name for the AS/400. We coded DISCNT=NO because we tested the "switched disconnect" function of the AS/400.

4.6.2 NCP Definitions for the AS/400

```
***** 01220008
*          BUILD MACRO SPECIFICATIONS          * 01230008
***** 01240008
NCPBUILD BUILD VERSION=V4R3,      # NCP V4 REL3          X01250008
          ADDSESS=20,            ENOUGH BLOCKS DEFINED IN RESSCB X01260008
          AUXADDR=10,            ADDITIONAL PLU ADDRESSES FOR ILU X01260108
          LOADLIB=NCPLoad,       LIB FOR LOAD MODULE          X01380008
          MAXSESS=16,           MAX LU-LU SESSIONS ANY LU CAN HAVE X01400008
          MAXSSCP=8,           MAXIMUM SESSIONS FOR LU          X01401008
          MODEL=3725,          X01420008
          NAMTAB=50,           # ENTRIES FOR SSCP, CP & NET NAMES X01430008
          NETID=USIBMRA,       NATIVE NETWORK                X01431008
          NEWNAME=RAONCP0,     NAME OF THIS LOAD MODULE      V3X01440008
          SUBAREA=24,         SUBAREA ADDRESS = 24          X01470008
          SUBAREA=(20)        CHANNEL ATTACHED HOSTSA REL 3 01970008
          :                   :                   01970008
```

Figure 53. NCP BUILD Macro Definitions for the AS/400 and S/38

For information about the parameters in Figure 53 see the descriptions in chapter 3.1.

```

***** 04750008
*      SNA SWITCHED LINE GROUP      04760008
***** 04770008
RAOGSHS0 GROUP LNCTL=SDLC,          X14580008
        DIAL=YES,                    X14590008
        NEWSYNC=NO,                  X15600008
        NRZI=YES,                    X14610008
        PAUSE=1,                      X14620008
        RETRIES=(7,4,5)              X14630008
RAOL0025 LINE ADDRESS=(25,HALF),    X14640008
        NPACOLL=YES,                 NPAX14650008
        OWNER=RAB,                   (V) VTAM X14660008
        CLOCKNG=EXT,                 X14670008
        DUPLEX=HALF,                 X14680008
        RETRIES=(5,4,24),           X14690008
        SPEED=2400,                  X14700008
        ANXWER=ON,                   (V) VTAM X14710008
        CALL=INOUT,                  (V) VTAM X14720008
        ISTATUS=ACTIVE,              X14730008
*      ATTACH=MODEM,                 # NOT SUPPORTED V4R3 X14740008
        STATOPT=('DIAL LINE',NOMONIT) X14750008
RAOP13  PU PUTYPE=(1,2),            X14760008
        XID=YES                       X14770008
        :                               :
        :                               :

```

Figure 54. NCP Switched Line Definitions for the AS/400

In Figure 54 the line group name RAOGSHS0 describes switched lines by defining DIAL=YES. CALL=INOUT provides the capability to dial in both directions: from the host to the AS/400 and from the AS/400 to the host. ANSWER=ON allows the host to be ready to answer if dialing-in.

The PU RAOP13 only defines the PU type and the parameter XID=YES to appear as T2.1 node to the AS/400. The other parameters are overwritten by the switched major node definitions as well as the LU macro definitions.

4.6.3 VTAM/NCP Definitions for the S/38

NCP, which operates in a communication controller, controls and services the devices attached to it, and transmits and receives data for the devices. It also forwards data as a node to other communication controllers or to a host processor.

```

***** 01220008
*      BUILD MACRO SPECIFICATIONS      * 01230008
***** 01240008
NCPBUILD BUILD VERSION=V4R3,        # NCP V4 REL3 X01250008
        ADSESS=20,                   ENOUGH BLOCKS DEFINED IN RESSCB X01260008
        AUXADDR=10,                  ADDITIONAL PLU ADDRESSES FOR ILU X01260108
        LOADLIB=NCPLOAD,             LIB FOR LOAD MODULE X01380008
        MAXSESS=16,                  MAX LU-LU SESSIONS ANY LU CAN HAVE X01400008
        MAXSSCP=8,                   MAXIMUM SESSIONS FOR LU X01401008
        MODEL=3725,                  !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! X01420008
        NANTAB=50,                   # ENTRIES FOR SSCP, CP & NET NAMES X01430008
        NETID=USIBHRA,               NATIVE NETWORK X01431008
        NEWNAME=RAONCP0,             NAME OF THIS LOAD MODULE V3X01440008
        SUBAREA=24,                  SUBAREA ADDRESS = 24 X01470008
        SUBAREA=(20)                 CHANNEL ATTACHED HOSTSA REL 3 01970008
        :                               : 01970008
        :                               : 01970008

```

Figure 55. NCP BUILD Macro Specifications.

In Figure 55 we define a BUILD macro which indicates the NCP version, the type of communication controller to be used, the name of this load module, the NCP subarea and the host subarea. USIBMRA is the network ID for the VTAM/NCP node in the scenario 1 configuration.

```

***** 04750008
*      LINE MACRO SPECIFICATION      SDLC LINK 020      04760008
***** 04770008
RAOL0020 LINE ADDRESS=(020,HALF), TRANSMIT AND RECEIVE ADDRESSES X04780008
          NPACOLL=YES, NPAX04790008
          ANS=CONTINUE, DON'T BREAK CROSS DOMAIN SESSIONS X04800008
          OWNER=RAB, (V) VTAM X04810008
          ISTATUS=ACTIVE, X04820008
          DUPLEX=(FULL), REQUEST TO SEND ALWAYS UP X04830008
          ETRATIO=30, DEFAULT X04840008
          LPDATS=LPA1, X04850008
          MAXPU=9, ALLOW NO MORE THAN 9 PUS ON LINE X04860008
          SERVLIM=2, X04870008
          SRT=(,64), X04880008
          SPEED=(4800) LINE SPEED IS 4800 BPS X04890008
*      ATTACH=MODEM, # NOT SUPPORTED V4R3 04900008
*      STATOPT=('S/36,S/38',NOMONIT) 04910008

```

Figure 56. NCP LINE Macro Specification for the S/38

In Figure 56 the line RAOL0020 is specified as a non-switched line attached to the host RAB (subarea 20).

```

***** 06973008
* PU/LU MACRO FOR S/38 * 06980008
***** 06990008
* PU AND LU DEFINITIONS FOR S/38A TO SUPPORT 07010009
* DEPENDENT AND INDEPENDENT LUS 07020009
***** 07040009
RAOP09 PU ADDR=C3, 3270 ADDRESS='C' (EBCDIC) X07090009
MAXDATA=265, MAXIMUM AMOUNT OF DATA X07100009
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE X07110009
PACING=(7), PACING SET BY BIND IMAGE X07120012
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING X07130009
PASSLIM=7, X07140009
PUTYPE=2, X07150009
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN X07160009
DISCNT=(NO), (V) VTAM ONLY X07170009
ISTATUS=ACTIVE, (V) VTAM ONLY X07180009
VPACING=8, (V) VTAM ONLY X07190010
XID=YES 07200010
* STATOPT='S/38A T2.1' 07210010
***** 07220009
* DEFINITIONS FOR S/38A - RALY38A * 07230009
* RAOTNNC0 TO C3 INDEPENDENT LUS 07240009
***** 07330009
RAOTNNC0 LU RESSCB=4, INDEPENDENT LU X07340010
LOCADDR=0, X07341013
MODETAB=MTGS3X, X07350010
DLOGMOD=MODS361, X07360010
ISTATUS=ACTIVE 07370010
* STATOPT='INDEPENDENT LU' 07380010
RAOTNNC1 LU RESSCB=4, INDEPENDENT LU X07390010
LOCADDR=0, X07391013
MODETAB=MTGS3X, X07400010
DLOGMOD=MODS361, X07410010
ISTATUS=ACTIVE 07420010
* STATOPT='INDEPENDENT LU' 07430010
RAOTNNC2 LU RESSCB=4, INDEPENDENT LU X07440010
LOCADDR=0, X07441013
MODETAB=MTGS3X, X07450010
DLOGMOD=MODS361, X07460010
ISTATUS=ACTIVE 07470010
* STATOPT='INDEPENDENT LU' 07480010
RAOTNNC3 LU RESSCB=4, INDEPENDENT LU X07490010
LOCADDR=0, X07491013
MODETAB=MTGS3X, X07500010
DLOGMOD=MODS361, X07510010
ISTATUS=ACTIVE 07520010
* STATOPT='INDEPENDENT LU' 07530010

```

Figure 57. PU and LU Definitions for S/38

In Figure 57 the physical address C3 is defined for the S/38. This value has to match with the station address defined in the S/38 controller description.

PUTYPE=2 and XID=YES must be specified to appear to the S/38 as a T2.1 node. Exchange ID will be negotiated between both systems.

The LU used for scenario 1 is RAOTNNC0. Because it is an independent LU, we have to specify LOCADDR=0. RESSCB=4 means that this specific LU has four reserved session control blocks for itself.

4.7 Definitions for Display Station Passthrough on AS/400

We used Display Station Passthrough (DSPT) to test the ability to have sessions between the AS/400 and S/38 using the S/370 subarea network. To be able to use DSPT at least one virtual controller and device must be configured for the target system. They describe the characteristics of the controller and a display station but are not physically attached to this system. Because we start DSPT from the AS/400 as well as from S/38 we have to create these objects on both systems.

4.7.1 Create Virtual Controller and Virtual Devices

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   90. Sign off

Selection or command
====> 7

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 58. AS/400 Main Menu Screen

Select option 7 in Figure 58 to define the configuration.


```
DEFINE                      Define or Change the System                System:  RALYAS4A
Select one of the following:

    1. Configuration
    2. Manage licensed programs
    3. Security
    4. Work with support contact information
    5. Work with hardware products
    6. Program temporary fix (PTF)

    8. Display system values
    9. Change system values

Selection or command
====> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 59. Define or Change the System Screen

Select option 1 in Figure 59 to define the configuration.

```
CFG                          Configuration                            System:  RALYAS4A
Select one of the following:

    1. Configure devices and communications
    2. Network configuration
    3. Work with hardware products
    4. Network management

Selection or command
====> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 60. Configuration Screen

Select option 1 in Figure 60 to define the configuration.

```

CFGDEVCMN          Configure Devices and Communications          System:  RALYAS4A
Select one of the following:

    1. Configure local hardware
    2. Configure communications and remote hardware
    3. Configure virtual controllers and devices
    4. Work with configuration status

Selection or command
===> 3

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 61. Configure Devices and Communications Screen

Select option 3 in Figure 61 to define the virtual controller.

```

CFGVRT          Configure Virtual Controllers and Devices          System:  RALYAS4A
Select one of the following:

    1. Controllers
    2. Printers
    3. Display stations

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 62. Configure Virtual Controllers and Devices Screen

Select option 1 in Figure 62 to define the virtual controller.

```

                                Work with Controller Descriptions          System:  RALYAS4A
Position to . . . . .          Starting character(s)

Type options, press Enter.
    2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Controller  Type  Text

                                                                 Bottom
Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 63. Work with Controller Descriptions Screen

Select F6 in Figure 63 to create the virtual controller PT5250.

```

CRTCTLWVS                Create Ctl Desc (Virtual WS)

Type choices, press Enter.

Controller description . . . . . > PT5250          Name
Online at IPL . . . . . *YES                      *YES, *NO
Text 'description' . . . . . Virtual Controller for DSPT(S/38)

                                                    Bottom
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 64. Create CTL Desc (Virtual WS) Screen

Define the controller PT5250 and press Enter to create it.

```

CFGVRT                Configure Virtual Controllers and Devices
                                                    System:  RALYAS4A

Select one of the following:

    1. Controllers
    2. Printers
    3. Display stations

Selection or command
===> 3

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
                                                    (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 65. Configure Virtual Controllers and Devices Screen

Select option 3 in Figure 65 to create a virtual display station.

```

                                Work with Device Descriptions
                                                    System:  RALYAS4A

Position to . . . . .          Starting character(s)

Type options, press Enter.
    2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Device      Type      Text.
AS4APT02  5251      5250 PT DSP
AS4APT03  5251      5250 PT DSP
AS4APT04  5251      5250 PT DSP
AS4APT05  5251      5250 PT DSP

                                                    Bottom

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
                                                    (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 66. Work with Device Descriptions Screen

Select F6 in Figure 66 to create a virtual display station.

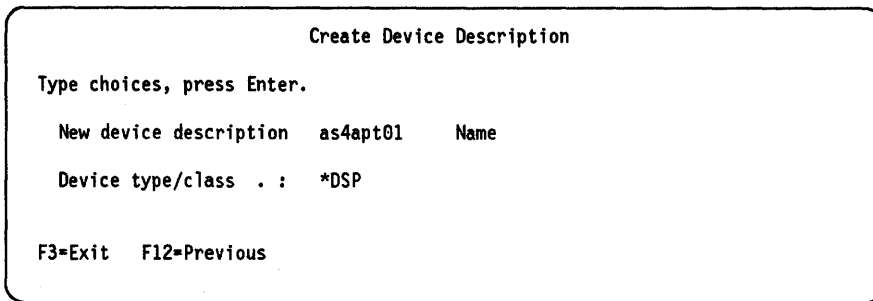


Figure 67. Create Device Description Screen

Press Enter to get the next parameters.

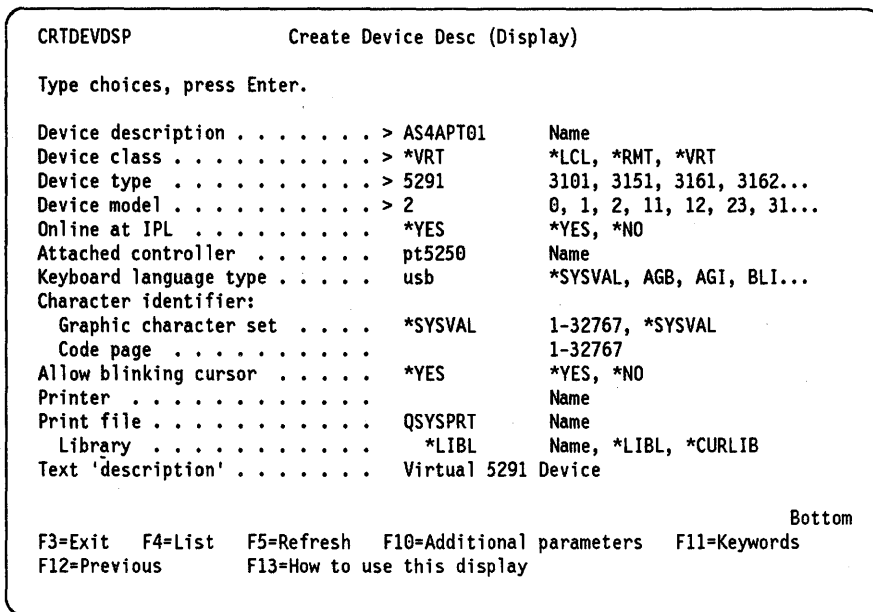


Figure 68. Create Device Description Screen

By definition, this virtual display will be attached to the virtual controller PT5250. You may want to create multiple virtual devices with different device types.

4.8 Definitions for Display Station Passthrough on S/38

We will be using Display Station Passthrough (DSPT) to test the ability to have sessions between the S/38 and AS/400 using the S/370 subarea network. To be able to use DSPT at least one virtual controller and device must be configured for the target system. They describe the characteristics of the controller and a display station but are not physically attached to this system. Because we start DSPT from the AS/400 we have to create these objects on the S/38.

Because we already used the created definitions on S/38, we will just show the definitions.

4.8.1 Display Virtual Controller and Virtual Devices

```
5/22/89 17:53:34 CONTROL UNIT DESCRIPTION      +++
Status: ACTIVE
Devices varied on: 013          Devices active: 002
Control unit description name: CUD      PASTHR
Control unit type:              TYPE    *PASS
Model number:                   MODEL  *NONE
Control unit address:           CTLADR  00FF
Switched line:                  SWITCHED
Nonswitched line name:          LINE    *NONE
Speed select feature:           SELECT
Telephone number:               TELNBR *NONE
Switched initial connection:    INLCNN
Exchange identifier:            EXCHID
BSC local identifier:           LCLID
BSC remote identifiers:         RMTID
SSCP identifier:                SSCPID
SSCP identifier checking:       SSCPIDCHK
Online at CPF start:            ONLINE  *YES
Current switched line:
Switched network backup:        SWNBKU
Activate swt network backup:    ACTSWNBKU
Allow delayed connection:       DLYFEAT
Attached device names:          DEV
                                PASPRT01 PASTRM02
BSC device delay in sec:       DEVDLY
```

Figure 69. Virtual Control Unit Description Screen

In Figure 69 the control unit description name is PASTHR. This is the name to be used when DSPT is started from the AS/400 as the virtual controller name and no specific virtual device will be selected.

The control unit type must be *PASS for a virtual controller.

The control unit address is always '00FF' for a virtual controller.

Attached device names show the devices created to attach to this controller.

For the other parameters see *S/38 Data Communications Programmer's Guide*.

```

5/22/89 17:56:38  DEVICE DESCRIPTION          ***
Status: VARY ON PENDING
Device description name:  DEVD      PASTRM02
Device address:          DEVADR    000000
Device type code:       DEVTYPE    5251
Model number:           MODEL      0011
Control unit description name: CTLU    PASTHR
Online at CPF start:    ONLINE     *YES
Drop line at sign off:  DROP       *YES
Associated work stn printer: PRINTER  PASPRTO1
Associated message queue: MSGQ
Library name:
Print image name:       PRIMG
Library name:
Printer device file name: PRTFILE   QSYSPRT
Library name:           *LIBL
Work stn controller address: WSCADR   020000
Work stn controller keyboard: WSCKBD  TAGB
Allow blinking cursor:  ALWBLN     *YES
BSC contention resolution: CONTN
Local LU name:          LCLLU
Remote LU name:         RMTLU
Secure LU:              SECURELU
Printer font:           FONT
Feed mode:              FORMFEED
3270 emulation device type: EMLDEV TYP
3270 emulation keyboard type: EMLKBD TYP
Maximum length RU:     MAXLENRU
Auxiliary device:      AUXDEV
(No auxiliary devices)
Network device address: NETDEVADR
Character identifier:   CHRID
Graphic character set:  *SYSVAL
Code page:
Text description:      TEXT
Virtual Screen 5251-11

```

Figure 70. Virtual Device Description Screen

In Figure 70 the device address must always be 000000 for a virtual device.

The control unit description PASTHR to which this device has to be attached to.

Workstation controller address must be a unique address to the virtual controller for this device.

PASPRTO1 is the associated work station printer to this device.

For the other parameters see *S/38 Data Communications Programmer's Guide*.

4.9 Communications Activation

This section will describe how to activate the network from both the AS/400 and S/38 and to establish sessions across the S/370 subarea using Display Station Passthrough.

4.9.1 AS/400 Switch Line Activation

To activate a switched line from the AS/400 to the host you will need to "Vary On" both the line and controller separately. The following screens will guide you through this exercise. You can also go directly to the "Work with Configuration Status" screen by using the WRKCFGSTS command.

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu

    90. Sign off

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 71. AS/400 Main Menu Screen

Select option 6 in Figure 71 to use the communication functions.

```

CMN                               Communications                               System:  RALYAS4A
Select one of the following:
    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 72. Communications Screen

Select option 1 in Figure 72 to look at the communication status.

```

CMNSTS                             Communications Status                             System:  RALYAS4A
Select one of the following:
    1. Work with line status
    2. Work with controller status
    3. Work with device status

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 73. Communications Status Screen

Select option 1 in Figure 73 to look at the line status.

```

WRKCFGSTS                          Work with Configuration Status
Type choices, press Enter.
Type . . . . . *LIN          *LIN, *CTL, *DEV
Configuration description . . . L24025      Name, generic*, *ALL , *CMN...
                                          Bottom
F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 74. AS/400 Work with Configuration Status Screen

Type the line description name L24025, which is the switched line from this AS/400 to the host.

```
Work with Configuration Status                               System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
 1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
 6=Release device  7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
 1  L24025          VARIED OFF

Parameters for options 1, 2, 3 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.
Bottom
```

Figure 75. AS/400 Work with Configuration Status Screen (continued)

Select option 1 in Figure 75 to vary on the line. The status should now change to Connect Pending. Select F3 to return to the Communications Status Screen.

```
CMNSTS                               Communications Status                               System: RALYAS4A
Select one of the following:
  1. Work with line status
  2. Work with controller status
  3. Work with device status
 70. Related commands

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System Main Menu Screen

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 76. Communications Status Screen

Select option 2 in Figure 76 to vary on the controller and devices.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
1=Vary on 2=Vary off 3=Hold device 4=End recovery 5=Work with job
6=Release device 7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
1 P24025D VARIED OFF
T24025D1 VARIED OFF
T24025D2 VARIED OFF
T24025D3 VARIED OFF
T24025D4 VARIED OFF
T24025D5 VARIED OFF
T24025D6 VARIED OFF
T24025D7 VARIED OFF
T24025D8 VARIED OFF

Parameters for options 1, 2, 3 or command
===>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Previous
F14=Work with controllers
More...
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 77. Work with Configuration Status Screen

Because the devices are attached to the controller, we can vary on the controller and devices at the same time by selecting option 1 in Figure 77 against the controller description P24025D. When dialing, this controller will be attached to the first line with the correct status defined in the switched line list. Be aware that this AS/400 has defined APPN *YES, which means that the device will be automatically created and attached to this controller.

Select F3 to return to the Communications Status Screen.

4.9.2 Activate Virtual Controller on the AS/400

```

CMNSTS Communications Status
System: RALYAS4A

Select one of the following:

1. Work with line status
2. Work with controller status
3. Work with device status

70. Related commands

Selection or command
===> 2

F3=Exit F4=Prompt F9=Retrieve F12=Previous F13=User support
F16=System main menu

```

Figure 78. Communications Status Screen

Select option 2 in Figure 78 to work with the virtual controller PT5250.

Take option 2 to Work with controller status.

```

WRKCFGSTS                Work with Configuration Status

Type choices, press Enter.

Type . . . . . *CTL          *LIN, *CTL, *DEV
Configuration description . . . pt5250      Name, generic*, *ALL , *CMN...

                                                    Bottom

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 79. Work with Configuration Status Screen

Enter the virtual controller description name and press Enter.

```

                                Work with Configuration Status
                                System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
 1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
 6=Release device      7=Resume recovery

Opt  Lin/Ctl/Dev/Mod  Status  -----Job-----
      PT5250          ACTIVE
      AS4APT01        VARY ON PENDING
      AS4APT02        VARY ON PENDING
      AS4APT03        VARY ON PENDING
      AS4APT04        VARY ON PENDING
      AS4APT05        VARY ON PENDING

                                                    Bottom

Parameters for options 1, 2, 3 or command
====>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with controllers

                                (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 80. Work with Configuration Status Screen (continued)

Type 1 to vary on the virtual controller PT5250. The virtual controller is ready to be used for incoming DSPT requests from the S/38.

4.9.3 Activate Communications for the S/38

By keying in the command DSPLINSTS L24020, the panel in Figure 81 will show the line L24020 with the attached controller and devices. The devices starting with RAON* are independent devices (LUs) and will be used for DSPT.

```
5/22/89 17:58:09          LINE STATUS DISPLAY - L24020
LIN/CTL/DEV/M  STATUS      JOB NAME  USER      NBR
4 L24020      VARIED OFF
  P24020C3    VARIED OFF
    RAONN     VARIED OFF
    RAONN1    VARIED OFF
    RAONN2    VARIED OFF
    E24020C1  VARIED OFF
    E24020C2  VARIED OFF
    E24020C3  VARIED OFF
    E24020C4  VARIED OFF
    A24020C5  VARIED OFF
    A24020C6  VARIED OFF
    A24020C7  VARIED OFF
    C24020C8  VARIED OFF
    Q61DEVLU01 VARIED OFF
    Q61DEVLU02 VARIED OFF
    Q61DEVLU03 VARIED OFF
    Q61DEVLU04 VARIED OFF
HELP-Details on options 1 thru 11          CF5-Redisplay +
```

Figure 81. Line Status Display Screen

Select option 4 next to the line description L24020 in Figure 81 to vary on the line, controller and devices.

4.9.4 Activate Communications on the S/370 Host

```
* RABAN V NET,ACT,ID=RAOL0025
RABAN IST097I VARY ACCEPTED
RABAN IST093I RAOL0025 ACTIVE
C RABAN AOPNLIST RAOL0025 NONE
RABAN IST097I DISPLAY ACCEPTED
```

Figure 82. Line Activation for AS/400

The host has the AS/400 attached via switched line RAOL0025. To activate the line, key in the NetView command as described in Figure 82.

```
NCCF NETVIEW RABAN WTCR21 05/26/89 09:00:59
* RABAN V NET,ACT,ID=SWAPPC
RABAN IST097I VARY ACCEPTED
RABAN IST093I SWAPPC ACTIVE
C RABAN AOPNLIST SWAPPC NONE
RABAN IST097I DISPLAY ACCEPTED
```

Figure 83. Switched Major Node Activation for AS/400

Because the AS/400 is attached to the host on a switched line, the switched major node has to be activated also. This is done by using the command in NetView as described in Figure 83.

```
NCCF NETVIEW RABAN WTCR21 05/26/89 09:02:00
* RABAN V NET,ACT,ID=RAOL0020
RABAN IST097I VARY ACCEPTED
RABAN IST093I RAOL0020 ACTIVE
C RABAN >AOPNLIST RAOL0020 NONE
RABAN IST097I DISPLAY ACCEPTED
```

Figure 84. Line Activation for the S/38

The host has the S/38 attached via leased line RAOL0020. To activate the line, key in the command as described in Figure 84 in NetView.

```
NCCF NETVIEW RABAN WTCR21 05/26/89 13:20:31
* RABAN V NET,ACT,ID=RAOP09,SCOPE=ALL
RABAN IST097I VARY ACCEPTED
RABAN IST093I RAOP09 ACTIVE
C RABAN AOPNLIST RAOP09 NONE
RABAN IST097I DISPLAY ACCEPTED
```

Figure 85. VTAM Vary Command for the S/38 PU

To activate the PU defined in VTAM/NCP for the S/38, key in the command as described in Figure 85.

```

NCCF          N E T V I E W          RABAN WTCR21    05/26/89 09:04:15
* RABAN      D NET,ID=SWAPPC,E
RABAN        IST097I DISPLAY ACCEPTED
' RABAN
IST075I NAME = SWAPPC          , TYPE = SW SNA MAJ NODE
IST486I STATUS= ACTIV        , DESIRED STATE= ACTIV
IST084I NETWORK NODES:
IST089I RAOP13  TYPE = PHYSICAL UNIT    , ACTIV
IST089I RAOAS4A TYPE = LOGICAL UNIT     , ACT/S<-----
IST089I RAOT25D1 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25D2 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25D3 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25D4 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25D5 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25D6 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25D7 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25D8 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25D9 TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25DA TYPE = LOGICAL UNIT    , ACTIV
IST089I RAOT25DB TYPE = LOGICAL UNIT    , CONCT
IST089I RAOT25DC TYPE = LOGICAL UNIT    , CONCT
IST089I RAOT25DD TYPE = LOGICAL UNIT    , CONCT

```

Figure 86. VTAM Switched Major Node Status for the AS/400

Figure 86 displays the status of the VTAM switched major node for the AS/400. Notice that the LU (RAOAS4A) is active and in session.

```

NCCF          N E T V I E W          RABAN WTCR21    05/26/89 09:05:33
' RABAN
C RABAN      DISPLAY NET,ID=RAOP13,SCOPE=ALL
RABAN        IST097I DISPLAY ACCEPTED
' RABAN
IST075I NAME = RAOP13          , TYPE = PU_T2.1<-----
IST486I STATUS= ACTIV        , DESIRED STATE= ACTIV
IST136I SWITCHED SNA MAJOR NODE = SWAPPC
IST081I LINE NAME = RAOL0025, LINE GROUP = RAOGSHS0, MAJNOD = RAONCP0
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I LOGICAL UNITS:
IST080I RAOAS4A ACT/S      RAOT25D1 ACTIV    RAOT25D2 ACTIV
IST080I RAOT25D3 ACTIV    RAOT25D4 ACTIV    RAOT25D5 ACTIV
IST080I RAOT25D6 ACTIV    RAOT25D7 ACTIV    RAOT25D8 ACTIV
IST080I RAOT25D9 ACTIV    RAOT25DA ACTIV    RAOT25DB CONCT
IST080I RAOT25DI ACTIV    RAOT25DJ ACTIV    RAOT25DK ACTIV
IST314I END

```

Figure 87. VTAM Status for the AS/400

Figure 87 displays the status of the PU RAOP13 for the AS/400. Notice that the PU is seen as T2.1 after activation.

```

C RABAN   DISPLAY NET, ID=RAOP09, SCOPE=ALL
RABAN    IST097I DISPLAY ACCEPTED
' RABAN
IST075I  NAME = RAOP09           , TYPE = PU_T2.1<-----
IST486I  STATUS= ACTIV          , DESIRED STATE= ACTIV
IST081I  LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCPO
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I  LOGICAL UNITS:
IST080I  RAOTNNC0 ACT/S        RAOTNNC1 ACTIV      RAOTNNC2 ACTIV
IST080I  RAOTNNC3 ACTIV        RAOTNNC4 ACTIV      RAOTNNC5 ACTIV
IST080I  RAOT0901 ACTIV        RAOT0902 ACTIV      RAOT0903 ACTIV
IST080I  RAOT0904 ACTIV        RAOT0905 ACT/S      RAOT0906 ACT/S
IST080I  RAOT0907 ACT/S        RAOT0908 ACTIV      RAOT0909 ACTIV
IST080I  RAOT090A ACTIV        RAOT090B ACTIV      RAOT090C ACTIV
IST080I  RAOT090D ACTIV        RAOT090E ACTIV      RAOT090F ACTIV
IST080I  RAOT090G ACTIV        RAOT090H ACTIV      RAOT090I ACTIV
IST080I  RAOT090J ACTIV

```

Figure 88. VTAM Status for the S/38 PU

Figure 88 displays the status of the PU RAOP09 for the S/38. Notice that the PU is seen as T2.1 after activation.

```

NCCF      N E T V I E W                RABAN WTCR21    05/26/89 09:42:57
C RABAN   DISPLAY NET, ID=RAOTNNC0, SCOPE=ALL
RABAN    IST097I DISPLAY ACCEPTED
' RABAN
IST075I  NAME = RAOTNNC0           , TYPE = LOGICAL UNIT
IST486I  STATUS= ACT/S            , DESIRED STATE= ACTIV
IST861I  MODETAB=MTGS3X  USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=MODS361
IST597I  CAPABILITY-PLU ENABLED , SLU ENABLED , SESSION LIMIT NONE
IST081I  LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCPO
IST135I  PHYSICAL UNIT = RAOP09
IST082I  DEVTYPE = INDEPENDENT LU <-----
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME  STATUS      SID          SEND RECVR VR TP NETID
IST635I  RAOAS4A  ACTIV-S   CF0384B97B360168 <----  0 0 USIBMRA
IST635I  RAOAS4A  ACTIV-P   CE773A1F55262F02      0 0 USIBMRA
IST314I  END

```

Figure 89. VTAM LU Status for the S/38 Independent LU

Figure 89 displays the status of the LU for the S/38. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=0 in the NCP major node. If you look at the IST635I message, you will see that this S/38 LU (RAOTNNC0) has an active session with the AS/400 LU (RAOAS4A).

```

NCCF          N E T V I E W          RABAN WTCR21    05/26/89 09:43:22
C RABAN      DISPLAY NET, ID=RAOAS4A, SCOPE=ALL
RABAN      IST097I DISPLAY ACCEPTED
' RABAN
IST075I NAME = RAOAS4A          , TYPE = LOGICAL UNIT
IST486I STATUS= ACT/S          , DESIRED STATE= ACTIV
IST861I MODETAB=MTGS3X        USSTAB=***NA*** LOGTAB=***NA***
IST934I DLOGMOD=MODS361
IST597I CAPABILITY-PLU ENABLED , SLU ENABLED , SESSION LIMIT NONE
IST135I PHYSICAL UNIT = RAOP13
IST136I SWITCHED SNA MAJOR NODE = SWAPPC
IST082I DEVTYPE = INDEPENDENT LU
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I SESSIONS:
IST634I NAME      STATUS      SID          SEND RECV VR TP NETID
IST635I RAOTNNC0 ACTIV-S     CE773A1F55262F02      0 0 USIBMRA
IST635I RAOTNNC0 ACTIV-P     CF0384B97B360168 <---- 0 0 USIBMRA
IST314I END
???
```

Figure 90. VTAM LU Status for the AS/400 Independent LU

Figure 90 displays the status of the LU for the AS/400. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=0 in the NCP major node. If you look at the IST635I message, you will see that this AS/400 LU (RAOAS4A) has an active session with the S/38 LU (RAOTNNC0).

4.10 Establish DSPT Session from the AS/400

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    90. Sign off

Selection or command
===> STRPASTHR

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 91. AS/400 Main Menu Screen

Enter the STRPASTHR command on the command line in Figure 91 to start the DSPT to the S/38. This command can be started from any screen that has a command line.

```
STRPASTHR                          Start Pass-Through
Type choices, press Enter.
Remote location name . . . . . raotnnc0      Name, *CNNDEV
                                           Bottom
F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display
```

Figure 92. Start Pass-Through Screen

Enter in Figure 92 the remote location name of the S/38 with which you want to communicate. Because the AS/400 "thinks" this location resides in the host (Low Entry Network node) it has to be defined in the remote location list of this AS/400 and the location (LU) has to be defined in VTAM/NCP.

```

STRPASTHR                               Start Pass-Through

Type choices, press Enter.

Remote location name . . . . . > RAOTNNC0      Name, *CNNDEV
Virtual controller . . . . .   pasthr          Name, *NONE
Virtual display device . . . . . *NONE         Name, *NONE
      + for more values
Mode . . . . .                   mods361       Name, *NETATR
Local location name . . . . .   raoas4a       Name, *LOC, *NETATR
Remote network identifier . . . . usibmra     Name, *LOC, *NETATR, *NONE
System request program . . . . . *SRQMNU     Name, *SRQMNU
Library . . . . .                 Name, *LIBL, *CURLIB

                                                                 Bottom

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 93. Start Pass-Through Screen (continued)

In Figure 93 "pasthr" is the virtual controller defined on the S/38 which can be used for DSPT coming in from any system which supports DSPT.

Because the AS/400 is attached to the host via a switched line, a message will be sent to the QSYSOPR message queue to dial in on the host when you start the DSPT. The device to be used will be automatically created, varied on and attached to the right controller.

Then the signon screen of the S/38 as shown in Figure 94 will appear.

```

Enter user ID and password to sign on:          System:  RALY38A
                                                Subsystem: QINTER
User ID:                                       Device:  PASTRM01
Password:

(C) COPYRIGHT IBM CORP. 1980, 1986.

```

Figure 94. Signon Screen S/38

The passthrough conversation from the AS/400 to the S/38 is now active and you are able to sign on to the S/38.

```

:: endpasthr                                COMMAND ENTRY DISPLAY          System: RALY38A

CF3 - Duplicate                             CF4 - Prompt                   CF7 - Low level messages

```

Figure 95. Command Entry Display Screen

To end the session with the S/38, type the CL command ENDPASTHR. This will return you to a local AS/400 screen.

4.11 Establish DSPT Session on the S/38

```
2: bgnpasthr          COMMAND ENTRY DISPLAY          System: RALY38A

CF3 - Duplicate      CF4 - Prompt          CF7 - Low level messages
```

Figure 96. S/38 Command Entry Display

To start DSPT to the AS/400 enter command BGNPASTHR + CMD 4 for prompting as shown in Figure 96 on page 87.

```
          Begin Pass-Through (BGNPASTHR) Prompt
Enter the following:
Peer device name:          CNNDEV      R  raonn
                          + for more
Virtual control unit name: VRTCTLU   P  pt5250
Virtual display device name: VRTDEV    P  *NONE
                          + for more
System request program name: SRQ10PGM  P  *SRQMNU
Library name:
```

Figure 97. Begin Pass-Through Prompt

In Figure 97 on page 87, the BGNPASTHR command allows you to pass through to a target system. The peer device name is the local location name to be used for DSPT. The virtual control unit is the virtual controller defined in the target AS/400.

When you have finished using the DSPT session on the AS/400, you enter the ENDPASTHR command to terminate the DSPT session.

4.12 Traces

The following traces were taken on the AS/400 using the trace facility.

COMMUNICATIONS TRACE												Title:	06/28/89	05:26:14	Page:	3
Record Number	S/R	Data Length	Record Status	Record Timer	Data Type	Controller Name/Number	Command	Number Sent	Number Received	Poll/Final						
Commands/Responses: I Information RR Receive Ready RNR Receive Not Ready REJ Reject UI Unnumbered Information SNRM Set Normal Response Mode DISC Disconnect/Request Disconnect TEST Test SIM Set Initialization Mode UP Unnumbered Poll FRMR Frame Reject CFGR Configure DM Disconnected Mode XID Exchange ID BCN Beacon SNRME Set Normal Response Mode Extended UA Unnumbered Acknowledgment ***** Invalid Command/Response																
1	R	0	00000000	2E07		/FF XID				ON						
2	S	84	00000000	2E07		/01 XID				ON						
			Data			32540561507800008008C000000000001010B00000109000000007000E							*.../&.....{.....*			
						11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C3E410							*.4USIBMRA.RALYAS4A..7AAAAACU.*			
						17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8							*.1.....9406B50100015078			
3	R	0	00000000	2E28		/FF XID				ON						
4	S	84	00000000	2E28		/01 XID				ON						
			Data			32540561507800008008C000000000001010B00000109000000007000E							*.../&.....{.....*			
						11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C3E410							*.4USIBMRA.RALYAS4A..7AAAAACU.*			
						17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8							*.1.....9406B50100015078			
5	R	119	00000000	2E37		/01 XID				ON						
			Data			3477FFFFFFD00001088400000000000010B1000105A000000007000E							*.....H.....!.....*			
						0CF4E4E2C9C2D4D9C14BD9C1C20E08F1D9C1D6D5C3D7F00E07F7D9C1D6D7							*.4USIBMRA.RAB..1RAONCP0..7RAOP*			
						F1F3103700161101130011F3F7F2F5F0F0F0F0F0F0F0F1F8F2F5201104							*13.....3725000000001825...*			
						0E02F5F6F6F8F8F5F4F0F1F3F0F00804F0F4F0F3F0F007098901371658							*.566885401300..040300..I....*			
6	S	84	00000000	2E37		/01 XID				ON						
			Data			32540561507800008008C000000000001010B00000109000000007000E							*.../&.....{.....*			
						11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C3E410							*.4USIBMRA.RALYAS4A..7AAAAACU.*			
						17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8							*.1.....9406B50100015078			
7	R	119	00000000	2E55		/01 XID				ON						
			Data			3477FFFFFFD00001084400000000000010B1000105A000000007000E							*.....D.....!.....*			
						0CF4E4E2C9C2D4D9C14BD9C1C20E08F1D9C1D6D5C3D7F00E07F7D9C1D6D7							*.4USIBMRA.RAB..1RAONCP0..7RAOP*			
						F1F3103700161101130011F3F7F2F5F0F0F0F0F0F0F0F1F8F2F5201104							*13.....3725000000001825...*			
						0E02F5F6F6F8F8F5F4F0F1F3F0F00804F0F4F0F3F0F007098901371658							*.566885401300..040300..I....*			
8	S	84	00000000	2E55		/01 XID				ON						
			Data			32540561507800008004C000000000001010B00000109000000007000E							*.../&.....{.....*			
						11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C3E410							*.4USIBMRA.RALYAS4A..7AAAAACU.*			
						17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8							*.1.....9406B50100015078			
9	R	0	00000000	2E5B		/01 SNRM				ON						
10	S	0	00000000	2E5B		/01 UA				ON						
13	R	18	00000000	2E65	EBCDIC P24025D	/01 I		0	0	OFF						
			Data			2D000000039C6B800011020105000000000B							*.....*			

Figure 98. AS/400 Trace for Scenario 1

```

COMMUNICATIONS TRACE      Title:                               06/28/89 05:26:39      Page:    1
Trace Description . . . . . :
Line name . . . . .       : L24025
Line protocol . . . . .   : SDLC
Start Date/Time . . . . . : 06/28/89 05:21:55
End Date/Time . . . . .   : 06/28/89 05:26:07
Bytes collected . . . . .  : 11385
Buffer size . . . . .     : 3      1=128K, 2=256K, 3=2048K
Data direction . . . . .  : 3      1=Sent, 2=Received, 3=Both
Stop on buffer full . . . . : N      Y=Yes, N=No
Format SNA data only . . . . : Y      Y=Yes, N=No
Format RR, RNR commands . . . : N      Y=Yes, N=No
Controller Name . . . . .  : *ALL      *ALL, name
COMMUNICATIONS TRACE      Title:                               06/28/89 05:26:39      Page:    2

```

```

Record Number . . . . . Number of record in trace buffer (decimal)
S/R . . . . .           S=Sent R=Received M=Modem Change
Controller name . . . . . Name of Controller associated with record
SNA Data . . . . .      TH, RH and RU for record
TH . . . . .           Transmission Header
RH . . . . .           Request/Response Header
RU . . . . .           Request/Response Unit
TH Parameter Descriptions:
FID . . . . .         Format Identification
MPF . . . . .         Mapping Field (segment of Basic Information
Unit (BIU) - ONLY, FIRST, MIDDLE, LAST)
OAF . . . . .         Origination Address Field
DAF . . . . .         Destination Address Field
SNF . . . . .         Sequence Number Field
DCF . . . . .         Data Count Field
LA . . . . .          Local Address
ODAI . . . . .        OAF-DAF Assignor Indicator
EFI . . . . .         Expedited Flow Indicator
LU . . . . .          Logical Unit
SSCP . . . . .        System Services Control Point
PU . . . . .          Physical Unit
RH Parameter Descriptions:
REQ . . . . .         Request
RSP . . . . .         Response
RH Category Descriptions:
NC . . . . .         Network Control
SC . . . . .         Session Control
DFC . . . . .        Data Flow Control
NC . . . . .         Network Control
FMD . . . . .        Function Management Data
FMH . . . . .        Function Management Header
RH Indicators:
FI . . . . .         Format Indicator
SDI . . . . .        Sense Data Included Indicator
BCI . . . . .        Begin Chain Indicator
ECI . . . . .        End Chain Indicator
DR1 . . . . .        Definite Response 1 Indicator
DR2 . . . . .        Definite Response 2 Indicator
ERI . . . . .        Exception Response Indicator
RTI . . . . .        Response Type Indicator
QRI . . . . .        Queued Response Indicator
EBI . . . . .        End Bracket Indicator
CDI . . . . .        Change Direction Indicator
PI . . . . .         Pacing Indicator
BBI . . . . .        Begin Bracket Indicator
CSI . . . . .        Code Selection Indicator
EDI . . . . .        Enciphered Data Indicator
PDI . . . . .        Padded Data Indicator
CEBI . . . . .       Conditional End Bracket Indicator
RLWI . . . . .       Request Larger Window Indicator

```

Figure 99. AS/400 Trace for Scenario 1 (continued)

COMMUNICATIONS TRACE				Title:	06/28/89 05:26:39	Page:	3
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU			
13	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=039C, EFI RH : ('688000'X) REQ SC, FI, BCI, ECI, DR1			
			RU Command	ACTPU			
			RU Data	110201050000000000			*.....*
17	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=039C, EFI RH : ('EB8000'X) RSP SC, FI, DR1			
			RU Command	ACTPU			
			RU Data	1111404040404040400000070100000000000			*.. ..*
19	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=00, SNF'=039D, EFI RH : ('688000'X) REQ SC, FI, BCI, ECI, DR1			
			RU Command	ACTLU			
			RU Data	0D0201			*...*
20	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=039E, EFI RH : ('688000'X) REQ SC, FI, BCI, ECI, DR1			
			RU Command	ACTLU			
			RU Data	0D0201			*...*
27	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('688100'X) REQ SC, FI, BCI, ECI, DR1, PI			
			RU Command	BIND			
			RU Data	31001307B0B051B30787868687070602000000000000102340000FE4E2 C9C2D4D9C14BD9C1D6C1E2F4C126000902E2D5C1E2E5C3D4C70903002590 0D9B4000941004E4E2C9C2D4D9C14BD9C1D6C1E2F4C10010E4E2C9C2D4D9 C14BD9C1D6E3D5D5C3F06019CE773A1F55262EF310E4E2C9C2D4D9C14BD9 C1D3E8C1E2F4C12C0A04087BC3D6D5D5C5C3E32B14010112461080010BE4 E2C9C2D4D9C14BD9C1C200			*.....GFFG.....US* *IBMRA.RAOAS4A...SNASVCMG....* *..M...USIBMRA.RAOAS4A..USIBMR* *A.RAOTNNC0-.....3.USIBMRA.R* *ALYAS4A...#CONNECT.....U* *SIBMRA.RAB.*
COMMUNICATIONS TRACE				Title:	06/28/89 05:26:39	Page:	4
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU			
28	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=039D, EFI RH : ('EB8000'X) RSP SC, FI, DR1			
			RU Command	ACTLU			
			RU Data	0D010100850000000C0E01000100000040404040404040			*....E.....*
38	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=039E, EFI RH : ('EB8000'X) RSP SC, FI, DR1			
			RU Command	ACTLU			
			RU Data	0D010100850000000C0E01000100000040404040404040			*....E.....*
62	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1			
			RU Command	BIND			
			RU Data	31001307B0B051B300808585800006020000000000000023400001F00 0902E2D5C1E2E5C3D4C709030025900D9B4000940905D9C1D6E3D5D5C3F0 00006019CE773A1F55262EF310E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C1			*.....EE.....* *..SNASVCMG.....M...RAOTNNC0* *..-.....3.USIBMRA.RALYAS4A*
65	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=13, SNF'=03AF, EFI RH : ('EB8000'X) RSP SC, FI, DR1			
			RU Command	ACTLU			
			RU Data	0D010100850000000C0E01000100000040404040404040			*....E.....*

Figure 100. AS/400 Trace for Scenario 1 (continued)

Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU
71	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0001 RH : ('089520'X) REQ FMD, FI, BCI, ECI, DR1, ERI, RLWI, PI, CDI RU Command : RU Data : 0C0502FF0003D00000206F10018121002000000000000000400040007D4 *.....}.....1.....M* D6C4E2F3F6F1 *ODS361
73	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI RU Data : 000002 *...
78	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0001 RH : ('039101'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CEPI RU Data : 001812100A00000000000000000000040007D4D6C4E2F3F6F1 *.....MODS361
79	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=0001 RH : ('088000'X) REQ FMD, FI, BCI, ECI, DR1 RU Command : NMVT RU Data : 41038D00000000000000218080049288001994ED00EC0000001000000000 *.....KH..M.....*
81	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI RU Data : 000007 *...
82	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('688100'X) REQ SC, FI, BCI, ECI, DR1, PI RU Command : BIND RU Data : 31001307B08051B307878585870706020000000000000102340000FE4E2 *.....GEEG.....US* C9C2D4D9C14BD9C1D6C1E2F4C125000802D4D6C4E2F3F6F109030025901B *IBMRA.RAOAS4A....MODS361.....* CF0000471004E4E2C9C2D4D9C14BD9C1D6C1E2F4C10010E4E2C9C2D4D9C1 *.....USIBMRA.RAOAS4A..USIBMRA* 4BD9C1D6E3D5D5C3F06019CE773A1F55262EF410E4E2C9C2D4D9C14BD9C1 *.RAOTNNC0.....4.USIBMRA.RA* D3E8C1E2F4C12C0A01087BC3D6D5D5C3E32B14010112461080010BE4E2 *LYAS4A....#CONNECT.....US* C9C2D4D9C14BD9C1C200 *IBMRA.RAB.
84	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI RU Data : 007FFF *..
86	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=0001 RH : ('8F9000'X) RSP FMD, FI, SDI, DR1, RTI Sense Code : 08060000, RU Command : NMVT RU Data : 41038D *...

Figure 101. AS/400 Trace for Scenario 1 (continued)

Table with columns: Record Number, S/R, Controller Name, Data Type, SNA Data: TH, RH, RU. Contains multiple rows of communication traces (e.g., 112, 115, 116, 118, 135, 137, 144, 145) with detailed data fields and status indicators.

Figure 103. AS/400 Trace for Scenario 1 (continued)

COMMUNICATIONS TRACE				Title:	06/28/89 05:26:39	Page: 11
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU		
412	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=1111		
				RH : ('0B8000'X) REQ FMD, FI, BCI, ECI, DR1		
			RU Command	REQDISCONT		
			RU Data	01021B80		*....
414	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=1111		
				RH : ('8B8000'X) RSP FMD, FI, DR1		
			RU Command	REQDISCONT		
			RU Data	01021B		*....
415	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=00, SNF'=039E, EFI		
				RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*
416	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=039F, EFI		
				RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*
417	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=03, OAF'=00, SNF'=03A0, EFI		
				RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*
418	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=04, OAF'=00, SNF'=03A1, EFI		
				RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*
419	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=05, OAF'=00, SNF'=03A2, EFI		
				RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*
420	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=06, OAF'=00, SNF'=03A3, EFI		
				RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*
422	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=039E, EFI		
				RH : ('EB8000'X) RSP SC, FI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*
423	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=039F, EFI		
				RH : ('EB8000'X) RSP SC, FI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*
425	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=07, OAF'=00, SNF'=03A4, EFI		
				RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
			RU Command	DACTLU		
			RU Data	0E		*

Figure 105. AS/400 Trace for Scenario 1 (continued)

COMMUNICATIONS TRACE Title:

06/28/89 05:26:39

Page: 12

Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU
426	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=08, OAF'=00, SNF'=03A5, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1 RU Command : DACTLU RU Data : 0E *
427	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=09, OAF'=00, SNF'=03A6, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1 RU Command : DACTLU RU Data : 0E *
428	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=0A, OAF'=00, SNF'=03A7, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1 RU Command : DACTLU RU Data : 0E *
429	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=0E, OAF'=00, SNF'=03AB, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1 RU Command : DACTLU RU Data : 0E *
430	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=0F, OAF'=00, SNF'=03AC, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1 RU Command : DACTLU RU Data : 0E *
431	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=10, OAF'=00, SNF'=03AD, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1 RU Command : DACTLU RU Data : 0E *
433	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=03, SNF'=03A0, EFI RH : ('EB8000'X) RSP SC, FI, DR1 RU Command : DACTLU RU Data : 0E *
434	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=04, SNF'=03A1, EFI RH : ('EB8000'X) RSP SC, FI, DR1 RU Command : DACTLU RU Data : 0E *
435	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=05, SNF'=03A2, EFI RH : ('EB8000'X) RSP SC, FI, DR1 RU Command : DACTLU RU Data : 0E *
436	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=06, SNF'=03A3, EFI RH : ('EB8000'X) RSP SC, FI, DR1 RU Command : DACTLU RU Data : 0E *
437	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=07, SNF'=03A4, EFI RH : ('EB8000'X) RSP SC, FI, DR1 RU Command : DACTLU RU Data : 0E *

Figure 106. AS/400 Trace for Scenario 1 (continued)

COMMUNICATIONS TRACE				Title:	06/28/89 05:26:39	Page: 13
Record Number	S/R	Controller Name	Data Type	SMA Data: TH, RH, RU		
439	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=11, OAF'=00, SNF'=03AE, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
440	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=12, OAF'=00, SNF'=03AF, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
441	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=13, OAF'=00, SNF'=03B0, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
442	R	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=14, OAF'=00, SNF'=03B1, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
444	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=08, SNF'=03A5, EFI RH : ('EB8000'X) RSP SC, FI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
445	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=09, SNF'=03A6, EFI RH : ('EB8000'X) RSP SC, FI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
446	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=0A, SNF'=03A7, EFI RH : ('EB8000'X) RSP SC, FI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
447	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=0E, SNF'=03AB, EFI RH : ('EB8000'X) RSP SC, FI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
448	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=0F, SNF'=03AC, EFI RH : ('EB8000'X) RSP SC, FI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
449	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=10, SNF'=03AD, EFI RH : ('EB8000'X) RSP SC, FI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*
450	S	P24025D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=11, SNF'=03AE, EFI RH : ('EB8000'X) RSP SC, FI, DR1		
		RU Command	DACTLU			
		RU Data	0E			*

Figure 107. AS/400 Trace for Scenario 1 (continued)

COMMUNICATIONS TRACE				Title:	06/28/89 05:26:39	Page: 14
Record Number	S/R	Controller Name	Data Type	SMA Data: TH, RH, RU		
455	S	P24025D	EBCDIC	TH : FID=2, MPF=Only	/ ODAI=0, DAF'=00, OAF'=12, SNF'=03AF, EFI	
				RH : ('EB8000'X) RSP SC, FI, DR1		
				RU Command	DACTLU	
				RU Data	0E	*
456	S	P24025D	EBCDIC	TH : FID=2, MPF=Only	/ ODAI=0, DAF'=00, OAF'=13, SNF'=03B0, EFI	
				RH : ('EB8000'X) RSP SC, FI, DR1		
				RU Command	DACTLU	
				RU Data	0E	*
457	S	P24025D	EBCDIC	TH : FID=2, MPF=Only	/ ODAI=0, DAF'=00, OAF'=14, SNF'=03B1, EFI	
				RH : ('EB8000'X) RSP SC, FI, DR1		
				RU Command	DACTLU	
				RU Data	0E	*
459	R	P24025D	EBCDIC	TH : FID=2, MPF=Only	/ ODAI=0, DAF'=00, OAF'=00, SNF'=039D, EFI	
				RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1		
				RU Command	DACTPU	
				RU Data	1202	*..
461	S	P24025D	EBCDIC	TH : FID=2, MPF=Only	/ ODAI=0, DAF'=00, OAF'=00, SNF'=039D, EFI	
				RH : ('EB8000'X) RSP SC, FI, DR1		
				RU Command	DACTPU	
				RU Data	1202	*..
***** END OF COMMUNICATIONS TRACE OUTPUT *****						

Figure 108. AS/400 Trace for Scenario 1 (continued)

5.0 Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host

5.1 Environment tested

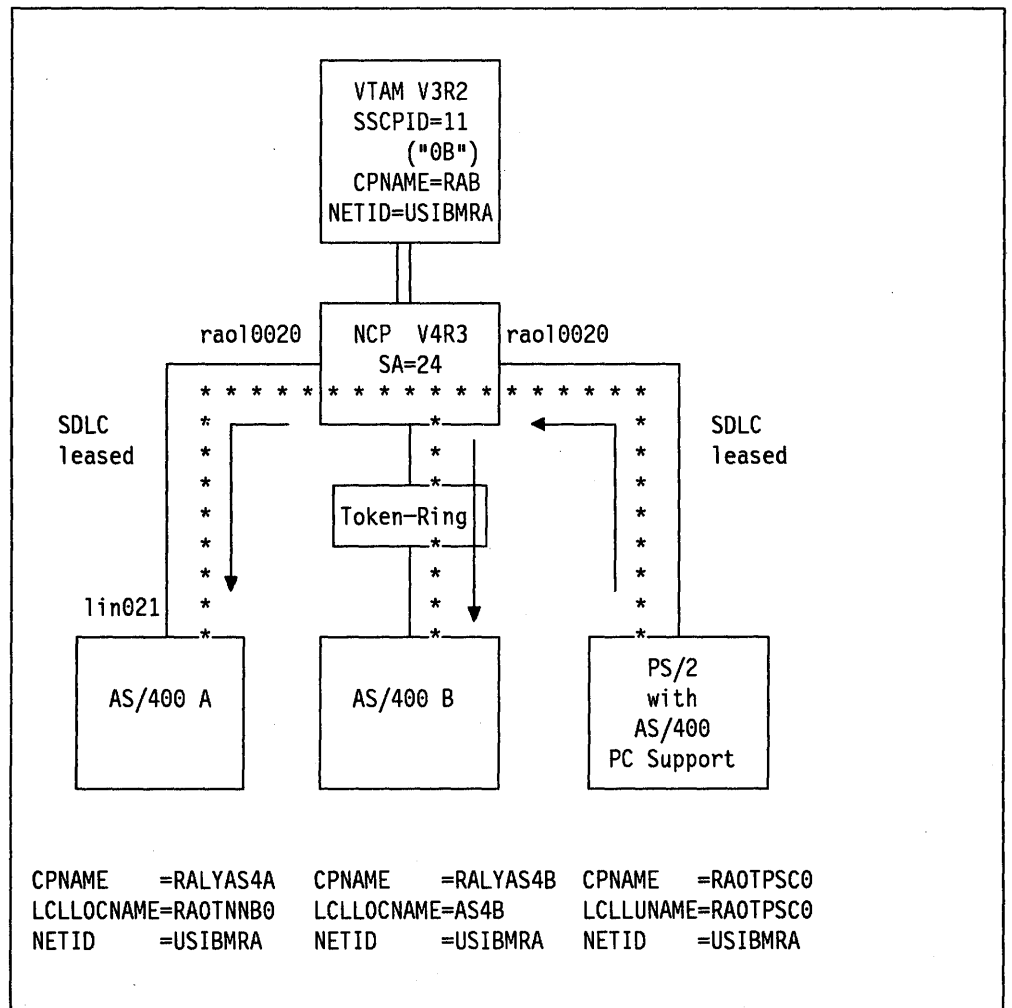


Figure 109. Scenario 2

In 5.2, "Section 1: Definitions on the AS/400A (RALYAS4A)" on page 101 we will describe the definitions required to connect AS/400A and a PS/2 (via the same multipoint line RAOL0020) to an S/370 subarea network. Also described is how the PS/2 can establish sessions with the AS/400A situated behind the S/370 subarea network while using AS/400 PC Support.

In 5.11, "Section 2: Definitions on AS/400B (RALYAS4B)" on page 134 we will describe the definitions required to connect AS/400B to the S/370 subarea network via a token-ring and the additional definitions required on the PS/2 to support the AS/400B. We will also describe how the PS/2 can establish sessions at the same time with both AS/400A and AS/400B that are situated behind the S/370 subarea network while using AS/400 PC Support.

This chapter will take you through the definition process for the AS/400A, AS/400B, PS/2 and VTAM/NCP screen by screen. We have done this purely for presentation purposes only and would strongly recommend the use of CL programs for the creation of the AS/400 definitions. Examples of the CL programs are in Chapter 7 "Definitions".

5.2 Section 1: Definitions on the AS/400A (RALYAS4A)

When you are going to connect an AS/400 as an APPN node to an S/370 subarea to support independent LUs you are required to perform the following steps:

- Check the network attributes
- Create a line description from the AS/400 to VTAM/NCP
- Create a host controller description for the S/370 host
- Create an entry the APPN local location list
- Create a mode entry.

5.2.1 Network Attributes

The network attributes contain the AS/400's local system values for APPN. You can display these attributes by using the DSPNETA command or by going to menu "NETWORK".

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   90. Sign off

Selection or command
===> dspneta

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 110. AS/400 Main Menu Screen

Type DSPNETA to display the network attributes.

```

                                Display Network Attributes
                                System:  RALYAS4A
Current system name . . . . . :  RALYAS4A
  Pending system name . . . . . :
Local network ID . . . . . :  USIBMRA
Local control point name . . . . . :  RALYAS4A
Default local location . . . . . :  RALYAS4A
Default mode . . . . . :  MODS361
Maximum number of conversations for a remote
  location . . . . . :  64
APPN node type . . . . . :  *NETNODE
Maximum number of intermediate sessions . . . . . :  200
Route addition resistance . . . . . :  128
Server network ID/control point name . . . . . :
                                                                More...

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 111. Display Network Attributes Screen

Notice we have defined the local control point name, local network ID, default location name and APPN node type. You can change these parameters by the CHGNETA command or by selecting option 2 from the "NETWORK" menu.

```

                                Display Network Attributes
                                System:  RALYAS4A
Alert status . . . . . :  *UNATTEND
Alert primary focal point . . . . . :  *NO
Alert default focal point . . . . . :  *NO
Alert logging status . . . . . :  *ALL
Alert controller description . . . . . :  P24020D
Message queue . . . . . :  QSYSOPR
  Library . . . . . :  QSYS
Output queue . . . . . :  QPRINT
  Library . . . . . :  QGPL
Job action . . . . . :  *FILE
Maximum hop count . . . . . :  16
DDM request access . . . . . :  *OBJAUT
PC Support request access . . . . . :  *OBJAUT

Press Enter to continue

F3=Exit  F12=Previous

```

Figure 112. Display Network Attributes Screen (continued)

P24020D is the alert controller description which can be used to send up alerts coming from this APPN network to NetView. For more information on alerts see *Management of AS/400 in SNA Subarea Network using Network Products*.

5.2.2 Create Line Description

The first step in defining an AS/400 to a S/370 subarea network is to create the line description. You can do this by either following the screens documented or by using the CL command CRTLNSDLC.

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   90. Sign off
Selection or command
====> 6
F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 113. AS/400 Main Menu Screen

Select option 6 in Figure 113 for the Communications screen.

```
CMN                               Communications                               System:  RALYAS4A
Select one of the following:
    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs
   70. Related commands
Selection or command
====> 4
F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 114. Communications Screen

Select option 4 in Figure 114 to Configure communications.

```

CFGCHN          Configure Communications and Remote Hardware
                                           System:  RALYAS4A
Select one of the following:

  1. Lines
  2. Communications controllers
  3. Work station controllers
  4. Communications devices
  5. Printers
  6. Display stations
  7. Modes
  8. Classes-of-service
  9. Configure address and location lists

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
                                           (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 115. Configure Communications and Remote Hardware Screen

Select option 1 in Figure 115 to define your line description.

```

                                Work with Line Descriptions
                                           System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Line      Type  Text
   L24025    *SDLC  SNA/SDLC Switched to SA24
                                           More...

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
                                           (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 116. Work with Line Descriptions Screen

Select option F6 in Figure 116 to create the line description.

```

                                Create Line Description

Type choices, press Enter.

New line description  124020  Name
Line type . . . . . *sdlc
                    *ASYNC=Asynchronous communications
                    *BSC=Binary synchronous communications
                    *SDLC=Synchronous data link control
                    *TDL=Token Ring local area network
                    *X25=X.25 communications network

F3=Exit  F12=Previous

```

Figure 117. Create Line Description Screen

The line type we are using is *SDLC.

```

CRTLINSDLC          Create Line Desc (SDLC)

Type choices, press Enter.

Label . . . . .
Line description . . . . . > L24020      Name
Resource name . . . . . > LIN021        Name
Online at IPL . . . . . > *NO           *YES, *NO
Data link role . . . . . > *SEC         *NEG, *PRI, *SEC
Physical interface . . . . . > *RS232V24 *RS232V24, *V35, *X21...
Connection type . . . . . > *MP         *NONSWTPP, *SWTPP, *MP
                                                    Bottom
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 118. Create Line Description (SDLC) Screen

The resource name is the name of the physical communications port on the AS/400. It can be found by executing the command WRKHDWPRD and taking the option to work with your rack configuration.

The data link role is always *SEC when the AS/400 is connected to a S/370 host.

We will be using a multipoint line so the connection type will be *MP.

```

CRTLINSDLC          Create Line Desc (SDLC)

Type choices, press Enter.

Label . . . . .
Line description . . . . . > L24020      Name
Resource name . . . . . > LIN021        Name
Online at IPL . . . . . > *YES           *YES, *NO
Data link role . . . . . > *SEC         *NEG, *PRI, *SEC
Physical interface . . . . . > *RS232V24 *RS232V24, *V35, *X21...
Connection type . . . . . > *MP         *NONSWTPP, *SWTPP, *MP
Switched network backup . . . . . *NO    *NO, *YES
Exchange identifier . . . . . > *SYSGEN  05600000-056FFFFF, *SYSGEN
NRZI data encoding . . . . . > *YES     *YES, *NO
Maximum controllers . . . . . > 5       1-254
Line speed . . . . . > 9600            600, 1200, 2400, 4800...
Modem type supported . . . . . *NORMAL  *NORMAL, *V54, *IBMRAP...
Maximum frame size . . . . . > 521     265, 521, 1033, 2057
Duplex . . . . . > *HALF              *HALF, *FULL
Inactivity timer . . . . . > 300       *NOMAX, 150-4200 (0.1 sec)
                                                    More...
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 119. Create Line Description (SDLC) Screen (continued)

In Figure 119 the Exchange identifier parameter is not needed because it is a leased line.

NRZI data encoding should match your NRZI parameter in the VTAM definitions.

The maximum frame size is set to 521.

In our scenario the AS/400 is defined as secondary on a multipoint line and should therefore be defined as *HALF duplex even if the modems used support *FULL duplex lines.

```
CRTLINS DLC          Create Line Desc (SDLC)

Type choices, press Enter.

Poll response delay . . . . . 0          0-2048 (0.0001 seconds)
Text 'description' . . . . . > 'SNA/SDLC Leased to SA24'

Comment . . . . .

F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display
```

Figure 120. Create Line Description (SDLC) Screen (continued)

Press Enter to create your line description to the host. It will return you to the Work with Line Descriptions screen.

5.2.3 Create Host Controller Description

Now you must create a host controller description which describes the S/370 host to which it is connected. Creation can be done interactively through the following screens or enter the CL command CRTCTLHOST.

```
CFGCMN          Configure Communications and Remote Hardware          System:  RALYAS4A
Select one of the following:
    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
====> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
```

Figure 121. Configure Communications and Remote Hardware Screen

Select option 2 in Figure 121 to configure your host controller.

```
Work with Controller Descriptions          System:  RALYAS4A
Position to . . . . .          Starting character(s)
Type options, press Enter.
    2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Controller  Type  Text
-----
QESCTL  *HOST  Service Support controller
QTICTL  *HOST  TIE, TIA, QA control unit description
RSCSCTLD *BSC  Ctl description for RSCS/PROFS Bridge
More...

Parameters for option 2 or command
====>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
```

Figure 122. Work with Controller Descriptions Screen

Select F6 to create your host controller description.

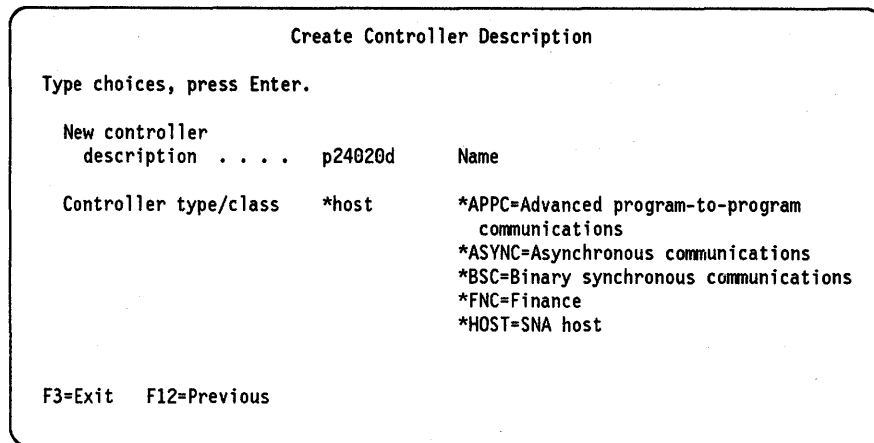


Figure 123. Create Controller Description Screen

We will be defining *HOST as our controller type as we will be communicating to an SNA host and will have the support of dependent and independent LUs.

You can also define the controller type as *APPC to describe the attributes of the host but then it will only support independent LUs.

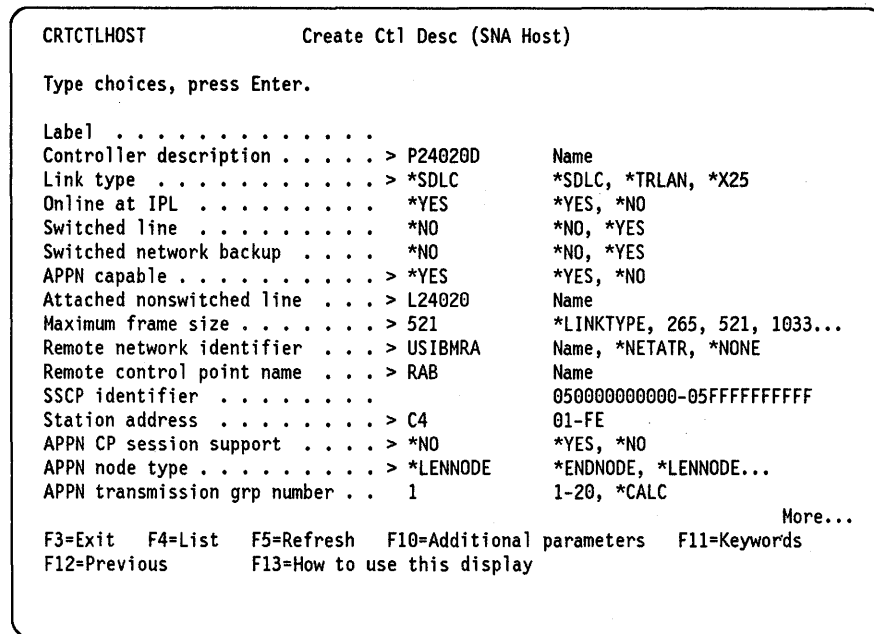


Figure 124. Create Controller Description (SNA Host) Screen

In Figure 124 we will be defining "APPN capable" as *YES which means the host device descriptions for independent LUs will be automatically created using the information defined in the network attributes, the associated mode description, the location list and the application program. Device descriptions that are automatically created are also automatically varied on and attached to the right controller. It means that the local system will appear as an End Node or Network Node to the adjacent system.

We must also match the nonswitched line name to the line name we have just created.

The remote network identifier and remote control point name must match those defined in the VTAM startup list. Remember that the S/370 subarea does not support CP-to-CP sessions so you must define "APPN CP session support" to *NO.

The station address must match the PU address in the VTAM/NCP major node definition.

A S/370 host is defined as a *LENNODE in an APPN network.

Press Enter to create your host controller description.

5.2.4 Configure Local and Remote Location Lists

If we define the host controller with APPN(*YES) then we do not have to manually create device descriptions for your independent LUs. This also applies to the device descriptions for the remote locations behind a S/370 subarea network which are defined in the APPN remote location list. The AS/400 will automatically create the device description, vary it on and attach it to the correct controller in the following situations.

- When a session is requested and the route chosen and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name attached.
- When a BIND is received for a local location and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name.

AS/400 APPN usually doesn't require remote locations to be defined as this information is dynamically added to the directory database through the searches when the AS/400 has CP-to-CP session support. However, when the AS/400 is connected to a Low Entry Network node (for example an S/370), entries need to be added in the remote location list for each LU with which we want to have sessions within the host or behind it. This information can't be obtained dynamically because the S/370 host doesn't support CP-CP sessions.

We don't have to create an entry for the PS/2 in the APPN remote location list because there is no session request from the AS/400 to the PS/2. The PS/2 with AS/400 PC Support can only request sessions to AS/400 PC Support on any AS/400 in the network.

A location entry must be defined in the local location list of the AS/400 to determine that the location with which the PS/2 wants to have sessions resides on this AS/400. The following screens will guide you through the creation of the APPN local location list.

```
CFGCMN          Configure Communications and Remote Hardware
                                                    System:  RALYAS4A

Select one of the following:

    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
===> 9

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
```

Figure 125. Configure Communications and Remote Hardware Screen

Select option 9 to define APPN location lists.

The local location list defines the locations that are defined on the AS/400. The following screens will add RAOTNNB0 to the list.

```

CFGLST                Configure Address and Location Lists                System:  RALYAS4A

Select one of the following:

    1. Asynchronous PAD network address lists
    2. Asynchronous remote location list
    3. APPN local location list
    4. APPN remote location list

Selection or command
===> 3

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 126. Configure Address and Location Lists Screen

Select option 3 in Figure 126 to define an APPN local location list.

```

                                Work with Configuration Lists                System:  RALYAS4A

Position to . . . . .          Starting character(s)

Type options, press Enter.
    2=Change  4=Delete  5=Display  6=Print

Opt List      Type      Text
  2  QAPPNLCL  *APPNLCL

                                                                Bottom

Parameters for option 2 or command
===>

F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 127. Work with Configuration Lists Screen

Select option 2 in Figure 127 to change the QAPPNLCL local list to add RAOTNNB0.

```

                                Define APPN Local Locations

Type new/changed information, press Enter.

Local Location Entry          Local Location Entry
Name Description              Name Description
RAOAS4A Local LU Name switch
RAOTNNB0 Local LU for leased

                                                                More...

F3=Exit  F12=Previous  F17=Top of list  F18=Bottom of list

```

Figure 128. Define APPN Local Locations Screen

Enter the local location name and its description. We will use RAOTNNB0 which must match the LU name which is defined in the NCP LU macro for the AS/400.

5.2.5 Create Mode Description

The mode description describes the session characteristics and number of sessions that will be used to negotiate the allowable values between the local and remote locations. A mode with the same name must exist at both end points. There must also be a mode entry with the same name in VTAM/NCP.

This mode description, QPCSUPP, is created automatically when AS/400 PC Support is installed on your AS/400 and must be used with AS/400 PC Support.

In Figure 129 the mode characteristics of QPCSUPP are shown.

Display Mode Description		
Mode description name	MODD	QPCSUPP
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	0
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	2048
Text	TEXT	AS/400 PC Support mode entry

Press Enter to continue.

F3=Exit F12=Previous

Figure 129. Display Mode Descriptions Screen

The parameters defined here must match those defined on the remote location.

5.3 Relationship between AS/400 and VTAM/NCP for a Leased Line

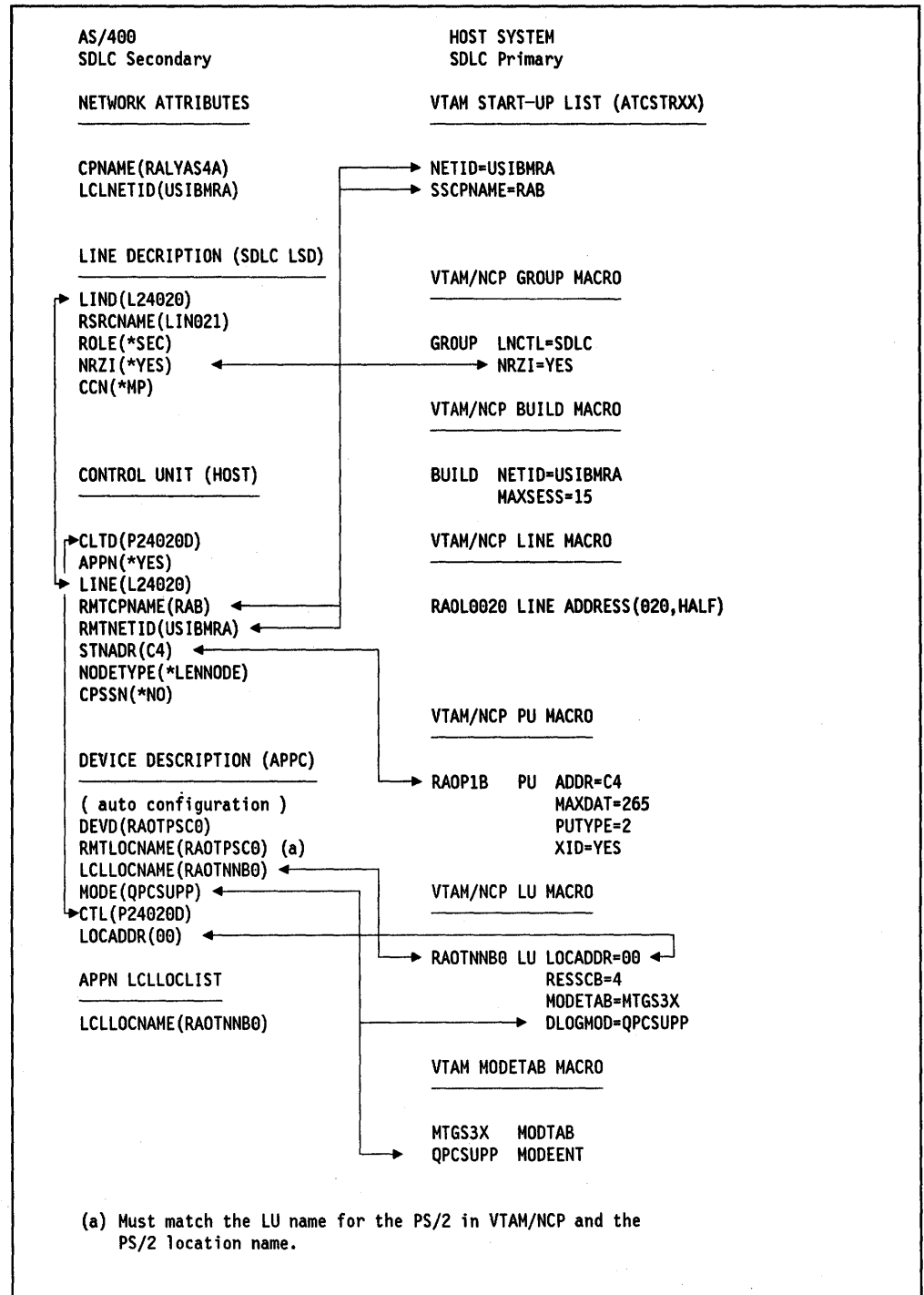


Figure 130. Defining a Leased Line between AS/400 and VTAM/NCP

5.4 Section 1: Definitions on the PS/2 (RAOTPSC0)

In order to configure the PS/2 with AS/400 PC Support to connect it to the S/370 subarea network we must perform the following:

- Install PC Support on the AS/400
- Initialize PC Support code on the AS/400
- Install PC Support on the PS/2
- Modify the CONFIG.SYS file on the PS/2
- Modify the CONFIG.PCS file on the PS/2
- Check the STARTPCS.BAT file on the PS/2.

We used a PS/2 model 60 with an IBM Multi-Protocol Adapter/A card to support the SDLC line connection between the PS/2 and the S/370 subarea network.

5.4.1 Install PC Support on the AS/400

Sign on to the AS/400 as security officer (QSECOFR) to install AS/400 PC Support. See *SC21-9765 AS/400 Licensed Programs Installation Guide* for installation instructions.

5.4.2 Initialize PC Support Code on the AS/400

You will have to run the CL command INZPCS in order to initialize AS/400 PC Support. All personal computers using PC Support need to have the same keyboard type and code pages. If you enter the command with no parameters, it will take the default from the system.

5.4.3 Install PC Support on the PS/2

In the following installation description we assume that DOS 3.30 has already been installed on the PS/2.

Insert the AS/400 PC Support (PCS) diskette into drive A and type: **A>INSTALL.**

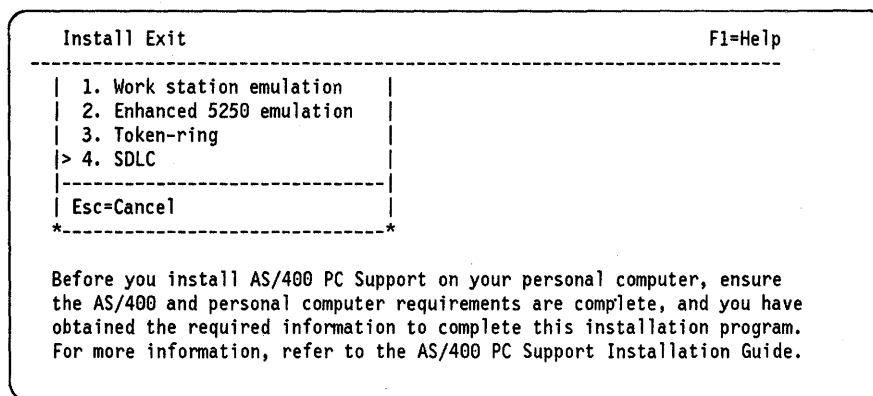


Figure 131. Installation Options Screen

Figure 131 is the screen that is displayed after you enter the INSTALL command. You will be installing the SDLC support so you will take option 4 on the hardware options screen.

Then the following screen will be displayed:

```
Installing AS/400 PC Support
(SDLC)
Complete the following with the information from the form; press Enter.

PCS directory drive      . . . (C)
PC location name        . . . . . (USIBMRA.RAOTPC0)
System name             . . . . . (RAOTNNB0)
Local station address   . . . . . (C5) (01 - FE)

Which functions
will you use?           . . .>Organizer
                        >Work Station Function
                        >Message Function
                        >Virtual Printer

-----
Enter Esc=Cancel F1=Help F3=Exit
```

Figure 132. Installing AS/400 PC Support (SDLC) Screen

After entering these values, the PCS directory is created in the disk drive C and the PC Support files are copied from the AS/400 PC Support diskette to this directory. At the same time the CONFIG.SYS file is modified and the files CONFIG.PCS and STARTPCS.BAT are created using the information you have just entered. For an explanation of the parameters see Figure 135 on page 116.

Figure 133 displays the PCS directory when the installation is completed.

```
C:\PCS>dir

Volume in drive C is DOSTUG
Volume Serial Number is 2353-14EE
Directory of C:\PCS

ECYDDX  SYS      20384 08-31-88  8:44a
FSDD    SYS      49280 06-24-89  3:37a
EIMPCS  SYS       5520 06-24-89  3:37a
XXRTRS  MRI     13848 06-24-89  3:39a
FSPC    EXE     88640 06-24-89  3:37a
FSPC    HLP     12393 01-01-80 12:03a
STARTRTR EXE    70168 06-24-89  3:37a
STOPRTR EXE    42728 06-24-89  3:37a
SDLCRTR EXE   55664 06-24-89  3:39a
CONFIG  PCS       110 05-30-89 11:05a
STARTPCS BAT   554 05-30-89  8:59a
UPDATE  PCS       40 10-28-88  9:26a
        14 File(s) 21354496 bytes free
```

Figure 133. PCS Directory on Drive C Screen

5.4.4 Modify the CONFIG.SYS File on the PS/2

The CONFIG.SYS file is the PS/2 configuration file and not an AS/400 PC Support file. If you already have this file on your PS/2, the installation program will automatically add the device drivers to be used by the PC Support memory manager and shared folders. If you are using the workstation function, "files=15" will be added to the CONFIG.SYS file. If you are using a token-ring attachment, the device drivers for the LAN adapter handler will be included in CONFIG.SYS file.

We also included F=10 to the ECYDDX driver which allows ten files to be opened at one time and B=20 to the FSDD driver which sets aside twenty blocks (block size is 1880 bytes) of storage for cache buffering on the PS/2.

```
C>type CONFIG.SYS
files=15
break=on
lastdrive=Z
DEVICE=C:\PCS\EIMPCS.SYS
DEVICE=C:\PCS\ECYDDX.SYS F=10
DEVICE=C:\PCS\FSDD.SYS B=20
```

Figure 134. CONFIG.SYS File Screen

5.4.5 Modify the CONFIG.PCS File on the PS/2

This file is the PC Support configuration file on the PS/2. It is created with the parameters you defined when you installed PC Support on the PS/2. In Figure 135 you can see the default CONFIG.PCS file that was created.

```
C>cd PCS

C:\PCS>type CONFIG.PCS.
RTYP SDLC
RTLN USIBMRA.RAOTPSCO
SDLI RAOTNNB0,C5
```

Figure 135. CONFIG.PCS Default File Screen

We will now tailor this CONFIG.PCS file to add in the parameters for the SDLC leased line connection to the S/370 subarea network.

In Figure 136 on page 117 the following parameters are defined:

- **RTYP SDLC** specifies the router to use when communicating with the AS/400 behind the S/370 subarea.
- **RTLN USIBMRA.RAOTPSCO** uniquely identifies the PS/2 to the network. The network identifier is USIBMRA and the PC location name is RAOTPSCO. This name is sent to the AS/400 whenever the router makes contact and it must match the LU name in the NCP of the PS/2.
- **SDLI RAOTNNB0,C5,RUSSELL** specifies the link identification and must be in the CONFIG.PCS file when the IBM SDLC router is used. Link identification includes the system name (which must match the local location name on the AS/400 and the LU name in VTAM/NCP for the AS/400), local station

address (which must match the PU address in VTAM/NCP for the PS/2) and user ID (which must be a valid user profile on the AS/400).

- **RTDN RAOTNNB0** specifies the default system name used to start conversations if a name is not used. In this case it is the AS/400 local location name.
- **SDLT MP** specifies that the line type is a nonswitched multi-point line. If you were using a leased line it would be NONSWPP.
- **RTCU RUSSELL** specifies the common user ID to be used if it hasn't been defined on the ADRS, EMLI or TRLI identifiers. It also will be used when the user ID is prompted by the start router command.
- **SDDE YES** specifies that NRZI data coding will be used. It must match with the NRZI parameter you defined in VTAM/NCP for this PS/2.
- **SDMR FULL** specifies that the line will operate at 100% of the selected data rate on the modem if it supports the rate select feature.
- **SDLF HALF** specifies half duplex for the line. This means that the line/modem can't be used to transmit data in both directions at the same time. It is required to be HALF because we are using a multipoint line. The default for the SDMR identifier is HALF.

```
RTYP SDLC
RTLN USIBMRA.RAOTPSC0
SDLI RAOTNNB0,C5,RUSSELL
RTDN RAOTNNB0
SDLT MP
RTCU RUSSELL
SDDE YES
SDMR FULL
SDLF HALF
```

Figure 136. Tailored CONFIG.PCS File for the PS/2 SDLC Link

5.4.6 Check the STARTPCS.BAT File on the PS/2

This file is created when you install PC Support on the PS/2. The contents will depend on the functions you selected in Figure 132 on page 115. This file will contain the necessary commands to start PC Support. You have the option to leave this file as created or to customize it for your specific requirements. Details of this customization can be found in *PC Support Operations Reference Manual*. We recommend that you copy the contents of QIWSFLR to your fixed disk drive for performance reasons. Once that has been done you must change the STARTPCS.BAT file to run from the C drive.

The following screen displays the **STARTPCS.BAT** file.

<pre>C: \PCS\STARTRTR C: PCS\CONFIG.PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start SDLC Router
<pre>ECHO ON C: \PCS\FSPC ASSIGN I: QIWSFLR ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Assign drive I to AS/400 folder QIWSFLR
<pre>ECHO ON C: \PCS\PCSUPDT I: \ C: \PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Run PC Support Update Function
<pre>ECHO ON C: \PCS\STARTMSG C: \PCS\CONFIG.PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Message Function
<pre>ECHO ON C: \PCS\VPRT ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Virtual Print Function
<pre>ECHO ON C: \PCS\WSF /T ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Workstation Function selected with one standard session
<pre>ECHO ON C: \PCS\STARTWSF 1 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	
<pre>ECHO ON C: \PCS\PCO C: \PCS\CONFIG.PCS ECHO OFF : EXIT ECHO ON</pre>	Start AS/400 PC Support Organizer

Figure 137. STARTPCS.BAT File

5.5 Relationship between PS/2 with PC Support and VTAM/NCP

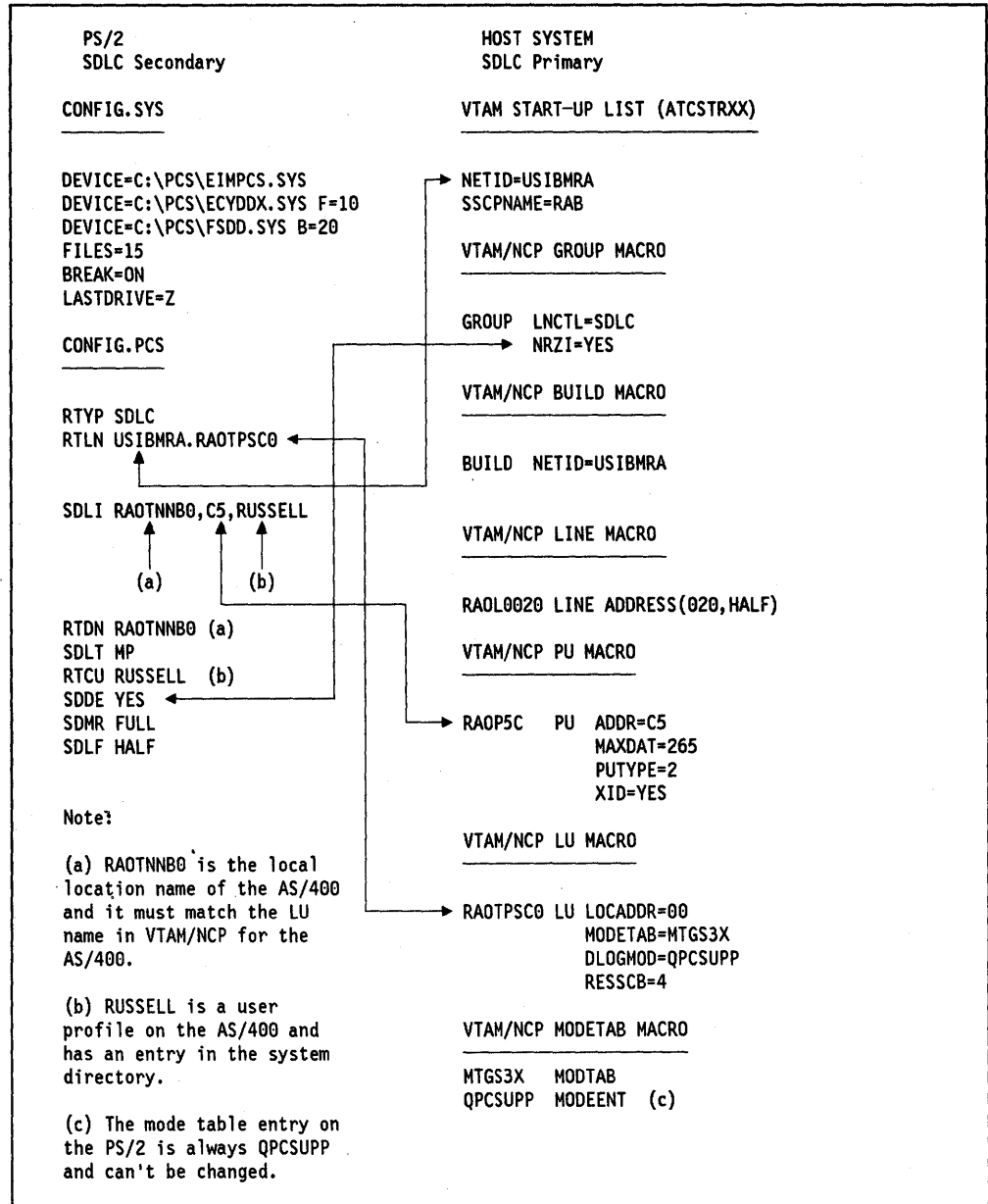


Figure 138. Defining a Leased Line between PS/2 and VTAM/NCP

5.6 Definitions on the Host for AS/400A and the PS/2

```

***** 01220008
*      BUILD MACRO SPECIFICATIONS * 01230008
***** 01240008
NCPBUILD BUILD VERSION=V4R3,      # NCP V4 REL3      X01250008
      ADDSESS=20,      ENOUGH BLOCKS DEFINED IN RESSCB X01260008
      AUXADDR=10,      ADDITIONAL PLU ADDRESSES FOR ILU X01260108
      ENBLT0=6.5,      IBM 386X REQUIRE 6.5 AS MINIMUM X01370008
      MAXSESS=16,      MAX LU-LU SESSIONS ANY LU CAN HAVE X01400008
      MAXSSCP=8,      MAXIMUM SESSIONS FOR LU X01401008
      MODEL=3725,      !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! X01420008
      NAMTAB=50,      # ENTRIES FOR SSCP, CP & NET NAMES X01430008
      NETID=USIBMRA,   NATIVE NETWORK X01431008
      NEWNAME=RAONCP0, NAME OF THIS LOAD MODULE V3X01440008
      SUBAREA=24,      SUBAREA ADDRESS = 24 X01470008
      COSTAB=ISTSDCOS, COS TABLE USED TO ACTIVATE ER/VR X01520008
      $ESSLIM=64      NUMBER OF SESSIONS PER NAF 01580008
      :
      :
      :

```

Figure 139. NCP BUILD Macro for the AS/400 and PS/2

In Figure 139 we define the BUILD macro which indicates the NCP version, the type of communication controller to be used and the name of this load module. It also specifies the NCP subarea and the host subarea. USIBMRA is the network ID for the VTAM/NCP node.

```

***** 04750008
*      LINE MACRO SPECIFICATION      SDLC LINK 020      04760008
***** 04770008
RA0L0020 LINE ADDRESS=(020,HALF), TRANSMIT AND RECEIVE ADDRESSES X04780008
      NPACOLL=YES,      NPAX04790008
      ANS=CONTINUE,      DON'T BREAK CROSS DOMAIN SESSIONS X04800008
      OWNER=RAB,      (V) VTAM X04810008
      ISTATUS=ACTIVE, X04820008
      DUPLEX=(FULL),      REQUEST TO SEND ALWAYS UP X04830008
      ETRATIO=30,      DEFAULT X04840008
      LPDATS=LPDAL1, X04850008
      MAXPU=9,      ALLOW NO MORE THAN 9 PUS ON LINE X04860008
      SERVLIM=2, X04870008
      SRT=(,64), X04880008
      SPEED=(4800)      LINE SPEED IS 4800 BPS 04890008
*      ATTACH=MODEM,      # NOT SUPPORTED V4R3 04900008
*      STATOPT=('AS/400',NONONIT) 04910008
***** 04920008
*      * 04930008
*      SERVICE MACRO SPECIFICATION FOR SDLC (LINE 020) * 04940008
*      * 04950008
***** 04960008
      SERVICE ORDER=(RAOP07, X04970008
      RAOP08, X04980008
      RAOP1B,      AS/400 A X04981012
      RAOP5C,      PS/2 X04982016
      RAOP09),      S/38 X04990008
      MAXLIST=9 05000008
***** 05010008

```

Figure 140. NCP LINE Macro for the AS/400 and PS/2

In Figure 140 the line RAOL0020 is specified as a non-switched multipoint line attached to the host RAB. Because this is a multipoint line, the service macro specification will present the order in which the attached PUs will be polled.

```

***** 07993008
* PU/LU MACRO RESERVED FOR THE AS/400 A (RALYAS4A) * 08000008
***** 08010008
*RAOP1B PU ADDR=C4, 3270 ADDRESS='C' (EBCDIC) X 08020008
*
* 08021009
* PU AND LU DEFINITION FOR AS/400A 08022009
* FOR SUPPORT DEPENDENT AND INDEPENDENT LUS 08023009
* GER ROOVERS EXT.2322 08024009
* 08025009
***** 08026010
RAOP1B PU ADDR=C4, 3270 ADDRESS='C' (EBCDIC) X08029209
MAXDATA=265, MAXIMUM AMOUNT OF DATA X08029309
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE X08029409
PACING=(7), PACING SET BY BIND IMAGE X08029512
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING X08029609
PASSLIM=7, X08029709
PUTYPE=2, X08029809
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN X08029909
DISCNT=(NO), (V) VTAM ONLY X08030009
ISTATUS=ACTIVE, (V) VTAM ONLY X08030109
VPACING=8, (V) VTAM ONLY X08030210
XID=YES 08030310
* STATOPT='AS/400 T2.1' 08030410
***** 08030509
* DEFINITIONS FOR AS/400A * 08030609
* RAOTNNB0 TO B3 INDEPENDENT LUS 08030709
***** 08031609
RAOTNNB0 LU RESSCB=4, INDEPENDENT LU X08031710
LOCADDR=0, X08031813
MODETAB=MTGS3X, X08031910
DLOGMOD=MODS361, X08032010
ISTATUS=ACTIVE 08032110
* STATOPT='INDEPENDENT LU' 08032210
RAOTNNB1 LU RESSCB=4, INDEPENDENT LU X08032310
LOCADDR=0, X08032413
MODETAB=MTGS3X, X08032510
DLOGMOD=QPCSUPP, X08032610
ISTATUS=ACTIVE 08032710
* STATOPT='INDEPENDENT LU' 08032810
RAOTNNB2 LU RESSCB=4, INDEPENDENT LU X08032910
LOCADDR=0, X08033013
MODETAB=MTGS3X, X08033110
DLOGMOD=QPCSUPP, X08033210
ISTATUS=ACTIVE 08033310
* STATOPT='INDEPENDENT LU' 08033410
RAOTNNB3 LU RESSCB=4, INDEPENDENT LU X08033510
LOCADDR=0, X08033613
MODETAB=MTGS3X, X08033710
DLOGMOD=MODS361, X08033810
ISTATUS=ACTIVE 08033910
* STATOPT='INDEPENDENT LU' 08034010

```

Figure 141. NCP PU and LU Macro for the AS/400

In Figure 141 the RAOP1B has a PU address of C4 defined. This value has to match the station address defined in the AS/400 controller description for this host.

PUTYPE=2 and XID=YES must be specified so that the host appears as T2.1 node to the AS/400.

The LU used for scenario 2 is RAOTNNB0. Because it is an independent LU, we have to specify LOCADDR=0. RESSCB=4 means that this specific LU has reserved four session control blocks for itself.

```

***** 08043113
* PU/LU MACRO RESERVED FOR THE PS/2 * 08043213
***** 08043313
* PU AND LU DEFINITION FOR PS/2 PC SUPPORT 05/16/89 08043613
* FOR SUPPORT DEPENDENT AND INDEPENDENT LUS 08043713
* GER ROOVERS EXT.2322 08043813
* 08043913
***** 08044013
RAOP5C PU ADDR=C5, 3270 ADDRESS='C' (EBCDIC) X08044115
MAXDATA=265, MAXIMUM AMOUNT OF DATA X08044213
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE X08044313
PACING=(7), PACING SET BY BIND IMAGE X08044413
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING X08044513
PASSLIM=7, X08044613
PUTYPE=2, X08044713
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN X08044813
DISCNT=(NO), (V) VTAM ONLY X08044913
ISTATUS=ACTIVE, (V) VTAM ONLY X08045013
VPACING=8, (V) VTAM ONLY X08045113
XID=YES 08045213
STATOPT='AS/400 T2.1' 08045313
***** 08045413
* DEFINITIONS FOR PS/2 WITH AS/400 PC SUPPORT * 08045513
* RAOTNNB1 INDEPENDENT LU 08045613
* 08046413
***** 08046513
RAOTPSC0 LU RESSCB=4, INDEPENDENT LU X08046614
LOCADDR=0, X08046713
MODETAB=MTGS3X, X08046813
DLOGMOD=QPCSUPP, X08046913
ISTATUS=ACTIVE 08047013
* STATOPT='INDEPENDENT LU' 08047113
***** 08047208

```

Figure 142. NCP PU and LU Macro for the PS/2

In Figure 142 RAOP5C has a PU address of C5 defined. This value must match the station address specified in the SDLI identifier in CONFIG.PCS file of the attached PS/2.

PUTYPE=2 and XID=YES must be specified so that the host appears as a T2.1 node to the PS/2.

The LU used for scenario 2 is RAOTPSC0. Because it is an independent LU, we have to specify LOCADDR=0. RESSCB=4 means that this specific LU has four reserved session control blocks for itself.

5.7 Activate Communications on the AS/400A

This section will describe how to activate AS/400A to the S/370 subarea network. The PS/2 can request a session when the AS/400 line and controller description have been activated.

To activate communications on the AS/400, the line, controller and devices have to be varied on. The following screens will guide you through this exercise. You can also go directly to the Work with Configuration Status screen by using the WRKCFGSTS command.

```
MAIN                               AS/400 Main Screen                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    90. Sign off

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 143. AS/400 Main Screen

Select option 6 in Figure 143 to go to the Communications screen.


```

CMN                               Communications                               System:  RALYAS4A
Select one of the following:
    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs
    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 144. Communications Screen

Select option 1 in Figure 144 to choose the Communications Status screen.

```

CMNSTS                             Communications Status                             System:  RALYAS4A
Select one of the following:
    1. Work with line status
    2. Work with controller status
    3. Work with device status
    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 145. Communications Status Screen

Select option 1 in Figure 145 to work with line status.

```

WRKCFGSTS                           Work with Configuration Status
Type choices, press Enter.
Type . . . . . > *LIN                *LIN, *CTL, *DEV
Configuration description . . . > 124020  Name, generic*, *ALL, *CMN...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 146. Work with Communications Status Screen

Type the line description name in Figure 146 to work with line status.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
1=Vary on 2=Vary off 3=Hold device 4=End recovery 5=Work with job
6=Release device 7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
1 L24020 VARIED OFF
  P24020D VARIED OFF
    T24020D1 VARIED OFF
    T24020D2 VARIED OFF
    T24020D3 VARIED OFF
    T24020D4 VARIED OFF
    T24020D5 VARIED OFF
    T24020D6 VARIED OFF
    T24020D7 VARIED OFF

Parameters for options 1, 2, 3 or command
===>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 147. Work with Communications Status Screen

Select option 1 in Figure 147 to vary on the line, the attached controller and devices.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
1=Vary on 2=Vary off 3=Hold device 4=End recovery 5=Work with job
6=Release device 7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
L24020 ACTIVE
  P24020D ACTIVE
    T24020D1 VARIED ON
    T24020D2 VARIED ON
    T24020D3 VARIED ON
    T24020D4 VARIED ON
    T24020D5 VARIED ON
    T24020D6 ACTIVE
    T24020D7 ACTIVE

Parameters for options 1, 2, 3 or command
===>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 148. Work with Communications Status Screen

Select F5 to refresh the screen in Figure 147. Because this is a leased line, the line and controller should present the status "ACTIVE" and the devices should present the status "ACTIVE" when they use LU 6.2 support; otherwise they present the status "VARIED ON".

5.8 Activating Communications on the S/370 Host for the PS/2 and AS/400A

```
NCCF      N E T V I E W      RABAN WTCR21  05/31/89 16:38:30
* RABAN   V NET,ACT,ID=RAOL0020  <-----
RABAN     IST097I VARY   ACCEPTED
RABAN     IST093I RAOL0020 ACTIVE
C RABAN   >AOPNLIST RAOL0020 NONE
RABAN     IST097I DISPLAY ACCEPTED
```

Figure 149. Activate Line for AS/400A and PS/2

AS/400A and PS/2 are T2.1 nodes connected to the same line of the S/370 host. Therefore to vary on the line we should issue the VTAM command "V NET,ACT,ID=RAOL0020".

```
NCCF      N E T V I E W      RABAN WTCR21  05/31/89 16:39:12
* RABAN   V NET,ACT,ID=RAOP1B,SCOPE=ALL  <-----
RABAN     IST097I VARY   ACCEPTED
RABAN     IST093I RAOP1B  ACTIVE
C RABAN   >AOPNLIST RAOP1B NONE
RABAN     IST097I DISPLAY ACCEPTED
```

Figure 150. Activate PU for the AS/400 A

To vary on the AS/400A PU, enter the VTAM command "V NET,ACT,ID=RAOP1B,SCOPE=ALL".

```
NCCF      N E T V I E W      RABAN WTCR21  05/31/89 16:39:38
* RABAN   V NET,ACT,ID=RAOP5C,SCOPE=ALL  <-----
RABAN     IST097I VARY   ACCEPTED
RABAN     IST093I RAOP5C  ACTIVE
C RABAN   >AOPNLIST RAOP5C NONE
RABAN     IST097I DISPLAY ACCEPTED
```

Figure 151. Activate PU for the PS/2

To vary on the PS/2 PU, enter the VTAM command "V NET,ACT,ID=RAOP5C,SCOPE=ALL".

```

NCCF      N E T V I E W                RABAN WTCR21   05/31/89 16:40:02
C RABAN   DISPLAY NET, ID=RAOP1B, SCOPE=ALL
RABAN     IST097I DISPLAY ACCEPTED
RABAN
IST075I   NAME = RAOP1B                , TYPE = PU T2.1 <-----
IST486I   STATUS= ACTIV                , DESIRED STATE= ACTIV
IST081I   LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP0
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I   LOGICAL UNITS:
IST080I   RAOTNNB0 ACT/S              RAOTNNB1 ACTIV    RAOTNNB2 ACTIV
IST080I   RAOTNNB3 ACTIV              RAOTNNB4 ACTIV    RAOTNNB5 ACTIV
IST080I   RAOT1B01 ACTIV              RAOT1B02 ACTIV    RAOT1B03 ACTIV
IST080I   RAOT1B04 ACTIV              RAOT1B05 ACTIV    RAOT1B06 ACTIV
IST080I   RAOT1B07 ACTIV              RAOT1B08 ACTIV    RAOT1B09 ACTIV
IST080I   RAOT1B0A ACTIV              RAOT1B0B NEVAC    RAOT1B0C NEVAC
IST080I   RAOT1B0D NEVAC              RAOT1B0E ACTIV    RAOT1B0F ACTIV
IST080I   RAOT1B0G ACTIV              RAOT1B0H ACTIV    RAOT1B0I ACTIV
IST080I   RAOT1B0J ACTIV
IST314I   END

```

Figure 152. Display Status of the PU for the AS/400A

Figure 152 displays the status of the PU for AS/400A. Notice that the PU is seen as a T2.1 after activation and LU RAOTNNB0 is active and in session.

```

NCCF      N E T V I E W                RABAN WTCR21   05/31/89 16:40:23
C RABAN   DISPLAY NET, ID=RAOP5C, SCOPE=ALL
RABAN     IST097I DISPLAY ACCEPTED
RABAN
IST075I   NAME = RAOP5C                , TYPE = PU T2.1 <-----
IST486I   STATUS= ACTIV                , DESIRED STATE= ACTIV
IST081I   LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP0
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I   LOGICAL UNITS:
IST080I   RAOTPSC0 ACT/S
IST314I   END

```

Figure 153. Display Status of the PU for the PS/2

Figure 153 displays the status of the PU for the PS/2. Notice that the PU is seen as a T2.1 after activation and LU RAOTPSC0 is active and in session.

```

NCCF      N E T V I E W                RABAN WTCR21   05/31/89 16:40:45
RABAN
C RABAN   DISPLAY NET, ID=RAOTNNB0, SCOPE=ALL
RABAN     IST097I DISPLAY ACCEPTED
RABAN
IST075I   NAME = RAOTNNB0              , TYPE = LOGICAL UNIT
IST486I   STATUS= ACT/S                , DESIRED STATE= ACTIV
IST861I   MODETAB=MTGS3X  USSTAB=***NA*** LOGTAB=***NA***
IST934I   DLOGMOD=MODS361
IST597I   CAPABILITY=PLU ENABLED ,SLU ENABLED ,SESSION LIMIT NONE
IST081I   LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP0
IST135I   PHYSICAL UNIT = RAOP1B
IST082I   DEVTYPE = INDEPENDENT LU    <-----
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I   ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I   SESSIONS:
IST634I   NAME      STATUS            SID              SEND RECV VR TP NETID
IST635I   RAOTPSC0 ACTIV-P          CF0384B97C5057BE  0 0 US1BMRA
IST314I   END

```

Figure 154. Display Status of the LU for the AS/400

Figure 154 displays the status of the LU for AS/400A. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that this AS/400 LU (RAOTNNB0) has an active session with the PS/2 LU (RAOTPSC0) and in this case the PS/2 is the primary LU.

```

NCCF          N E T V I E W          RABAN WTCR21    05/31/89 16:41:05
RABAN        DISPLAY NET, ID=RAOTPSC0, SCOPE=ALL
RABAN        IST097I DISPLAY ACCEPTED
RABAN
IST075I NAME = RAOTPSC0          , TYPE = LOGICAL UNIT
IST486I STATUS= ACT/S          , DESIRED STATE= ACTIV
IST075I NAME = RAOTPSC0          , TYPE = LOGICAL UNIT
IST861I MODETAB=MTGS3X  USSTAB=***NA*** LOGTAB=***NA***
IST934I DLOGMOD=MODS361
IST597I CAPABILITY-PLU ENABLED , SLU ENABLED , SESSION LIMIT NONE
IST081I LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP0
IST135I PHYSICAL UNIT = RAOP5C
IST082I DEVTPE = INDEPENDENT LU <-----
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I ACTIVE SESSIONS = 0000000001, SESSION REQUESTS = 0000000000
IST206I SESSIONS:
IST634I NAME      STATUS      SID          SEND RECV VR TP NETID
IST635I RAOTNNB0 ACTIV-S     CF0384B97C5057BE      0 0 USIBMRA
IST314I END

```

Figure 155. Display Status of the LU for the PS/2

Figure 155 displays the status of the LU for the PS/2. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that this PS/2 LU (RAOTPSC0) has an active session with the AS/400 LU (RAOTNNB0) and in this case the AS/400 LU is the secondary LU.

5.9 Running AS/400 PC Support

Once the communications on AS/400A and S/370 host have been activated you are ready to use PC Support to establish a session between the PS/2 and the AS/400 behind the S/370 subarea network.

All that needs to be done now is to run the STARTPCS command from the C drive. Refer to Figure 137 on page 118 for a display of the STARTPCS.BAT file. This command will initiate the following PC Support functions:

- **STARTRTR** will start the router between the PS/2 and AS/400A using the identifiers defined in the CONFIG.PCS file.
- **FSPC ASSIGN** will assign a folder on AS/400A to a virtual drive on the PS/2. In this case it is QIWSFLR folder being assigned the drive I. This will also allow the PS/2 user to access information stored in folders on the AS/400A.
- **PCUPDT** will automatically update the AS/400 PC Support programs on the PS/2. This ensures that the most appropriate level of AS/400 PC Support programs are installed on the PS/2.
- **STARTMSG** will allow the PS/2 users to send messages to and receive messages from other PS/2's with AS/400 PC Support or AS/400 workstations
- **VPRT** will allow the user to use printers attached to AS/400A system as though they were directly attached to the PS/2.
- **WSF IT** will start the work station function program on the PS/2. If a profile can't be found it will default to a single display screen and a 5250 keyboard style. You have the ability to define up to five sessions which can be any combination of display, graphic or printer sessions.
- **STARTWSF 1** will start the workstation function for session 1.
- **PCO** will allow both PS/2 functions and AS/400 functions to run from a single AS/400 menu. From the screen you also have options to transfer data from AS/400A to the PS/2 or vice versa.

For more information on PC Support see *AS/400 PC Support*.

5.10 Traces

The following traces were taken on the AS/400A using the trace facility.

```

COMMUNICATIONS TRACE      Title: AS/400 TO PS/2 V HST      06/28/89  07:08:58      Page: 1
Trace Description . . . . . : AS/400 TO PS/2 V HST
Line name . . . . .       : L24020
Line protocol . . . . .   : SDLC
Start Date/Time . . . . . : 06/28/89  07:01:42
End Date/Time . . . . .   : 06/28/89  07:08:54
Bytes collected . . . . .  : 68683
Buffer size . . . . .     : 3      1=128K, 2=256K, 3=2048K
Data direction . . . . .  : 3      1=Sent, 2=Received, 3=Both
Stop on buffer full . . . . : N      Y=Yes, N=No
Format SNA data only . . . . : N      Y=Yes, N=No
Format RR, RNR commands . . . : N      Y=Yes, N=No
Controller Name . . . . .  : *ALL      *ALL, name
COMMUNICATIONS TRACE      Title: AS/400 TO PS/2 V HST      06/28/89  07:08:58      Page: 2

Record Number . . . . . Number of record in trace buffer (decimal)
S/R . . . . .           S=Sent R=Received M=Modem Change
Data Length . . . . .   Amount of data in record (decimal)
Record Timer . . . . .   Time stamp (100 millisecond resolution, hexadecimal)
Record Status . . . . .  Status of record
Controller name . . . . . Name of controller associated with record
Command . . . . .        Command/Response information
Number sent . . . . .    Count of records sent
Number received . . . . . Count of records received
Poll/Final . . . . .    ON=Poll for Commands, Final for Responses
Commands/Responses:
-----
I . . . . .           Information
RR . . . . .         Receive Ready
RNR . . . . .        Receive Not Ready
REJ . . . . .        Reject
UI . . . . .         Unnumbered Information
SNRM . . . . .       Set Normal Response Mode
DISC . . . . .       Disconnect/Request Disconnect
TEST . . . . .       Test
SIM . . . . .        Set Initialization Mode
UP . . . . .         Unnumbered Poll
FRMR . . . . .       Frame Reject
CFGR . . . . .       Configure
DM . . . . .         Disconnected Mode
XID . . . . .        Exchange ID
BCN . . . . .        Beacon
SNRME . . . . .      Set Normal Response Mode Extended
UA . . . . .         Unnumbered Acknowledgment
***** . . . . .     Invalid Command/Response

COMMUNICATIONS TRACE      Title: AS/400 TO PS/2 V HST      06/28/89  07:08:58      Page: 3
Record  Data  Record  Record  Data  Controller  Number  Number  Poll/
Number  S/R  Length  Status  Timer  Type  Name/Number  Command  Sent  Received  Final
-----
15  R    0  00000000  6EFE  /C4  XID  /C4  XID  ON
16  S    84  00000000  6EFE  /C4  XID  /C4  XID  ON
Data . . . . : 32540561507800008004C000000000001010B000002090000000007000E *.../&.....{.....*
11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C3E510 *.4USIBMRA.RALYAS4A..7AAAAAACV.*
17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8 *.1.....9406B50100015078

21  R   119 00000000  6F45  /C4  XID  /C4  XID  ON
Data . . . . : 3477FFFFFFD000010844000000000000010B1000105A0000000007000E *.....D.....!.....*
0CF4E4E2C9C2D4D9C14BD9C1C20E08F1D9C1D6D5C3D7F00E07F7D9C1D6D7 *.4USIBMRA.RAB..1RAONCP0..7RAOP*
F1C2103700161101130011F3F7F2F5F0F0F0F0F0F0F1F8F2F5201104 *.1B.....3725000000001825....*
0E02F5F6F6F8F5F4F0F1F3F0F00804F0F4F0F3F0F007090901371658 *.566885401300..040300..I....*

22  S    84  00000000  6F45  /C4  XID  /C4  XID  ON
Data . . . . : 32540561507800008004C000000000001010B000002090000000007000E *.../&.....{.....*
11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C3E510 *.4USIBMRA.RALYAS4A..7AAAAAACV.*
17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8 *.1.....9406B50100015078

27  R    0  00000000  6F89  /C4  SNRM  /C4  SNRM  ON
28  S    0  00000000  6F89  /C4  UA    /C4  UA    ON
  
```

Figure 156. AS/400 Trace for Scenario 2

COMMUNICATIONS TRACE		Title: AS/400 TO PS/2 V HST	06/28/89 07:09:12	Page: 1
Trace Description	: AS/400 TO PS/2 V HST			
Line name	: L24020			
Line protocol	: SDLC			
Start Date/Time	: 06/28/89 07:01:42			
End Date/Time	: 06/28/89 07:08:54			
Bytes collected	: 68683			
Buffer size	: 3 1=128K, 2=256K, 3=2048K			
Data direction	: 3 1=Sent, 2=Received, 3=Both			
Stop on buffer full	: N Y=Yes, N=No			
Format SNA data only	: Y Y=Yes, N=No			
Format RR, RNR commands	: N Y=Yes, N=No			
Controller Name	: *ALL *ALL, name			
COMMUNICATIONS TRACE		Title: AS/400 TO PS/2 V HST	06/28/89 07:09:12	Page: 2
Record Number	Number of record in trace buffer (decimal)			
S/R	S=Sent R=Received M=Modem Change			
Controller name	Name of Controller associated with record			
SNA Data	TH, RH and RU for record			
TH	Transmission Header			
RH	Request/Response Header			
RU	Request/Response Unit			
TH Parameter Descriptions:				
FID	Format Identification			
MPF	Mapping Field (segment of Basic Information Unit (BIU) - ONLY, FIRST, MIDDLE, LAST)			
OAF	Origination Address Field			
DAF	Destination Address Field			
SNF	Sequence Number Field			
DCF	Data Count Field			
LA	Local Address			
ODAI	OAF-DAF Assignor Indicator			
EFI	Expedited Flow Indicator			
LU	Logical Unit			
SSCP	System Services Control Point			
PU	Physical Unit			
RH Parameter Descriptions:				
REQ	Request			
RSP	Response			
RH Category Descriptions:				
NC	Network Control			
SC	Session Control			
DFC	Data Flow Control			
NC	Network Control			
FMD	Function Management Data			
FMH	Function Management Header			
RH Indicators:				
FI	Format Indicator			
SDI	Sense Data Included Indicator			
BCI	Begin Chain Indicator			
ECI	End Chain Indicator			
DR1	Definite Response 1 Indicator			
DR2	Definite Response 2 Indicator			
ERI	Exception Response Indicator			
RTI	Response Type Indicator			
QRI	Queued Response Indicator			
EBI	End Bracket Indicator			
CDI	Change Direction Indicator			
PI	Pacing Indicator			
BBI	Begin Bracket Indicator			
CSI	Code Selection Indicator			
EDI	Enciphered Data Indicator			
PDI	Padded Data Indicator			
CEBI	Conditional End Bracket Indicator			
RLWI	Request Larger Window Indicator			

Figure 157. AS/400 Trace for Scenario 2 (continued)

COMMUNICATIONS TRACE			Title: AS/400 TO PS/2 V HST	06/28/89 07:09:12	Page: 3
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
33	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=03ED, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DRI	
			RU Command	ACTPU	
			RU Data	110201050000000000	*.....*
39	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=03ED, EFI RH : ('EB8000'X) RSP SC, FI, DRI	
			RU Command	ACTPU	
			RU Data	11114040404040404000000701000000000000	*... ..*
43	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=00, SNF'=03EE, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DRI	
			RU Command	ACTLU	
			RU Data	0002010E11F3E4E2C9C2D4D9C14B09C1D6E3F1C2F0F1	*.....3USIBMRA.RAOT1801*
51	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=03EE, EFI RH : ('EB8000'X) RSP SC, FI, DRI	
			RU Command	ACTLU	
			RU Data	00010100850000000000010001000000404040404040	*....E.....*
359	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DRI	
			RU Command	BIND	
			RU Data	31001307B08051B300878585870006020000000000001023000010E4E2 C9C2D4D9C14B09C1D6E3D7E2C3F010000902E2D5C1E2E5C3D4C71104E4E2 C9C2D4D9C14B09C1D6E3D7E2C3F00010E4E2C9C2D4D9C14B09C1D6E3D5D5 C2F02C0A01084040404040406014CF0384897C294E630BE4E2C9C2D4 D9C14B09C1C2	*.....GEEG.....US* *IBMRA.RAOTPSC0...SNASVCMG...US* *IBMRA.RAOTPSC0...USIBMRA.RAOTNN* *B0....-...D.@+...USIBM* *RA.RAB
369	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DRI	
			RU Command	BIND	
			RU Data	31001307B08051B300808585800006020000000000001023000001D00 0902E2D5C1E2E5C3D4C71105E4E2C9C2D4D9C14B09C1D6E3D5D5C2F0000 2C0A0108404040404040406014CF0384897C294E630BE4E2C9C2D4D9C1 4B09C1C2	*.....EE.....* *...SNASVCMG...USIBMRA.RAOTNNB0...* *.....-...D.@+...USIBMRA* *...RAB
373	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0001 RH : ('0A9100'X) REQ FMD, FI, BCI, DRI, ERI, PI	
			RU Command		
			RU Data	180502FF0003D000000206F1090802D9E4E2E2C5D3D30000	*.....}....1...RUSSELL..*
379	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000007	*...*
381	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0002 RH : ('019520'X) REQ FMD, ECI, DRI, ERI, RLWI, PI, CDI	
			RU Data	001812100200000000002000200000007D8D7C3E2E4D7D7	*.....QPCSUPP*
385	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	00000E	*...*
386	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0001 RH : ('039501'X) REQ FMD, BCI, ECI, DRI, ERI, RLWI, PI, CEBI	
			RU Data	001812100A00000000002000200000007D8D7C3E2E4D7D7	*.....QPCSUPP*
388	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000008	*...*
389	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DRI	
			RU Command	UNBIND	
			RU Data	320F00000000014CF0384897C294E630BE4E2C9C2D4D9C14B09C1C2	*.....-...D.@+...USIBMRA.RAB*
393	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DRI	
			RU Command	UNBIND	
			RU Data	32	*..*
397	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DRI	
			RU Command	BIND	
			RU Data	31001307B08051B300878686870006020000000000001023000010E4E2 C9C2D4D9C14B09C1D6E3D7E2C3F01C0000802D8D7C3E2E4D7D71104E4E2C9 C2D4D9C14B09C1D6E3D7E2C3F00010E4E2C9C2D4D9C14B09C1D6E3D5D5C2 F02C0A01084040404040406014CF0384897C294E640BE4E2C9C2D4D9 C14B09C1C2	*.....GFFG.....US* *IBMRA.RAOTPSC0...QPCSUPP...USI* *BMRA.RAOTPSC0...USIBMRA.RAOTNNB* *0....-...D.@+...USIBM* *A.RAB

Figure 158. AS/400 Trace for Scenario 2 (continued)

401	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1			
			RU Command	BIND			
			RU Data	31001307B00051B30080868680000602000000000000010230000001C00 *.....FF.....*			
				0802D8D7C3E2E4D7D71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F000002C *..QPCSUPP..USIBMRA.RAOTNNB0..*			
				0A010840404040404040406014CF834B97C294E640BE4E2C9C2D4D9C14B *... -...D.0.+..USIBMRA.*			
				D9C1C2 *RAB			
COMMUNICATIONS TRACE				Title: AS/400 TO PS/2 V HST	06/28/89 07:09:12	Page:	8
405	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0001 RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI			
			RU Command				
			RU Data	230502FF0003D000000430F0F1F9120802D9E4E2E2C5D3D30801D9E4E2E2 *.....}....019...RUSSELL..RUSS*			
				C5D3D30000 *ELL..			
413	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI			
			RU Data	000007 *... *			
415	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0002 RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI			
			RU Data	0028D00100010025104100071147D8D7C30006116DC6E200141404141900 *..}.....QPC..._FS.....*			
				02145700021463000214650002 *..... *			
419	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI			
			RU Data	00000E *... *			
428	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0001 RH : ('039520'X) REQ FMD, BCI, ECI, DR1, ERI, RLWI, PI, CDI			
			RU Data	0031D00300010028144300071147D8C1E2000C116D9C1D3E8C1E2F4C100 *..}.....QAS..._RALYAS4A.*			
				141404146500021419000214570002 *..... *			
430	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI			
			RU Data	000008 *... *			
433	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI			
			RU Data	0013D0010001000D104F0009116561D8C6D4E2 *..}.....|...../ FMS			
439	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0002 RH : ('039120'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CDI			
			RU Data	0010D0020001000A124B000611490000 *..}..... *			
441	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI			
			RU Data	000040 *.. *			
444	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0004 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI			
			RU Data	001AD00100010014104F0010116561D8C9E6E2C6D3D940C6D4E2 *..}.....|...../QIWSFLR FMS			
450	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI			
			RU Data	0010D0020001000A124B000611490000 *..}..... *			
458	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0005 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI			
			RU Data	0025D0410001001F102C0010116561D8C9E6E2C6D3D940C6D4E2000B1136 *..}...../QIWSFLR FMS....*			
				450B7D6BE99801001B006100020015010000B1136450B7D6BE998010006 *..',ZQ...}/.....',ZQ...*			
				114E14190046D06100030040100A000B1136450B7D6BE9980100130027D7 *..+...}/... ..',ZQ...P*			
				C3E2E4D7C4E34B6F6F640C6D4E200051133F000051132F100141102113A *CSUPDT.??? FMS...0...1.....*			
				110B1166119411321133110110E0015D0610004000F1004000B1136450B *.....M.....}/.....*			
				7D6BE998010015D0010005000F102D000B1136450B7D6BE99801 *',ZQ...}/.....',ZQ...*			
COMMUNICATIONS TRACE				Title: AS/400 TO PS/2 V HST	06/28/89 07:09:12	Page:	9
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU			
464	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0004 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI			
			RU Data	0010D0420001000A124B0006114900000010D0420002000A124B00061149 *..}.....}.....*			
				00000055D0430003004F14240012113AF1F9F8F9F0F6F2F4F0F3F3F8F0F0 *..}.....}.....19890624033800*			
				0008110B0000361100051166F100051194F100051132F000051133F00006 *.....1...M1...0...0...*			
				111014650017110ED8C9E6E2C6D3D961D7C3E2E4D7C4E34BC5E7C50010D0 *.....QIWSFLR/PCSUPDT.EXE..)*			
				420004000A124B0006114900000010D0020005000A124B000611490000 *.....}.....}.....*			

Figure 159. AS/400 Trace for Scenario 2 (continued)

5.11 Section 2: Definitions on AS/400B (RALYAS4B)

When you are going to connect AS/400B as an APPN node to an S/370 subarea to support independent LUs you are required to perform the following steps:

- Check the network attributes
- Create a line description from the AS/400 to VTAM/NCP
- Create a host controller description for the S/370 host
- Configure APPN remote and local location lists
- Create a mode entry.

5.11.1 Network Attributes

The network attributes contain the AS/400's local system values for APPN. You can display these attributes by using the DSPNETA command or by going to menu "NETWORK".

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4B
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    90. Sign off
Selection or command
====> dspnet
F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 160. AS/400 Main Menu Screen

Type DSPNETA to display the network attributes.

```

                                Display Network Attributes
                                System:  RALYAS4B
Current system name . . . . . : RALYAS4B
Pending system name . . . . . :
Local network ID . . . . . : USIBMRA
Local control point name . . . . . : RALYAS4B
Default local location . . . . . : RALYAS4B
Default mode . . . . . : MODS361
Maximum number of conversations for a remote
location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . :

                                More...

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 161. Display Network Attributes Screen

Notice we have defined the local control point name, local network ID, default location name and APPN node type. You can change these parameters by the CHGNETA command or by taking option 2 from the Network menu.

```

                                Display Network Attributes
                                System:  RALYAS4B
Alert status . . . . . : *UNATTEND
Alert primary focal point . . . . . : *NO
Alert default focal point . . . . . : *NO
Alert logging status . . . . . : *ALL
Alert controller description . . . . . : L31CTLTR
Message queue . . . . . : QSYSOPR
Library . . . . . : QSYS
Output queue . . . . . : QPRINT
Library . . . . . : QGPL
Job action . . . . . : *FILE
Maximum hop count . . . . . : 16
DDM request access . . . . . : *OBJAUT
PC Support request access . . . . . : *OBJAUT

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 162. Display Network Attributes Screen (continued)

L31CTLTR is the alert controller description which can be used to send up alerts coming from this APPN network to NetView. For more information on alerts see *Management of AS/400 in SNA Subarea Network using Network Products*.

5.11.2 Create Line Description

The first step in defining AS/400B to a S/370 subarea network is to create the line description. You can do this by either following the screens documented or by using the CL command CRTLINTRN.

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4B
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    90. Sign off

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 163. AS/400 Main Menu Screen

Select option 6 in Figure 163 to go to the Communications screen.

```
CMN                               Communications                               System:  RALYAS4B
Select one of the following:
    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs
    70. Related commands

Selection or command
===> 4

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 164. Communications Screen

Select option 4 in Figure 164 to configure communications.

```

CFGCMN          Configure Communications and Remote Hardware
                                           System:  RALYAS4B
Select one of the following:

  1. Lines
  2. Communications controllers
  3. Work station controllers
  4. Communications devices
  5. Printers
  6. Display stations
  7. Modes
  8. Classes-of-service
  9. Configure address and location lists

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 165. Configure Communications and Remote Hardware Screen

Select option 1 in Figure 165 to define your line description.

```

                                Work with Line Descriptions
                                           System:  RALYAS4B
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Line      Type      Text

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 166. Work with Line Descriptions Screen

Select option F6 to create the line description in Figure 166.

```

                                Create Line Description

Type choices, press Enter.

New line description  l31tr      Name

Line type . . . . . *trlan      *ASYNC=Asynchronous communications
                                *BSC=Binary synchronous communications
                                *SDLC=Synchronous data link control
                                *TDLC=Twinaxial data link control
                                *TRLAN=Token-Ring local area network
                                *X25=X.25 communications network

F3=Exit  F12=Previous

```

Figure 167. Create Line Description Screen

The line type we are using is *TRLAN.

```

CRTLINTRN          Create Line Desc (Token-Ring)

Type choices, press Enter.

Line description . . . . . > L31TR          Name
Resource name . . . . . lin031            Name
Online at IPL . . . . . *YES              *YES, *NO
Vary on wait . . . . . *NOWAIT            *NOWAIT, 15-180 (1 second)
Maximum controllers . . . . . 40          1-256
Maximum frame size . . . . . 1994        265, 521, 1033, 1994
Local adapter address . . . . . 400010020002 400000000000-7FFFFFFF...
Exchange identifier . . . . . *SYSGEN      05600000-056FFFFF, *SYSGEN
SSAP list:
  Source Service Access Point . . *SYSGEN  *SYSGEN, 04, 08, 0C, 10...
    + for more values
Text 'description' . . . . . Token-Ring Line Description to SA 24
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 168. Create Line Description (TRLAN) Screen

The resource name is the name of the physical communications port on the AS/400. It can be found by executing the command WRKHDWPRD and taking the option to work with your rack configuration.

The local token-ring adapter address of the AS/400B is 400010020002.

The exchange identifier parameter is not needed because we use the CPNAME for remote system identification.

Press Enter to create your line description to the host. It will return you to the Work with Line Descriptions screen.

5.11.3 Create Host Controller Description

Now you must create a host controller description which describes the S/370 host you are connecting to. Again, you can follow the screens or enter the CL command CRTCTLHOST.

```
CFGCMN          Configure Communications and Remote Hardware
                                     System:  RALYAS4B
Select one of the following:

  1. Lines
  2. Communications controllers
  3. Work station controllers
  4. Communications devices
  5. Printers
  6. Display stations
  7. Modes
  8. Classes-of-service
  9. Configure address and location lists

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 169. Configure Communications and Remote Hardware Screen

Select option 2 in Figure 169 to configure your host controller.

```
Work with Controller Descriptions
                                     System:  RALYAS4B
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Controller  Type  Text
    QESCTL      *HOST
    QTICTL      *HOST

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 170. Work with Controller Descriptions Screen

Select F6 to create your host controller description.

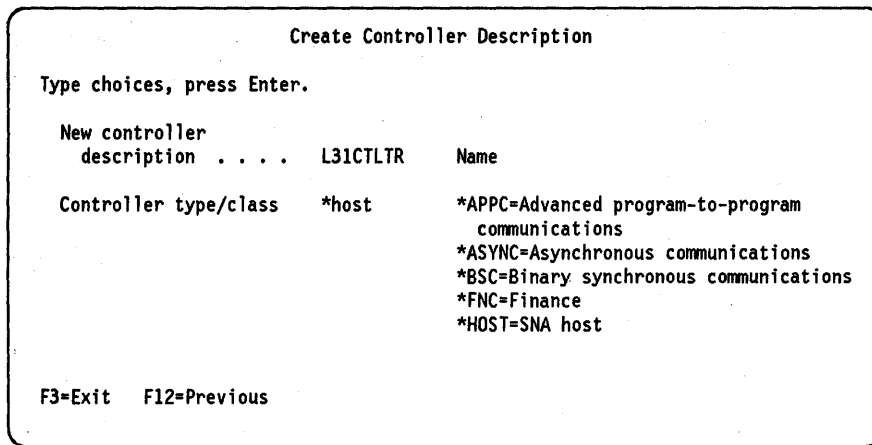


Figure 171. Create Controller Description Screen

We will be defining *HOST as our controller type as we will be communicating to a SNA host and will have the support of dependent and independent LUs.

You can also define the controller type as *APPC to describe the attributes of the host but then it will only support independent LUs.

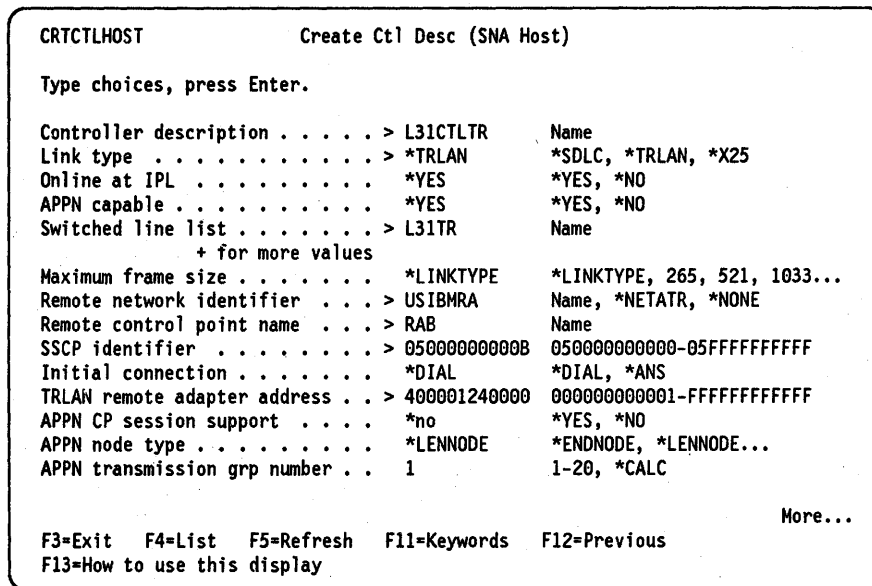


Figure 172. Create Controller Description (SNA Host) Screen

In Figure 172 we will be defining "APPN capable" as *YES. The device descriptions for independent LUs will be automatically created, varied on and attached to the right controller using the information defined in the network attributes, the associated mode description, the location list and the application program. It also means that the local system will appear as an End Node or Network Node to the adjacent system.

We will use the line just created and defined in the switched line list.

The remote network identifier and remote control point name must match those defined in the VTAM startup list. Remember that the S/370 subarea does not

support CP-to-CP sessions so you must define "APPN CP session support" to *NO.

The token-ring adapter address of the host controller is 400001240000.

A S/370 host is defined as a *LENNODE in an APPN network.

Press Enter to create your host controller description.

5.11.4 Configure Local and Remote Location Lists

If we define our host controller with APPN(*YES) then we do not have to manually create device descriptions for your independent LUs. This also applies to the device descriptions for the remote locations behind a S/370 subarea network which are defined in the APPN remote location list. The AS/400 will automatically create the device description, vary it on and attach it to the correct controller in the following situations:

- When a session is requested and the route chosen and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name attached.
- When a BIND is received for a local location and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name.

AS/400 APPN usually doesn't require remote locations to be defined as this information is dynamically added to the directory database through the searches when the AS/400 has CP-to-CP session support. However, when the AS/400 is connected to a Low Entry Network node (for example an S/370) entries need to be added in the remote location list for each LU with which we want to have sessions within the host or behind it. This information can't be obtained dynamically because the S/370 host doesn't support CP-CP sessions.

We don't have to create an entry for the PS/2 in the APPN remote location list because there is no session request from the AS/400B to the PS/2. The PS/2 with AS/400 PC Support can only request sessions with AS/400 PC Support on any AS/400 in the network.

A location entry must be defined in the local location list of the AS/400 to determine that the location with which the PS/2 wants to have sessions resides on this AS/400. The following screens will guide you through the creation of the APPN local location list.

```
CFGCMN          Configure Communications and Remote Hardware
                                     System:  RALYAS4B
Select one of the following:

    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
===> 9

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
```

Figure 173. Configure Communications and Remote Hardware Screen

Select option 9 to define APPN location lists.

The local location list defines the locations that are defined on the AS/400B. The following screens will add AS4B to the list.

```
CFGLST          Configure Address and Location Lists
                                     System:  RALYAS4B
Select one of the following:

    1. Asynchronous PAD network address lists
    2. Asynchronous remote location list
    3. APPN local location list
    4. APPN remote location list

Selection or command
===> 3

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 174. Configure Address and Location Lists Screen

Select option 3 in Figure 174 to define an APPN local location list.

```

Work with Configuration Lists
System: RALYAS4B
Position to . . . . . Starting character(s)
Type options, press Enter.
  2=Change  4=Delete  5=Display  6=Print
Opt List    Type      Text
  2  QAPPNLCL  *APPNLCL
Bottom
Parameters for option 2 or command
====>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 175. Work with Configuration Lists Screen

Select option 2 in Figure 175 to change the QAPPNLCL local list to add AS4B.

```

Define APPN Local Locations
Type new/changed information, press Enter.
Local
Location Entry          Local
Name      Description   Name      Description
AS4B      Local LU for TR
More...
F3=Exit  F12=Previous  F17=Top of list  F18=Bottom of list

```

Figure 176. Define APPN Local Locations Screen

Enter the local location name and its description. We will use AS4B which must match the LU name which is defined in the NCP LU macro for the AS/400B.

5.11.5 Create Mode Description

The mode description describes the session characteristics and number of sessions that will be used to negotiate the allowable values between the local and remote locations. A mode with the same name must exist at both end points. There must also be a mode entry with the same name in VTAM/NCP.

This mode description, QPCSUPP, is created automatically when AS/400 PC Support is installed on your AS/400 and must be used with AS/400 PC Support.

In Figure 177 on page 144 the mode characteristics of QPCSUPP are shown.

Display Mode Description		
Mode description name	MODD	QPCSUPP
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	0
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	2048
Text	TEXT	AS/400 PC Support mode entry

Press Enter to continue.

F3=Exit F12=Previous

Figure 177. Display Mode Descriptions Screen

The parameters defined here must match those defined on the remote location.

5.12 Relationship between AS/400B and VTAM/NCP for a Token-Ring Line

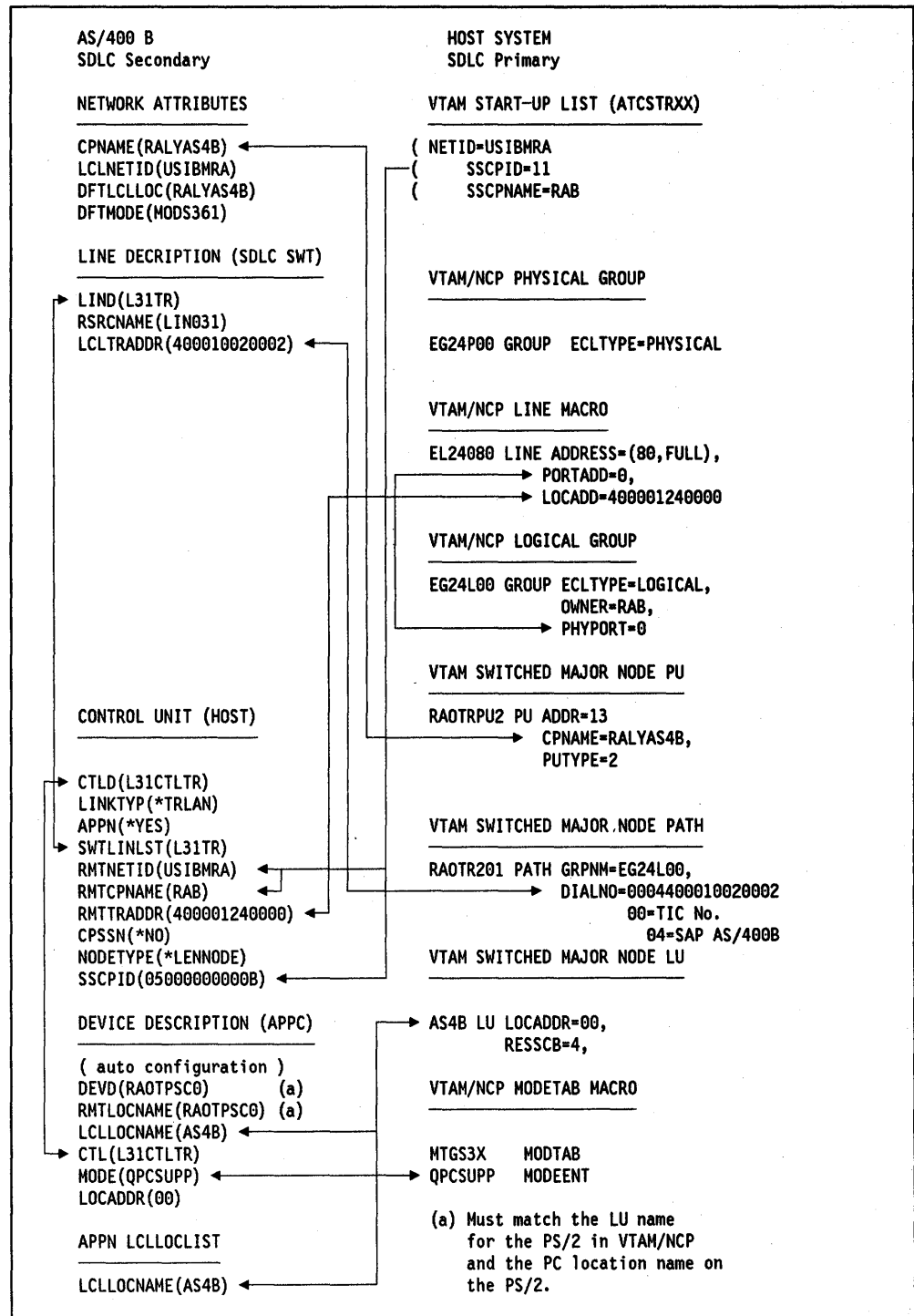


Figure 178. Defining a Switched Link between AS/400 and VTAM/NCP

5.13 Section 2: Additional Definitions Required on the PS/2 (RAOTPC0)

In order to configure AS/400B into the existing definitions on the PS/2 we need to do the following:

- Modify the CONFIG.PCS file on the PS/2
- Modify the STARTPCS.BAT file on the PS/2.

5.13.1 Modify the CONFIG.PCS File on the PS/2

This file is the PC Support configuration file on the PS/2. To add in the AS/400B we need to add the ADRS identifier to the CONFIG.PCS file.

```
RTYP SDLC
RTLN USIBMRA.RAOTPC0
SDLI RAOTNNB0,C5,RUSSELL
RTDN RAOTNNB0
SDLT MP
RTCU RUSSELL
SDDE YES
SDMR FULL
SDF HALF
ADRS AS4B,RAOTNNB0
```

Figure 179. Tailored CONFIG.PCS File for the PS/2 SDLC Link

In Figure 179 the ADRS identifier was added. This identifier specifies the location name of AS4B and the link name of RAOTNNB0. AS4B must match the local location name defined on AS/400B and the LU name defined in VTAM/NCP for AS/400B. RAOTNNB0 must match the name in the link identifier SDLI.

5.13.2 Modify the STARTPCS.BAT File on the PS/2

The contents of this file will depend on how you want the sessions to be setup on your PS/2. For example, the number drive you want to specify and to what system, the number of workstation emulation sessions and to what system. We only changed the STARTPCS.BAT to reflect the additional assigning of folder QIWSFLR from AS4B on drive E, to run the PC Support code from drive C and to include the WSF profile WSF.DAT which we customized to have a screen session to AS/400A and a screen session to AS/400B. For more information on customizing this file you can refer to *PC Support Operations Reference Manual*.

The following screen displays the modified **STARTPCS.BAT** file for section 2.

<pre>C: \PCS\STARTRTR C: PCS\CONFIG.PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start SDLC Router
<pre>ECHO ON C: \PCS\FSPC ASSIGN I: QIWSFLR \\RAOTNNB0 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Assign drive I to AS/400 A folder QIWSFLR
<pre>ECHO ON C: \PCS\FSPC ASSIGN E: QIWSFLR \\AS4B ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Assign drive E to AS/400 B folder QIWSFLR
<pre>ECHO ON C: \PCS\PCSUPDT I: \ C: \PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Run PC Support Update Function
<pre>ECHO ON C: \PCS\STARTMSG C: \PCS\CONFIG.PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Message Function
<pre>ECHO ON C: \PCS\VPRT ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Virtual Print Function
<pre>ECHO ON C: \PCS\WSF C: \PCS\WSF.DAT ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Workstation Function with profile WSF.DAT.
<pre>ECHO ON C: \PCS\STARTWSF 1 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	WSF Session to AS/400 A
<pre>ECHO ON C: \PCS\STARTWSF 2 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	WSF Session to AS/400 B
<pre>ECHO ON C: \PCS\PCO C: \PCS\CONFIG.PCS ECHO OFF : EXIT ECHO ON</pre>	Start AS/400 PC Support Organizer

Figure 180. STARTPCS.BAT File

5.14 Section 2: Definitions Required on the S/370 Host

5.14.1 VTAM Switched Major Node Definitions for the AS/400B

```
*****
*
*   VTAM SWITCHED MAJOR NODE FOR AS/400B
*
*****
SWRAOTR VBUILD TYPE=SWNET,          REQUIRED          * X
                MAXNO=12,          REQUIRED          * X
                MAXGRP=5
**
RAOTRPU2 PU   ADDR=13,              COULD BE ANYTHING (NOT USED) * X
              CPNAME=RALYAS4B,      AS/400 B                X
              DISCNT=NO,             * X
              ISTATUS=ACTIVE,        X
              MAXOUT=1,              * X
              MAXPATH=4,             * X
              PUTYPE=2,              * X
              SAPADDR=4,             * X
              SSCPFM=USSSCS,         * X
              MODETAB=MTGS3X,        * X
              DLOGMOD=QPCSUPP,       * X
              VPACING=0
**
RAOTR201 PATH GRPNM=EG24L00,         * X
              DIALNO=0004400010020001, AS400/B TR ADDRESS * X
              GID=1,                 * X
              PID=1,                  X
              USE=YES
**
AS4B   LU   LOCADDR=0,              FOR THE AS/400B          * X
              RESSCB=4
**
```

Figure 181. VTAM Switched Major Node Definition for AS/400B

Figure 181 describes the VTAM Switched Major Node definition for the token-ring attachment of AS/400B to the S/370. The PU macro specifies RALYAS4B as the CPNAME for AS/400B. This must match the CP name of AS/400B as defined in the network attributes on the AS/400B.

5.14.2 NCP Definitions for AS/400B

```

***** 03211000
NCP OPT OPTIONS NEWDEFN=(YES,ECHO),USERGEN=(FNMNDFGN) 00001008
***** 00008008
* DYNAMIC RECONFIGURATION POOL SPACE * 02060008
***** 02070008
* 02080008
DRPOOLPU PUDRPOOL NUMBER=25 CAN ADD 25 PUS 02090008
* 02110008
DRPOOLLU LUDRPOOL NUMILU=32, RESERVE 32 ILUS X02120008
NUMTYP1=10, RESERVE 10 LUS ON PU.T1 PUS X02130008
NUMTYP2=200 RESERVE 200 LUS ON PU.T2 PUS 02140008
"
***** 03211000
* PHYSICAL GROUP FOR NTRI TIC 1 * 37352800
***** 03211000
EG24P00 GROUP ECLTYPE=PHYSICAL 37351400
* 37351600
EL24080 LINE ADDRESS=(80,FULL),PORTADD=0,LOCADD=400001240000, X37351700
RCVBUFC=4095, X37351800
MAXTSL=1108 37351900
* 37352100
EP24080 PU 37352200
* 37352400
EU24080 LU ISTATUS=INACTIVE 37352500
***** 37352700
* PHYSICAL GROUP FOR NTRI TIC 2 * 37352800
***** 37352900
EG24P01 GROUP ECLTYPE=PHYSICAL 37353000
* STATOPT='NTRI TIC2' 37353100
EL24081 LINE ADDRESS=(81,FULL),PORTADD=1,LOCADD=400001240001, X37353300
RCVBUFC=4095, X37353400
MAXTSL=1108 37353500
EP24081 PU 37353800
* 37354000
EU24081 LU ISTATUS=INACTIVE 37354100
***** 37354200
* LOGICAL GROUP FOR NTRI TIC 1 * 37354300
***** 37354400
EG24L00 GROUP ECLTYPE=LOGICAL, X37354700
AUTOGEN=13, X37354800
CALL=INOUT, X37354900
OWNER=RAB, X37355000
PHYPORT=0 37355100
***** 37355300
* LOGICAL GROUP FOR NTRI TIC 2 * 37355400
***** 37355500
EG24L01 GROUP ECLTYPE=LOGICAL, X37355600
AUTOGEN=12, X37355700
CALL=INOUT, X37355800
PHYPORT=1 37356000
"

```

Figure 182. NCP Definitions for the Token-Ring Connection of AS/400B

5.15 Activate Communications on the AS/400B

This section will describe how to activate AS/400B to the S/370 subarea network. The PS/2 can request a session when the AS/400 line and controller description has been activated.

To activate communications on AS/400B, the line, controller and devices have to be varied on. The following screens will guide you through this exercise.

You can also go directly to the Work with Configuration Status screen by using the WRKCFGSTS command.

```
MAIN                               AS/400 Main Screen                               System:  RALYAS4B
Select one of the following:

  1. User tasks
  2. Office tasks
  3. General system tasks
  4. Files, libraries, and folders
  5. Programming
  6. Communications
  7. Define or change the system
  8. Problem handling
  9. Display a menu

 90. Sign off*

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 183. AS/400 Main Screen

Select option 6 in Figure 183 to go to the communications screen.

```
CMN                               Communications                               System:  RALYAS4B
Select one of the following:

  1. Communication status
  2. Messages
  3. Remote jobs
  4. Configure communications
  5. Network management
  6. Network configuration
  7. Verify communications
  8. Send or receive files
  9. Jobs

 70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 184. Communications Screen

Select option 1 in Figure 184 for the communications status.

```

CMNSTS                      Communications Status                      System:  RALYAS4B
Select one of the following:

    1. Work with line status
    2. Work with controller status
    3. Work with device status

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 185. Communications Status Screen

Select option 1 in Figure 185 to work with line status.

```

WRKCFGSTS                    Work with Configuration Status
Type choices, press Enter.

Type . . . . . ▶ *LIN          *LIN, *CTL, *DEV
Configuration description . . . ▶ l31tr      Name, generic*, *ALL , *CMN...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 186. Work with Communications Status Screen

Type the line description name in Figure 186 to work with line status.

```

Work with Configuration Status                      System:  RALYAS4B
Position to . . . . . Starting character(s)

Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device      7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1  L31TR          VARIED OFF

More...

Parameters for options 1, 2, 3 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 187. Work with Communications Status Screen

Type option 1 to vary on the line in Figure 187.

```

CMNSTS                      Communications Status                      System:  RALYAS4B
Select one of the following:

    1. Work with line status
    2. Work with controller status
    3. Work with device status

    70. Related commands

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 188. Communications Status Screen

Select option 2 in Figure 188 to work with controller status.

```

Work with Configuration Status                      System:  RALYAS4B
Position to . . . . . Starting character(s)

Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1  L31CTLTR  VARIED OFF

Parameters for options 1, 2, 3 or command
===>

F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 189. Work with Communications Status Screen

```

Work with Configuration Status                      System:  RALYAS4B
Position to . . . . . Starting character(s)

Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
  L31TR  ACTIVE
  L31CTLTR  VARIED ON

Parameters for options 1, 2, 3 or command
===>

F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 190. Work with Communications Status Screen

If you select F5 to refresh the screen in Figure 187 on page 151 the token-ring line is ACTIVE and the controller is VARIED ON. The refreshed screen is shown in Figure 190.

5.16 Activating Communications on the S/370 Host for AS/400B

```
NCCF      N E T V I E W                RABAN WTCR21  06/07/89 09:23:42
* RABAN   V NET,ACT,ID=SWRAOTR        ←-----
RABAN     IST097I VARY      ACCEPTED
RABAN     IST093I SWRAOTR  ACTIVE
C RABAN   ►AOPNLIST SWRAOTR NONE
RABAN     IST097I DISPLAY  ACCEPTED
```

Figure 191. Activate Switched Major Node for AS/400B

AS/400B is a T2.1 node connected to the S/370 host via a token-ring. Therefore, we need to activate the switched major node for the token-ring. To do this we issue the VTAM command "V NET,ACT,ID=SWTAOTR" as shown in Figure 191.

```
NCCF      N E T V I E W                RABAN WTCR21  06/07/89 09:24:07
C RABAN   DISPLAY NET,ID=SWRAOTR,SCOPE=ALL
RABAN     IST097I DISPLAY  ACCEPTED
RABAN
IST075I   NAME = SWRAOTR                , TYPE = SW SNA MAJ NODE
IST486I   STATUS= ACTIV                  , DESIRED STATE= ACTIV
IST084I   NETWORK NODES:
IST089I   RAOTRPU1 TYPE = PHYSICAL UNIT , CONCT
IST089I   RAOTRPS0 TYPE = LOGICAL UNIT  , CONCT
IST089I   RAOTRPU2 TYPE = PHYSICAL UNIT , ACTIV
IST089I   AS4B   TYPE = LOGICAL UNIT    , ACT/S
```

Figure 192. Display Switched Major Node for AS/400B

Figure 192 displays the status of switched major node.

```
NCCF      N E T V I E W                RABAN WTCR21  06/07/89 09:24:48
C RABAN   DISPLAY NET,ID=RAOTRPU2,SCOPE=ALL
RABAN     IST097I DISPLAY  ACCEPTED
RABAN
IST075I   NAME = RAOTRPU2                , TYPE = PU_T2.1 ←-----
IST486I   STATUS= ACTIV                  , DESIRED STATE= ACTIV
IST136I   SWITCHED SNA MAJOR NODE = SWRAOTR
IST081I   LINE NAME = J0000019, LINE GROUP = EG24L00 , MAJNOD = RAONCP1
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I   LOGICAL UNITS:
IST080I   AS4B   ACT/S
IST314I   END
```

Figure 193. Display PU for AS/400B

Figure 193 displays the status of the PU for AS/400B. Notice that the PU is seen as a T2.1 after activation.

```

NCCF          N E T V I E W          RABAN WTCR21  06/07/89 09:26:03
C RABAN      DISPLAY NET, ID=AS4B, SCOPE=ALL
RABAN       IST097I DISPLAY ACCEPTED
' RABAN
IST075I NAME = AS4B          , TYPE = LOGICAL UNIT
IST486I STATUS= ACT/S      , DESIRED STATE= ACTIV
IST861I MODETAB=MTGS3X    USSTAB=***NA*** LOGTAB=***NA***
IST934I DLOGMOD=QPCSUPP
IST597I CAPABILITY-PLU ENABLED ,SLU ENABLED ,SESSION LIMIT NONE
IST135I PHYSICAL UNIT = RAOTRPU2
IST136I SWITCHED SNA MAJOR NODE = SWRAOTR
IST082I DEVTYPE = INDEPENDENT LU ←-----
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I ACTIVE SESSIONS = 0000000001, SESSION REQUESTS = 0000000000
IST206I SESSIONS:
IST634I NAME STATUS SID SEND RECVR TP NETID
IST635I RAOTPSC0 ACTIV-P CF0384B97D20BF9F 0 0 USIBMRA
IST314I END

```

Figure 194. Display LU for AS/400B

Figure 194 displays the status of the LU for AS/400B. Notice the new device type of "Independent LU".

If you look at IST635I you will see that this AS/400 LU has an active session with the PS/2 (RAOTPSC0).

```

NCCF          N E T V I E W          RABAN WTCR21  06/07/89 09:30:33
C RABAN      DISPLAY NET, ID=RAOTPSC0, SCOPE=ALL
RABAN       IST097I DISPLAY ACCEPTED
' RABAN
IST075I NAME = RAOTPSC0     , TYPE = LOGICAL UNIT
IST486I STATUS= ACT/S      , DESIRED STATE= ACTIV
IST861I MODETAB=MTGS3X    USSTAB=***NA*** LOGTAB=***NA***
IST934I DLOGMOD=MODS361
IST597I CAPABILITY-PLU ENABLED ,SLU ENABLED ,SESSION LIMIT NONE
IST081I LINE NAME = RA0L0020, LINE GROUP = RA0GSFL0, MAJNOD = RAONCP1
IST135I PHYSICAL UNIT = RAOP5C
IST082I DEVTYPE = INDEPENDENT LU
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I ACTIVE SESSIONS = 0000000005, SESSION REQUESTS = 0000000000
IST206I SESSIONS:
IST634I NAME STATUS SID SEND RECVR TP NETID
IST635I RAOTNNB0 ACTIV-S CF0384B97D20BF9A 0 0 USIBMRA
IST635I AS4B ACTIV-S CF0384B97D20BF9F 0 0 USIBMRA
IST635I RAOTNNB0 ACTIV-S CF0384B97D20BF87 0 0 USIBMRA
IST635I RAOTNNB0 ACTIV-S CF0384B97D20BF88 0 0 USIBMRA
IST635I RAOTNNB0 ACTIV-S CF0384B97D20BFDA 0 0 USIBMRA
IST314I END

```

Figure 195. Display LU for PS/2

Figure 195 displays the status of the LU for PS/2. Notice the new device type of "Independent LU".

If you look at IST635I you will see that this PS/2 LU has an active session with AS/400B (AS4B).

6.0 Scenario 3: PS/2 (DOS3.3) -- S/370 -- AS/400A -- AS/400B

6.1 Environment Tested

In this chapter we will describe the definitions required to connect the AS/400B to the AS/400A via a token-ring and and secondly how the PS/2 with AS/400 PC Support can establish sessions with both AS/400A and AS/400B which are situated behind the S/370 subarea network.

This scenario is an extension to scenario 2 because all we have done is take AS/400B from the host and attach it to AS/400A.

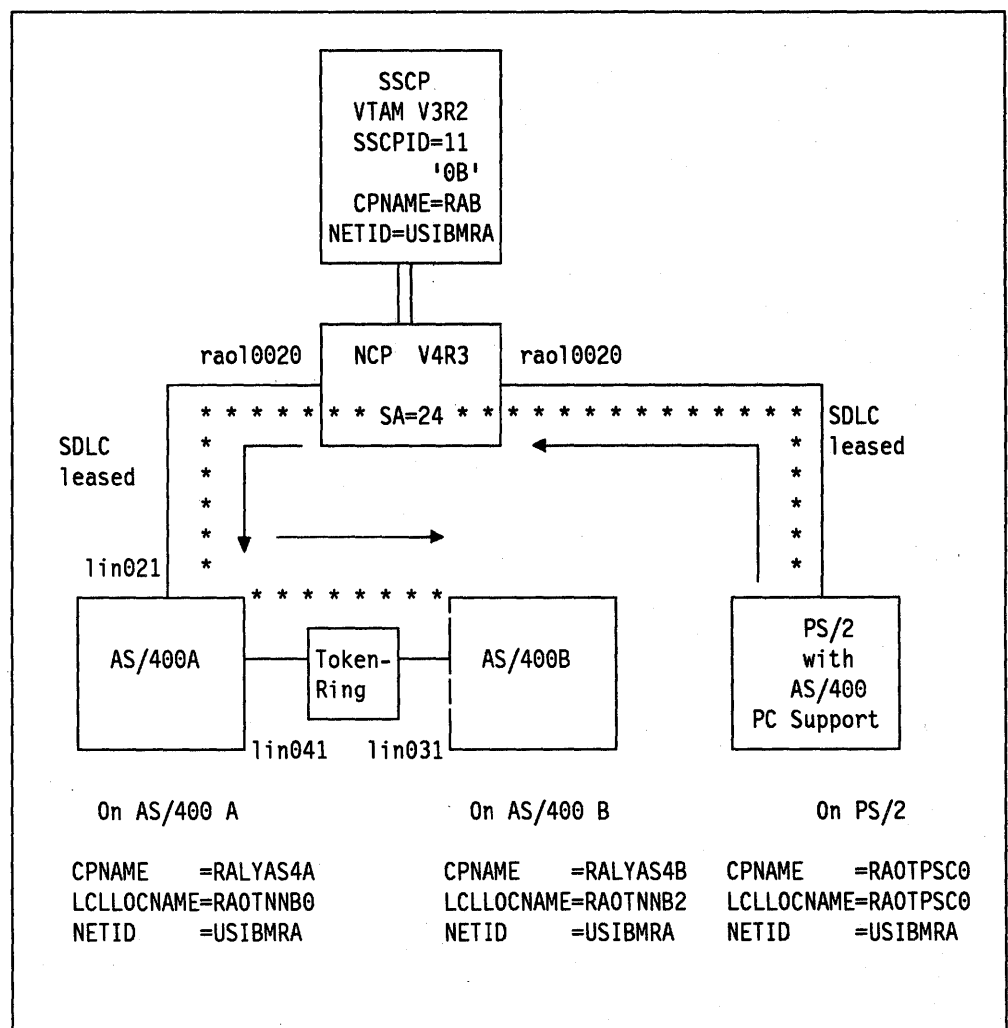


Figure 196. Scenario 3

6.2 Definitions on AS/400A (RALYAS4A) for AS/400B (RALYAS4B)

When you are going to connect AS/400A as an APPN network node to AS/400B via a token-ring you are required to perform the following steps:

- Check the network attributes
- Create a line description from the AS/400A to AS/400B
- Create an APPC controller description for AS/400B
- Configure APPN remote and local location lists
- Create a mode entry.

6.2.1 Network Attributes

The network attributes contains the AS/400's local system values for APPN. You can display these attributes by using the DSPNETA command or by going to menu "NETWORK".

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    90. Sign off
Selection or command
==> dspneta
F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 197. AS/400 Main Menu Screen

Type DSPNETA to display the network attributes.

```

                                Display Network Attributes
                                System:  RALYAS4A
Current system name . . . . . : RALYAS4A
  Pending system name . . . . . :
Local network ID . . . . . : USIBMRA
Local control point name . . . . . : RALYAS4A
Default local location . . . . . : RALYAS4A
Default mode . . . . . : MODS361
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . :

More...

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 198. Display Network Attributes Screen

Notice we have defined the local control point name, local network ID, default location name and APPN node type. You can change these parameters by the CHGNETA command or by taking option 2 from the Network menu.

```

                                Display Network Attributes
                                System:  RALYAS4A
Alert status . . . . . : *UNATTEND
Alert primary focal point . . . . . : *NO
Alert default focal point . . . . . : *NO
Alert logging status . . . . . : *ALL
Alert controller description . . . . . : P24020D
Message queue . . . . . : QSYSOPR
  Library . . . . . : QSYS
Output queue . . . . . : QPRINT
  Library . . . . . : QGPL
Job action . . . . . : *FILE
Maximum hop count . . . . . : 16
DDM request access . . . . . : *OBJAUT
PC Support request access . . . . . : *OBJAUT

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 199. Display Network Attributes Screen (continued)

P24020D is the alert controller description which can be used to send up alerts coming from this APPN network to NetView. For more information on alerts see *Management of AS/400 in SNA Subarea Network using Network Products*.

6.2.2 Create Line Description

The first step in defining AS/400A to AS/400B is to create the line description. You can do this by either following the screens documented or by using the CL command CRTLINTRN.

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu

    90. Sign off

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 200. AS/400 Main Menu Screen

Select option 6 in Figure 200 to go to the Communications screen.

```
CMN                               Communications                               System:  RALYAS4A

Select one of the following:

    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs

    70. Related commands

Selection or command
===> 4

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 201. Communications Screen

Select option 4 in Figure 201 to configure communications.

```

CFGCMN          Configure Communications and Remote Hardware
                                           System:  RALYAS4A
Select one of the following:

    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
                                           (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 202. Configure Communications and Remote Hardware Screen

Select option 1 in Figure 202 to define your line description.

```

                                Work with Line Descriptions
                                           System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
    2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Line      Type  Text
-----
Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
                                           (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 203. Work with Line Descriptions Screen

Select option F6 in Figure 203 to create the line description.

```

                                Create Line Description
Type choices, press Enter.

New line description  L41TR      Name
Line type . . . . . *TRLAN    *ASYNC=Asynchronous communications
                                           *BSC=Binary synchronous communications
                                           *SDLC=Synchronous data link control
                                           *TDLC=Twinaxial data link control
                                           *TRLAN=Token-Ring local area network
                                           *X25=X.25 communications network

F3=Exit  F12=Previous

```

Figure 204. Create Line Description Screen

The line type we are using is *TRLAN.

```

CRTLINTRN          Create Line Desc (Token-Ring)

Type choices, press Enter.

Line description . . . . . ▶ L41TR          Name
Resource name . . . . . tin041           Name
Online at IPL . . . . . *YES             *YES, *NO
Vary on wait . . . . . *NOWAIT          *NOWAIT, 15-180 (1 second)
Maximum controllers . . . . . 40         1-256
Maximum frame size . . . . . 1994       265, 521, 1033, 1994
Local adapter address . . . . . 400010020001 400000000000-7FFFFFFF...
Exchange identifier . . . . . *SYSGEN    05600000-056FFFFF, *SYSGEN
SSAP list:
  Source Service Access Point . . *SYSGEN  *SYSGEN, 04, 08, 0C, 10...
    + for more values
Text 'description' . . . . . Token-Ring Line Description to AS/400B
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 205. Create Line Description (TRLAN) Screen

The resource name is the name of the physical communications port on the AS/400. It can be found by executing the command WRKHDWPRD and taking the option to work with your rack configuration.

The local token-ring adapter address of AS/400A is 400010020001.

The exchange identifier parameter is not needed because we use the CPNAME for remote system identification.

Press Enter to create your line description to AS/400B. It will return you to the Work with Line Descriptions screen.

6.2.3 Create APPC Controller Description

Now you must create an APPC controller description which describes AS/400B you are connecting to. Again, you can follow the screens or enter the CL command CRTCTLAPPC.

```
CFGCMN          Configure Communications and Remote Hardware
                                     System:  RALYAS4A
Select one of the following:

1. Lines
2. Communications controllers
3. Work station controllers
4. Communications devices
5. Printers
6. Display stations
7. Modes
8. Classes-of-service
9. Configure address and location lists

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
                                     (C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 206. Configure Communications and Remote Hardware Screen

Select option 2 in Figure 206 to configure your APPC controller.

```
                                Work with Controller Descriptions
                                     System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Controller  Type  Text
    QESCTL      *HOST
    QTICTL      *HOST

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
                                     (C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 207. Work with Controller Descriptions Screen

Select F6 to create your APPC controller description.

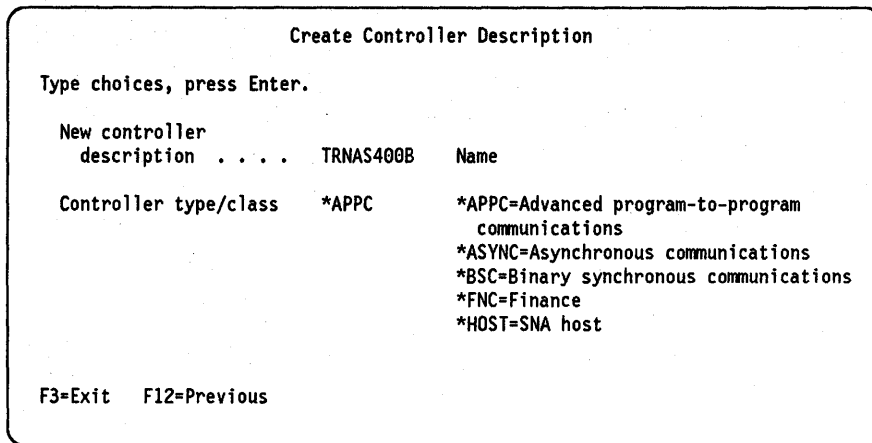


Figure 208. Create Controller Description Screen

We will be defining *APPC as our controller type as we will be communicating to AS/400B.

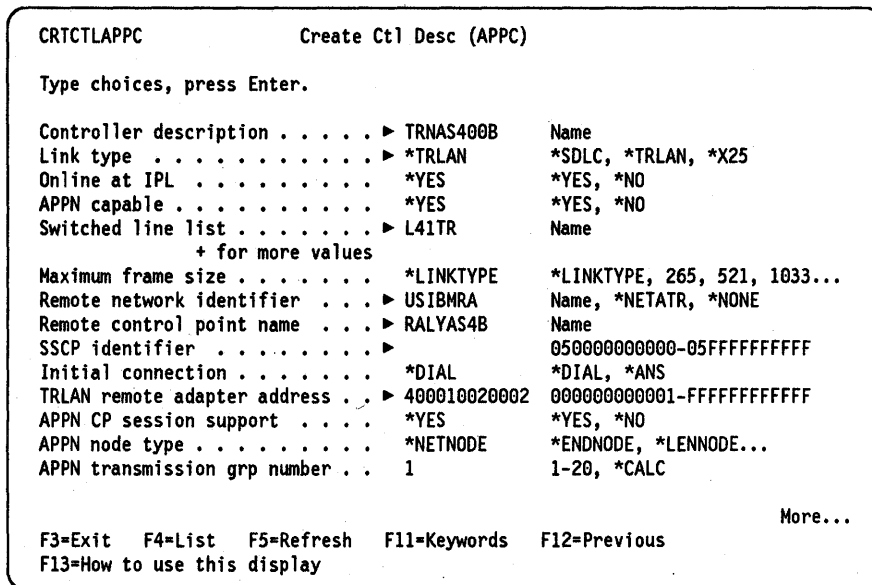


Figure 209. Create Controller Description (APPC) Screen

In Figure 209 we will be defining "APPN capable" as *YES. The APPC device descriptions will be automatically created, varied on and attached to the right controller using the information defined in the network attributes, the associated mode description, the location list and the application program. It also means that the local system will appear as an End Node or Network Node to the adjacent system.

We will use the switched line list name to the token-ring name we have just created.

Because we are defining APPC communications between two AS/400's, we select to have CP-CP session support. The AS/400B can be an End Node or Network Node. We will be able to use all functions of APPN, for example, intermediate session routing and directory services.

The token-ring adapter address of AS/400B is 400010020002.

Press Enter to create your APPC controller description.

6.2.4 Configure APPN Remote and Local Location List

Since we defined our APPC controller with APPN(*YES) the device descriptions will be automatically created. After the automatic creation of the devices the AS/400 will vary them on and attach them to the correct controller in the following situations:

- When a session is requested and the route chosen and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name defined.
- When a BIND is received for a local location and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name defined.

AS/400A, in this scenario, doesn't require the remote location of AS/400B to be defined as this information is dynamically acquired through the network. It does this by means of a "broadcast" search or a "directed" search across the CP-CP session.

6.2.5 Create Mode Description

The mode description describes the session characteristics and number of sessions that will be used to negotiate the allowable values between the local and remote locations. A mode with the same name must exist at both end points. There must also be a mode entry with the same name in VTAM/NCP.

This mode description QPCSUPP is created automatically when AS/400 PC Support is installed on AS/400B.

In Figure 210 the mode characteristics of QPCSUPP are shown.

Display Mode Description		
Mode description name	MODD	QPCSUPP
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	0
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	2048
Text	TEXT	AS/400 PC Support mode entry

Press Enter to continue.

F3=Exit F12=Previous

Figure 210. Display Mode Descriptions Screen

The parameters defined here must match those defined on the remote location.

6.3 Definitions on AS/400A (RALYAS4A) for the S/370 Host

When you are going to connect AS/400A as an APPN node to an S/370 subarea to support independent LUs you are required to perform the following:

- Check the network attributes
- Create a line description from AS/400A to VTAM/NCP
- Create an APPC controller description for the host
- Configure APPN remote and local location lists
- Create a mode entry.

We have already defined the definitions required to connect AS/400A to the host. You can find this information in 5.0, "Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host" on page 99.

6.4 Definitions on AS/400B (RALYAS4B) for AS/400A (RALYAS4A)

When you are going to connect AS/400B as an APPN network node to AS/400A you are required to perform the following steps:

- Check the network attributes
- Create a line description from AS/400B to AS/400A
- Create an APPC controller description for AS/400A
- Configure APPN remote and local location lists
- Create a mode entry

6.4.1 Network Attributes

The network attributes contains the AS/400's local system values for APPN. You can display these attributes by using the DSPNETA command or by going to menu "NETWORK".

```

MAIN                               AS/400 Main Menu                               System:  RALYAS4B
Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu

    90. Sign off

Selection or command
==> dspneta

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 211. AS/400 Main Menu Screen

Type DSPNETA to display the network attributes.

```

Display Network Attributes                               System:  RALYAS4B
Current system name . . . . . : RALYAS4B
Pending system name . . . . . :
Local network ID . . . . . : USIBMRA
Local control point name . . . . . : RALYAS4B
Default local location . . . . . : RALYAS4B
Default mode . . . . . : MODS361
Maximum number of conversations for a remote
location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . :
More...

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 212. Display Network Attributes Screen

Notice we have defined the local control point name, local network ID, default location name and APPN node type. You can change these parameters by the CHGNETA command or by taking option 2 from the Network menu.

```
Display Network Attributes
System: RALYAS4B
Alert status . . . . . : *UNATTEND
Alert primary focal point . . . . . : *NO
Alert default focal point . . . . . : *NO
Alert logging status . . . . . : *ALL
Alert controller description . . . . . :
Message queue . . . . . : QSYSOPR
  Library . . . . . : QSYS
Output queue . . . . . : QPRINT
  Library . . . . . : QGPL
Job action . . . . . : *FILE
Maximum hop count . . . . . : 16
DDM request access . . . . . : *OBJAUT
PC Support request access . . . . . : *OBJAUT

Press Enter to continue.

F3=Exit  F12=Previous
```

Figure 213. Display Network Attributes Screen (continued)

6.4.2 Create Line Description

The first step in defining AS/400B to AS/400A is to create the line description. You can do this by either following the screens documented or by using the CL command CRTLINTRN.

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4B

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu

    90. Sign off

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 214. AS/400 Main Menu Screen

Select option 6 in Figure 214 to go to the Communications screen.

```
CMN                               Communications                               System:  RALYAS4B

Select one of the following:

    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs

    70. Related commands

Selection or command
===> 4

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 215. Communications Screen

Select option 4 in Figure 215 to configure communications.

```

CFGCMN          Configure Communications and Remote Hardware
                                           System:  RALYAS4B
Select one of the following:

  1. Lines
  2. Communications controllers
  3. Work station controllers
  4. Communications devices
  5. Printers
  6. Display stations
  7. Modes
  8. Classes-of-service
  9. Configure address and location lists

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
                                           (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 216. Configure Communications and Remote Hardware Screen

Select option 1 in Figure 216 to define your line description.

```

                                Work with Line Descriptions
                                           System:  RALYAS4B
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Line      Type      Text
                                           More...

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
                                           (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 217. Work with Line Descriptions Screen

Select option F6 to create the line description in Figure 217.

```

                                Create Line Description

Type choices, press Enter.

New line description  l3ltr      Name
Line type . . . . . *trlan      *ASYNC=Asynchronous communications
                                           *BSC=Binary synchronous communications
                                           *SDLC=Synchronous data link control
                                           *TDLC=Twinaxial data link control
                                           *TRLAN=Token-Ring local area network
                                           *X25=X.25 communications network

F3=Exit  F12=Previous

```

Figure 218. Create Line Description Screen

The line type we are using is *TRLAN.


```

CRTLINTRN          Create Line Desc (Token-Ring)

Type choices, press Enter.

Line description . . . . . ▶ L31TR          Name
Resource name . . . . . lin031            Name
Online at IPL . . . . . *YES              *YES, *NO
Vary on wait . . . . . *NOWAIT           *NOWAIT, 15-180 (1 second)
Maximum controllers . . . . . 40          1-256
Maximum frame size . . . . . 1994        265, 521, 1033, 1994
Local adapter address . . . . . 400010020002 400000000000-7FFFFFFF...
Exchange identifier . . . . . *SYSGEN      05600000-056FFFFF, *SYSGEN
SSAP list:
  Source Service Access Point . *SYSGEN    *SYSGEN, 04, 08, 0C, 10...
    + for more values
Text 'description' . . . . . Token-Ring Line Description to AS400A *
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 219. Create Line Description (TRLAN) Screen

The resource name is the name of the physical communications port on the AS/400. It can be found by executing the command WRKHDWPRD and taking the option to work with your rack configuration.

The local token-ring adapter address of the AS/400B is 400010020002.

The exchange identifier parameter is not needed because we use the CPNAME for remote system identification.

Press Enter to create your line description to the host. It will return you to the Work with Line Descriptions screen.

6.4.3 Create APPC Controller Description

Now you must create an APPC controller description which describes AS/400A you are connecting to. Again, you can follow the screens or enter the CL command CRTCTLAPPC.

```
CFGCHN          Configure Communications and Remote Hardware          System:  RALYAS4B
Select one of the following:
    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 220. Configure Communications and Remote Hardware Screen

Select option 2 in Figure 220 to configure your APPC controller.

```
Work with Controller Descriptions          System:  RALYAS4B
Position to . . . . .          Starting character(s)
Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Controller  Type  Text
    QESCTL      *HOST
    QTICTL      *HOST

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 221. Work with Controller Descriptions Screen

Select F6 to create your APPC controller description.

```

                                Create Controller Description

Type choices, press Enter.

New controller
description . . . . . TRNAS400A   Name

Controller type/class *APPC        *APPC=Advanced program-to-program
                                communications
                                *ASYNC=Asynchronous communications
                                *BSC=Binary synchronous communications
                                *FNC=Finance
                                *HOST=SNA host

F3=Exit  F12=Previous

```

Figure 222. Create Controller Description Screen

We will be defining *APPC as our controller type as we will be communicating to AS/400A.

```

CRTCTLAPPC          Create Ct1 Desc (APPC)

Type choices, press Enter.

Controller description . . . . . ▶ TRNAS400A   Name
Link type . . . . . ▶ *TRLAN                 *SDLC, *TRLAN, *X25
Online at IPL . . . . . *YES                 *YES, *NO
APPN capable . . . . . *YES                 *YES, *NO
Switched line list . . . . . ▶ L41TR          Name
                                + for more values
Maximum frame size . . . . . *LINKTYPE      *LINKTYPE, 265, 521, 1033...
Remote network identifier . . . ▶ USIBMRA     Name, *NETATR, *NONE
Remote control point name . . . ▶ RALYAS4A    Name
SSCP identifier . . . . . ▶                  050000000000-05FFFFFFFF
Initial connection . . . . . *DIAL           *DIAL, *ANS
TRLAN remote adapter address . . ▶ 400010020001 000000000001-FFFFFFFF
APPN CP session support . . . *YES         *YES, *NO
APPN node type . . . . . *NETNODE          *ENDNODE, *LENNODE...
APPN transmission grp number . . 1           1-20, *CALC

More...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 223. Create Controller Description (APPC) Screen

In Figure 223 we will be defining "APPN capable" as *YES. The APPC device descriptions will be automatically created, varied on and attached to the right controller using the information defined in the network attributes, the associated mode description, the location list and the application program. It also means that the local system will appear as an End Node or Network Node to the adjacent system.

We will use the switched line list name to the token-ring name we have just created.

The remote network identifier and remote control point name must be those defined on AS/400A.

The token-ring adapter address of AS/400A is 400010020001.

Press Enter to create your APPC controller description.

6.4.4 Configure Local and Remote Location Lists

Since we defined our APPC controller with APPN(*YES), the device descriptions will be automatically created. After the automatic creation of the devices the AS/400 will vary them on and attach it to the correct controller in the following situations:

- When a session is requested and the route chosen and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name attached.
- When a BIND is received for a local location and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name.

AS/400 APPN doesn't require remote locations to be defined as this information is dynamically acquired through the network. It does this by means of a "broadcast" search or a "directed" search across the CP-CP session.

We must however define an entry in the APPN local location list to define the nickname of AS/400B. It must match the LU name in VTAM/NCP definitions.

```
CFGCMN          Configure Communications and Remote Hardware          System:  RALYAS4B
Select one of the following:
    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
==> 9

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
```

Figure 224. Configure Communications and Remote Hardware Screen

Select option 9 to define APPN location lists.

The local location list defines the locations that are located on the AS/400B. The following screens will add RAOTNNB2 to the list.

```

CFGLST          Configure Address and Location Lists          System:  RALYAS4B
Select one of the following:

  1. Asynchronous PAD network address lists
  2. Asynchronous remote location list
  3. APPN local location list
  4. APPN remote location list

Selection or command
===> 3

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 225. Configure Address and Location Lists Screen

Select option 3 in Figure 225 to define an APPN local location list.

```

Work with Configuration Lists          System:  RALYAS4B
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  4=Delete  5=Display  6=Print

Opt List      Type      Text
  2  QAPPNLCL  *APPNLCL

Parameters for option 2 or command
===>

F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 226. Work with Configuration Lists Screen

Select option 2 in Figure 226 to change the QAPPNLCL local list to add RAOTNNB2.

```

Define APPN Local Locations

Type new/changed information, press Enter.

Local Location Entry          Local Location Entry
Name Description              Name Description
RAOTNNB2 Local LU for TR

F3=Exit  F12=Previous  F17=Top of list  F18=Bottom of list

More...

```

Figure 227. Define APPN Local Locations Screen

Enter the local location name and its description. We will use RAOTNNB2 which must match the LU name which is defined in the NCP LU macro for the AS/400A.

6.4.5 Create Mode Description

The mode description describes the session characteristics and number of sessions that will be used to negotiate the allowable values between the local and remote locations. A mode with the same name must exist at both end points. There must also be a mode entry with the same name in VTAM/NCP.

This mode description QPCSUPP is created automatically when AS/400 PC Support is installed on AS/400B.

In Figure 228 the mode characteristics of QPCSUPP are shown.

Display Mode Description		
Mode description name	MODD	QPCSUPP
Class-of-service	COS	#CONNECT
Maximum number of sessions	MAXSSN	64
Maximum conversations	MAXCNV	64
Locally controlled sessions	LCLCTLSSN	0
Pre-established sessions	PREESTSSN	0
Inbound pacing value	INPACING	7
Outbound pacing value	OUTPACING	7
Max length of request unit	MAXLENRU	2048
Text	TEXT	AS/400 PC Support mode entry

Press Enter to continue.

F3=Exit F12=Previous

Figure 228. Display Mode Descriptions Screen

The parameters defined here must match those defined on the remote location.

6.5 Relationship between AS/400A and AS/400B

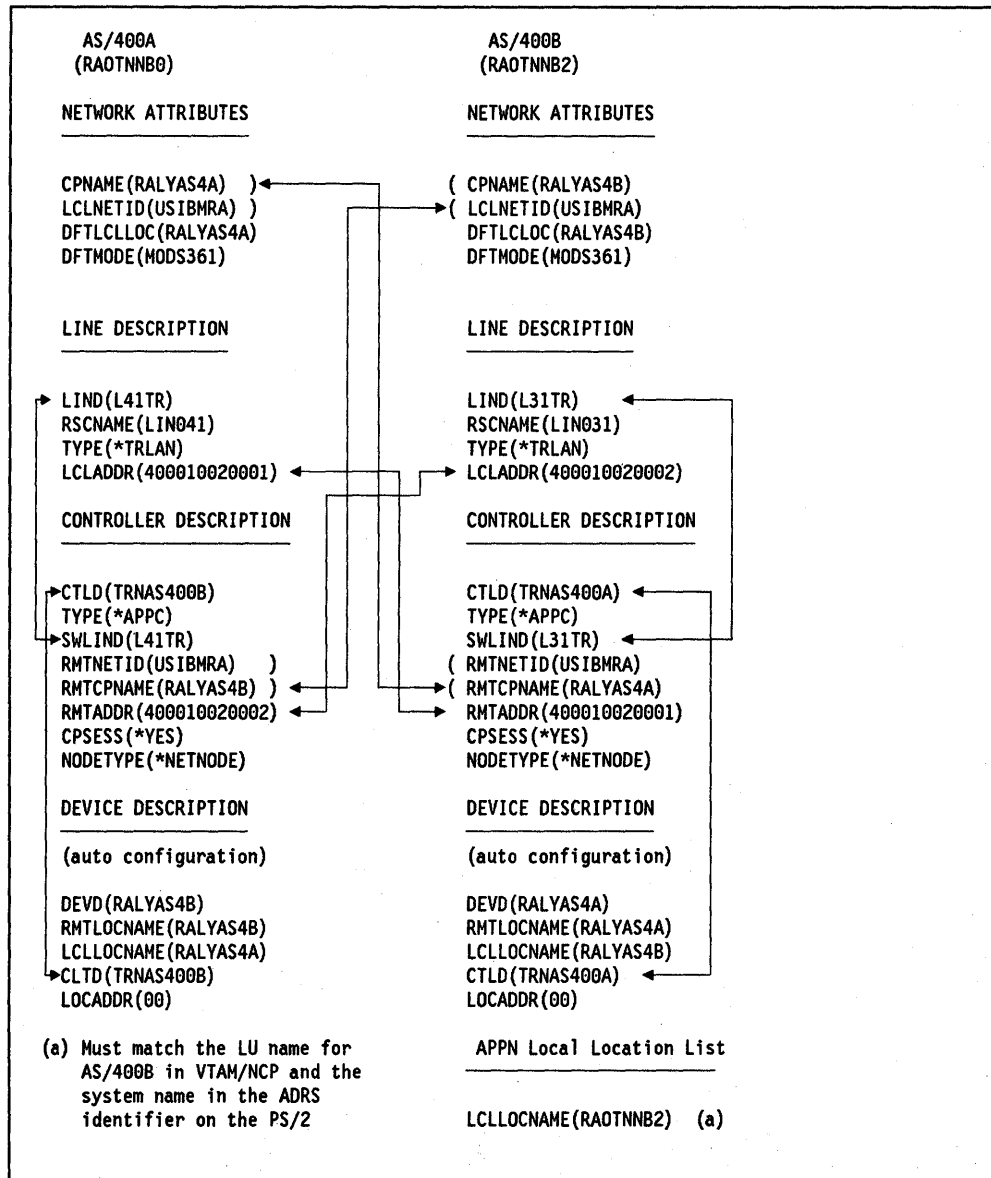


Figure 229. Defining a TRLAN between AS/400A and AS/400B

6.6 Definitions on the PS/2 (RAOTPSC0)

In order to configure AS/400B into the existing definitions on the PS/2 which we created in 5.0, "Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host" on page 99 we need to do the following:

- Modify the CONFIG.PCS file on the PS/2
- Modify the STARTPCS.BAT file on the PS/2.

6.6.1 Modify the CONFIG.PCS File on the PS/2

This file is the PC Support configuration file on the PS/2. To add the remote system RAOTNNB2 (AS/400B) we need to add the ADRS identifier to the CONFIG.PCS file.

```
RTYP SDLC
RTLN USIBMRA.RAOTPC0
SDLI RAOTNNB0,C5,RUSSELL
RTDN RAOTNNB0
SDLT MP
RTCU RUSSELL
SDDE YES
SDMR FULL
SDLF HALF
ADRS RAOTNNB2,RAOTNNB0
```

Figure 230. Tailored CONFIG.PCS File for the PS/2 SDLC Link

In Figure 230 the ADRS identifier was added. This identifier specifies the system name of RAOTNNB2 and the link name of RAOTNNB0. RAOTNNB2 must match the local location name defined on AS/400B and the LU name defined in VTAM/NCP for AS/400A. RAOTNNB0 must match the name in the link identifier SDLI.

6.6.2 Modify the STARTPCS.BAT File on the PS/2

The contents of this file will depend on how you want the sessions to be setup on your PS/2. For example, the number of drives you want to specify and to what system, the number of workstation emulation sessions and to what system. We only changed the STARTPCS.BAT file to reflect the additional assigning of folder QIWSFLR from RAOTNNB2 on drive E, to run the PC Support code from drive 'C' (for performance reasons) and to include the WSF profile WSF.DAT which we customized to have a screen session to AS/400A and a screen session to AS/400B. For more information on customizing this file you can refer to *PC Support Operations Reference Manual*.

The following screen displays the modified **STARTPCS.BAT** file for section 3.

<pre>C: \PCS\STARTRTR C: PCS\CONFIG.PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start SDLC Router
<pre>ECHO ON C: \PCS\FSPC ASSIGN I: QIWSFLR //RAOTNNB0 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Assign drive I to AS/400A folder QIWSFLR
<pre>ECHO ON C: \PCS\FSPC ASSIGN E: QIWSFLR //RAOTNNB2 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Assign drive E to AS/400B folder QIWSFLR
<pre>ECHO ON C: \PCS\PCSUPDT I: \ C: \PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Run PC Support Update Function
<pre>ECHO ON C: \PCS\STARTMSG C: \PCS\CONFIG.PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Message Function
<pre>ECHO ON C: \PCS\VPRT ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Virtual Print Function
<pre>ECHO ON C: \PCS\WSF C: \PCS\WSF.DAT ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	Start Workstation Function with profile WSF.DAT.
<pre>ECHO ON C: \PCS\STARTWSF 1 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	WSF Session to AS/400A
<pre>ECHO ON C: \PCS\STARTWSF 2 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT</pre>	WSF Session to AS/400B
<pre>ECHO ON C: \PCS\PCO C: \PCS\CONFIG.PCS ECHO OFF : EXIT ECHO ON</pre>	Start AS/400 PC Support Organizer to AS/400A

Figure 231. STARTPCS.BAT file

6.7 Relationship between PS/2 with PC Support and VTAM/NCP

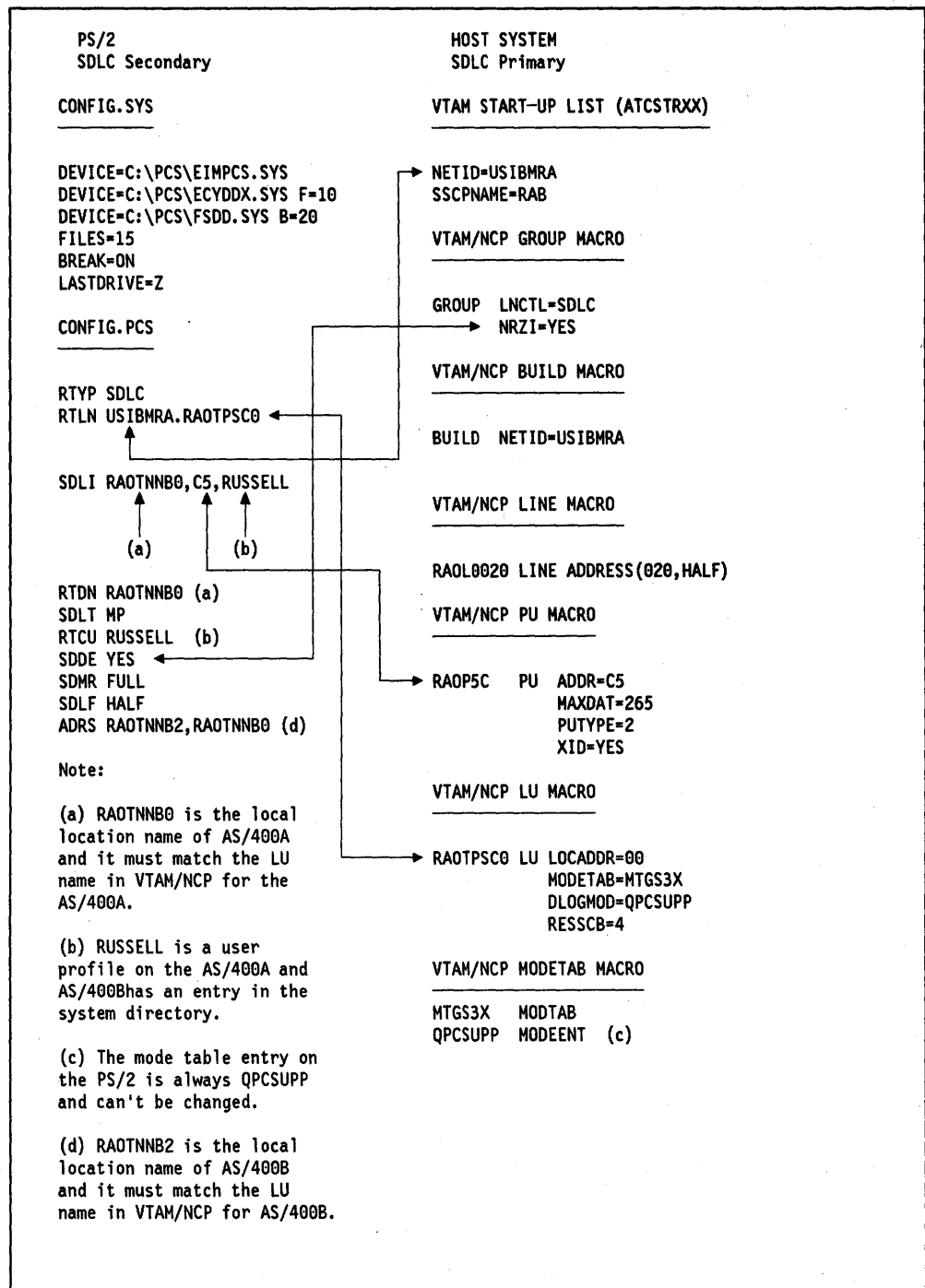


Figure 232. Defining a Leased Line between PS/2 and VTAM/NCP

6.8 Definitions on the S/370 Host (RAB) for the PS/2, AS/400A and AS/400B

```

***** 01220008
*      BUILD MACRO SPECIFICATIONS          * 01230008
***** 01240008
NCPBUILD BUILD VERSION=V4R3,      # NCP V4 REL3          X01250008
      ADDRESS=20,                ENOUGH BLOCKS DEFINED IN RESSCB X01260008
      AUXADDR=10,                ADDITIONAL PLU ADDRESSES FOR ILU X01260108
      ENABLT0=6.5,              IBM 386X REQUIRE 6.5 AS MINIMUM X01370008
      MAXSESS=16,              MAX LU-LU SESSIONS ANY LU CAN HAVE X01400008
      MAXSSCP=8,               MAXIMUM SESSIONS FOR LU          X01401008
      MODEL=3725,              !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! X01420008
      NAMTAB=50,               # ENTRIES FOR SSCP, CP & NET NAMES X01430008
      NETID=USIBMRA,          NATIVE NETWORK                   X01431008
      NEWNAME=RAONCP0,        NAME OF THIS LOAD MODULE          V3X01440008
      SUBAREA=24,             SUBAREA ADDRESS = 24             X01470008
      COSTAB=ISTSDCOS,        COS TABLE USED TO ACTIVATE ER/VR X01520008
      SESSLIM=64              NUMBER OF SESSIONS PER NAF       01580008
      :                       :
      :                       :

```

Figure 233. NCP BUILD Macro for the AS/400A and PS/2

In Figure 233 we define the BUILD macro which indicates the NCP version, the type of communication controller to be used and the name of this load module. It also specifies the NCP subarea of 24. USIBMRA is the network ID for the VTAM/NCP node.

```

***** 04750008
*      LINE MACRO SPECIFICATION          SDLC LINK 020      04760008
***** 04770008
RA0L0020 LINE ADDRESS=(020,HALF), TRANSMIT AND RECEIVE ADDRESSES X04780008
      NPACOLL=YES,              NPAX04790008
      ANS=CONTINUE,           DON'T BREAK CROSS DOMAIN SESSIONS X04800008
      OWNER=RAB,              (V) VTAM                          X04810008
      ISTATUS=ACTIVE,         X04820008
      DUPLEX=(FULL),          REQUEST TO SEND ALWAYS UP          X04830008
      ETRATIO=30,             DEFAULT                             X04840008
      LPDATS=LPDA1,          X04850008
      MAXPU=9,                ALLOW NO MORE THAN 9 PUS ON LINE X04860008
      SERVLIM=2,              X04870008
      SRT=(, 64),            X04880008
      SPEED=(4800)           LINE SPEED IS 4800 BPS             04890008
*      ATTACH=MODEM,          # NOT SUPPORTED V4R3              04900008
*      STATOPT=('S/36,S/38',NOMONIT) 04910008
***** 04920008
*
*      SERVICE MACRO SPECIFICATION FOR SDLC (LINE 020)    * 04930008
*
*
***** 04960008
      SERVICE ORDER=(RAOP07, X04970008
      RAOP08, X04980008
      RAOP1B, AS/400A X04981012
      RAOP5C, PS/2 X04982016
      RAOP09), S/38 X04990008
      MAXLIST=9 05000008
***** 05010008

```

Figure 234. NCP Line Macro for the AS/400A and PS/2

In Figure 234 the line RAOL0020 is specified as a non-switched multipoint line attached to the host RAB.

```

***** 07993008
* PU/LU MACRO RESERVED FOR THE AS/400A (RALYAS4A) * 08000008
***** 08010008
*RAOP1B PU ADDR=C4, 3270 ADDRESS='C' (EBCDIC) X 08020008
* 08021009
* PU AND LU DEFINITION FOR AS/400A 08022009
* FOR SUPPORT DEPENDENT AND INDEPENDENT LUS 08023009
* GER ROOVERS EXT.2322 08024009
* 08025009
***** 08026010
RAOP1B PU ADDR=C4, 3270 ADDRESS='C' (EBCDIC) X08029209
MAXDATA=265, MAXIMUM AMOUNT OF DATA X08029309
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE X08029409
PACING=(7), PACING SET BY BIND IMAGE X08029512
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING X08029609
PASSLIM=7, X08029709
PUTYPE=2, X08029809
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN X08029909
DISCNT=(NO), (V) VTAM ONLY X08030009
ISTATUS=ACTIVE, (V) VTAM ONLY X08030109
VPACING=8, (V) VTAM ONLY X08030210
XID=YES 08030310
* STATOPT='AS/400 T2.1' 08030410
***** 08030509
* DEFINITIONS FOR AS/400A * 08030609
* RAOTNNB0 TO B3 INDEPENDENT LUS 08030709
***** 08031609
RAOTNNB0 LU RESSCB=4, INDEPENDENT LU for AS/400A X08031710
LOCADDR=0, X08031813
MODETAB=MTGS3X, X08031910
DLOGMOD=MODS361, X08032010
ISTATUS=ACTIVE 08032110
* STATOPT='INDEPENDENT LU' 08032210
RAOTNNB1 LU RESSCB=4, INDEPENDENT LU X08032310
LOCADDR=0, X08032413
MODETAB=MTGS3X, X08032510
DLOGMOD=QPCSUPP, X08032610
ISTATUS=ACTIVE 08032710
* STATOPT='INDEPENDENT LU' 08032810
RAOTNNB2 LU RESSCB=4, INDEPENDENT LU for AS/400B X08032910
LOCADDR=0, X08033013
MODETAB=MTGS3X, X08033110
DLOGMOD=QPCSUPP, X08033210
ISTATUS=ACTIVE 08033310
* STATOPT='INDEPENDENT LU' 08033410
RAOTNNB3 LU RESSCB=4, INDEPENDENT LU X08033510
LOCADDR=0, X08033613
MODETAB=MTGS3X, X08033710
DLOGMOD=MODS361, X08033810
ISTATUS=ACTIVE 08033910
* STATOPT='INDEPENDENT LU' 08034010

```

Figure 235. NCP PU and LU Macro for the AS/400

In Figure 235 the PU "RAOP1B has a PU address of C4 defined. This value has to match the station address defined in the AS/400A controller description for this host.

PUTYPE=2 and XID=YES must be specified so the host appears as a T2.1 node to the AS/400.

The LU used for scenario 3 is RAOTNNB0 for AS/400A and RAOTNNB2 for AS/400B. Because they are independent LUs, we have to specify

LOCADDR=0. RESSCB=4 means that this specific LU has four session control blocks reserved for itself.

```

***** 08043113
* PU/LU MACRO RESERVED FOR THE PS/2 * 08043213
***** 08043313
* PU AND LU DEFINITION FOR PS/2 PC SUPPORT 05/16/89 08043613
* FOR SUPPORT DEPENDENT AND INDEPENDENT LUS 08043713
* GER ROOVERS EXT.2322 08043813
* 08043913
***** 08044013
RAOP5C PU ADDR=C5, 3270 ADDRESS='C' (EBCDIC) X08044115
MAXDATA=265, MAXIMUM AMOUNT OF DATA X08044213
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE X08044313
PACING=(7), PACING SET BY BIND IMAGE X08044413
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING X08044513
PASSLIM=7, X08044613
PUTYPE=2, X08044713
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN X08044813
DISCNT=(NO), (V) VTAM ONLY X08044913
ISTATUS=ACTIVE, (V) VTAM ONLY X08045013
VPACING=8, (V) VTAM ONLY X08045113
XID=YES 08045213
* STATOPT='AS/400 T2.1' 08045313
***** 08045413
* DEFINITIONS FOR PS/2 WITH AS/400 PC SUPPORT * 08045513
* RAOTPSC0 INDEPENDENT LU 08045613
* * 08046413
***** 08046513
RAOTPSC0 LU RESSCB=4, INDEPENDENT LU for PS/2 X08046614
LOCADDR=0, X08046713
MODETAB=MTGS3X, X08046813
DLOGMOD=QPCSUPP, X08046913
ISTATUS=ACTIVE 08047013
* STATOPT='INDEPENDENT LU' 08047113
***** 08047208

```

Figure 236. NCP PU and LU Macro for the PS/2

In Figure 236 the PU "RAOP5C has a PU address of C5 defined. The value must match the station address specified for the SDLI identifier in CONFIG.PCS file on the PS/2.

PUTYPE=2 and XID=YES must be specified so the host appears as a T2.1 node to the AS/400.

The LU used for scenario 3 is-RAOTPSC0. Because it is an independent LU, we have to specify LOCADDR=0. RESSCB=4 means that this specific LU has four session control blocks reserved for itself.

6.9 Activate Communications on AS/400A to AS/400B

This section will describe how to activate a communications link between AS/400A and AS/400B.

To activate a token-ring line on AS/400A you need to "vary on" the line then the controller. The following screens will guide you through this exercise. You can also go directly to the "Work with Configuration Status" screen by using the WRKCFGSTS command.

```
MAIN                               AS/400 Main Screen                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   90. Sign off

Selection or command
==> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 237. AS/400 Main Screen

Select option 6 in Figure 237 to communications.

```

CMN                               Communications                               System:  RALYAS4A
Select one of the following:

    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs

    70. Related commands

Selection or command
====> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 238. Communications Screen

Select option 1 in Figure 238 to communications status.

```

CMNSTS                             Communications Status                             System:  RALYAS4A
Select one of the following:

    1. Work with line status
    2. Work with controller status
    3. Work with device status

    70. Related commands

Selection or command
====> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 239. Communications Status Screen

Select option 1 in Figure 239 to work with line status.

```

WRKCFGSTS                           Work with Configuration Status
Type choices, press Enter.

Type . . . . . ▶ *LIN           *LIN, *CTL, *DEV
Configuration description . . . ▶ L41TR      Name, generic*, *ALL, *CMN...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 240. Work with Communications Status Screen

Type the line description name in Figure 240 to work with line status.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1  L41TR          VARIED OFF

More...

Parameters for options 1, 2, 3 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 241. Work with Communications Status Screen

Select option 1 in Figure 241 to vary on the line.

```

CMNSTS Communications Status
System: RALYAS4A
Select one of the following:
  1. Work with line status
  2. Work with controller status
  3. Work with device status

  70. Related commands

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 242. Communications Status Screen

Select option 2 in Figure 242 to work with controller status.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1  TRNAS400B    VARIED OFF

More...

Parameters for options 1, 2, 3 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 243. Work with Communications Status Screen

Select option 1 in Figure 243 to vary on the controller.


```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
1=Vary on 2=Vary off 3=Hold device 4=End recovery 5=Work with job
6=Release device 7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
L41TR ACTIVE
TRNAS400B ACTIVE More...
RALYAS4B ACTIVE

Parameters for options 1, 2, 3 or command
===>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 244. Work with Communications Status Screen

If you select F5 to refresh the screen in Figure 241 on page 187 the token-ring line is ACTIVE and the controller is ACTIVE. Because we specified CP-CP session support and APPN *YES the device descriptions are automatically created, attached to the right controller and varied on. The refreshed screen is shown in Figure 244.

6.10 Activate Communications on AS/400B to AS/400A

This section will describe how to activate a communications link between AS/400B and AS/400A.

To activate a token-ring line on AS/400B you need to "vary on" the line, then the controller. The following screens will guide you through this exercise. You can also go directly to the Work with Configuration Status screen by using the WRKCFGSTS command.

```
MAIN                               AS/400 Main Screen                               System:  RALYAS4B
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   90. Sign off

Selection or command
==> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 245. AS/400 Main Screen

Select option 6 in Figure 245 to go to the Communications screen.

```

CMN                               Communications                               System:  RALYAS4B
Select one of the following:
    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 246. Communications Screen

Select option 1 in Figure 246 to communications status.

```

CMNSTS                             Communications Status                             System:  RALYAS4B
Select one of the following:
    1. Work with line status
    2. Work with controller status
    3. Work with device status

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 247. Communications Status Screen

Select option 1 in Figure 247 to work with line status.

```

WRKCFGSTS                           Work with Configuration Status
Type choices, press Enter.
Type . . . . . ▶ *LIN           *LIN, *CTL, *DEV
Configuration description . . . ▶ l31tr      Name, generic*, *ALL, *CMN...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 248. Work with Communications Status Screen

Type the line description name in Figure 248 to work with line status.

```

Work with Configuration Status
System: RALYAS4B
Position to . . . . . Starting character(s)
Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery
Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1 L31TR VARIED OFF
More...
Parameters for options 1, 2, 3 or command
==>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 249. Work with Communications Status Screen

Select option 1 in Figure 249 to vary on the line.

```

CMNSTS Communications Status
System: RALYAS4B
Select one of the following:
  1. Work with line status
  2. Work with controller status
  3. Work with device status
  70. Related commands
Selection or command
==> 2
F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 250. Communications Status Screen

Select option 2 in Figure 250 to work with controller status.

```

Work with Configuration Status
System: RALYAS4B
Position to . . . . . Starting character(s)
Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery
Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1 TRNAS400A VARIED OFF
More...
Parameters for options 1, 2, 3 or command
==>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 251. Work with Communications Status Screen

Select option 1 in Figure 251 to vary on the controller.

```

Work with Configuration Status
System: RALYAS4B
Position to . . . . . Starting character(s)
Type options, press Enter.
1=Vary on 2=Vary off 3=Hold device 4=End recovery 5=Work with job
6=Release device 7=Resume recovery

Opt Lin/Ct1/Dev/Mod Status -----Job-----
L31TR ACTIVE
TRNAS400A ACTIVE More...
RALYAS4A ACTIVE
Parameters for options 1, 2, 3 or command
==>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Previous
F14=Work with lines
(C) COPYRIGHT IBM CORP. 1988, 1988.

```

Figure 252. Work with Communications Status Screen

If you select F5 to refresh the screen in Figure 249 on page 191 the token-ring line is ACTIVE and the controller is VARIED ON. Because we specified CP-CP session support and APPN *YES the device descriptions are automatically created, attached to the right controller and varied on. The refreshed screen is shown in Figure 252.

6.11 Activating Communications on the S/370 Host for the PS/2 and AS/400A

```
NCCF      N E T V I E W                RABAN WTCR21  05/31/89 16:38:30
* RABAN   V NET,ACT,ID=RAOL0020      ←-----
RABAN     IST097I VARY   ACCEPTED
RABAN     IST093I RAOL0020 ACTIVE
C RABAN   ►AOPNLIST RAOL0020 NONE
RABAN     IST097I DISPLAY ACCEPTED
```

Figure 253. Activate Line for AS/400A and PS/2

AS/400A and PS/2 are T2.1 nodes connected off the same line from the S/370 host. Therefore to vary on the line we should issue the VTAM command "V NET,ACT,ID=RAOL0020".

```
NCCF      N E T V I E W                RABAN WTCR21  05/31/89 16:39:12
* RABAN   V NET,ACT,ID=RAOP1B,SCOPE=ALL ←-----
RABAN     IST097I VARY   ACCEPTED
RABAN     IST093I RAOP1B  ACTIVE
C RABAN   ►AOPNLIST RAOP1B NONE
RABAN     IST097I DISPLAY ACCEPTED
```

Figure 254. Activate PU for the AS/400A

To vary on AS/400A PU enter the VTAM command "V NET,ACT,ID=RAOP1B,SCOPE=ALL".

```
NCCF      N E T V I E W                RABAN WTCR21  05/31/89 16:39:38
* RABAN   V NET,ACT,ID=RAOP5C,SCOPE=ALL ←-----
RABAN     IST097I VARY   ACCEPTED
RABAN     IST093I RAOP5C  ACTIVE
C RABAN   ►AOPNLIST RAOP5C NONE
RABAN     IST097I DISPLAY ACCEPTED
```

Figure 255. Activate PU for the PS/2

To vary on the PS/2 PU enter the VTAM command "V NET,ACT,ID=RAOP5C,SCOPE=ALL".

```

NCCF      N E T V I E W      RABAN WTCR21  05/31/89 16:40:02
C RABAN   DISPLAY NET, ID=RAOP1B, SCOPE=ALL
RABAN     IST097I DISPLAY ACCEPTED
' RABAN
IST075I   NAME = RAOP1B      , TYPE = PU_T2.1  <-----
IST486I   STATUS= ACTIV     , DESIRED STATE= ACTIV
IST081I   LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP1
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I   LOGICAL UNITS:
IST080I   RAOTNNB0 ACT/S      RAOTNNB1 ACTIV      RAOTNNB2 ACT/S
IST080I   RAOTNNB3 ACTIV      RAOTNNB4 ACTIV      RAOTNNB5 ACTIV
IST080I   RAOT1B01 ACTIV      RAOT1B02 ACTIV      RAOT1B03 ACTIV
IST080I   RAOT1B04 ACTIV      RAOT1B05 ACTIV      RAOT1B06 ACTIV
IST080I   RAOT1B07 ACTIV      RAOT1B08 ACTIV      RAOT1B09 ACTIV
IST080I   RAOT1B0A ACTIV      RAOT1B0B NEVAC      RAOT1B0C NEVAC
IST080I   RAOT1B0D NEVAC      RAOT1B0E ACTIV      RAOT1B0F ACTIV
IST080I   RAOT1B0G ACTIV      RAOT1B0H ACTIV      RAOT1B0I ACTIV
IST080I   RAOT1B0J ACTIV
IST314I   END

```

Figure 256. Display Status of the PU for the AS/400A

Figure 256 displays the status of the PU for AS/400A. Notice that the PU is seen as a T2.1 after activation and RAOTNNB0 (AS/400A) and RAOTNNB2 (AS/400B) are active and in session.

```

NCCF      N E T V I E W      RABAN WTCR21  05/31/89 16:40:23
C RABAN   DISPLAY NET, ID=RAOP5C, SCOPE=ALL
RABAN     IST097I DISPLAY ACCEPTED
' RABAN
IST075I   NAME = RAOP5C      , TYPE = PU_T2.1  <-----
IST486I   STATUS= ACTIV     , DESIRED STATE= ACTIV
IST081I   LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP1
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I   LOGICAL UNITS:
IST080I   RAOTPSC0 ACT/S
IST314I   END

```

Figure 257. Display Status of the PU for the PS/2

Figure 257 displays the status of the PU for the PS/2. Notice that the PU is seen as a T2.1 after activation and RAOTPSC0 (PS/2) is active and in session.

```

C RABAN   DISPLAY NET, ID=RAOTNNB0, SCOPE=ALL
RABAN    IST097I  DISPLAY  ACCEPTED
' RABAN
IST075I  NAME = RAOTNNB0           , TYPE = LOGICAL UNIT
IST486I  STATUS= ACT/S           , DESIRED STATE= ACTIV
IST861I  MODETAB=MTGS3X   USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=MODS361
IST597I  CAPABILITY-PLU ENABLED , SLU ENABLED , SESSION LIMIT NONE
IST081I  LINE NAME = RAOL0020, LINE GROUP = RAOGSFL0, MAJNOD = RAONCP1
IST135I  PHYSICAL UNIT = RAOP1B
IST082I  DEVTYPE = INDEPENDENT LU
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000004, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME      STATUS      SID          SEND RECV VR TP NETID
IST635I  RAOTPSC0  ACTIV-P    CF0384B97DD52DB4    0 0 USIBMRA
IST635I  RAOTPSC0  ACTIV-P    CF0384B97DD52DB8    0 0 USIBMRA
IST635I  RAOTPSC0  ACTIV-P    CF0384B97DD52DB9    0 0 USIBMRA
IST635I  RAOTPSC0  ACTIV-P    CF0384B97DD52DBB    0 0 USIBMRA
IST314I  END

```

Figure 258. Display Status of the LU for the AS/400A

Figure 258 displays the status of the LU for AS/400A. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that this AS/400 LU (RAOTNNB0) has an active session with the PS/2 LU (RAOTPSC0) and in this case the PS/2 is the primary LU.

```

NCCF      N E T V I E W           RABAN WTCR21   06/10/89 11:05:30
C RABAN   DISPLAY NET, ID=RAOTNNB2, SCOPE=ALL
RABAN    IST097I  DISPLAY  ACCEPTED
' RABAN
IST075I  NAME = RAOTNNB2           , TYPE = LOGICAL UNIT
IST486I  STATUS= ACT/S           , DESIRED STATE= ACTIV
IST861I  MODETAB=MTGS3X   USSTAB=***NA*** LOGTAB=***NA***
IST934I  DLOGMOD=MODS361
IST597I  CAPABILITY-PLU ENABLED , SLU ENABLED , SESSION LIMIT NONE
IST081I  LINE NAME = RAOL0020, LINE GROUP = RAOGSFL0, MAJNOD = RAONCP1
IST135I  PHYSICAL UNIT = RAOP1B
IST082I  DEVTYPE = INDEPENDENT LU
IST654I  I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I  ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I  SESSIONS:
IST634I  NAME      STATUS      SID          SEND RECV VR TP NETID
IST635I  RAOTPSC0  ACTIV-P    CF0384B97DD52DB6    0 0 USIBMRA
IST635I  RAOTPSC0  ACTIV-P    CF0384B97DD52DBC    0 0 USIBMRA
IST314I  END

```

Figure 259. Display Status of the LU for the AS/400

Figure 259 displays the status of the LU for AS/400B. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that this AS/400 LU (RAOTNNB2) has an active session with the PS/2 LU (RAOTPSC0) and in this case the PS/2 is the primary LU.


```

NCCF          N E T V I E W          RABAN WTCR21    06/10/89 11:06:16
C RABAN      DISPLAY NET, ID=RAOTPSC0, SCOPE=ALL
RABAN      IST097I DISPLAY ACCEPTED
' RABAN
IST075I NAME = RAOTPSC0          , TYPE = LOGICAL UNIT
IST486I STATUS= ACT/S          , DESIRED STATE= ACTIV
IST861I MODETAB=MTGS3X      USSTAB=***NA*** LOGTAB=***NA***
IST934I DLOGMOD=MODS361
IST597I CAPABILITY-PLU ENABLED ,SLU ENABLED ,SESSION LIMIT NONE
IST081I LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP1
IST135I PHYSICAL UNIT = RAOP5C
IST082I DEVTYPE = INDEPENDENT LU
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I ACTIVE SESSIONS = 0000000006, SESSION REQUESTS = 0000000000
IST206I SESSIONS:
IST634I NAME      STATUS      SID          SEND RECV VR TP NETID
IST635I RAOTNNB0 ACTIV-S      CF0384B97DD52DB4      0 0 USIBMRA
IST635I RAOTNNB2 ACTIV-S      CF0384B97DD52DB6      0 0 USIBMRA
IST635I RAOTNNB0 ACTIV-S      CF0384B97DD52DB8      0 0 USIBMRA
IST635I RAOTNNB0 ACTIV-S      CF0384B97DD52DB9      0 0 USIBMRA
IST635I RAOTNNB0 ACTIV-S      CF0384B97DD52DBB      0 0 USIBMRA
IST635I RAOTNNB2 ACTIV-S      CF0384B97DD52DBC      0 0 USIBMRA
IST314I END

```

Figure 260. Display Status of the LU for the PS/2

Figure 260 displays the status of the LU for the PS/2. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that this PS/2 LU (RAOTPSC0) has an active sessions with both AS/400A (RAOTNNB0) and AS/400B (RAOTNNB2) in this case the AS/400's are the secondary LUs.

6.12 Trace from AS/400A to Host

The following traces were taken on AS/400A using the trace facility. This trace displays both the XID3 exchanges and the BIND exchanges between AS/400A and the host.

COMMUNICATIONS TRACE		Title: AS/400A TO HOST		07/09/89 01:36:51		Page: 1			
Trace Description : AS/400A TO HOST									
Line name : L24020									
Line protocol : SDLC									
Start Date/Time : 07/09/89 01:31:11									
End Date/Time : 07/09/89 01:36:45									
Buffer size : 3 1=128K, 2=256K, 3=2048K									
Data direction : 3 1=Sent, 2=Received, 3=Both									
Stop on buffer full : N Y=Yes, N=No									
Format SNA data only : N Y=Yes, N=No									
Format RR, RNR commands : N Y=Yes, N=No									
Record Number : Number of record in trace buffer (decimal)									
S/R : S=Sent R=Received M=Modem Change									
Data Length : Amount of data in record (decimal)									
Record Timer : Time stamp (100 millisecond resolution, hexadecimal)									
Record Status : Status of record									
Controller name : Name of controller associated with record									
Command : Command/Response information									
Number sent : Count of records sent									
Number received : Count of records received									
Poll/Final : ON=Poll for Commands, Final for Responses									
Commands/Responses:									

I : Information									
RR : Receive Ready									
RNR : Receive Not Ready									
REJ : Reject									
UI : Unnumbered Information									
SNRM : Set Normal Response Mode									
DISC : Disconnect/Request Disconnect									
TEST : Test									
SIM : Set Initialization Mode									
UP : Unnumbered Poll									
FRMR : Frame Reject									
CFGR : Configure									
DM : Disconnected Mode									
XID : Exchange ID									
BCN : Beacon									
SNRME : Set Normal Response Mode Extended									
UA : Unnumbered Acknowledgment									
***** : Invalid Command/Response									
COMMUNICATIONS TRACE		Title: AS/400A TO HOST		07/09/89 01:36:51		Page: 3			
Record Number	Data S/R	Data Length	Record Status	Record Timer	Data Type	Controller Name/Number	Number Command Sent	Number Received	Poll/Final
4	R	0	00000000	1551	/CA XID				ON
5	S	84	00000000	1552	/CA XID				ON
			Data						
									.../&.....{.....
									.4USIBMRA.RALYAS4A..7AAAAAAD4.
									*.1.....9406B50100015078
10	R	119	00000000	1582	/CA XID				ON
			Data						
								D.....!.....
									.4USIBMRA.RAB..1RAONCP1..7RAOP
									1B.....372500000001825....
									.566885401300..040300..I....
11	S	84	00000000	1583	/CA XID				ON
			Data						
									.../&.....{.....
									.4USIBMRA.RALYAS4A..7AAAAAAD4.
									*.1.....9406B50100015078
16	R	0	00000000	1580	/CA SNRM				ON
17	S	0	00000000	1581	/CA UA				ON

Figure 261. AS/400A to Host XID3 Exchanges

```

COMMUNICATIONS TRACE      Title: AS/400A TO HOST      07/09/89 01:39:03      Page: 1
Trace Description . . . . : AS/400A TO HOST
Line name . . . . . : L24020
Line protocol . . . . . : SDLC
Start Date/Time . . . . . : 07/09/89 01:31:11
End Date/Time . . . . . : 07/09/89 01:36:45
Bytes collected . . . . . : 19386
Buffer size . . . . . : 3      1=128K, 2=256K, 3=2048K
Data direction . . . . . : 3      1=Sent, 2=Received, 3=Both
Stop on buffer full . . . . : N      Y=Yes, N=No
Format SNA data only . . . . : Y      Y=Yes, N=No
Format RR, RNR commands . . . : N      Y=Yes, N=No
Controller Name . . . . . : *ALL      *ALL, name
COMMUNICATIONS TRACE      Title: AS/400A TO HOST      07/09/89 01:39:03      Page: 2

Record Number . . . . . Number of record in trace buffer (decimal)
S/R . . . . . S=Sent R=Received M=Modem Change
Controller name . . . . . Name of Controller associated with record
SNA Data . . . . . TH, RH and RU for record
TH . . . . . Transmission Header
RH . . . . . Request/Response Header
RU . . . . . Request/Response Unit
TH Parameter Descriptions:
FID . . . . . Format Identification
MPF . . . . . Mapping Field (segment of Basic Information
Unit (BIU) - ONLY, FIRST, MIDDLE, LAST)
OAF . . . . . Origination Address Field
DAF . . . . . Destination Address Field
SNF . . . . . Sequence Number Field
DCF . . . . . Data Count Field
LA . . . . . Local Address
ODAI . . . . . OAF-DAF Assignor Indicator
EFI . . . . . Expedited Flow Indicator
LU . . . . . Logical Unit
SSCP . . . . . System Services Control Point
PU . . . . . Physical Unit
RH Parameter Descriptions:
REQ . . . . . Request
RSP . . . . . Response
RH Category Descriptions:
NC . . . . . Network Control
SC . . . . . Session Control
DFC . . . . . Data Flow Control
NC . . . . . Network Control
FMD . . . . . Function Management Data
FMH . . . . . Function Management Header
RH Indicators:
FI . . . . . Format Indicator
SDI . . . . . Sense Data Included Indicator
BCI . . . . . Begin Chain Indicator
ECI . . . . . End Chain Indicator
DR1 . . . . . Definite Response 1 Indicator
DR2 . . . . . Definite Response 2 Indicator
ERI . . . . . Exception Response Indicator
RTI . . . . . Response Type Indicator
QRI . . . . . Queued Response Indicator
EBI . . . . . End Bracket Indicator
CDI . . . . . Change Direction Indicator
PI . . . . . Pacing Indicator
BBI . . . . . Begin Bracket Indicator
CSI . . . . . Code Selection Indicator
EDI . . . . . Enciphered Data Indicator
PDI . . . . . Padded Data Indicator
CEBI . . . . . Conditional End Bracket Indicator
RLWI . . . . . Request Larger Window Indicator

```

Figure 262. AS/400A to Host BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A TO HOST	07/09/89 01:39:03	Page: 3
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
22	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=0283, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command	ACTPU	
			RU Data	110201050000000000	*.....*
28	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=0283, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	ACTPU	
			RU Data	11114040404040404000000701000000000000	*.. ..*
228	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command	BIND	
			RU Data	31001307B0B051B300878585870006020000000000001023000010E4E2 C9C2D4D9C14BD9C1D6E3D7E2C3F01D000902E2D5C1E2E5C3D4C71104E4E2 C9C2D4D9C14BD9C1D6E3D7E2C3F00010E4E2C9C2D4D9C14BD9C1D6E3D5D5 C2F02C8A0108404040404040406014CF0384B97DD52DB10BE4E2C9C2D4 D9C14BD9C1C2	*.....GEEG.....US* *IBMRA.RAOTPC0...SNASVCMG...US* *IBMRA.RAOTPC0...USIBMRA.RAOTNN* *B0.... -...D.'N...USIBM* *RA.RAB
234	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	BIND	
			RU Data	31001307B0B051B300808585800060200000000000001023000001D00 0902E2D5C1E2E5C3D4C71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F00000 2C0A0108404040404040406014CF0384B97DD52DB10BE4E2C9C2D4D9C1 4BD9C1C2	*.....EE.....* *..SNASVCMG...USIBMRA.RAOTNNB0..* *.... -...D.'N...USIBMRA* *RAB
238	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=0001 RH : ('0B8000'X) REQ FMD, FI, BCI, ECI, DR1	
			RU Command	NMVT	
			RU Data	41038D00000000000021808004928001994ED00EC000000010000000000 000004000A001400320064	*.....KH..M.....* *.....*
239	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0001 RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI	
			RU Command		
			RU Data	180502FF0003D000000206F1090802D9E4E2E2C5D3D30000	*.....}....1...RUSSELL..*
241	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=0001 RH : ('8F9000'X) RSP FMD, FI, SDI, DR1, RTI Sense Code : 00000000,	
			RU Command	NMVT	
			RU Data	41038D	*...*
246	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000007	*...*
248	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0002 RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI	
			RU Data	0018121002000000000020002000000007D0D7C3E2E4D7D7	*.....QPCSUPP*
252	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	00000E	*...*
253	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0001 RH : ('039501'X) REQ FMD, BCI, ECI, DR1, ERI, RLWI, PI, CEBI	
			RU Data	001812100A000000000020002000000007D0D7C3E2E4D7D7	*.....QPCSUPP*
255	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000008	*...*
256	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command	UNBIND	
			RU Data	320F000000000014CF0384B97DD52DB10BE4E2C9C2D4D9C14BD9C1C2	*.....-...D.'N...USIBMRA.RAB*
260	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	UNBIND	
			RU Data	32	*.....*

Figure 263. AS/400A to Host BIND Exchanges

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264 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI
RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1
RU Command . . . . . : BIND
RU Data . . . . . : 31001307B0B051B30087858587000602000000000001023000010E4E2 *.....GEEG.....US*
C9C2D4D9C14BD9C1D6E3D7E2C3F01D000902E2D5C1E2E5C3D4C71104E4E2 *IBMRA.RAOTPC0...SNASVCMG..US*
C9C2D4D9C14BD9C1D6E3D7E2C3F00010E4E2C9C2D4D9C14BD9C1D6E3D5D5 *IBMRA.RAOTPC0..USIBMRA.RAOTNN*
C2F22C0A01084040404040406014CF0384B97DD52DB30BE4E2C9C2D4 *B2.... -...D.'N...USIBM*
D9C14BD9C1C2 *RA.RAB

284 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI
RH : ('EB8000'X) RSP SC, FI, DR1
RU Command . . . . . : BIND
RU Data . . . . . : 31001307B0B051B30080858580000602000000000001023000001D00 *.....EE.....*
090E2D5C1E2E5C3D4C71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F20000 *..SNASVCMG..USIBMRA.RAOTNNB2.*
2C0A0108404040404040406014CF0384B97DD52DB30BE4E2C9C2D4D9C1 *.... -...D.'N...USIBMRA*
4BD9C1C2B2F0202164614800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C1 *RAB.....USIBMRA.RALYASAA*
174615800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C200 *.....USIBMRA.RALYASAB.

288 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0001
RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI
RU Command . . . . . :
RU Data . . . . . : 180502FF0003D000000206F1090802D9E4E2E2C5D3D30000 *.....)....1...RUSSELL..

292 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000007 *...

294 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0002
RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI
RU Data . . . . . : 00181210020000000002000200000007D8D7C3E2E4D7D7 *.....QPCSUPP

298 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000008 *...

303 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0001
RH : ('039501'X) REQ FMD, BCI, ECI, DR1, ERI, RLWI, PI, CEBI
RU Data . . . . . : 001812100A0000000002000200000007D8D7C3E2E4D7D7 *.....QPCSUPP

305 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000008 *...

306 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI
RH : ('688000'X) REQ SC, FI, BCI, ECI, DR1
RU Command . . . . . : UNBIND
RU Data . . . . . : 320F00000000014CF0384B97DD52DB30BE4E2C9C2D4D9C14BD9C1C2 *.....D.'N...USIBMRA.RAB

310 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI
RH : ('EB8000'X) RSP SC, FI, DR1
RU Command . . . . . : UNBIND
RU Data . . . . . : 32 *

314 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI
RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1
RU Command . . . . . : BIND
RU Data . . . . . : 31001307B0B051B30087868687000602000000000001023000010E4E2 *.....GFFG.....US*
C9C2D4D9C14BD9C1D6E3D7E2C3F01C000802D8D7C3E2E4D7D71104E4E2C9 *IBMRA.RAOTPC0...QPCSUPP..USI*
C2D4D9C14BD9C1D6E3D7E2C3F00010E4E2C9C2D4D9C14BD9C1D6E3D5D5C2 *BMRA.RAOTPC0..USIBMRA.RAOTNNB*
F02C0A01084040404040406014CF0384B97DD52DB40BE4E2C9C2D4D9 *0.... -...D.'N...USIBMRA*
C14BD9C1C2 *A.RAB

318 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI
RH : ('EB8000'X) RSP SC, FI, DR1
RU Command . . . . . : BIND
RU Data . . . . . : 31001307B0B051B30080868680000602000000000001023000001C00 *.....FF.....*
0802D8D7C3E2E4D7D71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F000002C *..QPCSUPP..USIBMRA.RAOTNNB...*
0A0108404040404040406014CF0384B97DD52DB40BE4E2C9C2D4D9C14B *.... -...D.'N...USIBMRA*
D9C1C2 *RAB

322 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0001
RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI
RU Command . . . . . :
RU Data . . . . . : 230502FF0003D000000430F0F1F9120802D9E4E2E2C5D3D30001D9E4E2E2 *.....)....019...RUSSELL..RUSS*
C5D3D30000 *ELL..

330 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000007 *...

332 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0002
RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI
RU Data . . . . . : 002BD00100010025104100071147D8D7C30006116DC6E200141404141900 *..}.....QPC..._FS.....*
02145700021463000214650002 *.....

336 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 00000E *...

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Figure 264. AS/400A to Host BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A TO HOST	07/09/89 01:39:03	Page: 6
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
341	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0001 RH : ('039520'X) REQ FMD, BCI, ECI, DR1, ERI, RLWI, PI, CDI	
			RU Data :	0031D0030001002B144300071147D8C1E2000C116DD9C1D3E8C1E2F4C100 *..).....QAS..._RALYAS4A.*	
343	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data :	000008 *..	
346	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
			RU Data :	0013D0010001000D104F000911656140C6D4E2 *..).....|.... / FMS	
352	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0002 RH : ('039120'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CDI	
			RU Data :	0010D0020001000A124B000611490000 *..).....	
354	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data :	000040 *..	
357	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0004 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
			RU Data :	001AD00100010014104F0010116561D8C9E6E2C6D3D940C6D4E2 *..).....|.... / QIWSFLR FMS	
363	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
			RU Data :	0010D0020001000A124B000611490000 *..).....	
371	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command :	BIND	
			RU Data :	31001307B00051B30087868687000602000000000001023000010E4E2 *.....GFFG.....US* C9C2D4D9C14BD9C1D6E3D7E2C3F01C000020D8D7C3E2E4D7D71104E4E2C9 *IBMRA.RAOTPSC0...QPSCSUPP...USI* C2D4D9C14BD9C1D6E3D7E2C3F00010E4E2C9C2D4D9C14BD9C1D6E3D5D5C2 *BMRA.RAOTPSC0...USIBMRA.RAOTNNB* F22C0A01084040404040406014CF0384B97DD52D860BE4E2C9C2D4D9 *2.... -...D.'N...USIBMR* C14BD9C1C2 *A.RAB	
377	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command :	BIND	
			RU Data :	31001307B00051B30080868680000602000000000001023000001C00 *.....FF.....* 0802D08D7C3E2E4D7D71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F200002C *..QPSCSUPP...USIBMRA.RAOTNNB2...* 0A0108404040404040406014CF0384B97DD52D860BE4E2C9C2D4D9C14B *... -...D.'N...USIBMRA.* D9C1C22B2F0202164614800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C117 *RAB.....USIBMRA.RALYAS4A.* 4615000110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C200 *.....USIBMRA.RALYAS4B.*	
381	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0001 RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI	
			RU Command :	FMH- 5=230502FF0003D0000000430F0F1F9120002D9E4E2E2C5D3D3 *.....}...019...RUSSELL 0001D9E4E2E2C5D3D30000 *..RUSSELL..*	
385	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data :	000007 *..	
387	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0002 RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI	
			RU Data :	002BD00100010025104100071147D8D7C30006116DC6E200141404141900 *..).....QPC..._FS.....* 02145700021463000214650002 *.....	

Figure 265. AS/400A to Host BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A TO HOST	07/09/89 01:39:03	Page: 7
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
393	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data		000008	*...*
402	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=0001 RH : ('039520'X) REQ FMD, BCI, ECI, DR1, ERI, RLWI, PI, CDI	
		RU Data		0031D0030001002B144300071147D8C1E2000C116DD9C1D3E8C1E2F4C200 14140414650002146300021419000214570002	*...}.....QAS... RALYAS4B.*
404	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data		000008	*...*
407	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
		RU Data		0013D0010001000D104F000911656140C6D4E2	*...}.....|.... / FMS
417	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=0002 RH : ('039120'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CDI	
		RU Data		0010D0020001000A124B000611490000	*...}.....
419	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data		000040	*..*
422	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0004 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
		RU Data		001AD00100010014104F0010116561D8C9E6E2C6D3D940C6D4E2	*...}.....|.... / QIWSFLR FMS
428	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
		RU Data		0010D0020001000A124B000611490000	*...}.....
436	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=02, SNF'=0005 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
		RU Data		0039D001000100331009001B110E61D8C9E6E2C6D3D961E4D7C4C1E3C54B D7C3E240C6D4E200141102113A110811661194113211331110110E	*...}..... / QIWSFLR/UPDATE.* *PCS FMS.....M.....*
442	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=00, SNF'=0004 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
		RU Data		0054D0030001004E14240012113AF1F9F8F8F1F0F2F8F0F9F2F6F0F00008 11080000002900051166F100051194F100051132F000051133F000061110 14650016110ED8C9E6E2C6D3D961E4D7C4C1E3C54BD7C3E2	*...}.....+.....19881020092600..* *.....1...M1...0...0...* *.....QIWSFLR/UPDATE.PCS
450	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=02, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
		RU Command		BIND	
		RU Data		31001307B0B051B300878686870006020000000000001023000010E4E2 C9C2D4D9C14BD9C1D6E3D7E2C3F01C000802D8D7C3E2E4D7D71104E4E2C9 C2D4D9C14BD9C1D6E3D7E2C3F00010E4E2C9C2D4D9C14BD9C1D6E3D5D5C2 F02C0A010840404040404040406014CF0384B97DD52DB80BE4E2C9C2D4D9 C14BD9C1C2	*.....GFFG.....US* *IBMRA.RAOTPC0....QPCSUPP..USI* *BMRA.RAOTPC0..USIBMRA.RAOTNNB* *0....-...D.'N...USIBMR* *A.RAB
454	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=02, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
		RU Command		BIND	
		RU Data		31001307B0B051B30080868680006020000000000001023000001C00 0802D8D7C3E2E4D7D71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F000002C 0A010840404040404040406014CF0384B97DD52DB80BE4E2C9C2D4D9C14B	*.....FF.....* *..QPCSUPP..USIBMRA.RAOTNNB...* *...-...D.'N...USIBMRA.*

Figure 266. AS/400A to Host BIND Exchanges

6.13 Trace from AS/400A to AS/400B

The following traces were taken on AS/400A using the trace facility. This trace displays both the XID3 exchanges and the BIND exchanges between AS/400A and AS/400B.

COMMUNICATIONS TRACE										Title: AS/400A TO AS/400B		07/09/89 01:39:36		Page: 1	
Trace Description										AS/400A TO AS/400B					
Line name										L41TR					
Line protocol										TRLAN					
Start Date/Time										07/09/89 01:31:05					
End Date/Time										07/09/89 01:39:33					
Bytes collected										11958					
Buffer size										3 1=128K, 2=256K, 3=2048K					
Data direction										3 1=Sent, 2=Received, 3=Both					
Stop on buffer full										N Y=Yes, N=No					
Format SNA data only										N Y=Yes, N=No					
Format RR, RNR commands										N Y=Yes, N=No					
Controller Name										*ALL *ALL, name					
COMMUNICATIONS TRACE										Title: AS/400A TO AS/400B		07/09/89 01:39:36		Page: 2	
Record Number	S/R	Data Length	Record Timer	Data Type	Controller Name	Destination MAC Address	Source MAC Address	Frame Format	Command	Number Sent	Number Received	Page: Po11/Final	DSAP	SSAP	
1	R	9	7413			400010020001	C00010020002	LLC	TEST			OFF 00	00	00	
Routing Information										: 0270					
Data										000003E60600129D2A					
2	S	9	7413			400010020002	C00010020001	LLC	TEST			OFF 00	00	01	
Routing Information										: 02F0					
Data										000003E60600129D2A					
3	R	0	7418	EBCDIC	TRNAS400B	400010020001	400010020002	LLC	XID			OFF 04	04	04	
4	S	9	7456			400010020002	C00010020001	LLC	TEST			OFF 00	00	00	
Routing Information										: 0270					
Data										000014D2E80004F878					
5	R	9	7456			400010020001	C00010020002	LLC	TEST			OFF 00	00	01	
Routing Information										: 02F0					
Data										000014D2E80004F878					
6	S	0	7456	EBCDIC	TRNAS400B	400010020002	400010020001	LLC	XID			OFF 04	04	04	
7	R	84	7456			400010020001	400010020002	LLC	XID			OFF 04	04	05	
Data										32540561553300000000C000000000001010B700007CA000000007000E					
										11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C20E09F7C1C1C1C1C1C2C110					
										17F1161101130011F9F4F0F4C2F2F0F1F0F0F0F1F5F5F3F3					
										*.../.....{.....}					
										..4USIBMRA.RALYAS4B..7AAAAAABA.					
										*..1.....9404B20100015533					
										OFF 04					
8	S	84	7456	EBCDIC	TRNAS400B	400010020002	400010020001	LLC	XID			OFF 04	04	04	
Data										32540561507800000000C000000000001010B700007CA000000007000E					
										11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C4F310					
										17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8					
										*.../&.....{.....}					
										..4USIBMRA.RALYAS4A..7AAAAAAD3.					
										*..1.....9406B50100015078					
										OFF 04					
9	R	84	7458			400010020001	400010020002	LLC	XID			OFF 04	04	05	
Data										32540561553300000000C000000000001010B700007CA000000007000E					
										11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C20E09F7C1C1C1C1C1C2C110					
										17F1161101130011F9F4F0F4C2F2F0F1F0F0F0F1F5F5F3F3					
										*.../.....4{.....}					
										..4USIBMRA.RALYAS4B..7AAAAAABA.					
										*..1.....9404B20100015533					
										OFF 04					
10	S	84	7458	EBCDIC	TRNAS400B	400010020002	400010020001	LLC	XID			OFF 04	04	04	
Data										32540561507800000000C000000000001010B400007CA000000007000E					
										11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C4F310					
										17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8					
										*.../.....4{.....}					
										..4USIBMRA.RALYAS4A..7AAAAAAD3.					
										*..1.....9406B50100015078					
										OFF 04					
11	R	84	7459			400010020001	400010020002	LLC	XID			OFF 04	04	05	
Data										32540561553300000000C000000000001010B500007CA000000007000E					
										11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C20E09F7C1C1C1C1C1C2C110					
										17F1161101130011F9F4F0F4C2F2F0F1F0F0F0F1F5F5F3F3					
										*.../.....4{.....&.....}					
										..4USIBMRA.RALYAS4B..7AAAAAABA.					
										*..1.....9404B20100015533					
										OFF 04					
12	S	84	7459	EBCDIC	TRNAS400B	400010020002	400010020001	LLC	XID			OFF 04	04	04	
Data										32540561507800000000C000000000001010B400007CA000000007000E					
										11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C4F310					
										17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8					
										*.../.....4{.....}					
										..4USIBMRA.RALYAS4A..7AAAAAAD3.					
										*..1.....9406B50100015078					
										OFF 04					
13	R	0	745A	EBCDIC	TRNAS400B	400010020001	400010020002	LLC	SABME			OFF 04	04	04	
14	S	0	745A			400010020002	400010020001	LLC	UA			OFF 04	04	05	

Figure 267. AS/400A to AS/400B XID Exchanges


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COMMUNICATIONS TRACE      Title: AS/400A TO AS/400B      07/09/89 01:39:42      Page: 1
Trace Description . . . . . : AS/400A TO AS/400B
Line name . . . . . : L41TR
Line protocol . . . . . : TRLAN
Start Date/Time . . . . . : 07/09/89 01:31:05
End Date/Time . . . . . : 07/09/89 01:39:33
Bytes collected . . . . . : 11958
Buffer size . . . . . : 3 1=128K, 2=256K, 3=2048K
Data direction . . . . . : 3 1=Sent, 2=Received, 3=Both
Stop on buffer full . . . . . : N Y=Yes, N=No
Format SNA data only . . . . . : Y Y=Yes, N=No
Format RR, RNR commands . . . . . : N Y=Yes, N=No
Controller Name . . . . . : *ALL *ALL, name
COMMUNICATIONS TRACE      Title: AS/400A TO AS/400B      07/09/89 01:39:42      Page: 2

Record Number . . . . . Number of record in trace buffer (decimal)
S/R . . . . . S=Sent R=Received M=Modem Change
Controller name . . . . . Name of Controller associated with record
SNA Data . . . . . TH, RH and RU for record
TH . . . . . Transmission Header
RH . . . . . Request/Response Header
RU . . . . . Request/Response Unit
TH Parameter Descriptions:
FID . . . . . Format Identification
MPF . . . . . Mapping Field (segment of Basic Information
Unit (BIU) - ONLY, FIRST, MIDDLE, LAST)
OAF . . . . . Origination Address Field
DAF . . . . . Destination Address Field
SNF . . . . . Sequence Number Field
DCF . . . . . Data Count Field
LA . . . . . Local Address
ODAI . . . . . OAF-DAF Assignor Indicator
EFI . . . . . Expedited Flow Indicator
LU . . . . . Logical Unit
SSCP . . . . . System Services Control Point
PU . . . . . Physical Unit
RH Parameter Descriptions:
REQ . . . . . Request
RSP . . . . . Response
RH Category Descriptions:
NC . . . . . Network Control
SC . . . . . Session Control
DFC . . . . . Data Flow Control
NC . . . . . Network Control
FMD . . . . . Function Management Data
FMH . . . . . Function Management Header
RH Indicators:
FI . . . . . Format Indicator
SDI . . . . . Sense Data Included Indicator
BCI . . . . . Begin Chain Indicator
ECI . . . . . End Chain Indicator
DR1 . . . . . Definite Response 1 Indicator
DR2 . . . . . Definite Response 2 Indicator
ERI . . . . . Exception Response Indicator
RTI . . . . . Response Type Indicator
QRI . . . . . Queued Response Indicator
EBI . . . . . End Bracket Indicator
CDI . . . . . Change Direction Indicator
PI . . . . . Pacing Indicator
BBI . . . . . Begin Bracket Indicator
CSI . . . . . Code Selection Indicator
EDI . . . . . Enciphered Data Indicator
PDI . . . . . Padded Data Indicator
CEBI . . . . . Conditional End Bracket Indicator
RLWI . . . . . Request Larger Window Indicator

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Figure 268. AS/400A to AS/400B BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A TO AS/400B	07/09/89 01:39:42	Page: 3
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
17	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('6B8100'X) REQ SC, FI, BCI, ECI, DR1, PI	
			RU Command	BIND	
			RU Data	31001307B0B051B307878686870706020000000000001023000010E4E2 *.....GFFG.....US* C9C2D4D9C14BD9C1D3E8C1E2F4C126000002C3D7E2E5C3D4C70903003330 *IBMRA.RALYAS4A....CPSVCMG.....* EAF900008F1104E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10010E4E2C9C2D4 *9.....USIBMRA.RALYAS4A..USIBM* D9C14BD9C1D3E8C1E2F4C26019CE773A1F55262F5410E4E2C9C2D4D9C14B *RA.RALYAS4B-.....USIBMRA.* D9C1D3E8C1E2F4C12C090407C3D7E2E5C3D4C7 *RALYAS4A....CPSVCMG *	
19	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000001 *... *	
21	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('6B8100'X) REQ SC, FI, BCI, ECI, DR1, PI	
			RU Command	BIND	
			RU Data	31001307B0B051B307878686870706020000000000001023000010E4E2 *.....GFFG.....US* C9C2D4D9C14BD9C1D3E8C1E2F4C226000002C3D7E2E5C3D4C70903000F09 *IBMRA.RALYAS4B....CPSVCMG.....* 3CAE0000561104E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C20010E4E2C9C2D4 *.....USIBMRA.RALYAS4A..USIBM* D9C14BD9C1D3E8C1E2F4C16019CE773A2255262EFC10E4E2C9C2D4D9C14B *RA.RALYAS4A-.....USIBMRA.* D9C1D3E8C1E2F4C22C090407C3D7E2E5C3D4C7 *RALYAS4B....CPSVCMG *	
23	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000001 *... *	
25	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	BIND	
			RU Data	31001307B0B051B3008086868000060200000000000010230000002600 *.....FF.....* 0802C3D7E2E5C3D4C70903003330EAF900008F1105E4E2C9C2D4D9C14BD9 *..CPSVCMG.....9.....USIBMRA.R* C1D3E8C1E2F4C200006019CE773A1F55262F5410E4E2C9C2D4D9C14BD9C1 *ALYAS4B-.....USIBMRA.RA* D3E8C1E2F4C12C090407C3D7E2E5C3D4C7 *LYAS4A....CPSVCMG *	
26	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	BIND	
			RU Data	31001307B0B051B3008086868000060200000000000010230000002600 *.....FF.....* 0802C3D7E2E5C3D4C70903000F093CAE0000561105E4E2C9C2D4D9C14BD9 *..CPSVCMG.....USIBMRA.R* C1D3E8C1E2F4C100006019CE773A2255262EFC10E4E2C9C2D4D9C14BD9C1 *ALYAS4A-.....USIBMRA.RA* D3E8C1E2F4C22C090407C3D7E2E5C3D4C7 *LYAS4B....CPSVCMG *	
29	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0001 RH : ('0B9520'X) REQ FMD, FI, BCI, ECI, DR1, ERI, RLWI, PI, CDI	
			RU Command	FMH- 5=110502FF0003D000000422F0F0F1000000 *.....}....001... *	
			RU Data	000C12C10000000BF4800000 *...A...4... *	
31	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0001 RH : ('0B9520'X) REQ FMD, FI, BCI, ECI, DR1, ERI, RLWI, PI, CDI	
			RU Command	FMH- 5=110502FF0003D000000422F0F0F1000000 *.....}....001... *	
			RU Data	000C12C10000000CF4800000 *...A...4... *	
32	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000008 *... *	

Figure 269. AS/400A to AS/400B BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A TO AS/400B	07/09/89 01:39:42	Page: 4
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
35	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0001 RH : ('039501'X) REQ FMD, BCI, ECI, DR1, ER1, RLWI, PI, CEBI	
		RU Data	:	000C12C1000000CF4800000 *...A....4...	*
37	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000000 *...	*
39	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000000 *...	*
41	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0001 RH : ('039501'X) REQ FMD, BCI, ECI, DR1, ER1, RLWI, PI, CEBI	
		RU Data	:	000C12C1000000BF4800000 *...A....4...	*
42	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0002 RH : ('089181'X) REQ FMD, FI, BCI, ECI, DR1, ER1, PI, BBI, CEBI	
		RU Command	:	FMH- 5=110502FF0003D000000422F0F0F4000000 *.....}....004...	*
		RU Data	:	005C12C20A800000010000000C154410E4E2C9C2D4D9C14BD9C1D3E8C1 *.*.B.....USIBMRA.RALYA* E2F4C100000C450A80000000000003300174615800110E4E2C9C2D4D9C1 *S4A.....USIBMRA* 4BD9C1D3E8C1E2F4C200164700000108076000000000000014C0080 *.*.RALYAS4B.....<.* 8080 *..	*
45	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000000 *...	*
47	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000000 *...	*
49	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0002 RH : ('089181'X) REQ FMD, FI, BCI, ECI, DR1, ER1, PI, BBI, CEBI	
		RU Command	:	FMH- 5=110502FF0003D000000422F0F0F4000000 *.....}....004...	*
		RU Data	:	005C12C20A8000000100000010154410E4E2C9C2D4D9C14BD9C1D3E8C1 *.*.B.....USIBMRA.RALYA* E2F4C200000C450A80000000000003300174615800110E4E2C9C2D4D9C1 *S4B.....USIBMRA* 4BD9C1D3E8C1E2F4C1001647000001080760000000000000014C0080 *.*.RALYAS4A.....<.* 8080 *..	*
51	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000000 *...	*
53	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0003 RH : ('089081'X) REQ FMD, FI, BCI, ECI, DR1, ER1, BBI, CEBI	
		RU Command	:	FMH- 5=110502FF0003D000000422F0F0F4000000 *.....}....004...	*
		RU Data	:	005C12C20A8000000100000010154410E4E2C9C2D4D9C14BD9C1D3E8C1 *.*.B.....USIBMRA.RALYA* E2F4C200000C450A80000000000003300174615800110E4E2C9C2D4D9C1 *S4B.....USIBMRA* 4BD9C1D3E8C1E2F4C1001647000001080760000000000000014C0080 *.*.RALYAS4A.....<.* 8080 *..	*
55	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0003 RH : ('089081'X) REQ FMD, FI, BCI, ECI, DR1, ER1, BBI, CEBI	
		RU Command	:	FMH- 5=110502FF0003D000000422F0F0F4000000 *.....}....004...	*
		RU Data	:	005C12C20A80000001000000F154410E4E2C9C2D4D9C14BD9C1D3E8C1 *.*.B.....USIBMRA.RALYA* E2F4C100000C450A80000000000003300174615800110E4E2C9C2D4D9C1 *S4A.....USIBMRA* 4BD9C1D3E8C1E2F4C2001647000001080760000000000000014C0080 *.*.RALYAS4B.....<.* 8080 *..	*

Figure 270. AS/400A to AS/400B BIND Exchanges

COMMUNICATIONS TRACE		Title: AS/400A TO AS/400B	07/09/89 01:39:42	Page: 5
81	S	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0004 RH : ('0B9081'X) REQ FMD, FI, BCI, ECI, DR1, ERI, BBI, CEBI	
		RU Command	FMH- 5=110502FF0003D000000422F0F0F3000000	*.....}....003...
		RU Data	004312CA038084148200F3E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F2143C00 F6E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C1143D00F3E4E2C9C2D4D9C14BD9 C1D6E3D7E2C3F0002112C500000100000008E2D5C1E2E5C3D4C700000C2C 010840404040404040003612C48000000001660CF0384B97DD52DB30B E4E2C9C2D4D9C14BD9C1C2172B0101130EF6E4E2C9C2D4D9C14BD9C1D3E8 C1E2F4C2	*.....D.B.3USIBMRA.RAOTNNB2... *6USIBMRA.RALYAS4A...3USIBMRA.R... *AOTPSC0...E.....SNASVCMG... *..D.....D.'N... *USIBMRA.RAB.....6USIBMRA.RALY... *AS4B
83	R	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0004 RH : ('0B9081'X) REQ FMD, FI, BCI, ECI, DR1, ERI, BBI, CEBI	
		RU Command	FMH- 5=110502FF0003D000000422F0F0F3000000	*.....}....003...
		RU Data	001F12C44000000001660CF0384B97DD52DB30BE4E2C9C2D4D9C14BD9C1 C2002F12CB038080143C00F6E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C2143D 00F3E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F2001512C500000100000008E2 D5C1E2E5C3D4C70000	*...D.....D.'N...USIBMRA.RA... *B.....6USIBMRA.RALYAS4B... *.3USIBMRA.RAOTNNB2...E.....S... *NASVCMG..
85	S	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('6B8100'X) REQ SC, FI, BCI, ECI, DR1, PI	
		RU Command	BIND	
		RU Data	31001307B0B051B33F878585873F06020000000000001023000010E4E2 C9C2D4D9C14BD9C1D6E3D7E2C3F01D000002E2D5C1E2E5C3D4C71104E4E2 C9C2D4D9C14BD9C1D6E3D7E2C3F00010E4E2C9C2D4D9C14BD9C1D6E3D5D5 C2F22C0A0108404040404040406014CF0384B97DD52DB30BE4E2C9C2D4 D9C14BD9C1C22B2F0202164614800110E4E2C9C2D4D9C14BD9C1D3E8C1E2 F4C1174615800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C200	*.....GEEG.....US... *IBMRA.RAOTPSC0...SNASVCMG..US... *IBMRA.RAOTPSC0..USIBMRA.RAOTNN... *B2....-...D.'N...USIBM... *RA.RAB.....USIBMRA.RALYAS... *4A.....USIBMRA.RALYAS4B.
87	R	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	000001	*...*
89	R	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
		RU Command	BIND	
		RU Data	31001307B0B051B3008085858000060200000000000010230000001D00 0902E2D5C1E2E5C3D4C71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F20000 2C0A0108404040404040406014CF0384B97DD52DB30BE4E2C9C2D4D9C1 4BD9C1C22B2F0202164614800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C1 174615800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C200	*.....EE.....* *..SNASVCMG..USIBMRA.RAOTNNB2... *....-...D.'N...USIBMRA... *RAB.....USIBMRA.RALYAS4A... *.....USIBMRA.RALYAS4B.
91	S	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0001 RH : ('0A9500'X) REQ FMD, FI, BCI, DR1, ERI, RLWI, PI	
		RU Command	FMH- 5=180502FF0003D000000206F1090802D9E4E2C5D3D30000	*.....}....1...RUSSELL..
93	R	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	000008	*...*
95	S	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0002 RH : ('019120'X) REQ FMD, ECI, DR1, ERI, PI, CDI	
		RU Data	001812100200000000002000200000007D8D7C3E2E4D7D7	*.....QPCSUPP
97	R	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	000008	*...*
99	R	TRNAS400B EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0001 RH : ('039501'X) REQ FMD, BCI, ECI, DR1, ERI, RLWI, PI, CEBI	
		RU Data	001812100A00000000002000200000007D8D7C3E2E4D7D7	*.....QPCSUPP

Figure 271. AS/400A to AS/400B BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A TO AS/400B	07/09/89 01:39:42	Page: 6
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
101	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	00003F	*...*
103	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
		RU Command	:	UNBIND	
105	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	*.....D.'N...USIBMRA.RAB*
		RU Command	:	UNBIND	
		RU Data	:	32	*..*
111	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0005 RH : ('0B9081'X) REQ FMD, FI, BCI, ECI, DR1, ERI, BBI, CEBI	
		RU Command	:	FMH- 5=110502FF0003D000000422F0F0F3000000	*.....}....003..*
		RU Data	:	004312CA038084148200F3E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F2143C00 F6E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C1143D00F3E4E2C9C2D4D9C14BD9 C1D6E3D7E2C3F0002012C50000010000007D8D7C3E2E4D7D700000C2C01 084040404040404040003612C48000000001660CF0384B97DD52DB60BE4 E2C9C2D4D9C14BD9C1C2172B0101130EF6E4E2C9C2D4D9C14BD9C1D3E8C1 E2F4C2	*.....D.B.3USIBMRA.RAOTNNB2...* *6USIBMRA.RALYAS4A...3USIBMRA.R* *AOTPSC0...E.....QPCSUPP.....* *.....D.....D.'N...U* *SIBMRA.RAB.....6USIBMRA.RALYA* *S4B*
113	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0005 RH : ('0B9081'X) REQ FMD, FI, BCI, ECI, DR1, ERI, BBI, CEBI	
		RU Command	:	FMH- 5=110502FF0003D000000422F0F0F3000000	*.....}....003...*
		RU Data	:	001F12CA40000000001660CF0384B97DD52DB60BE4E2C9C2D4D9C14BD9C1 C2002F12CB038080143C00F6E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C2143D 00F3E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F2001412C500000100000007D8 D7C3E2E4D7D70000	*...D.....D.'N...USIBMRA.RA* *B.....6USIBMRA.RALYAS4B...* *3USIBMRA.RAOTNNB2...E.....Q* *PCSUPP..*
115	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('6B8100'X) REQ SC, FI, BCI, ECI, DR1, PI	
		RU Command	:	BIND	
		RU Data	:	31001307B0B051B33F878686873F00020000000000001023000010E4E2 C9C2D4D9C14BD9C1D6E3D7E2C3F01C000802D8D7C3E2E4D7D71104E4E2C9 C2D4D9C14BD9C1D6E3D7E2C3F00010E4E2C9C2D4D9C14BD9C1D6E3D5D5C2 F22C0A010840404040404006014CF0384B97DD52DB60BE4E2C9C2D4D9 C14BD9C1C22B2F0202164614800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4 C1174615800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C200	*.....GFFG.....US* *IBMRA.RAOTPSC0...QPCSUPP..USI* *BMRA.RAOTPSC0..USIBMRA.RAOTNNB* *2.....-...D.'N...USIMBR* *A.RAB.....USIBMRA.RALYAS4* *A.....USIBMRA.RALYAS4B.*
117	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000001	*...*
119	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
		RU Command	:	BIND	
		RU Data	:	31001307B0B051B30080868680000020000000000010230000001C00 0802D8D7C3E2E4D7D71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F200002C 0A01084040404040404006014CF0384B97DD52DB60BE4E2C9C2D4D9C14B D9C1C22B2F0202164614800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C117 4615800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C200	*.....FF.....* *..QPCSUPP..USIBMRA.RAOTNNB2...* *...-...D.'N...USIBMRA.* *RAB.....USIBMRA.RALYAS4A.* *.....USIBMRA.RALYAS4B.*

Figure 272. AS/400A to AS/400B BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A TO AS/400B	07/09/89 01:39:42	Page: 7
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
121	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0001 RH : ('0A9500'X) REQ FMD, FI, BCI, DR1, ERI, RLWI, PI RU Command : FMH- 5=230502FF0003D000000430F0F1F9120002D9E4E2E2C5D3D3 *.....}....019...RUSSELL * 0801D9E4E2E2C5D3D30000 *..RUSSELL.. *	
123	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
125	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0002 RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI RU Data : 002B000100010025104100071147D8D7C30006116DC6E200141004141900 *..}.....QPC..._FS..... * 02145700021463000214650002 *..... *	
127	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
129	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0001 RH : ('039520'X) REQ FMD, BCI, ECI, DR1, ERI, RLWI, PI, CDI RU Data : 0031D0030001002B144300071147D8D7C30006116DD9C1D3E8C1E2F4C200 *..}.....QAS..._RALYAS4B. * 14140414650002146300021419000214570002 *..... *	
131	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
133	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI RU Data : 0013D0010001000D104F000911656140C6D4E2 *..}.....|...../ FMS *	
135	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0002 RH : ('039120'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CDI	
137	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
139	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0004 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI RU Data : 001AD00100010014104F0010116561D8C9E6E2C6D3D940C6D4E2 *..}.....|...../QIMSFLR FMS *	
141	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI	
151	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0006 RH : ('0B9001'X) REQ FMD, FI, BCI, ECI, DR1, ERI, BBI, CEBI RU Command : FMH- 5=110502FF0003D000000422F0F0F3000000 *.....}.....003... * RU Data : 004312CA030804148200F3E4E2C9C2D4D9C14B09C1D6E3D5D5C2F2143C00 *.....D.B.3USIBMRA.RAOTNNB2... * F6E4E2C9C2D4D9C14B09C1D3E8C1E2F4C1143D00F3E4E2C9C2D4D9C14B09 *6USIBMRA.RALYAS4A...3USIBMRA.R * C1D6E3D7E2C3F0002012C500000100000007D8D7C3E2E4D7D700000C2C01 *AOTPSC0...E.....QPCSUPP..... * 0840404040404040003612C48000000001660CF0384B97DD52DBC0BE4 *.....D.....D.'N...U * E2C9C2D4D9C14B09C1C2172B0101130EF6E4E2C9C2D4D9C14B09C1D3E8C1 *SIBMRA.RAB.....6USIBMRA.RALYA * E2F4C2 *S4B	

Figure 273. AS/400A to AS/400B BIND Exchanges

Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU
153	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=01, SNF'=0000 RH : ('0B9081'X) REQ FMD, FI, BCI, ECI, DR1, ERI, BBI, CEBI RU Command : FMH- 5=110502FF00030000000422F0F0F3000000 RU Data : 001F12C44000000001660CF0384B97DD52D8C08E4E2C9C2D4D9C14B09C1 C2002F12C8030000143C00F6E4E2C9C2D4D9C14B09C1D3E8C1E2F4C2143D 00F3E4E2C9C2D4D9C14B09C1D6E3D5D5C2F2001412C500000100000007D8 D7C3E2E4D7D70000 *.....}....003... *...D .....D.'N...USIBMRA.RA *B.....6USIBMRA.RALYAS4B... *3USIBMRA.RAOTNNB2...E.....0 *PCSUPP..
155	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=03, OAF'=01, SNF'=0000, EFI RH : ('688100'X) REQ SC, FI, BCI, ECI, DR1, PI RU Command : BIND RU Data : 31001307808051833F878686873F06020000000000001023000010E4E2 C9C2D4D9C14B09C1D6E3D7E2C3F01C00000208D7C3E2E4D7D71104E4E2C9 C2D4D9C14B09C1D6E3D7E2C3F00010E4E2C9C2D4D9C14B09C1D6E3D5D5C2 F2C0A0108404040404040406014CF0384B97DD52D8C08E4E2C9C2D4D9 C14B09C1C22B2F0202164614800110E4E2C9C2D4D9C14B09C1D3E8C1E2F4 C1174615800110E4E2C9C2D4D9C14B09C1D3E8C1E2F4C200 *.....GFF6.....US *IBMRA.RAOTPCSC...QPCSUPP..USI *BMRA.RAOTPCSC...USIBMRA.RAOTNNB *2....-...D.'N...USIBMRA *A.RAB.....USIBMRA.RALYAS4 *A.....USIBMRA.RALYAS4B.
157	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI RU Data : 000001 *... TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=03, SNF'=0000, EFI RH : ('E88000'X) RSP SC, FI, DR1
158	R	TRNAS400B	EBCDIC	RU Command : BIND RU Data : 3100130780805183008086800006020000000000001023000001C00 0802D0D7C3E2E4D7D71105E4E2C9C2D4D9C14B09C1D6E3D5D5C2F200002C 0A0108404040404040406014CF0384B97DD52D8C08E4E2C9C2D4D9C14B D9C1C22B2F0202164614800110E4E2C9C2D4D9C14B09C1D3E8C1E2F4C117 4615800110E4E2C9C2D4D9C14B09C1D3E8C1E2F4C200 *.....FF..... *..QPCSUPP..USIBMRA.RAOTNNB2... *...-...D.'N...USIBMRA... *RAB.....USIBMRA.RALYAS4A... *.....USIBMRA.RALYAS4B.
161	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=03, OAF'=01, SNF'=0001 RH : ('0A9500'X) REQ FMD, FI, BCI, DR1, ERI, RLWI, PI RU Command : FMH- 5=230502FF000300000400430F0F0F5120802D9E4E2E2C5D3D3 0801D9E4E2E2C5D3D30000 *.....}. .005...RUSSELL *..RUSSELL.. RU Data : 005912F500512E2005112A020000510010000002300000000000000000 00F3F1F9F74040C3F14040404000000000000000000000000000022C4E4E2 C200F6F9F740F0F3F7404040404040404040404040404040404040E2F2 *3197 C1 *B.697 037 .....DUS S2
163	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=03, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI RU Data : 000000 *...
165	S	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=03, OAF'=01, SNF'=0002 RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI No RU data
167	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=03, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI RU Data : 00000F *...
169	R	TRNAS400B	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=03, SNF'=0001 RH : ('03A500'X) REQ FMD, BCI, ECI, DR1, DR2, RLWI, PI RU Data : 004812A0900005001002000003C0000C9F9F0F2D9C1D3E8C1E2F4C2D9C1 D6E3D7E2C3F0E2F200 00000000000000000000 *.....I902RALYAS4BRA *OTPC0S2..... *.....

Figure 274. AS/400A to AS/400B BIND Exchanges

7.0 Scenario 4: PS/2 (DOS3.3) -- AS/400A -- S/370 -- AS/400B

7.1 Environment Tested

In this chapter we will describe the definitions required to connect a PS/2 with AS/400 PC Support to AS/400A via a token-ring. We have already discussed how to connect AS/400A and AS/400B to the S/370 subarea network in chapter 5.0, "Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host" on page 99 so please refer to that chapter for detailed information and definitions.

We will also describe how the PS/2 with AS/400 PC Support can establish sessions with both AS/400A and AS/400B which are situated on either side of an S/370 subarea network.

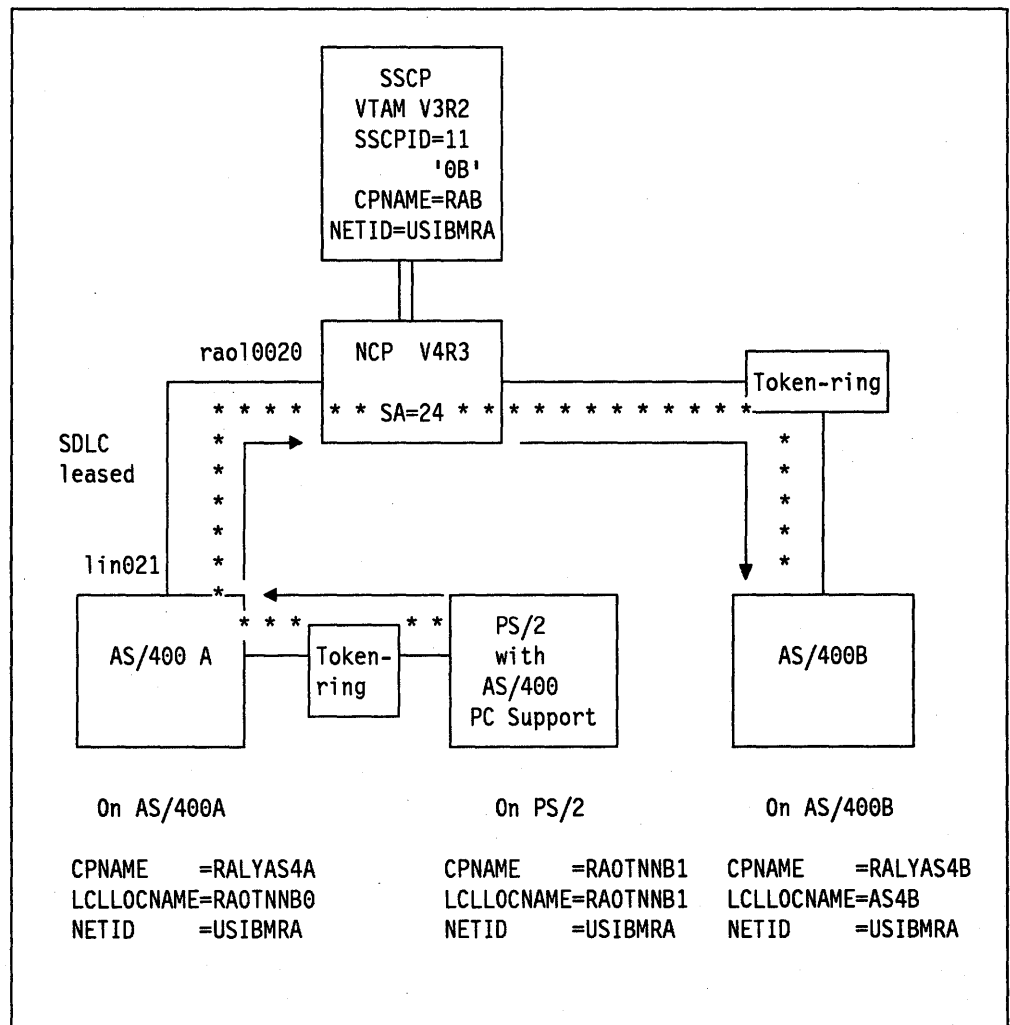


Figure 276. Scenario 4

7.2 Definitions on AS/400A (RALYAS4A) for PS/2 (RAOTNNB1)

When you are going to connect an PS/2 to AS/400A via a token-ring you are required to perform the following steps:

- Check the network attributes
- Create a line description from AS/400A to the PS/2
- Create an APPC controller description for the PS/2
- Configure APPN remote and local location lists
- Create a mode entry.

7.2.1 Network Attributes

The network attributes contain the AS/400's local system values for APPN. You can display these attributes by using the DSPNETA command or by going to menu "NETWORK".

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu

   90. Sign off

Selection or command
====> dspneta

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 277. AS/400 Main Menu Screen

Type DSPNETA to display the network attributes.

```

                                Display Network Attributes
                                System:  RALYAS4A
Current system name . . . . . : RALYAS4A
Pending system name . . . . . :
Local network ID . . . . . : USIBMRA
Local control point name . . . . . : RALYAS4A
Default local location . . . . . : RALYAS4A
Default mode . . . . . : MODS361
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . :
More...

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 278. Display Network Attributes Screen

Notice we have defined the local control point name, local network ID, default location name and APPN node type. You can change these parameters by the CHGNETA command or by taking option 2 from the Network menu.

```

                                Display Network Attributes
                                System:  RALYAS4A
Alert status . . . . . : *UNATTEND
Alert primary focal point . . . . . : *NO
Alert default focal point . . . . . : *NO
Alert logging status . . . . . : *ALL
Alert controller description . . . . . :
Message queue . . . . . : QSYSOPR
  Library . . . . . : QSYS
Output queue . . . . . : QPRINT
  Library . . . . . : QGPL
Job action . . . . . : *FILE
Maximum hop count . . . . . : 16
DDM request access . . . . . : *OBJAUT
PC Support request access . . . . . : *OBJAUT

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 279. Display Network Attributes Screen (continued)

7.2.2 Create Line Description

The first step in defining the PS/2 to AS/400A is to create the line description. You can do this by either following the screens documented or by using the CL command CRTLINTRN.

```
MAIN                      AS/400 Main Menu                      System:  RALYAS4A

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
    90. Sign off

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 280. AS/400 Main Menu Screen

Select option 6 in Figure 280 to go to the Communications screen.

```
CMN                      Communications                      System:  RALYAS4A

Select one of the following:

    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs
    70. Related commands

Selection or command
===> 4

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 281. Communications Screen

Select option 4 in Figure 281 to configure communications.

```

CFGCMN          Configure Communications and Remote Hardware
                                                    System:  RALYAS4A
Select one of the following:

  1. Lines
  2. Communications controllers
  3. Work station controllers
  4. Communications devices
  5. Printers
  6. Display stations
  7. Modes
  8. Classes-of-service
  9. Configure address and location lists

Selection or command
==> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
                                                    (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 282. Configure Communications and Remote Hardware Screen

Select option 1 in Figure 282 to define your line description.

```

                                Work with Line Descriptions
                                                    System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt Line      Type      Text

Parameters for option 2 or command
==>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status
                                                    (C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 283. Work with Line Descriptions Screen

Select option F6 in Figure 283 to create the line description.

```

                                Create Line Description

Type choices, press Enter.

New line description  L41TR      Name
Line type . . . . . *TRLAN  *ASYNC=Asynchronous communications
                                     *BSC=Binary synchronous communications
                                     *SDLC=Synchronous data link control
                                     *TDLC=Twinaxial data link control
                                     *TRLAN=Token-Ring local area network
                                     *X25=X.25 communications network

F3=Exit  F12=Previous

```

Figure 284. Create Line Description Screen

The line type we are using is *TRLAN.

```

CRTLINTRN          Create Line Desc (Token-Ring)

Type choices, press Enter.

Line description . . . . . ▶ L41TR          Name
Resource name . . . . . lin041           Name
Online at IPL . . . . . *YES             *YES, *NO
Vary on wait . . . . . *NOWAIT          *NOWAIT, 15-180 (1 second)
Maximum controllers . . . . . 40         1-256
Maximum frame size . . . . . 1994       265, 521, 1033, 1994
Local adapter address . . . . . 400010020001 400000000000-7FFFFFFF...
Exchange identifier . . . . . *SYSGEN     05600000-056FFFFF, *SYSGEN
SSAP list:
  Source Service Access Point . *SYSGEN   *SYSGEN, 04, 08, 0C, 10...
    + for more values
Text 'description' . . . . . Token-Ring Line Description
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 285. Create Line Description (TRLAN) Screen

The resource name is the name of the physical communications port on the AS/400. It can be found by executing the command WRKHDWPRD and taking the option to work with your rack configuration.

The local token-ring adapter address of AS/400A is 400010020001.

Press Enter to create your line description. It will return you to the "Work with line descriptions" screen.

7.2.3 Create APPC Controller Description

Now you must create an APPC controller description which describes the PS/2 you are connecting to. Again, you can follow the screens or enter the CL command CRTCTLAPPC.

```
CFGCMN          Configure Communications and Remote Hardware
                                     System:  RALYAS4A
Select one of the following:

    1. Lines
    2. Communications controllers
    3. Work station controllers
    4. Communications devices
    5. Printers
    6. Display stations
    7. Modes
    8. Classes-of-service
    9. Configure address and location lists

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 286. Configure Communications and Remote Hardware Screen

Select option 2 in Figure 286 to configure your APPC controller.

```
                                Work with Controller Descriptions
                                     System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
    2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Controller  Type  Text
   Q  QESCTL     *HOST
   T  QTICTL     *HOST

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 287. Work with Controller Descriptions Screen

Select F6 to create your APPC controller description.


```

                                Create Controller Description

Type choices, press Enter.

New controller
description . . . . . TRCTLPS      Name

Controller type/class *APPC      *APPC=Advanced program-to-program
                                communications
                                *ASYN=Asynchronous communications
                                *BSC=Binary synchronous communications
                                *FNC=Finance
                                *HOST=SNA host

F3=Exit  F12=Previous

```

Figure 288. Create Controller Description Screen

We will be defining *APPC as our controller type as we will be communicating to AS/400B.

```

CRTCTLAPPC      Create Ctl Desc (APPC)

Type choices, press Enter.

Controller description . . . . . ▶ TRCTLPS      Name
Link type . . . . . ▶ *TRLAN      *SDLC, *TRLAN, *X25
Online at IPL . . . . . *YES      *YES, *NO
APPN capable . . . . . *YES      *YES, *NO
Switched line list . . . . . ▶ L41TR      Name
                                + for more values
Maximum frame size . . . . . *LINKTYPE      *LINKTYPE, 265, 521, 1033...
Remote network identifier . . . ▶ USIBMRA      Name, *NETATR, *NONE
Remote control point name . . . ▶ PS2      Name
SSCP identifier . . . . . ▶      050000000000-05FFFFFFFF
Initial connection . . . . . *ANS      *DIAL, *ANS
TRLAN remote adapter address . ▶ 400000000045  000000000001-FFFFFFFF
APPN CP session support . . . . *NO      *YES, *NO
APPN node type . . . . . *LENNODE      *ENDNODE, *LENNODE...
APPN transmission grp number . . 1      1-20, *CALC

More...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 289. Create Controller Description (APPC) Screen

In Figure 289 we will be defining "APPN capable" as *YES. The APPC device descriptions will be automatically created, varied on and attached to the right controller using the information defined in the network attributes, the associated mode description, the location list and the application program. It also means that the local system will appear as an End Node or Network Node to the adjacent system.

We will use the switched line list name to the token-ring name we have just created.

The token-ring adapter address of the PS/2 is 400000000045.

Press Enter to create your APPC controller description.

7.2.4 Configure APPN Remote and Local Location List

Since we defined our APPC controller with APPN(*YES) the device descriptions will be automatically created. After the automatic creation of the devices, the AS/400 will vary them on and attach them to the correct controller in the following situations:

- When a session is requested and the route chosen and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name defined.
- When a BIND is received for a local location and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name defined.

The AS/400A, in this scenario, doesn't require the remote location of the PS/2 to be defined as the PS/2 will always be initiating the sessions.

7.2.5 Create Mode Description

The mode description describes the session characteristics and number of sessions that will be used to negotiate the allowable values between the local and remote locations. A mode with the same name must exist at both end points. There must also be a mode entry with the same name in VTAM/NCP.

This mode description QPCSUPP is created automatically when AS/400 PC Support is installed on AS/400A and must be used with AS/400 PC Support.

In Figure 290 the mode characteristics of QPCSUPP are shown.

```
Display Mode Description
Mode description name . . . . . : MODD      QPCSUPP
Class-of-service . . . . . : COS        #CONNECT
Maximum number of sessions . . . . : MAXSSN  64
Maximum conversations . . . . . : MAXCNV   64
Locally controlled sessions . . . . : LCLCTLSSN 0
Pre-established sessions . . . . . : PREESTSSN 0
Inbound pacing value . . . . . : INPACING  7
Outbound pacing value . . . . . : OUTPACING 7
Max length of request unit . . . . : MAXLENRU 2048
Text . . . . . : TEXT      AS/400 PC Support mode entr
y
Press Enter to continue.

F3=Exit F12=Previous
```

Figure 290. Display Mode Descriptions Screen

The parameters defined here must match those defined on the remote location.

7.3 Relationship between AS/400A and the PS/2

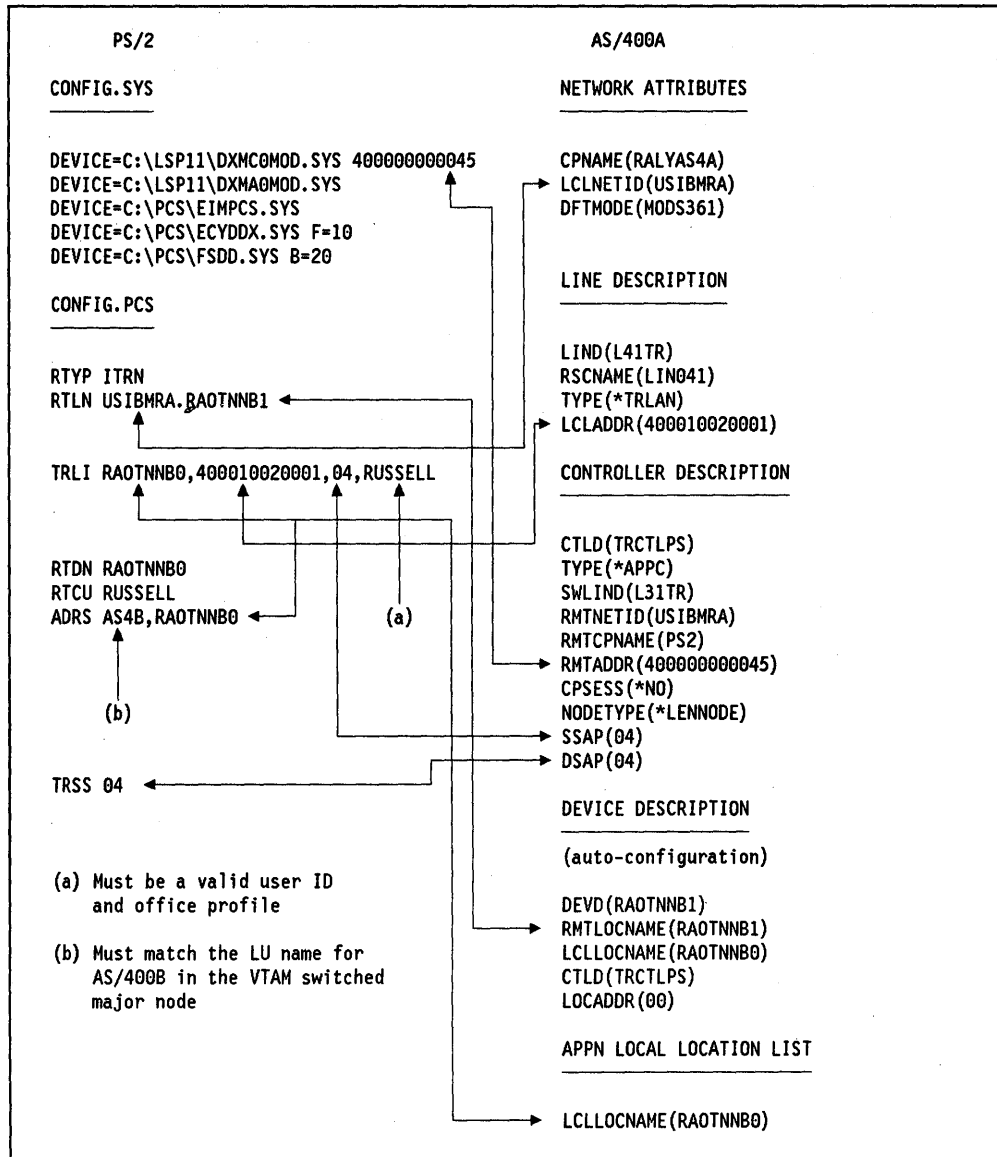


Figure 291. Relationship between AS/400A and PS/2

7.4 Definitions on the AS/400A (RALYAS4A) to Host

When you are going to connect AS/400A as an APPN node to an S/370 subarea to support independent LUs you are required to perform the following steps:

- Check the network attributes
- Create a line description from AS/400A to VTAM/NCP
- Create a host controller description for the S/370 host
- Configure APPN remote and local location list
- Create a mode entry.

We have already defined the definitions required to connect AS/400A to the host. You can refer to this information in Chapter 5.0, "Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host" on page 99.

7.5 Definitions on AS/400 B (RALYAS4B) to Host

When you are going to connect AS/400B as an APPN node to an S/370 subarea to support independent LUs you are required to perform the following steps:

- Check the network attributes
- Create a line description from the AS/400B to VTAM/NCP
- Create a host controller description for the S/370 host
- Configure APPN remote and local location lists
- Create a mode entry.

We have already defined the definitions required to connect AS/400B to the host. You can refer to this information in Chapter 5.0, "Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host" on page 99.

7.6 Definitions on the PS/2 (RAOTNNB1)

In order to configure the PS/2 with AS/400 PC Support to connect to AS/400A we must perform the following:

- Install PC Support on the AS/400A
- Initialize PC Support code on the AS/400A
- Install PC Support on the PS/2
- Modify the CONFIG.SYS file on the PS/2
- Modify the CONFIG.PCS file on the PS/2
- Change the STARTPCS.BAT file on the PS/2.

7.6.1 Install PC Support on the AS/400A

Sign on to the AS/400 as security officer (QSECOFR) to install AS/400 PC Support. See *AS/400 Licensed Programs Installation Guide* for installation instructions.

7.6.2 Initialize PC Support code on the AS/400A

You will have to run the CL command INZPCS in order to initialize AS/400 PC Support. All personal computers using PC Support need to have the same keyboard type and code pages. If you enter the command with no parameters, it will take the default from the system.

7.6.3 Install PC Support on the PS/2

In the following installation description we assume that DOS 3.30 has already been installed on the PS/2.

Insert the AS/400 PC Support (PCS) diskette into drive A and type: **A INSTALL**.

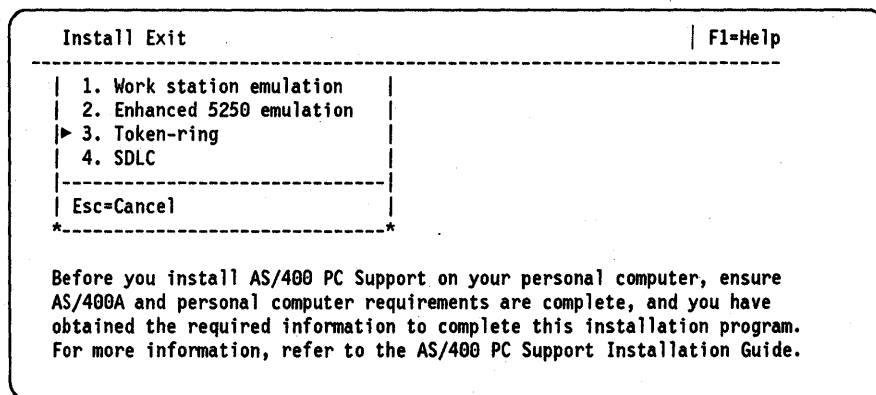


Figure 292. Installation Options Screen

Figure 292 is the screen that is displayed after you enter the INSTALL command. You will be installing the token-ring support so you will take option 3 on the Installations Options screen.

Then the following screen will be displayed:

```

                          Installing AS/400 PC Support
                          (Token-ring)
Complete the following with the information from the form; press Enter.

PCS directory drive          . . . (C)

PC location name            . . . . . (USIBMRA.RAOTNNB1)

System name                 . . . . . (RAOTNNB0)

System
token-ring address . . . . . (400010020001)

Which functions
will you use?               . . .►Organizer
                              ►Work Station Function
                              ►Message Function
                              ►Virtual Printer
-----
Enter Esc=Cancel F1=Help F3=Exit

```

Figure 293. Installing AS/400 PC Support (SDLC) Screen

After entering these values, the PCS directory is created in the disk drive C and the PC Support files are copied from the AS/400 PC Support diskette to this directory. At the same time the CONFIG.SYS file is modified and the files CONFIG.PCS and STARTPCS.BAT are created using the information you have just entered.

```

C:\PCS>dir

Volume in drive C is DOSTUG
Volume Serial Number is 2353-14EE
Directory of C:\PCS

ECYDDX  SYS      20384 08-31-88  8:44a
FSDD    SYS      49280 06-24-89  3:37a
EIMPCS  SYS      5520 06-24-89  3:37a
XXRTRS  MRI      13848 06-24-89  3:39a
FSPC    EXE      88640 06-24-89  3:37a
FSPC    HLP      12393 01-01-80  12:03a
STARTRTR EXE     70168 06-24-89  3:37a
STOPRTR EXE     42728 06-24-89  3:37a
ITRNRTR EXE     52724 06-30-89  6:16a
CONFIG  PCS       110 05-30-89  11:05a
STARTPCS BAT     554 05-30-89  8:59a
UPDATE  PCS       40 10-28-88  9:26a
      14 File(s)  21358496 bytes free

```

Figure 294. PCS Directory on drive C Screen

Figure 294 displays the PCS directory when the installation is completed.

7.6.4 Modify the CONFIG.SYS File on the PS/2

The CONFIG.SYS file is the PS/2 configuration file and not a AS/400 PC Support file. If you already have this file on your PS/2, the installation program will automatically add the device drivers to be used by the PC Support memory manager and shared folders. If you are using the workstation function, "files=15" will be added to the CONFIG.SYS file. If you are using a token-ring attachment, the device drivers for the LAN adapter handler will be included in CONFIG.SYS file if not already there.

We also included F=10 to the ECYDDX driver which allows ten files to be opened at one time and B=20 to the FSDD driver which sets aside twenty blocks (block size is 1880 bytes) of storage for cache buffering on the PS/2.

```

D>type CONFIG.SYS
files=15
break=on
lastdrive=Z
BUFFERS=20
DEVICE=C:\LSP11\DXMC0MOD.SYS 400000000045
DEVICE=C:\LSP11\DXMT0MOD.SYS S=8 ST=8 C=8 O=N ES=2 EST=2
DEVICE=C:\LSP11\DXMA0MOD.SYS
DEVICE=C:\PCS\EIMPCS.SYS
DEVICE=C:\PCS\ECYDDX.SYS F=10
DEVICE=C:\PCS\FSDD.SYS B=20

```

Figure 295. CONFIG.SYS File Screen

7.6.5 Modify the CONFIG.PCS File on the PS/2

This file is the PC Support configuration file on the PS/2. It is created with the parameters you defined when you installed PC Support on the PS/2. In Figure 296 you can see the default CONFIG.PCS file that was created.

```

D>cd PCS
C:\PCS>type CONFIG.PCS.
RTYP ITRN
RTLN USIBMRA,RAOTNNB1
TRLI RAOTNNB0,400010020001

```

Figure 296. CONFIG.PCS Default File Screen

We will now tailor this CONFIG.PCS file to add in the parameters for the token-ring connection to AS/400A and the parameters for AS/400B.

In Figure 297 on page 227 the following parameters are defined:

- **RTYP ITRN** specifies the router to use when communicating with AS/400A.
- **RTLN USIBMRA,RAOTNNB1** uniquely identifies the PS/2 to the network. The network identifier is USIBMRA and the PC location name is RAOTNNB1. This name is sent to the AS/400 whenever the router makes contact.
- **TRLI RAOTNNB0,400010020001,04,RUSSELL** specifies the link identification and must be in the CONFIG.PCS file when the IBM token-ring router is used. Link identification includes the system name (which must match the local location name on AS/400A, the token-ring address of AS/400A, the destination SAP and userid (which must be a valid user profile name on AS/400A).
- **RTDN RAOTNNB0** specifies the default system name used to start conversations if a name is not used. In this case it is AS/400A's local location name.
- **RTCU RUSSELL** specifies the common user ID to be used.
- **ADRS AS4B,RAOTNNB0** specifies the system name AS4B and the link identification name of RAOTNNB0. AS4B must match the local location name on AS/400B and the LU name defined in the VTAM switched major node defi-

dition for AS/400B. RAOTNNB0 must match the system name in the link identifier TRLI.

```
RTYP ITRN
RTLN USIBMRA.RAOTNNB1
TRLI RAOTNNB0,400010020001,04,RUSSELL
RTDN RAOTNNB0
TRSS 04
RTCU RUSSELL
ADRS AS4B,RAOTNNB0
```

Figure 297. Tailored CONFIG.PCS File for the PS/2 token-ring Link

7.6.6 Change the STARTPCS.BAT File on the PS/2

This file is created when you install PC Support on the PS/2. The contents will depend on the functions you selected in Figure 293 on page 225. This file will contain the necessary commands to start PC Support. If you have the option to leave this file as created or to customize it for your specific requirements. Details of this customization can be found in *PC Support Operations Reference Manual*. We recommend that you copy the contents of QIWSFLR to your fixed disk drive. Once that has been done you must change the STARTPCS.BAT file to run from the C drive.

The following screen displays the **STARTPCS.BAT** file.

C: \PCS\STARTRTR C: PCS\CONFIG.PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	Start SDLC Router
ECHO ON C: \PCS\FSPC ASSIGN I: QIWSFLR //RAOTNNB0 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	Assign drive I to AS/400A folder QIWSFLR
ECHO ON C: \PCS\FSPC ASSIGN J: QIWSFLR //AS4B ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	Assign drive I to AS/400B folder QIWSFLR
ECHO ON C: \PCS\PCSUPDT I: \ C: \PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	Run PC Support Update Function
ECHO ON C: \PCS\STARTMSG C: \PCS\CONFIG.PCS ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	Start Message Function
ECHO ON C: \PCS\VPRT ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	Start Virtual Print Function
ECHO ON C: \PCS\WSF C: \PCS\WSF1.DAT ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	Start Workstation Function to AS/400A and AS/400B.
ECHO ON C: \PCS\STARTWSF 1 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	
ECHO ON C: \PCS\STARTWSF 2 ECHO OFF IF ERRORLEVEL 20 GOTO EXIT	
ECHO ON C: \PCS\PCO C: \PCS\CONFIG.PCS ECHO OFF : EXIT ECHO ON	Start AS/400 PC Support Organizer

Figure 298. STARTPCS.BAT File

7.7 Definitions Defined in the Host (RAB) for the PS/2

```

***** 01220008
*      BUILD MACRO SPECIFICATIONS                * 01230008
***** 01240008
NCPBUILD BUILD VERSION=V4R3,      # NCP V4 REL3      X01250008
      ADSESS=20,                   ENOUGH BLOCKS DEFINED IN RESSCB X01260008
      AUXADDR=10,                  ADDITIONAL PLU ADDRESSES FOR ILU X01260108
      ENABLT0=6.5,                 IBM 386X REQUIRE 6.5 AS MINIMUM X01370008
      MAXSESS=16,                  MAX LU-LU SESSIONS ANY LU CAN HAVE X01400008
      MAXSSCP=8,                   MAXIMUM SESSIONS FOR LU          X01401008
      MODEL=3725,                  !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! X01420008
      NAMTAB=50,                   # ENTRIES FOR SSCP, CP & NET NAMES X01430008
      NETID=USIBMRA,               NATIVE NETWORK                    X01431008
      NEWNAME=RAONCP0,            NAME OF THIS LOAD MODULE          V3X01440008
      SUBAREA=24,                 SUBAREA ADDRESS = 24              X01470008
      COSTAB=ISTSDCOS,            COS TABLE USED TO ACTIVATE ER/VR X01520008
      SESSLIM=64,                 NUMBER OF SESSIONS PER NAF        01580008
      :                           :
      :                           :

```

Figure 299. NCP BUILD Macro for the AS/400A and PS/2

In Figure 299 we define the BUILD macro which indicates the NCP version, the type of communication controller to be used and the name of this load module. It also specifies the NCP subarea of 24. USIBMRA is the network ID for the VTAM/NCP node.

```

***** 04750008
*      LINE MACRO SPECIFICATION      SDLC LINK 020      04760008
***** 04770008
RAOL0020 LINE ADDRESS=(020,HALF),  TRANSMIT AND RECEIVE ADDRESSES X04780008
      NPACOLL=YES,                  NPAX04790008
      ANS=CONTINUE,                 DON'T BREAK CROSS DOMAIN SESSIONS X04800008
      OWNER=RAB,                    (V) VTAM                            X04810008
      ISTATUS=ACTIVE,               X04820008
      DUPLEX=(FULL),                REQUEST TO SEND ALWAYS UP           X04830008
      ETRATIO=30,                   DEFAULT                              X04840008
      LPDATS=LPDA1,                 X04850008
      MAXPU=9,                       ALLOW NO MORE THAN 9 PUS ON LINE X04860008
      SERVLIM=2,                     X04870008
      SRT=(,64),                     X04880008
      SPEED=(4800)                   LINE SPEED IS 4800 BPS              04890008
      ATTACH=MODEM,                 # NOT SUPPORTED V4R3                04900008
***** 04920008
*
*
*      SERVICE MACRO SPECIFICATION FOR SDLC (LINE 020) * 04930008
*
*
***** 04960008
      SERVICE ORDER=(RAOP07,        X04970008
      RAOP08,                       X04980008
      RAOP1B,                        AS/400A                             X04981012
      RAOP5C,                        PS/2                                  X04982016
      RAOP09),                       S/38                                  X04990008
      MAXLIST=9                       05000008
***** 05010008

```

Figure 300. NCP Line Macro for the AS/400A and PS/2

In Figure 300 the line RAOL0020 is specified as a non-switched multipoint line attached to the host RAB.

```

***** 07993008
* PU/LU MACRO RESERVED FOR THE AS/400A (RALYAS4A) * 08000008
***** 08010008
*RAOP1B PU ADDR=C4, 3270 ADDRESS='C' (EBCDIC) X 08020008
* 08021009
* PU AND LU DEFINITION FOR AS/400A 08022009
* FOR SUPPORT DEPENDENT AND INDEPENDENT LUS 08023009
* GER ROOVERS EXT.2322 08024009
* 08025009
***** 08026010
RAOP1B PU ADDR=C4, 3270 ADDRESS='C' (EBCDIC) X08029209
MAXDATA=265, MAXIMUM AMOUNT OF DATA X08029309
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE X08029409
PACING=(7), PACING SET BY BIND IMAGE X08029512
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING X08029609
PASSLIM=7, X08029709
PUTYPE=2, X08029809
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN X08029909
DISCNT=(NO), (V) VTAM ONLY X08030009
ISTATUS=ACTIVE, (V) VTAM ONLY X08030109
VPACING=8, (V) VTAM ONLY X08030210
XID=YES 08030310
* STATOPT='AS/400 T2.1' 08030410
***** 08030509
* DEFINITIONS FOR AS/400A * 08030609
* RAOTNNB0 TO B3 INDEPENDENT LUS 08030709
***** 08031609
RAOTNNB0 LU RESSCB=4, INDEPENDENT LU for AS/400A X08031710
LOCADDR=0, X08031813
MODETAB=MTGS3X, X08031910
DLOGMOD=MDS361, X08032010
ISTATUS=ACTIVE 08032110
* STATOPT='INDEPENDENT LU' 08032210
RAOTNNB1 LU RESSCB=4, INDEPENDENT LU for PS/2 X08032310
LOCADDR=0, X08032413
MODETAB=MTGS3X, X08032510
DLOGMOD=QPCSUPP, X08032610
ISTATUS=ACTIVE 08032710
* STATOPT='INDEPENDENT LU' 08032810
RAOTNNB2 LU RESSCB=4, INDEPENDENT LU for AS/400B X08032910
LOCADDR=0, X08033013
MODETAB=MTGS3X, X08033110
DLOGMOD=QPCSUPP, X08033210
ISTATUS=ACTIVE 08033310
* STATOPT='INDEPENDENT LU' 08033410
RAOTNNB3 LU RESSCB=4, INDEPENDENT LU X08033510
LOCADDR=0, X08033613
MODETAB=MTGS3X, X08033710
DLOGMOD=MDS361, X08033810
ISTATUS=ACTIVE 08033910
* STATOPT='INDEPENDENT LU' 08034010

```

Figure 301. NCP PU and LU Macro for the AS/400

In Figure 301 the PU "RAOP1B has a PU address of C4 defined. This value has to match the station address defined in the AS/400A controller description for this host.

PUTYPE=2 and XID=YES must be specified so the host appears as a T2.1 node to the AS/400.

The LU used for scenario 4 is RAOTNNB0 for AS/400A and RAOTNNB1 for PS/2. Because they are independent LUs, we have to specify LOCADDR=0. RESSCB=4 means that this specific LU has four reserved session control blocks for itself.

7.8 Activate Communications on AS/400A to PS/2

This section will describe how to activate a communications link between AS/400A and the PS/2.

To activate a token-ring line on AS/400A you need to "vary on" the line then the controller. The following screens will guide you through this exercise. You can also go directly to the Work with Configuration Status screen by using the WRKCFGSTS command.

```
MAIN                               AS/400 Main Screen                               System:  RALYAS4A
Select one of the following:
    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu
   90. Sign off

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 302. AS/400 Main Screen

Select option 6 in Figure 302 to go to the Communications screen.

```

CMN                               Communications                               System:  RALYAS4A

Select one of the following:

    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 303. Communications Screen

Select option 1 in Figure 303 to choose the Communications Status screen.

```

CMNSTS                             Communications Status                             System:  RALYAS4A

Select one of the following:

    1. Work with line status
    2. Work with controller status
    3. Work with device status

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 304. Communications Status Screen

Select option 1 in Figure 304 to work with line status.

```

WRKCFGSTS                           Work with Configuration Status

Type choices, press Enter.

Type . . . . . ▶ *LIN           *LIN, *CTL, *DEV
Configuration description . . . ▶ L41TR       Name, generic*, *ALL, *CMN...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 305. Work with Communications Status Screen

Type the line description name in Figure 305 to work with line status.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
  1-Vary on  2-Vary off  3-Hold device  4-End recovery  5-Work with job
  6-Release device  7-Resume recovery
Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1 L41TR VARIED OFF
More...
Parameters for options 1, 2, 3 or command
====>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Previous
F14=Work with lines
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 306. Work with Communications Status Screen

Type option 1 to vary on the line in Figure 306.

```

CMNSTS Communications Status
System: RALYAS4A
Select one of the following:
  1. Work with line status
  2. Work with controller status
  3. Work with device status
  70. Related commands
Selection or command
====> 2_
F3=Exit F4=Prompt F9=Retrieve F12=Previous F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 307. Communications Status Screen

Select option 2 in Figure 307 to work with controller status.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
  1-Vary on  2-Vary off  3-Hold device  4-End recovery  5-Work with job
  6-Release device  7-Resume recovery
Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1 TRCTLPS VARIED OFF
More...
Parameters for options 1, 2, 3 or command
====>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Previous
F14=Work with lines
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 308. Work with Communications Status Screen

Select option 1 in Figure 308 to vary on the controller.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
    L41TR          ACTIVE
    TRCTLPS       ACTIVE
    RAOTNNB1      ACTIVE
Parameters for options 1, 2, 3 or command
==>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 309. Work with Communications Status Screen

If you select F5 to refresh the screen in Figure 306 on page 233 the token-ring line is ACTIVE and the controller is ACTIVE. Because we specified CP-CP session support and APPN *YES the device descriptions are automatically created, attached to the right controller and varied on. The refreshed screen is shown in Figure 309.

7.9 Activating communications on the S/370 Host for the PS/2

```

NCCF          N E T V I E W                      RABAN WTCR21    05/31/89 16:38:30
* RABAN      V NET,ACT,ID=RAOL0020                ←-----
RABAN        IST097I VARY      ACCEPTED
RABAN        IST093I RAOL0020 ACTIVE
C RABAN      ►AOPNLIST RAOL0020 NONE
RABAN        IST097I DISPLAY  ACCEPTED
  
```

Figure 310. Activate Line for AS/400A

AS/400A is T2.1 node connected to the host via a SDLC leased line. Therefore to vary on the line we should issue the VTAM command "V NET,ACT,ID=RAOL0020".

```

NCCF          N E T V I E W                      RABAN WTCR21    05/31/89 16:39:12
* RABAN      V NET,ACT,ID=RAOP1B,SCOPE=ALL        ←-----
RABAN        IST097I VARY      ACCEPTED
RABAN        IST093I RAOP1B  ACTIVE
C RABAN      ►AOPNLIST RAOP1B NONE
RABAN        IST097I DISPLAY  ACCEPTED
  
```

Figure 311. Activate PU for the AS/400A

To vary on AS/400A PU enter the VTAM command "V NET,ACT,ID=RAOP1B,SCOPE=ALL".

```

NCCF          N E T V I E W                      RABAN WTCR21    05/31/89 16:40:02
C RABAN      DISPLAY NET, ID=RAOP1B,SCOPE=ALL
RABAN        IST097I DISPLAY  ACCEPTED
' RABAN
IST075I NAME = RAOP1B                               , TYPE = PU_T2.1 ←-----
IST486I STATUS= ACTIV                               , DESIRED STATE= ACTIV
IST081I LINE NAME = RAOL0020, LINE GROUP = RAOGSFL0, MAJNOD = RAONCP1
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I LOGICAL UNITS:
IST080I RAOTNNB0 ACTIV                               RAOTNNB1 ACT/S      RAOTNNB2 ACTIV
IST080I RAOTNNB3 ACTIV                               RAOTNNB4 ACTIV     RAOTNNB5 ACTIV
IST080I RAOT1B01 ACTIV                              RAOT1B02 ACTIV     RAOT1B03 ACTIV
IST080I RAOT1B04 ACTIV                              RAOT1B05 ACTIV     RAOT1B06 ACTIV
IST080I RAOT1B07 ACTIV                              RAOT1B08 ACTIV     RAOT1B09 ACTIV
IST080I RAOT1B0A ACTIV                              RAOT1B0B NEVAC     RAOT1B0C NEVAC
IST080I RAOT1B0D NEVAC                              RAOT1B0E ACTIV     RAOT1B0F ACTIV
IST080I RAOT1B0G ACTIV                              RAOT1B0H ACTIV     RAOT1B0I ACTIV
IST080I RAOT1B0J ACTIV
IST314I END
  
```

Figure 312. Display Status of the PU for the AS/400A

Figure 312 displays the status of the PU for AS/400A. Notice that the PU is seen as a T2.1 after activation and RAOTNNB1 (PS/2) is active and in session.


```

NCCF          N E T V I E W          RABAN WTCR21    06/12/89 13:10:00
C RABAN      DISPLAY NET, ID=RAOTNNB1, SCOPE=ALL
RABAN        IST097I DISPLAY ACCEPTED
' RABAN
IST075I NAME = RAOTNNB1          , TYPE = LOGICAL UNIT
IST486I STATUS= ACT/S          , DESIRED STATE= ACTIV
IST861I MODETAB=MTGS3X        USSTAB=***NA*** LOGTAB=***NA***
IST934I DLOGMOD=MODS361
IST597I CAPABILITY-PLU ENABLED , SLU ENABLED , SESSION LIMIT NONE
IST081I LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP1
IST135I PHYSICAL UNIT = RAOP1B
IST082I DEVTYPE = INDEPENDENT LU
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I SESSIONS:
IST634I NAME      STATUS      SID          SEND RECV VR TP NETID
IST635I AS4B     ACTIV-S     CE773A1F55262F70      0 0 USIBMRA
IST635I AS4B     ACTIV-S     CE773A1F55262F71      0 0 USIBMRA
IST314I END

```

Figure 313. Display Status of the LU for the PS/2

Figure 313 displays the status of the LU for the PS/2. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that this PS/2 LU (RAOTNNB1) has an active session with AS/400B LU (AS4B).

```

NCCF          N E T V I E W          RABAN WTCR21    06/12/89 13:10:54
C RABAN      DISPLAY NET, ID=AS4B, SCOPE=ALL
RABAN        IST097I DISPLAY ACCEPTED
' RABAN
IST075I NAME = AS4B            , TYPE = LOGICAL UNIT
IST486I STATUS= ACT/S          , DESIRED STATE= ACTIV
IST861I MODETAB=MTGS3X        USSTAB=***NA*** LOGTAB=***NA***
IST934I DLOGMOD=QPCSUPP
IST597I CAPABILITY-PLU ENABLED , SLU ENABLED , SESSION LIMIT NONE
IST135I PHYSICAL UNIT = RAOTRPUZ
IST136I SWITCHED SNA MAJOR NODE = SWRAOTR
IST082I DEVTYPE = INDEPENDENT LU
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I SESSIONS:
IST634I NAME      STATUS      SID          SEND RECV VR TP NETID
IST635I RAOTNNB1 ACTIV-P     CE773A1F55262F70      0 0 USIBMRA
IST635I RAOTNNB1 ACTIV-P     CE773A1F55262F71      0 0 USIBMRA
IST314I END

```

Figure 314. Display Status of the LU for the AS/400A

Figure 314 displays the status of the LU for AS/400B. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that AS/400B LU (AS4B) has an active session with the PS/2 LU (RAOTNNB1) and in this case the PS/2 is the primary LU.

7.10 Traces AS/400A to RAB to AS/400B

The following traces were taken on AS/400A using the trace facility. This trace displays both the XID3 exchanges and the BIND exchanges between AS/400A and the host. You will also see the exchanges being passed from AS/400A to AS/400B behind the S/370 subarea.

COMMUNICATIONS TRACE										Title: AS/400A-RAB-AS/400B	07/11/89 02:11:49	Page: 1
Trace Description										: AS/400A-RAB-AS/400B		
Line name										: L24020		
Line protocol										: SDLC		
Start Date/Time										: 07/11/89 02:07:03		
End Date/Time										: 07/11/89 02:11:46		
Bytes collected										: 12245		
Buffer size										: 3 1=128K, 2=256K, 3=2048K		
Data direction										: 3 1=Sent, 2=Received, 3=Both		
Stop on buffer full										: N Y=Yes, N=No		
Format SNA data only										: N Y=Yes, N=No		
Format RR, RNR commands										: N Y=Yes, N=No		
Controller Name										: *ALL *ALL, name		
COMMUNICATIONS TRACE										Title: AS/400A-RAB-AS/400B	07/11/89 02:11:49	Page: 2
Record Number										: Number of record in trace buffer (decimal)		
S/R										: S=Sent R=Received M=Modem Change		
Data Length										: Amount of data in record (decimal)		
Record Timer										: Time stamp (100 millisecond resolution, hexadecimal)		
Record Status										: Status of record		
Controller name										: Name of controller associated with record		
Command										: Command/Response information		
Number sent										: Count of records sent		
Number received										: Count of records received		
Poll/Final										: ON=Poll for Commands, Final for Responses		
Commands/Responses:												

UI										: Unnumbered Information		
SNRM										: Set Normal Response Mode		
DISC										: Disconnect/Request Disconnect		
XID										: Exchange ID		
SNRME										: Set Normal Response Mode Extended		
UA										: Unnumbered Acknowledgment		
*****										: Invalid Command/Response		
COMMUNICATIONS TRACE										Title: AS/400A-RAB-AS/400B	07/11/89 02:11:49	Page: 3
Record Number	S/R	Data Length	Record Status	Record Timer	Data Type	Controller Name/Number	Command	Number Sent	Number Received	Poll/Final		
5	R	0	00000000		C0AF	/C4	XID			ON		
6	S	84	00000000		C0AF	/C4	XID			ON		
					Data							*.../&.....{.....* *..4USIBMRA.RALYAS4A..7AAAAAAEA.* *1.....9406B50100015078*
11	R	119	00000000		C0F6	/C4	XID			ON		
					Data							*.....D.....!.....* *..4USIBMRA.RAB..1RAONCP1..7RAOP* *1B.....372500000001825...* *..566885401300..040300..I....*
12	S	84	00000000		C0F6	/C4	XID			ON		
					Data							*.../&.....{.....* *..4USIBMRA.RALYAS4A..7AAAAAAEA.* *1.....9406B50100015078*
17	R	0	00000000		C12E	/C4	SNRM			ON		
18	S	0	00000000		C12F	/C4	UA			ON		

Figure 315. AS/400A to Host XID3 Exchanges

```

COMMUNICATIONS TRACE      Title: AS/400A-RAB-AS/400B      07/11/89 02:11:55      Page: 1
Trace Description . . . . . : AS/400A-RAB-AS/400B
Line name . . . . . : L24020
Line protocol . . . . . : SDLC
Start Date/Time . . . . . : 07/11/89 02:07:03
End Date/Time . . . . . : 07/11/89 02:11:46
Bytes collected . . . . . : 12245
Buffer size . . . . . : 3      1=128K, 2=256K, 3=2048K
Data direction . . . . . : 3      1=Sent, 2=Received, 3=Both
Stop on buffer full . . . . . : N      Y=Yes, N=No
Format SNA data only . . . . . : Y      Y=Yes, N=No
Format RR, RNR commands . . . . . : N      Y=Yes, N=No
Controller Name . . . . . : *ALL      *ALL, name
Record Number . . . . . : Number of record in trace buffer (decimal)
S/R . . . . . : S=Sent R=Received M=Modem Change
Controller name . . . . . : Name of Controller associated with record
SNA Data . . . . . : TH, RH and RU for record
TH . . . . . : Transmission Header
RH . . . . . : Request/Response Header
RU . . . . . : Request/Response Unit
TH Parameter Descriptions:
FID . . . . . : Format Identification
MPF . . . . . : Mapping Field (segment of Basic Information
                Unit (BIU) - ONLY, FIRST, MIDDLE, LAST)
OAF . . . . . : Origination Address Field
DAF . . . . . : Destination Address Field
SNF . . . . . : Sequence Number Field
DCF . . . . . : Data Count Field
LA . . . . . : Local Address
ODAI . . . . . : OAF-DAF Assignor Indicator
EFI . . . . . : Expedited Flow Indicator
LU . . . . . : Logical Unit
SSCP . . . . . : System Services Control Point
PU . . . . . : Physical Unit
RH Parameter Descriptions:
REQ . . . . . : Request
RSP . . . . . : Response
RH Category Descriptions:
NC . . . . . : Network Control
SC . . . . . : Session Control
DFC . . . . . : Data Flow Control
NC . . . . . : Network Control
FMD . . . . . : Function Management Data
FMH . . . . . : Function Management Header
RH Indicators:
FI . . . . . : Format Indicator
SDI . . . . . : Sense Data Included Indicator
BCI . . . . . : Begin Chain Indicator
ECI . . . . . : End Chain Indicator
DR1 . . . . . : Definite Response 1 Indicator
DR2 . . . . . : Definite Response 2 Indicator
ERI . . . . . : Exception Response Indicator
RTI . . . . . : Response Type Indicator
QRI . . . . . : Queued Response Indicator
EBI . . . . . : End Bracket Indicator
CDI . . . . . : Change Direction Indicator
PI . . . . . : Pacing Indicator
BBI . . . . . : Begin Bracket Indicator
CSI . . . . . : Code Selection Indicator
EDI . . . . . : Enciphered Data Indicator
PDI . . . . . : Padded Data Indicator
CEBI . . . . . : Conditional End Bracket Indicator
RLWI . . . . . : Request Larger Window Indicator

```

Figure 316. AS/400A to Host BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A-RAB-AS/400B	07/11/89 02:11:55	Page: 3
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
23	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=02E6, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command	ACTPU	
			RU Data	110201050000000000	*.....*
29	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=02E6, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	ACTPU	
			RU Data	11114040404040404000000701000000000000	*..
37	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=0001 RH : ('0B8000'X) REQ FMD, FI, BCI, ECI, DR1	
			RU Command	NMVT	
			RU Data	41038D000000000000218080049288001994ED00EC000000010000000000 *.....KH..M.....*	
				000004000A001400320064	*.....*
41	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=0001 RH : ('8F9000'X) RSP FMD, FI, SDI, DR1, RTI Sense Code : 08060000,	
			RU Command	NMVT	
			RU Data	41038D	*...*
132	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('6B8100'X) REQ SC, FI, BCI, ECI, DR1, PI	
			RU Command	BIND	
			RU Data	31001307B0B051B30808585800106020000000000001023400010E4E2 *.....EE.....US*	
				C9C2D4D9C14BD9C1D6E3D5D5C2F11D000902E2D5C1E2E5C3D4C71104E4E2 *IBMRA.RAOTNNB1...SNASVCMG...US*	
				C9C2D4D9C14BD9C1D6E3D5D5C2F10008C1E2F4C2404040406619CE773A1F *IBMRA.RAOTNNB1..AS4B -.....*	
				55262F6A10E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E11F4E4E2C9C2D4D9 *.....USIBMRA.RALYAS4A..4USIBMR*	
				C14BD7E2F240404040402B2A0202164614800110E4E2C9C2D4D9C14BD9C1 *A.PS2 .....USIBMRA.RA*	
				D3E8C1E2F4C112461080010BE4E2C9C2D4D9C14BD9C1C2002C0A0408E2D5 *LYAS4A.....USIBMRA.RAB.....SN*	
				C1E2E5C3D4C7 *ASVCMG	
134	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	007FFF	*..*
137	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	BIND	
			RU Data	31001307B0B051B3080858580006020000000000001023400001900 *.....EE.....US*	
				0902E2D5C1E2E5C3D4C70D05E4E2C9C2D4D9C14BC1E2F4C200002C0A0108 *..SNASVCMG..USIBMRA.AS4B.....*	
				4040404040404040406019CE773A1F55262F6A10E4E2C9C2D4D9C14BD9C1D3 *USIBMRA.RAL*	
				E8C1E2F4C1 *YAS4A	
141	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0001 RH : ('0A9500'X) REQ FMD, FI, BCI, DR1, ERI, RLWI, PI	
			RU Command		
			RU Data	180502FF0003D000000206F1090802D9E4E2E2C5D3D30000 *.....}....1...RUSSELL..*	
143	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000000	*...*

Figure 317. AS/400A to Host BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A-RAB-AS/400B	07/11/89 02:11:55	Page: 4
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
147	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0002 RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI	
		RU Data	:	00181210020000000000200020000000708D7C3E2E4D7D7	*.....QPCSUPP
149	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000040	*..
150	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0001 RH : ('039101'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CE81	
		RU Data	:	001812100A0000000000200020000000708D7C3E2E4D7D7	*.....QPCSUPP
154	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000001	*...
155	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('688000'X) REQ SC, FI, BCI, ECI, DR1	
		RU Command	:	UNBIND	
		RU Data	:	320F08A000026019CE773A1F55262F6A10E4E2C9C2D4D9C14BD9C1D3E8C1	*.....USIBMRA.RALYA*
		RU Data	:	E2F4C1351808A000020F0010E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C100	*S4A.....USIBMRA.RALYAS4A.*
157	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('E88000'X) RSP SC, FI, DR1	
		RU Command	:	UNBIND	
		RU Data	:	32	*
179	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('688100'X) REQ SC, FI, BCI, ECI, DR1, PI	
		RU Command	:	BIND	
		RU Data	:	31001307808051830780F7F78007060200000000000001023400010E4E2	*.....77.....US*
		RU Data	:	C9C2D4D9C14BD9C1D6E3D5D5C2F11C0908802D8D7C3E2E4D7D71104E4E2C9	*IBMRA.RAOTNNB1....QPCSUPP..USI*
		RU Data	:	C2D4D9C14BD9C1D6E3D5D5C2F10008C1E2F4C2404040406019CE773A1F55	*BMRA.RAOTNNB1..AS4B -.....*
		RU Data	:	262F6B10E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E11F4E4E2C9C2D4D9C1	*...USIBMRA.RALYAS4A..4USIBMRA*
		RU Data	:	4BD7E2F240404040402B2A0202164614800110E4E2C9C2D4D9C14BD9C1D3	*.PS2 .....USIBMRA.RAL*
		RU Data	:	E8C1E2F4C1124610800108E4E2C9C2D4D9C14BD9C1C2002C0A01087BC3D6	*YAS4A.....USIBMRA.RAB.....#CO*
		RU Data	:	D5D5C5C3E3	*NNECT
181	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	007FFF	*..*
184	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('E88000'X) RSP SC, FI, DR1	
		RU Command	:	BIND	
		RU Data	:	31001307808051B30080F7F78000060200000000000001023400001800	*.....77.....*
		RU Data	:	0802D8D7C3E2E4D7D70D05E4E2C9C2D4D9C14BC1E2F4C200002C0A010840	*..QPCSUPP..USIBMRA.AS4B.....*
		RU Data	:	404040404040406019CE773A1F55262F6B10E4E2C9C2D4D9C14BD9C1D3E8	*USIBMRA.RALYA*
		RU Data	:	C1E2F4C1	*AS4A
188	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0001 RH : ('0A9500'X) REQ FMD, FI, BCI, DR1, ERI, RLWI, PI	
		RU Command	:		
		RU Data	:	230502FF0003000000430F0F1F9120802D9E4E2E2C5D3030801D9E4E2E2	*.....)....019...RUSSELL...RUSS*
		RU Data	:	C5D3D30000	*ELL..
190	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000008	*...
194	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0002 RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI	
		RU Data	:	002B00010001002510410007114708D7C30006116DC6E200141404141900	*..}.....QPC..._FS.....*
		RU Data	:	02145700021463000214650002	*.....*
196	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
		RU Data	:	000040	*..
209	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0001 RH : ('039120'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CDI	
		RU Data	:	0031D0030001002B14430007114708C1E2000C116DD9C1D3E8C1E2F4C200	*..}.....QAS..._RALYAS4B.*
		RU Data	:	14140414650002146300021419000214570002	*.....*

Figure 318. AS/400A to Host BIND Exchanges

```

213 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000007 *...
218 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0003
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
0013D0010001000D104F000911656140C6D4E2 *...}.....|.... / FMS
228 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0002
RH : ('039120'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CDI
0010D0020001000A124B000611490000 *...}.....
232 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000007 *...
237 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0004
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
001AD00100010014104F0010116561D8C9E6E2C6D30940C6D4E2 *...}.....|.... / QIWSFLR FMS
239 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0003
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
0010D0020001000A124B000611490000 *...}.....
321 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI
RH : ('688000'X) REQ SC, FI, BCI, ECI, DR1
RU Command . . . . . : BIND
RU Data . . . . . : 31001307B0B051B30180F7F78001060200000000000010234000010E4E2 *.....77..... .US*
C9C2D4D9C14BD9C1D6E3D5D5C2F11C000802D8D7C3E2E4D7D71104E4E2C9 *IBMRA.RAOTNNB1....QPCSUPP..USI*
C2D4D9C14BD9C1D6E3D5D5C2F10008C1E2F4C2404040406019CE773A1F55 *BMRA.RAOTNNB1..AS4B .....*
262F6C10E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E11F4E4E2C9C2D4D9C1 *.%.USIBMRA.RALYAS4A..4USIBMRA*
4BD7E2F240404040402B2A0202164614800110E4E2C9C2D4D9C14BD9C1D3 *PS2 .....USIBMRA.RAL*
E8C1E2F4C1124610800108E4E2C9C2D4D9C14BD9C1C2002C0A01087BC3D6 *YAS4A.....USIBMRA.RAB.....#CO*
D5D5C5C3E3 *NNECT
325 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI
RH : ('EB8000'X) RSP SC, FI, DR1
RU Command . . . . . : BIND
RU Data . . . . . : 31001307B0B051B30080F7F78000060200000000000001023400001000 *.....77..... .US*
0002D8D7C3E2E4D7D70005E4E2C9C2D4D9C14BC1E2F4C200002C0A010840 *..QPCSUPP..USIBMRA.AS4B.....*
4040404040406019CE773A1F55262F6C10E4E2C9C2D4D9C14BD9C1D3E8 *.....%.USIBMRA.RALY*
COMMUNICATIONS TRACE Title: AS/400A-RAB-AS/400B 07/11/89 02:11:55 Page: 6
RU Data . . . . . : C1E2F4C1 *AS4A
329 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0001
RH : ('0A9500'X) REQ FMD, FI, BCI, DR1, ERI, RLWI, PI
RU Command . . . . . : FMH- 5=230502FF0803D000400430F0F0F5120002D9E4E2E2C5D3D3 *.....}. ..005...RUSSELL *
0001D9E4E2E2C5D3D30000 *..RUSSELL.. *
RU Data . . . . . : 005912F5005512E2005112A0200005100100000230000000000000000 *...5...S..... *
00F3F1F9F74040C3F14040404000000000000000000000000000022C4E4E2 *3197 C1 .....DUS*
C200F6F9F740F0F3F7404040404040404040404040404040404040E2F2 *B.697 037 S2 *
331 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000008 *...
335 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0002
RH : ('019520'X) REQ FMD, ECI, DR1, ERI, RLWI, PI, CDI
No RU data
337 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000040 *..
342 R P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0001
RH : ('03A100'X) REQ FMD, BCI, ECI, DR1, DR2, PI
RU Data . . . . . : 004812A09000056001002000003C0000C9F90F2D9C1D3E8C1E2F4C2D9C1 *.....-.....I902RALYAS4BRA*
D6E3D5D5C2F1E2F263000214100002145700020000000000000000000 *OTNNB1S2..... *
000000000000000000000000 *.....
346 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
RU Data . . . . . : 000001 *...
353 S P24020D EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000
RH : ('832000'X) RSP FMD, DR2
No RU data

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Figure 319. AS/400A to Host BIND Exchanges


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COMMUNICATIONS TRACE      Title: AS/400A-PS/2      07/11/89 02:11:09      Page: 1
Trace Description . . . . . : AS/400A-PS/2
Line name . . . . . : L41TR
Line protocol . . . . . : TRLAN
Start Date/Time . . . . . : 07/11/89 02:08:21
End Date/Time . . . . . : 07/11/89 02:10:25
Bytes collected . . . . . : 241368
Buffer size . . . . . : 3 1=128K, 2=256K, 3=2048K
Data direction . . . . . : 3 1=Sent, 2=Received, 3=Both
Stop on buffer full . . . . . : N Y=Yes, N=No
Format SNA data only . . . . . : Y Y=Yes, N=No
Format RR, RNR commands . . . . . : N Y=Yes, N=No
Controller Name . . . . . : *ALL *ALL, name
COMMUNICATIONS TRACE      Title: AS/400A-PS/2      07/11/89 02:11:09      Page: 2

Record Number . . . . . Number of record in trace buffer (decimal)
S/R . . . . . S=Sent R=Received M=Modem Change
Controller name . . . . . Name of Controller associated with record
SNA Data . . . . . TH, RH and RU for record
TH . . . . . Transmission Header
RH . . . . . Request/Response Header
RU . . . . . Request/Response Unit
TH Parameter Descriptions:
FID . . . . . Format Identification
MPF . . . . . Mapping Field (segment of Basic Information
Unit (BIU) - ONLY, FIRST, MIDDLE, LAST)
OAF . . . . . Origination Address Field
DAF . . . . . Destination Address Field
SNF . . . . . Sequence Number Field
DCF . . . . . Data Count Field
LA . . . . . Local Address
ODAI . . . . . OAF-DAF Assignor Indicator
EFI . . . . . Expedited Flow Indicator
LU . . . . . Logical Unit
SSCP . . . . . System Services Control Point
PU . . . . . Physical Unit
RH Parameter Descriptions:
REQ . . . . . Request
RSP . . . . . Response
RH Category Descriptions:
NC . . . . . Network Control
SC . . . . . Session Control
DFC . . . . . Data Flow Control
NC . . . . . Network Control
FMD . . . . . Function Management Data
FMH . . . . . Function Management Header
RH Indicators:
FI . . . . . Format Indicator
SDI . . . . . Sense Data Included Indicator
BCI . . . . . Begin Chain Indicator
ECI . . . . . End Chain Indicator
DR1 . . . . . Definite Response 1 Indicator
DR2 . . . . . Definite Response 2 Indicator
ERI . . . . . Exception Response Indicator
RTI . . . . . Response Type Indicator
QRI . . . . . Queued Response Indicator
EBI . . . . . End Bracket Indicator
CDI . . . . . Change Direction Indicator
PI . . . . . Pacing Indicator
BBI . . . . . Begin Bracket Indicator
CSI . . . . . Code Selection Indicator
EDI . . . . . Enciphered Data Indicator
PDI . . . . . Padded Data Indicator
CEBI . . . . . Conditional End Bracket Indicator
RLWI . . . . . Request Larger Window Indicator

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Figure 322. AS/400A to PS/2 BIND Exchanges

COMMUNICATIONS TRACE			Title: AS/400A-PS/2	07/11/89 02:11:09	Page: 3
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
14	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command	: BIND	
			RU Data	: 31001307B0B051B101008585800106020000000000001023000010E4E2 *.....EE.....US* C9C2D4D9C14B09C1D6E3D5D5C2F11D000902E2D5C1E2E5C3D4C71104E4E2 *IBMRA.RAOTNNB1...SNASVCMG..US* C9C2D4D9C14B09C1D6E3D5D5C2F10008D9C1D6E3D5D5C2F0 *IBMRA.RAOTNNB1..RAOTNNB0 *	
16	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=04, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	: BIND	
			RU Data	: 31001307B0B051B1010785870106020000000000001023400001D00 *.....EEG.....* 0902E2D5C1E2E5C3D4C71105E4E2C9C2D4D9C14B09C1D6E3D5D5C2F00000 *..SNASVCMG..USIBMRA.RAOTNNB0..*	
18	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0001 RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI	
			RU Command	: FMH- 5=180502FF0003D000000206F1090802D9E4E2E2C5D3D30000 *.....}....1...RUSSELL.. *	
20	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0002 RH : ('019020'X) REQ FMD, ECI, DR1, ERI, CDI	
			RU Data	: 00181210020000000002000200000000708D7C3E2E4D7D7 *.....QPCSUPP *	
21	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=04, OAF'=01, SNF'=0000 RH : ('830100'X) RSP FMD, PI	
			No RU data		
24	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=04, OAF'=01, SNF'=0001 RH : ('039101'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CEBI	
			RU Data	: 001812100A0000000002000200000000708D7C3E2E4D7D7 *.....QPCSUPP *	
26	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0001 RH : ('830100'X) RSP FMD, PI	
			No RU data		
27	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command	: UNBIND	
			RU Data	: 320F *	
30	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=04, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	: UNBIND	
			RU Data	: 32 *	
32	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command	: BIND	
			RU Data	: 31001307B0B051B101008585800106020000000000001023000010E4E2 *.....EE.....US* C9C2D4D9C14B09C1D6E3D5D5C2F11D000902E2D5C1E2E5C3D4C71104E4E2 *IBMRA.RAOTNNB1...SNASVCMG..US* C9C2D4D9C14B09C1D6E3D5D5C2F10008C1E2F4C240404040 *IBMRA.RAOTNNB1..AS4B *	
34	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=04, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	: BIND	
			RU Data	: 31001307B0B051B1013F8585B0106020000000000001023400001900 *.....EE.....* 0902E2D5C1E2E5C3D4C70D05E4E2C9C2D4D9C14BC1E2F4C20000 *..SNASVCMG..USIBMRA.AS4B.. *	
36	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0001 RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI	
			RU Command	: FMH- 5=180502FF0003D000000206F1090802D9E4E2E2C5D3D30000 *.....}....1...RUSSELL.. *	
38	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0002 RH : ('019020'X) REQ FMD, ECI, DR1, ERI, CDI	
			RU Data	: 00181210020000000002000200000000708D7C3E2E4D7D7 *.....QPCSUPP *	

Figure 323. AS/400A to PS/2 BIND Exchanges

40	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=04, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI No RU data
42	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=04, OAF'=01, SNF'=0001 RH : ('039101'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CEBI
		RU Data		: 001812100A0000000002000200000007D8D7C3E2E4D7D7 *.....QPCSUPP *
44	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0001 RH : ('830100'X) RSP FMD, PI No RU data
45	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=04, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1
		RU Command		: UNBIND
		RU Data		: 320F *.. *
48	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=04, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1
		RU Command		: UNBIND
		RU Data		: 32 *
50	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1
		RU Command		: BIND
		RU Data		: 31001307B0B051B1070F7F780070602000000000001023000010E4E2 *.....77.....US* C9C2D4D9C14BD9C1D6E3D5D5C2F11C000802D8D7C3E2E4D7D71104E4E2C9 *IBMRA.RAOTNNB1...QPCSUPP..USI* C2D4D9C14BD9C1D6E3D5D5C2F10008D9C1D6E3D5D5C2F0 *BMRA.RAOTNNB1..RAOTNNB0 *
52	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1
		RU Command		: BIND
		RU Data		: 31001307B0B051B1070F7F7870706020000000000001023400001C00 *.....77G..... *.. * 0802D8D7C3E2E4D7D71105E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F00000 *..QPCSUPP..USIBMRA.RAOTNNB0.. *
54	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0001 RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI
		RU Command		: FMH- 5=230502FF0003D000000430F0F1F9120802D9E4E2E2C5D3D3 *.....)....019...RUSSELL * 0801D9E4E2E2C5D3D30000 *..RUSSELL.. *
56	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0002 RH : ('019020'X) REQ FMD, ECI, DR1, ERI, CDI
		RU Data		: 002B000100010025104100071147D8D7C30000116DC6E200141404141900 *..}.....QPC..._FS..... * 02145700021463000214650002 *..... *
58	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0000 RH : ('830100'X) RSP FMD, PI No RU data
COMMUNICATIONS TRACE				Title: AS/400A-PS/2
Record Number				07/11/89 02:11:09
Controller Name				Page: 5
Data Type				SNA Data: TH, RH, RU
60	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0001 RH : ('039120'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CDI
		RU Data		: 0031D0030001002B144300071147D8C1E2000C116DD9C1D3E8C1E2F4C100 *..}.....QAS..._RALYAS4A. * 14140414650002146300021419000214570002 *..... *
62	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0003 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
		RU Data		: 001AD00100010014104F0010116561D8C9E6E2C6D3D940C6D4E2 *..}.....|.../QIWSFLR FMS *
64	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0002 RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
		RU Data		: 0010D0020001000A124B000611490000 *..}..... *
66	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0000, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1
		RU Command		: BIND
		RU Data		: 31001307B0B051B1070F7F7800706020000000000001023000010E4E2 *.....77.....US* C9C2D4D9C14BD9C1D6E3D5D5C2F11C000802D8D7C3E2E4D7D71104E4E2C9 *IBMRA.RAOTNNB1...QPCSUPP..USI* C2D4D9C14BD9C1D6E3D5D5C2F10008C1E2F4C24040400 *BMRA.RAOTNNB1..AS4B *
68	S	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI RH : ('EB8000'X) RSP SC, FI, DR1
		RU Command		: BIND
		RU Data		: 31001307B0B051B1073FF7F7BF07060200000000000010234000001800 *.....77..... *.. * 0802D8D7C3E2E4D7D70D05E4E2C9C2D4D9C14BC1E2F4C20000 *..QPCSUPP..USIBMRA.AS4B.. *
70	R	TRCTLPS	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0001 RH : ('0A9100'X) REQ FMD, FI, BCI, DR1, ERI, PI
		RU Command		: FMH- 5=230502FF0003D000000430F0F1F9120802D9E4E2E2C5D3D3 *.....)....019...RUSSELL * 0801D9E4E2E2C5D3D30000 *..RUSSELL.. *

Figure 324. AS/400A to PS/2 BIND Exchanges

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72 R TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0002
RH : ('019020'X) REQ FMD, ECI, DR1, ERI, CDI
RU Data . . . . . : 002B000100010025104100071147D8D7C30006116DC6E200141404141900 *..}.....QPC..._FS.....*
02145700021463000214650002 *.....*

74 S TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0000, EFI
RH : ('830100'X) RSP FMD, PI
No RU data

78 S TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0001
RH : ('039120'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CDI
RU Data . . . . . : 0031D0030001002B144300071147D8C1E2000C116DD9C1D3E8C1E2F4C200 *..}.....QAS..._RALYAS4B.*
14140414650002146300021419000214570002 *.....*

80 R TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0003
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
RU Data . . . . . : 0013D0010001000D104F000911656140C6D4E2 *..}.....|....| FMS *

82 S TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0002
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
RU Data . . . . . : 0010D0020001000A124B000611490000 *..}.....*

84 R TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=0004
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
RU Data . . . . . : 001AD00100010014104F0010116561D8C9E6E2C6D3D940C6D4E2 *..}.....|....| QIWSFLR FMS *

86 S TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=01, SNF'=0003
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
RU Data . . . . . : 0010D0020001000A124B000611490000 *..}.....*

88 R TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0004
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
RU Data . . . . . : 0025D0410001001F102C0010116561D8C9E6E2C6D3D940C6D4E2000B1136 *..}...../QIWSFLR FMS....*
450B944B2A9B4D001B0061000200151010000B1136450B944B2A9B4D0000 *..M...(..)/.....M...(*
114E14190046D006100030040100A000B1136450B944B2A9B4D00130027D7 *+.....)/...M...(..P*
C3E2E4D7C4E34B6F6F6F40C6D4E200051133F000051132F100141102113A *CSUPDT.??? FMS....0....1.....*
110B11661194113211331110110E0015D00610004000F1004000B1136450B *.....M.....)/.....*
944B2A9B4D0015D0010005000F102D000B1136450B944B2A9B4D *M...(..).....M...(*

90 S TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0003
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
RU Data . . . . . : 0010D0420001000A124B0006114900000010D0420002000A124B00061149 *..}.....}.....*
00000055D0430003004F14240012113AF1F9F8F9F0F6F3F0F0F6F1F6F0F0 *.....}.....|.....19890630061600*
0008110B0000361100051166F100051194F100051132F000051133F0000 *.....1...M1....0....0...*
111014650017110ED8C9E6E2C6D3D961D7C3E2E4D7C4E34BC5E7C50010D0 *.....QIWSFLR/PCSUPDT.EXE...}*
420004000A124B0006114900000010D0020005000A124B000611490000 *.....}.....*

92 R TRCTLPS EBCDIC TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=01, SNF'=0005
RH : ('039020'X) REQ FMD, BCI, ECI, DR1, ERI, CDI
RU Data . . . . . : 002CD00100010026104D0001C110E61D8C9E6E2C6D3D961D7C3E2E4D7C4E3 *..}.....(....|QIWSFLR/PCSUPDT*
4BC5E7C540C6D4E200061129142C *..EXE FMS.....*

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Figure 325. AS/400A to PS/2 BIND Exchanges

8.0 Scenario 5: PS/2 (OS2/EE) -- AS/400A -- S/370 --AS/400B

8.1 Environment Tested

In this chapter we will describe the definitions required to connect a PS/2 with OS/2 EE 1.2 (5250 WSF) to AS/400A via a token-ring. We have already discussed how to connect AS/400A and AS/400B to the S/370 subarea network in Chapter 5.0, "Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host" on page 99 so please refer to that chapter for detailed information and definitions.

We will also describe how the PS/2 with OS/2 EE 1.2 (5250 WSF) can establish sessions with both AS/400A and AS/400B which are situated on either side of an S/370 subarea network.

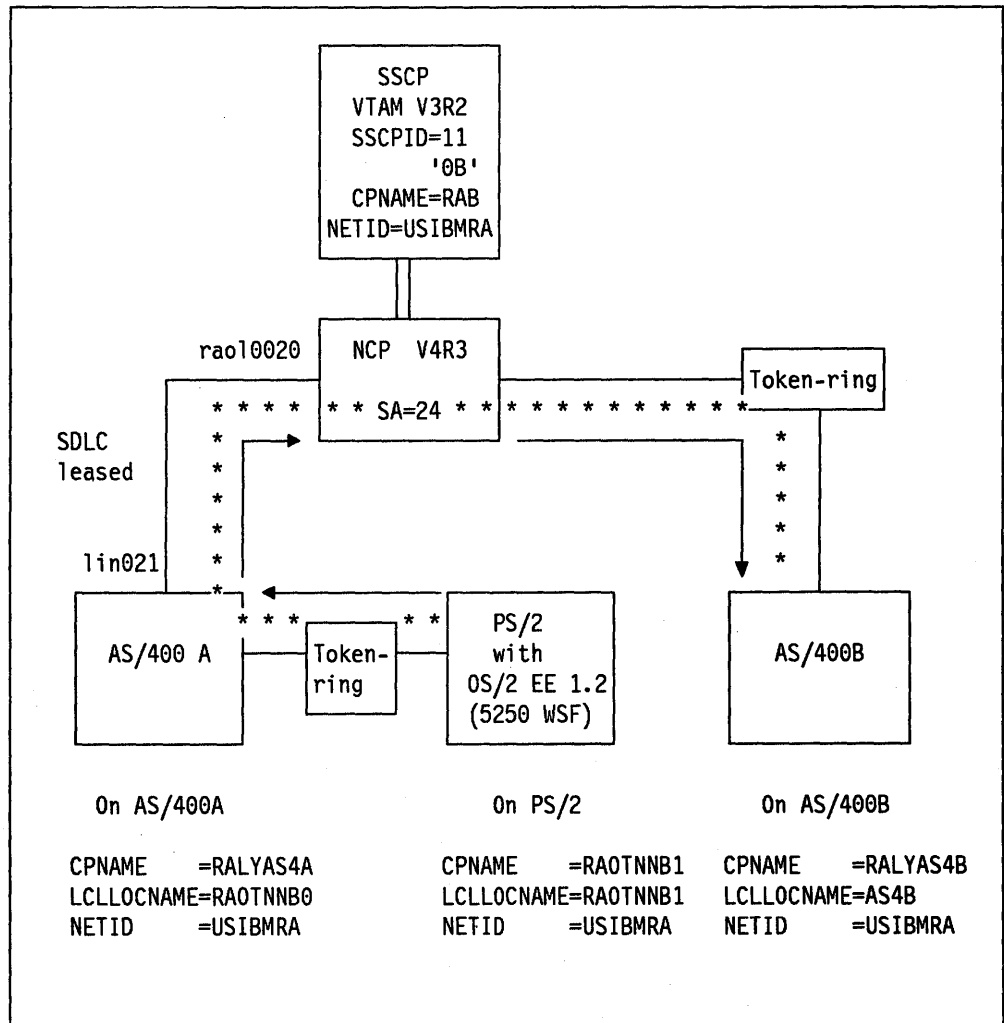


Figure 326. Scenario 5

8.2 Definitions on AS/400A (RALYAS4A) for PS/2 (RAOTNNB1)

When you are going to connect an PS/2 to AS/400A via a token-ring you are required to perform the following steps:

- Check the network attributes
- Create a line description from AS/400A to the PS/2
- Create an APPC controller description for the PS/2
- Configure APPN remote and local location lists
- Create a mode entry.

8.2.1 Network Attributes

The network attributes contain the AS/400's local system values for APPN. You can display these attributes by using the DSPNETA command or by going to menu "NETWORK".

```
MAIN                               AS/400 Main Menu                               System:  RALYAS4A

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu

    90. Sign off

Selection or command
===> dspneta

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 327. AS/400 Main Menu Screen

Type DSPNETA to display the network attributes.

```

                                Display Network Attributes
                                System:  RALYAS4A
Current system name . . . . . : RALYAS4A
  Pending system name . . . . . :
Local network ID . . . . . : USIBMRA
Local control point name . . . . . : RALYAS4A
Default local location . . . . . : RALYAS4A
Default mode . . . . . : MODS361
Maximum number of conversations for a remote
  location . . . . . : 64
APPN node type . . . . . : *NETNODE
Maximum number of intermediate sessions . . . . . : 200
Route addition resistance . . . . . : 128
Server network ID/control point name . . . . . :
                                                                More...

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 328. Display Network Attributes Screen

Notice we have defined the local control point name, local network ID, default location name and APPN node type. You can change these parameters by the CHGNETA command or by taking option 2 from the Network menu.

```

                                Display Network Attributes
                                System:  RALYAS4A
Alert status . . . . . : *UNATTEND
Alert primary focal point . . . . . : *NO
Alert default focal point . . . . . : *NO
Alert logging status . . . . . : *ALL
Alert controller description . . . . . :
Message queue . . . . . : QSYSOPR
  Library . . . . . : QSYS
Output queue . . . . . : QPRINT
  Library . . . . . : QGPL
Job action . . . . . : *FILE
Maximum hop count . . . . . : 16
DDM request access . . . . . : *OBJAUT
PC Support request access . . . . . : *OBJAUT

Press Enter to continue.

F3=Exit  F12=Previous

```

Figure 329. Display Network Attributes Screen (continued)

8.2.2 Create Line Description

The first step in defining the PS/2 to AS/400A is to create the line description. You can do this by either following the screens documented or by using the CL command CRTLINTRN.

```
MAIN                      AS/400 Main Menu                      System:  RALYAS4A

Select one of the following:

    1. User tasks
    2. Office tasks
    3. General system tasks
    4. Files, libraries, and folders
    5. Programming
    6. Communications
    7. Define or change the system
    8. Problem handling
    9. Display a menu

    90. Sign off

Selection or command
===> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 330. AS/400 Main Menu Screen

Select option 6 in Figure 330 to go to the Communications screen.

```
CMN                      Communications                      System:  RALYAS4A

Select one of the following:

    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs

    70. Related commands

Selection or command
===> 4

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 331. Communications Screen

Select option 4 in Figure 331 to configure communications.

```

CFGCMN          Configure Communications and Remote Hardware
                                     System:  RALYAS4A
Select one of the following:

1. Lines
2. Communications controllers
3. Work station controllers
4. Communications devices
5. Printers
6. Display stations
7. Modes
8. Classes-of-service
9. Configure address and location lists

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 332. Configure Communications and Remote Hardware Screen

Select option 1 in Figure 332 to define your line description.

```

                                Work with Line Descriptions
                                     System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Line      Type  Text

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 333. Work with Line Descriptions Screen

Select option F6 in Figure 333 to create the line description.

```

                                Create Line Description
Type choices, press Enter.

New line description  L41TR      Name
Line type . . . . . *TRLAN    *ASYNC=Asynchronous communications
                                     *BSC=Binary synchronous communications
                                     *SDLC=Synchronous data link control
                                     *TDL=Twinaxial data link control
                                     *TRLAN=Token-Ring local area network
                                     *X25=X.25 communications network

F3=Exit  F12=Previous

```

Figure 334. Create Line Description Screen

The line type we are using is *TRLAN.

```

CRTLINTRN          Create Line Desc (Token-Ring)

Type choices, press Enter.

Line description . . . . . ▶ L41TR          Name
Resource name . . . . . lin041            Name
Online at IPL . . . . . *YES              *YES, *NO
Vary on wait . . . . . *NOWAIT            *NOWAIT, 15-180 (1 second)
Maximum controllers . . . . . 40          1-256
Maximum frame size . . . . . 1994        265, 521, 1033, 1994
Local adapter address . . . . . 400010020001 400000000000-7FFFFFFF...
Exchange identifier . . . . . *SYSGEN     05600000-056FFFFF, *SYSGEN
SSAP list:
  Source Service Access Point . *SYSGEN   *SYSGEN, 04, 08, 0C, 10...
    + for more values
Text 'description' . . . . . Token-Ring Line Description
F3=Exit  F4=List  F5=Refresh  F10=Additional parameters  F11=Keywords
F12=Previous  F13=How to use this display

```

Figure 335. Create Line Description (TRLAN) Screen

The resource name is the name of the physical communications port on the AS/400. It can be found by executing the command WRKHDWPRD and taking the option to work with your rack configuration.

The local token-ring adapter address of AS/400A is 400010020001.

Press Enter to create your line description. It will return you to the "Work with line descriptions" screen.

8.2.3 Create APPC Controller Description

Now you must create an APPC controller description which describes the PS/2 you are connecting to. Again, you can follow the screens or enter the CL command CRTCTLAPPC.

```
CFGCMN          Configure Communications and Remote Hardware          System:  RALYAS4A
Select one of the following:

  1. Lines
  2. Communications controllers
  3. Work station controllers
  4. Communications devices
  5. Printers
  6. Display stations
  7. Modes
  8. Classes-of-service
  9. Configure address and location lists

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 336. Configure Communications and Remote Hardware Screen

Select option 2 in Figure 336 to configure your APPC controller.

```
Work with Controller Descriptions          System:  RALYAS4A
Position to . . . . . Starting character(s)

Type options, press Enter.
  2=Change  3=Copy  4=Delete  5=Display  6=Print

Opt  Controller  Type  Text
   QESCTL      *HOST
   QTICTL      *HOST

Parameters for option 2 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F6=Create  F9=Retrieve  F12=Previous
F14=Work with status

(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 337. Work with Controller Descriptions Screen

Select F6 to create your APPC controller description.

```

                                Create Controller Description

Type choices, press Enter.

New controller
description . . . . . TRCTLPSOS2  Name

Controller type/class  *APPC      *APPC=Advanced program-to-program
                                communications
                                *ASYN=Asynchronous communications
                                *BSC=Binary synchronous communications
                                *FNC=Finance
                                *HOST=SNA host

F3=Exit  F12=Previous

```

Figure 338. Create Controller Description Screen

We will be defining *APPC as our controller type as we will be communicating to AS/400B.

```

CRTCTLAPPC          Create Ctl Desc (APPC)

Type choices, press Enter.

Controller description . . . . . ▶ TRCTLPSOS2  Name
Link type . . . . . ▶ *TRLAN          *SDLC, *TRLAN, *X25
Online at IPL . . . . . *YES          *YES, *NO
APPN capable . . . . . *YES          *YES, *NO
Switched line list . . . . . ▶ L41TR      Name
                                + for more values
Maximum frame size . . . . . *LINKTYPE *LINKTYPE, 265, 521, 1033...
Remote network identifier . . . ▶ USIBMRA  Name, *NETATR, *NONE
Remote control point name . . . ▶ PS2     Name
SSCP identifier . . . . . ▶             050000000000-05FFFFFFFFFFFF
Initial connection . . . . . *ANS     *DIAL, *ANS
TRLAN remote adapter address . . ▶ 400000001111 000000000001-FFFFFFFFFFFF
APPN CP session support . . . *NO     *YES, *NO
APPN node type . . . . . *LENNODE   *ENDNODE, *LENNODE...
APPN transmission grp number . . 1       1-20, *CALC

More...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 339. Create Controller Description (APPC) Screen

In Figure 339 we will be defining "APPN capable" as *YES. The APPC device descriptions will be automatically created, varied on and attached to the right controller using the information defined in the network attributes, the associated mode description, the location list and the application program. It also means that the local system will appear as an End Node or Network Node to the adjacent system.

We will use the switched line list name to the token-ring name we have just created.

The token-ring adapter address of the PS/2 is 400000001111.

Press Enter to create your APPC controller description.

8.2.4 Configure APPN Remote and Local Location List

Since we defined our APPC controller with APPN(*YES) the device descriptions will be automatically created. After the automatic creation of the devices the AS/400 will vary them on and attach them to the correct controller in the following situations.

- When a session is requested and the route chosen and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name defined.
- When a BIND is received for a local location and the controller description doesn't already have a device description with the specified remote location name, remote NETID and local location name defined.

The AS/400A, in this scenario, doesn't require the remote location of the PS/2 to be defined as the PS/2 will always be initiating the sessions.

8.2.5 Create Mode Description

The mode description describes the session characteristics and number of sessions that will be used to negotiate the allowable values between the local and remote locations. A mode with the same name must exist at both end points. There must also be a mode entry with the same name in VTAM/NCP.

This mode description QPCSUPP is created automatically when AS/400 PC Support is installed on AS/400A and must be used with AS/400 PC Support.

In Figure 340 the mode characteristics of QPCSUPP are shown.

```
Display Mode Description
Mode description name . . . . . : MODD      QPCSUPP
Class-of-service . . . . . : COS        #CONNECT
Maximum number of sessions . . . . . : MAXSSN  64
Maximum conversations . . . . . : MAXCNV   64
Locally controlled sessions . . . . . : LCLCTLSSN  0
Pre-established sessions . . . . . : PREESTSSN  0
Inbound pacing value . . . . . : INPACING  7
Outbound pacing value . . . . . : OUTPACING  7
Max length of request unit . . . . . : MAXLENRU 2048
Text . . . . . : TEXT      AS/400 PC Support mode entr
y
Press Enter to continue.

F3=Exit F12=Previous
```

Figure 340. Display Mode Descriptions Screen

The parameters defined here must match those defined on the remote location.

8.3 Relationship between AS/400A and the PS/2

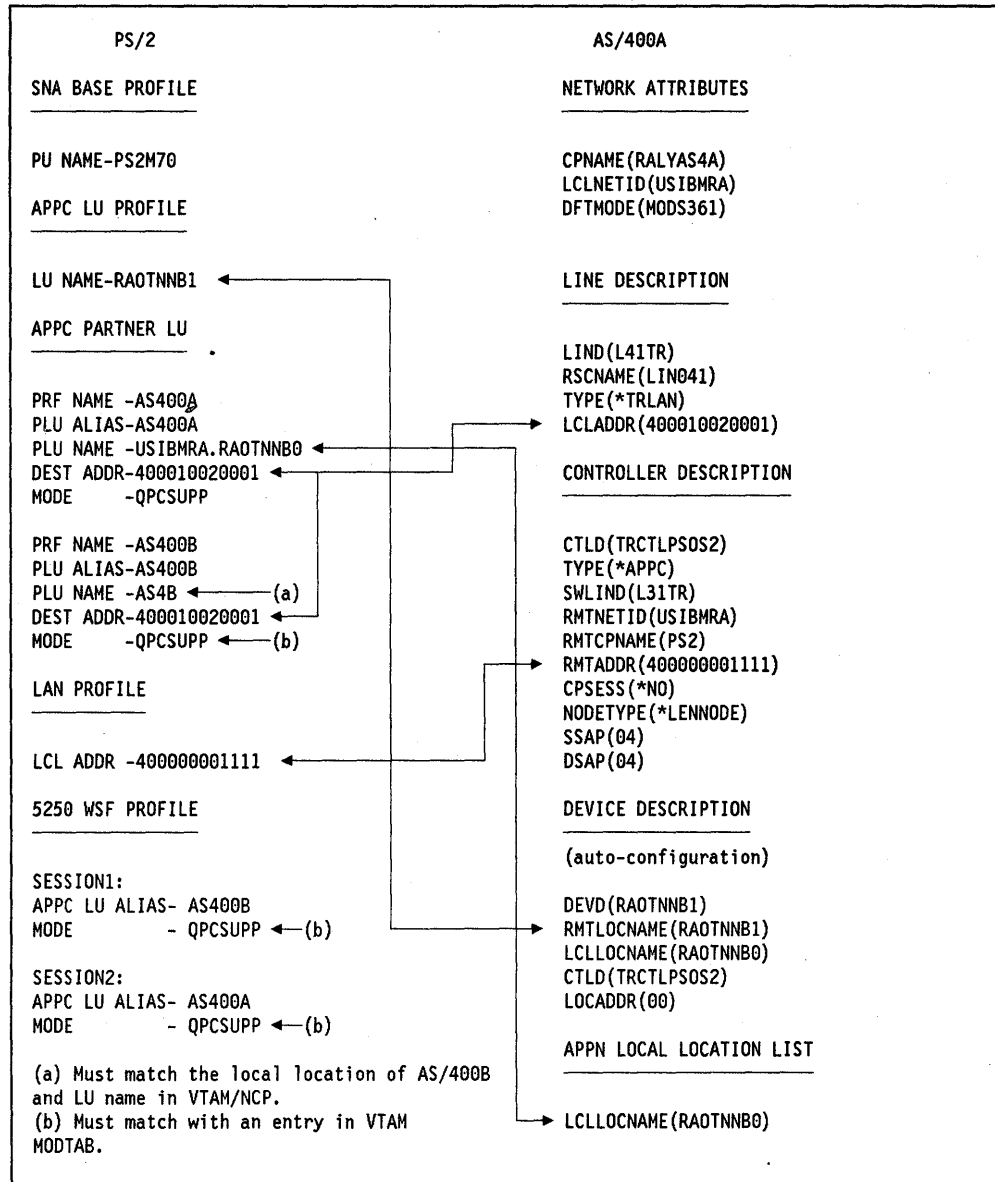


Figure 341. Relationship between AS/400A and PS/2

8.4 Definitions on the AS/400A (RALYAS4A) to Host

When you are going to connect AS/400A as an APPN node to an S/370 subarea to support independent LUs you are required to perform the following steps:

- Check the network attributes
- Create a line description from AS/400A to VTAM/NCP
- Create a host controller description for the S/370 host
- Configure APPN remote and local location list
- Create a mode entry.

We have already defined the definitions required to connect AS/400A to the host. You can refer to this information in Chapter 5.0, "Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host" on page 99.

8.5 Definitions on AS/400 B (RALYAS4B) to Host

When you are going to connect AS/400B as an APPN node to an S/370 subarea to support independent LUs you are required to perform the following steps:

- Check the network attributes
- Create a line description from the AS/400B to VTAM/NCP
- Create a host controller description for the S/370 host
- Configure APPN remote and local location lists
- Create a mode entry.

We have already defined the definitions required to connect AS/400B to the host. You can refer to this information in Chapter 5.0, "Scenario 2: AS/400A, AS/400B and PS/2 Adjacent to the Host" on page 99.

8.6 Definitions on the PS/2 (RAOTNNB1)

In order to configure the PS/2 with OS/2 EE 1.2 for 5250 workstation sessions, we have to customize the configuration file QPCSCFG in the following way:

- Modify Workstation Profile
- Modify SNA Feature Profile
- Modify LAN Feature Profile
- Modify 5250 Workstation Feature Profile.

For additional information you can refer to *IBM Operating System/2 Extended Edition Version 1.2 User's Guide*.

8.6.1 Modify Workstation Profile

From the Communications Configuration Menu in Figure 342 we modified the following profiles.

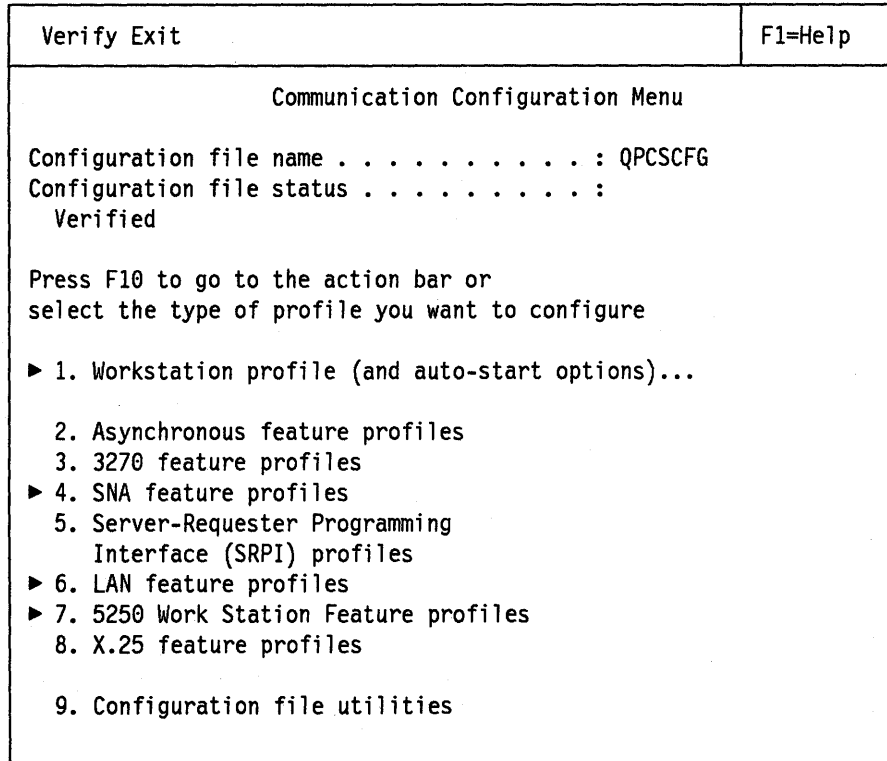


Figure 342. OS/2 Communication Configuration Menu Screen

```

WORKSTATION PROFILE (Option 1)
Autostart options:
  Emulator to start: 5250 WSF
  Services to load: SNA/APPC

SNA FEATURE PROFILES (Option 4)
SNA Base Profile(1):  PU Name      PS2M70
                      Network Name
DLC IBM TOKEN-RING (2): C\SM LAN Id  ITSCRAL
                      LOADDLC     YES
APPC LU (3):          Profile Name  QPCS
                      LU Alias     QPCS
                      LU Name      RAOTNNB1
                      LU Session Limit 128
APPC Partner LU (4): Profile Name  AS400A
                      Partner LU Alias AS400A
                      Qualified PLU Name USIBMRA.RAOTNNB0
                      LU Alias      QPCS
                      Destination Addr 400010020001
                      PLU Session Limit 64
                      Mode Name      QPCSUPP
                      Init. Sess.Limit QPCSUPP

                      Profile Name  AS400B
                      Partner LU Alias AS400B
                      Qualified PLU Name .AS4B
                      LU Alias      QPCS
                      Destination Addr 400010020001
                      PLU Session Limit 64
                      Mode Name      QPCSUPP
                      Init. Sess.Limit QPCSUPP
APPC Trsm. Serv. (5): Profile Name  QPCSUPP
                      Session Limit 64
APPC Init. Sess. (6): Profile Name  QPCSUPP

LAN FEATURE PROFILES (Option 6)
Use Locally Administered Address      400000001111

5250 WSF PROFILES (Option 7)
Terminal (1):          WSFTERM1
Specify APPC LU Alias (3): QPCS
Session Assignments (4): 5250WSF Prf.Name WSFTERM1
                        APPC LU Alias  AS400B
                        APPC Mode Name QPCSUPP
                        Session ID     A

                        5250WSF Prf.Name WSFTERM1
                        APPC LU Alias  AS400A
                        APPC Mode Name QPCSUPP
                        Session ID     B

```

Figure 343. OS/2 Communications Manager Configuration Summary

In Figure 343 we configured the workstation profile so that when we start the Communications Manager we will automatically start the 5250 WSF emulator and load the SNA/APPC services.

We need SNA/APPC services since the 5250 Workstation application uses an APPC session between an AS/400 and a PS/2 running OS/2 EE 1.2.

8.6.2 Modify SNA Feature Profiles

In Figure 343 on page 261 we configured the following profiles:

- **SNA Base profile**

The PU name is used in error logs and network management alerts to identify the PS/2. This name should be unique within the network. We defined the PU name to be PS2M70.

- **DLC profiles**

In order to use a token-ring connection to AS/400A, we define a token-ring DLC adapter.

The C/SM LAN ID identifies the particular LAN that this adapter is a member of. We have defined this ID to be ITSCRAL.

- **APPC Logical Unit (LU) Profiles**

The local APPC LU profiles identify the PS/2 to different networks. Each profile matches a specific configuration. For this scenario we use the profile QPCS.

The LU alias is the same name as the APPC LU profile name and is used to specify the local partner in an APPC session. For this scenario we define RAOTNNB1 as the LU name which must match the LU name in VTAM/NCP.

The LU session limit specifies the maximum number of sessions between the local LU and all partners LUs. This value must be greater than or equal to the sum of all the partner LU session limits that are configured with this LU. We have defined the LU session limit as 128.

- **APPC Partner Logical Unit (LU) Profiles**

These APPC partner LU profiles identify different session partners for the PS/2. We defined two profiles in this scenario, AS400A profile for AS/400A and AS400B profile for the remote AS/400B. Therefore, we can use 5250 WSF with both AS/400A and AS/400B.

- **AS400A**

The qualified primary LU name of AS/400A is USIBMRA.RAOTNNB0 and must match the AS/400A local location name. The LU alias is the LU profile name to be used for this session. The destination address must match the AS/400A token-ring local adapter address of 400010020001.

We define the mode profile to be used for session establishment as QPCSUPP.

The PLU session limit defines the maximum number of concurrently active logical connections between the local LU and this partner. The sum of all the mode session limit values for the partner LU must be no greater than the partner LU session limit.

- **AS400B**

The qualified primary LU name of AS/400B is AS4B and must match the AS/400B local location name. The LU alias is the LU profile name to be used for this session. The destination address must match the AS/400A token-ring local adapter address of 400010020001 because AS/400A is connected to the subarea and has AS4B defined in the APPN remote location list.

We define the mode profile to be used for session establishment as QPCSUPP.

The PLU session limit defines the maximum number of concurrently active logical connections between the local LU and this partner. The sum of all the mode session limit values for the partner LU must be no greater than the partner LU session limit.

- **APPC Transmission Services Profile**

The profile name is QPCSUPP. We specify the communication mode name, QPCSUPP, and the session limit of 64. This figure must be equal or less than the partner LU session limit in the partner LU profile. Take the default values for the other parameters.

- **APPC Initial Session Limit Profile**

The profile name is QPCSUPP; it defines the initial session limit setup.

8.6.3 Modify LAN Feature Profiles

OS/2 does not need the NETBIOS interface to run the 5250 Work Station Feature, therefore we select the IEEE 802.2 interface. We specified in Figure 343 on page 261 the "Universally Administered Address = No" and define the "Locally Administered Address" for the adapter as 400000001111.

Take the default values for the parameters concerning the token-ring logical connection.

8.6.4 Modify 5250 Workstation Feature Profiles

In Figure 343 on page 261 we configured the following session profiles:

- **Terminal Profiles**

We used WSFTERM1 as the terminal profile to determine the terminal attributes for keyboard, screen color etc.

- **Specify APPC LU Alias**

We used the PS/2 alias of QPCS for the APPC LU alias.

- **Session Assignments**

Select session number 1, which is the one to be displayed first, as stated in the Workstation Profile option. We assigned AS/400B to the first session by selecting the AS400B profile. We defined the following:

- 5250 WSF Profile Name: WSFTERM1
- APPC Partner LU Alias: AS400B
- APPC Mode Name: QPCSUPP
- Short Session ID: A (useful for file transfer only).

We assigned AS/400A to the second session by selecting the AS400A profile. We defined the following:

- 5250 WSF Profile Name: WSFTERM1
- APPC Partner LU Alias: AS400A
- APPC Mode Name: QPCSUPP
- Short Session ID: B (useful for file transfer only).

8.7 Definitions Defined in the Host (RAB) for the PS/2

```

***** 01220008
*      BUILD MACRO SPECIFICATIONS * 01230008
***** 01240008
NCPBUILD BUILD VERSION=V4R3, # NCP V4 REL3 X01250008
      ADDRESS=20, ENOUGH BLOCKS DEFINED IN RESSCB X01260008
      AUXADDR=10, ADDITIONAL PLU ADDRESSES FOR ILU X01260108
      ENBLTO=6.5, IBM 386X REQUIRE 6.5 AS MINIMUM X01370008
      MAXSESS=16, MAX LU-LU SESSIONS ANY LU CAN HAVE X01400008
      MAXSSCP=8, MAXIMUM SESSIONS FOR LU X01401008
      MODEL=3725, !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! X01420008
      NAMTAB=50, # ENTRIES FOR SSCP, CP & NET NAMES X01430008
      NETID=USIBMRA, NATIVE NETWORK X01431008
      NEWNAME=RAONCP0, NAME OF THIS LOAD MODULE V3X01440008
      SUBAREA=24, SUBAREA ADDRESS = 24 X01470008
      COSTAB=ISTSDCOS, COS TABLE USED TO ACTIVATE ER/VR X01520008
      SESSLIM=64, NUMBER OF SESSIONS PER NAF 01580008
      :
      :

```

Figure 344. NCP BUILD Macro for the AS/400A and PS/2

In Figure 344 we define the BUILD macro which indicates the NCP version, the type of communication controller to be used and the name of this load module. It also specifies the NCP subarea of 24. USIBMRA is the network ID for the VTAM/NCP node.

```

***** 04750008
*      LINE MACRO SPECIFICATION SDLC LINK 020 04760008
***** 04770008
RAOL0020 LINE ADDRESS=(020,HALF), TRANSMIT AND RECEIVE ADDRESSES X04780008
      NPACOLL=YES, NPAX04790008
      ANS=CONTINUE, DON'T BREAK CROSS DOMAIN SESSIONS X04800008
      OWNER=RAB, (V) VTAM X04810008
      ISTATUS=ACTIVE, X04820008
      DUPLEX=(FULL), REQUEST TO SEND ALWAYS UP X04830008
      ETRATIO=30, DEFAULT X04840008
      LPDATS=LPPDA1, X04850008
      MAXPU=9, ALLOW NO MORE THAN 9 PUS ON LINE X04860008
      SERVLIM=2, X04870008
      SRT=(,64), X04880008
      SPEED=(4800) LINE SPEED IS 4800 BPS 04890008
*      ATTACH=MODEM, # NOT SUPPORTED V4R3 04900008
***** 04920008
* 04930008
* SERVICE MACRO SPECIFICATION FOR SDLC (LINE 020) * 04940008
* 04950008
***** 04960008
      SERVICE ORDER=(RAOP07, X04970008
      RAOP08, X04980008
      RAOP1B, AS/400A X04981012
      RAOP5C, PS/2 X04982016
      RAOP09), S/38 X04990008
      MAXLIST=9 05000008
***** 05010008

```

Figure 345. NCP Line Macro for the AS/400A and PS/2

In Figure 345 the line RAOL0020 is specified as a non-switched multipoint line attached to the host RAB.

```

***** 07993008
* PU/LU MACRO RESERVED FOR THE AS/400A (RALYAS4A) * 08000008
***** 08010008
*RAOP1B PU ADDR=C4, 3270 ADDRESS='C' (EBCDIC) X 08020008
* 08021009
* PU AND LU DEFINITION FOR AS/400A 08022009
* FOR SUPPORT DEPENDENT AND INDEPENDENT LUS 08023009
* GER ROOVERS EXT.2322 08024009
* 08025009
***** 08026010
RAOP1B PU ADDR=C4, 3270 ADDRESS='C' (EBCDIC) X08029209
MAXDATA=265, MAXIMUM AMOUNT OF DATA X08029309
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE X08029409
PACING=(7), PACING SET BY BIND IMAGE X08029512
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING X08029609
PASSLIM=7, X08029709
PUTYPE=2, X08029809
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN X08029909
DISCNT=(NO), (V) VTAM ONLY X08030009
ISTATUS=ACTIVE, (V) VTAM ONLY X08030109
VPACING=8, (V) VTAM ONLY X08030210
XID=YES 08030310
* STATOPT='AS/400 T2.1' 08030410
***** 08030509
* DEFINITIONS FOR AS/400A * 08030609
* RAOTNNB0 TO B3 INDEPENDENT LUS 08030709
***** 08031609
RAOTNNB0 LU RESSCB=4, INDEPENDENT LU for AS/400A X08031710
LOCADDR=0, X08031813
MODETAB=MTGS3X, X08031910
DLOGMOD=MODS361, X08032010
ISTATUS=ACTIVE 08032110
* STATOPT='INDEPENDENT LU' 08032210
RAOTNNB1 LU RESSCB=4, INDEPENDENT LU for PS/2 X08032310
LOCADDR=0, X08032413
MODETAB=MTGS3X, X08032510
DLOGMOD=QPCSUPP, X08032610
ISTATUS=ACTIVE 08032710
* STATOPT='INDEPENDENT LU' 08032810
RAOTNNB2 LU RESSCB=4, INDEPENDENT LU for AS/400B X08032910
LOCADDR=0, X08033013
MODETAB=MTGS3X, X08033110
DLOGMOD=QPCSUPP, X08033210
ISTATUS=ACTIVE 08033310
* STATOPT='INDEPENDENT LU' 08033410
RAOTNNB3 LU RESSCB=4, INDEPENDENT LU X08033510
LOCADDR=0, X08033613
MODETAB=MTGS3X, X08033710
DLOGMOD=MODS361, X08033810
ISTATUS=ACTIVE 08033910
* STATOPT='INDEPENDENT LU' 08034010

```

Figure 346. NCP PU and LU Macro for the AS/400

In Figure 346 the PU "RAOP1B has a PU address of C4 defined. This value has to match the station address defined in the AS/400A controller description for this host.

PUTYPE=2 and XID=YES must be specified so the host appears as a T2.1 node to the AS/400.

The LU used for scenario 5 is RAOTNNB0 for AS/400A and RAOTNNB1 for PS/2. Because they are independent LUs, we have to specify LOCADDR=0. RESSCB=4 means that this specific LU has four reserved session control blocks to itself.

8.8 Activate Communications on AS/400A to PS/2

This section will describe how to activate a communications link between AS/400A and the PS/2.

To activate a token-ring line on AS/400A you need to "vary on" the line, then the controller. The following screens will guide you through this exercise. You can also go directly to the Work with Configuration Status screen by using the WRKCFGSTS command.

```
MAIN                               AS/400 Main Screen                               System:  RALYAS4A
Select one of the following:
1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
90. Sign off

Selection or command
====> 6

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 1988.
```

Figure 347. AS/400 Main Screen

Select option 6 in Figure 347 to go to the Communications screen.

```

CMN                               Communications                               System:  RALYAS4A

Select one of the following:

    1. Communication status
    2. Messages
    3. Remote jobs
    4. Configure communications
    5. Network management
    6. Network configuration
    7. Verify communications
    8. Send or receive files
    9. Jobs

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 348. Communications Screen

Select option 1 in Figure 348 to communications status.

```

CMNSTS                             Communications Status                             System:  RALYAS4A

Select one of the following:

    1. Work with line status
    2. Work with controller status
    3. Work with device status

    70. Related commands

Selection or command
===> 1

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu

(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 349. Communications Status Screen

Select option 1 in Figure 349 to work with line status.

```

WRKCFGSTS                           Work with Configuration Status

Type choices, press Enter.

Type . . . . . ▶ *LIN           *LIN, *CTL, *DEV
Configuration description . . . ▶ L41TR      Name, generic*, *ALL, *CMN...

F3=Exit  F4=List  F5=Refresh  F11=Keywords  F12=Previous
F13=How to use this display

```

Figure 350. Work with Communications Status Screen

Type the line description name in Figure 350 to work with line status.


```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1  L41TR          VARIED OFF
More...

Parameters for options 1, 2, 3 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 351. Work with Communications Status Screen

Type option 1 to vary on the line in Figure 351.

```

CMNSTS Communications Status
System: RALYAS4A
Select one of the following:
  1. Work with line status
  2. Work with controller status
  3. Work with device status

  70. Related commands

Selection or command
===> 2

F3=Exit  F4=Prompt  F9=Retrieve  F12=Previous  F13=User support
F16=System main menu
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 352. Communications Status Screen

Select option 2 in Figure 352 to work with controller status.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
  1=Vary on  2=Vary off  3=Hold device  4=End recovery  5=Work with job
  6=Release device  7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
  1  TRCTLPSOS2  VARIED OFF
      RAOTNNB1  VARIED OFF
More...

Parameters for options 1, 2, 3 or command
===>
F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F12=Previous
F14=Work with lines
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 353. Work with Communications Status Screen

Select option 1 in Figure 353 to vary on the controller.

```

Work with Configuration Status
System: RALYAS4A
Position to . . . . . Starting character(s)
Type options, press Enter.
1=Vary on 2=Vary off 3=Hold device 4=End recovery 5=Work with job
6=Release device 7=Resume recovery

Opt Lin/Ctl/Dev/Mod Status -----Job-----
      L41TR          ACTIVE
      TRCTLPSOS2     ACTIVE
      RAOTNNB1       ACTIVE
Parameters for options 1, 2, 3 or command
===>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Previous
F14=Work with lines
(C) COPYRIGHT IBM CORP. 1980, 1988.

```

Figure 354. Work with Communications Status Screen

If you select F5 to refresh the screen in Figure 351 on page 268 the token-ring line is ACTIVE and the controller is ACTIVE. Because we specified CP-CP session support and APPN *YES the device descriptions are automatically created, attached to the right controller and varied on. The refreshed screen is shown in Figure 354.

8.9 Activating Communications on the PS/2

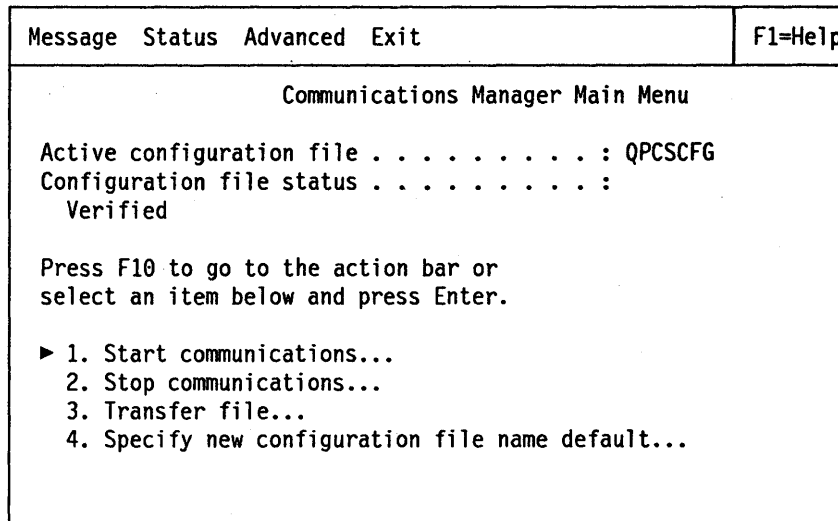


Figure 355. OS/2 Communications Manager Main Menu

Select option 1 in Figure 355 to start communications.

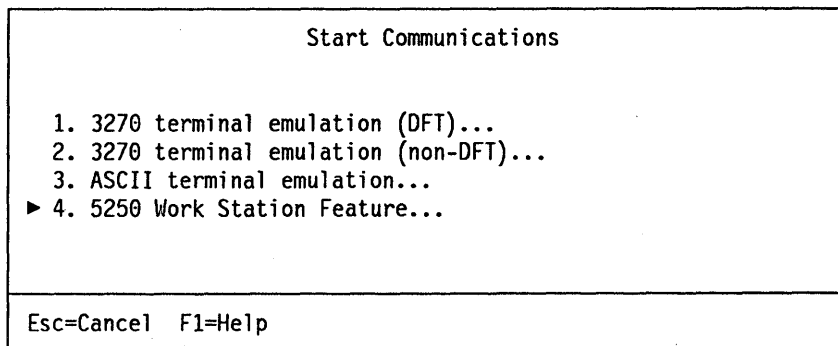


Figure 356. Start Communications Menu

Select option 4 in Figure 356 to start the 5250 WSF. The next screen to appear will be this signon screen for AS/400B. You can jump to AS/400A by pressing the Alt and Page Up keys on an enhanced keyboard or Alt and F9 on an AT keyboard.

8.10 Activating communications on the S/370 Host for the PS/2

```

NCCF      N E T V I E W                      RABAN WTCR21    05/31/89 16:38:30
* RABAN   V NET,ACT,ID=RAOL0020             ←-----
RABAN     IST097I VARY      ACCEPTED
RABAN     IST093I RAOL0020 ACTIVE
C RABAN   ▶AOPNLIST RAOL0020 NONE
RABAN     IST097I DISPLAY ACCEPTED
  
```

Figure 357. Activate Line for AS/400A

AS/400A is T2.1 node connected to the host via a SDLC leased line. Therefore to vary on the line we should issue the VTAM command "V NET,ACT,ID=RAOL0020".

```

NCCF      N E T V I E W                      RABAN WTCR21    05/31/89 16:39:12
* RABAN   V NET,ACT,ID=RAOP1B,SCOPE=ALL     ←-----
RABAN     IST097I VARY      ACCEPTED
RABAN     IST093I RAOP1B  ACTIVE
C RABAN   ▶AOPNLIST RAOP1B NONE
RABAN     IST097I DISPLAY ACCEPTED
  
```

Figure 358. Activate PU for the AS/400A

To vary on AS/400A PU enter the VTAM command "V NET,ACT,ID=RAOP1B,SCOPE=ALL".

```

NCCF      N E T V I E W                      RABAN WTCR21    05/31/89 16:40:02
C RABAN   DISPLAY NET,ID=RAOP1B,SCOPE=ALL
RABAN     IST097I DISPLAY ACCEPTED
RABAN
IST075I   NAME = RAOP1B                      , TYPE = PU_T2.1 ←-----
IST486I   STATUS= ACTIV                      , DESIRED STATE= ACTIV
IST081I   LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP1
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST355I   LOGICAL UNITS:
IST080I   RAOTNNB0 ACTIV                     RAOTNNB1 ACT/S      RAOTNNB2 ACTIV
IST080I   RAOTNNB3 ACTIV                     RAOTNNB4 ACTIV     RAOTNNB5 ACTIV
IST080I   RAOT1B01 ACTIV                     RAOT1B02 ACTIV     RAOT1B03 ACTIV
IST080I   RAOT1B04 ACTIV                     RAOT1B05 ACTIV     RAOT1B06 ACTIV
IST080I   RAOT1B07 ACTIV                     RAOT1B08 ACTIV     RAOT1B09 ACTIV
IST080I   RAOT1B0A ACTIV                     RAOT1B0B NEVAC     RAOT1B0C NEVAC
IST080I   RAOT1B0D NEVAC                     RAOT1B0E ACTIV     RAOT1B0F ACTIV
IST080I   RAOT1B0G ACTIV                     RAOT1B0H ACTIV     RAOT1B0I ACTIV
IST080I   RAOT1B0J ACTIV
IST314I   END
  
```

Figure 359. Display Status of the PU for the AS/400A

Figure 359 displays the status of the PU for AS/400A. Notice that the PU is seen as a T2.1 after activation and RAOTNNB1 (PS/2) is active and in session.

```

NCCF      N E T V I E W      RABAN WTCR21  06/21/89 18:07:09
C RABAN   DISPLAY NET, ID=RAOTNNB1, SCOPE=ALL
RABAN     IST097I DISPLAY ACCEPTED
' RABAN
IST075I   NAME = RAOTNNB1      , TYPE = LOGICAL UNIT
IST486I   STATUS= ACT/S        , DESIRED STATE= ACTIV
IST861I   MODETAB=MTGS3X      USSTAB=***NA*** LOGTAB=***NA***
IST934I   DLOGMOD=MODS361
IST597I   CAPABILITY-PLU ENABLED ,SLU ENABLED ,SESSION LIMIT NONE
IST081I   LINE NAME = RAOL0020, LINE GROUP = RAOGSFLO, MAJNOD = RAONCP2
IST135I   PHYSICAL UNIT = RAOP1B
IST082I   DEVTYPE = INDEPENDENT LU
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I   ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I   SESSIONS:
IST634I   NAME      STATUS      SID          SEND RECVR TP NETID
IST635I   AS4B     ACTIV-S     CE773A1F5526339C  0 0 USIBMRA
IST635I   AS4B     ACTIV-S     CE773A1F5526339B  0 0 USIBMRA
IST314I   END

```

Figure 360. Display Status of the LU for the PS/2

Figure 360 displays the status of the LU for the PS/2. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that this PS/2 LU (RAOTNNB1) has an active session with AS/400B LU (AS4B).

```

NCCF      N E T V I E W      RABAN WTCR21  06/21/89 18:06:53
C RABAN   DISPLAY NET, ID=AS4B, SCOPE=ALL
RABAN     IST097I DISPLAY ACCEPTED
' RABAN
IST075I   NAME = AS4B          , TYPE = LOGICAL UNIT
IST486I   STATUS= ACT/S        , DESIRED STATE= ACTIV
IST861I   MODETAB=MTGS3X      USSTAB=***NA*** LOGTAB=***NA***
IST934I   DLOGMOD=QPCSUPP
IST597I   CAPABILITY-PLU ENABLED ,SLU ENABLED ,SESSION LIMIT NONE
IST135I   PHYSICAL UNIT = RAOTRPU2
IST136I   SWITCHED SNA MAJOR NODE = SWRAOTR
IST082I   DEVTYPE = INDEPENDENT LU
IST654I   I/O TRACE = OFF, BUFFER TRACE = OFF
IST171I   ACTIVE SESSIONS = 0000000002, SESSION REQUESTS = 0000000000
IST206I   SESSIONS:
IST634I   NAME      STATUS      SID          SEND RECVR TP NETID
IST635I   RAOTNNB1 ACTIV-P     CE773A1F5526339C  0 0 USIBMRA
IST635I   RAOTNNB1 ACTIV-P     CE773A1F5526339B  0 0 USIBMRA
IST314I   END

```

Figure 361. Display Status of the LU for the AS/400A

Figure 361 displays the status of the LU for AS/400B. Notice the new device type of "independent LU". VTAM recognizes that it is an independent LU because of the LOCADDR=00 in the NCP major node.

If you look at IST635I you will see that AS/400B LU (AS4B) has an active session with the PS/2 LU (RAOTNNB1) and in this case the PS/2 is the primary LU.

8.11 Traces AS/400A to RAB to AS/400B

The following traces were taken on AS/400A using the trace facility. This trace displays both the XID3 exchanges and the BIND exchanges between AS/400A and the host. You will also see the exchanges being passed from AS/400A to AS/400B behind the S/370 subarea.

COMMUNICATIONS TRACE		Title: 400A TO RAB TO 400B	07/20/89 07:52:06	Page: 1					
Trace Description	: 400A TO RAB TO 400B								
Line name	: L24020								
Line protocol	: SDLC								
Start Date/Time	: 07/20/89 07:46:00								
End Date/Time	: 07/20/89 07:51:45								
Bytes collected	: 13342								
Buffer size	: 3 1=128K, 2=256K, 3=2048K								
Data direction	: 3 1=Sent, 2=Received, 3=Both								
Stop on buffer full	: N Y=Yes, N=No								
Format SNA data only	: N Y=Yes, N=No								
Format RR, RNR commands	: N Y=Yes, N=No								
Controller Name	: *ALL *ALL, name								
COMMUNICATIONS TRACE		Title: 400A TO RAB TO 400B	07/20/89 07:52:06	Page: 2					
Record Number	Number of record in trace buffer (decimal)								
S/R	S=Sent R=Received M=Modem Change								
Data Length	Amount of data in record (decimal)								
Record Timer	Time stamp (100 millisecond resolution, hexadecimal)								
Record Status	Status of record								
Controller name	Name of controller associated with record								
Command	Command/Response information								
Number sent	Count of records sent								
Number received	Count of records received								
Poll/Final	ON=Poll for Commands, Final for Responses								
Commands/Responses:									

UI	Unnumbered Information								
SNRM	Set Normal Response Mode								
XID	Exchange ID								
SNRME	Set Normal Response Mode Extended								
UA	Unnumbered Acknowledgment								
*****	Invalid Command/Response								
COMMUNICATIONS TRACE		Title: 400A TO RAB TO 400B	07/20/89 07:52:06	Page: 3					
Record Number	Data S/R	Record Status	Record Timer	Data Type	Controller Name/Number	Command	Number Sent	Number Received	Poll/Final
6	R	0	00000000	1AD3	/CA XID				ON
7	S	84	00000000	1AD3	/CA XID				ON
				Data	: 32540561507800000004C000000000001010B00000209000000007000E *.../&.....{.....*				
					11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C5E910 *..4USIBMRA.RALYAS4A..7AAAAAEZ.*				
					17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8 *..1.....9406B50100015078 *				
19	R	119	00000000	1B01	/CA XID				ON
				Data	: 3477FFFFFFD00001084400000000000010B1000105A000000007000E *.....D.....!.....*				
					0CF4E4E2C9C2D4D9C14BD9C1C20E08F1D9C1D6D5C3D7F20E07F7D9C1D6D7 *..4USIBMRA.RAB..1RAONCP2..7RAOP*				
					F1C2103700161101130011F3F7F2F5F0F0F0F0F0F0F0F1F8F2F5201104 *1B.....372500000001825....*				
					0E02F5F6F6F8F5F4F0F1F3F0F00804F0F4F0F3F0F007098901661620 *..566885401300..040300..I....*				
20	S	84	00000000	1B01	/CA XID				ON
				Data	: 32540561507800000004C000000000001010B00000209000000007000E *.../&.....{.....*				
					11F4E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C10E09F7C1C1C1C1C1C5E910 *..4USIBMRA.RALYAS4A..7AAAAAEZ.*				
					17F1161101130011F9F4F0F6C2F5F0F1F0F0F0F1F5F0F7F8 *..1.....9406B50100015078 *				
32	R	0	00000000	1B2D	/CA SNRM				ON
33	S	0	00000000	1B2D	/CA UA				ON

Figure 362. AS/400A to RAB XID3 Exchanges

```

COMMUNICATIONS TRACE      Title: 400A TO RAB TO 400B      07/20/89 07:52:01      Page: 1
Trace Description . . . . . : 400A TO RAB TO 400B
Line name . . . . . : L24020
Line protocol . . . . . : SDLC
Start Date/Time . . . . . : 07/20/89 07:46:00
End Date/Time . . . . . : 07/20/89 07:51:45
Bytes collected . . . . . : 13342
Buffer size . . . . . : 3      1=128K, 2=256K, 3=2048K
Data direction . . . . . : 3      1=Sent, 2=Received, 3=Both
Stop on buffer full . . . . . : N      Y=Yes, N=No
Format SNA data only . . . . . : Y      Y=Yes, N=No
Format RR, RNR commands . . . . . : N      Y=Yes, N=No
Controller Name . . . . . : *ALL      *ALL, name
COMMUNICATIONS TRACE      Title: 400A TO RAB TO 400B      07/20/89 07:52:01      Page: 2

```

```

Record Number . . . . . Number of record in trace buffer (decimal)
S/R . . . . . S=Sent R=Received M=Modem Change
Controller name . . . . . Name of Controller associated with record
SNA Data . . . . . TH, RH and RU for record
TH . . . . . Transmission Header
RH . . . . . Request/Response Header
RU . . . . . Request/Response Unit
TH Parameter Descriptions:
FID . . . . . Format Identification
MPF . . . . . Mapping Field (segment of Basic Information
                Unit (BIU) - ONLY, FIRST, MIDDLE, LAST)
OAF . . . . . Origination Address Field
DAF . . . . . Destination Address Field
SNF . . . . . Sequence Number Field
DCF . . . . . Data Count Field
LA . . . . . Local Address
ODAI . . . . . OAF-DAF Assignor Indicator
EFI . . . . . Expedited Flow Indicator
LU . . . . . Logical Unit
SSCP . . . . . System Services Control Point
PU . . . . . Physical Unit
RH Parameter Descriptions:
REQ . . . . . Request
RSP . . . . . Response
RH Category Descriptions:
NC . . . . . Network Control
SC . . . . . Session Control
DFC . . . . . Data Flow Control
NC . . . . . Network Control
FMD . . . . . Function Management Data
FMH . . . . . Function Management Header
RH Indicators:
FI . . . . . Format Indicator
SDI . . . . . Sense Data Included Indicator
BCI . . . . . Begin Chain Indicator
ECI . . . . . End Chain Indicator
DR1 . . . . . Definite Response 1 Indicator
DR2 . . . . . Definite Response 2 Indicator
ERI . . . . . Exception Response Indicator
RTI . . . . . Response Type Indicator
QRI . . . . . Queued Response Indicator
EBI . . . . . End Bracket Indicator
CDI . . . . . Change Direction Indicator
PI . . . . . Pacing Indicator
BBI . . . . . Begin Bracket Indicator
CSI . . . . . Code Selection Indicator
EDI . . . . . Enciphered Data Indicator
PDI . . . . . Padded Data Indicator
CEBI . . . . . Conditional End Bracket Indicator
RLWI . . . . . Request Larger Window Indicator

```

Figure 363. AS/400A to Host BIND Exchanges

COMMUNICATIONS TRACE			Title: 400A TO RAB TO 400B	07/20/89 07:52:01	Page: 3
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
38	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=19A8, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1	
			RU Command	ACTPU	
			RU Data	110201050000000000 *.....*	
44	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=00, SNF'=19A8, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	ACTPU	
			RU Data	11110404040404040400000070100000000000 *..*	
673	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=E159, EFI RH : ('6B8100'X) REQ SC, FI, BCI, ECI, DR1, PI	
			RU Command	BIND	
			RU Data	31001307B0B050B30180858580010602000000000001023000008D9C1 *.....&...EE.....RA* D6E3D5D5C2F11F000902E2D5C1E2E5C3D4C7090300E1F76A5AE1F76A0904 *OTNNB1....SNASVCMG....7.!.7...* D9C1D6E3D5D5C2F10004C1E2F4C26019CE773A1F5526339B10E4E2C9C2D4 *RAOTNNB1..AS4B-.....USIBM* D9C14BD9C1D3E8C1E2F4C10E11F4E4E2C9C2D4D9C14BD7E2F24040404040 *RA.RALYAS4A..4USIBMRA.PS2 2B2A0202164614800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C112461080 *.....USIBMRA.RALYAS4A....* 010BE4E2C9C2D4D9C14BD9C1C2002C0A01087BC3D6D5D5C5C3E3 *..USIBMRA.RAB.....SNASVCMG*	
675	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=00, OAF'=01, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	007FFF *..*	
678	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=E159, EFI RH : ('EB8000'X) RSP SC, FI, DR1	
			RU Command	BIND	
			RU Data	31001307B0B050B300808585800006020000000000001023000002300 *.....&...EE.....* 0902E2D5C1E2E5C3D4C7090300E1F76A5AE1F76A005E4E2C9C2D4D9C14B *..SNASVCMG....7.!.7...USIBMRA.* C1E2F4C200002C0A01084040404040406019CE773A1F5526339B10E4 *AS4B.....* E2C9C2D4D9C14BD9C1D3E8C1E2F4C1 *SIBMRA.RALYAS4A	
682	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0001 RH : ('0B9520'X) REQ FMD, FI, BCI, ECI, DR1, ERI, RLWI, PI, CDI	
			RU Command		
			RU Data	0D0502FF0003D000000206F100001912100200000000040002000000008 *.....}....1.....* D8D7C3E2E4D7D740 *QPCSUPP*	
684	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000000 *..*	
689	R	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=02, OAF'=00, SNF'=0001 RH : ('039101'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CEPI	
			RU Data	001912100A00000000040002000000008D8D7C3E2E4D7D740 *.....}....QPCSUPP*	
693	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=00, OAF'=02, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI	
			RU Data	000001 *..*	
696	S	P24020D	EBCDIC	TH : FID=2, MPF=Only / ODAI=1, DAF'=01, OAF'=02, SNF'=E15D, EFI RH : ('6B8100'X) REQ SC, FI, BCI, ECI, DR1, PI	
			RU Command	BIND	
			RU Data	31001307B0B050B307808585800706020000000000001023000008D9C1 *.....&...EE.....RA* D6E3D5D5C2F11F000902D8D7C3E2E4D7D740090300E1F76A5EE1F76A0904 *OTNNB1....QPCSUPP ....7.;.7...* D9C1D6E3D5D5C2F10004C1E2F4C26019CE773A1F5526339C10E4E2C9C2D4 *RAOTNNB1..AS4B-.....USIBM* D9C14BD9C1D3E8C1E2F4C10E11F4E4E2C9C2D4D9C14BD7E2F24040404040 *RA.RALYAS4A..4USIBMRA.PS2 2B2A0202164614800110E4E2C9C2D4D9C14BD9C1D3E8C1E2F4C112461080 *.....USIBMRA.RALYAS4A....* 010BE4E2C9C2D4D9C14BD9C1C2002C0A01087BC3D6D5D5C5C3E3 *..USIBMRA.RAB.....#CONNECT*	

Figure 364. AS/400A to Host BIND Exchanges

8.12 Traces AS/400A to PS/2

The following traces were taken on AS/400A using the trace facility. This trace displays both the XID3 exchanges and the BIND exchanges between AS/400A and the PS/2. You will also see the exchanges being sent for AS/400B behind the S/370 subarea.

COMMUNICATIONS TRACE										Title: AS400A TO PS/2		07/20/89 07:52:53		Page: 1	
Trace Description										AS400A TO PS/2					
Line name										L41TR					
Line protocol										TRLAN					
Start Date/Time										07/20/89 07:47:18					
End Date/Time										07/20/89 07:51:41					
Bytes collected										6579					
Buffer size										3		1=128K, 2=256K, 3=2048K			
Data direction										3		1=Sent, 2=Received, 3=Both			
Stop on buffer full										N		Y=Yes, N=No			
Format SNA data only										N		Y=Yes, N=No			
Format RR, RNR commands										N		Y=Yes, N=No			
Record Number										Number of record in trace buffer (decimal)					
S/R										S=Sent R=Received M=Modem Change					
Data Length										Amount of data in record (decimal)					
Record Timer										Time stamp (100 millisecond resolution, hexadecimal)					
Controller name										Name of Controller associated with record					
Command										Command/Response information					
Number sent										Count of records sent					
Number received										Count of records received					
Poll/Final										ON=Poll for Commands, ON=Final for Responses					
Destination MAC Address										Physical address of destination					
Source MAC Address										Physical address of source					
Frame Format										LLC (Logical Link Control) or MAC (Media Access Control)					
DSAP										Destination Service Access Point (Logical address of destination)					
SSAP										Source Service Access Point (Logical address of source)					
Commands/Responses:															
RR										Receive Ready					
UI										Unnumbered Information					
UA										Unnumbered Acknowledgment					
TEST										Test					
XID										Exchange ID					
SABME										Set Asynchronous Balanced Mode Extended					
COMMUNICATIONS TRACE										Title: AS400A TO PS/2		07/20/89 07:52:53		Page: 3	
Record Number	Data S/R	Record Length	Record Timer	Data Type	Controller Name	Destination MAC Address	Source MAC Address	Frame Format	Command	Number Sent	Number Received	Poll/Final	DSAP	SSAP	
1	R	34	0138			C00000000008	10005A250374	MAC							
				Data		00226029082D000006000000082E0000000000060B00000000002400010020001				*				*	
2	R	34	0138			C00000000008	10005A2503C3	MAC							
				Data		00226029082D000000000000082E000000000100060B00000000000210005A250374				*				*	
3	R	34	0387			C00000000008	10005A2503C3	MAC							
				Data		00226029082D000000000000082E000000000100060B00000000000210005A250374				*				*	
4	R	34	0388			C00000000008	400010020002	MAC							
				Data		00226029082D000001000000082E0000000000060B00000000000210005A2503C3				*				*	
5	R	34	051A			C00000000008	10005A2503C3	MAC							
				Data		00226029082D000001000000082E000000000100060B00000000000210005A250374				*				*	

Figure 366. AS/400A to PS/2 XID3 Exchanges


```

COMMUNICATIONS TRACE      Title: AS400A TO PS/2      07/20/89 07:52:47      Page: 1
Trace Description . . . . . : AS400A TO PS/2
Line name . . . . . : L41TR
Line protocol . . . . . : TRLAN
Start Date/Time . . . . . : 07/20/89 07:47:18
End Date/Time . . . . . : 07/20/89 07:51:41
Bytes collected . . . . . : 6579
Buffer size . . . . . : 3      1=128K, 2=256K, 3=2048K
Data direction . . . . . : 3      1=Sent, 2=Received, 3=Both
Stop on buffer full . . . . . : N      Y=Yes, N=No
Format SNA data only . . . . . : Y      Y=Yes, N=No
Format RR, RNR commands . . . . . : N      Y=Yes, N=No
Controller Name . . . . . : *ALL      *ALL, name
COMMUNICATIONS TRACE      Title: AS400A TO PS/2      07/20/89 07:52:47      Page: 2

Record Number . . . . . Number of record in trace buffer (decimal)
S/R . . . . . S=Sent R=Received M=Modem Change
Controller name . . . . . Name of Controller associated with record
SNA Data . . . . . TH, RH and RU for record
TH . . . . . Transmission Header
RH . . . . . Request/Response Header
RU . . . . . Request/Response Unit
TH Parameter Descriptions:
  FID . . . . . Format Identification
  MPF . . . . . Mapping Field (segment of Basic Information
                  Unit (BIU) - ONLY, FIRST, MIDDLE, LAST)
  OAF . . . . . Origination Address Field
  DAF . . . . . Destination Address Field
  SNF . . . . . Sequence Number Field
  DCF . . . . . Data Count Field
  LA . . . . . Local Address
  ODAI . . . . . OAF-DAF Assignor Indicator
  EFI . . . . . Expedited Flow Indicator
  LU . . . . . Logical Unit
  SSCP . . . . . System Services Control Point
  PU . . . . . Physical Unit
RH Parameter Descriptions:
  REQ . . . . . Request
  RSP . . . . . Response
RH Category Descriptions:
  NC . . . . . Network Control
  SC . . . . . Session Control
  DFC . . . . . Data Flow Control
  NC . . . . . Network Control
  FMD . . . . . Function Management Data
  FMH . . . . . Function Management Header
RH Indicators:
  FI . . . . . Format Indicator
  SDI . . . . . Sense Data Included Indicator
  BCI . . . . . Begin Chain Indicator
  ECI . . . . . End Chain Indicator
  DR1 . . . . . Definite Response 1 Indicator
  DR2 . . . . . Definite Response 2 Indicator
  ERI . . . . . Exception Response Indicator
  RTI . . . . . Response Type Indicator
  QRI . . . . . Queued Response Indicator
  EBI . . . . . End Bracket Indicator
  CDI . . . . . Change Direction Indicator
  PI . . . . . Pacing Indicator
  BBI . . . . . Begin Bracket Indicator
  CSI . . . . . Code Selection Indicator
  EDI . . . . . Enciphered Data Indicator
  PDI . . . . . Padded Data Indicator
  CEBI . . . . . Conditional End Bracket Indicator
  RLWI . . . . . Request Larger Window Indicator

```

Figure 368. AS/400A to PS/2 BIND Exchanges

COMMUNICATIONS TRACE		Title: AS400A TO PS/2		07/20/89 07:52:47		Page: 3		
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU				
23	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=E14E, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1				
		RU Command	.....	BIND				
		RU Data	.....	31001307B0B0D0B1010085858001060200000000000001023000008D9C1 *.....}...EE.....RA* D6E3D5D5C2F11F000902E2D5C1E2E5C3D4C7090300E1F76A4FE1F76A0904 *OTNNB1....SNASVCMG....7.|.7...* D9C1D6E3D5D5C2F10010E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F0 *RAOTNNB1..USIBMRA.RAOTNNB0 *				
25	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=E14E, EFI RH : ('EB8000'X) RSP SC, FI, DR1				
		RU Command	.....	BIND				
		RU Data	.....	31001307B0B0D0B1010785858701060200000000000001023000002700 *.....}...EEG.....* 0902E2D5C1E2E5C3D4C7090300E1F76A4FE1F76A1105E4E2C9C2D4D9C14B *..SNASVCMG....7.|.7...USIBMRA.* D9C1D6E3D5D5C2F00000 *RAOTNNB0.. *				
27	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0001 RH : ('0B9120'X) REQ FMD, FI, BCI, ECI, DR1, ERI, PI, CDI				
		RU Command	.....	FMH- 5=0D0502FF0003D000000206F100 *.....}.....1. *				
		RU Data	.....	001912100200000000040002000000008D8D7C3E2E4D7D740 *.....}.....QPCSUPP *				
29	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=0000 RH : ('830100'X) RSP FMD, PI				
		RU Command	.....	No RU data				
31	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=01, SNF'=0001 RH : ('039101'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CEBI				
		RU Data	.....	001912100A00000000040002000000008D8D7C3E2E4D7D740 *.....}.....QPCSUPP *				
33	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=01, OAF'=02, SNF'=0000 RH : ('830100'X) RSP FMD, PI				
		RU Command	.....	No RU data				
35	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=02, SNF'=E152, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1				
		RU Command	.....	BIND				
		RU Data	.....	31001307B0B0D0B1070085858007060200000000000001023000008D9C1 *.....}...EE.....RA* D6E3D5D5C2F11F000902D8D7C3E2E4D7D740090300E1F76A53E1F76A0904 *OTNNB1....QPCSUPP ....7...7...* D9C1D6E3D5D5C2F10010E4E2C9C2D4D9C14BD9C1D6E3D5D5C2F0 *RAOTNNB1..USIBMRA.RAOTNNB0 *				
37	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=03, OAF'=02, SNF'=E159, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1				
		RU Command	.....	BIND				
		RU Data	.....	31001307B0B0D0B101008585800106020000000000001023000008D9C1 *.....}...EE.....RA* D6E3D5D5C2F11F000902E2D5C1E2E5C3D4C7090300E1F76A5AE1F76A0904 *OTNNB1....SNASVCMG....7.!..7...* D9C1D6E3D5D5C2F10004C1E2F4C2 *RAOTNNB1..AS4B *				
39	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=02, SNF'=E152, EFI RH : ('EB8000'X) RSP SC, FI, DR1				
		RU Command	.....	BIND				
		RU Data	.....	31001307B0B0D0B107078585870706020000000000001023000002700 *.....}...EEG.....* 0902D8D7C3E2E4D7D740090300E1F76A53E1F76A1105E4E2C9C2D4D9C14B *..QPCSUPP ....7...7...USIBMRA.* D9C1D6E3D5D5C2F00000 *RAOTNNB0.. *				
41	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=02, SNF'=0001 RH : ('4B9101'X) REQ DFC, FI, BCI, ECI, DR1, ERI, PI, CEBI				
		RU Command	.....	LUSTAT				
		RU Data	.....	0400060000 *..... *				

Figure 369. AS/400A to PS/2 BIND Exchanges

COMMUNICATIONS TRACE			Title: AS400A TO PS/2	07/20/89 07:52:47	Page: 4
Record Number	S/R	Controller Name	Data Type	SNA Data: TH, RH, RU	
43	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=02, SNF'=0000 RH : ('830100'X) RSP FMD, PI No RU data	
45	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=03, SNF'=E159, EFI RH : ('EB8000'X) RSP SC, FI, DR1 RU Command : BIND RU Data : 31001307B0B050B1013F8585BF01060200000000000010230000002300 *.....&...EE.....*	*.....&...EE.....*
47	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=03, OAF'=02, SNF'=0001 RH : ('0B9120'X) REQ FMD, FI, BCI, ECI, DR1, ERI, PI, CDI RU Command : FMH- 5=0D0502FF0003D00000206F100 *.....}.....1.* RU Data : 00191210020000000000400020000000008D07C3E2E4D7D740 *.....}.....QPCSUPP*	*.....}.....1.* *.....}.....QPCSUPP*
49	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=03, SNF'=0000, EFI RH : ('830100'X) RSP FMD, PI No RU data	
51	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=03, SNF'=0001 RH : ('039101'X) REQ FMD, BCI, ECI, DR1, ERI, PI, CEBI RU Data : 001912100A0000000000040002000000008D07C3E2E4D7D740 *.....}.....QPCSUPP*	*.....}.....QPCSUPP*
53	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=03, OAF'=02, SNF'=0000 RH : ('830100'X) RSP FMD, PI No RU data	
55	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=04, OAF'=02, SNF'=E15D, EFI RH : ('6B8000'X) REQ SC, FI, BCI, ECI, DR1 RU Command : BIND RU Data : 31001307B0B000B107008585800706020000000000001023000000D9C1 *.....}....EE.....RA*	*.....}....EE.....RA*
57	S	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=02, OAF'=04, SNF'=E15D, EFI RH : ('EB8000'X) RSP SC, FI, DR1 RU Command : BIND RU Data : 31001307B0B050B1073F8585BF07060200000000000010230000002300 *.....&...EE.....*	*.....&...EE.....*
59	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=04, OAF'=02, SNF'=0001 RH : ('4B9101'X) REQ DFC, FI, BCI, ECI, DR1, ERI, PI, CEBI RU Command : LUSTAT *..... RU Data : 0400060000 *.....*	*..... *.....*
61	R	TRCTLPS0S2	EBCDIC	TH : FID=2, MPF=Only / ODAI=0, DAF'=04, OAF'=02, SNF'=0002 RH : ('0B90A0'X) REQ FMD, FI, BCI, ECI, DR1, ERI, BBI, CDI RU Command : FMH- 5=130502FF0003D000400430F0F050401020101 *.....}...005.....* RU Data : 009A12F5009612E2009212A02000051001000000230000000000000000 *...5.0.S.K.....* 00F3F1F9F74040C3F1404040404000 *...3197 C1DUS* C200F6F9F740F0F3F740 *B.697 037 S1.* 41C10000000040 *A....* 40 * * 40404040 * *	*...3197 C1DUS* *B.697 037 S1.* *A....* * * * *

Figure 370. AS/400A to PS/2 BIND Exchanges

9.0 Appendix A: AS/400A CL Program for Scenario 1 (SNA Switched)

```

5728PW1 R01M02 881028                      SEU SOURCE LISTING
SOURCE FILE . . . . . CMNLIB/QCLSRC
MEMBER . . . . . L24025
SEQNBR*...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7
 100                      PGM
 200
 300 /*****
 400 /* THIS PROGRAM IS USED TO CREATE THE LINE, CONTROL UNIT AND DEVICE */
 500 /* DESCRIPTION FOR THE SNA LINE CONNECTION TO SA24 NCP=RAONCP0 */
 600 /* THE SNA CONNECTION BETWEEN AS/400 AND SA24 IS SWITCHED */
 700 /*****
 800
 900
1000 /* LINE NAME:          L24025          RESOURCE NAME: LIN032          */
1100
1200 /* PU/CTL NAME:       P24025D        SDLC ADDRESS: 01          */
1300 /*
1400 /* DEVICES:
1500 /*                      DEVD/LU NAME          LOCADDR          */
1600 /*                      -----          -----          */
1700 /* INDEPENDENT LU    RAOTNNC0          00          */
1800 /*
1900 /* 3270 EMULATION    T24025D1          01          */
2000 /*                      T24025D2          02          */
2100 /*                      T24025D3          03          */
2200 /*                      T24025D4          04          */
2300 /*
2400 /* APPC                T24025D5          05          */
2500 /*                      T24025D6          06          */
2600 /*                      T24025D7          07          */
2700 /*
2800 /* SNUF LU 0          T24025D8          08          */
2900 /*                      T24025D9          09          */
3000 /*                      T24025DA          10/0A         */
3100 /*
3200 /* RJE                 T24025DB          11/0B         */
3300 /*                      T24025DC          12/0C         */
3400 /*                      T24025DD          13/0D         */
3500 /*
3600 /* DHCF                T24025DE          14/0E         */
3700 /*                      T24025DF          15/0F         */
3800 /*                      T24025DG          16/10         */
3900 /*                      T24025DH          17/11         */
4000 /*                      T24025DI          18/12         */
4100 /*
4200 /* DSNX                T24025DJ          19/13         */
4300 /*                      T24025DK          20/14         */
4400 /*****

```

```

4500 /*
4600 MONMSG MSGID(CPF0000)
4700
4800 VRYCFG CFGOBJ(L24025) CFGTYPE(*LIN) STATUS(*OFF)
4900 DLTDEVD DEVD(RAOTNNC0)
5000 DLTDEVD DEVD(T24025D*)
5100 DLTCTLD CTLD(P24025D)
5200 DLTLIND LIND(L24025)
5300
5728PW1 R01M02 881028 SEU SOURCE LISTING
SOURCE FILE . . . . . CMNLIB/QCLSRC
MEMBER . . . . . L24025
SEQNBR*...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7
5400 CRTLINS DLC LIND(L24025) RSRNAME(LIN032) ONLINE(*NO) +
5500 ROLE(*SEC) CNN(*SWTPP) EXCHID(*SYSGEN) +
5600 STNADR(01) MAXFRAME(265) DUPLEX(*HALF) +
5700 TEXT('SNA/SDLC Switched to SA24')
5800
5900 /* THIS IS THE CONTROLLER DESCR TO SA24 */
6000 CRTCTLHOST CTLD(P24025D) LINKTYPE(*SDLC) ONLINE(*NO) +
6100 SWITCHED(*YES) APPN(*YES) SWTLINLST(L24025) +
6200 MAXFRAME(265) RMTNETID(USIBMRA) +
6300 RMTCPNAME(RAB) SSCPID(050000000000B) +
6400 CNNBR(2401) STNADR(01) CPSSN(*NO) +
6500 NODETYPE(*LENNODE) TEXT('SNA CTL/PU on +
6600 L24025') SWTDSC(*YES)
6700
6800 /* 3270 DEVICE EMULATION */
6900 CRTDEVHOST DEVD(T24025D1) LOCADR(01) RMTLOCNAME(MVS3) +
7000 ONLINE(*NO) CTL(P24025D) APPTYPE(*EML) +
7100 MAXLENRU(512) EMLKBD(*LOWER) TEXT('SNA 3278 +
7200 DE')
7300 CRTDEVHOST DEVD(T24025D2) LOCADR(02) RMTLOCNAME(MVS3) +
7400 ONLINE(*NO) CTL(P24025D) APPTYPE(*EML) +
7500 MAXLENRU(512) EMLKBD(*LOWER) TEXT('SNA 3278 +
7600 DE')
7700 CRTDEVHOST DEVD(T24025D3) LOCADR(03) RMTLOCNAME(MVS3) +
7800 ONLINE(*NO) CTL(P24025D) APPTYPE(*EML) +
7900 MAXLENRU(512) EMLKBD(*LOWER) TEXT('SNA 3278 +
8000 DE')
8100 CRTDEVHOST DEVD(T24025D4) LOCADR(04) RMTLOCNAME(MVS3) +
8200 ONLINE(*NO) CTL(P24025D) APPTYPE(*EML) +
8300 EMLDEV(3287) +
8400 MAXLENRU(512) EMLKBD(*LOWER) TEXT('SNA 3287 +
8500 PRINTER DE')
8600
8700 /* LU 6.2 SESSIONS TO CICS */
8800 CRTDEVAPPC DEVD(T24025D5) RMTLOCNAME(CICS11) ONLINE(*NO) +
8900 LCLLOCNAME(T24025D5) RMTNETID(*NETATR) +
9000 CTL(P24025D) MODE(MODS361) APPN(*YES) +
9100 SNGSSN(*YES) TEXT('LU 6.2, dependent') +
9200 LOCADR(05)
9300 CRTDEVAPPC DEVD(T24025D6) RMTLOCNAME(CICS11) ONLINE(*NO) +
9400 LCLLOCNAME(T24025D6) RMTNETID(*NETATR) +
9500 CTL(P24025D) MODE(MODS361) APPN(*YES) +
9600 SNGSSN(*YES) TEXT('LU 6.2, dependent') +
9700 LOCADR(06)

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```

9800 CRTDEVAPP DEVD(T24025D7) RMTLOCNAME(CICS11) ONLINE(*NO) +
9900 LCLLOCNAME(T24025D7) RMTNETID(*NETATR) +
10000 CTL(P24025D) MODE(MODS361) APPN(*YES) +
10100 SNGSSN(*YES) TEXT('LU 6 2, dependent') +
10200 LOCADR(07)
10300
10400 /* LU 0 TO CICS */
10500 CRTDEVSNUF DEVD(T24025D8) LOCADR(08) RMTLOCNAME(CICS) +
10600 ONLINE(*NO) CTL(P24025D) APPID(DSVE) +
10700 HOST(*CICS) TEXT('LU 0/ SNUF to CICS')
10800 CRTDEVSNUF DEVD(T24025D9) LOCADR(09) RMTLOCNAME(CICS) +
10900 ONLINE(*NO) CTL(P24025D) APPID(DSVE) +
11000 HOST(*CICS) TEXT('LU 0/ SNUF to CICS')
11100 CRTDEVSNUF DEVD(T24025DA) LOCADR(0A) RMTLOCNAME(CICS) +
11200 ONLINE(*NO) CTL(P24025D) APPID(DSVE) +
11300 HOST(*CICS) TEXT('LU 0/ SNUF to CICS')
11400
11500 /* RJE SESSIONS */
11600 CRTDEVHOST DEVD(T24025DB) LOCADR(0B) RMTLOCNAME(JES2A) +
11700 ONLINE(*NO) CTL(P24025D) APPTYPE(*RJE) +
11800 TEXT('RJE Session')
11900 CRTDEVHOST DEVD(T24025DC) LOCADR(0C) RMTLOCNAME(JES2B) +
12000 ONLINE(*NO) CTL(P24025D) APPTYPE(*RJE) +
12100 TEXT('RJE Session')
12200 CRTDEVHOST DEVD(T24025DD) LOCADR(0D) RMTLOCNAME(JES2C) +
12300 ONLINE(*NO) CTL(P24025D) APPTYPE(*RJE) +
12400 TEXT('RJE Session')
12600 /* HCF/DHCF SESSIONS */
12700 CRTDEVDSP DEVD(T24025DE) DEVCLS(*RMT) TYPE(3277) +
12800 MODEL(*DHCF) LOCADR(0E) ONLINE(*NO) +
12900 CTL(P24025D) TEXT('HCF/DHCF')
13000 CRTDEVDSP DEVD(T24025DF) DEVCLS(*RMT) TYPE(3277) +
13100 MODEL(*DHCF) LOCADR(0F) ONLINE(*NO) +
13200 CTL(P24025D) TEXT('HCF/DHCF')
13300 CRTDEVDSP DEVD(T24025DG) DEVCLS(*RMT) TYPE(3277) +
13400 MODEL(*DHCF) LOCADR(10) ONLINE(*NO) +
13500 CTL(P24025D) TEXT('HCF/DHCF')
13600 CRTDEVDSP DEVD(T24025DH) DEVCLS(*RMT) TYPE(3277) +
13700 MODEL(*DHCF) LOCADR(11) ONLINE(*NO) +
13800 CTL(P24025D) TEXT('HCF/DHCF')
13900 CRTDEVDSP DEVD(T24025DI) DEVCLS(*RMT) TYPE(3277) +
14000 MODEL(*DHCF) LOCADR(12) ONLINE(*NO) +
14100 CTL(P24025D) TEXT('HCF/DHCF')
14300 /* DSNX SESSIONS */
14400 CRTDEVSNUF DEVD(T24025DJ) LOCADR(13) RMTLOCNAME(NVDM) +
14500 ONLINE(*NO) CTL(P24025D) PGMSTRRQS(*YES) +
14600 RCDLEN(32761) BLKLEN(32761) DFTPGM(AAA) +
14700 TEXT('LU 0/ SNUF to NV/DM')
14800 CRTDEVSNUF DEVD(T24025DK) LOCADR(14) RMTLOCNAME(NVDM) +
14900 ONLINE(*NO) CTL(P24025D) PGMSTRRQS(*YES) +
15000 RCDLEN(32761) BLKLEN(32761) DFTPGM(AAA) +
15100 TEXT('LU 0/ SNUF to NV/DM')
15300 ENDPGM

```


10.0 Appendix B: AS/400A CL Program for Scenario 2 (SNA Leased)

```

5728PW1 R01M02 881028                      SEU SOURCE LISTING
SOURCE FILE . . . . . CMNLIB/QCLSRC
MEMBER . . . . . L24020
SEQNBR*...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7
 100          PGM
 200 /*****
 300 /* THIS PROGRAM IS USED TO CREATE THE LINE, CONTROL UNIT AND DEVICE */
 400 /* DESCRIPTION FOR THE SNA LINE CONNECTION TO SA24 NCP=RAONCP0 */
 500 /*****
 600 /* LINE NAME:          L24020          RESOURCE NAME: LIN021          */
 700 /* PU/CTL NAME:       P24020C4        SDLC ADDRESS: C4              */
 800 /*
 900 /* DEVICES:
1000 /*
1100 /*          DEVD/LU NAME          LOCADDR          */
1200 /* INDEPENDENT LU  RAOTNNB0          00              */
1300 /*
1400 /* 3270 EMULATION  T24020D1          01              */
1500 /*                  T24020D2          02              */
1600 /*                  T24020D3          03              */
1700 /*                  T24020D4          04              */
1800 /*
1900 /* APPC              T24020D5          05              */
2000 /*                  T24020D6          06              */
2100 /*                  T24020D7          07              */
2200 /*
2300 /* SNUF LU 0        T24020D8          08              */
2400 /*                  T24020D9          09              */
2500 /*                  T24020DA         10/0A             */
2600 /*
2700 /* RJE              T24020DB          11/0B             */
2800 /*                  T24020DC          12/0C             */
2900 /*                  T24020DD          13/0D             */
3000 /*
3100 /* DHCF             T24020DE          14/0E             */
3200 /*                  T24020DF          15/0F             */
3300 /*                  T24020DG          16/10             */
3400 /*                  T24020DH          17/11             */
3500 /*                  T24020DI          18/12             */
3600 /*
3700 /* DSNX             T24020DJ          19/13             */
3800 /*                  T24020DK          20/14             */
3900 /*****

```

```

4000 /*
4100 MONMSG MSGID(CPF0000)
4200 VRYCFG CFGOBJ(L24020) CFGTYPE(*LIN) STATUS(*OFF)
4300 DLTDEVD DEVD(RAOTNNB0)
4400 DLTDEVD DEVD(T24020D*)
4500 DLTCTLD CTLD(P24020D)
4600 DLTLIND LIND(L24020)
4700 CRTLINS DLC LIND(L24020) RSRNAME(LIN021) ROLE(*SEC) +
4800 CNN(*MP) EXCHID(*SYSGEN) MAXCTL(5) +
4900 MAXFRAME(521) DUPLEX(*HALF) TEXT('SNA/SDLC +
5000 Leased to SA24')
5100 /* THIS IS THE CONTROLLER DESCR TO SA24 */
5200 CRTCTLHOST CTLD(P24020D) LINKTYPE(*SDLC) APPN(*YES) +
5300 LINE(L24020) MAXFRAME(521) +
5728PW1 R01M02 881028 SEU SOURCE LISTING
SOURCE FILE . . . . . CMNLB/QCLSRC
MEMBER . . . . . L24020
SEQNBR*...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7
5400 RMTNETID(USIBMRA) RMTCPNAME(RAB) STNADR(C4) +
5500 CPSSN(*NO) NODETYPE(*LENNODE) TEXT('SNA +
5600 CTL/PU on L24020')
5700 /* 3270 DEVICE EMULATION */
5800 CRTDEVHOST DEVD(T24020D1) LOCADR(01) RMTLOCNAME(MVS3) +
5900 ONLINE(*NO) CTL(P24020D) APPTYPE(*EML) +
6000 MAXLENRU(512) EMLKBD(*LOWER) TEXT('SNA 3278 +
6100 DE')
6200 CRTDEVHOST DEVD(T24020D2) LOCADR(02) RMTLOCNAME(MVS3) +
6300 ONLINE(*NO) CTL(P24020D) APPTYPE(*EML) +
6400 MAXLENRU(512) EMLKBD(*LOWER) TEXT('SNA 3278 +
6500 DE')
6600 CRTDEVHOST DEVD(T24020D3) LOCADR(03) RMTLOCNAME(MVS3) +
6700 ONLINE(*NO) CTL(P24020D) APPTYPE(*EML) +
6800 MAXLENRU(512) EMLKBD(*LOWER) TEXT('SNA 3278 +
6900 DE')
7000 CRTDEVHOST DEVD(T24020D4) LOCADR(04) RMTLOCNAME(MVS3) +
7100 ONLINE(*NO) CTL(P24020D) APPTYPE(*EML) +
7200 EMLDEV(3287) +
7300 MAXLENRU(512) EMLKBD(*LOWER) TEXT('SNA 3287 +
7400 PRINTER DE')
7500 /* LU 6.2 SESSIONS TO CICS */
7600 CRTDEVAPPC DEVD(T24020D5) RMTLOCNAME(CICS11) ONLINE(*NO) +
7700 LCLLOCNAME(T24020D5) RMTNETID(*NETATR) +
7800 CTL(P24020D) MODE(MODS361) APPN(*YES) +
7900 SNGSSN(*YES) TEXT('LU 6.2, dependent') +
8000 LOCADR(05)
8100 CRTDEVAPPC DEVD(T24020D6) RMTLOCNAME(CICS11) ONLINE(*NO) +
8200 LCLLOCNAME(T24020D6) RMTNETID(*NETATR) +
8300 CTL(P24020D) MODE(MODS361) APPN(*YES) +
8400 SNGSSN(*YES) TEXT('LU 6.2, dependent') +
8500 LOCADR(06)
8600 CRTDEVAPPC DEVD(T24020D7) RMTLOCNAME(CICS11) ONLINE(*NO) +
8700 LCLLOCNAME(T24020D7) RMTNETID(*NETATR) +
8800 CTL(P24020D) MODE(MODS361) APPN(*YES) +
8900 SNGSSN(*YES) TEXT('LU 6.2, dependent') +
9000 LOCADR(07)

```

```

9100 /* LU 0 TO CICS */
9200 CRTDEVSNUF DEVD(T24020D8) LOCADR(08) RMTLOCNAME(CICS) +
9300 ONLINE(*NO) CTL(P24020D) APPID(DSVE) +
9400 HOST(*CICS) TEXT('LU 0/ SNUF to CICS')
9500 CRTDEVSNUF DEVD(T24020D9) LOCADR(09) RMTLOCNAME(CICS) +
9600 ONLINE(*NO) CTL(P24020D) APPID(DSVE) +
9700 HOST(*CICS) TEXT('LU 0/ SNUF to CICS')
9800 CRTDEVSNUF DEVD(T24020DA) LOCADR(0A) RMTLOCNAME(CICS) +
9900 ONLINE(*NO) CTL(P24020D) APPID(DSVE) +
10000 HOST(*CICS) TEXT('LU 0/ SNUF to CICS')
10100
10200 /* RJE SESSIONS */
10300 CRTDEVHOST DEVD(T24020DB) LOCADR(0B) RMTLOCNAME(JES2A) +
10400 ONLINE(*NO) CTL(P24020D) APPTYPE(*RJE) +
10500 TEXT('RJE Session')
10600 CRTDEVHOST DEVD(T24020DC) LOCADR(0C) RMTLOCNAME(JES2B) +
5728PW1 R01M02 881028 SEU SOURCE LISTING
SOURCE FILE . . . . . CMNLIB/QCLSRC
MEMBER . . . . . L24020
SEQNBR*...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7
10700 ONLINE(*NO) CTL(P24020D) APPTYPE(*RJE) +
10800 TEXT('RJE Session')
10900 CRTDEVHOST DEVD(T24020DD) LOCADR(0D) RMTLOCNAME(JES2C) +
11000 ONLINE(*NO) CTL(P24020D) APPTYPE(*RJE) +
11100 TEXT('RJE Session')
11200 /* HCF/DHCF SESSIONS */
11300 CRTDEV DSP DEVD(T24020DE) DEVCLS(*RMT) TYPE(3277) +
11400 MODEL(*DHCF) LOCADR(0E) ONLINE(*NO) +
11500 CTL(P24020D) TEXT('HCF/DHCF')
11600 CRTDEV DSP DEVD(T24020DF) DEVCLS(*RMT) TYPE(3277) +
11700 MODEL(*DHCF) LOCADR(0F) ONLINE(*NO) +
11800 CTL(P24020D) TEXT('HCF/DHCF')
11900 CRTDEV DSP DEVD(T24020DG) DEVCLS(*RMT) TYPE(3277) +
12000 MODEL(*DHCF) LOCADR(10) ONLINE(*NO) +
12100 CTL(P24020D) TEXT('HCF/DHCF')
12200 CRTDEV DSP DEVD(T24020DH) DEVCLS(*RMT) TYPE(3277) +
12300 MODEL(*DHCF) LOCADR(11) ONLINE(*NO) +
12400 CTL(P24020D) TEXT('HCF/DHCF')
12500 CRTDEV DSP DEVD(T24020DI) DEVCLS(*RMT) TYPE(3277) +
12600 MODEL(*DHCF) LOCADR(12) ONLINE(*NO) +
12700 CTL(P24020D) TEXT('HCF/DHCF')
12800 /* DSNX SESSIONS */
12900 CRTDEVSNUF DEVD(T24020DJ) LOCADR(13) RMTLOCNAME(NVDM) +
13000 ONLINE(*NO) CTL(P24020D) PGMSTRRQS(*YES) +
13100 RCDLEN(32761) BLKLEN(32761) DFTPGM(AAA) +
13200 TEXT('LU 0/ SNUF to NV/DM')
13300 CRTDEVSNUF DEVD(T24020DK) LOCADR(14) RMTLOCNAME(NVDM) +
13400 ONLINE(*NO) CTL(P24020D) PGMSTRRQS(*YES) +
13500 RCDLEN(32761) BLKLEN(32761) DFTPGM(AAA) +
13600 TEXT('LU 0/ SNUF to NV/DM')
13700 ENDPGM
*** END OF SOURCE ***

```


11.0 Appendix C: AS/400A CL Program for Scenario 3/4 (SNA Token-Ring)

```

100          PGM
200
300 /*****
400 /* THIS PROGRAM IS USED TO CREATE THE LINE AND CONTROL UNIT      */
500 /* DESCRIPTION FOR THE TOKEN-RING CONNECTION TO THE PS/2 AND AS/400B*/
600 /*****
800
900 /* LINE NAME:          TRLIN41          RESOURCE NAME: LIN041      */
1000
1100 /* PU/CTL NAME:       TRCTLPS          */
1200 /*
1300 /* PU/CTL NAME:       TRNAS400B       */
1400 /*
1500 /* DEVICES:
1600 /*                   DEVD/LU NAME          LOCADDR          */
1700 /*                   -----            -----            */
1800 /* INDEPENDENT LU     RA0TNNB1          00                  */
2000 /*
2100          MONMSG          MSGID(CPF0000)
2200
2300          VRYCFG          CFG0BJ(L41TR) CFGTYPE(*LIN) STATUS(*OFF)
2400          DLTDEVD         DEVD(RALYAS4B)
2500          DLTDEVD         DEVD(RA0TNNB1)
2600          DLTCTLD         CTLD(TRCTLPS)
2700          DLTCTLD         CTLD(TRNAS400B)
2800          DLTLLND         LIND(L41TR)
2900          CRTLINTRN      LIND(L41TR) RSRNAME(LIN041) +
3000                      ADPTADR(400010020001) TEXT('Token-Ring Line +
3100                      Description')
3200          CRTCTLAPPC     CTLD(TRCTLPS) LINKTYPE(*TRLAN) +
3300                      SWTLINLST(L41TR) RMTNETID(USIBMRA) +
3400                      RMTCPNAME(PS2) INLCNN(*ANS) +
3500                      ADPTADR(400000000045) CPSSN(*NO) +
3600                      NODETYPE(*LENNODE) TEXT('CTL DESCRIPTION +
3700                      FOR PS/2')
3800          CRTCTLAPPC     CTLD(TRNAS400B) LINKTYPE(*TRLAN) +
3900                      SWTLINLST(L41TR) RMTNETID(USIBMRA) +
4000                      RMTCPNAME(RALYAS4B) ADPTADR(400010020002) +
4100                      NODETYPE(*NETNODE) TEXT('APPC Controller +
4200                      Description for AS/400B')
3200          CRTCTLAPPC     CTLD(TRCTLPS0S2) LINKTYPE(*TRLAN) +
3300                      SWTLINLST(L41TR) RMTNETID(USIBMRA) +
3400                      RMTCPNAME(PS2) INLCNN(*ANS) +
3500                      ADPTADR(4000000001111) CPSSN(*NO) +
3600                      NODETYPE(*LENNODE) TEXT('CTL DESCRIPTION +
3700                      FOR PS/2 OS/2')
4300          ENDPGM

```

12.0 Appendix D: Listing of NCP Definitions for the Residency

```

NCP OPT  OPTIONS NEWDEFN=(YES,ECHO),USERGEN=(FNMNDFGN)
***** 00002008
*      OPTIONS DEFINITION STATEMENT * 00003008
***** 00004008
*NCP OPT OPTIONS NEWDEFN=YES,USERGEN=(FNMNDFGN) NTRI AND NPM SUPPORT 00005008
* MAKE SURE OPTIONS MACRO IS THE FIRST LINE OF NCP 00006008
* LINES BEFORE OPTIONS MACRO WILL NOT BE COPY TO SYSPUNCH 00007008
***** 00008008
***** 00010008
*      NEWNAME = RAONCP0 * *      UNITSZ = 152 * 00020008
***** N *      MAXBFRU = 34 * 00030008
*      *      P *      MAXSUBA = ENA * 00040008
* ACF/NCP V4.3 FOR 3725 * A *      MAXSUBA = 31 NET X * 00050008
* (05/31/89) * *      SUBAREA = 24 NATIVE NET * 00060008
* *      *      SUBAREA = 11 ATTD. NET * 00070008
* *      *      * 00080008
***** 00090008
* MODIFICATIONS: 05/26/88 HEINZ * 00100008
* THIS IS FOR THE NEW NETWORK ==> USIBMRA <===== * 00110008
* NEW CDRMS RAB RAK RA3 RAP * 00120008
* PATH TO 12 AND 13 ADDED * 00130008
* MODIFICATIONS: * 00140008
* PU 2.1 DEFINITIONS ADDED FOR GER ROOVERS 16 MAY 1989 CARLA * 00196008
* TR DEFINITIONS ADDED FOR DIAZ 31 MAY 1989 HEINZ * 00196008
* NEW PATHES FROM RSET3 31 MAY 1989 HEINZ * 00196008
***** 00200008
***** 00210008
* * 00220008
* CHANNEL ATTACHED TO SUBAREA 11 * 00230008
* CHANNEL ATTACHED TO SUBAREA 21 * 00240008
* CHANNEL ATTACHED TO SUBAREA 20 * 00250008
***** 00260008
* PORT * LINENAME * OWNER * PU INDEX. WEIGHT * 00270008
* 20 * RAOL0020 * ROOVERS * 07 08 09 1B * 00480008
* 25 * RAOL0025 * SADTLER * 13 * 00530008
* * * 00560008
* LIC TYPE 3 * 00570008
* * * 00580008
* 32 * RAOH1MKU * * 19 * 00590008
* 36 * RAOL0036 * * 18 * 00600008
* 40 * RAOH1RAQ * SADTLER * 1C * 00610008
* 44 * RAOH2RAQ * SADTLER * 1A * 00620008
***** 00630008
* * 00640008
***** 00650008
* PCCU'S MACRO SPECIFICATIONS * 00660008
***** 00670008
* * 00680008
***** 00700008
***** 00710008
PCCUB096 PCCU CUADDR=096, V/M IS C9F *
NETID=USIBMRA, NETWORK ID *
GWCTL=ONLY, *
AUTODMP=YES, ONLY ONE AUTODMP-HOST IF TWINTAIL *
AUTOIPL=YES, ONLY ONE AUTOIPL-HOST IF TWINTAIL *
AUTOSYN=YES, USE THE ALREADY LOADED NCP IF OK *
BACKUP=YES, RESOURCE TAKEOVER PERMITTED *
CHANCON=COND, CONDITIONAL CONTACT REQ. TO NCP SENT*

```

```

DUMPDS=NCPDUMP,      DUMP DATASET      *
MDUMPDS=NCPDMOSS,   MOSS DUMP DATASET  *
CDUMPDS=NCPDCSP,    SCANNER DUMP DATASET *
MAXDATA=5000,
RNAME=(P12040,RAQP01),
OWNER=RAB,
VFYLM=YES,          VERIFY LMOD WHEN LOADING *
SUBAREA=11          HOSTSA  VTAM VER 3 MVS   *
* STATOPT=('SA24 3725',NOMONIT)                00880008
PCCUKC9D PCCU CUADDR=C9D, V/M IS ALSO C9D      *
AUTODMP=YES,        ONLY ONE AUTODMP-HOST IF TWINTAIL *
AUTOIPL=YES,        ONLY ONE AUTOIPL/HOST IF TWINTAIL *
AUTOSYN=YES,        USE THE ALREADY LOADED NCP IF OK   *
BACKUP=YES,         RESOURCE TAKEOVER PERMITTED      *
CHANCON=COND,       CONDITIONAL CONTACT REQ TO NCP SENT*
DUMPDS=NCPDUMP,     DUMP DATASET                    *

```

```

MDUMPDS=NCPDMOSS, MOSS DUMP DATASET *
CDUMPDS=NCPDCSP, SCANNER DUMP DATASET *
MAXDATA=5000, *
OWNER=RAK, *
RNAME=(P12040,RAQP01), *
VFYLM=YES, VERIFY LMOD WHEN LOADING *
SUBAREA=20 HOSTSA VTAM VER 3 MVS *
* NETID=USIBMRA, VTAM V3R2 NON-GATEWAY REQUIRED !! 01030108
* STATOPT=('SA24 3725',NOMONIT) 01040008
PCCU3096 PCCU CUADDR=096, V/M IS C9D/ WTCOSB IS 096 *
NETID=USIBMRA, NETWORK ID *
AUTODMP=YES, ONLY ONE AUTODMP-HOST IF TWINTAIL *
AUTOIPL=YES, ONLY ONE AUTOIPL-HOST IF TWINTAIL *
AUTOSYN=YES, USE THE ALREADY LOADED NCP IF OK *
BACKUP=YES, RESOURCE TAKEOVER PERMITTED *
CHANCON=COND, CONDITIONAL CONTACT REQ. TO NCP SENT*
DUMPDS=NCPDUMP, DUMP DATASET *
MDUMPDS=NCPDMOSS, MOSS DUMP DATASET *
CDUMPDS=NCPDCSP, SCANNER DUMP DATASET *
MAXDATA=5000, *
OWNER=RA3, *
VFYLM=YES, VERIFY LMOD WHEN LOADING *
SUBAREA=03 HOSTSA VTAM VER 2 MVS *
* RNAME=(P13068), 01190008
* STATOPT=('SA24 3725',NOMONIT) 01200008
* 01210008
***** 01220008
* BUILD MACRO SPECIFICATIONS * 01230008
***** 01240008
NCPBUILD BUILD VERSION=V4R3, # NCP V4 REL3 *
ADDESS=20, ENOUGH BLOCKS DEFINED IN RESSCB *
AUXADDR=10, ADDITIONAL PLU ADDRESSES FOR ILU *
BFRS=(128), NCP BUFFER SIZE,EP FREE BUFFER *
BRANCH=500, BRANCH TRACE ENTRIES V3*
CATRACE=(YES,100), CHANNEL ADAPTER TRACE V3*
CSMHDR=27F5C711C3F0405C40C8C4D9405C, 3270 CRITSIT HEADER*
CSMHDR=40E3C5E7E3405C5C, 3270 CRITST HEADER EXTRA TEXT *
CSMSG=C3D9C9E3E2C9E35A40E385819440F040, CRITSIT MESG *
CSMSGC=6040C1D5E240828587A4954B, CRITST MESG EXTRA TEXT *
CWALL=26, MIN. BUFFERS BEFORE SLOWDOWN *
DSABLTO=6.5, *
ENABLTO=6.5, IBM 386X REQUIRE 6.5 AS MINIMUM *
LOADLIB=NCPLoad, LIB FOR LOAD MODULE *
LTRACE=4, SIT FOR 4 LINES *
MAXSESS=16, MAX LU-LU SESSIONS ANY LU CAN HAVE *
MAXSSCP=8, MAXIMUM SESSIONS FOR LU *
MODEL=3725, !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! *
MXRLINE=2, *
MXVLINE=25, *
NAMTAB=50, # ENTRIES FOR SSCP, CP & NET NAMES *
NETID=USIBMRA, NATIVE NETWORK *
NEWNAME=RAONCP2, NAME OF THIS LOAD MODULE V3*
NPA=YES, NPA*
NUMHSAS=25, VR'S TO 25 HOSTS AND NCP ALLOWED *
PATHEXT=20, DEFAULT IS 254, AND NCP ALLOWED *
SUBAREA=24, SUBAREA ADDRESS = 24 *
TRACE=(YES,64), 64 ADDRESS-TRACE ENTRIES *
TYPGEN=NCP, NCP ONLY *
TYPYSYS=0S, *

```

```

COSTAB=ISTSDCOS,      COS TABLE USED TO ACTIVATE ER/VR      *
VRPOOL=128,           NO OF VR'S ENDING + DEACT/REACT.          *
HSBPOOL=256,          HALF SESSION CB POOL                      *
NETLIM=128,           LIMIT HSCB USAGE OUT OF HSBPOOL            *
SESSLIM=64            NUMBER OF SESSIONS PER NAF
* # V4R3              CA=(TYPE5,TYPE5,TYPE5,TYPE5), CHANNEL ADAPTER TYPE      01581008
* # V4R3              CANETID=(USIBMRA,USIBMRA,USIBMRA,USIBMRA),    01581108
* # V4R3              DELAY=(0.2,0.2,0.2,0.2), DELAY FOR V3 BUILD    01582008
* # V4R3              NCPA=(ACTIVE,ACTIVE,ACTIVE,ACTIVE),          01583008
* # V4R3              TIMEOUT=(120,120,120,120),                   01584008
*                     RESOEXT=64, # NOT SUPPORT V4R3                01590008
***** 01600008
*      SYSCNTRL MACRO SPECIFICATIONS                                * 01610008
***** 01620008
NCPSSYC SYSCNTRL OPTIONS=(BHSASSC,ENDCALL,MODE,RCNTRL,RCOND,RECMD,RIMM*
,NAKLIM,SESSION,SSPAUSE,XMTLMT,STORDSP,DLRID,RDEVQ)
***** 01650008
*      GWNAU DEFINITIONS                                          01660008
***** 01670008
*
*      DEFINITIONS OF THE CDRMS LOCATED IN NETWORK NETD 9370     01680008
*
*
*
***** 01700008
*
*      GWNAU NAME=MC314,      SNI - ID OF SSCP                      *
*      NETID=NETD,           SNI - NETID                          *
*      ELEMENT=2             SNI - ELEMENT ADRESS IN USIBMRA      *
*      GWNAU NAME=MK33,      SNI - ID OF SSCP                      *
*      NETID=USIBMMK,        SNI - NETID                          *
*      ELEMENT=3             SNI - ELEMENT ADRESS IN USIBMRA      *
*      GWNAU NAME=MK31,      SNI - ID OF SSCP                      *
*      NETID=USIBMMK,        SNI - NETID                          *
*      ELEMENT=4             SNI - ELEMENT ADRESS IN USIBMRA      *
*      GWNAU NAME=MK34,      SNI - ID OF SSCP                      *
*      NETID=USIBMMK,        SNI - NETID                          *
*      ELEMENT=5             SNI - ELEMENT ADRESS IN USIBMRA      *
*      GWNAU NAME=MK21,      SNI - ID OF SSCP                      *
*      NETID=USIBMMK,        SNI - NETID                          *
*      ELEMENT=6             SNI - ELEMENT ADRESS IN USIBMRA      *
*
*
***** 01760008
***** 01770008
*      GWNAU DEFINITIONS DYNAMICALLY ASSIGNED                    01780008
***** 01790008
*
*      GWNAU NUMADDR=512      DYNAMICALLY ASSIGNED NAF"S        01800008
*
*
*
***** 01820008
***** 01830008
***** 02730000
*      DYNAMIC RECONFIGURATION POOL SPACE                        * 03130000
***** 03140000
*
*
***** 03150000
***** 01840008
*      HOST MACRO SPECIFICATIONS                                  * 01850008
***** 01860008
RAB      HOST INBFERS=10,      NCP BUFFERS ALLOCATION              *
*      MAXBFRU=34,           UP TO 34 VTAM BUFFERS SHIPPED        *
*      UNITSZ=152,           VTAM IO BUFFERS SIZE                  *
*      BFRPAD=0,             BUFFER PAD (MANDATORY FOR ACF)        *
*      SUBAREA=(11),         CHANNEL ATTACHED HOSTSA REL 3        *

```



```

      NETID=USIBMRA      NETWORK ID
RAK  HOST INBFRS=10,    NCP BUFFERS ALLOCATION      *
      MAXBFRU=34,      UP TO 34 VTAM BUFFERS SHIPPED *
      UNITSZ=152,      VTAM IO BUFFERS SIZE      *
      BFRPAD=0,        BUFFER PAD (MANDATORY FOR ACF) *
      SUBAREA=(20)     CHANNEL ATTACHED HOSTSA REL 3
*      NETID=USIBMRA      NETWORK ID                                01980008
***** 02050008
*      DYNAMIC RECONFIGURATION POOL SPACE                        * 02060008
***** 02070008
*      02080008
DRPOOLPU PUDRPOOL NUMBER=25      CAN ADD 25 PUS
*      * 02110008
DRPOOLLU LUDRPOOL NUMILU=32,      RESERVE 32 ILUS      *
      NUMTYP1=10,      RESERVE 10 LUS ON PU.T1 PUS      *
      NUMTYP2=200      RESERVE 200 LUS ON PU.T2 PUS
***** 02150008
*      PATH SPECIFICATIONS FOR OTHER NCPS AND HOSTS            * 02160008
***** 02170008
***** 02180008
***** PATHSNI ***** 02190008
***** 02200008
*      02210008
*      PATH UPDATED 05/31/89 BY HEINZ                          02220008
*      RTG SET RSET3                                           02230008
***** 03000008
* NCP24
      PATH DESTSA=3,      *
      ER0=(11,1,5000,5000,5000,20000), *
      VR0=0, *
      VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
      PATH DESTSA=11, *
      ER1=(11,1), *
      ER2=(20,1,5000,5000,5000,20000), *
      VR0=1, *
      VRPWS00=(1,3),VRPWS01=(1,3),VRPWS02=(1,3), *
      VR1=2, *
      VRPWS10=(2,6),VRPWS11=(2,6),VRPWS12=(2,6)
      PATH DESTSA=20, *
      ER1=(20,1), *
      ER2=(11,1), *
      ER3=(11,1), *
      VR0=1, *
      VRPWS00=(1,3),VRPWS01=(1,3),VRPWS02=(1,3), *
      VR1=2, *
      VRPWS10=(2,6),VRPWS11=(2,6),VRPWS12=(2,6), *
      VR2=3, *
      VRPWS20=(4,12),VRPWS21=(4,12),VRPWS22=(4,12)
      PATH DESTSA=25, *
      ER1=(20,1), *
      VR0=1, *
      VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
      PATH DESTSA=28, *
      ER2=(20,1), *
      VR0=2, *
      VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
      PATH DESTSA=5, *
      ER0=(11,1), *
      VR0=0, *

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        VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
PATH DESTSA=6,
    ER4=(11,1),
    VR0=4,
    VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
PATH DESTSA=7,
    ER4=(11,1),
    VR0=4,
    VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
PATH DESTSA=8,
    ER3=(20,1),
    VR0=3,
    VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
PATH DESTSA=9,
    ER3=(11,1),
    VR0=3,
    VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
PATH DESTSA=12,
    ER2=(11,1),
    VR0=2,
    VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
PATH DESTSA=13,
    ER2=(11,1),
    VR0=2,
    VRPWS00=(2,6),VRPWS01=(2,6),VRPWS02=(2,6)
PATH DESTSA=22,
    ER2=(11,1),
    VR0=2,
    VRPWS00=(3,9),VRPWS01=(3,9),VRPWS02=(3,9)
PATH DESTSA=26,
    ER0=(26,8,5000,5000,5000,20000),
    VR0=0,
    VRPWS00=(1,3),VRPWS01=(1,3),VRPWS02=(1,3)
*   SDLCST STATEMENTS FOR CONFIGURABLE LINK STATIONS
*   (STATEMENT MUST PRECEDE GROUP STATEMENTS)
***** 03015008
***** 03020008
***** 03030008
SDL24PRI SDLCST MODE=PRI,
    GROUP=RAOGXPRI,      GROUP FOR PRIMARY LINKS
    RETRIES=(7,3,5),
    MAXOUT=7,
    PASSLIM=254
*
*   03090008
SDL24SEC SDLCST MODE=SEC,
    GROUP=RAOGXSEC,      GROUP FOR SECONDARY LINKS
    RETRIES=(7),
    MAXOUT=7,
    PASSLIM=254
***** 00200000
***** 04750008
*   LINE MACRO SPECIFICATION      SDLC LINK 020      04760008
***** 04770008
RAOL0020 LINE ADDRESS=(020,HALF),  TRANSMIT AND RECEIVE ADDRESSES
    NPACOLL=YES,
    ANS=CONTINUE,
    OWNER=RAB,
    ISTATUS=ACTIVE,
    DUPLEX=(FULL),
    ETRATIO=30,
    LPDATS=LPDA1,
    DON'T BREAK CROSS DOMAIN SESSIONS
    (V) VTAM
    REQUEST TO SEND ALWAYS UP
    DEFAULT
    NPA*

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MAXPU=9,          ALLOW NO MORE THAN 9 PUS ON LINE *
SERVLIM=2,       *
SRT=(,64),      *
SPEED=(4800)    LINE SPEED IS 4800 BPS
ATTACH=MODEM,   # NOT SUPPORTED V4R3
STATOPT=('S/36,S/38',NOMONIT)
***** 04900008
* 04910008
* SERVICE MACRO SPECIFICATION FOR SDLC (LINE 020) * 04940008
* * 04950008
***** 04960008
SERVICE ORDER=(RAOP07,RAOP08,RAOP1B,RAOP5C,RAOP09),
MAXLIST=9
***** 05010008
***** 05050008
* PU AND LU DEFINITIONS OF AS/400B TO SUPPORT DEPENDENT 05060009
* AND INDEPENDENT LUS 05070009
* GER ROOVERS EXT.2322 05080009
* 05090009
***** 05100010
RAOP07 PU ADDR=C1, 3270 ADDRESS='C' (EBCDIC) *
MAXDATA=265, MAXIMUM AMOUNT OF DATA *
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE *
PACING=(7), PACING SET BY BIND IMAGE *
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING *
PASSLIM=7, *
PUTYPE=2, *
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN *
DISCNT=(NO), (V) VTAM ONLY *
ISTATUS=ACTIVE, (V) VTAM ONLY *
VPACING=8, (V) VTAM ONLY *
XID=YES
* STATOPT='AS400B T2.1' 05270010
***** 05280009
* DEFINITIONS FOR AS/400B * 05290009
* RAOTNN00 TO 03 INDEPENDENT LUS 05300012
* RAOTNN04 TO 05 INDEPENDENT LUS TO CICS 05310012
* RAOT0701 TO 04 FOR 3270 EMULATION (4 LUS) * 05320009
* RAOT0705 TO 07 FOR APPC SESSIONS WITH CICS (3 LUS) * 05330009
* RAOT0708 FOR LU 0 SESSIONS WITH CICS (1 LU) * 05340009
* RAOT0709 TO 0A FOR DSX (2 LUS) * 05350009
* RAOT070B TO 0D FOR RJE (3 LUS) * 05360009
* RAOT070E TO 0I FOR HCF (5 LUS) * 05370009
* * 05380009
***** 05390009
RAOTNN00 LU RESSCB=4, INDEPENDENT LU *
LOCADDR=0, *
MODETAB=MTGS3X, *
DLOGMOD=MODS361, *
ISTATUS=ACTIVE
* STATOPT=INDEPENDENT LU 05440010
RAOTNN01 LU RESSCB=4, INDEPENDENT LU *
LOCADDR=0, *
MODETAB=MTGS3X, *
DLOGMOD=MODS361, *
ISTATUS=ACTIVE
* STATOPT=INDEPENDENT LU 05490010
RAOTNN02 LU RESSCB=4, INDEPENDENT LU *
LOCADDR=0, *

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      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*
*   STATOPT=INDEPENDENT LU
RAOTNN03 LU RESSCB=4,          INDEPENDENT LU
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*
*   STATOPT=INDEPENDENT LU
RAOTNN04 LU RESSCB=4,          INDEPENDENT LU TO CICS
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*
*   STATOPT=INDEPENDENT LU
RAOTNN05 LU RESSCB=4,          INDEPENDENT LU TO CICS
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*
*   STATOPT=INDEPENDENT LU
RAOT0701 LU LOCADDR=1,        3270 EMULATION
      MODETAB=MTGS3X,
      USSTAB=US327X,
      DLOGMOD=EM3278,
      ISTATUS=ACTIVE
RAOT0702 LU LOCADDR=2,        3270 EMULATION
      MODETAB=MTGS3X,
      USSTAB=US327X,
      DLOGMOD=EM3278,
      ISTATUS=ACTIVE
RAOT0703 LU LOCADDR=3,        3270 EMULATION
      MODETAB=MTGS3X,
      USSTAB=US327X,
      DLOGMOD=EM3278,
      ISTATUS=ACTIVE
RAOT0704 LU LOCADDR=4,        3270 EMULATION
      MODETAB=MTGS3X,
      USSTAB=US327X,
      DLOGMOD=EM3278,
      ISTATUS=ACTIVE
*-----
RAOT0705 LU LOCADDR=5,        APPC SESSIONS WITH CICS
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      LOGAPPL=CICS11,
      ISTATUS=ACTIVE
RAOT0706 LU LOCADDR=6,        APPC SESSIONS WITH CICS
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      LOGAPPL=CICS11,
      ISTATUS=ACTIVE
RAOT0707 LU LOCADDR=7,        APPC SESSIONS WITH CICS
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      LOGAPPL=CICS11,

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          ISTATUS=ACTIVE
*-----* 05997009
RA0T0708 LU LOCADDR=8,          LU 0 SESSIONS WITH CICS      *
          MODETAB=MTGS3X,          *
          DLOGMOD=SNUF36,          *
          ISTATUS=ACTIVE          *
*-----* 05999309
RA0T0709 LU LOCADDR=9,          DSNX                      *
          MODETAB=MTGS3X,          *
          ISTATUS=ACTIVE          *
RA0T070A LU LOCADDR=10,         DSNX                      *
          MODETAB=MTGS3X,          *
          ISTATUS=ACTIVE          *
*-----* 06000009
RA0T070B LU LOCADDR=11,         MSRJE                       *
          MODETAB=MTGS3X,          *
          DLOGMOD=RJES36,          *
          ISTATUS=ACTIVE          *
RA0T070C LU LOCADDR=12,         MSRJE                       *
          MODETAB=MTGS3X,          *
          DLOGMOD=RJES36,          *
          ISTATUS=ACTIVE          *
RA0T070D LU LOCADDR=13,         MSRJE                       *
          MODETAB=MTGS3X,          *
          DLOGMOD=RJES36,          *
          ISTATUS=ACTIVE          *
*-----* 06001309
RA0T070E LU LOCADDR=14,         DHCF                       *
          ISTATUS=ACTIVE          *
RA0T070F LU LOCADDR=15,         DHCF                       *
          ISTATUS=ACTIVE          *
RA0T070G LU LOCADDR=16,         DHCF                       *
          ISTATUS=ACTIVE          *
RA0T070H LU LOCADDR=17,         DHCF                       *
          ISTATUS=ACTIVE          *
RA0T070I LU LOCADDR=18,         DHCF                       *
          ISTATUS=ACTIVE          *
***** 06003008
* PU/LU MACRO FOR S/36B DYNAMIQUE CONFIGURATION = DRS36B24 * 06010008
***** 06030008
* PU AND LU DEFINITIONS FOR S/36B TO SUPPORT DEPENDENT* 06040009
* AND INDEPENDENT LUS * 06050010
* GER ROOVERS EXT: 2322 * 06060010
* * 06070010
***** 06080010
RAOP08 PU ADDR=C2,          3270 ADDRESS='C' (EBCDIC) *
          MAXDATA=265,          MAXIMUM AMOUNT OF DATA *
          MAXOUT=7,            MAX SDLC FRAMES BEFORE RESPONSE *
          PACING=(7),          PACING SET BY BIND IMAGE *
          ANS=CONTINUE,        KEEPS CROSS-DOMAIN RUNNING *
          PASSLIM=7,          *
          PUTYPE=2,            *
          RETRIES=(,1,4),      4 RETRIES, 1 SECOND BETWEEN *
          DISCNT=(NO),         (V) VTAM ONLY *
          ISTATUS=ACTIVE,      (V) VTAM ONLY *
          VPACING=8,           (V) VTAM ONLY *
          XID=YES *
* STATOPT='S/36B T2.1' * 06250010
***** 06260009

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* DEFINITIONS FOR S/36B
* RAOTNNA0 TO A3 INDEPENDENT LU SUPPORT
* RAOTNNA4 TO A5 INDEPENDENT LU SUPPORT TO CICS
* RAOT0801 TO 04 FOR 3270 EMULATION (4 LUS)
* RAOT0805 TO 07 FOR APPC SESSIONS WITH CICS (3 LUS)
* RAOT0808 FOR LU 0 SESSIONS WITH CICS (1 LU)
* RAOT0809 TO 0A FOR DSX (2 LUS)
* RAOT080B TO 0D FOR RJE (3 LUS)
* RAOT080E TO 0I FOR HCF (5 LUS)
*
*****
RAOTNNA0 LU RESSCB=4, INDEPENDENT LU
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*      STATOPT='INDEPENDENT LU'
RAOTNNA1 LU RESSCB=4, INDEPENDENT LU
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*      STATOPT='INDEPENDENT LU'
RAOTNNA2 LU RESSCB=4, INDEPENDENT LU
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*      STATOPT='INDEPENDENT LU'
RAOTNNA3 LU RESSCB=4, INDEPENDENT LU
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*      STATOPT='INDEPENDENT LU'
RAOTNNA4 LU RESSCB=4, INDEPENDENT LU TO CICS
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*      STATOPT='INDEPENDENT LU'
RAOTNNA5 LU RESSCB=4, INDEPENDENT LU TO CICS
      LOCADDR=0,
      MODETAB=MTGS3X,
      DLOGMOD=MODS361,
      ISTATUS=ACTIVE
*      STATOPT='INDEPENDENT LU'
RAOT0801 LU LOCADDR=1, 3270 EMULATION
      MODETAB=MTGS3X,
      USSTAB=US327X,
      DLOGMOD=EM3278,
      ISTATUS=ACTIVE
RAOT0802 LU LOCADDR=2, 3270 EMULATION
      MODETAB=MTGS3X,
      USSTAB=US327X,
      DLOGMOD=EM3278,
      ISTATUS=ACTIVE
RAOT0803 LU LOCADDR=3, 3270 EMULATION
      MODETAB=MTGS3X,

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                USSTAB=US327X,
                DLOGMOD=EM3278,
                ISTATUS=ACTIVE
RAOT0804 LU LOCADDR=4,          3270 EMULATION
                MODETAB=MTGS3X,
                USSTAB=US327X,
                DLOGMOD=EM3278,
                ISTATUS=ACTIVE
*-----*
RAOT0805 LU LOCADDR=5,          APPC SESSIONS WITH CICS
                MODETAB=MTGS3X,
                DLOGMOD=MODS361,
                LOGAPPL=CICS11,
                ISTATUS=ACTIVE
RAOT0806 LU LOCADDR=6,          APPC SESSIONS WITH CICS
                MODETAB=MTGS3X,
                DLOGMOD=MODS361,
                LOGAPPL=CICS11,
                ISTATUS=ACTIVE
RAOT0807 LU LOCADDR=7,          APPC SESSIONS WITH CICS
                MODETAB=MTGS3X,
                DLOGMOD=MODS361,
                LOGAPPL=CICS11,
                ISTATUS=ACTIVE
*-----*
RAOT0808 LU LOCADDR=8,          LU 0 SESSIONS WITH CICS
                MODETAB=MTGS3X,
                DLOGMOD=SNUF36,
                ISTATUS=ACTIVE
*-----*
RAOT0809 LU LOCADDR=9,          DSNX
                MODETAB=MTGS3X,
                ISTATUS=ACTIVE
RAOT080A LU LOCADDR=10,         DSNX
                MODETAB=MTGS3X,
                ISTATUS=ACTIVE
*-----*
RAOT080B LU LOCADDR=11,         MSRJE
                MODETAB=MTGS3X,
                DLOGMOD=RJES36,
                ISTATUS=ACTIVE
RAOT080C LU LOCADDR=12,         MSRJE
                MODETAB=MTGS3X,
                DLOGMOD=RJES36,
                ISTATUS=ACTIVE
RAOT080D LU LOCADDR=13,         MSRJE
                MODETAB=MTGS3X,
                DLOGMOD=RJES36,
                ISTATUS=ACTIVE
*-----*
RAOT080E LU LOCADDR=14,         DHCF
                ISTATUS=ACTIVE
RAOT080F LU LOCADDR=15,         DHCF
                ISTATUS=ACTIVE
RAOT080G LU LOCADDR=16,         DHCF
                ISTATUS=ACTIVE
RAOT080H LU LOCADDR=17,         DHCF
                ISTATUS=ACTIVE
RAOT080I LU LOCADDR=18,         DHCF

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ISTATUS=ACTIVE

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***** 06973008
* PU/LU MACRO FOR S/38 * 06980008
***** 06990008
* 07000009
* PU AND LU DEFINITIONS FOR S/38A TO SUPPORT 07010009
* DEPENDENT AND INDEPENDENT LUS 07020009
* GER ROOVERS EXT.2322 07030009
***** 07040009
RAOP09 PU ADDR=C3, 3270 ADDRESS='C' (EBCDIC) *
MAXDATA=265, MAXIMUM AMOUNT OF DATA *
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE *
PACING=(7), PACING SET BY BIND IMAGE *
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING *
PASSLIM=7, *
PUTYPE=2, *
RETRIES=(,1,4), 4 RETRIES, 1 SECOND BETWEEN *
DISCNT=(NO), (V) VTAM ONLY *
ISTATUS=ACTIVE, (V) VTAM ONLY *
VPACING=8, (V) VTAM ONLY *
XID=YES
* STATOPT='S/38A T2.1' 07210010
***** 07220009
* DEFINITIONS FOR S/38 * 07230009
* RAOTNNC0 TO C3 INDEPENDENT LUS 07240009
* RAOTNNC4 TO C5 INDEPENDENT LUS TO CICS 07250009
* RAOT0901 TO 04 FOR 3270 EMULATION (4 LUS) * 07260009
* RAOT0905 TO 07 FOR APPC SESSIONS WITH CICS (3 LUS) * 07270009
* RAOT0908 TO 08 FOR LU 0 SESSIONS WITH CICS (1 LU) * 07280009
* RAOT0909 TO 0D FOR RJE (5 LUS) * 07290009
* RAOT090E TO 0I FOR HCF (5 LUS) * 07300009
* RAOT090J FOR REMOTE MANAGEMENT TEST (1 LU) * 07310009
* 07320009
***** 07330009
RAOTNNC0 LU RESSCB=4, INDEPENDENT LU *
LOCADDR=0, *
MODETAB=MTGS3X, *
DLOGMOD=MODS361, *
ISTATUS=ACTIVE
* STATOPT='INDEPENDENT LU' 07380010
RAOTNNC1 LU RESSCB=4, INDEPENDENT LU *
LOCADDR=0, *
MODETAB=MTGS3X, *
DLOGMOD=MODS361, *
ISTATUS=ACTIVE
* STATOPT='INDEPENDENT LU' 07430010
RAOTNNC2 LU RESSCB=4, INDEPENDENT LU *
LOCADDR=0, *
MODETAB=MTGS3X, *
DLOGMOD=MODS361, *
ISTATUS=ACTIVE
* STATOPT='INDEPENDENT LU' 07480010
RAOTNNC3 LU RESSCB=4, INDEPENDENT LU *
LOCADDR=0, *
MODETAB=MTGS3X, *
DLOGMOD=MODS361, *
ISTATUS=ACTIVE
* STATOPT='INDEPENDENT LU' 07530010
RAOTNNC4 LU RESSCB=4, INDEPENDENT LU TO CICS *

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        LOCADDR=0,
        MODETAB=MTGS3X,
        DLOGMOD=MODS361,
        ISTATUS=ACTIVE
*
        STATOPT='INDEPENDENT LU'
RA0TNNC5 LU RESSCB=4, INDEPENDENT LU TO CICS
        LOCADDR=0,
        MODETAB=MTGS3X,
        DLOGMOD=MODS361,
        ISTATUS=ACTIVE
*
        STATOPT='INDEPENDENT LU'
RA0T0901 LU LOCADDR=1, 3270 EMULATION
        MODETAB=MTGS3X,
        USSTAB=US327X,
        DLOGMOD=EM3277,
        ISTATUS=ACTIVE
RA0T0902 LU LOCADDR=2, 3270 EMULATION
        MODETAB=MTGS3X,
        USSTAB=US327X,
        DLOGMOD=EM3277,
        ISTATUS=ACTIVE
RA0T0903 LU LOCADDR=3, 3270 EMULATION
        MODETAB=MTGS3X,
        USSTAB=US327X,
        DLOGMOD=EM3277,
        ISTATUS=ACTIVE
RA0T0904 LU LOCADDR=4, 3270 EMULATION
        MODETAB=MTGS3X,
        USSTAB=US327X,
        DLOGMOD=EM3277,
        ISTATUS=ACTIVE
*-----
RA0T0905 LU LOCADDR=5, APPC SESSIONS WITH CICS
        MODETAB=MTGS3X,
        DLOGMOD=MS38APPC,
        LOGAPPL=CICS11,
        ISTATUS=ACTIVE
RA0T0906 LU LOCADDR=6, APPC SESSIONS WITH CICS
        MODETAB=MTGS3X,
        DLOGMOD=MS38APPC,
        LOGAPPL=CICS11,
        ISTATUS=ACTIVE
RA0T0907 LU LOCADDR=7, APPC SESSIONS WITH CICS
        MODETAB=MTGS3X,
        DLOGMOD=MS38APPC,
        LOGAPPL=CICS11,
        ISTATUS=ACTIVE
*-----
RA0T0908 LU LOCADDR=8, LU 0 SESSIONS WITH CICS
        MODETAB=MTGS3X,
        DLOGMOD=SNUF36,
        ISTATUS=ACTIVE
*-----
RA0T0909 LU LOCADDR=9, MSRJE
        MODETAB=MTGS3X,
        DLOGMOD=S38RJE,
        ISTATUS=ACTIVE
RA0T090A LU LOCADDR=10, MSRJE
        MODETAB=MTGS3X,

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          DLOGMOD=S38RJE,
          ISTATUS=ACTIVE
RAOT090B LU LOCADDR=11,          MSRJE
          MODETAB=MTGS3X,
          DLOGMOD=S38RJE,
          ISTATUS=ACTIVE
RAOT090C LU LOCADDR=12,          MSRJE
          MODETAB=MTGS3X,
          DLOGMOD=S38RJE,
          ISTATUS=ACTIVE
RAOT090D LU LOCADDR=13,          MSRJE
          MODETAB=MTGS3X,
          DLOGMOD=S38RJE,
          ISTATUS=ACTIVE
*----- 07990909
RAOT090E LU LOCADDR=14,          DHCF
          ISTATUS=ACTIVE
RAOT090F LU LOCADDR=15,          DHCF
          ISTATUS=ACTIVE
RAOT090G LU LOCADDR=16,          DHCF
          ISTATUS=ACTIVE
RAOT090H LU LOCADDR=17,          DHCF
          ISTATUS=ACTIVE
RAOT090I LU LOCADDR=18,          DHCF
          ISTATUS=ACTIVE
*----- 07992009
RAOT090J LU LOCADDR=19,          REMOTE MANAGEMENT TEST
          MODETAB=MTGS3X,
          DLOGMOD=S3767,
          ISTATUS=ACTIVE
***** 07993008
*   PU/LU MACRO RESERVED FOR THE OLYMPIC
***** 08000008
***** 08010008
*RAOP1B  PU  ADDR=C3,          3270 ADDRESS='C' (EBCDIC)      X 08020008
*
*   PU AND LU DEFINITION FOR AS/400A
*   FOR SUPPORT DEPENDENT AND INDEPENDENT LUS
*   GER ROOVERS      EXT.2322
*
***** 08025009
***** 08026010
RAOP1B  PU  ADDR=C4,          3270 ADDRESS='C' (EBCDIC)      *
          MAXDATA=265,          MAXIMUM AMOUNT OF DATA
          MAXOUT=7,             MAX SDLC FRAMES BEFORE RESPONSE
          PACING=(7),           PACING SET BY BIND IMAGE
          ANS=CONTINUE,         KEEPS CROSS-DOMAIN RUNNING
          PASSLIM=7,
          PUTYPE=2,
          RETRIES=(,1,4),       4 RETRIES, 1 SECOND BETWEEN
          DISCNT=(NO),          (V) VTAM ONLY
          ISTATUS=ACTIVE,       (V) VTAM ONLY
          VPACING=8,            (V) VTAM ONLY
          XID=YES
*   STATOPT='AS/400 T2.1'
***** 08030410
***** 08030509
*   DEFINITIONS FOR AS/400A
*   RAOTNNB0 TO B3  INDEPENDENT LUS
*   RAOTNNB4 TO B5  INDEPENDENT LUS TO CICS
*   RAOT1B01 TO 04  FOR 3270 EMULATION (4 LUS)
*   RAOT1B05 TO 07  FOR APPC SESSIONS WITH CICS (3 LUS)

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* RAOT1B08 TO 08   FOR LU 0 SESSIONS WITH CICS (1 LU)      * 08031109
* RAOT1B09 TO 0D   FOR RJE (5 LUS)                        * 08031209
* RAOT1B0E TO 0I   FOR HCF (5 LUS)                       * 08031309
* RAOT1B0J         FOR REMOTE MANAGEMENT TEST (1 LU)      * 08031409
*                                                         * 08031509
***** 08031609
RAOTNNB0 LU RESSCB=4,          INDEPENDENT LU             *
      LOCADDR=0,              *
      MODETAB=MTGS3X,         *
      DLOGMOD=MODS361,       *
      ISTATUS=ACTIVE          *
* STATOPT='INDEPENDENT LU'   * 08032210
RAOTNNB1 LU RESSCB=4,          INDEPENDENT LU             *
      LOCADDR=0,              *
      MODETAB=MTGS3X,         *
      DLOGMOD=MODS361,       *
      ISTATUS=ACTIVE          *
* STATOPT='INDEPENDENT LU'   * 08032810
RAOTNNB2 LU RESSCB=4,          INDEPENDENT LU             *
      LOCADDR=0,              *
      MODETAB=MTGS3X,         *
      DLOGMOD=MODS361,       *
      ISTATUS=ACTIVE          *
* STATOPT='INDEPENDENT LU'   * 08033410
RAOTNNB3 LU RESSCB=4,          INDEPENDENT LU             *
      LOCADDR=0,              *
      MODETAB=MTGS3X,         *
      DLOGMOD=MODS361,       *
      ISTATUS=ACTIVE          *
* STATOPT='INDEPENDENT LU'   * 08034010
RAOTNNB4 LU RESSCB=4,          INDEPENDENT LU TO CICS     *
      LOCADDR=0,              *
      MODETAB=MTGS3X,         *
      DLOGMOD=MODS361,       *
      ISTATUS=ACTIVE          *
* STATOPT='INDEPENDENT LU'   * 08034610
RAOTNNB5 LU RESSCB=4,          INDEPENDENT LU TO CICS     *
      LOCADDR=0,              *
      MODETAB=MTGS3X,         *
      DLOGMOD=MODS361,       *
      ISTATUS=ACTIVE          *
* STATOPT='INDEPENDENT LU'   * 08035210
RAOT1B01 LU LOCADDR=1,        3270 EMULATION              *
      MODETAB=MTGS3X,         *
      USSTAB=US327X,          *
      DLOGMOD=EM3277,         *
      ISTATUS=ACTIVE          *
RAOT1B02 LU LOCADDR=2,        3270 EMULATION              *
      MODETAB=MTGS3X,         *
      USSTAB=US327X,          *
      DLOGMOD=EM3277,         *
      ISTATUS=ACTIVE          *
RAOT1B03 LU LOCADDR=3,        3270 EMULATION              *
      MODETAB=MTGS3X,         *
      USSTAB=US327X,          *
      DLOGMOD=EM3277,         *
      ISTATUS=ACTIVE          *
RAOT1B04 LU LOCADDR=4,        3270 EMULATION              *
      MODETAB=MTGS3X,         *

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USSTAB=US327X,
DLOGMOD=EM3277,
ISTATUS=ACTIVE
*----- 08037309
RAOT1B05 LU LOCADDR=5, APPC SESSIONS WITH CICS
      MODETAB=MTGS3X,
      DLOGMOD=MSOLAPPC,
      LOGAPPL=CICS11,
      ISTATUS=ACTIVE
RAOT1B06 LU LOCADDR=6, APPC SESSIONS WITH CICS
      MODETAB=MTGS3X,
      DLOGMOD=MSOLAPPC,
      LOGAPPL=CICS11,
      ISTATUS=ACTIVE
RAOT1B07 LU LOCADDR=7, APPC SESSIONS WITH CICS
      MODETAB=MTGS3X,
      DLOGMOD=MSOLAPPC,
      LOGAPPL=CICS11,
      ISTATUS=ACTIVE
*----- 08038909
RAOT1B08 LU LOCADDR=8, LU 0 SESSIONS WITH CICS
      MODETAB=MTGS3X,
      DLOGMOD=SNUF36,
      ISTATUS=ACTIVE
*----- 08039409
RAOT1B09 LU LOCADDR=9, MSRJE
      MODETAB=MTGS3X,
      DLOGMOD=S38RJE,
      ISTATUS=ACTIVE
RAOT1B0A LU LOCADDR=10, MSRJE
      MODETAB=MTGS3X,
      DLOGMOD=S38RJE,
      ISTATUS=ACTIVE
RAOT1B0B LU LOCADDR=11, MSRJE
      MODETAB=MTGS3X,
      DLOGMOD=S38RJE,
      ISTATUS=ACTIVE
RAOT1B0C LU LOCADDR=12, MSRJE
      MODETAB=MTGS3X,
      DLOGMOD=S38RJE,
      ISTATUS=ACTIVE
RAOT1B0D LU LOCADDR=13, MSRJE
      MODETAB=MTGS3X,
      DLOGMOD=S38RJE,
      ISTATUS=ACTIVE
*----- 08041509
RAOT1B0E LU LOCADDR=14, DHCF
      ISTATUS=ACTIVE
RAOT1B0F LU LOCADDR=15, DHCF
      ISTATUS=ACTIVE
RAOT1B0G LU LOCADDR=16, DHCF
      ISTATUS=ACTIVE
RAOT1B0H LU LOCADDR=17, DHCF
      ISTATUS=ACTIVE
RAOT1B0I LU LOCADDR=18, DHCF
      ISTATUS=ACTIVE
*----- 08042609
RAOT1B0J LU LOCADDR=19, REMOTE MANAGEMENT TEST
      MODETAB=MTGS3X,

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DLOGMOD=S3767,
ISTATUS=ACTIVE
***** 08043113
* PU/LU MACRO RESERVED FOR THE PS/2 * 08043213
***** 08043313
* PU AND LU DEFINITION FOR PS/2 PC SUPPORT 05/16/89 08043613
* FOR SUPPORT DEPENDENT AND INDEPENDENT LUS 08043713
* GER ROOVERS EXT.2322 08043813
* 08043913
***** 08044013
RAOP5C PU ADDR=C5, 3270 ADDRESS='C' (EBCDIC) *
MAXDATA=265, MAXIMUM AMOUNT OF DATA *
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE *
PACING=(7), PACING SET BY BIND IMAGE *
ANS=CONTINUE, KEEPS CROSS-DOMAIN RUNNING *
PASSLIM=7, *
PUTYPE=2, *
RETRIES=(1,4), 4 RETRIES, 1 SECOND BETWEEN *
DISCNT=(NO), (V) VTAM ONLY *
ISTATUS=ACTIVE, (V) VTAM ONLY *
VPACING=8, (V) VTAM ONLY *
XID=YES *
* STATOPT='AS/400 T2.1' 08045313
***** 08045413
* DEFINITIONS FOR PS/2 WITH AS/400 PC SUPPORT * 08045513
* RAOTNNC1 INDEPENDENT LU 08045613
* 08046413
***** 08046513
RAOTPSC0 LU RESSCB=4, INDEPENDENT LU *
LOCADDR=0, *
MODETAB=MTGS3X, *
DLOGMOD=MODS361, *
ISTATUS=ACTIVE *
* STATOPT='INDEPENDENT LU' 08047113
***** 08047208
* SNA SWITCHED LINE GROUP * 14560008
***** 14570008
RAOGSHS0 GROUP LNCTL=SDLC, *
DIAL=YES, *
NEWSYNC=NO, *
NRZI=YES, *
PAUSE=1, *
RETRIES=(7,4,5) 7 RETRY PER SECOND FOR 5 TIMES *
RAOL0025 LINE ADDRESS=(25,HALF), PHONE NUMBER 850-2401 *
NPACOLL=YES, NPA* *
OWNER=RAB, (V) VTAM *
CLOCKNG=EXT, *
DUPLEX=HALF, *
RETRIES=(5,4,24), *
SPEED=2400, *
ANSWER=ON, (V) VTAM *
CALL=INOUT, (V) VTAM *
ISTATUS=ACTIVE (V) VTAM *
* ATTACH=MODEM, # NOT SUPPORTED V4R3 14740008
* STATOPT=('DIAL LINE',NOMONIT) 14750008
RAOP13 PU PUTYPE=(1,2), *
XID=YES *
* MAXLU=16, # NOT SUPPORTED V4R3 14770008
* STATOPT=('DIAL LINE',NOMONIT) 14780008

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*
RAOL0026 LINE ADDRESS=(26,HALF),  PHONE NUMBER 14790008
      NPACOLL=YES,  NPA*
      OWNER=RAK,  (V) VTAM
      CLOCKNG=EXT,
      DUPLEX=HALF,
      SPEED=2400,
      ANSWER=ON,  (V) VTAM
      CALL=INOUT,  (V) VTAM
      ISTATUS=INACTIVE (V) VTAM
*
      ATTACH=MODEM,  # NOT SUPPORTED V4R3 14890008
*
      STATOPT=('DIAL LINE',NOMONIT) 14900008
RAOP14  PU PUTYPE=(1,2)
*
      MAXLU=16,  # NOT SUPPORTED V4R3 14920008
*
      STATOPT=('DIAL LINE',NOMONIT) 14930008
*
* 14950008
***** 14960008
*
      GROUP MACRO SPECIFICATIONS FOR SDLC LOCAL/LOCAL LINKS * 14970008
***** 14980008
RAOGXSEC GROUP MODE=SEC,LNCTL=SDLC,ACTIVT0=120
*
* 15000008
RAOGXPRI GROUP MODE=PRI,LNCTL=SDLC,REPLYT0=1
*
* 15020008
RAOGXLLL GROUP LNCTL=SDLC,REPLYT0=1
*
* 15040008
***** 15050008
*
      LINE MACRO SPECIFICATION FOR LINE 15  SNI LINK TO USIBMTA * 15060008
***** 15070008
RAOL0015 LINE ADDRESS=(15,FULL),  LINE ADDRESS
      CLOCKNG=(EXT),  REQUIRED FOR DIRECT
      DUPLEX=(FULL),  MODEM STRAPPING IS FULL
      MONLINK=YES,  MONITOR LINK FOR ACTPU
      LPDATS=LPDA1,
      NRZI=YES,
      OWNER=RAB,
      PAUSE=0.1,
      SDLCST=(SDL24PRI,SDL24SEC),
      SERVLIM=254,
      SPEED=(9600,9600),  NPA USE ONLY
      SRT=(,64),
      ISTATUS=ACTIVE  INITIAL STATUS
*
      ATTACH=MODEM,  # NOT SUPPORTED V4R3 15210008
**
      STATOPT=('INN BLDG 051 SA7') 15220008
***** 15230008
*
      PU MACRO SPECIFICATION FOR THE ADJACENT 3725  USIBMTA * 15240008
***** 15250008
RAOP015  PU MAXOUT=7,  MAX PIU'S SENT BEFORE RESP REQ
      PUTYPE=4,  PHYSICAL UNIT TYPE LOCAL 3725
      NETID=USIBMTA,  NET OF SOLUTION PAC
      ISTATUS=ACTIVE,  INITIAL STATUS
      TGN=8,  TRANSMISSION GROUP 8
      ANS=CONTINUE  DON'T BREAK THE X-DOMAIN SESSIONS
*
      STATOPT=('INN BLDG 051') 15320008
***** 15330008
*
      LINE MACRO SPECIFICATION FOR LINE 16  SNI LINK TO SCRA@NET * 15340008
*
      NO LOGER REQUIRED 25/10/88 HILARY LEE 15341008
***** 15350008
*RAOL0016 LINE ADDRESS=(16,HALF),  LINE ADDRESS 15360008
*
      CLOCKNG=EXT,  REQUIRED FOR DIRECT 15370008

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*          DUPLEX=FULL,          MODEM STRAPPING IS FULL          15380008
*          MONLINK=YES,          MONITOR LINK FOR ACTPU          15390008
*          NRZI=YES,              15400008
*          LPDATS=LPDA1,          15410008
*          PAUSE=0.1,            15420008
*          SDLCST=(SDL24PRI,SDL24SEC), 15430008
*          SERVLIM=254,          15440008
*          SPEED=9600,           NPA USE ONLY          15450008
*          SRT=(,64),            15460008
*          ISTATUS=ACTIVE        INITIAL STATUS          15470008
**         ATTACH=MODEM,         # NOT SUPPORTED V4R3  15480008
**         STATOPT=('INN POK F NETWORK USIBMSC') 15490008
***** 15500008
*          PU MACRO SPECIFICATION FOR THE ADJACENT 3725 SNI SCRA@NET * 15510008
*          NO LOGER REQUIRED 25/10/88 HILARY LEE 15511008
***** 15520008
*RAOP16  PU  MAXOUT=7,          MAX PIU'S SENT BEFORE RESP REQ 15530008
*          PUTYPE=4,            PHYSICAL UNIT TYPE LOCAL 3725 15540008
*          NETID=SCRA@NET,      NULLNET TO POUGHKEEPIE      15550008
*          ISTATUS=ACTIVE,      INITIAL STATUS              15560008
*          TGN=8,                TRANSMISSION GROUP 8        15570008
*          ANS=CONTINUE         DON'T BREAK THE X-DOMAIN SESSIONS 15580008
**         STATOPT=('INN POK SA5') 15590008
***** 15600008
*          LINE MACRO SPECIFICATION FOR LINE 18  INN LINK 9370 NETD * 15610008
***** 15620008
RAOH1RAE LINE ADDRESS=(18,HALF),  LINE ADDRESS *
          CLOCKNG=EXT,          REQUIRED FOR DIRECT *
          DUPLEX=FULL,          MODEM STRAPPING IS FULL *
          IPL=YES,              ALLOW LOADING OVER THIS LINK *
          MONLINK=YES,          MONITOR LINK FOR ACTPU *
          NRZI=YES,              *
          PAUSE=0.1,            *
          RETRIES=(7,3,5),      *
          SDLCST=(SDL24PRI,SDL24SEC), *
          SERVLIM=254,          *
          SPEED=9600,           NPA USE ONLY *
          SRT=(,64),            *
          ISTATUS=ACTIVE        INITIAL STATUS
*          ATTACH=MODEM,         # NOT SUPPORTED V4R3          15760008
*          STATOPT=('L24014 9370 SA 14') 15770008
***** 15780008
*          PU MACRO SPECIFICATION FOR THE ADJACENT 9370 M90 SA 14 NETD * 15790008
***** 15800008
RAOP17  PU  MAXOUT=7,          MAX PIU'S SENT BEFORE RESP REQ *
          PUTYPE=4,            PHYSICAL UNIT TYPE ICA 4361 *
          ISTATUS=ACTIVE,      INITIAL STATUS *
          TGN=1,                ICA TRANSMISSION GROUP 1 *
          NETID=NETD,          SNI CONNECTION TO NETD *
          ANS=CONTINUE         DON'T BREAK THE X-DOMAIN SESSIONS
*          STATOPT=('9370 M90') 15870008
***** 15880008
*          LINE MACRO SPECIFICATION SDLC LINK 036 * 15890008
***** 15900008
RAOL0036 LINE ADDRESS=(36,FULL),  TRANSMIT AND RECEIVE ADDRESSES *
          CLOCKNG=EXT,          *
          ISTATUS=ACTIVE,      *
          DUPLEX=(FULL),       REQUEST TO SEND ALWAYS UP *
          ETRATIO=30,          DEFAULT *

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LPDATS=NO, *
OWNER=RAB, *
MAXPU=9, ALLOW NO MORE THAN 9 PUS ON LINE *
SERVLIM=10, *
SRT=(,64), *
SPEED=19200 LINE SPEED IS 19200BPS *
* ATTACH=MODEM, # NOT SUPPORTED V4R3 16020008
* STATOPT=('SDLC 327X LINE') 16030008
***** 16040008
* SERVICE MACRO SPECIFICATION FOR SDLC (LINE 036) * 16050008
***** 16060008
SERVICE ORDER=(RAOP18),MAXLIST=9
***** 16080008
* PU/LU SPECIFICATIONS FOR PU3274 16090008
***** 16100008
RAOP18 PU ADDR=C6, CLUSTER ADDRESS = C6 *
ANS=CONTINUE, DON'T BREAK THE X-DOMAIN SESSIONS *
MAXDATA=265, MAXIMUM AMOUNT OF DATA *
MAXOUT=7, MAX SDLC FRAMES BEFORE RESPONSE *
PACING=0, PACING SET BY BIND IMAGE *
PASSLIM=8, *
PUDR=YES, *
PUTYPE=2, *
RETRIES=(,4,5), 7 RETRY PER SECOND FOR 5 TIMES *
DISCNT=(NO), (V) VTAM *
ISTATUS=ACTIVE, (V) VTAM *
SSCPFM=USSSCS, (V) VTAM *
VPACING=0 (V) VTAM *
* MAXLU=64, # NOT SUPPORTED V4R3 16240008
* STATOPT=('3274',NOACTY) 16250008
RAOT1801 LU LOCADDR=2, FIRST LU MUST BE LOCADDR=2 *
MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ, *
USSTAB=US327X, (V) VTAM *
ISTATUS=ACTIVE (V) VTAM *
RAOT1802 LU LOCADDR=3, *
MODETAB=MTJS328X,DLOGMOD=SCS3262, *
ISTATUS=ACTIVE (V) VTAM *
* STATOPT=('RMT99',NOACTY) 16330008
RAOT1803 LU LOCADDR=4, *
MODETAB=AMODETAB,DLOGMOD=M3SDLCQ, *
USSTAB=US327X, (V) VTAM *
ISTATUS=ACTIVE (V) VTAM *
RAOT1804 LU LOCADDR=5, *
MODETAB=AMODETAB,DLOGMOD=M3SDLCQ, *
USSTAB=US327X, (V) VTAM *
ISTATUS=ACTIVE (V) VTAM *
RAOT1805 LU LOCADDR=6, *
MODETAB=AMODETAB,DLOGMOD=M3SDLCQ, *
USSTAB=US327X, (V) VTAM *
ISTATUS=ACTIVE (V) VTAM *
RAOT1806 LU LOCADDR=7, *
MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ, *
USSTAB=US327X, (V) VTAM *
ISTATUS=ACTIVE (V) VTAM *
RAOT1807 LU LOCADDR=8, *
MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ, *
USSTAB=USMSHF, (V) VTAM *
ISTATUS=ACTIVE (V) VTAM *
RAOT1808 LU LOCADDR=9, *

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      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=USMSHF,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT1809 LU LOCADDR=10,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=USMSHF,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT180A LU LOCADDR=11,
      MODETAB=MTPSPC,DLOGMOD=PC3278,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT180B LU LOCADDR=12,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT180C LU LOCADDR=13,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT180D LU LOCADDR=14,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT180E LU LOCADDR=15,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT180F LU LOCADDR=16,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT1810 LU LOCADDR=17,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT1811 LU LOCADDR=18,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT1812 LU LOCADDR=19,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT1813 LU LOCADDR=20,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT1814 LU LOCADDR=21,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT1815 LU LOCADDR=22,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM
      ISTATUS=ACTIVE      (V) VTAM
RAOT1816 LU LOCADDR=23,
      MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
      USSTAB=US327X,      (V) VTAM

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                ISTATUS=ACTIVE      (V) VTAM
RAOT1817 LU LOCADDR=24,
                MODETAB=AMODETAB,DLOGMOD=M2SDLCNQ,
                USSTAB=US327X,      (V) VTAM
                ISTATUS=ACTIVE      (V) VTAM
***** 17180008
* LINE MACRO SPECIFICATION FOR LINE 32 INN LINK TO SA30 SNI * 17190008
***** 17200008
RAOH1MKU LINE ADDRESS=(32,FULL), LINE ADDRESS
                CLOCKNG=EXT,        REQUIRED FOR DIRECT
                DUPLEX=FULL,        MODEM STRAPPING IS FULL
                IPL=YES,            ALLOW LOADING OVER THIS LINK
                MONLINK=YES,        MONITOR LINK FOR ACTPU
                NRZI=YES,
                PAUSE=0.1,
                SDLCST=(SDL24PRI,SDL24SEC),
                SERVLIM=254,
                SPEED=56000,        NPA USE ONLY,ICC MAXIMUM
                SRT=(,64),
                ISTATUS=ACTIVE      INITIAL STATUS
* ATTACH=MODEM, # NOT SUPPORTED V4R3 17330008
* STATOPT=('SNI LINK TO SA30') 17340008
***** 17350008
* PU MACRO SPECIFICATION FOR THE ADJACENT 3725 SA30 * 17360008
* MKNETC NULL-NETWORK TO USIBMMK * 17370008
***** 17380008
RAOP19 PU MAXOUT=7, MAX PIU'S SENT BEFORE RESP REQ
                PUTYPE=4,          PHYSICAL UNIT TYPE LOCAL 3725
                NETID=MKNETC,      NETWORK FOR SNI BACK TO BACK
                ISTATUS=ACTIVE,    INITIAL STATUS
                TGN=8,            TRANSMISSION GROUP 8
                ANS=CONTINUE       DON'T BREAK THE X-DOMAIN SESSIONS
* STATOPT=('SNI / SA30',NOMONIT) 17450008
***** 17460008
* LINE MACRO SPECIFICATION FOR LINE 40 INN LINK TO 96 ON SA26 * 17470008
***** 17480008
RAOH2RAQ LINE ADDRESS=(40,FULL), LINE ADDRESS
                CLOCKNG=EXT,        REQUIRED FOR DIRECT
                DUPLEX=FULL,        MODEM STRAPPING IS FULL
                IPL=YES,            ALLOW LOADING OVER THIS LINK
                MONLINK=YES,        MONITOR LINK FOR ACTPU
                NRZI=YES,
                PAUSE=0.1,
                SDLCST=(SDL24PRI,SDL24SEC),
                SERVLIM=254,
                SPEED=56000,        NPA USE ONLY,ICC MAXIMUM
                SRT=(,64),
                ISTATUS=ACTIVE      INITIAL STATUS
* ATTACH=MODEM, # NOT SUPPORTED V4R3 17610008
* STATOPT=('INN SA26/L96',NOMONIT) 17620008
***** 17630008
* PU MACRO SPECIFICATION FOR THE ADJACENT 3725 SA26 * 17640008
***** 17650008
RAOP1A PU MAXOUT=7, MAX PIU'S SENT BEFORE RESP REQ
                PUTYPE=4,          PHYSICAL UNIT TYPE LOCAL 3725
                ISTATUS=ACTIVE,    INITIAL STATUS
                TGN=8,            TRANSMISSION GROUP 8
                ANS=CONTINUE       DON'T BREAK THE X-DOMAIN SESSIONS
                STATOPT=('SA26/L96',NOMONIT) 17710008

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***** 17711008
* LINE MACRO SPECIFICATION FOR LINE 44 INN LINK TO 80 ON SA26 * 17712008
***** 17713008
RAOH1RAQ LINE ADDRESS=(44,FULL), LINE ADDRESS *
CLOCKNG=DIRECT, SA 24 PROVIDE THE CLOCK *
DUPLEX=FULL, MODEM STRAPPING IS FULL *
IPL=YES, ALLOW LOADING OVER THIS LINK *
MONLINK=YES, MONITOR LINK FOR ACTPU *
NRZI=YES, *
PAUSE=0.1, *
SDLCST=(SDL24PRI,SDL24SEC), *
SERVLIM=254, *
SPEED=56000, NPA USE ONLY,ICC MAXIMUM *
SRT=(,64), *
ISTATUS=ACTIVE INITIAL STATUS
* STATOPT=('INN SA26/L80',NOMONIT) 17719808
***** 17719908
* PU MACRO SPECIFICATION FOR THE ADJACENT 3725 SA26 * 17720008
***** 17720108
RAOP1C PU MAXOUT=7, MAX PIU'S SENT BEFORE RESP REQ *
PUTYPE=4, PHYSICAL UNIT TYPE LOCAL 3725 *
ISTATUS=ACTIVE, INITIAL STATUS *
TGN=8, TRANSMISSION GROUP 8 *
ANS=CONTINUE DON'T BREAK THE X-DOMAIN SESSIONS
* STATOPT=('SA26/L80',NOMONIT) 17720708
** 17990008
***** 03211000
* PHYSICAL GROUP FOR NTRI TIC 1 * 37352800
***** 03211000
EG24P00 GROUP ECLTYPE=PHYSICAL, *
TYPE=NCP, *
DIAL=NO, *
LNCTL=SDLC, *
LEVEL2=ECLNARL2, *
LEVEL3=ECLNARL3, *
LEVEL5=NCP, *
TIMER=(ECLNART1,,ECLNART2,ECLNART3), *
XIO=(ECLNARXL,ECLNARXS,ECLNARXI,ECLNARXK), *
USERID=(5668854,ECLRBDT,NORECMS,,ECLNMVT), *
MAXPU=1, *
SPEED=9600, *
NPACOLL=NO, *
PUTYPE=1, *
PUDR=NO, *
COMPTAD=YES
* 37351600
EL24080 LINE ADDRESS=(80,FULL),PORTADD=0,LOCADD=400001240000, *
RCVBUFC=4095, *
MAXTSL=1108, *
UACB=(X$P1AX,X$P1AR)
* GENERATED BY ECL
J000001S SERVICE
* 37352100
EP24080 PU ADDR=01
* 37352400
EU24080 LU ISTATUS=INACTIVE, *
LOCADDR=0
***** 37352700
* PHYSICAL GROUP FOR NTRI TIC 2 * 37352800

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***** 37352900
EG24P01 GROUP ECLTYPE=PHYSICAL, *
        TYPE=NCP, *
        DIAL=NO, *
        LNCTL=SDLC, *
        LEVEL2=ECLNARL2, *
        LEVEL3=ECLNARL3, *
        LEVEL5=NCP, *
        TIMER=(ECLNART1,,ECLNART2,ECLNART3), *
        XIO=(ECLNARXL,ECLNARXS,ECLNARXI,ECLNARXK), *
        USERID=(5668854,ECLRBDT,NORECMS,,ECLNMVT), *
        MAXPU=1, *
        SPEED=9600, *
        NPACOLL=NO, *
        PUTYPE=1, *
        PUDR=NO, *
        COMPTAD=YES
*          STATOPT='NTRI TIC2' 37353100
*          37353200
EL24081 LINE ADDRESS=(81,FULL),PORTADD=1,LOCADD=400001240001, *
        RCVBUFC=4095, *
        MAXTSL=1108, *
        UACB=(X$P2AX,X$P2AR)
* GENERATED BY ECL
J000002S SERVICE 37353700
*
EP24081 PU ADDR=01 37354000
*
EU24081 LU ISTATUS=INACTIVE, *
        LOCADDR=0
***** 37354200
*          LOGICAL GROUP FOR NTRI TIC 1 * 37354300
***** 37354400
***** TO CHANGE MAXLU ALSO CONSIDER LUDRPOOL AND MAXVLINE***** 37354500
***** 37354600
EG24L00 GROUP ECLTYPE=LOGICAL, *
        AUTOGEN=13, *
        CALL=INOUT, *
        OWNER=RAB, *
        PHYPORT=0, *
        TYPE=NCP, *
        DIAL=YES, *
        LNCTL=SDLC, *
        LEVEL2=ECLNAVL2, *
        LEVEL3=ECLNAVL3, *
        LEVEL5=NCP, *
        TIMER=(ECLNAVT1,,ECLNAVT2,ECLNAVT3), *
        XIO=(ECLNAVXL,ECLNAVXS,ECLNAVXI,ECLNAVXK), *
        USERID=(5668854,ECLVBDT,NORECMS,,ECLNMVT), *
        LINEADD=NONE, *
        LINEAUT=YES, *
        MAXPU=1, *
        NPACOLL=NO, *
        PUTYPE=2, *
        XMITDLY=NONE, *
        RETRIES=(6,0,0,6)
* GENERATED BY ECL
J0000001 LINE UACB=X$L1A
* GENERATED BY ECL

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J0000002 PU
* GENERATED BY ECL
J0000003 LINE UACB=X$L2A
* GENERATED BY ECL
J0000004 PU
* GENERATED BY ECL
J0000005 LINE UACB=X$L3A
* GENERATED BY ECL
J0000006 PU
* GENERATED BY ECL
J0000007 LINE UACB=X$L4A
* GENERATED BY ECL
J0000008 PU
* GENERATED BY ECL
J0000009 LINE UACB=X$L5A
* GENERATED BY ECL
J000000A PU
* GENERATED BY ECL
J000000B LINE UACB=X$L6A
* GENERATED BY ECL
J000000C PU
* GENERATED BY ECL
J000000D LINE UACB=X$L7A
* GENERATED BY ECL
J000000E PU
* GENERATED BY ECL
J000000F LINE UACB=X$L8A
* GENERATED BY ECL
J0000010 PU
* GENERATED BY ECL
J0000011 LINE UACB=X$L9A
* GENERATED BY ECL
J0000012 PU
* GENERATED BY ECL
J0000013 LINE UACB=X$L10A
* GENERATED BY ECL
J0000014 PU
* GENERATED BY ECL
J0000015 LINE UACB=X$L11A
* GENERATED BY ECL
J0000016 PU
* GENERATED BY ECL
J0000017 LINE UACB=X$L12A
* GENERATED BY ECL
J0000018 PU
* GENERATED BY ECL
J0000019 LINE UACB=X$L13A
* GENERATED BY ECL
J000001A PU
***** 37355300
* LOGICAL GROUP FOR NTRI TIC 2 * 37355400
***** 37355500
EG24L01 GROUP ECLTYPE=LOGICAL, *
          AUTOGEN=12, *
          CALL=INOUT, *
          PHYPOR=1, *
          TYPE=NCP, *
          DIAL=YES, *
          LNCTL=SDLC, *

```

LEVEL2=ECLNAVL2, *
 LEVEL3=ECLNAVL3, *
 LEVEL5=NCP, *
 TIMER=(ECLNAVT1,,ECLNAVT2,ECLNAVT3), *
 XIO=(ECLNAVXL,ECLNAVXS,ECLNAVXI,ECLNAVXK), *
 USERID=(5668854,ECLVBDT,NORECMS,,ECLNMVT), *
 LINEADD=NONE, *
 LINEAUT=YES, *
 MAXPU=1, *
 NPACOLL=NO, *
 PUTYPE=2, *
 XMITDLY=NONE, *
 RETRIES=(6,0,0,6) *

* GENERATED BY ECL
 J000001B LINE UACB=X\$L14A
 * GENERATED BY ECL
 J000001C PU
 * GENERATED BY ECL
 J000001D LINE UACB=X\$L15A
 * GENERATED BY ECL
 J000001E PU
 * GENERATED BY ECL
 J000001F LINE UACB=X\$L16A
 * GENERATED BY ECL
 J0000020 PU
 * GENERATED BY ECL
 J0000021 LINE UACB=X\$L17A
 * GENERATED BY ECL
 J0000022 PU
 * GENERATED BY ECL
 J0000023 LINE UACB=X\$L18A
 * GENERATED BY ECL
 J0000024 PU
 * GENERATED BY ECL
 J0000025 LINE UACB=X\$L19A
 * GENERATED BY ECL
 J0000026 PU
 * GENERATED BY ECL
 J0000027 LINE UACB=X\$L20A
 * GENERATED BY ECL
 J0000028 PU
 * GENERATED BY ECL
 J0000029 LINE UACB=X\$L21A
 * GENERATED BY ECL
 J000002A PU
 * GENERATED BY ECL
 J000002B LINE UACB=X\$L22A
 * GENERATED BY ECL
 J000002C PU
 * GENERATED BY ECL
 J000002D LINE UACB=X\$L23A
 * GENERATED BY ECL
 J000002E PU
 * GENERATED BY ECL
 J000002F LINE UACB=X\$L24A
 * GENERATED BY ECL
 J0000030 PU
 * GENERATED BY ECL
 J0000031 LINE UACB=X\$L25A

```

* GENERATED BY ECL
J0000032 PU
***** 18010008
*      GROUP MACRO SPECIFICATIONS FOR CHANNEL ADAPTERS          * 18011008
***** 18012008
RAOGCA  GROUP LNCTL=CA,          CHANNEL ADAPTERS          *
          ISTATUS=INACTIVE      STOP VTAM ACT THE CHANNEL LINK
***** 18015008
*      CHANNEL 0  SUBARE 11 (VM C9F) (MVS 096)                  18015108
***** 18015208
RAOH03  LINE ADDRESS=0,          *
          CA=TYPE5,              NO TWO PROCESSOR SWITCH      *
          CASDL=120,             INTERVAL BEFORE CHANNEL SLOW DOWN *
          DELAY=0.2,             CHANNEL ATTENTION DELAY      *
          DYNADMP=NONE,          NO EP SUB CHANEL TO DUMP DATA *
          NCPCA=ACTIVE,          NATIVE SUB CHANEL ACTIVE      *
          TIMEOUT=120            INTERVAL BEFOR CHANNEL DISCONNECT
RAOPC9F PU PUTYPE=5,            HOST          *
          TGN=1                   MUST BE 1 FOR HOST
*      STATOPT='CHANNEL 0'          18016308
***** 18016408
*      CHANNEL 1  SYS3            (VM C9E)                    18016508
***** 18016608
RAOH13  LINE ADDRESS=1,          *
          CA=TYPE5,              NO TWO PROCESSOR SWITCH      *
          CASDL=120,             INTERVAL BEFORE CHANNEL SLOW DOWN *
          DELAY=0.2,             CHANNEL ATTENTION DELAY      *
          DYNADMP=NONE,          NO EP SUB CHANEL TO DUMP DATA *
          NCPCA=ACTIVE,          NATIVE SUB CHANEL ACTIVE      *
          TIMEOUT=120            INTERVAL BEFOR CHANNEL DISCONNECT
RAOPC9E PU PUTYPE=5,            HOST          *
          TGN=1                   MUST BE 1 FOR HOST
*      STATOPT='CHANNEL 1'          18017708
***** 18017808
*      CHANNEL 2  SYSTEM6 20     (VM C9D) (MVS C9D)          18017908
***** 18018008
RAOH26  LINE ADDRESS=2,          *
          CA=TYPE5,              NO TWO PROCESSOR SWITCH      *
          CASDL=120,             INTERVAL BEFORE CHANNEL SLOW DOWN *
          DELAY=0.2,             CHANNEL ATTENTION DELAY      *
          DYNADMP=NONE,          NO EP SUB CHANEL TO DUMP DATA *
          NCPCA=ACTIVE,          NATIVE SUB CHANEL ACTIVE      *
          TIMEOUT=120            INTERVAL BEFOR CHANNEL DISCONNECT
RAOPC9D PU PUTYPE=5,            HOST          *
          TGN=1                   MUST BE 1 FOR HOST
*      STATOPT='CHANNEL 2'          18019108
***** 18019208
*      CHANNEL 3  SYSTEM 6       (VM 09C)                    18019308
***** 18019408
RAOH36  LINE ADDRESS=3,          *
          CA=TYPE5,              NO TWO PROCESSOR SWITCH      *
          CASDL=120,             INTERVAL BEFORE CHANNEL SLOW DOWN *
          DELAY=0.2,             CHANNEL ATTENTION DELAY      *
          DYNADMP=NONE,          NO EP SUB CHANEL TO DUMP DATA *
          NCPCA=ACTIVE,          NATIVE SUB CHANEL ACTIVE      *
          TIMEOUT=120            INTERVAL BEFOR CHANNEL DISCONNECT
RAOPC9C PU PUTYPE=5,            HOST          *
          TGN=1                   MUST BE 1 FOR HOST
*      STATOPT='CHANNEL 3'          18020508

```

```

***** 18020608
*      CHANNEL 4 SYSTEM 3      (VM 09A)      18020708
***** 18020808
RAOH43  LINE ADDRESS=4,      *
          CA=TYPE5,          NO TWO PROCESSOR SWITCH      *
          CASDL=120,        INTERVAL BEFORE CHANNEL SLOW DOWN *
          DELAY=0.2,        CHANNEL ATTENTION DELAY      *
          DYNADMP=NONE,     NO EP SUB CHANEL TO DUMP DATA *
          NCPCA=ACTIVE,    NATIVE SUB CHANEL ACTIVE      *
          TIMEOUT=120      INTERVAL BEFOR CHANNEL DISCONNECT *
RAOPC9A PU PUTYPE=5,        HOST      *
          TGN=1            MUST BE 1 FOR HOST
*      STATOPT='CHANNEL 4'      18021808
***** 18021908
*      CHANNEL 3 SYSTEM 6      (VM 09B)      18022008
***** 18022108
RAOH56  LINE ADDRESS=5,      *
          CA=TYPE5,          NO TWO PROCESSOR SWITCH      *
          CASDL=120,        INTERVAL BEFORE CHANNEL SLOW DOWN *
          DELAY=0.2,        CHANNEL ATTENTION DELAY      *
          DYNADMP=NONE,     NO EP SUB CHANEL TO DUMP DATA *
          NCPCA=ACTIVE,    NATIVE SUB CHANEL ACTIVE      *
          TIMEOUT=120      INTERVAL BEFOR CHANNEL DISCONNECT *
RAOPC9B PU PUTYPE=5,        HOST      *
          TGN=1            MUST BE 1 FOR HOST
*      STATOPT='CHANNEL 5'      18023108
***** 18023208
*      NON NATIVE NETWORK FOR SNI TO MKNETC - BACK TO BACK * 18024008
*      (MKNETC IS THE NULL-NETWORK TO USIBMMK)      * 18030008
***** 18040008
          NETWORK NETID=MKNETC,      **
          ACTPU=NO,          ****
          MAXSUBA=31,       ****
          NUMHSAS=1,        **
          SUBAREA=24,       **
          NETLIM=128,       **
          SESSLIM=32,       **
          COSTAB=ISTSDCOS
***** 18130008
*      PREDIFINED CDRMS OF USIBMRA AND RESERVED ADRESSES * 18140008
***** 18150008
          GWNAU NAME=RAB,NETID=USIBMRA,NUMSESS=16,ELEMENT=1
          GWNAU NUMADDR=112
***** 18180008
*      PATHS IN NETWORK MKNETC      * 18190008
***** 18200008
*      PATH      18210008
*      18220008
          PATH DESTSA=30,      *
          ER0=(30,8,5000,5000,5000,20000),      *
          VR0=0
*      18260008
*      18270008
***** 18280008
***** 18290008
*      NON NATIVE NETWORK FOR SNI TO USIBMTA      * 18300008
*      USIBMTA IS THE NETWORK OF BLDG 051 SOLUTION PACK * 18310008
***** 18320008
          NETWORK NETID=USIBMTA,      *

```



```

ACTPU=NO,
MAXSUBA=31,
NUMHSAS=3,
SUBAREA=24,
NETLIM=128,
SESSLIM=32,
COSTAB=ISTSDCOS
***** 18410008
*   PREDIFINED CDRMS OF USIBMRA AND RESERVED ADRESSES   * 18420008
***** 18430008
      GWNAU NAME=RAB,NETID=USIBMRA,NUMSESS=16,ELEMENT=1
      GWNAU NUMADDR=200
***** 18460008
*   PATHES IN NETWORK USIBMRA   * 18470008
***** 18480008
*PATH   18490008
*   18500008
      PATH DESTSA=7,
        ER0=(7,8),
        VR0=0
      PATH DESTSA=6,
        ER0=(7,8),
        VR0=0
*   18540008
*   18550008
***** 18560008
***** 18570008
*   NON NATIVE NETWORK FOR SNI TO NETD 9370   * 18580008
***** 18590008
      NETWORK NETID=NETD,
        ACTPU=NO,
        NUMHSAS=5,
        SUBAREA=27,
        COSTAB=ISTSDCOS
***** 18650008
*   PREDIFINED CDRMS OF USIBMRA AND RESERVED ADRESSES   * 18660008
***** 18670008
      GWNAU NAME=RAB,NETID=USIBMRA,NUMSESS=15,ELEMENT=1
      GWNAU NUMADDR=50
***** 18700008
*   PATHES IN NETWORK NETD   * 18710008
***** 18720008
*PATH   18730008
*   18740008
      PATH DESTSA=14,
        ER0=(14,1),
        VR0=0
*   18780008
      PATH DESTSA=15,
        ER0=(14,1),
        VR0=0
*   18820008
      PATH DESTSA=16,
        ER0=(14,1),
        VR0=0
*   18860008
*   18870008
***** 18880008
      GENEND INIT=ECLINIT,

```

TMRTICK=ECLTICK,
UGLOBAL=ECLUGBL

13.0 Appendix E: Listing of VTAM Switched Major Node for Scenario 1

```

*****
*
*          VTAM SWITCHED MAJOR NODE FOR NTRI WITH APPCLU          *
*
*****
          VBUILD MAXGRP=5,          REQUIRED          * X00010480
                MAXNO=12,          REQUIRED          * X00010490
                TYPE=SWNET          REQUIRED          00010500
**
**
**
**
RAOP13  PU  ADDR=01,          * X00010540
          CPNAME=RALYAS4A,    * X
          DISCNT=NO,          * X00010570
          MAXOUT=1,           * X00010580
          MAXPATH=0,          * X00010590
          VPACING=0,          * X00010610
          PUTYPE=2,           * X00010620
          SSCPFM=USSSCS      00010630
**
**
RAOAS4A LU  LOCADDR=0,          FOR THE AS/400A : ILU    * X00010650
          RESSCB=4,          * X
          MODETAB=MTGS3X,    * X
          DLOGMOD=MODS361
**
**
**
**
RAOT25D1 LU LOCADDR=1,          FOR THE 3270 EMULATION  * X00010650
          MODETAB=MTGS3X,    * X
          DLOGMOD=EM3278,    * X
          USSTAB=US327X
**
**
RAOT25D2 LU LOCADDR=2,          FOR THE 3270 EMULATION  * X00010650
          MODETAB=MTGS3X,    * X
          DLOGMOD=EM3278,    * X
          USSTAB=US327X
**
**
RAOT25D3 LU LOCADDR=3,          FOR THE 3270 EMULATION  * X00010650
          MODETAB=MTGS3X,    * X
          DLOGMOD=EM3278,    * X
          USSTAB=US327X
**
**
RAOT25D4 LU LOCADDR=4,          FOR THE 3270 EMULATION  * X00010650
          MODETAB=MTGS3X,    * X
          DLOGMOD=EM3278,    * X
          USSTAB=US327X
**
**

```

RA0T25D5 LU	LOCADDR=5, MODETAB=MTGS3X, DLOGMOD=MODS361, LOGAPPL=CICS11	APPC SESSIONS WITH CICS	* X00010650 * X * X
**			
**			
RA0T25D6 LU	LOCADDR=6, MODETAB=MTGS3X, DLOGMOD=MODS361, LOGAPPL=CICS11	APPC SESSIONS WITH CICS	* X00010650 * X * X
**			
**			
RA0T25D7 LU	LOCADDR=7, MODETAB=MTGS3X, DLOGMOD=MODS361, LOGAPPL=CICS11	APPC SESSIONS WITH CICS	* X00010650 * X * X
**			
**			
RA0T25D8 LU	LOCADDR=8, MODETAB=MTGS3X, DLOGMOD=SNUF36	SNUF LU0	* X00010650 * X
**			
**			
RA0T25D9 LU	LOCADDR=9, MODETAB=MTGS3X, DLOGMOD=SNUF36	SNUF LU0	* X00010650 * X
**			
**			
RA0T25DA LU	LOCADDR=10, MODETAB=MTGS3X, DLOGMOD=SNUF36	SNUF LU0	* X00010650 * X
**			
**			
RA0T25DB LU	LOCADDR=11, MODETAB=MTGS3X, DLOGMOD=RJES36	RJE	* X00010650 * X
**			
**			
RA0T25DC LU	LOCADDR=12, MODETAB=MTGS3X, DLOGMOD=RJES36	RJE	* X00010650 * X
**			
**			
RA0T25DD LU	LOCADDR=13, MODETAB=MTGS3X, DLOGMOD=RJES36	RJE	* X00010650 * X
**			
**			

RAOT25DE LU	LOCADDR=14, ISTATUS=ACTIVE	DHCF	* X00010650
**			
**			
RAOT25DF LU	LOCADDR=15, ISTATUS=ACTIVE	DHCF	* X00010650
**			
**			
RAOT25DG LU	LOCADDR=16, ISTATUS=ACTIVE	DHCF	* X00010650
**			
**			
RAOT25DH LU	LOCADDR=17, ISTATUS=ACTIVE	DHCF	* X
**			
**			
RAOT25DI LU	LOCADDR=18, ISTATUS=ACTIVE	DHCF	* X00010650
**			
**			
RAOT25DJ LU	LOCADDR=19, ISTATUS=ACTIVE, MODETAB=MTGS3X	DSNX	* X00010650 * X
**			
**			
RAOT25DK LU	LOCADDR=20, ISTATUS=ACTIVE, MODETAB=MTGS3X	DSNX	* X00010650 * X
**			

14.0 Appendix F: Listing of VTAM Switched Major Node for Scenario 2/4

```

*****
*
*   VTAM SWITCHED MAJOR NODE FOR PS/2 RUNNING AS/400 PC SUPPORT
*
*****
SWRAOTR VBUILD TYPE=SWNET,          REQUIRED          * X
                MAXNO=12,          REQUIRED          * X
                MAXGRP=5
**
**
**
RAOTRPU1 PU   ADDR=13,              COULD BE ANYTHING (NOT USED) * X
              CPNAME=RAOTRPS0,     PS/2 WITH AS/400 PC SUPPORT * X
              DISCNT=NO,           * X
              ISTATUS=ACTIVE,      X
              MAXDATA=265,         X
              SAPADDR=4,           X
              MAXOUT=1,            * X
              MAXPATH=1,           * X
              PUTYPE=2,            * X
              SSCPFM=USSSCS,       * X
              MODETAB=MTGS3X,     * X
              DLOGMOD=QPCSUPP,    * X
              VPACING=0
**
**
RAOTR101 PATH GRPNM=EG24L00,        * X
              DIALNO=0004400000314005, PC/AT TR ADDRESS * X
              GID=1,              * X
              PID=1,              X
              USE=YES
**
**
RAOTRPS0 LU   LOCADDR=0,           FOR THE PC RUNNING PC SUPPORT X
              RESSCB=4
**
**
**
RAOTRPU2 PU   ADDR=13,              COULD BE ANYTHING (NOT USED) * X
              CPNAME=RALYAS4B,    AS/400 B                      X
              DISCNT=NO,          * X
              ISTATUS=ACTIVE,     X
              MAXOUT=1,           * X
              MAXPATH=4,          * X
              PUTYPE=2,           * X
              SAPADDR=4,          * X
              SSCPFM=USSSCS,     * X
              MODETAB=MTGS3X,    * X
              VPACING=0
**

```


RA0TR201	PATH	GRPNM=EG24L00, DIALNO=0004400010020002, AS400/B TR ADDRESS GID=1, PID=1, USE=YES	* X * X * X X
**			
AS4B	LU	LOCADDR=0, FOR THE AS/400 B RESSCB=4, DLOGMOD=QPCSUPP	* X X
**			
**			
B3270PU3	PU	ADDR=13, COULD BE ANYTHING (NOT USED) IDBLK=017, PC 3274 EMULATOR IDNUM=B0003, PC 3274 EMULATOR DISCNT=NO, * X IRETRY=NO, NOT USED X ISTATUS=ACTIVE, X MAXDATA=265, X MAXOUT=7, NOT USED FOR 9370/LAN * X MAXPATH=4, * X PACING=0, * X PUTYPE=2, * X SAPADDR=4, * X SSCPFM=USSSCS, * X USSTAB=USSSNA, * X VPACING=0	
**			
B3270301	PATH	GRPNM=EG24L00, DIALNO=0004400000314005, GID=1, PID=1, USE=YES	* X * X * X X
**			
B3270L32	LU	LOCADDR=2	FOR THE PC EMULATOR
B3270L33	LU	LOCADDR=3	FOR THE PC EMULATOR
B3270L34	LU	LOCADDR=4	FOR THE PC EMULATOR
B3270L35	LU	LOCADDR=5	FOR THE PC EMULATOR
**			
**			
**			
B3270PU4	PU	ADDR=13, COULD BE ANYTHING (NOT USED) IDBLK=017, PC 3274 EMULATOR IDNUM=B0004, PC 3274 EMULATOR DISCNT=NO, * X IRETRY=NO, NOT USED X ISTATUS=ACTIVE, X MAXDATA=265, X MAXOUT=7, NOT USED FOR 9370/LAN * X MAXPATH=4, * X PACING=0, * X PUTYPE=2, * X SAPADDR=4, * X SSCPFM=USSSCS, * X USSTAB=USSSNA, * X VPACING=0	

```
**
B3270401 PATH GRPNM=EG24L00, * X
                DIALNO=0004400000314005, * X
                GID=1, * X
                PID=1, X
                USE=YES
```

```
**
B3270L42 LU LOCADDR=2 FOR THE PC EMULATOR
B3270L43 LU LOCADDR=3 FOR THE PC EMULATOR
B3270L44 LU LOCADDR=4 FOR THE PC EMULATOR
B3270L45 LU LOCADDR=5 FOR THE PC EMULATOR
**
**
```


15.0 Appendix G: System/38 CL Program for Scenario 1

```

PGM
/*****
/* This program is used to create the line, control unit and
/* device descriptions for the SNA line L24020 ADDRESS C3
/* RALEIGH INTERNATIONAL SUPPORT CENTER.
/* This line is used for RJE, 3270 emulation, HCF/DHCF,
/*
/*          APPC WITH CICS
/*
/*****
/* INDEPENDENT LU          RAONN          RAOTNNC0    000061
/*                          RAONN1          RAOTNNC1    000061
/*                          RAONN2          RAOTNNC2    000061
/*                          RAONN3          RAOTNNC3    000061
/*
/* 3270 Emulation         E24020C1        RAOT0901    020061
/*                          E24020C2        RAOT0902    030061
/*                          E24020C3        RAOT0903    040061
/*                          E24020C4        RAOT0904    050061
/*
/* APPC WITH CICS11       A24020C5        RAOT0905    060061
/*                          A24020C6        RAOT0906    070061
/*                          A24020C7        RAOT0907    080061
/*
/* LU0 WITH CICS11       C24020C8          RAOT0908    060061
/*
/* RJE                     Q61DEVLU01        RAOT0909    090061
/*                          Q61DEVLU02        RAOT090A    0A0061
/*                          Q61DEVLU03        RAOT090B    0B0061
/*                          Q61DEVLU04        RAOT090C    0C0061
/*                          Q61DEVLU05        RAOT090D    0D0061
/*
/* DHCF                     H24020CE          RAOT090E    0E0061
/*                          H24020CF          RAOT090F    0F0061
/*                          H24020CG          RAOT090G    100061
/*                          H24020CH          RAOT090H    110061
/*                          H24020CI          RAOT090I    120061
/*
/* REMOTE MANAGEMENT     M24020CJ          RAOT090J    130061
/*****
MONMSG      MSGID(CPF0000) /* Ignore errors */
VRYDEV      DEV(RAONN RAONN1 RAONN2 RAONN3) STATUS(*OFF)
VRYDEV      DEV(E24020C1 E24020C2 E24020C3 E24020C4) +
            STATUS(*OFF)
VRYDEV      DEV(A24020C5 A24020C6 A24020C7) STATUS(*OFF)
VRYDEV      DEV(C24020C8) STATUS(*OFF)
VRYDEV      DEV(Q61DEVLU09 Q61DEVLU0A Q61DEVLU0B +
            Q61DEVLU0C Q61DEVLU0D) STATUS(*OFF)
VRYDEV      DEV(H24020CE H24020CF H24020CG H24020CH +
            H24020CI) STATUS(*OFF)
VRYDEV      DEV(M24020CJ) STATUS(*OFF)
VRYCTLU     CTLU(P24020C3) STATUS(*OFF)
VRYLIN      LINE(L24020) STATUS(*OFF)
/*****

```

```

DLTDEV  DEVD(RAON*)
DLTDEV  DEVD(E24020C*)
DLTDEV  DEVD(A24020C*)
DLTDEV  DEVD(C24020C*)
DLTDEV  DEVD(Q61DEVLU*)
DLTDEV  DEVD(H24020C*)
DLTDEV  DEVD(M24020C*)
DLTCUD  CUD(P24020C3)
DLTLIND LIND(L24020)
CRTLIND LIND(L24020) LINNBR(61) TYPE(*SDLCS) CNN(*MP) +
        RATE(9600) NONRTNZ(*YES) WIRE(4) +
        ONLINE(*YES) STNADR(C3) EXCHID(0222696A) +
        TEXT('SNA Host line 124020 with subarea 24')
CRTCUD  CUD(P24020C3) TYPE(PU2) MODEL(0) CTLADR(0061) +
        LINE(L24020) ONLINE(*YES) DLYFEAT(*NO) +
        TEXT('SNA Host control unit P24020C3 on +
        L24020')
/*-----*/
/*          INDEPENDENT LU DEFINITIONS          */
/*-----*/
CRTDEV  DEVD(RAONN) DEVADR(000061) DEVTYPE(*PEER) +
        MODEL(0) CTLU(P24020C3) LCLLU(RAOTNNC0) +
        RMTLU(RA0AS4A) TEXT('Device Description +
        for          RALYAS4A')
ADDDEV  DEVD(RAONN) MODE(MODS361) MAXSSN(8) +
        PREBNDSSN(0) MAXSRCSSN(4) MAXCNV(8) +
        INPACING(7) OUTPACING(7) MAXLENRU(256) /* +
        Mode for Network USIBMRA */
CRTDEV  DEVD(RAONN1) DEVADR(000061) DEVTYPE(*PEER) +
        MODEL(0) CTLU(P24020C3) LCLLU(RAOTNNC1) +
        RMTLU(RAOTNNB0) TEXT('Device Description +
        for          REMOTE1')
ADDDEV  DEVD(RAONN1) MODE(MODS361) MAXSSN(8) +
        PREBNDSSN(0) MAXSRCSSN(4) MAXCNV(8) +
        INPACING(7) OUTPACING(7) MAXLENRU(256) /* +
        Mode for Network USIBMRA */
CRTDEV  DEVD(RAONN2) DEVADR(000061) DEVTYPE(*PEER) +
        MODEL(0) CTLU(P24020C3) LCLLU(RAOTNNC1) +
        RMTLU(RA0AS4A) TEXT('Device Description +
        for          REMOTE2')
ADDDEV  DEVD(RAONN2) MODE(MODS361) MAXSSN(8) +
        PREBNDSSN(0) MAXSRCSSN(4) MAXCNV(8) +
        INPACING(7) OUTPACING(7) MAXLENRU(256) /* +
        Mode for Network USIBMRA */
CRTDEV  DEVD(RAONN3) DEVADR(000061) DEVTYPE(*PEER) +
        MODEL(0) CTLU(P24020C3) LCLLU(RAOTNNC1) +
        RMTLU(RA0AS4A) TEXT('Device Description +
        for          REMOTE3')
ADDDEV  DEVD(RAONN3) MODE(MODS361) MAXSSN(8) +
        PREBNDSSN(0) MAXSRCSSN(4) MAXCNV(8) +
        INPACING(7) OUTPACING(7) MAXLENRU(256) /* +
        Mode for Network USIBMRA */
/*-----*/
CRTDEV  DEVD(E24020C1) DEVADR(010061) DEVTYPE(PLU1) +
        MODEL(0001) CTLU(P24020C3) ONLINE(*YES) +
        EMLKBDTYP(*LOWER) MAXLENRU(2560) TEXT('3270 +
        emulation device on line L24020')

```

```

CRTDEVD  DEVD(E24020C2) DEVADR(020061) DEVTYPE(PLU1) +
          MODEL(0001) CTLU(P24020C3) ONLINE(*YES) +
          EMLKBDTYP(*LOWER) MAXLENRU(2560) TEXT('3270 +
          emulation device on line L24020')
CRTDEVD  DEVD(E24020C3) DEVADR(030061) DEVTYPE(PLU1) +
          MODEL(0001) CTLU(P24020C3) ONLINE(*YES) +
          EMLKBDTYP(*LOWER) MAXLENRU(2560) TEXT('3270 +
          emulation device on line L24020')
CRTDEVD  DEVD(E24020C4) DEVADR(040061) DEVTYPE(PLU1) +
          MODEL(0001) CTLU(P24020C3) ONLINE(*YES) +
          EMLKBDTYP(*LOWER) MAXLENRU(2560) TEXT('3270 +
          emulation device on line L24020')
/*-----*/
CRTDEVD  DEVD(A24020C5) DEVADR(050061) DEVTYPE(*PEER) +
          MODEL(0000) CTLU(P24020C3) ONLINE(*YES) +
          LCLLU(T24020C5) RMTLU(CICSPSPC) +
          PUBAUT(*NORMAL) TEXT('APPC device')
ADDDEVMODE DEVD(A24020C5) MODE(MS38APPC) MAXSSN(1) +
          PREBNDSSN(1) MAXSRCSSN(1) MAXCNV(3) +
          INPACING(0) OUTPACING(0) MAXLENRU(256)
CRTDEVD  DEVD(A24020C6) DEVADR(060061) DEVTYPE(*PEER) +
          MODEL(0000) CTLU(P24020C3) ONLINE(*YES) +
          LCLLU(T24020C6) RMTLU(CICSPSPC) +
          PUBAUT(*NORMAL) TEXT('APPC device')
ADDDEVMODE DEVD(A24020C6) MODE(MS38APPC) MAXSSN(1) +
          PREBNDSSN(1) MAXSRCSSN(1) MAXCNV(3) +
          INPACING(0) OUTPACING(0) MAXLENRU(256)
CRTDEVD  DEVD(A24020C7) DEVADR(070061) DEVTYPE(*PEER) +
          MODEL(0000) CTLU(P24020C3) ONLINE(*YES) +
          LCLLU(T24020C7) RMTLU(CICSPSPC) +
          PUBAUT(*NORMAL) TEXT('APPC device')
ADDDEVMODE DEVD(A24020C7) MODE(MS38APPC) MAXSSN(1) +
          PREBNDSSN(1) MAXSRCSSN(1) MAXCNV(3) +
          INPACING(0) OUTPACING(0) MAXLENRU(256)
/*-----*/
CRTDEVD  DEVD(C24020C8) DEVADR(080061) DEVTYPE(PLU1) +
          MODEL(0000) CTLU(P24020C3) ONLINE(*YES) +
          MAXLENRU(256) TEXT('Device for LU0 with +
          CICS11')
/*-----*/
CRTDEVD  DEVD(Q61DEVLU01) DEVADR(090061) DEVTYPE(PLU1) +
          MODEL(0) CTLU(P24020C3) ONLINE(*YES) +
          MAXLENRU(2048) TEXT('RJE device')
CRTDEVD  DEVD(Q61DEVLU02) DEVADR(0A0061) DEVTYPE(PLU1) +
          MODEL(0) CTLU(P24020C3) ONLINE(*YES) +
          MAXLENRU(2048) TEXT('RJE device')
CRTDEVD  DEVD(Q61DEVLU03) DEVADR(0B0061) DEVTYPE(PLU1) +
          MODEL(0) CTLU(P24020C3) ONLINE(*YES) +
          MAXLENRU(2048) TEXT('RJE device')
CRTDEVD  DEVD(Q61DEVLU04) DEVADR(0C0061) DEVTYPE(PLU1) +
          MODEL(0) CTLU(P24020C3) ONLINE(*YES) +
          MAXLENRU(2048) TEXT('RJE device')
CRTDEVD  DEVD(Q61DEVLU05) DEVADR(0D0061) DEVTYPE(PLU1) +
          MODEL(0) CTLU(P24020C3) ONLINE(*YES) +
          MAXLENRU(2048) TEXT('RJE device')
/*-----*/

```

```

      CRTDEVD  DEVD(H24020CE) DEVADR(0E0061) DEVTYPE(3277) +
                MODEL(*DHCF) CTLU(P24020C3) ONLINE(*YES) +
                PUBAUT(*ALL) TEXT('DHCF Device ')
      CRTDEVD  DEVD(H24020CF) DEVADR(0F0061) DEVTYPE(3277) +
                MODEL(*DHCF) CTLU(P24020C3) ONLINE(*YES) +
                PUBAUT(*ALL) TEXT('DHCF Device ')
      CRTDEVD  DEVD(H24020CG) DEVADR(100061) DEVTYPE(3277) +
                MODEL(*DHCF) CTLU(P24020C3) ONLINE(*YES) +
                PUBAUT(*ALL) TEXT('DHCF Device ')
      CRTDEVD  DEVD(H24020CH) DEVADR(110061) DEVTYPE(3277) +
                MODEL(*DHCF) CTLU(P24020C3) ONLINE(*YES) +
                PUBAUT(*ALL) TEXT('DHCF Device ')
      CRTDEVD  DEVD(H24020CI) DEVADR(120061) DEVTYPE(3277) +
                MODEL(*DHCF) CTLU(P24020C3) ONLINE(*YES) +
                PUBAUT(*ALL) TEXT('DHCF Device ')

/*-----*/
      CRTDEVD  DEVD(M24020CJ) DEVADR(130061) DEVTYPE(PLU1) +
                MODEL(0000) CTLU(P24020C3) ONLINE(*YES) +
                MAXLENRU(256) TEXT('Device for logon to +
                DPCRELAY VTAM application.')

/*-----*/
      VRYLIN   LINE(L24020) STATUS(*ON)
      VRYCTLU  CTLU(P24020C3) STATUS(*ON)
      ENDPGM

```

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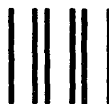
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