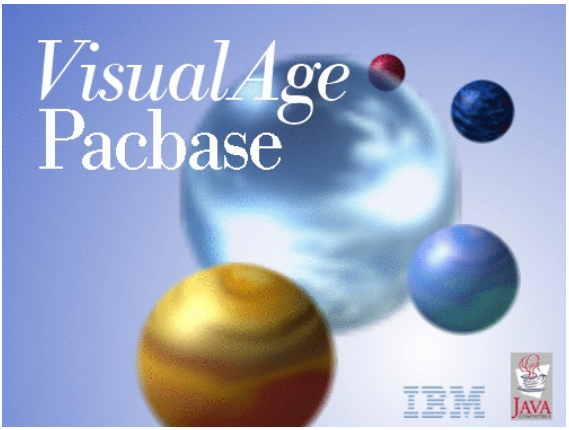
IBM

VisualAge Pacbase

Pocket Guide: Character Mode

Version 3.5



Note

Before using this document, read the general information under "Notices" on page v.

You may consult or download the complete up-to-date collection of the VisualAge Pacbase documentation from the VisualAge Pacbase Support Center at:

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This edition applies to the following licensed programs:
- VisualAge Pacbase Version 3.5

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Contents

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Chapter 1. Presentation

This pocket guide describes the command language used to access the different VisualAge Pacbase screens. For more details, consult the Reference Manuals.

All VisualAge Pacbase screens can be accessed via input in the OPERATION CODE and CHOICE fields (O: CH:), located at the bottom of the screens.

The OPERATION CODE field is made up of 2 characters. The first character indicates the desired sub-network and the second indicates the requested screen presentation option.

The CHOICE field is used to select a screen. A set of hierarchical MENUS guide the user in accessing the various screens of the System.

The General Menu can be accessed by entering 'H' in the CHOICE field, or, on the sign-on screen, by pressing ENTER with no input in the CHOICE field.

An Entity sub-menu may be accessed by positioning the cursor on the desired sub-menu line and pressing ENTER. If the cursor position is not supported by the hardware in use, enter a slash '/' in the input field of the corresponding line and pressing ENTER.

Convention : strings are contained in single quotes.

Chapter 2. Function Keys

The access to the various screens, in VisualAge Pacbase database, is facilitated by the cursor position or the Use of PFkeys.

The use of these functions depends on the hardware and operating system in use at the site. If the hardware does not support the standard use of function keys, you can use '.nn' Choice to simulate 'PFnn' function key use (for example, PF7 amounts to CH: .7).

In any case, the use of the standard command language is always valid.

The standard assignment of Function Keys is resumed as follows:

FK	Standard significance
PF1	Recall screen memorized in M1 (equivalent to operation code R1)
PF2	Recall screen memorized in M2 (equivalent to operation code R2)
PF3	Recall screen memorized in M3 (equivalent to operation code R3)
PF4	Call screen-related HELP (equivalent to action code '?')
PF5	Return to main menu (equivalent to choice 'H')
PF6	Back to sign-on screen (equivalent to operation code 'FT')
PF7	Inhibits implicit updates
PF8	-TC screen display starting from cursor position
PF9	Call of -TC screen from -PG and vice-versa or Zoom on key description from screen B ..... DR
PF10	Branch to Entity Definition screen
PF11	Branch to the Generation Elements (-GG) or General Documentation (-GC), according to the Entity
PF12	End of session with conversation saved

Chapter 3. The CHOICE Field: Presentation

Access to an Entity

Each entity is identified by a 1-character entity type code:

CODE	ENTITY
*	LIBRARY
K	KEYWORD
E	ELEMENT
T	TEXT
V	VOLUME
I	INPUT AID
D	DATA STRUCTURE
S	SEGMENT
R	REPORT
P	PROGRAM
O	ON-LINE SCREEN
B	BLOCK DATABASE
M	MODEL ENTITY
F	META-ENTITY
1	EXTENSION META-ENTITY
Q	USER RELATIONSHIP
$	USER ENTITY ITEM
Y	EXTENSION USER ENTITY

Definition screen for an entity is accessed by entering the appropriate 1-character entity type code:

```
Program Definition                    P .....
On-Line Screen Definition             O .....
```

Depending on the entity, different description screens can can be accessed:

The description of an entity is generally accessed by the 1-character code 'D':

```
Element Description                   E ..... D
```

Call screens are used to call an entity within another. Use 'C' for call followed by the entity type code:

Program Call of Program	P..... CP
Segment Call of Elements	S .... CE

Specific screens used to further describe an entity are accessed through a 1-character code:

Program Work Areas	P ..... W -- ...
Program Procedural Code	P ..... P .. -- ..

Cross-References of an entity are accessed by entering 'X', optionally followed by the key of the first line to be displayed:

Element X-Reference to Program pppppp, starting with Procedural Code ff:	E ..... XP pppppp P ff

Assigned Text is accessed by entering 'AT':

On-Line Screen Assigned Text	O..... AT

General Documentation is accessed by entering 'GC':

Input Aid General Documentation	I ..... GC

Remark: Once an entity has been selected, the combination 'entity type/entity code' can be replaced with a '-'.

Lists of Entities

An entity list is obtained by entering an 'L'.

The second character specifies the type of list:

List by code	LC
List by type	LT
List by name	LN
List of undefined entities in the Repository	LF
List by code for update	LU
List by external name	LE

The third character specifies the entity type: LCT List by Code Text.

Remark: Special list commands are described with each entity.

Special Choices

Special requests are entered with an explicit one to four character code:

Journal File Display of transaction	JO
Activity Calculation on Segment	S .... ACT

Menus are accessed by entering H with or without the entity type code specified:

Elements menu	HE
Special choices menu	HSC

Chapter 4. The CHOICE Field: The Entities

Library

Definition	* ...
General Documentation	* ... GC ...
Called Entities	* ... CR ...
Options	* ... GO ...
X-References to User Relations	* ... XQ .....
List by code	LC* ...
Liste by name	LN*

Keyword

List of Keywords by code	LCK .....
Enrichment of the Thesaurus	K .....
Word Search	WS

Data Element

Definition	E .....
General Documentation	E ..... GC ...
Called Entities by the Element	E ..... CR ...
Description	E ..... D ...
Assigned Text	E ..... AT .....
Cross-References	E X
X-References to Text	E ..... XT .....
X-References to Model Entity	E ..... XM .....
X-References to User Relationship	E ..... XQ ..... ---
X-References to Database Block	E ..... XB .....
	E ..... XB ..... DC ...
	E ..... XB ..... DH ...
	E ..... XB ..... DR ...
X-References to Volume	E ..... XV .....
X-References to On-Line Screens	E ..... XO .....
	E ..... XO ..... W -- ...
	E ..... XO ..... P .. -- ...
	E ..... XO ..... B
	E ..... XO ..... CP
X-References to Segments	E ..... XS ....
X-References to Reports	E ..... XR .....
	E ..... XR ..... CE
X-References to Programs	E ..... XP .....

	E ..... XP ..... B .....
	E ..... XP ..... CP
	E ..... XP ..... SC .....
	E ..... XP ..... W -- ...
	E ..... XP ..... P .. -- ...
	E ..... XP ..... 8 .. -- ...
	E ..... XP ..... 9 .. -- ...
X-References to Meta-Entities	E ..... XF .....
X-References to Relational/SQL Key	E ..... XK ....
X-References to Extension U.E.	E ..... XY ..
List of Undefined Elements in Dictionary	LFE .....
List of Elements by code	LCE .....
List for update	LUE .....
List by name	LNE .....
(C2 : 3 formats indicated)	
List by COBOL name	LAE .....
List by Relational name	LRE .....
List by Code of Child Elements	LDE .....

Text

Text Definition	T .....
General Documentation	T ..... GC ...
Called Entities by the Text	T ..... CR ...
Assigned Text	T ..... AT .....
List of Paragraphs Titles	T ..... LT ..
Description of Paragraph	T ..... D ... --
Text Simulation (of Paragraph Description)	T ..... SIM ... D ..
Cross-References	T X
X-References to Volume	T ..... XV .....
X-References to Text	T ..... XT ..... --
X-References to Documentation	T ..... XG
X-References to User Relationships	T ..... XQ .....
List of Texts by code	LCT .....
List of Texts by type	LTT .. T .....
List of Textsby name	LNT .....
List of User Entities using the Text	T ..... XZ .....

Volume

Volume Definition	V .....
General Documentationr	V ..... GC ...
Called Entities by the Volume	V ..... CR ...
Assigned Text	V ..... AT .....
Description of Contents	V ..... D .. -- ...
Cross-References	V ..... X .....

X-References to Volume	V ..... XV .....
X-References to User Relationships	V ..... XQ .....
List of Volumes by Code	LCV .....
List of Volumes by Type	LTV . V .....
List of Volumesr by Name	LNV .....

Input Aid

Input Aid Definitione	I .....
General Documentation	I ..... GC ...
Called Entities by the Input Aid	I ..... CR ...
Assigned Text	I ..... AT .....
Cross-References	I X
X-Ref's to Libraries	I ..... X*
X-Ref's to Data Stuctures	I ..... XD ..
X-Ref's to Reports	I ..... XR .....
X-Ref's to Programs	I ..... XO .....
X-Ref's to Model Entities	I ..... XM .....
X-Ref's to Blocks	I ..... XB .....
X-Ref's to Texts	I ..... XT .....
X-Ref's to Elements	I ..... XE .....
X-Ref's to Segments	I ..... XS ....
X-Ref's to Volumes	I ..... XV .....
X-Ref's to Input Aids	I ..... XI .....
X-Ref's to Meta-Entities	I ..... XF .....
X-Ref's to User Entities	I ..... X$ .....
X-Ref's to User Relationship	I ..... XQ .....
X-Ref's to Extension UE	I .....XY .....
Input Aid Description	I..... D ...
List of Input Aids by Code	LCI .....
List of Input Aids by Type	LTI . I .....
List of Input Aids by Name	LNI .....
List of Input Aids by External Ref's	LXI .....
X-Refs of Input Aid External Ref's	XI .....
	XI ..... I .....

Data Structure

Data Structure Definition	D ..
D.S. General Documentation	D .. GC ...
Generation Complements for D.S.	D .. GG
Called Entities by the D.S.	D .. CR ...
Assigned Text	D .. AT .....
Error Messages/Online Help Generation for D.S.	D .. GE ...
Data Structure X-Reference	D .. X
D.S. X-Ref's to User Relationships	D .. XQ .....

D.S. X-Ref's to Volumes	D .. XV .....
D.S. X-Ref's to Programs	D .. XP .....
	D .. XP ..... W .. ---
	D .. XP ..... CP .....
D.S. X-Ref's to Screens	D .. XO .....
	D .. XO ..... W .. ---
	D .. XO ..... CP .....
D.S. X-Ref's Extension U.E.	D .. XY ..
List of D.S. by code	LCD
List of D.S. by type	LTD . D ..
List of D.S. by external name in programs	LPD .....
List of D.S. by external name in screens	LOD .....
List of D.S. by name	LND .....
Data Structure List of Segments	D .. LS ..

Segment

Segment Definition	S ....
Segment General Documentation	S .... GC ...
Called Entities by the Segment	S .... CR ...
Error Messages/Online Help Generation for the Segment	S .... GE ...
Generation Complements for the Segment	S .... GG ...
Generation Options for the Segment	S .... GO ...
Assigned Text	S .... AT .....
Sub-schemas and Sub-systems	S .... SS . -
Call of Elements	S .... CE ...
(C2 : internal format)	
(C3 : input format)	
Call of Elements Comments	S .... CE ... GC ...
Call of Elements Help Generation	S .... CE ... GE ...
Call of Elements Generation Complements	S .... CE ... GG ...
Integrity Constraints on Segment	S .... CN .....
Level, Address and Length	S .... LAL
Data Element Details	S .... DED
(C1 : Element Name)	
(C2 : Relational Name)	
Statistics	S .... STA
DB2 View Description	S .... DBE ...
Socrate Description	S .... SE ...
Activity	S .... ACT
Cross-References	S X
X-Ref's to Extension U.E.	S .... XY ..
X-Ref's to Segments	S .... XS....
X-Ref's to Database Blocks	S .... XB .....
X-Ref's to User Relationships	S .... XQ .....
X-Ref's to Volumes	S .... XV .....
X-Ref's to Programs	S .... XP .....
	S .... XP ..... W .. ---

	S .... XP ..... CP .....
X-Ref's to Screens	S .... XO .....
	S .... XO ..... W .. ---
	S .... XO ..... CP .....
List of Parent Segments	S .... LSP ....
List of Children Segments	S .... LSC ....
List of Segments by Code	LCS ....
List of Segments by Name	LNS .....

Report

Definition	R ...
General Documentationt	R ... GC ...
Calles Entities by the Report	R ... CR ...
Assigned Text	R ... AT .....
Description	R ... D .. ---
Call of Elements	R ... CE .. ---
(C2 : output format)	
Layout	R ... L .. C ...
(C for column)	
Cross-References	R ... X
X-Ref's to Volumes	R... XV .....
X-Ref's to Programs	R ... XP .....
X-Ref's to User Relationships	R ... XQ .....
List of Reports by code	LCR ...
List of Reports by Nature Code	LTR . R ...
List of Reports by Name	LNR .....

Program

Definition	P .....
General Documentation	P ..... GC ...
Called Entities by the Program	P ..... CR ...
Assigned Text	P ..... AT .....
Call of Data Structures	P ..... CD ..
Call of P. M. S.	P ..... CP ..... --
Generation Options	P ..... GO ...
Beginning Insertions	P ..... B .. -- ...
(C2 : with source)	
Work Areas	P ..... W -- ...
(C2 : with source)	
Procedural Code	P ..... P .. -- ...
(C2 : with source)	
	P ..... 8 .. -- ...
	P ..... 9 .....
	P ..... SC .. -- ..

	P ..... STR ....
Cross-References	P X
X-Ref's to Volumes	P ..... XV .....
X-Ref's to Programs	P ..... XP .....
X-Ref's to Screens	P ..... XO .....
X-Ref's to User Relationships	P ..... XQ .....
List of Programs by Code	LCP .....
List of Programs by Nature Code	LTP . P .....
List of Programs by Name	LNP .....
List of Programs by External Name	LEP .....
List of Titles without Condition	P ..... TO .. -- <
List of Titles with Conditions	P ..... TC .. -- < ..
List of Titles with Conditions	P ..... < ..
	P ..... < .. TC ....
	P ..... < .. TO ....
Generated Procedural Code	P ..... PG .. -- ...

(C2 : with source for -TC and -< choices)

On-Line Screen

Definition	O .....
General Documentation	O ..... GC ...
Called Entities by the On-Line Screen	O ..... CR ...
Assigned Text	O ..... AT .....
Error Messages/Online Help Generation	O ..... GE ...
Generation Elements	O ..... GG ...
Generation Options	O ..... GO ...
Call of P.M.S.	O ..... CP .....
Beginning Insertions (C2 : with source)	O ..... B .. -- ...
Work Areas (C2: with source)	O ..... W -- ...
Procedural Code (C2: with source)	O ..... P -- ...
Mapping (C for column)	O ..... M .. C ..
Layout (C for column)	O ..... L .. C ..
Dialogue or Screen Complement	O ..... O
Address of Elements (C for column)	O ..... ADR .. C ..
Dialogue or Screen Simulation (C1, C3, C4 ou C5)	O ..... SIM ..
Cross-References	O X
X-References to Segments	O ..... XS
X-References to User Relationships	O ..... XQ .....
X-References to Volumes	O ..... XV .....

X-References to Screens	O ..... XO .....
Call of Elements	O ..... CE ...
(C2: Labels content)	
(C3 : Elements label)	
Call of Segments	O ..... CS - ...

List of Screens

- by code	LCO .....
- by external program name	LPO .....
- by external map name	LSO .....
- by transaction name	LOT .....
- by type	LTO .. O .....
- by name	LNO .....

List of Titles

- without condition	O ..... TO .. -- < ..
- with condition	O ..... TC .. -- < ..
- with condition	O ..... < ..
	O ..... < .. TC ....
	O ..... < .. TO
- Generated procedural Code	O ..... PG .. -- ...

(C2: with source for -TC and -< choices)

Database Block

Definition	B .....
General Documentation	B ..... GC ...
Called Entities by the Block	B ..... CR ...
Assigned Text	B ..... AT .....
Generation Elements	B ..... GG ...
Generation Options	B ..... GO ...

Database Block	**HIERARCHICAL**
Description	B ..... DH ...
Documentation	B ..... DH ... GC ...
Generation Elements	B ..... DH ... GG ...

Database Block	**CODASYL**
Description	B ..... DC ...
Documentation	B ..... DC ... GC ...
Elements Generation	B ..... DC ... GG ...
Codasyl Activity on a Set	C ..... ACT

Database Block	**RELATIONAL/SQL**
Description	B ..... DR ...

Database Block	**RELATIONAL/SQL**
Documentation	B ..... DR ... GC ...
Elements Generation	B ..... DR ... GG...
Building of the Key	B ..... DR ... K
Generation of RELATIONAL/SQL DDL	B ..... GN ...

Database Block	**Turbo-Image**
Description	B ..... DT ...
Documentation	B ..... DT ... GC ...

Cross-References	**B ..... X**
X-References to User Relationship	B ..... XQ .....
X-References to Volumes	B ..... XV .....
X-References to Blocks in PSB'B	B ..... XB .....
X-References to Screens	B ..... XO .....
	B ..... XO ..... CS ....
	B ..... XO ..... W ..
X-References to Programs	B ..... XP .....
	B ..... XP ..... W ..
X-References to Extension U.E.	B ..... XY ..

List of Blocks	
- by code	LCB .....
- by type	LTB .....
- by name	LNB .....
- by external name	LEB .....
- Areas by code (Codasyl)	LCA .....
list of Codasyl Sets by code	LCC .....
List of SQL objects / T.I Sets by Code	LTS - .....
List of SQL objects / T.I Sets by External name	LES -- .....

Model Entity

Definition	M .....
General Documentation	M ..... GC ...
Called Entities by the Model Entity	M ..... CR ...
Assigned Text	M ..... AT .....
Relationship Call of Objects	M ..... CM ...
- Documentation	M ..... CM ... GC ...
Call of Elements/Attribute	M ..... CE ...
- Documentation	M ..... CE ... GC ...
Cross-References	M X
X-References to Model Entities	M ..... XM .....
X-References to User Relationships	M ..... XQ .....
X-References to Segments	M ..... XS ....
X-References to Database Blocks	M ..... XB .....
X-References to Volumes	M ..... XV .....

List of Model Properties by code	LMP .....
List of Model F.I.C.s by code	LMC .....
List of Model Objects by code	LMO .....
List of Model Relationships by code	LMR .....
List of Model F.I.X's by name	LXC .....
List of Model Objects by name	LXO .....
List of Model Relationships by name	LXR .....

User Entity

Definition	$ -- .....
General Documentationt	$ -- ..... GC ...
Assigned Text	$ -- ..... AT .....
Description of contents	$ -- ..... D - ...
	$ -- ..... D ..... ID ..
Called Entities by the U.E.	$ -- ..... CR ...
Definition	$ -- ..... ID ..
Cross-references	$ -- X
X-References to User Relationships	$ -- ..... XQ .....
X-References to Volumes	$ -- ..... XV .....
List of User Entities by code	LC$-- .....
List of User Entities by sort code	LS$ -- .....
List of User Entities by type	LT$ .....
List of User Entities by name	LN$ .....

Special Choices

General Menu	H
Sub-Menu for the x entity	Hx
Generation and print requests	GP .. ---
List of Locked Entities	LL ..... L-.....
Previous screen (Jump Previous)	JP
Next screen (Jump Forward)	JF
Same screen (Jump in Place)	JI

New Context

- New Library	N* ...
- New session	NH .... -
- Return to Current Session	NH9999
- New Change	NC ... .

Update mode

- No update (inhibits the implicit action codes)	.NU
- Update (sets the implicit action codes)	.U
- Inhibit all update (implicit & explicit)	.NT

Display the differences between sessions

- without update	.D .... -
- modify	.M .... -

Within the Help function

- Return to beginning of documentation	-
- Return to initial screen	END or JP

Job Review (some platforms)

- List of jobs	LJOB
- Review of Job "nnpp"	JOB nnpp

Lists

- of previous sessions by code	LCH ....
- of previous sessions by name	LNH .....
- of previous sessions by short name	LRH .....
Journal file display transactions	JO

Special Text Editing

Search for 'string 1'	. S/string 1/
Step-by-Step Replacement	. C1/old string/new string/
Replacement from the Beginning bound to the End bound	. C2/old string/new string/ B . -- ..... E . -- .....
Global Replacement (on -W, -P, -B, -CP, -9 and -SC lines)	. C3/old string/new string/
Lines renumbering with 'nn' interval (default=20).	.R nn

Note : '/' is some delimiter no included in strings.

Chapter 5. The OPERATION Field

C1	Selected library and higher level libraries	
U1	Selected library only	
Z1	Selected library and lower level libraries	
I1	Selected library and lower and higher level libraries	
>1	Higher level libraries	
<1	Lower level libraries	
A1	Identical to C1 with display of duplicates	

Mn	Stores or memorizes the screen upon which the request is executed (n=1-9)
Rn	Recalls the screen that was stored by the Mn operation (n=1-9)
FT	Final Transaction

Chapter 6. The ACTION CODE Field

Blank	lmplicit Update (create or modify)
C	Create
M	Modify
D	Delete
B	Block (multiple) deletion
L	End delimiter of multiple deletion
E	Inhibits implicit update on the line
?	Help documentation
S	Split line of text where cursor is positione
T	Line transfer
G	Group line transfer
L	End delimiter of group line transfer
I	Insert nnn lines here (nnn is entered in the Line number field)
R	Repeat nnn times, beginning with the line number where the R action code is entered (nnn is entered in the next field).
J	On any line other than an I, R or S line, gives the step 'nnn' by which to increment line numbers (optional, defaults to calculated line number)
X	Explicit update (creation/modification)

Chapter 7. Generation and Print Commands

Thesaurus

DCK	Description of Thesaurus Keywords with synonyms
LCK	List of Keywords defined in the Thesaurus

Data Element and Property

DCE	Data Elements/Properties description
DFE	Undefined Data Elements description
LCE	List of Data Elements/Properties by Code
LKE	List of Data Element/Properties by Keywords
LNE	List of Data Elements/Properties by Name
LXE	List of unused Data Elements/Properties
LAE	List by COBOL name

Text

DCT	Description for Texts by Code
DTT	Description for Texts by Type
LCT	List of Texts by Code
LKT	List of Texts by Keywords
LTT	List of Texts by Type
L*T	List of Paragraph Titles of Text
LNT	List of Texts by Name

Volume

DCV	Description for Volumes by Code
LCV	List of Volumes by Code
LNV	List of Volumes by Name
LKV	List of Volumes by Keywords
PCV	Print Volumes by Code

Input Aid

DCI	P.I.A. description
LCI	List of P.I.A. by Code

LKI	List of P.I.A. by Keywords
LXI	List of P.I.A. by X-reference
LNI	List of P.I.A. by Name

Data Structure

DCD	Description of Data Structures
LCD	List of Data Structures by Code
LKD	List of Data Structures related by Keywords
LND	List of Data Structures by Name
LTD	List of Data Structures by Type
LPD	List of Data Structures by External Name in programs
LOD	List of Data Structures by External Namee in screens
GCD	Generation of Selected Data Structures

Segment

DCS	Description of Segments in Format
LCS	List of Segments by Code
LKS	List of Segments by Keywords
LNS	List of Segments by Name

Report

DCR	Reports description
LCR	List of Reports by Code
LKR	List of Reports related by Keywords
LTR	List of Reports by Type
LNR	List of Reports by Name

Program

DCP	Program description
DSP	Description of Programs (Reverse Engineering)
LCP	List of Programs by Code
LEP	List of Programs by External Name
LKP	List of Programs related by Keywords
LTP	List of Programs by Type
LNP	List of Programs by Name
GCP	Source code for selected
GSP	Source code for selected Program (Reverse Engineering)

On-Line Screen

DCO	Description of Selected On-line Screens
DSO	On-line Screen description (Rev. Eng.)
LCO	List of On-line Screens by Code
LKO	List of On-line Screens by Keywords
LPO	List by External program name
LSO	List of On-line Screens by Map name
LOT	List of On-line Screens by External Transaction name
LNO	List of On-line Screens by Name
LTO	List of On-line Screens by Type
GCO	Description of Selected On-line Screens
GSO	On-line Screen description (Rev. Eng.)

Client/Server and eBusiness Entity

DGC	Description of a C/S Screen
DGS	Description of a Business Component
GGC	Generate a C/S Screen
GGS	Generate a Business Component
GVC	Generation of a Proxy Logical View
GMF	Generation of a Folder
GMI	Generation of an INIT/TERM Server
GMM	Generation of a Communication Monitor
GMS	Generation of a Server
GME	Generation of an Error Server

Error Message

LEC	List of error messages for a Client Component/Screen
LED	List of error messages for a Data Structure/Segment
LEO	List of all error messages for a On-line Dialogue/Screen
GED	Generation of error messages for a Data Structure/Segment
GEO	Generation of error messages for a Dialog/Screen
GEC	Generation of error messages for a C/S Dialogue/Component
GEF	Generation of error messages for a C/S Folder
GEI	Generation of error messages for INIT/TERM component
GES	Generation of error messages for a C/S Component

Option	**Generation Content**
C1	Error messages for the Dialog and for each Screen
C2	C1 plus documentary help messages
C3	Error messages for the Dialog only

Option	Generation Content
C4	Screen extractions for PacWeb, PAW (GEO)

Database Block

DTB	Database Blocks description by Type
LCB	List of Database Blocks by Code
LEB	List of Database Blocks by External name
LKB	List of Database Blocks related by Keywords
LTB	List of Database Blocks by Type
LNB	List of Database Blocks by Name
LES	List of SQL objects/T.I. Sets by External name
LTS	List of SQL objects by Code
GCB	Generation of source: Database Blocks
GSQ	Generation of DDL for Relational/SQL block

Model Entity

DCM	Description of the Model Entity
DCMC	Functional Integrity Constraints Description
DCMO	Model Objects description
DCMR	Model Relationships description
LCMC	List of Model F.I.C. by Code
LCMO	List of Model Objects by Code
LCMR	List of Model Relationships with F.I.C.'s
LCMP	List of Model Properties by Code
LKM	List of Model entities related by Keywords
PCM	Edition of Meta-Entities by Model Entity

User Relationship

DCQ	Description of User relationships
LCQ	List of User Relationships by Code
LKQ	List of User Relationships by Keywords
LNQ	List of User Relationships by Name

Meta-Entity

DCF	Description of Meta-Entities
LCF	List of Meta-Entities by Code
LKF	List of Meta-Entities related by Keywords
LNF	List of Meta-Entities by Name

Client User Entity

DC$	User Entities description
LC$	List of User Entities by Code
LK$	List of User Entities related by Keywords
LN$	List of User Entities by Name

Extension User Entity

DCY	Description of Extension User Entity
LCY	List of Extension User Entities by Code

Job Card and End-Of Job Delimiter

	Flow control
FLB	- Database Blocks
FLS	- Relational/SQL blocks
FLD	- Data Structures
FLO	- Screens
FLP	- Programs
FSP	- Rev. Eng. Programs
FSO	- Screen job card / end delim (Rev. Eng.)
FGC	- Client Component
FGS	- Server Component
FLE	- Error messages
FGE	- C/S Error messages
FLV	- Volumes
FMS	- Server
FME	- eBusiness Error messages

Lowercase Shift

UPC	Shift to upper case for printers that do not support lower case

Generation of User Commands

GUT	Generation of User commands

Chapter 8. Structured Code

General Operators

N	Title, must be line 000
*	Comment
M	Move
MA	Move all
MC	Move Corresponding
MCI	Move (for identical dependent Data Elements)
MF	Move Function
P	Perform
C	Compute
A	Add
S	Subtract
MP	Multiply
DV	Divide into
MES	Display message
ACC	Accept
STR	String
UNS	Unstring
CAL	Call
GT	Go to end of current sub-function with level number nn
GFT	Go to end of iteration
GDI	Go to beginning of iteration
GB	Go to beginning of current loop with level number nn
EXA	Examine
INS	Inspect
EXC	EXEC CICS ... END-EXEC
EXP	EXEC PAF .... END-EXEC
DXX	(CICS) DFHXX TYPE=
DBM	(CICS) DFHBMS TYPE=
COB	COBOL in margin B
COA	COBOL in margin A
U07	COBOL in column 7
SUP	Suppress an automatic (sub-) function
SCH	Search on table
SCB	Search (on sorted table)
ADT	Call system date (6 characters)
ADC	System date with century (8 characters)
AD	Date format : Century positioned from CENTUR field
AD0	Date format : Century positioned from DAT-CTY
AD1	Date format : Century set to 19 if year < value in DAT-CTYT field
AD2	Date format : Century set to 20 if year < value in DAT-CTYT field
ADI	Date inversion (6 characters)

ADE	Date with slash (8 characters)
DAD	Computing of the number of days between two dates
DAO	Days added to or subtracted from a date
TIM	TIME HHMMSS format
TIF	HHMMSS to HH:MM:SS

SQL Operators

EXQ	EXEC SQL ... END-EXEC
SCC	CONNECT order (or its like)
SDC	DISCONNECT order (or its like)
SCO	COMMIT order
SRO	ROLLBACK order
SWH	WHENEVER order
SQL	Personalized Access

DBMS Operators

IDS1

IMV or TMV	MOVE
IMC or TMC	MOVE CURRENT
IMD or TMD	MODIFY
IDE or TDE	DELETE
IRE or TRE	RETRIEVE
ISE or TSE	SET
IST or TST	STORE
II or TI	IF ----- GO TO --- (PARAGRAPH-NAME)
IIE or TIE	IF ERROR GO TO --- (PARAGRAPH-NAME)
IHE or THE	HEAD
ICL or TCL	CLOSE
IOU or TOU	OPEN UPDATE
IOR or TOR	OPEN RETRIEVAL

CODASYL

BRY	READY
BFH	FINISH
BFD	FIND
BG	GET
BER	ERASE
BDT	DISCONNECT --- FROM ---
BCT	CONNECT --- TO ---
BMD	MODIFY
BST	STORE

COBOL II Operators

CON	Continue (no operand)
EVA	Evaluate
EVT	Evaluate true
EVF	Evaluate false
EEV	END-Evaluate (no operand)
EIF	END-IF (no operand)
EPE	END-PERFORM (no operand)
ESE	END-SEARCH (no operand)
INI	INITIALIZE
SEA	SEARCH
GOB	GO BACK

Operators for On-Line Only

AD6	ADT and ADI (on-line)
AD8	ADE (on-line)
GF	Go to end of automatic sub-function
GDB	Branch to start of current loop
GFR	Go to end-of-reception
GFA	Go to end-of-display
OTP	Immediate transfer to screen of external name
OSC	Screen transter
OSD	Deterred screen transfer
XR	Read segment (Perform of paragraph F80-ddss-R)
XP	Read first occurrence of segment
XRN	Read next occurrence of segment
XRU	Read for update of segment
XW	Write segment
XRW	Rewrite segment
XD	Delete segment
XUN	Unlock segment (VSAM)
Yaa	Create paragraph labels (F80-ddss-aa)
Xaa	With Yaa, Perform of paragraph F80-ddss-aa
ERU	User error (specified at dialogue level)
ERR	User field error

Relative Positioning - On-Line Screen

*A	To insert the sub-function before the automatic sub-function (F20, F25,and F35)
*P	To insert the sub-function after the automatic sub-function (F20, F25, F30, F35, F60 and F65)
*R	To replace an automatic sub-function (F20, F25, F35, F60 anf F80)

Operators for Business Component

GFA	End of selection processing (Branch to the Fvunn-SELC-FN label)
GFR	End of validation/update processing (Branch to the Fvunn-CHUP-FN label)
GDB	Return to the beginning of current iteration (Branch to the Fvunn-CHUP-CATR-SVRx-CHCK label or Fvunn-SELC-CATR-SVRx-SELC label)
GDI	Go to the beginning of next iteration (Branch to the Fvunn-CHUP-CATR-SVRx-DONE label or Fvunn-SELC-CATR-SVRx-DONE label)
GFT	Go to the end of iteration (Branch to the Fvunn-CHUP-CATR-FN label or Fvunn-SELC-CATR-FN label)
GF ENDV	Go to end of logical view processing (Branch to the Fvunn-ENDV label)
XT	Allows you to call an elementary processing (transfers, processing on Segment, ...)
ERL	Logical error indicator on control/update access Error on Lock or Unlock query ordered by a graphical client (MOVE L TO TECH-IERRU)

Relative Positioning - Business Component

*C	Insert or replace code in the server or for a logical view. It must be defined on a level 05
*B	To insert in the elementary processing called by PERFORM

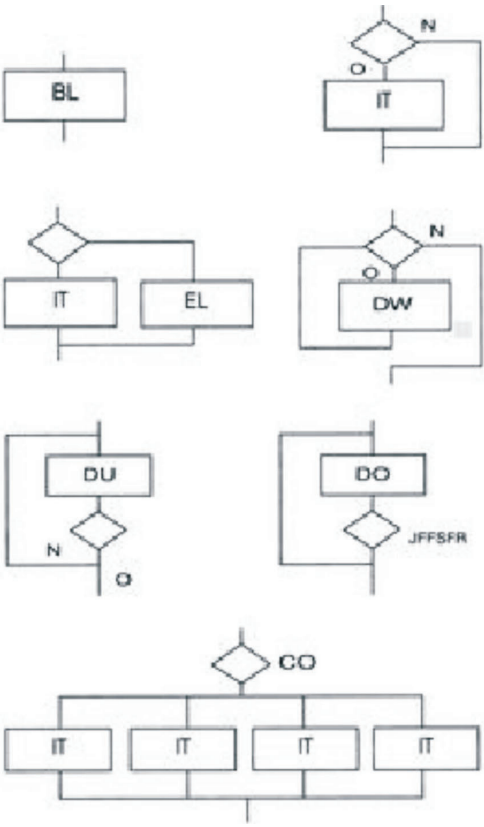
Batch Operators

OPE	Open
CLO	Close
R	File read
W	File write
RW	File rewrite
RN	File read next (VSAM)
STA	File start read (VSAM)
DEL	Record delete (VSAM)
TRI	Sort
E	Error messagee
ADM	Insertion of slashes in a date with century
ADS	Date inversion with century

Communication Operators

ENA	Enable
DSB	Disable
RE	Receive
SD	Send

Types of Structures



BL	Block
IT	If Then
EL	Else
CO	Case of
DW	Do while
DU	Do until
DO	Do
OR	Or
AN	And

WH	When

There are also three structures which are not standard COBOL :

DC	Processing depends on a date comparison
DI	Processing if invalid date
DV	Processing if valied date

Chapter 9. Screen Generation

Variables and Constants

CURPOS	Cursor position in Screen
CPOSN	'Absolute' cursor position in Screen
INA	Number of input Data Elem. in the screen-top category
INR	INA + Number of input Data Elements in the repetitive category
INZ	INR + Number of input Data Elements in the screen-bottom category
IRR	Number of repetitions in the repetitive category
INT	Number of input fields in the Screen
IER	Number of error messages on the Screenn
SESSI	Session number of the generated program
LIBRA	Code of the VisualAge Pacbase library
DATGN	Date of program generation
PROGR	VisualAge Pacbase Program code
PROGE	External name of the program
TIMGN	Time of program generation
USERCO	User code
COBASE	Database code
DATGNC	Program generation date with century
PRDOC	External name of the 'Help screen' program
DATOR	Field storing the date of processing
DATCTY	Field for loading the century
DATSEP	Separator used in dates (default = '/')
DATSET	Separator used in dates (default = '-')
DAT6	Date formatting field
DAT7	Date formatting field
DAT8	Date formatting field
DAT6C	Non-formatted date with century
DAT7C	Non-formatted date with century
DAT8C	Formatted date with century (CCYY/MM/DD)
DAT8G	Gregorian-formatted date with century (CCYY-MM-DD)
TIMCO	Field for loading the time
TIMDAY	Field for loading the formatted time (HH:MM:SS)
5-xxnn-PROGE	Field containing the name of the program to branch to
RELEAS	Generator version
DATGE	Generator date
DATSQ	Skeleton date

Control Variables and Indicators

ICF	Input configuration

	1	Screen in input
	0	No screen in input
OCF		Output configuration
	1	Screen in output
	0	No screen in output
OPERD		Operation code for deferred branching
	O	Deferred call of another Screen
CATMA		Saving of the transaction code of the screen-top category
OPER		Operation code
	A	Display
	M	Update
	S	Screen continuation
	E	End
	P	Same Screen
	O	Call of another Screen
CATM		Transaction code
	C	Creation
	M	Modification
	A	Deletion
	X	Implicit update
CATX		Code of the category being executed
	0	Beginning of reception or display
	blank	Screen-top
	R	Repetitive
	Z	Screen-bottom
ICATR		Indicator for current category being processed
		(Repetitive category only)
ddss-CF		Segment configuration indicator
	0	Segment I/O area does not contain a record
	1	Segment I/O area contains a record
FT		End of repetitive category indicator
	0	Lines to display
	1	No more lines to display
IK		Error indicator for Segment access or server call
	0	No error
	1	Error

Error Variables

CAT-ER		Ongoing error indicator for current category
	blank	No error
	E	Error
SCR-ER		Screen error indicator
	1	No error
	4	Error

ER-scrn-delcod		Data Element error indicator
	0	Absent Data Element
	1	Present Data Element
	2	Invalid absence of Data Element
	3	Invalid presence of Data Element
	4	Erroneous class
	5	Invalid content
DEL-ER		Memorization of the Data Element Presence or Status at a given time

Screen Structure

01	- Initializations	05 BL
	Reception	
		03 IT ICF = '1'
05	- Reception	05 BL
	0510 - Reception of the Screen	10 BL
	0512 - Documentation call processing	10 BL
	0520 - Validation of the operation code	10 BL
--	LOOP BY CATEGORY	04 DW CATX not = 'Z'
10	- Category processing loop	05 BL
	1010 - - Category positioning	10 BL
15	- Validation of the transaction code	05 BL
20	- Data Element validation	05 BL
	20A - Screen-top category	
	20R - Repetitive category	
	20Z - Screen-bottom category	
25	- Segment access for reception	05 IT CATG = ' '
	25A - Screen-top category	
	25R - Repetitive category	
	25Z - Screen-bottom category	
30	- Data Element transfer	05 IT CATG = ' '
	30A - Screen-top category	
	30R - Repetitive category	
	30Z - Screen-bottom category	
35	- Segment access for updat - Server call	05 IT CATG = ' '
	35A - Screen-top category	
	35R - Repetitive category	
	35Z - Screen-bottom category	
--	END OF LOOP for reception	04 BL
	3999 - ITER-FI. GO TO F10.	
	3999 - ITER-FT. EXIT.	
40	- Transaction management	05 IT GR-EG='1'
	4010 - Set-up keys for new display	10 IT OPER = 'A' or 'M'
	4020 - Set-up keys for screen paging	10 IT OPER = 'S'

	Reception	
	4030 - End of transaction	10 IT OPER = 'E'
	4040 - Transfer to another Screen	10 IT OPER = 'O'
--	End of Reception. (F45 - FN)	
	Display	
		03 IT OCF = '1'
50	- Display	05 BL
	5010 - Initializations	10 BL
--	LOOP BY CATEGORY	04 DW CATX <> 'Z'
55	- Category processing loop	05 BL
	5510 - Category positioning	10 BL
60	- Segment access for display - Server call	05 BL
	60A - Screen-top category	
	60R - Repetitive category	
	60Z - Screen-bottom categor	
65	- Data Element transfer	05 BL
	65A - Screen-top category	
	65R - Repetitive category	
	65Z - Screen-bottom categor	
--	END OF LOOP for Display	04 BL
	6999 - ITER-FI. GO TO F55.	
	6999 - ITER-FT. EXIT.	
70	- Error management	05 BL
	7010 - Error messages processing	10 BL
	7015 - Logical View error processing	10 BL
	7020 - Positioning of attributes	10 BL
--	End of display. (F78-FN)	
8Z	- Display and end of Program	05 BL
	8Z05 - Help sub-function	10 IT SCR-ER='1'
	8Z10 - Display	10 BL
	8Z20 - End of Program	10 BL
	Called functions	
80	- Physical Segment access routines	05 BL
81	- Called Validation Functions	
	81CS - Server call	10 BL
	81CV - Recovery of C/S communication area	10 BL
	81ER - Abnormal end procedure	10 BL
	81TA - Client context save	10 BL
	81TR - Client context retrieval	10 BL
	81UT - Memorization of users errors	10 BL
	81UV - Database access error	10 BL
	8110 - Numeric validation	10 BL
	8115 - Initialization of the variable fields	10 BL
	8120 - Validation and setting of date	10 BL
	8125 - Transfer of variable fields	10 BL
	8130 - Help sub-function	10 BL
	8140 - Compute of cursor position	10 BL

Called functions

8150 - Documentation Help	10 BL
8160 - Help function return processing	10 BL

Chapter 10. Business Component Generation

Variables and Constants

IRR	Number of repetitions requested by the client
SESSI	Session number of the generation Library
LIBRA	Library code
PROGR	Code of the component in the library
PROGE	External name of the component
USERCO	User code
COBASE	Database code
DATGN	Date of component generation
DATGNC	Component generation date with century
TIMGN	Time of component generation

Control Variables and Indicators

IK		Error indicator for Segment access or server call
	0	No error
	1	Error
CATM		Transaction code
	C	Creation
	M	Modification
	A	Deletion
	X	Implicit update
A-CATM		Description of action codes of logical View data
A-CATM-CA		Non repeated data
A-CATM-CR		Repeated Data (occurs N)
ICATR		Indicator of the current repetition (repeated Logical View's data)
ICATRC		Number of requested repetitions during the call of a Business Component
OPERS		Operation code
OPERV		Logical View processing indicator
	V	Recognized
	blank	Not processed
OPER2		Operation code for the call of a second-level Business Component
OPERB		Indicates if the selection requested is a list at a Business Component all
OPERT		Area for the management of check/update/selection services

CH-view		Table used for the checks of the Logical View. Generated if the CHECKSER=YES. One item for each Data Element called in the LV.
	N	No check on this Data Element (default value)
	P	Missing Data Element
	blank	All Data Elements are checked
L-CURS-EXTNAM		Closing of the cursor at the end of a selection service if an extraction method is used

Error Variables

DEL-ER	Memorizes Data Element error (work variable)
IER	Maximum number of errors on database accesses that the Business Component can detect before returning to the Client. (Number determined by the ACCESERR option)
K50L	Work indicator of the number of Segment access errors
K50D	Work indicator of the number of Data Element errors

Data Element Errors storage. Generated for each Logical View (view) called in the Business Component.

(Number of items in table depends on the DATAERR option)

EE-view-LIBRA	Library Code
EE-view-SERVER	Business Component code
EE-view-VIEW	Logical View code
EE-view-DATCOD	Data Element code
EE-view-DATERR	Error code
EE-view-DATTYP	Error type
	'S' Standard error
	'U' User error
EE-view-ICATR	Line number on which the error was detected

Storage of Segment Access Errors.

The number of items depends on the ACCESERR option.

V-ERR-SEGCOD	Erroneous Segment code
V-ERR-SEGERR	Error code
V-ERR-SEGTYP	Error type
V-ERR-ICATR	Rank of the erroneous occurrence in a multi-occurrence processing
V-ERR-LIBRA	Library code
V-ERR-SERVER	Business Component code

Manipulable Variables

You can modify the following areas but it is left to your own responsibility. It is recommended to use intermediary areas described in the WWS. Caution: you must not add or modify existing values of these areas.

TECH-CLIENT		Code of the calling Client. Not used for a Client calling Business Components in synchronous mode
TECH-VIEW		Code of the Logical View to be processed
TECH-SERVER		Code of the Business Component called
TECH-OPER		Service requested by the Client for the Logical View.
	L	Monoinstance read service
	A	selection service (generally a BROWSE from one or more criteria)
	E	Check service (no data is returned)
	X	Check, selection service
	M	Check, update service
	T	Check, update, selection service
	U	User service
TECH-ICATRC		Number of instances to be processed by the Business Component for the Logical View
TECH-ICATRS		Number of instances selected by the Business Component for a selection, check or update service
TECH-IERRS		Indicator of non-system errors for selection access, set by the Business Component
	O	No error
	L	No error, end of list
	S	Error
TECH-IERRU		Indicator of non-system errors for check or update access, set by the Business Component
	O	No error
	C	Access error
TECH-IERCC		Indicator of non-system
	O	No error

	A	Non-recoverable error on file or DBMS physical access
	L	Length error for the communication area or the different buffers
	O	Error on service request
	S	Value error for TECH-STRUCT
	V	Logical View code not known by the Business Component
TECH-IDATAC		Check indicator of the Logical View's data
	blank	Check on request (see the description of the indicator in CONT-BUFFER)
	N	No check
	C	Check of all the Data Elements
TECH-ERRCOD		File status or SQLCODE in the case of physical access error (split up into TECH-STATUS area)
TECH-CODE		Name of the file or the table in which a non-recoverable error has been detected
TECH-TYPE		File access type in the case of a non-recoverable error ((R for read, W for write, ...)
TECH-LGREAL		Real length of the communication area
TECH-EXTNAM		Extraction method code set by the Client
TECH-TRANS		Beginning/end of transaction indicator set by the Client
	B	Beginning of transaction
	E	End of transaction
TECH-COMMIT		Indicator of the COMMIT requested by the Client
	blank	No COMMIT request
	C	COMMIT request
	R	ROLLBACK request
TECH-LGDATA		Length of the check indicator of the Logical View's data set by the Client
TECH-NUVERS		Version number used for the compatibility check between the Business Component and the graphic Client
TECH-BROWSE		Selection type indicator
	blank	Direct selection by selection criterion
	B	Browse
	M	Direct selection by the Logical View's data
TECH-SRVUSR		User Service initialized by the Client
TECH-REQST		Management of the call sequence of Business Components after a client query
	F	First Business Component called
	M	Intermediary Business Component called
	L	Last Business Component called
	C	Single Business Component called

TECH-CALSRV		Management of the open and close sequence of cursors for large reading instance selection
	blank	Default
	F	First call of the Business Component to carry out selection
	M	Intermediary call of the Business Component to carry out selection
	L	Last call of the Business Component to carry out selection
	C	Selection carried out using one call
TECH-TIMEST		Timestamp management for a lock or unlock service
USER-BUFFER		Optional User Buffer. This buffer is the same within a Dialogue

Business Component Structure

Body of the Program

05 **FSERVER**
Beginning of server processing
10 FSERVER-STRVIEW
Structure validation and length of the communication area buffers

05 **FSQL**
SQL declaration
10 FSQL-WHENEVER
Clause Whenever
10 FSQL-CURSR-SEGT
Declare Cursor

05 **FVIEW**
Processing of the VIEW logical view
10 FVIEW-BEGV
Initialization of the logical view processing
10 FVIEW-CHUP
Check/update processing
15 FVIEW-CHUP-CATX
X Category processing
= 'A' : before repetitive,
= 'R' : repetitive,
= 'Z' : after repetitive
20 FVIEW-CHUP-CATX-SRVO
O Service processing (O = 'E', 'L', 'M', 'T' or 'X')
25 FVIEW-CHUP-CATX-SRVO-INIT
Initializations
25 FVIEW-CHUP-CATX-SRVO-CHCK
Logical check processing

05 **FVIEW**

25 FVIEW-CHUP-CATX-SRVO-TRAN
Loading before update

25 FVIEW-CHUP-CATX-SRVO-UPDT
Logical update processing

25 FVIEW-CHUP-CATX-SRVO-DONE
End of service processing

10 FVIEW-LOCK
Lock

10 FVIEW-UNLK
Unlock

10 FVIEW-SELC
Selection processing

15 FVIEW-SELC-CATX
X Category processing
= 'A' : before repetitive
= 'R' : repetitive
= 'Z' : after repetitive

20 FVIEW-SELC-CATX-SRVA
Selection service processing

25 FVIEW-SELC-CATX-SRVA-INIT
Initializations

25 FVIEW-SELC-CATX-SRVA-SELC
Logical selection processing

25 FVIEW-SELC-CATX-SRVA-TRAN
Loading after selection

25 FVIEW-SELC-CATX-SRVA-DONE
End of service processing

10 FVIEW-USER
User processing

10 FVIEW-ERRV
VIEW logical view error processing

10 FVIEW-ENDV
End of VIEW logical view processing

05 **FSERVER-END**
End of server processing

Performed Processing

10 **FVIEW-TRDT**
Transfer of the logical view data to the
Segment data in physical access

15 FVIEW-TRDT-CATX
X Category processing (X = 'A', 'R' or 'Z')

10 **FVIEW-CHKD**
Logiciel view data control

15 FVIEW-CHKD-CATX
X Category processing (X = 'A', 'R' or 'Z')

10 **FVIEW-TRVW**
Transfer of Segment data to the logical view data
15 FVIEW-TRVW-CATX
X Category processing (X = 'A', 'R' or 'Z')

10 **FSEGT-CHCK**
Logical check access processing of SEGT Segment
15 FSEGT-CHCK-CATX
X Category processing (X = 'A', 'R' or 'Z')
20 FSEGT-CHCK-CATX-ALIM
Key loading
20 FSEGT-CHCR-CATX-CALL
Physical access call
20 FSEGT-CHCK-CATX-ERRS
Error processing on physical access

10 **FSEGT-UPDT**
Processing of the logical update access on SEGT Segment
15 FSEGT-UPDT-CATX
X Category processing (X = 'A', 'R' or 'Z')
20 FSEGT-UPDT-CATX-ALIM
Key loading
20 FSEGT-UPDT-CATX-CALL
Physical access call
20 FSEGT-UPDT-CATX-ERRS
Error processing on physical access

10 **FSEGT-SLCT**
Processing of the logical selection access on SEGT Segment
15 FSEGT-SLCT-CATX
X Category processing (X = 'A', 'R', 'Z' or 'T')
20 FSEGT-SLCT-CATX-ALIM
Key loading
20 FSEGT-SLCT-CATX-CALL
Physical access call
20 FSEGT-SLCT-CATX-ERRS
Error processing on physical access

F80 Physical access

F81 **Complementary processing**
(end of Program, error management...)

Chapter 11. Program Generation

Conditional Variables

FTBn	Final total control break at level n
	Processing is ending on all data structures synchronized on input for all records having the same key at level n. ('1'- YES, '0'- NO)
ITBn	Initial total control break at level n
	Processing is starting on all data structures synchronized on input for all records having the same key at level n. ('1'- YES, '0'- NO)
dd-FBn	Final control break on data structure dd at level n
	The last record, at level n, on data structure dd, is ready for processing. ('1'- YES, '0'- NO)
dd-IBn	Initial control break on data structure dd, level n
	The first record, at level n, on data structure dd, is ready for processing. ('1'- YES, '0'- NO)
dd-CFn	File configuration at level n
	'1' - File match: process in this iterationt
	'0' - Bypass file in this iteration
dd-OCn	Occurrence on Data Structure dd at level n
	A record on Data Structure dd with usage 'P' is being processed in this program cycle.
dd-FT	Input data structure dd has detected end-of-file
	('1'- YES, '0'- NO)
dd-FI	Control break processing only
	'1' - File 1/0 area contains last record of file
	'0' - File 1/0 area does not contain last record of file

Table Indexes and Counters

IddssM	Contains the value of the maximum number of entries specified by the user
IddssL	Contains the value of the number of entries actually loaded from segment ss in data structure dd.
	This number cannot exceed the maximum specified above.
IddssR	Varying from 1 to IddssL, used for all look-ups on the table loaded from data structure dd, segment ss.
	Once the table is loaded, this index is initialized to zero if there is no overflow, or to the number of records read if an overflow has occurred.
5-dd00-CPTENR	Record counter for data structure dd
	Incremented with each READ or WRITE of the d.s.

Validation Processing (Work areas and variables)

DE-ERR		Stores the presence status of each data element of the transaction being processed.
		Each elementary data element (eeeeee), other than FILLER, ENPR, GRPR, ERUT and their sub-elements, is provided with a status field within the table.
		This field is named ER-ss-eeeeees (ss = SEGMENT CODE)
		The values vary at different points in the processing cycle:
	0	Data element absent
	1	Data element present
	2	Invalid absence of data element
	3	Invalid presence of data element
	4	Erroneous class
	5	Invalid content
ID-ER		.The last field in the table is ID-ER and is used for storing the record identification status:
	0	Record type and action code are valid values
	5	Error detected on record type
	6	Error detected on action code
DEL-ER		Stores the presence status of the data element being processed
ER-PRR		Used only to carry out transfers between DE-ERR and a data structure (USAGE OF D.S. = M, N or E) with a reduced error array.
SE-ERR		Stores the presence status of each transacaction file record type.
		Generated if the program contains a transaction file (to be validated or not).
		Each record type is provided with a status field within this table. This field is named SE-ER(I01).
		The values vary at different points in the processing cycle:
	0	Record absent
	1	Record present
	2	Invalid absence of record
	3	Invalid presence of record
	7	Duplicate record
	8	Invalid creation
	9	Invalid modification or deletion
TR-ER		The last field in the table is named TR-ER and is used for storing errors detected.
	1	no error detected
	4	An error is detected
SE-ERE		Stores the presence status of the record being processed.

GR-ER	Stores information concerning errors detected on a group of transactions which update a record, of at least one principal data structure.
UT-ERUT	Stores the user's errors.

Tables used for Reports

CAT-TAB	Category table: stores all categories to be printed in this iteration.
ST-TA	Table storing the structure number, constant part number, and page/line skip for the category to be printed.
r-LAB	Table containing constants for report r.
ST-SLS	Stores the structure number, constant part number, skip to be executed before writing a line and char. set. option (special printer).
CATX	Stores the category of report being printed.
5-dd00-rPC	Page counter for report r in data structure dd initially set to zero.
5-dd00-rLC	Line counter for report r of data structure dd.
5-dd00-rLCM	Counter for maximum number of lines per page.
r-cc-NL	.Number of lines necessary for printing category cc of report r.
Jddrcc	Index associated with repetitive category cc for report r of data structure dd. Contains the rank of the category (cc) being printed, at the time the structures are being loaded.

Automated Totalling Fields

Trst-eeeeee(n)	Accumulator at level n, for data element eeeeee of structure st in report r.
Grst-eeeeee	Grand total accumulator, for data element eeeeee of structure st in report r.

Batch Program Structure

01	Initializations	05 BL
	01dd - Open File, prime Read Instruction for file with control break orload of the table files.	10 BL
	Iteration beginning - Read	
05	Read sequential files with no control break	05 BL
	05dd - Read dd-file	10 BL

	Iteration beginning - Read	
10	Read sequential files with control break	05 BL
	10dd - Read dd-file	10 BL
	End of run	
20	End of run	05 IT FT=ALL '1'
	20dd - Close dd-file	10 BL
	2099 - Stop Run	10 BL
	Break-Configuration	
22	Calculate file control breaks	05 BL
24	File matching logic	05 BL
26	Total control break logic	05 BL
30	Calculate validation variable	05 BL
	Validation	
33	Identification validation	05 BL
	33AA - Record Type Validation	10 BL
	33BB - Transaction Code Validation	10 IT ID-ER='0'
36	Duplicate record validation	05 BL
39	Presence of data elements	05 IT ID-ER='0'
	3900 - Record dd00	10 BL
	39nn - Record ddnn	10 IT 1-dd00-struct='nn'
42	Record structure validation	05 IT ID-ER='0'
	4210 - Common Part	10 BL
	4220 - Specific parts	10 BL
45	Data element contents validation	05 IT ID-ER='0'
	4500 - Record dd00	10 BL
	45nn - Record ddnn	10 IT 1-dd00-struct='nn'
51	Record presence validation	05 IT ID-ER='0'
	5110 - Record Presence Validation	10 BL
	5120 - Record Absence Validation	10 IT dd-FBn='1'
70	Existence validationn	05 IT ID-ER='0' and dd-IBn='1'
	70dd - Existence validation on dd-file	10 BL
	Update	
73	Update	05 IT ID-ER='0' and SE-ER(I01)='1'
	Errors processing	
76	Store errors and Backout	05 BL
	76dd - Backout for dd-file	10 IT FTBn='1' and GR-ER='1'
	Print	
8r	Report logic for report r	05 IT condition on -D

Print

	8rZZ - Loads Constant Part	10 BL
	8r00 - Loads Variable Part	10 BL
	8r99 - Physical Write	10 BL

Write files

90	Write	05 BL
	90dd - Write dd-file	10 BL
	9099 - ITER-FN. GO TO F05	10 BL
	(END of LOOP)	

Called functions

95	Function called by PERFORM	
	(from 05 or 10 functions for input data structure with a W organization on the -CD screen	

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