

SY33-8572-2
File No. S370-20

Systems

**DOS/VS Handbook
Volume 2**

Release 32

IBM

Preface

This manual is the second in a series of two volumes. The reference information combined in these two manuals is provided as a DOS/VS serviceability aid and is, therefore, a summary of other DOS/VS documentation. These manuals are intended for use by persons involved in program support.

The two volumes contain the following information:

- Volume 1, SY33-8571:
 - Chapter I : System/370 General Information
 - II : DOS/VS General Information
 - III: DOS/VS IOCS (General, SAM, DAM, ISAM)
 - IV: DOS/VS Supervisor Control Blocks and Areas
 - V : DOS/VS Service Aids

- Volume 2, SY33-8572:
 - Chapter I : POWER/VS
 - II : VTAM Control Blocks
 - III: VSAM Control Blocks
 - IV: Model 20 Emulator
 - V : 14xx Emulator
 - VI: BTAM

If there is any discrepancy between the information contained in this manual and the DOS/VS optional programming material (e.g., PLMs and listings), the latter is assumed to be correct.

Third Edition (November, 1975)

This is a major revision of, and obsoletes, SY33-8572-1. It applies to Version 5, Release 32, of the IBM Disk Operating System/Virtual Storage, DOS/VS, and to all subsequent versions and releases until otherwise indicated in new editions or Technical Newsletters. Changes are continually made to the information herein; before using this publication in connection with the operation of IBM systems, consult the latest *IBM System/370 Bibliography*, GC20-0001, for the editions that are applicable and current.

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A handbook-sized binder, FE Part Number 453559, may be purchased from IBM. Customers may order it through their IBM marketing representative. IBM personnel should order it as an FE part from Mechanicsburg.

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A form for readers' comments is provided at the back of this publication. If the form has been removed, comments may be sent to the above address. Comments become the property of IBM.

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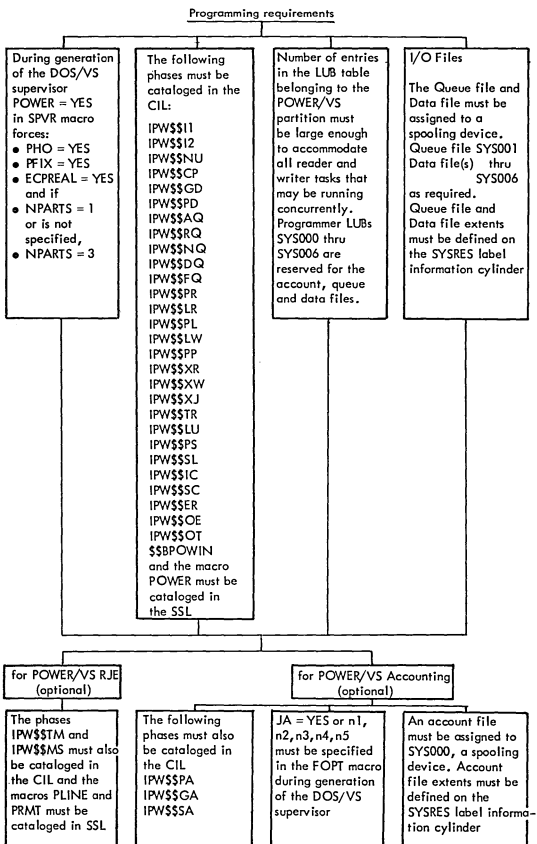
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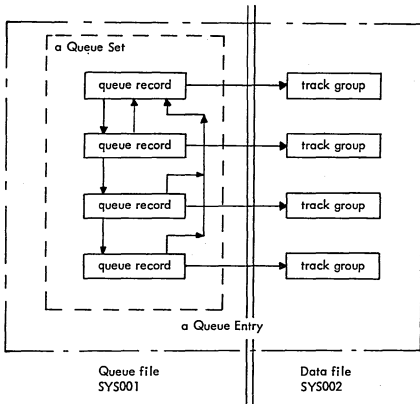
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POWER/V5



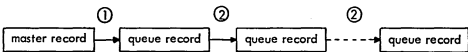
PROGRAMMING REQUIREMENTS FOR POWER/VS



RELATIONSHIP BETWEEN A QUEUE SET, QUEUE RECORDS, AND A QUEUE ENTRY

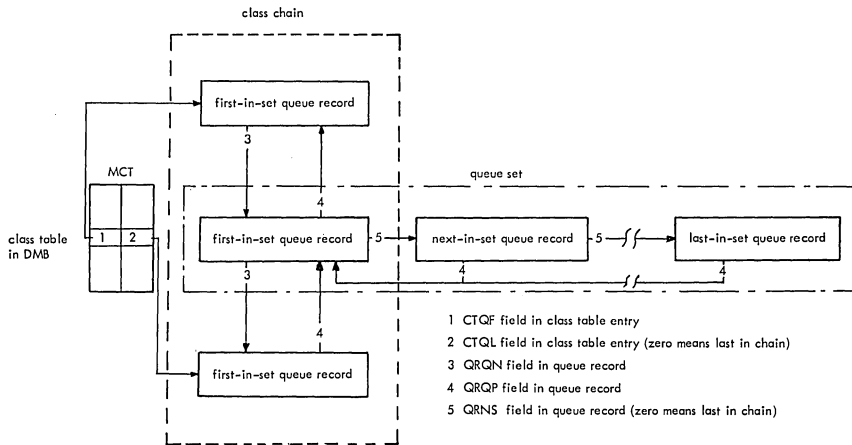


FREE QUEUE SET

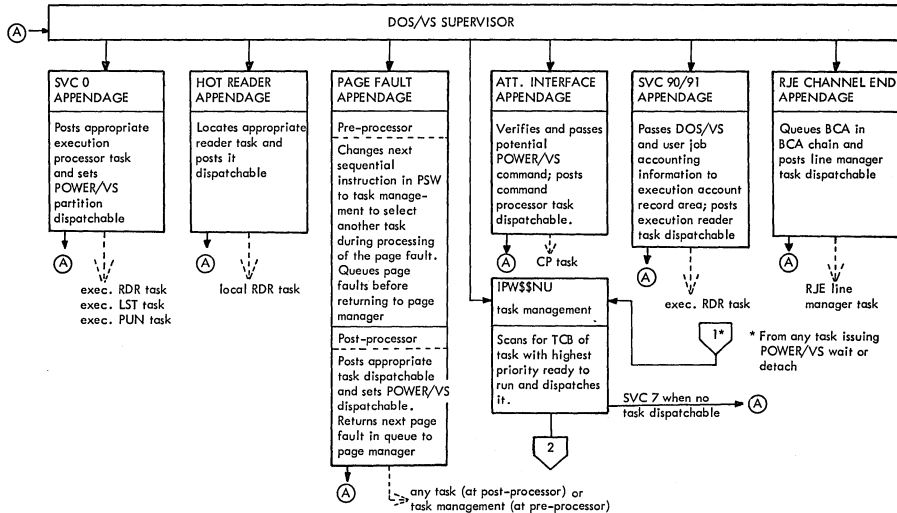


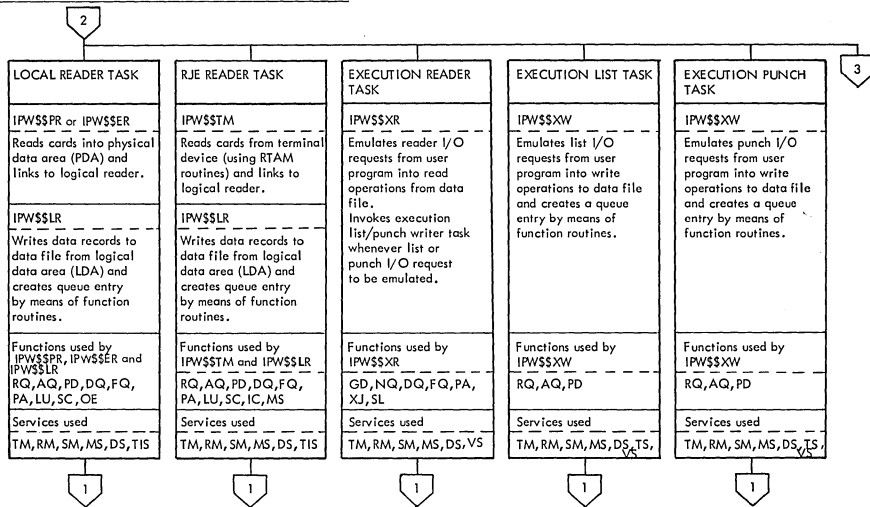
- ① MRQF field in master record
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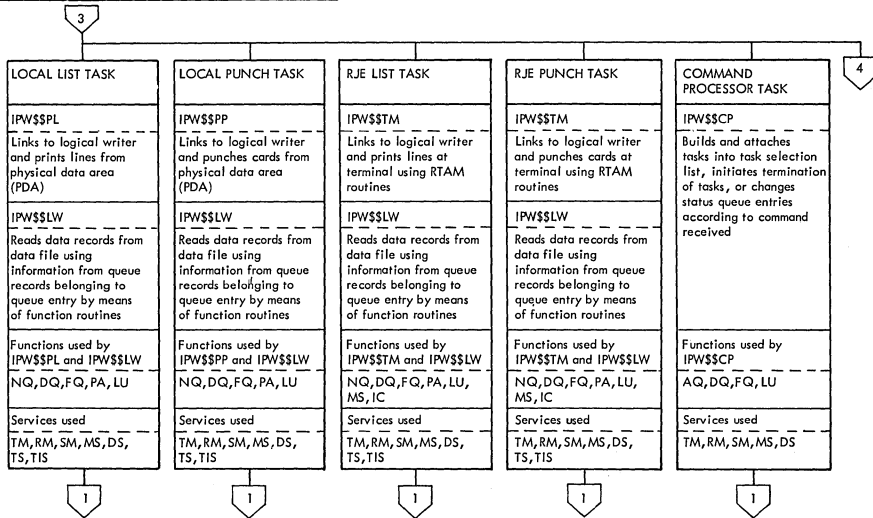
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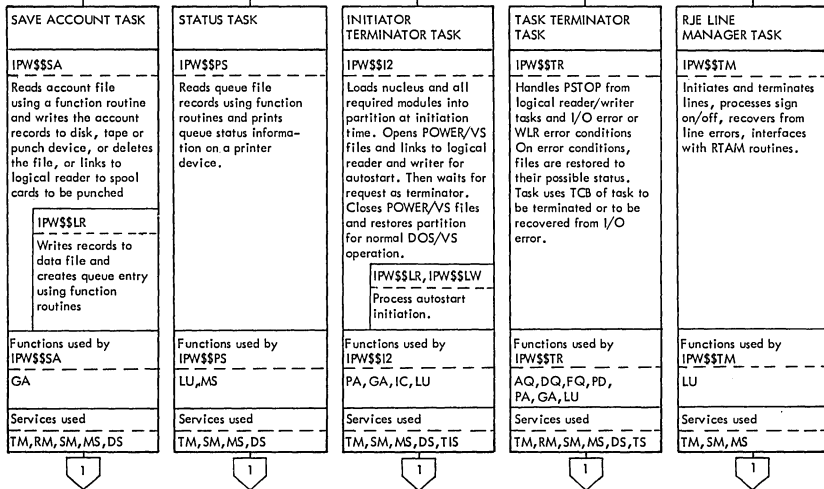
INTERFACES AND TASK STRUCTURES







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POWER/VS OPERATOR COMMAND LANGUAGE (POCL)

POWER/VS operator commands include :

- o Task Management commands. Used to control read/write tasks and execution processors.
- o Queue Management commands. Used to control the various input/output queues.
- o Miscellaneous commands. Enable the operator ro, for example, align printer forms or save the POWER/VS account file.

The operator commands consist of two fields, the operation field and the operand field. The operand field contains one or more parameters, separated by commas, or contains no parameters at all. The operator commands can be entered in either uppercase or lowercase.

POWER/VS supports abbreviated as well as extended operation codes. All command options (parameters) are valid for both formats.

The following table shows the abbreviated and the extended command codes :

Type	Extended format	Abbreviated format	Function
Task management	PSTART	S	start a task or partition
	PSTOP	P	stop a task or partition
	PGO	G	activate a task or partition
	PEND*	-	end POWER/VS execution
	PCANCEL	C	cancel a POWER/VS status report
Queue management	PFLUSH	F	flush an active job entry
	PRESTART	T	restart a write task
	PDISPLAY	D	display a job status
	PALTER	A	alter attributes
Miscellaneous	PDELETE	L	delete a job entry or a message
	PRELEASE	R	release a job entry
	PBRDCST	B	transmit a message
	PINQUIRE	I	check terminal status
	PACCOUNT	J	process account file
	PSETUP	-	print page layout

The one-character operation code for PEND, (E) is not supported, since the operator might inadvertently end the execution of POWER/VS.

POWER/VS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Task Management commands

Operation	Operand	Comments
<p>{PSTART S}</p> <p>(non-diskette)</p>	<p>{ task, uraddr, [class] task, uraddr, tapeaddr partition [class] RJE, lineaddr [,password] }</p>	<p>task : RDR, LST or PUN uraddr : Its format is either : cuu or X'cuu'. lineaddr : Its format is either : cuu or X'cuu'. tapeaddr : Its format is : X'cuu'. password : Any combination of up to eight alpha- numeric characters. class : The meaning of this parameter depends on the type of task to be started.</p>
<p>{PSTART S}</p> <p>(diskette data-mode processing)</p>	<p>RDR, uraddr1, class2, uraddr 2</p>	<p>For a write task, "class" defines the output class(es) upon which the task operates. Up to four classes can be designated by specifying one to four alphabetic characters from A through Z. The order specified is the order in which the classes will be processed. If no class parameter is specified, only class A is selected.</p>
<p>{PSTART S}</p> <p>(diskette sysin-mode processing)</p>	<p>RDR, uraddr 2 [class] [file-id] [1 , number-of-diskettes] [L S][L V]</p>	<p>For a read task, "class" defines the input class that is assigned to all jobs without a class specification in their * \$\$ JOB cards, when no CTL statement is in effect. It may be specified as an alpha- numeric character from A through Z or from 0 through 4. If no class parameter is specified, class defaults to A.</p>

POWER/VS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Task Management commands (...continued)

Operation	Operand	Comments
PSTART, S (c'ntd)		<p>class : For a partition, "class" (c'ntd) defines the input class(es) that can be executed in this partition. Up to four classes can be designated by specifying one to four alphameric characters from A through Z or from 0 through 4. The order specified is the order in which the classes will be executed. If no class is specified, only job entries with matching partition-type (0-4) input class are selected</p> <p>partition : BG, F4, F3, F2 or F1.</p> <p>uraddr 1 : physical device address of cardreader in form X'cuu' or cuu</p> <p>uraddr 2: physical device address of 3540 diskette in form X'cuu' or cuu.</p> <p>file-id : File name as in HDR 1 label of the diskette. Can be specified with or without quotes. Blank characters are only allowed when filename specified within quotes.</p> <p>number-of-diskettes : Can be one to three digits, allowed values from 1 to 255</p> <p>S : Volume sequence checking. Sequence numbers must start with 1 and be incremented by 1. When omitted, no checking will take place.</p> <p>V: File verification. When omitted, verify field in HDR1 label is ignored.</p>

POWER/V5 OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Task Management commands (...Continued)

Operation	Operand	Comments
$\left\{ \begin{array}{l} \text{PSTOP} \\ \text{P} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{uraddr } [, \text{EOJ} \\ \text{partition} \\ \text{lineaddr } [, \text{EOJ}] \end{array} \right\}$	<p>uraddr : Format is : <u>cuu</u> or <u>X'cuu'</u>.</p> <p>RESTART: Applies only to output processing.</p> <p>partition : BG, F4, F3, F2 or F1.</p> <p>lineaddr : Its format is either : <u>cuu</u> or <u>X'cuu'</u>.</p>
$\left\{ \begin{array}{l} \text{PGO} \\ \text{G} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{uraddr} \\ \text{partition, cuu} \end{array} \right\}$	<p>uraddr : Its format is either <u>cuu</u> or <u>X'cuu'</u></p> <p>partition, cuu : specifies the partition and unit record device address whose output is being spooled to tape.</p>
PEND	$\left[\begin{array}{l} \text{uraddr} \\ \text{KILL } [, \text{uraddr}] \end{array} \right]$	<p>uraddr : Its format is either <u>cuu</u> or <u>X'cuu'</u>.</p> <p>KILL : Terminates POWER/V5 immediately. Partitions supported by POWER/V5 are also cancelled.</p>
$\left\{ \begin{array}{l} \text{PCANCEL} \\ \text{C} \end{array} \right\}$	[STATUS]	STATUS : A confirmation message is issued.
$\left\{ \begin{array}{l} \text{PFLUSH} \\ \text{F} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{uraddr } [, \text{HOLD}] \\ \text{partition } [, \text{HOLD}] \end{array} \right\}$	<p>uraddr : Its format is either <u>cuu</u> or <u>X'cuu'</u>.</p> <p>HOLD : specifies that the corresponding job entry is <u>not</u> to be deleted, but put in the hold state.</p> <p>partition : BG, F4, F3, F2, or F1.</p>
$\left\{ \begin{array}{l} \text{PRESTART} \\ \text{T} \end{array} \right\}$	uraddr [,n]	<p>uraddr : Its format is either <u>cuu</u> or <u>X'cuu'</u></p> <p>n : signed or unsigned value from 0 to 9999.</p>

POWER/VS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Queue Management commands

Operation	Operand	Comments
<p>{ ALTER A }</p>	<p>queue, { jobname [,jobnumber] ALL *abc class 1 [,PRI = priority] [,DISP = disposition] [,CLASS = class 2] [,COPY = number of copies] [,REMOTE = remid]</p>	<p>queue : LST, PUN or RDR jobname : can be 2 to 8 characters jobnumber : may be 1 to 5 digits long. *abc : requests to alter all job entries that have the first n characters of their jobnames in common. "abc" represents any combination of from one to seven alphanumeric characters. class 1: specifies class of job entries to be altered. Can be any alphabetic character (A-Z) and for input classes also from 0-4. priority : A single digit from 0 to 9. Nine is the highest priority. disposition : can be H,K, L or D. class 2: any alphabetic character (A-Z). Also, specifications from 0 through 4 are allowed for input classes. number of copies : can be from 0 to 99. remid : can be specified as any number from 0 to 200. '0' indicates the central location.</p>
<p>{ PDELETE L }</p>	<p>{ queue, jobname [,jobnumber] queue, ALL queue, class queue, *abc MSG [,n] }</p>	<p>queue : LST, PUN or RDR. jobname : Can be 2 to 8 alphanumeric characters. jobnumber : Can be 1 to 5 digits long *abc : All job entries with the same first n character, are to be deleted. "abc" represents any combination of up to seven alphanumeric characters. MSG, n : ALL USERS-type message number n is to be deleted.</p>

POWER/VIS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Queue Management commands (continued)

Operation	Operand	Comments
<p>{ PDISPLAY } D</p>	<p>{ queue, jobname [,jobnumber] queue [,ALL] queue, HOLD queue, FREE queue, RJE [,remid] queue, LOCAL queue, *abc queue, class ALL [,listaddr] HOLD FREE RJE [,remid] LOCAL *abc MSG A M Q</p>	<p>queue : LST, PUN or RDR jobname : Can be 2 to 8 characters. jobnumber : Can be 2 to 5 digits ALL : If queue parameter is not specified, status information on all entries in all queues is displayed on SYSLOG. listaddr : Its format is : cuu or X'cuu'. class : Can be specified as a character from A through Z or from 0 to 4 (input class only). *abc : specifies a request for the status of all job entries having the first n characters of their jobnames in common. "abc" represents any combination of from one to seven alphameric characters. If the queue parameter is not specified, status information is displayed for all queues.</p>
<p>{ PRELEASE } R</p>	<p>{ queue, jobname [,jobnumber] queue [,ALL] queue, class queue, *abc</p>	<p>queue : LST, PUN or RDR. jobname : Can be 2 to 8 alphameric characters. jobnumber : Can be 1 to 5 digits long. *abc : all job entries with the same first n characters are to be released. "abc" represents any combination of up to seven alphameric characters.</p>

POWER/VS OPERATOR COMMANDS LANGUAGE (POCL) (...Continued)

Miscellaneous commands

Operation	Operand	Comments
{ PINGUIRE I }	{ lineaddr ALL }	lineaddr : Its format is : cuu or X'cuu' ALL : Status of all supported lines are to be displayed
{ PBRDCST B }	remid, 'text'	remid : Can be from 1 to 200. A specification of ALL USERS indicates all users. 'text' : Can be 1 to 40 characters.
{ PACCOUNT J }	[tapeaddr [, filename] DISK, filename DEL]	If no operands specified, the account file is spooled to disk. tapeaddr : Can be : cuu X'cuu' cuu,ss X'cuu'ss cuu'X'ss X'cuu',X'ss' filename : If specified, the file created will be a standard labeled tape file. May be 1 to 8 alphameric characters long. DISK,filename : "filename" is 1 to 8 alpha- meric characters long
PSETUP	uraddr [,n]	uraddr : Its format is : cuu or X'cuu' n : one or two digits that specify the number of pages to be printed.

POWER/VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL)

There are four types of commands :

- * Terminal control commands. Start and stop user sessions.
- * Task management commands. Apply to RJE write tasks. (The RJE read task is started by the central operator when he brings up the line, and its operation is controlled by the system, as are execution processors.)
- * Queue management commands. Apply to jobs that are submitted by or routed to the same remote-id as the one issuing the command.
- * Miscellaneous commands. Print page layouts or transmit messages.

The following table includes all valid commands.

Type	Command	Function
Terminal control	* .. SIGNON	start a user session
	* .. SIGNOFF	terminate a user session
Task management	* .. START	start a writer or start message generation
	* .. STOP	stop a writer or stop message generation
	* .. GO	re-activate a write task
	* .. FLUSH	flush an activate job entry
	* .. RESTART	restart a writer
Queue management	* .. DISPLAY	display a job status
	* .. ALTER	alter job attributes
	* .. DELETE	delete a job or a message
	* .. RELEASE	release a job
Miscellaneous	* .. BRDCST	transmit a message
	* .. SETUP	print page layout

POWER/VS RJE terminal commands are entered on punched cards through the reader at the terminal. They must be submitted outside POWER/VS job boundaries, otherwise they are treated as user data.

Each RJE command consists of the following fields :

1. Identification field. Contains an * in column 1, blank in column 2, and .. (periods) in columns 3 and 4. Column 5 must be blank.
2. Operation field. Specifies the RJE command. At least one blank must separate this field from the following field.
3. Operand field. Contains one or more parameters, separated by commas. At least one blank must separate the operand field and the comments field.

POWER, VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

- 4 Comments field. May contain any information considered helpful by the user. Continuation of the comments field is not allowed.

The operation field, operand field, and comments field must be contained in columns 6 through 71. Column 72 must be blank.

- 5 Sequence field. Sequence numbers are useful when a number of commands with the same operation code are submitted from a terminal. Columns 73 - 80 are returned in diagnostic messages.

Terminal commands

Operation	Operand	Comments
* .. SIGNON	remid [,password][,user information]	remid : Remote users are identified by numbers from 1 to 200. password : Can be any combination of up to eight alphameric characters. user information : Up to 16 bytes of user information, punched in columns 56 to 71.
*... SIGNOFF		

Task Management commands

Operation	Operands	Comments
* .. START	{ task task, class MSG }	task : LST or PUN class : Up to four classes can be designated by specifying one to four alphabetic characters from A through Z. MSG : specifies that all subsequent broadcast messages directed to this terminal are to be accepted.

POWER/VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

Task Management commands (continued)

Operation	Operands	Comments
* .. STOP	$\left\{ \begin{array}{l} \text{task} \\ \text{task, EOJ} \\ \text{task, RESTART} \\ \text{MSG} \end{array} \right\}$	<p>task : LST or PUN.</p> <p>EOJ: Stop until current entry has completed processing.</p> <p>RESTART : When the task is started again, processing will begin at the record following the last one processed before the STOP comment was issued.</p> <p>MSG : All subsequent broadcast messages directed to the terminal are to be ignored.</p>
* .. GO	task	task : LST or PUN
* .. FLUSH	$\left\{ \begin{array}{l} \text{task} \\ \text{task, HOLD} \end{array} \right\}$	task : LST or PUN
* .. RESTART	$\left\{ \begin{array}{l} \text{task} \\ \text{task, n} \end{array} \right\}$	<p>task : LST or PUN</p> <p>n : Signed or unsigned value from 0 to 9999.</p>

Queue Management commands

Operation	Operands	Comments
* .. DISPLAY	$\left\{ \begin{array}{l} \text{queue, jobname [,jobnumber]} \\ \text{queue [,ALL]} \\ \text{queue, HOLD} \\ \text{queue, FREE} \\ \text{queue, *abc} \\ \text{queue, class} \\ \text{ALL} \\ \text{HOLD} \\ \text{FREE} \\ \text{*abc} \\ \text{MSG} \end{array} \right\}$	<p>queue : LST, PUN or RDR</p> <p>jobname : Can be two to eight alphameric characters</p> <p>jobnumber : One to five digits long.</p> <p>class : Can be specified as an alphameric character from A through Z, or from 0 to 4.</p> <p>*abc: Requests the status of all entries having the first n characters of their jobnames in common.</p>

POWER/V5 REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

Queue Management commands (continued)

Operation	Operands	Comments
<p>* .. DISPLAY (continued)</p>		<p>"abc" represents any combination of from one to seven characters. If the queue parameter is not specified, status information is displayed for all queues.</p> <p>MSG : Requests the display of all ALLUSERS-type messages that have been entered, together with their originators and all operator messages routed specifically to this remote-id. Operator messages are automatically deleted when they are displayed.</p>
<p>* .. ALTER</p>	<pre> queue {jobname [,jobnumber]} {ALL *abc class 1} [,PRI=priority] [,DISP=disposition] [,CLASS=class 2] [,COPY=number-of-copies] [,REMOTE=remid] </pre>	<p>queue : LST, PUN or RDR.</p> <p>jobname : Can be two to eight alphameric characters.</p> <p>jobnumber : May be one to five digits long.</p> <p>priority : Specified as a single digit from 0 to 9. Nine is the highest priority.</p> <p>disposition : Can be specified as H, K, L, or D.</p> <p>class 1 : class of which all job entries are to be altered</p> <p>class 2 : can be specified as any alphabetic character from A through Z. Also, specifications from 0 through 4 are allowed for input classes.</p> <p>remid : can be specified as any number from 0 to 200. "0" indicates the central location. Only the "to" remote-id can be modified with an ALTER command; the "from" remote-id cannot be modified.</p>

POWER/VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

Queue Management commands (continued)

Operation	Operands	Comments
* .. DELETE	$\left\{ \begin{array}{l} \text{queue, jobname[, jobnumber]} \\ \text{queue, ALL} \\ \text{queue, class} \\ \text{queue, *abc} \\ \text{MSG[,n]} \end{array} \right\}$	<p>queue : LST, PUN or RDR.</p> <p>jobname : Can be two to eight alphanumeric characters.</p> <p>jobnumber : The jobnumber is from one to five digits long. The DISPLAY command can be used to obtain the jobnumber.</p> <p>*abc: All job entries with the same first n characters are to be deleted. "abc" represents any combination of up to seven alphanumeric characters.</p> <p>MSG,n: "n" is the message number. If n is omitted, all ALLUSERS-type messages that were entered from this remote-id are deleted.</p>
* .. RELEASE	$\left\{ \begin{array}{l} \text{queue, jobname[,jobnumber]} \\ \text{queue[,ALL]} \\ \text{queue, class} \\ \text{queue, *abc} \end{array} \right\}$	<p>queue : LST, PUN or RDR</p> <p>jobname : Can be two to eight alphanumeric characters.</p> <p>jobnumber : The jobnumber is one to five digits long.</p> <p>*abc: All job entries with the same first n characters are to be released. "abc" represents any combination of up to seven alphanumeric characters.</p>

POWER/VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

Miscellaneous commands

Operation	Operands	Comments
* .. BRDCST	remid, 'text'	<p>remid : Remote users can be identified by numbers from 1 to 200. A specification of 0 indicates the central location, and a specification of ALLUSERS indicates all users.</p> <p>'text': The message can consist of from 1 to 40 characters enclosed in single quotation marks. A single quotation mark within the message must be written as two quotation marks.</p>
* .. SETUP	LST [,n]	<p>n : one or two digits that specify the number of pages to be printed.</p>

POWER/VS JOB ENTRY CONTROL LANGUAGE (JECL)

The following table shows the JECL statements and their functions :

JECL Statement	Function
* \$\$ CTL	Specifies a default input class
* \$\$ JOB	Indicates the beginning of a POWER/VS job and provides handling information
* \$\$ EOJ	Indicates the end of a POWER/VS job
* \$\$ RDR	Inserts a diskette file into the input stream
* \$\$ LST/ * \$\$ PRT	Provides handling information for printed output
* \$\$ PUN	Provides handling information for punched output
* \$\$ SLI	Inserts data from a sublibrary into the job stream
* \$\$ /*	Used in a source statement library book to indicate the end of a DOS/VS job step (used for the SLI statement only)
* \$\$ /&	Used in a source statement library book to indicate the end of a DOS/VS job (used for the SLI statement only)
* \$\$ DATA	Inserts data into a book retrieved from a source statement library.

Each JECL statement consists of the following fields.

1. Identification field. Contains the characters * \$\$ (asterisk-blank-dollar-dollar) in columns 1 through 4.
2. Operation field. Specifies the JECL operation. It can directly follow the second dollar sign or be separated from the second dollar sign by one or more blanks. At least one blank must be placed between the operation field and the operand field.
3. Operand field. Contains one or more keyword or positional parameters, separated by commas. Keyword and positional parameters cannot be mixed within one statement.
4. Comments field. Can contain any information considered helpful by the user.
5. Sequence field. Contains up to eight characters of optional information used for control statement identification. If present, the sequence field is positionally dependent and must be coded starting in column 73.

POWER/VS JOB ENTRY CONTROL LANGUAGE (JECL) (...Continued)

Operation	Operand	Comments
*\$\$ CTL	CLASS = $\left\{ \begin{array}{l} \text{A} \\ \text{Class} \end{array} \right\}$	Class : Can be specified as an alphameric character from A-Z or 0-4.
*\$\$ JOB	<p>keyword form :</p> $\left[\begin{array}{l} \text{JNM} = \left\{ \begin{array}{l} \text{AUTONAME} \\ \text{jobname} \end{array} \right\} \\ \text{,DISP} = \left\{ \begin{array}{l} \text{D} \\ \text{disposition} \end{array} \right\} \\ \text{,PRI} = \text{priority} \\ \text{,CLASS} = \text{class} \\ \text{,USER} = \text{user-information} \end{array} \right]$ <p>positional form</p> $\left[\begin{array}{l} \text{AUTONAME} \\ \text{jobname} \\ \text{,} \left[\begin{array}{l} \text{D} \\ \text{disposition} \end{array} \right] \\ \text{,} \left[\text{priority} \right] \\ \text{,} \left[\text{class} \right] \end{array} \right]$	<p>jobname : A JECL jobname specification can be from 1 to 8 alphameric characters, beginning with an alphabetic character.</p> <p>disposition : D, H, K or L.</p> <p>priority : It is specified as a single digit from 0 to 9. Nine is the highest priority.</p> <p>class : It can be specified as an alphameric character from A-Z or 0-4.</p> <p>user-information : Up to 16 bytes of user information can be specified, within quotes.</p>
*\$\$ EOJ		
*\$\$ RDR	<p>keyword form :</p> <p>DEV = phys. unit number</p> $\left[\begin{array}{l} \text{,FID} = \text{file-id} \\ \text{,NOD} = \frac{1}{\text{number of diskettes}} \\ \text{,VSC} = \left\{ \begin{array}{l} \text{NO} \\ \text{YES} \end{array} \right\} \\ \text{,VER} = \left\{ \begin{array}{l} \text{NO} \\ \text{YES} \end{array} \right\} \end{array} \right]$ <p>positional form :</p> <p>Physical unit-number</p> $\left[\begin{array}{l} \text{,} \left[\text{'file-id'} \right] \\ \text{,} \left[\frac{1}{\text{number of diskettes}} \right] \\ \text{,} \left[\text{S} \right] \end{array} \right]$	<p>Physical-unit number : Parameter is used for Data-mode processing. Omitted for SYSIN-processing. Identifies the physical unit number of the diskette either in the form X'cuu' or cuu.</p> <p>File id : Specific file name as appears in the HDR1 label on the diskette. Can be one to eight alphameric characters between quotes.</p> <p>Number of diskettes : One to three digits can be specified.</p> <p>VSC : Volume sequence numbers must start with 1.</p> <p>S : same as for VSC.</p>

POWER/VS JOB ENTRY CONTROL LANGUAGE (JECL) (...Continued)

Operation	Operand	Comments
	keyword form :	
* \$\$ $\left\{ \begin{array}{l} \text{LST} \\ \text{PRT} \end{array} \right\}$	$\left[\begin{array}{l} \text{DISP} = \left\{ \begin{array}{l} \text{D} \\ \text{disposition} \end{array} \right\} \\ , \text{CLASS} = \left\{ \begin{array}{l} \text{A} \\ \text{class} \end{array} \right\} \\ , \text{REMOTE} = \text{remid} \\ , \text{FNO} = \left\{ \begin{array}{l} \text{forms-number} \\ \text{forms-number} \end{array} \right\} \\ , \text{JSEP} = \text{sep} \\ , \text{COPY} = \left\{ \begin{array}{l} 1 \\ \text{number-of-copies} \end{array} \right\} \\ , \text{RBM} = (\text{norbm 1}, \text{norbm 2}) \\ , \text{LTAB} = \text{linetab} \\ , \text{RBS} = \text{norbs} \\ , \text{UCS} = (\text{phasename} [, \text{option}]) \\ , \text{FCB} = \text{phasename} \\ , \text{LST} = \text{listaddr} \end{array} \right]$	<p>disposition : D, H, K, L, N or T. remid : Can be a number from 0 to 200. (0 is central installation.) forms-number : Can be one to four alphameric characters long. sep : Can be 0 to 9. number-of-copies : Can be one or two digits long tapeaddr : Can be cuu X'cuu' cuu, X'ss' X'cuu', X'ss' cuu, ss X'cuu', ss norbm 1 : This parameter is one to six digits long. norbm 2 : The number is one to six digits long. linetab : This parameter is 26 digits long ; each subparameter is two digits. The format of linetab is : d0, d1, d2, ... d12 norbs : This parameter can be one to six digits long. A zero means that no segmentation will take place. phasename : The format of the parameter is (phasename, option), where "option" can be specified as F, C, CF, or FC. listaddr : The address can be either in the form SYSxxx, where xxx is LST or any valid programmer logical unit ; or in the form cuu (or X'cuu').</p>
	positional form :	
* \$\$ $\left\{ \begin{array}{l} \text{LST} \\ \text{PRT} \end{array} \right\}$	$\left[\begin{array}{l} \text{D} \quad \left[\begin{array}{l} \text{A} \\ \text{class} \end{array} \right] \\ \text{disposition} \quad \text{class} \\ , \left\{ \begin{array}{l} \text{forms-number} \\ \text{forms-number} \end{array} \right\} \\ , \left\{ \begin{array}{l} 1 \\ \text{number-of-copies} \end{array} \right\} \\ (\text{tapeaddr}) \\ , \text{norbm 1} \\ , \text{linetab} \end{array} \right]$	

POWER/VS JOB ENTRY CONTROL LANGUAGE (JECL) (...Continued)

Operation	Operand	Comments
<p>keyword form :</p> <p>* \$\$ PUN</p>	<p>[DISP = { $\frac{D}{\text{disposition}}$ }]</p> <p>[, CLASS = { $\frac{A}{\text{class}}$ }]</p> <p>[, REMOTE = remid]</p> <p>[, FNO = { $\frac{\cancel{12345}}{\text{forms-number}}$ }]</p> <p>[, JSEP = sep]</p> <p>[, COPY = { $\frac{1}{\text{number-of-copies}}$ }]</p> <p>[, TADDR = (tapeaddr)]</p> <p>[, RBM = (norbm 1, norbm 2)]</p> <p>[, PUN = punaddr]</p> <p>[, RBS = norbs]</p> <p>positional form :</p> <p>* \$\$ PUN</p> <p>[$\frac{D}{\text{disposition}}$ [$\frac{A}{\text{class}}$]]</p> <p>[, $\frac{\cancel{12345}}{\text{forms-number}}$]</p> <p>[, { $\frac{1}{\text{number-of-copies}}$ }]</p> <p>[(tapeaddr)]</p> <p>[, norbm 1]</p>	<p>disposition : D, H, I, K, L, N or T.</p> <p>class : Can be specified as any alphabetic character.</p> <p>remid : Can be a number from 0 to 200. Numbers 1 to 200 are specific remote users. If remid is 0, punch output is directed to the central installation.</p> <p>forms-number : One to four alphameric characters long.</p> <p>sep : Number of job separator cards (0 to 9).</p> <p>number-of-copies : One or two digits long.</p> <p>tapeaddr : Format :</p> <p>cuu X'cuu' cuu, X'ss' X'cuu', X'ss' cuu, ss X'cuu', ss.</p> <p>norbm 1 : One to six digits long.</p> <p>norbm 2 : One to six digits long.</p> <p>punaddr : The address can be either in the form SYSxxx where xxx is PCH or any valid programmer logical unit ; or in the form cuu (or X'cuu').</p> <p>norbs : Can be one to six digits long. A zero means that no segmentation will take place.</p>
<p>* \$\$ SLI</p>	<p>[sublid.] bookname</p>	<p>At execution time, the * \$\$ SLI (source library inclusion) statement causes the private and system source libraries to be searched for a book, which, when found, is inserted into the job stream.</p>

POWER/VS JOB ENTRY CONTROL LANGUAGE (JECL) (...Continued)

Operation	Operand	Comments
* \$\$/*		
* \$\$/&		
* \$\$ DATA	name	name : can be from one to eight alphameric characters, the first character must be alphabetic.

POWER/VS CONTROL BLOCKS

CONTROL ADDRESS TABLE (CAT)

Included by definition macro IPWS\$DPA for the permanent area.

This table consists of a set of tables, addresses and constants in the permanent area of the POWER/VS partition, used to link the component routines of the POWER/VS subsystem during execution.

Bytes		Description/function of field
Dec	Hex	
		Control address table
00-15 16-19 20-23 24-27 28-31 32-35 36-39 40-43 44-47	00-0F 10-13 14-17 18-1B 1C-1F 20-23 24-27 28-2B 2C-2F	Storage descriptor (CAT) POWER/VS master ECB Start address POWER/VS partition Start address fixable area Start address pageable area End address POWER/VS partition + 1 Start address LTA End address LTA +1 Address of POWER/VS PIB
		Relocation constant
48-51	30-33	Relocation constant used by initiator to calculate the relocation factor for addresses in the following tables. (To enable POWER/VS to be loaded in any partition.) Value = X'170'.
		External interface addresses
52-55 56-59 60-63 64-67 68-71 72-75	34-37 38-3B 3C-3F 40-43 44-47 48-4B	Attention interface Page fault appendage Hot reader routine RJE CE appendage SVC 0 appendage SVC 90/91 appendage
		Resource control block addresses. These addresses are collectively referenced by label CAFR.
76-79 80-83 84-87 88-91	4C-4F 50-53 54-57 58-5B	Disk management block Account control block Storage control block Message control block

POWER/VS CONTROL BLOCKS (...CONTINUED)

CONTROL ADDRESS TABLE (CAT)(...Continued)

Bytes		Description/function of field
Dec	Hex	
		Module control block address table The addresses in this table are used by the disk services and are established when the POWER/VS disk files are opened at system start-up time.
92-95 96-99 100-103 104-107 108-111 112-115 116-119 120-123 124-127	5C-5F 60-63 64-67 68-6B 6C-6F 70-73 74-77 78-7B 7C-7F	Accounting module MCB queue file MCB data file module 1 MCB data file module 2 MCB data file module 3 MCB data file module 4 MCB data file module 5 MCB private SSL MCB system SSL
		Task state values and addresses of state processing routines These constants are used by the task management macro instructions to set values within the task selection fields of the task control blocks.
128-131	80-83	The task is inactive, task not selected Branch to TM10
132-135	84-87	Page fault in process, task not selected Branch to TM10
136-139	88-8B	Wait for operator, task not selected Branch to TM10
140-143	8C-8F	Wait on locked resource, test lockword Branch to TM30
144-147	90-93	Wait on LTA, PTA, tets control blocks Branch to TM55
148-151	94-97	Wait on multiple posting, test control blocks Branch to TM50
152-155	98-9B	Wait on class table posting, test control blocks Branch to TM50
156-159	9C-9F	Wait on single posting, test control block Branch to TM80
160-163	A0-A3	Wait on space posting, test control blocks Branch to TM80
164-167	A4-A7	Immediate dispatch, dispatch the task Branch to TM90
168-171	A8-AB	Wait state. Used for WCB only. Wait routine. Branch to TM20.
172-175	AC-AF	The task is running, no selection address

POWER VS CONTROL BLOCKS (...CONTINUED)

CONTROL ADDRESS TABLE (CAT) (...Continued)

Bytes		Description/function of field
Dec	Hex	
		Permanent TCB addresses
176-179 180-183 184-187 188-191	B0-B3 B4-B7 B8-BB BC-BF	Wait control block Command processor TCB Initialization/termination TCB Line manager TCB
		Task control address table
192-195	C0-C3	Task identifying prefix (L) and the address of the TCB of the line manager (or of the wait control block if the line manager is not present).
196-199	C4-C7	Task identifying prefix (O) and the address of the TCB of the most recently attached auxiliary command processor (or of the permanent command processor if no auxiliary command processor presently exists).
200-203	C8-CB	Task identifying prefix (X) and the address of the TCB of the most recently attached remote (RJE) reader/writer.
204-207	CC-CF	Task identifying prefix (W) and the address of the TCB of the most recently attached local writer task.
208-211	D0-D3	Task identifying prefix (E) and the address of the TCB of the most recently attached execution processor task.
212-215	D4-D7	Task identifying prefix (R) and the address of the TCB of the most recently attached reader task.
216-219	D8-DB	X'FF000000' (list delimiter)
		Module load addresses (listed as loaded in the pageable area)
220-223 224-227 228-231 232-235 236-239 240-243 244-247 248-251 252-255 256-259 260-263 264-267 268-271	DC-DF E0-E3 E4-E7 E8-EB EC-EF F0-F3 F4-F7 F8-FB FC-FF 100-103 104-107 108-10B 10C-10F	Command processor Physical reader Put data record function Logical reader Scan and check parameter function Get data record function Physical list Logical writer Physical punch Execution reader Get data record function (copy 2) Execution writer Put data record function (copy 2)

POWER/VS CONTROL BLOCKS (...CONTINUED)

CONTROL ADDRESS TABLE (CAT) (...Continued)

Bytes		Description/function of field
Dec	Hex	
		Module load addresses (listed as loaded in the pageable area) (...continued)
272-275	110-113	JBCL analysis
276-279	114-117	Reserve queue function
280-283	118-11B	Add to queue function
284-287	11C-11F	Get next from queue function
288-291	120-123	Delete from queue function
292-295	124-127	Free queue function
296-299	128-12B	LUB/PUB update function
300-303	12C-12F	Print queue status report
304-307	130-133	Pass internal command
308-311	134-137	Task terminator
312-315	138-13B	3540 Physical reader
316-319	13C-13F	3540 OPEN function
320-331	140-14B	Reserved
332-335	14C-14F	Remote job entry
336-339	150-153	Remote message handler
340-343	154-157	User reader exit routine
344-347	158-15B	Put account function
348-351	15C-15F	Get account function
352-355	160-163	Save account function
356-359	164-167	Get SSI function
		} optional phases
		Service routine branch table
		The branch instructions are used to transfer control from service routine macro instructions to the appropriate service code.
360-363	168-16B	Attach task
364-367	16C-16F	Detach task
368-371	170-173	Task selection
372-375	174-177	Initial task entry
376-379	178-17B	Reserve resource
380-383	17C-17F	Release resource
384-387	180-183	Reserve workspace
388-391	184-187	Release work space
392-395	188-18B	Message service
395-399	18C-18F	Set write command code
400-403	190-193	Disk service
404-407	194-197	Set read command code
408-411	198-19B	Disk service
412-415	19C-19F	Tape service
416-419	1A0-1A3	Timer service
420-423	1A4-1A7	Remote message service
424-427	1A8-1AB	Address indication service

POWER, VS CONTROL BLOCKS (...CONTINUED)

CONTROL ADDRESS TABLE (CAT) (...Continued)

Bytes		Description/function of field
Dec	Hex	
		Block length table The table is used by the IPW\$RSW macro instruction to identify the size of work space required to accommodate certain control blocks.
428-431 432-435	1AC-1AF 1B0-1B3	Data buffer - set by INIT (amount of storage required to accommodate the data block) Data block - set by INIT (size of record written to disk)
		Miscellaneous non-relocatable constants
436-439 440-443	1B4-1B7 1B8-1BB	Line control block address Reserved
		Statistical information
444-445 446-447 448-451 452-455 456-459 460-463 464-467 468-471 472-475 476-479 480-483 484-487 488-491 492-495	1BC-1BD 1BC-1BF 1C0-1C3 1C4-1C7 1C8-1CB 1CC-1CF 1D0-1D3 1D4-1D7 1D8-1DB 1DC-1DF 1EQ-1E3 1E4-1E7 1E8-1EB 1EC-1EF	Highest remote-id Number of lines Total number of queue records Number of free queue records Maximum number of queue records used Total number of tracks data file Number of free tracks data file Maximum number of tracks used Number of times waiting for storage Total number of pages allocated Current number of pages allocated Maximum number of pages allocated Current number of tasks Maximum number of tasks
		Fullword constants
496-499 500-503 504-507 508-511	1F0-1F3 1F4-1F7 1F8-1FB 1FC-1FF	F'1' F'4' F'8' F'24'
		Translation tables
512-767 768-1023	200-2FF 300-3FF	This table is used to scan sequences of blank characters for the first non-blank character and also as a source of blank characters for various program purposes. This table is used to scan sequences of non-blank characters for the first blank character and also as a source of zero characters for various program purposes.

How to locate : Start of POWER/VS partition + X'140'.

POWER/VS CONTROL BLOCKS (...CONTINUED)

WAIT CONTROL BLOCK (WCB)

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (WCB)
16-19	10-13	Reserved
20-23	14-17	Address of TCB belonging to task with highest priority in TSL
24-27	18-1B	Page fault request word - always zero
28-31	1C-1F	Task selection field Byte 0 : X'E6' Byte 1-3 : Address of routine that tests if a POWER/VS event is posted in main ECB. If no event, it places the POWER/VS partition in wait state by issuing an SVC 7 to DOS/VS supervisor.

How to Locate : Displacement X'B0-B3' of the CAT contains a pointer to the WCB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

STORAGE CONTROL BLOCK (SCB)

Definition macro : IPW\$DSC

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (SCB)
16-19	10-13	Last permanent page
20-23	14-17	First fixed page
24-27	18-1B	Event control block
28-31	1C-1F	Lockword
32-35	20-23	Task register 14
36-39	24-27	Task register 15
40-43	28-2B	Task register 0
44-47	2C-2F	Task register 1
48-51	30-33	Task register 2
52-55	34-37	Task register 3
56-59	38-3B	Task register 4
60-63	3C-3F	Task register 5
64-127	40-7F	Storage assignment table ②
128-135	80-87	Constant to initialize the first BCW (see Figure 5.21) in a new fixed page in the fixable area.
136-143	88-8F	Constant to initialize the last BCW in a new fixed page in the fixable area (see Figure 5.21)
		Page fix/free work area ③
144-147	90-93	Page virtual address ③
148-151	94-97	Page length (-1) ③
152-155	98-9B	End-of-list indicator (X'FF000000')
156-159	9C-9F	Reserved

① Since the storage management routines are used to provide register save areas for task use, the storage control block must contain a register save area for use by the storage management routines.

② The storage assignment table is like a map of the fixable area within the POWER/VS address space in which each page control byte represents a single page of address space. Each byte within the table takes one of four values.

X'00' Page free (and not last page)
 X'40' Page free (and last page)
 X'80' Page in use (but not last page)
 X'C0' Page in use (and last page)

POWER/VS CONTROL BLOCKS (...CONTINUED)

STORAGE CONTROL BLOCK (SCB) (...Continued)

The storage assignment table is defined with all pages free and is properly initialized by the POWER/VS start-up routines to reflect the amount of real storage available to the POWER/VS partition at that time.

- ③ Three fullwords used as a work are by the page-fix and page-free routines. The first word is used to contain the address of the first byte of the page to be fixed or freed; the second word contains binary 2047 (page size minus one); and the third word contains X'FF' in its high-order byte to act as a list terminator.

How to Locate : Displacement X'54-57' of CAT contains a pointer to the SCB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

MESSAGE CONTROL BLOCK (MMB)

Defintion macro : IPW\$DMM

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (MMB)
16-23 24-27 28-31	10-17 18-1B 1C-1F	Work area Reserved Lockword
		CCB
32-33 34-35 36-37 38-39 40 41-43 44-47	20-21 22-23 24-25 26-27 28 29-2B 2C-2F	Residual count Communication bytes Status bytes LUB identifier Flags Channel program address DOS/VS internal use
		Channel program
48-55 56-63	30-37 38-3F	Write CCW Read CCW
64-135	40-87	Message output area
136-183 184-187 188-191	88-87 88-8B 8C-8F	Reply input area Save area for register 5 Constant of character ObOP

How to Locate : Displacement X'58-5B' of the CAT contains a pointer to the MMB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB)

Definition macro : IPW\$DQC

The disk management block area is used to control access to the POWER/VS queue file. It is located in the permanent area of the POWER/VS partition.

The disk management block is divided into the following areas :

- o Resource control fields
- o File control fields
- o Record control fields
- o Master record area
- o Auxiliary account record area
- o Auxiliary queue record area
- o Master class table area .

Detailed Description of Fields :

Bytes		Description/function of field
Dec	Hex	
		Resource control fields They are used to manage the resources contained within the DMB
00-15 16-23 24-27 28-31	00-0F 10-17 18-1B 1C-1F	Storage descriptor (DMB) Reserved Event control block Lockword
		File control fields They contain parameters relating to queue file, data file, and, if used, private and system SSL
32-35 36-39 40-87 88-95	20-23 24-27 28-57 58-5F	Number of records/track queue file ① Number of tracks/cylinder queue file ② Queue file sector table Reserved
96-99 100-103 104-127 128-159	50-63 64-67 68-7F 80-9F	Number of records/track data file ① Number of tracks/cylinder data file ② Track group control table Data file sector table
160-163 164-167 168-215 216-223	A0-A3 A4-A7 A8-D7 D8-DF	Number of records/track SSL ① Number of tracks/cylinder SSL ② SSL sector table Reserved

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
		Record control fields They contain information used to read and write records to and from the master record area and auxiliary queue record area.
224-231 232-235 236-239 240-247 248-251 252-255	E0-E7 E8-E3 EC-EF F0-F7 F8-FB FC-FF	Master record seek address (MBBCHHR) Real master area address Virtual master area address Queue record seek address (MBBCHHR) Real auxiliary queue record area address Virtual queue record area address
		Master record area The master record is written as the first physical record within the queue file extent. During POWER/VS execution a copy of the master record is maintained in this area. Whenever this copy is updated a replacement master record is at once written to the queue file so that, in the event of a failure of the system, warm start information can be recovered from the direct access device in question.
256-263	100-107	Date These eight bytes contain the date of POWER/VS execution in the format chosen at system generation (dd/mm/yy or mm/dd/yy).
264-267	108-10B	POWER/VS start time These four bytes contain the start time of POWER/VS execution in packed decimal format.
268-271	10C-10F	Reserved
272-275	110-113	Data block size This fullword contains a fixed-point binary value representing the block size of the data blocks within the data file.
276-279	114-117	Track group size This fullword contains a fixed-point binary value representing the number of tracks within each track group within the data file.

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
280-281	118-119	Version and modification level Two numeric characters representing the version and modification level of POWER/VS used.
		Programming Note : The following 6 switch bytes preserve the options established by the POWER/VS user at the time he generated his version.
282	11A	Source library switch This byte contains a single alphabetic character representing the source statement sublibrary to be associated, unless otherwise specified, with any JECL SLI statements encountered in the read queue.
283	11B	Job accounting switch This byte contains a single alphabetic character ; the character A indicates that POWER/VS job accounting is required; a blank character indicates that POWER/VS accounting is not required.
284	11C	Reserved
285	11D	LOG option switch (set to character L if JLOG=YES and blank if JLOG=NO)
286	11E	Termination status. Contains character A for incomplete session or abnormal termination. Otherwise, it contains character N, meaning normal termination. Note : It will contain an A during the session.
287	11F	Reserved
		Programming Note : The following 14 bytes contain standard POWER/VS default values used when new queue records are created.
288-295	120-127	Default job name These eight bytes contain the character string 'AUTONAME' used as a default job name.
296-297	128-129	Master job number This halfword contains a fixed-point binary value representing the next job number to be assigned by POWER/VS. It is incremented by one each time it is used.

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
298	12A	Master queue identifier This byte contains the alphabetic character M to show that this is the master record.
299	12B	Default class attribute This byte contains the alphabetic character A representing the class attribute to be given by default to each RDR queue entry created within POWER/VS.
300	12C	Default priority attribute This byte contains numeric character 3 which defines the priority attribute to be given by default to each queue entry created by POWER/VS.
301	12D	Default cancel code This byte contains the hexadecimal characters X'10' representing normal end of job and task
302-303	12E-12F	Reserved
		Programming Note : Next 16-byte field contains the master line table, consisting of system default values used to analyse space and skip operations during printer control carriage simulation.
304-319	130-13F	Line table
		Programming Note : Next 16 bytes contain the master list values, which will be inserted by default in list queue records, unless overridden by a JECL statement. (Values are set by IPW\$\$I1 using those specified by user during POWER/VS generation (JSEP=, RBS=, STDLINE=))
320-322	140-142	Reserved
323	143	Number of separators
324-327	144-147	Records before segmentation
328-331	148-14B	Records before message
332-335	14C-14F	Records before message
		Programming Note : Next 16 bytes contain the master punch values, which will be inserted by default in punch queue records, unless overridden by a JECL statement. (Values set by IPW\$\$I1 using those specified by user during POWER/VS generation. (JSEP=, RBS=, STDCARD=))

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
336-338 339 340-343 344-347 348-351	150-152 153 154-157 158-15B 15C-15F	Reserved Number of separators Records before segmentation Records before message Records before next message
		<u>Programming Note</u> : Next 10 bytes contain account file values.
352-359	160-167	Account file seek address (MBBCCHHR) Contains the direct access storage seek address of the last record in the POWER, VS account file.
360-361	168-169	Account file record maximum size Binary value representing the length of the longest record so far written to the account file.
362-375	16A-177	Reserved
		<u>Programming Note</u> : Next 32 bytes contain free queue pointers.
376-383	178-17F	First record in free queue (MBBCCHHR)
384-407	180-197	Reserved
		Auxiliary account record area This area actually overlaps the auxiliary queue record area, because the account record consists of the first part of the queue record which is built in that area. All account records except execution account are transferred from here to the account file as standard variable length records.
408-415	198-19F	Block and record length This record control field is used for sequential access method.
		Auxiliary queue record area (152 bytes) This area is required as a work space for an additional queue record. For example, for updating class chain addresses during the add to queue function. The first part (96 bytes) of the Q record contains body fields (information pertinent to this particular queue entry and the user job which created it).

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
416-423	1A0-1A7	Date in format specified at SYSGEN (mm/dd/yy or dd/mm/yy)
424-427	1A8-1AB	Operation start time, in packed decimal (0HHMMSSSF ; F = sign)
428-431	1AC-1AF	Operation end time (0HHMMSSSF ; F = sign)
432-447	1B0-1BF	16 bytes user information
448-455	1C0-1C7	Job name Job name associated with this particular POWER/VS or DOS/VS job. If no job name is provided by the user the default value AUTONAME is set into this field.
456-457	1C8-1C9	Job number Contains a binary job number assigned to the job upon its entry into the system and thereafter available for further identification of jobs with a common job name.
458	1CA	Queue record identifier R = read queue record L = list queue record P = punch queue record F = free queue record D = dummy queue record.
459	1CB	POWER/VS cancel codes <u>Cancel Code</u> <u>Condition</u> X'10' Normal end of POWER/VS job or task ③ X'20' PCANCEL has been issued X'30' PSTOP has been issued ④ X'40' PFLUSH has been issued X'50' PDELETE has been issued X'60' PFLUSH has been issued via RDREXIT X'70' Canceled due to I/O error
460	1CC	Line identifier/device type
461-463	1CD-1CF	Channel and unit (line address)

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
464	1D0	From-terminal identifier
465	1D1	To-terminal identifier
466	1D2	Class (default = A)
467	1D3	Priority (default = 3) This single byte contains the priority value (numeric 0 to 9), assigned by the user to this job operation.
468-471	1D4-1D7	Record count Binary counter that represents the number of input or output data records associated with the read, list, or punch operation (data transfer and control operations).
472-473	1D8-1D9	Number of tracks for output storage Binary counter recording the number of tracks within the data file used to contain data input or output for this particular job operation.
474	1DA	Job suffix number Binary job suffix number assigned to each successive operation (read, list, or punch) performed on behalf of the job. It may be used to identify output sets produced by jobs handling segmented output.
475	1DB	Number of copies This single byte contains a binary value indicating the number of copies of printed or punched output that are to be produced when the output is processed by the writer tasks. It has no use within input-related queue records.
476-479	1DC-1DF	Forms identifier Alphanumeric forms or card identifier of any special stationery or card stock to be used when creating the physical output from the job. A blank value indicates that no special requirement exists. The field has no use within input-related queue records.
480-483	1E0-1E3	Number of additional records.

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
484-485	1E4-1E5	Number of pages (number of skips to channel 1)
486-487	1E6-1E7	Number of extra pages
488-491	1E8-1EB	Line/card counter (data transfers only)
492-495	1EC-1EF	Restart page counter (used when PRESTART command given)
496	1F0	Copies remaining (used when PRESTART command given)
497	1F1	Not used
498	1F2	Disposition (default = D)
499	1F3	Number of separators Binary value indicating the number of printed output separators to be produced. It has no use within input-related queue records.
500-503	1F4-1F7	Number of records before segmentation (count driven segmentation)
504-507	1F8-1FB	Records before message Binary value representing the maximum number of list or punch data records that is to be tolerated by this job. When the record count exceeds the maximum value a warning message is output to the system operator.
508-511	1FC-1FF	Records before next message Additional number of list or punch data records that is to be tolerated by the job each time the record count exceeds the maximum value specified in the preceding field and the system operator elects to continue execution of the job.
512-513	200-201	3540 Physical device address (packed)
514-519	202-207	Reserved
		The second portion (56 bytes) of the queue record contain control fields (information relating to the status of the queue record and to its position within the POWER/VS queues).
520	208	Execution switch x = job in execution b = job not in execution
521	209	First in set switch

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
522	20A	Segmentation type c = count driven segmentation p = program driven segmentation d = data driven segmentation b = no segmentation
523-535	20B-217	Reserved
536-543	218-21F	Next record in set (MBBCCCHHR) M = index in module control block address table in CAT.
544-551	220-227	Pointer to previous queue record (MBBCCCHHR) M = index in module control block address table in CAT. The meaning of this pointer depends on the value of the contents in field QCFS. (displ. X'201')
552-559	228-22F	Pointer to next queue record (MBBCCCHHR) M = index in module control block address table in CAT. The meaning of this pointer depends on the value of the contents in field QCFS. (displ. X'201')
560-567	230-237	Seek address of first data block (MBBCCCHHR) M = index in module control block address table in CAT. Seek address of the first read, list, or punch data block associated with the input or output described by this queue record.
568-575	238-23F	Reserved
		Master class table area Defines the status of the POWER/VS queues.
576-703	240-2BF	Reader class area (32 entries, that is, 1 dummy entry and 31 entries 0-4 and A-Z)
704-831	2C0-33F	List class area (32 entries, that is, 6 dummy entries and 26 entries A-Z)
832-959	340-3BF	Punch class area (32 entries, that is, 6 dummy entries and 26 entries A-Z)

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hec	
		<p>Each entry is defined as a class list entry (DSECT=) and consists of the following two 2-byte fields :</p> <p>1st field: Relative record number of first queue record in queue set in this class chain.</p> <p>2nd field: Relative record number of last queue record in queue set in this class chain.</p> <p>The high-order bit in the last field indicates whether there is a queue entry in this class that can be dispatched.</p>

- ① This fullword contains a fixed-point binary value, representing the number of records per track characterising the DASD on which the file is located.
- ② This fullword contains a fixed-point binary value, representing the number of tracks per cylinder characterising the DASD on which the file is located.
- ③ This code indicates that the corresponding queue entry was not affected by an abnormal POWER/VS termination. The DOS/VS jobs associated with the queue entry, however, could have been canceled via DOS/VS.
- ④ The PSTOP cancel code will not be stored in an account record if the EOJ option was specified with the PSTOP command.

How to Locate : Displ. X'4C-4F' of CAT contains pointer to the DMB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

TASK CONTROL BLOCK (TCB)

Definition macro : IPW\$DTC

The TCB is divided into the following main areas :

- o Task management fields
 - o Task register save area (TRSA)
 - o File control words and general task work area
 - o Linkage register save area (LRSA)
- ② ③
① ② ③

- ① The LRSA may be the first part of a double linkage register save area (DLRSA).
- ② When the TCB belongs to a command processor task, the file control words, general task work area, and linkage register save area are replaced by a command processor control block.
- ③ When the TCB belongs to an RJE line manager task, the file control words, general task work area, and linkage register save area are replaced by information for the line manager.

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS

Bytes in TCB		Description/function of Task management fields
Dec	Hex	
00-03 04-07	00-03 04-07	<p>The first 16 bytes contain the storage descriptor</p> <p>Storage descriptor block ID (TCB) Task ID</p> <p>X'D6' (C) TCB belongs to a command processor task. Remaining 3 bytes are 'bCP'</p> <p>X'C9' (I) TCB belongs to an initiator. Remaining 3 bytes are 'bIT'</p> <p>X'E3' (T) TCB belongs to a terminator task. Remaining 3 bytes are 'bTT'</p> <p>X'D9' (R) TCB belongs to a local reader.</p> <p>X'E6' (W) TCB belongs to a local writer.</p> <p>X'C5' (E) TCB belongs to an execution processor task. In this case the next byte contains X'40', and the remaining bytes in the field indicate the partition that requested the task. For example, X'C&F1' = foreground 1 partition.</p> <p>X'F1'-'F9' TCB belongs to an RJE task. In this case the three remaining bytes will indicate the type of task. For example, X'D9C4D9' = RDR.</p> <p>X'D3' (L) TCB belongs to a line manager task. Remaining 3 bytes are 'RLM'.</p> <p>X'D7' (P) TCB belongs to a status task. Remaining 3 bytes are 'bPS'.</p> <p>X'40' (b) TCB belongs to an account task. Remaining 3 bytes are 'ACT'.</p>
08-11	08-0B	<p>Physical device ID</p> <p>Physical unit address. If byte 0 of the task ID field = X'F1' - X'F9' (1-9), then it contains the RJE line number.</p>
12-15	0C-0F	<p>Terminal ID</p> <p>Identifies the terminal ID requiring the task. When binary zeros (0000), then task started as result of command invoked by the central operator.</p>

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS (Continued)

Bytes in TCB		Description/function of Task management fields
Dec	Hex	
		The following two fields form part of the task selection list (TSL).
16-19	10-13	Address of task control block belonging to previous task in task selection list.
20-23	14-17	Address of task control block belonging to the next task in task selection list. If the present is the last task control block in the chain, the address is that of the wait control block.
24-27	18-1B	Page fault request word. Contains page fault request information resulting from a page fault interrupt. Contents of GPR 13, passed from DOS/VS supervisor and saved for page management in the event of a page fault occurring during execution of the task. The field is set to binary zeros when no page fault request condition is present; hence, it will contain binary zeros during the time that the task is in control of the central processor.
28-31	1C-1F	<p>Task selection field. Byte 0 (the first byte in the field) = Task State Value</p> <p><u>Task State Values</u></p> <p>At any time, each task within the POWER/VS must be in one or another of a set of task states. The state of each task is defined by the single alphanumeric character in byte 28 of the associated task control block, and this in turn determines what action the task management routines must take when the task is examined for dispatch.</p> <p>Task states are normally set by the task itself whenever one of the task management macros is issued. The task management routines and the command processing task are privileged, however, in that they may modify the task state of tasks other than themselves.</p> <p><u>Note</u> : Task states can also be set by the page fault appendage routine.</p>

POWER, VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS (Continued)

Bytes in TCB		Description/function of Task management fields			
Dec	Hex	Task states	Hex	Char	Task condition
32-48	20-30	Not dispatchable	C9	I	Task is inactive
			D7	P	Page fault in process
			D6	O	Waiting for operator response
		Conditionally dispatchable	D3	L	Waiting for locked resource
			C6	F	Waiting for the LTA or PTA
			D4	M	Wait on multiple CCB or ECB posting ^①
			D8	Q	As for M state, except event may never occur
			C3	C	Wait on single CCB or ECB posting ^②
		E2	S	As for C state, except event may never occur	
		Immediately dispatchable	C4	D	Dispatch task immediately
Running	D9	R	Task is running		
<p>① or for an RJE task, waiting for a single ECB posting.</p> <p>② or for an RJE task, waiting for a multiple ECB posting.</p>					
<p>Bytes 1-3 = Address of the routine in the nucleus that tests for the condition indicated by the task state.</p> <p>Task class list (plus a 1-byte field of X'FF') Up to four different classes can be specified simultaneously for any task, except RDR. For each class identifying character an entry is made in this field. The first byte of each entry contains the class, and the remaining three bytes contain an address of an ECB in the master class table area (in DMB).</p>					

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS (Continued)

Bytes in TCB		Description/function of Task management fields
Dec	Hex	
49	31	Termination type <u>Hex</u> <u>Char</u> 40 (b) Normal - continue execution E4 (O) Unrecoverable I/O error E7 (X) Task cancel condition C3 (C) PCANCEL command issued C6 (F) PFLUSH command issued C5 (E) Stop at end of job E2 (S) Stop immediately C8 (H) PFLUSH with hold issued D9 (R) Stop immediately and restart
50	32	Job boundary switch FF = Start of job 00 = Job boundary 80 = No job started yet
51	33	Function track indicator This indicator is used by the task terminator phase (TR) to determine the appropriate action in case of an I/O error on the queue file or the data file. The following entries are possible : <u>On input :</u> X'D5' N - Get next from queue X'C9' I - Open for input X'C7' G - Get in process X'C4' D - Delete in process X'C3' C - Free pending X'C6' F - Free in process X'C5' E - End of queue action, awaiting accounting action X'D3' L - Put account record in process X'00' 0 - No entry active or X'40' b - No entry active

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS (Continued)

Bytes in TCB		Description/function of Task management fields
Dec	Hex	
		<p>Function track indicator (continued)</p> <p><u>On output :</u></p> <p>X'D9' R - Reserve queue in process X'D6' O - Open for output X'D7' P - Put in process X'O1' A - Add to queue X'O5' E - End of queue action, awaiting accounting action X'D3' L - Put account record in process X'00' 0 - No entry active or X'40' b - No entry active</p>
52-55	34-37	Task event control block
		<p>Each POWER/VS task that needs to perform input or output operations addressed to the system console must specify the operation required in the form of a message request word or a reply request word. These control fields are used to pass the necessary parameters for the operation of the message service routines.</p>
56-59	38-3B	<p>Message request word.</p> <p>Byte 0 : Hold flag and R5 flag. Byte 1-3 : Message address.</p> <p>The message address field contains the virtual address of the message control byte, that is, the byte that immediately precedes the test of the message to be output.</p>
60-63	3C-3F	<p>Reply request word</p> <p>Byte 0 : Binary 0. Byte 1-3 : Reply address.</p> <p>The reply address field contains the virtual address of the reply control byte, that is, the byte that immediately precedes the input area into which the reply is to be read.</p> <p>If no reply is to be made to the message, this field must contain binary zeros.</p>

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK REGISTER SAVE AREA (TRSA)

Bytes in TCB		Description/function of Fields in TRSA
Dec	Hex	
64-67	40-43	<p>Register 12 - asynchronous address register ('task PSW')</p> <p>Register 12 contains the address of the first instruction to be executed when the task is despatched. The first byte contains the condition code and the program mask bits in the form in which they are loaded by BAL instructions. (This is also true when the information is provided by the page fault appendage routines.)</p>
68-71	44-47	<p>Register 13 - save area register</p> <p>Register 13 may contain the address of either the first (or only) or second linkage register save area depending on the hierarchy level of the caller.</p>
72-75	48-4B	<p>Register 14 - linkage register</p> <p>Register 14 is used to contain the linkage address, that is, the address to which return is to be made when an exit linkage is next performed. When not required for this purpose the register is available for general use.</p>
76-79	4C-4F	<p>Register 15 - entry point register</p> <p>Register 15 is used to address the entry point of the routine to be entered when an entry linkage is performed. This address is normally that of the storage descriptor which precedes the routine to be executed. The register may be conveniently used as the base register for the function to be executed. When not required for this purpose the register is available for general use.</p>
84-87	54-57	<p>Register 1 - parameter and work register</p> <p>Register 1 may address a control block or control block list on which the task is at present waiting. For a task in C or S state it will point to a conventional DOS, VS CCB or a POWER/VS ECB. For a task in M or Q state, it will point to an ACB or CCB list.</p>

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK REGISTER SAVE AREA (TRSA) (Continued)

Bytes in TCB		Description/function, of Fields in TRSA
Dec	Hex	
88-91	58-5B	Register 2 - linkage and work register Register 2 is used by service routines to retain the return address of the requesting task. It also has machine usage when a translate and test instruction is executed. When not required for these purposes the register is available for general task use.
92-95	5B-5F	Register 3 - resource address register Register 3 may contain the address of a resource control block on which the task is at present waiting (task in L state). When not required for this purpose the register is available for general task use.
96-99	60-63	Register 4 - work register
100-103	64-67	Register 5 - work register If the task owns queue space, this register will address the queue record.
104-107	68-6B	Work register (may address the DMB).
108-111	6C-6F	Work register In an execution processor task this register addresses the user CCB.
112-115	70-73	Work register In an execution processor task this register addresses current channel command. In a physical routine, it points to PWS.
116-119	74-77	Base register for highest level of code used by task.
120-123	78-7B	Restart information This field contains an action type code in byte 0 and a value in bytes 1-3, as follows: Byte 0: X'04' restart at specified record (card or page) X'08' skip forward specified number of records X'0C' skip back specified number of records (* set by PRESTART command)

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK REGISTER SAVE AREA (TRSA) (Continued)

Bytes in TCB		Description/function of Fields in TRSA
Dec	Hex	
		Restart information (continued)
		Byte 0 (continued):
		X'10' print specified number of pages (set by PSETUP command)
		X'14' restart a specified record (card or page) (set by PSTOP with RESTART option)
		Bytes 1-3 :
		The number of records (cards or pages) to be acted upon.
124	7C	Device type code
125	7D	Account track indicator
		This indicator is used by the task terminator phase (TR) to determine the appropriate action in case of an I/O error on the account file.
		It can contain the following :
		X'D6' O - Open for reading account file
		X'C1' A - Caller active
		X'C7' G - Get in process
		X'C3' C - Close in process
		X'D2' K - Keep account file in process
		X'C5' E - Erase account file in process
		X'00' 0 - No entry active
		or
		X'40' 0 - No entry active
126-127	7E-7F	Packed device address

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - FILE CONTROL WORDS AND GENERAL TASK WORK AREA

When the TCB belongs to a command processor task, this part of the TCB is replaced by the command processor control block (CPB).

Bytes in TCB		Description/function of File Control Words and General Task Work Area
Dec	Hex	
		I/O (disk or tape) request word for data file
128-135	80-87	Data file seek address (MBBCCCHR) M = index into the module control load address table. For tape spooling, this 8 byte field is defined as follows : byte 0 Tape fla (X'80') byte 1 Reserved bytes 2-3 Length field bytes 4-7 Address of tape control block
136-139	88-8B	Real data area address (see Note 3)
140-143	8C-8F	Virtual data area address
		Blocking Control Words
144-147	90-93	Residual count block
148-151	95-97	Previous record address
		Record Control Word (formed from CCW)
152	98	Record command code
153-155	99-9B	Record address (virtual)
156	9C	General purpose byte X'00' = normal record X'02' = 3540 data record X'04' = end of data X'08' = break record X'10' = end of block X'20' = end of 3540 data (note : bit 7 of this byte may be set to 1 to indicate data transfer or card motion is to be performed)
157	9D	Reserved
158-159	9E-9F	Record length

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - FILE CONTROL WORDS AND GENERAL TASK WORK AREA (Continued)

Bytes in TCB		Description/function of File Control Words and General Task Work Area
Dec	Hex	
160-167	A0-A7	I/O(disk or tape)request word for queue file Queue file seek address For tape spooling, this 8 byte field is defined as follows : byte 0 : Tape flag byte 1 : Reserved bytes 2-3 : Length field bytes 4-7 : Address of tape control block
168-171	A8-AB	Real queue space address (see Note 1)
172-175	AC-AF	Virtual queue space address
176-191	B0-BF	General Task Work area, may be broken into fields in whatever way is required by a task (for example, logical reader and writer work areas) It can also contain the 3540 communication byte : X'01' = card reader with a 3540 attached X'02' = reading from 3540 X'04' = 3540 data file processing.

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - LINKAGE REGISTER SAVE AREAS (LRSA)

When the TCB belongs to a command processor task, this part of the TCB is replaced by a command processor control block (CPB).

Bytes in TCB		Description/function of Fields in LRSA
Dec	Hex	
		Register Save Area
192-195	C0-C3	Task control block address
196-199	C4-C7	Previous save area address points to second of double LRSA
200-203	C8-B8	Saved Register 14
204-207	CC-CF	Saved Register 15
208-211	D0-D3	Saved Register 0
212-215	D4-D7	Saved Register 1
216-219	D8-DB	Saved Register 2
220-223	DC-DF	Saved Register 3
224-227	E0-E3	Saved Register 4
228-231	E4-E7	Saved Register 5
232-235	E8-EB	Saved Register 6
236-239	EC-EF	Saved Register 7
240-243	F0-F3	Saved Register 8
244-247	F4-F7	Saved Register 9

Note 1 : The high-order byte of this field will contain the command code of the current or last executed operation.

How to locate TCB : Chaining of TCB's via 'previous' and 'next' pointers, task selection list is delimited by the WCB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

COMMAND PROCESSOR CONTROL BLOCK (CPB)

This block replaces part of a command processor TCB, when a command is entered via the console keyboard by the central operator, and of its associated temporary command processor TCB when linkage is made via the IPW\$ICP macro.

CPB replaces file control fields, general task work area, and LRSA of standard TCB.

The contents of the CPB are described below :

Bytes		Description function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (CPB)
16	10	RJF-userid (0 for local)
17-23	11-17	Command Code
24-95	18-5F	Operands (free format)
96-103	60-67	Sequence number (RJE only)
104-107	68-6B	Address of caller ECB
108-119	6C-77	Reserved

How to Locate : Displacements X'80' of the appropriate command processor TCB is the starting address of the CPB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

PHYSICAL WORK SPACE (PWS)

Definition macro : IPW\$DPW.

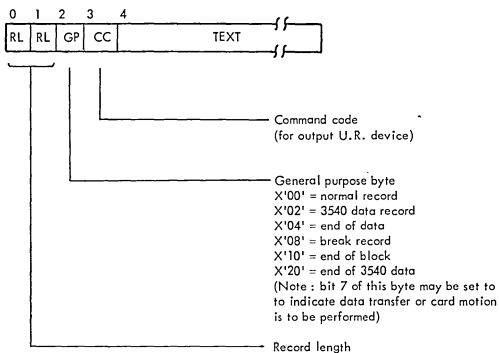
Bytes		Description/function of field
Dec	Hex	
00-03	00-03	Virtual address of the first PDA
04-07	04-07	Real address of the first PDA
08-11	08-0B	Virtual address of the second PDA
12-15	0C-0F	Real address of the second PDA
16-19	10-13	Virtual address of the active PDA
20-23	14-17	Real address of the active PDA
24-25	18-19	Displacement of last CCW in string from beginning of PDA
26-27	1A-1B	Physical record length; to update the record pointer in the deblock routine
28-31	1C-1F	Device type information
28	1C	1 byte = single/double buffering (contains number of buffers)
29	1D	1 byte = device type of unit record device
30-31	1E-1F	2 bytes = LUB number
32-35	20-23	Virtual address of end of PDA
36-39	24-27	Real address of end of PDA
40-43	28-2C	Real address of the first CCW
44-55	2D-37	Reserved.

How to locate : Reg. 8 in the TCB for a task that uses a physical routine.

POWER/VS CONTROL BLOCKS (...CONTINUED)

LOGICAL DATA RECORD AREA (LDA)

The format of a data record is shown below :



How to Locate : Displ. X'88-8B' (I/O request words) of a TCB for R/W or XPTask contains a pointer to the LDA.

POWER/VS CONTROL BLOCKS (...CONTINUED)

MODULE CONTROL BLOCK (MCB)

Definition macro : IPW\$DMC

Description of Contents

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor MCB QFILE1 cuu (SYS001) Storage descriptor MCB DFILE2 cuu (SYS002) Storage descriptor MCB DFILE3 cuu (SYS003) Storage descriptor MCB DFILE4 cuu (SYS004) Storage descriptor MCB DFILE5 cuu (SYS005) Storage descriptor MCB DFILE6 cuu (SYS006) Storage descriptor MCB LFILE7 cuu (SSL) Storage descriptor MCB LFILE8 cuu (PVTSSL)
16-23	10-17	Module seek address (MBBCCHHR) ①
24-27	18-1B	Reserved
28-31	1C-1F	Lockword
		Command control block
32-33	20-21	Residual count
34-35	22-23	Communication bytes
36-37	24-25	Device status
38-39	26-27	EXP real plus LUB index
40-43	28-2B	CCW address
44-47	2C-2F	CCW address in CSW
		Extent information
48-51	30-33	Low limit (CCHH)
52-55	34-37	High limit (CCHH)
56	38	Sector value
57-59	39-3B	Reserved
60-63	3C-3F	Sector table address
		Channel program
64-71	40-47	Seek CCW
72-79	48-4F	Set sector or TIC CCW
80-87	50-57	Search CCW
88-95	58-5F	TIC CCW
96-103	60-67	Read or write CCW
104-119	68-77	Reserved

POWER/VS CONTROL BLOCKS (...CONTINUED)

MODULE CONTROL BLOCK (MCB) (Continued)

- ① Seek and search address required by the channel program. Whenever an input or output operation is to be performed it is updated from the seek address pointer in the I/O Request Word that controls the operation.

How to Locate :

Displ.	X'60-63'	of CAT	contains	pointer to	MCB	Q files
"	X'64-67'	"	"	"	"	Dfile 1
"	X'68-6B'	"	"	"	"	Dfile 2
"	X'6C-6F'	"	"	"	"	Dfile 3
"	X'70-73'	"	"	"	"	Dfile 4
"	X'74-77'	"	"	"	"	Dfile 5
"	X'78-7B'	"	"	"	"	private SSL
"	X'7C-7F'	"	"	"	"	system SSL

POWER/VS CONTROL BLOCKS (...CONTINUED)

TAPE CONTROL BLOCK (TBB)

Definition macro : IPW\$DTB

Description of Contents

Bytes		Description/function of field
Dec	Hex	
00-15 16-27 28-31	00-0F 10-1B 1C-1F	Storage descriptor (TBB) Reserved Lockword
		Command control block
32-33 34-35 36-37 38-39 40-43 44-47	20-21 22-23 24-25 26-27 28-2B 2C-2F	Residual count Communication bytes Channel and device status EXCP real plus LUB index CCW address CCW address in CSW
48-55	30-37	Write CCW

How to Locate : Displ. X'84-87' and X'A4-A7' of TCB (when initialised for tape-spooling) contain pointers to TBB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

PAGE CONTROL BLOCK (PCB)

Definition macro : IPW\$DPC

Bytes		Description/function of field
Dec	Hex	
00-03	00-03	Page real storage address Real storage address of the page described by this PCB.
04-07	04-07	Previous page virtual address Virtual storage address of the previous page in the fixed page list. If the present page is the first page in the fixed page list the word is set to binary zeros.
08-11	08-0B	This page virtual address This fullword contains the virtual storage address of the page described by this page control block.
12-15	0C-0F	Page control byte address Contains the virtual storage address of the byte within the storage assignment block in the storage control block which corresponds to the present page.
16-19	10-13	First buffer address This fullword contains the virtual storage address of the first storage buffer within the present page.
20-23	14-17	Next page virtual address This fullword contains the virtual storage address of the next page in the fixed page list. If the present page is the last page in the fixed page list the word is set to binary zeros.

How to locate :Each page in the fixable area starts with this control block, which occupies the first 24 bytes of the page.

POWER/VS CONTROL BLOCKS (...CONTINUED)

BUFFER CONTROL WORD (BCW)

Bytes		Description/function of the field
Dec	Hex	
00-01	00-01	Length of previous buffer This halfword contains the binary length of the immediately-preceding storage buffer. If the buffer is in use its length is stored in twos complement form. If the buffer is not in use its length is stored in normal form. If the present buffer is the first in the page the word is set to binary zeros.
02-03	02-03	Length of next buffer This halfword contains the binary length of the present storage buffer, that is, the buffer which immediately follows this buffer control word in storage. If the buffer is in use its length is stored in twos complement form. If the buffer is not in use its length is stored in normal form. If the preceding buffer is the last in the page the word is set to binary zeros.
04-07	04-07	Owner (TCB virtual address) of next buffer. This fullword contains the address of the TCB belonging to the task which issued the request for buffer space. If a TCB is contained in the buffer, the owner address is that of the task which built the TCB.

How to locate : When a page is fixed in the fixable area, storage management assigns the first and last buffer control words. The first buffer control word is placed immediately after the page control block at the start of the page in real storage, and the last buffer control word is placed in the last two words of the page.

POWER/VS CONTROL BLOCKS (...CONTINUED)

PARTITION CONTROL BLOCK (PDB)

Definition macro : IPW\$DPD

Bytes		Description/function of fields
Dec	Hex	
00-15 16-17 18-19 20-23 24-27 28-31 32-35 36-39 40-47	00-0F 10-11 12-13 14-17 18-1B 1C-1F 20-23 24-27 28-2F	Storage descriptor PART.CONTR.BLOCK Reserved Partition identifier Number of entries Partition comreg address PIB address First entry address Boundary Box entry pointer Reserved
		Statistical information This information is destined for the execution account record and there is a pointer to the SLI work area
48-51 52-55 56-59 60-61 62-63	30-33 34-37 38-3B 3C-3D 3E-3F	Pointer to SLI work area Number of lines spooled Number of cards spooled Number of pages spooled Reserved
		3540 Spool device entry
64-79	40-4F	Format same as for RDR device entry
		RDR device entry (maximum = 1)
80-83 84-87 88-91 92 93 94-95	50-53 54-57 58-5B 5C 5D 5E-5F	Address of entry in the DOS/VS PUB for a card reader device Address of execution reader TCB CCB address. The first byte of this field is the SVC code : X'00' = SVC 0 : I/O request by user program X'90' = SVC90 : accounting request by PA X'91' = SVC91 : accounting request by JCL Device type code Device class code Can be R = normal reader, or C = console Requestor ID

POWER/VS CONTROL BLOCKS (...CONTINUED)

PARTITION CONTROL BLOCK (PDB) (Continued)

Bytes		Description/function of fields
Dec	Hex	
		LST device entry (maximum = 8)
96-99	60-63	Address of entry in the DOS/VS PUB for a printer device
100-103	64-67	Address of the execution list TCB
104-107	68-6B	CCB address
108	6C	Device type code
109	6D	For list device entry this can be L = device is being spooled, N = device is not being spooled.
110-111	6E-6F	Requestor ID
Depends on number of LST entries		PUN device entry (maximum = 8) (same format as LST device entry)
		Address of entry in the DOS/VS PUB for a punch device
		Address of the execution punch TCB
		CCB address
		Device type code
		For punch device entry this can be P = device is being spooled, N = device is not being spooled.
		Requestor ID

How to Locate : Displ. X'A0 - A3' of the partition comreg and R6 in TRSA of a TCB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

QUEUE RECORD AREA (QRA)

Definition macro : IPW\$DQR

Bytes		Description/function of field
Dec	Hex	
		Body Fields (first 96 bytes)
		The body of the queue record contains information pertinent to this particular queue entry and the user job which created it.
00-07	00-07	Date
08-11	08-08	Operation start time
12-15	0C-0F	Operation end time
16-31	10-1F	User information
32-39	20-27	Job name
40-41	28-29	Job number
42	2A	Queue record identifier
43	2B	POWER/VS cancel code
44	2C	Line identifier or device type
45-47	20-2F	Channel and unit (line address)
48	30	From terminal identifier
49	31	To terminal identifier
50	32	Class
51	33	Priority
52-55	34-37	Record count
56-57	38-39	Number of tracks
58	3A	Job suffix number
59	3B	Number of copies
60-63	3C-3F	Forms identifier
64-67	40-43	Number of additional records
68-69	44-45	Number of pages
70-71	46-47	Number of extra pages
72-75	48-4B	Line/card counter
76-79	4C-4F	Restart page count
80	50	Copies remaining
81	51	Not used
82	52	Disposition
83	53	Number of separators
84-87	54-57	Number of records before split
88-91	58-5B	Maximum value of count
92-95	5C-5F	Additional count value
96-97	60-61	3540 Physical unit address in packed format
98-103	62-67	Reserved

POWER/VS CONTROL BLOCKS (...CONTINUED)

QUEUE RECORD AREA (QRA) (Continued)

Bytes		Description/function of field
Dec	Hex	
		Control Fields (56 bytes) The control portion of the queue record contains information relating to the status of the queue record and to its position within the POWER/VS queues.
104	68	Execution switch
105	69	First in set switch
106	6A	Segmentation type
107-119	6B-77	Reserved
120-127	78-7F	Next record in set
128-135	80-87	Previous set in queue
136-143	88-8F	Next set in queue
144-151	90-97	First block of data

How to locate : Displ. X'A8-AB' of a TCB (not being Comm. proc. or Line manager TCB).

POWER/VS CONTROL BLOCKS (...CONTINUED)

SLI WORK SPACE (SLW)

Definition macro : IPW\$DSL

Bytes		Description/function of field
Dec	Hex	
00-79	00-49	Logical record work area
80-239	50-E9	SSL block work area
		Disk request word
240-247	F0-F7	Seek address (MBBCCHHR) M= index in module control block address table in CAT.
248-251	F8-FB	Real address read-in area
252-255	FC-FF	Virtual address read-in area
256-259	100-103	Register 8 save area
		SLI sublibrary and bookname
260	104	Sublibrary name
261-268	105-10C	Bookname
269	10D	Read SSL switch
270	10E	Read RDR switch
271-279	10F-117	Filler for alignment

How to Locate

Displ. X'30'-X'33' of PDB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

ACCOUNT CONTROL BLOCK (ACB)

Definition macro : IPW\$DAC

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (ACB)
16-19	10-13	Event control block This ECB is posted when the account file is emptied
20-23	14-17	Extent lower limit
24-27	18-1B	Extent upper limit
28-31	1C-1F	Lockword
		Command Control Block
32-33 34-35 36-37 38-39 40 41-43 44 45-47	20-21 22-23 24-25 26-27 28 29-2B 2C 2D-2F	Residual count Communication bytes Device status Logical unit Reserved for LIOCS CCW real address Reserved for PIOCS CCW address in CSW
48-54 55	30-36 37	Current seek address (BBCCHHR) Reserved
56-63	38-3F	Count field
64-67	40-43	Maximum account file capacity
68-71	44-47	20% limit residual capacity
72-75	48-4B	Current residual capacity
76-79	4C-4F	Maximum track capacity
80-83	50-53	Residual capacity on current track
84-87	54-57	Number of tracks per cylinder
88-89	58-59	Sector values

POWER/VS CONTROL BLOCKS (...CONTINUED)

ACCOUNT CONTROL BLOCK (ACB) (...CONTINUED)

Bytes		Description/function of field
Dec	Hex	
90-91	5A-5B	Tolerance
92-93	5C-5D	Overhead
94	5E	PUB device type code
95	5F	DTFPH device type code
		Channel Program
96-103 104-111 112-119 120-127 128-143 144-151	60-67 68-6F 70-77 78-7F 80-8F 90-97	Seek CCW Set sector or TIC * +8 CCW Search ID equal CCW TIC * -8 CCW WCKD CCWs (WCOUNT and WDATA) Read sector CCW or not used
152-167 168-171 172-183	98-A7 A8-AB AC-B7	Channel program modifiers RDATA and RCOUNT CCWs Virtual address account work space buffer Not used

How to Locate:

Displ. X'50' - X'53' of CAT.

POWER/VS CONTROL BLOCKS (...CONTINUED)

LINE CONTROL BLOCK (LCB)

Definition macro : IPW\$DLC

Bytes		Description/function of field
Dec	Hex	
00-07 08-15 16-19 20-23 24-39 40-47 48-49 50 51 52	00-07 08-0F 10-13 14-17 18-27 28-2F 30-31 32 33 34	LCB header (LCBbbcuu) System data in format specified at SYSGEN SIGNON time in format 0HHMMSSF; F = sign in packed decimal SIGNOFF time in format 0HHMMSSF; F = sign in packed decimal User information Line password Reserved Line account record identifier (T) SIGNOFF code Terminal error count. This count is only maintained for intervention required and for specific timeouts. When the count reaches 10 a record is written to SYSREC (error recorder file). Then the count is reset to zero. When it reaches 10 again, the same sequence occurs.
53-55 56 57 58-59 60-61 62-63	35-37 38 39 3A-3B 3C-3D 3E-3F	Line address (in alpha) Remote identifier (in binary) Remote identifier (for compatibility) Transmission count per session Timeout count per session Error count per session
64-67 68-71 72-75 76-79	40-43 44-47 48-4B 4C-4F	Corresponding BCA address LCB chain pointer. A chain of LCBs is maintained and is continuously scanned by the line manager. Up to 25 LCBs can be chained, the last LCB in the chain has 0 in this field. Work field Remote identifier. This 4-byte field consists of remote ID in binary in first byte and remote ID in alpha in bytes 2, 3 and 4.
80-83	50-53	List output classes. Each byte in this 4-byte field contains a hex displacement in the LST part of the MCTA in the DMB. The displacement contained in one of the bytes therefore corresponds to a class. Up to four classes may be specified, being delimited by X'FF' in a similar manner to that in the TCCT field in the TCB.

POWER/V5 CONTROL BLOCKS (...CONTINUED)

LINE CONTROL BLOCK (LCB) (...CONTINUED)

Bytes		Description/function of field
Dec	Hex	
84-87	54-57	For example, the command *.. START LST, B, C, D would result in the displacements 18, 1C, 20 being placed in this field. (Byte 3 would be X'FF'). If no START LST command is entered the first byte of this field is FF. Punch output classes. Each byte in this 4-byte field is used in the same way as in field LCBLIST, displacements being in the PUN part of the MCTA.
88-89	58-59	Timeout counter. This field counts the number of timeouts (1 every 3 seconds) as long as the terminal is idle (no data transfer). When information is transmitted on the line it is set to zero. The count is compared with the timeout limit specified in the PLINE macro.
90-91	5A-5B	Timeout limit. The value in this field is specified by the TIMEOUT parameter in the PLINE macro. If the user specifies 1 (one minute) the value set in this field is binary 20. The maximum timeout that may be specified is 255 minutes. If the idle time on the line as counted in the field LCBTMOUT exceeds the value of field LCBTMOUT the terminal is signed off by POWER/V5. If TIMEOUT=NO is specified, this field is filled with binary zeros.
92 93	5C 5D	Line features LCB flags X'80' Line stop X'40' Line start/restart X'20' An ETX has been received X'10' No messages wanted X'08' Remote is signed on X'02' SIGNOFF card has been read X'01' signoff (processing finished)
94	5E	Output switches X'80' = list output is ready and dispatchable for any of the classes started X'08' = punch output is ready and dispatchable for any of the classes started

POWER/VS CONTROL BLOCKS (...CONTINUED)

LINE CONTROL BLOCK (LCB) (...CONTINUED)

Bytes		Description/function of field
Dec	Hex	
95	5F	On START LST, field LCBOUT is initiated with X'80'. On START PUN, field LCBOUT is initiated with X'08'. Message subchain index. This byte contains the entry number in the message queue that contains the first message queued for this LCB.
96-99	60-63	Reader TCB address. This field contains the reader TCB address as long as the reader is active. It is set to binary zero when an RDR TCB is detached. If an EOF is encountered in the middle of a job, TCB space is not released, and the field is not set to zero. After the user responds by placing more cards in the reader the reader TCB will be reactivated. To summarize : If the field is zero, a new TCB is created. If the field is nonzero, the original TCB is reactivated.
100-103 104-107 108-109 110-111	64-67 68-6B 6C-6D 6E-6F	List forms Punch forms Corresponding PUB address Message counter. This field contains the number of messages for the user of this LCB in the remote message queue. Since this remote message queue contains 255 entries an overflow condition may occur. Should an overflow occur, the LCB with the highest value in this field is located, all messages for this user are removed from the message queue and replaced by message 1R201.
112-119	70-77	Not used.
Remote Block		
120 121 122-123	78 79 7A-7B	Default punch routing Default list routing Terminal buffer size Size of this buffer depends on type of terminal.

POWER/VS CONTROL BLOCKS (...CONTINUED)

LINE CONTROL BLOCK (LCB) (...CONTINUED)

Bytes		Description/function of field
Dec	Hex	
124	7C	Terminal type plus line features X'80' Log every channel end ▷1 X'40' Transparency ▷2 X'20' ASCII code X'02' 3780 X'01' 2780 or 3741 X'00' 2770 or 3780 with component select
125	7D	Terminal features X'20' Hardware compress feature X'10' Multiple-record feature X'08' Horizontal format control X'02' Variable length records X'01' Blocked records
126	7E	Remote printer width
127	7F	Reserved

▷1. The byte is set X'80' if TRACE=YES has been specified in the REMOTE macro. It enables a wraparound I/O trace in the phase IPW\$STM.

▷2. Transparency enables user to transmit object decks over line. If no transparency is supported codes X'00' through X'40' are converted to binary zeros for output to the terminal.

Transparency on input (read) is determined by a switch on the terminal unit.

For print output to the terminal, non-transparency if forced by POWER/VS.

For punch output, transparency depends on whether it has been specified in the PLINE macro and the PRMT macro. If either one has not been specified for transparency, non-transparency is forced by POWER/VS.

POWER/VS CONTROL BLOCKS (...CONTINUED)

BUFFER CONTROL AREA (BCA) (...CONTINUED)

Bytes		Description/function of field
Dec	Hex	
72-73	48-49	Multileaving sign-on sequence
74-75	4A-4B	Start of text sequence
76	4C	End of text block sequence
77	4D	End of text block character This 1-byte field is the second byte of the previous 2-byte field.
78-79	4E-4F	End of text sequence
80	50	Even acknowledgement sequence
81	51	Even acknowledgement character This 1-byte field is the second byte of the previous 2-byte field.
82	52	Odd acknowledgement sequence
83	53	Odd acknowledgement character This 1-byte field is the second byte of the previous 2-byte field.
84	54	Negative acknowledgement sequence
85	55	Negative acknowledgement character This 1-byte field is the second byte of the previous 2-byte field.
86	56	Acknowledgement conversation character
87	57	CCW chaining character
88	58	Enquiry character
89	59	End of transmission character
90	5A	Wait before transmit
91	5B	Reserved for future use
		Other RJE Information
92-95	5C-5F	Restart address of channel program
96	60	Last remote output command code
97-99	61-63	Address of the last remote carriage control
100	64	Current remote output record count. Incremented at each PUT during a WRITE operation. The count is compared with the value in the field TPBMXREC. If they match, the PDA is written out.
101-103	65-67	Remote data pointer. Address of the record in the PDA currently being processed.
104-107	68-6B	Address of last data byte read. Address of the last byte read into the PDA (not necessarily the last byte in the PDA).
108-111	6C-6F	Address of the corresponding LCB
112-115	70-73	Reserved
116-119	74-77	Address of the last CCW executed plus 8 (stored by the RJE channel appendage routine on every I/O interrupt).
120-123	78-7B	Displacement between the real and virtual address of the BCA (used to construct real addresses for the channel program).

POWER/VS CONTROL BLOCKS (...CONTINUED)

BUFFER CONTROL AREA (BCA) (...CONTINUED)

Bytes		Description/function of field
Dec	Hex	
124-127	7C-7F	Address of next CCB completed. BCA chain pointer, set up by channel appendage routine, and processed by line manager.
128-131	80-83	Address of a list TCP or punch TCB as long as an RJE LST or PUN task is active. Otherwise, the field is 0. (Has same function as field LCBTCBAD in the LCB.)
132-135	84-87	Real address of PDA. Address of current TP buffer. Updated whenever a new buffer is obtained.
136-139	88-8B	Virtual address of PDA. Address of current TP buffer. Updated whenever a new buffer is obtained.
140-143	8C-8F	Address of last TCB, as long as a form change is needed. Otherwise, the field is 0.
144	90	Remote mode byte (SDA mode byte). Set at line initialization time to X'04' for 2701, and to X'00' for 2703 TP control unit or ICA.
145	91	Remote next acknowledgement. For write response CCW
146-147	92-93	Remote response control block. Used for the write response to the terminal, and to read the response from the terminal
148	94	First sense byte (see TP manual)
149	95	Second sense byte (always 0)
150	96	Maximum output record count. Contains a value equal to the maximum record count for the output buffer at the terminal. Its value depends on the terminal type.
151	97	BCA flags X'01' end of transmission X'02' end of forms X'04' second entry to put routine.

POWER/VS CONTROL BLOCKS (...CONTINUED)

BUFFER CONTROL AREA (BCA)

Definition macro : IPW\$DBC

Bytes		Description/function of field
Dec	Hex	
		RJE CCB Initialized with a complete sense CCW to read sense information into the two sense bytes in the BCA. Byte 12 is initialized with bits 1 and 2 on indicating that channel-end appendages and private unit-check routines are being used.
00-01 02 03 04-05 06-07 08-11	00-01 02 03 04-05 06-07 08-0B	Residual count Communication byte Communication byte Status bytes from CSW Logical unit number First CCW address
12 13-15 16-23	0C 0D-0F 10-17	Communication byte Channel appendage address RJE sense CCW
		RJE CCW string, dynamically set up by MCCWINIT routine
24-31 32-39 40-47 48-55 56-63 64-71	18-1F 20-27 28-2F 30-37 38-3F 40-47	These six CCW fields constitute various channel programs that depend on the operation required. For example, a READ program consists of <ul style="list-style-type: none"> • An enable CCW • A write response CCW • A read text CCW. A WRITE program has a different CCW string and a PREP program consisting of : <ul style="list-style-type: none"> • A disable CCW • A set mode CCW • An enable CCW • A write enquiry CCW • A read response CCW
		EBCDIC/ASCII Code Table This table is moved from virtual storage at OPEN time for RDR, LST, or PUN to reflect one of the following four conditions: EBCDIC code transparency EBCDIC code non-transparency ASCII code transparency ASCII code non-transparency

OPEN 3540 DISKETTE WORK SPACE

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor ('OEWS V6M0 cuu')
16-17	10-11	3540 command control block
18-19	12-13	Residual count
20-21	14-15	Communications bytes
22-23	16-17	Device status
24	18	Device type and logical unit
25-27	19-1B	Reserved for LIOCS
28	1C	First CCW
29-31	1D-1F	Reserved for PIOCS CCW address in CSW
32-87	20-57	Temporary register save area for the interface between functions
88-95	58-5F	Conversion work space
96-103	60-67	3540 channel program
104-111	68-6F	Define operations or NOP
112-119	70-77	Seek
120-123	78-7B	Read label
124-127	7C-7F	Mode setting argument Seek argument (00CCHRR)
128-207	80-CF	3540 input area and label test area
		Message buffers and work areas
208	D0	Message length of first line
209-215	D1-D7	First line of message output area
216-263	D8-107	Message identity
264	108	Message text of first line
265	109	Message length of second line
266-319	110-13F	Second line of message output area
320	140	Message identity
321	141	Message text of second line
322-327	142-147	Not used Reply length Reply input area
328-329	148	Cylinder number save area
		Physical reader information indicators. The following indicators are copied from the physical work space to prevent them from being destroyed should the open be unsuccessful. On a successful open, the indicators in the physical work space are overwritten by these updated indicators. On an unsuccessful open, only the open indicator 'PEOC' will be updated with the stop code 'S'.

OPEN 3540 DISKETTE WORK SPACE (...CONTINUED)

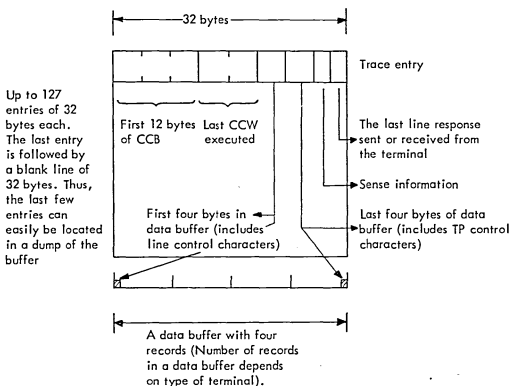
Bytes		Description/function of field
Dec	Hex	
330-331	14A-14B	Record length (copy of PERL) Sequence ID (copy of PESI)
332	14C	Multivolume identification (copy of PEMI)
333	14D	Volume sequence number (copy of PESN)
334	14E	Number of opened diskettes (copy of PEOD)
335	14F	Number of diskettes to be read (copy of PEND)
336-343	150-157	Not used

SERVICE AIDS

RJE I/O TRACE

An I/O trace for an RJE line after SIGNON can be initiated by specifying YES to TRACE=in the PRMT macro.

Entries are made in a wraparound buffer in the phase IPW\$STM. The following information is recorded at every I/O interrupt from this terminal.



The trace is to be used when RJE line errors occur or incorrect output is encountered which can be caused by the I/O operation.

POWER/VS FILE DUMP PROGRAM

This program enables any of the POWER/VS files (account, queue, data) to be dumped on a line printer assigned to SYSLST. An option is also provided to enable queue records and their associated track groups belonging to specific jobs to be dumped.

How to Execute

The program is requested by JCL commands entered either via SYSLOG or SYSIN, where SYSIN is assigned to a card reader. Before requesting ensure relevant assignments are made for the file to be dumped.

SERVICE AIDS (...Continued)

POWER/V5 FILE DUMP PROGRAM (...Continued)

Example Job Stream

```
//JOBname
//ASSGN (SYS000   for Account file)
        (SYS001   for Queue file)
        (SYS002-6 for Data files)
//EXEC IPW$DD
```

When the program is loaded successfully, the following message will be issued to SYSLOG :

DUMP FUNCTION =

At this point one of the following options can be entered via SYSLOG :

A (to specify the Account file)
Q (to specify the Queue file) ①
D (to specify the Data file)
Jobname (jobnumber) (,queue) ②
EOJ (to enable cancelation of the program or selection of a new option).

- ① The complete data file will be dumped.
- ② This enables (a) queue record(s) belonging to a specific job in the RDR, LST, or PUN queue plus its associated track group(s) to be dumped. Job name may be 8 characters, job number may be 6 characters. For the 'queue' option one of the following three entries can be specified :

L, for LST queue (default)
P, for PUN queue
R, for RDR queue.

After the dump is completed, the message

DUMP FUNCTION =

is issued to SYSLOG again to enable either a new option to be specified or the program to be terminated by the option EOJ.

Format of Output

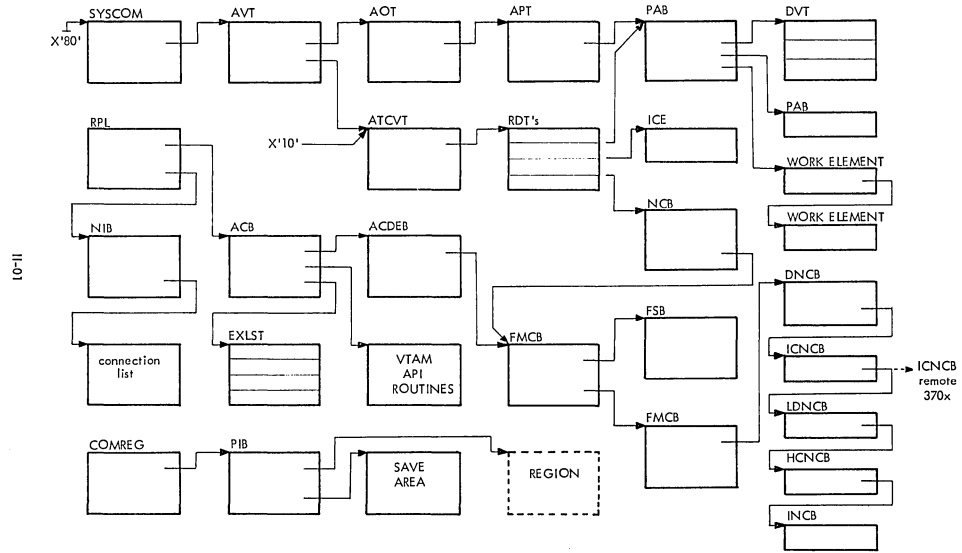
For every 100 bytes, a block of four lines is printed. Line 1 contains the printable characters in those bytes; line 2 contains the zone-part of each byte; line 3 contains the numeric part of each byte; line 4 contains a scale indicating the position of the bytes in the string.

```
line 1: CHAR // JOB POWJOB01 DATE 08/19/74,
line 2: ZON 664DDC4DDEDDCF444444444 44444CCEC4FF6FF6FF6
line 3: NUMR 11016207661620100000000000 00004135008119174B
line 4: 01...5...10...15...20...25. .85...90...95.....
```

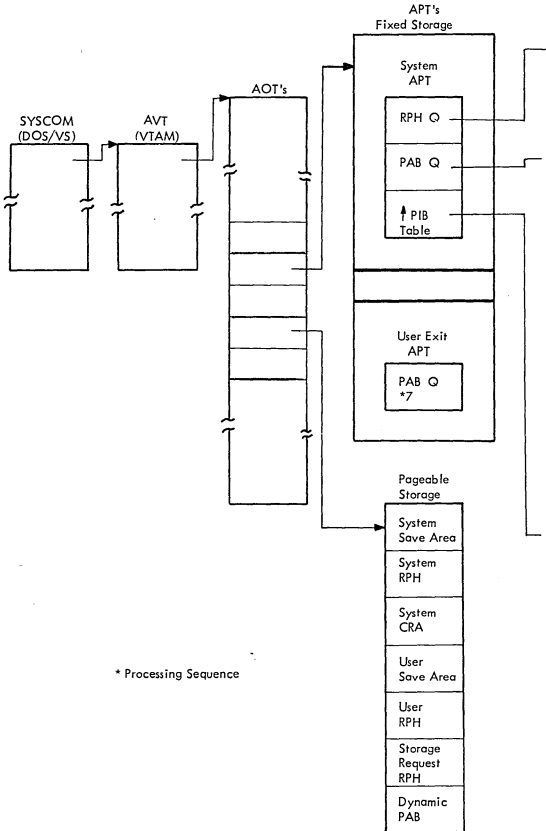
CHAPTER II
VTAM CONTROL BLOCKS



VTAM CONTROL BLOCK RELATIONSHIP

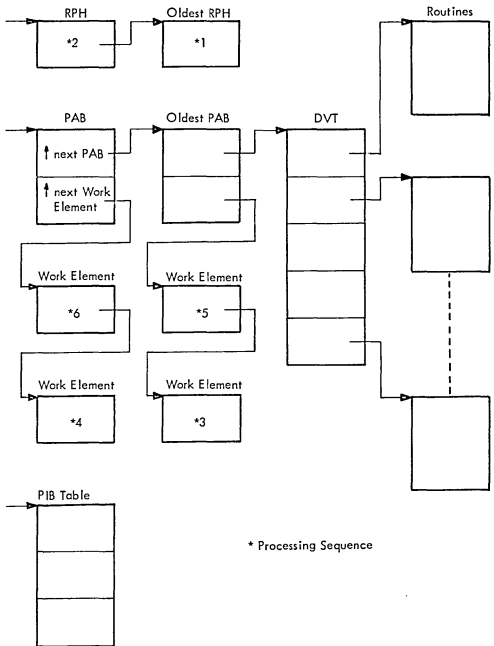


PROCESS SCHEDULING CONTROL BLOCK RELATIONSHIPS



* Processing Sequence

PROCESS SCHEDULING CONTROL BLOCK RELATIONSHIP (....Cont'd)



ACB (VTAM ACB)

Dec	Hex	0	1	2	3
0	0	@NM00008 ACB ID	@NM00009 ACB Subtype Field	ACBLEN2 ACB Length	
4	4	ACBAPID Application Identifier Ptr.			
8	8	ACBINRTN Interface Routine Addr.			
12	C	@NM00010 Not used			
16	10	@NM00011 Not used	@NM00012 Not used	@NM00013 Flag Field ACBMACR2	
20	14	ACBAM DTF type ACBDOSID	@NM00015 ACBOFLGS	@NM00017 Access Method ID	@NM00018 ACBERFLG
24	18	@NM00019 Reserved	ACBDEB DEB Pointer		
28	1C	@NM00020 ACB DDNAME			
36	24	ACBPASSW Password Pointer			
40	28	ACBRTN Branch Return to User			
44	2C	@NM00021 Not used			
48	30	ACBUEL Pointer User Exit List			

ACB (VTAM ACB) (...Continued)

Alphabetical List of Fields in@NM00007

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
@NM00008	0000	0000	@NM00017	0022	0016	ACBDEB	0025	0019
@NM00009	0001	0001	@NM00018	0023	0017	ACBINRTN	0008	0008
@NM00010	0012	000C	@NM00019	0024	0018	ACBLEN2	0002	0002
@NM00011	0016	0010	@NM00020	0028	001C	ACBPASSW	0036	0024
@NM00012	0018	0012	@NM00021	0046	002E	ACBRTN	0040	0028
@NM00013	0019	0013	ACBAM	0020	0014	ACBUEL	0048	0030
@NM00015	0021	0015	ACBAPID	0004	0004			

Flag Meanings

<u>Hex Disp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
0013	@NM00013	Flag Field ACBMACR2	1... 1111	ACBLOGON @NM00014	LOGON Bit Flag 1= NLOGON Not used
0015	@NM00015	ACBFLGS	1111 11.. .... ..1. .... ...1	@NM00016 ACBBUSY ACBLOCK	Defined above ACB is busy ACB is locked

ACDEB (ISTACDEB)

Dec	Hex	0	1	2	3
0	0	ACDTYPE Control Block Type	ACDLNGTH Control Block Length in Bytes	ACDSAF Flags	
4	4	ACDCHN Chain field			
8	8	ACDSKID Task ID			
12	C	ACDRSV08 Reserved Preserve Alignment			
16	10	ACDDBPFX VTAM DEB Prefix Section			
24	18	ACDBASIC BASIC DEB Section			
40	28	ACDVTAM VTAM DEB Section			
128	80	ACDSIP SESSION Control Inbound PAB			
144	90	ACDSOP SESSION Control Outbound PAB			

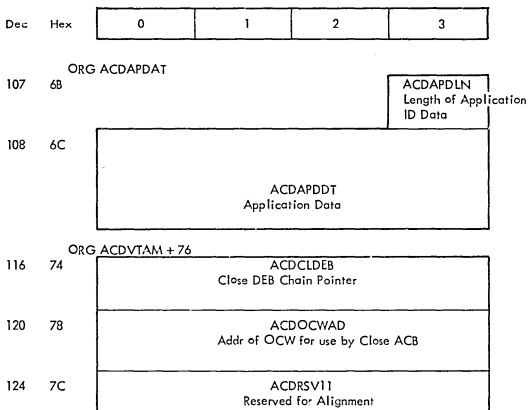
ACDEB (ISTACDEB) (...Continued)

Dec	Hex	0	1	2	3
160	A0	ACDASFQ ADDR 1st FMCB on DFASY ANY Q			
164	A4	ACDREFQ ADDR 1st FMCB on RESP ANY Q			
ORG ACATYPE					
0	0	ACDOPNAD First byte of DEB for open			
ORG ACDBPFX					
16	10	ACDRSV01 Reserved			
20	14	ACDLENG Length for OS	ACDAMTYP Acces Method Type for OS	ACDRSV02 Reserved	ACDRSV03 Reserved
ORG ACDBASIC					
24	18	ACDTCB Pointer to TCB owning this DEB			
28	1C	ACDDEB Pointer to next DEB on DEB Chain of TCB			
32	20	ACDPRLEN Prefix Length	ACDDEBID Owner DEB Identification	ACDRSV04 Reserved	
36	24	ACDACBAD			
ORG ACDACBAD					
36	24	ACDRSV10	ACDACB Pointer to Appl. ACB		
ORG ACDVTAM					
40	28	ACDLOCK Deblock Lock			

ACDEB (ISTACDEB) (...Continued)

Dec	Hex	0	1	2	3
44	2C	ACDRDTE Pointer to RDT Entry			
48	30	ACDFMCB Addr of 1st FMCB on FMCB queue of this DEB			
52	34	ACDRAFQ Addr of 1st FMCB on Readany FMCB Que			
56	38	ACDRARQ Addr of 1st RPL on readany RPL que			
60	3C	ACDPSST Addr of the PSS table			
64	40	ACDRSV33 Reserved			
72	48	ACDNEPAB PSS solicit/read any PAB			
88	58	ACDSSPAB PSS system services PAB			
104	68	ACDSSFLG System service flags			
105	69	ORG ACDVTAM+65			
		ACDRSV06 Reserved	ACDRSV07 Reserved		
		ACDPAPDAT Application - ID section			

ACDEB (ISTACDEB) (...Continued)



Alphabetical List of Fields in ISTACDEB

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
ACDACB	0037	0025	ACDLNGTH	0001	0001	ACDRSV06	0105	0069
ACDACBAD	0036	0024	ACDLOCK	0040	0028	ACDRSV07	0106	006A
ACDAMTYP	0021	0015	ACDNEPAB	0072	0048	ACDRSV08	0012	000C
ACDAPDAT	0107	0068	ACDOCWAD	0120	0078	ACDRSV10	0036	0024
ACDAPDDT	0108	006C	ACDOPNAD	0000	0000	ACDRSV11	0124	007C
ACDAPDLN	0107	0068	ACDPRLEN	0032	0020	ACDRSV33	0064	0040
ACDASFQ	0160	00A0	ACDPSST	0060	003C	ACDSAF	0002	0002
ACDBASIC	0024	0018	ACDRAFQ	0052	0034	ACDSIP	0128	0080
ACDCHN	0004	0004	ACDRARQ	0056	0038	ACDSAOP	0144	0090
ACDCLDEB	0116	0074	ACDRDTE	0044	002C	ACDSSFLG	0104	0068
ACDDBPFX	0016	0010	ACDREFQ	0164	00A4	ACDSSPAB	0088	0058
ACDDEB	0028	001C	ACDRSV01	0016	0010	ACDTCB	0024	0018
ACDDEBID	0033	0021	ACDRSV02	0022	0016	ACDTSKID	0008	0008
ACDFMCB	0048	003C	ACDRSV03	0023	0017	ACDTYPE	0000	0000
ACDLENG	0020	0014	ACDRSV04	0034	0022	ACDVTAM	0040	0028
						ACDVTPRX	0000	0000

ACDEB (ISTACDEB) (...Continued)

<u>Hex Disp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
0068	ACDSSFLG	System Service Flags	1... .. .1... .. ..1. .... ...1 1111	ACDCACB ACDABEND ACDA1CLS ACDRSV09	Close ACB in Progress If ABEND or CANCEL in progress, used as flag to indicate that a dump must be taken CLOSE issued in ISTRAAA1 Reserved

Constants in ISTACDEB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ACDID	X'0F'	VTAM Data Extent Block ID

AOT (ISTAOT)

Dec	Hex	0	1	2	3
0	0	AOTAPT Pointer to APT for this task			
4	4	AOTCNT Count of open ACBs for this task	AOTDSBYT Used by ISTAPCAS to disable via STNSM	AOTRSV02 Reserved	
8	8	AOTRSV03 Reserved			
12	C	AUTOFLAGB Flags	AOTRSV04 Reserved		

0	0	ORG AOTAPT AOTFLAGA Flags
1	1	ORG AOTAPT + 1 AOTAPTA Same as AOTAPT
0	0	ORG AOTAPT AOTOBB
0	0	ORG AOTOBB AOTBVA Start Addr of VTAM Partition
4	4	AOTVEA End Addr of VTAM Partition

Alphabetical List of Fields in ISTAOT

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
AOTAPT	0000	0000	AOTFLAGA	0000	0000	AOTRSV03	0008	0008
AOTAPTA	0001	0001	AOTFLAGB	0012	000C	AOTRSV04	0013	000D
AOTONT	0004	0004	AOTOBB	0000	0000	AOTVBA	0000	0000
AOTDSBYT	0005	0005	AOTRSV02	0006	0006	AOTVEA	0004	0004

AOT (ISTAOT) (...Continued)

Flag Meanings

<u>Hex Disp</u>	<u>Flag-Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
000C	AOTFLAGB	Flags	1... ..	AOTTPEAL	TPIN macro has been issued, used only in Attention Task AOT
			.1... ..	AOTDUMP	Dump taken on termination, used on in a main task AOT
			..1.	AOTCNCL	Cancel postponed for APS to finish
			...1	AOTVTDLY	Timer exit delayed by VTAM AP
			.... 1...	AOTUE	User exit processing
			.... .1..	AOTVTSVC	VTAM SVC 53 or SVC49
			.... ..1.	AOTSWAP	VTAM process dispatching
			.... ...1	AOTSKEY	Supervisor key forced for this task VTAM
0000	AOTFLAGA	Flags	1... ..	AOTCAP	DOS dispatcher call to ISTAPCAS needed
			.111 1111	AOTRSV01	Reserved

APT (ISTAPT)

Dec	Hex	0	1	2	3
0	0	APTAPT Pointer to pagable portion of APT			
4	4	APTRPH Posted RPH queue anchor			
8	8	APTPAB Scheduled PAB queue anchor			
12	C	APTUECB Scheduled user exit queue anchor			
16	10	APTWAIT Waiting RPH queue anchor			
20	14	APTPIB Pointer to PIB for task			

0	0	ORG APTAPT APTFLAGA Flags
---	---	---------------------------------

1	1	ORG APTAPT+1 APTAPTX Same as APTSPTX
---	---	--

8	8	ORG APTPAB @NM00019 Flags in CS operation	APTPABA Same as APTPAB
---	---	--	---------------------------

Alphabetical List of Fields in ISTAPT

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
@NM00019	0008	0008	APTFLAGA	0000	0000	APTRPH	0004	0004
APTAOT	0024	0018	APTPAB	0008	0008	APTUECB	0012	000C
APTAPT	0000	0000	APTABA	0009	0009	APWAIT	0016	C010
APTAPTX	0001	0001	APTPIB	0020	0014			

APT (ISTAPT) (...Continued)

Flag Meanings

<u>Hex Disp</u>	<u>Flag byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
0000	APTFLAGA	FLAGS	1... ..	APTRPHEY	Pre-allocated RPH is in use
			.1.. ..	APTSUSP	Waiting for Storage Request
			..1.	APTVSKEY	Status of Super- visor key bit on entry for VTAM
			...1	APTUSKEY	Process Dispatch Same for User exits
			.... 1...	APTUE	User exit being processed
			.... .111	APTRSV01	Reserved

APT (ISTAPTX)

Dec	Hex	0	1	2	3
0	0	APTHDR Dummy header			
4	4	APTCHAIN Chaining field			
8	8	APTSKID Task ID of this task			
12	C	APTXRSV1 Reserved			
16	10	APTXPAB PAB for TPIO spec scheduling			
32	20	APTSAVEV Save area for VTAM process dispatching			
104	68	APTSAVEU Save area for user exit dispatching			
176	B0	APTXRPH Pre-allocated RPH for VTAM process dispatching			
284	11C	APTXCRA CRA for above RPH			
876	36C	APTSMRPH RPH for storage request			

APT (ISTAPT) (...Continued)

Dec	Hex	0	1	2	3
984	3D8	APTADRR Range of Storage for this Partition			

		ORG APTHDR			
0	0	APTTYPE Control Block Type	APTXRSVO Reserved	APTLNATH Length of ISTAPT	

		ORG APTADRR			
984	3D8	APTADRS Start of Range			
988	3DC	APTADRE End of Range			

Alphabetical List of Fields in ISTAPT

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
APTADRE	0988	03DC	APTSAVEU	0104	0068	APTXPAB	0016	0010
APTADRR	0984	03D8	APTSAVEV	0032	0020	APTXRPH	0176	00B0
APTADRS	0984	03D8	APTSMRPH	0876	036C	APTXRSVO	0001	0001
APTCHAIN	0004	0004	APTTSKID	0008	0008	APTXRSV1	0012	000C
APTHDR	0000	0000	APTTYPE	0000	0000			
APTLNATH	0002	0002	APTXCRA	0284	011C			

Constants in ISTAPT

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
APTXTYP	X'16'	Setting Value for Type

ATCVI (ISTATCVI)

Dec	Hex	0	1	2	3
		ATCCOM System Independent Fields			
268	10C	ATCMAXID Maximum number of major nodes, 0= number of *		ATCRSV16 not used	
272	110	ATCMNT PTR to major node table - set by Sys.Def.Ref. by IS			
276	114	ATCCDADD PTR to CIDADD routine ISTSDCA ref. by CIDCTL macro			
280	118	ATCCDEL PTR to CIDDEL routine ISTSDCCD ref. by CIDCTL macro			
284	11C	ATCCFND Ptr to CIDFND routine IATSDCCF ref. by CIDCTL macro			
288	120	ATCESC01 PTR to ESC01			
292	124	ATCESC02 PTR to ESC02			
296	128	ATCCSMR PTR to connection services master routine			
300	12C	ATCOCRT PTR to open/close routine			
304	130	ATCUEP Pointer to user exit			

* Entries in the MNT.

ATCVT (ISTATCVT) (Continued)

Dec	Hex	0	1	2	3
308	134	<p style="text-align: center;">ATCSHRTN Name of VTAM shared RTN to be loaded</p>			
316	13C	<p>ATCSHRFG Attribute flags</p>	<p>ATCXRANG Number of bits in X-value portion of CID</p>	<p>ATCSAF Sub area address field</p>	
320	140	<p style="text-align: center;">ATCEPA Entry point addr of loaded</p>			
324	144	<p style="text-align: center;">ATCALERT Pointer to alert-routine ISTSDCAL</p>			
328	148	<p style="text-align: center;">ATCDVLOD Pointer to ISTSDCOD</p>			
332	14C	<p style="text-align: center;">ATCTRCPT Pointer to trace parm list</p>			
336	150	<p style="text-align: center;">ATCDVT Pointer to first DVT on chain</p>			
340	154	<p style="text-align: center;">ATCEPT Pointer to first EPT on chain</p>			
344	158	<p style="text-align: center;">ATCMSGP Pointer to TPMSG processor</p>			
348	15C	<p style="text-align: center;">ATCMSGM Pointer to TPMSG - message CSECT</p>			
352	160	<p style="text-align: center;">ATCTRPAB Address of trace writer PAB</p>			
356	164	<p style="text-align: center;">ATCVTLOD Address of VTAM load list</p>			

ATCVT (ISTATCVT) (Continued)

Dec	Hex	0	1	2	3
360	168	ATCECPRT ECB for trace file print			
364	16C	ATCZDVTB Address of ISTZCFBI			
368	170	ATCECTLP TOLTEP ECB			
372	174	ATCRVCHS Reserved			
380	17C	ATCCRME Vary PSS control mechanism			
384	180	ATCHPGM Buffer information			
388	184	ATCDEBCH Close DEB chain Pointer			
392	188	ATCTODVT The TOLTEP DVT ptr pointed to by 3rd word of PAB			
396	18C	ATCADEL A delete routine address			
400	190	ATCCDPTR Pointer to ISTOCCCD - DOS only			
404	194	ATCLDNCS Pointer to NCSPL for load/dump			
408	198	ATCLDECB ECB fo load/dump subtask			

ATCVT (ISTATCVT) (Continued)

Dec	Hex	0	1	2	3
412	19C	ATCRSV99 Reserved for later pointers			
444	1BC	ATCAP33 Pointer to ISTAPC33			
448	1C0	ATCAP35 Pointer to ISTAPC35			
452	1C4	ATCAP36 Pointer to ISTAPC36			
456	1C8	ATCDVTLK Lock word for DVT lock			
460	1CC	ATCCDFIN Pointer to ISTSDCRR			
464	1D0	ATCCDFDN Pointer to ISTSDCCN			
468	1D4	ATCVOCLK VOCLOCK lock			
472	1D8	ATCRDTLK RDTLOCK lock			
476	1DC	ATCRSV97 DWORD alignment			

ATCVT (ISTATCVT) (Continued)

Dec	Hex	0	1	2	3
480	1E0	ATCVPAB1 PAB for vary under PSS Control			
512	200	ATCPGPAB ERP PAB for purge			
544	220	ATCDLRPB Dump load & restart PAB			
576	240	ATCCCLAD Address of vary ERP (ISTINCCL)			
580	244	ATCCDLAD Address of vary dump, LD rstrt (ISTINCDL)			
584	248	ATCOCCOB Address ISTOCCOB			
588	24C	ATCOCCCB Address ISTOCCCB			

ATCVT (ISTATCVT) (Continued)

Dec	Hex	0	1	2	3
592	250	ATCTIPAB A pab for ISTOLTP			
624	270	ATCTCIPB A pab for TOLTEP CLIP			
656	290	ATCVTIPB A pab for TOLTEP - VTAM interface			
688	2B0	ATCTCLOM Addr TOLTEP CLOP proc.			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
692	2B4	ATCTCLIM Addr TOLTEP Clip proc.			
696	2B8	ATCVTINM Addr TOLTEP-VTAM Intf proc.			
700	2BC	ATCTACB TOLTEP ACB			
704	2C0	ATCRSV10 Reserved			
736	2E0	ATCPTR00 A PAB			
768	300	ATCCFEAD Addr of ISTINCFE			
772	304	ATCVLCNT Vary device online counts			
776	308	ATCS49XI Address of ISTPICXI			
780	30C	ATCS49XL Address of ISTPICXL			

ATCVT (ISATCVT) (...Continued)

Dec	Hex	0	1	2	3
784	310	ATCPTR05 Reserved			
788	314	ATCPTR06 Reserved			
792	318	ATCSOPD Session Control			
800	320	ATCSIPD Session Control			
812	32C	ATCSECT Session Controlless Term			
816	330	ATCNMCTR Name Counter		@NM00009 Reserved	
820	334	ATCSRTAB Search LOGON Mode Table RTN Address (ISTINCSH)			
824	338	ATCUSSPT Default USS Definition Table Address (ISTINCDT)			
828	33C	ATCMODTB Default System LOGON Mode Table Address (ISTINCLM)			
832	340	ATCINCW3 Address of ISTINCW3			
836	344	ATCIOECB ECB Used by IOS - Pointed to by IOBECEPT			

ATCVT (ISATCVT) (...Continued)

Dec	Hex	0	1	2	3
840	348	ATCVDPAB SS CP Command Processing PAB			
872	368	ATCVFPAB SS CP Front End PAB			
904	388	ATCVDLCK SSCP Serialization Lock			
908	38C	ATCDOS DOS Only Fields			

ORG ATCCOM

0	0	ATCSTAT VTAM Status Indicators
---	---	-----------------------------------

ORG ATCSTAT

0	0	ATCSTAT1 VTAM Status Byte 1
---	---	-----------------------------------

ORG ATCSTAT+1

1	1	ATCSTFLG Storage Management Flags
---	---	--

ORG ATCSTAT+2

2	2	ATCSTAT2 Reserved	ATCSTAT4 VTAM Status Byte 4
---	---	----------------------	-----------------------------------

ORG ATCCOM+4

4	4	ATCAPI Addr of API Routine
---	---	-------------------------------

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
8	8	ATCDCFRR Pointer to FRR of control layer, initialized by open			
12	C	ATCRDT Pointer to first RDT			
16	10	ATCSRT Pointer to SRT directory			
20	14	ATCRSV70 Reserved			
24	18	ATCECMOD ECB for modify command proc.			
28	1C	ATCMODQ Pointer for output queue for modify command			
32	20	ATCECHLT ECB for halt command			
36	24	ATCHALTQ Pointer to output queue for halt command			
40	28	ATCECVRY ECB for vary command proc.			
44	2C	ATCVARYQ Pointer to output queue for vary command			
48	30	ATCECDSP ECB for display command			
52	34	ATCDSPLQ Pointer to output queue for display command			
56	38	ATCOCHA Pointer to OCT header			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
60	3C	ATCESES ECB to Halt Session Mode			
64	40	ATCEVRQ ERP ECB for Vary Req. Info. Request Notification			
68	44	ATCVPARM Address of Vary Parameters			
72	48	ATCEOPC ECB to Indicate Operator Control Processing Complete			
76	4C	ATCECNET ERP ECB for Network Configuration Request			
80	50	ATCEPRM Pointer to QAB for ERP's ECB Parameters			
84	54	ATCHLTMS Pointer to Halt Command or Halt Return Message			
88	58	ATCF5B Pointer to Feedback Status Block			
92	5C	ATCRSV71 Reserved			
96	60	ATCRDTH Pointer RDT Header			
100	64	ATCACCTA Pointer to Installation Accounting Routine			
104	68	ATCAUTHA Pointer to Installation Authorisation Routine			
108	6C	ATCPTCHA Pointer to VTAM Patch Area			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
112	70	ATCCONFT Pointer to VTAM Configuration Table			
116	74	ATCFDVT Pointer to first DVT for O/C			
120	78	ATCFEPT Pointer to first EPT for O/C			
124	7C	ATCDVPT Address of load mod for type = VTAM tracing			
128	80	ATCBPDA Pointer to buffer pool directory			
132	84	ATCADD Pointer to ADD procedure			
136	88	ATCREMOV Pointer to remove procedure			
140	8C	ATCIOTRC Pointer to I/O trace procedure			
140	8C	Org_ ATCIOTRC ATCTHTRC Addr of TH trace routine			
140	8C	Org_ ATCTHTRC ATCTPBUF TPIOS buffer trace (ISTRARTP)			
144	90	Org_ ATCCOM+144 ATCBFTRC Pointer to buffer trace procedure			
148	94	ATCFBRPH Addr of feedback proc RPH			
152	98	ATCBLDLA Addr of BLDL routine			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
156	9C	ATCALOAD Addr of Aload Routine			
160	A0	ATCREADA Addr of Source Read Routine			
164	A4	ATCGTSTR Addr of Getstor Routine			
168	A8	ATCFRSTR Addr of Freestor Routine			
172	AC	ATCSTMA Addr of SM Initialization Routine			
176	B0	ATCACDA Addr of First ACDEB			
180	B4	ATCSMRQ Addr of Request Storage Routine			
184	B8	ATCSMQU Addr of Queue Request Rtn			
188	BC	ATCSMRS Addr of Release Storage Routine			
192	C0	ATCSMRC Addr of Recover Storage Routine			
196	C4	ATCSMBQ Pointer to Q'ed Req. SMS Routine			
200	C8	ATCFIRA Addr of Feedback Initiation RPH			
204	CC	ATCSRTAD Pointer to SRTADD routine			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
208	D0	ATCSRTDF Pointer to Setdele Routine			
212	D4	ATCDCC60 Pointer to ISTDCC60 - Ctl. layer move to user area			
216	D8	ATCDCC61 Pointer to ISTDCC61 - Ctl. layer move fixed to pagable			
220	DC	ATCNERST Pointer to ISTDCC00 - Request - ST			
224	E0	ATCNERCV Pointer to ISTRCC21 - Receive OB			
228	E4	ATCNERNE Pointer to ISTDCC25 - Read - ANY			
232	E8	ATCNERFN Pointer to ISTDCC02 - Request - FN			
236	EC	ATCAPOST Pointer to VTAM Post Routine			
240	F0	ATCVTMID Host major node I.D.		ATCRSV11 Reserved	
244	F4	ATCRCC63 HSKPANYQ Pointer			
248	F8	ATCRCC26 Send Response Pointer			
252	FC	ATCRCC65 Set RPL Pointer			
256	100	ATCNESAL Pointer to ISTDCC24 - Solicit - All			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
260	104	ATCNERAP Pointer to ISTDCC85 - Read Any Purge			
264	108	ATCACTRM Count of Active Terminals		ATCCIDM CID Mask	
268	10C	ATCMSGSP Reserved for msg suppression			
296	128	Org ATCCSMR ATCCSMA Pointer to connection Service Master Routine			
384	180	Org ATCHPGM ATCHBFNO Number of buffs for channel		ATCHBSIZ Buffer size in bytes	
772	304	Org ATCVLCNT ATCRNCNT 370X Count		ATCLCLCT 3270 Count	
792	318	Org ATCSOPD ATCSEC01 Outbound processing			
796	31C	ATCSEC10 DVT			
800	320	Org ATCSIPD ATCSEC21 Inbound processing			
804	324	ATCSEC30 Feedback			
808	328	ATCSEC40 DVT			
812	32C	Org ATCSECST ATCSEC51 Recovery DVT			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
		ORG ATCDOS			
908	38C	ATCPRTYQ Priority Msg Queue Anchor			
912	390	ATCSYSCN Address of SYSCON Routine			
916	394	ATCCIBPL Address of Lib Pool			
920	398	ATCCACBA Address of Open ACB Routine			
924	39C	ATCCACBA Address of Close ACB Routine			
928	3A0	ATCTET Address of VTAM TET			
932	3A4	ATCTETC Addr of Current Task Entry in TET			
936	3A8	ATCSV53T Addr of Function Table for SVC53T			
940	3AC	ATCSCHRT Address of Return to Asynchronous Processing Scheduler			
944	3B0	ATCAPESH Address of Module to schedule a PAB (ISTAPESH)			
948	3B4	ATCAPCST Address of ISTAPCST			
952	3B8	ATCSTATA Addr of Local Device Status Collector			
956	3BC	ATCLAHRA Addr of Local 3270 Attention Handler RPH			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
960	3C0	ATCRCCY0 Ptr to Post= Sched Proc.			
ORG ATCRCCY0					
960	3C0	ATCRCFY0 Alias			
ORG ATCDOS+56					
964	3C4	ATCSRPA B System Reset PAD address			
968	3C8	ATCINBA Addr of System Console Input Buffer			
972	3CC	ATCECBA Addr of System Console Input BC			
976	3D0	ATCFQE Ptr to Primed Queue Elements			
980	3D4	ATCEIRPH RPL Header for Activating Error Msg Writer for I/O completion			
1088	440	ATCINDIC Reserved	ATCFLAGS Flag Byte		
ORG ATCDOS+182					
1090	442			ATCSVC33 SVC 33 Instruction	
1092	444	ATCF LDA Start of Fixed Area			

ATCVT (ISATCVT) (Continued)

Dec	Hex	0	1	2	3
1096	448	ATCDTFBL DTF Builder Routine Address			
1100	440	ATCTIMER Timer Subroutine Address			
1104	450	ATCR7SVE Save R7 for ISTAPEAS			
1108	454	ATCGVPAG Addr of Pageable Area in GETVIS Region			
1112	458	ATCDCC3X Ptr to ISTDCC3X-Extn to ISTDCC30 for Performance			
1116	45C	ATCRTDOS Return to DOS		ATCRVPTD Reserved	
1120	460	ATCNSECB ECB for Attaching NETSOL			

ORG ATCNSECB

1120	460	ATCNSPAD Alignment		ATCN SRC Return Code	
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ORG ATCDOS+216

1124	464	ATCNRMQ Normal Msg Queue Anchor			
1128	468	ATCAICTN Pointer to ISTAICTN			

ATCVT (ISTATCVT) (Continued)

Alphabetical List of Fields in ISTATCVT

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
@NM00009	0818	0332	ATCECMOD	0024	0016	ATCNMCTR	0816	0330
ATCACCTA	0100	0064	ATCECNET	0076	004C	ATCNRMQ	1124	0464
ATCACDA	0176	0080	ATCECOPC	0072	0048	ATCNSECB	1120	0460
ATCACTRM	0264	0108	ATCECPRM	0080	0050	ATCNSPAD	1120	0460
ATCADD	0132	0084	ATCECPRT	0360	0168	ATCNSTRC	1123	0463
ATCADEL	0396	018C	ATCECSES	0060	003C	ATCOACBA	0920	0398
ATCAICTN	1128	0468	ATCECTLP	0368	0170	ATCOCCCB	0588	024C
ATCALERT	0324	0144	ATCECVRQ	0064	0040	ATCOCCOB	0584	0248
ATCLOAD	0156	009C	ATCECVRY	0040	0028	ATCOCHA	0056	0038
ATCAPCST	0948	0384	ATCEIRPH	0980	03D4	ATCOCRT	0300	012C
ATCAPESH	0944	0380	ATCEPA	0320	0140	ATCPGPAB	0512	0200
ATCAPI	0004	0004	ATCEPT	0340	0154	ATCPRTYQ	0908	038C
ATCAPOST	0236	00EC	ATCESC01	0288	0120	ATCPTCHA	0108	006C
ATCAP33	0444	018C	ATCESC02	0292	0124	ATCPTR00	0736	02E0
ATCAP35	0448	01C0	ATCFBRPH	0148	0094	ATCPTR05	0784	0310
ATCAP36	0452	01C4	ATCFDVT	0116	0074	ATCPTR06	0788	0314
ATCAUTHA	0104	0068	ATCFEPT	0120	0078	ATCRCCY0	0960	03C0
ATCBFTRC	0144	0090	ATCFESS	0412	019C	ATCRCC26	0248	00F8
ATCELDLA	0152	0098	ATCFIRA	0200	00C8	ATCRCC63	0244	00F4
ATCBPDA	0128	0080	ATCFLAGS	1089	0441	ATCRCC65	0252	00FC
ATCCACBA	0924	039C	ATCF LDA	1092	0444	ATCRCFY0	0960	03C0
ATCCCLAD	0576	0240	ATCFQE	0976	03D0	ATCRDT	0012	000C
ATCCDADD	0276	0114	ATCFRSIR	0168	00A8	ATCRDTH	0096	0060
ATCCDDEL	0280	0118	ATCF5B	0088	0058	ATCRDLTK	0472	01D8
ATCCDFDN	0464	01D0	ATCGTSTR	0164	00A4	ATCREADA	0160	00A0
ATCCDFIN	0460	01CC	ATCGVPAG	1108	0454	ATCREMOV	0136	0088
ATCCDFND	0284	011C	ATCHALTQ	0036	0024	ATCRNCNT	0772	0304
ATCCDLAD	0580	0244	ATCHBFNO	0384	0180	ATCRSV10	0704	0200
ATCCDPTR	0400	0190	ATCHBSIZ	0386	0182	ATCRSV11	0242	00F2
ATCCFEAD	0768	0300	ATCHLTMS	0084	0054	ATCRSV16	0270	010E
ATCCIBPL	0916	0394	ATCHPGE	0384	0180	ATCRSV70	0020	0014
ATCCIDM	0266	010A	ATCINBA	0968	03C8	ATCRSV71	0092	005C
ATCCOM	0000	0000	ATCINCW3	0832	0340	ATCRSV97	0476	01DC
ATCCONFT	0112	0070	ATCINDIC	1088	0440	ATCRSV99	0416	01A0
ATCCRME	0380	017C	ATCIOECB	0836	0344	ATCRDOS	1116	045C
ATCCSMA	0296	0128	ATCIOTRC	0140	008C	ATCRVCH5	0372	0174
ATCCSMR	0296	0128	ATCLAHRA	0956	03BC	ATCRVPTD	1118	045E
ATCDC3X	1112	0458	ATCLCLCT	0774	0306	ATCR7SVE	1104	0450
ATCDC60	0212	00D4	ATCLDECB	0408	0198	ATCSAF	0318	013E
ATCDC61	0216	00D8	ATCLDNCS	0404	0194	ATCSCHRT	0940	03AC
ATCDCFR	0008	0008	ATCMAXID	0269	010D	ATCSECT	0812	032C
ATCDCBCH	0388	0184	ATCMNT	0272	0110	ATCSEC01	0792	0318
ATCDLRPB	0544	0220	ATCMODQ	0028	001C	ATCSEC10	0796	031C
ATCDOS	0908	038C	ATCMODIB	0828	033C	ATCSEC21	0800	0320
ATCDSPLQ	0052	0034	ATCMSGE	0348	015C	ATCSEC30	0804	0324
ATCDTFBL	1096	0448	ATCMSGP	0344	0158	ATCSEC40	0808	0328
ATCDVLOD	0328	0148	ATCMSGSP	0268	010C	ATCSEC51	0812	032C
ATCDVT	0336	0150	ATCNERAP	0260	0104	ATCSHRFG	0316	013C
ATCDVTLK	0456	01C8	ATCNERCV	0224	00E0	ATCSHRTN	0308	0134
ATCDVTPT	0124	007C	ATCNERFN	0232	00E8	ATCSIPD	0800	0320
ATCECBA	0972	03CC	ATCNERNE	0228	00E4	ATCSMBQ	0196	00C4
ATCECDSP	0048	0030	ATCNERST	0220	00DC	ATCSMQU	0184	00B8
ATCECHLT	0032	0020	ATCNESAL	0256	0100	ATCSMRC	0192	00C0

ATCVT (ISTATCVT) (Continued)

Alphabetical List of Fields in ISTATCVT

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
ATCSMRQ	0180	00B4	ATCSYSCN	0912	0390	ATCUSST	0824	0338
ATCSMRS	0188	00BC	ATCS49XI	0776	0308	ATCVARYQ	0044	002C
ATCSOPD	0792	0318	ATCS49XL	0780	030C	ATCVDLOK	0904	0388
ATCSRPA	0964	03C4	ATCTACB	0700	028C	ATCVDPAB	0840	0348
ATCSRT	0016	0010	ATCTCIPB	0624	0270	ATCVFPAB	0872	0368
ATCSRTAB	0820	0334	ATCTCLIM	0692	02B4	ATCVLCNT	0772	0304
ATCSRTAD	0204	00CC	ATCTCLOM	0688	02B0	ATCVOLCK	0468	01D4
ATCSRTDF	0208	00D0	ATCTET	0928	03A0	ATCVPAB1	0480	01E0
ATCSTAT	0000	0000	ATCTETC	0932	03A4	ATCVPARM	0068	0044
ATCSTATA	0952	03B8	ATCTHTRC	0140	008C	ATCVTINM	0696	02B8
ATCSTAT1	0000	0000	ATCTIMER	1100	044C	ACTVTIPB	0656	0290
ATCSTAT2	0002	0002	ATCTIPAB	0592	0250	ATCVTL0D	0356	0164
ATCSTAT4	0003	0003	ATCTODVT	0392	0188	ATCVTMID	0240	00F0
ATCSTFLG	0001	0001	ATCTPBUF	0140	008C	ATCXRANG	0317	013D
ATCSTMA	0172	00AC	ATCTRCPT	0332	014C	ATCZDVTB	0364	016C
ATCSVC33	1090	0442	ATCTRPAB	0352	0160			
ATCSV53T	0936	03A8	ATCUEP	0304	0130			

Flag Meanings

<u>Hex</u>	<u>Flag</u>	<u>Byte</u>	<u>Contents</u>	<u>Bit</u>	<u>Pattern</u>	<u>Pattern</u>	<u>Pattern</u>
<u>Disp</u>				<u>Pattern</u>	<u>Name</u>	<u>Meaning</u>	
0000	ATCSTAT1		VTAM Status Byte 1	1... ..	ATCSTART	VTAM is starting	
				.1... ..	ATCACTIV	VTAM is active	
				..1.	ATCSNHLT	VTAM session halt	
				...1	ATCQKHLT	VTAM Quick halt	
				.... 1...	ATCNETSL	NETSOL=YES	
						specified on CMD	
				.... .1..	ATCINHLT	Internal VTAM	
						Halt Quick	
				.... ..11	@NM00008	Reserved	
0001	ATCSTFLG		Storage Management	1... ..	ATCHSDMF	System Slow Down	
						Flag	
0003	ATCSTAT4		VTAM Status Byte 4	1... ..	ATCPRAT	1= Trace Print active,	
				.1... ..	ATCPPRT	0= Not active	
				..1.	ATCMTST	When 1, TPRINT in	
				...1	ATCNQSD	process	
						When 1, Modify	
				.... 1111	ATCRSV04	Test in process	
						NOS quiesced	
						during Halt	
						Reserved	

ATCVT (ISTATCVT) (Continued)

Flag Meanings (Continued)

<u>Hex Disp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
013C	ATCSHRFG	Attribute Flags	1... ..	ATCLAST	Indicate this is Last Module
0441	ATCF LAGS	Flag Byte	1... .. .1... .. ..11 1111	ATCSTOPF ATCRNLUB ATCRSV02	Halt msg Receipt Flag LUB is unassigned Reserved

AVT (ISTAVT)

Dec	Hex	0	1	2	3
0	0	ISTACVT Address of VTAM CVT			
4	4	ISTAS49 Address of SVC 49 Code			
8	8	ISTAS53 Address of SVC 53 code			
12	C	ISTAPSTA Address of APS table			
16	10	ISTXTSZ Not used		ISTVTTIK VTAMRP Task ID	
20	14	ISTAPSEX Address of APS exit			
24	18	ISTPHNM Phase name of transient			
28	1C	ISTX1 Test field		ISTARID Address of RID	
32	20	ISTART Address of VTAM gates in RETAB		ISTAGTWT Address of GATEWAIT routine	
36	24	ISTVTTTP Address of code to check for pending timer interrupt		ISTPDAVP Vector for PDAIDS SMS trace	
40	28	ISTPDAVP (Cont)			

ORG ISTA49

4	4	First Byte of ISTAS49
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AVT (ISTAVT) (Continued)

Alphabetical List of Fields in ISTAVT

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
ISTACVT	0000	0000	ISTAS49	0004	0004	ISTXTSZ	0016	0010
ISTAGTWT	0034	0022	ISTAS53	0008	0008	ISTVTTIK	0018	0012
ISTAPSEX	0020	0014	ISTATRT	0032	0020	ISTVTTP	0036	0024
ISTAPSTA	0012	000C	ISTPDAVP	0038	0026	ISTX1	0029	001D
ISTARID	0030	001E	ISTPHNM	0024	0018			

Flag Meanings

<u>Hex Disp</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
0004	First byte of ISTAS49	1... ..	ISTAHIP	Halt in progress

BPDIR (ISTBPDIR - BUFFER POOL DIRECTORY)

Dec	Hex	0	1	2	3
0	0	BPDIRSFA Buffer Pool ID for SFA			
4	4	BPDIRSFA A (Small Fixed Pool)			
8	8	BPDIRLFA Buffer Pool ID for LFA			
12	C	BPDIRLFA A (Large Fixed Pool)			
16	10	BPDIRSPA Buffer Pool ID for SPA			
20	14	BPDIRSPA A (Small Pageable Pool)			
24	18	BPDIRLPA Buffer Pool ID for LPA			
28	1C	BPDIRLPA A (Large Pageable Pool)			
32	20	BPDIRDAPA Buffer Pool ID for ACE/ICE			
36	24	BPDIRAPA Addr. CE/ICE Pool			
40	28	BPDIRWPA Buffer Pool ID for WS FMCB			
44	2C	BPDIRWPA Addr. WS FMCB Pool			
48	30	BPDIRPPA Buffer Pool ID for PD			

BPDIR (ISTBPDIR - BUFFER POOL DIRECTORY) (Continued)

Dec	Hex	0	1	2	3
52	34	BPDIRPPA Addr Pageable Data Buf Pool			
56	38	BPDIDNPA Buffer Pool ID for NW FMCB			
60	3C	BPDIRNPA Addr Non-Working Set FMCB Buffer Pool			
64	40	BPDIRVFA A (Variable Buffer Length Fixed Pool)			
68	44	BPDIRVPA A (Variable Buffer Length Pageable Pool)			

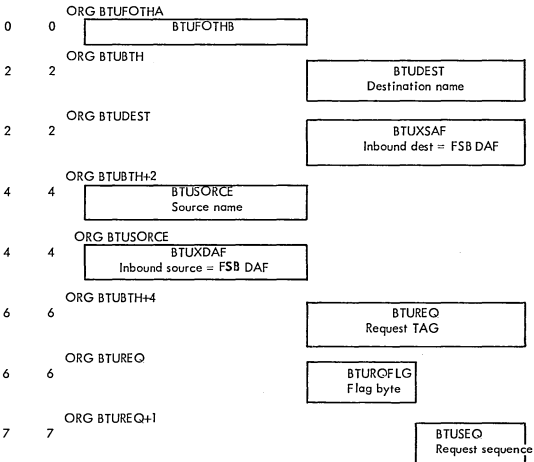
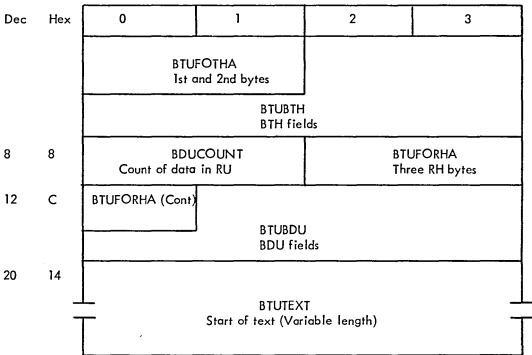
Displacement List of Fields in ISTBPDIR

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	BPDIDSFA	0024	0018	BPDIDLPA	0048	0030	BPDIDPPA
0004	0004	BPDIRSFA	0028	001C	BPDIRLPA	0052	0034	BPDIRPPA
0008	0008	BPDIDLFA	0032	0020	BPDIDAPA	0056	0038	BPDIDNPA
0012	000C	BPDIRLFA	0036	0024	BPDIRAPA	0060	003C	BPDIRNPA
0016	0010	BPDIDSPA	0040	0028	BPDIDWPA	0064	0040	BPDIRVFA
0020	0014	BPDIRSPA	0044	002C	BPDIRWPA	0068	0044	BPDIRVPA

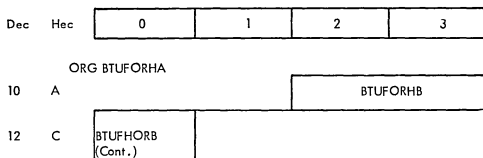
Alphabetical List of Fields in ISTBPDIR

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
BPDIDAPA	0032	0020	BPDIDSPA	0016	0010	BPDIRPPA	0052	0034
BPDIDLFA	0008	0008	BPDIDWPA	0040	0028	BPDIRSFA	0004	0004
BPDIDLPA	0024	0018	BPDIRAPA	0036	0024	BPDIRSPA	0020	0014
BPDIDNPA	0056	0038	BPDIRLFA	0012	000C	BPDIRVFA	0064	0040
BPDIDPPA	0048	0030	BPDIRLPA	0028	001C	BPDIRVPA	0068	0044
BPDIDSFA	0000	0000	BPDIRNPA	0060	003C	BPDIRWPA	0044	002C

BTU (ISTBTU)



BTU (ISTBTU) (...Continued)



Alphabetical List of Fields in ISTBTU

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
BDUCOUNT	0008	0008	BTUFOTHA	0000	0000	BTUTEXT	0020	0014
BTUBDU	0013	000D	BTUFOTHB	0000	0000	BTUXDAF	0004	0004
BTUBTH	0002	0002	BTUREQ	0006	0006	BTUXSAF	0002	0002
BTUDEST	0002	0002	BTURQFLG	0006	0006			
BTUFORHA	0010	000A	BTUSEQ	0007	0007			
BTUFORHB	0010	000A	BTUSORCE	0004	0004			

Flag Meanings

<u>Hex</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit</u>	<u>Pattern</u>	<u>Pattern</u>	<u>Pattern</u>
<u>Dec</u>			<u>Pattern</u>		<u>Name</u>	<u>Meaning</u>
0000		First byte of BTUFOTHB	1111	....	BTUFID	Format ID
0006	BTURQFLG	Flag Byte	1...	....	BTURFIND	Request Feedback Indicator
			.1..	....	BTUACIND	Additional Command Indicator
			..1.	....	BTUFFIND	Functional Flag Generated
			...1	....	BTULBIND	Last Block Indicator
			....	1...	BTUNONCB	No NCB for this Request
			....	.1..	BTUINPET	Invite Perpetual
			....	...1.	BTUASBTU	Associate BTU to come
			....	...1	BTUDTRCE	Device Trace Requested

BTU (ISTBTU) (...Continued)

Constants in ISTBTU

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
BTUMDR	X'0A'	MDR Id'fier in SYS Resp. byte
BTUTHCON	X'0E00'	FIDO TH
BTURHCON	X'039000'	FIDO RH
BTUODFC	10	Difference between BDU and TH Count Flds

CCB (ISTCCB)

Dec	Hex	0	1	2	3
0	0	CCBCNT Residual Count		CCBCOM1 First Communication byte	CCBCOM2 Second Communication byte
4	4	CCBSTA CSW status		CCBCLS CCB class	CCBPUBNO Pub no in table
8	8	CCBCCW CCW address			
12	C	CCBCOM3 Third Communication byte	CCBCHAP Address of Channel Appendage		

ORG CCBCCW

8	8	CCBLIOCS LIOCS flags	CCBCPAD Real Address of CCW
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Alphabetical List of Fields in ISTCCB

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
CCBCCW	0008	0008	CCBCOM1	0002	0002	CCBLIOCS	0008	0008
CCBCHAP	0013	000D	CCBCOM2	0003	0003	CCBPUBNO	0007	0007
CCBCLS	0006	0006	CCBCOM3	0012	000C	CCBSTA	0004	0004
CCBCNT	0000	0000	CCBCPAD	0009	0009			

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0002	CCBCOM1	First Communication Byte	1... .. .1... .. ..1... ..	CCBTRABT @NM00009 CCBDISER	CCB Traffic bit Reserved CCB Disaster bit area
0006	CCBCLS	CCB Class	1... .. .111 1111	CCBREAL @NM00010	Real CCB Reserved

COMRG (ISTCOMRG)

Dec	Hex	0	1	2	3
0	0	COMDATE Job date			
8	8	COMPBEG End of supervisor		COME OSSP End of storage protection	
12	C	COMSCRAT User scratch area			
20	14				COMUPSI UPSI byte
24	18	COMNAME Job name			
32	20	COMPEND Address of last byte of PP area			
36	24	COMHIPHS Address of last fetch or load			
40	28	COMHIPRG Address of longest PP phase			
44	2C	COMLABLN Length of PP label area		COMPID Program interrupt key	
48	30	COME OCA Address of end of core			
52	34	COMCONFG Machine configuration	COMLACT Configuration options	COMSOB1 Standard option byte 1	COMSOB2 Standard option byte 2
56	38	COMJCSW1 Job control switch 1	COMLCTL Linkage control byte	CONJCSW3 Job control switch 3	CONJCSW4 Job control switch 4
60	3C	COMDALC Disk address of label cylinder		COMFOCL Address of FOCL	
64	40	COMPUPT Address of PUB table		COMFAVP Address of FAVP	

COMRG (ISTCOMRG) (continued)

Dec	Hex	0	1	2	3
68	44	COMJIBPT Address of JIB table		COMTEBPT Null TEB address	
72	48	COMFICL Address of FICL		COMNICL Address of NICL	
76	4C	COMLUBPT Address of LUB table		COMSYSLN System line count	
		COMSYSDT System date			
88	58	COMLIOCS LIOCS communication bytes		COMPIBPT Address of PIB table	
92	50	COMCHKID Last check point number		COMLTHID Length of LUB ID queue	
96	60	COMDIBPT Address of background DIB		COMERBL Address of transient CONREG	
100	64	COMPCPTR Address of PC option table		COMITPTR Address of IT option table	
104	68	COMOCPTR Address of OC option table		COMPWTIM Key of PGM with IT support	
108	6C	COMLUBID Address of LUB ID queue		COMLTK Logical transient key	
112	70	COMSYSPM SYSPARM field			
116	74	COMJAPT Address of job accounting table			
120	78	COMSYSCM Address of SYSCOM			
124	7C	COMPIB2 Address of PIB extension		COMMICR Address of MICR DTF	
128	80	@NM00003 Reserved			
132	84	COMBGCOM Address of background COMREG		COMOPTN Option indicator byte	@NM00005 Reserved

COMRG (ISTCOMRG) (Continued)

Dec	Hex	0	1	2	3
136	88	COMEXT Address of COMREG extension			
140	8C	@NM00006 Reserved			
144	90	@NM00007 Reserved			

ORG COMSYSDT

79	4F		COMMDD
80	50	COMMDD (CONT) MMDD or DDMM part	
		COMYYDDD YYDDD part	

Alphabetical List of Fields in ISTCOMRG

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
@NM00003	0128	0080	COMHIPHS	0036	0024	COMNICKL	0074	004A
@NM00005	0135	0087	COMHIPRG	0040	0028	COMOCPTR	0104	0068
@NM00006	0140	008C	COMITPTR	0102	0066	COMOPTN	0134	0086
@NM00007	0144	0090	COMJAPT	0116	0074	COMPCPTR	0100	0064
COMBGC0M	0132	0084	COMJCSWI	0056	0038	COMPIBPT	0090	005A
COMCHKID	0092	005C	COMJIBPT	0068	0044	COMPIB2	0124	007C
COMCONFG	0052	0034	COMLABLN	0044	002C	COMPID	0046	002B
COMDALC	0060	003C	COMLCTL	0057	0039	COMPPBEG	0008	0008
COMDATE	0000	0000	COMLIOCS	0088	0058	COMPEND	0032	0020
COMDIBPT	0096	0060	COMLACT	0053	0035	COMPLUBPT	0064	0040
COMEOCA	0048	0030	COMLTHID	0094	005E	COMPWTIM	0106	006A
COMEOSSP	0010	000A	COMLTK	0110	006E	COMSCRAT	0012	000C
COMERBL	0098	0062	COMLUBID	0108	006C	COMSOB1	0054	0036
COMEXT	0136	0088	COMLUBPT	0076	004C	COMSOB2	0055	0037
COMFAVP	0066	0042	COMMDD	0079	004F	COMSYSCM	0120	0078
COMFICL	0072	0048	COMMICR	0126	007E	COMSYSYDT	0079	004F
COMFOCL	0062	003E	COMNAME	0024	0018	COMSYSYLN	0078	004E

COMRG (ISTCOMRG) (Continued)

Alphabetical List of Fields in ISTCOMRG (Continued)

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
COMSYSPM	0112	0070	COMUPSI	0023	0017	CONJCSW3	0058	003A
COMTEBPT	0070	0046	COMYYDDD	0083	0053	CONJCSW4	0059	003B

Flag Meanings

<u>Hex Disp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
0035	COMLTACT	Configuration Options	1111 11.. .... ..1.	@NM00001 CCMASYNC	Reserved Asynchronous processing in operation Reserved
			.... ..1	@NM00002	Reserved
0086	COMOPTN	Option Indicator Byte	1111 111. .... ..1	@NM00004 CCMANCHT	Reserved Partition Anchor Table exists.

CONFT (ISTCONFT)

Dec	Hex	0	1	2	3
0	0	CONCONFIG Name of configuration table			
8	8	CONAPINM API Module name			
16	10	CONAPSNM APS Module name			
24	18	CONDMNM Device Management Control Layer Module Name			
32	20	CONFBPNM Feedback processing routine module name			
40	28	CONACB Pointer to VTAM ACB			
44	2C	CONCIBAD Pointer to command input buffer			
48	30	CONDISLA Display command parameter list address			
52	34	CONNCSLA NCS parameter list address			
56	38	CONHLLA Halt command parameter list address			
60	3C	COMMODLA Modify command parameter list address			
64	40	CONVARLA Vary command parameter list address			
68	44	CONENDLA The last command processed parameter list address			

CONF (ISTCONF) (...Continued)

Dec	Hex	0	1	2	3
72	48	CONSTCIB Start command CIB address			
76	4C	CONRDBUF Buffer address used by read routine			
80	50	CONLDPRM Pointer to ISTLDPRM			
84	54	CONDCBOA Address of VTAMLIBDCB			
88	58	CONDCBLA Address of VTAMLIBDCB			
92	5C	CONDCBBA Address of VTAMLIBDCB			
96	60	CONRSV02 Reserved			
100	64	CONBUFSZ Size of buffer used by read routine		CONCID Operator terminal CID	
104	68	CONRES2 Reserved	CONLAST Last command code	CONHALT Halt flags	CONVARY Vary code
108	6C	CONDISPL Display code	CONMODFY Modify code		
112	70	CONFLAGS Flags			CONRSV17 Reserved for alignment
116	74	CONSF5BF Small fixed list			
128	80	CONSP5BF Small pageable list			
140	8C	CONLF5BF Large fixed list			

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
152	98	CONLPSBF Large pageable list			
164	A4	CONVFSBF Variable length fixed list			
176	B0	CONVPSBF Variable length oageable			
188	BC	CONIOSBF I/O Fixed list			
200	C8	CONWPSBF Working Set Pool list			
212	D4	CONAPSBF ACE/ICE pool list			
224	E0	CONNPSBF Non-working set list			
236	EC	CONPPSBF Pageable data pool list			
248	F8	CONCRPLS CRPL pool list			
260	104	CONSFDBF Small fixed list			

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
272	110	CONSPDBF Small pageable list			
284	11C	CONLFDBF Large fixed list			
296	128	CONLPDBF Large pageable list			
308	134	CONVDFBF Variable-length fixed list			
320	140	CONVPDBF Variable-length pageable			
332	14C	CONUEDBF UECB list			
344	158	CONIODBF I/O fixed list			
356	164	CONWPDBF Working set pool list			
368	170	CONAPDBF ACE/ICE pool list			
380	17C	CONNPDBF Non-working set pool list			

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
392	188	CONPPDBF Pageable data pool list			
404	194	CONCRPLD CRPL pool list			
416	1A0	CONFLG01 Init/term flags	CONRSV01 Reserved - for Alignment		
420	1A4	CONVTHDR VTAM RDT header			
536	218	CONVVTAM Application entry for VTAM			
656	290	CONTOLTP Application entry for TOLTEP			
776	308	CONTRACE Application entry for TRACE			
896	380	CONNTSOL Application entry for NETSOL			
1016	3F8	CONRECON Application entry for RECOVERY			
1136	470	CONECDET ECB to be posted upon subtask completion			

CONF (ISTCONF) (...Continued)

Dec	Hex	0	1	2	3
1140	474	<p>CONSTAFP Footprint for non-PSS state rtn. for VTAM task</p>			
1144	478	<p>CONLIST Two character storage area for the 'List-ID' operand</p>		<p>CONRSV50 Reserved preserve alignment</p>	
1148	47C	<p>CONCSCB Pointer for CSCB</p>			
1152	480	<p>CONFNSAT Attach parameter list for Network solicitor</p>			
1180	49C	<p>CONFTRAT Attach parameter list for trace</p>			
1208	4B8	<p>CONFLDAT Attach parameter list for load/dump</p>			
1236	4D4	<p>CONFXXAT Attach parameter list for SYS def.</p>			
1264	4F0	<p>CONFTTAT Attach parameter list for TOLTEP</p>			
1292	50C	<p>CONRSV24 RESERVED</p>			
1320	528	<p>CONGLBBH</p>	<p>CONRVPTI Reserved</p>	<p>CONUNITS RN Host Buffersize, LBUF DOS/V5, IQBUF in V/S 1,2</p>	
1324	52C	<p>CONSECB ECB used to post ISTDCLM to run SYS def IO code</p>			
1328	530	<p>CONSDMLC Ptr to SYS def parameter list ISTMLCA</p>			

CONFT (ISTCONFT) (Continued)

Dec	Hex	0	1	2	3
1332	534	CONF01SV Host attach save area ptr			
1336	538	CONSCPID SSCPID			
1340	53C	CONUESBF UECB list			
1352	548				

ORG CONFLAGS

110 6E

CONDSFLG
Data set flags :

ORG CONFLAGS+1

111 6F

CONOPTFL
Optional
services flags:

ORG CONFLAGS+2

112 70

CONSTAT
Resource status
flags :

ORG CONFLAGS+3

113 71

CONBUFF
Buffer status flags

ORG CONBUFF

113 71

First Byte of
CONBUFF

ORG CONBUFF+1

114 72

Second Byte of
CONBUFF

CONFT (ISTCONFT) (Continued)

Dec	Hex	0	1	2	3
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ORG CONSCPID

1336	538	CONFCNL Functional level	CONFILL Filler	CONBLKNO 12-bit Block Number	CONSTFIL*
1340	53C	CONSTVAR* Variable Portion of station I.D.			

* CONSTFIL is a 4-bit field. CONSTFIL and CONSTVAR together make up the field CONSTAID, which is a 20-bit Station ID.

Alphabetical List of Fields in ISTCONFT

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
CONACB	0040	0028	CONFATTAT	1264	04F0	CONRSV50	1146	047A
CONAPDBF	0368	0170	CONFXXAT	1236	04D4	CONRVPT1	1321	0529
CONAPINM	0008	0008	CONF01SV	1332	0534	CONSCPID	1336	0538
CONAPSBF	0212	00D4	CONGLBBH	1320	0528	CONSECB	1324	052C
CONAPSMN	0016	0010	CONHALT	0106	006A	CONSDMLC	1328	0530
CONBLKNO	1338	053A	CONHLTLA	0056	0038	CONSFDBF	0260	0104
CONBUFF	0113	0071	CONIODBF	0344	0158	CONSF5BF	0116	0074
CONBUFSZ	0100	0064	CONIOSBF	0188	00BC	CONSPDBF	0272	0110
CONCIBAD	0044	002C	CONLAST	0105	0069	CONSP5BF	0128	0080
CONCID	0102	0066	CONLDPRM	0080	0050	CONSTAFF	1140	0474
CONCONFG	0000	0000	CONLDFBF	0284	011C	CONSTAT	0112	0070
CONCRPLD	0404	0194	CONLFSBF	0140	008C	CONSTCIB	0072	0048
CONCRPLS	0248	00F8	CONLIST	1144	0478	CONSTVAR	1340	0536
CONCSCB	1148	047C	CONLPDBF	0296	0128	CONTOLTP	0656	0290
CONDCBBA	0092	005C	CONLPSBF	0152	0098	CONTRACE	0776	0308
CONDCBLA	0088	0058	CONMODFY	0109	006D	CONUEDBF	0332	014C
CONDCBOA	0084	0054	CONMODLA	0060	003C	CONUESBF	1342	053E
CONDISLA	0048	0030	CONNCSLA	0052	0034	CONUNITS	1322	052A
CONDISPL	0108	006C	CONNPDBF	0380	017C	CONVARLA	0064	0040
CONDMNM	0024	0018	CONNPSBF	0224	00E0	CONVARY	0107	006B
CONDSFLG	0110	006E	CONNTSOL	0896	0380	CONVDFBF	0308	0134
CONCEDET	1136	0470	CONOPTFL	0111	006F	CONVFSBF	0164	00A4
CONENDLA	0068	0044	CONPPDBF	0392	0188	CONVPDBF	0320	0140
CONFBNPM	0032	0020	CONPP5BF	0236	00EC	CONVPSBF	0176	00B0
CONFCNL	1336	0538	CONRDBUF	0076	004C	CONVTHDR	0420	01A4
CONFILL	1337	0539	CONRECON	1016	03F8	CONVVTAM	0536	0218
CONFLAGS	0110	006E	CONRES2	0104	0068	CONWDPBF	0356	0164
CONFLDAT	1208	04B8	CONRSV01	0417	01A1	CONWPSBF	0200	00C8
CONFLG01	0416	01A0	CONRSV02	0096	0060			
CONFNSAT	1152	0480	CONRSV17	0115	0073			
CONFTRAT	1180	049C	CONRSV24	1292	050C			

CONFT (ISTCONFT) (Continued)

Flag Meanings

<u>Hex Disp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
006A	CONHALT	Halt Flags	1... ..	CONHLTQ	Quick flag
			.1... ..	CONHLTS	Session flag
006E	CONDSFLG	Data Set Flags	1... ..	@NM00003	Reserved
			.1... ..	@NM00004	Reserved
			..1... ..	@NM00005	Reserved
			...1... ..	CONSYOBJ	SYS1. VTAMOBJ is open
			....1... ..	CONSYLIB	SYS1. VTAMLIB is open
			.... .1.. ..	CONSYLST	SYS1. VTAMLST is open
			.... ..1.. ..		
006F	CONOPTFL	Optional Services Flags	1... ..	@NM00006	Reserved
			.1... ..	@NM00007	Reserved
			..1... ..	@NM00008	Reserved
			...1... ..	@NM00009	Reserved
			....1... ..	CONBUFTR	Buffer Trace Requested
			.... .1.. ..	CONBTUTR	BTU Trace Requested
			.... ..1.. ..	CONMODTR	Module Trace Requested
			.... ..1.. ..	CONIOTR	I/O Trace Requested
0070	CONSTAT	Resource Status Flags	1... ..	@NM00010	Reserved
			.1... ..	@NM00011	Reserved
			..1... ..	@NM00012	Reserved
			...1... ..	CONSTOR	VTAM has Storage
			....1... ..	CONDSOPN	Data Sets open
			.... .1.. ..	CONLODED	VTAM routines loaded
			.... ..1.. ..	CONVRYIN	Network varied in
.... ..1.. ..	CONACTV	Operator active			
0071		First byte of CONBUFF	1... ..	CONSFEX	Small fixed pool exists
			.1... ..	CONSPEX	Small paged pool exists
			..1... ..	CONLFEX	Large fixed pool exists
			...1... ..	CONLPFX	Large paged pool exists
			....1... ..	CONVFEX	Variable fixed bfr pool (DOS) exists
			.... .1.. ..	CONVPEX	Variable pg bfr pool (DOS) exists

CONFT (ISTCONFT) (Continued)

Flag Meanings (Continued)

0071 (Continued)	First byte of CONBUFF (Continued)	.... .1. .... .1	CONUECB	UECB pool exists (VS1 & VS2)
			CONIOEX	I/O fixed pool exists	
0072	Second byte of CONBUFF	1... .. .1.. .. ..1. .. ...1 1..	CONWPEX CONAPEX CONNPEX CONPPEX CONCRPL	Working set pool exists ACE/ICE pool exists Non-working set pool exists Pageable data pool exists CRPL pool exists	
01A0	CONFLG01	INIT/TERM flags	1... .. .1.. .. ..1. .. ...1 1.. .... .1.. .... .1. .... .1	CONFTSTM CONFTTMR CONFTEXS CONFVNAC CONFVNSA CONFVTA CONFVPSA CONNSNEC	Bit to indicate Set Timer Bit to indicate Timer is running Exits scheduled flag No active connections flag Bit to indicate Network Solicitor active To indicate TOLTEP active Bit to indicate Port Solicitor active Indicate Network Solicitor is necessary

DEVCH (ISTDEVCH)

Dec	Hex	0	1	2	3
0	0	DEVSHCH Dev.Sched.	DEVTCODE Device type Codes	DEVMCODE Device model Code	DEVFLAGS Use depends on DEVSHCH values
4	4	DEVPHYSA Physical Device Address	DEVRSV03 Reserved		

ORG DEVSHCH

0	0	DEVCHAR Compatibility Existing Code
---	---	---

ORG DEVTCODE

1	1	DEVCHAR2 Compatibility Existing Code
---	---	--

Alphabetical List of Fields in ISTDEVCH

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
DEVCHAR	0000	0000	DEVMCODE	0002	0002	DEVSHCH	0000	0000
DEVCHAR2	0001	0001	DEVPHYSA	0004	0004	DEVTCODE	0001	0001
DEVFLAGS	0003	0003	DEVRSV03	0005	0005			

Flag Meanings

<u>Hex</u>	<u>Flag</u>	<u>Byte</u>	<u>Contents</u>	<u>Bit</u>	<u>Pattern</u>	<u>Pattern</u>	<u>Pattern</u>
<u>Disp</u>				<u>Pattern</u>	<u>Name</u>	<u>Meaning</u>	
0000	DEVCHAR		Compatibility Existing Code	1... ..	DEVINPUT	Device is for Input	
				.1... ..	DEVOUTPUT	Device is for Output	
				..1... ..	DEVCONVR	Device is Conversation RN definition	
				...1... ..	DEVSUBND	Device has schedulable Sub- Node	
				....1...	DEVSPS	DEV is Start Print sensitive	

DEVCH (ISTDEVCH) (Continued)

Flag Meanings (Continued)

<u>Hex Disp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
0000 (Cont)	DEVCHAR (Continued)		.... 1..	DEVNNSPT	Node has Netwrk Mngmnt Sprt.
			.... ..1.	DEVCCCTL	Node has Conn. Cntrl Depends
			.... ...1	DEVRSV01	Reserved
0003	DEVFLAGS	Use depends on DEVSHCH values	1111	DEVFCCTL	Used if Device req. conn. ctrl
			1...	DEVCBSC	Reset orderly, Bi-Synch terminals except 3270's
			.1..	DEVCSL	Reset at end of command. 3270's and Start/Stop Exc.
			..1.	DEVCRVB	Reset immediate. Start/Stop terms with Reverse Break feature
			...1	DEVCSWL	1=Higher Node is switch connection, 0=Leased connection
			.... 1111	DEVCHAR3	Compatibility existing code
			.... 1..	DEVCATTN	Terminal can interrupt with attention
			.... .1..	DEVCCHEK	Terminal has checking
			.... ..1.	DEVCSCTL	Terminal has Station Control
.... ...1	DEVCSLPN	Terminal has Selector Pen			

Constants in ISTDEVCH

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
DEV2740	X'01'	Device is a 2740
DEV2741	X'02'	Device is a 2741
DEV1050	X'03'	Device is a 1050
DEVTWX	X'04'	Device is a TWX
DEVWTTY	X'05'	Device is a WTTY
DEV115A	X'06'	Device is a 115A
DEV83B3	X'07'	Device is an 83B3
DEV2715	X'08'	Device is a 2715
DEV2770	X'09'	Device is a 2770
DEV2780	X'0A'	Device is a 2780
DEV3735	X'0B'	Device is a 3735

DEVCH (ISTDEVCH) (Continued)

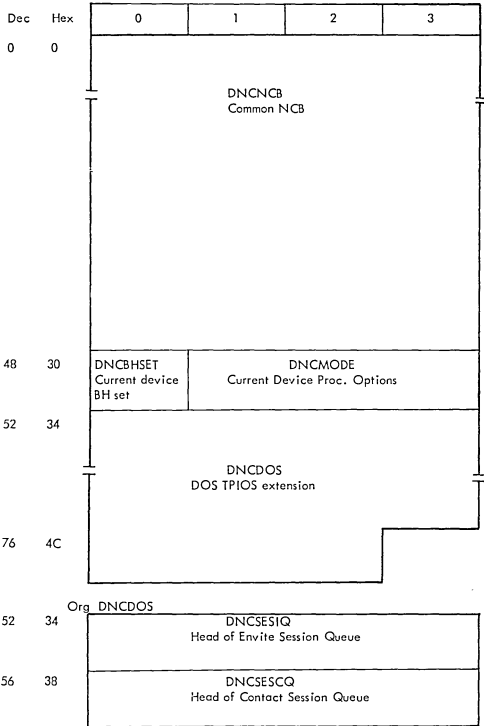
Constants in ISTDEVCH

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
DEV3780	X'0C'	Device is a 3780
DEV1130	X'0D'	Device is an 1130
DEV1800	X'0E'	Device is an 1800
DEV3125	X'11'	Device is a 3125
DEV3135	X'12'	Device is a 3135
DEVSYS3	X'13'	Device is SYS 3
DEV3704	X'16'	Device is a 3704
DEV3705	X'17'	Device is a 3705
DEV2980	X'18'	Device is a 2980
DEV3277	X'19'	Device is a 3277
DEV3284	X'1A'	Device is a 3284
DEV3286	X'1B'	Device is a 3286
DEV3275	X'1C'	Device is a 3275
DEV3741	X'1D'	Device is a 3741
DEV3747	X'1E'	Device is a 3747
DEVMTA	X'28'	Device is an MTA
DEV2972	X'33'	Device is a 2972
DEV3271	X'34'	Device is a 3271
DEV3272	X'36'	Device is a 3272
DEVCC	X'35'	Device is a Physical Unit
DEV1052	X'64'	Device is a 1052
DEV1053	X'65'	Device is a 1053
DEV1054	X'66'	Device is a 1054
DEV1055	X'67'	Device is a 1055
DEV1056	X'68'	Device is a 1056
DEV1057	X'69'	Device is a 1057
DEV1058	X'6A'	Device is a 1058
DEV1092	X'6B'	Device is a 1092
DEV1093	X'6C'	Device is a 1093
DEVLU	X'6D'	Device is a Logical Unit
DEV545	X'78'	Device is a 545
DEV1017	X'79'	Device is a 1017
DEV1018	X'7A'	Device is a 1018
DEV2203	X'7B'	Device is a 2203
DEV2213	X'7C'	Device is a 2213
DEV2265	X'7D'	Device is a 2265
DEV2502	X'7E'	Device is a 2502
DEV50	X'7F'	Device is a 50
DEV1255	X'80'	Device is a 1255
DEV5496	X'81'	Device is a 5496

Model Codes

DEVMOD1	X'00'	Model 1
DEVMOD2	X'01'	Model 2

DNCB (ISTDNCB)



DNCB (ISTDNCB) (Continued)

Dec	Hex	0	1	2	3
60	3C	DNCSHEDQ Command queue			
64	40	DNCRESET Reset trap			
64	40	Org DNCRESET DNCFBUFA Trapped buffer queue			
68	44	DNCRFLG Trap flags			
69	45	Org DNCRESET+5 DNCFMFCB Address of Invitors FMCB			
72	48	DNCFICIP Count of I/P commands currently in process	DNCFILIP Limit of I/P commands in process	DNCFACIP Count of all commands currently in process	
75	4B	Org DNCFDOS+23			DNCFILAP Limit of all commands currently in process
76	4C	DNCFFLAG Flag byte			
77	4D	Org DNCFDOS+25 DNCFSAF Current session			

DNCB (ISTDNCB) (Continued)

Alphabetical list of Fields in ISTDNCB

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
DNCACIP	0074	004A	DNCIFMCB	0069	0045	DNCRFLG	0068	0044
DNCBHSET	0048	0030	DCNLACP	0075	004B	DCNSAF	0077	004D
DNCBUFA	0064	0040	DCNLICP	0073	0049	DCNSESCQ	0056	0038
DNCDOS	0052	0034	DNCMODE	0049	0031	DCNSESISQ	0052	0034
DNCFLAG	0076	004C	DNCNCB	0000	0000	DNCSHEDQ	0060	003C
DNCICIP	0072	0048	DNCRESET	0064	0040			

Flag Meanings

<u>Hex</u>	<u>Flag</u>	<u>Byte</u>	<u>Contents</u>	<u>Bit</u>	<u>Pattern</u>	<u>Pattern</u>	<u>Pattern</u>
<u>Disp</u>						<u>Name</u>	<u>Meaning</u>
004A	DNCACIP		Cnt of all commands currently in process	1...	....	DNCLCLP	Last command in LCP process
004C	DNCFLAG		Flag byte	1111	....	DNCSTAT	DNCB session status
				1...	....	DNCSESS	Resource in session
				.1..	....	DNCINVIT	Invite pending
				..1.	....	DNCCONT	Contact pending
				...1	....	DNCDISC	Disconnect pending
				....	1..	DNCDHO	Don't honor open in progress
				....	.1..	DNCBSC	BSC sense status to come
				....	..1.	DNCRMF	Record mode flag
				....	...1	DNCLOWQ	Requests queued due to slow down condition
0044	DNCRFLG		Trap Flags	1...	....	DNCSYNC	Synchronization flag
				.1..	....	DNCCRF	Contact reqrd for next command
				..1.	....	DNCTF1	TOLTEP Flag 1
				...1	....	DNCTF2	TOLTEP Flag 2
				....	1..	DNCRSI	Reset suppressed
				....	.1..	DNCDFE	Invite indicator Disconnected feedback expected indicator
				....	..1.	DNCPSOL	=1 indicates Dial in/port solicitor, =0 indicates Dial out
				....	...1	DNCZF008	Data purge flag

DNCB (ISTDNCB) (continued)

Flags and Masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
70(46)	DNCACIP	CNT of all CMNDS currently in process	DNCLCLP	X'80'	Last command in LCP process
72(48)	DNCFLAG	Flag byte	DNCSTAT	X'F0'	DNCB session status
			DNCSESS	X'80'	Resource in session
			DNCINVIT	X'40'	Invite pending
			DNCCONT	X'20'	Contact pending
			DNCDISC	X'10'	Disconnect pending
			DNCDHO	X'08'	Don't honor open in progress
			DNCBSC	X'04'	BSC sense status to come
			DNCRMV	X'02'	Record mode flag
			DNCSLOWQ	X'01'	Requests queued due to slow down condition
64(40)	DNCRFLG	Trap flags	DNCSYNC	X'80'	Synchronization flag
			DNCCRF	X'40'	Contact reqrd for nxt com'd
			DNCTF1	X'20'	Toltep flag 1
			DNCTF2	X'10'	Toltep flag 2
			DNCRSI	X'08'	Reset suppressed invite indicator
			DNCDFE	X'04'	Disconnect feedback expecte indicator
			DNCPSOL	X'02'	= 1 indicates dial in/port solicitor, = 0 indicates
			DNCZF008	X'01'	Data purge flag

DTFLT (ISTDTFLT)

Dec	Hex	0	1	2	3
0	0	DTFFTSD Substructure for Seq DTF			
16	10				

Dec	Hex	Org	DTFFTSD
0	0	0	DTFDEVAD Pointer to Device Address
4	4	4	DTFBLKSI Pointer to Block Size
8	8	8	DTFIOARA Pointer to I/O Buffer
12	C	C	DTFNAME Pointer to DTF Name

Dec	Hex	Org	DTFFTDA
16	10	10	DTFSEEKA Pointer to Seek Address
20	14	14	DTFERBYT Pointer to Error Byte
24	18	18	DTFDSKX Pointer to Disk Extent Field

DTFLT (ISTDTFLT (Continued))

Displacement List of Fields in ISTDTFLT

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	DTFDEVAD	0008	0008	DTFIOARA	0016	0010	DTFFTD
0000	0000	DTFFTS	0012	000C	DTFNAME	0020	0014	DTFERBYT
0004	0004	DTFBLKSI	0016	0010	DTFSEEKA	0024	0018	DTFDSKX

Alphabetical List of Fields in ISTDTFLT

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
DTFBLKSI	0004	0004	DTFERBYT	0020	0014	DTFIOARA	0008	0008
DTFDEVAD	0000	0000	DTFFTD	0016	0010	DTFNAME	0012	000C
DTFDSKX	0024	0018	DTFFTS	0000	0000	DTFSEEKA	0016	0010

DVT (ISTDVT)

Dec	Hex	0	1	2	3
0	0	DVTHDR Used by ISTOCCRD and Function Release			
24	18	DVENTRY Begin entries (Variable length)			

ORG DVTHDR

0	0	DVTHFORW Points to next DVT on Chain	
4	4	DVTHECNT Number of entries in the DVT	DVTHUCNT Use Count=Number of EPT's referencing the DVT
8	8	DVTHFGA Flag field 1	

ORG DVTHDR+9

9	9	DVTHFGB Reserved	DVTHLEN Length of DVT (bytes)
12	C	DVTHDCNT Count of duplicate DVT's	
		DVTRSV15 Reserved	
20	14	DVTRSV01 Reserved	

DVT (ISTDVT) (Continued)

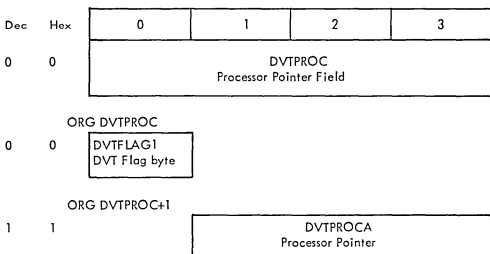
Alphabetical List of Fields

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
DVENTRY	0024	0018	DVTHFGA	0008	0008	DVTHUCNT	0006	0006
DVTHDCNT	0012	000C	DVTHFGB	0009	0009	DVTRSV01	0020	0014
DVTHDR	0000	0000	DVTHFORW	0000	0000	DVTRSV15	0014	000E
DVTHECNT	0004	0004	DVTHLEN	0010	000A			

Flag Meanings

<u>Hex Disp</u>	<u>Flag byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
0008	DVTHFGA	Flag field 1	1... ..	DVTHFGA0	Flag byte :X'80'=a duplicate DVT has been built
			.1.. ..	DVTHFGA1	Delete process module for this DVT
			..1.	DVTRSV02	Reserved
			...1	DVTRSV03	Reserved
			.... 1...	DVTRSV04	Reserved
			.... .1..	DVTRSV05	Reserved
			.... ..1.	DVTRSV06	Reserved
			.... ...1	DVTRSV07	Reserved

DVT (ISTDVTE)



Alphabetical List of Fields in ISTDVTE

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
DVTFLAG1	0000	0000	DVTPROC	0000	0000	DVTPROCA	0001	0001

Flag Meanings

<u>Hex Disp</u>	<u>Flag byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
0000	DVTFLAG1	DVT flag byte	1... ..	DVTXITF	End of DVT
			.1.	DVTRSV08	Reserved
			..1.	DVTRSV09	Reserved
			...1	DVTRSV10	Reserved
			.... 1...	DVTRSV11	Reserved
			.... .1..	DVTRSV12	Reserved
			.... ..1.	DVTRSV13	Reserved
			.... ...1	DVTRSV14	Reserved

FMCB (ISTFMCB)

Dec	Hex	0	1	2	3
0	0	FMCTYPE Control Type Block Code	FMCLNGTH Length in Bytes	FMCSAF ID of Source	
4	4	FMCNXTCB Address of next FMCB in ACDEB			
8	8	FMCTSKID Task Identifier OS - TCB Address, DOS - PIK			
12	C	FMCDVTA Address of DVT Entry Point Table			
16	10	FMCDNCBA Address of DNCB for this Node			
20	14	FMCFMCBA Address of next FMCB for this Node			
24	18	FMCUSFLD Use Information Field			
28	1C	FMSTAT Source Status Information	FMSTAT1 Status Information	@NM00002 Reserved	FMCCMDFL Command Flags
32	20	FMCDDEBA Address of ADDEB			
36	24	FMCCMPS1			
40	28	FMCRPLH Address of Held RPL			
44	2C	FMCVWT RPH Address for Vary Wait			

FMCB (ISTFMCB) (Continued)

Dec	Hex	0	1	2	3
48	30	FMCPROCD Process Option from NIB			
52	34	FMCMODE Mode Name from NIB			
60	3C	FMCFASYA DFASY any Q Chain			
64	40	FMCPAB1 Control Layer Outbound PAB			
80	50	FMCPAB2 Control Layer Inbound PAB			
96	60	FMCPAB3 Synch with Outbound PAB			
112	70	FMCPAB4 TPIOCS Inbound PAB			
128	80	FMCBPAB5 TPIOCS all but Synch with Outbound PAB			

FMCB (ISTFMCB) (Continued)

Dec	Hex	0	1	2	3
144	90	FMCEXLST Address of CEXLST			
148	94	FMCSIPA Address of Session Control Inbound PAB			
152	98	FMCNXOSQ Next Outbound Sequence nums.			
156	9C	FMCISSN Inbound Sync Sequence Number	FMCIRD01 For Control Layer XXXX	FMCSTAT Session-CPM Status	
160	A0	FMCPACE Pacing Counts			
164	A4	FMCCLEXT Basic Control Layer Extension			
184	B8	FMCBHSET BHSET ID Index for connected Application	FMCSTAT2 Purge flags	FMCLUSTR Count of Start CTLS Rec	
188	BC	FMCIPISEQ Invite Perpetual Count	FMCMODEB Mode Byte	FMCCLESEQ CL Sequence Numbers	
192	C0	FMCCLESEQ (Cont.)		FMCCTLB Ctl. Type outstanding	FMCRRSP Respond Type expected
196	C4	FMCSTRS Cnt Outstanding Post=RESP		FMCRSPLM RESPLIM Value	
200	C8	FMCSESEQ Sync.-Flow Segment Queue			

FMCB(ISTFMCB) (Continued)

Dec	Hex	0	1	2	3
204	CC	FMCLOCK FMCB Lock			
208	D0	FMCRTDPT Ptr to RDTE after FMCB Disconnect			
212	D4	FMCASEGQ ASYN Flow Segment Queue			
216	D8	FMCFBAS DFASY Data Q Pointer			
220	DC	FMCFBRE Resp. Data Q Pointer			
224	E0	FMCSNCTL Session Control Field			
228	E4	FMCFRESA Resp. Any Q Chain Ptr			
232	E8	FMCDOS DOS Extention			

ORG FMCCMPS1

36	24	FMCBUFLM Limit of Queued Buffers	FMCBUFNB Number of Queued Buffers
----	----	-------------------------------------	--------------------------------------

ORG FMCSIPA

148	94	FMCSIP Scaffold
-----	----	--------------------

ORG FMCNXOSQ

152	98	FMCNXCFM Next Outbound FM Seq. number
-----	----	--

ORG FMCNXCEM

152	98	FMCOSN
-----	----	--------

FCMB (ISTFCMB) (Continued)

Dec	Hex	0	1	2	3
		ORG FMCNXOSQ+2			
154	9A			FMCNXOSC Next Outbound SC Seq. Number	
		ORG FMCNXOSC			
154	9A			FMCOASN	
		ORG FMCPACE			
160	A0	FMCPACEN N Value of Pacing			
		ORG FMCPACEN			
160	A0	FMCPCNT			
		ORG FMCPACE+1			
161	A1		FMCPACEM M Value of Pacing		
		ORG FMCPACEM			
161	A1		FMCMPCNT		
		ORG FMCPACE+2			
162	A2			FMCPACPC Current Pacing count	
		ORG FMCPACPC			
162	A2			FMCCPCNT	
		ORG FMCPACE+3			
163	A3				FMCCVAL Chain Values
		ORG FMCCLEXT			
164	A4	FMC RPLA Address of Application RPL			

FMCB (ISTFMCB) (Continued)

Dec	Hex	0	1	2	3
ORG FMCRPLA					
164	A4	FMCRPLRS Reserved	FMCRPLPT Pointer to RPL		
ORG FMCCLEXT+4					
168	A8	FMCFBA Address of FSB Data Queue			
ORG FMCFBA					
168	A8	FMCFBRSV Reserved	FMCFBPTR Pointer to FSB		
ORG FMCCLEXT+8					
172	AC	FMCCRAF Address of FMCB on ACDEB Read Any Queue			
176	B0	FMCCCLOCK Control Layer FMCB Lock			
180	B4	FMCCCMPS2			
ORG FMCCCMPS2					
180	B4	FMCCFLGA Flag Field 1 (Control Layer)			
ORG FMCCCMPS2+1					
181	B5	FMCCFLGCL Flag Field 2 (Record Control Layer)			
ORG FMCCCMPS2+2					
182	B6	FMCCPSCMD Port Outstanding Command Field			
ORG FMCCCMPS2+3					
183	B7	FMCCPSTAT Port Solicitor Status Flags			

FMCB (ISTFMCB) (Continued)

Dec	Hex	0	1	2	3		
		ORG FMCCLEXT+20					
184	B8	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCPMRC Purge Minor Return Code </td> </tr> </table>				FMCPMRC Purge Minor Return Code	
FMCPMRC Purge Minor Return Code							
		ORG FMCLSEQ					
190	BE			<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCTSQNO Expected Response SEQ NR </td> </tr> </table>		FMCTSQNO Expected Response SEQ NR	
FMCTSQNO Expected Response SEQ NR							
192	C0	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCBSQNO SQNO Last Received </td> </tr> </table>		FMCBSQNO SQNO Last Received			
FMCBSQNO SQNO Last Received							
		ORG FMCSSEGQ					
200	C8	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCSEGD Segmented Input Data Que </td> </tr> </table>				FMCSEGD Segmented Input Data Que	
FMCSEGD Segmented Input Data Que							
		ORG FMCFBAS					
216	D8	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCZV002 Reser Orderly LCPB Address </td> </tr> </table>				FMCZV002 Reser Orderly LCPB Address	
FMCZV002 Reser Orderly LCPB Address							
		ORG FMCZV002					
216	D8	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCFBXM Pointer to 1st Buffer of TRAN </td> </tr> </table>				FMCFBXM Pointer to 1st Buffer of TRAN	
FMCFBXM Pointer to 1st Buffer of TRAN							
		ORG FMCSNCTL					
224	E0	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCSFLG Flag Byte </td> </tr> </table>				FMCSFLG Flag Byte	
FMCSFLG Flag Byte							
		ORG FMCSNCTL+1					
225	E1	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCSCTL SC Last CTL Received </td> </tr> </table>		FMCSCTL SC Last CTL Received	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMSCSQN SC Last Seq Nr. Received </td> </tr> </table>		FMSCSQN SC Last Seq Nr. Received
FMCSCTL SC Last CTL Received							
FMSCSQN SC Last Seq Nr. Received							
		ORG FMCDOS					
232	E8	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"> FMCREQT Outbound Request TAG </td> </tr> </table>				FMCREQT Outbound Request TAG	
FMCREQT Outbound Request TAG							

FMCB (ISTFMCB) (Continued)

Dec	Hex	0	1	2	3
		ORG FMCREQT			
232	E8	FMCRTFGS Request TAG Flag Byte			
		ORG FMCREQT+1			
233	E9		FMSEQ1 Next Outbound Sequence		
		ORG FMCDOS+2			
234	EA			FMSEQ2 Next expected Inbound Seq.	FMCFIAGS FMCB Flags
		ORG FMCDOS+4			
236	EC	FMCSHEDQ Head of Pending RPH Queue			
		ORG FMCSHEDQ			
236	EC	First Byte of FMCSHEDQ			
		ORG FMCDOS+8			
240	F0	FMCLCPBQ Head of User LCPB Queue			
244	F4	FMCCCNT Current LCCW Count			
		ORG FMCCCNT			
244	F4	FMCTDAF DAF of Test Node			
		ORG FMCDOS+14			
246	F6			FMCTLMOD LEXEC Command Modifier	FMCBYTE Flags

FMCB (ISTFMCB) (Continued)

Dec	Hex	0	1	2	3
-----	-----	---	---	---	---

ORG FMCDOS+16

248	F8	<p>FMCPFCSQ Seq Number of Last 1st In Chain RU</p>	<p>FMCEXFIC First in Chain Sequence# Assoc. with Exception Resp</p>
252	FC	<p>FMCLRPH Ptr to CLS DST</p>	
256	100	<p>FMCLRC Lost Record Counts (TRACE)</p>	

ORG FMCLRC

256	100	<p>FMCOLRC Outbound Lost Record Count</p>	<p>FMCILRC Inbound Lost Record Count</p>
-----	-----	---	--

ORG FMCDOS+28

260	104	<p>FMCLXOQ LCPB for Reset Orderly Awaiting Delayed Completion</p>
-----	-----	---

ORG FMCPCMD

182	B6	<p>FMFLAG</p>
-----	----	---------------

ORG FMFLAG

182	B6	<p>FMFLGB Flag Field 2 (Control Layer)</p>
-----	----	--

FMCB (ISTFMCB) (Continued)

Alphabetical List of Fields in ISTFMCB

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
@NM00002	0030	001E	FMCFMCBA	0020	0014	FMCPSTRS	0196	00C4
FMCASEGQ	0212	00D4	FMCFRESA	0228	00E4	FMCFRAF	0172	00AC
FMCBHSET	0185	00B9	FMCIIRC	0258	0102	FMCRDTP	0208	00D0
FMCBSQNO	0192	00C0	FMCIPISEQ	0188	00BC	FMCREQT	0232	00E8
FMCBUFLM	0036	0024	FMCISSN	0156	009C	FMCRPLA	0164	00A4
FMCBUFNB	0038	0026	FMCLCPBQ	0240	00F0	FMCRPLH	0040	0028
FMCBYTE	0247	00F7	FMCLNG TH	0001	0001	FMCRPLPT	0165	00A5
FMCCCNT	0244	00F4	FMCLOCK	0204	00CC	FMCRPLRS	0164	00A4
FMCCLEXT	0164	00A4	FMCLRC	0256	0100	FMCRRESP	0195	00C3
FMCCLRPH	0252	00FC	FMCLUSTR	0187	00BB	FMCRSPLM	0198	00C6
FMCCLSEQ	0190	00BE	FMCLXOQ	0260	0104	FMCRTFGS	0232	00E8
FMCCMDFL	0031	001F	FMCMODE	0052	0034	FMCRVD01	0158	009E
FMCCMP51	0036	0024	FMCMODEB	0189	00BD	FMCSAF	0002	0002
FMCCMP52	0180	00B4	FMCMPCNT	0161	00A1	FMCSCTL	0225	00E1
FMCCPCNT	0162	00A2	FMCNPCNT	0160	00A0	FMCSFLG	0224	00E0
FMCCTLB	0194	00C2	FMCNXCFM	0152	0098	FMCSCSQN	0226	00E2
FMCCVAL	0163	00A3	FMCNXOSC	0154	009A	FMCSGD	0200	00C8
FMCD CLOK	0176	00B0	FMCNXOSQ	0152	0098	FMCSQI	0233	00E9
FMCD EBA	0032	0020	FMCNXTCB	0004	0004	FMCSQ2	0234	00EA
FMCDNCBA	0016	0010	FMCOASN	0154	009A	FMCSHEDQ	0236	00EC
FMCDOS	0232	00EB	FMCOLRC	0256	0100	FMCSIP	0148	0094
FMCDVTA	0012	000C	FMCOSSN	0152	0098	FMCSIPA	0148	0094
FMCEXFIC	0250	00FA	FMCPAB1	0064	0040	FMCSNCTL	0224	00E0
FMCEXLST	0144	0090	FMCPAB2	0080	0050	FMCSSEGQ	0200	00C8
FMCFASYA	0060	003C	FMCPAB3	0096	0060	FMCSSTAT	0159	009F
FMCFBA	0168	00A8	FMCPAB4	0112	0070	FMCSSTAT	0028	001C
FMCFBAS	0216	00D8	FMCPAB5	0128	0080	FMCSSTAT1	0029	001D
FMCFBPTR	0169	00A9	FMCPACE	0160	00A0	FMCSSTAT2	0186	00B6
FMCFBRE	0220	00DC	FMCPACEM	0161	00A1	FMCTADF	0244	00F4
FMCFBRSV	0168	00A8	FMCPACEN	0160	00A0	FMCTLMOD	0246	00F6
FMCFBXM	0216	00D8	FMCPACPC	0162	00A2	FMCTSKID	0008	0008
FMCF LAG	0182	00B6	FMCPFCSQ	0248	00F8	FMCTSQNO	0190	00BE
FMCF LAGS	0235	00EB	FMCPMRRC	0184	00B8	FMCTYPE	0000	0000
FMCF LGA	0180	00B4	FMCPROCD	0048	0030	FMCUSFLD	0024	0018
FMCF LGB	0182	00B6	FMCPSCMD	0182	00B6	FMCVWT	0044	002C
FMCF LGCL	0181	00B5	FMCPSTAT	0183	00B7	FMCV002	0216	00D8

Flag Meanings

<u>Hex</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit</u>	<u>Pattern</u>	<u>Pattern</u>	<u>Pattern</u>
<u>Disp</u>			<u>Pattern</u>	<u>Name</u>	<u>Meaning</u>	
00A3	FMCCVAL	Chain values	1111	FMCOBCE	Current Outbound	
			1...	FMCFIRST	First Piece	
			..1.	FMCMIDDLE	Middle Piece	
			...1.	FMCLAST	Last Piece	
			...1	FMCONLY	Only Piece	
			.... 11..	FMCI BCE	Current Inbound	
			.... ..11	FMCPRCLS	Presentation Class,	
					01= Record	

FMCB (ISTFMCB) (Continued)

Flag Meanings (Continued)

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
00BA	FMCSTAT2	Purge flags	1... ..	FMCVPIP	Vary Purge in Progress
			.1... ..	FMCZF00A	Purge Successfully completed
			..1... ..	FMCIAIO	Inhibit all I/O
			...1... ..	FMCALIPR	Allocation in Progress
			.... 1...	FMCCPIP	CLSDST Purge in Progress
			.... .1..	FMCSEQUI	SEQ/ID, 1= Sequence Number Reserved
00BD	FMCMODEB	Mode byte	1... ..	FMCHOLD	Buffer Flood Condition
			.1... ..	FMCCLEAR	Clear in progress
			..1... ..	FMCAPO	Application quiesced
			...1... ..	FMCLUQ	LU quiesced
			.... 1...	FMCRSTR	Resetsr in progress
			.... .1..	FMCRSOT	Response outstanding
00B4	FMCFLGA	Flag Field 1 (Control Layer)	.... .1..	FMCIBPRG	I/B Purge chain
			.... ...1	FMCBPBRG	O/B Purge chain
			1... ..	FMCFLGA0	Data expected
			.1... ..	FMCFLGA1	In Dialogue
			..1... ..	FMCFLGA2	FMCB on ACDEB for Read Any
			...1... ..	FMCFLGA3	Incoming Data Flush
00B5	FMCFLGCL	Flag Field 2 (Record Control Layer)	.... 1...	FMCFLGA4	Purge in progress
			.... .1..	FMCFLGA5	Buffer Threshold Exceeded
			.... ...1	FMCFLGA6	Read done to 3735 (On)
			.... ...1	FMCFLGA7	FMCB is Locked
			1... ..	FMCFLGB0	FMCB on ACDEB Dfasy any Q
			.1... ..	FMCFLGB1	FMCB on ACDEB Req any Q
00B5	FMCFLGCL	Flag Field 2 (Record Control Layer)	..1... ..	FMCFLGB2	Satisfy Dfasy Spec.
			...1... ..	FMCFLGB3	Satisfy Res. Spec.
			.... 1...	FMCFLGB4	Reserved
			.... .1..	FMCFLGB5	POST= Sched. Outstanding
			.... ...1	FMCFLGB6	Hold Response Outstanding
			.... ...1	FMCFLGB7	Reserved

FMCB (ISTFMCB) (Continued)

Flag Meanings (Continued)

<u>Hex Disp</u>	<u>Flag byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
00B6	FMCPSCMD	Port Outstanding Command Field	1... ..	FMGINVT	Invite
			.1.. ...	FMCCNTCT	Contact
			..1.	FMCRESTI	Reset Immediate Command Outstanding
			...1	FMCPURGE	Purge (Reset)
			.... 1...	FMCDSEOC	Disconnect End of Call
			.... .1..	FMCRDBLK	Read Block (Start Input)
00B6	FMCFLGB	Flag Field 2 (Control Layer)	1... ..	FMCFLGA8	Reset Conditional is Active
			.111 1111	FMCFLRSV	Unused
			1... ..	FMCELKST	Error Lock set
			.1.. ...	FMCIDVFD	TPIOS could not find A
00B7	FMCPSTAT	Port Solicitor Status Flags	..1.	FMCDDOCD	Dial disconnect occurred
			...1 ...	FMCPCLSD	Port being closed by Port Solicitor
			.... 1111	FMCRSV09	Reserved
			1... ..	FMCFPE	1= Path End Response
			.1.. ...	FMCFEX	1= Exception Response
00C3	FMCRRESP	Respond Type Expected	..1.	FMCFME	0= Function MNM End Resp.
			...1	FMCFRRN	1= Reached Recovery Mode
			.... 1..	FMCTSLHA	1= Term Self Last has Arvd.
			.... .111	@NM00004	Reserved
			1... ..	FMCSIRP	Session Indication Req. pend.
00EB	FMCFLAGS	FMCB Flags	.1.. ...	FMCUSIND	Potential Session Indicator
			..1.	FMCUSIN1	Copy of Pot.Sess. Indicator
			...1	FMCSIRE	Session Initiation Request ended. N queue

FMCB (ISTFMCB) (Continued)

Flag Meanings (Continued)

<u>Hex Disp.</u>	<u>Flag</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
00EB	FMCFLAGS (Continued)		.... 1...	FMCSSTRE	Session Termination Request ended, no Queue posted
			.... .1..	FMCRESET	Reset Request in Progress, do not Post
			.... ..1.	FMCSIRQ	Session Initiation Request queued for Connection
			.... ...1	FMCSPTRT	Start Print bit
00EC		First byte of FMCSHEDQ	1...	FMCSHEDG	Gating bit
00E0	FMCSCFLG	Flag Byte	11..	FMCI8SAC	Save I8SQAC
			..11	FMCOBSAC	Save OBSQAC
			.... 1...	FMCLURO	LU owes Response
			.... .1..	FMCAPRO	Appl owes Response
			.... ..1.	FMSCCLO	Clear outstanding
			.... ...1	FMCSCTL	1=CLUS already Sched.
00E8	FMCRTFGS	Request TAG Flag Byte	111.	FMCRSV12	Reserved
			...1	FMCLBIND	Last Block Indicator
			.... 1...	FMCNONCB	No NCB Indicator
			.... .1..	FMCIINPET	Invite Perpetual Ind.
			.... ..1.	FMCASBTU	Associated BTU to Come
			.... ...1	FMCRSV11	Reserved
00F7	FMCBYTE	Flags	1...	FMCCRF	Contact Required
			.1.	FMCSAQ	PORTSOL session Acquired
			..1.	FMCEOTRQ	EOT Expected after RVI from Reset
			...1	FMCSREQ	Orderly. Session Status Change Ind.
			.... 1...	FMCBV4	Reserved
			.... .1..	FMCBV5	Reserved
			.... ..1.	FMCBV6	Reserved
.... ...1	FMCBV7	Reserved			
001C	FMCSTAT	Source Status Info	1...	FMCPMTR	FMCB is a Preemptor
			.1.	FMCPMTE	FMCB is a Preemptee
			..1.	FMCDAPT	Device Accepted
			...1	FMCDEVOF	Device varied or set by Vary DSACT.

FMCB (ISTFMCB) (Continued)

Flag Meanings (Continued)

<u>Hex Disp.</u>	<u>Flag</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
001C	FMCSTAT (Continued)		.... 1...	FMCDDEDC	Device disconnected
			.... .1..	FMCFZ007	Buffer Trace Active flag
			.... ..1.	FMCLTEAS	Last Term Exit scheduled for this FMCB
			.... ...1	FMCVSP1	Soft Purge in Progress
001D	FMCSTAT1	Status Information	1...	FMCVSP2	A User Request was Soft Purged
			.1..	FMCHPURG	Session has been Hard Purged
			..11 1111	@NM00001	Reserved
001F	FMCCMDFL	Command flags	1...	FMCCMDR	1= Initial Self Revd
			.1..	FMCVSNA	FMCB for Vary Session
			..1.	FMCSNA	User Session with New Dev's.
			...1 1111	@NM00003	Reserved
009F	FMCsstat	Session-CPM Status	1...	FMCSNB1	Session not Bound
			.1..	FMCCIPI	TPIOS Clear in Progress
			..1.	FMCIUPI	Unbind in Progress
			..1.	FMCSDTR	SDT Required
			.... 1...	FMCBIP	Bind in Progress
			.... .1..	FMCONSALU	No Session exists between the Application and the LU
			.... ..1.	FMCPURCH	TPIOS Purging Chain start
			.... ...1	FMCCONF	Sick Flag

Constants in ISTFSB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
FMCZHRIP	X'1000'	RESYNCH in Progress
Common Constants Follow		
FMTYPE	X'03'	Type Code for FMCB
FMCOBCEI	B'0001'	
FMCIBCEI	B'11'	
FMCRCO	'RECORD'	Equate for Record Mode

FSB (ISTFSB)

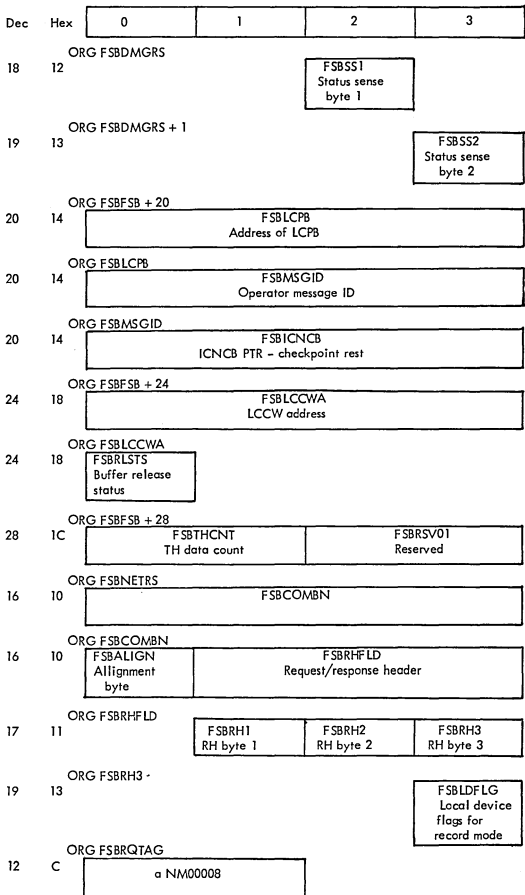
Dec	Hex	0	1	2	3
0	0	FSBFSB FSB without FDB			
32	20	FSBFDB First FDB			

0	0	ORG FSBFSB			
		FSBTYPE Control block type	FSBLNGTH Length in bytes	FSBMNRCD Minor return code of physical condition	
3	3	ORG FSBFSB + 3			
					FSBSFLGS Tpios session flags
4	4	ORG FSBFSB + 4			
		FSBFSBA Address of next FSB			
4	4	ORG FSBFSBA			
		First byte of FSBFSBA			
8	8	ORG FSBFSB + 8			
		FSBBTH BTH fields			
8	8	ORG FSBBTH			
		FSBCID Communication ID			
8	8	ORG FSBCID			
		FSBSAF Sixteen BIT source ID		FSBDAF Sixteen BIT destination ID	
12	C	ORG FSBBTH + 4			
		FSBRQTAG Request tag			
12	C	ORG FSBRQTAG			
		FSBSEQID Sequence number of ID, SDCC			
12	C	ORG FSBSEQID			
		FSBFLAGS Flag byte			

FSB (ISTFSB) (continued)

Dec	Hex	0	1	2	3
13	D	ORG FSBSEQID + 1	FSBSEQ Sequence number		
13	D	ORG FSBSEQ	FSBCMD LCCW command for local dev		
14	E	ORG FSBPTH + 6		FSBCSWST CSW status	
14	E	ORG FSBCSWST		FSBTHFLD Transmission header	
14	E	ORG FSBTHFLD		FSBTH1 TH byte 1	
14	E	ORG FSBTH1		FSBSYSRS System response	
15	F	ORG FSBTHFLD + 1			FSBTH2 TH byte 2
15	F	ORG FSBTH2			FSBEXTRS Extended response
16	10	ORG FSBFSB + 16	FSBNETRS Network response		
16	10	ORG FSBNETRS	FSBSRCAT System response category		
16	10	ORG FSBSRCAT	FSBMJRC Major return code		
17	11	ORG FSBNETRS + 1	FSBERC Extended response conditions		
18	12	ORG FSBFSB + 18		FSBDMGRS Device management response	

FSB (ISTFSB) (continued)



FSB (ISTFSB) (Continued)

Dec	Hex	0	1	2	3
-----	-----	---	---	---	---

ORG@NM00008
 12 C First byte of
FSBRQTAG

ORG@NM00008+1
 13 D Second byte of
FSBRQTAG

Alphabetical List of Fields in ISTFSB

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
@NM00008	0012	000C	FSBLCCWA	0024	0018	FSBSEQ	0013	000D
FSBALIGN	0016	0010	FSBLCPB	0020	0014	FSBSEQID	0012	000C
FSBBTH	0008	0008	FSBLDFLG	0019	0013	FSBSFLGS	0003	0003
FSBCID	0008	0008	FSBLNGTH	0001	0001	FSBSRCAT	0016	0010
FSBCMD	0013	000D	FSBMJRCD	0016	0010	FSBSS1	0018	0012
FSBCOMBN	0016	0010	FSBMNRCD	0002	0002	FSBSS2	0019	0013
FSBCSWST	0014	000E	FSBNSGID	0020	0014	FSBSYSRS	0014	000E
FSBDAF	0010	000A	FSBNETRS	0016	0010	FSBTHCNT	0028	001C
FSBDMGRS	0018	0012	FSBRHFLD	0017	0011	FSBTHFLD	0014	000E
FSBERC	0017	0011	FSBRH1	0017	0011	FSBTH1	0014	000E
FSBEXTRS	0015	000F	FSBRH2	0018	0012	FSBTH2	0015	000F
FSBFDB	0032	0020	FSBRH3	0019	0013	FSBTYPE	0000	0000
FSBFLAGS	0012	000C	FSBRLSTS	0024	0018			
FSBFSB	0000	0000	FSBRQTAG	0012	000C			
FSBFSBA	0004	0004	FSBRSV01	0030	001E			
FSBICNCB	0020	0014	FSBSAF	0008	0008			

Flag Meanings

<u>Hex</u>	<u>Flag</u>	<u>Contents</u>	<u>Bit</u>	<u>Pattern</u>	<u>Pattern</u>	<u>Pattern</u>
<u>Disp</u>	<u>Byte</u>		<u>Pattern</u>		<u>Name</u>	<u>Meaning</u>
000C	FSBFLAGS	Flag Byte	1... ..	....	FSBRFIND	Request Feedback Indicator
			.1.. ..	....	FSBACIND	Additional Command Indicator
			..1.		FSBFFIND	Function Flag Generated
			...1		FSBLBIND	Last Block Indicator
			.... 1...		FSBNONCB	No NCB for this Request
			.... .1..		FSBINPET	Invite Perpetual Response
			.... ..1.		FSBASBTU	Associated Response to Come
			.... ...1		FSBDTRCE	Device Trace Request

FSB (ISTFSB) (Continued)

Flag Meanings (Continued)

Hex Disp.	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
000C		First Byte of FSBRQTAG	1... ..	FSBRT00	Logical Error Flag
			.1... ..	FSBRT01	Contrl Block Error
			..1.	FSBRT02	End of Scheduling Block
			...1	FSBRT03	Write/Read Request
			.... 1...	FSBRT04	Feedback Requested
			.... .1..	FSBRT05	Decrement Sched Count on Dequeue
			.... ..1.	FSBRT06	Write Request
.... ...1	FSBRT07	Scheduling Flag			
000D		Second Byte of FSBRQTAG	1... ..	FSBRT08	Device End Notification
			.1... ..	FSBRT09	Critical Text Flag
			..1.	FSBRT0A	Contact
			...1	FSBRT0B	Disconnect Major Return Code Type Value
000E	FSBSYSRS	System Response	1... ..	FSBSERR	Error Flag
			..1.	FSBSPHSE	Response Phase
			...1 1111	FSBSCODE	Response Code
000F	FSBEXTRS	Extended Response	111.	FSBXFSTS	First Status
			1... ..	FSBXNORM	Off for Norm
			...1 1111	FSBXCODE	First Status Extended Response Code
			...1 111.	FSBXFINS	Final Status
			.... ...1	FSBXLCI	Leading Chars Indicated
0002	FSBMNRCD	Minor Return Code or Physical Condition Flags	1... ..	FSBMNELI	Error Lock Indicator
			.1... ..	FSBMNRVI	RVI Received
			..1.	FSBMNATN	ATTN Received
			...1	FSBMNDNU	Device not Usable
			.... 1...	FSBMNEOP	Output Error
			.... .1..	FSBMNDIF	Dialog Initiation Feature
			.... ..1.	FSBMNOA	Operation Aborted Due to Con
.... ...1	FSBMNSDA	Sense Data Available			
0003	FSBSFLGS	TPIOS Session Flags	1... ..	FSBPGBUF	Pageable Buffer
			..11 1111	FSBRSV02	Reserved
0004		First Byte of FSBFSA	1... ..	FSBGATE	Gating Flag

FSB (ISTFSB) (Continued)

Flag Meanings (Continued)

Hex Disp.	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0011	FSBERC	Extended Response Conditions	1... ..	FSBED1	End of LCP Indicator
			.1.. ...	FSBEC1	End of Command Indicator
			..1. ...	FSBEB1	End of Block Indicator
			...1 ...	FSBEM1	End of Message Indicator
			... 1..	FSBET1	End of Transmission Indicator
			... .1..	FSBFBM1	First Block in Message Indicator
			... .1..	FSBLM1	Logoff Message Received
			... ..1	FSBLG1	Leading Graphics Indicator
0012	FSBSS1	Status Sense Byte 1	1111 1..	@NM00005	Reserved
			... .1..	FSBSSUS	Unit Specify
			... ..1.	FSBSSDE	Device End
			... ..1	@NM00006	Reserved
			...		
0013	FSBSS2	Status Sense Byte 2	11.. ...	@NM00007	Reserved
			..1.	FSBSSCR	Command Reject
			...1	FSBSSIR	Interv. Required
			... 1..	FSBSSDC	Equipment Check
			... .1..	FSBSSDC	Data Check
			... ..1.	FSBSSCC	Control Check
			... ..1	FSBSSOC	Operation Check
			...		
0013	FSBLDFLG	Local Device Flags for Record Mode	1... ..	FSBLDRMF	Record Mode Flag
			.1..	FSBLDSCF	Session Control Flag
			..1.	FSBLDFME	FME Requested Flag
			...1	FSBLDBBF	Begin Bracket Flag
			... 1..	FSBLDEBF	End Bracket Flag
			... .1..	FSBLDSOF	Send Output Command Flag
			... ..1.	FSBLDSIF	Send Input Command Flag
			... ..1	FSBLDCUF	Clear/Unbind Flag
0018	FSBRLSTS	Buffer Release Status	1... ..	FSBCFTX	Buffer Contains Confid Text
			.111 1111	FSBRLRSV	Reserved

FSB (ISTFSB) (Continued)

Constants in ISTFSB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
FSTYPE	X'02'	Type Code for FSB
FSTRACE	X'8F'	Trace FSB
FSTYPEA	X'80'	FIDI FSB
FRREJBB	X'90'	Rejected Begin Bracket
FRREJBS	X'94'	Rejected Bracket Status
FSTHCON	X'1E00'	3270 Record TH Bytes 1,2
FRMNSALU	X'00'	No Session Exists
FRMRCDMP	X'29'	Reset Condl Reject- Error Lock Set
FSATHCON	X'1F00'	Asynchronous TH Constant
FRNORM	X'00'	Normal Feedback
FRCBLKE	X'04'	Control Block Error
FRLOGICE	X'08'	Logical Error in Access Method
FRPHYSC	X'0C'	I/O Error
FRPPRIEX	X'0D'	RU Purged Due to Exception on Prior Element on Chain
FRNEGRCC	X'10'	Condit Commnd Not Performed
FRESPEC	X'0C'	Special Condition
FRCMDRST	X'18'	Command Terminated by Reset
FRPURGE	X'1C'	Request Purged
FRDISCNT	X'28'	Device Disconnected
FRMLCCWS	X'04'	LCCW Synch Completion Code
FRNETP	X'80'	Network Processing
FRLINTR	X'84'	Line Trace
FRMDR	X'88'	MDR Record
FROLT	X'8C'	OLTT
FRNOTIFY	X'30'	Notify
FRCLRSP	X'31'	Clear Response

Minor Return Codes for Normal Feedback

FRMOK	X'00'	OK So Far
FRMRCDPR	X'04'	Reset Condition Successful, Read Ahead Data Present
FRMLSYN	X'04'	LCCW Synchronization
FRMSRCTL	X'0C'	CTL Command Session Record
FRMIRCTL	X'10'	CTL Command Incident Record
FRMRSTEL	X'40'	Reset Error Lock Completed
FRMRSTQP	X'41'	Reset of Queue Complete
FRMRELCB	X'30'	Release CB
FRMNPGR	X'31'	Clear Response
FRMNPUR	X'32'	Unbind Response
FRMRSTR	X'33'	Resetsr Response

Minor Return Codes for Control Block Error

FRMINVCF	X'81'	Invalid Chaining FLD in LCCW
FRMIECMD	X'87'	Invalid Escape CMD
FRMLGCNT	X'88'	Leading Graphics Count > 15
FRMESCNT	X'89'	Escape CMD Count < 4
FRMPCNT	X'8A'	Copy LCC Count NE 3
FRMINDAT	X'97'	Invalid Data Addr/Length
FRMINCNT	X'8B'	Invalid Data Count
FRMINDR	X'17'	Invalid Data/CNT-Record Mode
FRMNSEGE	X'1C'	Segmenting Error

FSB (ISTFSB) (Continued)

Constants in ISTFSB (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Physical Condition Minor Return Codes		
FRMDENOT	X'01'	3270 Device End Notification
FRMLOERR	X'88'	3270 Local Output Error Without Sense
FRMNRP	X'80'	Negative Response to Polling
FRMLERR	X'80'	3270 Loc I/O Error without Sense
FRMLOSNS	X'89'	3270 Loc Output Error with Sense
FRMLESNS	X'81'	3270 Loc I/O Error with Sense
Minor Return Codes for Logical Errors		
FRMVTAME	X'A0'	VTAM Error
FRMILRS	X'A1'	Incompatible Local/Remote Sysgens
FRMRDIP	X'A2'	Reset or Deactivate + Clear in Progress
FRMUSELE	X'A3'	User Logic Error
FRMINVL	X'A3'	User Logic Error
FRMCTLCF	X'A4'	Control Command
FRMOLTF	X'A5'	OLTT Failure
FRMCDITS	X'A6'	Conflicting Dialogue Initiation/Termination
FRMCRNF	X'A7'	Conversational Reply not Feasible
FRMELNV	X'A9'	Escape LCCW not Valid
FRMNELNV	X'AA'	Non Escape LCCW not Valid
FRMLCH	X'AB'	LCCW Count Exceeds 255
FRMNORD	X'AC'	No Read where Required
FRMINVBS	X'AD'	Invalid BTU System Response
FRMSEQER	X'AE'	Response Sequence Error
FRMERNR	X'AF'	Expected Response not Received
FRMTRUN	X'B0'	Data Truncation Occurred
FRMCPYE2	X'B1'	Attempt to Copy from Device on Different Cluster
FRMREINP	X'B2'	Reset Error Lock not Performed
FRMCPYE1	X'B3'	Attempt to Copy from UNOP DEV
FRMCPYE3	X'B3'	Attempt to Copy from a Device
FRMPRM1	X'B4'	Attempt to Preempt Preempted FMCB
FRMPRM2	X'B5'	Attempt TP Preempt an FMCB with Preempt Pending
FRMBHNDG	X'B6'	Dialogue Entry Failed Due Invalid BH Set
FRMMDNDG	X'B7'	Dialogue Entry Failed Due Invalid Processing Options
FRMRCNA	X'B8'	Read Continuous not Allowed
FRMRDLGO	X'B9'	Read with Data Length GT Internal TPIOS only
Minor Return Codes for Conditional Command not Performed		
FRMNRCC	X'00'	Reset not Performed
FRMYTC	X'80'	Yielded to Contention
Minor Code for Command Reset		
FRMCDRST	X'00'	Command has been Reset

FSB (ISTFSB) (Continued)

Constants in ISTFSB (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
<i>Minor Return Codes for Notify</i>		
FRMPREMT	X'0B'	TOLTEP Preempt
FRMRESTR	X'0C'	Restore After Preempt
FRNCDTRM	X'0D'	Conditional Term Self
<i>Minor Return Codes for Request Purged</i>		
FRPRARSS	X'01'	3705 Abend, Restart Successful
FRPRABND	X'02'	Early Warn, Recov in Prog
FRPPCHF L	X'03'	Permanent Channel Failure
FRPRANSH	X'04'	Auto Network Shutdown
FRPAPABD	X'05'	Application Abended
FRPCLSDO	X'06'	CLSDST Occurred
FRPVRYOF	X'07'	Vary Offline Occurred
FRPDISCO	X'08'	Disconnect Occurred
FRPDBTEX	X'09'	Buffer Threshold Exceeded
FRPRTF	X'10'	Temp Record Device Failure
FRPRTS	X'11'	Terminate Self
FRPRAP	X'0A'	Appl Issued Clear
FRPRPR	X'0B'	Preempt
FRNFRE	X'0C'	Restore
FRPARSSL	X'81'	This is last Operation Purge for 3705 Abend, Restart
<i>Minor Return Codes for Network Processing</i>		
FRMMTAID	X'00'	MTA Device Identified
FRMNP LQ	X'04'	Neg Poll Limit Reached Queue Option
FRMNPDES	X'08'	Device End Status
FRMNPSE	X'80'	Error Sense/Status
FRMDEBSF	X'84'	Device Error - BSC Status to Follow
FRMBIDE	X'0C'	BSC ID Error
FRMMTABS	X'18'	MTA/BSC Verify Successful 370X
FRMBSCR	X'90'	BSC ID Verify Successful (in Host), Error Lock Set
FRMNUTRM	X'94'	BSC ID Verify Unsuccessful Error Lock Set
FRMNP HPS	X'10'	Hold - Pending Sense/ST
FRMNP RMD	X'20'	Request Manualdial
FRMBSCOK	X'1C'	BSC ID Association Success- Ful in TPIOS
FRMBSCKO	X'1E'	BSCID Successful in VS1 TPIOS
FRMUNID	X'14'	Unidentified Dial in Terminal
FRMNP R DV	X'42'	Reset Conditional Failed
FRMFIRM	X'10'	LU Failed
FRMTERM	X'11'	Terminate Received
<i>Minor Return Codes for Line Trace</i>		
FRMLINTR	X'00'	Line Trace
FRMLTRE	X'04'	Line Trace Terminated by ERR
<i>Minor Return Codes for MDR Records</i>		
FRMMDR	X'00'	MDR Records

FSB (ISTFSB) (Continued)

Constants in ISTFSB (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Minor Return Codes for OLTT		
FRMOLTR	X'80'	OLT Request Message
FRMOLTE	X'04'	OLTT CMD Terminated
FRMOLTNC	X'90'	No CCW String Queued
FRMOLTNT	X'91'	CCW String Queued - Not Test Mode Req
FRMOLTNS	X'92'	I/O not Started - HDV not Issued

**** Minor Return Code for Command Reset **** **

FRMRSTRM	X'80'	Reset by Successful TRM
FRMRUTRM	X'81'	Reset by Successful TRM

**** Minor Return Codes for Physical Condition ****

FRMUSDA	B'00000001'	Unsol Sense Data Avail
FRMSE	B'10000001'	Error Sense Data Avail
FRMUSE	B'10000001'	Error, Unsolicited, Sense
FRMDDR	X'90'	Asyn Dial Discon Received
FRMNCLR	X'0A'	Cleared by Clear
FRMCU	X'06'	Cleared by Clear/Unbind
FRMCUN	X'07'	Cleared by Clear/Unbind/Notfy

NCP System Response Field

Response Phase

NCPPHSE0	B'00'	Phase 0 Response
NCPPHSE1	B'01'	Phase 1 Response
NCPPHSE2	B'10'	Phase 2 Response
NCPPHSE3	B'11'	Phase 3 Response

Phase 0 Non Error Responses

NCPDAC	B'00011'	Device Assyn Complete
NCPMTAID	B'00100'	MTA Device Identified
NCPCAPM	B'00101'	Channel Adapter to Prim Mode
NCPCASM	B'00110'	Channel Adapter Secondary Mode
NCPEYSS	B'00111'	Entering System Slowdown
NCPLSYSS	B'01000'	Leaving System Slowdown
NCPICOMP	B'01001'	Init Complete
NCPMDR	B'01010'	MDR Record
NCPANSCT	B'11011'	Auto Network Shutdown via Channel Timeout
NCPANSOP	B'11100'	Auto Network Shutdown via Operations Panel
NCPANSAC	B'11101'	Auto Network Shutdown Complete
NCPMSLOG	B'11110'	Serviceability Aid Mass Storage Logging
NCPOFLO	B'11111'	Overflow Configuration

Phase 1, 2, 3 non Error Responses

NCPOK	B'00000'	Command OK So Far
NCPLGR	B'00001'	Leading Graphics Received
NCPOKD	B'00010'	OK So Far with Date
NCPNPLQ	B'00011'	Negative Poll Limit Queue Option
NCPOLTR	B'00100'	OLT Request
NCPNPLNW	B'00110'	Negative Poll Limit - Nowait Option
NCPLINTR	B'00111'	Line Trace
NCPBSTAT	B'00101'	BSC Status Message

FSB (ISTFSB) (Continued)

Constants in ISTFSB (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Phase 0 Error Responses		
NCPCHERR	B'00000'	Channel Error
NCPIRID	B'00001'	Invalid Resource ID
NCPICMD	B'00010'	Invalid Command
NCPIMOD	B'00011'	Invalid Modifier
NCPRSIP	B'00100'	Reset or Deactivate Progress
NCPDIACT	B'00101'	Device Inactive
NCPLIACT	B'00110'	Line Inactive
NCPCNVR	B'00111'	Command not Valid for Resource
NCPCSXE	B'01000'	Command Syntax Error
NCPCNBS	B'01001'	Command did not Conform to BSC Specifications
NCPICDL	B'01010'	Invalid Control Data Leng
NCPRSNP	B'01011'	Reset not Performed
NCPGPA	B'01011'	Gen. Poll Aborted
NCPDNCR	B'01100'	Data not Core Resident
NCPDSQL	B'01101'	Dial Set Queue Limit Reached
NCPSDLI	B'01110'	Switched Device Line Incompatibility
NCPIIXL	B'01111'	Invalid Text Length
NCPICOD	B'10001'	Invalid Control Data
NCPINBTU	B'10010'	Incomplete BTU
NCPDIATU	B'10100'	Data in Use
NCPICCM	B'10101'	Invalid Control Command or Modifier
NCPOLTRJ	B'10110'	OLT Command Rejected
NCPMULTD	B'11000'	Multiple Dial Requests
NCPMODI	B'11001'	Mode Inconsistency
NCPBUFNA	B'11010'	Buffer not Available
NCPSYSS	B'11011'	Command Rejected System in Shutdown
NCPERLS	B'11100'	Command Rejected Error Lock Set
NCPCNOP	B'11101'	Command Rejected---- Channel Inoperative
NCPCRS	B'11110'	Command Reset or Line Deactivated
NCPESCO	B'11111'	Phase 0 Error Escape
Extended Response (Final Status) for Phase 0 Error Escape		
NCPIPLE	B'00001'	IPL Lock on
NCPVNE	B'00101'	Invalid Node
NCPTLE	B'00100'	Trunk Error Lock on
Phase 1, 2, 3 Error Responses		
NCPDACHK	B'00000'	Data Check
NCPPIVR	B'00001'	Possible Interventions Required
NCPIVR	B'00010'	Intervention Required
NCNPPLW	B'00011'	Negative Poll Limit--- Wait Option
NCPYCNT	B'00100'	Yield to Contention
NCPDEBF	B'00101'	Device Error--BSC Status to Follow
NCPBIDER	B'00110'	BSC ID Error
NCPLTRT	B'00111'	Line Trace Terminated
NCPDOCT	B'01000'	OLT Command Terminated
NCPSSNS	B'01001'	Session not Started BSC Status Message

FSB (ISTFSB) (Continued)

Constants in ISTFSB (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
NCPSTAT	B'01010'	BSC Error Status Message
NCPDCREC	B'01100'	Data Disconnect Received
NCPBRREC	B'10011'	Break Received
NCPCRJS	B'11000'	Contact Rejected ---- Session Started
NCPDDIC	B'11001'	Dial Data Inconsistency Command Reset ----
NCPILR	B'01101'	IPL Required
NCPTRNKE	B'01110'	Trunk Error
NCPBLKR	B'01111'	Remote Block Returned Host

NCP Extended Response Field Values

First Status Values

NCPXCNTL	B'000'	Control
NCPXTXT	B'001'	Text
NCPXTXT	B'010'	Transparent Text
NCPXHEAD	B'011'	Heading
NCPXSPEC	B'100'	Special
NCPXHCHK	B'111'	Hardware Check

Final Status Values with Normal First Status i.e. Control, Text, Transparent Text or Heading

NCPXTIMT	B'0000'	Timeout
NCPXCUTF	B'0010'	Cutoff
NCPXABLK	B'0011'	Abort Block
NCPXEHE	B'0100'	EOT Halted ERP
NCPXDCE	B'0101'	DLE Control End
NCPXWRAK	B'0110'	Wrong ACK
NCPXRSBE	B'1000'	Received Sub Block End
NCPXETX	B'1001'	End of Text
NCPXETB	B'1010'	End of Block
NCPXENQ	B'1011'	Enquiry
NCPXEOT	B'1100'	End of Transmission
NCPXRVI	B'1101'	Reverse Interrupt
NCPXPACK	B'1110'	Positive ACK
NCPXWACK	B'1111'	Wait ACK

Final Status Values with Special First Status

Timeout-- same as Normal First Status

NCPXCREJ	B'0001'	Command Reject
NCPXBPE	B'0010'	Buffer Pool End
NCPXSLTD	B'0011'	Selected
NCPXRDS	B'0100'	Received Disconnect Signal
NCPXLDTA	B'0101'	Last Data
NCPXRSET	B'0110'	Reset
NCPXPLLD	B'0111'	Polled
NCPXRSBE	B'1000'	Transmit Sub Block End
NCPXESWR	B'1001'	EOT Sent after Wack Received

FSB (ISTFSB) (Continued)

Constants in ISTFSB (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
NCPXRBT	B'1010'	Received Break in Text
NCPXPLLS	B'1011'	Polling Stop
NCPXEOTS	B'1100'	EOT Sent
NCPXRCB	B'1101'	Received Break
NCPXDSC	B'1110'	Disconnected
NCPXCNTD	B'1111'	Connected

Final Status Values with Hardware Check First Status

NCPXEQUC	B'0000'	Equipment Check
NCPXCSBC	B'0010'	CSB Check
NCPXADC	B'0100'	Adapter Check
NCPXUSER	B'0110'	User Error
NCPXMODC	B'1000'	Modem Check
NCPXDTOC	B'1010'	DSR Turn on Check
NCPXDTEC	B'1100'	DSR Turn off Check
NCPXACUC	B'1110'	ACU Check

**** Miscellaneous Equates ****

FSBLCWMX	X'FF'	Max # LCCW's LCPB
FRMCRJSS	X'08'	Contact Rjcted, Sesn Started
FSBNRMST	X'0C'	Normal I/O Status of CE, DE

Session Flag Values

FSESCS	X'01'	Contact Successful
FSESI5	X'02'	Invite Successful
FSESCR	X'03'	Contact Rejected
FSESDS	X'04'	Disconnect Successful
FSESCWDS	X'05'	Contact/Write/Disconnect Successful
FSESIDS	X'06'	Invite/Disconnect Success
FSESIADS	X'07'	Invite W. Auto Restart Completed a Cycle
FSESDF	X'08'	Comm'd with Discon. Failed
FSESCF	X'09'	Write with Contact and Disconnect Failed
FSE5IF	X'0A'	Invite with Connect Failed
FSE5SDF	X'0B'	Write with Contact and Disconnect Failed to End Session
FSE5SDF	X'0C'	Invite Started Session but Disconnect Failed
FSE5IR	X'0E'	Invite Rejected - Disc Sent

RH, TH, Sense Constants

FSSEQSNS	X'00000000'	SEQ Num Sense Field
FSSEQSLN	X'04'	Length of Above
FSEPRRH	X'930100'	Stand-Alone Pacing Response RH
FSDEONLY	X'0200'	DE Only Status
FSSNAMSK	X'3FFF'	Mask to Zero First Two Bits of Status

ICE (ISTICE)

Dec	Hex	0	1	2	3
0	0	ICESUBJ Address of ACDEB or RDT			
4	4	ICEOBJ Address of RDT or ACDEB			
8	8	ICESUBJQ Link Field for Sub Chain			
12	C	ICEOBJQ Link Field for OBJ Chain			
16	10	ICESIDE Field Link for Other Ices			
20	14	ICEDATA Address of Request Data			
24	18	ICERPHA Address of RPH			
28	1C	ICEFLAGS Flag Bytes	@NM00002 PAD to Full Word		
32	20	ICEUECBX Anchor for Chain of UECBS or ICX			
36	24	ICERSC2B Resource 2 Name from Initiate RU			

ICE (ISTICE) (Continued)

Alphabetical List of Fields in ISTICE

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
@NM00002	0029	001D	ICEOPJQ	0012	000C	ICESUBJ	0000	0000
ICEDATA	0020	0014	ICERPHA	0024	0018	ICESUBJQ	0008	0008
ICEFLAGS	0028	0010	ICERSC2B	0036	0024	ICEUECEX	0032	0020
ICEOBJ	0004	0004	ICESIDE	0016	0010			

Flag Meanings

<u>Hex</u>	<u>Bit</u>	<u>Pattern</u>	<u>Pattern</u>
<u>Disp</u>	<u>Pattern</u>	<u>Name</u>	<u>Meaning</u>
001C	ICEFLAGS	Flag Bytes	
	1... ..	ICESPEC	Specific Accept
	.1... ..	ICEICX	ICX is Present
	..1.	ICELGCN	Acquire is Logon Type
	...1	ICERSC2F	1=ICERSC2B is a name
	.... 1...	ICESTAPR	0=no name
	.... .111	@NM00001	Shoulder Tap Slack

LCCW (ISTLCCW)

Dec	Hex	0	1	2	3
0	0	LCCWOP Operational Code-Control	LCCWFLAG Flag Byte	LCCWCNT Data Count	
4	4	LCCWDATA Data Address or Immed. Data			

Alphabetical List of Fields in ISTLCCW

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
LCCWCNT	0002	0002	LCCWDATA	0004	0004	LCCWFLAG	0001	0001
LCCWOP	0000	0000						

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning			
0000	LCCWOP	Operation Code -Control	1... ..	LCCWSI	Sess Init/Start Dialog Flg			
			.1.. ..	LCCWSD	Sess Discor/End Dialog Flg			
			..11 1111	LCCWRWOP	Read/Write Operation Code			
			..1.	@NM00001	Reserved			
			...1	LCCWSOP	Special Operation Like Erase or Read Cont			
			.... 1111	LCCWCTL	Control Type		
			.... 11..	LCCWMODE	Mode Type		
			.... ..11	LCCWTYPE	Operation Type		
			0001	LCCWFLAG	Flag Byte	1... ..	LCCWCD	Chain Data
						.1.. ..	LCCWCC	Chain Command
						..1.	LCCWCKPT	Suppress 3705 Check Point Record
						...1	LCCWNTVC	Do not Perform Valchek
.... 1..	LCCWIDAT	LCCWDATA Contains Data						
.... .1..	LCCWLSI	LCCW Synch Indicator						
.... .1..	LCCWPER	Post-Resp						
.... ..1.	LCCWRFI	Request Feedback Indicator						
.... ...1	LCCWACI	Addition Command Indicator						

LCCW (ISTLCCW) (Continued)Constants in ISTLCCW

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
LXDQ	X'3B'	Reset Device Queue
LXEC	X'4B'	Reset at End of Command
LXO	X'5B'	Reset Orderly
LCCWPRGE	X'6B'	Purge
LWH	X'0F'	Write Header Indi. 1st Block
LWRVI	X'1F'	Write RVI
LWNA	X'2F'	Write Negative Ack
LWAA	X'3F'	Write Alternate Ack
LWPLG	X'5F'	Write Ack Leading Graphics
LWNLG	X'6F'	Write Nack Leading Graphics
LSMDE	X'4F'	Set Mode
LIFBM	X'7F'	Indic 1st Block of Message
LTEST	X'FE'	Test LCCW
LPRMPT	X'13'	Preempt LCCW
LRSTR	X'43'	Restore LCCW
LEXEC	X'FF'	Special Control Operation
LREAD	B'10'	Read Type LCCW
LWRITE	B'01'	Write Type LCCW
LCNTRL	B'11'	Control Type LCCW
LRESET	B'1011'	Reset Commands
LTIC	X'08'	Logical Tic
LWR	B'000001'	Write Conversational
LWB	B'000101'	Write Block
LWM	B'001001'	Write Message
LWT	B'001101'	Write Transmission
LEWM	B'011001'	Erase/Write Message
LEWT	B'011101'	Erase/Write Transmission
LEAU	B'010001'	Erase All Unprotected
LRB	B'000110'	Read Block
LRM	B'001010'	Read Message
LRT	B'001110'	Read Transmission
LRMOD	B'010010'	Read Modified
LRBUF	B'010110'	Read Buffer
LRCONT	B'011010'	Read Continuous
LRPEP	B'011110'	Read Perpetual
LCPYM	B'101001'	Copy Message
LCPYT	B'101101'	Copy Transmission
LD	X'23'	Disconnect
LDEC	X'33'	Disconnect with End of Call
LEOC	X'53'	End of Call Command
LXEL	X'0B'	Reset Error Lock
LXC	X'1B'	Reset Conditional
LXI	X'2B'	Reset Immediate
LC	X'03'	Contact
LWPA	X'FD'	Write Positive Ack
LMT	B'11'	Transmission Mode
LMS	B'00'	Special Mode like Conv, EAU
LMB	B'01'	Block Mode
LMM	B'10'	Msg or Continuous Mode

LCCW (ISTLCCW) (Continued)

Constants in ISTLCCW (Continued)

Following Equates for - Port Solicitor (Dial)

Port Solicitor Command Codes

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
PSOL	X'FE'	Special Port Solicitor Command
STCTL	X'01'	Start Control
RESTCTL	X'02'	Reset & Control - Redrive
STIPUT	X'03'	Start Input

Following Equates for SDLC Support

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
LCCHOLD	X'01'	Hold
LCCRHOLD	X'02'	Release Hold
LSEND	X'F1'	Send
LCLEAR	X'F2'	Clear
LCRUD	X'F3'	Clear, Unbind
LCRUDNFY	X'F4'	Clear, Unbind, Notify
LNFY	X'F5'	Notify
LRELCB	X'F6'	Release CB
LRESTSR	X'F7'	Resetsr
LCLRNFY	X'F8'	Clear/Notify
LCHPUR	X'F9'	Purge
LCCWSIZE	8	LCCW size
LRDS	X'FF'	Record dev stats command
LQUIS	X'FE'	Quiesce Command

LCPB (ISTLCPB)

Dec	Hex	0	1	2	3
0	0	LCPTYPE Type Code	LCPLNGTH Length in Bytes	LCPFLAGS Flag Byte	LCPMNRCD LCP Minor Rejection Code
4	4	LCPCHAIN APS Chain			
8	8	LCPRUCNT Number of RU for this LCPB	LCPFLAG2 Second Flag Byte	LCPSEQ Outbound Sequence Number	
12	C	LCPCID Communication ID			
16	10	LCPNXLCCW ADDR Next LCCW			
20	14	LCPFDABA BTU Address			
24	18	LCPTLBAD Address of TLB			
28	1C	LCPFOSN Sequence Number First BU		LCPFSNCH 1st SEQ Number in Ru Chain	
32	20	LCPRSV03 Reserved	LCPFLG1 Flags	LCPRRCT Count of Responses Received	LCPRRCNT Count of Responses Requested
36	24	LCPFLCCW Internal DOS TPIOS Pointer to First LCCW			
40	28	LCPPLCCW First LCCW			

Org LCPCHAIN

4	4	First Byte of LCPCHAIN
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Org LCPCID

12	C	LCPSAF Source Identification	LCPDAF Destination Identification
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LCPB (ISTLCPB) (Continued)

Dec	Hex	0	1	2	3
		Org LCPFLCCW			
36	24	LCPUBFSB Unbind FSB Address			
		Org LCPPLCCW			
40	28	LCPRSTQA Reset LCPB Queue Header			
44	2C	LCP PABA PAB Pointer			
		Org LCPPABA			
44	2C	LCPRPHA RPH Pointer			
		Org LCPRPHA			
44	2C	First Byte of LCP PABA and LCPRPHA			

Alphabetical List of Fields in ISTLCPB

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
LCPCHAIN	0004	0004	LCPLCCW	0040	0028	LCPRUCNT	0008	0008
LCPCID	0012	000C	LCPLNGTH	0001	0001	LCPSAF	0012	000C
LCPDAF	0014	000E	LCPMNRCD	0003	0003	LCPSEQ	0010	000A
LCPFDBA	0020	0014	LCPNXLCW	0016	0010	LCPTLBAD	0024	0018
LCPFLAGS	0002	0002	LCP PABA	0044	002C	LCPTYPE	0000	0000
LCPFLAG2	0009	0009	LCPRPHA	0044	002C	LCPUBFSB	0036	0024
LCPFLCCW	0036	0024	LCPRRCCCT	0034	0022			
LCPFLG1	0033	0021	LCPRRNT	0035	0023			
LCPFOSN	0028	001C	LCPRSTQA	0040	0028			
LCPFSNCH	0030	001E	LCPRSV03	0032	0020			

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0002	LCPFLAGS	Flag Byte	1... .. .1... .. ...1... ..	LCPLOGIC LCPBLK LCPFBIND LCPRJECT	LCP Logic Error LCP Control Block Error Free Block Indicator LCPB Rejected Flag

LCPB (ISTLCPB) (Continued)

Flag Meanings (Continued)

<u>Hex Disp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
			...1....	LCPCRFLG	Rejected Contact Request
			....1...	LCPMDRST	LCP has been reset
			....1..	LCPRESET	Reset Request LCP
			....1.	LCPDTRCE	Device Trace
			....1	LCPREQOK	Require Request Handled as NOOP, Completion O.K.
0004		First Byte of LCPCHAIN	1... ..	LCPCHNG	Gate Bit
0009	LCPFLAG2	Second Flag Byte	1... ..	LCPPRFLG	Pacing Required
			.1.	LCPASYN	Asynchronous LCPB
			..1.	LCPRSTRT	Restart LCPB
			...1	LCPTLBPI	TPIOS Block LCCW
			....1..	LCPFIDO	FIDO TH
			....1..	LCPCPURG	Indicator for Record Request may cause Following Requests to be Purged
			....1.	LCPTPICB	LCPB owned by TPIOS
			....1	LCPSPURG	Request Subject to Purging due to Prior Exception
002C		First Byte of LCPPABA and LCPRPHA	1... ..	LCPFTYPE	Feedback Type
0021	LCPFLG1	Flags	1... ..	LCPRSV04	Reserved for Alignment
			.1.	LCPINTER	Internal LCPB
			..1.	LCPREDRV	LCPB is for Redrive
			...1	LCPSTLB	TLB not to be Freed
			....1..	LCPDIRPT	Direct Post
			....111	LCPRSV05	Reserved

LCPB (ISTLCPB) (Continued)

Constants in ISTLCPB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Constants for LCPTYPE		
LCRPHFT	B'1'	
LCPABFT	B'0'	
LCPBFIRM	X'10'	LU Failed, CLSDST, Sched Lost Term, OPNDST may be tried
LCPBTERM	X'11'	Term Received, CLSDST, Sched Lost Term
LCTYPE	X'04'	
LCPCLACB	X'04'	LCPB from Close ACB
PLCPTYPE	X'28'	Purge LCPB Type ID
LCPETYPE	X'40'	Extended LCPB Type ID

Minor Return Codes

LCMCRSTR	X'F7'	Minor RC for Resets
LCPMNEW	X'02'	Early Warning, Recovery in Progress
LCPMNPF	X'03'	Perm. I/O Failure
LCPMNAS	X'04'	Auto Network Shutdown
LCPMNCL	X'06'	Close/CLSDST Occured
LCPMNVD	X'07'	Vary Deactivate
LCPMNTF	X'10'	Temp Record Device Failure
LCPMNSF	X'01'	Temp Basic Failure
LCPMNTS	X'11'	Terminate Self
LCPMNAP	X'0A'	Appl. Issued Clear
LCPMNPR	X'0B'	Preempt
LCPMNRE	X'0C'	Restore

NCB (ISTNCB)

Dec	Hex	0	1	2	3
0	0	NCBTYPE Control block type code	NCBLNGTH Length in bytes	NCBDAF ID of destination	
4	4	NCBRDTE Address of RDT entry			
8	8	NCBTSKID Task ID			
12	C	NCBNSNA Address of next schedulable node			
16	10	NCBFMCBA Address of first FMCB			
20	14	NCBNCBA CID of next same/lower level node		NCBNCSL CID of next same/level node	
24	18	NCBFLAGS Common NCB flags			
28	1C	NCBRVPTI Count of last trace records		NCBLTRC Last trace record count	
32	20	NCBFMCBP Address of port solicitor FMCB			
36	24	NCBDEVCH Node Dev Char			
44	2C	NCBSWDAF Real Network Address of Term in SW. Subarea		NCBRSV01 Reserved	

Org NCBFLAGS

24	18	NCBCSTAT Connection status flag	NCBFRAS RAS flag
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Org NCBFRAS

25	19	NCBFTRIO I-O trace active this node
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Org NCBFTRIO

25	19	NCBFLTIO I-O trace active this node
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NCB (ISTNCB) (Continued)

Dec	Hex	0	1	2	3
		Org NCBFLAGS + 2			
26	1A	NCBFLAG1 NCB flags			
		Org NCBFLAGS + 3			
27	1B	NCBNMLLN Number of lower level nodes			

Alphabetical List of Fields in ISTNCB

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
NCBCSTAT	0024	0018	NCBFRAS	0025	0019	NCBRDTE	0004	0004
NCBDAF	0002	0002	NCBFRIO	0025	0019	NCBRV01	0046	002E
NCBDEVCH	0036	0024	NCBLNGTH	0001	0001	NCBRVPT1	0028	001C
NCBFLAGS	0024	0018	NCBLTRC	0030	001E	NCBSWDAF	0044	002C
NCBFLAG1	0026	001A	NCBNCBA	0020	0014	NCBTSKID	0008	0008
NCBFLTIO	0025	0019	NCBNCSL	0022	0016	NCBTYPE	0000	0000
NCBFMCBA	0016	0010	NCBNMLLN	0027	001B			
NCBFMCBP	0032	0020	NCBNSNA	0012	000C			

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
001A	NCBFLAG1	NCB Flags	1... ..	NCBSNAI	Old Node
			.1... ..	NCBCCNE	Node Sick Flag
			..1... ..	NCBRSTRT	Recovery in Progress
			...1... ..	@NM00001	Reserved
			... 1... ..	NCBTTF	C/B Ignore Trickle Traffic 1=Yes
			... ..11.	@NM00002	Reserved
			... ..1	@NM00003	Used for DOS

Constants in ISTNCB

Label	Value	Meaning
LDTYPE	X'07'	Type Code for LDNCB
ICTYPE	X'06'	Type Code for ICNCB
DNTYPE	X'05'	Type Code for DNCB
HCTYPE	X'14'	HCNCB Type
CCTYPE	X'15'	CCNCB Type Code
LUTYPE	X'25'	LUNCB Type Code
NCNOTRC	0	No Trace Required

NCSPL (ISTNCSPL)

Dec	Hex	0	1	2	3
0	0	NCSPFx Queue Element Prefix			
16	10	NCSPLSID DOS=X'00' (Console ID)	NCSPLVCD Verb Code	NCSPLVBF Verb Modifier Flags	
20	14	NCSPLVFL Command Flags	NCSPLVF1 Special Proc Flags	NCSPRMRC Purge Minor Return Code Field	NCSIORC I/O or Restart Return Code
24	18	NCSPRRNT Addr RN Entry for Line Trace			
28	1C	NCSPLRID ID = 'Nodename'			
36	24	NCSPLLID Logon = 'Nodename'			
44	2C	NCSDLID Offhook ID			
48	30	NCSRSV03 Reserved			
52	34	NCSPLRPT ID = 'Nodename' RDTE Address			

NCSPL (ISTNCSPL) (Continued)

Dec	Hex	0	1	2	3
56	38	<p>NCSPLLPT Logon/Logoff = 'Nodename' RDTE Addr</p>			
60	3C	<p>NCSPLCMD 3705 Control Command Codes</p>		<p>NCSNCEP EP Subchannel Addr</p>	<p>NCSMSGSP Reserved for Message Supression</p>
64	40	<p>NCSPLUAD U = 'Unit Address'</p>			<p>@NM00011 Reserved</p>
68	44	<p>NCSPLWRE WTOR ECB</p>			
72	48	<p>NCSPLWRF WTOR Reply Area</p>			
144	90	<p>NCSPLRAD RDTE PTR for Allocate/Deallocate</p>			
148	94	<p>NCSIOCID Current CID for DAF Lock Held</p>			
152	98	<p>NCSPLWKA NCS Work Area Address</p>			
156	9C	<p>NCSPLCVT Pointer to VTAM CVT</p>			
160	A0	<p>NCSPLRPH Pointer to RPH</p>			

NCSPL (ISTNCSPL) (Continued)

Dec	Hex	0	1	2	3
164	A4	NCSPLECB ECB for Vary PGS			
168	A8	NCSPLFSB Address of USS-FSS FSB or RU			
172	AC	NCSPLRCR Address RDTE for CR			
176	B0	NCSPLFL1 Vary Flags	NCSPLFL2 Vary Flags	NCSPLFL3 Flag Byte	NCSPLFL4 Flag byte
180	B4	NCSDLRSN Dial Reason Codes	NCSPLFL5 Flag Byte	NCSPLOLN Length O/B RU	
184	B8	NCSPLP1 Addr Vary PAB			
188	BC	NCSPLP2 Addr D/L/R PAB			
192	C0	NCSPLP3 Addr ERP PAB			
196	C4	NCSPLSPL Addr Assoc. NCSPL			
200	C8	NCSPLWEL Addr Post RPH			
204	CC	NCSPLRRP Addr Remote RN RDTE in Local RDT			
208	D0	NCSPLRUO Addr O/B RU			

NCSPL (ISTNCSPL) (Continued)

Dec	Hex	0	1	2	3
212	D4	NCSPLRUI Addr Buffer for 1/8 RU			
216	D8	NCSPLAPP Addr NCSPL Appendage			
220	DC	NCSRNAME Rname=from Vary Activate			
228	E4	NCSPLSQN Sequence=Nr. for Response	NCSPLGID Binary Rep of GID Value	NCSPLPID Binary Rep of PID Value	
232	E8	NCSPLMID Logmode = 'Modename'			
240	F0	NCSPLNSN RDTE NSNEA at CLSDST			
244	F4	NCSSENSE Sense			
248	F8	NCSCPWPT Address of CPWA			
252	FC	NCSMGLPT PTR to USS/FSS MSG Param List			
256	100	NCSUFMCB Pointer to SSCP-LU FMCB			
260	104	NCSPLRH Request RH		NCSPLRTY Type from RTGOH RU	

NCSPL (ISTNCSPL) (Continued)

Dec	Hex	0	1	2	3
		Org NCSPLVBF			
18	12			First Byte of NCSPLVBF	
		Org NCSPLVBF+1			
19	13			Second Byte of NCSPLVBF	
		Org NCSPLCMD			
60	3C	NCSCMDA RH Flags			
		Org NCSPLCMD+1			
61			NCSCMD Command Field		
		Org NCSPLRAD			
		NCSLSCMD Line Sched Command Type	NCSPLRCD Hex Value for Line Sched Param		
		Org NCSIOCID			
		NCSPLCID Alias for Above			
		Org NCSPLCID			
148	94	NCSPLSAF Source Address		NCSPLDAF Destination Address	
		Org NCSSENSE			
244	F4	NCSSNS1 Sense Data Major Code	NCSSNS2 Sense Modifier Byte	NCSSNS2 User Sense Data	

NCSPL (ISTNCSPL) (Continued)

Alphabetical List of Fields in ISTNCSPL

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
@NM00011	0067	0043	NCSPLFSB	0168	00A8	NCSPLSPL	0196	0004
NCSCMDA	0060	003C	NCSPLGID	0230	00E6	NCSPLSQN	0228	00E4
NCSCMDB	0061	003D	NCSPLLID	0036	0024	NCSPLUAD	0064	0040
NCSCPWPT	0248	00F8	NCSPLLPT	0056	0038	NCSPLVBF	0018	0012
NCSDLID	0044	002C	NCSPLMID	0232	00E8	NCSPLVCD	0017	0011
NCSDLRSN	0180	00B4	NCSPLNSN	0240	00F0	NCSPLVFL	0020	0014
NCSIIOCID	0148	0094	NCSPLOLN	0182	00B6	NCSPLVF1	0021	0015
NCSIORC	0023	0017	NCSPLPID	0231	00E7	NCSPLWEL	0200	00C8
NCSLSCMD	0144	0090	NCSPLP1	0184	00B8	NCSPLWKA	0152	0098
NCSMGLPT	0252	00FC	NCSPLP2	0188	00BC	NCSPLWRE	0068	0044
NCSMSGSP	0063	003F	NCSPLP3	0192	00C0	NCSPLWRF	0072	0048
NCSNCEPEP	0062	003E	NCSPLRAD	0144	0090	NCSPRMRC	0022	0016
NCSPFXX	0000	0000	NCSPLRCD	0145	0091	NCSRRNAME	0220	00DC
NCSPLAPP	0216	00D8	NCSPLRCR	0172	00AC	NCSRRNPT	0024	0018
NCSPLCID	0148	0094	NCSPLRH	0260	0104	NCSRSV03	0050	0032
NCSPLCMD	0060	003C	NCSPLRID	0028	001C	NCSSENSE	0244	00F4
NCSPLCVT	0156	009C	NCSPLRPH	0160	00A0	NCSSENS2	0246	00F6
NCSPLDAF	0150	0096	NCSPLRPT	0052	0034	NCSSENS1	0244	00F4
NCSPLECB	0164	00A4	NCSPLRRP	0204	00CC	NCSSENS2	0245	00F5
NCSPLFL1	0176	00B0	NCSPLRXY	0263	0107	NCSUFMCB	0256	0100
NCSPLFL2	0177	00B1	NCSPLRUI	0212	00D4			
NCSPLFL3	0178	00B2	NCSPLRUO	0208	00D0			
NCSPLFL4	0179	00B3	NCSPLSAF	0148	0094			
NCSPLFL5	0181	00B5	NCSPLSID	0016	0010			

Flag Meanings

<u>Hex</u>	<u>Flag</u>	<u>Contents</u>	<u>Bit</u>	<u>Pattern</u>	<u>Pattern</u>	<u>Pattern</u>
<u>Disp</u>	<u>Byte</u>		<u>Pattern</u>	<u>Name</u>	<u>Meaning</u>	
00B0	NCSPLFL1	Vary Flags	1... ..	NCSPL2IN	Second Entry	
			..1... ..	NCSPLSOM	Supress Op. Message	
			...1... ..	NCSPLEBN	Entry from BNN SSCP	
			....1... ..	NCSPLREQ	NCSPL from Restora	
			.... 1... ..	NCSPLNON	Do not Addr RDT	
			.... .1.. ..	NCSPLAPU	Segment	
			.... ..1. ..	NCSPL2CN	Activate Physical	
			.... ..1. ..	NCSPL2CN	Done by Load	
			.... ..1. ..	NCSPL2CN	Second Contact	
			.... ..1. ..	NCSPL2CN	Request	
			.... ..1. ..	NCSPL2CN	BNN Posted	
00B1	NCSPLFL2	Vary Flags	1... ..	NCSPLVDP	NCSPL on Vardef PAB	
			..1... ..	NCSPLRSF	No Sick Clear before	
			...1... ..	NCSPLRIO	I/O	
			...1... ..	NCSPLRIO	I/O = Restart I/O	
			.... 1... ..	NCSOUFMC	Purge Only User FMCB	
			.... 1... ..	NCSPLDS	1=CIO Saved	
			.... 1... ..	NCSREMP	Response Data	
			.... .1.. ..	NCSREMP	Remots Power Off	
			.... .1.. ..	NCSREMP	Spec by Oper	

CSPL (ISTNCSPL) (Continued)

sg Meanings (Continued)

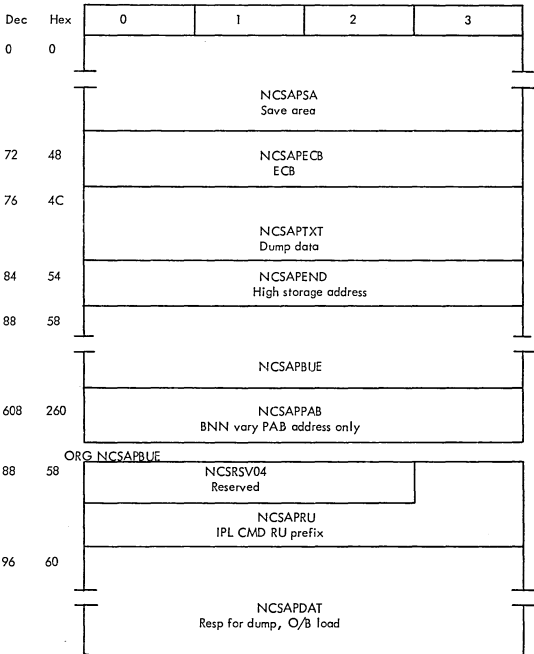
<u>ix</u> <u>sp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit</u> <u>Pattern</u>	<u>Pattern</u> <u>Name</u>	<u>Pattern</u> <u>Meaning</u>
			.... .1.	NCSPLVIS	Vary IMM Start Caller of CVP
			.... .1	NCSPLVIT	Vary IMM Term Caller of CVP
0B2	NCSPLFL3	Flag Byte	1... ..	NCSPLMOM	ERP Caused by Failure of Higher Node 1=EP Subchannel
			.1... ..	NCSEPP	Present
			..1... ..	NCSPLANS	On for Act in Answer Mode Off for Act in Non-Answer Mode
			...1	NCSGID	On for Path with GID Parm
			... 1...	NCSPID	On for Path with PID Parm
			.... .1..	NCSANS	On for Activate with ANS Parm
			.... .1.	NCSFINAL	Final Parm Exists
			.... .1	NCSSEND	End Parm Exists
0B3	NCSPLFL4	Flag Byte	1... ..	NCSDLNID	ID Present in NCSPL - Off
			.1... ..	NCSPLRSO	Reset Only
			..1... ..	NCSPLVID	Orig CMD was Modify Dump
			...1	NCSDSPE	Display Every
			.... 1..	NCSDSPA	Display Act
			.... .1..	NCSDSPI	Display Inact
			.... .1.	NCSDSPN	Display None
			.... .1	NCSPL2AP	Second ACTPU to 320X
0B5	NCSPLFL5	Flag Byte	1... ..	NCSSCPPS	SSCP Work Area in PVT Storage
			.1... ..	NCSSDLK	On-SDLC Link Processed
			..11 1111	@NM00012	Reserved
012		First Byte of NCSPLVBF	1... ..	NCSVBF01	Unused
			.1... ..	NCSVBF02	Unused
			.1... ..	NCSVBF03	Modify MSG Sup
			...1	NCSVBF04	Type=VTAM
			.... 1..	NCSVBF05	Linetrace=1
			.... .1..	NCSVBF06	I/O Trace=1
			.... .1.	NCSVBF07	Buffer Trace=1
			.... .1	NCSVBF08	Modify Tprint
013		Second Byte of NCSPLVBF	1... ..	NCSVBF09	Modify Test
			.1... ..	NCSVBF10	Modify Trace=No
			..1... ..	NCSVBF11	Vary Internal Only & Modify Trace = Yes

NCSPL (ISTNCSPL) (Continued)

Flag Meanings (Continued)

<u>Hex Disp</u>	<u>Flag Byte</u>	<u>Contents</u>	<u>Bit Pattern</u>	<u>Pattern Name</u>	<u>Pattern Meaning</u>
			...1	NCSVBF12	Vary Immediate & Modify Netsol=No
			.... 1...	NCSVBF13	Modify Netsol=Yes
			.... .1..	NCSVBF14	Vary Logon & Modify Change
			.... ..1.	NCSVBF15	Vary Deactivate & Vary Normal Close (ERP)
			.... ...1	NCSVBF16	Vary Activate & ERP Request & Modify Dump
0014	NCSPLVFL	Command Flags	1...	NCSVNCSA	NCSPL is Active
			.1...	NCSVDEL	Delete NCSPL
			..1.	NCSVSTAT	Indicate NCSPL was not Getmained
			...1	NCSDCONT	Do Disconact
			.... 1...	NCSABCON	Do Abandon Connection
			.... .1..	NCSDACLK	Do Activate Line
			.... ..11	NCSRSV02	Reserved
0015	NCSPLVF1	Special Proc Flags	1...	NCSOVFMC	Purge only Vary's FMCD
003C	NCSCMDA	RH Flags	1...	NCSPLSYS	On-System Off-FM
			.1...	NCSPLCTL	On-Control Off-Data
			..1.	NCSPLSYN	On=Synchr Off- Asynch
			...1	NCSPLFLO	On-with Flow Off-against Flow
			.... 1...	NCSPLUFM	On=Unformatted RU, Off=Formatted
			.... .111	@NM00010	Reserved

NCSPL (NCSAPP)



Alphabetical List of Fields in NCSAPP

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
NCSAPBUE	0088	0058	NCSAPEND	0084	0054	NCSAPSA	0000	0000
NCSAPDAT	0096	0060	NCSAPPAB	0608	0260	NCSAPTXT	0076	004C
NCSAPECB	0072	0043	NCSAPRU	0091	005B	NCSRSV04	0088	0058

NCSPL (NCSUSSRU)

Dec	Hex	0	1	2	3
0	0	NCSRULEN Length of RU		NCSRUITS Start of RU (Variable Length)	

Alphabetical List of Fields in NCSUSSRU

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
NCSRUITS	0002	0002	NCSRULEN	0000	0000

Constants in ISTNCSP

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
<u>General Constants</u>		
NCSWASZ	2032	NCSPL Work Area Size
NCSRTGOH	X'1000'	VBF Value for Internal Command-RTGOH RECVD.
NCSPLVC0	X'00'	Error
NCSPLVC1	X'01'	Vary
NCSPLVC2	X'02'	Modify
NCSPLVC3	X'03'	ERP
NCSPLVC4	X'04'	Display
NCSPLVC5	X'05'	Status to SM
NCSPLVC6	X'06'	Internal CMD
NCSPLVC7	X'07'	Init/Term Tasm
NCSPLVC8	X'08'	Dial

Constants for Vary Command Modifiers

NCSVACT	X'0001'	Activate
NCSVDEA	X'0002'	Deactivate
NCSVLON	X'0004'	Logon
NCSVPP	X'0080'	Vary Normal Cleanup Reqst
NCSVIMM	X'0010'	Immediate
NCSVINT	X'0020'	Internal Only
NCSVALO	X'0005'	Activate with Logon
NCSVDEI	X'0012'	Deactivate Immediate
NCSVDII	X'0032'	Deactivate Immediate Internal Only
NCSNOTF	X'FFF8'	Notify Request
NCSVANON	X'0008'	Answer = On
NCSVANOF	X'0040'	Answer = Off
NCSVPUSE	X'0100'	Path = Usable
NCSVPIUS	X'0200'	Path = Not Usable
NCSVINOP	X'0400'	Inoperative

NCSPL (ISTNCSPL) (Continued)

Constants in ISTNCSPL (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Constants for Modify Command Modifiers		
NCSMDUM	X'0001'	Dump 3705
NCSMCHA	X'0004'	Change
NCSMNSY	X'0008'	Netsol = Yes
NCSMNSN	X'0010'	Netsol = No
NCSMTRY	X'0020'	Trace = Yes
NCSMVTRY	X'1020'	
NCSMVTRN	X'1040'	
NCSMTRN	X'0040'	Trace = No
NCSMTPR	X'0100'	Trace Print
NCSMTST	X'0080'	Modify Test
NCSDPF	X'0000'	Potential Fail
NCSDSRT	X'0001'	Dial Start
NCSDOH1	X'0002'	Offhook 1
NCSDOH2	X'0004'	Offhook 2
NCSDDF	X'0010'	Dial Failed
NCSDLKS	X'0008'	Link Start
NCSDLKC	X'0020'	Link Completion
NCSDHU	X'0040'	Hangup
NCSDLK	X'0080'	Deallocate
NCSDGIVE	X'0100'	Give
NCS DINOP	X'0200'	Inop
NCSDLRST	X'0400'	Recovery SW Links after RN Failure
NCSERRA	X'0001'	ERP Request
NCSCLOR	X'0002'	Vary Normal Close Request
NCS EDACT	X'0004'	ERP Deactivate Request
NCSERSTR	X'0008'	RSTRT Entry from DLR Proc
Purge Minor Return Codes Constants		
NCSAPABN	X'05'	Application Abend
NCSCLDST	X'06'	Close Dest Occured
NCSDDISC	X'08'	Dial Disconnect Occured - Conn no Longer Available
NCSBTHEX	X'09'	Buffer Threshold Exceeded
I/O or Restart Return Codes Constants		
NCSIOSUC	X'00'	I/O Successful
NCSIOERR	X'04'	I/O Error
NCSIOPRG	X'08'	I/O Purged
NCSRSSUC	X'00'	Restart Successful
NCSRSERR	X'04'	Restart Error
NCSVAIPL	X'00'	IPL No Restart on Vary Actv
NCSVANRA	X'10'	IPL Successful, no Restart Available on Vary Active
NCSVAWMF	X'08'	Warm Start Failure for Vary Activate
NCSVAIPF	X'0C'	IPL Failed on Vary Activate
NCSDSIA	X'14'	Invalid Address Specified on Display Storage Cmnd
NCSVAISZ	X'08'	NCP Size too Large
NCSIPLSC	X'00'	IPL Successful
NCSIOER	X'0C'	I/O Error on Remote IPL

NCSPL (ISTNCSPL) (Continued)Constants in ISTNCSPL (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
NCSNCPAC	X'04'	Remote NCP Already Active
NCSNCRPF	X'70'	Remote Power Off

Constants for 3600 Support

NCSSES	X'0001'	End Session
NCSBF	X'0002'	Bind Failure
NCSUF	X'0004'	Unbind Failure
NCSINIT	X'0001'	
NCSTERM	X'0002'	
NCSTPPST	X'0001'	TPPST Command
NCSII	X'0002'	IPL Init Command
NCSIT	X'0004'	IPL Command
NCSIF	X'0008'	IPL Final Command
NCSDI	X'0010'	Dump Init Command
NCSDT	X'0020'	Dump Text Command
NCSDF	X'0040'	Dump Final Command
NCSCON	X'0080'	Contact Command
NCSDICON	X'0100'	Discontact Command
NCSMSFMD	X'0200'	Send FMD
NCSSEND	X'0400'	Send
NCSPURGE	X'0800'	PAB Purge
NCSMSSUP	X'2000'	Constants for MSG Sup
NCSCRDS	X'3023'	Record Dev Stats Command
NCSCQUIS	X'F01A'	Quiesce Command
NCSNUSS	X'381F'	Send USS Message
NCSNC	X'04'	Not Contacted
NCSLD	X'00'	Contacted Loaded
NCSNLD	X'0C'	Contacted Needs Load
NCSNCD	X'08'	Not Contacted Due to Deact
NCSNCE	X'10'	Not Contacted Due to ERP
NCSNFME	X'24'	Negative FME

Constants for IORC for Display Storage

NCSDSDEA	X'0C'	Prior Deact
NCSDSFAL	X'04'	Fail Other than Prior Deact

Type Codes for Configuration Restart

NCSCTRLM	X'01'	Change Dev Trans Limit
NCSNPOL	X'02'	Change Neg Poll Resp Limit
NCSCESS	X'03'	Change Session Limit
NCSCPOLL	X'04'	Change Line Serv Seek Pause

FM Data Command Codes

NCSAPU	X'D001'	Act Phys
NCSCDPU	X'D002'	Deact Phys
NCSALU	X'D003'	Act Log
NCSDLU	X'D004'	Deact Log
NCSSDT	X'D005'	SDT

NCSPL (ISTNCSPL) (Continued)

Constants in ISTNCSPL (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
NCSCFME	X'2006'	Send Pos Resp
NCSCEXCP	X'2007'	Send Neg Resp
NCSCCON	X'3008'	Contact
NCSCDCON	X'3009'	Discontact
NCSCIPLI	X'300A'	IPL Init
NCSCIPLT	X'300B'	IPL
NCSCIPLF	X'300C'	IPL Final
NCSCDUMI	X'300D'	Dump Init
NCSCDUMP	X'300E'	Dump
NCSCDUMF	X'300F'	Dump Final
NCSCACTL	X'3010'	Act Link
NCSDAACL	X'3011'	Deact Link
NCSCSV	X'3012'	Set State Vector
NCSNSP	X'3013'	NS Proc Error
NCSSTD	X'3019'	Set Time & Date
NCSSEP	X'9014'	Switch to EP
NCSNC	X'9015'	Switch to NCP
NCSCLSD	X'3016'	Line Sched Parm
NCSDDS	X'3017'	Display Storage
NCSCPWO	X'3018'	Remote Power Off
NCSNFMD	X'301C'	Send FMD
NCSCDIAL	X'301A'	Dial
NCSCADIL	X'301B'	Abandon Dial
NCSCEANS	X'301D'	Enable Ans Mode
NCSCAANS	X'301E'	Abandon Ans Mode
NCSANA	X'301F'	Assign Net Address
NCSFNA	X'3020'	Free Net Address
NCSCACON	X'3021'	Abandon Connection
NCSXCV	X'3022'	Set Control Vector
NCSNCPPG	X'FFFF'	Purge

New Values for NCSPLCMD

NCSCLCND	X'0041'	Load Conditionally
NCSUCND	X'0042'	Load Unconditionally
NCSRSRT	X'0043'	Restart 370X or Clus
NCSDUCMD	X'0044'	Dump 370X
NCSERPP	X'0045'	Perform ERP Dump and Reload of 370X
NCSDOUT	X'0046'	Dial Out
NSDCNT	X'0047'	Dial Contact
NCSDABDN	X'0048'	Dial Abandon
NCSDENAS	X'0049'	Dial Enable Answer

Values for NCSMDB

NCSBFME	X'06'	Send POS Resp Command
NCSBEXC	X'07'	Send Neg Resp Command

Constants for Dial Reason Codes

NCSDIRRD	X'01'	Redial
NCSLRQT	X'02'	Quit

NCSPL (ISTNCSPL) (Continued)

Constants in ISTNCSPL (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
New Values for NCSIORC		
NCSLDAOK	X'00'	Command Processed Success
NCSLDACT	X'04'	NCP Active-Load not Perf
NCSLDCAN	X'04'	Reload Declined by Oper
NCSLDIOP	X'08'	I/O Purged
NCSLDNOG	X'0C'	Command Failed
NCSDUCOM	X'14'	Dump Complete
NCSHALTD	X'18'	CMD Rejected, Halt in Prog
NCSUNREC	X'1C'	Command Unrecognized
NCSNOSTG	X'20'	CMD Rejected, Insuff Storage
NCSDOS	X'00'	Dial-Out Successful
NCSDOF	X'04'	Dial-Out Unsuccessful
NCSDOP	X'08'	Dial-Out Pending
NCSDCS	X'00'	Dial-Contact Loaded
NCSDCF	X'0C'	Dial-Contact Failed
NCSDAS	X'00'	Dial-Abandon Conn Complete
NCSDENSO	X'00'	Enable Answer Successful
NCSDOFHR	X'04'	Offhook Required
NCSDENSF	X'08'	Enable Answer Fail
New values for NCSPRMRC		
NCSFIRM	X'10'	Restart Successful Opndst Req
NCSSEWRN	X'11'	Con Lost, Recov in Prog
Constants for Trace		
NCSACTLT	X'0820'	Activate Line Trace
NCSDACTL	X'0840'	Deactivate Line Trace
NCSCACTL	X'301D'	SSCP Act Line Trace
NCSDCCLT	X'301E'	SSCP Deact Line Trace
Display Command Modifier Constants		
NCSDPATH	X'0001'	Paths

PAB (ISTPAB)

Dec	Hex	0	1	2	3
0	0	PABWQCHN CPS SWAP Field for NEQ&CHN			
8	8	PABOFFST Offset from Control Block	PABDVTA DVT Address		
12	C	PABRPHFG Sched Flags and RPH			

Org PABWQCHN

0	0	PABWEQA Work Element Queue Address
---	---	---------------------------------------

Org PABWEQA

0	0	First Byte of PABWEQA
---	---	--------------------------

Org PABWEQA+1

1	1	PABWEQP WKEL PTR
---	---	---------------------

Org PABWQCHN+4

4	4	PABCHAIN APS Chain
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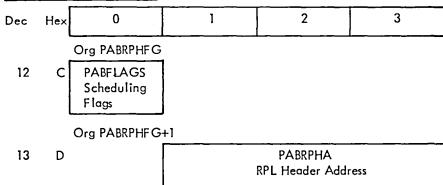
Org PABCHAIN

4	4	First Byte of PABCHAIN
---	---	---------------------------

Org PABCHAIN+1

5	5	PABCHNGP PSS Chain PTR
---	---	---------------------------

PAB (ISTPAB) (Continued)



Alphabetical List of Fields in ISTPAB

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
PABCHAIN	0004	0004	PABOFFST	0008	0008	PABWEQP	0001	0001
PABCHNGP	0005	0005	PABRPHA	0013	000D	PABWQCHN	0000	0000
PABDVTA	0009	0009	PABRPHFG	0012	000C			
PABFLAGS	0012	000C	PABWEQA	0000	0000			

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
000C	PABFLAGS	Scheduling Flags	1... ..	PABAPYP	Application is a User Exit
			.1... ..	PABPRIOR	Immediate Priority
			..1.	PABNORPR	Normal Priority - Reschedulable
			...1	PABDYNAM	Dynamic
			.... 1...	PABSSN	System Services
			.... .1..	PABERLCK	PAB Error Lock Flag
			.... .1..	PABERRLK	Error Lock
			.... .1..	PABERLOK	Error Lock
			.... .1..	PABINHBT	1=Inhibit Traffic, 0=No
			.... ...1	PABNODQ	Do not DEQ Work Element
0000		First Byte of PABWEQA	1... ..	PABWEQG	Gating Bit
			.111 1111	PABRSV01	Reserved
0004		First Byte of PABCHAIN	1... ..	PABCHNG	Gating Bit
			.1... ..	PABRESCH	Reschedule PAB at TPEXIT
			..1.	PABCDP	Close DST/Change in Progress
			...1	PABUNCON	Unconditionally Reschedule PAB at TPEXIT
			.... 1...	PABRESET	Reset Issued on this PAB
			.... .111	PABRSV02	Reserved

PAB (ISTPAB) (Continued)

Constants in ISTPAB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
PABWEQG0	X'7FFFFFFF'	Turn PABWEQG Off
PABWEQG1	X'80000000'	Turn PABWEQG On
PABCHNG0	X'7FFFFFFF'	Turn PABCHNG Off
PABCHNG1	X'80000000'	Turn PABCHNG On
PABRESC0	X'BFFFFFFF'	Turn PABRESCH Off
PABRESC1	X'40000000'	Turn PABRESCH On
PABCDP0	X'DFFFFFFF'	Turn PABCDP Off
PABCDP1	X'20000000'	Turn PABCDP On
PABERLK0	X'FBFFFFFF'	Turn PABERRLK On
PABERLK1	X'04000000'	Turn PABERRLK Off
PABUNCO0	X'EFFFFFFF'	Turn PABUNCON Off
PABUNCO1	X'10000000'	Turn PABUNCON On
PABPRI0	X'BFFFFFFF'	Turn PAB Prior Off
PABPRI1	X'40000000'	Turn PAB Prior On
PABRST0	X'F7FFFFFF'	Turn PABRESET Off
PABRST1	X'08000000'	Turn PABRESET On

PIB (ISTPIB)

Dec	Hex	0	1	2	3
0	0	PIBFLG Flag byte	PIBCNCL Cancel code	PIBLOGID SYSLOG identifier	
4	4	PIBDATFL Flags for VM support	PIBSAVE Address of SAVE area		
8	8	PIBNOC Number of core blocks	PIBORP Origin of partition		
12	C	PIBASS Assign flags	PIBLUBID User lub index	PIBLUBND Nbr of user lubs	PIBFLG2 More flags

9 9 ORG PIBORP

PIBOSAVE For Attn rtn, PTR to user save area

Flags and masks

Disp.	Flag	Contains	Mask	Value	Means
4(4)	PIBDATFL	Flags for VM support	PIBTRAM	X'80'	Partition in virtual mode
			@NM00007	X'7F'	Reserved
0(0)	PIBFLG	Flag byte	@NM00006	X'FE'	Not used
			PIBIOCOMP	X'01'	I/O completion
15(0F)	PIBFLG2	More flags	PIBFLG20	X'80'	Reserved
			PIBFLG21	X'40'	Reserved
			PIBFLG22	X'20'	Reserved
			PIBFLG23	X'10'	Reserved
			PIBFEOJ	X'08'	Fetch EOJ
			PIBTASK	X'04'	Cancel task
			PIBFLG26	X'02'	Reserved
			PIBFLG27	X'01'	Reserved

Constants in ISTPIB

Label	Value	Meaning
PIBVFORC	X'40'	VTAM sympathetic forced cancel
PIBVSNO	X'41'	Cancel due to VTAM should-not-occur condition

VTAM cancel should-not-occur function codes

I denotes SNO in inbound code

O denotes SNO in outbound code

PIB denotes DOS/VS TPIOS module

The hex value of the code is structured

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Where BIT-0 represents 0 = inbound, 1 = outbound		
BIT - 1 represents 0 = TPIOS, 1 = non-TPIOS		
BITS 2 - 3		
	00	=DOS/VS
	01	=VS/1
	10	=VS/2
	11	= Common
BITS 4 - 15 = Function code value		
PIE11242	X'04DA'	RTN code GT 0 from rest
ISTPICBA		
None		
ISTPICCA		
PIE12010	X'07DA'	RC>0 CIDCTL find
PIE12015	X'07DF'	RC>0 CIDCTL finish
PIE12020	X'07E4'	RC>0 CIDCTL find
PIE12025	X'07E9'	RC>0 CIDCTL finish
PIE12030	X'07EE'	RC>0 Relstore
PIE12035	X'07F3'	RC>0 CIDCTL finish
PIE12040	X'07F8'	RC>0 relstore
PIE12045	X'07FD'	RC>0 CIDCTL finish
PIE12050	X'0802'	RC>0 CIDCTL find
PIE12060	X'080C'	RC>0 relstore
PIE12070	X'0816'	RC>0 CIDCTL find
PIE12080	X'0820'	Work element invalid
PIE12090	X'082A'	RC>8 reqstore
ISTPICCE		
None		
ISTPICCF		
PIE10230	X'00E6'	RC>0 TPLOCK
ISTPICCI		
PIE13510	X'0DB6'	LRA error
ISTPICCO		
PIEO0020	X'8014'	RC>8 reqstore
PIEO0030	X'801E'	RC>8 reqstore
PIEO0040	X'8028'	RC>8 reqstore
PIEO0050	C'8032'	RC>8 reqstore

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPICCO (continued)		
PIE00055	X'8037'	RC > 8 reqstore
PIE00060	X'803C'	RC > 8 reqstore
PIE00065	X'8041'	RC > 8 reqstore
PIE00070	X'8046'	RC > 8 reqstore
ISTPICCS		
PIE00120	X'8078'	RC > 8 reqstore
PIE00130	X'8082'	RC > 8 reqstore
PIE00140	X'808C'	RC > 8 reqstore
PIE00150	X'8096'	RC > 8 reqstore
ISTPICCT		
None		
ISTPICCU		
PIE10420	X'01A4'	RC > 8 reqstore
PIE10430	X'01AE'	CSOL FMCB not found
ISTPICDD		
PIE11910	X'0776'	RC > 8 reqstore
PIE11920	X'0780'	RC > 0 CIDCTL find
PIE11930	X'078A'	RC > 0 CIDCTL finish
ISTPICDR		
PIE10510	X'01FE'	RC > 8 reqstore
PIE10520	X'0208'	RC > 0 CIDCTL find
PIE10530	X'0212'	RC > 0 relstore
PIE10540	X'0210'	RC > 0 relstore
PIE10550	X'0226'	RC > 0 CIDCTL find
ISTPICEI		
PIE10610	X'0262'	RC > 8 reqstore
PIE10620	X'026C'	RC > 8 getstor
PIE10630	X'0276'	RC > 0 relstore
PIE10640	X'0280'	RC > 0 relstore
ISTPICES		
PIE13450	X'0D7A'	Invalid input NCB
PIE13460	X'0D84'	RC > 8 reqstore
PIE13470	X'0D8E'	RC > 0 relstore
ISTPICF1		
PIE10720	X'02D0'	RC > 0 CIDCTL find
PIE10730	X'02DA'	RC > 0 CIDCTL find
PIE10740	X'02E4'	RC > 0 relstore
PIE10750	X'02EE'	RC > 0 CIDCTL finish
PIE10760	X'02F8'	RC > 0 CIDCTL finish
PIE10770	X'0302'	RC > 0 CIDCTL finish
PIE10780	X'030C'	RC > 0 relstore

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPICG1		
PIE00210	X'80D2'	RC>0 TPDVTS
PIE00220	X'80DC'	RC>0 TPDVTS
PIE00230	X'80E6'	RC>0 relstore
PIE00240	X'80F0'	RC>8 reqstore
PIE00250	X'80FA'	RC>0 CIDCTL finish
PIE00260	X'8102'	RC>0 CIDCTL finish
ISTPICG2		
PIE10810	X'032A'	RC>8 from reqstore
PIE10815	X'032F'	RC>0 CIDCTL finish
PIE10820	X'0334'	RC>0 TPDVTS
PIE10825	X'0339'	RC>0 CIDCTL finish
PIE10830	X'033E'	Disconnect cmd. in error
PIE10835	X'0343'	RC>0 CIDCTL finish
PIE10837	X'0345'	RC>0 CIDCTL find
PIE10838	X'0346'	RC>0 CIDCTL finish
PIE10840	X'0348'	RC>8 from reqstore
PIE10845	X'034D'	RC>0 CIDCTL finish
PIE10850	X'0325'	RC>0 CIDCTL find
PIE10855	X'0357'	RC>0 CIDCTL finish
PIE10860	X'035C'	RC>0 CIDCTL find
PIE10865	X'0361'	RC>0 CIDCTL finish
PIE10870	X'0366'	RC>0 CIDCTL find
PIE10875	X'036B'	RC>0 CIDCTL finish
PIE10880	X'0370'	RC>0 CIDCTL find
PIE10885	X'0375'	RC>0 CIDCTL finish
PIE10890	X'037A'	RC>0 CIDCTL find
PIE10895	X'0384'	RC>0 from relstore
ISTPICG3		
PIE10930	X'03A2'	RC>0 TPDVTS
PIE10960	X'03C0'	RC>0 relstore
ISTPICIN		
PIE00330	X'814A'	RC>8 reqstore
PIE06340	X'8154'	RC>8 reqstore
PIE00350	X'815E'	Invalid LCCW
PIE00360	X'8168'	RC>8 relstore
ISTPICIT		
PIE00430	X'81AE'	RC>8 reqstore
PIE00440	X'81B8'	RC>0 from TPDVTS
PIE00450	X'81C2'	RC>8 from reqstore
ISTPICLA		
PIE11720	X'06B8'	RC>0 relstore
PIE11730	X'06C2'	RC>0 relstore
PIE11740	X'06CC'	RC>8 reqstore
PIE11750	X'06D6'	Unexpected LCPB

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPICLC		
PIEO1220	X'84C4'	Loop in test channel program
PIEO1230	X'84CE'	RC>8 reqstore
ISTPICLT		
PIEO0610	X'8262'	RC>8 reqstore
PIEO0620	X'826C'	RC>0 TPDVTS
ISTPICMA		
None		
ISTPICNR		
PIE11120	X'0460'	RC>8 from reqstore
PIE11125	X'0465'	RC>0 CIDCTL find
PIE11130	X'046A'	RC = 0 or 12 CIDCTL find
PIE11135	X'046F'	RC>0 CIDCTL finish
PIE11140	X'0474'	RC>0 from relstore
PIE11150	X'047E'	RC>0 from relstore
PIE11160	X'0488'	RC>8 from reqstore
PIE11170	X'0492'	RC>0 from relstore
PIE11180	X'049C'	RC>0 from CIDCTL finish
PIEO0332	X'814C'	RC>0 CIDCTL find
PIEO0334	X'814E'	RC>0 CIDCTL finish
ISTPICQP		
PIE11220	X'04C4'	RC>8 from reqstore
PIE11230	X'04CE'	RC>0 from relstore
PIE11240	X'04D8'	RC>0 from relstore
PIE11250	X'04E2'	RC>0 from relstore
PIE11260	X'04EA'	RC>0 from relstore
PIE11270	X'04F4'	RC>0 from CIDCTL for obtaining a lock
PIE11280	X'04FE'	RC>0 from CIDCTL for releasing a lock
PIE11290	X'0508'	RC>0 from CIDCTL for releasing a lock
PIE11295	X'050D'	RC>0 from CIDCTL for releasing a lock
ISTPICRI		
None		
ISTPICRP		
PIE11320	X'0528'	RC>8 reqstore
ISTPICSC		
PIEO0510	X'81FE'	RC>8 from reqstore
PIEO0520	X'8208'	RC>8 from relstore
PIEO0530	X'8212'	RC>8 from reqstore
PIEO0540	X'821C'	RC>0 from relstore
PIEO0550	X'8226'	RC>8 from reqstore
PIEO0560	X'8230'	RC>0 from relstore
PIEO0570	X'823A'	RC>0 from relstore
PIEO0580	X'8244'	RC>0 from relstore
PIEO0590	X'824E'	RC>8 from reqstore

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPICSO		
PIEO1310	X'851E'	RC>8 from reqstore
PIEO1320	X'8528'	RC>0 CIDCTL find
PIEO1330	X'8532'	RC>0 CIDCTL finish
ISTPICSS		
PIEO0710	X'82C6'	RC>8 from reqstore
PIEO0720	X'82D0'	RC>8 from reqstore
PIEO0730	X'82DA'	RC>8 from reqstore
PIEO0740	X'82E4'	RC>8 from reqstore
PIEO0750	X'82EE'	RC>0 from CIDCTL for obtaining a lock
PIEO0760	X'82F8'	RC>0 from CIDCTL for releasing a lock
ISTPICST		
PIE13610	X'0E1A'	LRA error
PIE13635	X'0E33'	Unidentifiable completion status
ISTPICSU		
PIE11410	X'0582'	RC>0 from relstore
PIE11420	X'058C'	RC>0 from relstore
PIE11430	X'0596'	RC>8 from reqstore
PIE11440	X'05A0'	RC>8 from reqstore
PIE11450	X'05AA'	RC>0 from TPDVTS
PIE11460	X'05B4'	RC>0 from CIDCTL find
PIE11470	X'05BE'	RC>0 from CIDCTL finish
PIE11480	X'05C8'	RC>0 from relstore
ISTPICTA		
PIE11620	X'0654'	RC>0 relstore
PIE11630	X'065A'	RC>8 reqstore
ISTPICTC		
PIEO1030	X'8406'	RC>0 from CIDCTL find
PIEO1040	X'8410'	RC>8 from reqstore
PIEO1050	X'841A'	RC>0 from CIDCTL finish
PIEO1060	X'8424'	RC>0 from CIDCTL finish
PIEO1070	X'842E'	RC>8 reqstore
ISTPICTF		
None		
ISTPICTH		
PIE11810	X'0712'	RC>8 from reqstore
PIE11820	X'071C'	RC>0 from relstore
PIE11830	X'0726'	RC>0 from relstore
PIE11840	X'0730'	RC>8 from reqstore
PIE11850	X'073A'	RC>8 from reqstore
PIE11860	X'0744'	RC>0 from TPDVTS

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPIOTO		
PIEO0820	X'8334'	RC>8 reqstore
PIEO0830	X'833E'	RC>0 relstore
ISTPICTR		
PIEO0930	X'83A2'	Invalid LCCW
PIEO0940	X'83AC'	RC>8 reqstore
PIEO0950	X'83B6'	RC>0 relstore
ISTPICXP		
PIE13660	X'0E4C'	LRA error
PIE13670	X'0E56'	Invalid CB input
SSABERV1		
None		
SSABERV2		
PIE13760	X'0EB0'	Valid CB not found
SSABERV3		
PIE13810	X'0EE2'	LRA error
PIE13820	X'0EEC'	CCB not found in ICNCB
SSABERV4		
PIE13880	X'0F28'	Failing CCW not found
PIE13860	X'0F14'	CCB not found in LONCB
PIE13870	X'0F1E'	CC and O APPR LRA
SSABERV5		
PIE13910	X'0F46'	LRA error
PIE13910	X'0F50'	CCB not found in ICNCB
SSABERV6		
PIE13960	X'0F78'	LRA error
SSRAST14		
None		
SSRAST15		
None		
SMS		
None		

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
PIE10192	X'00C0'	RC>0 TPDVTS
PIE10534	X'0216'	RC>0 TPDVTS
PIE10623	X'0271'	RC>0 CIDCTL finish
PIE10627	X'0273'	RC= 0112 CIDCTL find
PIEO0202	X'80CA'	RC>0 TPDVTS within linkx
PIEO0204	X'80CC'	RC>0 TPDVTS
PIE10904	X'0388'	RC>0 TPDVTS within linkz
PIE11010	X'03F2'	ISTPICMA--relstore failed for MTA association FSB
PIE11144	X'0478'	RC>0 from CIDCTL find
PIE11145	X'0479'	RC>0 from CIDCTL finish
PIE11146	X'047A'	RC>0 from CIDCTL find
PIE11147	X'047B'	RC>0 from CIDCTL finish
PIEO0555	X'822B'	RC>0 from CIDCTL find
PIEO0557	X'822D'	RC>0 from CIDCTL finish
PIE13615	X'0E1F'	CCW at head of buffer not read/write/WRBP
PIE13620	X'0E24'	NOP preceded by write, not write BP
PIE13625	X'0E29'	Insufficient read CCWS or data-chained read
PIE13630	X'0E2E'	Unchained write CCW
ISTPICXO		
PIEO0224	X'80E0'	RC>0 CIDCTL find
ISTPIEIR		
PIEO4000	X'8FA0'	TPDVTS failure
ISTPLIEPB		
PIEO4005	X'8FA5'	Reqstore RC>8
PIEO4006	X'8FA6'	CIDCTL find error
PE1O4007	X'8FA7'	CIDCTL finish error
ISTPIEPA		
PIE14010	X'0FAA'	TPDVTS failure
ISTPIEIS		
PIEO4015	X'8FAF'	Reqstore RC>8
ISTPIESA		
PIE14017	X'0FB1'	Reqstore return CDE>8
ISTPIEIF		
ISTPIETT		
PIEO4020	X'8FB4'	CIDCTL find RC= 0
PIEO4025	X'8FB9'	CIDCTL release DAF look RC= 0
ISTPLIECP		
PIE14020	X'0FB0'	CIDCTL find error
PIE14025	X'0FB5'	CIDCTL finish error
ISTPIELO		
PIEO4030	X'8FBE'	Reqstore RC>8

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
	ISTPIELF	
PIE14035	X'0FC3'	Reqstore RC>8
	ISTPIELS	
PIEO4040	X'8FC8'	Reqstore >8
	ISTPIERO	
PIEO4045	X'8FCD'	Reqstore >8
	ISTPIERF	
PIE14050	X'8FD2'	Reqstore >8
	ISTPIESI	
PIEO4055	X'8FD7'	Reqstore >8
	ISTPIESG	
PIEC4060	X'8FDC'	Reqstore RC>8
PIEO4061	X'8FDD'	Reqstore RC>0

RDY (ISTRDY)

Dec	Hex	0	1	2	3
0	0	RDTPRE Entry prefix			
72	48	RDTPLEN Priority and length field			
76	4C	RDTFORW Forward pointer			
80	50	RDTBACK Backward pointer			
84	54	RDYFLAGS Segment flags, unused/refused		RDYCTSNT Count of SNT entries for segment	
88	58	RDYMAXID Max node ID for network	RDYNODID Node ID for this segment	RDYLGCT Count of logons outstanding	RDYFLAGB Flag byte
92	5C	RDYVPAB Address of vary PAB			
96	60	RDYEPAB Address of ERP PAB			
100	64	RDYDPAB Address of dump/load/restart PAB			
104	68	RDYTPAB Toltep SSCP PAB			
108	6C	RDYVYRPH @ of Vary RPH Waiting for Restart Completion			
112	70	RDYSINCNT Active Subnode Count	@NM00007 Reserved		

Org RDYPLEN

72	48	RDYPROR Determines Segment Type
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Org RDYPLEN+1

73	49	RDYLEN Length of RDY
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RDT (ISTRDT) (Continued)

Dec	Hex	0	1	2	3
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Org RDTVYRPH

108	6C	RRNVYRPH Delete Alias
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Org RDTSTCNT

112	70	RRNSTCNT Delete Alias
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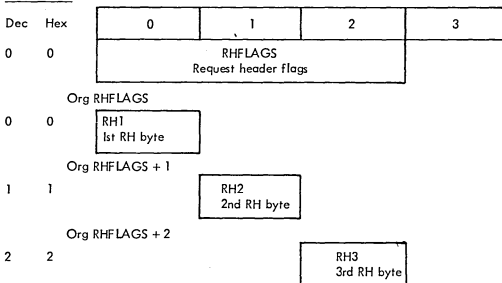
Alphabetical List of Fields in ISTRDT

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
@NM00007	0113	0071	RDTFORW	0076	004C	RDTPRIOR	0072	0048
RDTBACK	0080	0050	RDITLEN	0073	0049	RDTSTCNT	0112	0070
RDTCTSNT	0086	0056	RDTLGCT	0090	005A	RDTTPAB	0104	0068
RDTDPAB	0100	0064	RDTMAXID	0088	0058	RDTVPAAB	0092	005C
RDTEPAB	0096	0060	RD TNODID	0089	0059	RDTVYRPH	0108	006C
RDTFLAGB	0091	005B	RDTPLEN	0072	0048	RRNSTCNT	0112	0070
RDTFLAG5	0084	0054	RDTPRE	0000	0000	RRNVYRPH	0106	006C

Flag Meanings

Hex Disp	Flag	Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0048	RDTPRIOR		Determines Segment Type	111. .... ...1 1... 1.. .... .1. .... .1. .... ...1	@NM00006 RDTPRIAP RDTPRILC RDTPRIRN RDTPRISW RDTPRILS	Not Used Application Segment Local Segment RN Segment Switched Segment Local Subarea Segment
005B	RDTFLAGB		Flag Byte	1... .... .1... .... .1. .... ...1 1... .... .111	RDTQUERP RDTPRGDN RDTCTPGD RDTCTCFL RDTBHSET RDTRSV01	1 = Repeat ERP 1 = Purge Issued 1 = Contact Purged Higher Failure-Contact Flushed BHSET Required Reserved

RH (ISTRH)



Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
0(0)	RH1	First RH byte	RHQS	X'80'	0 - request, 1 - response
			RHTYPE	X'40'	0 - data, 1 - control
			RHSCI	X'20'	0 - FM, 1 - system control
			RHDIRI	X'10'	0 - with, 1 - against
			RHFORMAT	X'08'	0 - unformatted, 1 - formatted
			RHSENSE	X'04'	0 - not included, 1 - included
			RHCHAIN	X'03'	Chaining control 0 - middle, 1 - last, 2 - first, 3 - only
1(1)	RH2	Second RH byte	RHFME	X'80'	Q - FME requested, S - FME
			RHPE	X'40'	Q - PE requested, S - PE
			RHRRN	X'20'	Q - RRN requested, S - RRN
			RHEXCEPT	X'10'	Q - exception responses only, S - error
			RHRETRY	X'08'	Q - retry
			RHBUSY	X'08'	S - busy
			RHRSVD1	X'04'	Q - reserved
			RHNIOP	X'04'	S - inoperative
			RHRSVD2	X'02'	Q - reserved, S - reserve
			RHPACE	X'01'	Q - pacing
2(2)	RH3	Third RH byte	RHBB	X'80'	Begin sequence
			RHFB	X'40'	End sequence
			RHCDIR	X'20'	Change direction
			RHRCDIR	X'10'	Request change direction
			RHRSVD3	X'08'	Reserved
			RHLOG	X'04'	Log
			RHRSVD4	X'02'	Reserved
			RHRSVD5	X'01'	Reserved

RH (ISTRH) (continued)

Constants in ISTRH

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
RHFIRST	B'10'	First in chain
RHMIDDLE	B'00'	Middle of chain
RHLAST	B'01'	Last in chain
RHONLY	B'11'	Only one in chain
RHRESP	X'938000'	RH response mask
RHREQ	X'030000'	RH request mask

RPH (ISTRPH)

Dec	Hex	0	1	2	3
0	0	RPHTYPE Control Block Type	RPHLNTH Length in Bytes	RPHFLAGS System Dependent Flags	RPHFLGB Second Flag Byte
4	4	RPHRPHA Address of next RPL Header			
8	8	RPHTSKID Task Identification or Address of APS Table			
12	C	RPHDVTA Address of Current DVT			
16	10	RPHRESMA TPWAIT-Post Information			
20	14	RHPABOF Offset of PAB in Control BLK	RPHMAJCB Address of Major Control Block		
24	18	RPHWEA Address of Work Element			
28	1C	RPHSRPRM Service Routine Parm. Field			
32	20	RPHCRR Address of Component Recovery Record			
36	24	RHPABWD PAB Word Address			
40	28	RPHWORK 16 Word Work Area			

RPH (ISTRPH) (Continued)

Dec	Hex	0	1	2	3
104	68	RPHNEXPO Address Next RPH to be Posted			
		Org RPHRPHA			
4	4	First Byte of RPHRPHA			
		Org RPHRPHA + 1			
5	5	RPHRPHAP			
		Org RPHTSKID			
8	8	@NM00002 RPH TSK ID			RPHTIK TIK
		Org RPHRESMA			
16	10	RPHWPFLG Wait-Post Flags			
		Org RPHRESMA + 1			
17	11	RPHRESUM Resume Address			
		Org RPHWEA			
24	18	RPHCSPA Address of ISTCSP			
		Org RPHCSPA			
24	18	First Byte of RPHCSPA			
		Org RPHSPRM			
28	1C	RPHSRP12 Count of Q'ed SMS Requests		RPHSRP34 Size of Q'ed SMS Requests	
		Org RPHPABWD			
36	24	RPHPABFG Flag Byte			
		Org RPHPABWD + 1			
37	25	RPHPABQP Pointer to Queue of PAB's			
		Org RPHPABQP			
37	25	RPHPABQA PAB Pointer			

RPH (ISTRPH) (Continued)

Dec	Hex	0	1	2	3
		Org RPHWORK			
40	28	RPHSAVE1			
		Org RPHSAVE1			
40	28	RPHSBYTE 1-Byte Save Field	RPHSBITS Save Field for Flag Byte		
		Org RPHSAVE 1 + 2			
42	2A	RPHSHALF Half Word Save Area			
		Org RPHWORK + 4			
44	2C	RPHSAVE2			
48	30	RPHSAVE3			
52	34	RPHSAVE4			
56	38	RPHSAVE5			
60	3C	RPHSAVE6			
64	40	RPHSAVE7			
68	44	RPHSAVE8			
72	48	RPHSAVE9			
76	4C	RPHSAVE10			
80	50	RPHSAVE11			
84	54	RPHSAVE12			
88	58	RPHSAVE13			
92	5C	RPHSAVE14			

RPH (ISTRPH) (Continued)

Dec	Hex	0	1	2	3
96	60	RPHSAVE15			
100	64	RPHSAVE16			

Alphabetical List of Fields in ISTRPH

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
@NM00002	0008	0008	RPHRPHA	0004	0004	RPHSAV15	0096	0060
RPHCRR	0032	0020	RPHRPHAP	0005	0005	RPHSAV16	0100	0064
RPHCSPA	0024	0018	RPHSAVE1	0040	0028	RPHSBITS	0041	0029
RPHDVTA	0012	000C	RPHSAVE2	0044	002C	RPHSBYTE	0040	0028
RPHFLAGS	0002	0002	RPHSAVE3	0048	0030	RPHSHALF	0042	002A
RPHFLGB	0003	0003	RPHSAVE4	0052	0034	RPHSRFRM	0028	001C
RPHLNGTH	0001	0001	RPHSAVE5	0056	0038	RPHSRP12	0028	001C
RPHMAJCB	0021	0015	RPHSAVE6	0060	003C	RPHSRP34	0030	001E
RPHNEXPO	0104	0068	RPHSAVE7	0064	0040	RPHTIK	0011	000B
RPHPABFG	0036	0024	RPHSAVE8	0068	0044	RPHTSKID	0008	0008
RPHPABOF	0020	0014	RPHSAVE9	0072	0048	RPHTYPE	0000	0000
RPHPABQA	0037	0025	RPHSAV10	0076	004C	RPHWEA	0024	0018
RPHPABQP	0037	0025	RPHSAV11	0080	0050	RPHWORK	0040	0028
RPHPABWD	0036	0024	RPHSAV12	0084	0054	RPHWPFLG	0016	0010
RPHRESMA	0016	0010	RPHSAV13	0088	0058			
RPHRESUM	0017	0011	RPHSAV14	0092	005C			

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0002	RPHFLAGS	System Dependent Flags	1... .. .1... .. ..1. .... ...1 1... .... .1.. .... ..1. .... ...1.... ...1	RPHOGIND RPHSPGIN RPHAPTYP RPHSMQ RPHSMTYP RPHSMCLR RPHMLTCP RPHFSTLC RPHFNFLG	Open Gate Indicator Special Gate Open Indicator APS is a User Exit Indicator if RPH is to be Queued Request Type is Buffer or Double-Word Indicator if Buffer to be Cleared Used by Local 3270 Support when building Multiple Chan Program Used by Local 3270 Support to Indicate First LCCW LCCW Set Function Flags
0003	RPHFLGB	Second Flag Byte	1... .. .1... ..	RPHLOCK RPHBSSP	Lacking Option System Services Progress

RPH (ISTRPH) (Continued)

Flag Meanings (Continued)

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
			..1.	RPHBAPS	STG. Obtained by APS
			...1 1111	RPHNRSAV	Do not Save on Activate
0004		First Byte of RPHRPHA	1... .... .111 1111	RPHGATE @NM0001	Gating Flag Reserved
0010	RPHWPFLG	Wait-Post Flags	1111	RPHRSKEY	Storage Protect Key to Resume Processing
			.... 1... .... .1.. .... .11	RPHWT RPHPT @NM00003	Wait Bit Post Bit Reserved for Wait/Post
0018		First Byte of RPHCSPA	1...	RPHWEGT	Gate for Work Element Proc.
0024	RHPABFG	Flag Byte	1...	RPHDEACT	RPH has been De-activated VS/1 only
			.1..	RPHLKFRE	Locks held by Abended Process have been Freed (VS/1 only)
			.1..	RPHPGCMP	Purge Complete (VS/2 only)
			..1.	RPHRLCRA	Indicates that ISTAPC64 should free the CRA
			...1	RPHAUTEX	Exit to Authorized User VS/2 only
			.... 1...	RPHPURGE	RPH Flagged by Recovery to be purged by PSS VS/2 only
			.... .111	@NM00004	Reserved
0029	RPHSBITS	Save Field for Flag Byte	1... .... .1. .... ..1. .... ...1 1... .... .1.. .... .1. .... ...1	RPHSBIT1 RPHSBIT2 RPHSBIT3 RPHSBIT4 RPHSBIT5 RPHSBIT6 RPHSBIT7 RPHSBIT8	1st Save Field 2nd Save Field 3rd Save Field 4th Save Field 5th Save Field 6th Save Field 7th Save Field 8th Save Field

Constants in ISTRPH

Label	Value	Meaning
RPTYPE	X'01'	Type Code for RPH
RPHWTO	X'F7FFFFFF'	Turn RPHWT Off
RPHWT1	X'08000000'	Turn RPHWT On
RPHPT0	X'FBFFFFFF'	Turn RPHPT Off
RPHPT1	X'04000000'	Turn RPHPT On
RHPABQ1	X'00000001'	Turn RHPBQ Gate

RPL (ISTRPL)

Dec	Hex	0	1	2	3
0	0	@NM00017 RPLID	@NM00018 Subtype X'FF'=active X'00'=inactive	@NM00019 Reserved	RPLEN2 RPL Length
4	4	RPLPLHPT RPLH Pointer			
8	8	@NM00020 CID or NIB Pointer RPLARG			
12	C	@NM00021 Pointer to Area RPLAREA			
16	10	@NM00022 Record Length RPLRLEN			
20	14	@NM00023 Area Length RPLBUFL			
24	18	@NM00024 Pointer to ACB RPLDACB			
28	1C	@NM00025 Reserved	@NM00026 Request Code RPLREQ	@NM00027 Reserved	@NM00028 Reserved
32	20	@NM00029 RPLOPT1	@NM00033 Reserved	RPLEXTDS Exit Definition	@NM00037 Reserved
36	24	@NM00038 Reserved	@NM00039 Feedback RC RPLFDBK		
40	28	RPLAAREA Alternate Area Pointer			
44	2C	RPLECB ECB or Pointer to ECB/EXIT			
48	30	RPLAARLN Alternate Area Length			

RPL (ISTRPL) (Continued)

Dec	Hex	0	1	2	3
52	34	RPLARCLN Alternate Record Size			
56	38	RPLFDBK2 Feedback Word			
60	3C	RPLUSFLD User Field			
64	40	RPLOPTC3 Additional Option Codes			
68	44	RPLOPTC3 Move VTAM Options			
72	48	RPLRH3 Third RH Byte	RPLSRTYP Send or Receive Type	RPLVTFL1 VTAM Flags	RPLVTFL2 VTAM Flags
76	4C	RPLCHN Position in HU Chain	RPLCNTRL PU Control Code		
80	50	RPLOBSQV STSN Outbnd. Seq. Nr.		RPLIBSQV STSN Inbind. Seq. Nr.	
84	54	RPLBSQ STSN Outb. Action Code	RPLIBSQ STSN Inbound Action Code	RPLSEQNO Sequence Number	
88	58	RPLOSENS Sense Output Data			
92	5C	RPLACTIV Subtype-X'FF' = Active, X'00' = Inact.	RPLRSV1		
96	60	RPLSIGDA Signal Data			

RPL (ISTRPL) (Continued)

Dec	Hex	0	1	2	3
		Org @NM00020			
8	8	RPLSAF		RPLDAF	
		Org RPLEXTDS			
34	22			RPLEXTD1	
		Org @NM00039			
37	25	@NM00040 RPLRTNCD		@NM00041 RPLFDB2	
		Org @NM00039+2			
39	27			@NM00042 RPLFDB3	
		Org RPLECB			
44	2C	@NM00043 Reserved		Third byte of RPLECB	
		Org RPLECB+3			
47	2F			@NM00044 Reserved	
		Org RPLFDBK2			
56	38	RPLSSNSI System Sense Inp.			
		Org RPLSSNSI			
56	38	RPLDSB Device Status			
		Org RPLDSB			
56	38	RPLDSB1 Dev .Status Byte 1			
		Org RPLDSB1			
56	38	RPLSSE1 Sys SNS Error Codes			

RPL (ISTRPL) (Continued)

Dec	Hex	0	1	2	3
57	39	Org RPLDSB+1	RPLDSB2 Dev. Status Byte 2		
57	39	Org RPLDSB2	RPLSSMI SYS SNS Mod in		
58	3A	Org RPLSIGDA+2		RPLUSNSI User Sense Input	
58	3A	Org RPLUSNSI		RPLESR1 Extd. Syst. Resp. 1	RPLESR2 Extd. Syst. Resp. 2
64	40	Org RPLOPTC2	RPLOPT5 Fifth Byte of Options		
65	41	Org RPLOPTC2+1	RPLOPT6 Sixth Byte of Options		
66	42	Org RPLOPTC2+2		RPLOPT7 Seventh Byte of Options	
67	43	Org RPLOPTC2+3			RPLOPT8 Eighth Byte of Options
68	44	Org RPLOPTC3	RPLOPT9 Ninth Byte of Options		
69	45	Org RPLOPTC3+1	RPLOPT10 Tenth Byte of Options		

RPL (ISTRPL) (Continued)

Dec	Hex	0	1	2	3
70	46	Org RPLOPTC3+2		RPLOPT11 Eleventh Byte of Options	
71	47	Org RPLOPTC3+3		RPLOPT12 Twelfth Byte of Options	
77	4D	Org RPLCNTRL		RPLCNTRDF Data Flow Control Codes	
78	4E	Org RPLCNTRL+1		RPLCNTDC Data Flow Control CTD	
79	4F	Org RPLCNTRL+2		RPLCNTSC Session Control Codes	
88	58	Org RPLOSENS RPLSSNSO System Sense Output			
88	58	Org RPLSSNSO RPLSSEO System Sense Error Code			
89	59	Org RPLSSNSO+1		RPLSSMO System Sense Mod Output	
90	54	Org RPLOSENS+2		RPLUSNSO User Sense Output	

RPL (ISTRPL) (Continued)

Alphabetical List of Fields in ISTRPL

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
@NM00017	0000	0000	RPLCHN	0076	004C	RPLOPT6	0065	0041
@NM00018	0001	0001	RPLCNTDC	0078	004E	RPLOPT7	0066	0042
@NM00019	0002	0002	RPLCNTDF	0077	004D	RPLOPT8	0067	0043
@NM00020	0008	0008	RPLCNTRL	0077	004D	RPLOPT9	0068	0044
@NM00021	0012	000C	RPLCNTSC	0079	004F	RPLOSENS	0088	0058
@NM00022	0016	0010	RPLDAF	0010	000A	RPLPHPT	0004	0004
@NM00023	0020	0014	RPLDSB	0056	0038	RPLRH3	0072	0048
@NM00024	0024	0018	RPLDSB1	0056	0038	RPLRSV1	0093	005D
@NM00025	0028	001C	RPLDSB2	0057	0039	RPLSAF	0008	0008
@NM00026	0029	001D	RPLECB	0044	002C	RPLSEQNO	0086	0056
@NM00027	0030	001E	RPLESR1	0058	003A	RPLSIGDA	0096	0060
@NM00028	0031	001F	RPLESR2	0059	003B	RPLSTYP	0073	0049
@NM00029	0032	0020	RPLEXTDS	0034	0022	RPLSSEI	0056	0038
@NM00033	0033	0021	RPLEXTD1	0034	0022	RPLSSEO	0088	0058
@NM00037	0035	0023	RPLFDBK2	0056	0038	RPLSSMI	0057	0039
@NM00038	0036	0024	RPLIESQ	0085	0055	RPLSSMO	0089	0059
@NM00039	0037	0025	RPLIESQV	0082	0052	RPLSSNSI	0056	0038
@NM00040	0037	0025	RPLEN2	0003	0003	RPLSSNSO	0088	0058
@NM00041	0038	0026	RPLOB5Q	0084	0054	RPLUSFLD	0060	003C
@NM00042	0039	0027	RPLOB5QV	0080	0050	RPLUSNSI	0058	003A
@NM00043	0044	002C	RPLOPTC2	0064	0040	RPLUSNSO	0090	005A
@NM00044	0047	002F	RPLOPTC3	0068	0044	RPLVTF1	0074	004A
RPLAAREA	0040	0028	RPLOPT10	0069	0045	RPLVTF2	0075	004B
RPLAARLN	0048	0030	RPLOPT11	0070	0046			
RPLAVTIV	0092	005C	RPLOPT12	0071	0047			
RPLARCLN	0052	0034	RPLOPT5	0064	0040			

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
002E		Third Byte of RPLECB	1... .. .111 1111	RPLPOST ZRPL2	Event Complete Reserved
0020	@NM00029	RPLOPT1	1111 1... ... .11. ... ..1	@NM00030 @NM00031 @NM00032 RPLECBIN	Reserved RPLASY Reserved 1 = External ECB
0022	RPLEXTD1		1... .. ..1. .... ..1. .... ...1 1... .... .1.. .... ..1. .... ...1	RPLEXSCH RPLNEXIT RPLEXIT @NM00034 @NM00035 RPLNIB RPLBRANC @NM00036	Exit Scheduled Indicator No Exit Specified Exit Reserved Reserved 1 = ARG Has NIB Pointer 1 = Branch Entry to Macro Reserved

RPL (ISTRPL) (Continued)

Flag Meanings (Continued)

0026	@NM00041	RPLFDB2	1... ..	RPLERLK	Error Lock Set			
			.1... ..	RPLRVID	RVI Received			
			..1... ..	RPLATND	Attention Received			
			...1... ..	RPLDVUNS	Device Unuseable			
			....1... ..	RPLIOERR	I/O Error Type (0-Input, 1-Output)		
			.... .1..	RPLDLGFL	Dialog Initiation Failed		
			.... .1.	RPLCUERR	Control Unit Failure		
			.... ..1	RPLSTSAV	Sense Bytes Present		
			0027	@NM00042	RPLFDB3	1... ..	RPLUINPT	Unsolicited Input
						.1... ..	RPLTSV32	Reserved
..1... ..	RPLREOB	End of Block						
...1... ..	RPLREOM	End of Message						
....1... ..	RPLREOT	End of Transmission						
.... .1..	RPLLGFRG	Logoff Received						
.... .1.	RPLRLG	Leading Graphics Received						
.... ..1	RPLRDSOH	SOH Received						
0038	RPLSSEI	Sys.Sns Err.Codes				1... ..	RPLPATHI	SSENSEI Path
						.1... ..	RPLCPMI	SSENSEI CPM
			..1... ..	RPLSTATI	SSENSEI State			
			...1... ..	RPLFI	SSENSEI FI			
			....1... ..	RPLRRI	SSENSEI RR		
			.... .111	@NM00045	Reserved for VTAM		
004A	RPLVTFL1	VTAM Flags	1... ..	@NM00056	Reserved			
			.1... ..	RPLVTUSE	SWITCHC 0=APP/1=System			
			..11 1111	@NM00057	Reserved for VTAM			
004B	RPLVTFL2	VTAM Flags	1111 ..	RPLSTV				
			1... ..	RPLSCHED	Post 0=RESP/1=Sched			
			.111 ..	@NM00058	Reserved for VTAM			
			.... 1111	RPLRESP			
			.... 1... ..	@NM00059	Reserved for VTAM		
			.... .1..	RPLEX	Respond 0=NEX/1=EX		
			.... .1.	RPLNFME	Respond 0=FME/1=NFM		
.... ..1	RPLRRN	Respond 0=NRRN/ 1=RRN						
004C	RPLCHN	Position in HU Chain	1... ..	RPLFIRST	Chain First			
			.1... ..	RPLMIDLE	Chain Middle			
			..1... ..	RPLLAST	Chain Last			
			...1... ..	RPLONLY	Chain Only			
			.... 1111	@NM00060	Reserved for VTAM		
004D	RPLCNTDF	Data Flow Cntrl Codes	1... ..	RPLDATA	Control Data			
			.1... ..	RPLCNCEL	Control Cancel			
			..1... ..	RPLQC	Control QC			
			...1... ..	RPLQEC	Control QEC			
			.... 1... ..	RPLCHASE	Control Chase		
			.... .1..	RPLRELQ	Control RELQ		

RPL (ISTRPL) (Continued)

Flag Meanings (Continued)

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
			.... 1.	RPLQI	Reserved for VTAM
			.... 1.1	@NM00061	Reserved for VTAM
004E	RPLCNTDC	Data Flow Control CTD	1... ..	RPLBID	Control BID
			.1.. ..	RPLRTR	Control RTR
			..1.	RPLLUS	Control LUS
			...1	RPLSIGNL	Control Signal
			.... 1111	@NM00062	Reserved for VTAM
004F	RPLCNTSC	Session Control Codes	1... ..	RPLSDT	Control SDT
			.1.. ..	RPLCLEAR	Control Clear
			..1.	RPLSTSN	Control STSN
			...1	RPLSHUTD	Control Shutd
			.... 1..	RPLSHUTC	Control Shutc
			.... .1..	RPLRQR	Control RQR
			.... ..1.	RPLRSHUT	Control RSHUTD
			.... ..1	@NM00063	Reserved for VTAM
0040	RPLOPT5	Fifth Byte of Options	1... ..	RPLDLGIN	Dialog Indicator 1 = CS, 0 = CA
			.1.. ..	@NM00064	Reserved
			..1.	RPLPSOPT	Pass Option
			...1	RPLNERAS	Write No Erase
			.... 1..	RPLEAU	Write Erase Unprotected
			.... .1..	RPLERACE	Write Erase
			.... ..1.	RPLNODE	Node Indicator 1 = Any, 0 = Spec
			.... ..1	RPLWROPT	Write Option, 1 = Conv, 0 = Nconv
0041	RPLOPT6	Sixth Byte of Options	1... ..	RPLEOB	End of Block
			.1.. ..	RPLEOM	End of Message
			..1.	RPLEOT	End of Transmission
			...1	RPLCOND	Reset Conditional
			.... 1..	RPLNCOND	Reset Unconditional
			.... .1..	RPLLOCK	Reset Lock
			.... ..1.	@NM00047	Reserved
			.... ..1	RPLRSV68	Reserved
0042	RPLOPT7	Seventh Byte of Options	1... ..	RPLCNNALL	Connect All
			.1.. ..	RPLCNANY	Connect Any
			..1.	RPLCWYMM	Connect Immediate
			...1	RPLQOPT	Open Destination Q Opt
			.... 1..	RPLTPOST	1 = Already under
			.... .1..	RPLRLSOP	Release Option
			.... ..1.	RPLRSV77	Reserved
			.... ..1	RPLRSV78	Reserved

RPL (ISTRPL) (Continued)

Flag Meanings (Continued)

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0043	RPLOPT8	Eighth Byte of Options	1... ..	RPL0DACQ	Acquire
			.1... ..	RPL0DACP	Accept (Default)
			..1... ..	@NM00048	Reserved
			...1... ..	RPLPEND	Pend (Default)
			....1... ..	RPLSESS	Session
			.... .1... ..	RPLACTV	Active
			.... ..1... ..	RPLUNCON	Uncondl
.... ...1... ..	RPLRSV88	Reserved			
0044	RPLOPT9	Ninth Byte of Options	1... ..	RPLLOGON	INQ Logon MSG (Default)
			.1... ..	RPLDEVCH	INQ Device Char
			..1... ..	RPLTERMS	INQ Terms
			...1... ..	RPLCOUNT	INQ Counts
			....1... ..	RPLAPPST	INQ Appstat
			.... .1... ..	RPLRNAM	INQ Rname
			.... ..1... ..	RPLCIDE	INQ Cidxlate
.... ...1... ..	RPLTOPL	INQ Toplogon			
0045	RPLOPT10	Tenth Byte of Options	1... ..	RPLBSCID	INQ BSC ID
			.1... ..	RPLDPLY	INQ Display
			..1... ..	RPLSPARM	INQ Session
			...1... ..	RPLRSV12	Reserved
			....1... ..	RPLRSV13	Reserved
			.... .1... ..	RPLRSV14	Reserved
			.... ..1... ..	RPLRSV15	Reserved
.... ...1... ..	RPLRSV16	Reserved			
0046	RPLOPT11	Eleventh Byte of Options	1... ..	RPLQUIES	Setlogon Quiesce (Default)
			.1... ..	RPLSTART	Setlogon start
			..1... ..	RPLSTOP	Setlogon Stop
			...1... ..	RPLRSVE4	Reserved
			....1... ..	RPLRSVE5	Reserved
			.... .1... ..	RPLRSVE6	Reserved
			.... ..1... ..	RPLRSVE7	Reserved
.... ...1... ..	RPLRSVE8	Reserved			
0047	RPLOPT12	Twelfth Byte of Options	1... ..	@NM00049	Reserved
			.1... ..	RPLKEEP	Receive Keep
			..1... ..	RPLTRUNC	Receive Trunc
			...1... ..	RPLNIBTK	Receive NIBTK
			....1... ..	@NM00050	Reserved
			.... .1... ..	@NM00051	Reserved
			.... ..1... ..	@NM00052	Reserved
.... ...1... ..	RPLFMHDR	0 = NFMHDR 1 = FMHDR			
0048	RPLRH3	Third RH Byte	1... ..	RPLBB	Bracket 0 = NBB 1 = BB
			.1... ..	RPLEB	Bracket 0 = NEB 1 = EB

RPL (ISTRPL) (Continued)

Flag Meanings (Continued)

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
			..1.	RPLCMD	CHNGDIR 0 = NCMD, 1 = CMD
			...1 ,...	RPLCHREQ	CHNGDIR 0 = NREQ, 1 = REQ
			.... 1...	RPLCSI	Code Selection Indicator 0 = Basic Code/1 = Alternate Code
			.... .111	@NM00053	Reserved for VTAM
0049	RPLSRTP	Send or Receive Type	1111	RPLSTYPE	Send Type Type 0 = REQ/ 1 = RESP
			1...	RPLSRESP	Reserved for VTAM
			.111	@NM00054	Reserved for VTAM
			.... 1111	RPLRTP	Receive Type
			.... 1...	RPLRRESP	Rtype 0 = NRESP/ 1 = RESP
			.... .1..	RPLNFSYN	Rtype 0 = DFSYN/ 1 = NDFSYN
			.... ..1.	RPLDFASY	Rtype 0 = NDFASY/ 1 = DFASY
			.... ...1	@NM00055	Reserved
0054	RPLOBSQ	STSN Outb. Action Code	1...	RPLOSET	OBSQAC Set
			.1..	RPLTST	OBSQAC Testset
			.1.	RPLORSET	OBSQAC Reset
			...1	RPLOIGN	OBSQAC Ignore
			.... 1...	RPLOPOS	OBSQAC Testpos
			.... .1..	RPLONEG	OBSQAC Testneg
			.... ..1.	RPLOINV	OBSQAC Invalid
			.... ...1	@NM00064	Reserved for VTAM
0055	RPLIBSQ	STSN Inbound Act. Code	1...	RPLISET	IBSQAC Set
			.1..	RPLITST	IBSQAC Testset
			.1.	RPLIRSET	IBSQAC Reset
			...1	RPLIIGN	IBSQAC Ignore
			.... 1...	RPLIPOS	IBSQAC Testpos
			.... .1..	RPLINEG	IBSQAC Testneg
			.... ..1.	RPLIINV	IBSQAC Invalid
			.... ...1	@NM00065	Reserved for VTAM
0058	RPLSSEO	System Sense Err. CD/S	1...	@NM00066	Reserved for VTAM
			.1..	RPLCPMO	SSENSEO CPM
			.1.	RPLSTATO	SSENSEO State
			...1	RPLFIO	SSENSEO FI
			.... 1...	RPLRRO	SSENSEO RR
		111	@NM00067	Reserved for VTAM

RPL (ISTRPL) (Continued)

Constants in ISTRPL

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
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The following Equates are for the Various Request Codes that may be set

RPLWRITE	X'11'	Write
RPLRESET	X'12'	Reset
RPLDO	X'13'	Do
RPLCHECK	X'14'	
RPLQUISE	X'15'	Quiesce
RPLSMLGO	X'16'	Simulated Logon
RPLOPNDS	X'17'	Open Destination
RPLCHNG	X'19'	Change
RPLINQIR	X'1A'	Inquire
RPLINTPT	X'1B'	Interpret
RPLREAD	X'1D'	Read
RPLSLICT	X'1E'	Solicit
RPLCLOSE	X'1F'	Close Destination
RPLCLACB	X'21'	Close ACB (Internal Only)
RPLSND CD	X'22'	Send
RPLRCVCD	X'23'	Receive
RPLRSRCD	X'24'	Resetsr
RPLSSCCD	X'25'	Sessionc

The following are possible Return Codes to be mapped against RPLRTNCD

RPLNOERR	X'00'	No
RPLCBLKE	X'04'	Invalid REQ or CTL Block
RPLLOGIC	X'08'	Logical Error
RPLPHYSC	X'0C'	Physical Error
RPLNGRCC	X'10'	Neg Response to Cond CMD
RPLSPECC	X'14'	Special Condition
RPLCMDRT	X'18'	Command Reset
RPLPURGE	X'1C'	Command Purged
RPLVTMNA	X'20'	VTAM Not Active
RPLSYERR	X'24'	System Error
RPLDEVDC	X'28'	Device Disconnected
RPLLIMEX	X'2C'	NIB Resplim Excd.
RPLEXRQ	X'30'	Except. REQ. Received
RPLEXRS	X'34'	Except. Resp. Received
RPLNOIN	X'38'	No Input Available

Reason Code equates for RPLFDB2 if RPLRTNCD = X'08'

RPLCBERR	X'01'	Invalid Control Block
RPLRNORT	X'02'	No Rtype Specified
RPLCLSLIP	X'03'	CLSDST in Progress
RPLSTEAM	X'03'	Sess. Team in Proc.
RPLCIDNG	X'05'	Invalid CID
RPLILDOP	X'06'	Bad LDO OP Code
RPLILSEQ	X'07'	Bad LDO Sequence
RPLWANCR	X'08'	Read not Chained
RPLSANOD	X'0C'	SOL Any + No Dev Conn
RPLSANDA	X'0D'	SOL Any + No Dev Avail
RPLSTOOD	X'0E'	SOL to Output Only
RPLSDE	X'0F'	SOL + Data Already Expected

RPL (STRPL) (Continued)

Constants in ISTRPL (Continued)

Label	Value	Meaning
RPLRTOOD	X'10'	Read to Output Only
RPLWTOI	X'11'	Write to Input Only
RPLEWNS	X'12'	Erase to Non 2265/3270
RPLEWAU3	X'13'	EAU to Non 3270
RPLCWTOO	X'14'	Write Conv to Output Only
RPLCWB	X'15'	Erase + Conv
RPLCCCPY	X'16'	Copy LDO W/CCOR CD
RPLIDA	X'17'	Invalid Data Area or Length
RPLLIDOA	X'18'	Invalid LDO Address
RPLJTOJ	X'19'	Jump to Jump
RPLM255	X'1A'	Over 100 LDOS
RPLRJLCP	X'1B'	Reset LDO + Other
RPLCRIRT	X'1C'	Invalid Request Type
RPLRIOCC	X'1D'	Read LDO W/CC
RPLEWBLK	X'1E'	Erase + Block
RPLCRSDC	X'1F'	SOL LDO W/CD
RPLDOFOD	X'20'	Device Offline or Discon
RPLIREST	X'21'	Invalid Reset Type
RPLINVAC	X'22'	Invalid ACB
RPLINVEX	X'23'	Invalid Exlst
RPLWBT32	X'24'	Write Block to 3270
RPLRMOBN	X'25'	Read Mod or Buf Non 3270
RPLCTN32	X'26'	Copy to Non 3270R
RPLWCNVR	X'27'	WRT CNV. Data Expec.
RPLRNFT3	X'28'	Read Not First to 3735
RPLRCINV	X'29'	Reset Cond Illegal
RPLINVRM	X'2A'	Invalid Read Mode
RPLAT5FI	X'2B'	Area too smal for I + I
RPLIINA	X'2C'	I Info not Available
RPLICNDN	X'2D'	Int could not DET Name
RPLILSIN	X'2E'	Invalid Logon SEQ Int
RPLIICBE	X'2F'	CB Error in I + I
RPLLOLIPT	X'30'	Over Length 'Input' (Trunc)
RPLINTNA	X'31'	Int Info not Available
RPLRCLCK	X'32'	Reset Cond with Lock
RPLSDQT	X'32'	DFSYN Attempt Quies.
RPLSDEX	X'33'	Resp. = Ex in RPL
RPLSDNP	X'34'	Prev Sched Unpost.
RPLSCEM	X'35'	Chain Err Mid.Lst.
RPLSCEF	X'36'	Chain Err 1st Only
RPLSNQC	X'37'	Quis. send not Req.
RPLSINV C	X'38'	Inv. Cntr. of Option
RPLSDFR	X'39'	Send in DF Reset
RPLSNOS	X'3A'	Send in DF Chl. Inv.
RPLSNOUT	X'3B'	Resp with 0 Outstn.
RPLSNMC	X'3C'	Chase but cncl Exp.
RPLSSEQ	X'3D'	Seq Nr not Expect.
RPLSINVS	X'3E'	Resp Option Error
RPLSINVR	X'3F'	Inv. Resp for Post
RPLOCE01	X'40'	Type not Support List
RPLOCE02	X'41'	Type Invalid

RPL (ISTRPL) (Continued)

Constants in ISTRPL (Continued)

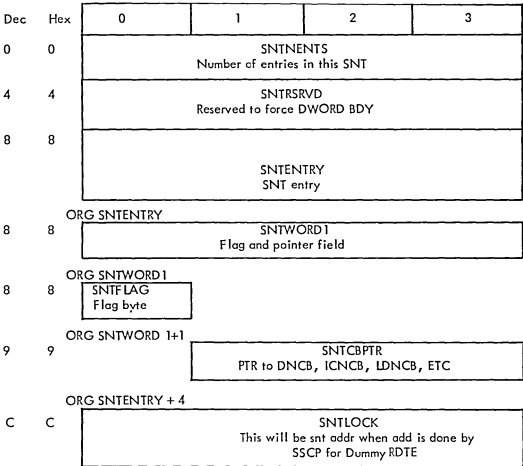
<u>Label</u>	<u>Value</u>	<u>Meaning</u>
RPLOCE03	X'42'	Acquire Invalid Parm
RPLOCE04	X'43'	Appl Never Accepts
RPLOCE05	X'44'	No Preempt Auth
RPLOCE06	X'45'	Preempt has Invalid OPT
RPLOCE07	X'46'	Invalid Nib Option
RPLOCE08	X'47'	Dest Unknown
RPLOCE09	X'48'	Dest Unopenable
RPLOCE10	X'49'	Not Auth to Opndst Installation Provided Subroutine Failed to Provide Appl Name to Interpret
RPLOCE11	X'4A'	Dest Unavail - Offline
RPLOCE12	X'4B'	Dest Unavail - In Use
RPLOCE13	X'4C'	No Logon Found Accept
RPLOCE14	X'4D'	Opndst Canceled
RPLOCE15	X'4E'	Device/Mode Incomp.
RPLOCE16	X'4F'	Invalid Mode Name
RPLOCE17	X'50'	Bhset Name Unknown
RPLOCE18	X'51'	Bhset not on Local
RPLOCE19	X'52'	Multi Bhsets Specified
RPLOCE21	X'54'	Invalid Request Type
RPLOCE22	X'55'	Appl is Quiescing
RPLOCE25	X'58'	Invalid Logon Addr or Len
RPLOCE26	X'59'	Bhset ID Rejected
RPLOCE27	X'5A'	Duplicate Nodes
RPLOCE28	X'5B'	VTAM is Halting
RPLOCE29	X'5C'	VTAM not Active
RPLOCE30	X'5D'	Source Addr of CID
RPLOCE31	X'5E'	CID not Resolvable
RPLOCE32	X'5F'	CID DST not Opened
RPLOCE33	X'60'	No Auth for Pass
RPLOCE34	X'61'	Passer not Own Resource
RPLOCE35	X'62'	Resource not Owned
RPLOCE36	X'63'	Preempt Unopened Device
RPLOCE37	X'64'	Restore of Preempt Failed
RPLOCE38	X'65'	Bhset ID Rejected by NCP
RPLOCE39	X'66'	Invalid Setlogon
RPLOCE40	X'67'	Chnge Inv. for Sess.
RPLOCE41	X'68'	Opndst/Bind Fail.
RPLVACIN	X'69'	Invalid Action
RPLINVRT	X'6A'	Inv. Response Type
RPLINVL	X'80'	ASE Invalid LCCW Code
RPLINVCF	X'81'	ASE Invalid Chaining LCCW
RPLIECMD	X'87'	ASE Invalid Escape CMD
RPLLG CNT	X'88'	Leading Graphs over 15
RPLESCNT	X'89'	ASE Escape CMD Count
RPLPCNT	X'8A'	Copy LCC Count NE 3
RPLINDAT	X'97'	Inv. Area or Length
RPLVTAME	X'A0'	ASE Miscellaneous
RPLIIRS	X'A1'	Incompatible Sysgen
RPLRDIP	X'A2'	Reset in Progress
RPLUSELE	X'A3'	Miscellaneous User Error

RPL (ISTRPL) (Continued)

Constants in ISTRPL (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
RPLCTLCF	X'A4'	ASE Control Command
RPLMOLTF	X'A5'	ASE OIIt Failure
RPLCDITS	X'A6'	ASE Conflicting Dialog
RPLCRNF	X'A7'	Conv. Reply not Possible
RPLNUTRM	X'A8'	ASE no Uterm Rdte
RPLELNV	X'A9'	ASE Escape LCCW
RPLNELNV	X'AA'	ASE Non-Escape LCCW
RPLLCH	X'AB'	ASE LCCW Count G255
RPLNORD	X'AC'	Read not First to BSC Dial in
RPLINVBS	X'AD'	ASE Invalid BTU Resp
RPLSEQER	X'AE'	ASE RSP SEQ Err
RPLERNR	X'AF'	ASE Expected RSP not Received
RPLLOIPX	X'B0'	Overlength Input (Trunc)
RPLCPYE2	X'B1'	Copy Wrong Cluster
RPLRELNPN	X'B2'	Reset Lock not Allowed
RPLCPYE1	X'B3'	Copy Unopened from Device
Equates for RPLFDB2 if RPLRTNCD = X'10'		
RPLRCWNP	X'00'	Reset C was Noop
RPLYTCTN	X'80'	Yielded to Contention
RPLYADIF	X'84'	Yielded + Dialog Init Failure
Reason Code equates for RPLFDB2 if RPLRTNCD = X'14'		
RPLSTALF	X'01'	Storage Allocation Failure
Reason Code equates for RPLFDB2 if RPLRTNCD = X'18'		
RPLUSRES	X'00'	User Reset
RPLRSTSR	X'00'	Resertsr
RPLSSTRM	X'01'	Successful TRM Reset
RPLUNTRM	X'02'	Unsuccessful TRM Reset
Reason Code equates for RPLFDB2 if RPLRTNCD = X'1C'		
RPLNCPAO	X'01'	NCP Abend = Restart OK
RPLNCPAN	X'02'	NCP Abend = Restart NOK
RPLPCF	X'03'	Perm Channel Failure
RPLANS	X'04'	Auto Network Shutdown
RPLAPPAB	X'05'	ASE Appl Abended
RPLCLOCC	X'06'	CLSDST Occurred
RPLVOFOC	X'07'	Vary Offline Occurred
RPLDISCO	X'08'	Disconnect Occurred
RPLBTHEX	X'09'	Buffer Threshold Exceeded
RPLCLRED	X'0A'	Register Cleared
RPLCPAOL	X'81'	Last Operation Purged for NCP Abend - Restart OK
Reason Code equates for RPLFDB2 if RPLRTNCD = X'24'		
RPLCOS01	X'01'	ASE Unexpected Error
RPLCOS02	X'02'	ASE Srt not Present
RPLCOS03	X'03'	ASE Controlling Mode Offline

SNT (ISTSNT)



Alphabetical List of Fields in ISTSNT

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
SNTCBPTR	0009	0009	SNTLOCK	0012	000C	SNTWORD1	0008	0008
SNTENTRY	0008	0008	SNTNENTS	0000	0000			
SNTFLAG	0008	0008	SNTRSVD	0004	0004			

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0008	SNTFLAG	Flag Byte	1... ..	SNTRDTFG	RDTE Entry Flag, 1 = RDTE, 0 = NCB
			.1... ..	SNTSNTFG	This SNT Entry Contains a Pointer to an SNT Entry
			..1.	SNTDUMFG	This is SNT for a Dummy RDTE it is never Locked
			...1 1111	SNTRSVFG	Reserved

TH (ISTTH)

Dec	Hex	0	1	2	3
0	0	THFLAG1 TH flag byte		THDAP Destination address	
4	4	THOAF Original address		THSNF Sequence number	
8	8	THDCF Data count			

Org THFLAG 1

0	0	First Byte of THFLAG1
---	---	-----------------------

Org THFLAG+1

1	1	THFLGB Header Flag Fields
---	---	------------------------------

Alphabetical List of Fields in ISTTH

Field	Dec	Hex	Field	Dec	Hex
THDAF	0002	0002	THFLGB	0001	0001
THDCF	0008	0008	THOAF	0004	0004
THFLAG1	0000	0000	THSNF	0006	0006

Flag Meanings

Hex Disp	Flag Byte	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0000		First Byte of THFLAG1	1111 1111 11.. 1.. .... .1.. .... .1. .... ..1.	THFID THFLGA THMPF THRHI THCMPLI THPSI	Format ID Header Bit Flags Mapping Field RH Included Indicator RU Complete Indicator Primary-Secondary Indicator Expedited Flow Indicator
0001	THFLGB	Header Flag Fields	.... ..1 1111 11.. .... ..11	THAFI THPYF THSEF THCDF	Priority Security Reserved

TH (ISTTH2)

Dec	Hex	0	1	2	3
0	0	TH2FLAG1 Flag Bytes		TH2DAF Destination Address	TH2OAF Origin Address
4	4	TH2SNF Sequence Number			

Org TH2FLAG1

0	0	First Byte of TH2FLAG1
---	---	---------------------------

Org TH2FLAG1+1

1	1	Second Byte of TH2FLAG1
---	---	----------------------------

Alphabetical List of Fields in ISTTH2

Field	Dec	Hex	Field	Dec	Hex
TH2DAF	0002	0002	TH2OAF	0003	0003
TH2FLAG1	0000	0000	TH2SNF	0004	0004

Flag Meanings

Hex Disp	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0000	First Byte of TH2FLAG1	1111	TH2FID	Format ID
		.... 11..	TH2MPF	Mapping Field
		.... 1...	TH2RHI	RH Included Indicator
		.... .1..	TH2CMPLI	RU Complete Indicator
		.... ..1.	TH2PSI	Primary-Secondary Indicator
		.... ...1	TH2AFI	Expedited Flow Indicator
0001	Second Byte of TH2FLAG1	1111	TH2PYF	Priority Field
		.... 11..	TH2SEF	Security Field
		.... ..11	TH2CDF	Reserved

Constants in ISTTH2

Label	Value	Meaning
Values for Format ID Field		
THFID0	B'0000'	FID 0
THFID1	B'0001'	FID 1
THFID2	B'0010'	FID 2

TH (ISTTH2) (Continued)

Constants in ISTTH2 (Continued)

Values for Mapping Field

THCNOSEG	B'11'	No Segmenting
THONLY	B'11'	Only Segment
THFIRST	B'10'	First Segment
THMIDDLE	B'00'	Middle Segment
THLAST	B'01'	Last Segment

Values for Primary-Secondary Indicator

THCPTOS	B'1'	Primary to Secondary Flow
THCSTOP	B'0'	Secondary to Primary Flow

Values for Priority Field

THCNOPIF	B'0000'	No Priority
----------	---------	-------------

Values for Security Field

THCNOSEF	B'00'	No Security
----------	-------	-------------

Values for Code Definition Field

THCNOCDF	B'00'	No Code Definition
----------	-------	--------------------

Standard Values for Flag Bytes

THSYNREQ	X'1C00'	Normal Request
THASYREQ	X'1D00'	Expedited Request
THSYNRES	X'1E00'	Normal Response
THASYRES	X'1F00'	Expedited Response

TIE (ISTTIE)

Dec	Hex	0	1	2	3
0	0	TIETTYPE Control block type code	TIELNGTH Length in bytes	TIERETCD Return code from TOLTEP	TIEREQ Tie usage code
4	4	TIETIEA Address of next tie			
8	8	TIESNA Address of symbolic name			
12	C	TIERPHA Address of RPL header			
Org TIETIEA					
4	4	First Byte of TIETIEA			
Org TIESNA					
8	8	TIEPTR1 First Pointer			
Org TIERPHA					
12	C	TIEPTR2 Second Pointer			

Alphabetical List of Fields in ISTTIE

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
TIELNGTH	0001	0001	TIERETCD	0002	0002	TIETTYPE	0000	0000
TIEPTR1	0008	0008	TIERPHA	0012	000C			
TIEPTR2	0012	000C	TIESNA	0008	0008			
TIEREQ	0003	0003	TIETIEA	0004	0004			

Flag Meanings

Hex Disp	Contents	Bit Pattern	Pattern Name	Pattern Meaning
0004	First Byte of TIETIEA	1... ..	TIEGATE	Gating Flag

Constants in ISTTIE

Label	Value	Meaning
TITYPE	X'18'	Type Code for TIE

TIE (ISTTIE) (Continued)

Constants in ISTTIE (Continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
TIE Usage Codes		
TIEREQ0	0	RFT REQ Passed to TOLTEP
TIEREQ1	1	Vary Passed FSB to TOLTEP
TIEREQ2	2	Vary Passed NCSPL to TOLTEP
TIEREQ3	3	Req. for an End-CTL to Vary
TIEREQ4	4	Req. for Freeing Buffers
TIEREQ5	5	TOLTEP REQ Info from SSCP
TIEREQ6	6	TOLTEP Pass LCPB to Vary
TIEBASIC	0	Basic Support for Device RFT Received for
TIERCRD	4	Record Support for Device RFT Received for

SERVICE AIDS

The following service aids are available for VTAM:

- . Buffer Trace
- . I/O Trace
- . Line Trace
- . NCP Dump
- . VTAM Dump Facility

A complete description of these and other relevant service aids can be found in the DOS/VS VTAM Debugging Guide, GC27-0021.

CHAPTER III
VSAM CONTROL BLOCKS



VSAM CONTROL BLOCK STRUCTURE FOR A KEY-SEQUENCED DATA SET

User's record management request:

GET, PUT, POINT, ERASE, or ENDREQ

VSAM user:

ISAM user:

R1

↑ DTFIS

DTFIS

X'11' LOGMODAD

X'2C' AMDTFAD

X'30' CIPROCAD

Note: Present only if using IIP

DOS/VS

COMREG

AMDTF

X'90' ACBAD

X'98' RPLAD

X'9C' DTFISAD

IIPRCPR

Branch vector

Address table

ANCHTAB

R1

↑ RPL

RPL

Describes the VSAM record processing request

X'18' ↑ ACB

ACB

Describes the VSAM data set

X'04' ↑ AMBL

X'08' ↑ Record management load module

X'30' ↑ EXLST

OAL

X'0C'

AMBL

X'04' ↑ Data AMDSB

X'08' ↑ Index AMDSB

X'0C' ↑ PLH's

X'14' ↑ ACB

X'40' ↑ Exclusive ctrl list

IKQVSM

EXLST

User exit routines

↑ LERAD

↑ SYNAD

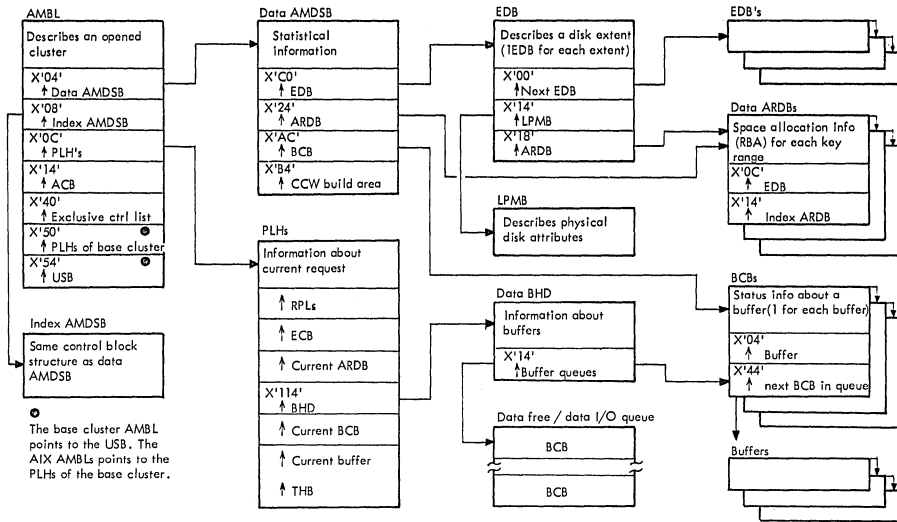
↑ EODAD

↑ EXCPAD

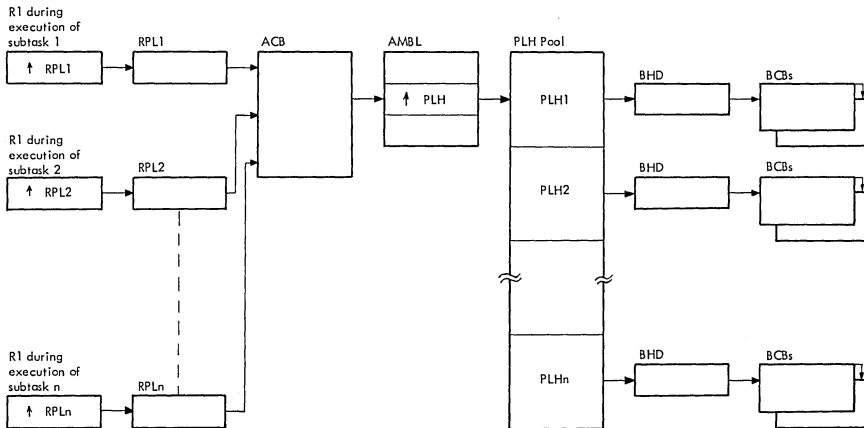
See figure:
Data and index
control block
structure

DATA AND INDEX CONTROL BLOCK STRUCTURE

III - 02



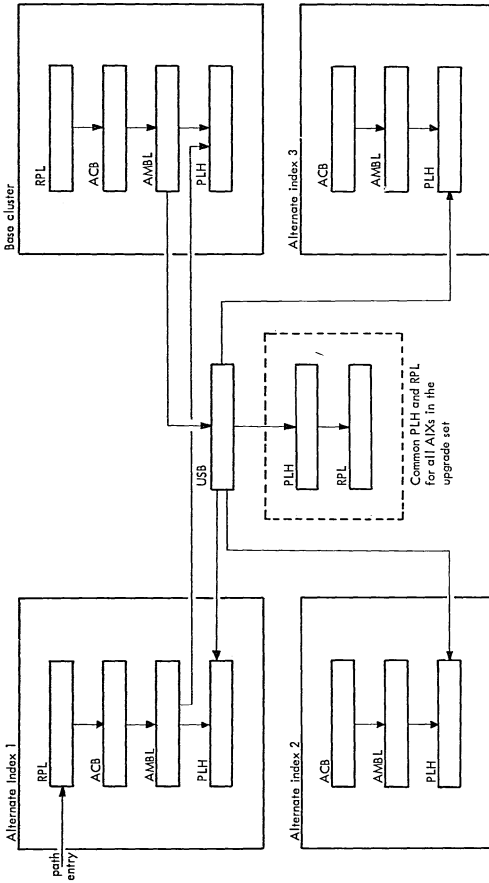
MULTIPLE STRING CONTROL BLOCK STRUCTURE



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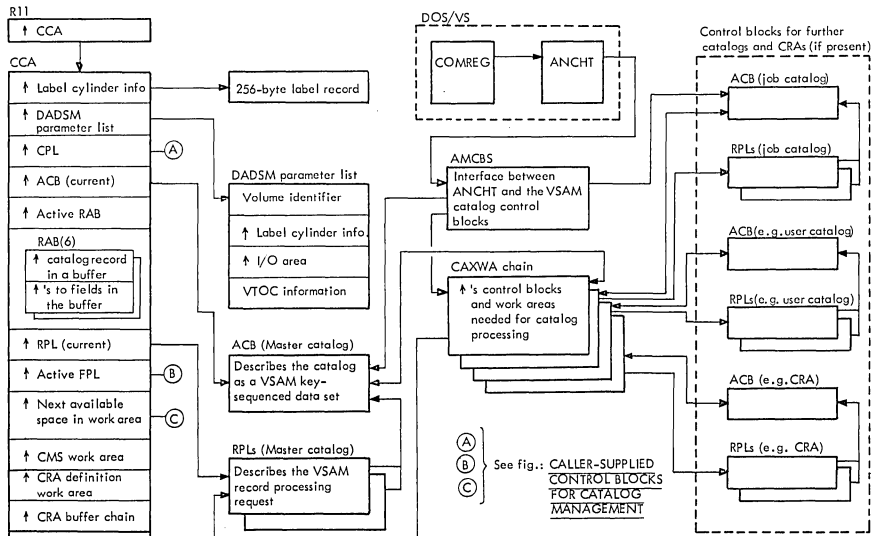
Note: PLH1 is not permanently assigned to RPL1, etc.
PLHs are assigned as required.

BASE CLUSTER TO ALTERNATE INDEX CONTROL BLOCK STRUCTURE

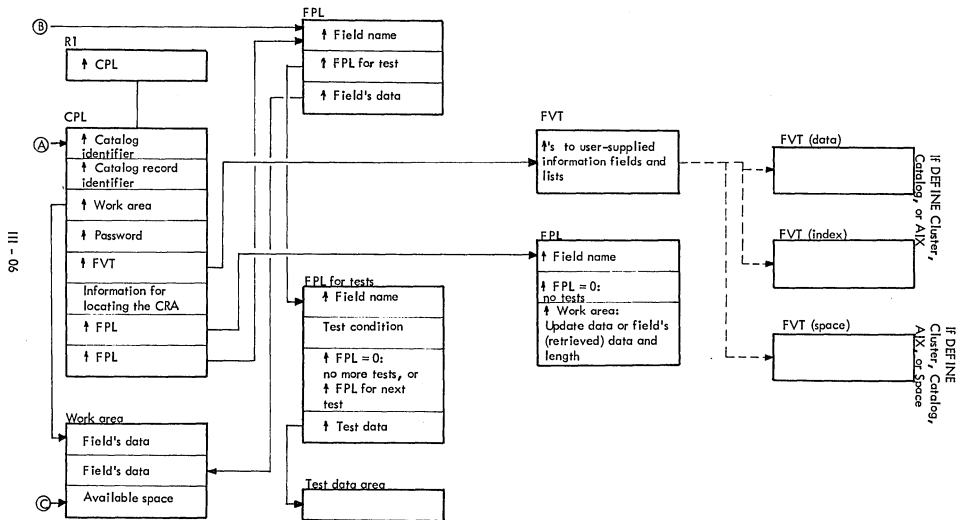


CATALOG MANAGEMENT CONTROL BLOCKS

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CALLER-SUPPLIED CONTROL BLOCKS FOR CATALOG MANAGEMENT



ACCESS METHOD BLOCK LIST (AMBL)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
0	0		AMBLST		Beginning of AMBL
0	0	2	AMBLID	X'11'	AMBL identifier
1	1	1	AMBLACT		AMBL active byte
2	2	2	AMBLLEN		Length of control block
4	4	4	AMBLDTA		Pointer to data AMDSB
8	8	4	AMBLIX		Pointer to index AMDSB
12	C	4	AMBLPLHF		Pointer to first PLH
16	10	4	AMBCCHAIN		Reserved
20	14	4	AMBLACB		Pointer to ACB
24	18	2	AMBLPLHL		Length of PLH
26	1A	1	AMBLPLHN		Total number of strings
27	1B	1	AMBLFLAG		Flag byte
			AMBLPOST	X'80'	POST must be issued
28	1C	4	AMBAMBUF		Size of buffer space
32	20	2	AMBMACRF		Flags (copy of flags in ACBMACR1 and ACBMACR2)
			AMBMACR1		First byte:
			AMBKEY	X'80'	Access data via index
			AMBADD	X'40'	Access without index
			AMBADR	X'40'	Access without index
			AMBCNV	X'20'	Control interval processing
			AMBSEQ	X'10'	Sequential processing
			AMBDIR	X'08'	Direct processing
			AMBIN	X'04'	GET, READ processing
			AMBOUT	X'02'	PUT, WRITE processing
			AMUBUF	X'01'	User buffers
			AMBMACR2		Second byte:
			AMBSKP	X'20'	Skip sequential accessing
			AMBRST	X'10'	Reusable Data Set
			AMBAIX	X'08'	AIX processing
			AMBOPEN	X'01'	Open is in process
34	22	2	AMBLTLEN		Length of GETVIS for AMBL, PLH, etc.
36	24	2	AMBDBUF		Number of data buffers
38	26	2	AMBIBUF		Number of index buffers
40	28	4	AMBLOPWA		Pointer to open work area
Split Control					
44	2C	4	AMBSECB		Split/split pseudo-split ECB
44	2C	1	AMBS0		Reserved
45	2D	1	AMBS1		Reserved
46	2E	1	AMBSCOM		ECB post byte
			AMBSWAIT	X'80'	Wait bit share
47	2F	1	AMBSECBT		Share gate test and set byte
48	30	4	AMBBECB		ECB fo Buffer Manager
48	30	1	AMBB0		Reserved
49	31	1	AMBB1		Reserved
50	32	1	AMBBCOM		ECB Post byte
			AMBBWAIT	X'80'	Wait bit-buffer manager

ACCESS METHOD BLOCK LIST (AMBL) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
51	33		AMBBECBT		Buffer gate-test and set byte
52	34	4	AMBLORBA		Low RBA of control area being split
56	38	4	AMBHIRBA		High RBA of control area being split
60	3C	4	AMBPLH		Address of PLH in control
Pointers					
64	40	4	AMBALIST		Exclusive control list address
68	44	4	AMBLRPLS		Address of RPL causing split
72	48	4	AMBLCLWA		Pointer to close work area
76	4C	4	AMBLCIWA		Pointer to CI split work area
80	50	4	AMBLBC		Pointer to base cluster
84	54	4	AMBLUSB		Pointer to USB
88	58	4	AMBBCACB		Pointer to BC-ACB
92	5C	4	AMBPEACB		Pointer to PE-ACB
96	60	4			Reserved

ACCESS METHOD CONTROL BLOCK (ACB)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
0	0	1	ACBID		ACB identifier = 'A0'
			ACBIDD	X'A0'	ACB equate
			ACBIDVAL	X'A0'	ACB equate
1	1	1	ACBACT		Active byte test and set
					X'00' VSAM Release 1
					X'10' VSAM Release 2
					X'20' VTAM
2	2	2	ACBLEN		Length of ACB in bytes
2	2	2	ACBLENG		Length of ACB in bytes(1)
4	4	4	ACBAMBL		Address of the AMBL
8	8	4	ACBAM0		Pointer to VSAM code
12	C	2			Reserved
14	E	2	ACBDBUF		Number of data buffers
14	E	2	ACBBUFND		Number of data buffers
16	10	2	ACBIBUF		Number of index buffers
16	10	2	ACBBUFN1		Number of index buffers
18	12	2	ACBMACRF		MACRF
18	12	1	ACBMACR1		MACRF first byte
			ACBKEY	X'80'	Access data via index
			ACBADD	X'40'	Access without index
			ACBADR	X'40'	Access without index
			ACBCNV	X'20'	Control interval processing
			ACBSEQ	X'10'	Sequential processing
			ACBDIR	X'08'	Direct processing
			ACBIN	X'04'	GET
			ACBOUT	X'02'	PUT
			ACBUBF	X'01'	User buffers
19	13	1	ACBMACR2		MACRF second byte
				X'80'	Reserved
				X'40'	Reserved
			ACBSKIP	X'20'	Skip sequential access
			ACBRST	X'10'	Reusable data set
			ACBAIX	X'08'	AIX processing
				X'04'	Reserved
				X'02'	Reserved
				X'01'	Reserved for open AMBL
20	14	1	ACBDOSID		DOS DTF identifier
			ACBDTFID	X'28'	DTF type for VSAM
21	15	1	ACBOFLGS		Open/close flags
			ACBVOLMT	X'80'	Verify volume mounted
			ACBVMSG	X'40'	Message requested bit
			ACBEOV	X'20'	EOV detects completed
			ACBOPEN	X'10'	ACB is open
			ACBCAT	X'08'	ACB for VSAM catalog
			ACBEXFG	X'04'	User exit flag
			ACBKEYOK	X'01'	Key processing all right for this ACB
22	16	1	ACBNST		Number of strings
22	16	1	ACBSTRNO		Number of strings
23	17	1	ACBERFLG		Error flags

(1) If specified length is too small for a VSAM Release 2 ACB a Release 1 ACB is built (X'00' in byte 1).

ACCESS METHOD CONTROL BLOCK (ACB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
			ACBOALR	X'04'	<p><u>Open error return codes :</u></p> <p>This ACB is already open</p> <p>The symbolic unit in the DLBL statement is invalid</p> <p>No job information blocks (JIBs) are available from the label information cylinder.</p> <p>The address in the ASSIGN statement for the logical unit was IGN (assignment ignored).</p> <p>The address in the ASSIGN statement for the logical unit was UA (logical unit unassigned).</p> <p>The volume serial numbers specified in the EXTENT statement do not match those specified in the catalog entry.</p> <p>Unable to load VSAM modules via a CDLOAD macro instruction.</p> <p>Attempt to mount two volumes on the same drive when direct or keyed processing was specified. Or the operator failed to mount the volume.</p> <p>CRA volume not mounted</p> <p>Unusable input data set</p> <p>Empty upgrade AIX</p> <p>The time stamp of the volume on which a data set is stored doesn't match the system time stamp in the volume catalog entry.</p> <p>The system time stamp of a data set and its index do not match, this indicates that the data has been updated separately. This test is greater than or equal, i.e., no warning is given if the index time stamp is greater than the data time stamp.</p> <p>Open empty data set for read only.</p>
			ACBOLLUB	X'0E'	
			ACBONJIB	X'0F'	
			ACBOLIGN	X'11'	
			ACBOLUNA	X'12'	
			ACBOEXT	X'22'	
			ACBOCDLD	X'32'	
			ACBONMNT	X'50'	
			ACBONCRA	X'5C'	
			ACBOIERR	X'60'	
			ACBOUEMP	X'64'	
			ACBOTMST	X'68'	
			ACBOTIME	X'6C'	
			ACBOEMPT	X'6E'	

ACCESS METHOD CONTROL BLOCK (ACB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
			ACBODSNC	X'74'	Data set was not closed the last time it was processed
			ACBODEV	X'75'	The symbolic unit specified in the EXTENT statements is not a valid VSAM device type.
			ACBONDLB	X'80'	The DLBL statement is missing or the filename in the DLBL doesn't match the ACB.
			ACBOIOER	X'84'	A permanent I/O error occurred while VSAM was reading label information from the label information cylinder.
			ACBONVRT	X'88'	Not enough virtual storage space is available in the partition for work areas, control blocks, or buffers.
			ACBOIOCA	X'90'	A permanent I/O error occurred while VSAM was reading or writing a catalog entry.
			ACBOSECU	X'98'	CATX'94' found in the catalog for this ACB. Security verification failed; the password specified in the ACB for a specific level of access doesn't match the password in the catalog for that level of access.
			ACBOPARC	X'A0'	The operands specified in the ACB are inconsistent with each other or with the information in the catalog entry, for example, an open of an ESDS for keyed processing.
			ACBOKBUF	X'A1'	User-specified buffers with keyed access (user buffers can be specified only with CNV access).
			ACBOIOVL	X'A4'	A permanent I/O error occurred while VSAM was reading the volume label of the volume the data is set on.
			ACBONAVA	X'A8'	The data set is not available because it is being updated by (under the exclusive control of) another ACB or has been exported by Access Method Services.

ACCESS METHOD CONTROL BLOCK (ACB) (...Continued)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
			ACBNOCT	X'B4'	The VSAM catalog is not connected to the system on logical unit SYSCAT.
			ACBOACT	X'BC'	ACB was active
			ACBOOERR	X'CD'	Unusable output data set
			ACBOPEMP	X'C4'	Access via empty path
			ACBODSCB	X'CB'	DSCB format 4 error
			ACBOCNVP	X'E0'	Invalid control interval procedure
			ACBONRST	X'E8'	Non-reusable is not empty
			ACBOCTER	X'FF'	Unexpected return from catalog locate function.
					<u>Close error return codes:</u>
			ACBCALR	X'04'	ACB already closed
			ACBCNVRT	X'88'	Insufficient space available in user's partition for work area
			ACBCIOCA	X'90'	Permanent I/O error occurred while VSAM was reading or writing a catalog entry.
			ACBCNCAT	X'94'	No catalog entry found
			ACBCIOER	X'B8'	Permanent I/O error occurred while VSAM was completing outstanding I/O requests.
			ACBCBUSY	X'BC'	ACB busy
24	18	4	ACBAMBUF		Length of buffer pool
28	1C	8	ACBDDNM		DDname
36	24	4	ACBPTCT		Pointer to password
40	28	4	ACBUAPTR		Pointer to user work area
44	2C	4	ACBBFPL		Pointer to first data buffer in buffer pool
48	30	4	ACBEXLST		User exit list pointer
52	34	4	ACBNXT		Reserved
56	38	1			Reserved for BSTRNO
57	39	1	ACBINFLG		Catalog recovery flag byte
			ACBSCRA	X'80'	CRA flag system
			ACBUCRA	X'40'	CRA flag user
				X'20'	Reserved
				X'10'	Reserved
				X'08'	Reserved
				X'04'	Reserved
				X'02'	Reserved
				X'01'	Reserved
58	3A	2	ACBMSGLN		Message area length
60	3C	4	ACBMSGAR		Message area
64	40	4	ACBMLOAD		CBM module load address

ACCESS METHOD CONTROL BLOCK STRUCTURE BLOCK (AMCBS)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	CBSID	X'00'	AMCBS identifier
1	1	1	CBSFLAGS		AMCBC flags
			CBSJCAT	X'80'	Job catalog not present
2	2	4	CBSSIZ		Length of the AMCBS
4	4	4	CBSCRACB		Pointer to CRA ACB
8	8	4	CBSACB		Pointer to ACB (Master)
12	C	4	CBSCRAPL		Pointer to AMS CRAAP list
16	10	4	CBSSYSUC		Pointer to job catalog ACB
20	14	4	CBSCAXCN		Pointer to CAXWA chain

ACCESS METHOD DATA STATISTICS BLOCK (AMDSB)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
0	0	96	AMDSB COM		Common part
0	0	1	AMDSBID	X'60'	AMDSB identifier
1	1	1	AMDATTR		Attributes of the data set
			AMDATTR1		Attributes (first byte) :
			AMDDST	X'80'	Key-sequenced data set 1... ..
					Entry-sequenced data set 0... ..
			AMDWCK	X'40'	Check each record when it is written
			AMSDST	X'20'	Sequence set is stored with the data
			AMDREPL	X'10'	Replication
			AMDORDER	X'08'	Use the volumes in the same order as the volume list
			AMDRANGE	X'04'	The data set is divided into key ranges
			AMDRRDS	X'02'	Relative record data set
			AMDSPAN	X'01'	Spanned records
2	2	2	AMDLEN		Length of AMDSB in the catalog
			AMDAXRKP		Index section
6	6	2	AMDRKP		Relative key position
8	8	2	AMDKEYLN		Key length
10	A	1	AMDPTCA		Percentage of free control intervals in the control area
11	B	1	AMDPTCI		Percentage of free bytes in the control interval
12	C	2	AMDCIPCA		Number of control intervals in a control area
14	E	2	AMDFSCA		Number of free control intervals in a control area
16	10	4	AMDFSCI		Number of free bytes in a control interval
20	14	4	AMDCINV		Control interval size
24	18	4	AMDLRECL		Maximum record size
28	1C	4	AMDHLRBA		RBA of the high-level index record
28	1C	4	AMDNSLOT		Number of relative record slots
32	20	4	AMDSRBA		RBA of first seq. record
32	20	4	AMDMAXRR		Max. relative record number
36	24	4	AMDPARDB		Pointer to first ARDB

ACCESS METHOD DATA STATISTICS BLOCK (AMDSB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
40	28	1	AMDATTR3 AMDUNO	X'80' X'40' X'20' X'10' X'08' X'04' X'02' X'01'	Attributes 0=unique; 1=non-unique Reserved Reserved Reserved Reserved Reserved Reserved Reserved
41	29	3			Reserved
44	2C	4			Reserved
Statistics					
48	30	4	AMDSTAT		Statistics
48	30	8	AMDSTMST		System time stamp
48	30	8	AMDSTSP		System time stamp
56	38	2	AMDNIL		Number of index levels
58	3A	2	AMDNEDB		Number of EDBs
58	3A	2	AMDNEXT		Number of extents in the data set
60	3C	4	AMDNLR		Number of user-supplied (logical) records in the data set
64	40	4	AMDDEL		Number of deleted records
68	44	4	AMDIREC		Number of inserted records
72	48	4	AMDUPR		Number of updated records
76	4C	4	AMDRETR		Number of retrieved records
80	50	4	AMDASPA		Number of bytes of free space in the data set
84	54	4	AMDNCIS		Number of times a control interval was split
88	58	4	AMDNCAS		Number of times a control area was split
92	5C	4	AMDEXCP		Number of times EXCP was issued by VSAM I/O routines
			AMDCOMM		
General Continue					
96	60	1	AMDSHOPT		Share option byte
			AMDSHR1	X'80'	Share option 1
			AMDSHR2	X'40'	Share option 2
			AMDSHR3	X'20'	Share option 3
			AMDSHR4	X'10'	Share option 4
97	61	4	AMDCDSN		Pointer to catalog ACB
101	65	3	AMDDSN		Catalog control interval number for data (index)
104	68	4	AMDHWRBA		High-water RBA for the data set

ACCESS METHOD DATA STATISTICS BLOCK (AMDSB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
108	6C	1	AMDATTR2 AMDREL AMDLOAD AMDSPEED AMDINDX AMDSHR AMDKR	X'80' X'40' X'20' X'10' X'08' X'04'	Attributes (second byte): Release unused space Load mode Speed option Index option Sharing Key-range processing, duplicate of AMDRANGE
109	6D	.1	AMDCAT	X'01'	AMDSB for catalog
110	6E	..2	AMDACT AMDFILT		AMDSB test and set byte User area (ISAM compatibility)
112	70	4	AMDPVOL		Pointer to volume list
116	74	1	AMDAMS AMDAIX AMDPATH AMDBASE	X'80' X'40' X'20'	AMS flag byte Alternate index Access via path Access via base
117	75	1			Reserved
118	76	2	AMDAIRKP		AIX relative key position
Local Statistics					
120	78	4 2	AMDLSTAT AMDLNIL		Local statistics Local number of index levels
122	7A	..2	AMDLNEST		Local number of entries in the index section
124	7C	4	AMDLNLR		Local number of user- supplied (logical) records
128	80	4	AMDLDEL		Local number of deleted records
132	84	4	AMDLIREC		Local number of inserted records
136	88	4	AMDLUPR		Local number of updated records
140	8C	4	AMDLRETR		Local number of retrieved records
144	90	4	AMDLASPA		Local bytes of free space
148	94	4	AMDLNCIS		Local number of control interval splits
152	98	4	AMDLNCAS		Local number of control area splits
156	9C	4	AMDLEXCP		Local number of EXCPs issued by VSAM I/O routines
Exceptional Exit					
160	A0	8	AMDEXEXT		Exception exit

ACCESS METHOD DATA STATISTICS BLOCK (AMDSB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
Buffer Management Information					
168	A8	2	AMDBCNO		Number of buffers
170	AA	2	AMDBFREE		Number of unassigned buffers
172	AC	4	AMDFSBCB		Address of the first BCB
176	B0	4	AMDFFCB		Address of the first free BCB
180	B4	4	AMDCCWA		Pointer to CCW build area
184	B8	8	AMDCCWA		Reserved
EDB Header					
192	C0	4	AMDFSEDB		Address of first EDB
196	C4	2			Reserved
198	C2	..2	AMDLEDB		Length of EDB

ACCESS METHOD DEFINE THE FILE (AMDTF) TABLE

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	72	SAVARPP		Used to store register contents of problem program ISAM interface program save area Address of ACB } Used by IIPOPEN to open the ACB
72	48	72	SAVARCI		
144	90	4	ACBAD		
148	94	4		X'0A020000'	SVC 2
152	98	4	RPLAD		Address of RPL
156	9C		EREPL		Error exit parameter list
156	9C	4	DTFISAD		Address of DTFIS
160	A0	4	EPLRECAD		Address of record in error (not supported by IIP)
164	A4	8	EPLDASDA		DASD address of record in error (not supported by IIP)
172	AC	1	EPLRECID		Record identification
			EPLRECID	X'80'	Data record (VSAM data set)
			EPLXREC	X'40'	Index record (VSAM sequence set)
			EPLCXREC	X'20'	Cylinder index record (VSAM index set)
			EPLMXREC	X'10'	Master index record (VSAM index set)
			EPLREAD	X'02'	Read
			EPLWRITE	X'01'	Write
173	AD	1	EPLCMNDC	X'00'	Command code of failing CCW (not supported by IIP)
176	B0		GENACB		GENCB information to generate the ACB
176	B0	4	GACBHAD		Address of header
180	B4	4	MACRFEAD		Address of MACRF element
184	B8	4	FILENEAD		Address of filename element
188	BC		GACBH		Header
188	BC	1	GACBBTC	X'A0'	Block-type code (ACB)
189	BD	1	GACBFTC	X'01'	Function-type code (GENCB)
190	BE	2	GACBNOC	X'0001'	Number of copies (1 copy)
192	C0	4	GACBWAAD		Address of work area set to 0; VSAM obtains space via GETVIS
196	C4	4	GACBWALN	X'00'	Length of work area

ACCESS METHOD DEFINE THE FILE (AMDTF) TABLE (. . . .Cont'd)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
200	C8	4	MACRFEL	X'00120000'	MACRF element
200	C8		MACRFKTC		Keyword-type code
204	CC		MACRFVAL		Value supplied by IIOOPEN
208	D0		FNAMEEL		File name (DDname) element
208	D0	4	FNAMEKTC	X'00090000'	Keyword-type code
212	D4	8	FNAMEACB		File name (inserted by IIOOPEN)
220	DC		GENRPL		GENCB information to generate the RPL
220	DC	4	GRPLHAD		Address of header
224	E0	4	ARLNEAD		Address of AREALEN element
228	E4	4	ACBEAD		Address of ACB element
232	E8	4	KEYLNEAD		Address of KEYLEN element
236	EC	4	RECLNEAD		Address of RECLLEN element
240	F0		GRPLH		Header
240	F0	1	GRPLBTC	X'C0'	Block-type code (RPL)
241	F1	1	GRPLFTC	X'01'	Function-type code (GENCB)
242	F2	2	GRPLNOC	X'0001'	Number of copies (1 copy)
244	F4	4	GRPLWAAD		Address of work area set to 0; VSAM obtains space via GETVIS
248	F8	4	GRPLWALN		Length of work area set to 0
252	FC		ARLNEL		AREALEN element
252	FC	4	ARLNKTC	X'002D0000'	Keyword-type code
256	100	4	ARLNVAL		Area Length
260	104		ACBEL		ACB element
260	104	4	ACBKTC	X'002B0000'	Keyword-type code
264	108	4	ACBAD1		Address of ACB
268	10C		KEYLNEL		KEYLEN element
268	10C	4	KEYLNKTC	X'00300000'	Keyword-type code
272	110	4	KEYLNVAL		Key length
276	114		RECLNEL		RECORDLEN element
276	114	4	RECLNKTC	X'00350000'	Keyword-type code
280	118	4	RECLNVAL		Record length
284	11C		SHOWCB		Information to show ACB or RPL
284	11C	4	SHHAD		Address of header
288	120	4	SHEAD		Address of element
292	124		SHH		Header
292	124	1	SHBTC	X'00'	Block-type code
293	125	1	SHFTC	X'03'	Function-type code (SHOWCB)
294	126	2	SHOTC	X'0000'	Object-type code
296	128	4	SHBAD		Address of block to be shown

ACCESS METHOD DEFINE THE FILE (AMDTF) TABLE (...Cont'd)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
300	12C	4	SHARAD		Address of area
304	130	4	SHARLN	X'0004'	Length of area
308	134	4	SHAR	X'00	Area where information is to be placed
312	138		SHEL		Element
312	138	4	SHKTC		Keyword-type code (set by IIP)
316	13C		MODRPL		MODCB information to modify the RPL
316	13C	4	MRPLHAD		Address of header
320	140	4	OPTCDEAD		Address of OPTCD element
324	144	4	AREAEAD		Address of AREA element
328	148	4	ARGEAD		Address of ARG element
332	14C		MRPLH		Header
332	14C	1	MRPLBTC	X'CO'	Block-type code (RPL)
333	14D	1	MRPLFTC	X'02'	Function-type code (MODCB)
336	150	4	MRPLBAD		Address of block to be modified (supplied by IIPOPEN)
340	154		OPTCDEL		OPTCD element
340	154	4	OPTCDKTC	X'00340000'	Keyword-type code
344	158	4	OPTCDVAL		Bit pattern (supplied by IIP)
348	15C		AREAEL		AREA element
348	15C	4	AREAKTC	X'002C0000'	Keyword-type code
352	160	4	AREAAD		Address of area (supplied by IIP)
356	164		ARGEL		ARG element
356	164	4	ARGKTC	X'002E0000'	Keyword-type code
360	168	4	ARGAD		Address of ARG parameter (supplied by IIP)
364	16C		MSGOUT		Header
364	16C	2	MSCCB		Residual count
366	16E	2			Communications bytes
368	170	2			CSW status bytes
370	172	1			Logical unit class
371	173	1			Logical unit
372	174	1			Zero
373	175	3			CCW address
376	178	1			Status byte
377	179	3			CSW CCW address
380	17C	4			Zeros
384	180	8	MSCCW		CCW
392	188	6	ERRCDE		Error code of message
398	18E	5	ISAMCM		'ISAM'
403	193	8	ISCM		ISAM command area
412	19C	5	VSAMCM		'VSAM'
417	1A1	8	VCCM		VSAM command area
426	1AA	4	CRCM		'RC='
430	1AE	5	CRC1		Return code area
435	1B3	20	SHOWCBF		Area if SHOWCB failed
455	1C7	5	CRC2		Return code from SHOWCB
460	1CC	4	CRSCM		'EC='
464	1D0	4	CRSC		Error code area
468	1D4	1	BRKT		Closing bracket

ADDRESS RANGE DEFINITION BLOCK (ARDB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	ARDID	X'AD'	Control block identifier Identifies the type of space defined by the ARDB: One key range of a key-range data set The total index of a key-sequenced data set that does not have the sequence set with the data, or The non-sequence set levels of a key-sequenced data set's index, when the sequence set is stored with the data The sequence set of a key-sequenced data set, when the sequence set is stored with data Use overflow volumes for this key End of data ARDB Device contains more than 256 cylinders Length of the ARDB Address range definition preformat byte (this byte is a literal copy of the catalog byte called ITYPEXT) No preformat done indication Reserved Address of the next ARDB in the ARDB chain The RBA of the next free-space control interval at the end of the data set Pointer to the active EDB Pointer to related ARDB The RBA of the highest control interval allocated to the key range
1	1	1	ARDTYPE		
			ARDKR	X'80'	
			ARDHLI	X'40'	
			ARDSS	X'20'	
			ARDUOVFL	X'10'	
			ARDEOD	X'08'	
			ARDLGCC	X'04'	
2	2	2	ARDLEN	X'80'	
4	4	1	ARDPRF		
			ARDPRFMT	X'40'	
5	5	3			
8	8	4	ARDNPTR		
12	C	4	ARDHRBA		
16	10	4	ARDEDBA		
20	14	4	ARDPREL		
24	18	4	ARDERBA		

ADDRESS RANGE DEFINITION BLOCK (ARDB) (...Cont'd)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
28	1C	4	ARDPKEYS		Pointer to ARDKEYS The RBA of the data set control interval containing the key range's high-key value Number of volumes in list
32	20	4	ARDHKRBA		
36	24	2	ARDVOLNM		
The following ten-byte entry, called an ARDB volume group, repeats for each volume in this ARDB.					
38	26	10	ARDVOLGP		Volume serial (VOLSER) list The serial number of the volume containing the highest RBA allocated to the key range Catalog relative replication number Symbolic unit Symbolic unit class Symbolic unit number Space reserved for the key range's low and high key values. The length of this field equals twice the key length
38	26	6	ARDVOLSR		
44	2C	2	ARDRELRP		
46	2E	2	ARDSYMU		
46	2E	1	ARDSUCLS		
47	2F	1	ARDSUNUM		
48	30	Variable	ARDKEYS		

BUFFER CONTROL BLOCK (BCB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	4	BUFNBCB		Address of the next BCB entry
4	4	4	BUFCBAD		Buffer address
8	8	20	BUFRIODR		Read I/O driver block
8	8	2	BUFCURRU		Read symbolic unit number
			BUFCURU		Current logical unit
10	A	2	BUFBKSTR		Number of physical blocks to read
12	C	8	BUFRSEEK		Computed DASD address for read
12	C	1	BUFRM		M
13	D	2	BUFRBB		BB
15	F	2	BUFRCC		CC
17	11	2	BUFRHH		HH
19	13	1	BUFRR		R
20	14	4	BUFCRBA		RBA for the read
24	18	4	BUFRLPMB		Address of the read LPMB
28	1C	20	BUFWIODR		Write I/O driver block
28	1C	2	BUFCURWU		Write symbolic unit number
30	1E	10	BUFCIN		Write check initialize area
30	1E	2	BUFBKSTW		Number of physical blocks to write
32	20	8	BUFWSEEK		Computed DASD address for write
32	20	1	BUFWM		M
33	21	2	BUF WBB		BB
35	23	2	BUFWCC		CC
37	25	2	BUFWHH		HH
39	27	1	BUFWR		R
40	28	4	BUFCWRBA		RBA for the write
44	2C	4	BUFWLPMB		Address of the write LPMB
48	30	2	BUFFLAG		Flag bytes
			BUFFLAG1		Flag byte 1:
			BUFCMW	X'80'	Write indicator
			BUFCFMT	X'40'	Format write indicator
			BUFCRRD	X'20'	Read indicator
			BUFRDAH	X'10'	Read ahead request
			BUFPFMT	X'08'	Format remainder of control area
			BUFCVAL	X'04'	Buffer contents are valid
			BUFSSRCD	X'02'	Buffer is a sequence set record
			BUFRES1	X'01'	Available
			BUFFLAG2		Flag byte 2:
			BUFPURG1	X'80'	Purge - must write or read
			BUFPURG2	X'40'	Purge - format
			BUFRIXRD	X'20'	Replicated index read

BUFFER CONTROL BLOCK (BCB) (...Cont'd)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
			BUFFREP	X'08'	Return buffer by REPBUF
			BUFWRINV	X'10'	Control interval was written - another string Available
50	32	10	BUFRES2	X'07'	Write initialize area
50	32	2	BUFBKTWI		Number of physical blocks to check
			BUFBKTCK		
52	34	8	BUFWCKSK		Computed DASD address for check (not used in release 1)
52	34	1	BUFCM		M
53	35	2	BUFCBB		BB
55	37	2	BUFCBC		CC
57	39	2	BUFCHH		HH
59	3B	1	BUFCR		R
60	3C	4	BUFCVCHH		CCHH for index read
60	3C	4	BUFCVCB		CCB address
64	40	1	BUFERFLG		I/O error indicator
		1	BUFEIOER	X'80'	I/O error on buffer
		1	BUFESRCH	X'40'	I/O error on search ID
		1	BUFESEEK	X'20'	I/O error on seek
		1	BUFEREAD	X'10'	I/O error on read
		1	BUFEWRT	X'08'	I/O error on write
		1	BUFERBCK	X'04'	I/O error on readback check
		1	BUFENTCM	X'02'	I/O operation complete
		1	BUFEDSK	X'01'	2314 seek incorrect
65	41	1	BUFSTRID		String ID of this set of buffers
66	42	2	BUFCNOI		No. of blocks in control interval to process
68	44	4	BUFNACB		Next BCB in AMDSB chain

BUFFER HEADER (BHD)

Displacement Dec	Hex	Bytes	Field Name	Hex	Description
				Digit	
0	0	2	BHDNO		Number of buffers
2	2	2	BHDLEN		Length of control block
4	4	2	BHDRMAX		Maximum number of buffers available
6	6	2	BHDRMIN		Minimum number of buffers available
8	8	2	BHDBRC		Read-ahead count
10	A	1	BHDHFLAG		Buffer header flag 1
			BHDRAHOK	X'80'	Read-ahead OK flag
			BHDIXREP	X'40'	Replicated index read indicator
			BHDNSKD	X'08'	I/O with wait for no-schedule queue (BCBNSKDQ)
			BHDSKD	X'04'	I/O with wait for schedule queue (BCBSKDQ)
			BHDMVBCB	X'02'	Free buffer is a move
11	B	1	BHDHFLAG		Buffer header flag 2
12	C	4			Reserved
16	10	4	BHD1STF		Address of chain of free buffers
20	14	4	BHDSKDQ		Address of BCB chain with I/O scheduled
24	18	4	BHDNSKDQ		Address of BCB chain with pending I/O
28	1C	4	BHD1STW		Address of first BCB requiring I/O
32	20	1	BHDID	X'77'	BHD identification
33	21	1			Reserved
34	22	2	BHDIOCNT		I/O count of no-schedule queue (BCBNSKDQ)
36	24	2	BHDWMIN		Write threshold
38	26	2	BHDTRACT		Temporary read-ahead count
40	28	2	BHDQNO		Number of BCBs on queues
42	2A	2			Reserved
44	2C	4	BHDCCHH		CCHH of last held control area
48	30	4	BHDCCBCH		CCB chain pointer

CATALOG AUXILIARY WORK AREA (CAXWA)

Offset		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
0	0	1	CAXID	Control Block identifier X"CA"
1	1	3		Reserved
4	4	4	CAXCHN	Address of the next CAXWA in the chain
8	8	1	CAXFLGS	Flags:
		1... ..	CAXBLD	Build request
		.1... ..	CAXOPN	The catalog is being opened
		..1... ..	CAXCLS	The catalog is being closed
		...1... ..	CAXEOV	An end-of-volume routine is in control
		....1... ..	CAXCMP	Open /Close/EOV processing is
		.... .1..	CAXMCT	1=Master Catalog 0=User catalog
		.... .1.	CAXCMR	Catalog management has been called by a catalog management routine
		.... .1	CAXSCR	Reserved for OS
9	9	1	CAXFLG2	Flags:
		1... ..	CAXF2DT	The catalog has been deleted
		.1... ..	CAXF2NDD	No DD-name found
		..1... ..	CAXF2CCR	0=CCR needs to be read 1=CCR has been read
		...1... ..	CAXF2CRA	CAXWA for CRA
		....1... ..	CAXF2REC	Recoverable catalog
		.... .1..	CAXF2EOV	End of volume flag
		.... .x.		Reserved
		.... .1	CAXF2CA	Free CAXWA if error
10	A	1		Reserved
11	B	1	CAXACT	Catalog activity count
12	C	4	CAXATIOT	Reserved for OS
16	10	4	CAXSCHWA	Reserved for OS
20	14	4	CAXDRWP	Address of the catalog's DRWA
24	18	4	CAXACB	Address of the catalog's ACB
			CAXCRACB	Address of CRA (ACB)
28	1C	4	CAXUCB	Address of the COMREG
32	20	12	CAXCCR	Catalog control record information
32	20	3	CAXHACI	Catalog interval number of the highest allocated control interval in the catalog
35	23	3	CAXNFCI	Control interval number of the next free control interval in the catalog
38	26	3	CAXDCI	Number of deleted control intervals
41	29	3	CAXFDCI	Control interval number of the first deleted control interval in the catalog
44	2C	2		Reserved
46	2E	2	CAXRPLCT	Number of RPLs associated with the CAXWA
48	30	4	CAXRPL	Address of the first RPL in the CAXWA's RPL chain
52	34	44	CAXCNAM	Catalog name
96	60	4	CAXOPLST	Open/Close paramater list :
96	60	1	COPTS	Option flags:
		1... ..	CENLST	End-of-list indicator
		..xxx xxxx		Reserved
97	61	3	COPACB	Address of the catalog's ACB.

CATALOG AUXILIARY WORK AREA (CAXWA) (...Continued)

Offset		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
100	64	4	CAXOPEWA	Reserved for OS
104	68	4	CAXCCA	Address of the CCA
108	6C	4	CAXJDE	Reserved for OS
112	70	4	CAXCAT	Address of the catalog's ACB associated with CRA
115	74	6	CAXVOLCR	Volume serial of CRA volume
112	7A	2	CAXSYSCR	SYS-number of CRA volume
124	7C	6	CAXVOLRM	Volume Serial of REM volume
130	82	2	CAXSYSRM	SYS-number of REM volume
132	84	6	CAXOCPAR	O/C parameter list
132	84	4	CAXOCACB	ACB address
136	88	2	CAXOCEOL	End of list indicator

CATALOG COMMUNICATIONS AREA (CCA)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
0	0	2	CCAID	Identifier - set to X'ACCA'
2	2	2	CCASZ	Size
4	4	1	CCACD1	Return code 1
5	5	1	CCACD2	Return code 2
6	6	1	CCAFLG1	Flag byte 1:
		1... ..	CCAF1LPS	Stop the loop
		.1.. ..	CCAF1ARA	Assign RPL to ARA
		..1.	CCAF1LRD	Catalog control record read into virtual storage
		...1	CCAF1KEY	Retrieve the catalog record based on a DSNAME value
		.... 1..	CCAF1KGE	Retrieve the next catalog record
		.... .1..	CCAF1CR	A checkpoint of the CCR is required
		.... ..1.	CCAF1UP	GET macro instruction issued for update
		.... ...1	CCAF1DK	When the caller is renaming a data set, this flag indicates that the data set's true-name record is to be deleted, but the data set's catalog record is not to be deleted.
7	7	1	CCAFLG2	Flag byte 2:
		1... ..	CCAF2SYS	Always set on
		.1.. ..	CCAF2NVC	No validity check on the caller's CTGFL or work area is required
		.. 1.	CCAF2CCT	Reserved for OS
		...1	CCAF2XEQ	Exclusive enqueue
		...0		Shared enqueue
		.... 1..	CCAF2RHS	When a catalog management routine calls the VSAM Open routines to open a newly created catalog, and the Open routines call VSAM Catalog Management routines to obtain information about the catalog to be opened, the situation is called a "recursive call". The catalog cannot be dequeued when the Catalog Management routines return to the caller (VSAM Open routines).
		.... .xx.	CCAF2COB	Combination of catalog open and build:
		.... .1..	CCAF2CO	Catalog is being opened
		.... .1.	CCAF2CB	Reserved for OS
		.... ...1	CCAF2SMO	Search master catalog only
8	8	1	CCAFLG3	Flag byte 3:
		1... ..	CCAEXGR1	Exit indicator
		.1.. ..	CCAGC4	The catalog record contains a password group occurrence (identified by Group Code 4) (detected during IGGPSCNC processing)
		.. 1.	CCAGDSP	GENDSP
		...1	CCAEXGR2	Exit indicator

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
9	9	.... 1...	CCANF	The group occurrence cannot be found
		.... .1..	CCAELC2	Exit indicator
		.... .1.	CCALFT	First time
		.... ....1	CCAEGREC	Exit indicator
		1	CCAF4G4	Flag byte 4:
		1... ..	CCAF4DRQ	The catalog must be dequeued after the request completes
		.1..	CCAF4BYS	Bypass the security verification
		..1.	CCAGVNC	The required variable-length field is not completely contained in the record currently in the buffer
		... 1	CCAGVNF	The group occurrence identified by the caller-specified sequence number cannot be found
		.... 1...	CCAGVNBS	There is no buffer space available to contain an extension record
		.... .1..	CCAGVEX	Exit indicator
		.... .1.	CCAGVNE	The field does not exist in the located group occurrence
....1	CCATCOMP	Test complete : all group occurrence pointers have been examined and all designated fields have been tested		
10	A	1	CCAF4G5	Flag byte 5:
		1... ..	CCAMEX2	Exit indicator
		.1..	CCAMEX	Exit indicator
		..1.	CCAMEX1	Exit indicator
		...1	CCAMODPA	The catalog record's base record must be written (using IGGPPAD) into the catalog
		.... 1...	CCATHIT	Successful test : a group occurrence has been found that satisfies the test conditions
		.... .1..	CCATEX	Exit indicator
		.... .1.	CCATEX1	Exit indicator
		.... ....1	CCATEX2	Exit indicator
		1	CCAF4G6	Flag byte 6:
11	B	1... ..	CCAMCODR	The catalog must be dequeued when the request completes
		.1..	CCADELP	A deleted group occurrence pointer was found
		..1.	CCAMNOSP	The catalog record's free space isn't large enough to contain all the new catalog information during the group occurrence move operation
		... 1	CCAINIT	Insert switch for variable-length field being retrieved
		.... 1...	CCASUPFD	Suppress password field information during field retrieval
		.... .1..	CCAREUSE	The contents of the caller's record areas (buffers) can be used by IGGPEXT and IGGPMOD

CATALOG COMMUNICATIONS AREA (CCA) (... Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
		.... .1.	CCAEXT	Set when a catalog management routine calls the Extract routine (IGGPEXT)
		.... . .1	CCAMOD	Set when a catalog management routine calls the Modify routine (IGGPMOD)
12	C	4	CCALBCYL	Address of the label cylinder area
16	10	4	CCADPL	Address of the DADSM parameter list
20	14	4	CCACPL	Address of the caller's CTGPL
24	18	4	CCAACB	Address of the catalog's ACB
28	1C	4	CCANPCCB	Address of next PCCB
32	20	4	CCAUAB	Address of the record area block (RAB) currently in use
36	24	44	CCASRCH	Search argument (DSNAME of a cluster, data, index, catalog, or non VSAM data set, or a volume serial number)
36	24	3	CCASRID	Control interval number
		3	CCASRCIN	Control interval number
80	50	20	CCARAB0	Record Area Block 0: Each record area block describes the catalog record contained in one of the six catalog management buffers available for the request. RABs 1 through 5 are identical in format to RAB 0. Note: "x" in each field name is replaced by "0" through "5" to indicate a particular RAB's field.
80	50	1	CCARxFLG	Flags: The following flag is used by IGGPEXT and IGGPMOD:
		1... ..	CCARxUR	The RAB is in use. It cannot be used by IGGPEXT or IGGPMOD
		.1... ..	CCARxUI	The RAB is temporarily in use by IGGPEXT or IGGPMOD. It cannot be overlaid
		..1.	CCARxU2	(Same as CCARxUI)
		...1	CCARxWR	The buffer must be written before another catalog record can be read into it
		.... 1...	CCARxPA	The buffer contains a new catalog record - PUT-add is required to add the record to the catalog
		.... .xx.		Reserved
		.... . .1	CCARxUPD	Update buffer not reused
81	51	1	CCARxRPL	Last assign, RPL index
92	52	2		Reserved
84	54	4	CCARxREC	Address of the record in the buffer
88	58	12	CCARxSEG	Addresses of segments

CATALOG COMMUNICATIONS AREA (CCA) (... Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
88	58	4	CCACPE2x	Address of the first byte after the fixed-length header fields
92	5C	4	CCACPE3x	Address of the first group occurrence
96	60	4	CCACPE4x	Address of the first free-space byte in the record
100	64	20	CCARAB1	Record Area Block 1 (See RAB 0 description)
120	78	20	CCARAB2	Record Area Block 2 (See RAB 0 description)
140	8C	20	CCARAB3	Record Area Block 3 (See RAB 0 description)
160	A0	20	CCARAB4	Record Area Block 4 (See RAB 0 description)
180	B4	20	CCARAB5	Record Area Block 5 (See RAB 0 description)
200	C8	1	CCARPLK	Assigned RPL count
201	C9	1	CCARPLF	Index to RPL found
202	CA	1	CCARPLX	Work byte for ARPL, RPLM
203	CB	1	CCARPLT	Work byte for ARPL, RPLM
204	CC	6	CCARPLAA	Indices to assigned RPLs
210	D2	2		Reserved
212	D4	4	CCARPL1	Address of the RPL in use
216	D8	44	CCADESA	Save area for the extent information returned by VSAM DADSM and Catalog Management : Suballocate
216	D8	1	CCANDEXT	Number of extents
217	D9	1	CCAIXEXT	Extent index value
218	DA	2	CCASSVOL	Sequence number of the data set directory entry in the volume catalog record
220	DC	128	CCAEXTDE	Sixteen 8-byte extent descriptors :
220	DC	2	CCAEXTSS	Sequence number of the Data Space group occurrence that this extent's space is a part of
222	DE	4	CCAEXTAD	The extent's starting physical address :
222	DE	2	CCAEXTCC	Cylinder number CC
224	E0	2	CCAEXTTH	Head number HH
226	E2	2	CCAEXTTH	Number of tracks in the extent
348	15C	1	CCAASCIK	Number of control intervals required to satisfy the caller's request
349	15D	1	CCACRRP	RPL used for reading CCR
350	15E	1	CCAASCIX	Used by the ASSIGN functions - points to the element in CCAASCI currently being processed
351	15F	1	CCASRFLX	Saved RPL flags
352	160	9	CCAASCI	Number of each assigned control interval
361	169	3	CCAUPGD	Control interval for UPG modification
364	16C	16	CCAEDQDQ	Enqueue/Dequeue parameter list
364	16C	1	CCAEDXFF	End of parameter list, indicator byte =X'FF'
365	16D	1	CCAEDRLN	Length of minor name

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
366	16E	1 1... .. .1... .. ..xx xxxx	CCAEDOPT CCAEDSHR CCARLSEB	Enqueue/Dequeue Options 1=Shared, 0=Exclusive Release control bit Other options (set by macro)
367	16F	1	CCAEDRCD	Enqueue/Dequeue return code
368	170	4	CCARTSAV	Save area for CCAMLRET
372	174	4	CCACOMRG	COMRG pointer
376	178	4	CCAEDUCB	Work area
380	17C	4	CCAMLRET	Address of the caller's save area used by IGG0CLAG
384	180	12	CCAMSSPL	GETVIS/FREEVIS parameter list area
384	180	4	CCAMNLEN	Number of bytes to process
388	184	4	CCAMNPTR	Address of the return address
392	188	1		Reserved for OS
393	189	1	CCAMNSPL	Reserved for OS
394	18A	2		Reserved for OS
396	18C	4	CCARPRM	Return parameters
400	190	8	CCACMS	Catalog management Services work area
400	190	4	CCACMSWA	Address of the CMS calling routine's work area
404	194	4	CCAEXCMS	Address of a secondary CMS work area
The following fields are set and used by IGGPLOC, IGGPEXT, and IGGPTSTS, and catalog management subfunctions which these procedure call :				
408	198	4	CCALUME	Address of a selected group occurrence
412	19C	4	CCACPE51	(Same as CCACPE5)
416	1A0	4	CCACPE52	(Same as CCACPE5)
420	1A4	4	CCACPE53	(Same as CCACPE5)
424	1A8	4	CCACPE6	Address of a selected group occurrence
428	1AC	4	CCACPE61	(Same as CCAPE6)
			CCARABSE	Save extract caller URAB
432	1B0	4	CCACPE7	Address of field value
			CCAIIDPT	Insert data address
436	1B4	4	CCACPE71	Alternate address to field value
440	1B8	2	CCAGOPLN	Length of the group occurrence pointer
442	1BA	2	CCASL	Number of bytes for the sequence number
444	1BC	4	CCAILNG	Length of the selected retrieved field
448	1C0	4	CCAFLLPT	Address of the requested-field CTGFL
			CCATFLPT	Address of the CTGFL-for-tests
452	1C4	4	CCARABPT	Address of the record area block
456	1C8	4	CCADICT	Dictionary information to describe the field, based on its field name
460	1CC	4	CCAXCPL CCAMCPL	Address of the CTGPL built when IGGPEXT and IGGPMOD are called, so that information in the caller's CTGPL is not altered
464	1D0	4	CCARABB	Address of the RAB that identifies the base catalog record
468	1D4	4	CCARABF	Address of the RAB that identifies the first record area (buffer) that can be used by IGGPEXT or IGGMOD

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
472	1D8	4	CCARABL	Address of the RAB that identifies the last record area (buffer) that can be used by IGGPEXT or IGGPMOD
476	1DC	3	CCACBASE	The control interval number of the base catalog record
479	1DF	1	CCAGC	Group code of the requested group occurrence
480	1E0	2	CCALREL	Relative repetition number of a selected group occurrence
482	1E2	2	CCALREL1	Sequence number of a selected group occurrence
484	1E4	1	CCASN	CRA flags
		1... ..	CCAFGL8	Inhibit CRA PUT
		.1... ..	CCALSTC	List cat request
		..1... ..	CCAEXTCR	Extend CRA in process
		...1... ..	CCABLDCR	Open request for CRA build
		.... 1... ..	CCASPUCO	Special UCAT
		.... .1... ..	CCASCAX	1=CRA CAXWA search; 0= UCAT CAXWA search
		.... ..1... ..	CCAUPG	1=upgrade ; 0=no upgrade
		.... ..1	CCABUF	Output buffering flag
		485	1E5	1	CCAFLGA	More flags
1... ..	CCAUPGRR			RAB1 to be restored by upgrade module
.1... ..	CCARGET			Get record for compare before update CRA
..1... ..	CCALBFUT			1=Multiple file parameter search at define
		...x xxxxx		Reserved
486	1E6	2	CCAIXFPL	Index to the current CTGFL being processed
488	1E8	2	CCAIXREL	Index for CCATREL
490	1EA	2	CCATNREL	The sequence number of the next group occurrence to perform tests against if CCATREL is full or if there are no buffers available to contain the catalog record's next extension
492	1EC	2	CCATNUM	Number of successful relative repetition numbers (cannot exceed 16)
494	1EE	32	CCATREL	Successful relative repetition numbers
526	20E	2	CCATNO	Total number of successful relative repetition numbers (might exceed 16)
528	210	4	CCATEST	Address of the test CTGFL
532	214	20	CCARBA	Work area for extent descriptors
532	214	2	CCASS	Sequence number of the Data Space group occurrence that contains the extent's first track
534	216	4	CCACCHH1	Physical address -CCHH - of the extent's first track
538	21A	4	CCACCHH2	Physical address -CCHH - of the extent's last track
542	21E	2	CCATT	Number of tracks in the extent
544	220	4	CCARBA1	Low relative byte address (RBA)
548	224	4	CCARBA2	High relative byte address (RBA)

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
552	228	2	CCATLNG CCATLEN	Total length of the extent information that has been processed (CCATLNG) ; total length of the scanned field so far (CCATLEN)
554	22A	2	CCARBAL	RBA extent balance
556	22C	2	CCACNIX	Combination name index
558	22E	2	CCAREASN	Reason code
560	230	4	CCAIDPT2	Address of the available space in the caller's work area or of the caller-supplied update information
564	234	4	CCAIDPT3 CCARABSM	Address of the length-field of a variable length field in the user's return area
568	238	2	CCAGVCT	Number of group occurrence pointers processed so far
570	23A	2	CCANEVV	If the requested variable-length field is non-extent, this field is set to binary zero
572	23C	3	CCAGVEXT	Control interval number of the record's next extension record (not yet in a buffer)
575	23F	1	CCANEFV	If the requested fixed-length field is non-extent, this byte is set to X"FF".
576	240	1		Reserved
577	241	1	CCAGRGC	Group code of the requested group occurrence
578	242	2	CCAGRHI CCAGRHI1	High relative repetition number
580	244	2	CCAIXTPL	Index to test FPL
582	246	2	CCADLEN	Number of bytes to be deleted from the catalog record
584	248	2	CCADIFF	The difference between the insert length and the delete length (can be a negative number)
586	24A	2	CCAREPCT	Number of relative repetition numbers processed so far
588	24C	2	CCADISP	Displacement into variable-length field to the delete/insert location
590	24E	3	CCASVCI	Save area for the control interval number of the base catalog record
593	251	3	CCASVCI1	Save area for the control interval number
596	254	4	CCADTA	Address of the dictionary
600	258	4	CCACDTA	Address of the index combination table
604	25C	2	CCADTCT	Number of dictionary entries
606	25E	2	CCACDTCT	Number of index combination entries
608	260	4	CCACWAP	Controller work area
612	264	4	CCAMNADR	Address of the virtual storage obtained by a GETVIS request
616	268	4	CCAILNG3	Save area for the insertion length
620	26C	4	CCAILNG2	Length of the user-supplied insert data
624	270	4	CCAALPTR	Address of the space management work area
628	274	4		Reserved

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
632	278	4	CCALCPL	Reserved for OS
636	27C	1	CCAF LG7	Flags:
		1... ..	CCALSP	Reserved for OS
		.1... ..	CCANRLSE	Release Control Bit
		..1... ..	CCACKDEL	Delete switch
		...1... ..	CCASMPBR	Do GET for base record
		.... 1... ..	CCAONCE	Move only one occurrence
		.... .1... ..	CCARORE	Read only request
		.... .1... ..	CCAFEOV	Force EOVS
		.... ....1	CCAEQOPN	Enqueued on SYSOPEN
637	27D	3	CCARCI	CRA Record control interval number
640	280	4	CCALABSV	Saved address of IKQLAB area
644	284	4	CCARABSV	Saved address of RAB
648	288	2	CCAMODUL	Module name
650	28A	3	CCACHAIN	Control interval number save area
653	28D	3	CCACI1	Control interval number save area
656	290	3	CCACI2	(Same as CCACI1)
659	293	3	CCACI3	(Same as CCACI1)
662	296	2	CCAVARLN	Number of bytes to be inserted into the record
664	298	4	CCARRAB	Address of the RAB containing the group occurrence pointers where delete/insert processing is to begin
668	29C	4	CCARBASE	(Same as CCARRAB)
672	2A0	4	CCAVARPT	Address of the information to be inserted into the record
676	2A4	2	CCADELN	Number of bytes to be deleted from the record
678	2A6	20	CCAVAR	Insert information save area
698	2BA	20	CCAVAR1	(Same as CCAVAR)
718	2CE	3	CCADEL1	The control interval number of the first record in a series of records to be deleted
721	2D1	3	CCADEL2	The control interval number of the last record in a series of records to be deleted
724	2D4	40	CCAXLATE	Translation work area
764	2FC	4	CCART14S	Register 14 save area
			CCABMINP	Input parameters
768	300	2	CCABMTRK	Starting track
770	302	2	CCABMLIM	Check limit, nn for set
772	304	2	CCABMMIN	Conditional check minimum
774	306	1	CCABMFLG	State and function code
		1... ..	CCABMST	State to set condition check
		.1... ..	CCABMCHK	ON-Perform check
		..1... ..	CCABMSET	ON-Perform set
		...1... ..	CCABMCCK	ON-Perform condition check
		.... 1... ..	CCABMLST	ON-Last set request (write)
		.... .xxx		Reserved
775	307	1		Reserved
			CCABMOUT	Output parameters
776	308	2	CCABMONN	Track number
778	30A	2	CCABMOTR	Starting track

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
780	30C	1 1... .. .xxx xxxx	CCAMOFG CCABMOST	Output flags State of bits Reserved
781	30D	6	CCAVOLCR	CRA volume identification
787	313	1	CCABMPAD	Padding character
788	314	4	CCABMGOP	Current bit mask GOP
792	318	4	CCABMPTR	Address of current bit mask byte
796	31C	4	CCABMEND	End of current bit mask
800	320	2	CCABMBT1	Bit count, first byte
802	322	2	CCABMBTL	Bit count, last byte
804	324	2	CCABMBYT	Number of full bytes
806	326	2	CCABMSTR	Current bit mask, start track
808	328	4	CCABMWK1	Work field
812	32C	4	CCABMWK2	Work field
816	330	4	CCABMWK3	Work field
820	334	4	CCABMWK4	Work field
824	338	4	CCABMRB1	Address of first bit map RAB
828	33C	4	CCABMRB2	Address of second RAB
832	340	4	CCACARWA	Address of CRA definition work area
836	344	4	CCACRABF	Address of CRA buffer
840	348	4	CCASACB	Address of saved CCA, ACB field
844	34C	4	CCAEXC	Save address for CCA ACB
848	350	4	CCASR ^{PL}	Address of saved CCA, RPL field
852	354	4	CCAADBUB	Address of cluster record buffer, cluster record saved until CRA volume known
856	358	4	CCASCAXS	Address of search argument for CAXWA chain search
860	35C	4	CCASCAXA	Address of found CAXWA
864	360	4	CCADEVT	CRA volume device type
868	364	8	CCANMF1	Name field of variable open resource
876	36C	8	CCANMF2	Name field of variable open resource
884	374	8	CCANMF3	Name field of variable open resource
The following two fields are used by the no-upgrade/upgrade function, called by ALTER, DEFINE or DELETE				
892	37C	3	CCAXDCI	AIX data control interval number
895	37F	3	CCAXICI	AIX index control interval number
898	382	1	CCACATIN	CLAH indicator
899	383	1		Reserved
900	384	4	CCACOPTR	CLCO work area
904	388	4	CCADEVA	Address of device character return area
908	38C	4	CCAFARE	Address of file identification
912	390	4	CCAAREA	Pointer to address of label record area
916	394	2	CCAMDSAV	Save area for CCA module
918	396	2	CCARSSAV	Save area for CCA
920	398	40	CCATEMPS	Temporary area for PLS
960	3C0	348	CCAREGS	Save area for registers
960	3C0	4		Address of user save area
964	3C4	8	CCAMODNM CCAEND	Load module name End CCA

CONTROL INTERVAL WORK AREA (CIW)

Offset		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
Register Save Area for IKOCIS				
0	0	48	CIWAVE	Register save area (12 Reg.)
0	0	4	CIWAVR14	Register 14
4	4	4	CIWAVR15	Register 15
8	8	4	CIWAVR0	Register 0
12	C	4	CIWAVR1	Register 1, RDF shift count on entry
16	10	4	CIWAVR2	Register 2, RDF modification offset
20	14	4	CIWAVR3	Register 3, RDF data work area
24	18	4	CIWLNGTH	Length of work area
Space Manager Save Area				
52	34	4	CIWSPA14	Register 14
56	38	4	CIWSPA15	Register 15
60	3C	4	CIWSPA03	Register 3
IKQPF0 Work Area				
64	40	4	CIWPFO14	Register 14
68	44	4	CIWPFO00	Register 0
72	48	4	CIWPFO01	Register 1
76	4C	4	CIWPFO02	Register 2
80	50	4	CIWPFO03	Register 3
84	54	4	CIWPFO04	Register 4
88	58	4	CIWACB	ACB pointer for TCLOSE call
92	5C	2	CIWSVC	SVC2 in TCLOSE call list
IKQRRP Work Area				
The work area for IKQRRP overlays the work area for IKQPF0				
64	40	4	CIWRRP14	Register 14
68	44	4	CIWRRP00	Register 0
72	48	4	CIWRRP01	Register 1
76	4C	4	CIWRRP02	Register 2
80	50	4	CIWRRP03	Register 3
84	54	4	CIWRRBA	Beginning of RBA in extent
88	58	4	CIWRRPLN	Preformat length
92	5C	2	CIWRSEOF	SEOF indicator
IKONCA Work Area				
96	60	4	CIWNEW14	Register 14
100	64	4	CIWNEW01	Register 1
104	68	4	CIWNEW03	Register 3
108	6C	4	CIWCARBA	Low RBA of data control area (new control area)
112	70	4	CIWCIRBA	Index RBA of old sequence set record
116	74	4	CIWNXRBA	Index RBA of new sequence set record
120	78	4	CIWDARDBB	

CONTROL INTERVAL WORK AREA (CIW) (...Continued)

Offset		Bytes and Bit Pattern	Field Name	Description	
Dec	Hex				
IKQCAS Work Area					
124	7C	4	CIWCAS14		Register 14
128	80	4	CIWCAS03		Register 3
132	84	4	CIWHINEW		High section of new control area
136	88	4	CIWSPTR		Pointer save section
140	8C	4	CIWHIOLD		High section of old control area
144	90	4	CIWEPTR		Entry pointer
148	94	4	CIWAKEY		Address of key save area
152	98	2	CIWEINC		Entry increment bytes
154	9A	2	CIWSRR		Offset of last section from the high section of the new control area
156	9C	4	CIWXBUFA		Address of new index buffer
Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
IKQCIR Work Area Control Interval Space Reclamation Work Area					
The work area for IKQCIR overlays the work areas for IKQNCA and IKQCAS					
96	60	4	CIWCIR14		Register 14
100	64	4	CIWCIR09		Register 9
104	68	4	CIWCIR03		Register 3
108	6C	4	CIWSAVP		Free data of pointer save for control interval
112	70	1	CIWCIRSW		Switch byte
			CIWNEXT	X'80'	Position to next entry index
			CIWSPAN	X'40'	Spanned entry index
			CIWRECL	X'20'	Space reclamation index
			CIWNOSPL	X'10'	No control area split indicator
			CIWXWRT	X'08'	Write index indicator
		3			Reserved
113	71	12	CIWLASMD		IKQLASMD parameter list
116	74	1	CIWLID		Request type
			CIWLTST	X'04'	Test request
117	75	7	CIWLDSID		Data set identification
117	75	3	CIWLDSCI		Control interval number
120	78	4	CIWLACB		Pointer to catalog ACB
124	7C	1	CIWLSOPT		Share option
125	7D	1	CIWLFLG		Flag byte
			CIWLIN	X'80'	Input indicator
126	7E	2	CIWLOUT		Output count
128	80	8	CIWRES		Resource name field

CONTROL INTERVAL WORK AREA (CIW) (...Continued)

Offset Dec	Hex	Bytes	Field Name	Hex Digit	Description
IKQCIS Work Area					
160	A0	32	CIWCIWA		Copy of PLH work area
192	C0	4	CIWRCDCT		Record count save for move
196	C4	4	CIWMODPT		Pointer to modification point
200	C8	4	CIWFPTR		Next address
204	CC	4	CIWFRDF		Next RDF
208	D0	4	CIWTCIL		Total data length of control interval
212	D4	4	CIWCLNUP		RBA of control interval requires an update
216	D8	4	CIWDCRDB		Save of current ARDB pointer
220	DC	4	CIWNIABA		RBA of new sequence set
225	E0	2	CIWOLDCT		Save of RDF count
226	E2	1	CIWFLAGS		Flags
			CIWNTWO	X'80'	Two control intervals are needed for this split
			CIWNCAS	X'40'	Control area split needed to continue
			CIWCASDN	X'20'	Control area split has been executed
			CIWUHKR	X'10'	ARDHKRBA requires update
			CIWCLN	X'08'	Control intervals written require clearing
			CIWCIR	X'04'	Space reclamation executed
IKQIXE Entry Stack					
228	E4	4	CIWENTRY		Index entry data stack
228	E4	12	CIWENT1		
228	E4	4	CIWRBA1		RBA to be put in entry
232	E8	4	CIWKADD1		Address of key
236	EC	2	CIWKL1		Length of key
238	EE	1	CIWFLG1		Flag byte
			CIWENTOK	X'81'	Two bits are used as indicators
			CIWINC	X'40'	Index record in core
			CIWSPLIT	X'20'	Split entry to be done
			CIWNOIO	X'10'	No execution of input/output yet
239	EF	1	CIWIXLV1		Index level
240	F0	12	CIWENT2		Second stack position
240	F0	4	CIWRBA2		RBA
244	F4	4	CIWKADD2		Key pointer
248	F8	2	CIWKL2		Key length
250	FA	1	CIWFLG2		
251	FB	1	CIWIXLV2		Index level
252	FC		CIWSTKND		End of stack
252	FC	4	CIWEKEYA		Address of index enter key

CONTROL INTERVAL WORK AREA (CIW) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Scratch Buffer Parameter List					
256	100	20	CIWDCNV		Scratch CI descriptor
256	100	4	CIWDRBA		Scratch control interval RBA
260	104	8	CIWDBUF		Buffer parameter list
260	104	4	CIWDBC		Address of control block
264	108	4	CIWDBAD		Address of buffers
268	10C	4	CIWDCIDF		CIDF descriptor
268	10C	2	CIWDFSO		Free space offset
270	10E	2	CIWDFSL		Free space length
272	110	1	CIWDSW		Switch byte
273	111	1			Reserved
274	112	2	CIWDCSZ		Length of buffer - 10
IKQIXE Work Area					
276	114	4	CIWIXEBA		Caller base save
280	118	4	CIWIXERT		Return register save
284	11C	4	CIWIXERO		Save GETVIS length
288	120	4	CIWIXERI		Save GETVIS address
Work Area for Linkage from IKQCIS to IKQCAS					
292	124	4			Reserved
296	128	4	CIWCR8		Register save for linkage return
AMDSB Save Area for Updates to AMDSB Control Fields					
300	12C	4	CSXHLRBA		AMDHLRBA index
304	130	2	CSXNIL		AMDNIL index
IXFORMAT Work Space					
308	134	4	CIWIXFBA		Save callers base
312	138	4	CIWIXFRT		Save return register
316	13C	4	CIWLSEP		Entry pointer for last section
320	140	4	CIWANLSE		Entry address for last section
324	144	4	CIWANLE		Last entry address
328	148	2	CIWKEYL		Length of current key
330	14A	2	CIWNLSEL		Length of last section key
332	14C	2	CIWNLEL		Length of last entry key
336	150	4	CIWXNSA		Address of next section
340	154	4	CIWXSOP		Offset pointer of last section
344	158	2	CIWFCNT		Format count
346	15A	2	CIWCINL		Control entry length
The following field must be of the same length as PLHWAREA					
348	15C	44	CIWAREA		Work area for RDF build

CATALOG PARAMETER LIST (CTGPL)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
0	0	1	CTGOPTN1	First option indicator :
		1... ..	CTGBYPSS	Bypass the catalog management security verification processing
		.1.. ..	CTGMAST	Check the master password
		..1.	CTGCI	Check the control interval password
		...1	CTGUPD	Check the update password
		.... 1..	CTGREAD	Check the read password
		.... .1..	CTGNAME	The CTGENT field contains the address of a 44-byte DSNNAME, or a 6-byte volume serial number (padded with binary 0's)
		.... .0..		The CTGENT field contains the address of a 3-byte control interval number
		.... .1.	CTGCNAME	The CTGCAT field contains the address of a 44-byte catalog DSNNAME
		.... .0.		The CTGCAT field contains the address of a VSAM catalog's ACB
1	1	.... ..x		Reserved
		1	CTGOPTN2	Second option indicator :
		1... ..	CTGEXT	Extend option (with UPDATE)
		.1.. ..	CTGERASE	Erase option (with DELETE)
		..1.	CTGSMF	Reserved for OS
		...1	CTGREL	Release (with UPDATE)
		.... 1..	CTGPURG	Purge option (with DELETE)
		.... .1..	CTGVMNT	Volume mount caller
		.... .1.	CTGGTNXT	Get-next option (with LISTCAT)
		.... .1.	CTGDISC	Disconnect option (with DELETE)
2	2	.... .1.	CTGOVRID	Erase override option (with DELETE)
		.... .1.	CTGSCR	Scratch space option (with DELETE)
		.... ..x		Reserved
		1	CTGOPTN3	Third option indicator :
		xxx.	CTGFUNC	Specifies the caller-requested function :
		001.		LOCATE
		011.		UPDATE
		100.		A Catalog Management Services function (see CTGOPTNS)
		...1	CTGSUPLT	Reserved for OS
		.... x..		Reserved
3	3	.... .1..	CTGSRH	Reserved for OS
		.... .1.	CTGNUM	Reserved for OS
		.... ..1	CTGAM:0	VSAM request versus non-VSAM
		.... ..1	CTGOPTN4	Reserved for OS
		1	CTGENT	Address of the catalog record identifier, as defines in CTGOPTN1
4	4	4	CTGFVT	Address of the caller's CTGFV
		4	CTGCAT	Address of the catalog's DSNNAME or ACB, as specified in CTGOPTN1
8	8	4	CTGWKA	Address of the caller's work area
12	C	4		

CATALOG PARAMETER LIST (CTGPL) (...Continued)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
16	10	2	CTGOPTNS	Catalog Management Services request options : DEFINE ALTER DELETE LISTCAT Reserved
		0000 1...		
		0001 0...		
		0001 1...		
		0010 0...		
		.... .xxx		
17	11	1	CTGCRFLG	CRA open flags
		1... ..	CTGLBCYL	Label cylinder information is passed for CRA
		.1... ..	CTGCTRBL	Control blocks are passed for CRA
		..xx xxxx		Reserved
18	12	1	CTGTYPE	Type of catalog record
		C'D'	CTGTDATA	Data
		C'I'	CTGINDX	Index
		C'A'	CTGALIN	Non-VSAM
		C'U'	CTGTUCAT	User catalog
		C'V'	CTGTVOL	Volume
		C'C'	CTGTCL	Cluster
		C'M'	CTGTMCAT	Master catalog
		C'G'	CTGTAIX	Alternate index
		C'R'	CTGTPTH	Path
		C'Y'	CTGTUPG	Upgrade set
19	13	1	CTGNOFLD	Number of entries contained in CTGFIELD
20	14	4	CTGDDNM	Address of the DLBL statement ; if one is associated with this request
			CTGNEWWIN	Address of the new DSNAM ; if the request is being changed
24	18	4	CTGPSWD	Address of the caller-supplied password
28	1C	4	CTGDDUC	Address of UCAT file name
32	20	4	CTGDDCR	Address of CRA file name
36	24	4	CTGFIELD	Field pointers

DEFINE THE FILE INDEXED SEQUENTIAL (DTFIS) TABLE

Displacement		Bytes and Alignment	Field Name	Hex Digit	Description
Dec	Hex				
0	0	16	DTFCCB		
2	2	1	DTFCCBB2		
2	2		ERREXT	X'10'	Accept physical I/O error
16	10	1	FLAGBYTE		
			AMODTF	X'80'	VSAM bit set to 1 if DTF belongs to a VSAM data set
				X'20'	Assign "ignore" bit
17	11	.3	LOGMODAD		Address of logic module; if AMODTF is set to 1, then address of branch vector
20	14	1	FILETYPE		File type
			LOAD	X'24'	LOAD-type DTF
			ADD	X'25'	ADD-type DTF
			RETRVE	X'26'	RETRIEVE-type DTF
			ADDRTR	X'27'	ADD-RETRIEVE type DTF
21	15	.1	OPTIONS1		Options byte 1 (ISAM options)
			BLKDRECS	X'08'	Blocked records
22	16	7	FNAMEDTF		File name (DName)
29	1D	.1	OPTIONS2		Options byte 2 (not used by IIP)
30	1E	..1	FNAMEC		Status byte
			<u>LOAD files:</u>		
			UNCIOERR	X'80'	Uncorrectable DASD I/O error
			WRGLEN	X'40'	Wrong length record (not used by IIP)
			PDARFULL	X'20'	No more VSAM data space available
			CYLXFULL	X'10'	No more VSAM data space available
			MASXFULL	X'08'	No more VSAM data space available
			DUPREC	X'04'	Duplicate record
			SEQCHECK	X'02'	Sequence check
			PDAROVFL	X'01'	Prime data area overflow (not used by IIP)
			<u>Non-LOAD files:</u>		
			UNCIOERR	X'80'	Uncorrectable DASD I/O error
			WRGLEN	X'40'	Wrong length record (not used by IIP)
			EOF	X'20'	End of file
			NORECFND	X'10'	No record found
			ILLEGID	X'08'	Illegal identifier specified (not supported by IIP)

DEFINE THE FILE INDEXED SEQUENTIAL (DTFIS) TABLE (...Cont'd)

Displacement		Bytes and Alignment	Field Name	Hex Digit	Description
Dec	Hex				
			DUPREC	X'04'	Duplicate record No more VSAM data space available
			OFARFULL	X'02'	
			OVFLREC	X'01'	Overflow record (RETRVE) (not used by IIP)
43	2B	...1	RTRBYTE		RETRVE byte
			WORKR	X'80'	WORKR set to 1 if WORKR specified
			WORKS	X'40'	WORKS set to 1 if WORKS specified
44	2C	4	AMDTFAD		Address of AMDTF
48	30	4	CIPROCAD		Address if IIP processor
52	34	4	SAVERG		Save area for one register
56	38	4	PPRETAD		Return address to problem program if called from a \$\$B phase
60	3C	4	RECLOC		Address of record for LOAD IOREG
64	40	1	CISWITCH		IIP switches
			WNKA	X'80'	Write-new-key-add bit
			RKWK	X'40'	Read-key-write-key bit
			RK	X'20'	Read-key bit
			FIRWRITE	X'08'	First write after SETFL
			FIWOK	X'04'	First write is all right
			LD	X'02'	LOAD
74	4A	..2	LRECLN		Logical record length
76	4C	2	KEYLEN		Key length
94	5E	..2	KEYLOC		Key location (not used by IIP)
96	60	4	KARGAD1		Address of KEYARG, moved from part 2 by IIOOPEN if RTR SEQ with KEY (POINT) or RTR RAN is specified
100	64	2	DSPLPRT2		Displacement of part 2 (ADD, RTR)
102	66	..2	DSPLPRT3		Displacement of part 3 (ADD, RTR)
104	68	4	LDIOREGS		For RTR SEQ: if WORKS=1, then NOP; if WORKS=0, then L IOREG, RECLOC
108	6C	4	LDIOREGR		For RTR RAN: if WORKR=1, then NOP; if WORKR=0, then L IOREG, RECLOC

DEFINE THE FILE INDEXED SEQUENTIAL (DTFIS) TABLE (... Cont'd)

Displacement Dec	Hex	Bytes and Alignment	Field Name	Hex Digit	Description
112	70	4	WORKAD1		Address of WORKR moved from part 2 Address of IOAREAS moved from part 2 For LOAD-type DTF, save area for IIOOPEN Address of IOAREAL for LOAD Address of data in WORKL for LOAD Address of key in WORKL for LOAD Master index extension indicator for LOAD Create-extend bit (create=0; extend=1) Address of WORKL for ADD KEYLEN-1 for LOAD
116	74	4	IOASAD1		
120	78	64	SAVAR1		
184	88	4	IOARLAD		
188	BC	4	DATIWLAD		
192	C0	4	KEY1WLAD		
200	C8		MIXEXT1		
			CROREXT	X'10'	
204	CC	4	WORKLAD		
224	E0	2	KLMI		
Part 2 of DTF					
8	8	4	IOASAD2		Address of IOAREAS Address of IOAREAR Address of KEYARG Address of WORKR Address of current sequential I/O area L IOREG, *4 or NOP (RTR SEQ) Number of records tagged for deletion LR IOREG, 0 or NOP (RTR RAN)
12	C	4	IORAD		
16	10	4	KARGAD2		
20	14	4	WORKRAD2		
24	18	4	CURIOAAD		
28	1C	4	LIOREGS		
68	44	2	NTAGRECS		
70	46	..2	LIOREGR		
Part 3 of DTF					
0	0	64	SAVAR2		Save area for IIOOPEN, not LOAD type

EXIT LIST (EXLST)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
0	0	1	EXLID		Control block identifier=X'81'
0	0	1	EXLIDD	X'81'	EXLST identifier equate
1	1	1	EXACT		Active byte test and set
					X'00' VSAM Release 1 X'10' VSAM Release 2 X'20' VTAM
2	2	2	EXLLEN		Length of EXLST
4	4	1			Reserved
5	5	5	EXLOAD		EODAD entry
5	5	1	EXLEODF		Entry description bits
6	6	4	EXLEODP		Address of the EODAD exit routine
10	A	5	EXLSYN		SYNAD entry
10	A	1	EXLSYNF		Entry description bits
11	B	4	EXLSYNP		Entry of the SYNAD exit routine
15	F	5	EXLLER		LERAD entry
15	F	1	EXLLERF		Entry description bits
16	10	4	EXLLERP		Address of the LERAD exit routine
20	14	5	EXLIOEX		EXCPAD entry
20	14	1	EXLIOEXF		Entry description bits
21	15	4	EXLIOEXP		Address of the EXCPAD exit routine
25	19		EXLJRN		JRNAD entry
25	19		EXLJRNF		Entry description bits
26	1A		EXLJRNP		JRNAD pointer
Bits used in individual exit flags in bytes shown as entry description					
			EXENEXB EXENACTB EXENLEB	X'80' X'40' X'20'	Entry present bit Entry active bit Load bit
Minimum length EXLST for specified entry:					
			EXLEODL EXLSYNL EXLLERL EXLIOEXL EXLJRNT	Dec. Digit 10 15 20 25 30	Minimum length if EODAD Minimum length if SYNAD Minimum length if LERAD Minimum length if EXCPAD Minimum length if JRNAD
Minimum and maximum size of EXLST :					
			EXLMINL EXLMAXL	10 30	Minimum length of EXLST Maximum length of EXLST

EXTENT DEFINITION BLOCK (EDB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	4	EDBNEDB		Address of next EDB
4	4	2	EDBSYMU		Symbolic unit (for CCB)
			EDBSUCLS		Symbolic unit class
			EDBSUNUM		Symbolic unit number
6	6	2	EDBNUMTR		Number of tracks of extent
8	8	1	EDBFLGS		Flags
			EDBDWSS	X'80'	Data RBA with sequence set
			EDBSSWD	X'40'	Sequence set RBA with data
			EDBIXREP	X'20'	Index replication
			EDBMNT	X'10'	Volume mount flag
			EDBLGCC	X'08'	Device contains more than 256 cylinders
			EDBRPS	X'04'	Indicates RPS Device
9	9	3	EDBMBB		EDB
9	9	1	EDBM		Extent (M)
10	A	2	EDBBB		Bin number (BB)
12	C	8	EDBXTNT		Force low and high CCHH next to each other
12	C	4	EDBLCCHH		Low cylinder and head numbers
12	C	2	EDBLCC		Lowest cylinder
14	E	2	EDBLHH		Lowest head
16	10	4	EDBHCCHH		High cylinder and head numbers
16	10	2	EDBHCC		Highest cylinder
18	12	2	EDBHHH		Highest head
20	14	4	EDBLPMB		Address of associated LPMB
24	18	4	EDBPARDB		Address of ARDB
28	1C	2	EDBVLSQ		Index to the VOLSER list
30	1E	2	EDBSTTRK		Relative track address of extent
32	20	8	EDBRBAS		Force low and high RBAs next to each other
32	20	4	EDBLORBA		Low RBA limit
36	24	4	EDBHIRBA		High RBA limit

FIELD PARAMETER LIST (CTGFL)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
0	0	1	CTGFLDNO	Number of entries in CTGFLDAT Test condition : The FPL describes a field to be updated or retrieved. The FPL is pointed to by the caller's CTGPL (CTGFIELD entry). The FPL describes a test condition. The FPL is pointed to by another FPL. Test condition : Equal Not equal Greater than Less than Greater than or equal Less than or equal Test under mask for zeros Test under mask for ones Test under mask for mixed
1	1	1	CTGFLDCD	
		X'00'		
		X'non00'		
		X'80'		
		X'60'		
		X'20'		
		X'40'		
		X'A0'		
		X'C0'		
		X'80'		
		X'10'		
		X'40'		
2	2	1	CTGFLDGC	Group code number
3	3	1	CTGFLDRE	Test results :
		xxxx xxxx		Reserved
		.... 0		Successful test
		.... 1		Test failed
4	4	4	CTGFLDWA	Work area : contains information about the catalog record's field name from the dictionary
8	8	4	CTGFLDNM	Address of the field name
12	C	4	CTGFLCHN	Address of next field macro or zero
16	10		CTGFLDAT	Pairs of data length/address
16	10	4	CTGFLNG	Data length and address in the callers work area of
20	14	4	CTGFLPT	<ul style="list-style-type: none"> • Each field that was retrieved, if the request was LOCATE or CMS LIST-CAT • New data to replace or add to data in the catalog record. The request was UPDATE, CMS DEFINE or CMS ALTER • Data used to compare to catalog record fields, if the FPL is a FPL-for-tests.

FIELD VECTOR TABLE (CTGFV)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
0	0	1	CTGFVTYP	The CTGFV contains information used by the CMS Define routines to build a catalog record of the type :
		C"A"	CTGFVALN	NonVSAM
		C"C"	CTGFVCL	Cluster
		C"D"	CTGFVDTA	Data
		C"I"	CTGFVIDX	Index
		C"V"	CTGFVVOL	Volume
		C"G"	CTGFVAIX	Alternate Index
		C"R"	CTGFVPTH	Path
1	1	1	CTGFVPRO	CMS processing option flags :
		1... ..	CTGFVAVL	ALTER : Add volumes
		.1... ..	CTGFVRVL	ALTER : Remove volumes
		..xx xxxx		Reserved
2	2	1	CTGFVELM	Element number of CMSPCATR
3	3	1		Reserved
4	4	4	CTGFVDCH	Address of the cluster's data set FVT
8	8	4	CTGFVICH	Address of the cluster's index FVT
12	C	4	CTGFVVCH	Address of the space vector table
16	10	4	CTGFVIND	Address of the associated DLBL statement
20	14	4	CTGFVENT	Address of the entry name FPL
24	18	4	CTGFVSTY	Address of the security information FPL (passwords, codewords, and number-of-tries)
28	1C	4	CTGFVOWN	Address of the owner identification FPL
32	20	4	CTGFVEXP	Address of the expiration date FPL
36	24	4	CTGFVCRE	Address of the creation date FPL
40	28	4	CTGFVVL	Address of the volume serial number list
44	2C	4	CTGFVRNG	Address of the key range list
48	30	4	CTGFVDVT	Address of the device type FPL (for NonVSAM DEFINE only)
52	34	4	CTGFVSPC	Address of the space allocation information FPL
56	38	4	CTGFVAMD	Address of the AMDSB FPL (if VSAM DEFINE)
56	38	4	CTGFVFSN	Address of the file sequence number (if NonVSAM DEFINE)
60	3C	4	CTGFVATR	Address of the data set attributes FPL
64	40	4	CTGFVBUF	Address of the buffer size FPL
68	44	4	CTGFVLR	Address of the average record size FPL
72	48	4	CTGFVEXT	Address of exception exit
76	4C	4	CTGFVNAM	Address of related object
80	50	4	CTGFVUPG	Address of RGATTR FPL
84	54	4	CTGFVWKA	Address of CRA volume identification
88	58	4	CTGFVPWD	Relationship password

LOGICAL-TO-PHYSICAL MAPPING BLOCK (LPMB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	LPMID	X'FF'	Control block identifier Device type indicator
1	1	1	LPMBDTF		
2	2	2	LPMLEN		Length of the LPMB Number of bytes per track Number of bytes per control area Physical block size Number of tracks per control area Number of tracks per cylinder Number of physical records per track Number of blocks per CI
4	4	4	LPMBPTRK		
8	8	4	LPMCASZ		
12	C	4	LPMBLKSZ		
16	10	2	LPMTRKCA		
18	12	2	LPMTPC		
20	14	2	LPMBNBQBK		
22	16	2	LPMBPBCI		

OPEN WORK AREA (IKQOPNWA)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
0	0		WACOMMON	Common Open/Close work area
0	0	1	WAFLAG	Flag byte :
		1... ..	TCLOSE	Work area for TCLOSE
		.1... ..	CLOSE	Work area for CLOSE
		..1... ..	OPEN	Work area for OPEN
		...1... ..	OPAMDINX	Index AMSDB is being processed
		.... 1...	VOLFOUND	Volume serial number is in label cylinder record
		.... .1..	SSFLAG	Sequence set with data
		.... ..1.	RETRY	Catalog should be reupdated by CLOSE
		.... ....1	FILEPROT	DOS Supervisor DASD file protect
1	1	1	WAERCODE	Error condition code
2	2	2	WALEN	Length of GETVIS area
4	4	4	WAPIBSV	Address of partition user save area, copy of user PSW, registers
8	8	4	WALISTP	Address of user ACB/DTF list
12	C	2	WACOMR	Address of DOS communication region
14	E	1	EDBCODE	One GETVIS obtains enough space for 3 EDBs; this field is used to count EDBs
15	F	1		Reserved
16	10	4	CATEXTPT	Pointer to extent information in order to build EDBs
20	14	2	CATEXTLN	Length of total extents
22	16	2	EXTNUMB	Number of extents
24	18	80	USERSAVE	Room to save user PSW and registers
104	68	4	WACOMEND	End of common work area
104	68		OWA	Partial map of work area obtained by GETVIS issued by \$\$BOVSAM
104	68	4	WAVSLOD	Address of location where VSAM has been placed by CDLOAD (set by \$\$BOVSAM)
108	6C	4	WAIKQLAB	Address of location where IKQLAB has been placed by CDLOAD (set by \$\$BOVSAM)
112	70	4	WARACB	Pointer to ACB being opened
112	70	4	CLWAAD	Close work area address saved
116	74	1	LBLRCLFN	Length of work area pointed to by LABICPTR in multiple of 128
117	75	3	LABICPTR	Pointer to work area reserved for label record
120	78	4	SVCATACB	Pointer to catalog ACB
124	7C	4	CTGPLPTR	Pointer to catalog parameter list (CPL)
128	80	4	CATWKPTR	Pointer to catalog work area (CTGWA) (contents moved to CPL)
132	84	4	OLDEDB	Address of last EDB
136	88	4	NXTEDB	Address to next EDB

OPEN WORK AREA (IKQOPNWA) (...Continued)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
Catalog Field List for AMDSB				
140	8C	8	FLAMDSB	Catalog field list work area (CTGFLDWA) for AMDSB
140	8C	4	SAVERET1	Pointer to contents of return register (R14) if not catalog call
140	8C	4	RETREG1	Return address to save area 1
144	90	4	SAVERET2	Return address to save area 2
144	90	4	RETREG2	Return address to save area 2
148	94	4	FLAMDSBN	Pointer to catalog field name
148	94	4	RETREG3	AMDSBCAT
148	94	4	*	
152	98	4	WAAMBLIX	Pointer to index AMDSB
156	9C	4	FLAMDSBL	Length of AMDSBCAT
160	A0	4	FLAMDSBA	Address of AMDSBCAT
Catalog Field List for Volume Entry(ies)				
164	A4	8	FLENTVOL	No. of key ranges equals number of ARDBs
164	A4	2	KRNKEYS	
166	A6	2	KRNVOLS	Number of volumes for this key range
172	AC	4	FLVOLNTN	Volume entry name VOLENT
176	B0	4	*	
176	B0	4	SVLENG	Length of ENTVOL
180	B4	4	VOLENTLN	Length of volume entry
184	B8	4	VOLGPTR	Address of VOLENT data
Catalog Field List for Data Set Attributes				
188	BC	20	*	DSATTR field list
208	D0	4	FLDSATRA	Base of DSATTR
Catalog Field List for Open Indicator				
212	D4	8	FLOPNIND	Locate OPENIND and test for UPD Open indicator field list
220	DC	4	FLOPNINN	
224	E0	4	*	
228	E4	4	FLOPNINL	Length of OPENIND
232	E8	4	FLOPNINA	OPENIND address
Catalog Field List for Minimum Buffer Size				
236	EC	20	*	Flags, etc., for BUFSIZE
256	100	4	FLBUFSZA	Base of BUFSIZE
Catalog Field List for High-Used RBA per Data Set				
260	104	20	*	Miscellany for HURBADs
260	104	20	NVOLLIST	No. of volumes per key range
280	118	4	FLHURDSA	Base for HURBADs

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (...Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
Catalog Field List for ISAM Compatibility (USERINFO)				
284	11C	20	*	CATFILT field list
304	130	4	FLFILTA	Base for CATFILE
Catalog Field List for Names of Related Data Sets				
308	134	8	FLNAMEDS	Flags for NAMEDS
308	134	8	PARMLIST	IKQVLAB parameter list
308	134	4	PARM1	ACB address
312	138	4	PARM2	LABICPTR address
316	13C	4	FLNAMDSN	Pointer to 'NAMEDS'
320	140	4	*	
324	144	4	FLNAMDSL	Length of associated names
324	144	4	NAMEDSLN	Length of associated names
328	148	4	NAMEDSPT	Address of NAMEDS entry
328	148	4	FLNAMDSA	Address of NAMEDS groups
Catalog Field List for Entry Type and Control Interval No.				
332	14C	8	*	CTGFLDWA for this field list
340	154	4	FLMISCLN	Pointer to 'DSTYPNAM'
344	158	4	*	
348	15C	4	FLMISCLL	Length of DSTYPNAM
352	160	4	FLMISCLA	Address of DSTYPNAM
Catalog Field List to Find Catalog ACB Address				
356	164	20	*	Field list nr. 10 for catalog ACB
376	178	4	FLCTACBA	Pointer to catalog ACB pointer
Catalog Field List to Test for Write of Open Indicator				
380	17C	8	FLWOPNND	Update OPENIND field list
380	17C	4	TSTENTVL	Address of test ENTVOL (scan)
384	180	4	TSTENTLN	Address of end scan ENTVOL
388	184	4	FLWOPNNN	Pointer to 'OPENIND'
392	188	4	*	
396	18C	4	FLWOPNNL	Length of data
400	190	4	FLWOPNNA	Pointer to data
Catalog Field List for Volume Time Stamp				
404	194	24	FLTMSTVF	VOLTSTMP field list
404	194	*		
424	1A8	4	FLTMSTVA	Pointer to 'VOLTSTMP'

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (... Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
End of Catalog Field List for Volume Time Stamp				
428	1AC	1	WARNFLG	Used to save warning error code
429	1AD	1	*	
430	1AE	2	I	Index for DO loops
432	1B0	2	LIMIT	Count of ENTVOVS (pointed to by VOL20PT)
434	1B2	2	RELGP	Relative group number in the catalog
436	1B4	2	TEMP	Local calculations (on same listing page)
438	1B6	2	1ARDB	Index for ARDB list
440	1B8	4	SAVDEV	Used to save device type
444	1BC	4	SAVDEV2	Used to save sequence set device type
448	1C0	2	SAVTRKAU	Used to save number of tracks per allocation unit (control area) to help identify type of LPMB
450	1C2	2	SAVIRKA2	Same as SAVTRKAU but used only if sequence set with data
452	1C4	4	RLPMB2	Pointer to sequence set (index) LPMB
456	1CB	1	OWAFLAGS	Open flags and switches
		1... ..	OWFLAGZB	User did not specify buffer size in ACB
		.1.. ..	OWFLAGBF	BCB building in process
		..1.	OWFLAGIB	Got buffer with AMBL for index
		...1	WARSOPEN	Use macro has been issued for SYSOPEN (RELEASE macro must subsequently be issued)
		.... 1...	DTACNT	Open count in look-aside table is bumped for data
		.... .1..	IDXCNT	Open count in look-aside table is bumped for index
		.... ..1.	WARSCTLG	USE macro has been issued for SYSCTLG (RELEASE macro must subsequently be issued)
		.... ..x		Reserved
457	1C9	3	INDEXSAV	Used to save index file name
460	1CC	1	SAVTYPE	Used to save entry type when entry is not a cluster
461	1CD	2	*	Reserved
463	1CF	4	TESTSV1	Save word for testing
467	1D3	1	SVOPNIN	Updated OPENIND for catalog
		1... ..	SVOPNINO	Flag open for output
		.xxx xxxx		Reserved
468	1D4	2	SVNEXTNT	Save number of EXTENT statements
470	1D6	2	SETNBUF	Count of buffers (used by SETADDR)
472	1D8	4	VOLSTPTR	Address of IDAVLST
476	1DC	4	VOLENTND	End of all ENTVOVS

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
480	1E0	2	VOLENTCT	Count of volume entries
482	1E2	2	IVOLS	Working index of VOLENTs
484	1E4	4	VOL20PT	Pointer to volume entries to sort (address of VOLENT20 if less than 20)
488	1E8	80	VOLENT20	Volume entries to sort
568	238	4	VMPTR	Pointer for right VOLSER
572	23C	4	REQBUFSP	Minimum buffer space required
576	240	4	CURBUFSP	Currently specified buffer space
580	244	4	CURBFSPD	Current buffer space specified for data
584	248	4	ADDAREA	Room to add without current specifications for index
584	248	4	CURBFSP1	Current buffer space specified for index
588	24C	1	SVLUBPUB	Save index of PUB
589	24D	1	NEXTJIB	Next JIB saved
590	24E	10	SV PUB	LUBs for mounted volumes
600	258	2	IPUB	Index for SV PUB
602	25A	4	WRKCINV	Control interval size used in pointing BCBs to buffers
606	25E	8	OWAPRTCT	Room to build password
616	268	12	PARM	Parameter list for IKQLASMD
616	268	1	CALLERID	Caller identification
617	269	7	DSID	Data set identification
617	269	3	DSCI	Control interval number
620	26C	4	CTACBPTR	Pointer to catalog ACB
624	270	1	SHAREOPT	Share option from catalog
625	271	1		Reserved
626	272	2	OUTCNT	Number of output users, returned from IKQLASMD
628	274	72	OWPLSAVE	Save area formatted according to PL/S standards
700	28C	72	OWPLSAV2	Save area 2 formatted according to PL/S standards
772	304	80	DUMCATPL	Room for catalog parameter list
852	354	512	OWACTWKA	Normal catalog work area
1364	554	8	CCWX	CCW definition
1364	554	1	CCWCODE	Write-to-console op code
1365	555	3	CCWDTA	Pointer to message buffer
1368	558	2	*	
1370	55A	2	CCWCNT	Length of message buffer
1372	55C	24	CCBX	CCB definition
1372	55C	9	*	
1381	565	3	CCWPT	Pointer to channel program (CCWX)
1396	574	65	VMSG	Volume name is built and used as part of calling parameter when catalog is called to get the time stamp
1396	574	65	MSG	Volume time stamp built
1396	574	11	MSGID	Message identification

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
1407	57E	8	MSGDSN	Data set name
1415	587	46	MSGTXT	Message text
1461	5B5	3	*	
1464	5B8	4	OWSTRGV	Start of GETVIS
1468	5BC	4	UACBAD	User ACB address
1472	5C0	4	OWAOAL	Address of OAL section
1476	5C4	4	AIXACBAD	AIX cluster ACB address
1480	5C8	4	BCACBAD	Base cluster ACB address
1484	5CC	4	RPLPAD	RPL pool just handled
1488	5D0	4	PLHADDR	Address of first PLH
1492	5D4	2	NRPL	Number of user strings
1494	5D6	2	AIXBCLEN	GETVIS length for ACB/RPL
1496	5D8	4	USBAD	Pointer to USB
1500	5DC	2	UPGRM	Members in upgrade set
1502	5DE	2	UPGRCT	Upgrade set loop counter
1504	5E0	4	UPACBAD	ACB of upgrade member
1508	5E4	4	AIXBUFAD	Upgrade buffer pool
1512	5E8	4	AIXBUFLN	Length of upgrade buffer pool
1516	5EC	2	AIXUPLEN	Length of upgrade set (RPL + PLH)
1518	5EE	2	*	
1520	5F0	24	FLRGATTR	Field list RGATTR
1520	5F0	16	*	
1536	600	4	*	Length
1540	604	4	FLRGATRA	Pointer to RGATTR
1544	608	24	FLEXCPEX	Field list exception exit
1544	608	16	*	
1560	618	4	FLEXCEPL	Length
1564	61C	4	FLEXCEPA	Address
1568	620	4	OWAUCPL	Pointer for IKQLAB
1572	624	24	MSGPARMS	Parameter list for IKGOCMSG
1596	63C	2	MSGFLGBT	Message flag byte
1598	63E	1	AIXFLG	Alternate index flags
		1... ..	AIXUPGR	Upgrade set available
		.1... ..	AIXBASE	Base cluster handled
		..1.	AIXPE	Path entry handled
		...x		Reserved
		.... 1...	AIXPATH	Path structure open
		.... .1..	AIXMUS	Member of upgrade set handled
		.... .1.	AIXEUO	AIX as and-use object
		.... ..1	AIXUSERR	Upgrade set error
1599	63F	1	AIXFLG2	Alternate index flags 2
		1... ..	AIXTHB	THB for upgrade set
		..xxx xxxx		Reserved
1600	640	1	PATHFLG	Path flags
		1... ..	PFLUPD	Update option
		..xxx xxxx		Reserved

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (... Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
1601	641	1	*	Flag byte
		1... ..	RESETSW	Switch for reset
		.1... ..	ESDSERR	ESDS error flag
		..1... ..	OALEFND	OAL entry found
		...1... ..	JRNACT	JRNAD activ
		.... 1...	CATOPEN	Catalog open in procedure
		.... .xxx		Reserved
1602	642	1	SAVAIX	Save area for AIXFLG
1603	643	2	AIXUSAV	Save area for ACB option
1605	645	3	AIXYENTR	Internal address of y-entry
1608	648	3	AIXDNAM	AIX data name
1611	64B	3	AIXINAM	AIX index name
1614	64E	3	BCDNAM	Base cluster data name
1617	651	3	BCINAM	Base cluster index name
1620	654	3	CLUNAME	Cluster name save area
1623	657	8	NAMEFLD	Use REUSE parameter list
1631	65F	72	OWPLSAV3	Third level save
1703	6A7	80	INTCPL	Internal CPL
1783	6F7	5	INTWA	Internal catalog work area
1788	6FC	512	OWA2	Work area
1788	6FC	512	OWAUCAT	IKQCAT work area for UCAT
1788	6FC	512	USCTGWA	Catalog work area in IKQOPNUS
1788	6FC	512	OWAMSGAR	Message work area

* Multi-use field

PLACEHOLDER (PLH)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Standard Save Area					
0	0	72	PLHSAREA		Register save area
0	0	4			Reserved
4	4	4	PLHSADDR		Address of user's save area
8	8	4			Reserved
12	C	60	PLHSAVE		Save area for 15 registers (Reg.0-14)
Buffer Manager and I/O Manager Save Area					
72	48	44	PLHBSAVE		Buffer manager and I/O manager save area (Reg. 9-14 and Reg 0-4)
Index Search and Get Next Save Area					
116	74	48	PLHIXSSV		Index search and get next save area
164	A4	16	PLHJRNSV		JRNAD save area
Return Register Stacks					
180	B4	8	PLHSTCK		Fixed return register stack
180	B4	4	PLHSTCK1		Return register from level 1
184	B8	4	PLHSTCK2		Return register from level 2
RPL Pointers					
188	BC	4	PLHHRPL		Pointer to header RPL
192	C0	4	PLHCRPL		Pointer to current RPL
PLH ECB					
196	C4	4	PLHECB		Event control block
196	C4	1			Reserved
197	C5	1	PLHAUSE		Request active on PLH
198	C6	1	PLHECOM		Communications byte
199	C7	1	PLHEWAIT		Wait flag on ECB
			PLHECBT	X'80'	Test and set byte for ECB
PLH Work Area					
200	C8	44	PLHWAREA		PLH work area
PLH Identification Byte					
244	F4	1	PLHID	X'55'	PLH identification byte
PLH Use Gate					
245	F5	1	PLHUSE		PLH use gate

PLACEHOLDER (PLH) (...Continued)

Offset Dec	Hex	Bytes	Field Name	Hex Digit	Description
PLH Condition Flags					
246	F6	1	PLHFLAG PLHST		PLH condition flags PLH status flag (bit 0) 1 - PLH set 0 - PLH invalid
			PLHPOS		PLH position flag (bit 1) 1 - Next record 0 - previous record
			PLHEOD		PLH end-of-date-condition flag (bit 2) 1 - EOD reached 0 - Not EOD
			PLHWAIT		PLH wait flag (bit 3) 1 - I/O pending 0 - No I/O pending
			PLHSKIP		PLH skip flag (bit 4) 1 - Skip control interval 0 - Don't skip control interval
			PLHRST		PLH restart flag (bit 5) 1 - Restart 0 - No restart
			PLHFST		PLH first-time flag (bit 6) 1 - First time 2 - Not first time
			PLHRRREAD		PLH exclusive control reread flag (bit 7) 1 - Need reread 0 - Reread not needed
247	F7	1	PLHFLG		PLH spare condition flag
PLH Communication Switches					
248	F8	1	PLHSWITCH PLHLOAD	X'80'	PLH communication switches PLH load or resume load indicator
			PLHKRCH	X'40'	PLH key range change indicator
			PLHMSRT	X'20'	Mass insert indicator
			PLHFSR	X'10'	First request for data set indicator
			PLHSTBCB	X'04'	Demand a BCB from STEAL000 (IKQBFA00)
			PLHEC	X'02'	Exclusive control needed

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Previous Request Characteristics					
249	F9	3	PLHPREQ		Previous request information
249	F9	1	PLHRTC		Previous request-type code
250	FA	2	PLHOPT		Previous request option bytes
250	FA	1	PLHOPT1		First option byte
251	FB	1	PLHOPT2		Second option byte
Multiple String Support					
252	FC	1	PLHSTRID		PLH string ID (1-255)
253	FD	1	PLHENDRQ		ENDREQ request gate byte
254	FE	1	PLHINDS		Indicator byte
255	FF	1	PLHCLOSE	X'80'	Close-type ENDREQ request Reserved
EXCPAD Parameter List Pointer					
256	100	4	PLHPARML		EXCPAD parameter list
JRNAD Parameter List Pointer					
260	104	4	PLHAJRN		JRNAD parameter list pointer
I/O Manager Entry Point					
264	108	4	PLHIOMGR		I/O Manager (IKQIOA00) entry point
Key Range Support Fields					
268	10C	4	PLHDCRDB		Address current ARDB
272	110	4	PLHDTRDB		Address target ARDB
Pointers to Buffer Headers (BHDs)					
276	114	4	PLHDBHD		Address of data BHD
280	118	4	PLHIBHD		Address of index BHD
284	11C	4	PLHBRPL		Save header RPL
288	120	4	PLHTHB		Address of THB (share option 4)
292	124	4			Reserved
Data PLH					
296	128	36	PLHDATA		Data PLH
296	128	20	PLHDCNV		Data CNV information
296	128	4	PLHDRBA		Data CNV RBA
300	12C	8	PLHDBUF		Data buffer description
300	12C	4	PLHDBC		Address of data BCB

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
304	130	4	PLHDBAD		Address of data buffer
308	134	4	PLHDCIDE		Data CNV CIDF
308	134	2	PLHDFSO		Data CNV free space offset
310	136	2	PLHDFSL		Data CNV free space length
312	138	1	PLHDSW		Data CNV switches
			PLHHOLD	X'80'	Track hold indication
			PLHHELD	X'40'	Track free indication
			PLHNORD	X'10'	No read indication
			PLHLOG	X'08'	Logical GETBUFF request
			PLHRAHD	X'04'	Read-ahead request
313	139	1	PLHDSWI		Buffer request control switch
			PLHEHOLD	X'80'	Exclusive control desired
			PLHEHELD	X'40'	Exclusive control held
			PLHEACTV	X'20'	Exclusive control active
314	13A	2	PLHDCSZ		Data CNV size 10 (rightmost RDF)
Data Record Description					
316	13C	16	PLHDRCD		Data record description
316	13C	2	PLHDRO		Data record offset
318	13E	2	PLHDRDF		Data record RDF-offset
320	140	2	PLHDRIX		Data record RDF-index
322	142	2			Spare
324	144	4	PLHDRRBA		Data record RBA
328	148	4	PLHDRL		Data record length
Read-Ahead Data PLH					
332	14C	24	PLHBDATA		Data read ahead PLH
332	14C	4	PLHRBA		RBA of next CNV to read ahead
Read-Ahead Data CNV Description					
336	150	10	PLHBCNV		Read-ahead data CNV information
336	150	4	PLHBRBA		Data CNV RBA
340	154	8	PLHDBUF		Data buffer description
340	154	4	PLHDBCBC		Address of data BCB
344	158	4	PLHDBBAD		Address of data buffer
348	156	4	PLHDCDF		Data CNV CIDF
348	15C	2	PLHDFSO		Data CNV free space offset
350	15E	2	PLHDFSL		Data CNV free space length
356	160	1	PLHDSW		Data CNV switches
353	161	1	PLHDSWI		Buffer request control switch
354	162	2	PLHDCSZ		Data CNV size-10

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Alternate Index Record Information					
356	164	16	PLHAIX		AIX record information
356	164	4	PLHAIXPT		Address of base cluster pointer
360	168	4	PLHAIXWA		Pointer to work area
364	16C	4	PLHAIXWL		Work area length
368	170	2	PLHAIXPN		Counter of base cluster pointer
370	172	2	PLHAIXOP		RPL Option bytes
372	174	12	PLHUPG		Upgrade set information
372	174	4	PLHUPGP1		Current USB entry address
376	178	4	PLHUPGP2		Last USB entry address
380	17C	4	PLHUPGAD		Address of prime key (KSDS) or RBA (ESDS) of base cluster record
384	180	24	PLHAIXSV		AIX save area
Spanned Record Flag Byte					
408	198	1	PLHSWT2		Spanned record switch byte
			PLHSPAN	X'80'	Spanned record indicator
			PLHSRU	X'40'	Called from IKQSRU
			PLHSRUF	X'20'	First call from IKQSRU
			PLHSRUL	X'10'	Last call from IKQSRU
			PLHSRCAS	X'08'	CA-split necessary
				X'04'	Reserved
			PLHSREC	X'02'	Exclusive control indicator
				X'01'	Reserved
JRNAD Flag Byte					
409	199	1	PLHJRN		JRNAD flag byte
			PLHJRACT	X'80'	JRNAD exit active
			PLHJRVS	X'40'	JRNAD called from IKQVSM
			PLHJRMDY	X'20'	JRNAD called from IKQMDY
			PLHJRCIS	X'10'	JRNAD called from IKQCIS
			PLHJRCA1	X'08'	JRNAD first call from IKQCAS
			PLHJRCA2	X'04'	JRNAD second call from IKQCAS
			PLHJRSRG	X'02'	JRNAD called from IKQSRG
			PLHJRSRU	X'01'	JRNAD called from IKQSRU

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Spanned Record Information					
410	19A	2	PLHSRCNT		Number of segments
412	19C	22	PLHSPREC		Spanned record information
412	19C	8	PLHRCD		Spanned record description
412	19C	4	PLHAREA		Pointer to user area
416	1A0	4	PLHRLEN		Length of spanned record
420	1A4	4	PLHSRRBA		RBA of record
424	1A8	2	PLHX1EO		Index entry offset of 1.part
426	1AA	2	PLHXPTR		Pointer number
428	1AC	6	PLHSRRDF		Double RBF for spanned record
428	1AC	1	PLHSRR2		R byte 2
429	1AD	2	PLHSRLVL		Level number
431	1AF	1	PLHSSR1		R byte 1
432	1B0	2	PLHSRLL		Length of segment
434	1B2	1	PLHSWT1		PLH communication switch control
				X'80'	Reserved
				X'40'	Reserved
				X'20'	Reserved
				X'10'	Reserved
			PLHUPRES	X'08'	AIX upgrade reset switch
			PLHPCI	X'04'	Previous control interval
			PLHBWD	X'02'	0=Forward, 1=backward
			PLHLRD	X'01'	0=any record, 1=last record
435	1B3	1	PLHFLG1		Flag byte continuation
				X'80'	Reserved
				X'40'	Reserved
				X'20'	Reserved
				X'10'	Reserved
			PLHDKUKEY	X'08'	Duplicate key in AIX record
			PLHAIXRP	X'04'	AIX repositioning flag
				X'02'	Reserved
				X'02'	Reserved
Index PLH					
436	1B4	40	PLHINDEX PLHLESDS		Index PLH Length of PLH for ESDS
Index CNV Description					
436	1B4	20	PLHXCNV		Index CNV information
436	1B4	4	PLHXRBA		Index CNV RBA
440	1B8	8	PLHXBUF		Index buffer description
440	1B8	4	PLHXBCB		Address of index BCB
444	1BC	4	PLHXBAD		Address of index buffer
448	1C0	4	PLHXCIDF		Index CNV CIDF
448	1C0	2	PLHXFSO		Index CNV free space offset

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
450	1C2	2	PLHXFSL		Index CNV free space length
452	1C4	1	PLHXSW		Index CNV switches
453	1C5	1	PLHXSW1		Buffer request control
454	1C6	2	PLHXCSZ		Index CNV size-10
Index Entry Description					
456	1C8	20	PLHXETRY		Index entry description
456	1C8	2	PLHXEO		Index entry offset
458	1CA	2	PLHXSEO		Next section entry offset
460	1CC	4	PLXHSOP		Last section entry offset pointer
464	1D0	2	PLHXLVL		Present index level in process
466	1D2	2	PLHXLEVP		Previous level index
468	1D4	2	PLHXPTRP		Previous entry-s p-field
468	1D4	2	PLHXEOP		Previous entry offset
470	1D6	2	PLHXSEOP		Previous section entry offset
472	1D8	4	PLHXRBA		Previous index record RBA
Read-Ahead Index PLH					
476	1DC	28	PLHBINDX		Read-ahead index PLH
Read-Ahead Index CNV Description					
476		20	PLHBXCNV		Read-ahead index CNV information
476		4	PLHBXRBA		Index CNV RBA
480		8	PLHBXBLUF		Index buffer description
480		4	PLHBXBCB		Address of index BCB
484	1E4	4	PLHBXBAD		Address of index buffer
488	1E8	4	PLHBXCDF		Index CNV CIDF
488	1E8	2	PLHBXFSD		Index CNV free space offset
490	1EA	2	PLHBXFSL		Index CNV free space length
492	1EC	1	PLHBXSW		Index CNV switches
493	1ED	1	PLHBXSW1		Buffer request control switch
494	1EE	2	PLHBXCSZ		Index CNV size-10
Read-Ahead Index Entry Description					
496	1F0	2	PLHBXEO		Index entry offset
498	1F2	2	PLHBXSEO		Next section entry offset
500	1F4	4	PLHBXSOP		Last section entry offset pointer
Previous Record Key Information					
504	1F8	1	PLHPKEY PLHLKSDS		Key of previous record Basic length of PLH for KSDS

REQUEST PARAMETER LIST (RPL)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	RPLID		Control block identifier= X'00'
0	0	1	RPLIDD	X'00'	RPL equate
1	1	1	RPLACT		Active byte test and set X'00' VSAM Release 1 X'10' VSAM Release 2 X'20' VTAM
2	2	2	RPLLEN		Length of RPL
4	4	4	RPLRBA		RBA of last record processed
4	4	4	RPLDDDD		DD field
8	8	4	RPLARG		Pointer to search argument
12	C	8	RPLRCD		Record description
12	C	4	RPLAREA		Address of the caller's work area
16	10	4	RPLRLEN		Length of record
20	14	4	RPLBUFL		User buffer size
24	18	4	RPLACB		Address of the caller's ACB
24	18	4	RPLDACB		Catalog compatibility
28	1C	1	RPLSTRID		RPL string identifier
29	1D	1	RPLREQ		Request type
			RPLPOINT	X'00'	POINT request
			RPLGET	X'04'	GET request
			RPLERASE	X'08'	ERASE request
			RPLPUT	X'0C'	PUT request
			RPLUPDTE	X'0C'	Update request
			RPLINSRT	X'10'	Insert request
			RPLCHECK	X'14'	Check request
			RPLRCLSE	X'18'	RCLOSE request
			RPLENDRQ	X'1C'	ENDREQ request
			RPLFRCIO	X'1C'	FORCIO request
			RPLVERFY	X'20'	VERIFY request
			RPLPUTL	X'24'	PUT locate request
30	1E	2	RPLKEYL		Key length
32	20	2	RPLOPTCD		Option codes
32	20	1	RPLOPT1		First byte of options
			RPLKEY	X'80'	Keyed access
			RPLADR	X'40'	Addressed access
			RPLSEQ	X'20'	Sequential
			RPLDIR	X'10'	Direct processing
			RPLASY	X'08'	Asynchronous
			RPLSKP	X'04'	Skip sequential access
			RPLCNV	X'02'	CNV access (RBA)
			RPLUPD	X'01'	Update
33	21	1	RPLOPT2		Second byte of options
			RPLKGE	X'80'	Search key greater than or equal
			RPLGEN	X'40'	Generic key request
			RPLNSP	X'20'	Note string position
			RPLNUP	X'10'	No update
			RPLLOC	X'08'	Locate mode
			RPLUBF	X'04'	User buffers
			RPLBWD	X'02'	0=Forwards, 1=backwards
			RPLLRD	X'01'	0=Any record, 1=Last record

REQUEST PARAMATER LIST (RPL) (...Continued)

Offset		Bytes	Field Name	Hex Digit		Description
Dec	Hex					
34	22	1	RPLHLD2	X'FF'		Second test and set byte (RPL not available)
35	23	1	RPLHLD	X'00'		RPL available
				X'FF'		Test and set byte (RPL held-request not completed)
36	24	1	RPLFLAG	X'00'		Request completed
				X'FF'		Flag byte
37	25	3	RPLFDBK			Reserved
37	25	1	RPLFDBK1			Error feedback area
37	25	1	RPLRTNCD			Error class (return) code
38	26	1	RPLFDB2			Error class code
39	27	1	RPLFDB3			Function type code
39	27	1	RPLERRCD			Error type code
39	27	1	RPLFDBK C			Error type code
The following equates are for the various feedback returns that may be set for offset 39 (27). They fall into the four categories shown.						
Register 15 setting for error feedback code						
			RPLNOERR	X'00'		No error detected
			RPLNORPL	X'04'		RPL held by another request
			RPLLOGER	X'08'		Logical error
			RPLPHYER	X'0C'		Physical error
			RPLVABND	X'3C'		ABEND encountered (VTAM)
Returns that are not errors (Register 15 = X'00')						
			RPLEOV	X'04'		EOV called during request
			RPLDPKEY	X'08'		Duplicate key
Logical errors (register 15 = X'08')						
			RPLEOFDS	X'04'		End of data set encountered
			RPLEODER	X'04'		End of data set encountered
			RPLDUPRC	X'08'		Duplicate record
			RPLDUP	X'08'		Duplicate record
			RPLSEQCK	X'0C'		Sequence error
			RPLNRFND	X'10'		No record found
			RPLNOREC	X'10'		No record found
			RPLEXCTL	X'14'		Data already in exclusive control
			RPLNVOLM	X'18'		Volume or extent unavailable
			RPLNRSPA	X'1C'		No DASD space available
			RPLNOEXT	X'1C'		No DASD space available
			RPLSPACE	X'1C'		No DASD space available
			RPLINRBA	X'20'		Invalid RBA specified
			RPLNKEYR	X'24'		No key range for new record
			RPLNOVIR	X'28'		Insufficient virtual storage

REQUEST PARAMETER LIST (RPL) (...Continued)

Offset Dec	Hex	Bytes	Field Name	Hex Digit	Description
			RPLWRKAS	X'2C'	User's work area not large enough
			RPLCDLOD	X'30'	CDLOAD failure
			RPLVLERR	X'34'	Internal VSAM logic error
			RPLNOPLH	X'40'	PLH in use (no string available)
			RPLNOPEN	X'44'	Access type not requested at Open
			RPLKEYES	X'48'	Keyed request for ESDS
			RPLADRKS	X'4C'	ADR or CNV insert for KSDS
			RPLINERS	X'50'	Illegal ERSAER request
			RPLINLOC	X'54'	Illegal locate mode specification
			RPLNOPOS	X'58'	Positioning error
			RPLNGUPD	X'5C'	No valid GET UPD issued
			RPLUPDKC	X'60'	Key change during update
			RPLENCN	X'64'	Length change for addressed update
			RPLCONOP	X'68'	Improper or conflicting RPL options
			RPLIMRCL	X'6C'	Improper RECLLEN specified
			RPLIMGKL	X'70'	Improper generic key length specified
			RPLINLD	X'74'	Illegal request during data set load
			RPLCATLG	X'80'	Internal catalog call failure
			RPLSRLOC	X'84'	Illegal locate mode
			RPLSRADR	X'88'	Illegal request for spanned record
			RPLINCSR	X'8C'	Inconsistent spanned record
			RPLNOBAS	X'90'	No base record
			RPLMAXPT	X'94'	Maximum of pointers exceeded
			RPLINVRR	X'C0'	Invalid relative record number
			RPLRRADR	X'C4'	Illegal address requested (RRDS)
			RPLIPATH	X'C8'	Illegal path access
			RPLINBWD	X'CC'	Illegal backward mode requested
Physical errors (register 15 = X'0C')					
			RPLRDERD	X'04'	Data read error
			RPLRDERI	X'08'	Index read error
			RPLRDERS	X'0C'	Sequence set read error
			RPLWTERD	X'10'	Data write error
			RPLWTERI	X'14'	Index write error
			RPLWTERS	X'18'	Sequence set write error

REQUEST PARAMATER LIST (RPL) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
40	28	4	RPLCHAIN		Pointer to next RPL
44	2C	1	RPLAIXID		AIX information byte
				X'80'	Reserved
				X'40'	Reserved
				X'20'	Reserved
				X'10'	Reserved
				X'08'	Reserved
				X'04'	Reserved
				X'02'	Reserved
				X'01'	Prime key pointer
45	2D	2	RPLAXPKP		Number of pointers
48	30	4	RPLAIXPC		CBM module load address
			RPLMLOAD		

TRACK HOLD BLOCK (THB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	THBID	X'88'	Control block identification
1	1	1	THBFLAG	X'00'	Flag byte
			THBACTV	X'80'	This THB is active
			THBPSUDO	X'40'	Track hold not issued
			THBREAL	X'20'	Track hold issued
2	2	2	THBLEN		Length of THB
4	4	2			Available
6	6	2	THBTID		Task ID
8	8	16	THBCCB		CCB area
24	18	8	THBCCW		CCW area
24	18	1	THBCCWOP		CCW operation code
25	19	3	THBCCWAD		CCW argument address
28	1C	2			Available
30	1E	2	THBCCWCT		CCW byte count
32	20	20	THBIODRB		ODRB area
32	20	4			Available
36	24	8	THBARG		MBBCCCHR
44	2C	8			Available
52	34	48	THBSAVE		Save area for 12 registers

FIELD CONTROL AND DATA BLOCK (FCDB)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	64	FCB		Maps the module FCB
0	0	56			Space for use in the block
56	38	1	FCBTIC		Reserved for a TIC operation code
57	39	3	FCBCHAIN		Pointer to next block
60	3C	1	FCBCFL		Reserved for chaining flag
61	3D	1	FCBALI		Allication indicator
			FCBPRVA	X'04'	Previous request allocated
			FCBPRVSV	X'08'	Previous request save
62	3E	2	FCBOFSET		Offset pointer in block

BLOCK POOL HEADER (BKPHD)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	2	BKPLENG		Length of the pool of blocks
2	2	2			Available
4	4		BKPHDECB		Control allocation of blocks
4	4	2			Not used
6	6	1	BKPHDCOM	X'80'	Communications byte
			BKPHWAIT		Wait flag
7	7	1	BKPHDTS		Test and set byte allocation
8	8	32	BKPHRSAV		Space for saving registers-steal
8	8	4	BKPHRS13		Save register 13, swap PLH
12	C	4	BKPHRS14		Save register 14 during steal
16	10	4			Save register 15 during steal BCB
20	14	4	BKPHRS00		Save register 0 during steal BCB
24	18	4	BKPHRS01		Save register 1
28	1C	4			Save register 2
32	20	4			Save register 3
36	24	4			Save register 4
40	28	4	BKPHDBHD		Save data buffer header-steal
44	2C	4	BKPHIBHD		Save index buffer header - steal
48	30	4	BKPSPCHN		Address of next area of blocks
52	34	4	BKPERCCB		Address of CCB chain of errors
56	38	4	BKPFSTBK		Address of first available blocks
60	3C	4	BKPSTECB		ECB-steal BCB, other string Available
60	3C	2			Available
62	3E	1	BKPSTCOM	X'80'	Communications byte
			BKPSWAIT		Wait flag
63	3F	1	BKPSTTS		Test and set block

UPGRADE SET BLOCK (USB)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	USBID	X'E0'	USB identifier
			USBIDD		USB equate
1	1	1	USBACT		Active byte, test and set
2	2	2	USBLEN		Length of this block
4	4	2	USBMAXDB		Max. data buffer in upgrade set
6	6	2	USBMAXIB		Max. index buffer in upgrade set
8	8	4	USBWAPTR		Pointer to work area pool
12	C	2	USBMIN		Min. required record length
14	E	2	USBWALEN		Work area length
16	10	4	USBPLH		Pointer to PLH
Begin of first/only Index Entry					
20	14	4	USBAIX	X'80'	Pointer to ACB
			USBACB		Last entry indicator
			USBLAST		Relative key position
24	18	2	USBRKP		Key length
26	1A	2	USBK L		
Next Alternate Index Entry					
28	1C				

OPEN ACB LIST (OAL)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	OALID OALIDD		OAL identifier
1	1	1			Reserved
2	2	2	OALLEN		Length of this block (max. 512)
4	4	4	OALNOAL		Pointer to next OAL
8	8	2	OALNOPN		No of open data sets or partitions
10	A	2	OALNENT		No. of OAL entries (max. 62)
12	C	4	OALACB		Address of opened ACB
16	10	1	OALSVC		Delimiter (X'0A')
17	11		OALFLG		Flag byte
			OALACT	X'80'	ACB is open
				X'40'	Reserved
				X'20'	Reserved
				X'10'	Reserved
				X'08'	Reserved
				X'04'	Reserved
				X'02'	Reserved
				X'01'	Reserved
18	12	2	OALCCHK		Value to check validity of cylinder no. of data set in catalog

SERVICE AIDS

Service aid phases are available for :

- Enabling and disabling snap dumps within the VSAM component.
- Obtaining snap dumps of control blocks .
- Using UPSI to obtain diagnostic information for the VSAM catalog.
- Maintaining DSCBs in the VTOC and VOL1 labels on DASD.
- Loading a VSAM phase or a program you have written.

The service aid phases IKQVDUMP and \$\$BCVS03 are included in the link-edit of VSAM. The other three phases, IKQVEDA, IKQVDU, and \$\$BCVS04 can be placed in the core image library by executing the following job.

```
//JOB          JOBNAME
//OPTION      CATAL
//INCLUDE     IKQCLNLK
/*
//EXEC       LNKEDT, REAL
/&
```

Enabling and Disabling Snap Dumps

The following snap points are available in VSAM. Each snap ID, if enabled with IKQVEDA, will produce the result indicated.

<u>Snap number</u>	<u>Result of Enabling this Snap</u>
0001	This snap allows Catalog Management diagnostic information to be obtained. (See section 'Using UPSI to obtain Diagnostic Information for the VSAM Catalog' for details.) As snap 0001 uses the UPSI byte, it cannot be run when the user program in the partition also uses the UPSI byte.
0002	This snap enables the Buffer Manager trace, which provides the current usage of VSAM buffering.
0003	This snap enables the CLOSE control block dump at the beginning of CLOSE processing.
0004	This snap enables the VSAM I/O trace facility.
0005	This snap enables the I/O error trace.
0006	This snap enables the OPEN control block dump facility when open processing is complete.
0007	This snap enables the OPEN error trace. Control blocks are printed if an error occurs during open processing.
0008	This snap enables the Catalog Management I/O trace. All I/O operations done by catalog management are printed on SYSLSL.
0009	This snap enables the VSAM Record Management error handler trace, allowing display of control blocks for any error detected by VSAM record management.

SERVICE AIDS (...Continued)

Enabling and Disabling Snap Dumps (...Continued)

IKQVEDA is called by :

```
//EXEC IKQVEDA
```

The routine will print on SYSLOG :

```
ENTER FUNCTION ENABLE/DISABLE/END
```

You must enter either :

```
ENABLE SNAP = xxxx  
                (where xxxx is one of the snap numbers)
```

or

```
DISABLE SNAP = xxxx
```

or

```
END (to terminate processing).
```

The program will look for a private core image library and print:

```
NO PRIVATE CORE IMAGE LIBRARY ASSIGNED
```

if it cannot be found and will then look in the core image library for the VSAM phase needed.

If the phase needed cannot be found in a library the program will inform you with the following message :

```
PHASE NOT FOUND IN THE SYSTEM PRIVATE  
CORE IMAGE LIBRARY
```

Any error in input will result in the INVALID REPLY message and the ENTER FUNCTION message is reissued.

The program can only be ended by the END reply as noted earlier.

The following examples illustrate the use of IKQVEDA to enable and disable SNAP 0001 :

```
// EXEC IKQVEDA  
ENTER FUNCTION ENABLE/DISABLE/END  
ENABLE SNAP = 0001  
NO PRIVATE CORE IMAGE LIBRARY ASSIGNED  
SNAP 0001 ENABLED  
ENTER FUNCTION ENABLE/DISABLE/END  
DISBALE SNAP = 0001  
NO PRIVATE CORE IMAGE LIBRARY ASSIGNED  
SNAP 0001 DISABLED  
ENTER FUNCTION ENABLE/DISABLE/END  
END
```

SERVICE AIDS (...Continued)

Obtaining Snap Dumps of Control Blocks

IKQVDUMP enables you to print out snap dumps of record management and catalog control blocks. Code is provided at certain points in VSAM modules which is nonoperational so far as normal execution of the modules is concerned. Refer to 'Enabling and Disabling Snap Dumps'.

IKQVDUMP is called by the following sequence of instructions (See also 'Loading a VSAM phase or a Program You Have Written'):

```

                LA      1, PARMLIST
                SVC     2
                .
                .
                .
PARMLIST      DC      CL8'$B$CVS03'    B transient
                DC      CL8'IKQVDUMP'  phase that provides dump of
                                                control blocks
    
```

When the program has completed processing, \$B\$CVS03 returns the program to the instruction immediately following the SVC instruction.

Figure below shows the description and format of the parameter list that follows the two phase names in the above calling sequence.

Offset		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
0	0	1	PARMSW1	First byte of parameter list
		1... ..	PARMAMBL	Dump the AMBL
		.1... ..	PARMACB	Dump the ACB
		..1... ..	PARMAMDS	Dump the AMDSB
		...1... ..	PARMARDB	Dump the ARDB
		... 1... ..	PARMBCB	Dump the BCB
		... ..1..	PARMBUFE	Dump the buffer
		... ..1..	PARMEDB	Dump the EDB
		... ..1..	PARMLPMB	Dump the LPMB
		1	1	1	PARMSW2	Second byte of parameter list
1... ..	PARMCCW			Dump the CCW
.1... ..	PARMPLH			Dump the PLH
..1... ..	PARMBHD			Dump the BHD
...1... ..	PARMRPL			Dump the RPL
... 1... ..	PARMEXCP			Dump the EXCPAD work area
... ..1..	PARMCAT			Dump the catalog blocks
... ..1..	PARMDATA			Dump the non-catalog blocks
... ..1..	PARMTHB			Dump the THB
2	2			1	PARMSW3	Third byte of parameter list
		1... ..	PARMOPEN	Dump the open work area
		.1... ..	PARMCLOS	Dump the close work area
		..1... ..	PARMCIW	Dump the control interval split area
		...1... ..	PARMVLSL	Dump the volume list
		... 1... ..	PARMREGS	Dump the registers
		... ..1..	PARMCECL	Dump the control interval exclusive control list
		... ..1..	PARMODLB	Dump the open DLBL
		... ..1..	PARMREQR	Dump the requester's registers

SERVICE AIDS (...Continued)

Obtaining Snap Dumps of Control Blocks (...Continued)

Offset		Bytes and Bit Pattern	Field Name	Description		
Dec	Hex					
3	3	1	PARMSW4	Fourth byte of parameter list		
		1... ..	PARMPAMB	1=Pointer to start dump is in parameter list (PARMAMBA) 0=Pointer to start dump is in register 11		
		..1.	PARMCCAA	1=Pointer to CCA 0=Pointer to AMBL		
		...1	PARMRTNA	Call the test routine		
		... 1... ..	PARMHDID	Dump the header ID		
		.x.. .xxx		Available		
4	4	4	PARMAMBA	Pointer to start dump		
8	8	4	PARMID	Pointer to header		
8	8	1	PARMIDLN	Length of the header		
9	9	3	PARMIDAD	Address of the ID		
12	C	1	PARMSW5	Fifth byte of parameter list		
		1... ..	PARMCCA	Dump the CCA		
		.1... ..	PARMCADL	Dump the CCA DLBL		
		..1.	PARMCADP	Dump the CCA DADSM parameter list		
		...1	PARMCARA	Dump the CCA record areas		
		... 1... ..	PARMCPL	Dump the catalog parameter list (CTGPL)		
		.... 1..	PARMPLDN	Dump the CTGPL data set name	
		.... .1.	PARMPLNN	Dump the CTGPL new name	
		.... ...1	PARMPLPW	Dump the CTGPL password	
		13	D	1	PARMSW6	Sixth byte of parameter list
		1... ..		PARMPLCN	Dump the CTGPL catalog name	
		.1... ..		PARMPLCI	Dump the CTGPL control interval number	
..1.	PARMPLDL	Dump the CTGPL file CTGDDNM field				
...1	PARMPLWA	Dump the CTGPL work area				
... 1... ..	PARMCFL	Dump the catalog field parameter list (CTGFL)				
.... 1..	PARMF LFD	Dump the CTGFL fields				
.... .1.	PARMF LFN	Dump the CTGFL field name				
.... ...x		Available				
14	D	1		PARMSW7	Seventh byte of the parameter list	
1... ..		PARMCFV		Dump the catalog field vector table (CTGFV)		
.1... ..		PARMFVDL		Dump the CTGFV file name		
.1... ..		PARMFVEN	Dump the CTGFV entry name			
...1		PARMFVKR	Dump the CTGFV key range list			
... 1... ..		PARMFVVL	Dump the CTGFV volume serial list			
.... 1..		PARMDPDL	Dump the DADSM parameter list DLBL			
.... .1.		PARMDPIO	Dump the DADSM parameter list I/O area			
.... ...1	PARMDPWA	Dump the DADSM parameter list work area				

SERVICE AIDS (...Continued)

Obtaining Snap Dumps of Control Blocks (...Continued)

Offset Dec	Hex	Bytes and Bit Pattern	Field Name	Description
15	F	1 1... .. .1... .. ..1... .. ...1... .. ....1... .. .... .1.. .... ..xx	PARMSWB PARMDPSV PARMCBS PARMCAXW PARMCXRL PARMCXDR PARMCMSW	Eighth byte of parameter list Dump the DADSM parameter list save I/O area Dump the AMCBS Dump the CAXWA Dump the CAXWA RPL Dump the CAXWA DSCB read-in work area (DRWA) Dump the CMS work area Available
16	10	8	PARMRTNN	Name of test routine

Using the Test Routine Dump

IKQVDUMP allows a phase to be called before a dump is taken to see if a dump is desired. (The name of the test routine is in the parameter list at field name PARMRTNN.) The phase can use any logic to determine whether a dump is needed, and this logic will override a call for a dump if it is not needed. If a 0 is returned in register 15, the dump will be taken ; if register 15 holds a nonzero return, the dump will not be taken.

The registers on entry to the test routine have the following contents :

- R2 = Pointer to the parameter list
- R11 = Caller's register 11
- R13 = Pointer to 18-word save area
- R14 = Return address of calling phase
- R15 = Address of entry point

Using UPSI to Obtain Diagnostic Information for the VSAM Catalog

Manipulation of the UPSI job control statement enables you to screen catalog return codes and obtain a snap dump, cancel a job (which causes a full dump to be taken), or simply continue processing. You must first use IKQVEDA to enable Snap = 0001. Otherwise the UPSI statement will be inoperative. As snap 0001 uses the UPSI byte, it cannot be run when the user program in the partition also uses the UPSI byte.

The purpose of this service aid is to diagnose catalog errors that occur while running any program that causes the VSAM catalog to execute. Typically this would be an Access Method Services module or a record management program you have written.

The //UPSI nnnnnnn job control statement must precede the //EXEC [progname] statement. If no UPSI statement is included, the default is //UPSI 000 (see type 3 request below).

SERVICE AIDS (...Continued)

Using UPSI to Obtain Diagnostic Information for the VSAM Catalog (...Continued)

On exit from catalog management after processing, a message will be printed out depending on the type of UPSI bit setting you have selected. Some messages require a reply from the operator. The return codes in the message are obtained from register 15. The format is :

** NNN, MN, RRR, FFFF, CCCCCCCCCCCCCC

where

NNN is the return code in decimal
MN are the last two characters of the module name which issued the error. This is blank in case of error code 0.
RRR is the reason code in decimal
FFFF is one of the following catalog management functions that had been processed :

DEFC	(define catalog)
DEFA	(define non-VSAM data set)
DEFS	(define space)
DEF	(define VSAM data set)
ALT	(alter)
DELC	(delete catalog)
DELS	(delete space)
DEL	(delete VSAM or non-VSAM data set)
LSTC	(list catalog)
UPD	(update or update-extend)
LOC	(locate)

C..C is either the control interval number in decimal or the first 16 characters of the data set name or volume serial number in EBCDIC.

If a reply is required from the system operator for certain types of requests, the operator must enter one of the following replies from the system console :

- Type in SNAP to get a snap dump by means of IKQVDUMP (see IKQVEDA for enabling snap dumps). The message will then be repeated and the operator should press the END key to continue processing
- Type in CANCEL to cancel the job and obtain a full dump.
- Press the END key to resume processing.

The following paragraphs describe the four types of UPSI settings you can use to elicit a message and/or to determine the degree of return code screening done :

Type 1 UPSI Setting . If you want to obtain an operator message for all VSAM catalog return codes (including 0), you must include one of the following statements :

```
// UPSI 11000000    No reply is required from the operator  
// UPSI 01100000    A reply is required from the operator
```

SERVICE AIDS (Continued)

Using UPSI to Obtain Diagnostic Information for the VSAM Catalog (...Continued)

Type 2 UPSI Setting. An operator message is issued only if the return code is not 0 for the following statements :

```
// UPSI 10000000    No reply is required from the operator
// UPSI 01000000    A reply is required from the operator
```

Type 3 UPSI Setting. An operator message is not issued if one of the following conditions exists:

1. the Access Method Services command being processed was a LISTCAT and the return code is 8, or
2. the return code is 0, 40, 68 or 160
(these code occur during normal processing and are, therefore, excluded).

If neither of these conditions exists, an operator message is issued for the following statements:

```
// UPSI 00000000    No reply is required from the operator
// UPSI 01110000    No reply is required from the operator
```

Type 4 UPSI Setting If you want an operator message on a specific return code, you must include the following statements :

```
// UPSI 00nnnnnn    nnnnnn is set to the value, in binary,
                    of the code divided by 4. A reply
                    is required from the operator.
```

Maintaining DSCB's in the VTOC and VOL1 Labels on DASD

A VSAM DADSM service aid has been provided to assist the programmer and operator in maintaining the VTOC and VOL1 labels on DASD devices.

The following procedures should be followed to use IKQVDU at the system console for such maintenance. The key difference in the three procedures is the presence, or absence, of a // UPSI job control statement. As IKQVDU uses the UPSI byte, it cannot be run when the user program in the partition uses the UPSI byte. Steps of the procedure in lower case letters are typed in at the console ; steps in upper case letters are printed out.

<u>Procedure 1</u>	<u>Explanation</u>
//assign sys000,x'cuu' (press END key)	cuu points at the volume you want to use.
//upsi 1 (press END key)	This job control statement is optional. If it is included, the following events take place on the volume that was assigned to SYS000 :
	<ul style="list-style-type: none">• The VSAM volume ownership bit and CRA TT pointer in the F4 DSCB are reset.• The entire VTOC is scratched, that is, empty DSCBs are written over existing F1, F2, and F3 DSCBs, with the exception of DSCBs that have names starting with the characters 'DOS', or 'PAGE'.

SERVICE AIDS (...Continued)

Maintaining DSCB's in the VTOC and VOL1 Labels on DASD (...Continued)

<u>Procedure 1 (c'td)</u>	<u>Explanation</u>
//upsi 1 (press END key) continued	<ul style="list-style-type: none">• An operator authorization prompt is issued if the DSCB to be scratched is security protected
// exec ikqvdu, size=auto (press END key)	Start Execution of the IKQVDU phase
<u>Procedure 2</u>	<u>Explanation</u>
// assgn sys000,x'cuu' (press END key)	cuu points at the volume you want to use
// upsi 11 (press END key)	This job control statement is optional. If it is included, the following events take place on the volume that was assigned to SYS000: <ul style="list-style-type: none">• The VSAM volume ownership bit and CRA TT pointer in the F4 DSCB are reset.• The entire VTOC is scratched, that is, F0 DSCBs are written over existing F1, F2, and F3 DSCBs, with the exception of DSCBs that have names starting with the characters 'DOS' or 'PAGE'.
// exec ikqvdu,size=auto (press END key)	Start execution of the IKQVDU phase.
<u>Procedure 3</u>	<u>Explanation</u>
// assgn sys000,x'cuu' (press END key)	cuu points at the volume you want to use
// exec ikqvdu,size=30k (press END key)	Start execution of the IKQVDU phase.
Specify function or reply '?' for options ready ? (press END key)	The character ? causes a list of the various functions that IKQVDU performs to be printed out at the system console.

SERVICE AIDS (...Continued)

Maintaining DSCB's in the VTOC and VOL1 Labels on DASD (...Continued)

To set the Volume Ownership Flag	reply 'Set Ownership'
To set the CRA Pointer	reply 'Set Ownership'
To reset the Volume Ownership Flag and CRA Pointer	reply 'Reset Ownership' or 'Reset CRA'
To set the Security Flag in A F1 DSCB	reply 'Set Security'
To reset the Security Flag in A F1 DSCB	reply 'Reset Security'
To remove a DSCB from the VTOC	reply 'Scratch'
To rename a DSCB	reply 'Rename'
To allocate a DSCB	reply 'Allocate'
To reinitiate Processing	reply 'Restart'
To alter or display a DASD VOL1 label	reply 'CLIP LABEL=SER=N..N' or 'CLIP LABEL=DISPLAY'
To terminate Processing	reply 'End'
Ready	

You can avoid printing out this list of functions simply by specifying the function you wish as follows :

<u>Procedure</u>	<u>Explanation</u>
Set Ownership (press END Key)	Causes the VSAM ownership bit to be set in the F4 DSCB and optionally allows the user to set the CRA TT pointer.
Reset CRA or Reset Ownership	Causes the VSAM ownership bit and CRA TT pointer to be reset in the F4 DSCB
Set Security (press END key)	Causes the security bit to be set in the F1 DSCB When the console responds with ENTER DSN, reply with the data set name of the DSCB to be modified.
Reset Security (press END key)	Causes the security bit in the F1 DSCB to be reset. When the console responds with ENTER DSN, reply with the data set name of the DSCB to be modified.
Scratch DSN=DSNAME (press END key)	Causes the DSCB with the specified data set name to be scratched.
Scratch VTOC (press END key)	Causes the entire VTOC to be scratched with the exception of data set names starting with the characters 'DOS' and 'PAGE'. In addition, an operator-authorization prompt will be issued if the DSCB is security-protected or describes a catalog.

SERVICE AIDS (...Continued)

Maintaining DSCB's in the VTOC and VOL1 Labels on DASD (...Continued)

<u>Procedure</u>	<u>Explanation</u>
Rename (press END key)	Causes the DSNAM portion of the F1 DSCB to be changed When the console responds with ENTER OLD DSN, reply with the data set name of the DSCB to be changed. When the console responds with ENTER NEW DSN, reply with the new data set name.
Allocate (press END key)	Causes a new DSCB to be created and written in the VTOC. In order to utilize this function, a DLBL/EXTENT job control statement must be provided (see 'DOS/V5 System Control Statements GC33-5376'). When the console responds with ENTER FILEID, reply with the same file identification as that in the DLBL/EXTENT statement referred to above. When the console responds with ENTER NEW DSN, reply with the data set name of the data set to be created. When the console responds with DO YOU WISH TO SECURITY PROTECT THIS DATA SET? reply YES or NO. A reply of YES causes the data security bit to be set in F1 DSCB. A reply of NO causes the data security bit to be reset in the F1 DSCB.
Restart (press END key)	Causes processing to be reinitiated with a READY prompt. This keyword can be used as a response to any operator prompt.
CLIP LABEL=DISPLAY (press END key)	Causes the volume serial number to be displayed on the system console.
CLIP LABEL=SER=N..N (press END key)	Causes the existing volume serial number to be changed to the one specified as N..N.
End (Press END key)	Causes processing to terminate.

SERVICE AIDS (...Continued)

Maintaining DSCB's in the VTOC and VOL1 Labels on DASD (...Continued)

If an error occurs during execution of IKQVDU,

ERROR DADSM RETURN CODE IS nnn

prints out on the system console. The following list shows the message code (nnn) and associated message that appears, for example,

ERROR DADSM RETURN CODE IS 020 VTOC FULL

nnn	Message
004	I/O error while reading volume label
008	Volume not mounted
012	I/O error on VTOC
016	Duplicate name on volume
020	VTOC full
024	Extent overlaps expired file
028	Extent overlaps unexpired file
032	Extent overlaps protected unexpired file
036	Extent overlaps VTOC
040	Required extents missing
044	DSCB not found
056	Extent overlaps protected expired file
064	GETVIS failure encountered
072	CDLOAD failure encountered
080	Overlap among new extents

Loading a VSAM Phase or a program You Have Written

If you want to load and transfer control to and from a selected VSAM phase or a program you have written, you can use B-transient \$\$BCVS03 without destroying any registers in the following calling sequence :

```
LA 1,PARMLIST
SVC 2
:
:
PARMLIST DC CL8'$$BCVS03'          B Transient
RTNNAME DC CL8'XXXXXXXX'         Name of phase or program you have
:                                 written
USERLIST DC                       Parameterlist for 'XXXXXXXX'
```

When control is received by 'XXXXXXXX', the registers have the following contents :

R0	=	Address of a work area (the size of the work area is specified by a halfword at offset 4 of 'XXXXXXXX' phase)
R1	=	Pointer to user's parameter list (USERLIST)
R2-13	=	Remain the same as they were when SVC 2 was issued
R14	=	Return address of calling module
R15	=	Address of entry point in 'XXXXXXXX'

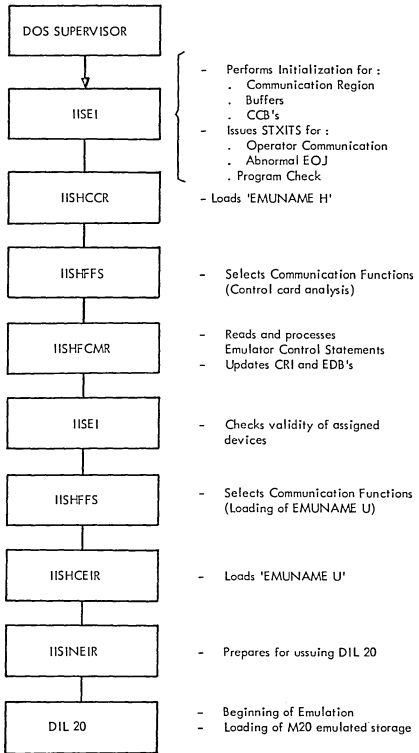
Control is returned from 'XXXXXXXX' by a BR 14 instruction.

CHAPTER IV
MODEL 20 EMULATOR



M 20 EMULATOR

Flow of initialization



M 20 EMULATOR (...Continued)

Emulator Layout

CCW and buffer for read ahead option on a 2501 (160 bytes)	
Error recovery buffer on a 2540 (81 bytes)	
CCW and buffer for printer (132 bytes)	
Card reader buffer (160 bytes)	
Emulated Model 20 storage (1) (from 4K to 32K, minus 144 bytes)	
EDBs (2)	
CCBs and buffers for communications routines	
Communication region (3)	
CCBs and buffers for communications routines	
Fixed communication region data areas	
<u>Emulator routines</u>	
<u>Resident</u>	
IISCP, IISCPs, IISDB, IISDD, IISDF, IISDFED, IISDI, IISDK, IISED, IISHC, IISTD, IISTP, IISTR.	
<u>Optional</u>	
IISTPH	
<u>Overlaid</u>	
<u>emunameU (4)</u>	<u>emunameH (4)</u>
IISCM	IISHF
IISCMS	
IISD1	
IISD2	
IISD3	
IISD4	
IISDE	
IISID	
IISM2	
IISMF	
IISPD2	
IISIN (last routine)	

M 20 EMULATOR (Continued)

Emulator Layout (..Continued)

Device independence buffers (optional) Tape read ahead buffers (optional)	
1	IISEI is loaded here and overlays itself at end of initialization
2	EDBs are also loaded in the disk area of the communication region when disk and device independence are not included in the emulator
3	The communications region is loaded and moved up to a 256-byte boundary by IISEI at initialization
4	The phases emunameU and emunameH overlay one another

COMMUNICATION REGION CR1

Dec	Hex				
0	0	CRBYTE12 1st 2 bytes M20 inst		CR5000 base reg ss inst	
4	4	CR6000 base reg ss inst			
8	8	CRDIL EA 20 3000 3100 DIL instruction			
12	C	CRM20PSW current M20 PSW			
16	10	CRMAPORG A (M20 address 0) relocation factor			
20	14	CRSIZE20 M20 core size - 1			
24	18	CRPEADD A(IISCPPE)			
28	1C	CRDCNTRT A(IISNEIR)			
32	20	CRM20INT A(IISINTIR)			
36	24	CRDILCNT current value		CRINTFLG pending interrupts	•
40	28	CRIRCAL current inst when error occurs		CRPECC20 M20 error code	
44	2C	CREOJCD			
48	30	CREOJCB			
56	38	CRDFADD A(IISDFED)			
60	3C	CRDKBUF1			
64	40	CRDKBUF2			
68	44	CRDKBFAD			
84	54	not used	CRDKBFWK	CRDKBFAC	CRDKOLDB
88	58	CRDKOLDR			
92	5C	CRBUFTP			
116	74	CRSAVM20 M20 register save area			
148	94	CRMAPEND A (last byte of emulated storage)			
152	98	CRLASTFW A (last full word of emulated storage)		CRMAPEND-3	
156	9C	CRLSTCCW A (last possible M20 CCW)		CRMAPEND-5	

• For further explanation : see end of the table

COMMUNICATION REGION CR1 (... Continued)

Dec	Hex					
160	A0	CRDEV TAB A (EDB of device to be emulated)				
192	C0	CRINTCOD M20 interrupt code table				
204	CC					
208	D0	CREDBDIS displacement into CRDEV TAB				
220	DC					
224	E0	CRDELADD A (IISTDDI) delay routine				
228	E4	CRIOACT		CREMLF LG	CREMUIND	
232	E8	CRSUBMOD M20 model	CRSKIPSW	CRLSTCNT last CRDILCNT before DIL		
236	EC	CRHFPSW previous M20 PSW				
240	F0	CRCMADD A (IISCM)				
244	F4	CRSIOTPE A (IISTP)				
248	F8	CRSIODSK A (IISDK)				
252	FC	not used				
256	100	CRDISPTB used by DIL : 1 byte entry for each M20 inst byte configuration. Index to CROPCODE table				
508	1FC					
512	200	CROPCODE A (specific emulation routine) 13 full words				
564	234	CREDFADD A (IISEDF)				
568	238	CRSAVCPU save area for STXIT macro (program check while executing M20 instruction)				
640	280	CRHFCWPK CCW for comm PK routines				
648	288	CRCCWRD CCW for read card				
656	290	CRCCWPN CCW for punch card				

• For further explanation : see end of the table

COMMUNICATION REGION CR1 (..Continued)

Dec	Hex				
664	298	CRCCWPR CCW for print			
672	2A0	CRCCWWCP A(chain for M20 MFCM write card) in CR2			
676	2A4	CRCCWPKP A(chain for M20 PK ops) located in CR2			
680	2A8	CRCCWTP A(chain for M20 tape ops) located in CR2			
684	2AC	CRDIADD A(IISDB)			
688	2B0	CRHFLAG1 ●	CRHFLAG2 ●	CRHFLAG3 ●	CRHFLAG4 ●
692	2B4	CRHFMSGN msg number	CRHFINDP A(IISFFIN)	CRHFCMDP A(IISFFCMR)	CRHFBRTB ●
696	2B8	CRHFTYMG ●	CRHFCX		
700	2BC	translation table, char A-B to hex A-B			CRHFDISP ●
704	2C0	CRHFFCAD A("FUNCTION" table)			
708	2C4	CRHFASAD A(STOP address) ●	CRHFMSGH ●	CRCHKDSK ●	
712	2C8	CRHFSCRN screening mask for the latest msg issued			
716	2CC	CRHFPBFA A(print buffer for comm routines)			
720	2D0	CRHFRBFA A(read buffer for comm routines)			
724	2D4	CRHFCCRA A(IISHCCF) comm control routines			
728	2D8	CRHFRETA A(IISHCEIR) communications : exit routine			
732	2DC	CRHFIKAD A(IISHCIR) S/370 interrupt key routine			
736	2E0	CRHFTRAD A(IISHF)			
740	2E4	CRHFCCBA A(DOS CCB's for communication routines)			
744	2E8	CRHFXC translation table hexa A-F to char A-F			
760	2F8	CRHFRTCD comm routines return code from B transient			
764	2FC	CRHFVLH communication routine phase name			

● For further explanation : see end of the table

COMMUNICATION REGION CR1 (...Continued)

Dec	Hex				
772	304	CRHFOVLU unit record routine phase name			
780	30C	CRHFERTP error type for IISHFMSG	CRINDIMP	•	not used
784	310	CRDTFDI or CRSTPH			
788	314	CRDIFSTB A(first buffer for device independence)			
792	318	CRDIBUFL device independence buffer size			
796	31C	CRDIBUFN A(second buffer for device independence)			
800	320	CRDIHBUF last byte of device independence buffers			
804	324	CRDIEDB A(EDB for device independence)			
808	328	CRDIERR	•	CRDICD	•
				CRDIFLAG	•
812	32C	CRDICCT A(M20 carriage control tape)			
816	330	CRDIRD A(M20 read routine)			
820	334	CRDIPN A(M20 punch routine)			
824	338	CRDIPT A(M20 printer routine)			
828	33C	CRDIER A(M20 error routine)			
832	340	XIO displacement byte table			
876	36C				
880	370	CRDICM A(IISDI) I/O decode			
884	374	CRDICMEN A(IISIDIEN) I, O decode			
888	378	CRDIMTSD A(IISTD) DOS tape/disk module			
892	37C	CRDIEDBC A(EDB control card reader)			
896	380	CRDILOAD A(M20 IPL)			
900	384	CRLNKSAV return to caller after IISINEIR			

• For further explanation : see end of the table

COMMUNICATION REGION CR1 (...Cont'd)

Dec	Hex	
904	388	CRSAVERR STXIT OC save area
976	3D0	EDB active list (16 words) CREDBACT I/O op in overlap or time sharing mode
1040	410	CRBINDEL last card delimiter read binary
1048	418	CRHFTRAC A(IISTR) trace routine
1052	41C	CR20CCW1 A(first M20 CCW used by IISTP)
1056	420	CRCARDEL last card character in DC of M20 CPU macro or EC control statement
1060	424	CRCHKCNT Record and file count for checkpoint
1084	43C	CRDATADD A(M20 tape CCW data address) used by IISTP
1088	440	CRSAVCCB A(CCW in CCB) used by IISTP
1092	444	CRSAVER area for count/file update used by IISTP
1096	448	CRCCWCNT M20 CCW record count used by IISTP
1100	44C	Table of indexes into CRXIOTAB CRXIODIS 1 entry for each DAFS
1166	48E	Table of indexes into CRCIOTAB CRTIODIS 1 entry for each DAFS
1238	4D6	Table of indexes into CRTIOTAB CRCIODIS 1 entry for each DAFS
1310	51E	CRERR4 A(CPU error code 4 routine)
1318	526	CRERR5 A(CPU error code 5 routine)
1326	52E	CRERR6 A(CPU error code 6 routine)
1334	536	CRERR7 A(CPU error code 7 routine)

- For further explanation : see end of the table.

COMMUNICATION REGION CR1 (...Cont'd)

Dec	Hex					
1338	53A	CRERROR				
		A(routine handling all M20 program error stops)				
1380	564	CREMUBGN				
		A(first emulator byte)				
1384	568	CREMUEND				
		A(last emulator byte)				
1388	56C	CRDILADD				
		reserved for hardware				
1392	570	CRDKSTAS	1st sector in command		static CRDKLERF last error free sector	
1396	574	CRDKOBS	EXCP target sector		CRDKEOC end of cylinder sector	
1400	578	dynamic CRDKLDEF	last error free sector		CRDKECD end of command sector	
1404	57C	CRDKRSCT	residual count		CRDKLTCT last count used (head/record)	
1408	580	CRDKLSTO	CRDKFAST	CRDKEFDT		
		disk unit last op		no error free data sectors		
1412	584	no bytes in sector in error CRDKLBDT			CRDKCCHR field used by ID....	
1416	588	CRDKCCHR	....conversion routine		not used	
1420	58C	CRDKIDPC / CRDKHTSR				
		A(S/370 identifier) for partial case - Conversion routine -				•
1422	590	CRDKNSSK				
1428	594	S/370 seek field			CRDKCCHE cyl.number	
1432	598	CRDKHHHE	head number		CRDKHRE record nbr	
					CRDKINDI •	
1436	59C	CRDKM20	CRDKEXCT	CRDKEXC1	CRDKEXC2	
		•	•	•	•	
1440	5A0	CRDKDFDB	CRDKDDDB	CRDKDSCT	not used	
		•	•	•	•	
1444	5A4	CRDKDTB				
		A(chain descriptor table)				
1448	5A8	CRDKSKTB				
		A(skeleton table)				
1452	5AC	CRDKMOTB				
		A(modifier table)				

• For further explanation : see end of the table

COMMUNICATION REGION CRI (...Cont'd)

Dec	Hex			
1456	5B0	CRDKCCWA A(S/370 CCW area)		
1460	5B4	CRDKKYAD A(S/370 key buffer for extra read)		
1464	5B8	CRDKDAAS A data buffer for scan)		
1468	5BC	CRDKIDTB A(S/370 identifiers table) except for scan		
1472	5C0	CRDKIDAS A(S/370 identifiers table) for scan		
1476	5C4	CRDKDK A(IISDK)		
1480	5C8	CRDKDF A(IISDF)		
1484	5CC	CRDKDD A(IISDD) DOS		
1488	5D0	CRDKCTLH M20 cnt field length	CRDKSCLH data sector length	
1492	5D4	CRDKBASE save area for base register		
1496	5D8	CRDKTOTS no of sectors given by DOS extents	CRTRSKPS •	CRPERF
1500	5DC	CRXIOTAB (variable length) A(DII instruction)		
1504	5E0	CRPKADD A(IISDE) if PK is emulated, otherwise CRDIL		
1508	5E4	CRTDADD A(IISTDXIO) if Tape/disk is emulated, otherwise CRDIL		
1512	5E8	A(routines used to emulate M20 XIO ops)		
		4 bytes entry by emulated device		
		CRCIOTAB		
		A(routines to emulate M20 CIO ops)		
		CRTIOTAB		
		A(routines to emulate M20 TIO ops)		

• For further explanation : see next pages

COMMUNICATION REGION FLAG BYTES LAYOUT

Displacement		Field name	Bytes	Field description		
Dec	Hex					
38	26	<u>CRINTFLAG</u>		Flags for pending M20 interruptions		
		Byte 1	1...	2501 card read		
		CRURINT	.1.	2520/2560 card read		
			..1.	1403/2203 print		
			...1	2560 card punch		
			.... 1...	1442 card punch	
			.... .1..	2560 card print	
			.... ..1.	2520 card punch	
			.... ....1	not used	
			Byte 2	1...	tape	
			CRTDPK	.1.	disk	
				..1.	2152 read	
				...1	2152 write or carrier return	
			 1...	2152 inquiry request	
		.... .1..	CC2 interrupt request		
		.... ..1.	not used		
		.... ....1	not used		
160	A0	<u>CRDEVTAB</u>		Addresses of EDB's of M20 devices that can be emulated, as follows :		
		CR2501AD	1- 4	2501 card reader		
		CR1442AD	5- 7	1442 card punch		
		CRPRINAD	8-12	1403 or 2203 printer		
		CR2520AD	13-16	2520 card read-punch or card punch		
		CR2560BD	17-20	2560 MFCM		
		CR2152AD	21-24	2152 printer-keyboard		
		CRIOCAD	25-28	I/O channel		
		CRSCAD	29-32	Storage control		
228	E4	<u>CRIOACT</u>		CRIOACT has same layout as CRINTFLAG. When a bit is 1, data transfer or interruption is pending.		
		Byte 1	1...		2501 card read	
			.1.		2520/2560 card read	
			..1.		1403/2203 print	
			...1		2560 punch	
		 1...		1442 punch	
		1..		2560 card print	
		1.		2520 punch	
		1		not used	
			Byte 2		1...	tape
					.1.	disk
					..1.	2152 read
					...1	2152 write or carrier return
				 1...	2152 inquiry request
		.... .1..	CC2 interrupt request		
		.... ..1.	not used		
		.... ....1	not used		

COMMUNICATION REGION FLAG BYTES LAYOUT (...Cont'd)

Displacement		Field name	Bytes	Field description
Dec	Hex			
230	E6	CREMUFLG		Emulator program indicators
		CRCCFLAG	1... ..	M20 PSW condition code can be modified by current M20 instruction
		CRERRFLG	.1.. ..	Error was detected while decoding current M20 instruction
		CREBDIN	..1.	An EDB is to be inserted in CREDBACT by IISINEIR
		CRDCNTIN	...1	A new DILCNT must be stored at CRDILCNT
		CRWAITIO	.... 1..	IISINEIR must complete all outstanding I/O operations
		CRHFOUT	.... .1..	IISINEIR must return to comm.routines
		CRETURN	.... ..1.	IISINEIR must return to caller
		CREIRBIT	.... ...1	IISINEIR has been called by an emulator routine
231	E7	CREMUIND		Emulator program indicators
		CRDELAYI	1... ..	IISINEIR must call IISTDDL to perform tape operation
		CRDELAYD	.1.. ..	IISINEIR must call IISTDDL to perform disk operations
		CROVLUR	..1.	Unit record I/O operation must be treated in overlap mode
		CROVLTP	...1	Tape I/O operation must be treated in overlap mode
		CROVLDK	.... 1..	Disk I/O operation must be treated in overlap mode
		CRDELAYF	.... .1..	Delay ON must be performed by IISTDDL
		CRDELAYC	.... ..1.	Both a tape and a disk operation have been delayed
		CRM20TSS	.... ...1	M20 time sharing switch is being emulated.
232	E8	CRSUBMOD	xxxx xxxx	Hexadecimal F5 if M20 Submodel 5 or 6 is being emulated
233	E9	CRSKIPSW	xxxx xxxx	Skip indicator for trace
688	280	CRHFLAG1		Calls for processing :
		CRHFAS	1... ..	M20 address stop
		CRHFHPR	.1.. ..	M20 HPR
		CRHFPE	..1.	M20 program error
		CRHFEM	...1	Emulator message
		CRHFSS	.... 1..	M20 instruction step
		CRHFTR	.... .1..	Trace to be made of all M20 instructions executed
		CRHFIK	.... ..1.	Interrupt key

COMMUNICATION REGION FLAG BYTES LAYOUT (...Cont'd)

Displacement		Field name	Bytes	Field description
Dec	Hex			
689	2B1	<u>CRHFLAG2</u>		Calls being processed :
		CRHFASP	1... ..	M20 address stop
		CRHFSYNP	.1.. ..	M20 HPR or program error
		CRHFEMP	..1.	Emulator message
		CRHFSSP	...1	M20 instruction step
		CRHFIKP	.... 1...	interrupt key
690	2B2	<u>CRHFLAG3</u>		Indicates :
		CRHFICC	1... ..	Initialization control card
		CRFFDCC	.1.. ..	Dynamic control card
		CRHFINIT	..1.	IISHFIN called
		CRHFCMP	...1	IISHFCMR called
		CRHFCHN	.... 1..	Control statement chaining
		CRHFTC	.... .1.	Count option for debugging
		CRHFTRCE	.... .1.	Trace option for debugging
		CRHECIM	.... ...1	M20 decimal operation
		CRHFICER	.... ...1	Error in initialization control card
691	2B3	<u>CRHFLAG4</u>		Indicates :
		CRHFEMT	1... ..	IISHF has been loaded
		CRHFERSW	.1.. ..	Error has been detected in a control statement keyword or operands
		CRHFDF	..11	Mask for emulator on M20 trace
		CRHFDFTT	..1.	Emulator contains routines for trace
		CRHFDFIO	...1	Emulator contains routines to execute keyword IOT of control statement DF
		CRHFTASW	.... 1..	M20 trace or address stop
		CRHFSTSW	.... .1..	M20 instruction step
		CRHFCLC	.... .1.	2501 last card has been read
		CRHFICAC	.... ...1	M20 INTERRUPT key has been pressed during execution of IISINEIR
694	2B6	<u>CRHFCMDP</u>	xxxx xxxx	Displacement in HFUNTAB of IISHFIN
695	2B7	<u>CRHFBRTB</u>	xxxx xxxx	B-transient area
696	2B8	<u>CRHFTYMG</u>		Type of message :
		CRHFINF	.1.. ..	Information
		CRHFDEC	..1.	Decision
		CRHFACT	...1	Action
		CRHFAEOJ	.... 1..	Automatic End Of Job
		CRHFERMS	.... .1.	Error
		CRHFCONT	.... ...1	Continuation
703	2BF	<u>CRHFDISP</u>	xxxx xxxx	Displacement of entry point of a control statement routine in HFUNTAB
708	2C4	<u>CRHFASAD</u>	xxxx xxxx xxxx xxxx	In address stop mode, address of M20 byte at which emulator is to stop
710	2C6	<u>CRHFMSGH</u>	xxxx xxxx	Number of the latest decision or action message issued

COMMUNICATION REGION FLAG BYTES LAYOUT (....Cont'd)

Displacement		Field name	Bytes	Field description
Dec	Hex			
711	2C7	CRCHKDSK	xxxx xxxx	Indicates whether checkpoint file is open
782	30E	CRINDIMP		Device independence switches
		CRDISCFL	X'80'	Screening flag for D. I. initialization
		CRDIGEN	X'40'	Device independence option generated
		CRDIGENT	X'20'	Device independence option for tapes
		CRDIGEND	X'10'	Device independence option for disks
		CRDIACT	X'08'	Device independence option active
		CRDIMESG	X'04'	Device indep. inf. message switch
		CRDICCTM	X'02'	Device indep. two messages switch
		CRDINTMG	X'01'	Device indep. initialization message
784	310	CRDTFDI		A(DTFDI for device independence routines)
		CRSTPH		A(IISTPH if read ahead on tape - No device independence)
808	328	CRDIERR	xxxx xxxx	Error return code
809	329	CRDICD		Buffer Allocation/Release flag
		CRDIALLC	X'80'	Allocation request
		CRDIRELS	X'40'	Release request
		CRDIRCLC	X'20'	DI off command
		CRDIRDIN	X'10'	RCC/INIT command
		CRDILD	X'08'	LD command
		CRDIEOJ	X'04'	EOJ command
		CRDIRET	X'02'	Return to caller via link reg.
810	32A	CRDIFLAG		DI working switches
		CRDIFST	X'80'	1st time switch for printer
		CRDICHAN	X'40'	No hole found in carriage control tape
		CRDIFSW	X'20'	Buffer allocation message switch
		CRDIRDM	X'10'	Read control cards in DI mode
		CRDIRPK	X'08'	Read from PK at initialization
		CRDIOPN	X'04'	OPEN issued for DTFDI
1409	581	CRDKFAST		Indicator for performance
		CRDKVRIF	X'80'	Verify option ON
		CRDKHTRY	X'40'	Hit occurred on last command
		CRDKSCAN	X'20'	Scan 6 SCTRS option ON
		CRDKRDBF	X'10'	Use buffer for read option ON
		CRDKMVDD	X'08'	Read and move SCTRS to M20
1420	58C	CRDKHTR		Hit sector addr in scan buffer
1435	59B	CRDKINDI		M20 indicators for disk
		CRDKEEOC	X'80'	End of cylinder
		CRDKEDA	X'40'	Data address error
		CRDKECTA	X'20'	Count address error
		CRDKEEDC	X'10'	Data check in data area
		CRDKEKDC	X'08'	Data check in count area
		CRDKSHIT	X'04'	Scan hit
		CRDKSNEQ	X'02'	LE or HE scan hit
1436	59C	CRDKM20		M20 control byte. Class of operation
		CRDKCTRL	X'80'	Control operation
		CRDKC10	X'40'	10 sector max operation
		CRDKC100	X'20'	100 sectors max operation
		CRDKSCCL	X'10'	Scan class
		CRDKCTDT	X'08'	Count and data class
		CRDKDTCL	X'04'	Data class

COMMUNICATION REGION FLAG BYTES LAYOUT (....Cont'd)

Displacement		Field name	Bytes	Field description
Dec	Hex			
1437	59D	<u>CRDKEXCT</u>		Control byte for building CCW's
		CRDKSCEQ	X'01'	Scan equal
		CRDKUSH	X'02'	Unshuffling to make
		CRDKWRCL	X'09'	Write class
		CRDKVRCL	X'0C'	Verify class
		CRDKCTDA	X'10'	Count and data class
		CRDKSHU	X'18'	Shuffling to make
		CRDKINCA	X'A0'	Increasing address command
		CRDKRDCD	X'B2'	Read count and data
		CRDKFFKY	X'C0'	S/370 search command with X'FF' in key area
1438	59E	<u>CRDKEXC1</u>		Control byte 1 of IISDF
		CRDKLPI	X'80'	First EXCP loop
		CRDKLSLP	X'40'	Last EXCP loop
		CRDKEXT2	X'20'	Extent 2 used
		CRDKRCS	X'08'	Read count successful
		CRDKEXRD	X'04'	Extra read requested. Hit for LE or HE
		CRDKWAIT	X'02'	Wait requested
		CRDKNSID	X'01'	Indicator for identifier conversion
1439	59F	<u>CRDKEXC2</u>		Control byte 2 of IISDF
		CRDKDELY	X'80'	Delay routine called
		CRDKBDEX	X'40'	Bad extents information
		CRDKPART	X'20'	Data partially processed
		CRDKIOOP	X'10'	DOS I/O indicator
		CRDKEQUA	X'08'	Equality in compare routine
		CRDKHNEQ	X'04'	Hit not equal in compare routine
		CRDKINID	X'02'	Increasing ID addresses
CRDKIEXT	X'01'	One extent already given		
1440	5A0	CRDKDFDB		S/370 CCW control dispatching byte
		CRDKDFCW	X'80'	Caller wants CCW control
		CRDKDFID	X'40'	Caller wants ID conversion
1441	5A1	<u>CRDKDDDB</u>		IISDD control byte
		CRDKDDEX	X'80'	Caller wants EXCP
		CRDKDDOP	X'40'	Caller wants OPEN
1442	5A2	<u>CRDKDSCT</u>	xxxx xxxx	Description count for CCW builder
1498	5DA	<u>CRTRSKPS</u>	xxxx xxxx	Trace of first skip to channel 1

EDB LAYOUT

2501/2520/2560 Card Reader

Dec	Hex				
0	0	EDBCTLBK A(DOS CCB)			
4	4	EDBINT A(end of operation routine)			
8	8	EDBCNTC Current DILCOUNT		EDBCNTS Standard DILCOUNT value	
12	C	EDBTYPE ●	EDBINTMK Int.mask	EDBFLAG ●	EDBSS Select stacker
16	10	EDBDATAL Data count		not used	
20	14	EDBRDBUF A(read card buffer)			
24	18	EDBDATAD Data address for read operation			

2520/2560 Card Read Punch

0	0	EDBCTLBK A(DOS CCB)			
4	4	EDBINT A(end of operation routine)			
8	8	EDBCNTC Current DILCOUNT		EDBCNTS Standard DILCOUNT value	
12	C	EDBTYPE ●	EDBINTMK Int.mask	EDBFLAG ●	EDBSS Select stacker
16	10	EDBDATAL Data count		not used	
20	14	EDBRDBUF A(read card buffer)			
24	18	EDBDATAD Data address for read operation			

1442 Card Punch

0	0	EDBCTLBK A(DOS CCB)			
4	4	EDBINT A(end of operation routine)			
8	8	EDBCNTC Current DILCOUNT		EDBCNTS Standard DILCOUNT value	
12	C	EDBTYPE ●	EDBINTMK Int.mask	EDBFLAG ●	EDBSS Select stacker
16	10	EDBPNBUF* Save area for ERP(address)			
20	14	EDBPNCNT* Count for ERP		not used*	

*When emulated by 2540 Card Read Punch
● See Flag bytes layout

EDB LAYOUT (...Cont'd)

Dec	Hex	2560 MFCM			
0	0	EDBCTLBK A(DOS CCB)			
4	4	EDBINT A(end of operation routine)			
8	8	EDBCNTC Current DILCOUNT		EDBCNTS Standard DILCOUNT value	
12	C	EDBTYPE ●	EDBINTMK Int.mask	EDBFLAG ●	EDBSSF1 SS feed1
16	10	EDBDATAL Data count		EDBSSF2 SS feed2	EDBSSPN SS punch
20	14	EDBRDBUF A(read card buffer)			
24	18	EDBDATAD Data address for read operation			
28	1C	EDBSTAT** Card position	EDBWCHSL** Head selection		
32	20	EDBWCHD** Head selection			
		** MFCM with Print card			
Storage Control					
0	0	EDBCTLBK A(DTFPH)			
4	4	EDBINT A(end of operation routine)			
8	8	EDBCNTC Current DILCOUNT		EDBCNTS Standard DILCOUNT value	
12	C	EDBTYPE ●	EDBINTMK Int.mask	EDBFLAG ●	EDBFLAG2 ●
16	10	EDBLONG Length of EDB			
20	14	EDBCSW CSW for the device			
24	18	not used	EDBSENSE		
28	1C	Sense status		EDBMXCL Max cyl no	EDBHDESEL Last head
32	20	EDBSKCL Last seek			
36	24	EDBEXT1 Extent table nr 1			EDBRECTK S/370 records/ track
40	28	EDBEXT2 Extent table nr 2			
44	2C	EDBTKCYL S/370 track/ cyl		not used	

● See Flag bytes layout

EDB LAYOUT (...Cont'd)

Dec	Hex	I/O Channel			
0	0	EDBCTLBK A(DOS CCB)			
4	4	EDBINT A(end of operation routine)			
8	8	EDBCNTC Current DILCOUNT		EDBCNTS Standard DILCOUNT value	
12	C	EDBTYPE ●	EDBINTMK Int.mask	EDBFLAG ●	EDBFLAG2 ●
16	10	EDBLONG Length of EDB			
20	14	EDBCSW CSW for the device			
24	18	EDBRECRD Record counter		EDBTM File counter	
28	1C	EDBSVREC Record and file counter when UC in CCB			
1403/2203 Printer					
0	0	EDBCTLBK A(DOS CCB)			
4	4	EDBINT A(end of operation routine)			
8	8	EDBCNTC Current DILCOUNT		EDBCNTS Standard DILCOUNT value	
12	C	EDBTYPE ●	EDBINTMK Int.mask	EDBFLAG ●	EDBELOP Delay code
16	10	EDBLENG Line length		EDBRESPA Residual space	not used
2152 Printer Keyboard					
0	0	EDBCTLBK A(DOS CCB)			
4	4	EDBINT A(end of operation routine)			
8	8	EDBCNTC Current DILCOUNT		EDBCNTS Standard DILCOUNT value	
12	C	EDBTYPE ●	EDBINTMK Int.mask	EDBFLAG ●	EDBNASAL ASA carrier return

● See Flag bytes layout

EDB LAYOUT (...Cont'd)

Dec	Hex	Extension for Device Independence		
0	0	EDBDIST	EDBDIST2	EDBBLKF Blocking factor
4	4	EDBBLKSZ Block size		EDBCCTLG Length carriage ctl tape
8	8	EDBCTID Index of carriage tape image		
12	C	EDBDTFPT A(active DTF)		
16	10	EDBDTFIT A(input tape DTF)		
20	14	EDBDTFOT A(output tape DTF)		
24	18	EDBDTFID A(input disk DTF)		
28	1C	EDBDTFOD A(output disk DTF)		
32	20	EDBBFADD A(output device independence buffer)		
36	24	EDBIOREG A(last logical record in buffer)		
40	28	EDBDIASA ASA control character		

● See Flag bytes layout

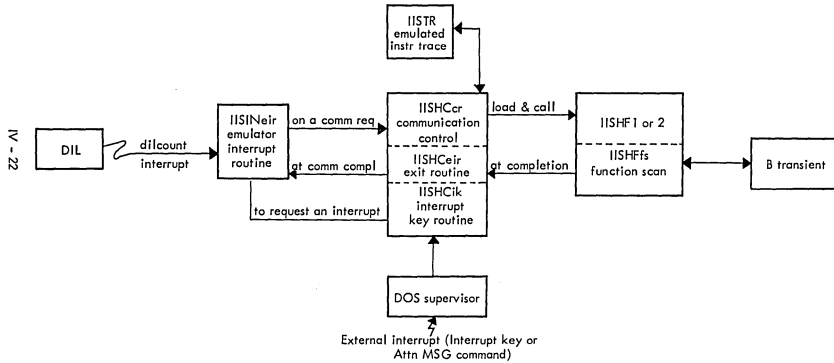
EDB FLAGBYTES LAYOUT

Displacement		Field name	Bytes	Field description		
Dec	Hex					
12	C	EDBTYPE		Definition of the M20 device:		
		EDBSC	1111 1111	Disk		
		EDB1442	1...	1442 Card Punch		
		EDB2501	.1..	2501 Card Reader		
		EDB2520	.1..	2520 Card Read Punch		
		EDB2520P	...1	2520 Card Punch		
		EDBMFCM1	.... 1...	2560 MFCM (feed 1)	
		EDBMFCM2	.... .1..	2560 MFCM (feed 2)	
		EDBPRINT	.... .1..	1403/2203 Printer	
		EDBPK	.... ...1	2152 Printer Keyboard	
		EDBIDC	.... ....	Tape	
14	E	EDBFLAG		M20 indicators for:		
		EDBLSTCP	1...	Last card		
		EDBFEED	.1..	Previous M20 operation included a feed for 2520 Card Read Punch		2520, 2560, 2501 Card Reader
		EDBTODEV	.1..	2520 Card Read Punch is emulated by 3525 Card Punch; or 2560 MFCM is emulated by 3525 Card Punch		
		EDBDIFIR	...1	First request to execute CIO SS instruction during device independence		
		EDBMESG	.... .1..	Pending message	
		EDBDI1	EDB includes device independence		1442/2520 CP
		EDBTODEV	.1..	1442/2520 Card Punch is emulated on 2520/3525 Card Punch		
		EDBPNER	.... .1..	1442/2520 punch error	
		EDBMESG	.... .1..	Pending message	
		EDBDI1	EDB includes device independence		2560 MFCM
		EDBLSTCD	1...	Last card		
		EDBFEED	.1..	Previous M20 operation included a feed for 2520 Card Read Punch		
		EDBTODEV	.1..	2520 Card Read Punch is emulated by 3525 Card Punch; or 2560 MFCM is emulated by 3525		
		EDBPNFIR	...1	First request for punch or punch-feed on 3505 Card Reader		1403/2203 Printer
		EDBWCFIR	.... 1...	First request for write card on 3505 Card Reader	
		EDBPNER	.... .1..	Punch error	
		EDBMESG	.... .1..	Pending message	
		EDBDI1	EDB includes device independence		
		EDBCH9	1...	Channel 9		
EDBCH12	.1..	Channel 12				
EDBCH9B	.1..	Channel 9 with dual feed carriage				
EDBCH12B	...1	Channel 12 with dual feed carriage				
EDBCH1	.... 1...	Channel 1			
EDBNCM	.... .1..	No carriage motion			
EDBMESG	.... .1..	Pending message			
EDBDI	.... ...1	EDB includes device independence			

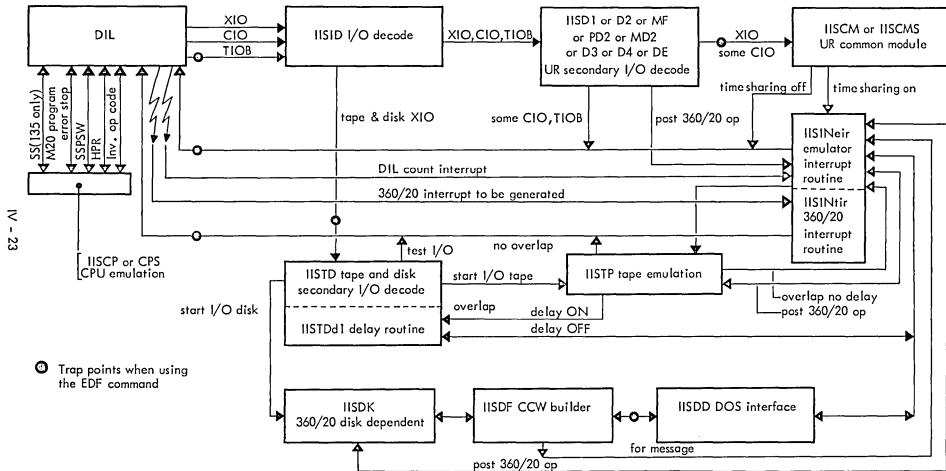
EDB FLAGBYTES LAYOUT (...Cont'd)

Displacement		Field name	Bytes	Field description	
Dec	Hex				
15	F	EDBREQPK	1... ..	Enable/disable	2152 P.L.KB
		EDBREQST	.1..	Request stored	
		EDBCNCL	..1.	Cancel	
		EDBMESG	.... ..1.	Pending message	
		EDBLSTBK	1... ..	Last EDB	IOC/SC
		EDBDEVB	.1..	Device busy	
		EDBDEVI	..1.	Device-end interrupt pending	
		EDBREQ1	.... ..1	First request	
		EDBCTLL	.... 1..	Long control operation	
		EDBCEIN	.... ..1.	Channel-end interrupt pending	
		EDBDELN	.... ..1.	Delay on	
		EDBDELY	.... ..1	Delay off	
		EDBFLAG2		M20 IOC/SC indicators for:	
		EDBCHBIT	1... ..	Chained IOC operation	
EDBPGCHK	.1..	IOC program check			
EDBSCFT	..1.	S/370 device has scan feature			
EDBRDAH	..1.	Read ahead (IOC)			
EDBOPEN	...1 ..	DOS disk pack representing M20 disk pack is open			
EDBCTOPT	.... 1..	Non standard disk count field found in M20 core during a write count and data or verify count and data operation			
EDBUCBIT	.... ..1.	Unit check on S/370 device during tape operation			
EDBSNSDN	.... ..1.	Sense done for file protect (IOC)			
EDBFILDP	.... ..1	Tape in file protect (IOC)			
EDBWDATA	.... ..1	Previous Write data set			
36	24	EDBDIST		Device independence	
		EDBDITP	1... ..	Generated for tape	
		EDBDIDK	.1..	Generated for disk	
		EDBDIACT	..1.	Active on tape	
		EDBDIAD	.... ..1	Active on disk	
		EDBIOPN	.... 1..	File opened	
		EDBFNRD	.... ..1.	Read	
		EDBFNPN	.... ..1.	Punch	
		EDBFNPT	.... ..1	Print	
		37	25	EDBDIST2		Device independence indicators
EDBDICHG	1... ..			MFCM emulated by two 3525's	
EDBSIZ	.1..			Input record size is 80	

INTER - ROUTINE LINKS FOR COMMUNICATION ROUTINES



INTER - ROUTINE LINKS - Except communication routines



IV - 23

HFUNTAB ENTRIES

Routine	Control Statement Handled	Entry in HFUNTAB for this routine						Displacement in HFUNTAB of entry		
		Bytes 1-2 Routine Identifier	Byte 3 Displacement in Branch table *		Byte 4	Byte 5	Byte 6			Dec	Hex
			(in Hex)	Dec	Hex	Displacement in HFUNTAB of entry for routine to be called when:				
						return code= 0	return code= -1	return code= -2		
IISHFIN		HF	4	4	194 (C2) (IISHFMSG)	205 (CD) (IISHCCR)	208 (D0) (IISHCEIR)	0	0	
IISHFCMR		HF	12	C	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		6	6	
IISHFS	S	HF	24	18	200 (CB) (IISHFEX)	208 (D0) (IISHCEIR)	194 (C2) (IISHFMSG)	11	0B	
\$\$BIISLE	EOJ	LE	8	8	194 (C2) (IISHFMSG)	180 (B4) (IISDIBF)		17	11	
\$\$BIISTS	I	TS	8	8	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		22	16	
\$\$BIISCF	CF	CF			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		27	1B	
IISHFSK	RCC keyword scanning	HF	16	10	32 (20) (\$\$BIISTS)			32	20	
\$\$BIISTS	RCC	TS	0	0	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		36	24	
\$\$BIISLE	SR	LE	4	4	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		41	29	
IISHFCP	CP	HF	28	1C	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		46	2E	

HFUNTAB ENTRIES (. . . Cont'd)

Routine	Control Statement Handled	Entry in HFUNTAB for this routine						Displacement in HFUNTAB of entry	
		Bytes 1-2 Routine Identifier (in Hex)	Byte 3 Displacement in Branch table *		Byte 4	Byte 5	Byte 6		
			Dec	Hex	Displacement in HFUNTAB of entry for routine to be called when:				
					return code=0	return code=-1	return code=-2		
IISHFSK	LD keyword scanning	HF	16	10	55 (37) (\$\$BIISLE)			51	33
\$\$BIISLE	LD	LE	0	0	208 (D0) (IISHCEIR)	194 (C2) (IISHFMSG)	180 (B4) (IISDIBF)	55	37
IISHFDIC	HELP	HF	32	20	61 (3D) (\$\$BIISPR)	66 (42) (\$\$BIISDP)		61	3D
\$\$BIISPR	HELP (except for device indep.)	PR			194 (C2) (IISHFMSG)			66	42
\$\$BIISDP	HELP (for dev. independence)	DP			194 (C2) (IISHFMSG)			70	46
IISHFSK	CCT keyword scanning	HF	16	10	78 (4E) (\$\$BIISCC)			74	4A
\$\$BIISCC	CCT	CC			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		78	4E
IISHFSK	CS keyword scanning	HF	16	10	87 (57) (\$\$BIISCS)			83	53
\$\$BIISCS	CS	CS			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		87	57
IISHFSK	DF keyword scanning	HF	16	10	96 (60) (\$\$BIISDF)			92	5C

HFUNTAB ENTRIES (...Cont'd)

Routine	Control Statement Handled	Entry in HFUNTAB for this routine						Displacement in HFUNTAB of entry	
		Bytes 1-2 Routine Identifier (in Hex)	Byte 3 Displacement in Branch table *		Byte 4	Byte 5	Byte 6			Displacement in HFUNTAB of entry for routine to be called when:
					return code= 0			return code= -1	return code= -2
			Dec	Hex	return code= 0	return code= -1	return code= -2	Dec	Hex
\$\$BIISDF	DF	DF			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		96	60
IISHFSK	TS keyword scanning	HF	16	10	105 (69) (\$\$BIISTS)			101	65
\$\$BIISTS	TS	TS	4	4	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		105	69
IISHFSK	DK keyword scanning	HF	16	10	114 (72) (\$\$BIISTD)			110	6E
\$\$BIISTD	DK	TD	4	4	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		114	72
IISHFSK	TP keyword scanning	HF	16	10	123 (7B) (\$\$BIISTD)			119	77
\$\$BIISTD	TP	TD	0	0	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		123	7B
IISHFSK	UR keyword scanning	HF	16	10	132 (84) (\$\$BIISUR)			128	80
\$\$BIISUR	UR	UR			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		132	84
IISHFSK	EC keyword scanning	HF	16	10	141 (8D) (\$\$BIISTD)			137	89

HFUNTAB ENTRIES (. . . .Cont'd)

Routine	Control Statement Handled	Entry in HFUNTAB for this routine						Displacement in HFUNTAB of entry	
		Byte 1-2 Routine Identifier (in Hex)	Byte 3 Displacement in Branch table*		Byte 4	Byte 5	Byte 6		
			Dec	Hex	Displacement in HFUNTAB of entry for routine to be called when:			Dec	Hex
					return code= 0	return code= -1	return code= -2		
\$\$BIISTD	EC	TD	8	8	205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		141	8D
IISHFSK	EDF keyword scanning	HF	16	10	150 (96) (IISEDf)			146	92
IISEDf	EDF	HD			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		150	96
\$\$BIISCT	CNT	CT			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		155	9B
IISHFSK	DI keyword scanning	HF	16	10	164 (A4) (\$\$BIISDI)			160	A0
\$\$BIISDI	DI	DI			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)	180 (B4) (IISDIBF)	164	A4
IISHFSK	DIA keyword scanning	HF	16	10	174 (AE) (\$\$BIISAS)			170	AA
\$\$BIISAS	DIA	AS			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)	(180 (B4) (IISDIBF)	174	AE
IISDIBF		HB			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		180	B4
IISHFSK	CD keyword scanning	HF	16	10	189 (BD) (\$\$BIISCD)			185	B9

HFUNTAB ENTRIES (...Cont'd)

Routine	Control Statement Handled	Entry in HFUNTAB for this routine						Displacement in HFUNTAB of entry	
		Byte 1-2 Routine Identifier (in Hex)	Byte 3 Displacement in Branch table *		Byte 4	Byte 5	Byte 6		
			Dec	Hex	Displacement in HFUNTAB of entry for routine to be called when:				
					return code=0	return code=-1	return code=-2		
\$\$BIISCD	CD	CD			205 (CD) (IISHCCR)	194 (C2) (IISHFMSG)		189	BD
IISHFMSG		HF	20	14	205 (CD) (IISHCCR)	200 (C8) (IISHFEX)	211 (D3) (\$\$BIISLE)	194	C2
IISHFEX		HF	8	8	208 (D0) (IISHCEIR)	205 (CD) (IISHCCR)		200	C8
IISHCCR		HC						205	CD
IISHCEIR		HC						208	D0
\$\$BIISLE		LE	12	C				211	D3

Notes:

- For routines with a HF identifier, the branch table is HFRTNTAB (contained in IISHF)
- For routines with a LE identifier, the branch table is LDBRANCH (contained in \$\$BIISLE)
- For routines with a TD identifier, the branch table is TDTAB (contained in \$\$BIISTD)
- For routines with a TS identifier, the branch table is TSTAB (contained in \$\$BIISTS)

R8 contains a return code
R7 = HFBRTAB points to HFRTNTAB
R9 = HFUNCPTR points to HFUNTAB

PROBLEM DETERMINATION AIDS

Dynamic Service Aids (Depend on emulator generation option) - See notes

FORMAT OF COMMANDS

DF	TD= (X'hhh', X'hhh')	emulated core dump
	ED= (X'hhhhh', X'hhhhh')	emulator core dump
	TT	emulated instruction trace
	TTS	trace stop
EDF	IOT= (d, xct)	Unit record
	IOT= (n, st)	Disk or tape
	IOT= (X'hh', st)	---- id ----
	IOTS= y	stop list

d= device

x= list of emulator control blocks before and after execution of XIO

c= list of emulator control blocks before and after execution of CIO

t= list of emulator control blocks before and after execution of TIO

n= 1 to 4, M20 disk storage address

hh= 01 to FF, M20 magnetic tape address

s= list of emulator control blocks before and after execution of Start I/O

t= list of emulator control blocks before and after execution of Test I/O

Notes:

You can code TT only if you have coded DEBUG= TT or IOT in the EM20CPU macro instruction.

You can code EDF only if you have coded DEBUG= IOT in the EM20CPU macro instruction.

INFORMATION OUTPUT

TD	1st line : 360/20 GPR's 8 to 15
	2d line : 360/20 old PSW, 360/20 new PSW, stacker info, CSW
	next lines : core contents
ED	line 1-2 : S/370 GPR's 0 to 15
	next lines : core contents
TT	on the same line:
	A (instruction in process)
	instruction
	current 360/20 PSW
	360/20 GPR's 8 to 15
	360/20 old PSW
	360/20 new PSW
	360/20 CSW
IOT	See table on next page.

PROBLEM DETERMINATION AIDS (...Cont'd)

	Trace fields shown before (B) and after (A) execution of Model 20 I/O instruction									
	Unit Record		Tape				Disk			
	CIO XIO	TIOB	SIO	TIO	SIO ¹	SIO ²	TIO			
S/370 registers	B A	B A	B A	B A	B A	B A	B A	B A	B A	B A
M20 registers	B A		B A	B A	B A	B A	B A	B A	B A	B A
M20 instructions	B A	B A	B A	B A	B A	B A	B A			B A
M20 PSW	B A	B A	B A	B A	B A	B A	B A	B A	B A	B A
CRIOACT	B A	B A	B A	B A	B A	B A	B A	B A	B A	B A
CRINTFLG	B A	B A	B A	B A	B A	B A	B A	B A	B A	B A
EDB	B A	A	B A	B A	B A	B A	B A	B A	B A	B A
CCB	B A		A	A		A B				A
CREMUIND	B A					A B				
S/370 CCW	A		A			A B				
M20 CCW			B A	B A	B A				B A	A
M20 CSW			A	A		A B				A
Communication region disk fields						A B				
Disk count area						B				

1 A routine other than IISDD has control

2 IISDD has control

EMULATOR ROUTINE IN ERROR

If an emulator message has been issued, the explanation should give some idea as to the nature of the error. The PLM lists all the routines that can issue a particular message.

When an abnormal DOS termination occurs, the DOS PSW and GPR's are located in the communication region at CRSAVCPU.

- Use:
- the address of the interrupted PSW
 - the contents of registers 4, 14, 15
 - the linkedit map

COMMUNICATION REGION

- GPR 3 should point to it, which is on a 256 byte boundary
- If GPR 3 does not point to the communication region, locate IISCR in the linkedit map; it is located at the next upper 256 byte boundary address

PROBLEM DETERMINATION AIDS (:...Cont'd)

EMULATED MOD 20 MAIN STORAGE

Beginning address : CRMAPORG
Ending address : CRMAPEND
M20 main storage is bounded at the end by 98xxxxxx

CONTROL BLOCKS AND BUFFERS

- EDB's addresses : CRDEVTAB
- If M20 disks are emulated and device independence option is chosen at emulator generation, EDB's addresses are in the CSECT IISEDBCS
- If they are not, the EDB's for unit record devices are moved to the communication region at initialization time. Should there not be enough space, any remaining EDB's are generated in a separate CSECT (IISEDBCS)
- Pointers in EDB's locate CCBs and DTFs
- CCB or DTF for emulated disks are found in the first fullword of the EDB
- For device independence:
Four fullwords in an extension of the EDB point to the DTFMT's and DTFSD's.
The address of the buffer for the device is found in its EDB

REGISTER USAGE AND NAMES

Register 1 :	CCBREG	pointer to DOS CCB
Register 2 :	EDBPNT	pointer to EDB
Register 3 :	COMREG	pointer to the communication region
Register 4 :	BASOP	Base register
Register 5 :	EFFADD1	M20 operand 1 address
Register 6 :	EFFADD2	M20 operand 2 address
Register 7 :	MODIFIER	M20 instruction length or immediate field
Register 14 :	LINK	return address
Register 15 :		used as a base register for all B transient emulator routines

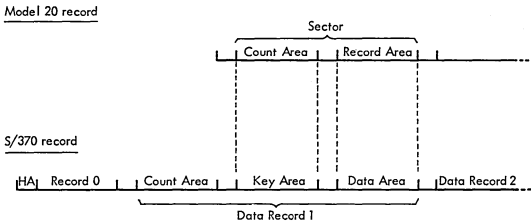
DIL macro instruction sets registers 4, 5, 6 and 7 before giving control to an emulator routine

EMULATOR DUMP

The following items can be found in COMREG :

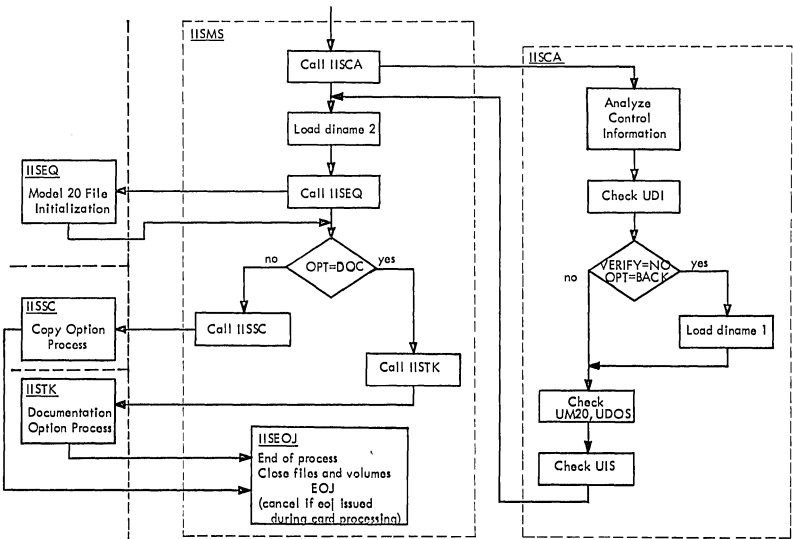
- M20 address 0 (i.e. relocation factor) CRMAPORG
- Contents of M20 registers 8 to 15 CRSAVM20
- M20 PSW (address of the current instruction) CRM20PSW
- First two bytes of the previous M20 instruction CRBYTE12
- The contents of the I-recall register CRICAL

MODEL 20 SECTOR TO SYSTEM/370 DISK RECORD CORRESPONDENCE



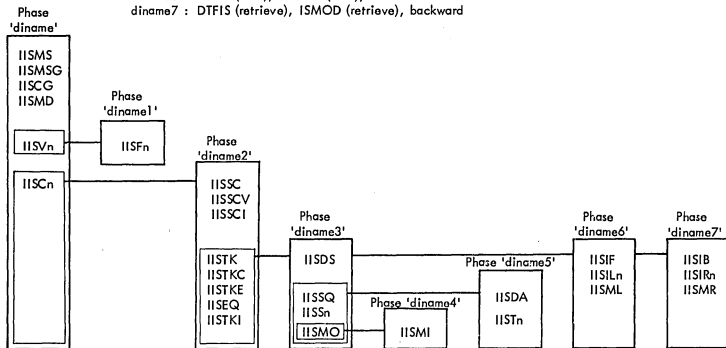
MODEL 20 STANDARD MAIN STORAGE COUNT FIELD

Byte	1	2	3	4	5	6	7	8	9
	0	0	Cylinder Address	0	Head Address	Record Number	0	Data Length 270	



- diname : control among device independence routines, message processing, control card processing, DTFDAs for DPS files with verify, DTFCN, DTFDI, and DIMOD for SYSLSL and SYSIPT, DAMOD
- diname1 : DTFDAs for DPS files with verify specified
- diname2 : DPS file initialization, DPS VTOC and volume processing, and documentation
- diname3 : SAM file processing, DTFSDs, SDMODF0 (forward)
- diname4 : SDMODF1 (backward only)
- diname5 : DTFDAs, DAM processing
- diname6 : DTFIS (load), ISMOD (load), forward
- diname7 : DTFIS (retrieve), ISMOD (retrieve), backward

DATA INTERCHANGE OVERLAY STRUCTURE



DATA INTERCHANGE COMMUNICATION REGION

Operation communication control block (CRHCB)

0	(0)	A (card buffer) CRHBFCDA	
4	(4)	A (print buffer) CRHBFPA	
8	(8)	A (DTFCN) CRHDFCNA	
12	(C)	A (DTFDI SYSLST) CRHDFDIA	
16	(10)	● CRHMSGN	● CRHPMSGN
20	(14)	A (beginning of variable data in card buffer) CRHVADD	
24	(18)	● CRHIMSGN	● CRHFLAGS ● CRHFLP2
28	(1C)	● CRHSCMSG ● CRHREPLY ● CRHERTYP	not used

Generation control block (CRGCB)

32	(20)	CRGDINAM		
36	(24)	Program name		
40	(28)	CRGNAMPT first blank in program name	● CRGDEV20	● CRGDEVDS

Control cards block (CRCCB)

44	(2C)	CRCLID		
84	(54)	M20 file identifier		
88	(58)	CRCLNM		
92	(5C)	File name for DOS representing a DPS file		
96	(60)	CRCFDOS		
100	(64)	File name for DOS file	not used	
104	(68)	CRCLNPT first blank in CRCLNM	● CRCNEXPD	
108	(6C)	● CRCNEXPD	System date YDD	CRCSYSD
112	(70)	CRCDDDM days in system year	● CRCTVNBR	
116	(74)	CRDBLK new block size for DOS file		
120	(78)	● CRCYLXVN	● CRCDFLVN	
124	(7C)	● CRCDDELP ISAM	● CRDELID ISAM	● CRCOPT ● CRCINDIC

● For further explanation see the end of the table

DATA INTERCHANGE COMMUNICATION REGION (...Cont'd)

Data interchange structure block (CRCSB)

1. locates DTFs

2. gives buffer allocation

before execution:

128	(80)	A (IISn) DTFSD DOS file	CRSDDFSD
132	(84)	A (IISTn) DTFDA DOS file	CRSDDFDA
136	(88)	A (ISEQ parameter table)	CRISPTR
140	(8C)	A (IISLn) DTFIS load DOS file	CRSDFISL
144	(90)	A (IISRn) DTFIS retrieve DOS file	CRSDFISR
148	(94)	A (CRSBUFSC3)	CRSECTA
152	(98)	A (current DTF for DOS file)	CRSDDFA
156	(9C)	A (first DTFDA for M20 file)	CRSMDFAI
160	(A0)	A (current DTF for M20 file)	CRSMDFP
164	(A4)	A (second DTFDA for M20 file)	CRSMDFAI2
168	(A8)	A (third DTFDA for M20 file)	CRSMDFAI3

Data interchange structure block (CRSCB)

during execution:

128	(80)	A (DPS block area)	CRSMBA
132	(84)	A (work area DPS cylinder index)	CRSMCYWA
136	(88)	A (ISEQ parameter table)	CRISPTR
140	(8C)	A (work area DPS track index)	CRSMTKWA
144	(90)	•	CRDOSIA
148	(94)	A (CRBUFSC3)	CRSECTA
152	(98)	A (DOS DTF) according to selected option	CRSDDFA
156	(9C)	•	CRSMDFAI
160	(A0)	A (current DTF for M20 file)	CRSMDFP
164	(A4)	•	CRSCYDFA
168	(A8)	•	CRSOVDFA

• For further explanation see the end of the table

DATA INTERCHANGE COMMUNICATION REGION (...Cont'd)

File control block (CRFCB) (file identification part)
Has the same format as the M20 standard file label from bytes 0-92

172	(AC)	CRFFLID			
212	(D4)	DPS file identification			
216	(D8)	format identifier	CRFFSNBR		CRFVSNBR
220	(DC)	file serial number			vol. seq. nbr
224	(E0)	CRFVSNBR	creation date	CRFCRTD	
228	(E4)	expiration date	CRFEXPD	CRFEXTCN ext. count	
232	(E8)	not used			
252	(FC)			file type	CRFILTYP
256	(100)			block length	CRFBLKLG
260	(104)	record length	CRFRECLC	CRFKEYLG key length	CRFKEYLC key loc
264	(108)	CRFKEYLC			

File control block (extent information part) (CRECBEXT), same as F1

and F2 label,	10 bytes by extent 12 entries (max. nmr of extents)	CRFEXTYP	CRFEXNBR seq. number
268	(10C)	CCHH lower limit	CRFEXLOW
272	(110)	CCHH upper limit	CRFEXUPP
388	(184)	386 (182)	
392	(188)	save area for cylinder index extent	
396	(18C)	CRFEXSTN first sector in extent	CRFEXEDN last sector in extent
400	(190)	CRFEXPTR current extent 1 to 12	CRFEXUP number of extents from lbl
404	(194)	CRFBFPT (next extent to be moved in CRECBEXT)	
408	(198)	remaining extents	CRFEXCHK

• For further explanation : see end of the table

DATA INTERCHANGE COMMUNICATION REGION (...Cont'd)

File control block, VTOC information part (CRFCBVT)

Processing of the M20 VTOC label

		410 (19A)	CRFLEXLW first sector (DPS VTOC)
412	(19C)	last sector CRFCXUP	CRFFMTI first sector DPS FI label
416	(1A0)	CRFCVTOC VTOC sector being processed	CRFVOLN DPS vol being processed
420	(1A4)	VTOC • indicators	

File control block, documentation part (CRFCBDOC)

Fields used in processing DPS files documentation

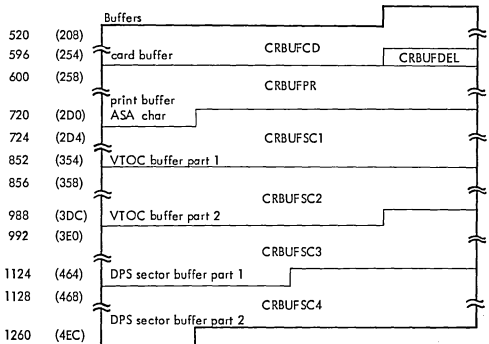
424	(1A8)	CRFVBLK block size max. allowed	CRFTRKC Dos file track capacity
428	(1AĈ)	CRFDOFLG offset last record	CRFMSTK sectors / tracks
432	(1B0)	key length CRFDKYLK	DOS tracks required CRFTRKN
436	(1B4)	number of records processed (DOS or DPS)	CRFDRCC
440	(1B8)	number of records left (extents too small)	CRFDORCC
444	(1BC)	CRFDOCLP extents-print line	CRFVOLAB
448	(1C0)	Vol. ser. number current DPS volume	
452	(1C4)	record size (current DPS file)	CRFM20R
456	(1C8)	CRFM20BK	
460	(1CC)	block size current DPS file	CRFDOSBK
464	(1D0)	max. block size for the device (DOS)	
468	(1D4)	DOS block size specified or default value	CRFDPSPBK
472	(1D8)	• CRFVDIND	not used

• For further explanation : see end of the table

DATA INTERCHANGE COMMUNICATION REGION (...Cont'd)

File control block, file conversion part
(Fields related to forward and backward copies)

			•	CRFDASTN
476	(1DC)	CRFDAEDN end of data area sector		CRFBNSCB number of sectors in DPS block
480	(1E0)	CRFBNRCB DPS blocking factor		CRFBFSCB beginning of DPS block
484	(1E4)	CRFBLSCB end DPS block		CRDNRCB DOS blocking factor
488	(1E8)	•	CRMERBYT	•
492	(1EC)	track reference in DTFDA for DPS file		CRFMREF
496	(1F0)	track reference in DTFDA for DOS file		CRFDREF
500	(1F4)	CRFDKEY		
504	(1F8)			
508	(1FC)	A (first prime data track)		CRVF2D4
512	(200)	CRVF2D6 overflow tracks		CRVF2ADR sector number of F2 label
516	(204)	CRFDNTRK rec/track	•	•



• For further explanation see the end of the table

DATA INTERCHANGE COMMUNICATION REGION FLAG BYTE LAYOUT

Displacement Dec	Hex	Field	Bytes	Field description
16	C	CRHMSGN	2	Internal number of next priority 1 message
24	18	CRHIMSGN	2	Internal number of entry in message directory
26	1A	CRHFLAGS	1	Message flags
		CRHTYI	10000000	Information
		CRHTYD	01000000	Decision
		CRHTYA	00100000	Action
		CRHTYB	00001000	Automatic EOJ
		CRHTYC	00000100	Another to be printed
		CRHTYP	00000010	Message on printer keyboard
		CRHTYS	00000001	Message on SYSLST
27	1B	CRHFLP2	1	Flags for priority 2 messages
		CRHERMSG	00000010	Invalid response to action or decision message
		CRHPRMSG	00000001	HELP entered
28	1C	CRHSMSG	1	Screening mask for message directory
		CRHSVCVRY	10000000	Any reply is valid
		CRHSCEOJ	01000000	EOJ is valid
		CRHSCKP	00100000	SKIP is valid
		CRHSCIGN	00010000	IGN is valid
		CRHS CRTY	00001000	RETRY is valid
29	1D	CRHREPLY	1	Reply made by operator
		CRHRPVRY	10000000	Other than EOJ, SKIP, IGN, RETRY
		CRHRPEOJ	01000000	EOJ
		CRHRPSKP	00100000	SKIP
		CRHRPIGN	00010000	IGN
		CRHRPRTY	00001000	RETRY
30	1B	CRHERTYP	1	Control card error type
42	2A	CRGDEV20	1	DPS device specified at generation
		CRGM2011	10000000	2311
		CRGM2014	01000000	2314 or 2319
		CRGM2030	00100000	3330
		CRGM2040	00010000	3340
43	2B	CRGDEVDS	1	DOS device specified at generation
		CRGDOS11	10000000	2311
		CRGDOS14	01000000	2314 or 2319
		CRGDOS30	00100000	3330
		CRGDOS40	00010000	3340
106	6A	CRCNEXPD	3	New expiration date for M20 file YDD
114	72	CRC TVNBR	2	Number of DPS volume to be processed
120	78	CRCYLXVN	2	ISAM, DPS volume that contains the cylinder index. Default value is one
122	7A	CRCDFLVN	2	ISAM, DPS volume that contains the independent overflow. Zero if no overflow area.
124	7C	CRCDELP	2	ISAM copy. Position of delete byte in record zero if no record deletion
126	7E	CRDELEID	1	ISAM copy. Delete byte, X'FF' is default.

DATA INTERCHANGE COMMUNICATION REGION FLAG BYTE LAYOUT (. . . Cont'd)

Displacement Dec	Hex	Field	Bytes	Field description
127	7F	CRCOPT CRCFWCY CRCBWCY CRCFDOC CRCVDOC CRCINDIC CRCVRFY CRUISF CRDOSIA	Half byte 1000 0100 0010 0001 Half byte 1000 0100 4	Options Forward Backward File documentation Volume documentation Indicators Verify specified UIS Card
144	09	CRSMDFA1	4	A(DOS IOAREA) for SAM and DAM or DOS WORKL for ISAM forward ISAM:
156	9C	CRSMDFA1	4	A (DTF to process prime data area extent) Other file :
164	A4	CRSCYDFA	4	A (DTF to process the extent) Non Isam file: points to DFDA addressed by CRSMDFA1 ISAM Multivolume: A (DTFDA to process the cylinder index extent) except if cylinder index and independent overflow are on the same volume
168	A8	CRSOVDFA	4	ISAM file: A(DTFDA to process independent overflow extent A(DTFDA to process the independent overflow extent and the cylinder index extent) if they are on the same volume
254	FE	CRFILTYF CRFISEQ CRFSEQ CRFDA	2 X'8000' X'4000' X'2000'	File type ISAM SAM DAM
266	10A	CRFEXTYP CRCYLTYF CROVTYF CRPDTYF	1 00000100 00000010 00000010	Extent type Cylinder extent Overflow area Prime data or consecutive area
420	1A4	----- CRFVTOCF CRFVTOCE CRFVNOF1 CRFVNOF3 CRFVOLNB CRVOLF1 CRVOLF3 CRINITSW CRFVDIND CRFVDR2H CRFVDB2H CRFVDBDH CRFVDBDM CRFVEXIN	1 10000000 01000000 00100000 00010000 00001000 00000100 00000010 00000001 1 10000000 01000000 00100000 00010000	VTOC indicators First half of DPS sector being processed (bit 1=0 indicates second half) End of DPSVTOC has been encountered No format 1 label No format 3 label Incorrect volume number Next F1 label to be read Next F3 label to be read File to be opened (DPS file initialization) Documentation indicators DPS record size greater than track capacity DPS block size greater than track capacity DOS block size greater than track capacity DOS block size is not a multiple of DPS block size No extent found in F1 label
472	ID8			

DATA INTERCHANGE COMMUNICATION REGION FLAG BYTE LAYOUT (Cont'd)

Displacement Dec	Hex	Field	Bytes	Field description
474	1D4	CRFDASTN	2	Sector number beginning of data area SAM=DPS cylinder DAM=DPS extent ISAM=DPS prime data cylinder } data area
488	1E8	CRMERBYT	2	Error indicators from ERRBYTE DOS DTFDA defining the M20 file
490	1EA	CRDERBYT	2	Error indicators from ERRBYTE DOS DTFDA defining the DOS file (DAM only)
500	1F4	CRFDKEY	8	DOS file key (DA copy) which is the M20 ID (MBBCHHR)

Note: GPR3 points to the data interchange communication region.

Problem determination aids: use the diagnostics facilities of DOS/VS

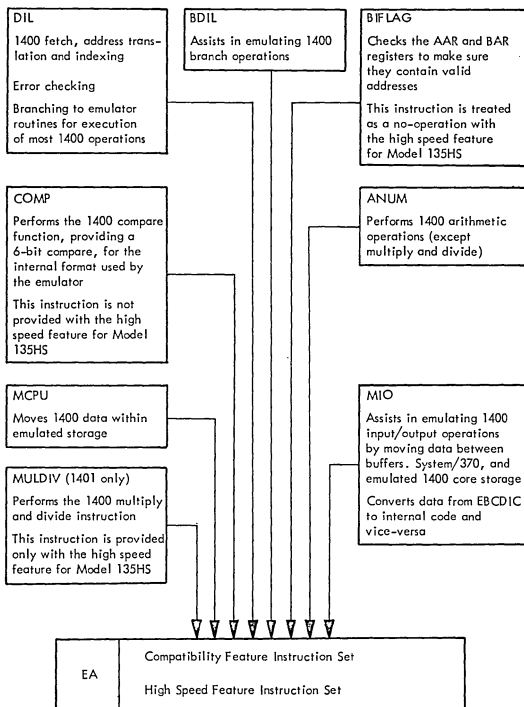
The DI Program is not dependent on the Hardware compatibility feature # 7520 and can run on any model supported by DOS/VS

CHAPTER V

14xx EMULATOR

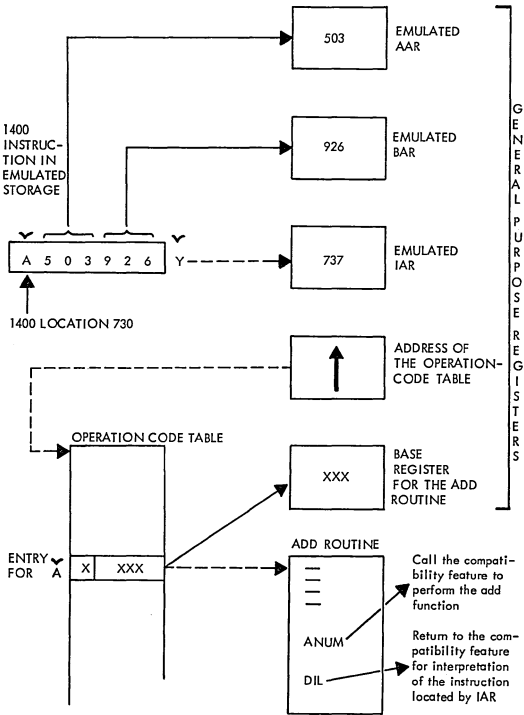


1401/1440/1460 AND 1410/7010 COMPATIBILITY FEATURE INSTRUCTIONS



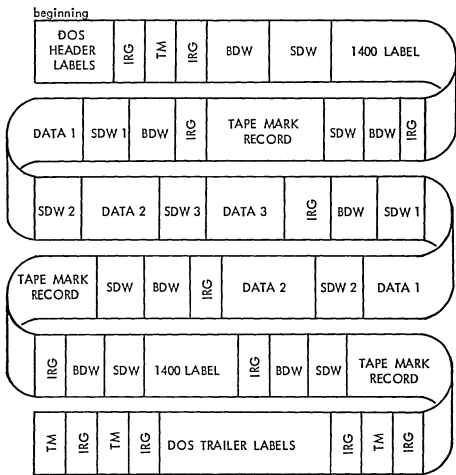
1401/1440/1460 AND 1410/7010

HOW DIL INSTRUCTION FETCHES 1400 INSTRUCTION



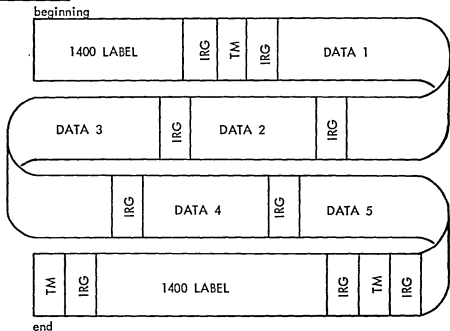
1401/1440/1460 AND 1410/7010

TAPES IN SPANNED FORMAT AND 1400 FORMAT



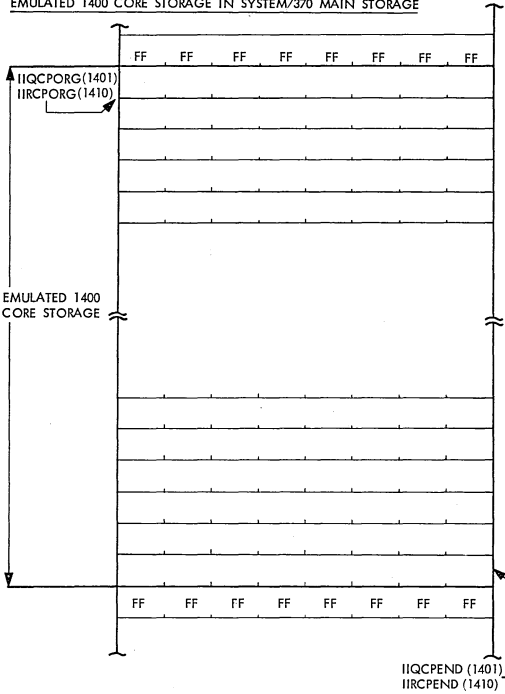
TM = Tape mark
 IRG = Inter-record gap
 BDW = Block descriptor word
 SDW = Segment descriptor word

1400 FORMAT



1401/1440/1460 AND 1410/7010

EMULATED 1400 CORE STORAGE IN SYSTEM/370 MAIN STORAGE



SYSTEM/370 BYTE	1400 CHARACTER
0	bit 8
1	bit 4
2	bit 2
3	bit 1
4	bit B
5	bit A
6	bit M
7	bit always 0

EXAMPLE:
 CWBA8421
 in BCD format becomes:
 8421BAWC
 in internal format.

1401/1440/1460 AND 1410/7010 COMPATIBILITY FEATURE

REGISTER	BYTE 0	BYTES 1,2 AND 3	COMMENTS
2	Zero	Zero	Work register for compatibility feature
3(COMREG)	Zero for valid address	Communication region base register	Binary address of communication region
4 (BAR)	Zero for valid address	B - address register	Binary address of current 1400 B - field
5 (AAR)	Zero for valid address	A- address register	Binary address of current 1400 A - field
6 (IAR)	DILCNT	1400 instruction counter	Binary address of next 1400 instruction to be fetched
7(BASOP)	Control byte	Emulation routine base register	Binary address of emulation routine

Contents of GPR 2 through GPR 7 used by the compatibility feature

Emulator Unit Control Block (EUCB)

One for each device to be emulated.
Created at generation time, modified with emulator control statements.

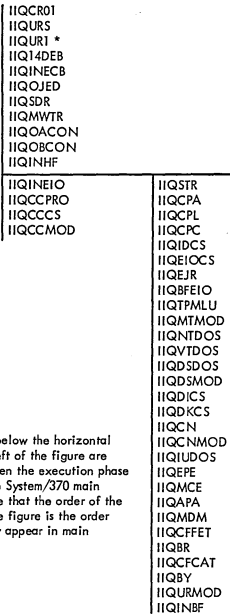
- SUB For tape drive and UR device.
- DUB For each DA device.
Followed by a disk extent table (DUBEXTPT) used to locate 1400 disks in CS format on S/370 disk pack.
- EMDTF Interface between DOS logical or physical IOCS and emulation routines of the emulator.
Contains: CCW and CCB or DTFPH for the file, EOF indicator, parity, error indicator, data address.

Emulator Channel Control Block (1410/7010 only) (ECCB)

For each emulated 1400 channel.
Contains: channel status indicator, device assignment table, EAR, FAR, GAR, or HAR

1401/1440/1460 PROGRAM ORGANIZATION

Emulator program overlay tree:



The CSECTs below the horizontal line on the left of the figure are overlayed when the execution phase is loaded into System/370 main storage. Note that the order of the CSECTs in the figure is the order in which they appear in main storage.

Emulator CSECTs (by function)

Initialization	CPU emulation	I/O emulation		Emulator services	Catalog and fetch
IIQINENT	IIQCPA	IIQURS	IIQDSMOD	IIQ14DEB	IIQCFFET
IIQINECB	IIQCPL	IIQIDCS	IIQDICS	IIQOJED	IIQFCAT
IIQINHf	IIQCPC	IIQEIOCS	IIQDKCS	IIQSDR	
IIQINEIO	IIQCBPE	IIQBFEO	IIQCN	IIQMWTR	
IIQINBF	IIQMCE	IIQTPMLU	IIQCNMOD	IIQOACON	
	IIQAPA	IIQMTMOD	IIQUIUDOS	IIQOBCON	
	IIQMMDM	IIQNTDOS	IIQURMOD	IIQCCPRO	
	IIQBR	IIQVTDOS	IIQUR1 *	IIQCCCS	
	IIQBY	IIQSDSOS		IIQCCMOD	
				IIQSTR	
				IIQEJR	

* Note: IIQUR1 is created if a carriage control tape is to be used on the S/370 printer (CARRCTL=NO)

1401/1440/1460 DISK FORMAT

PP bb	LL bb	EMUL	SECTOR 1			LL bb	EMUL	SECTOR 20
2164 00	108 00	CTL	100 bytes			108 00	CTL	100 bytes

Format of a System/370 record representing a 1301 or 1311 track (sector mode)

PP bb	LL bb	EMUL		TRACK
2992 00	2988 00	CTL		2980 bytes

Format of a System/370 record representing a 1311 track (track mode)

PP bb	LL bb	EMUL		TRACK
2555 00	2551 00	CTL		2543 bytes

Format of a System/370 record representing a 1301 track (track mode)

PP bb	LL bb	EMUL	SECTOR 1			LL bb	EMUL	SECTOR 5
1044 00	208 00	CTL	200 bytes			208 00	CTL	200 bytes

Format of a System/370 record representing a 1405 track

PP bb	:	The first two bytes contain the length of the System/370 physical record; the last two are set to zero.
LL bb	:	The first two bytes contain the length of a System/370 logical record; the last two are set to zero.
EMULCTL	:	This 4-byte field is set to zero except for the first bit of the first byte: Bit 0 = 0, move mode Bit 0 = 1, load mode
SECTOR AND TRACK	:	This field contains the 1400 data.

Disk format	Load mode	Move mode
1301 or 1311 sector mode	90	100
1301 track mode	2261	2543
1311 track mode	2682	2980
1405	176	200

Number of 1400 Characters in System/370 Disk Records

1401/1440/1460

1400 ADDRESSES AND CORRESPONDING MACHINE CODES

ADDRESSES 0000-3999		ADDRESSES 4000-7999 A-bit (0-Zone) over Units Position		ADDRESSES 8000-11999 B-bit (11-Zone) over Units Position		ADDRESSES 12000-15999 AB-bits (12-Zone) over Units Position		
Addresses	Codes	Addresses	Codes	Addresses	Codes	Addresses	Codes	
0000-0099	000-099	4000-4099	00x-09Z	8000-8099	00p-00R	12000-12099	00g-09I	
0100-0199	100-199	4100-4199	10x-19Z	8100-8199	10p-19R	12100-12199	10g-19I	
0200-0299	200-299	4200-4299	20x-29Z	8200-8299	20p-29R	12200-12299	20g-29I	
0300-0399	300-399	4300-4399	30x-39Z	8300-8399	30p-39R	12300-12399	30g-39I	
0400-0499	400-499	4400-4499	40x-49Z	8400-8499	40p-49R	12400-12499	40g-49I	
0500-0599	500-599	4500-4599	50x-59Z	8500-8599	50p-59R	12500-12599	50g-59I	
0600-0699	600-699	4600-4699	60x-69Z	8600-8699	60p-69R	12600-12699	60g-69I	
0700-0799	700-799	4700-4799	70x-79Z	8700-8799	70p-79R	12700-12799	70g-79I	
0800-0899	800-899	4800-4899	80x-89Z	8800-8899	80p-89R	12800-12899	80g-89I	
0900-0999	900-999	4900-4999	90x-99Z	8900-8999	90p-99R	12900-12999	90g-99I	
A-bit (0-Zone)	1000-1099	x00-x99	5000-5099	x0x-x9Z	9000-9099	x0p-x9R	13000-13099	x0g-x9I
	1100-1199	/00-/99	5100-5199	/0x-/9Z	9100-9199	/0p-/9R	13100-13199	/0g-/9I
	1200-1299	500-599	5200-5299	50x-59Z	9200-9299	50p-59R	13200-13299	50g-59I
	1300-1399	T00-T99	5300-5399	T0x-T9Z	9300-9399	T0p-T9R	13300-13399	T0g-T9I
	1400-1499	U00-U99	5400-5499	U0x-U9Z	9400-9499	U0p-U9R	13400-13499	U0g-U9I
	1500-1599	V00-V99	5500-5599	V0x-V9Z	9500-9599	V0p-V9R	13500-13599	V0g-V9I
	1600-1699	W00-W99	5600-5699	W0x-W9Z	9600-9699	W0p-W9R	13600-13699	W0g-W9I
	1700-1799	X00-X99	5700-5799	X0x-X9Z	9700-9799	X0p-X9R	13700-13799	X0g-X9I
	1800-1899	Y00-Y99	5800-5899	Y0x-Y9Z	9800-9899	Y0p-Y9R	13800-13899	Y0g-Y9I
1900-1999	Z00-Z99	5900-5999	Z0x-Z9Z	9900-9999	Z0p-Z9R	13900-13999	Z0g-Z9I	
B-bit (11-Zone)	2000-2099	p00-p99	6000-6099	p0x-p9Z	10000-10099	p0p-p9R	14000-14099	p0g-p9I
	2100-2199	J00-J99	6100-6199	J0x-J9Z	10100-10199	J0p-J9R	14100-14199	J0g-J9I
	2200-2299	K00-K99	6200-6299	K0x-K9Z	10200-10299	K0p-K9R	14200-14299	K0g-K9I
	2300-2399	L00-L99	6300-6399	L0x-L9Z	10300-10399	L0p-L9R	14300-14399	L0g-L9I
	2400-2499	M00-M99	6400-6499	M0x-M9Z	10400-10499	M0p-M9R	14400-14499	M0g-M9I
	2500-2599	N00-N99	6500-6599	N0x-N9Z	10500-10599	N0p-N9R	14500-14599	N0g-N9I
	2600-2699	O00-O99	6600-6699	O0x-O9Z	10600-10699	O0p-O9R	14600-14699	O0g-O9I
	2700-2799	P00-P99	6700-6799	P0x-P9Z	10700-10799	P0p-P9R	14700-14799	P0g-P9I
	2800-2899	Q00-Q99	6800-6899	Q0x-Q9Z	10800-10899	Q0p-Q9R	14800-14899	Q0g-Q9I
	2900-2999	R00-R99	6900-6999	P0x-P9Z	10900-10999	R0p-R9R	14900-14999	R0g-R9I
AB-bits (12-Zone)	3000-3099	g00-g99	7000-7099	g0x-g9Z	11000-11099	g0p-g9R	15000-15099	g0g-g9I
	3100-3199	A00-A99	7100-7199	A0x-A9Z	11100-11199	A0p-A9R	15100-15199	A0g-A9I
	3200-3299	B00-B99	7200-7299	B0x-B9Z	11200-11299	B0p-B9R	15200-15299	B0g-B9I
	3300-3399	C00-C99	7300-7399	C0x-C9Z	11300-11399	C0p-C9R	15300-15399	C0g-C9I
	3400-3499	D00-D99	7400-7499	D0x-D9Z	11400-11499	D0p-D9R	15400-15499	D0g-D9I
	3500-3599	E00-E99	7500-7599	E0x-E9Z	11500-11599	E0p-E9R	15500-15599	E0g-E9I
	3600-3699	F00-F99	7600-7699	F0x-F9Z	11600-11699	F0p-F9R	15600-15699	F0g-F9I
	3700-3799	G00-G99	7700-7799	G0x-G9Z	11700-11799	G0p-G9R	15700-15799	G0g-G9I
	3800-3899	H00-H99	7800-7899	H0x-H9Z	11800-11899	H0p-H9R	15800-15899	H0g-H9I
	3900-3999	I00-I99	7900-7999	I0x-I9Z	11900-11999	I0p-I9R	15900-15999	I0g-I9I

Note : The symbols *, ! and ? have been replaced by the letters x, p and g, respectively since this is the method of display on the 1052 Printer-KeyBoard.

1401/1440/1460 PROBLEM DETERMINATION AIDS

Dynamic Service Aids, format of emulator commands :

IDENTIFI- CATION	KEYWORD AND OPERANDS	FUNCTION
DISPLAY	CONFIG ADDR=nnnnn XADDR=nnnnnn SENSE INQUIRY REG STATUS TAPE [=n] DISK [=n] UR	Assignment of all I/O devices . 40 Characters of 1400 core storage from 1400 decimal address nnnnn . WM are displayed as one underscore Word separator as 2 (--) . 4 Fullwords of S/370 main storage data from hex address nnnnnn . Emulated sense switches from A to G . Inquiry indicator . IAR, AAR, BAR . Switches and IAR, BAR, AAR. Assignment of tape unit n . Default value is display all . Assignment of disk storage n . Default is display all . Assignment of all UR devices
DEBUG	ACTION= { SET RESET } (nnnn) TYPE= { ADSTOP STEP TRACE }	Emulates certain debugging functions . Only one is active at a given time . Next command cancels the effect of the previous one . DEBUG=YES must be coded in the EMSUP macro . SET= enables TYPE=SET or TYPE=TRACE RESET= disable TYPE action nnnn= 1400 stop address ADSTOP= 1400 stop address emulation STEP= I/E Mode switch emulation TRACE= lists on SYSLST all 1400 instructions executed and AAR, IAR, BAR.
DUMP	FROM=a, TO=b XFROM=a, XTO=b	Dumps onto SYSLST the 1400 core storage or the S/370 main storage . Default value is all 1400 core storage dumped . DEBUG=YES must be coded in the EMSUP macro . 1400 Core storage . a and b are decimal from 1 to 5 digits long . Default value is all core dumped . S/370 Main storage . a and b are hex from 1 to 6 digits long . Default value is all storage dumped .
RETRY		Used to reread a card that has just been corrected . May be used only if 1400 card are read on a 2540 or a 3505 .

1401/1440/1460 PROBLEM DETERMINATION AIDS (...Cont'd)

Emulator Routine in Error

If an emulator message has been issued, the message explanation should give some idea as to the nature of the error. The Logic Manual lists all the routines that can issue a particular message.

- Determine which 1400 instruction was being emulated at error time.
- IAR normally points to the next 1400 instruction to be emulated.
- Use IAR, program listing or dump to locate the 1400 instruction to be emulated.
- The last 1400 I/O instruction emulated (M, L or U op-code) is stored at CCINSTSV.

Communication Region

GPR 3 should point to it which is on a 256 byte boundary (first 512 bytes are put on the same page).

- If GPR 3 does not point to the COMREG, locate IIQCR01 in the linkedit map. The COMREG is located at the next 256 byte boundary address.

Emulated 1400 Core Storage

- Beginning address : CRMAPORG
- Ending address : CRMAPEND
- 1400 core storage is bounded at each end by a double word containing X'FF'.

Control Blocks and buffers

- Buffers and DTF's can be located using pointers in the SUB or DUB of the emulated device.
- To find a SUB or DUB, find a displacement in the device assignment table at CCASNDEV in the COMREG (displacement 8D0) and the address of the UCB address list at CMUCBLST (displacement 888). Using the value from CCASNDEV multiplied by 4, as an index, get the address of the corresponding SUB or DUB,
 - or : When control has been given to I/O emulation and DOS interface routines, get the address of the SUB or DUB involved from GPR 9 ,
 - or : As the file name is in BCD in the SUB and DUB, find it in the dump between the COMREG and emulated 1400 core storage.

1400 Registers

The IAR, BAR, AAR are maintained in S/370 binary format, use emulator commands DISPLAY=REG or DISPLAY=STATUS to display the contents of those registers.

Note : COMREG stands for Communication Region.

1401/1440/1460 TABLE OF REGISTER USAGE

ROUTINE	REGISTER CONTENTS AT ENTRY EMULATOR ROUTINES
IIQEP	Same as IIQAP
IIQID	3 - Address of communication region 4 - BAR 5 - AAR 6 - IAR 7 - Base register for this routine 13 - Save area address provided by this routine
IIQIU	Same as IIQDS
IIQMC	Same as IIQAP
IIQMD	Same as IIQAP
IIQMW	0 - Address of variable text or zero 1 - Message number of message to be issued 13 - Address of caller's register save area 14 - Return address 15 - Entry point address
IIQNT	Same as IIQDS
IIQOA	0 - Address of variable text or zero, or length of operator's reply on return from IIQMW 1 - Message number of message to be issued or address of operator's reply on return from IIQMW
IIQOB	0 - Length of the emulator command or control statement 1 - Address of the emulator command or control statement
IIQOC thru IIQOK	0 - Address of a parameter list
IIQTP	3 - Address of communication region 9 - Address of SUB 13 - Address of caller's register save area 14 - Return address 15 - Entry point address and DILCNT interruption indication
IIQSD	3 - Address of communication region 13 - Address of caller's register save area 14 - Return address 15 - Entry point address
IIQST	3 - Address of communication region 7 - Base register for this routine
IIQUR	3 - Address of communication region 4 - BAR 13 - Address of caller's register save area 14 - Return address 15 - Entry point address and DILCNT interruption indication
IIQUR1	3 - Address of communication region 4 - BAR 9 - Address of printer SUB 13 - Address of caller's register save area 14 - Return address 15 - Entry point address

1401/1440/1460 TABLE OF REGISTER USAGE (...Cont'd)

ROUTINE	REGISTER CONTENTS AT ENTRY EMULATOR ROUTINES
IIQVT	Same as IIQDS
IIQAP	3 - Address of communication region 4 - BAR 5 - AAR 7 - Base register for this routine
IIQCN	3 - Address of communication region 4 - BAR 9 - Address of SUB 14 - Return address 15 - Entry point address
IIQCP	3 - Address of communication region 4 - BAR 5 - AAR 7 - Base register for this routine
IIQDI	3 - Address of communication region 4 - BAR 5 - AAR 9 - Address of DUB 14 - Return address 15 - Entry point address
IIQDK	Same as IIQDI
IIQDS	0 - Code indentifying function to be performed 1 and 9 - Address of SUB 3 - Address of communication region
IIQEI	0 - Code indentifying function to be performed 1 - Address of SUB or DUB

- Note that the DILCNT, set by unit record and tape emulation routines for overlapped I/O operations, is in the seven leftmost bits of GPR 6.
- The compatibility feature DIL instruction sets GPR 4, GPR 5, GPR 6, and GPR 7 (BAR, AAR, IAR, and base register) before giving control to an emulator program routine. The compatibility feature also uses GPR 2 as a work register.
- Register usage remains the same throughout the execution of a given routine. In addition, note that GPR 15 is used for return codes by IIQEI, IIQDS, IIQIU, IIQMW, IIQNT, IIQVT, and IIQOC through IIQOI.

1410/7010 PROGRAM ORGANIZATION

Emulator program overlay tree:

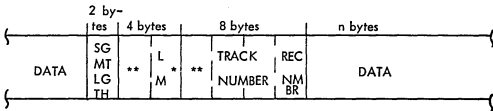
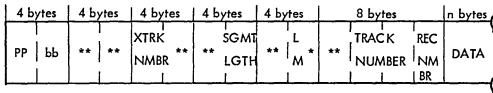
IIRINENT	
IIRURS	
IIRCRC2	
IIRCRC1	
IIR14DEB	
IIRINECB	
IIROJED	
IIRMWTR	
IIRSDR01	
IIROACON	
IIROBCON	
IIRINHF	
IIRINEIO	IIRSTR
IIRCCPRO	IIRCP
IIRCCMOD	IIRFP
	IIRST
	IIRPR
	IIRISDCS
	IIREIOCS
	IIREJR
	IIRBFEIO
	IIRTPMLU
	IIRMTMOD
	IIRNTDOS
	IIRVTDOS
	IIRDSMOD
	IIRSDOS
	IIRDCC
	IIRDK0
	IIRIUDOS
	IIRMIM
	IIRMIC
	IIRIS
	IIRURMOD
	IIRDK1
	IIRINBUF

The CSECTs on the left of the figure, below the horizontal line, are overlayed when the execution phase is loaded into System/370 main storage.

Emulator Program CSECT Layout

INITIALIZATION	CPU EMULATION	I/O EMULATION	EMULATOR SERVICES
IIRINENT	IIRCP	IIRURS	IIROJED
IIRINECB	IIRFP	IIRIDCS	IIRMWTR
IIRINHF	IIRST	IIREIOCS	IIRSDR
IIRINEIO	IIRPA	IIRBFEIO	IIROACON
IIRINBUF	IIRMIM	IIRTPMLU	IIROBCON
	IIRMIC	IIRMTMOD	IIRCCPRO
		IIRNTDOS	IIRCCMOD
		IIRVTDOS	IIRSTR
		IIRDSMOD	IIR14DEB
		IIRSDOS	IIREJR
		IIRDCC	
		IIRDK0	
		IIRIUDOS	
		IIRIS	
		IIRURMOD	
		IIRDK1	

1410/7010 DISK FORMAT



Each System/370 disk record represents one 1400 disk track.

PP	:	Length of the S/370 physical record 1301 Mod 1 and 2 : 2,828 bytes 1302 Or 2302 Mod 1 and 2 : 5,878 bytes
bb	:	Set to zero
XTRK	:	Hex number of the 1400 track (first trk is 0)
NMBR	:	First byte : bit 0 = 0 move mode = 1 load mode
SGMT	:	Sum of the length of the control information field
LGTH	:	(14 bytes) and the 1400 data field
LM	:	Bit 0 = 0 move mode = 1 load mode
TRACK	:	
NM3R	:	Decimal number of the 1400 track
REC	:	
NMBR	:	Decimal number of the record (first record is 0)
**	:	Not used

DISK FORMAT	LOAD MODE CHARACTERS	MOVE MODE CHARACTERS
1301 Models 1 and 2	2165	2800
1302 or 2302 Models 1 and 2	4533	5850

Number of 1400 characters in System/370 Disk Records

1410/7010 TABLE OF REGISTER USAGE

MODULE	REGISTER CONTENTS AT ENTRY
IIRCP	3 - Address of the communication region 4 - BAR 5 - AAR 7 - Base register
IIRDK	3 - Address of the communication region 4 - BAR 5 - AAR 9 - Address of the DUB 10 - Address of the ECCB 14 - Return address 15 - Entry point address
IIRDL	Same as IIRDK
IIRDS	0 - Code indentifying the function to be performed 1 and 9 - Address of the DUB or the SUB 3 - Address of the communication region
IIREI	0 - Code indentifying the function to be performed 1 - Address of a DUB or SUB
IIRID	3 - Address of the communication region 4 - BAR 5 - AAR 6 - IAR 7 - Base register 13 - Save area address
IIRIU	Same as IIRDS
IIRMI	Same as IIRCP
IIRFDP	Same as IIRCP
IIRPR	Same as IIRCP
IIRST	Same as IIRCP
IIRMW	0 - Address of variable text or zero 1 - Message number of message to be issued 13 - Address of caller's register save area 14 - Return address 15 - Entry point address
IIRNT	Same as IIRDS
IIROA	0 - Address of variable text or zero, or length of 68160r operator's reply on return from IIRMIO 1 - Message number of message to be issued or address of an operator's reply on return from IIRMIO
IIROB	0 - Length of the emulator command or control statement 1 - Address of the emulator command or control statement
IIROC thru IIROK	0 - Address of a parameter list

1410/7010 TABLE OF REGISTER USAGE (...Cont'd)

MODULE	REGISTER CONTENTS AT ENTRY
IIRTP	3 - Address of the communication region 9 - Address of the SUB 10 - Address of the ECCB 13 - Address of caller's register save area 14 - Return address 15 - Entry point address and DILCNT interruption indication
IIRSD	3 - Address of the communication region 13 - Address of caller's register save area 14 - Return address 15 - Entry point address
IIRST	3 - Address of the communication region 7 - Base register
IIRVT	Same as IIRDS

- Note that GPR 15 is used for return codes by IIREI, IIRDS, IIRIU, IIRMW, IIRNT, IIRVT, and IIROC through IIROI and IIROK.
- The compatibility feature DIL instruction sets up GPR 4, GPR 5, GPR 6, and GPR 7 (the BAR, AAR, IAR, and entry point address for the routine given control), before giving control to an emulator program routine. The compatibility feature also uses GPR 2 as a work register.

1410/7010 PROBLEM DETERMINATION AIDS

Dynamic Service Aids, format of emulator commands :

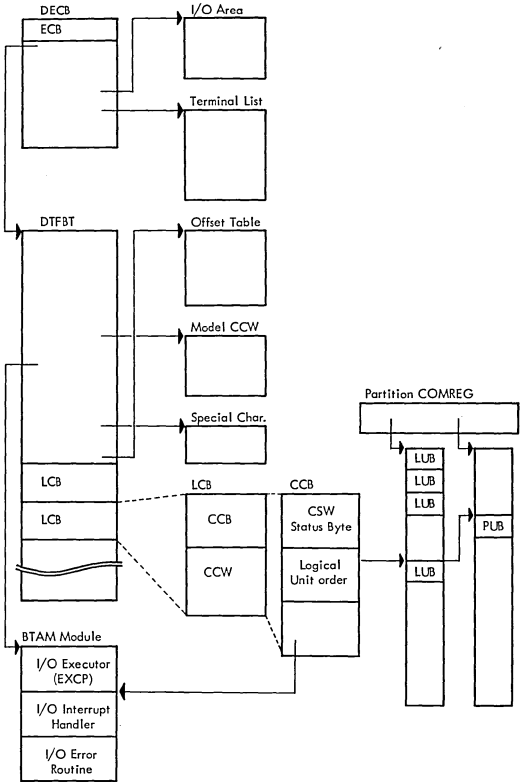
IDENTIFICATION	KEYWORD AND OPERANDS	COMMENTS
DISPLAY	SWITCH REG STATUS TAPE [=cn] DISK [=cma] UR CONFIG ADDR=nnnnn XADDR=nnnnnn	Displays on SYSLOG Status of the inquiry indicator IAR, AAR, BAR Switches and IAR, AAR, BAR Assignment of tape unit cn (c=channel, n=unit) Default value is display all Assignment of disk storage cma (c=channel, m=module, a=unit) Default value is display all Assignment of all unit record devices Assignment of all I/O devices 40 Characters of 1400 core storage from 1400 decimal address 'nnnnn'. WM are displayed as one underscore Word separator as 2 (--) 4 Fullwords of S/370 main storage data from hex address 'nnnnnn'
DEBUG	ACTION= { nnnnn SET RESET } TYPE= { ADSTOP STEP TRACE }	Emulates certain debugging functions. Only one is active at a given time. Next command cancels the effect of the previous one. DEBUG=YES must be coded in the EMSUP macro. 'nnnnn' = 1400 stop address SET = enable TYPE=SET or TYPE=TRACE RESET = disable TYPE action ADSTOP = 1400 stop address emulation STEP = I/E Mode switch emulation TRACE = lists on SYSLST all 1400 instructions executed and AAR, IAR, BAR
DUMP	FROM=a, TO=b XFROM=a, XTO=b	Dumps onto SYSLST the 1400 core storage or the S/370 main storage. Default value is all 1400 core storage dumped. DEBUG=YES must be coded in the EMSUP macro 1400 core storage (a and b are decimal from 1 to 5 digits long. Default value is all core dumped. S/370 main storage (a and b are hex from 1 to 6 digits long. Default is all storage dumped.

CHAPTER VI

BTAM



CONTROL BLOCK LINKAGES



DTFBT TABLE

	0	1	2	3
0(0)	LCB Count	LCB Size	Feature Flags	
4(4)	Flag Byte 1 or IAM	WRU	EOM	EOT
8(8)	DTFBT Flags	Buffer Control Block Address		
12(0C)	Device Code	Address of CCW Model Table		
16(10)	DTFBT Length 16	Address of BTAM Logic		
20(14)	DTF Type + Code	Flag Byte 2	Message Length or Mondly	
24(18)	Retry Count	Address of Table of specific characters		
28(1C)	2x Retry Count	Line Error Block Address		
32(20)	Address of Table of Offsets			
36(24)	Reserved			
40(28)	CCB-LCB Area (See Line Control Blocks)			
	Buffer Pool (if any)			

DTFBT Table Explanation

Byte(s)	Description																							
	Meaning	Source																						
0 (0) LCB Count	The number of LCB's in this DTFBT	Generated by the DTFBT macro by analyzing the LINELST keyword operand																						
1 (1) LCB Size	The number of bytes in each LCB in this DTFBT	Computed by DTFBT macro expansion from the DE-VICE and FEATURE operands																						
2-3 (2-3) Feature Flags	Describes device features : First byte (2) <table border="1"> <thead> <tr> <th>Bit Configuration</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>B'10000000'</td> <td>SIX</td> </tr> <tr> <td>B'01000000'</td> <td>SXW</td> </tr> <tr> <td>B'11000000'</td> <td>SIW</td> </tr> <tr> <td>B'00100000'</td> <td>RIX</td> </tr> <tr> <td>B'00010000'</td> <td>RXW</td> </tr> <tr> <td>B'00110000'</td> <td>RIW</td> </tr> <tr> <td>B'00001000'</td> <td>SLV</td> </tr> <tr> <td>B'00000100'</td> <td>BSC</td> </tr> <tr> <td>B'00000010'</td> <td>Reserved</td> </tr> <tr> <td>B'00000001'</td> <td>OIU</td> </tr> </tbody> </table>	Bit Configuration	Meaning	B'10000000'	SIX	B'01000000'	SXW	B'11000000'	SIW	B'00100000'	RIX	B'00010000'	RXW	B'00110000'	RIW	B'00001000'	SLV	B'00000100'	BSC	B'00000010'	Reserved	B'00000001'	OIU	DTFBT macro operand FEATURE
Bit Configuration	Meaning																							
B'10000000'	SIX																							
B'01000000'	SXW																							
B'11000000'	SIW																							
B'00100000'	RIX																							
B'00010000'	RXW																							
B'00110000'	RIW																							
B'00001000'	SLV																							
B'00000100'	BSC																							
B'00000010'	Reserved																							
B'00000001'	OIU																							

DTFBT TABLE (. . . .Cont'd)

DTFBT Table Explanation

Byte(s)	Description	
	Meaning	Source
<u>2-3</u> (2-3) Feature Flags (Cont'd)	Second byte (3) <u>Bit Configuration</u> <u>Meaning</u> B'10000000' Station Control (STC) B'01000000' Transmit Control (TRC) B'00100000' Checking (CHK) B'00010000' PCI B'00001000' Start-stop Auto Poll Bits 5-7 of the second byte are reserved	
<u>4</u> (4) IAM or Flag Byte 1	Describes WTTA device feature ----- Local 2260/local 3270 Flags : <u>Bit Configuration</u> <u>Meaning</u> B'10000000' On-line Terminal Test Flag B'00010000' Local 2260 and local 3270 RESTPL Inhibit Flag B'00001000' Local 2260 and local 3270 NOP Wait Flag B'00001000' BSC Valid First Character Flag (used by IJLM-ARTN) B'00000100' Local 2260 and local 3270 Read Wait Flag B'00000010' Local 2260 and local 3270 Rescan Flag B'00000001' Local 2260 and local 3270 Enable-Read-in-Appendage Flag The remaining bits are reserved. When bit zero is on, the next three bytes contain On-line Terminal Test Information. For the local 2260 and local 3270, the next three bytes contain a pointer to the DECB	DTFBT macro operand FEATURE 2260 local READ routine and Interruption handler/ BSC Message Analysis Routine
<u>5</u> (5) WRU	Describes WTTA device feature	DTFBT macro operand FEATURE
<u>6</u> (6) EOM	Character representing the end of a message (WTTA)	DTFBT macro operand EOM

DTFBT TABLE (...Cont'd)

DTFBT Table Explanation

Byte(s)	Description																																	
	Meaning	Source																																
<u>Z</u> (7) EOT	Character representing the end of a transmission (WTTA)																																	
<u>B</u> (8) DTFBT Flags	<table border="1"> <thead> <tr> <th>Bit Configuration</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>B'00000001'</td> <td>DTFBT Open Flag</td> </tr> <tr> <td>B'00000010'</td> <td>Non-partitioned channel program flag</td> </tr> <tr> <td>B'00000100'</td> <td>Switched network flag</td> </tr> <tr> <td>B'00001000'</td> <td>Multipoint configuration (BSC)</td> </tr> <tr> <td colspan="2">The remaining bits are reserved</td> </tr> </tbody> </table>	Bit Configuration	Meaning	B'00000001'	DTFBT Open Flag	B'00000010'	Non-partitioned channel program flag	B'00000100'	Switched network flag	B'00001000'	Multipoint configuration (BSC)	The remaining bits are reserved		The switched-network flag, the multipoint flag and the non-partitioned channel program flag are put in at assembly time. The open flag is maintained by the OPEN and CLOSE routines.																				
Bit Configuration	Meaning																																	
B'00000001'	DTFBT Open Flag																																	
B'00000010'	Non-partitioned channel program flag																																	
B'00000100'	Switched network flag																																	
B'00001000'	Multipoint configuration (BSC)																																	
The remaining bits are reserved																																		
<u>9-11</u> (09-0B) Buffer Control Block Address		Put in at assembly time by the DTFBT macro																																
<u>12</u> (0C) Device Code	<table border="1"> <thead> <tr> <th>Numeric identifier of the type of device attached to the lines of this group</th> <th>Equated to</th> </tr> </thead> <tbody> <tr><td>1030</td><td>1</td></tr> <tr><td>1060</td><td>2</td></tr> <tr><td>2848</td><td>3</td></tr> <tr><td>8383</td><td>4</td></tr> <tr><td>115A</td><td>5</td></tr> <tr><td>2260</td><td>6</td></tr> <tr><td>1050</td><td>7</td></tr> <tr><td>2740</td><td>8</td></tr> <tr><td>TWX33</td><td>9</td></tr> <tr><td>TWX35</td><td>10</td></tr> <tr><td>1130</td><td>12</td></tr> <tr><td>2780</td><td>13</td></tr> <tr><td>WTTA</td><td>14</td></tr> <tr><td>2020</td><td>15</td></tr> <tr><td>3277</td><td>17</td></tr> </tbody> </table>	Numeric identifier of the type of device attached to the lines of this group	Equated to	1030	1	1060	2	2848	3	8383	4	115A	5	2260	6	1050	7	2740	8	TWX33	9	TWX35	10	1130	12	2780	13	WTTA	14	2020	15	3277	17	Put in by the DTFBT macro using the DEVICE keyword operand
Numeric identifier of the type of device attached to the lines of this group	Equated to																																	
1030	1																																	
1060	2																																	
2848	3																																	
8383	4																																	
115A	5																																	
2260	6																																	
1050	7																																	
2740	8																																	
TWX33	9																																	
TWX35	10																																	
1130	12																																	
2780	13																																	
WTTA	14																																	
2020	15																																	
3277	17																																	
<u>13-15</u> (0D-0F) CCW Model Table Address		Put in by the Linkage Editor																																
<u>16</u> (10) DTFBT Length 16		Put in at assembly time																																
<u>17-19</u> (11-13) Address of BTAM Logic		Put in by the Linkage Editor																																
<u>20</u> (14) DTF+CU	Numeric identifier of the DTF type and the control unit type	Initialized at assembly time from the CU keyword operand																																

DTFBT TABLE (...Cont'd)

DTFBT Table Explanation

Byte(s)	Description															
	Meaning	Source														
20 (14) DTF+CU (Cont'd)	<p>The DTF code is X'40' for a DTFBT. The following CU codes are OR'ed into the low-order 4 bits:</p> <table border="1"> <thead> <tr> <th>Control Unit</th> <th>Equated to</th> </tr> </thead> <tbody> <tr> <td>7770</td> <td>1</td> </tr> <tr> <td>2848</td> <td>3</td> </tr> <tr> <td>2701</td> <td>4</td> </tr> <tr> <td>2702</td> <td>5</td> </tr> <tr> <td>2703</td> <td>6</td> </tr> <tr> <td>3272</td> <td>7</td> </tr> </tbody> </table>	Control Unit	Equated to	7770	1	2848	3	2701	4	2702	5	2703	6	3272	7	
Control Unit	Equated to															
7770	1															
2848	3															
2701	4															
2702	5															
2703	6															
3272	7															
21 (15) Flag Byte 2	<p>Flags for ERP:</p> <table border="1"> <thead> <tr> <th>Bit Configuration</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>B'00000100'</td> <td>ERP requested</td> </tr> <tr> <td>B'00000010'</td> <td>Read text retry</td> </tr> <tr> <td>B'00000001'</td> <td>Write text retry</td> </tr> </tbody> </table> <p>The remaining bits are reserved</p>	Bit Configuration	Meaning	B'00000100'	ERP requested	B'00000010'	Read text retry	B'00000001'	Write text retry	Flags are set by the ERROPT operand						
Bit Configuration	Meaning															
B'00000100'	ERP requested															
B'00000010'	Read text retry															
B'00000001'	Write text retry															
22-23 (16-17) Message Length or MONDLY	Number of pad characters (WTTA)	DTFBT macro operand MSGL DTFBT macro operand MONDLY														
24 (18) Retry Count	BSC Retry Ceiling	DTFBT macro operand RETRY														
25-27 (19-1B) Address of Table of special Characters		Put in by Linkage Editor														
28 (1C) 2x Retry Count	2x BSC Retry Ceiling	DTFBT macro operand RETRY														
29-31 (1D-1F) Line Error Block Address		DTFBT macro operand LERBADR														
32-35 (20-23) Table of Offsets	<p>Pointers to the table of model CCW's corresponding to operation types defined for a particular device. The displacement in the Table of Offsets corresponds to the operation code for the macro. An X'FF' at displacement 07 in the table, for example, means that optype X'07' (READ Repeat-TP) is not available.</p> <p>Operation Type Codes</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Macro</th> </tr> </thead> <tbody> <tr> <td>X'00'</td> <td>WRITE DISCONNECT</td> </tr> <tr> <td>X'01'</td> <td>READ INITIAL</td> </tr> <tr> <td>X'02'</td> <td>WRITE INITIAL</td> </tr> </tbody> </table>	Code	Macro	X'00'	WRITE DISCONNECT	X'01'	READ INITIAL	X'02'	WRITE INITIAL	Generated by the DTFBT macro from the DEVICE operand						
Code	Macro															
X'00'	WRITE DISCONNECT															
X'01'	READ INITIAL															
X'02'	WRITE INITIAL															

DTFBT TABLE (...Cont'd)

DTFBT Table Explanation

Byte(s)	Description		Source
	Code	Macro	
32-35 (20-23) Table of Offsets (Cont'd)	X'03'	READ CONTINUE	
	X'04'	WRITE CONTINUE	
	X'05'	READ CONVERSATION- NAL	
	X'05'	READ CONTINUE WITH GRAPHICS	
	X'06'	WRITE CONVERSATION- NAL	
	X'07'	READ REPEAT	
	X'08'	WRITE ACK	
	X'08'	WRITE INIT TRANSPAR- RENT BLOCK	
	X'09'	READ INITIAL INQUIRY	
	X'09'	READ SKIP	
	X'0A'	WRITE NAK	
	X'0A'	WRITE INITIAL TRANSPAR- RENT TEXT	
	X'0B'	READ BUFFER	
	X'0B'	READ REPEAT WITH GRAPHICS	
	X'0C'	WRITE AT LINE ADDR.	
	X'0C'	WRITE INIT TRANSPAR- RENT CONVERSATION- NAL	
	X'0D'	READ SHORT	
	X'0D'	READ INQUIRY	
	X'0E'	WRITE ERASE	
	X'0E'	WRITE INITIAL CON- VERSATIONAL	
	X'0F'	READ CONTINUE WITH IDENTIFICATION EX- CHANGE (WT TELE- GRAPH)	
	X'10'	WRITE INVITATIONAL	
	X'10'	WRITE TRANSPARENT BLOCK	
	X'11'	READ INTERRUPT	
	X'11'	READ MODIFIED	
	X'12'	WRITE TRANSPARENT TEXT	
	X'12'	WRITE INITIAL OPTI- CAL	
	X'12'	WRITE UNPROTECTED ERASE	
	X'13'	READ CONTINUE WITH LEADING ACKNOWLEDGEMENT	
	X'13'	READ CONNECT	
	X'13'	READ BUFFER FROM POSITION	

DTFBT TABLE (...Cont'd)

DTFBT Table Explanation

Byte(s)	Description	
	Meaning	Source
32-35 (20-23) Table of Offsets (Cont'd)	<u>Code</u>	<u>Macro</u>
	X'14'	WRITE TRANSPARENT CONVERSATIONAL
	X'14'	WRITE INVITATIONAL OPTICAL
	X'15'	READ CONNECT WITH TONE
	X'16'	WRITE EOT
	X'16'	WRITE CONVERSATIO- NAL OPTICAL
	X'18'	WRITE WACK
	X'19'	READ MODIFIED FROM POSITION
	X'1A'	WRITE INQUIRY
	X'1B'	CONTROL INITIAL
	X'1C'	CONTROL DISABLE
	X'1D'	CONTROL MODE
	X'1E'	CALL SEGMENT
	X'1F'	ANSWER
X'20'	WRITE CONNECT	
36-39 (24-27) Reserved		
40-XX (28-..) Line Control Blocks	Line control blocks describe the particular line (See Line Control Block for detailed description)	One LCB is generated at assembly time for each line in the LINELST ope- rand sublist
XX-XX (...) Buffer Pool	(Optional)	

LINE CONTROL BLOCK

	0	1	2	3
0(0)	CCB			
16(10)	Flag Byte	DECB Address		
20(14)	Relative Line No	Send Ack Local 3270 Flag Byte	Rcve Ack Reserved	Mode Byte(BSC)
24(18)	ERP Message Code and Status Save Area			
32(20)	CCW Area reserved for ERP and Audio			
40(28)	User Channel Program Area			
104(68)	Marker (BSC)	Total User CCW Retries (BSC)	User CCW Retries (BSC)	ERP CCW Retries (BSC)
108(6C)	BSC FlagByte 1	BSC FlagByte 2	BSC FlagByte 3	Reserved
112(70)	BSC ERP CCW Area (3 double-words)			

Line Control Block Explanation

Byte(s)	Description									
	Meaning	Source								
0-15 (00-0F) CCB	Command Control Block	Space is reserved by the DTFBT instruction. The contents of the block are maintained by the Supervisor, IJLCPGX and IJLBTIH.								
16 (10) LCB Flag Byte	<p>Used to indicate LCB Conditions</p> <table border="1"> <thead> <tr> <th>Bit Configuration</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>B'10000000'</td> <td>Last LCB in line group</td> </tr> <tr> <td>B'01000000'</td> <td>Line error at Open (except for local 2260 and local 3270)</td> </tr> <tr> <td>B'01000000'</td> <td>Local 2260 or local 3270 Read started from Appendage</td> </tr> </tbody> </table>	Bit Configuration	Meaning	B'10000000'	Last LCB in line group	B'01000000'	Line error at Open (except for local 2260 and local 3270)	B'01000000'	Local 2260 or local 3270 Read started from Appendage	These flags are initialized by the DTFBT macro instruction. IJLCPGX, IJLBTIH and OPEN maintain them.
Bit Configuration	Meaning									
B'10000000'	Last LCB in line group									
B'01000000'	Line error at Open (except for local 2260 and local 3270)									
B'01000000'	Local 2260 or local 3270 Read started from Appendage									

LINE CONTROL BLOCK (. . . . Cont'd)

Line Control Block Explanation

Byte(s)	Description	
	Meaning	Source
16 (10) LCB Flag Byte (Cont'd)	<u>Bit Configuration</u>	<u>Meaning</u>
	B'00100000'	Halt I/O requested
	B'00010000'	LCB Cancel flag (ERP)
	B'00001000'	Write at Line Address (remote 2260), LCB Q-flag (local 2260 or local 3270)
	B'00000100'	Attention flag (local 2260 or local 3270), Terminal Test flag (OIU)
	B'00000010'	Skip flag (local 2260 or local 3270), Frame Change Test flag (OIU)
	B'00000001'	Printer flag (local 2260 or local 3270), Message from OIU flag (OIU)
	B'00000001'	Re-read flag (WTTA)
B'00000001'	Auto Poll channel program modified flag (BSC)	
17-19 (11-13) DECB Address		This field is set to zero by the completion logic; The address is supplied by IJLCPGX
20 (14) RLN	Relative Line Number	The relative line number is inserted by the DTFBT macro instruction
21 (15) Send ACK/ Rcv ACK or		
Local 3270 Flag Byte	<u>Bit Configuration</u>	<u>Meaning</u>
	B'10000000'	Printer busy flag
	B'01000000'	Unreliable device buffer contents
	B'00100000'	RFT in progress flag
	B'00010000'	Start original READ flag (RFT flag)
B'00001000'	I/O request flag	

LINE CONTROL BLOCK (. . . .Cont'd)

Line Control Block Explanation

Byte(s)	Description	
	Meaning	Source
22 (16) Reserved		
23 (17) Mode Byte	Used for Set Mode	Initialized at assembly time; Updated via CONTROL
24-31 (18-1F) ERP Code and	Error Message Code (byte 24)	The hex value (1-byte) of the error message number to be printed is inserted by the routine that determined the error condition
Status Save Area	CSW bytes 1-7 (but not byte 0) (bytes 25-31)	The CSW is saved for the last user (non-ERP) CCW that completed
32-39 (20-27) ERP CCW		CCW is set up and executed in an attempt to recover from the error condition
40-103 (28-67) CCW Space	Channel Program Area	IJLCPGX builds the channel program in this space
104-107 (68-6B) Marker and Retry Bytes		
108 (6C) BSC Flag Byte 1	Bit 0: 1= ENQ can be legally received 0= ENQ an illegal response to text Bit 1: 1= Last response-to-text was NAK (i.e., NAK was sent to remote station as the response to the last received message) Bit 2: 1= No response was received to previous Write text Bit 3: 1= No retry flag Bit 4: 1= Error occurred on an ERP CCW Bit 5: 1= ERP in process (due to Unit Check) Bit 6: 1= Error occurred on a Read Response to text or a Read text in a conversational WRITE channel program Bit 7: 1= First retry of the error discussed for bit 6	

LINE CONTROL BLOCK (...Cont'd)

Line Control Block Explanation

Byte(s)	Description	
	Meaning	Source
109 (6D) BSC Flag Byte 2	<p>For any READ/WRITE macro other than WRITE Inquiry (TQ) with entry coded 'S', the Operation flag byte 1 in the DECB is moved to the BSC flag byte 2 in the LCB</p> <p>For WRITE Inquiry (TQ) with entry not coded 'S' bit-2 (B'00100000') of the BSC flag byte 2 in the LCB is turned ON subsequent to the moving in of the DECB Operation flag byte 1</p> <p><u>Note:</u></p> <p>For WRITE Inquiry (TQ) with entry coded 'S', the BSC flag byte 2 in the LCB Extension will contain the value set by IJLCPGX for the most recently issued macro (normally an initial-type WRITE for dial operation) that was not a WRITE TQ with entry coded 'S'</p>	Initialized by IJLCPGX
110 (6E) BSC Flag Byte 3	<p>Bit 0: BTAM initiates terminal test</p> <p>Bit 1: LCB in test flag</p> <p>Bit 2: X=0 flag for on-line test</p> <p>Bit 3: Invalid character in RFT</p> <p>Bit 4: RESETPL flag for TERM test</p> <p>Bit 5: Positive response to line bid has been received</p> <p>Bit 6: Remote 3270 RFT BSC flag</p> <p>Bit 7: Reserved</p>	
111 (6F) Reserved		
112-135(70-87) BSC ERP CCW	BSC ERP CCW Area (3 double-words)	

DATA EVENT CONTROL BLOCK (DECB)

	0	1	2	3
0(0)	Completion Code	Reserved for DOS/BTAM internal use (See explanation of bit 6 of the flag byte)		
4(4)	Optype Qualifier bits	Optype Code	Length	
8(8)	Response Information Byte	DTFBT Address		
12(0C)	Mode Byte	Input/Output Address		
16(10)	Sense Byte	Sense byte for Diagnostic Read/Write	Residual Count	
20(14)	Command Code	List Address or Entry Address		
24(18)	Flag byte	Relative Line Number	Response to Addressing Field	Response to LRC and/or VRC
28(1C)	TP Code	Error Information	Status Bytes	
32(20)	Reserved	Addressing Pointer		
36(24)	Reserved	Polling or Scanning Pointer		
40(28)	Flag Bytes for extended DECB	Reserved	Auxlength	
44(2C)	Reserved	Auxarea Address		

-BSC only-

Note: The first four (4) bytes of the DECB are called the Event Control Block (ECB). The last eight (8) bytes of the DECB are called the DECB extension.

DECB Explanation

Byte(s)	Description	
	Meaning	Source
0 (0) Completion Code	X'00' Operation in progress X'7F' Normal completion X'41' I/O error X'44' Terminal ID non-comparison X'48' HALT I/O requested and completed X'50' Contention (BSC or WTTA) X'51' End-of-file condition X'52' Wrong length record X'54' Non-productive operation X'58' Cancel condition detected X'60' Wrong ACK-i received (i= 0 or 1) X'61' WACK received or RVI received in response to selection on a multipoint line X'62' ENQ received in response to ENQ X'64' Unreliable device buffer contents	Maintained by IJLCPGX and IJLBTH

DATA EVENT CONTROL BLOCK (DECB) (...Cont'd)

Byte(s)	Description	
	Meaning	Source
<u>1-3</u> (1-3) Reserved	Reserved for DOS/BTAM internal use (See explanation of bit 6 of the flag byte)	
<u>4</u> (4) Optype Quali- fier bits	Flags are set according to the type of operation <u>Bit Configuration</u> <u>Meaning</u> B'10000000' Initial optype B'01000000' Reset optype B'00100000' 2260 local lock operation B'00010000' Conversational flag B'00010000' Skip buffer check flag (local 3270 for RFT) B'00001000' Start-stop; Auto Poll used in current operation B'00000100' Entry 'S' B'00000010' Area 'S' B'00000001' Length 'S'	Set by READ, WRITE and CONTROL
<u>5</u> (5) Optype Code (See DTFBT Table)	Operation type code of the last exe- cuted I/O macro instruction	
<u>6-7</u> (6-7) Length	The amount of data to be transmitted or received	
<u>8</u> (8) Response Information byte	<u>Bit Configuration</u> <u>Meaning</u> B'00000010' An RVI has been received in respon- se to selection	
<u>9-11</u> (09-0B) DTFBT Address	Specifies the line group	
<u>12</u> (0C) Mode byte	Used for Set Mode	
<u>13-15</u> (0D-0F) Input/Output Address		
<u>16</u> (10) Sense byte	<u>Bit Configuration</u> <u>Meaning</u> B'10000000' Command reject B'01000000' Intervention req'd B'00100000' Bus-out check B'00010000' Equipment check B'00001000' Data check B'00000100' Overrun or, for local 3270, unit specify	Stored by IJLBTH when an unit check has occurred

DATA EVENT CONTROL BLOCK (DECB) (....Cont'd)

Byte(s)	Description	
	Meaning	Source
<u>25</u> (19) Relative line number	Position of line entry in list	From macro instruction operand
<u>26</u> (1A) Response to Addressing	Space reserved for response to addressing	Channel program reads into this field
<u>27</u> (1B) Read response to redundancy check		
<u>28</u> (1C) TP Code	TP code of last command	Maintained by IJLBTIH and IJLCPGX
<u>29</u> (1D) Error Information	ERP information <u>Bit Configuration</u> <u>Meaning</u> B'01000000' Should-not-occur error B'00100000' Error in ERP B'00010000' Diagnostic WRITE READ failed B'00000010' ENQ received in text (BSC) B'00000001' NAK response to text (BSC) NAK or ID-NAK response to ID-ENQ (BSC)	Set by IJLBTIH
<u>30-31</u> (1E-1F) Status bytes	Bytes are set when an event occurs	Set by IJLBTIH from the CSW
<u>32</u> (20) Reserved		
<u>33-35</u> (21-23) Addressing Pointer	Address of terminal being addressed	Set by IJLCPGX
<u>36</u> (24) Reserved		
<u>37-39</u> (25-27) Polling or Scanning pointer	Address of terminal being polled or scanned	Set by IJLCPGX
<u>40</u> (28) DECB extension flag byte	Flags are set according to the type of operation using the DECB extension <u>Bit Configuration</u> <u>Meaning</u> B'10000000' Auxarea 'S'	READ/WRITE

DATA EVENT CONTROL BLOCK (DECB) (....Cont'd)

Byte(s)	Description	
	Meaning	Source
<u>41</u> (29) Reserved		
<u>42-43</u> (2A-2B) Auxlength	The amount of data to be transmitted or received by operations using the DECB extension	READ/WRITE
<u>44</u> (2C) Reserved		
<u>45-47</u> (2D-2F) Auxarea	Address of data to be transmitted or input area for operations using the DECB extension	READ/WRITE

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