

TOPS-20 Monitor Table Descriptions

Autopatch Number 22

April 1989

This document describes the internal tables of the TOPS-20 operating system.

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SOFTWARE: TOPS-20 Version 7.0

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DECserver 100	KA10	PrintServer 40	VAX/VMS
DECserver 200	KI	Q-bus	VT50
DECsystem-10	KL10	ReGIS	
DECSYSTEM-20	KS10	RSX	d i g i t a l

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APPENDIX A LISTING BY MONITOR MODULES

PREFACE

This book describes the internal TOPS-20 monitor tables. The sample table on the following page illustrates the information presented in the book. In addition to the tables, this book also contains one appendix which lists in alphabetical order the names of the monitor modules and the tables defined in each.

Change bars in the margin identify new tables and/or changes to existing tables. These changes are the result of software changes for TOPS-20 V6, V6.1, and V7.0.

MONITOR TABLES

AA

This is the ACCEPT call's argument block, which is used by DECnet Session Control and NSP.

Defined in: D36PAR

Format

ACCEPT Argument Block	
AASCB	SCB ID for new port
AAPID	NSP's port identifier
AAFLO	Flow control type
AAGOL	Data request goal
AASIZ	Max bytes allowed in a message segment
AASCV	Session control's entry address

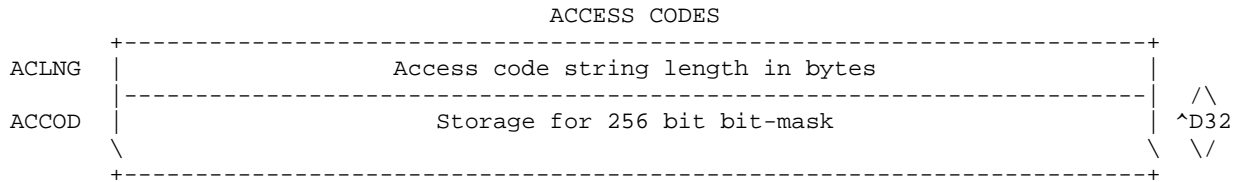
MONITOR TABLES

AC

AC is the LAT Host Access Codes portion of the Host Node (HN) data structure. It is a bit mask that defines what groups have access to the host. Note that the bit mask is made up of PDP-11 style 8-bit bytes. Therefore, group zero is represented by bit 7 -- the low order bit in the first byte.

Defined in: LATSrv

Format



MONITOR TABLES

AJ

This is the DECnet Router adjacency block -- AJ.

Defined in: D36PAR

Format						
AJNXT	Pointer to next adjacency block					
	<table border="1"> <tr> <td>AJNTY</td> <td>AJFLA</td> <td>AJVER Version of neighbor's router</td> <td>AJEEO ECO number of neighbor's router</td> <td>AJCUS Customer version of neighbor's router</td> </tr> </table>	AJNTY	AJFLA	AJVER Version of neighbor's router	AJEEO ECO number of neighbor's router	AJCUS Customer version of neighbor's router
AJNTY	AJFLA	AJVER Version of neighbor's router	AJEEO ECO number of neighbor's router	AJCUS Customer version of neighbor's router		
AJNAH	Adjacency's hi-order address (NI)					
	<table border="1"> <tr> <td>AJNAL Low order in string format <a1,a2></td> <td>AJNAA [+]</td> <td>AJNAN [+] Adjacency's node number</td> </tr> </table>	AJNAL Low order in string format <a1,a2>	AJNAA [+]	AJNAN [+] Adjacency's node number		
AJNAL Low order in string format <a1,a2>	AJNAA [+]	AJNAN [+] Adjacency's node number				
AJRTV	Pointer to this adjacency's routing vector					
AJCBP	Circuit block for this adjacency					
AJBSZ	Block size requested by neighbor					
AJNHT	Neighbor's hello timer					
AJTLR	Time last message received from adjacency					
	<table border="1"> <tr> <td>AJPRI Routers priority to be designated router (NI)</td> <td>AJARE Routers area (reserved field)</td> <td>AJMPD MPD (reserved)</td> </tr> </table>	AJPRI Routers priority to be designated router (NI)	AJARE Routers area (reserved field)	AJMPD MPD (reserved)		
AJPRI Routers priority to be designated router (NI)	AJARE Routers area (reserved field)	AJMPD MPD (reserved)				

Field AJSTA (0-1) Adjacency state

For field AJFLA(6-11):

- AJPH4 6 Phase 4 node
- AJVRQ 7 Verification requested by remote
- AJBLO 8 Blocking is requested by this node
- AJRJF 9 Reject flag
- AJMTA 10 No multi-cast traffic accepted

[+] AJADR is a concatenation of AJNAA and AJNAN.

MONITOR TABLES

ALOC1

Allocation 1 Table. This non-resident table, the size of the OFN area in SPT, is used to help enforce disk quotas for each active directory.

Defined in: STG

Index: ALOCX portion of an OFN entry in the SPT

Format

ALOC1: ALCWD	ADIRN Directory No.	ODIRC Directory OFN Count	/ \
	.		
	.		
	.		
	.		
	.		
			\ /

NOFN

The right half of each slot in this table contains a count of all OFNs for files from that directory.

MONITOR TABLES

BAT

Bad Allocation Table. The BAT Block is one sector in length (128 words). It consists of 4 words of header, followed by data; each 2 word data entry indicates the bad spots on the disk. The BAT Block is found on section 2 of a disk pack.

Defined in: PROLOG

		Format		
BATNAM	=0	SIXBIT/BAT/		
BATFRE	=1	BATFR	Free blocks left	
		9	BTHCT 17	Header
			# of pairs added by mapper	
		BTMCT	# of pairs added by monitor	
		Bad Block information		*
		9	ADD27 35	Data Pair
			Address of starting sector	*
			.	
			.	
			.	
			.	
			.	
			.	
BATCOD	=176	Unlikely code 606060		
BATBLK	=177	Sector number of the BAT block		

MONITOR TABLES
BAT (Cont.)

Data Pair 0	8	18	20	21	22	35
word 1	BATNB Bad Blks Cnt	BTKNB Controller#	Type	APRNM Apr Serial #		

Bits	Pointer	Content
0-8	BATNB	Count of Bad Blks in Pair
18-20	BTKNB	Massbus Controller #
21	BADT	Type field in BAT Pair
23-35	APRNM	APR Serial #

word 2

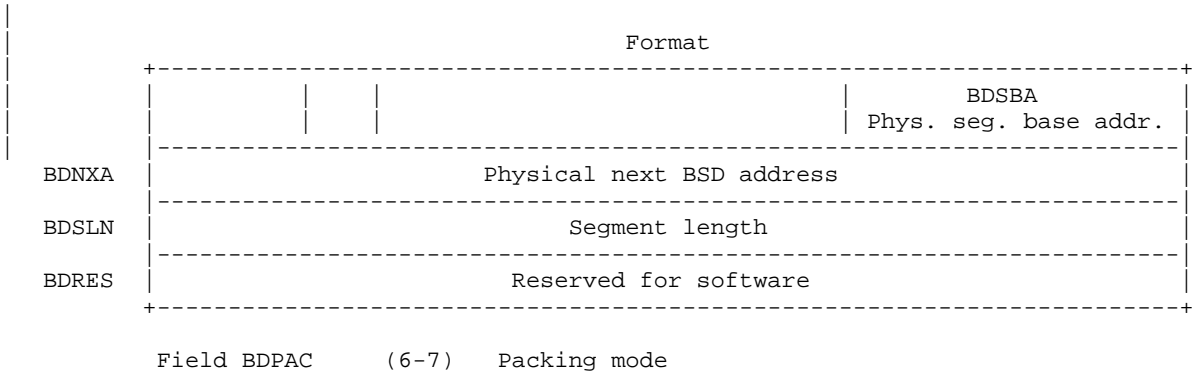
Bits	Pointer	Content
18-35	ADD18	Old style disk address of starting sector
9-35	ADD27	New style address of starting sector

MONITOR TABLES

BD

BD represents the format of the Buffer Segment Descriptor (BSD) used to describe data buffers passed to and from the NI.

Defined in: PHYKNI



MONITOR TABLES

BP

This table contains the byte pointer and count structure used by DECnet. Routines DNGUBY,DNPUBY, and all related DNGUnB require a pointer to this type of structure. All byte pointers are section local (for the moment).

Defined in: D36PAR

	Format
BPBPT	Byte pointer to user string
BPBYT	Byte count left

MONITOR TABLES

BR

This is the NI% jsys internal buffer descriptor block.

Defined in: NIUSR

Format		
BRNXT	Pointer to next BR block	
	BRBSZ Buffer size	BRPRO Protocol type
	BRCP1 Locked core page 1	BRCP2 Locked core page 2
BRBFA	Buffer address (Byte pointer)	/\ 2
BRBID	Buffer ID	\ \
BRSTA	Return status	
BRDAD	Destination Ethernet address	/\ 2
BRSAD	Source Ethernet address	\ \ 2

MONITOR TABLES

BTB

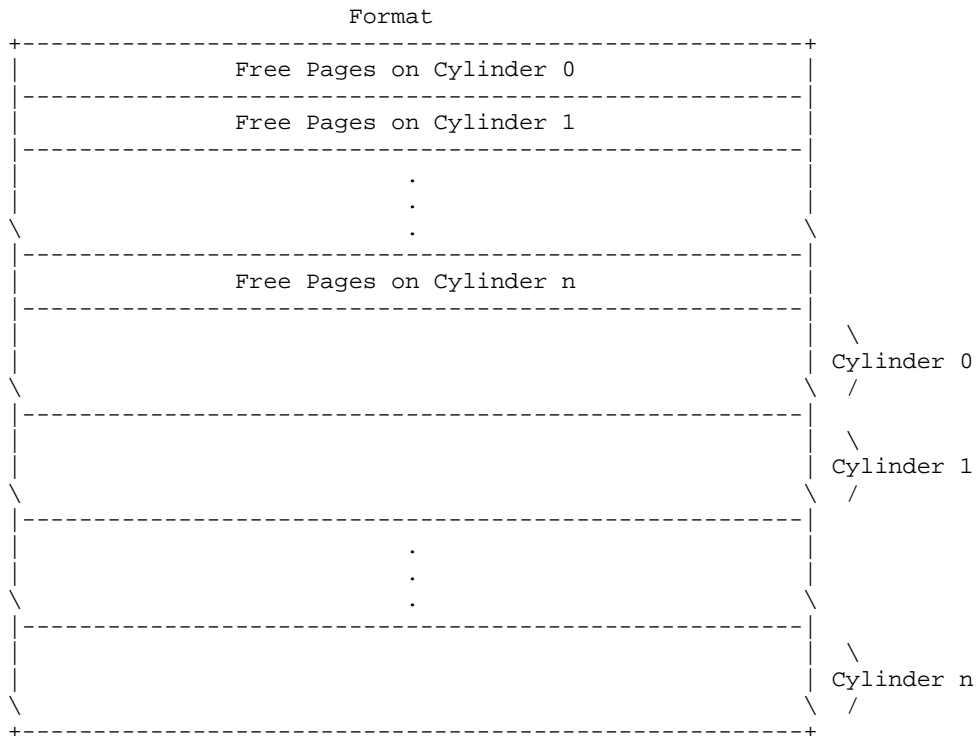
Bit Table for Disk. This table has mapped into it pointers to the file STRNAM:<ROOT-DIRECTORY> DSKBTBTL, when pages are allocated or deallocated from the disk unit(s) belonging to structure, STRNAM. The bit table file as shown below indicates which pages are assigned (bits off) and which are available (bits on).

It consists of two parts; the top half contains the number of free pages for each cylinder in the structure and the bottom half contains a bit map (1 bit per page) for all pages of each cylinder in the structure.

At initialization time, the following are assigned in the bit table file:

- o All of this structure's pages that belong to the Home blocks
- o All of the pages in this structure's swapping space
- o Those pages pointed to by the BAT blocks

Defined in: STG



MONITOR TABLES
BTB (Cont.)

NOTE

In the bit map each cylinder starts on a word boundary and contains as many full words as are needed for all of its pages.

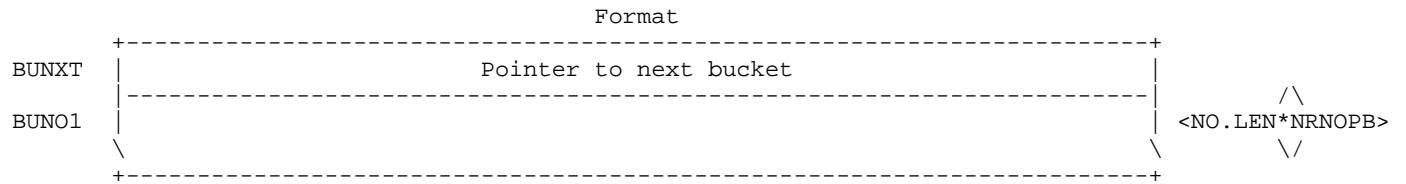
For Systems which have sectioning, the BTB table does not hold the maps for the disk bit table file. Rather, the monitor maps the disk bit table file for a structure into section 4 of the monitor's address space when it needs to allocate or deallocate disk pages. That is, the index block of this file is the page table pointed to by the monitor's section pointer for section 4.

MONITOR TABLES

BU

The data structure BU defines a bucket in the DECnet-36 node name/number data base.

Defined in: SCLINK



MONITOR TABLES

BUG-HLT/CHK/INF-STORAGE-AREA

BUGHLT, BUGCHK, and BUGINF Storage Area. This resident storage is used to hold such information as the push down list, PC, ACs and dispatch address when a BUGHLT/BUGCHK/BUGINF occurs. BUGSEB holds the pointer to the last queued up SYSERR block. (See SYSERR-STORAGE-AREA)

Defined in: STG

	Format	
BUGHLT:	0 (PC Stored here on BUGHLT)	
	JRST BUGH0	
XBUGHL:	Indirect Word for BUGHLTs	
SVVEXM:	Save Valid Examine in BUGTYO	
BUGLCK:	Lock on BUGxxx Routines	
BUGCHK:	0 (PC Stored here on BUGCHK)	
	JRST BUGC0	
XBGCCH:	MSEC1,,BGCCHK	
BUGINF:	0 (PC Stored here on BUGINF)	
	JRST BUGI0	
XBGCIN:	MSEC1,,BGCINF	
BUGACS:	ACs Saved on a BUGHLT (Contents of ACs at time of BUGHLT)	/ \ # of ACs
BUGACU:	Place to Store Previous Context ACs	/ \ # of ACs
BUGPDL:	Push Down List	/ \ BUGPLN
BUGCNT:	Count of BUG Blocks in SYSERR Queue (Maximum of BUGMAX=20)	/ \
BUGNUM:	Number of BUGCHK/INFs since STARTUP	/ \

MONITOR TABLES
 BUG-HLT/CHK/INF-STORAGE-AREA (Cont.)

BUGSEB:	Ptr to last queued up SYSERR Block due to a BUGHLT/CHK/INF	
BUGP1:	Temp Storage for BUGSTO Routine	
BUGP2:	Temp Storage for BUGSTO Routine	
BUGP3:	Temp Storage for BUGSTO Routine	
BUGTMS:	Time to Store Next BUGTIM (Length of Interval Is BUGINT = 5 min)	
BUGTIM:	ASCII Time & Date Stored for BUGHLT	/ \
PISAV:	CONI PI at time of BUGHLT	4
PISVI:	Temp Copy of PISAV before BUGLCK Acquired	\ /

MONITOR TABLES

C1

C1 is the format of the NI Read and Read/Clear Counters command.

Defined in: PHYKNI

Format	
C1RID	Request ID
C1PID	Process ID
C1BFA	Buffer address
C1SPI	Secondary portal ID
*	C1FNC Function code

Field C1ZRO (0-0) Indicates counters should be zeroed

MONITOR TABLES

CA

This table contains field definitions for the CTERM character attributes portion of the CTERM Characteristics Message.

Defined in: CTERMD

Format

Character attribute structure - right justified



- Field CAXXX (28-28) (Reserved Flag)
- Field CASCF (29-29) Special Char Function (For O,R,U,V,W,X,DEL)
- Field CACEC (30-31) Control Char Echo
 - .CACCX=0 No Echo
 - .CACCI=1 Image Echo
 - .CACCS=2 Standard Echo
 - .CACCB=3 Standard, then Image Echo
- Field CADIS (32-32) Discard output if CLEAR OOB
- Field CAINC (33-33) Include immed. HELLO OOB in input stream
- Field CAOOB (34-35) Out of band handling
 - .CAOOX=0 Not out of band
 - .CAOOI=1 Immediate clear
 - .CAOOD=2 Deferred clear
 - .CAOOH=3 Immediate hello

MONITOR TABLES

CB-LATSRV

CB is the LAT circuit block data structure. There is one circuit block for each LAT virtual circuit created since the last system startup. There can be up to HNMXC connect blocks allocated at one time. If that threshold has been reached when attempting to open a new virtual circuit, the monitor reuses an inactive connect block if any are available. Connect blocks are chained together; HN locations HNQAC and HNQIC contain pointers to the first and last entries on the active circuit (HNQAC) and inactive circuit (HNQIC) queues.

Defined in: LATSRV

Format

CIRCUIT BLOCK

CIRCUIT BLOCK		/\								
CBLNK	Queue Link words (must be first words)	2								
	<table border="1"> <tr> <td>CBRID Circuit handle assigned by the remote</td> <td>CBLID Local circuit index</td> </tr> <tr> <td>* </td> <td>CBCSB Count since balanced</td> </tr> <tr> <td>CBSDC Number of slots with data waiting</td> <td>CBTSQ Next transmit sequence number</td> </tr> <tr> <td>CBRSQ Next expected receive sequence number</td> <td>CBLRA Sequence number of last message ack'd by remote node</td> </tr> </table>	CBRID Circuit handle assigned by the remote	CBLID Local circuit index	*	CBCSB Count since balanced	CBSDC Number of slots with data waiting	CBTSQ Next transmit sequence number	CBRSQ Next expected receive sequence number	CBLRA Sequence number of last message ack'd by remote node	/\
CBRID Circuit handle assigned by the remote	CBLID Local circuit index									
*	CBCSB Count since balanced									
CBSDC Number of slots with data waiting	CBTSQ Next transmit sequence number									
CBRSQ Next expected receive sequence number	CBLRA Sequence number of last message ack'd by remote node									
CBTIM	Current value of circuit timer									
	<table border="1"> <tr> <td>CBRTC Current retransmit count</td> <td>CBKAV 2* Server Keep-alive</td> </tr> </table>	CBRTC Current retransmit count	CBKAV 2* Server Keep-alive							
CBRTC Current retransmit count	CBKAV 2* Server Keep-alive									
CBKAT	TODCLK last time message received from server									
	<table border="1"> <tr> <td>CBQUA Circuit quality</td> <td>CBERR Reason code for last time circuit stopped</td> </tr> </table>	CBQUA Circuit quality	CBERR Reason code for last time circuit stopped							
CBQUA Circuit quality	CBERR Reason code for last time circuit stopped									
	<table border="1"> <tr> <td>CBDLL Number of transmit buffers in the DLL</td> <td></td> </tr> </table>	CBDLL Number of transmit buffers in the DLL								
CBDLL Number of transmit buffers in the DLL										

MONITOR TABLES
CB-LATSRV (Cont.)

CBXBQ	Queue of free transmit buffers		/\
			2
CBAKQ	Unacknowledged queue header		/\
			2
CBSBQ	Circuit slot queue		/\
			2
CBDNI	NI address of remote server		/\
			2
	CBMTF Maximum transmit frame size for circuit	CBRPV Remote protocol version and ECO	
	CBMSL Maximum slots allowed by remote	CBNBF Additional transmit buffers allowed by remote	
	CBCTI Value of remote's circuit timer	CBKTI Value of remote's keep-alive timer	
	CBPTC Product type code for remote node	CBSTA Virtual circuit state	
	CBNUM Remote's system number	CBRSC Remote's system name count	
	CBRLC Remote's location text count		
CBSNM	Remote's system name		/\
			<<ML.SNM+4>/5>
CBLOC	Remote's location string		/\
			<<ML.LOC+4>/5>

For field CBFLG(0-2):

CBRRF	0	Reply requested flag
CBMRS	1	Must reply soon flag
CBMRN	2	Must reply now flag

MONITOR TABLES

CB-LLMOP

DECnet counters block.

Defined in: LLMOP

	Format
CBID	Requester ID for this block
CBBR	Bytes received
CBBX	Bytes transmitted
CBFR	Frames received
CBFX	Frames transmitted
CBMCB	Multicast bytes received
CBMCF	Multicast frames received
CBFXD	Frames xmitted, initially deferred
CBFXS	Frames xmitted, single collision
CBFXM	Frames xmitted, multiple collisions
CBXF	Transmit failures
CBXFM	Transmit failure bit MASK
CBCDF	Carrier detect check failed
CBRF	Receive failures
CBRFM	Receive failure bit mask
CBDUN	Discarded unknown
CBD01	Discarded position 1
CBD02	Discarded position 2
CBD03	Discarded position 3
CBD04	Discarded position 4
CBD05	Discarded position 5

MONITOR TABLES
CB-LLMOP (Cont.)

CBD06	Discarded position 6
CBD07	Discarded position 7
CBD08	Discarded position 8
CBD09	Discarded position 9
CBD10	Discarded position 10
CBD11	Discarded position 11
CBD12	Discarded position 12
CBD13	Discarded position 13
CBD14	Discarded position 14
CBD15	Discarded position 15
CBD16	Discarded position 16
CBFBE	Free buffer list empty
CBSBU	System buffer unavailable
CBUBU	User buffer unavailable
CBUFD	Unrecognized frame dest
CBXXX	This word actually reserved for ucode
CBUNI	Portal ID

MONITOR TABLES

CB-SCPAR

The DECnet-36 Connect Block is used to describe the information present in the NSP connect initiate message.

Defined in: SCPAR

Format

The Internal Connect Block						
CBNUM	Node number					
CBCIR	Loopback circuit ID					
CBDST	Destination end user name	PB.LEN				
CBSRC	Source end user name	PB.LEN				
CBUID	Source user identification	<<^D39+3>/4>				
CBPSW	Access verification password	<<^D39+3>/4>				
CBACC	Account data	<<^D39+3>/4>				
CBUDA	End user connect data	<<^D16+3>/4>				
	<table border="1"> <tr> <td> CBUCT User ID byte count</td> <td> CBPCT Password byte count</td> </tr> <tr> <td> CBACT Account data byte count</td> <td> CBCCT User connect data count</td> </tr> </table>	CBUCT User ID byte count	CBPCT Password byte count	CBACT Account data byte count	CBCCT User connect data count	
CBUCT User ID byte count	CBPCT Password byte count					
CBACT Account data byte count	CBCCT User connect data count					

MONITOR TABLES

CC-LATSRV

CC is the LAT circuit counters block. This data structure is part of the Circuit Block (CB) data structure.

Defined in: LATSrv

Format

CIRCUIT COUNTERS	
CCRCV	Messages received
CCXMT	Messages transmitted
CCRTR	Messages retransmitted
CCSEQ	Receive message sequence errors
CCIMR	Illegal messages received
CCISR	Illegal slots received
CCRES	Resource errors
CCMSK	Illegal message error mask

MONITOR TABLES

CC-NIPAR

CC is the read channel counters block. There are two words in the table for each entry. CC is used by NTCTRS for the SHOW COUNTERS and SHOW and ZERO COUNTERS network management functions.

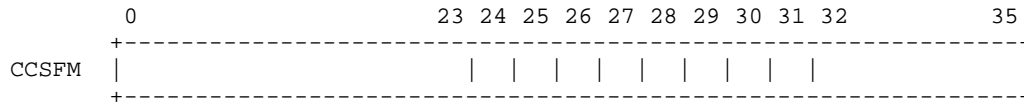
Defined in: NIPAR

	Format
	Network management data
CCSLZ	Seconds since last zeroed
	Network management data
CCBYR	Bytes received
	Network management data
CCBYS	Bytes sent
	Network management data
CCDGR	Datagrams received
	Network management data
CCDGS	Datagrams sent
	Network management data
CCMBR	Multicast bytes received
	Network management data
CCMDR	Multicast datagrams received
	Network management data
CCDSD	Datagrams sent, initially deferred

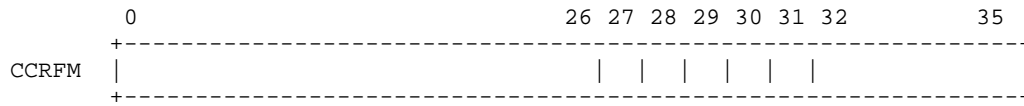
MONITOR TABLES
 CC-NIPAR (Cont.)

	Network management data	
CCDS1	Datagrams sent, single collision	
	Network management data	
CCDSM	Datagrams sent multiple collisions	
	Network management data	
CCSF	Send failures	
CCSFM	Send failure bit mask	*
	Network management data	
CCRF	Receive failure	
CCRFM	Receive failure bit mask	*
	Network management data	
CCUFD	Unrecognized frame destination	
	Network management data	
CCDOV	Data overrun	
	Network management data	
CCSBU	System buffer unavailable	
	Network management data	
CCUBU	User buffer unavailable	

MONITOR TABLES
CC-NIPAR (Cont.)



Symbol	Bit	Contents
CCLOC	24	Loss of carrier
CCXBP	25	Xmit buffer parity error
CCRFD	26	Remote failure to defer
CCXFL	27	Xmitted frame too long
CCOC	28	Open circuit
CCSC	29	Short circuit
CCCF	30	Collision detect check failed
CCEXC	31	Excessive collisions



Symbol	Bit	Contents
CCFLE	27	Free list parity error
CCNFB	28	No free buffers
CCFTL	29	Frame too long
CCFER	30	Framing error
CCBCE	31	Block check error

MONITOR TABLES

CDB

Channel Data Block. This table, one per channel, contains channel dependent instructions and data, pointers to the units (that is, UDBs) belonging to the channel and information about the currently active unit. When the channel interrupts, control passes (by way of a JSP instruction) to CDBINT. The CDB address is stored in AC, P1, and the principal analysis routine, PHYINT, is called.

Defined in: PHYPAR

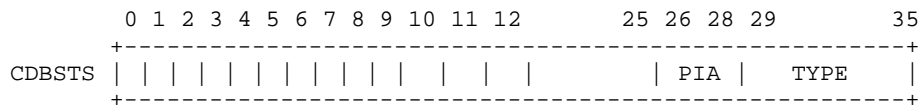
	Format	
CDBINT	0(2-word PC stored on interrupt)	
-5	0	
-4	(Flags) 0	
-3	0,, .+1	
-2	MOVEM P1, .+2+CDBSVQ	
-1	JSP P1, PHYINT	
CDBSTS=0	Status and Configuration Information	*
CDBMBW=1	Memory Bandwidth Scheduling Information	
CDBODT	Overdue Timer when Data Transfer Active	
CDBICP	EXEC Virtual Adrs (EPT Adrs) of Interrupt Vector,, Data Logout Area	
CDBIUN	Initial AOBJN Pointer to UDB Table	
CDBCUN	Current AOBJN Pointer to UDB Table	
CDBDSP	Unit Utilities Dispatch Main Entry Dispatch (Channel Dispatch Table)	*
CDBFCT	Fairness Count for Latency	
CDBPAR	Channel Memory Parity Errors	
CDBNXM	Channel NXMs	
CDBXFR	Currently Transferring UDB	
CDBCCL	Channel Command List (3 words)	

MONITOR TABLES
CDB (Cont.)

CDBUDB	KDB or UDB Table (16 words)
CDBSVQ	P1 Saved Here on Vector Interrupt Entry
CDBJEN	BLT 17, 17 (Interrupt Dismiss)
	DATA0 RH, CDBRST
	XJEN CDBINT
CDBRST	Location Used by CDBJEN
CDBCNI	Channel CONI at Start of Interrupt
CDBONR	Fork Who Has Channel in Maint. Mode
CDBADR	Number of This Channel (CHNTAB index)
CDBCS0	Channel Status 0 at Error
CDBCS1	Channel Status 1
CDBCS2	Channel Status 2
CDBCC1	First CCW
CDBCC2	Second CCW
CDBOVR	Number of Overruns
CDBICR	Initial STCR When Device Started
CDBCL2	Alternate CCW List (3 words)
CDBIRB	IORB to start transfer for
CDBLUN	Last UDB which did transfer or positioning
CDBCAD	CCW for first command
	CCW for second command
CDBDDP	CDB Device Dependent Block

*

MONITOR TABLES
CDB (Cont.)



Symbol	Bits	Content
CS.OFL	0	Offline
CS.AC1	1	Primary command active
CS.AC2	2	Secondary command active
CS.MAI	3	Channel is in maint. mode
CS.MRQ	4	Maint. mode requested for a unit
CS.ERC	5	Error recovery in progress
CS.STK	6	Channel Support, Command Stacking
CS.ACL	7	Alternate CCW List is Current
CS.CWP	8	Channel write parity error detected on this channel
CS.CIP	9	This is a CI port channel
CS.DEN	10	(CI port) DIAG TO TAKE CHANNEL is enabled
CS.NIP	12	This is an NI port channel
	26-28	PIA field
	29-35	Channel type field

CDBDSP
See Tables, UDS and CDS

CDBDDP
CDB Device Dependent Block for the RH20 Controller

Defined in: PHYH2

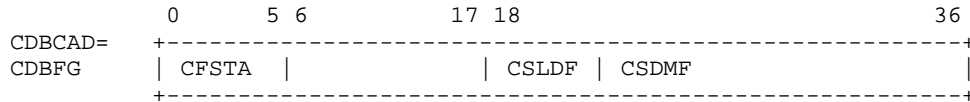
CDBDDP=																				
RH2CNI																				
RH2CNO																				
RH2DTI																				
RH2DTO																				

MONITOR TABLES

CDBCAD

This is the CDB Device Dependent Block for the CI or NI.

| Defined in: PHYPAR



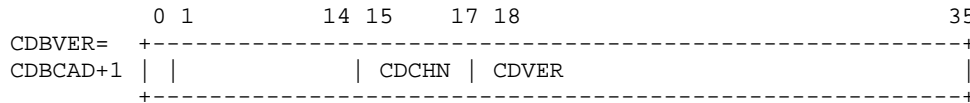
CFSTA

States of the Port:

Symbol	Port States	Port-state description
CHNUNK	0	Unknown (system startup)
CHNSTP	1	Stopped (and needs to be restarted)
CHNNRL	2	Needs to have microcode reloaded
CHNRIP	3	Microcode reload in progress
CHNNDM	4	Needs to have dump taken
CHNDIP	5	Dump in progress
CHNMAI	6	Maintenance mode (owned by diagnostic)
CHNDED	7	Dead (we are not trying to restart it)
CHNRUN	10	Running
CHNRLC	11	Microcode reload complete
CHNDMC	12	Microcode dump complete

CSLDF Last fork that loaded the port's microcode

CSDMF Last fork that dumped the port's microcode



Symbol	Bits	Contents
CDPRT	0	Port; 0 = CI; 1 = NI
CDCHN	15-17	RH20 channel number
CDVER	18-35	Microcode version number

MONITOR TABLES
 CDBCAD (Cont.)

CDBLGO= CDBCC1	Logout Word 0
CDBLG1= CDBCC2	Logout Word 2
CDBLG2= CDBICR	Logout Word 3
CDBQRQ= CDBRST	Non-0 if had to requeue a request
CDBCTR= CDBCL2	Monotonic number,,Fork which owns counters
CDBFQE= CDBCL2+1	Message,,datagram free queue error count
CDBECW= CDBCL2+2	CCW from PCB at error

MONITOR TABLES

CDR-STORAGE-AREA

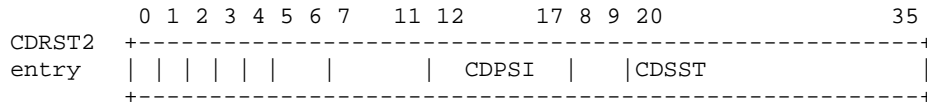
Card Readers (Physical) Storage Area. Most entries are CDRN words long where CDRN equals the number of card readers on the system.

Defined in: STG

	Format	
CDRCT1:	Buffer Count	CDRN
CDRCKT:	Word for Scheduler Test	CDRN
CDRSTS:	Status Word	*CDRN
CDRST1:	Second Status Word	CDRN
CDRST2:	Third Status Word	*CDRN
CARDCT:	Count of Cards Read	CDRN
CARDER:	Number of "Hardware" Errors	CDRN
CDRLCK:	CDR Lock Word	
CDRCNT:	Count of CDRs Opened	
CDUBAD:	Address of UBA Window	CDRN
CD11A:	Address of UBA-11 Address	CDRN
CDERBF:	Error Status for Cardreader	CDRN *16
CDUNIT:	Unit Number of Cardreader	CDRN

KS10
only

MONITOR TABLES
CDR-STORAGE-AREA (Cont.)



Symbol	Bits	Pointer	Content
CD%SHA	0	CDSHA	"Status has arrived" flag
	1	CDMWS	MTOPR is waiting for status to arrive
CD%RLD	2	CDRLD	Front end has reloaded
	3	CDOFI	Offline interrupt is pending
	4	CDEFI	End of file interrupt already given
	5-6	CDRTYP	Type of card reader
	7	CDEXST	Existence of reader
	12-17	CDPSI	PSI chan. no. for on-line transitions
	20-35	CDSST	Software status word

Symbol	Bits	Content
.DVFFE	28	Device has a fatal, unrecoverable error
.DVFLG	29	Error logging info. follows
.DVFEF	30	EOF
.DVFIP	31	I/O in progress
.DVFSE	32	Software cond.
.DVFHE	33	Hardware error
.DVFOL	34	Offline
.DVFNX	35	Nonexistent device

MONITOR TABLES

CDS

Channel Dispatch Service Routine Table. This table contains vectored addresses to channel dependent functions, and is given in its generalized form. The channel dispatch table for the RH20 and RH11 begins at RH2DSP. See PHYPAR for definitions of arguments given and returned on calls to these channel routines.

Defined in: PHYPAR

	Format
CDSINI=0	Initialize and Build Data Structure
CDSSTK=1	Stack Second Channel Command, Skip if OK(fails if RH11)
CDSIO=2	Start I/O on IORB (skip if started O.K.)
CDSPOS=3	Do Positioning to Idle Unit (skips if O.K.)
CDSLTM=4	Return Latency and Best Request (that is, best IORB)
CDSINT=5	Interrupt Entry
CDSCCW=6	Generate Single CCW Entry
CDSHNG=7	Hung Reset
CDSRST=10	On Restart, Reset Channel and All Devices
CDSCHK=11	Periodic Check Entry, PIA, ...
CDSEXT=12	Check legality of a unit (skip if existent)
CDSOCA=13	Extract address from CCW entry

MONITOR TABLES

CF

This table defines the structure of the wait check tables.

Defined in: SCLINK

0 1		11 12 13		Format
				CFTST
				Local address of tester function

Field CFIFI (0-0) The sign bit is reserved for IFIW flg

Field CFCHN (12-12) Set if a channel is req'd for this fcn

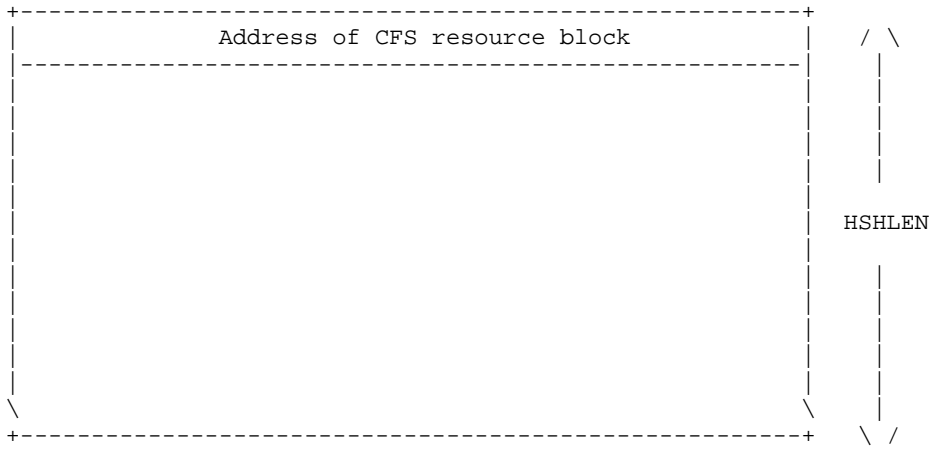
MONITOR TABLES

CFHSHT

This table is the CFS resource hash table and it contains the addresses of CFS resource blocks. The hash number used to index into the table is a combination of the root and qualifier of the resource. Collisions are linked off of the forward pointer of each resource block.

Defined in: STG

Index: Hash number calculated from root and qualifier of resource

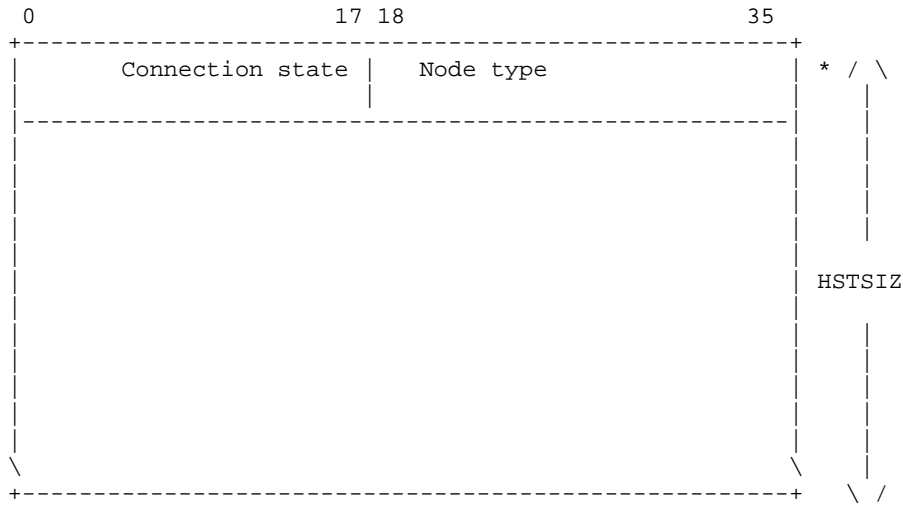


MONITOR TABLES

CFHSTS

This table contains the status of each connection that CFS has. This table is parallel to CFSHST.

Defined in: STG



Connection State:

- 1 --- When connection is fully open
- 0 --- When connection is being opened
- 1B0 -- This bit is turned off when a disconnect happens and the interlock is set.
- 1B17 - This bit is turned off to indicate a lack of credit.

Node Type:

- 1 --- Full CFS node
- 0 --- Not full CFS node

MONITOR TABLES

CFSHST

This table contains the connection ID for each connection that CFS has. The number of connections that CFS currently has is kept in location CFSHCT. CFSHCM contains the count of full voting hosts.

Defined in: STG

CID of connection or -1 if this is a listener	/ \
	HSTSIZ

MONITOR TABLES

CFS RESOURCE BLOCK

This is the format of the CFS resource block. This block fully describes a resource known to CFS. The root and qualifier uniquely describe the resource. The base address of the hash table (which contains these resource blocks) is contained in CFHSHT.

Defined in: CFSPAR

HSHLNK=0	Link to next resource block		
HSHROT=1	Root		
HSHQAL=2	Qualifier		
HSHTIM=3	Time stamp when the resource was granted		
HSFLAG=4	Flags for resource		
HSHCOD=5	Unique code used for ID		
HSHPST=6	Post address for when resource is released (call-back)		
HSHVWD=7	11	17	
	HSHLKF Lock field	HSHVCT Votes in	HSHUNQ Vote code
HSHVRW=10	Reserved		HSHDRC Denial reason code
HSHNBT=11	Node bit table (nodes to contact upon release)		
HSHRET=12	Return address used for removal (SHTADD or LNGADD)		
HSHDVD=13	HSHRHN Dest port number of commit		HSHVVL Vote code
HSHMSK=14	HSHDLY Delay mask		HSHFRK Owning fork
HSHOPT=15	Optional data from vote		
HSHOP1=16	Transaction number for optional data		
HSHOKV=17	Call-back routine for when a vote is OKed		
HSHCDA=20	Call-back routine for optional data in vote		
HSHFCT=21	Fairness timer		

MONITOR TABLES
CFS RESOURCE BLOCK (Cont.)

HSHWTM=22	Vote retry time
HSHBKP=23	Back pointer
HSHBTT=25	First word of hash bit table (for directory locks)
HSHDRI	Additional words for hash bit table
+-----+	
HSFLAG=4	Flags for resource

Contents of HSFLAG

Symbol	Bits	Meaning
HSHWVT	0	If on, we are voting
HSHEYES	1	Yes/No vote (1 if anyone said no)
HSHTYP	2-5	Type of entry
.HTPLH=0		Place-holder entry
.HTOAD=1		Owned for full sharing
.HTOSH=2		Owned Read-Only shared
.HTOEX=3		Owned exclusively
.HTOPM=4		Owned for Promiscuous read
HSHTWF	6	"Token" wait flag
HSRTRY	7	Retry now bit
HSHLSG	8	Entry being released
HSHVRS	9	Vote restart flag
HSHLOS	10	Long/Short flag (1 if block is long)
HSHUGD	11	Voting for an upgrade
HSHODA	12	Optional data valid
HSHKPH	13	Don't purge this entry
HSHVTP	14-17	Type we are voting on
HSHDWT	18	If here, waiting for delay to be up
HSVUC	19	Bit to indicate vote must include HSHCOD
HSHLCL	20	Local exclusive
HSHRFF	21	For tokens only
HSHAVT	22	Vote on all nodes, even reduced CFS nodes
HSHBTF	23	If set, this is a bit-table file
HSHCNT	24-35	Count of sharers

MONITOR TABLES
CFS RESOURCE BLOCK (Cont.)

HSHVRW=10	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px solid black; padding: 5px;">Reserved</td> <td style="padding: 5px;">HSHDRC Denial reason code</td> </tr> </table>	Reserved	HSHDRC Denial reason code
Reserved	HSHDRC Denial reason code		

Contents of field HSHDRC

Symbol	Value	Meaning
.CDDWT	1	We are in VOTDWT
.CDVUC	2	HSHCODs are unequal
.CDYUX	3	We are voting, HSHYES set, we have .HTOEX
.CDYUN	4	We are voting, HSHYES set, unequal access
.CDVDL	5	We are voting, HSHDLY set
.CDVLN	6	We are voting, tie, our serial bigger
.CDVUX	7	We are voting, tie, HSHUGD set, he wants .HTOEX
.CDVUN	10	We are voting, tie, HSHUGD set, unequal access
.CDOCT	11	We own resource, conflicting access, HSHCNT set
.CDOFC	12	We own resource, conflicting access, HSHFCT valid

MONITOR TABLES

CFS VOTER MESSAGE BUFFER

This is the format of the text area of the message packet sent by CFS upon a vote request or reply. It does not include the SCA header, which appears above the first word of the text area (SCALEN).

Defined in: CFSSRV

SCALEN=11	CFFLG Flags	CFCOD Opcode	CFUNQ Unique code	*
CFROT=12	Root			
CFQAL=13	Qualifier			
CFTYP=14	Access required or answer			
CFDAT=15	Optional data (OFNLEN or retry time)			
CFDT1=16	Transaction number for optional data			
CFDST0=17	Structure free count in bit table			
CFDST1=20	Transaction number for structure free count			
CFVGRD=21	CFGWD Guard word (for debugging)	CFDRC Denial reason code		
SCALEN=11	CFFLG Flags	CFCOD Opcode	CFUNQ Unique code	

Contents of FLAGS field

Symbol	Bits	Meaning
CFODA	0	Optional data present
CFVUC	1	Vote to include HSHCOD

MONITOR TABLES
CFS VOTER MESSAGE BUFFER (Cont.)

Contents of OPCODE field

Symbol	Value	Meaning
.CFVOT	1	Vote request
.CFREP	2	Reply to vote request
.CFRFR	3	Resource freed
.CFCEZ	4	Seize resource
.CFBOW	5	Broadcast of OFN change
.CFBEF	6	Broadcast end-of-file info
.CFTAD	7	Time and date arrived
.CFSHT	10	Shutdown of system is pending
.CFENQ	11	Cluster ENQ message

See the description of the HSHDRC field in the CFS Resouce Block table for the possible value of the denial reason code field (CFDRC).

MONITOR TABLES

CH-CTERMD

This is the CTERM Connection Data Block. One CTERM Connection Data Block exists for each active CTERM connection.

Defined in: CTERMD

Format

Per connection CTERM data base - same as CDB

CHIMB	Address of CTERM message input buffer	
CHUID	Unique ID (used for stale detection)	
CHCO1	Last CCOC word (1) sent to server	
CHCO2	Last CCOC word (2) sent to server	
CHBR1	Last break mask (word 1) sent to server	
CHBR2	Last break mask (word 2) sent to server	
CHBR3	Last break mask (word 3) sent to server	
CHBR4	Last break mask (word 4) sent to server	
CHRFL	START-READ flags	
	CHLIN TOPS-20 TTY #	CHCHL DECnet36 channel number
	CHINC Count of bytes in input buffer	CHSTS Current status of DECnet link
	CHSTA Current CTERM state for this TTY	CHSSZ Maximum protocol message size
	CHMAX Maximum input buffer length	CHRLN START-READ length
	CHRID Remote host ID (node address)	CHRBL ^R Buffer length (0<RBFCNT)
	CHFLG	CHFL1
CHRBF	Remote username string	

*
 /\n
 <<RBFCNT>/5>
 \n
 /\n
 10
 \n

MONITOR TABLES
CH-CTERMD (Cont.)

For field CHFLG(0-17):

CHRDA	0	A read request is active in the server.
CHMRD	1	There is input data available in the server
CHSSD	2	Set "do not discard" in the next write message
CHDSO	3	Discard output (control-O is in effect)
CHRCX	4	CR-LF forced on in server's break mask
CHCLI	5	Clear input buffer
CHASR	6	Send another START-READ
CHCOC	7	Send CCOC words
CHTCI	8	Sending input characters to TTYSRV
CHCTM	9	CTERM INITIATE message has been received
CHBIN	10	Last message sent to server was Transparent (binary)

For field CHFL1(18-35):

CHEDT	18	Remote server supports editing
CHLWI	19	Remote server supports line width setting
CHRTI	20	Remote server supports remote TEXTI% prompts

MONITOR TABLES

CH-D36COM

This table defines the memory-manager data base for DECnet-36 pre-allocated message blocks and buffers.

Defined in: D36COM

Format

Core handler structure					
CHBOT	Pointer to free pool start				
CHPTR	pointer to first free block				
CHAVL	Number of available blocks				
	<table border="1"> <tr> <td>CHLWM Low water mark</td> <td>CHREQ Size requested</td> </tr> <tr> <td>CHNUM Total blocks, alloc & unalloc</td> <td>CHSIZ Size of blocks</td> </tr> </table>	CHLWM Low water mark	CHREQ Size requested	CHNUM Total blocks, alloc & unalloc	CHSIZ Size of blocks
CHLWM Low water mark	CHREQ Size requested				
CHNUM Total blocks, alloc & unalloc	CHSIZ Size of blocks				

Field CHCON (0-0) Set if this block type subject to congestion

MONITOR TABLES

CH-LLMOP

This is the DECnet remote console LLMOP header MSD.

Defined in: LLMOP

Format

MSD for header

CHIDD	ID word to hack for Transmit Complete	/\
CHMSD		MD.LEN
CHDAT	Room for Largest Remote Console header	/\
		<<RCH.LN+3>/4>

MONITOR TABLES

CHNTAB

Channel Table contains channel data block (CDB) pointers.

Defined in: STG

Index: Channel Number

	Format	
CHNTAB:	CDB Pointer	/ \
	.	
	.	
	.	CHNN
	.	
	.	
	.	\ /

MONITOR TABLES

CICMST

This table contains the status of the oldest MSCP driver command for each connection. This is the status returned from the server. If the number does not decrease after each GCS command, we assume the remote is dead.

Defined in: PHYMSC

Index: Server connect id.

CICMST	GCS count	/ \
/		/ CTABSZ
/		/
		/
		\ /

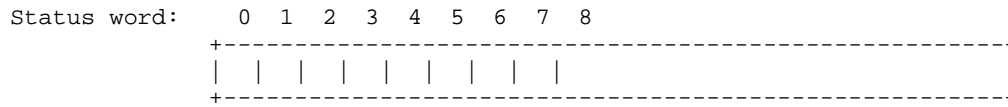
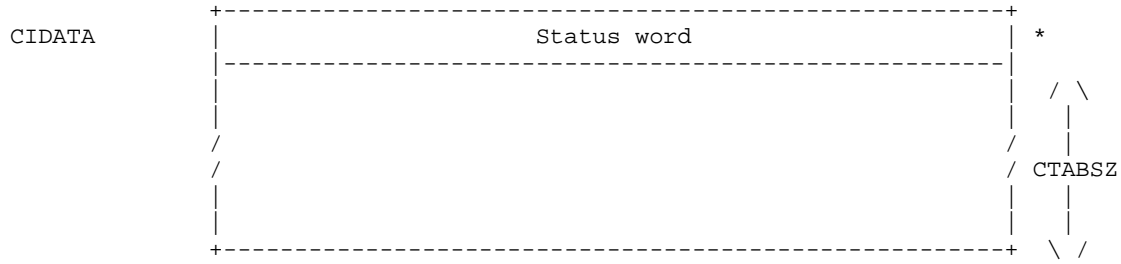
MONITOR TABLES

CIDATA

This table contains the state of the MSCP driver connection during initialization and, after initialization, the status of the connection.

Defined in: PHYMSC

Index: Server connect id.



Symbol	Bits	Content
DT.TAP	0	Controller is a tape drive (must be sign bit)
DT.GAW	1	Node has gone away (connection broken)
DT.GCS	2	A GCS command is outstanding
DT.IDC	3	We have initiated a disconnect
DT.IRC	4	We have initiated a reconnect
DT.DIS	5	Other side has initiated a disconnect
DT.DI1	6	Already tried disconnect once
DT.NXU	7	First pass next unit test
DT.KL	8	Remote is KL

MONITOR TABLES

CI RELATED VARIABLES

This is a list of various CI related variables in SCAMPI. They are not stored in this contiguous format.

Defined in: SCAMPI

TOPFQ:	Address of top of message free queue
BOTFQ:	Address of bottom of message free queue
FQCNT:	Count of buffers on message free queue
TOPDC:	Address of top of "don't care" queue
BOTDC:	Address of bottom of "don't care" queue
TOPDFQ:	Address of top of datagram free queue
BOTDFQ:	Address of bottom of datagram free queue
DFQCNT:	Count of buffers on datagram free queue
SBCNT:	Number of system blocks
NOTTAB:	Address of notification table
NOTEND:	Address of end of notification table
UNQBTS:	Uniqueness bits to be assigned to next CID
UNQRFL:	Number of times uniqueness bits have been recycled
NXTIDX:	Next free index into table of CID's
CIDRFL:	Number of times CIDTAB has been recycled
CIDTAB:	Base address of the CID address table
UBTTAB:	Base address of the CID uniqueness bits table
SBSTUK:	Bit mask indicating which systems are stuck on buffers
RAPTIM:	Timer for SCA
RAPINC:	Min. time increment in milliseconds between reap runs
RNGSW:	Indicates which ring buffer events are recorded

MONITOR TABLES
CI RELATED VARIABLES (Cont.)

SNDTAB:	Table of packets sent	/\ .STLST \
RECTAB:	Table of packets received	/\ .STLST \
LISTEN:	Number of listeners	
RCBCNT:	Number of connections deleted by reaper	
TMGCNT:	Count of systems timed out by idle chatter	
TMGSBI:	Current system under investigation by idle chatter	
TMGTIM:	Timeout period for idle chatter	
MBPS:	Minimum message buffers per system block	
MBCR:	Minimum datagram buffers per system block	
MINMSG:	Minimum number of message buffers which should exist	
MINDG:	Minimum number of datagram buffers which should exist	
NMBCNT:	Count of times we ran out of message buffers	
NDBCNT:	Count of times we ran out of datagram buffers	
TOTMGB:	Total number of message buffers ever created	
TOTDGB:	Total number of datagram buffers ever created	
MBUST:	Number of times a small request was honored Even under message threshold	
DBVST:	Number of times a small request was honored Even under datagram threshold	
DMRCNT:	Number of message buffer requests deferred	
DDRCNT:	Number of datagram buffer requests deferred	
RMRCNT:	Number of message buffer requests refused	
RDRCNT:	Number of datagram buffer requests refused	

MONITOR TABLES
CI RELATED VARIABLES (Cont.)

ASRMR:	Average size of refused message request
ASRDR:	Average size of refused datagram request
LRGREQ:	Buffer requests of less than this size are small req.
MGTRSH:	MSG Threshold SC.ABF does not allocate a large request *
DGTRSH:	DG Threshold SC.ALD does not allocate a large request *

* A large request is any request larger than 2.

MONITOR TABLES

CLASS-SCHEDULER-STORAGE

This storage is used by the class scheduling algorithms.

Defined in: STG

Index: A number of the sections are indexed by either class (sections of length MAXCLS) or by job number (sections of length NJOBS).

	Format	
MJBUSE:	Highest job in use	
RDRTIM:	Time to do next reorder	
UTLTIM:	Time to compute utilization	
UTLINT:	Interval to compute next utilization	
OLDSLD:	Previous sold time	
OLDIDL:	Previous idle time	
CLASSF:	If non-zero, doing classy scheduling	
CLSCTL:	Class control word	*
CLSUTL:	Class utilization	/\ MAXCLS \ \ .
JOBCLS:	Class per job	/\ NJOBS \ \ .
JOBUTL:	Job utilization	/\ NJOBS \ \ .
JOBIRT:	Job incremental runtime	/\ NJOBS \ \ .
JOB DST:	Job distance	/\ NJOBS \ \ .
CLSSHR:	Class share	/\ MAXCLS \ \ .

MONITOR TABLES
CLASS-SCHEDULER-STORAGE (Cont.)

CLSSWA:	Windfall allocation (or -1)	/\
	.	MAXCLS
		\/
CLSSHI:	Share per member	/\
	.	MAXCLS
		\/
CLSCNT:	CLGLC	/\
	Count of processes	MAXCLS
	on GOLST per class	
	.	\/
		\/
CLSDST:	Class distance	/\
	.	MAXCLS
		\/
CLSSUM:	Integral of NRUN for classes	/\
	.	MAXCLS
		\/
CLSIRT:	Class incremental runtime	/\
	.	MAXCLS
		\/

	0 1	9 10	18 19 20	25 26	36
CLSCTL	CLSDF	CLSBT	CLSKV		
entry	+-----+-----+-----+-----+-----+				

Bits	Pointer	Content
0	CLSD	BATCH jobs to dregs queue
1-9	CLSDF	Default class
10-18	CLSBT	Batch class
19	CLSAC	If on, class by accounts
20-25	CLSKV	Current knob value

MONITOR TABLES

CLUHST

This table contains information CLUDGR uses when it receives a connection to its listener. CLUHST is a maximum of HSTSIZ words long. HSTSIZ is defined in STG.

Defined in: CLULSN

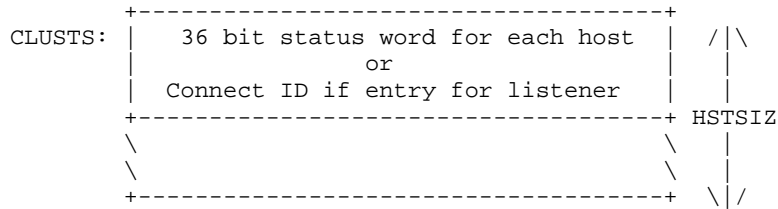
CLUHST:	+-----+ / \
	-1 if listening, or connect ID
	+-----+ HSTSIZ
	\ \
	\ \
	+-----+ \ /

MONITOR TABLES

CLUSTS

This table is kept in parallel with CLUHST. It contains the status word or it contains a connect ID if this entry is associated with a listener. CLUSTS is a maximum of HSTSIZ words long. HSTSIZ is defined in STG.

Defined in: CLULSN



Name	Bit	Meaning
CL%RDY	0	Set when connection is fully opened
CL%OPN	1	Set when connection is being opened
CL%DNY	2	Set when remote system is rejecting CLUDGR requests
CL%LCL	3	Set when remote system has little credit left
CL%NOS	4	Set when remote system is refusing SEND ALLs
	5-17	Reserved for future expansion
CIDBUF	18-35	Contains the count of buffers in use by this connection.

MONITOR TABLES

CM

CM is the common header used in all NI command blocks. The remainder of a command block for a particular command is appended to the end of the common header.

Defined in: PHYKNI

Format					
CMFLI	Forward link *				
CMBLI	Backward link				
CMVAD	Virtual address of entry				
	<table border="1"> <tr> <td>CMERR Error code including error bit at bottom</td> <td>CMFLG</td> <td>CMOPC Opcode</td> <td>CMTDR Time domain reflectometry value</td> </tr> </table>	CMERR Error code including error bit at bottom	CMFLG	CMOPC Opcode	CMTDR Time domain reflectometry value
CMERR Error code including error bit at bottom	CMFLG	CMOPC Opcode	CMTDR Time domain reflectometry value		

Field CMSRI (0-0) Send/receive indicator

For field CMFLG(7-14):

CMPAC	7	Packing mode for non-BSD
CMCRC	8	CRC included
CMPAD	9	Unused
CMB03	10	Unused
CMBSD	11	Buffer segment descriptor format
CMB05	12	Unused
CMCLR	13	Clear counters
CMRSP	14	Response needed

CMFLI	CMERC NISRV error code during command processing
-------	---

MONITOR TABLES

CONNECT ID FORMAT

This is the format of a SCA connect ID. Each SYSAP can specify the SYSAP ID to be of any value.

Defined in: SCAPAR

0	5 6	22 23	31 32	35
+-----+-----+-----+-----+				
SID		UBITS		INDEX
SYSAP ID		Uniqueness bits		CIDTAB index
				unused
+-----+-----+-----+-----+				

MONITOR TABLES

CSTnX

The CSTnX tables, where n ranges from 0 to 3, are the tables that allow access to the core status tables, now residing in extended sections. Each table holds 16 values, which allow indirect access to each of the CSTs, instead of the indexed access that was used when the CSTs were in section 0/1.

The values in the CSTnX tables are never changed and are determined when the monitor is linked. CST5 is still in section 0/1, so there is no need for a CST5X table.

Defined in: CSTnX

	0	5 6	35
CSTnX:	0	Address of CSTn	
	1	Address of CSTn	
	2	Address of CSTn	
	3	Address of CSTn	
	.		
	.		
	.		
	17	Address of CSTn	

MONITOR TABLES
CST0 (Cont.)

Symbol	Bits	Pointer	Content
AGEMSK	0-8	CSTAGE	<p>If page in use, contents of pager age register (>= 100) at last age register reload</p> <p>If page not in use, this field indicates (right-justified) the page state as follows:</p> <p>PSRPQ = 0 On replaceable queue PSDEL = 1 To be put on replaceable queue PSRDN = 2 Read completed PSWIP = 4 Write in progress PSRIP = 6 Read in progress PSSPQ = 7 Page on special memory queue PSASN = 10 Page assign to process if age field >=PSASN. (The age field should always be strictly greater than 10 as it is initialized to 100 and increases in value as process runs.)</p>
	9-14	XGAGE	Age at last XGC (low bits only)
	18	CSWRB	CST write bit
	19-32	CFXRD	Number of fork which initiated read if page not in use (that is, age field < 10).
PSTFLD	33-34	CSTPST	<p>Special page state</p> <p>PSTAVL=.MCPSA=0 Available for RPLQ when freed PSTSPM=.MCPSS=1 Place on SPMQ when freed PSTOFL=.MCP SO=2 Offline-action as PSTSPM PSTERR=.MCPSE=3 Offline due to error action as PSTSPM</p>
CORMB	35		This is the "modified" bit which is set by the pager on any write reference. This bit is 1 if the page has been written since the last operation.

MONITOR TABLES

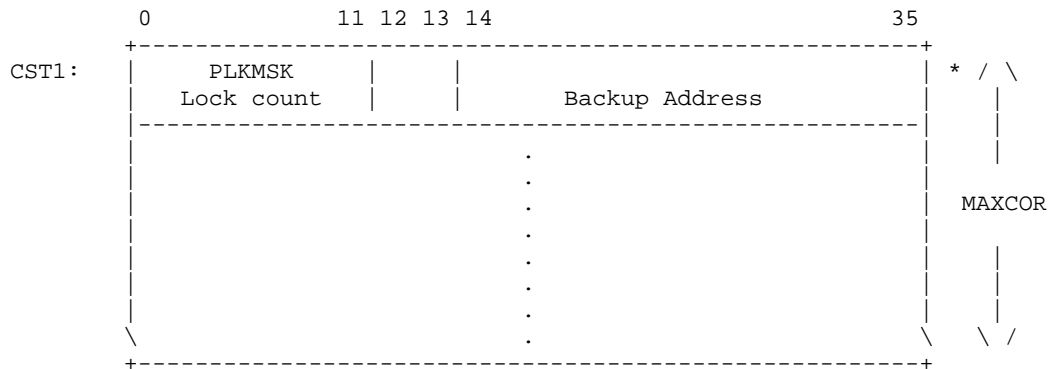
CST1

Core Status Table 1. This table is referenced only by the software and is parallel to CST0. It contains the lock count which indicates the number of system events requiring the page be locked in core (that is, page table contains other core addresses) and the backup address (next level of storage) for each page in core (1000000 if unassigned).

Defined in: STG

Index: Physical page number

Format



Symbol	Bits	Pointer	Content
	0-11	PLKMSK	Lock count field-if non-zero, the page is not considered for swapping
PLKV	11		Page lock value in CST1
	14-35		Backup address

MONITOR TABLES
CST2

private process page (that is, pointed to by a direct pointer from the process' map). Otherwise (that is, PTN<NOFN), it is a process' file page pointed to by an indirect pointer through the file's own page table, the index block. *

* In both of these cases when an index block is involved (that is, SPTN/PTN< NOFN), it is common to find in the monitor listings the symbolic notation, OFN, replacing SPTN/PTN.

MONITOR TABLES

CST3

Core Status Table 3. This table is referenced only by the software and is parallel to CST0. An entry in this table is used for a variety of purposes, generally as a list pointer for groups of pages on various queues.

For example, when on the replaceable queue, the left half and right half contain backward and forward list pointers, respectively. When on a swapping device queue, the right half contains a forward list pointer and B0 is 1 if write and 0 if read.

Other queues threaded throughout this table are the deletion and special memory queues.

When the page is in use (not linked on one of the queues), it contains the local disk address for PHYSIO and the fork assigned to the page.

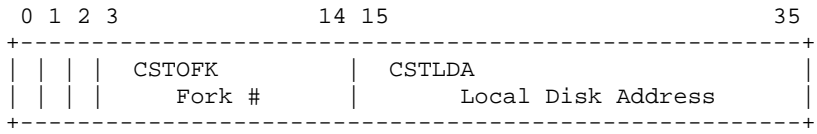
Defined in: STG

Index: Physical page number

Format

CST3:	Backward List Pointer		Forward List Pointer		/ \
	or				
			Forward List Pointer		
	or				
	Flags	CSTOFK Fork #	CSTLDA Local Disk Address		*
					MAXCOR
	.				
	.				
	.				
	.				

MONITOR TABLES
CST3 (Cont.)



Symbol	Bits	Pointer	Content
DWRBIT	0		Set if write in progress. The bit is cleared by the swapper when the write completes.
SWPERR	1		Set if an unrecoverable error occurred when this page read in from disk/drum
DSKSWB	2		Swap to disk requested by DDMP (periodic routine that trickles file pages to the disk) or by monitor when certain monitor calls are issued, for example, CLOSF
	3-14	CSTOFK	Process to which this page is assigned (7777 is not assigned).
	15-35	CSTLDA	Local disk address for PHYSIO

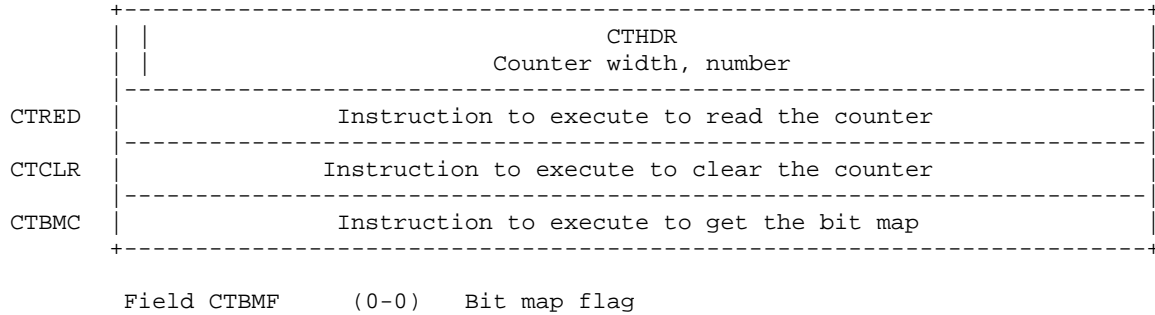
MONITOR TABLES

CT

The CT structure is used to keep the information for a DECnet network management counter. It is pointed to by a table, generated with the COUNTER macro. This structure is read by the routine NTCTRS in D36COM.

Defined in: D36PAR

Format



MONITOR TABLES

DEV`DTB

Device Dispatch Table. Each device has its own dispatch table that conforms to the format described below. An error return dispatch address is placed in those words which have no corresponding device function. The naming convention for these tables is the device name concatenated with DTB (that is, MTADTB, DSKDTB, and TTYDTB)

Defined in: PROLOG

Format

DTBLH=0	Length of DTB Block
DLUKD=1	Directory Setup
NLUKD=2	Name Lookup
ELUKD=3	Extension Lookup
VLUKD=4	Version Lookup
PLUKD=5	Protection Insertion
ALUKD=6	Account Insertion
SLUKD=7	Status Modification
OPEND=10	Open File
BIND=11	Sequential Byte Input
BOUTD=12	Sequential Byte Output
CLOSD=13	Close File
REND=14	Rename File
DELD=15	Delete File
DMPID=16	Dump Mode Input
DMPOD=17	Dump Mode Output
MNTD=20	Mount
DSMD=21	Dismount
INDD=22	Initialize a Directory

MONITOR TABLES
DEV`DTB (Cont.)

MTPD=23	MTOPR Operations
GDSTD=24	Get Device Status
SDSTD=25	Set Device Status
RECOUT=26	Force Record Out (SOUTR)
RFTADD=27	Read File Time and Date
SFTADD=30	Set File Time and Date
JFNID=31	Set JFN for Input
JFNOD=32	Set JFN for Output
ATRD=33	Check Attribute
RLJFD=34	Release JFN

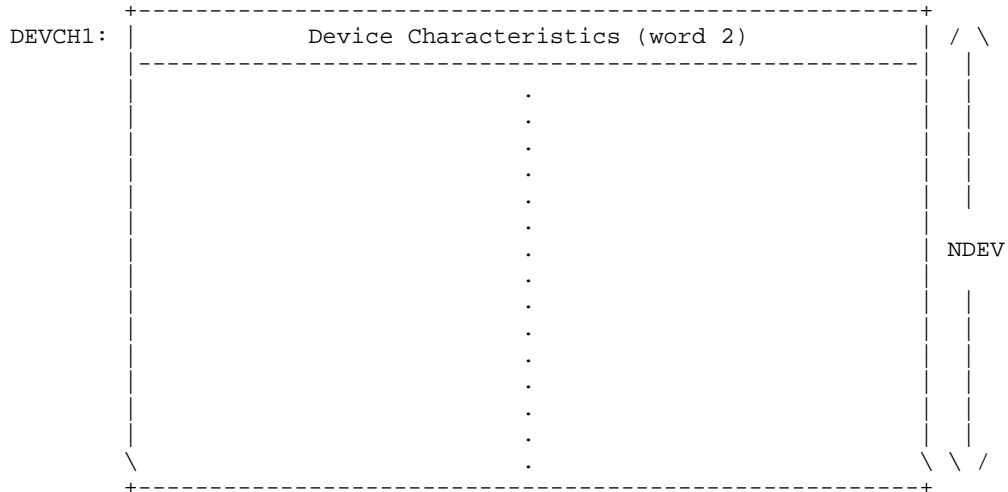
MONITOR TABLES

DEVCH1

Device Characteristics Table 1. This table contains a word of information about each device unit in the system and is initialized from the INIDVT table at system start up time.

Defined in: STG, MONSYM

Format



Symbol	Bits	Content
D1%SPL	0	Device is spooled
D1%ALC	1	Device is under control of allocator
D1%VVL	2	Volume valid
D1%NIU	3	Device slot not is use
D1%INI	4	Device is being initialized currently for structures only)
D1%MTO	5	Device can do MTOPR without JFN opened.

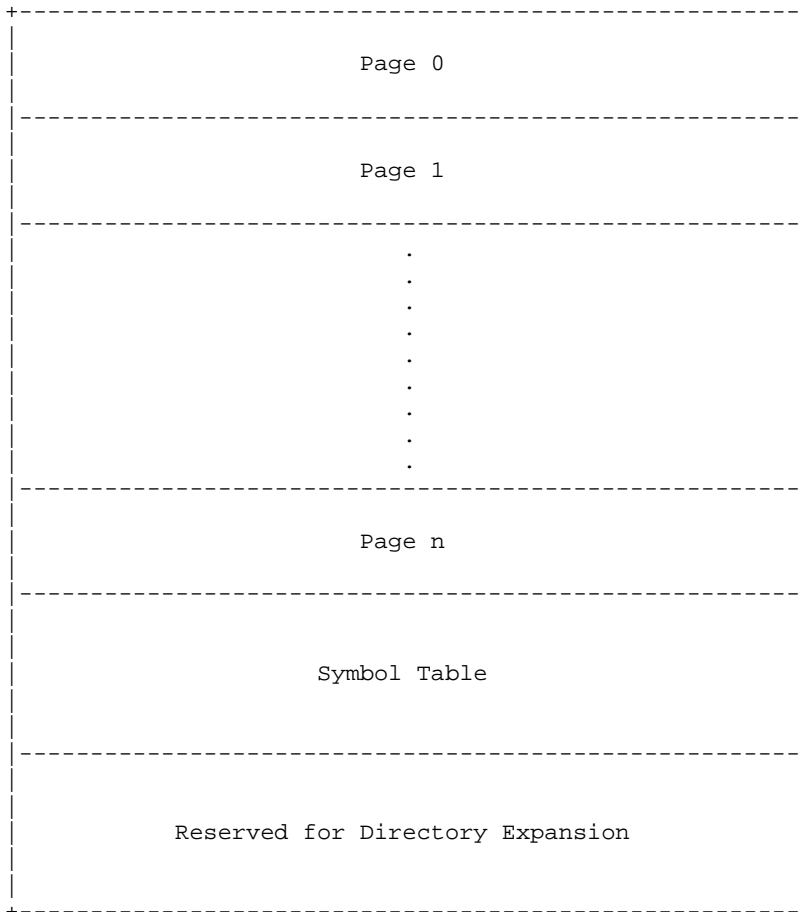
MONITOR TABLES

DIRECTORY

Directory Format. The following illustrations show the format of a TOPS-20 directory.

Defined: PROLOG

Overview of a Directory



MONITOR TABLES
 DIRECTORY (Cont.)

First Page of a Directory

	0	17 18	23 24	
	DRTYP		DRVER	DRHLN
	Block Type TYDIR (400300)		Ver. #	Length of Header
	DRRPN		DRNUM	
	Relative Page # in DIR		Directory Number	
.DRFFB=2	DRFFB Pointer to First Free Block			
	DRSBT Address of start of Symbol Table			
	DRSTP Address of end of Symbol Table			
	DRFTP Address of Last Used Word+1 for Strings and FDBs			
	DRFBT Pointer to Free Bit Table			
	DRDPW Default File Protection			
	DRPRT Default Directory Protection			
	DRDBK Backup Specification			
	DRLIQ Logged In Quota			
	DRLOQ Logged Out Quota			
	DRDCA Current Directory Allocation			
	DRNAM Pointer to Directory Name String			
	DRPSW Pointer to Password String			

MONITOR TABLES
 DIRECTORY (Cont.)

DRPRV	Privilege Bits
DRMOD	Mode Bits
DRDAT	Date and Time of Last Interactive LOGIN
DRUGP	Pointer to User Group List
DRDGP	Pointer to Directory Group List
DRUDT	Date and Time of Last Update to Directory
DRSDM	Max # of Subdirectories
DRSDC	Count of Subdirectories
DRCUG	CRDIR allowed specifying these User Groups
DRACT	Pointer to Dir. Default Account
DRDNE	Default online expiration date/interval
DRDFE	Default offline expiration date/interval
DRRNA	Pointer to remote alias list
Reserved	DRPEV Password encryption ver.
DRPDT	Creation date/time of password
DRPED	Expiration date/time of password
DRPUD	Password use data

*

MONITOR TABLES
 DIRECTORY (Cont.)

DRPPN	TOPS-10 project-programmer number		
DRNIL	Last non-interactive LOGIN date-time		
DRFIL	Failed interactive Login attempts	DRFNL	Failed non-interactive Login attempts
Spare Words			
Free Space for Strings and FDBs			

	18	23 24	29 30	35
DRPRT		DRPOW	DRPGP	DRPWL

Bits	Pointer	Content
18-23	DRPOW	Owner field
24-29	DRPGP	Group field
30-35	DRPWL	World field

DRPUD	DRPCU	DRPMU
-------	-------	-------

0-17	DRPCU	Current password use count
18-36	DRPMU	Maximum password use count

MONITOR TABLES
 DIRECTORY (Cont.)

General format for all blocks

0	17 18	23 24	35
BLKTYP	BLKVER	BLKLEN	
Type code	Ver. #	Length	

Possible type codes are:

Code	Value	Type
.TYNAM	400001	Name Block
.TYEXT	400002	Extension Block
.TYACT	400003	Account Block
.TYUNS	400004	User Name Block
.TYFDB	400100	File Descriptor Block
.TYLAC	400200	Legal Account List
.TYDIR	400300	Directory
.TYSYM	400400	Symbol Table
.TYFRE	400500	Free Block
.TYFBT	400600	Free Storage Bittable
.TYGDB	400700	Group Descriptor Block

Subsequent Directory Pages

DRTYP .TYDIR (400300)		DRVER Ver. #		DRHLN Length of Header
DRRPN Relative Page # in DIR		DRNUM Directory Number		
DRFFB Pointer to First Free Block				
Free Space for Strings and FDBs				

MONITOR TABLES
 DIRECTORY (Cont.)

Symbol Table

SYMTY		SYMDN	
.TYSYM (400400)		Dir. # of Sym.Tbl.	
-1			
SYMET	SYMAD		
Type	Address of FDB		
SYMVL			
First 5 Characters of Name, Account or User Name for last writer/author in ASCII			
.			
.			
.			
.			
.			
.			

0	1	2	3	35
Type				Address of FDB

Bits	Pointer	Content	
0-2	SYMET	Entry Type	
		0 = .ETNAM	Name
		2 = .ETUNS	User Name
		4 = .ETACT	Account
3-35	SYMAD	Address of FDB	

MONITOR TABLES
 DIRECTORY (Cont.)

User Name String

UNTYP .TYUNS (400004)	Ver. #	UNLEN Length
UNSHR Share Count of User Name String		
UNVAL ASCIZ User Name String		

Name String

NMTYP .TYNAM (400001)	Ver. #	NMLEN Length
NMVAL ASCIZ Name String		

Extension String

EXTYPE .TYEXT (400002)	Ver. #	EXLEN Length
ASCIZ Extension String		

Account String

ACTYP .TYACT (400003)	Ver. #	ALLEN Length
ACSHR Share Count		
ACVAL ASCIZ Account String		

MONITOR TABLES
 DIRECTORY (Cont.)

File Descriptor Block (FDB)

FBTYP .TYFDB (400100)	FBVER Ver. #	FBLEN Length
See FDB Table for Details of this Block		

Free Space

FRTYP .TYFRE (400500)	FRVER Ver. #	FRLEN Length
FRNFB Pointer to Next Free Block or 0 if at end		
Remainder of Free Block		

Free Storage Bit Table

.TYFBT (400600)	Ver. #	Length
Bit Table Containing 1 Bit per Directory Page		
0 = No Room on the Page 1 = There is Room on the Page		

MONITOR TABLES
DIRECTORY (Cont.)

Group List

.TYGDB (400700)	Ver. #	Length
Group #		Group #
Group #		0

MONITOR TABLES

DIRECTORY CACHE

This resident table contains the directory cache and a lock for the cache. Every five words (excluding the lock) describes an entry.

Defined in: STG, PROLOG

Reference by: DIRECT

Format

DIRCLK:	Directory cache lock		
DIRCSH:			/ \
DCDIRN=0	Directory number of this entry		
DCSTRN=1	Structure information (1.half of SDBFLK in SDB)	Structure number	
DCSHRC=2	Share count of the entry		normal entry
DCSOFN=3	OFN for this directory		
DCSTIM=4	Time at which this entry was last referenced		
	.		DIRSCZ
	.		(^D25)
	.		*5

MONITOR TABLES

DL

This is the DECnet data link block -- DL.

Defined in: D36PAR

Format

DLNXT	Link to next data link block				
DLUID	ID supplied by DNADLL user				
DLDID	Device ID				
	<table border="1"> <tr> <td>DLFLG</td> <td>DLKNO</td> </tr> <tr> <td></td> <td>Kontroller number (DTE only)</td> </tr> </table>	DLFLG	DLKNO		Kontroller number (DTE only)
DLFLG	DLKNO				
	Kontroller number (DTE only)				
DLUNB	Pointer to the User-NI block				
DLPID	Portal ID				
DLLTP	Line table pointer				
DLSLZ	(0) Seconds since last zeroed				
DLBYR	(1000) Total bytes received				
DLBYS	(1001) Total bytes sent				
DLDBR	(1010) Total data blocks received				
DLDBS	(1011) Total data blocks sent				
DLUBU	(1065) User buffer unavailable				

For field DLFLG(0-5):

DLRUN	0	Data link is running
DLEBU	1	Emergency buffer in use
DLLIU	2	Line in use by circuit

MONITOR TABLES

DNA PARAMETER AND COUNTER DATA BASE

This is the DNA parameters and counters data base description. The entity data bases are pointed to by table PRMP.

Defined in: NTMAN

Each entity type (NODE, LINE) has a data base composed of two word blocks associated with it. The two word blocks have the format:

	0	3 4	8 9	14 15	20 21	35
Word 0	+-----+					
	NTTYP	NTLEN	NTROU	NTDEV	NTQUA	
	+-----+					
	Bits	Pointer	Content			
	0-3	NTTYP	Data type			
			NT.FC=1 - Coded format			
			NT.FCM=2 - Coded multiple			
			NT.FAI=3 - Ascii image (8-bit)			
			NT.FDU=4 - Decimal, unsigned. Cannot be zero			
			NT.FDS=5 - Decimal, signed			
			NT.FH=6 - Hex integer			
			NT.FHI=7 - Hex, image			
			NT.FOC=10 - Octal			
			NT.FDM=11 - Decimal, milliseconds			
			NT.FVN=12 - Version number			
			NT.FNE=13 - Node entity ID			
			NT.FNN=14 - Ascii node name			
			NT.FCN=15 - Ascii circuit name			
	4-8	NTLEN	Length			
	9-14	NTROU	Index to routine to call			
	15-20	NTDEV	Device applicability			
			NTD.R - DMR-11			
			NTD.N - Ethernet (NIA20)			
			NTD.C - Computer Interconnect (CI20)			
			NTD.P - DDP (DUP11)			
			NTD.K - KDP (KMC11/DUP11)			
			NTD.D - DTE-20 (UGH)			
	21-35	NTQUA	Qualifier Parameter Number			

MONITOR TABLES
DNA PARAMETER AND COUNTER DATA BASE (Cont.)

Word 1	0	3 4	9 10	11 12	13	22 23	35
	NTAPL	NTINF	NTSET	NTBUF	NTBSZ	NTSEQ	
	Bits	Pointer	Contents				
	0-3	NTAPL	Applicability restrictions NTA.E - Executor NTA.L - Loop nodes NTA.R - Remote nodes NTA.H - Home area nodes				
	4-9	NTINF	Information type NTI.C - Characteristics NTI.S - Status NTI.% - Summary NTI.K - Circuit State NTI.Q - This parameter is qualified NTI.N - None. NOOP bit				
	10-11	NTSET	Settability restrictions NTS.=0 - Read and write NTS.R=1 - Read only parameter NTS.W=2 - Write only parameter				
	12	NTBUF	Buffer Field NTB.=0 - Parameter value fits into a word NTB.B=1 - Parameter value too big				
	13-22	NTBSZ	Buffer size needed (if needed)				
	23-35	SEQ	Sequence or type of field				

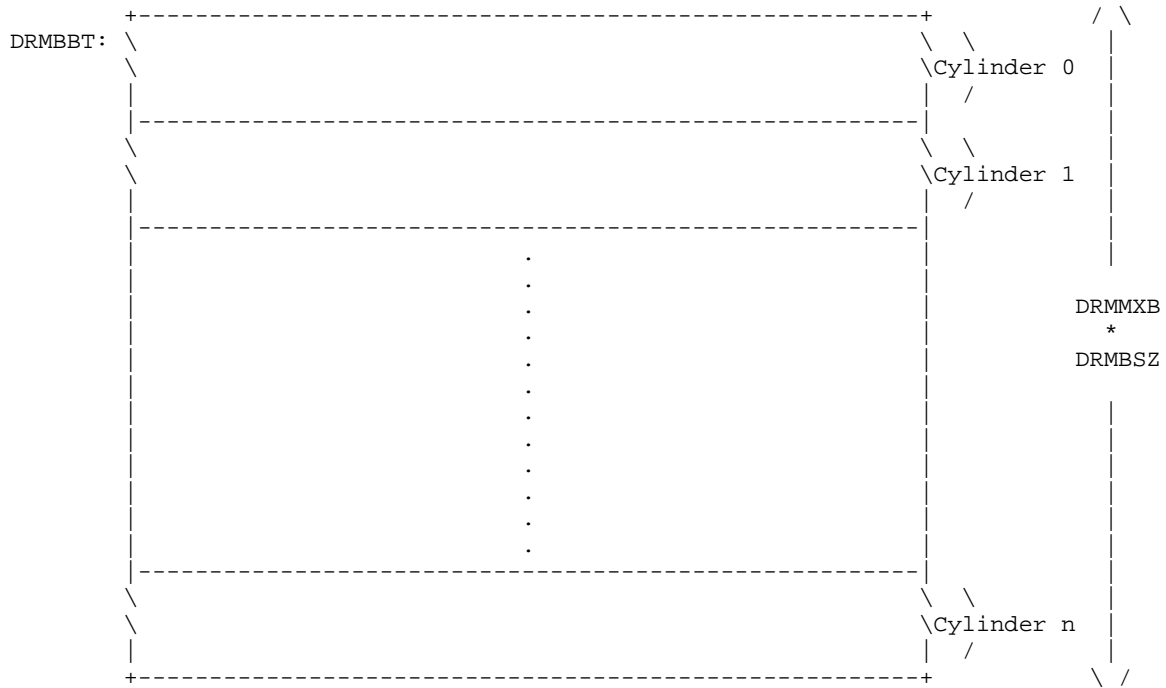
MONITOR TABLES

DRMBBT

Drum Bit Table. This bit table indicates which pages are in use and which pages are available in the swapping area.

Defined in: STG

Format



NOTE

The bit map for each cylinder starts on a word boundary and contains as many full words as are needed for all of its pages.

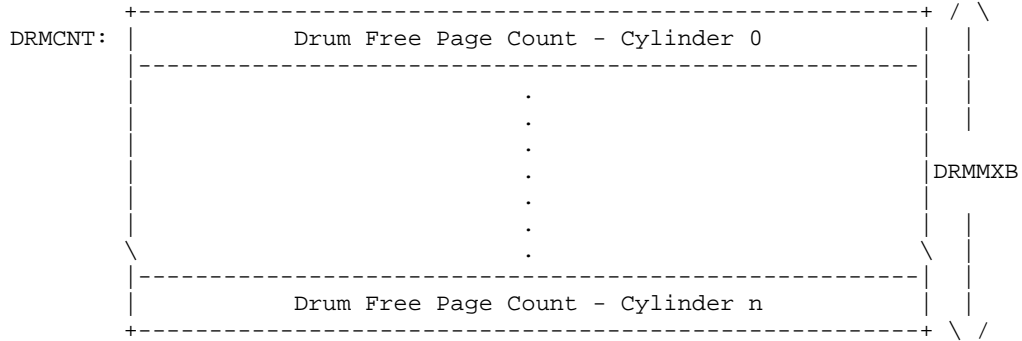
MONITOR TABLES

DRMCNT

Drum Count Table. This resident table, indexed by cylinder, records the free page count for the drum (logical swapping area). The total free page count for all the cylinders is kept in the storage word, DRMFRE.

Defined in: STG

Format



MONITOR TABLES

DSKSIZ

Disk Size Pointer Table. This table contains pointers to the disk size data tables. DSKSIZ is parallel to DSKUTP which contains codes for the known disk types. When an entry is added to DSKUPT, a corresponding entry must be added to DSKSIZ to point to the correct size data for that type of disk.

Defined in: PHYSIO

Format

DSKSIZ:	Pointer to RP04 Table (DSKSZ0)
	Pointer to RP05 Table (DSKSZ0)
	Pointer to RP06 Table (DSKSZ1)
	Pointer to RP07 Table (DSKSZ2)
	Pointer to RM03 Table (DSKSZ3)
	Pointer to RP20 Table (DSKSZ4)
	Pointer to RA80 Table (DSKSZ5)
	Pointer to RA81 Table (DSKSZ6)
	Pointer to RA60 Table (DSKSZ7)
	Pointer to RA82 Table (DSKSZ8)(Future)
	Pointer to RA62 Table (DSKSZ9)(Future)

MONITOR TABLES

DSKSZ`N

Disk Size Table (for type n). The resident table contains size data (for disks) based on type.

- n = 0 for RP04 and RP05
- n = 1 for RP06
- n = 2 for RP07
- n = 3 for RM03
- n = 4 for RP20
- n = 5 for RA80
- n = 6 for RA81
- n = 7 for RA60
- n = 8 for RA82 (future)
- n = 9 for RA62 (future)

Defined in: STG

Format

DSKSZ`n:	
SEGPAG=0	Sectors per Page
SECCYL=1	Sectors per Cylinder
PAGCYL=2	Pages per Cylinder
CYLUNT=3	Cylinders per Unit
SECUNT=4	Sectors per Unit
BTWCYL=5	No. of Bit Words in Bit Table per Cylinder
LPPCYL=6	Lost Sectors per Surface
MINFPG=7	Minimum Free Pages for Free Choice Allocation
MAXFPU=10	Pages per Unit for DSKASN turning point
SECSRF=11	Sectors per Surface
USSECU=12	Microseconds per LATOPT sector unit
TRECPP=13	True Section per Page (RAXx disks only)

MONITOR TABLES

DSKUTP

Disk Unit Type. This table contains the unit types used by the file system.

Defined in: PHYSIO

Format

DSKUTP:	Format	
	RP04 Disk Unit Code (.UTRP4 = 1)	/ \
	RP05 Disk Unit Code (.UTRP5 = 5)	
	RP06 Disk Unit Code (.UTRP6 = 6)	
	RP07 Disk Unit Code (.UTRP7 = 7)	
	RM03 Disk Unit Code (.UTRM3 = 11)	
	RP20 Disk Unit Code (.UTP20 = 24)	
	RA80 Disk Unit Code (.UTR80 = 27)	NDSKUT
	RA81 Disk Unit Code (.UTR81 = 30)	
	RA60 Disk Unit Code (.UTR60 = 31)	
	RA82 Disk Unit Code (.UTR82 = 32)(Future)	
	RA62 Disk Unit Code (.UTR62 = 33)(Future)	
		\ /

MONITOR TABLES

DST

Drum Status Table. This table is indexed as a function of the drum (swapping space) address. The DST holds the address of the next lower level of storage (usually disk) for the page stored at that address on the drum.

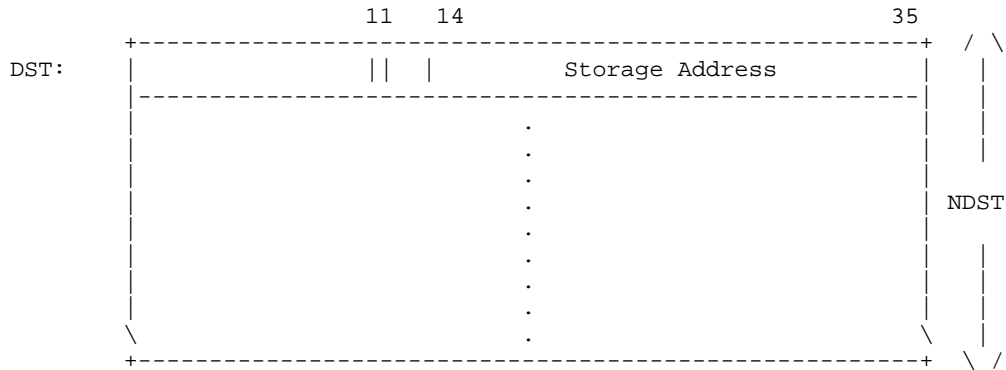
BWRBIT (bit 11) indicates if the page has been changed since being read from the lower level storage. The page is only copied back on to the lower level storage if BWRBIT is set (that is, page modified) when the page is no longer in use. A slot no longer in use contains a -1.

The DST table is in an extended section and is pointed to by DSTLOC.

Defined in: STG, PROLOG

Index: Drum page number

Format



MONITOR TABLES

DTE-STORAGE-AREA

DTE Storage Area. This storage area contains storage for each DTE. It contains the Communication Area for each processor in COMBAS, the linked output packet queues (pointed to by DTEQS), the DTE input buffers, and local storage (that is, ACs, PC, & PDL) for the DTE Protocol Handler, DTESRV.

A packet in the COMQ area must be reformatted to RSX20F protocol and stored in PKTADR before being sent over the DTE. The before and after packet formats are described below.

Two single packets, SNGPK1 and SNGPK2 (already formatted as direct packets to RSX20F protocol - See below) are set aside for the DTSNGL routine. This routine is responsible for activating lines and sending single characters over the DTE if the output buffer has only one character.

Normally output buffer characters are sent by way of indirect packets over the DTE, where the indirect packet (after being reformatted and stored in PKTADR) is sent first followed by the line's output buffer characters.

Defined in: STG

	Format	
UPFLAG:	Word to Generate Continued Message	
LOAD11:	Says if -11 Needs to Reload	
LODFRK:	Handle of Monitor Fork Doing -11 Reboot	
DTEDETE:	The Interrupting DTE	
CTYUNT:	FE Physical Unit for TS TTY	
DTEQS:	Drive Queue Header for DTE 1 (Ptr. to 1st Queued Packet in COMQ)	/ \
	.	\ DTEN
	Driver Queue Header for DTE n	
COMQ:	Area for Queue Packets (=Packet Size * ^D20)	\ / * / \
		\ QPKT1

MONITOR TABLES
DTE-STORAGE-AREA (Cont.)

COMH:	Queue Header (Points to 1st Free Packet in COMQ)	\ /
DTESTS:	DTE 1 Status Word	*
	.	
	DTE n Status Word	\ DTEN
DTEST1:	DTE 1 Secondary Status Word	\ /
	.	
	DTE n Secondary Status Word	* / \
	.	
	DTE n Secondary Status Word	\ DTEN
DTETMR:	DTE 1 Timer Variable	\ /
	.	
	DTE n Timer Variable	\ DTEN
	.	
	DTE n Timer Variable	\ /
DTBFWD:	Hdr. Word for DTE 1 Buf (Ptr. to 2nd Input Buf,, Ptr. to 1st Input Buf)	\
	.	
	Header Word for DTE n Buffer	\
DTETRA:	Interrupt Return PC for DTE 1	\
	.	
	Interrupt Return PC for DTE 2	\
	.	
DTESKP:	Local PDL Stack	/ \
	.	
	Local PDL Stack	\ DTESZ
	.	
DTEACB:	Block to Save ACs	\ /
	.	
	Block to Save ACs	/ \
	.	
	Block to Save ACs	\ 16
DTEIND:	Storage for Indirect Function for DTE 1	\ /
	.	
	Storage for Indirect Function for DTE n	* / \
	.	
	Storage for Indirect Function for DTE n	\ DTEN
DTEEND:	DTE 1 Resident free space debugging storage	\ /
	.	
	DTE n Resident free space debugging storage	\ DTEN
	.	
	DTE n Resident free space debugging storage	

MONITOR TABLES
DTE-STORAGE-AREA (Cont.)

DTEOBL:	DTE 1 Pointer to section zero output block	\ /	
	.	/ \	
	DTE n Pointer to section zero output block	\	DTEN
DTEIBL:	DTE 1 Pointer to section zero input block	\ /	
	.	/ \	
	DTE n Pointer to section zero input block	\	DTEN
DTEDID:	DTE 1 Router's circuit ID list	\ /	
	.	/ \	
	DTE n Router's circuit ID list	\	DTEN
DCNCID:	DTE 1 DECnet callback ID list	\ /	
	.	/ \	
	DTE n DECnet callback ID list	\	DTEN
PKTADR:	Storage for Queue Packets (One 3-Word Packet/RSX20F Protocol DTE)	* / \	
		\	PKTSZ1
COMBUF:	Processor # Index into COMBAS to get to this 4 Processor's Comm Area	\ /	--
	3 ''	/ \	DTEN+1
	2 ''	\ /	Header Area
	1 ''	/ \	
	0 ''	\ /	--
COMBAS:	KL10 "Owned" Area	-- *	
	"To" DTE1 Area		
	"To" DTE2 Area		Master Process Comm Area
	.		
	.		
	.		

MONITOR TABLES
DTE-STORAGE-AREA (Cont.)

	"To" DTEn Area		Communi- cation Region
	DTE1 "Owned" Area		DTE1 Comm Area
	"To" KL10 Area		
	.		
	.		
	DTEn "Owned" Area		DTEn Comm Area
	"To" KL10 Area		
TAD11:	Time Packet from -11	/ \	3
TO11TM:	Time Packet to -11	\ /	3
	KLINIK Data Base	\ /	KLISIZ
RLDFRK:	System wide handle of reload fork	\ /	
SNGPK1:	Single-Packet-1 Header Word	/ \	
	Packet Data (5 Words)	\ /	5
SNGPK2:	Single-Packet-2 Header Word	*	
	Packet Data (5 Words)	/ \	5
		+ \ /	

MONITOR TABLES
DTE-STORAGE-AREA (Cont.)

COMQ area for queue packets where a packet (5 words in length) has the form:

	0	17 18		35		
QNSPH	QINT Int loc for this function		QLINK Link to next packet			
	QFNC Function work for this request		QDEV DTE device code for this request			
	0	QLIN Device unit number	17	QMODE Data must be byte mode	19 QCNT Byte count or byte or 0	35
	QPNTR Byte pointer for indirect operation or Local 8-bit datum if QCNT = 0					
	QCOD Unique code returned to interrupt routine, TTYINT					

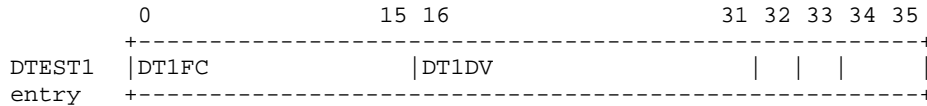
COMQ area is currently assembled for room of ^D20 packets.

MONITOR TABLES
DTE-STORAGE-AREA (Cont.)

	0	1	2	3	4	5	6	17	18	29	30	35	
DTESTS entry								DTEB1		DTEBC		DTEST	
	Bits							Pointer				Contents	
	0							DTERL				If set, DTE exists	
	1							DTEBF				Says which buffer is in use for RSX20 protocol	
	2							DTBLK				For MCB, to -10 is blocked on free space	
	3							DTRLD				If set, -11 is being reloaded	
	4							DTKAC				If set, -11 is ill	
	5							DTSTI				Status packet is split	
	6-17							DTEB1				Byte count of list transfer	
	18-29							DTEBC				Byte count remaining for subsequent transfer	
	31							DTIPU				If set, protocol is running	
	32-35							DTEST				DTE status DTE10=1--KL10 is receiving last fragment of message DTE11=2--11 is receiving bytes DTE11I=4--11 is receiving an indirect queue entry DTE1F=10--KL10 is receiving 1st fragment of a message	

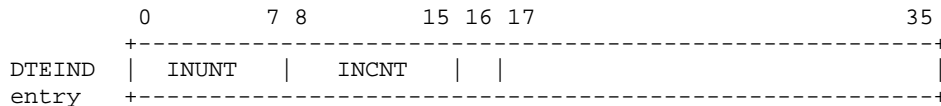
MONITOR TABLES
DTE-STORAGE-AREA (Cont.)

DTEST1 is parallel to DTESTS and contains current operation data and special request bits for "To" -11 conditions.



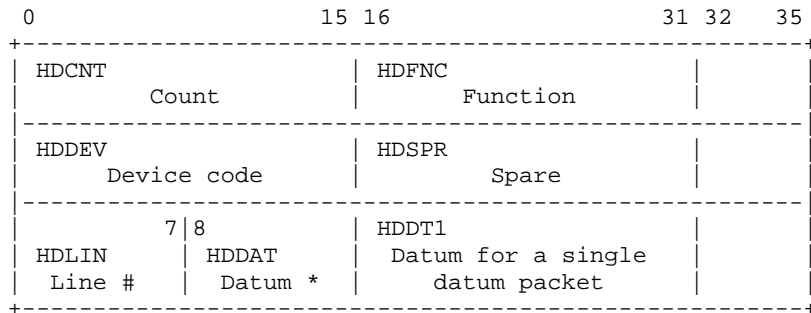
Bits	Pointer	Contents
0-15	DT1FC	Current function code
16-31	DT1DV	Current device code
32	DT1TM	-11 wants time of day
33	DT1ID	Waiting for indirect setup

Storage for indirect packets:



Bits	Pointer	Contents
0-7	INUNT	Unit
8-15	INCNT	Count
16	INVLD	If set, says unit field is invalid

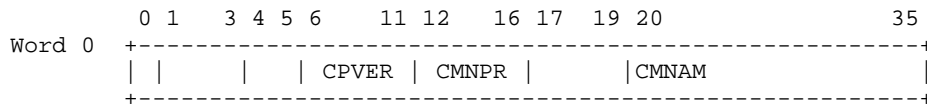
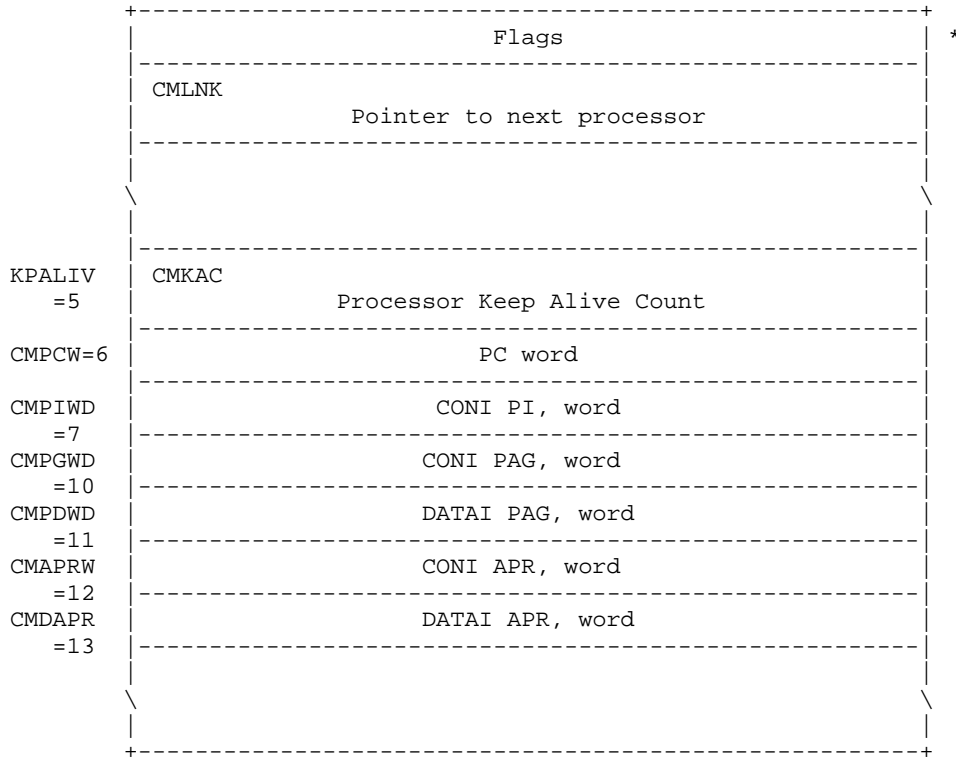
PKTADR is storage for currently activated DTE packets for each DTE (packet taken from the linked list of packets on the queue in COMQ and placed here). The packet has the following form:



Datum could be a character (direct packet case) or
Max number of characters to be sent (indirect packet case)

MONITOR TABLES
DTE-STORAGE-AREA (Cont.)

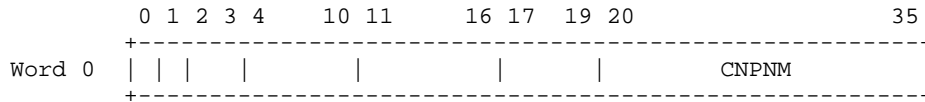
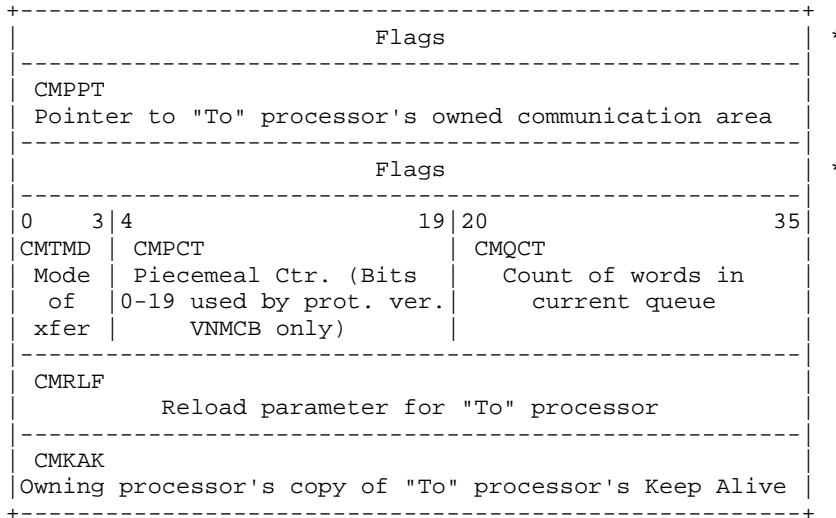
COMBAS "Owned" Area Block Format



Bits	Pointer	Contents
0	CMTEN	Set if area belongs to KL10
1-3	CMVER	Communication area version number
6-11	CPVER	Protocol version number
12-16	CMNPR	Number of processors represented in this area (including owner)
17-19	CMSIZ	Size of area in 8-word blocks
20-35	CMNAM	Processor name (= serial number)

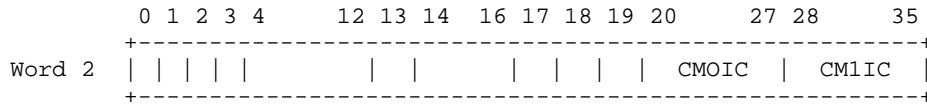
MONITOR TABLES
DTE-STORAGE-AREA (Cont.)

"To" Area Block Format

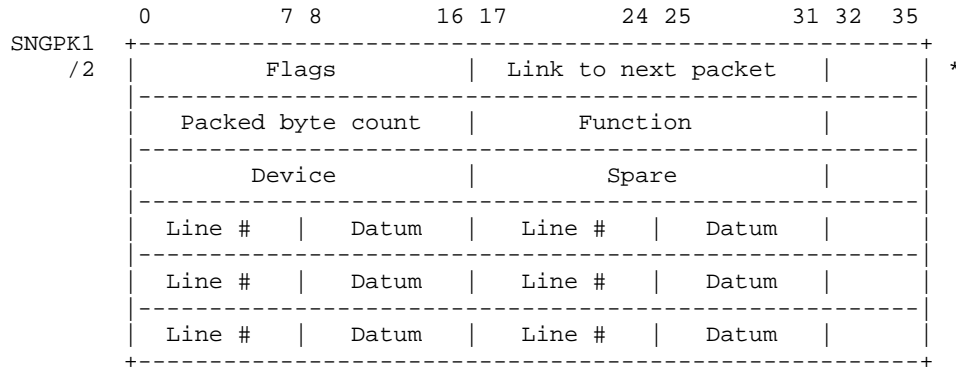


Bits	Pointer	Contents
0	CMPRO	If set, it implies connected to a KL10
1	CMDTE	If set, there is a DTE connecting this processor and owning processor
2-3	CMDTN	If CMDTE is set, this is the number of that connecting DTE
11-16	CMVRR	Protocol in use by the 2 processors
17-19	CMSIZ	Size of "to" area in 8-word blocks
20-35	CNPNM	"To" processor number

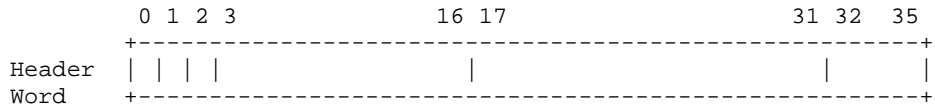
MONITOR TABLES
DTE-STORAGE-AREA (Cont.)



Symbol	Bits	Pointer	Contents
	0	CMPWF	Power fail indicator -11
	1	CML11	Wants reload (set by -11)
	2	CMINI	Initialization bit for MCB protocol only
	3	CMTST	Valid examine if set (should always be set)
	13	CMQP	Set if using queued protocol
	17	CMFWD	-11 doing full word transfer (set by -11)
CMIP	18		-11 doing indirect transfer
CMTOT	19		"Toit" bit. Set to 1 by KL10 in -11's section of -10's Comm area after -11 sets QMode bit or increments Q-count, and after -10 processes the doorbell. Cleared by KL10 after receiving T010DN. Assures -11 that the KL10 has not lost a T010DN interrupt
	20-27	CMOIC	-11s wrap around count of direct Q transfer
	28-35	CM1IC	KL10's wrap around count of direct Q transfers.



MONITOR TABLES
DTE-STORAGE-AREA (Cont.)



Symbol	Bits	Contents
SNGONQ	0	On the DTE packet queue pointed to by DTEQS
SNGAVL	1	Packet has space available
SNGACT	2	Packet active (that is, DTE processing it)
	16-31	Link to next packet

MONITOR TABLES

DTEDTV

DTE Protocol Device Dispatch Table. The entries with the dispatch address TTYDTV are for the CTY, DL11, DH11 and DLS devices.

Defined in: STG

Format

DTEDTV:	Reserved for Unknown Device
	TTYDTV
	TTYDTV
	TTYDTV
	TTYDTV
	LPTDTV
	CDRDTV
	0 (Unknown Device)
	FEDTV

MONITOR TABLES

EC

This is the DECnet event communication block, a communications area between a layer and NTMAN.

Defined in: D36PAR

Format

		ECLOS Count of "events lost"	ECCNT Count of events on queue
	*	ECLAY	ECETY Entity type of DECnet device this EC block belongs to
ECEID		Entity ID of DECnet device this EC block belongs to	
		ECMAX Maximum number of events on queue allowed	

Field ECDEL (0-0) This EC block marked for deallocation

Field ECLAY (3-5) DECnet layer this EC block belongs to

MONITOR TABLES

EL

The DECnet EL structure (Link Block) holds all the NSP information about this logical link.

Defined in: D36PAR

	Format				
ELAPQ	Next in queue of all link blocks	QP.LEN			
ELHBQ	Next in queue of links in a hash bucket	QP.LEN			
ELJFQ	Next in queue of links needing jiffy service	QP.LEN			
	<table border="1"> <tr> <td>ELFLG</td> <td>ELSTA NSP state of this link</td> <td>ELSIZ Max size of a segment on this link</td> </tr> </table>	ELFLG	ELSTA NSP state of this link	ELSIZ Max size of a segment on this link	*
ELFLG	ELSTA NSP state of this link	ELSIZ Max size of a segment on this link			
	<table border="1"> <tr> <td>ELLLA Local link address</td> <td>ELRLA Remote link address</td> </tr> </table>	ELLLA Local link address	ELRLA Remote link address		
ELLLA Local link address	ELRLA Remote link address				
ELORQ	Queue header for MBs sent to ROUTER and expected to be returned to LLINKS	QH.LEN			
ELCLC	Count of retries left, trying to close a port waiting for MBs to be returned from ROUTER and children				
	<table border="1"> <tr> <td>ELORC Count of msgs out in ROUTER</td> <td>ELDSG Msg segment being timed for delay calc (must be segnum-size field for CMODxx)</td> </tr> </table>	ELORC Count of msgs out in ROUTER	ELDSG Msg segment being timed for delay calc (must be segnum-size field for CMODxx)		
ELORC Count of msgs out in ROUTER	ELDSG Msg segment being timed for delay calc (must be segnum-size field for CMODxx)				
ELDTM	Time msg was first sent				
	ELNNM The remote's node number				
ELNDB	Ptr to NSP node block				
ELTMA	Inactivity timer				
ELSCV	Session control call vector base address				
ELSCB	Session control block ID				
ELCIM	Ptr to (R)CI message				

MONITOR TABLES
EL (Cont.)

ELDIM	Ptr to DI message	
ELNSL	The normal sublink block	/\
ELOS	The other sublink block	/\
ELCIR	Output circuit for loopback connection	/\
ELCHK	Address of this EL, for addr check	/\

For field ELFLG(0-8):

- | | | |
|-------|---|--|
| ELOJQ | 0 | Link is on the jiffy-request queue |
| ELSNC | 1 | Set if not yet told SC about no conf |
| ELCNF | 2 | Set if we have confidence in link |
| ELSCM | 3 | Send connect ACK message next jiffy |
| ELSDM | 4 | Send disconnect confirm message next jiffy |
| ELABO | 5 | Aborting this logical link |
| ELDTO | 6 | Delay timer is for "other" sublink |

Field ELVER (18-20) Version of remote NSP, see VER3.1,VER3.2

MONITOR TABLES

ENQ/DEQ-LOCK-BLOCK

Enqueue Lock-Block. Each resource is described in a lock-block. The lock-block is created at the time of the first request.

Defined in: ENQ

		Format	
	0	17 18	35
0	ENQLHC	Back Pointer to Last Lock-Block on Hash Chain	
1	ENQNHLC	Pointer to Next Lock-Block on Hash Chain	
2	ENQLLQ	Back Pointer to Last Q-Block on Lock Queue	
3	ENQNLQ	Forward Pointer to First Q-Block on Lock Queue	
4	ENQFLG	Reserved	ENQLVL Level Number of this Lock
5	ENQTR	Total Number of Resources in this Pool	ENQRR Remaining Number of Resources in this Pool
6	ENQTS	Time Stamp Time of Last Request Locked	
7	ENQFBP	Free Block Pointer to Free Q-Block	
10	ENQLT	Long Term Lock List for System	
11	ENQOFN	OFN, or -2, or -3, or 400000 + Job Number	ENQLEN Length of this Lock-Block

*

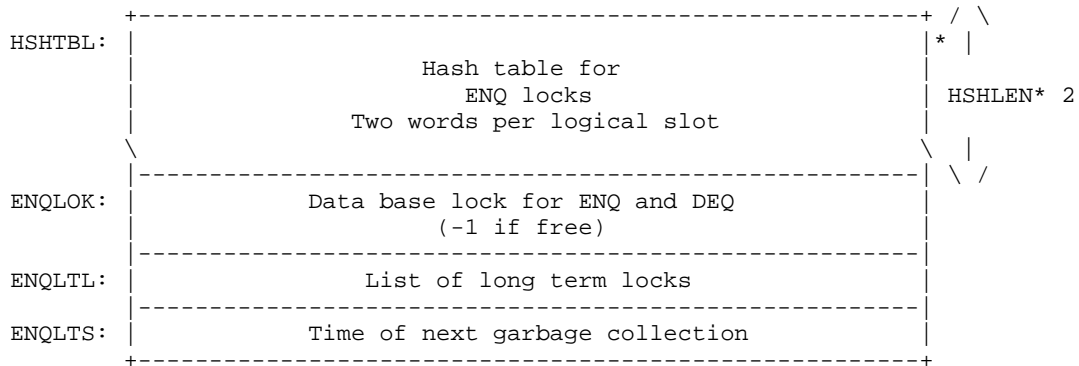
MONITOR TABLES

ENQ/DEQ - STORAGE AREA

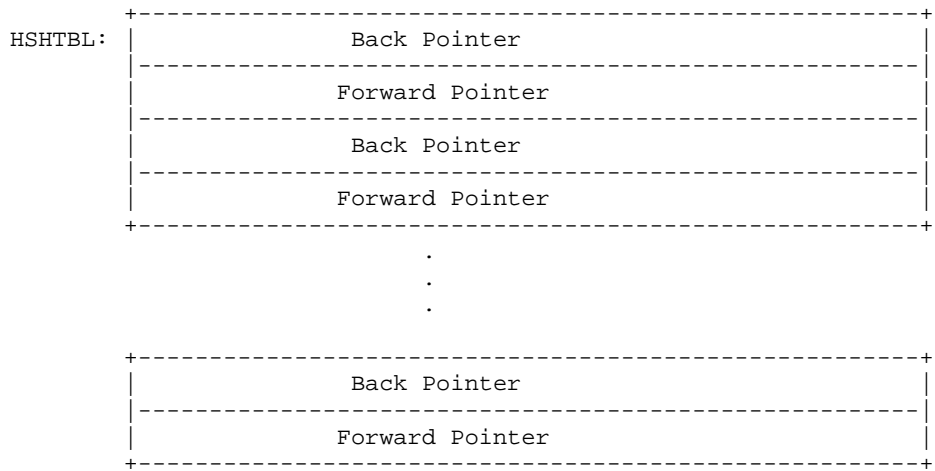
Enqueue/Dequeue Storage Area. The non-resident local area for the ENQ/DEQ Facility is illustrated first followed by the resident bit table, ENFKTB. A bit is set in the ENFKTB bit table if the fork should be woken up or interrupted because it owns a lock. (The Scheduler's wake-up test routine address is ENQTST.)

Defined in: STG

Format



Each logical slot in HSHTBL is two words long:



MONITOR TABLES
ENQ/DEQ - STORAGE AREA (Cont.)

Resident storage

ELBCSH:	Lock-Block Caching Flag (-1 if caching)
ENFKTB:	Wake-up table (one bit per fork)
	.
	.
LCKDBT:	Bit table for DIR lock ENQ/DEQ (one bit per fork)
	.
	.

* The name (or identifying number) of a lock block is hashed to provide a number. This number, module HSHLEN, then doubled, is used as an index into HSHTBL. If the hashing algorithm yields the same index for more than one lock block name, the lock blocks are linked together; the HSHTBL entry is the linked list header.

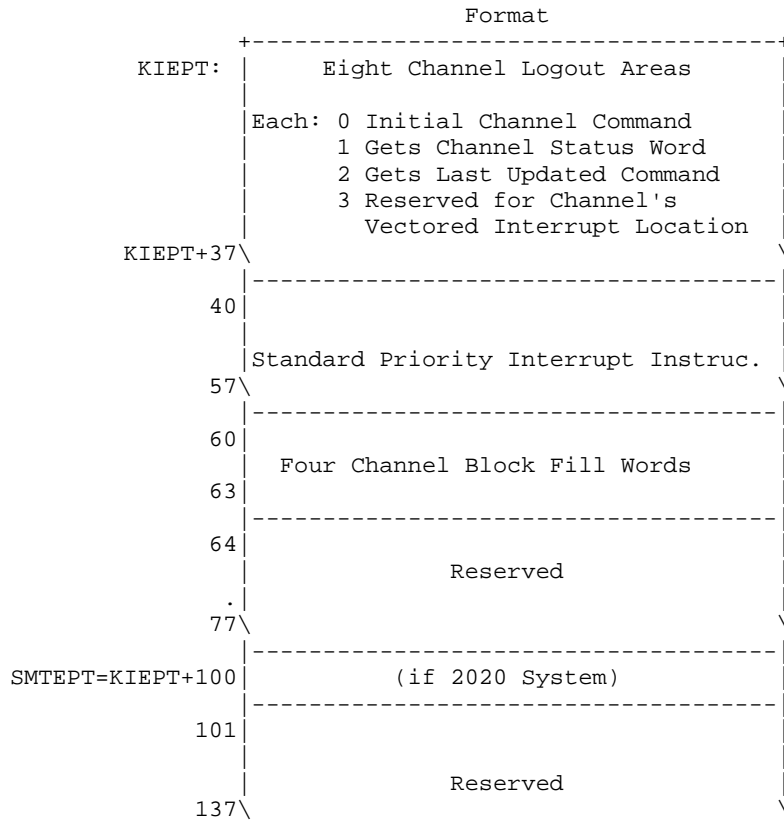
MONITOR TABLES

EPT

Executive Process Table. This memory resident table pointed to by the Executive Base Register (EBR), contains the vectored dispatch addresses for system events. All device interrupts pass control to a specific offset position in this table.

This table also includes the executive section map table, the time of day clock and arithmetic trap instructions which are executed when arithmetic conditions occur in executive mode.

Defined in: STG



MONITOR TABLES
EPT (Cont.)

DTEEBP=KIEPT+140	Four 8-word DTE20 Control Blocks
DTEETBP=KIEPT+141	Each: 0 To -11 Byte Pointer
DTEINT=KIEPT+142	1 To -10 Byte Pointer
143	2 Interrupt Location
DTEEPW=KIEPT+144	3 Reserved
DTEERW=KIEPT+145	4 Examine Protection Word
DTEDPW=KIEPT+146	5 Examine Relocation Word
DTEDRW=KIEPT+147	6 Deposit Protection Word
	7 Deposit Relocation Word

	DTE1 Control Block

	DTE2 Control Block

177\	DTE3 Control Block

EPTMHI=KIEPT+200	Available to Software

417\	LUUO from Executive Mode (.LUTRP)*

421	Executive Arithmetic Overflow Trap Instruction (JFCL)*

422	Executive Stack Overflow trap Instruction (.PDOVT)*

423	Executive Trap 3 Trap Instruction (JFCL)*

424	Reserved

437\	Reserved for Software

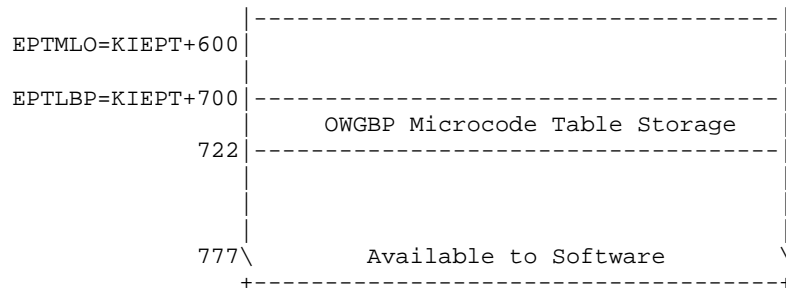
440	Reserved for Software

443\	

MONITOR TABLES
EPT (Cont.)

DTEFLG=KIEPT+444	Operation Complete Flag
DTECFK=KIEPT+445	Clock Interrupt Flag
DTECKI=KIEPT+446	Clock Interrupt Instruction
DTE11=KIEPT+447	"To" 11 Argument
DTEF11=KIEPT+450	"From" 11 Argument
DTECMD=KIEPT+451	Command Word
DTESEQ=KIEPT+452	DTE20 Operation Sequence Number
DTEOPR=KIEPT+453	Operation in Progress Flag
DTECHR=KIEPT+454	Last Typed Character
DTECMD=KIEPT+455	Monitor TTY Output Complete Flag
DTEMTI=KIEPT+456	Monitor TTY Input Flag
DTESWR=KIEPT+457	Console Switch Register
460	Reserved for Software
477\	
500	Reserved
507\	
TIMBAS=KIEPT+510	
511	Time Base
512	Performance Analysis Count
513	
TIMVIL=KIEPT+514	Internal Counter Interrupt Instruc.
MSECTB=KIEPT+540	EXEC SECTION 0
577\	EXEC SECTION 37

MONITOR TABLES
EPT (Cont.)



* These values are placed into the table when the EPT is initialized at system startup.

MONITOR TABLES

ES

The DECnet Sublink Block is part of the link block. It holds the information about the "normal" and the "other" sublinks.

The structure name ES is used instead of the more obvious NS (NSP Sublink) to avoid a conflict with the other NS structure defined in this universal file. The "E" stands for the new name for the NSP layer: "End-to-end" layer.

Defined in: D36PAR

Format

	ESFLG		ESGOL Data request goal (9 for DDT ease)	ESCGL After-congestion recovery goal	*
	ESXLD Xmit DRQS outstanding to local SC	ESXRD Xmit DRQS outstanding to remote NSP	ESXSD Xmit DRQS need to send to SC		
	ESRLD Receive DRQS outstanding to local SC	ESRRD Receive DRQS outstanding to remote NSP	ESRSD Receive DRQS need to send to SC		
	ESLMA Last message number assigned	ESLAR Last ACK received (and processed)	ESLMR Last message received		
ESAKQ	Queue header for the to-be-acked Q				/\ QH.LEN
ESRCQ	Queue header for the receive Q				/\ QH.LEN
ESXMQ	Queue header for the xmit Q				/\ QH.LEN
	ESCWS Current window size	ESCDA # of ACKs since last window change	ESDLT ACK delay timer		

MONITOR TABLES
ES (Cont.)

For field ESFLG(0-11):

ESOTH	0	Set if this is other sublink
ESACK	1	Send ACK for this sublink next jiffy
ESNAK	2	Send NAK to PH2 NSP (turn ACK on too)
ESROF	3	Receive is off
ESROC	4	Receive off has changed
ESXOF	5	Xmit is off
ESBFR	6	Remote is "buffer-rich" on this link
ESDLY	7	ACK delaying allowed

Field ESRFL (13-14) Receive flow control type

Field ESXFL (16-17) Xmit flow control type

MONITOR TABLES

ET

For test and debug purposes, there is an extra function of the NTMAN JSYS. This function logs an event or signal.

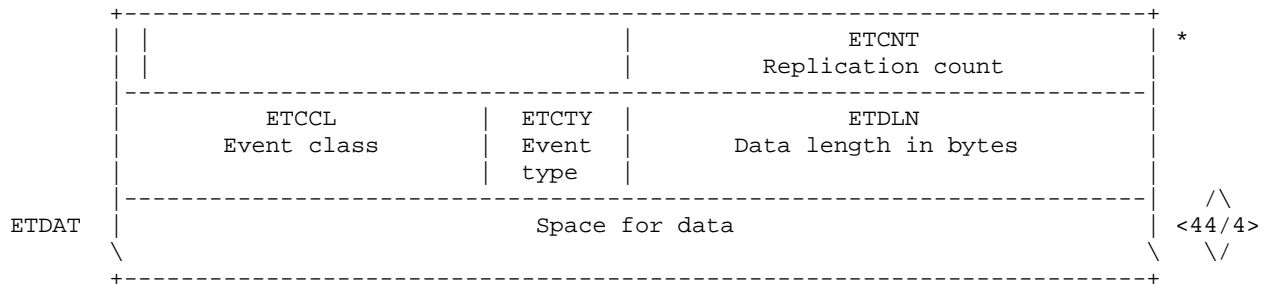
The function code is -5 (.NTTEV)

The entity ID and type for the event are taken from the standard words in the NTMAN argument block.

Word .NTSEL points to a secondary argument block of the following layout.

Defined in: D36PAR

Format



Field ETSIG (0-0) Set if this is a signal

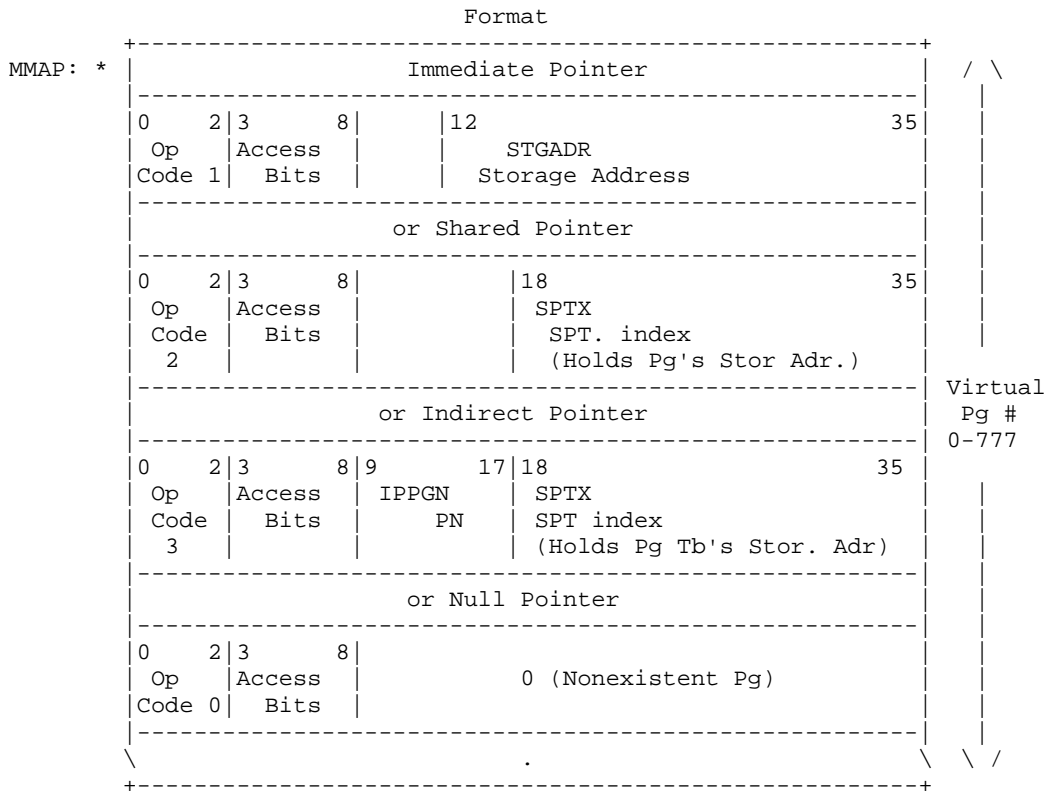
MONITOR TABLES

EXEC-PG-MAP-TBL

Executive Page Map Table. This 512-word memory resident table holds or points to other tables that hold all of the mapping information needed by the firmware to translate executive (monitor) virtual addresses in a given section into physical memory addresses. It is pointed to by an entry in the monitor's section table in the Executive Process Table (EPT).

The four possible formats for an entry in this table (that is, Immediate, shared, indirect or null pointers) are illustrated below. The details of these four possible pointer words as well as the mechanics of the virtual to physical translation process for a monitor page is identical to that described for the User-Page Map Table (See User-Pg-Map-Tbl)

Defined in: STG



* Currently MMAP is the monitor's page map table for section 0 and section 1. The layout of the monitor's virtual address space for section 0 is described in Appendix B of the Monitor Structures Book.

MONITOR TABLES

FA

This is the DECnet Filter argument block which is used to pass arguments to the EV.FIL function of NMXEVT.

Defined in: D36PAR

Format

Filter argument block

FACCL	FACTY
Event class	Event type

MONITOR TABLES

FDB

File Description Block. All attributes of a file are stored in its description block (FDB) maintained in the file's directory. An FDB is built in the directory's free space area when a file is created. This table is referenced by the DIR table.

Defined in: PROLOG, MONSYM

		Format							
.FBHDR	0	17	18	23	24	35			
=0	FBTYP		FBVER		FBLEN				
	.TYFDB (400100)		Ver. #		Length				
.FBCTL	0					35			
=1	FBFLG						*		
		Flags							
.FBEXL	2	3	FBEXL						
=2				Link to FDB of Next Extension					
.FBADR			FBADR						
=3				Disk Address of File's Index Block					
.FBPRT			FBPRT						
=4				Protection of the file					
			500000		File Access Bits				
.FBCRE			FBCRE						
=5				Date and Time of Last Write to File					
.FBAUT			FBAUT						
=6				Pointer to Author String					
.FBGEN			FBGEN		FBDRN		*		
=7			Generation Number		Dir.# (if it's a Dir File)				
.FBACT			FBACT						
=10				500000,,0 + Account Number					
				or					
				Pointer to Account String					
.FBYV	0	5	6	11	14	17	18	35	*
=11	FBGNR	FBBSZ		FBMOD		FBNPG			
	# Gens.	Byte Sz		Mode		# of Pages in File			
.FBSIZ			FBSIZ						
=12				# of Bytes in File					

MONITOR TABLES
FDB (Cont.)

.FBCRV =13	FBCRV Date and Time of Creation	
.FBWRT =14	FBWRT Date and Time of Last User Write	
.FBREF =15	FBREF Date and Time of Last Nonwrite Access	
.FBCNT =16	FBNWR # of Writes	FBNRF # of References
.FBBK0 =17	FBBK0 Backup Word #1	*
.FBBK1 =20	FBBK1 Backup Word #2	
.FBBK2 =21	FBBK2 Backup Word #3	
.FBBBT =22	FBBBT Tape system flag bits	*
.FBNET =23	FBNET Date and time of online expiration	
.FBUSW =24	FBUSW User Settable Word	
.FBGNL =25	2 3 FBGNL Link to FDB of Next Generation	
.FBNAM =26	FBNAM Pointer to File Name Block	
.FBEXT =27	FBEXT Pointer to Extension Block	
.FBLWR =30	FBLWR Pointer to Last Writer String	
.FBTDT =31	FBTDT Date and time of archive/collection tape write	
.FBFET =32	FBFET Date and time of off-line expiration	

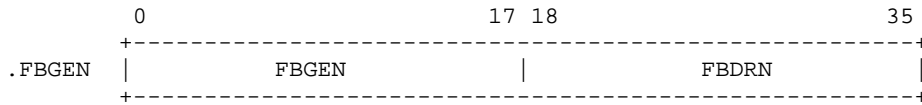
MONITOR TABLES
FDB (Cont.)

.FBTP1 =33	ARTP1 Tape ID for first archive/collection run
.FBSS1 =34	TSN1 TFN1 Saveset # for 1st tape Tape file # in saveset
.FBTP2 =35	ARTP2 Tape ID for second archive/collection run
.FBSS2 =36	TSN2 TFN2 Saveset # for 2nd tape Tape file # in saveset

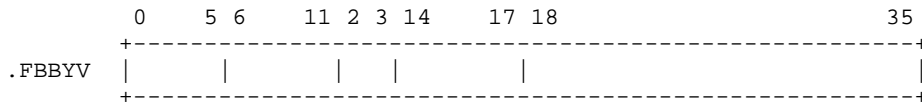
.FBCTL	0 1 2 3 4 5 6 7 8 9 0 1 2 3 14 17 18 19 20 35
--------	---

Symbol	Bits	DEFSTR	Content
FB%TMP	0	FBTMP	File is temporary
FB%PRM	1	FBPRM	File is permanent
FB%NEX	2	FBNEX	No extension for this file yet; file doesn't really exist.
FB%DEL	3	FBDEL	File is deleted
FB%NXF	4	FBNXF	File doesn't exist (first write not complete)
FB%LNG	5	FBLNG	Long file
FB%SHT	6	FBSHT	Reserved for DEC
FB%DIR	7	FBDIR	File is a directory
FB%NOD	8	FBNOD	File is not saved by backup system
FB%BAT	9		File may have bad pages
FB%SDR	10	FBSDR	This directory has subdirectories
FB%ARC	11	FBARC	File has archive status
FB%INV	12	FBINV	File is invisible
FB%OFF	13	FBOFF	File is off-line
FB%FCF	14-17		File class field 0 = .FBNRM Not an RMS file 1 = .FBRMS RMS file
FB%NDL	18		File is not delete table
FB%WNC	19		Last write not closed
FB%FOR	20		FORTTRAN data file
FB%SEC	21		File is secure (ACJ consulted on each access)

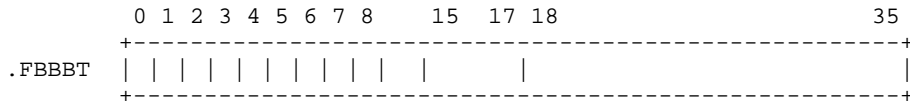
MONITOR TABLES
FDB (Cont.)



Symbol	Bits	DEFSTR	Content
FB%GEN	0-17	FBGEN	Generation number
FB%DRN	18-35	FBDRN	Directory number



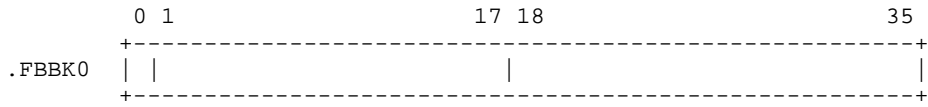
Symbol	Bits	DEFSTR	Content
FB%RET	0-5	FBGNR	Generation retention count
FB%BSZ	6-11	FBBSZ	Byte size
FB%MOD	14-17	FBMOD	Last OPENF mode
FB%PGC	18-38	FBNPG	Page count



Symbol	Bits	DEFSTR	Content
AR%RAR	1	K0RAR	Request for file to be archived
AR%RIV	2	K0RIV	System request for migration
AR%NDL	3	K0NDL	Do not delete disk contents after archiving
AR%NAR	4	K0NAR	Resist migration
AR%EXM	5	K0EXM	File is exempt from migration
AR%1ST	6	K01ST	First pass is in progress
AR%RFL	7	K0RFL	Restore failed
AR%WRN	8		User warned of file expiration
AR%RSN	15-17	K0RSN	Reason file pushed off-line: 1 = .AREXP File expired 2 = .ARARR Archive requested 3 = .ARRIR Migration requested
AR%PSZ	18-35	ARPSZ	Number of pages in file when removed from disk

MONITOR TABLES
FDB (Cont.)

FBBK0 is used by DUMPER as follows:



Bits	Contents
0	Indicator for interrupted incremental save
1-17	Count of incremental saves since last time write count changed
18-35	Write count at last incremental save

NOTE

For additional information on the FDB see the Monitor
Call's Reference Manual.

MONITOR TABLES

FE-STORAGE-AREA

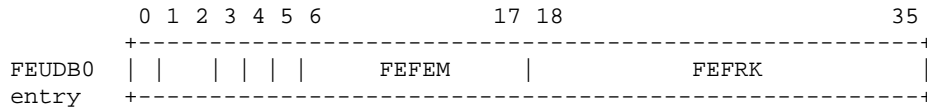
Front End Storage Area. Each entry is FEN words long (except the lock--FELOCK), where FEN equals the number of front end devices.

Defined in: STG

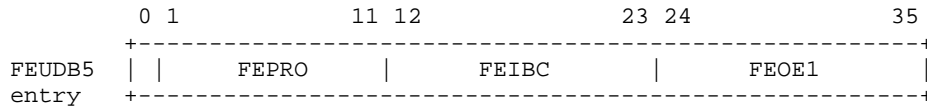
Format

FEUDB0:		+-----+-----+-----+-----+				/ \
		FEICT	FEFEM	FEFRK		*
		Flags	FE Alloc	Fork # Owing Device		FEN
		+-----+-----+-----+-----+				/ \
FEUDB1:		FEICT	unused	FEFEI		/ \
		Current Input		Bytes Now in FE		FEN
		Byte Count				/ \
		+-----+-----+-----+-----+				/ \
FEUDB5:		Byte information				*
		+-----+-----+-----+-----+				/ \
FEUDB6:		Output output pointer				FEN
		+-----+-----+-----+-----+				/ \
FEUDB7:		0	11 12	23 24	35	/ \
		FEIE1	FEOEB	FEIEB		FEN
		Bytes remain. for	Bytes remain. for	Bytes remain. for		
		input level	output int. level	input int. level		/ \
		+-----+-----+-----+-----+				/ \
		0	17 18	23 24	35	/ \
		FEIBF	FEBSZ	FEOCT		FEN
		Buffer Address	Byte Size	Output		/ \
			of Opening	Count		/ \
		+-----+-----+-----+-----+				/ \
FEUDB4:		Input Input Pointer				FEN
		+-----+-----+-----+-----+				/ \
FELOCK:		Front end storage area lock				
		+-----+-----+-----+-----+				

MONITOR TABLES
FE-STORAGE-AREA (Cont.)



Bit(s)	Pointer	Content
0	FEACT	Output active bit
1-2	FEDTE	DTE owning this device
3	FEBLK	Unit is blocked
4	FEEOF	Input EOF declared by FE
5	FEVDT	FE assignment is valid
6-17	FEFEM	FE Allocation
18-35	FEFRK	Fork owning device



Bit(s)	Pointer	Content
0	FEHNG	Hung bit
1-11	FEPRO	Count of input since last ack
12-23	FEIBC	Count of bytes in interrupt buffer
24-35	FEOE1	Bytes remaining for output level

MONITOR TABLES

FKBSPW

This resident table contains pointers that comprise a linked list of the current balance set members. The initial pointer to this list is BSLST. The list is used by AJBALS to determine the status of the current members of the balance set. Note that an entry may contain a non-zero value without being a balance set member. Only entries found by following the BSLST link are considered. If a fork is placed on the balance set without hold time, it does not appear on this list.

Defined in: STG

Index: Fork number

Format

FKBSPW:	FKGOLN	FKBLP Balance set list pointer	/ \
	.		
\	.		NFKS
	.		
	.		\ /

When the fork is blocked, FKGOLN contains the block priority, which may be one of the following:

- FHV1 = 1
- .
- .
- .
- FHV7 = 7

When the fork is runnable, FKGOLN contains the GOLST position.

MONITOR TABLES

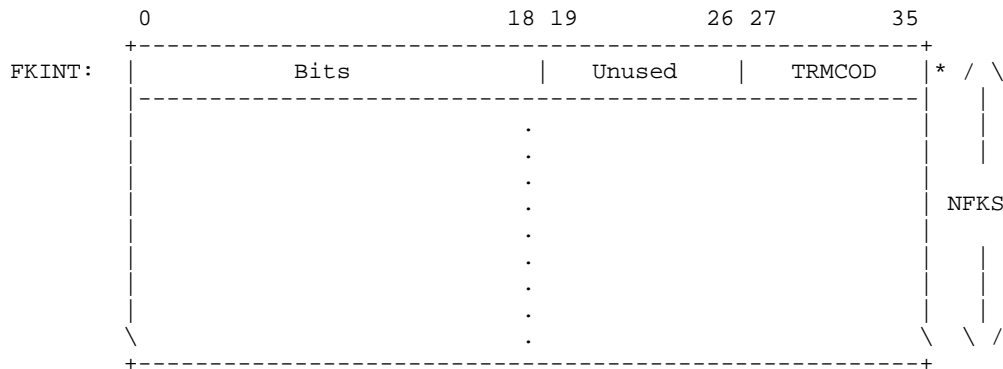
FKINT

Fork Interrupt Table. This table contains the pseudo-interrupt communication register for each fork. The left half of each entry contains bits recording the type of request. The symbols for these requests have right half bit assignments (that is, bits 20-35) but are tested against the left half of the table.

Defined in: STG

Index: Fork number

Format



Symbol	Bits	Pointer	Content
FKPSI0	0		Interrupt Request(s) pending
FKPSI1	1		Fork not interruptable
NEWFK%	2		Initiate new fork
NEWJB%	3		Initiate new job
PSIIF%	4		Channel interrupt requested in FKINTB
PSIT1%	5		Terminal code Interrupt, Phase 1
PSIT2%	6		Terminal code Interrupt, Phase 2
SUSFK%	7		Suspend fork request
PSIWT%	8		Job was in wait state
PSILO%	9		Logout job request
FRZB1%	10		Direct freeze has been done
FRZB2%	11		Indirect freeze has been done
FRZBB%==FRZB1%+FRZB2%			Both bits for external references
JTFRZ%	12		JSYS trap freeze
ABFRZ%	13		Address break freeze
FRZBA%==ABFRZ%+JTFRZ%+FRZBB%			All types of freezes
PSICO%	14		Carrier off action request

MONITOR TABLES
FKINT (Cont.)

PSITL%	15		Time limit exceeded interrupt
PSIJT%	16		JSYS trap request
ADRBK%	17		Address break request
PSIPRI	18		Priority word set
PSIDP%	19		DAP% JSYS Attention
PSISC%	20		SCS% JSYS work queue entries for this fork
UNUSED	21-26		Unused
	27-35	TRM COD	Field for terminal

MONITOR TABLES

FKINTB

Fork Interrupt Table. This table contains the pseudo-interrupt channel requests pending for each fork since the fork's last PSI interrupt.

Defined in: STG

Index: Fork number

Format

FKINTB:	Interrupt Channel Request(s) Pending	/ \
	.	
		NFKS
		\ /

MONITOR TABLES

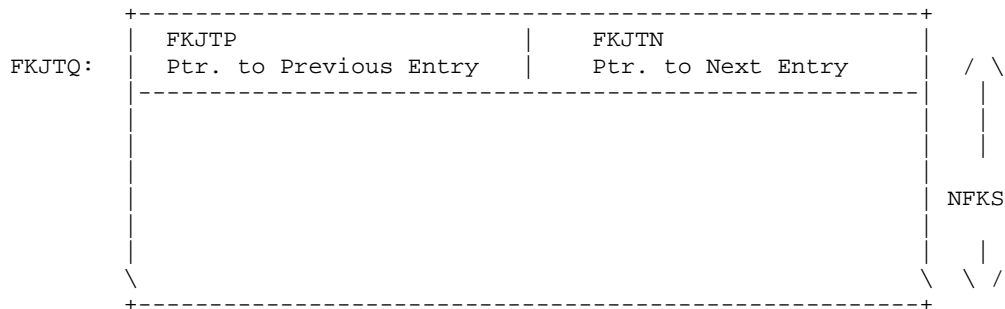
FKJTQ

Fork JSYS Trap Queue. This doubly linked list is a JSYS Traps Queue of forks waiting to program software interrupt (PSI) the monitor. JTLST points to the top fork on the linked JSYS traps queue in FKJTQ.

When a fork tries JTLOCK (in the JSB) and some other fork has the lock, the fork is added to FKJTQ and blocked. When the lock is cleared, the queue is scanned for the first fork (if any) waiting on the lock. That fork is removed from the queue and allowed to run.

Defined in: STG

Format



MONITOR TABLES

FKNBW

This resident table saves the time of start of a balance set wait of a fork.

Defined in: STG

Index: Fork number

Format

FKNBW:		Time of start of BALSET wait		/ \
		.		
		.		NFKS
		.		
	\	.	\	\ /

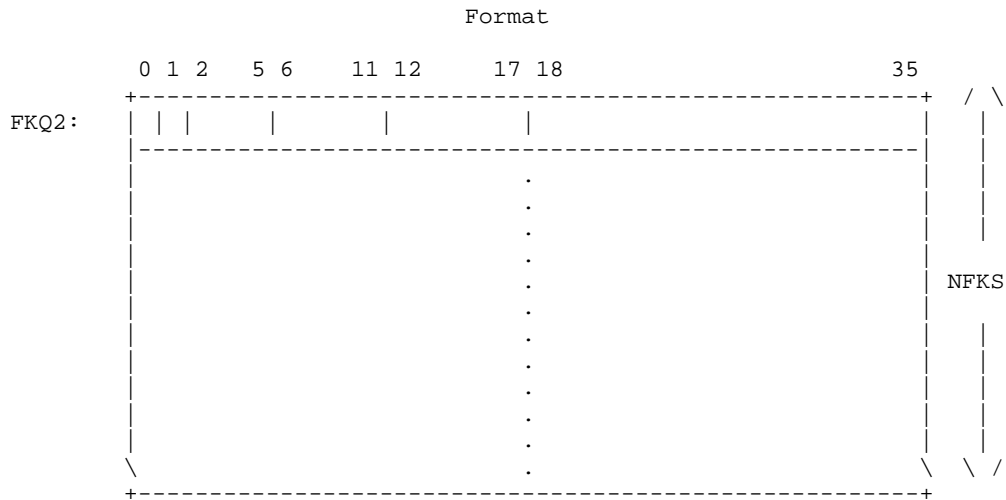
MONITOR TABLES

FKQ2

Fork Run Queue Table 2. This table contains the queue level number and fork location (that is, the list address such as TTILST or GOLST) for each fork.

Defined in: STG

Index: Fork number



Bits	Pointer	Content
0	FKNTC	Network topology change interrupt enabled
1	PIBMP	PI boost flag
2-5	FKFLG	Fork flags
6-11	FKMNQ	Max Q for fork
12-17	FKQN	Queue level number
18-35	FKWTL	Wait list address for blocked fork

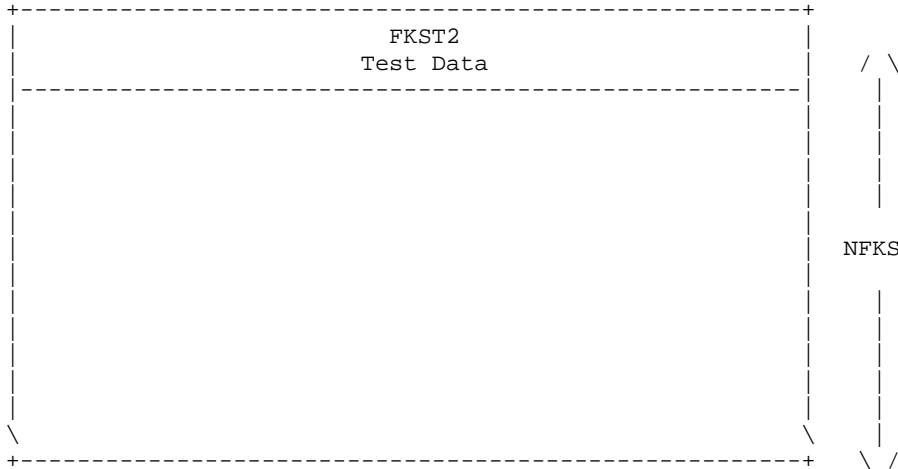
MONITOR TABLES

FKSTA2

This table, indexed by fork number, contains the test data for a given fork. It is similar to FKSTAT except that this table can contain a full 36-bit test data word.

Defined in: STG

Index: Fork number



MONITOR TABLES

FKSTAT

Fork Status Table. This table has useful information when a fork blocks and leaves the GOLST (that is, LH (FKPT) contains the list address, WTLST).

The blocked fork's entry in this table contains the address of the test routine which, when called, determines if wait satisfied has occurred for the fork.

Defined in: STG

Index: Fork number

Format

FKSTAT:	FKSTR	Test Data	FKSTO	Test Routine Address
		.		
		.		
		.		
		.		
		.		
		.		
		.		
		.		
		.		
		.		

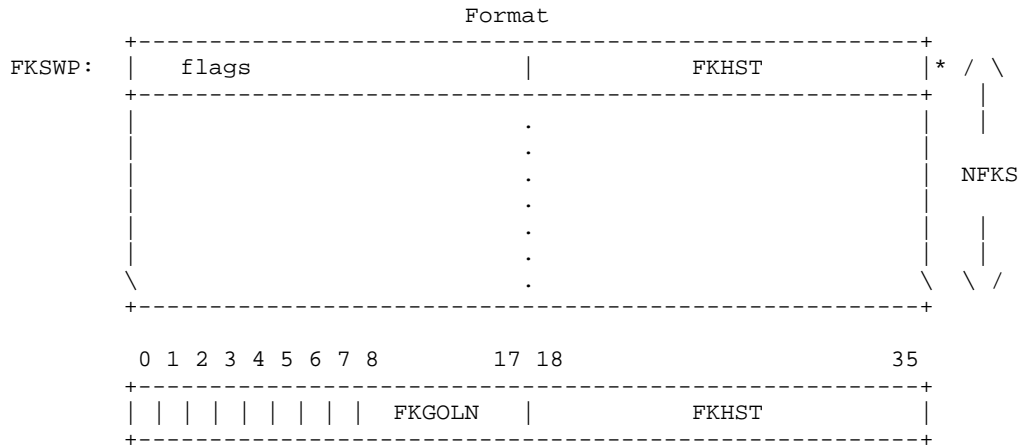
MONITOR TABLES

FKSWP

This resident table contains fork information that is used primarily by the working set manager in its decisions.

Defined in: STG, PROLOG

Index: Fork number



Bits	Pointer	Content
0	FKWSL	Working set loaded
1	FKBLK	Fork blocked off if on GOLST
2	FKIBS	Fork in balance set
3	BSWTB	Fork in balance set wait
4	BSNSK	NOSKED--on if fork is NOSKED and not running
5	BSCRSK	CRSKED--on if fork is CRSKED and not running
6	FKIBH	In balance set hold--on if fork entered balance set since last update to history
7	FKBSHF	In balance set hold in AJBALS algorithm
8	BSSPQ	Special queue (system fork)
9	BSOVRD	Override high priority
10	BSNST	Last block was long
11	SCWAK%	SCJSYS is waking
12	SCBLK%	SCJSYS is blocked
13	FKSPL	Inferior fork has been spliced
14	FKKIL	Fork is being killed
15	FKOGL	Fork is on GOLST
16-17		Unused
18-35	FKHST	Fork history

MONITOR TABLES

FKWSP

Fork Working Set (In-Memory Size) Table. This table contains in the right half the number of physical pages currently assigned to each fork. The left half is used to hold the preload size as determined by LDJOB when a fork enters the balance set.

Defined in: STG

Index: Fork number

Format

FKWSP:	FKNWCE	FKCSIZ	/ \
	# of pages to be loaded (either # of pages of the working set currently not loaded or # of overhead pages if not preloading (NFKSPP=4))	Current Size	
	.	.	NFKS
	.	.	
	.	.	
	.	.	
	.	.	
	.	.	
	.	.	
	.	.	
	\	.	\ /

MONITOR TABLES

FL

FL is the format of the NI Flush Command Queue command.

Defined in: PHYKNI

Format

FLCHK	Check word
FLPID	Portal ID

MONITOR TABLES

FREESPACE BLOCK HEADER/TRAILER

At a minimum, a header of length 3 is required (no trailer is ever required). The header is infinitely expandable, as is any trailer.

While in the pool, blocks are manipulated by pointers that address the first word past the header (thus the negative offsets for the header definitions). Before a block is assigned to the user, the pointer is SOS'd and the user area of the block overlays the header by one word. (Specifically, the user area of the block begins with header word FSPNXT.)

Unless the monitor has been assembled with the debug conditional, the block header is three words long and no trailer is used.

Defined in: FREE

Format

FSPAPC= -7	PC of block assigner
FSPAJF= -6	Job #,,fork # of block assigner
FSPDPC= -5	PC of block deassigner
FSPDJF= -4	Job #,,fork # of block deassigner
FSPFLG= -3	Flags,,unique code
FSPSIZ= -2	Size of block (including header/trailer)
FSPNXT= -1	Pointer to next block

MONITOR TABLES

FREESPACE DESCRIPTOR

The free space descriptor is a block that contains information about the individual free space pools and pointers to them. The address of each descriptor is contained in the FSPTAB table.

Defined in: FREE

Format

FSPFFL=0	Flags
FSPLOK=1	Pool lock
FSPORG=2	Origin address of freespace pool
FSPEND=3	Ending address of freespace pool
FSPCNT=4	Count of space remaining in pool
FSPSML=5	Smallest balance of free space achieved
FSPBAP=6	Pointer to block-accounting area
FSPMTB=7	Minimum total block size
FSPFFB=10	Pointer to first free block
FSPRFB=11	Randomized pointer to first free block
FSPHDS=12	Block header size
FSPTRS=13	Block trailer size
FSPHTS=14	Combined header and trailer size
FSPBCS=15	Smaller of header or trailer size
FSPHBP=16	History buffer address
FSPHBX=17	Max History transactions Index to current hist rec

FSPDSS = descriptor size in words

MONITOR TABLES

FREESPACE-DESCRIPTOR INDEX TABLE

This is the table that points to the swappable and JSB freespace structures.

Defined in: FREE

Format

FSPTAB: +-----+
| Pointer to freespace descriptor |
+-----+
| Pointer to freespace descriptor |
+-----+
| . |
| . |
| . |
+-----+
| Pointer to freespace descriptor |
+-----+

FSPTBL = Freespace-descriptor index-table size in words

MONITOR TABLES

FREESPACE HISTORY RECORD

The free space history record is a ring buffer that is used to record free space transactions. There is one ring buffer for each free space pool. Word FSPHBO in the free space descriptor contains the base address of this buffer. The right half of word FSPHBX in the free space descriptor contains the index to the current history record.

Defined in: FREE

	Format
FSPHST=0	Transaction Type (-1 = assign; 0 = deassign)
FSPHPC=1	PC of Caller
FSPHJF=2	Job,, Fork of Caller
FSPHBA=3	Block Address
FSPHBS=4	Block Size

FSPHRC (200 decimal) is the number of history records in the history buffer.

MONITOR TABLES

GB

The format of the LAT Service Block is shown below. There is one service block for each service provided by the host. A host must provide at least one service if it is to function as a LAT host. If no services have been defined by the LCP interface at the time LAT operations are started, a default service is defined with the same name as the host node name.

Defined in: LATSRV

Format

SERVICE BLOCK				
GBRAT	Service Rating			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"> GBNC Count of bytes in service name </td> <td style="width: 50%; text-align: center;"> GBLC Count of bytes in service description </td> </tr> </table>	GBNC Count of bytes in service name	GBLC Count of bytes in service description	
GBNC Count of bytes in service name	GBLC Count of bytes in service description			
GBNAM	Storage for up to 16 bytes of service name	/\n <<ML.SNM+4>/5>		
GBHID	Storage for up to 64 bytes of service id	/\n <<ML.SID+4>/5>		

MONITOR TABLES

G TOKPR

This table is used by the access control code. It contains one entry for each legal GETOK/GIVOK function.

Defined in: STG

Format

G TOKPR:	DGOUSR -- User requests	/ \
	DGOASD -- Assign device	
	DGOCAP -- Enable/disable capabilities	
	DGOCJB -- Create job	
	DGOLOG -- Login	
	DGOCFK -- Create fork	
	DGOTBR -- Set terminal baud rate	
	DGOLGO -- Logout	
	DGOENQ -- ENQ quota setting	MXGOKF
	DGOCRD -- Create/modify directory	
	DGOSMT -- Structure mount	
	DGOMDD -- Enter MDDT	
	DGOCLS -- Set class for job	
	DGOCL0 -- Set class at login	
	DGOMTA -- MT access	
	DGOACC -- ACCESS JSYS	
	DGOOAD -- Assign device via OPENF	
	DGODNA -- DECnet access	
	DGOANA -- ARPAnet access	

MONITOR TABLES
GTOKPR (Cont.)

DGOATJ -- Attach job
DGOINF -- INFO% monitor call
DGOLAT -- LATOP% monitor call
DGOCTM -- Incoming CTERM connections
DGOTTM -- Allow TTMSG%
DGOSMN -- Allow SMON%
DGOMSY -- Allow HSYS%
DGOSGT -- Allow SYSGT%
DGOGTB -- Allow GETAB%
DGOOPN -- OPENF% of secure file
DGORNF -- RNAME% of secure file
DGODLF -- DELF%/DELNF% of secure file
DGOTLK -- Allow TLINK%
DGOCRL -- Allow CRLNM% (only some functions)
DGODTC -- Allow DTACH%
DGOCFD -- Allow CHFDB% to set file secure

MONITOR TABLES

HC

Data structure HC is the LAT circuit counters portion of the Host Node (HN) data structure.

Defined in: LATSrv

Format

HCRCV	Messages received
HCXMT	Messages transmitted
HCRTTR	Messages retransmitted
HCSEQ	Receive message sequence errors
HCIMR	Illegal messages received
HCISR	Illegal slots received
HCRES	Resource errors
HCMSK	Illegal message error mask

MONITOR TABLES

HN

The HN (Host Node) data structure is used by LAT service to store status and configuration information describing the local host. TOPS-20 stores the address of this block in location LAHNDB.

Defined in: LATSrv

Format

HOST NODE Data Base

HOST NODE Data Base		
HNFLG	HNCFL	*
HNMXC Maximum allocatable circuit blocks	HNNCC Number of currently allocated circuit blocks	
HNMAC Maximum number of active circuits	HNNAC Number of currently active circuits	
HNMCO Maximum number of simultaneous connects	HNCON Current number of active connects	
HNNUM Host number	HNLAS LAT access state	
HNRLI Virtual circuit message retransmit limit	HNRTIM Virtual circuit timer initial value (ms)	
HNMTE Multicast timer initial value (sec)	HNRAT Host node dynamic rating	
HNPRG Host progress timer	HNNRB Number of receive buffers allocated	
HNCMT Command message retry timer	HNCMX Command message retry limit	
HNHST	Address of state table	
HNQAC	Queue header for active circuit blocks	2
HNQIC	Queue header for inactive circuit blocks	2

MONITOR TABLES
HN (Cont.)

HNNIQ	Interrupt level message queue	/\	2
HNSCQ	Scheduler level message queue	/\	2
HNPID	NI Portal ID	/\	
	HNNXI HNNSV Next circuit block index to assign Number of offered services	/\	
HNLOK	Lock for HN data base	/\	
	HNNMC HNIDC Host node name count Host identification string count	/\	
HNNAM	Host node name string	/\	2
HNID	Host identification string	/\	<<ML.DSC+4>/5>
HNSMT	Start message template	/\	<<ML.HSM+3>/4> +SBF.OF>
HNMCM	Copy of the multicast message	/\	<<ML.HMC+3>/4>
HNSRV	Storage for service blocks	/\	<GB.LEN*MXHSRV>

For field HNFLG(0-17):

HNRUN	0	NI run state
HNANY	1	Reconstruct of START message necessary
HNCIP	2	Virtual circuit connect in progress

For field HNCFL(28-35):

HNOTH	28	Something other than above changed
HNFIL	29	
HNCLS	30	A host service class changed
HNSVD	31	A host service description changed
HNSVR	32	A host service rating changed
HNSVN	33	A host service name changed
HNDD	34	Host Node Description changed
HNACS	35	Access Codes changed

MONITOR TABLES

HOM

Home Block. Block on each disk unit which contains vital statistics that cannot be built in when a monitor is generated. These are primarily parameters of the unit and the STR to which it belongs.

Defined in: DSKALC

Format

HOMNAM=0	SIXBIT/HOM/	
HOMID=1	SIXBIT/Unit ID/	
HOMPHY=2	Physical Disk Address of This Home Block	Physical Disk Address of Other Home Block
HOMSNM=3	SIXBIT/Structure Name/	
HOMLUN=4	# of Packs in STR	Logical Pack # Within STR
HOMHOM=5	Block # of This Home Block	Block # of Other Home Block
HOMP4S=6	# of Pages for Swapping on This Structure	
HOMFST=7	First Swapping Track on Unit	
HOMRXB=10	Address of Index Block of ROOT-DIRECTORY	
HOMBXB=11	Address of Index Block of BACKUP-COPY-OF-ROOT-DIRECTORY	
HOMFLG=12	Flags	
HOMSIZ=13	Number of Sectors in This Unit	
HOMBTB=14	Number of Tracks in Structure	
HOMMID=15	Pack Unique Code	
	Reserved for Expansion	
HOMFE0=61	Front End File System (sector #)	
HOMFE1=62	Front End File System (# of sectors)	

MONITOR TABLES
HOM (Cont.)

Reserved for the Front End	
HOMFE2=101	BOOTSTRAP.BIN Word One (Sector #)
HOMFE3=102	BOOTSTRAP.BIN Word Two (# of Sectors)
Reserved for Expansion	
HOMLS1=160	CPU Serial Number CPU Serial Number
HOMLS2=161	CPU Serial Number CPU Serial Number
HOMLS3=162	CPU Serial Number CPU Serial Number
HOMLS4=163	CPU Serial Number CPU Serial Number
HOMSER=164	APR Serial # of CPU booked from this structure
HOMUID=165	12 Character Unit I.D. (PDP-11 Format) (3 words)
HOMOID=170	12 Character Owner I.D. (PDP-11 Format) (3 words)
HOMFSN=173	12 Character File System Name (PDP-11 Format)(3 words)
HOMCOD=176	0 CODHOM (707070)
HOMSLF=177	0 This Block #

MONITOR TABLES
HOM (Cont.)

PDB Format

	High Serial Number	
	Low Serial Number	
	Non CI Processor Serial Number	
0	CI Processor Serial #	CI State
17		

MONITOR TABLES

HOME

Home Table. This table contains the disk pages for the HOME and BAT blocks and the 11 Bootstrap program.

Defined in: STG

Format

HOME :		/ \
	0 (11 Bootstrap)	
	1 (Home Block)	
	2 (BAT Block)	
	3 (PDB Block)	
	4 .	
	5 .	
	6 .	NHOME
	7 .	
	10 .	
	11 .	
	12 (Secondary Home Block)	
	13 (Secondary Bat Block)	
		/ \

MONITOR TABLES

IA

This structure is used by DECnet. The Connect Initiate and Connect Confirm calls' argument format for T2. T1 holds the NSPpid for the new logical link.

Defined in: D36PAR

Format

IAFLO Flow control type	IASIZ Max bytes allowed in a message segment
----------------------------	--

MONITOR TABLES

IB

The initialization block is the argument to all DECnet-36 initialization routines. It is set with NODE% jsys functions, and read by the various DECnet layers during and after initialization.

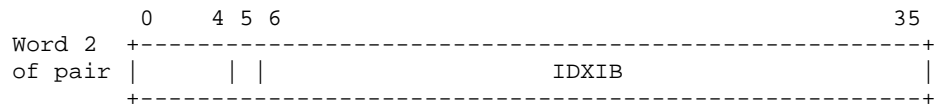
Defined in: D36PAR

Format

Initialization Block			
*	<table border="1"> <tr> <td>IBRTR</td> <td></td> </tr> </table>	IBRTR	
IBRTR			
IBNAM	Executor node name (in sixbit)		
IBADR	Executor node address (16-bit address)		
IBMXA	Maximum address		
IBMXB	Maximum buffers		
IBDGL	Default goal		
IBDBL	Default # of buffers per link		
IBBIP	Buffer input percentage		
IBBSZ	Buffer size		

Field IBPH2	(0-0)	Set if Phase II desired
Field IBRTR	(2-5)	Routing type
.RNT.L1		Level-1 router
.RNT.NR		End node
Field IBFCM	(6-7)	Default flow control

MONITOR TABLES
IDXFIL (Cont.)



Symbol	Bits	Pointer	Meaning
IDX%IV	5		If set, indicates that this IDX entry is invalid. (IDX%IV is set equal to 1, but is positioned at bit 5)
	6-35	IDXB	Disk address of index block of directory.

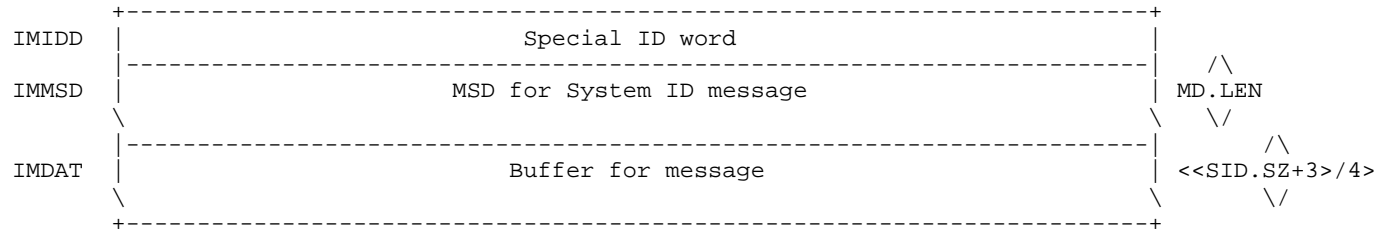
MONITOR TABLES

IM

This is the DECnet LLMOP identify-self message block.

Defined in: LLMOP

Format



MONITOR TABLES

INDEX

The Index Block (1 page) exists for each disk file and contains pointers to where each of the file's pages resides on disk. If more than one index block is needed for non-directory files, a super index block (1 page) is created which points to the home disk address of each index block. (Note that the maximum file size is 512*512 pages.)

When the file is referenced, an in-core copy of the index block is maintained which keeps track of the file's active pages in the system. (That is, whether the pages are in-core, on the swapping area, or on disk.)

Format

0		8	
C			Storage address
H			
0	E	8	
	C		Storage address
	K		
0		8	
	S		Storage address
	U		
0		8	
	M		Storage address
			Storage address
			.
			.
			.

MONITOR TABLES

INIDEV

Initialization Device Routines. This table contains calls to initialize devices after loading the swappable monitor.

Defined in: STG

Format

INIDEV:	CALL MTAINI
	CALL LPTINI (2020 only)
	CALL CDPINI (KL only)
	RET

MONITOR TABLES

INIDV1

Front End Initialization Device Routines.

Defined in: STG

Format

INIDV1:	CALL FEINI (KL only)
	CALL CDRINI
	CALL LPTINI (KL only)
	RET

MONITOR TABLES
 INIDVT (Cont.)

TYPE is one of the following:

Symbol	Value	Meaning
.DVDSK	0	Disk
.DVMTA	2	Magtape
.DVPTP	5	Spooled PTP
.DVLPT	7	Spooled & physical line printer
.DVCDR	10	Spooled & physical card reader
.DVFE	11	Front End Device
.DVTTY	12	Terminal
.DVPTY	13	Pseudo TTY
.DVNULL	15	Null Device
.DVNET	16	ARPA network
.DVPLT	17	Spooled Plotter
.DVCDP	21	Spooled Card Punch
.DVTCP	25	TCP Device

MODES can be a combination of the following:

Symbol	Bit	Meaning
DV%M0	35	Can be opened in mode 0
DV%M1	34	" 1
DV%M2	33	" 2
DV%M3	32	" 3
DV%M4	31	" 4
DV%M5	30	" 5
DV%M6	29	" 6
DV%M7	28	" 7
DV%M10	27	" 10
DV%M11	26	" 11
DV%M12	25	" 12
DV%M13	24	" 13
DV%M14	23	" 14
DV%M15	22	" 15
DV%M16	21	" 16
DV%M17	20	" 17

MONITOR TABLES
INIDVT (Cont.)

CHAR2 can be a combination of the following:

Symbol	Bit	Meaning
D1%SPL	0	Is spooled
D1%ALC *	1	Is under control of allocator
D1%VVL *	2	Volume valid
D1%NIU *	3	Device slot not in use
D1%INI *	4	Device is being initialized (currently for structures only)
D1%MTU	5	Device can do MTOPR without JFN opened

* These bits are zero at assembly time and are set by the monitor when appropriate in their corresponding device tables. (DEVCHR or DEVCH1)

CHAR3 is either zero or DV%PSD (bit 18) which indicates pseudo-device.

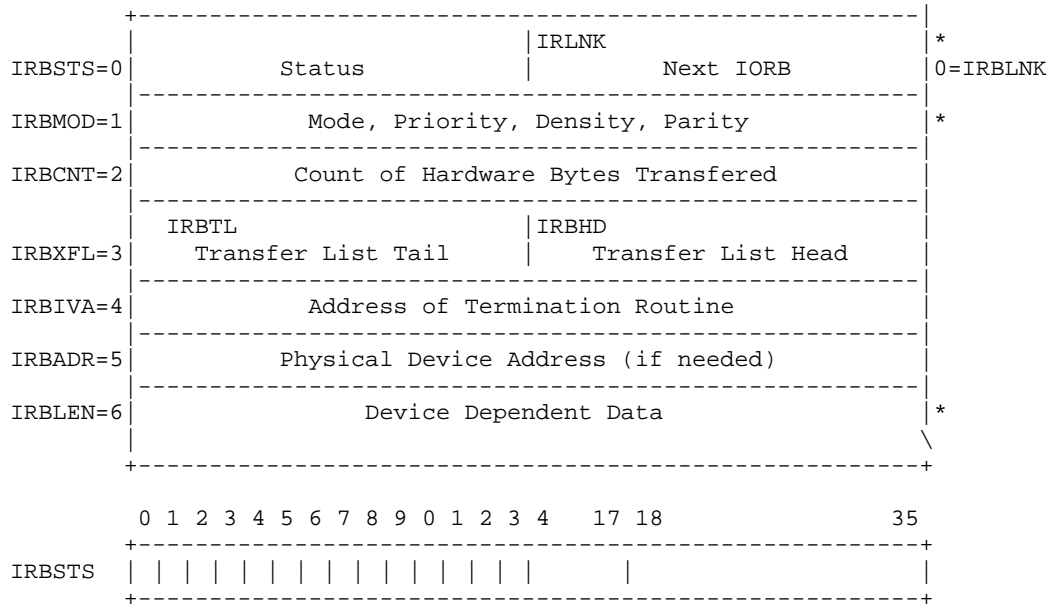
MONITOR TABLES

IORB

I/O Request Block. Whenever a request for massbus I/O (that is, DSK or MTA) occurs, an IORB is built for that request. It is of the long form described below for magtape requests and special disk I/O. However, the most common IORB format for disk I/O is a one word IORB, consisting of just the status word, IRBSTS, and stored in the CST5 table.

Defined in: PHYPAR

Format



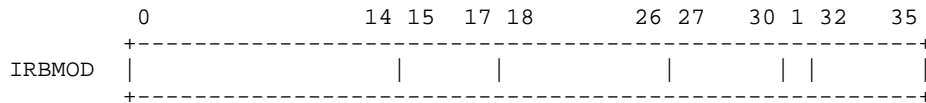
Symbol	Bits	Pointer	Content
IS.SHT	0		Short form (PAGEM) request
IS.DON	1		Done with this job
IS.ERR	2	ISERR	Error on this operation
IS.NRT	3		No more retries
IS.WGU	4		Wrong unit interrupted
IS.TPM	5	ISTPM	Hit tape mark
IS.EOT	6		On write only, hit physical EOT
IS.WLK	7		Write locked
IS.IER	8		Inhibit error recovery
IS.DTE	9		Data error
IS.DVE	10		Hardware error on device
IS.BOT	11		Hit BOT

MONITOR TABLES
IORB (Cont.)

IS.RTL	12		Record too long (buffer too small)
IS.IEL	13		Inhibit error logging
	14-17	ISFCN	Function code
	18-35	IRLNK	When referring to link

Function Codes for ISFCN

Symbol	Code	Function
IRFRED	1	Read data
IRFRDF	2	Read data and format (count, key, header)
IRFWRT	3	Write data
IRFWTF	4	Write format
IRFSEK	5	Seek
IRFFSB	6	Forward space block
IRFBSB	7	Backspace block
IRFWTM	10	Write tape mark
IRFERG	11	Erase gap
IRFREW	12	Rewind
IRFRUN	13	Rewind and unload
IRFRDR	14	Read reverse
IRFRCR	15	Recovery read
IRFWVC	16	Write with validity check
IRFRVC	17	Read with validity check



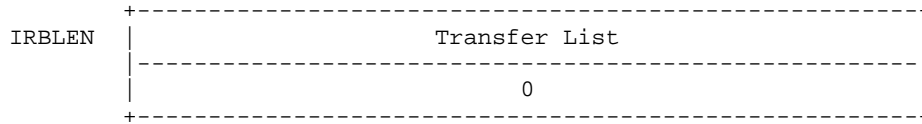
Bits	Pointer	Content
15-17	IRBDM	Data Mode
27-30	IRBPRI	Priority
31	IRBPARG	Parity
32-35	IRBDN	Density

Data Modes for IRBDM

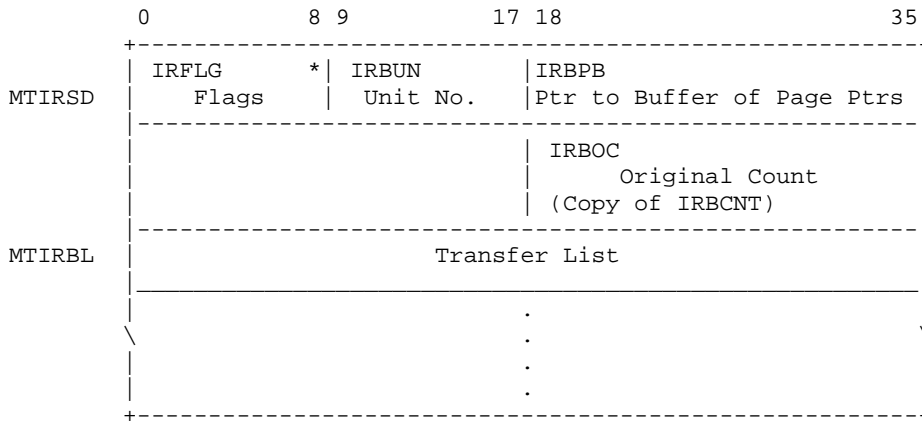
Symbol	Code	Meaning
IRMWRD	1	Word mode
IRM6BT	2	Six bit
IRM7BT	3	Seven bit
IRM8BT	4	Eight bit
IRMHID	5	High density mode

MONITOR TABLES
IORB (Cont.)

If device is DSK, IRBLEN becomes:



If device is MTA, IRBLEN=MTIRSD becomes:



Value of flags in IRFLG:

Bits	Pointer	Content
0	IRBFR	Buffer ready for use
1	IRBFQ	Current buffer flag
2	IRBFA	Active flag, IORB being filled or emptied by service routine
3	IRBAB	IORB aborted due to an error
4	IRBFF	IORB free

MONITOR TABLES

IPCF-MESSAGE-HEADER

IPCF Message header. This table describes the format of the message header for message sent by the Inter-Process Communications Facility.

Defined in: IPCF

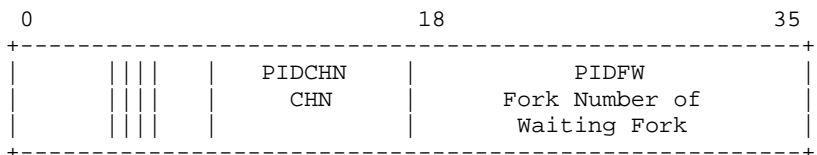
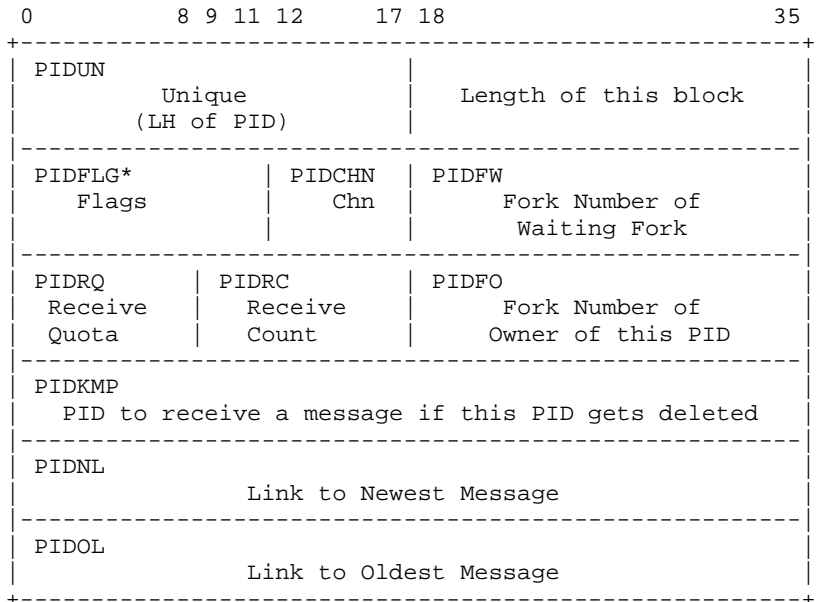
		Format	
	0	17 18	35
	0	MESLNK Link to Next Message	
	1	Reserved	MESLEN Length of This Block
	2	MESSJN Sender's Job Number	MESFLG Flags
	3	MESSPD Sender's PID	
	4	MESLDN Logged in Directory # of Sender	
	5	MESENB Enabled Capabilities of Sender	
	6	MESCDN Connected Directory # of Sender	
MESACT=7		MESACT Account String Block (length of MESALN = 10)	
	17	MESSLO: Logical Location String Block of MESLLN (2)	
MESWDI=21		MESWDO Message (PTN.PN in Page Mode)	
MESWDI+1		MSFTM Mask into Fork Page Bit Table (PAGE Mode only)	
MESWDI+2		MESPAC Access Bits of Page	MSFTI Index into Fork Bit Table

MONITOR TABLES

IPCF-PID-HEADER

IPCF Process ID Header. This contains overhead information for each PID in use.

Defined in: IPCF



Symbol	Value	Content
PD%JWP	10	PID is a Job-wide PID
PD%DIS	4	PID is disabled
PD%CHN	2	Channel is set up to get interrupts
PD%NOA	1	No access by other forks

MONITOR TABLES

IPCF-STORAGE-AREA

Inter-Process Communication Facility Storage Area. This non-resident storage is described followed by the resident wake-up bit table (PDFKTB). The PID headers and messages are contained in the Swap-free-space pool which immediately follows this table in non-resident storage. See also the tables, PIDCNT and PIDTBL.

Defined in: STG

Format

SPIDTB:	Table of Commonly Used PIDS	/ \ SPDTBL=8 \ /
PIDLOK:	Lock on PID Free Pool and Data Structure	
NXTPID:	Next Unique # to be used as LH of PID	
INFOPD:	PID of SYSTEM INFO	
INFOPV:	Public Value of SYSTEM INFO PID	
PIDLST:	Number of First Free PID, 0 if none	
PIDMXP:	Highest Page in Pages-In-Transit File	
PIDPBT:	Bit Table of Pages-In-Transit File	/ \ PIDPBL \ /
PIDFTB:	TBL of PTN's of forks for pages in transit	/ \ PIDFTL \ /
PDFKTB	Bit Wakeup Table (1/Fork)	

MONITOR TABLES

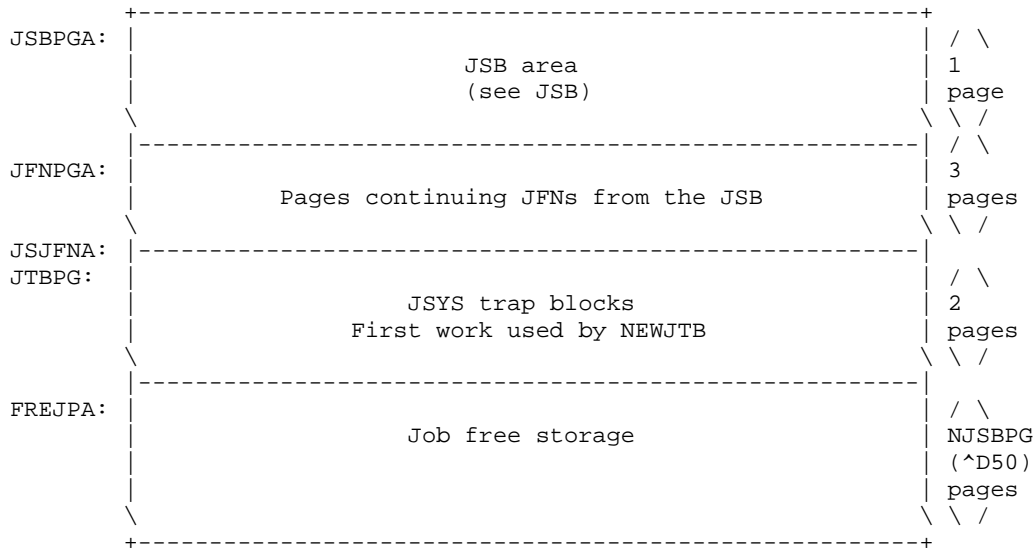
JOB AREA

This area contains the job specific information. It is the entire JSVAR psect. The JOBMAP in the JSB points to all of the job area storage. For this area, the monitor has indirect pointers in its page table (MMAP) for its pages beginning at JSBPGA: (which is on a page boundary) for the length of the job area. All of these pointers are to a single location in the SPT (specifically SPT+NOFN). With this arrangement, the job area for the current process can be changed to the job area for another process by only changing the one location in the SPT.

JBCOR contains a bit table which keeps track of which pages in the Job Storage Area are in use (bit(s) = 0) and which are free (bit(s) = 1). The first several pages of this Job Common Area is always allocated for the JSB page plus expansion pages for the JFN blocks and for the JSYS trap header word and trap blocks (See FKJTQ table). The first non-reserved page begins at FREJPA (=626000). Pages are assigned from the bit table, JBCOR, by the routine, ASGPAG, and are used for temporary job pages such as file window pages, magtape buffer pages, mapping a super index block, getting more space for the free block storage linked in JSBFRE, and mapping EXE file directory pages.

Defined in: STG

Format



MONITOR TABLES

JOBDIR

Job Directory Table. This table contains the number of the login directory for each job.

Defined in: STG

Format

JOBDIR:	Reserved	Login Directory #	NJOBS
	.		
	.		
	.		
	.		
	.		
	.		

MONITOR TABLES

JOBPNM

Job Program Name. This non-resident table contains each job's program name.

Defined in: STG

Index: Job number

Format

JOBPNM:	Job Program Name	/ \
	.	
		NJOB
		\ /

MONITOR TABLES

JSB

Job Storage Block. Each job has a Job Storage Block which holds per-job information such as the job's fork structure, line number of controlling TTY, terminal interrupts enabled and accounting and logical name information.

JSBFRE is the free block header. If a block of words (that is, <512 words) is required, it is allocated from the JSFREE area in the JSB. Blocks in the JSFREE area are linked and when a block of words is required, the free list is searched looking for a large enough block. If the free list area in JSFREE is depleted, a new page (space outside the JSB in the Job Storage Area) is allocated and its space added to the free list for block usage. Blocks of words are assigned from the free list, headed by JSBFRE by the routine, ASGFRE, and are used to hold temporary storage such as name strings for JFN blocks, the job-wide Logical Names List, and the Logical Name Definition Blocks.

JBCOR contains a bit table which keeps track of which pages in the job area are in use. For further information see JOB AREA.

Defined in: STG

Format

JSBPGA:	-----		
JOBMAP:	Object Map for Job-Common Area		

SYSFK:	Job Fork Index to System Fork Index Table		*/ \
	(1 Entry /Job Fork)		NUFKS

CTTAB:	Not Used	Controlling TTY	\ /
		#, or -1	/ \

FKJTB:	Adr of JSYS Trap Block		\ /
	(1 Entry /Job Fork)		/ \

	:		NUFKS

FKPTRS:	Fork Pointers (Structure) Table		\ /
	(1 Entry /Job Fork)		/ \

FKPSIE:	Terminal Interrupt Enabled Word Table		\ /
	(1 Entry /Job Fork)		/ \

	-----		\ /

MONITOR TABLES
JSB (Cont.)

FKDPSI:	Deferred Terminal Interrupts Mask Table (1 Entry /Job Fork)	/ \ NUFKS \ /
FREJFK:	Free Job Fork Slot List	
FKLOCK:	Lock for Fork Structure Modification	
FLKCNT:	Nest Count for Fork Lock	
FLKOWN:	Fork That Locked Fork Lock	
FKTIMW:	TIMER word for lock timeout	
FKCNT:	Count of Active Forks in This Job	
LSTLGN:	Last Interactive LOGIN Date and Time	
NLDLGN:	Last Non-interactive LOGIN Date and Time	
SRTTIM:	Data & Time Job Was Initialized	
ARDFRT:	Job Default for Retrievals	
CTRLTT:	Line Number of Controlling TTY	
GBLJNO:	Global Job Number	
TTSPSI:	Code Enabled Anywhere in This Job	
TTSDPS:	Terminal Interrupt Code Deferred	
TTJTIW:	Terminal Interrupt Enable Mask	
JBFLTM:	Time of Last Password Failure	
JBFLCT:	Count of Password Failures in Interval	
CONSTO:	Console Time On (TODCLK units)	
CTIMON:	Connect Time On (GTAD units)	
CONCON:	Console Connect Time (for usage)	
JBRUNT:	Job Run Time (for usage)	
JBNODE:	Node Name (SIXBIT)	
JBBNAM:	Batch Job Name (SIXBIT)	

MONITOR TABLES
JSB (Cont.)

JBBSEQ:	Batch Sequence Number	
ACCTSL:	Length of ACCTSR	
ACCTSR:	Account String	MAXLW
ACCTSX:	Expiration Data of ACCTSR	
CSHACT:	Most recently Validated Account	MAXLW
CSHUSR:	User for Whom Cached Account was Validated	
CSHACX:	CSHACT Expiration Date	
CSHCLS:	Class of Cached Account	WPN
LLSR:	Logical Location	
JSSRM:	Session Remark	MAXLW+1
USRNAM:	User Name String	MAXLW+1
JFNLCK:	Lock to Prevent Tampering with JFNs	
MAXJFN:	Maximum Number of JFNs for Job	
ENQLST:	Forward Pointer to Q-Block	
	Backward Pointer to Q-Block	
ENQQOT:	ENQ Quotas & Counts Reserved	
TIMALC:	TIMER Clocks Limit	
LNTABP:	Pointer to Logical Name Table (Tbl is in JSB Space)	
LNMLCK:	Lock for Logical Name Data Base	
NPRIVP:	Number of private pages in job	
JOBUNT:	Connected Disk Unit	
JBCLCK:	Lock for ASGPAG	
JBCOR:	Page Allocation Bit Table for Job Storage Area	4

MONITOR TABLES
JSB (Cont.)

JSBFRE:	Ptr. to 1st Free Block 0	
	Lock	
	Space Counter	
	Most Common Block Size	
	Max Top of Free Stor. Min. Bottom of Free Stor.	
	Temp	
	Temp	
JSFREE:	Free Storage Area in Job Block (^D64 words)	/ \
	[Free Blocks have Hdr. Wd of: Ptr. to Next Blk,, Length]	IJSFRE
JSSTRT:	JSSTN	\ /
JSSTRF=0	Flags Structure Unique Code	*/ \
JSGRPS=1	JSGRP AOBJN Pointer to List of Groups	
JSADIR=2	JSADN **Unused** JSSTMX Accessed DIR # for This STR	*STRN
JSFKMT=3	JSFMT Fork-mount bit word	
	(4 Words per Structure)	
JSSTLK:	Lock on the JSSTRT Block	\ /
JSBSDN:	JSUC JSDIR Connected STR Unique Code Connected Directory #	
JSBCDS:	0 18 35 JSCDF JSCDS String Ptr. Ptr. to Connected Valid if set Dir. Name String	

MONITOR TABLES
JSB (Cont.)

MODES:	DDBMOD Word from LOGIN	
GROUPS:	Groups to Which LOGIN User Belongs	
RSCNPT:	RESCAN Pointer	
RSCNBP:	Ptr. to RESCAN Buffer (max. buf. size is 777)	
JBINFO:	PID of Private <SYSTEM>INFO for JOB	
JSCDR:	Next Version # (or -1)	Adr. of Spool Set String for CDR
JSMTAL:	MTA Parity, Density, Mode, and Default Record Size	
JBFLAG:	Spooler Flags (Sent on CLOSE/LOGOUT	General Job-wide Flags
JSLOPD:	PID to get LOGOUT message from CRJOB	
JSLOJB:	Job # of Who Logged Out this Job	
JSFSTK:	Stack of Things to be Done on Fork Cleanup	
JSFLCK:	Lock for This JSFSTK Structure	
CRJFLG:	Flag that this is CRJOB Startup.(Used by MEXEC & LOGIN)	
DCNCNT:	DCMAX Job's Network Link Quota	DCCUR Current Count of Open Links
JSSRTM:	Runtime at Start of this Accounting Session	
JSSCTM:	Console Time at Start of this Session	
JSSCTI:	Universal Date and Time at Start of Session	
JSATCT:	ATS HTN Quota , ,Count	
JOBSKD:	Special Job Scheduling Parameter	
BATSTF:	Batch Stream Number and Flags Word	
BATRID:	Batch Request ID	

MONITOR TABLES
JSB (Cont.)

JFNO:			
FILBYT:	Byte Pointer to Current Window New I/O = FILBFI - byte pointer to current input buffer		
FILBFO:	Byte Pointer to Current Buffer New I/O = byte pointer to current output buffer		
FILBYN:	Byte # of Current Byte New I/O = FILBNI - input byte number of current byte		
FILBNO:	New I/O - Output Byte Number of Current Byte		
FILACT:	Ptr to Account String or Account #		
FILLEN:	Total File Length in Bytes		
FILCNT:	Bytes Remaining in Current Buffer New I/O = FILBCI = Bytes remaining in Current Input Buffer		
FILBCO:	Bytes Remaining		
FILLCK:	File Lock Word		
FILWND:	FLPGN Current Page #	FLWPG Location of Current Window	
FILSTS:	File Status Bits	Status	Mode *
FILST1:	Status		*
FILDEV:	STR Structure Number	FLDTB DEV`DTB (i.e.Dev Disp. Tbl)	
FILNLP:	FLFCO Flow Control Option	FLSCS Segment Size	
FILOFN:	FLPTN OFN for This File	FLPTT OFN of Long File PT Table	JFN
FILLFW:	FLMPC Count of Pages Mapped	FLTTW Loc. of Page Table Table	BLOCK
FILDDN:	FLDSB Ptr. to Device String Block	FLDNO Directory #	
FILDNM:	FLDIR Directory Name String	FLATL Ptr to Attribute List	
FILNEN:	FLNSB File Name String Blk. Ptr.	FLESB Ext. String Blk. Ptr.	

MONITOR TABLES
JSB (Cont.)

FILVER:	ORG Fork # of JFN Originator	FLVNO Version #
FILMS1:	FLDMS Directory Wild Mask	FLNMS Name Wild Mask
FILMS2:	FLEMS Extension Wild Mask	
FILFDB:	Address of FDB in the Directory	
FILCOD:	FLUC STR Unique Code	FLP0 PTO OFN for Long File
FILNND:	FLLNK DECnet Port #	FLLND Ptr to node name string
	Additional JFN Blocks	

Each JFN uses a block of 19 (MLJFN) words. (Since JFNs can grow beyond the end of the JSB into successive pages, the JFN blocks must be the last storage defined in the JSB.) MJFN is the maximum number of JFNs.

These definitions are used in the above positions only during the GTJFN procedure:

- (1) FILTMP / Ptr. to temp string block for default ,, Ptr. to temp string block
- (2) FILPRT / Ptr. to protection string or protection number
- (3) FILSKT / Arpanet connection no.,, Unused
- FILOPT / Byte Ptr. to Store String in GTJFN
- (4) FILLIB / For DECNET, Ptr to LL Block
- (5) FILLNM / Ptr. to RDTEXT buffer ,, Ptr. to logical name chain **
- (6) FILBFO / For DECNET, Output Buffer Ptr.
- (7) FILIDX / 0 ,, Index into device tables for original devices GTJFNed
{(doesn't change during spooling)}
- FILBFI / For DECNET, Ptr. to Input Buffer
- (8) FILBCT / For DECNET, Ptr. to Counts

MONITOR TABLES
JSB (Cont.)

Logical Name Header Format

LNMCNT Depth Count	LN MSTP Step Counter
LNMLNK Link to Next BLK	LNMPNT Logical Name String Ptr

Bits	Pointer	Content
0-17	LNMCNT	Depth count for logical names
18	LMMIDX	Index into logical name tables
19-35	LN MSTP	Step counter at time of chaining
0-17	LNMLNK	Link to next chain block
18-35	LNMPNT	Pointer to logical name string

FILSTS	flags	mode
--------	-------	------

Symbol	Bits	Pointer	Contents
OPNF	0		File is open
READF	1		File is OK to read
WRTF	2		File is OK to write
XCTF	3		File is OK to execute
RNDF	4		File is OK to reset ptr. (that is, not append)
NONXF	5		Non-existent File, delete FDB on RLJFN
NWTF	6		No wait on DUMP I/O
LONGF	7		File is a long file
EOFF	8		End of file if read attempted
ERRF	9		Bytes read may be wrong
NAMEF	10		Name is associated with this JFN
ASTF	11		An * was typed in
ASGF/BLKF	12		JFN is being assigned or service routine wants to block; shares a bit position with ASGF
HLTF	13		Halt if I/O error
WNDF	14		Window page has been set up

MONITOR TABLES
 JSB (Cont.)

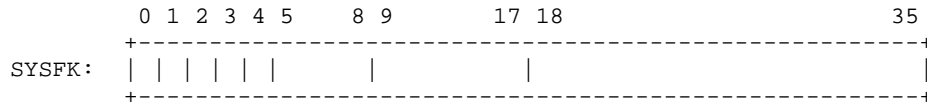
ENDF/TRNSL	15		File is past end of maximum length. Bit timeshared with ENDF to say the JFN is in a transitional state and may not be accessed.
SIZE	16		Illegal to change size of byte
FRKF	17		File is restricted to fork in LH(FILVER)
PASLSN	18		Set to skip line number checking on ASCII files
SKIPBY	19		Set by BYTINA to remember that it has to discard.
XQTAF	20		Quota exceeded Flag
FILDUD	21		Suppress DDMP action if set
FILINP	22		Direction of I/O is input
FILOUP	23		Direction of I/O is output
HLDF	24		Hold in balance set
RECF	25		End of record seen
ACRLFF	26		Add CRLF's after records on input
CRNXT	27		Return CR next
LFNXT	28		Return LF next
FROSTF	29		Record has been frosted
	18-35	IOMODE	Mode File is opened in

```

FILST1 |-----|
      |-----+
  
```

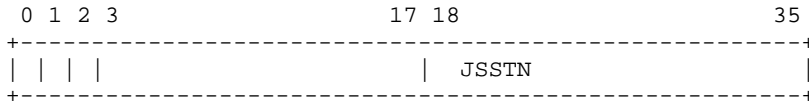
Symbol	Bits	Pointer	Contents
FILNO	0		New output
ASGF2	1		Shadow bit for ASGF

MONITOR TABLES
JSB (Cont.)

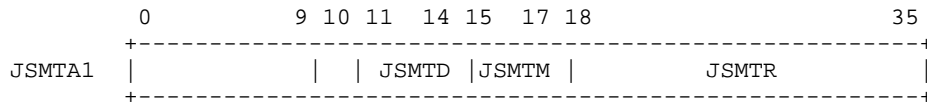


Bits	Pointer	Content
0		JRFN not in use
1	SFEXO	Fork is Execute-Only if set
2	SFNVG	Fork is not "virgin" if set
3	SFGXO	Fork can PMAP into execute-only forks
4	SFSRT	Fork has been started
9-17	FKHCNT	Count of handles on a given fork
18-35		System fork number

Work 0 of 4-word structure block (starts at JSSTRT)

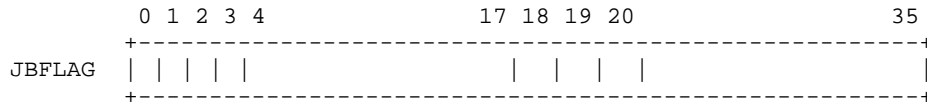


Symbol	Bits	Pointer	Content
	0	JSSDM	Structure is dismounted
	1	JSMCI	Mount count has been incremented by structure
	2	JSXCL	Structure is mounted exclusively by the structure
JSFRST	18-35	JSSTN	Structure unique code



Bits	Pointer	Content
10	JSMTM	Default Parity
11-14	JSMTD	Default Density
15-17	JSMTM	Default Mode for transfers
18-35	JSMTR	Default record size (hardware bytes)

MONITOR TABLES
JSB (Cont.)



Symbol	Bits	Pointer	Content
SP%BAT	0	JSBAT	Job is being controlled by BATCH
SP%DFS	1	JSDFS	Spooling is deferred
SP%ELO	2	JSELO	Job executed LOGOUT JSYS
SP%FLO	3	JSFLO	Job forced to LOGOUT by top Fork error
SP%OLO	4	JSOLO	Job logged out by other job
	18	JBMX	Job has been in the mini-exec
	19	JBT20	Job is at TOPS-20 command level

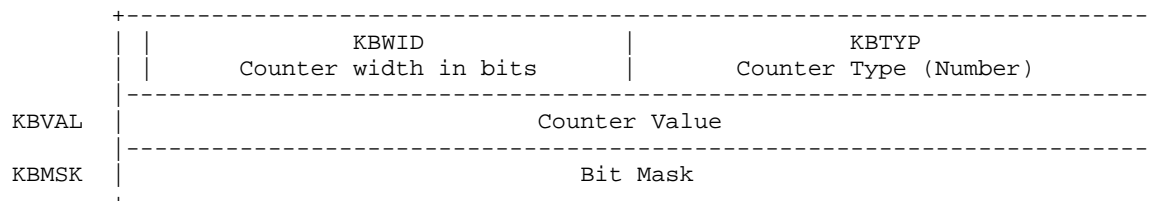
MONITOR TABLES

KB

KB contains the DECnet Counter Block Sub-fields.

Defined in: D36PAR

Format



Field KBBMF (0-0) Bit Map Flag

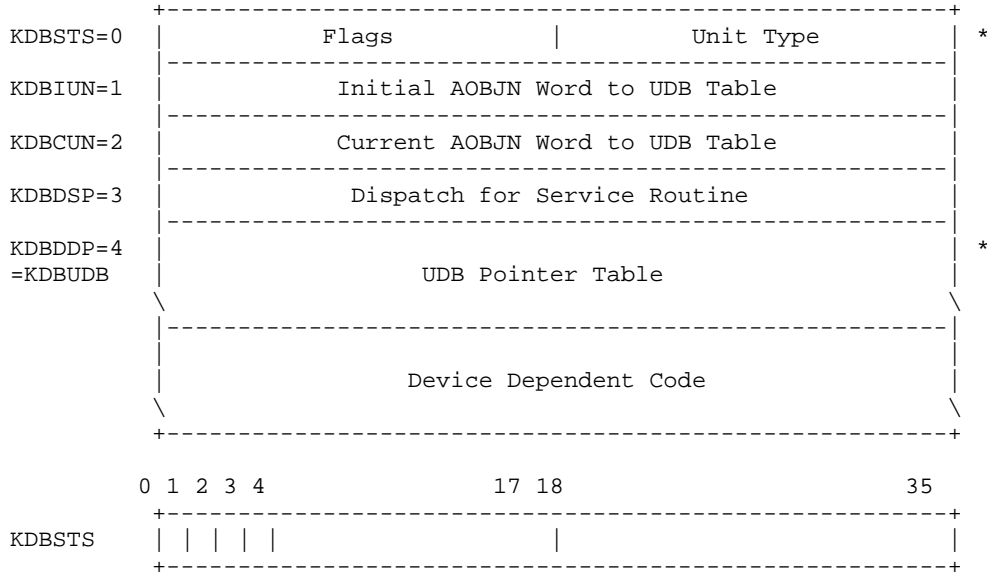
MONITOR TABLES

KDB

Kontroller Data Block (TM02/3, DX20, and CI nodes)

Defined in: PHYPAR, PHYM2, PHYP2, SCAPAR

Format



Symbol	Bits	Pointer	Content
KS.ACT	1		Controller Active if set
KS.HLT	2		Microcode is halted
KS.DSK	3		Controller for disks
	18-35		Unit type (see unit types in UDBSTS in UDB)

MONITOR TABLES
KDB (Cont.)

Device dependent sector for TM02/3

KDBUDB= KDBDDP	UDB Pointer Table	8
TM2ADR:	Massbus Address of TM02/3	
SAVUDB:	Current UDB (0 if none) 2020 Only	
TM.CNI:	CONI of RH goes here	
TM.CS1:	DATAI RH control Register	
TM.DBF:	DATAI RH Data Register	
TM2REG:	Drive Registers go here	12

LK.TM2 = Length of TM02 KDB

Device Dependent Sector for TM78

KDBUDB= KDBDDP	UDB Pointer Table
TM8ADR	MASSBUS Address of TM78
SAVUDB	Current UDB (0 if none)
SAVLSI	Last Interrupt Code
TM8XCW	CCW for Reading Extended Sense Info
TM8SCW	Saved CCW While Reading Extended Sense
TM8ACT	Count of Asynchronous Interrupts
TM8CNI	CONI of RH Goes Here
TM8CS1	DATA1 RH Control Register

MONITOR TABLES
KDB (Cont.)

TM8DBF	DATA1 RH Data Register		
TM8REG	Drive Registers Start Here:		
DR.CR=0	Drive Control Register		
DR.ICD=1	Interrupt code (Data XFER) Register		
DR.FMT=2	Record Count/Format Register		
DR.ER=3	Error Register		
DR.AS=4	Attention Summary Register		
DR.BC=5	Byte Count Register		
DR.DT=6	Drive Type Register		
DR.SR=7	Status Register		
DR.SN=10	Serial Number Register		
DR.DG=11	Diagnostic Register		
DR.DG2=12	Diagnostic Register		
DR.ICN=13	Interrupt Code (Non Data-XFER) Register		
DR.ND0=14	Non Data-XFER Command, Unit 0 Register		
DR.ND1=15	Command, Unit 1 Register		
DR.ND2=16	Command, Unit 2 Register		
DR.ND3=17	Command, Unit 3 Register		
DR.IA=20	Internal Address Register		
DR.TMS=21	TM Status Register		
TM8REV	ROM Rev Levels	/ \	2
TM8XSN	Extended Sense Information	/ \	17
		/ \	

MONITOR TABLES
KDB (Cont.)

Device dependent sector for DX20

K.DUDB= KDBDDP	UDB Pointer Table	/ \ NUMDRV \ /
K.DXAD:	Massbus Address of DX20	
K.STCT:	Number of Time Microcode Restarted	
K.STCL:	Clock Timer for Restarts on Overdues	
K.DNUM:	Number of Drives in Existence	
D.SAVQ:	Storage for Q1 on ATTN Interrupts	
K.DVER:	Microcode Version	
K.DREG:	Drive Registers go here	/ \ REGNUM \ /
K.DEXS:	Extended Status Table	/ \ (SNSNUM+3)/4 \ /
K.DCNI:	CONI of RH on Error	
K.DCS1:	DATAI of RH Control Register	
K.DDBF:	DATAI of RH Data Register	

MONITOR TABLES
KDB (Cont.)

LK.DX2 = Length of DX20 KDB

Device dependent sector for CI node

KDBUDB= KDBDDP	UDB Pointer Table	/ \
		\ PRTMXU
KDBCID:	Controller ID	\ /
	8 8-bit Bytes	/ \
KDBIAC:	Saved ACs for Initialization of a Node	\ /
		/ \
		10
		\ /
	System Block (See description elsewhere in this manual)	
		\

MONITOR TABLES

LB

This is the loopback portion of a DECnet Request Block.

Defined in: LLMOP

Format

Message Block for Loopback

LBAAD	Assistant Address
LBALV	Assistance Level

MONITOR TABLES

LD

This is the DECnet loopback data area; the data buffer is supplied by the user.

Defined in: LLMOP

Format

Loopback Data Output MSD



MONITOR TABLES

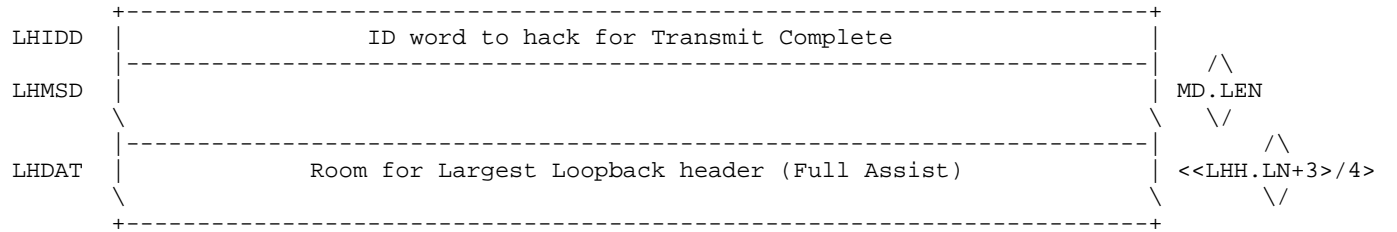
LH

This is the DECnet Loopback LLMOP Header MSD.

Defined in: LLMOP

Format

MSD for header



MONITOR TABLES

LI

The following is the definition of the Line-ID (LI) that the DECnet router maps into a line block address. This is used:

- o On an initial open from the DLL to ROUTER;
- o By router to determine any Kontroller specific peculiarities;
- o By network management to communicate with ROUTER.

Defined in: D36PAR

Format

Line-ID

LIDEV		LIKON	LIUNI	LIDRP
Device type		Controller	Unit number	Drop number
		number (CPU# for DTE's and CI's)		(port for CI's)

Field LILXC (0-0) Bit indicating line ID (1) or circuit ID (0).

MONITOR TABLES

LK

LK represents the format of DECnet storage location NSPLKF, which is a bit map of pending NSPLCF requests.

Defined in: LLINKS

Format

BITS IN NSPLKF



For field LKFLG(0-5):

LKJIF	0	Jiffy service, must be sign bit for NSPJIF
LKCGT	1	Congestion-detected service
LKRLV	2	Congestion-relieved service

MONITOR TABLES

LN

LN is the definition of the DECnet-36 Loopback Node block. A block is created every time a loopback node is defined for a circuit. The blocks are chained together, and the first block on the chain is pointed to by monitor location SCTLNL.

Defined in: SCLINK

Format

LNNXT	Ptr to next loopback node block
LNNAM	Loopback node name
LNCIR	Loopback circuit

MONITOR TABLES

LOGICAL-NAME-DEFINITION

Logical Name Definition Block. The block format given below is used for system and job-wide logical name definitions. The first definition block for a logical name is pointed to by its Logical Name List and is stored in the swappable free space if a system logical name or in the JSB space if a job-wide logical name.

Defined in: LOGNAM

Reference by: LOGNAM

Format

LNBLK=0	PTR TO NEXT DEFINITION (OR ZERO IF NONE)	SIZE OF THIS BLOCK (USUALLY 12)
LNDEV=1	ASCII BYTE PTR TO DEVICE BLOCK (IF ANY)	
LNDIR=2	ASCII BYTE PTR TO DIRECTORY BLOCK (IF ANY) (-3 MEANS STAR WAS TYPED)	
LNNAM=3	ASCII BYTE POINTER TO NAME BLOCK (IF ANY)	
LNEXT=4	ASCII BYTE POINTER TO FILE TYPE (IF ANY) (-2 MEANS A NULL FIELD WAS SPECIFIED)	
LNVER=5	500000,,0 + GENERATION NUMBER (IF ANY)	
LNACT=6	500000,,0 + ACCOUNT NUMBER -OR- ASCII BYTE POINTER TO ACCOUNT STRING (IF ANY)	
LNPRT=7	500000,,0 + FILE PROTECTION (IF ANY)	
LNTMP=10	0 IF PERMANENT OR -1 IF TEMPORARY (IF ANY)	
LNATR=11	PREFIX VALUE OF CURRENT PREFIX	PTR TO ATTRIBUTE CHAIN

MONITOR TABLES

LOGICAL-NAMES-LIST

Logical Names List. The list described below is the format used for the system logical names list (pointed to by SYLNTB) and the job wide logical names list (pointed to by the JSB entry, LNTABP.)

The system logical names list is built in the swappable free space from the entries in SYNMTB at system initialization time. (See SWAP-FREE-SPACE and SYNMTB tables). A job's logical names list is built in the JSB space the first time a logical name is created.

An entry in a logical names list has a pointer to the logical name string (in ASCIZ) in the left half and a link to the first definition block in the right half (See LOGICAL-NAME-DEFINITION description).

Defined in: STG

Format

# OF DEFINED LOG NAMES	SPACE ALLOCATED IN TABLE
LOGICAL NAME BLK ADDR	LINK TO FIRST DEFINITION
LOGICAL NAME BLK ADDR	LINK TO FIRST DEFINITION
.	.
.	.

MONITOR TABLES

LPT-STORAGE-AREA

Line Printer Storage Area. Each entry in the resident area is LPTN words long, where LPTN equals the number of line printers on the system.

Defined in: STG

Format

LPTTYP:	\	Type of LPT Vector for Dev. Independence	\	LPTN
LPTSTS:	\	Status Word	\	LPTN
LPTST1:	\	Second Status Word	\	LPTN
LPTST2:	\	Third Status Word	\	LPTN
LPTST3:	\	Fourth Status Word	\	LPTN
LPTERR:	\	Last Error Word	\	LPTN
LPTCNT:	\	Buffer Counter	\	LPTN
LPTCLS:	\	LPTCHK Clock Switch	\	LPTN
LPTCCW:	\	BLKI/O Pointer	\	LPTN
LPTICT:	\	Interrupt Byte Count	\	LPTN
LPTCKT:	\	Interval for LPTTIM	\	LPTN
LPTLCK:	\	Lock on Opening LPT	\	LPTN
PGDATA:	\	Page Counter to be Sent to -11	\	LPTN

MONITOR TABLES
LPT-STORAGE-AREA (Cont.)

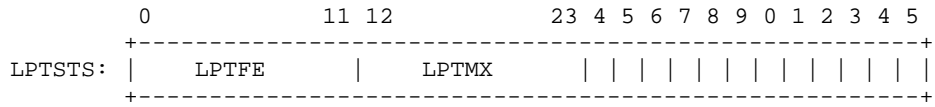
The following LPT: storage items are in the nonresident area of the monitor.

LPTBUF:	2 Buffers (each NLPBF=400 words) for each LPT:	/ \
		LPTN * 2
		* NLPBF
LPTOFN:	VFUOFN RAMOFN	/ \
	VFU RAM	/ \
	OFN's to Prevent Opens for Write (1 entry/DTE)	LPTN
VFUFIL:	Swappable Storage Area for VFU File Names	/ \
		LPTN
		LPFLSZ*
RAMFIL:	Swappable Storage Area for RAM File Names	/ \
		LPTN
		LPFLSZ*

If the assembly flag, SMFLG, is set, indicating a 2020 monitor, then the following additional storage is assembled in the resident area of the monitor:

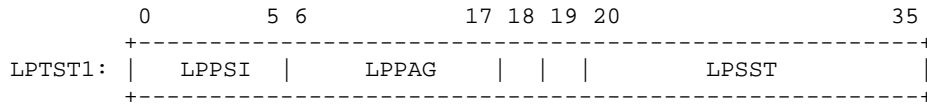
L11A:	Holds Fake -11 Adr of Buf (1 entry / LPT)	
LPWINA:	Address of Unibus Window	
LPACS:	AC Storage During LPT Interrupt	/ \
		16
LPSTAK:	PDL During LPT Interrupt	/ \
		LPSLEN
LPXJEN:	XJEN Instr. for Dismissing LPT Interrupt	/ \
LPXPTB:	LPT Interrupt Instr. is XPCW to this 4-word Blk	/ \
		LPTN(1)*4

MONITOR TABLES
LPT-STORAGE-AREA (Cont.)



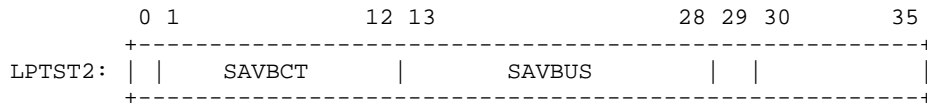
Symbol	Bits	Pointer	Content
LP%FE	0-11	LPTFE	Bytes now in front end
LP%MX	12-23	LPTMX	Max. bytes allowed in front end
LP%LHC	24	LPLHC	Loading has completed flag for RAM/VFU load
LP%HE	25	LPTHE	Hard error on this LPT:
LP%OBF	26	LPOBF	Output is being flushed
LP%MWS	27	LPMWS	MTOPR is waiting for a status to arrive
LP%ER	28	LPTER	LPT had an error
LP%OL	29	LPTOL	LPT on-line
LP%TBL	30	LPTBL	LPT is over allocation
LP%TWT	31	LPTWT	Request on Q.
LP%THN	32	LPTHN	Line printer control failed
LP%OPN	33	LPOPN	LPT is opened
LP%ALI	34	ALTI	Interrupt buffer pointer
LP%ALP	35	ALTP	Buffer Pointer

MONITOR TABLES
LPT-STORAGE-AREA (Cont.)



Symbol	Bits	Pointer	Content
LP%PSI	0-5	LPPSI	Channel number on which PSI's are desired
LP%PAG	6-17	LPPAG	Page Counter
LP%LCP	18	LPLCP	Lower case printer
LP%SHA	19	LPSHA	Status has arrived
LP%SST	20-35	LPSST	Software status word Entry as follows:

Symbol	Bits	Content
.DVFFE	28	Device has a fatal, unrecoverable error
.DVFLG	29	Error logging information follows
.DVFEF	30	EOF
.DVFIP	31	I/O in progress
.DVFSE	32	Software condition
.DVFHE	33	Hardware error
.DVFOL	34	Offline
.DVFNX	35	Nonexistent device



Bits	Pointer	Content
0	ARROWF	Convert control to arrow character
1-12	SAVBCT	Saved byte counter during arrow
13-28	SAVBUS	Saved bus address register
29	LPTLOR	On when loading ram

MONITOR TABLES
LPT-STORAGE-AREA (Cont.)

2020 only:

	0 1		8 9		23 24	35
LPTST3:			SAVCHR		LPTCC	

Bits	Pointer	Content
0	LPXBIT	On if printer exists
1-8	SAVCHR	Saved LP buffer character
24-35	LPTCC	Count of characters sent to printer

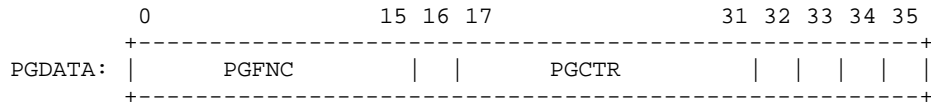
	0		17 18 19 20		35
LPTERR:		LPFRK			LPERR

Symbol	Bits	Pointer	Content
LP%FRK	0-17	LPFRK	Fork ID of owning PSI process
LP%MSG	18	LPMSG	If on, suppress standard messages
LP%PCI	19	LPPCI	Page counter has interrupted
LP%ERR	20-35	LPERR	Last error indication

	0	5 6	15 16 17 18		35
LPTCLS:		LPBSZ			

Symbol	Bits	Pointer	Content
LP%BSZ	0-5	LPBSZ	Byte size of OPENF
LP%RLD	16	LPRLD	Front end was reloaded
LP%NOE	17	LPNOE	Note occurrence of EOF

MONITOR TABLES
LPT-STORAGE-AREA (Cont.)



Symbol	Bits	Pointer	Content
	0-15	PGFNC	Function code: load page counter
	16	PGENB	Enable interrupts
	17-31	PGCTR	Page counter value
LP%IRP	32	LPIRP	Interrupt request pending
LP%RBR	33	LPRBR	RAM or VFU being reloaded
LP%LTR	34	LPLTR	Translation RAM requires reloading
LP%LVF	35	LPLVF	VFU requires reloading

MONITOR TABLES

LT

This is the DECnet Line table structure.

Defined in: DNADLL

Format

LTLID	Line ID			
		LTPRO Protocol type	LTCTY Circuit type	LTDBF Default number of buffers
	LTBNO Number of buffers to post		LTNBP Number of buffers posted	

For field LTF LG(0-1):

LTDVE	0	Driver believes device is present
LTCAD	1	Channel address is DECnet (Ethernet only)

Field LTSTA (2-3) State of line

Field LTC ON (4-5) Controller (normal/loopback)

MONITOR TABLES

MB

The following is the definition of the DECnet-36 Message Block. This is the fundamental data structure used to represent an individual message. The Message Block is divided up into a public section and several private sections which belong to each of the layers of the DECnet architecture.

Defined in: D36PAR

Format

The Public Section

MBNXT	Ptr to next message. Must be full word for NSP, see BEGSTR QP in LLINKS.MAC	
MBFMS	Pointer to first MSD (DLLs expect this field to be right here)	
MBMSN	DDCMP message number (DLLs expect this field to be right here)	
	MBDST Destination node	MBSRC Source node
MBDS1	First 32 bits of destination	
MBSR1	First 32 bits of source	
*	MBFLG 	MBVST Visits count
		MBABS Adjacency's block size
MBCHN	Loopback channel (Circuit ID)	
MBPRC	Procedure processor (NSP & SC)	
MBAR1	Argument storage #1 (NSP & SC)	
MBAR2	Argument storage #2 (NSP & SC)	
MBAR3	Argument storage #3 (NSP & SC)	

For field MBFLG(0-8):

MBOTH	0	On the "other" sublink
MBBOM	1	Beginning of message
MBEOM	2	End of message
MBEBF	3	Message block has been allocated from emergency buffer free list
MBPH2	4	Phase II message
MBDON	5	"Synchronous" interlock done bit (NSP & SC)
MBLCL	6	Bound for the local NSP
MBUNR	7	Unreachable

MONITOR TABLES

MD-D36PAR

This is the DECnet-36 Message Segment Descriptor. Every Segment of the message is described by this small block. In the typical case, this descriptor resides in the owner's (the owner being a level of DECnet) portion of the Message Block.

Defined in: D36PAR

Format

	Input Meaning	Output Meaning	
MDNXT	Must be zero	Ptr to next MSD	QP.LEN
MDPTR	ILDB ptr into msg	IDPB ptr into msg	
MDAUX	Not used	ILDB ptr to beg of msg	
MDBYT	Bytes left to read	Bytes written so far	
MDVMC		MDALL Allocated length in bytes	*
MDALA	Allocated address of segment's data		

Field MDVMC (0-2) Virtual map context

- VMC.XC=0 EXEC Context (Map through EPT)
- VMC.US=1 USER Context (Map through UPT)
- VMC.NO=2 DO NOT Map (Physical Address)

MONITOR TABLES

MD-NIPAR

MD is the Network Interconnect (NI) Message Segment Descriptor block.

Defined in: NIPAR

		Format		
		Input Meaning	Output Meaning	
MDNXT		Must be zero	Ptr to next MSD	1
				1
MDPTR		ILDB ptr into msg	IDPB ptr into msg	
MDAUX		Not used	ILDB ptr to beg of msg	
MDBYT		Bytes left to read	Bytes written so far	
		MDVMC	MDALL	*
			Allocated length in bytes	
MDALA		Allocated address of segment's data		

Field MDVMC (0-2) Virtual map context

- VMC.XC=0 EXEC Context (Map through EPT)
- VMC.US=1 USER Context (Map through UPT)
- VMC.NO=2 DO NOT Map (Physical Address)

MONITOR TABLES

MN

MN represents the format of the DECnet-36 MENUVER field of the connect data. This field specifies what other connect data follows and what version of Session Control is running on the other node.

Defined in: SCPAR

Format

MENUVER



- Field MNRPA (0-0) RQSTRID, PASSWRD, account fields are included
- Field MNUSR (1-1) USRDATA included
- Field MNRSV (2-4) Reserved field
- Field MNVER (5-6) Version of session control

MONITOR TABLES

MONITOR-STATISTICS

This table is available through GTTAB and is used by WATCH and EXEC.

Defined in: STG

Format

SKDTM0:	Time spent in SKDNUL with balance set empty	
SKDTM1:	Time spent in SKDNUL with balance set non-empty	
SKDTM2:	Time spent running scheduler	
SPTTIM:	Time spend in pager trap code	
DRMRD:	Number of drum reads	
DRMWR:	Number of drum writes	
DSKRD:	Number of disk reads	
DSKWR:	Number of disk writes	
TTYBKS:	Number of tty wakeups	
TTINTS:	Number of terminal interrupts	
BSTSUM:	Integral of NBPROC DT	
RJTSUM:	Integral of NBPROC NGOJOB DT	
RJAV:	Exponential average of number runnable forks	/ \ NRJAVS =3 \ \ /
DSKWT:	Sum of process disk wait times	
DRMWT:	Sum of process drum wait times	
NTTYIN:	Total number terminal input characters	
NTTYOT:	Total number terminal output characters	
NGCCOR:	Count of GCCORs	
GCCTIM:	Integral of GCCOR time	
NREMR:	Count of WS removals while runnable	

MONITOR TABLES
MONITOR-STATISTICS (Cont.)

BSWT:	Sum of process wait times
SKDOVH:	Accumulated SCHED overhead time in HP units
SKDIDL:	Accumulated idle time in HP units
SKDSWP:	Accumulated swap-wait time in HP units
USRTIM:	Accumulated user time in milliseconds
HQFSUM:	Integral of NGQFK DT
LQFSUM:	Integral of NLQFK DT
DWRWT:	Sum of process disk write wait
NAJBAL:	Number of forced AJBALS calls
SNRSUM:	Integral of SUMNRN
RPQSUM:	Integral of NRPLQ
HSPTIM:	HP pager trap time
NCSWCH:	Number of context switches
BGNDTM:	Time doing background stuff (TTCH7,)
STRPCT:	System total page traps
SRPQSC:	System total "saves" from RPLQ
SGCCWR:	Number writes from GCCOR
NWSSUM:	Integral of number WS in memory
SKDFIL:	Integral of wait time with out swap waits
NWSLOD:	Count of WS loads
NREMJ:	Count of balance set removals while runnable
SXGCWR:	Number writes from XGC
TTWAKN:	Terminal input wakeup count
DSKRVC:	Skip reads count
CIPKSN	CI Packets Sent

MONITOR TABLES
MONITOR-STATISTICS (Cont.)

CIPKRC	CI Packets Received
SCAOSN	SCA Overhead messages sent
SCAORC	SCA Overhead messages received
MSCSNT	MSCP Driver messages sent
MSCRCV	MSCP Driver messages received
SVSEND	MSCP Server messages sent
SVRECV	MSCP Server messages received
CFSSND	CFS messages sent
CFSRCV	CFS messages received
SCSJSN	SCS% messages sent
SCSJRC	SCS% messages received
CMDQS	CI Command Q usage Q0
	CI Command Q usage Q1
	CI Command Q usage Q2
	CI Command Q usage Q3
IPSND	IP Datagrams sent
IPLCV	IP Datagrams received
DNASND	DECnet Datagrams sent
DNARCV	DECnet Datagrams received
SCSJDS	SCS% Datagrams sent
SCSJDR	SCS% Datagrams received
MSCDRC	MSCP Driver datagrams received
HSELP	HSCP Error-log datagrams received (PPD byte 5)

MONITOR TABLES

MSCCID

This table keeps track of the current SCA connect id of each MSCP driver connection.

Defined in: PHYMSC

Index: MSCP driver connect id

Format

MSCCID	SCA connect-id	CTABSZ
	.	
	.	
/	.	/
/	.	/
	.	

Notes: Zero indicates unused.
-1,-1 indicates an entry that is no longer connected.
Anything else is a valid connect id.

MONITOR TABLES

MSCINT

This table describes the time-out interval to wait for an MSCP driver connect id.

Defined in: PHYMSC

Index: MSCP driver connect id

MSCINT	Time-out interval	/ \
/		/ CTABSZ
/		/
		\ /

MONITOR TABLES

MSCOLD

This table contains old connect id values for driver MSCP and is mainly for recovery purposes.

Defined in: PHYMSC

Index: MSCP driver connect-id

MSCOLD	SCA connect-id	/ \
/	/	CTABSZ
/	/	\ /

Notes: See MSCCID.

MONITOR TABLES

MSCP SERVER COMMAND HEADER

This header resides within the invisible SYSAP area of an SCA message and contains command-specific information for the MSCP server.

Defined in: PHYMVR

.QCRTN=-13	Return address for this command								
.QCNEXT=-12	Pointer to next queued command								
.QCLST .	Pointer to previous queued command								
.QCPID .	Virtual page for I/O								
.QCSTS .	Status *								
.QCIOR	IORB address								
.QCDBD	Buffer name								
.QCTMO	Time-out time								
.QCDBG	Unused								
.QCRT2	Return address for returning packet to SCA if the command is queued								
	0	1	2	3	8	9	17	18	35
.QCSTS									

Symbol	Bits	Meaning
MS.COQ	0	Command is queued
MS.ABT	1	Command is aborted
MS.CTO	2	Command is timed out

MONITOR TABLES
MSCP SERVER COMMAND HEADER (Cont.)

QCSTS 3-8 Command state, which can be:

STCMD==0 Treat as incoming command
STWAE==1 Waiting to allocate end
STWSR==2 Waiting to send data (retryable)
STWRR==3 Waiting to request data (retryable)
STWSE==4 Waiting to send end packet (IO only) state
STWSD==5 Wait for send data state
STWRD==6 Wait for receive data state
STIAC==7 IORB active (IO only) state
STWSB==10 Waiting to send buffer (IO only) state
STWRB==11 Waiting to request buffer (IO only) state

QCCNT 18-35 Timed retry counter

MONITOR TABLES

MSCP SERVER STORAGE

This storage contains variables used by the MSCP server module (PHYMVR).

Defined in: STG, PHYMVR

SVSTSW:	Status Word	*
SVLSX:	Index into SCDBTB for listener	
SRVCHK:	Flags for periodic check	
SRVCKT:	Next time to check	
SVIRBH:	First free IORB	
SVBDKN:	# of disks to broadcast Online	
SVILCM:	# of illegal commands	
SVLCMO:	Last server command routine address	
SVPKIU:	# of packets in use	
SVMKIU:	Max # of packets in use	
SVCMIU:	# of commands in use	
SVMCIU:	Max # of commands in use	
SVIPIU:	I/O pages in use	
SVMPIU:	Max I/O pages in use	
SVBKNS:	Times reqeud because of nsked events	
SVCMDL:	Table of command counts (parallel to MSSDSP)	/ \ NMSFCN \ /
SVCMRT:	Table of retried command counts (parallel to MSSDSP)	

MONITOR TABLES
MSCP SERVER STORAGE (Cont.)



Symbol	Bits	Meaning
SVSINF	0	Server has been initialized
SVSILB	1	Do not issue more MSSCGL BUGINFs
SVSLIS	2	OK to open a listener

MONITOR TABLES

MSCTMO

This is the time left to wait for a remote MSCP driver connection.

Defined in: PHYMSC

Index: MSCP driver connect-id

MSCTMO	Time left	/ \
/	/	CTABSZ
/	/	/
+	+	\ /

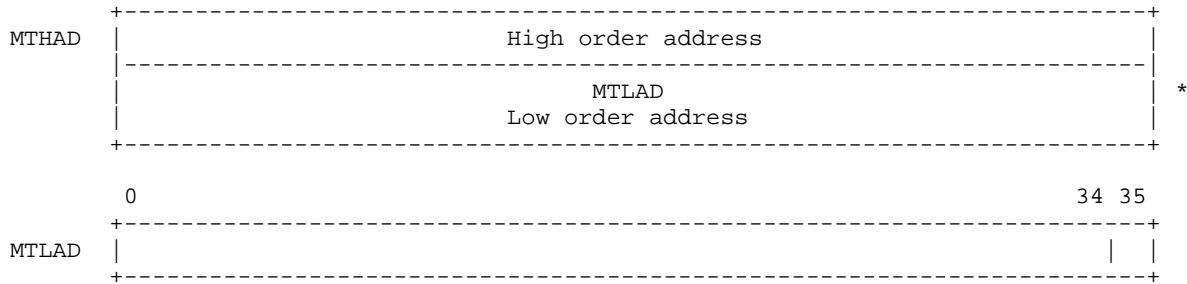
MONITOR TABLES

MT

NI Multi-cast address block. There is a block for each Multi-cast address that has been enabled for the NI port. Multi-cast address blocks are allocated at location MCTADR. There are NMTT (16) blocks in the table. The word MTUSE contains the number of NI multi-cast address blocks currently in use. The beginning of the table is pointed to by channel block word PSMTT, that is, PSMTT points to MCTADR.

Defined in: PHYKNI

Format



Bit	Symbol	Contents
35	MTENA	Enable bit

MONITOR TABLES

MTA-STORAGE-AREA

Magtape storage area; each entry (unless otherwise noted) is MTAN words long where MTAN equals the number of magtape units on the system.

Defined in: STG

	Format	
MTALCK:	Lock Word	\ MTAN
MTASTS:	Status of Unit	\ MTAN
MTANR1:	Nonresident Storage for Magtape	\ MTAN
MTANR2:	Nonresident Storage for Magtape	\ MTAN
MTANR3:	Nonresident Storage for Magtape	\ MTAN
MTANR4:	Nonresident Storage for Magtape	\ MTAN
MTANR5:	Nonresident Storage for Magtape	\ MTAN
MTANR6:	Nonresident Storage for Magtape	\ MTAN
MTARS1:	Resident Storage for Magtape	\ MTAN
MTPSFK:	PSI Fork #	\ MTAN
MTCUTB:	CDB Table UDB Table (1 Entry/UDB)	\ MTAN
MTAPBF:	Space for Buffer Page Pointers	MTPBFL= MTBUFN*MAXPPB \ +MTAN
MTIRBF:	Space for IORBs	MTABFL= MTAN*MTBUFN* \ MTIRBL

MONITOR TABLES
MTA-STORAGE-AREA (Cont.)

MTIOWD:	IOWD for Next Transfer	\\ / / \	MTAN
MTBLOW:	Backup IOWD for Next Transfer	\\ / / \	MTAN
MTAOLS:	Length of last Xfer	\\ / / \	MTAN
MTARCE:	Total Error Count	\\ / / \	MTAN
REWCNT:	Number of Rewinding Units	\\ /	
MTERAS:	Rewrite Erase Counter		
MTPNTR:	IOWD During Transfer		
MTAUNT:	Unit Currently Attached to Controller		
MTERRC:	Retry Counter		
MTERFL:	State of Retry		
MTACOM:	CONO Word of Current Operation		
MTDINR:	Return Address for Data Interrupt		
MTACLS:	Clock Routine Switch, 0 for No Clock Wanted		
TLABBP:	PNTR to Locked Buffer Page	/ \	2*MTAN
TLABR0:	Resident flags	\\ / / \	MTAN
	RCNT		
	Record count info		
MTAJB0:	JOB 0 flag for MTA unit came on line	\\ /	

MONITOR TABLES
MTA-STORAGE-AREA (Cont.)

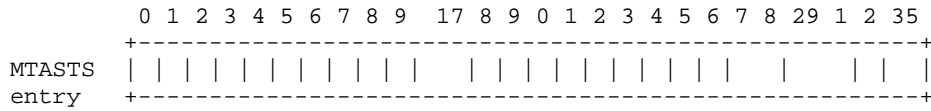
The following MTA storage items are in the nonresident area of the monitor and each item is MTAN words long.

	0	17	18	35						
MTANR1:	Flags, Density, Mode		MTRS Rec size in Hdw. Bytes	* / \ MTAN						
MTANR2:	MTBYT Initial LH of FILBYT		MTBUF Ptr. to Buffer Pages List	/ \ MTAN						
MTANR3:	0	5	6	11	12	17	18	23		
	MTHBW	MTUBW	MTCSE	MTCUB						MTAN
	Hdw.Byts	UserByts	Current	Current						
	Per Wd	Per Wd	Service	User						
			Routine	Buffer						/ \
			Buffer							/ \
MTANR4:	MTCIRB Current IORB in Use			MTCUP Current User Page						MTAN
MTANR5:	MTUBB User Bytes per Buffer			MTUBP User Bytes per Page						MTAN
MTANR6:	MTALTC Last Transfer Count			MTLIRB Last Dump Mode IORB Adr.						MTAN
TLABL0:	Flags								* / \ MTAN	
TLABL1:	TPERM Error codeset by MTCO			TPFRK Tape fork for PSI						MTAN
TLABL2:	TPJFN Saved JFN			TPLBLS Tape label buffers in SWAP						MTAN
TLABL3:	FSSAV Place to save file status								/ \ MTAN	
TLABL4:	flags, section #			TPMTRS Place to save Rec Size						* / \ MTAN

MONITOR TABLES
MTA-STORAGE-AREA (Cont.)

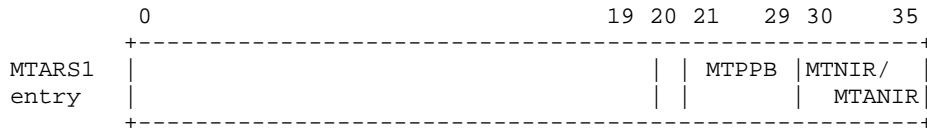
TLABL5:	Tape position info		* / \
TLABL6:	TPBSZ File blocksize	TPRSZ File record size	\ / \
TLABL7:	TPSCUP Saves Cur. pg. PTR for TPSBYT	TPIOB I/O buffer address	\ / \
TLABL8:	SVIOS Place to save IOS		\ / \
TLABL9:	SVBLK Place to save black address		\ / \
TLABL10:	TPLRC Local Status	TPPRO Protection	* / \
TLABL11:	TPOCT old TPCNT	TPOBY old TPFBYN	\ / \
TLABL12:	TPFSN Sixbit volume set name		\ / \
TLABL13:	TPEXPD Expiration date		\ / \
TLABL14:	Sequence Numbers		\ / \
TPFCNT:	MT filcnt		\ / \
TPFBYB:	MT filbyn		\ / \
TPFLEN:	MT fillen		\ / \
TPFLNX:	Count of Bytes Expected in next Record		\ / \
TPSBYB:	Pointer to where JCW should go when record is complete		\ / \
			\ / \

MONITOR TABLES
MTA-STORAGE-AREA (Cont.)

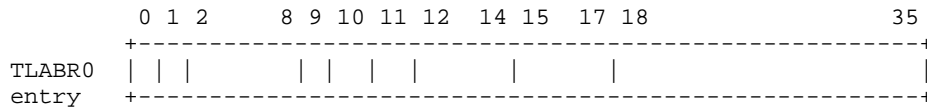


Symbol	Bits	Content
OPN	0	Unit has been opened
OPND	2	Unit has been opened for dum mode
DMPWT	3	Waiting for a dump mode operation to finish
LTERR	4	Error Occurred on last dump mode operation
BUFA	5	Buffers have been assigned
CLOF	6	CLOSF in progress
MTOWT	7	MTOPR in progress
MTIELW	8	Inhibit error logging
MTNOWT	9	Do not set MTOWT
MT%ILW	18	Write lock
MT%DVE	19	Hardware device error
MT%DAE	20	Data error
MT%SER	21	No error retry
MT%EOF	22	EOF
MT%IRL	23	Illegal record length
MT%BOT	24	Beginning of tape
MT%EOT	25	Physical end of tape
MT%EVP	26	Even Parity
MT%DEN	27-28	Density (0 is normal) .MTLOD=1 Low Density (200 BPI) .MTMED=2 Medium Density (556 BPI) .MTHID=3 High Density (800 BPI)
MT%CCT	29-31	Character Counter
MT%NSH	32	Mode or density not supported by hardware

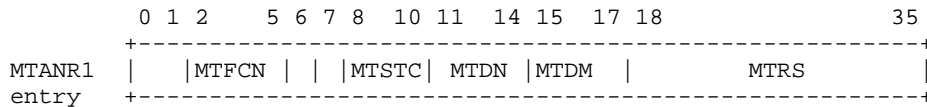
MONITOR TABLES
MTA-STORAGE-AREA (Cont.)



Bits	Pointer	Content
20	ABORTF	An error occurred and IORBs aborted
21-29	MTPPB	Number of pages per buffer
30-35	MTNIR	Number of IORBs queued
30-35	MTANIR	Absolute version of MTNIR

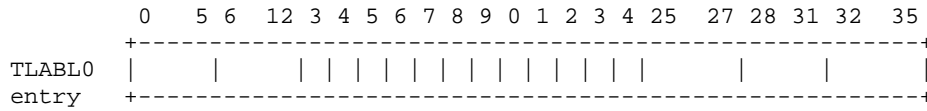


Bits	Pointer	Content
0	TPVV	Volume valid flag
1	TPNVV	Tape not valid
2-8	TPUNIT	Actual mta unit
9	SNEOT	EOT seen while writing labels
11	TPEDB	EBCDIC Volume
12-14	TPMTDM	Place to save data mode
15-17	TPMHBW	Place to save bytes/wd
18-35	RCNT	Record count info

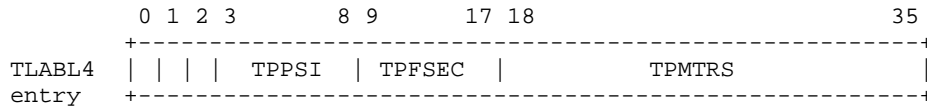


Bits	Pointer	Content
0-1	MTNTM	Count of EOFs written
2-5	MTFCN	Last function performed
6	MTPAR	Parity
7	MTRBF	Reading backwards flag
8-10	MTSTC	CLOSF function counter
11-14	MTDN	Density
15-17	MTDM	Data mode
18-35	MTRS	Record size in hardware bytes

MONITOR TABLES
MTA-STORAGE-AREA (Cont.)

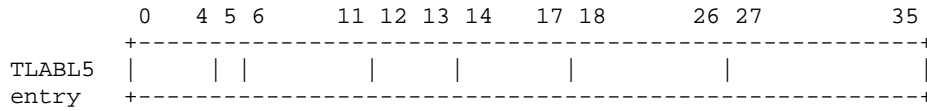


Bits	Pointer	Content
0-5	TPSTAT	State code
6-12	TPLPCS	Label processing code
13	TPBEGF	Set if beginning of spanned record
14	TPNBL	New block read
15	TPUED	Use EBCDIC data if set
16	TPFVM	If set, first volume is mounted
17	TPLCT	User label count
18	HDR1	HDR1 data valid
19	HDR2	HDR2 data valid
20	RCCHK	Record count check error (TLRCHK)
21	TPEOF	EOF 1/2 seen in TLRCHK (also EOVS)
22	TPT20	TOPS-20 volume
23	UVLD	UVLD data valid
24	TPLBD	Unlabeled/labeled operation
25-27	TPDNS	MTA density - declared by MTCN
28-31	TPNUL	# of user labels written

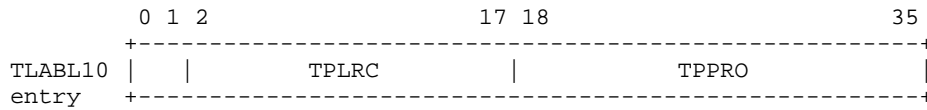


Bits	Pointer	Content
0	TPEUT	End of user labels encountered
1	TPAPP	Open for append
2	TPDPN	MT opened
3-8	TPPSI	Tape PSI for EOVS
9-17	TPFSEC	File section number
18-35	TPMTRS	Place to save record size

MONITOR TABLES
MTA-STORAGE-AREA (Cont.)



Bits	Pointer	Content
5	TPDVS	Defer volume switch if set
6-11	TPFRMT	Record format type code
12-13	TPMOD	Tape mode
14-17	TPRVN	Relative volume number
18-26	FSEQ	Tape file position (seq. #)
27-35	USRSEQ	User requested seq. #



Bits	Pointer	Content
0-1	TPXLB	Extra label count
2-17	TPLRC	Count of last read record
0-17	TPGDS	Local status
18-35	TPPRO	Save protection here

MONITOR TABLES

NAMUTP

Name Unit Type Pointers. This table contains pointers to unit type names for disks (RP06, RM03, ...) and magtapes (TU45, TU77, ...).

Defined in: PHYSIO

Format

NAMUTP:	POINT 7,[ASCIZ/ (Illegal Type: 0) /]
	POINT 7,[ASCIZ/RP04/]
	.
	.
	.

MONITOR TABLES

NE

This is the DECnet network event block. An NE block contains all information about an event.

Defined in: D36PAR

Format

NENXT	Pointer to next NE block on queue		
NETIM	Time of event		
NECBK	Address of callback routine		
NEECP	Pointer to event communications block		
	NECCL Event class	NECTY Event type	NEDLN Data length in bytes
	NEETP Entity type		
NEEID	Entity ID		
NEDAT	Fullword pointer to data string		

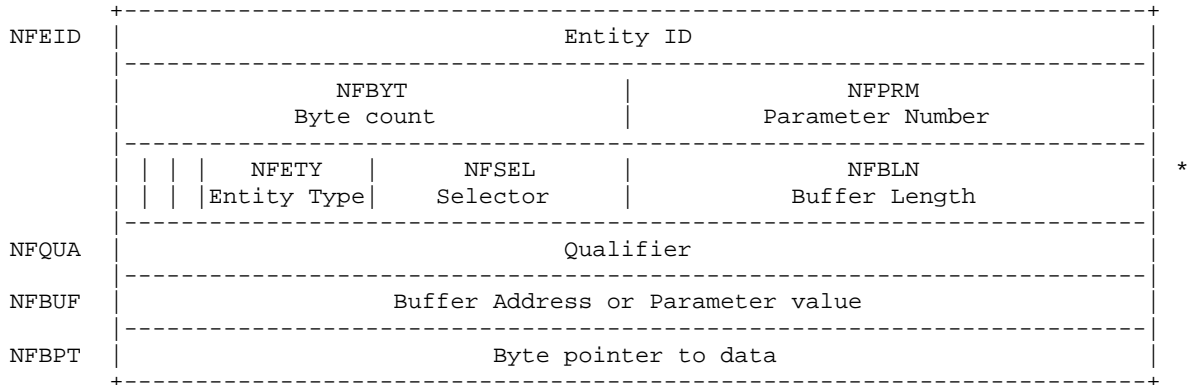
MONITOR TABLES

NF

This is the DECnet NMX Interface Function Argument Block, whose purpose is to implement a standard calling interface between Network Management (NTMAN) and the DECnet Layers.

Defined in: D36PAR

Format



- Field NFBFF (0-0) Buffer Flag
- Field NFUBF (1-1) User Buffer passed (for return KNOWN NODES)
- Field NFQUF (2-2) Qualifier Flag

MONITOR TABLES

NM

This is the Network Services Section of a DECnet message.

Defined in: D36PAR

Format

*		NMSGN	NMMGF	NMCNT	
	NMFLG	Message segment number	The MSGFLG field of the NSP header	Number of times we've sent message	
NMTIM	Time stamp				
NMPRT	Pointer to port block				
	NMLLA	NMRLA			
	Local link address	Remote link address			
NMMSD	Space for MSD				/\
					MD.LEN
NMORQ	ORQ queue link				/\
					QP.LEN
					/\
NMMAG	Magic word for DTESRV				
NMMHDR	NSP header room				/\
					<<NMMH.LN+3>/4>
					/\
NMMK1	First mark				
NMMK2	Second mark				

For field NMFLG(0-5):

NMACK	0	Needs to be ACKed
NMRET	1	Return msg to SC
NMDLY	2	ACK delay allowed

MONITOR TABLES

NN

The DECnet node block contains all the information LLINKS has to know about a node. There is a node block for all nodes that we have active links to. The node block is created when someone tries to connect to a node that does not yet have a node block associated with it.

When the number of active links goes to zero, the node block is subject to possible deletion. If the number of node blocks is larger than NNDMAX, then the now unused node block is deleted after its counters are logged with a 3.2 (database reused) event.

The list of node blocks is pointed to by the queue header NMXNDQ.

Note that many counters are full words, even though they only have to be 16 bits wide. This is so the OPSTR logic generates a single read-modify-write instruction when updating them and spares us the worry of interlocking this data base.

Defined in: LLINKS

Format

NETWORK NODE BLOCK	
NNNXT	Ptr to next node block
NNTLZ	Time (from DNGTIM) when last zeroed
	NNNOD Network node ID (2 bytes) (HWORD for speed)
NNTMC	Message timeouts to node
NNRBC	User bytes received from node
NNXBC	User bytes transmitted to node
NNRMC	User msgs received from node
NNXMC	User msgs transmitted to node
NNTBR	Total # of bytes received from node
NNTBX	Total # of bytes transmitted to node
NNTMR	Total # of messages received from node
NNTMX	Total # of messages transmitted to node

/\
QP.LEN
\
/

*

MONITOR TABLES
 NN (Cont.)

NNRCC	Connect inits received from node
NNXCC	Connect inits transmitted to node
NNRRC	Rejects received from node
NNXRC	Rejects transmitted to node
NNLKC	Current active links to node
NNLKM	Max active links to node
NNCRC	Connect resource errors received
NNDLY	Estimated round-trip delay (msecs)
NNSLZ	Seconds since last zeroed (time stamp)
NNPSZ	Pipe size (= 3 * last message's visit count)

For field NNFLG(0-1):

 NNGDL 0 Set if we've "got delay", see UPDELAY

Field NNMSG (2-2) Set if we've sent a 'link broken' message
 for this node

MONITOR TABLES

NO-SCLINK

The NO defines a single node in a bucket in the DECnet-36 node name/number data base.

Defined in: SCLINK

Format

Represents a single node

NONAM	Node name
NOADR	Node address

MONITOR TABLES

NO-SCPAR

There is one node name block for each node. Node name blocks are kept on doubly linked lists, with the head of each list in a vector MAX-NODES long.

Defined in: SCPAR

Format

Node name

NONXT	POINTER TO NEXT NODE	
NOLST	POINTER TO LAST NODE	
NOCID	CIRCUIT ID USED ONLY FOR LOOPBACK	
NOCNT	COUNT OF BYTES IN NODE NAME (DOESN'T NEED FULL WORD, REST IS FREE)	
NONAM	NODE NAME TEXT	<<^D6+3>/4>

MONITOR TABLES

NR

The NR is the NRT (Network Remote Terminal) Data Block (also referred to as the NRB). One block is allocated for each active link to hold data associating the DECnet link with a terminal data block (TDB).

Defined in: NRTRSV

Format

NRTDB	Dynamic ptr to associated TDB		
	NRFLG	NRCHN DECnet channel number	NRSTS Current status of DECnet link
NRSJB	Pointer to this link's SJB		
	NRSIZ Max chars in a segment on this link	NRPSI SCJSYS's original PSI mask for NETUSER link	
	NRRID Remotes node ID	NRINA Inactivity timer for NETHOST link	

For field NRFLG(0-5):

NRCFG	0	Set if config msg has been sent
NRREL	1	This NRB is being released
NRUSR	2	0=Nethost link, 1=User netlink
NRTRN	3	This NRB is in transition
NRDEA	4	Deallocate TDB

MONITOR TABLES

NT

The NT structure defines the format of the data blocks that are used to store the characteristics, counters, and states associated with the network management entities; these entities are nodes, circuits, lines, and modules. The blocks are also passed between the various layers of DECnet for the purpose of setting and reading parameters, and reading counters.

Defined in: NTMAN

Format

NTTYP Data type	NTLEN Length	NTROU Index to routine to call	NTDEV	NTQUA Qualifier Parameter Number	*
NTAPL	NTINF	NTBSZ Buffer size needed (if needed)	NTSEQ Sequence or type of field		*

For field NTTYP(0-4):

NT.FC	1	Coded format
NT.FCM	2	Coded multiple (this means special casing)
NT.FAI	3	ASCII image (8-bit)
NT.FDU	4	Decimal, unsigned. Cannot be zero.
NT.FDS	5	Decimal, signed
NT.FH	6	Hex integer
NT.FHI	7	Hex image
NT.FOC	8	Octal
NT.FDM	9	Internal data type only. Decimal, milliseconds.
NT.FVN	10	Internal data type only. Version number.
NT.FNE	11	Internal data type only. Node entity ID.
NT.FNN	12	Internal data type only. ASCII node name
NT.FCN	13	Internal data type only. ASCII circuit name

For field NTDEV(15-20):

NTD.R	15	DMR-11
NTD.N	16	Ethernet (KLNI)
NTD.C	17	Computer Interconnect (KLPI)
NTD.P	18	DDP
NTD.K	19	KDP
NTD.D	20	DTE-20 (UGH)

MONITOR TABLES
NT (Cont.)

For field NTAPL(0-3):

NTA.E	0	Executor
NTA.L	1	Loop nodes
NTA.R	2	Remote nodes
NTA.H	3	Home area nodes only

For field NTINF(4-9):

NTI.C	4	Characteristics (listed in spec as 'C')
NTI.S	5	Status (listed in spec as 'S')
NTI.%	6	Summary (listed in spec as '*')
NTI.K	7	Circuit State
NTI.Q	8	This parameter is qualified
NTI.N	9	None. noop bit, not necessary

Field NTSET (10-11) Settability restrictions

NTS.	0	0 means read and write
NTS.R	1	Read only parameter
NTS.W	2	Write only parameter

Field NTBUF (12-12) Buffer Field

MONITOR TABLES
NX (Cont.)

Field NXLTY (12-14) Line type

XP NX.TST	0	Test bed driver (obsolete)
XP NX.DTE	1	DTE
XP NX.KDP	2	KDP
XP NX.DDP	3	DDP
XP NX.CIP	4	CI PORT
XP NX.NI	5	ETHERNET
XP NX.DMR	6	DMR

Field NXENT (15-17) Entity type

MONITOR TABLES

OA

Argument block used by DECnet Session Control and NSP. The OPEN call's argument block.

Defined in: D36PAR

Format

OPEN Argument Block	
OASCB	SCB ID for new port
OANOD	Destination node
OAFLO	Flow control type
OAGOL	Data request goal
OASIZ	Max bytes allowed in a message segment
OASCV	Session control's entry address
OACIR	Loopback circuit

MONITOR TABLES

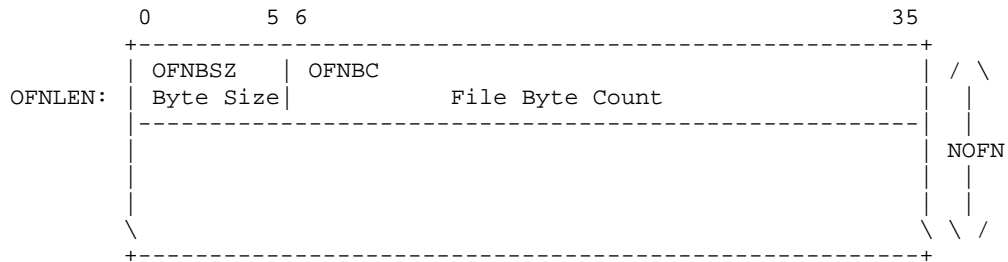
OFNLEN

Open File Length Table. This resident table contains the current file byte size and file byte count for each open file. It is parallel to the OFN areas of the SPT and SPTH tables.

Defined in: STG

Index: OFN number

Format



MONITOR TABLES

PA

The PA structure is used to keep the information for a DECnet network management parameter. It is pointed to by a table, generated with the PARAMETER macro. This structure is read by the routine NTPARM in D36COM.

Defined in: D36PAR

Format

PAPNR	Parameter Number	
	PAFLA	PADEF Default value for parameter
	PAMAX Maximum value that can be set	PAMIN Minimum value that be set
PASET	Instruction to execute to set the parameter	
PARED	Instruction to execute to read the parameter	
PACLR	Instruction to execute to clear the parameter	

For field PAFLA(0-4):

PANST	0	Cannot set this parameter
PANCL	1	Cannot clear this parameter
PANRD	2	Cannot read this parameter (Write only memory)
PABEX	3	Buffer from NTMAN expected
PADRC	4	Don't range check "set" value

MONITOR TABLES

PB-PHYKNI

This is the NI Port Block data structure. The port block is used by both the monitor and the NI microcode to transfer and store control and status information.

Defined in: PHYKNI

Format

PBCQI	Command queue interlock
PBCQF	Command queue flink
PBCQB	Command queue blink
PBR0	Reserved for software
PBRQI	Response queue interlock
PBRQF	Response queue flink
PBRQB	Response queue blink
PBR1	Reserved
PBUQI	Unknown protocol type queue interlock
PBUQF	Unknown protocol type queue flink
PBUQB	Unknown protocol type queue blink
PBUQL	Unknown protocol type queue length
PBR2	Reserved
PBPTT	Protocol type table starting address
PBMTT	Multicast address table starting address
PBR3	Reserved
PBER0	KLNI error logout 0
PBER1	KLNI error logout 1
PBLAD	Address of channel logout word 1
PBCLO	Contents of channel logout word 1

MONITOR TABLES
PB-PHYKNI (Cont.)

PBPBA	Port control block base address
PBPIA	PI level assignment
PBIVA	Interrupt vector assignment
PBCCW	Channel command word
PBRCB	Pointer to read counters buffer

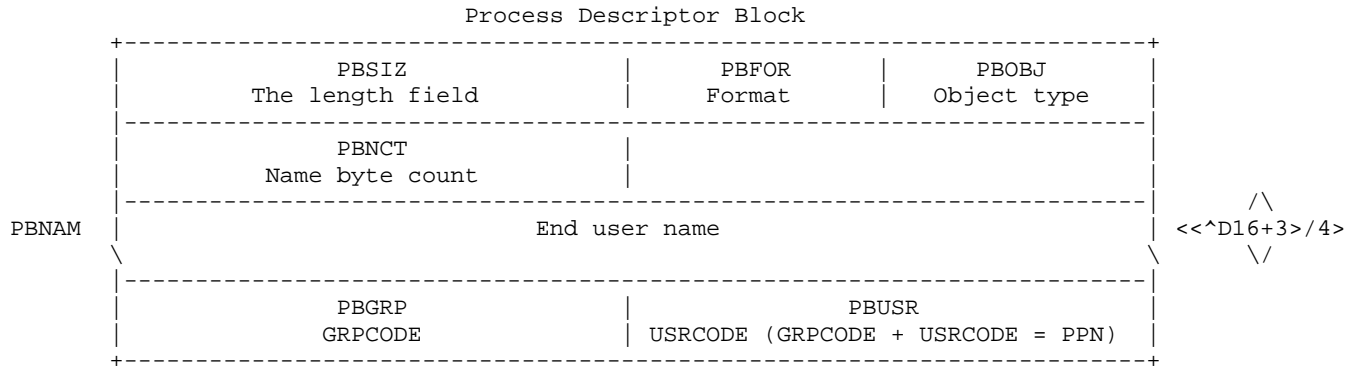
MONITOR TABLES

PB-SCPAR

DECnet-36 Process Descriptor Block. A "process block" is used to name local and remote processes. There are two of these contained in the Connect Block, one for the destination name and one for the source name.

Defined in: SCPAR

Format



MONITOR TABLES

PC

PC is the read port counters block. There are two words in the table for each entry. PC is used by NTCTRS for the SHOW COUNTERS and SHOW and ZERO COUNTERS network management functions.

Defined in: NIPAR

Format

PCSLZ	Seconds since last zeroed
PCBYR	Bytes received
PCDGR	Datagrams received
PCBYS	Bytes sent
PCDGS	Datagrams sent
PCUBU	User buffer unavailable

MONITOR TABLES

PCB (PORT CONTROL BLOCK)

The mechanism where the KL10 and the CI20 share the queue structures is controlled by the Port Control Block. The Port Control Block is a data structure that exists in the physical memory space of the KL10. Both the KL10 and the CI20 read and write the data in the PCB. The PCB contains the link words for the queues and other control information.

Defined in: SCAPAR

.PBBDT	Buffer Descriptor Table Starting Address
.PBMQE	Message Free Queue Entry Length
.PBDQE	Datagram Free Queue Entry Length
	Reserved
.PBQ3I	Command Queue 3 Interlock
.PBQ3F	Command Queue 3 FLINK
.PBQ3B	Command Queue 3 BLINK
.PBQ2I	Command Queue 2 Interlock
.PBQ2F	Command Queue 2 FLINK
.PBQ2B	Command Queue 2 BLINK
.PBQ1I	Command Queue 1 Interlock
.PBQ1F	Command Queue 1 FLINK
.PBQ1B	Command Queue 1 BLINK
.PBQ0I	Command Queue 0 Interlock
.PBQ0F	Command Queue 0 FLINK
.PBQ0B	Command Queue 0 BLINK
.PBRQI	Response Queue Interlock
.PBRQF	Response Queue FLINK
.PBRQB	Response Queue BLINK

MONITOR TABLES
PCB (PORT CONTROL BLOCK) (Cont.)

.PBMFI	Message Free Queue Interlock
.PBMFF	Message Free Queue FLINK
.PBMFB	Message Free Queue BLINK
.PBDFI	Datagram Free Queue Interlock
.PBDFF	Datagram Free Queue FLINK
.PBDFB	Datagram Free Queue BLINK
	Reserved
	Reserved
	Reserved
	Reserved
.PBER0	Port Error Word 0
.PBER1	Port Error Word 1
.PBER2	Port Error Word 2
.PBER3	Port Error Word 3
.PBER4	Port Error Word 4
.PBPBA	PCB Base Address
.PBPIA	PI Level
	Reserved to Port
.PBCCW	Channel Command Word
	Reserved to Port

MONITOR TABLES

PHYUNT

PHYSIO Unit Dispatch Tables. Table of known unit dispatch routines.

Defined in: STG

Format

PHYUNT:	Type (DSK)=.UTRP4	DSK Unit Dispatch Adr. = RP4DSP	/ \
	Type (MTA)=.UTTM2	MTA Unit Dispatch Adr. = TM2DSP	
	Type (DX20A)=.UTDXA	DX20 Dispatch Adr. = DXADSP	-PHYUNL
	Type (DX20B)=.UTDXB	DX20 Dispatch Adr. = DXBDSP	
	Type (TU78) =.UTTM7	TU78 Dispatch Adr. = TM8DSP	\ /

MONITOR TABLES

PI

This is the format of the NI% JSYS global portal ID.

Defined in: NIUSR

Format

Structure for global portal IDs

	PIFRK Job wide fork number	PIPID Job wide portal ID
--	----------------------------------	--------------------------------

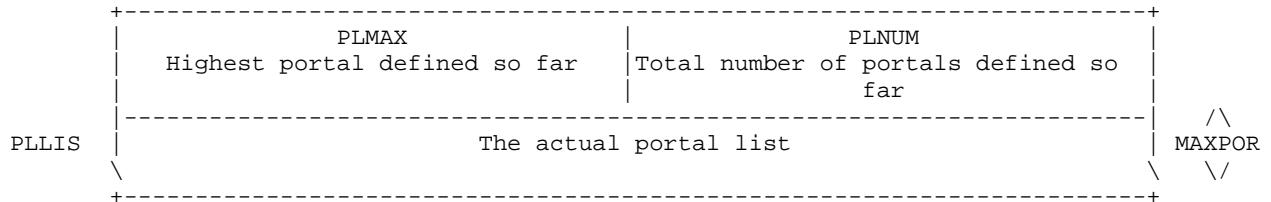
MONITOR TABLES

PL

This is the NI portal list structure. This structure contains a table of pointers to all Ethernet portal blocks defined by NI% jsys users.

Defined in: NIUSR

Format



MONITOR TABLES

PR-NISRV

This is the NI Portal Table block.

Defined in: NISRV

Format

PRNXT	Pointer to next block (must be first)	
	PRFLG	PREXI External portal ID
		PRBSZ Receive buffer size
PRUID	What user wants on callback	
	PRPMD Packing mode	PRPRO Protocol type (bytes swapped)
PRCHN	Ethernet channel block address	
PRMUL	Bit vector of enabled multicasts	
PRPOS	Callback address	
PRCHK	Check word (address of this block)	
PRFQA	Free queue header address	
PROXM	Outstanding transmits	
PRORC	Outstanding receives	
PTLZ	Time at which counters were zeroed	
PRBYR	Bytes received	
PRDGR	Datagrams received	
PRBYS	Bytes sent	
PRDGS	Datagrams sent	
PRUBU	User buffer unavailable	

For field PRFLG(0-8):

PRCLO	0	Portal is closing
PRPAD	1	Pad flag

MONITOR TABLES

PR-NIUSR

This is the NI Portal block. One exists for each Ethernet portal defined by the NI% JSYS.

Defined in: NIUSR

Format

PRNXT	Pointer to next portal			
	PRUPD User's portal ID	PRFLG	PRLFk Job wide fork #	PRFRK Fork number of owning fork
PRCHK	Check word			
	PRTCH Transmit completion interrupt channel	PRRCH Receive completion interrupt channel	PRSCH Status change interrupt channel	
PRUNB	UN block pointer			
PRPID	Monitor's portal ID			
PRXQH	Transmitted queue header			XR.LEN
PRRQH	Receive queue header			XR.LEN
PRTRQ	Transmit quota			
PRRCQ	Receive quota			
PRTIP	Number of transmit buffers queued up to NISRV			
PRRIP	Number of receive buffers queued up to NISRV			

For field PRFLG(6-11):

PRCCP	6	Close complete
PRRPS	7	Receive PSI requested
PRTPS	8	Transmit PSI requested
PRSPS	9	Status change PSI requested

MONITOR TABLES

PRMP

This table contains pointers to the DNA parameter and counter data bases. The format for the data bases is described in the DNA Parameter and Counter Data Base table.

Defined in: NTMAN

Format

PRMP:	NODE pointer
	LINE pointer
	LOGGING pointer
	CIRCUIT pointer
	MODULE pointer
	EVENT pointer

Each pointer has the format:

COUNT	ADDRESS
-------	---------

The COUNT is the negative of the number of parameters in the data base, and ADDRESS is the address of the first block in the data base.

MONITOR TABLES
PROCESS STORAGE AREA (Cont.)

IDXPGA:	Index table is mapped here (zero length if sections)	\\ / / \ NIDXPG pages \\ /
DIRPGA:	Directory window (zero length if sections)	/ \ DRMASZ pages \\ /
DDTPXA:	MDDT private segment	/ \ NDDTPG pages \\ /
UPTPGA:	User section 0 page table (see USER-PG-MAP-TBL)	/ \ 1 page \\ /
HWPTA:	Hardware variables (see UPT)	/ \ 1
PSBPGA:	overlaid with First page of PSB (see PSB)	page \\ /
PS2PGA:	Second page of PSB	/ \ 1 page \\ /

MONITOR TABLES
PS-PHYKNI (Cont.)

	 PSVAR	PSSVA	 PSVBT	PSRSP Maximum number of entries on the response que	PSCHN		
PSCHK	Check word, contains magic value						
PSTLR	Time of last response						
PSCNO	CONO KNI, (T1)						
PSCNI	CONI KNI, T1						
PSDTO	DATAO KNI, T1						
PSDTI	DATAI KNI, T1						
PSCQA	CONO KNI, CO.BTS+CO.CQA or NOP						
PSMXT	Number of multicasts transmitted						
	PSUMA Major version number			PSUMI Minor version number			
PSUED	Edit number						
PSTPC	UDT of port crash						
PSLAR	LAR at time of uCode crash						
PSCRL	Left hand CRAM bits at time of crash						
PSCRR	Right hand CRAM bits at time of crash						
PSTLZ	Time at which port counters were zeroed						
PSSHC	Address of shadow counters block						

For field PSFLG(0-17):

PSLSL	0	1=Line state needs reported
PSWUL	1	1=Waiting for uCode to be loaded
PSSTP	2	1=Waiting for port restart
PSBIG	3	1=KNISTP BUGINF reported
PSLSI	4	1=Need to write station information
PSLMC	5	1=Need to do load multicast table command
PSLPP	6	1=Need to do load protocol table command
PSVAD	7	1=PSHAD/LAD is valid

MONITOR TABLES
PS-PHYKNI (Cont.)

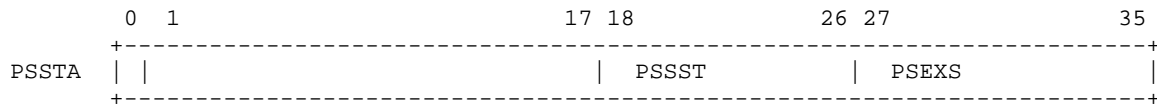
For field PSVAR(0-3):

PSCRC	0	Allow receipt of frames with CRC errors
PSPMC	1	Station is in Promiscuous multicast mode
PSH40	2	H4000 mode if 1
PSPRM	3	Promiscuous mode if 1

For field PSVBT(8-11):

PSVCR	8	PSCRC is valid
PSVPM	9	PSPMC is valid
PSVH4	10	PSH40 is valid
PSVPR	11	PSPRM is valid

Field PSCBA (24-26) CBUS address



Symbol	Bits	Meaning
PSRUN	1	Channel is running; should be 1b0
PSSST	18-26	Channel substate
PSEXS	27-35	Channel external state

MONITOR TABLES

PS-SCPAR

This is DECnet-36 PSI data passed back from SCLINK on a call to SCTPSQ, the "Read PSI Queue" routine. The data is passed in T1 and T2.

Defined in: SCPAR

Format

PSFLG	PSPSM The PSI mask for this link
PSSTS The status half-word	PSCHN The channel number

For field PSFLG(0-17):

PSMOR 0 Set if more PSIs queued

MONITOR TABLES
PSB (Cont.)

INTDF:	SOS INTDF or JSYS PSISV1	
MJRSTF:	XJRSTF FFL or JSYS PSISV0	
ACBAS:	Current AC Stack Pointer	
ITFFL:	Flags on Interrupt to MEXEC (Must be contiguous with ITFPC)	
ITFPC:	PC on Interrupt to MEXEC	
TRPID:	IDENT of Page Causing Trap	
TRPPTR:	Storage Address or Pointer Causing Trap	
UAC:	User ACs (from AC block 1) Saved here when process not running	/ \ 20 / \
PAC:	Process ACs EXEC AC's are saved here when process not running	/ \ 20 / \
PFL:	Process Flags (Must be contiguous with PPC)	
PPC:	Process PC	
NSKED:	No-Schedule Word	
RSKED:	No-Schedule Trap JFCL/JSR RSKCHK	
TRAPSK:	Stack Used During Pager Traps	/ \ NTSK= 133 / \
TRAPAP:	Page Trap Saved P	
TRAPC:	Pager Trap Recursion Count	
UTRSW:	Saved Page Fail Word for User	
UTRPCT:	Count of Pager Traps for This Process	
USWPCT:	Count of SWPINW Calls for This Process	
PTTIM:	Time Spent in Pager Traps	
LSTXGR:	Time (FKRT) of Last XGC	
FKTLST:	Lost Time While Clock Turned Off	

MONITOR TABLES
PSB (Cont.)

CRSKED:	In Critical Section if Non-0	
SKDFL:	Scheduler Temp (Return Flags)	
SKDPC:	Scheduler Temp (Return) Must Stay With SKDFL	
MONBK:	Interrupt to Monitor if non-zero	
LSTIPC:	PC of Last JSP T2, ITRAP1	
PSIPT:	PSI Storage List Pointer	
PIOLDS:	FKSTAT Prior To PSI if was Waiting	
LEVCHN:	Level Table Channel Table Addresses	
PSISYS:	Non-0 if PSI System Off	
MONCHN:	Channels Reserved by Monitor	
PSICHA:	Channel Assigned to TERM Code	/ \
		\ NTERMI/6
		\ /
PIMSK:	PSI Request Word Being Passed to PSI Service	
PSIBW:	Break Waiting Word	
FORCTC:	Channel Which Caused Forced Fork Termination	
PSICHM:	Channel Enabled Word	
SUPCHN:	Channels Reserved by Superior	
ENSKR:	Scheduler Temp (Return) XPCW block	/ \
		\ 4
		\ /
UPTTPI= HWPTA+ 420	Hardware Storage (UPT cells) (see UPT Table Description)	
PIOLD2:	FKSTA2 prior to PSI if was waiting	
PSIBIP:	Break in Progress Word (Levels)	
ADRBRK:	Address Break Information	

MONITOR TABLES
PSB (Cont.)

ADRBK1:	Address of Instruction Causing Address Break	
ADRBAD:	Last Break Referenced this Address	
FRKNOP:	NOP or MDDT breakpoint	
PIFL:	Saved Flags (Must be with PIPC)	
PIPC:	Saved PC during Initial PI Service (called with XPCW)	/ \ 3 \ /
FKTOFF:	Time at Which CPU Clock Turned Off	
NWSCE:	Number of Entries in WS Cache	
LSTXGT:	Time (TODCLK) of Last XGC	
UMUOW:	Save MUUO Word for User	/ \ 2 \ /
KIMUU1:	Last UUO Word from User	/ \ 2 \ /
PSLEVT:	Address of User's Level Table	\ /
PSCHNT:	Address of User's Channel Table	
PSBITS:	Miscellaneous Per Process Bits	
TRPDSP:	Dispatch for MON ILLEG MEM REF	
HPSWRN:	Time to flag excessive high priority scheduling	
DDPFRK:	1 => this is DDMP fork	
PSBSAB:	Address of DECnet SAB indirect table	
SCSTMQ:	Head pointer for SCS% message queue	
SCSBMQ:	Tail pointer for SCS% message queue	
SCSTDQ:	Head pointer for SCS% datagram queue	
SCSBDQ:	Tail pointer for SCS% datagram queue	
SCSTXQ:	Head pointer for SCS% DMA xfer queue	
SCSBXQ:	Tail pointer for SCS% DMA xfer queue	
SCSTEQ:	Head pointer for SCS% event queue	

MONITOR TABLES
PSB (Cont.)

SCSBEQ:	Tail pointer for SCS% event queue
SCSPS0:	PSI channels for msg avail,,dg available
SCSPS1:	PSI channels for DMA avail,,events
SCSTCQ:	Head pointer for CB queue
SCSBCQ:	Tail pointer for CB queue
SCSTXN:	Head pointer for list of DMA buffer names
SCSBXN:	Tail pointer for list of DMA buffer names
EVLNTH:	Entry Vector Length
EVADDR:	Entry Vector Address
PATLEV:	PA1050 Entry Vector Length
PATADR:	PA1050 Compatability Entry Vector Address
PATU40:	Where to Store C(40), Setup as UMOVEM 1,XX
PATUPC:	Where to Store PC, Setup as UMOVEM 1, XX
DMSLEV:	RMS Entry Vector Length
DMSADR:	RMS Entry Vector Address
DMSU40:	Where to Store C(40) on DMS Call
DMSUPC:	Where to Store PC of DMS Call
ENQWRD:	Used for Cluster ENQ/DEQ (0=Not doing Cluster ENQ)
CABMSK:	Capability Mask
CAPENB:	Capabilities Enabled
SNPPGS:	Count Page # of First Page Locked
SNPLST:	Flags Link to 1st BP for Fork
LSTERR:	Last Error Number
PDVS:	Pointer to PDV block

MONITOR TABLES
PSB (Cont.)

ERRSAV:	Block of Error Parameters	/ \	NERRSV
PSBMAP:	Map for Process Area	/ \	PSBMSZ
JTBLK:	FKJTB + forkn for this fork	/ \	
JTLCK:	Lock on JSYS Trap to Monitor (this) fork Lock Protects JTTRW and Allows Only one JSYS Trap Interrupt at a Time to This Monitor		
JTTRW:	JSYS Trap Word (Set by interrupting fork) Contains trapping instruction		
JTTFK:	JTFRK Forkn of Trapping Fork		
JTMNW:	12 17 JTMCN JTNMI Monitor's Forkn of Mon Interrupted PSI Chan (PSI'd)		
PNSKDC:	NOSKED's Done by DIAG & other Resource Managers		
ARTHTR:	User-Specified Arithmetic Trap		
PDOVTR:	Address of user's block for PDL overflow		
CRTRGN:	Indicates Critical Region		
STRWRD:	STRFLG Flag for STR Info	NOSTR # Mount Count Increments (for KSELF)	
FKXORA:	Fork IDXORA During Creation of Structure		
LOKH1:	Index of Highest Lock Held At This Time		
DRLOC:	Location in Directory During Searches		
DRINP:	Pointer to Input Name During Lookup		
DRINL:	Length of Input String		

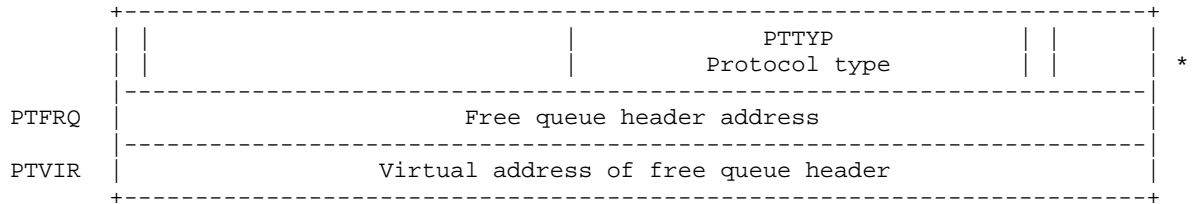
MONITOR TABLES

PT-PHYKNI

This is the NI Protocol type table. There is a PT block for each protocol enabled for the NI port -- up to NPTT (16) blocks. A table of PT blocks is allocated by the monitor at location PTTADR. Channel block word PSPTT points to the first PT block; that is, it points to PTTADR.

Defined in: PHYKNI

Format



Field PTENA (0-0) Protocol is enabled

Field PTFRE (32-32) 1 means entry is free

MONITOR TABLES

QA

This structure contains the data request count (in T2), an inter-layer parameter passed by Session Control to NSP.

Defined in: D36PAR

		Format	
0	5		
QAFLG			QACNT THE DATA REQUEST COUNT BEING REQUESTED
QAOFF -- Set if the sublink is to be turned off			

MONITOR TABLES

QB

This is the DECnet queue block.

Defined in: DNADLL

Format

QBNXT	Pointer to next request in queue
	QBFCN Function requested
QBDA1	Function specific data
QBDA2	Additional data
QBDLB	Associated data link block address

MONITOR TABLES

Q-BLOCK

The information for each ENQ request is stored in a Q-BLOCK. Q-BLOCKS are doubly linked for each job; the list header is in ENQLST in the JSB. Also, Q-BLOCKS are doubly linked on a system wide list for each lock block; the list header is in the lock block.

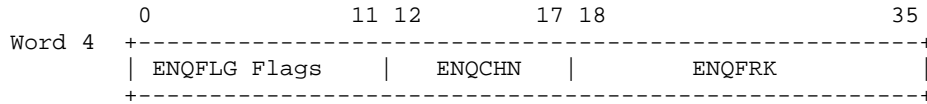
Defined in: ENQPAR

Format

	0	17 18	35
0	ENQLJQ Back Pointer to Last Q-BLOCK for job		
1	ENQNJQ Forward Pointer to Next Q-BLOCK for job		
2	ENQLLQ Back Pointer to Last Q-BLOCK		
3	ENQNLQ Forward Pointer to Next Q-BLOCK		
4	ENQFLG Flags	ENQCHN: PSI Channel	ENQFRK: Fork to Interrupt When Request Is Locked
5	ENQNR Number of Resources Requested from Pool	ENQID: Request ID Code	*
6	ENQLRQ Back Pointer to Last Q-BLOCK of Request		
7	ENQFQ Forward Pointer to Next Q-BLOCK of Request		
10	ENQLBP Pointer to LOCK-BLOCK		
11	Reserved	ENQGRP Group Number of Sharable Request	
12	ENQNST Nest Count	ENQJFN: JFN of Request or -1, -2, or -3	
13	ENQMSK Pointer to MASK BLOCK		

MONITOR TABLES
Q-BLOCK (Cont.)

The flags word must occur in the same position in both the Lock-Block and the Q-Block. The flags word is used to distinguish a Lock-block from a Q-block.



Symbol	Bits	Pointer	Contents
EN.SDO=400	3		Scheduling pass needed on Lock-Block
EN.CLL=200	4		Cluster-wide queue block or Cluster-wide lock-block
EN.NOV=100	5		No vote for this lock-block Set during caching and for -1 type locks
EN.LTL=40	6		Long Term Lock
EN.INV=20	7		This Q-Block is invisible
EN.LOK=10	8		The Q-Block has the Lock Locked.
EN.TXT=4	9		This Block has a Text String Identifier.
EN.EXC=2	10		Request is Exclusive
EN.LB=1	11		This is the Lock-Block
	12-17		Reserved
	18-35	ENQLVL	Level number of this lock.

MONITOR TABLES

QE

QE describes the format of the header for all command, response, and unknown protocol queue entries. The NI uCode expects this format.

Defined in: PHYKNI

Format

	Queue entry
QEFLI	Forward link
QEBLI	Backward link
QEVIR	Virtual address of entry
QEOPC	Queue entry operation code

MONITOR TABLES

QH-D36PAR

Structure QH, queue header, is used by the ENDQUE, DEQUE and RMVQUE macros for manipulation of DECnet queues.

Defined in: D36PAR

Format

Queue Header

QHBEG	Pointer to first entry in queue	
QHEND	Pointer to last entry in queue	
	QHMAX Max length queue ever got	QHCNT Current length of queue

MONITOR TABLES

QH-PHYKNI

QH defines the queue header format for the command, response, and unknown protocol queues. The NI uCode expects the queue header to have this format.

Defined in: PHYKNI

Format

Queue header definition

QHIWD	Interlock word
QHFLI	Forward link
QHBLI	Backward link
QHLEN	Length of queue entries

MONITOR TABLES

QL

QL is the Queue Link definition used by LAT. All LAT queue entries are linked together using this structure.

Defined in: LATSrv

Format

	Halfword Queue Link Word
QLFWD	Next forward queue element
QLBWD	Previous backward queue element

MONITOR TABLES

RC-D36PAR

This is the DECnet router circuit block, which contains all the "per-circuit" data for Router-36.

Defined in: D36PAR

Format

RCNXT	Pointer to next circuit block		
RCLID	Circuit ID		
RCDLB	Data link block address		
RCAJQ	Queue of adjacencies belonging to this circuit		/\ QH.LEN \
	RCFLG	RCSTA	
		RCCST	RCDRT
		Circuit cost	Timer before we assume DSR role
RCTLS	Time last message of any type was sent		*
RCTLR	Time last routing message was sent		
RCTLH	Time we sent the last hello (NI only)		
RCTIN	Time we got protocol up from controller		
RCTM3	Hello message timer		
	RCBSZ	RCRBS	
	Minimum of adjacencies' block sizes	Receive block size for this circuit	
	RCMXR	RCNRO	
	Maximum routers allowed on this circuit	Number of routers online	
RCDSH	ID of current designated router (NI only)		
	RCDSL	RCPRI	
	ID of current designated router (NI only)	Priority to be designated router (NI only)	
RCJSQ	Queue header for jiffy resend queue		/\ QH.LEN \
RCCMQ	Messages queued		

MONITOR TABLES
RC-D36PAR (Cont.)

RCCLC	Local messages
RCSLZ	(0) Time stamp of when last zeroed.
RCCAP	(800) Arriving packets received (to NSP)
RCCDP	(801) Departing packets sent (from NSP)
RCCAL	(802) Arriving congestion loss (to NSP)
RCCTR	(810) Transit packets received
RCCTS	(811) Transit packets sent
RCCTL	(812) Transit congestion loss
RCCCD	(820) Circuit down events
RCAJD	Adjacency down
RCCIF	(821) Initialization failures
RCBSX	(xxxx) Adjacency block size exceeded /output

For field RCFLG(0-5):

RCBCT	0	Broadcast circuit (should be bit 0)
RCSR	1	Send routing message flag
RCEBU	2	Emergency buffer is in use
RCSHM	3	Send hello message
RCDSR	4	We are the designated router

Field RCSTA (6-8) Circuit state

Field RCCST (9-20) Circuit Cost

Field RCDRT (21-29) Time before we assume DSR role

MONITOR TABLES

RC-PHYKNI

RC is the structure for the NI read counters block.

Defined in: PHYKNI

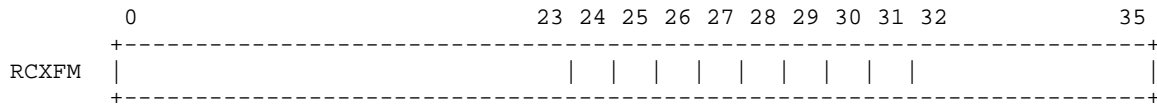
Format

RCBR	Bytes received	
RCBX	Bytes transmitted	
RCFR	Frames received	
RCFX	Frames transmitted	
RCMCB	Multicast bytes received	
RCMCF	Multicast frames received	
RCFXD	Frames xmitted, initially deferred	
RCFXS	Frames xmitted, single collision	
RCFXM	Frames xmitted, multiple collisions	
RCXF	Transmit failures	
RCXFM	Transmit failure bit mask	*
RCCDF	Carrier detect check failed	
RCRF	Receive failures	
RCRFM	Receive failure bit mask	*
RCDUN	Discarded unknown	
RCD01	Discarded position 1	
RCD02	Discarded position 2	
RCD03	Discarded position 3	
RCD04	Discarded position 4	
RCD05	Discarded position 5	
RCD06	Discarded position 6	

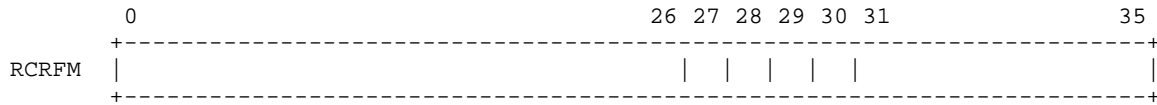
MONITOR TABLES
RC-PHYKNI (Cont.)

RCD07	Discarded position 7
RCD08	Discarded position 8
RCD09	Discarded position 9
RCD10	Discarded position 10
RCD11	Discarded position 11
RCD12	Discarded position 12
RCD13	Discarded position 13
RCD14	Discarded position 14
RCD15	Discarded position 15
RCD16	Discarded position 16
RCUFD	Unrecognized frame destination
RCDOV	Data overrun
RCSBU	System buffer unavailable
RCUBU	User buffer unavailable
RCRS0	PLI reg rd par error,,PLI parity error
RCRS1	MOVER parity error,,CBUS parity error
RCRS2	EBUS parity error,,EBUS queue parity error
RCRS3	Channel error,,Spur channel error
RCRS4	Spur xmit attn error,,CBUS req timeout error
RCRS5	EBUS req timeout error,,CSR grnt timeout error
RCRS6	Used buff parity error,,xmit buff parity error
RCRS7	Reserved for uCode
RCRS8	Reserved for uCode

MONITOR TABLES
RC-PHYKNI (Cont.)



Symbol	Bits	Contents
RCLOC	24	Loss of carrier
RCXBP	25	Xmit buffer parity error
RCRFD	26	Remote failure to defer
RCXFL	27	Xmitted frame too long
RCOC	28	Open circuit
RCSC	29	Short circuit
RCCCF	30	Collision detect check failed
RCEXC	31	Excessive collisions



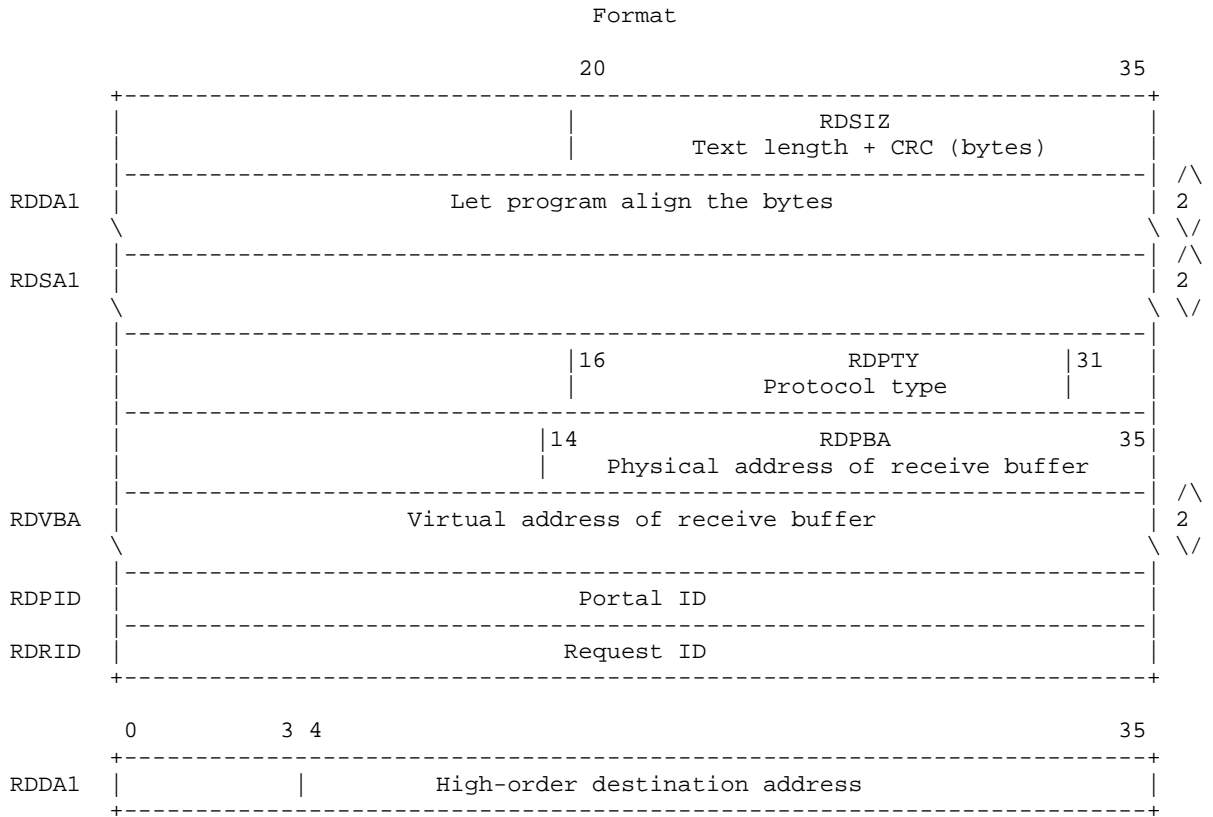
Symbol	Bits	Contents
RCFLE	27	Free list parity error
RCNFB	28	No free buffers
RCFTL	29	Frame too long
RCFER	30	Framing error
RCBCE	31	Block check error

MONITOR TABLES

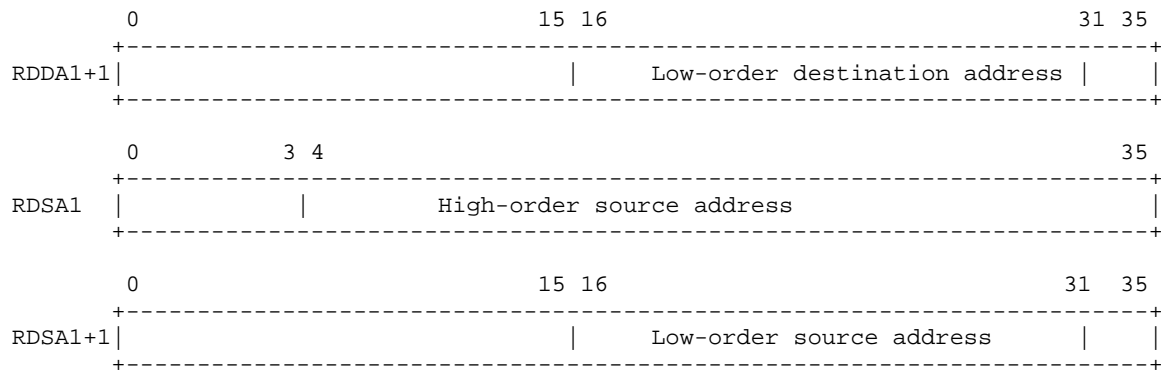
RD

RD represents the format of the NI Receive Datagram command.

Defined in: PHYKNI



MONITOR TABLES
RD (Cont.)



MONITOR TABLES

RES-FREE-SPACE

Resident Free Space Storage.

The resident free space pool is used by TOPS-20 for allocating free space for data structures such as UDBs, CDBs, KDBs, and SDBs; for terminal messages and line dynamic data blocks; and for the TIMER JSYS when it builds a job's run-time limit block. (See JOBRTL table).

Defined in: STG

There are 2 resident free spaces - one in section 0/1 and one in an extended section. The following data structure describes each of the free spaces. The locations RES0TB and RESNTB contain the addresses of the data structures for section 0/1 space and extended space, respectively.

.REBAS	Starting address of free space
.REEND	Address of last word of free space
.RETOT	Total size of free space in blocks
.REPR1	If space left is less than this, allocate P1 only
.REGRO	If space left is less than this, grow free space
.REBTB	Address of start of bit table
.REBTL	Length of bit table (words)
.RETFR	Total remaining unallocated blocks
.REFFB	Number of block just past end of free space
.REPMX	Number pools
.REQTA	Address of block containing quota for each pool
.REPFR	Address of block containing count of unallocated blocks

Offset .REBTB points to a bit table, each bit representing a 4-word block of free space - bit on means block in use.

MONITOR TABLES
RES-FREE-SPACE (Cont.)

Pool types and numbers as indicated by RESUTP are:

.RESGP=1 General resident free space pool
.RESTP=2 Terminal pool
.RESNP=3 Network pool
.RSTMP=4 TIMER pool
.RESUP=5 UNITS pool - used by PHYSIO and DSKALC

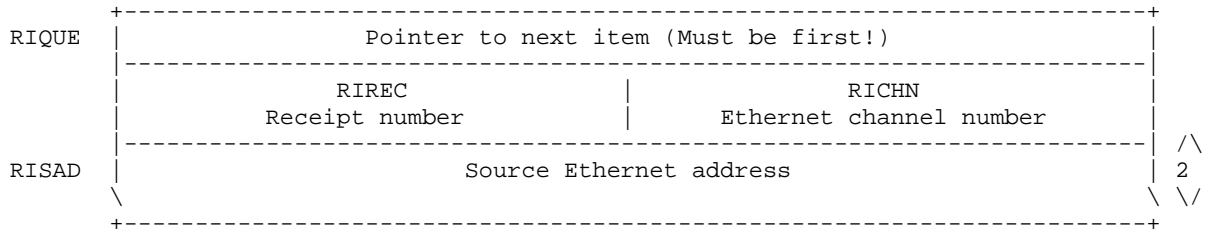
MONITOR TABLES

RI

This is the DECnet LLMOP request block, which is used to make the Job 0 (CHKR) fork generate a System ID message on the NI.

Defined in: LLMOP

Format

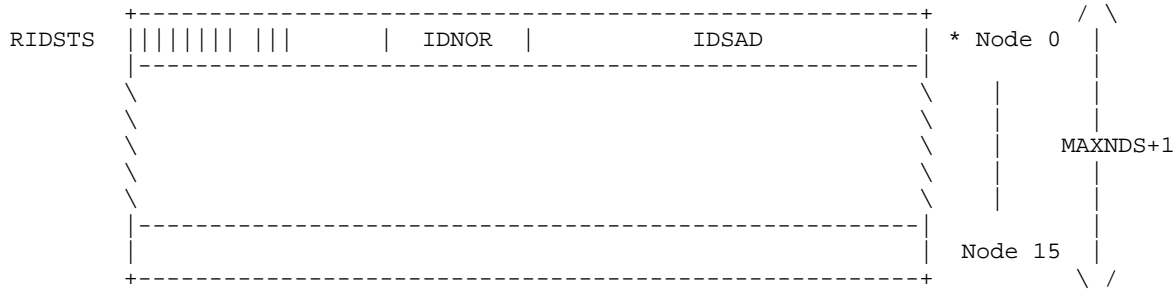


MONITOR TABLES

RIDSTS (REQUEST-ID STATUS)

RIDSTS, indexed by CI node number, contains information regarding the status of CI request-id polling. Also, if the remote node is an HSC, RIDSTS contains information about our attempts to reset/start it.

Defined in: PHYKLP



Bit	Name	Description
0	IDSNT	Last Request-ID sent - 0 = path A, 1 = path B
1	IDPAO	Path A Open - 0 = closed, 1 = open
2	IDPBO	Path B Open - 0 = closed, 1 = open
3	IDNRA	No-Response on Path A - 0 = response, 1 = no-response
4	IDNRB	No-Response on Path B - 0 = response, 1 = no-response
5	IDTRY	Last Try Status - 0 = first, 1 = second
6	IDWFR	Waiting for a response (from our port) to sent request-id
8	IDRST	Reset-remote command has been sent
9	IDSTA	Start-remote command to be sent
10	IDMAI	Remote port is in maintenance mode
12-17	IDNOR	Count of consecutive no-responses when we know the other port is receiving our request-ids
20-35	IDSAD	Starting address for remote node

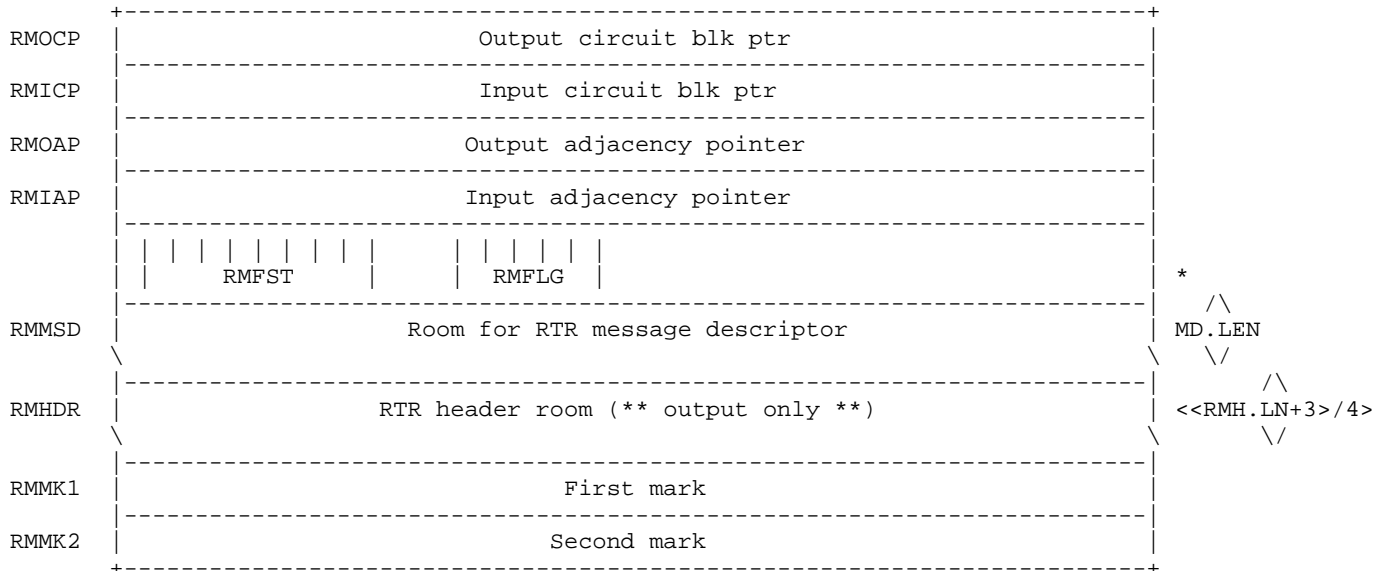
MONITOR TABLES

RM

This is structure RM, the DECnet router message.

Defined in: D36PAR

Format



For field RMFST(1-8):

- | | | |
|-------|---|----------------------------|
| RMMZ1 | 1 | Reserved (must be zero) |
| RMEVL | 2 | Evolution bit (reserved) |
| RMMZ2 | 3 | Reserved (must be zero) |
| RMRTS | 4 | Being returned to sender |
| RMRQR | 5 | Return requested |
| RMMZ3 | 6 | Reserved (must be zero) |
| RMMB1 | 7 | Reserved (must be one) |
| RMCTL | 8 | Control message (not data) |

Field RMCTY (9-11) Control message type

For field RMFLG(12-16):

- | | | |
|-------|----|---|
| RMODN | 12 | Local NSP doesn't want this local message "ODN"ed |
| RMPH2 | 13 | Message seems to be PHASE II |
| RMTRY | 14 | NSP wants Router to "TRYHARD" on the NI |
| RMTST | 15 | This is a test message |
| RMDRM | 16 | This message should be resent to multicast "All-Endnodes" |

MONITOR TABLES

SA

SA is the Session Control Argument Block (SAB) portion of a DECnet message.

Defined in: D36PAR

Format

Start right after public portion of MB

	SAFLG	SAMFG	SAERR Place to store error return	*
	SANAG Number of user arguments supplied		SAAFN Function code	
	SAAST Status variable		SAACH Channel or job number	
SAAA1	Argument one			
SAAA2	Argument two			
SAAA3	Argument three			
SASBP	Pointer to string block			
SACBP	Pointer to connect block			
SABCT	Buffer byte count			
SABPT	Buffer byte pointer (possibly extended)			/\
SASJB	Pointer to session control job block			2
SASLB	Pointer to session control link block			/\
SASLT	Indirect table entry this SAB belongs in			
SAHBA	Address of routine to perform HIBER			
SAWKA	Address of routine to perform WAKE			
SAUID	SLB's serial number - for stale detection			

MONITOR TABLES
SA (Cont.)

For field SAFLG(0-5):

Symbol	Bit	Contents
SAWAI	0	Wait if user wants (check NS.WAI)
SAEOM	1	End of message flag
SABOM	2	Beginning of message flag
SAKCB	3	Keep connect block for life of link
SABLK	4	HIBER routine has blocked. Room for future MONUSR flags

For field SAMFG(6-11):

Symbol	Bit	Contents
SAEVA	6	User buffer in exec virtual addr space
SASAT	7	Data read satisfied Room for future monitor flags

MONITOR TABLES

SB-LATSRV

This is the LAT slot block data structure. There is one slot block for each active slot (terminal) session. Slot blocks are created when a slot session is started and released when the slot session is terminated. Slot blocks are pointed to by the Connect Block queue pointer CBSBQ.

Defined in: LATSRV

Format		
SLOT BLOCK		
SBLNK	Queue link word (must be first)	/\ 2
	SBFLG Maximum attention slot size	*
	SBMDS Maximum slot data size	
	SBSTA Slot state	
	SBRID Remote slot id	SBLID Local slot id
	SBXCR Transmit credits available to us	SBRCR Receive credits still outstanding
	SBREA Reason code for stop or reject	SBSRC Source slot name count
	SBPRC Port name count	SBSVC Service name count
SBSRN	Server Name	<<ML.SLN+4>/5>
SBPRN	Port Name	<<ML.SLN+4>/5>
SBSVN	Service Name	<<ML.SLN+4>/5>
SBTDB	Terminal data block	
SBCBA	Circuit block address for this slot	
SBPRA	Pending request block address	

MONITOR TABLES
SB-LATSRV (Cont.)

For field SBFLG(0-17):

Symbol	Bit	Contents
SBSDP	0	Slot data present (must be sign bit)
SBREJ	1	Send REJECT Slot
SBSTR	2	Send START Slot
SBFOU	3	Flush output
SBOUT	4	Output data available
SBFCC	5	Flow control change
SBSTO	6	Send STOP Slot(Must be last)
SBDLP	7	This slot is a dialup line

MONITOR TABLES

SB-PHYKNI

This block exists in all NI Send Datagram commands; it starts after the SN block. If the datagram is BSD style, SBBBA contains the physical address of the first BSD. The other fields in this block may be used by both BSD and non-BSD style sends.

Defined in: PHYKNI

Format

SBBBA	Physical BSD base address	
SBPID	Portal ID	
SBMSD	MSD pointer	
SBRID	Request ID	
SBBFA	Buffer address	/\ 2
SBRES	Pad out to 4 word boundary	/\ 2

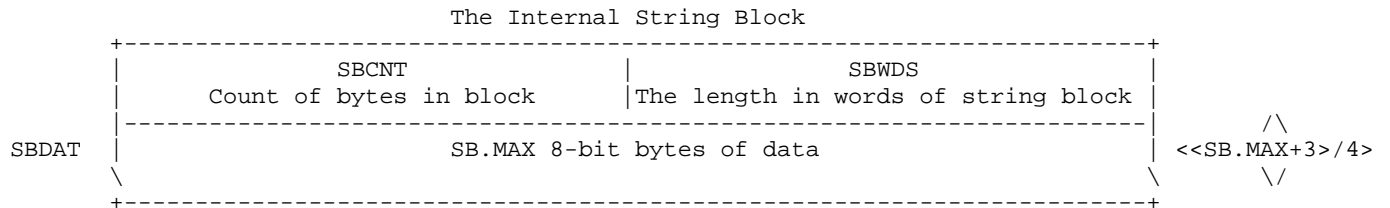
MONITOR TABLES

SB-SCPAR

The String Block is used by DECnet-36 to store the user's string-block argument.

Defined in: SCPAR

Format

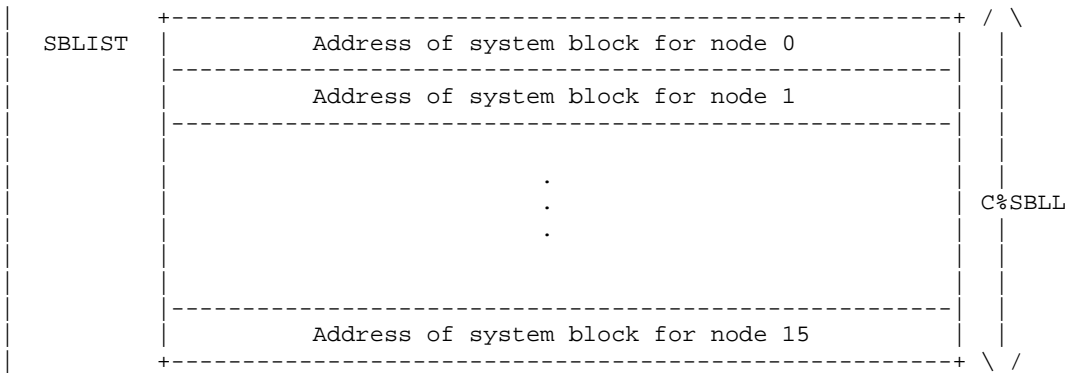


MONITOR TABLES

SBLIST (SYSTEM BLOCK LIST)

The system block list, indexed by CI node number, contains the addresses of the system blocks for nodes on the CI. These addresses point to the device-dependent portion of the KDB for that CI node.

Defined in: SCAMPI



MONITOR TABLES

SCA CONNECTION BLOCK

This is the format of the connection block used by SCA to keep the state of each connection which it is maintaining.

Defined in: SCAPAR

.CBANB=0	Address of next connect block		/\
.CBAPB=1	Address of previous connect block		
.CBSBA=2	System block address		.CBLEN
.CBSBI=3	CBDNOD Destination node number	CBEXPR Expected response	*
.CBSTS=4	CBBKST Connect block state	CBCNST Connection state	*
.CBFLG=5	Flags		*
.CBSCI=6	CBSCID Source connect ID		
.CBDCI=7	CBDCID Destination connect ID		
.CBADR=10	SYSAP callback address		
.CBBUF=11	CBIMB Message buffers to queue	CBIDB Datagram buffers to queue	
.CBNWQ=12	Next entry on work queue		
.CBSPN=13\	Source process name		\
.CBDPN=17\	Destination process name		\
.CBDTA=23\	User supplied connect data		\
.CBREA=27	CBDDRE Dest. disconnect reason	CBSDRE Source disconnect reason	

MONITOR TABLES
SCA CONNECTION BLOCK (Cont.)

.CBMCD=30	CBMNSC Minimum send credit	CBMNRC Minimum receive credit
.CBSCD=31	Send credit	
.CBRCd=32	Receive credit	
.CBPRC=33	Pending receive credit	
.CBRQC=34	Requeue credit	
.CBRTC=35	Return credit	
.CBNPO=36	CBNPO Packets on port command Q	CBRCNT Reaping postponed count
.CBDGR=37	Number of datagram buffers on hardware queue	
.CBCDD=40	CBCDD Number of dropped datagrams	
.CBLCK=41	Interlock word for connect state	
.CBPND=42	Interlock word for credit_request in progress	
.CBJNB=43	CPJNB Address of next connection block for this fork	
.CBJPB=44	CPJPB Address of previous connection block for this fork	
.CBMGJ=45	CBMGJ Number of SCS% message receive buffers queued	
.CBDGJ=46	CBDGJ Number of SCS% DG buffers queued	
.CBFRK=47	CBFORK Job number of owner job	CBJOB Fork number of owner fork
.CBTMQ=50	Pointer to top of message available queue (for SCS%)	
.CBBMQ=51	CBBMQ Pointer to bot of message available queue (for SCS%)	
.CBTDQ=52	CBTDQ Pointer to top of datagram available queue (for SCS%)	

MONITOR TABLES
SCA CONNECTION BLOCK (Cont.)

.CBBDQ=53	CBBDQ Pointer to bot of datagram available queue (for SCS%)	
.CBTXQ=54	CBTXQ Pointer to top of the DMA xfer complete queue	
.CBBXQ=55	CBBXQ Pointer to bot of the DMA xfer complete queue	
.CBTEQ=56	CBTEQ Pointer to top of the event queue	
.CBBEQ=57	CBBEQ Pointer to bot of the event queue	
.CBTBQ=60	CBTBQ Pointer to first buffer descriptor block	
.CBBBQ=61	CBBBQ Pointer to last buffer descriptor block	
.CBPS0=62	CBPMG CBPDG PSI channel for messages PSI channel for datagrams	
.CBPS1=63	CBPDA CBPEV PSI channel for DMA PSI channel for events	
+=====+		
.CBSBI=3	CBDNOD CBEXPR Destination node number Expected response	

Contents of field CBEXPR

Symbol	Value	Meaning
.STORS	1	Connect response
.STARS	3	Accept response
.STRRS	5	Reject response
.STDRS	7	Disconnect response
.STCRS	11	Credit response

MONITOR TABLES
SCA CONNECTION BLOCK (Cont.)

.CBSTS=4	CBBKST Connect block state	CBCNST Connection state
----------	-------------------------------	----------------------------

Contents of field CBBKST

Symbol	Value	Meaning
.BSFRE	1	Free
.BSALL	2	Allocate
.BSCNP	3	Connect pending
.BSACP	4	Accept pending
.BSRPN	5	Reject pending
.BSCRPN	6	Credit pending
.BSDPN	7	Disconnect pending

Contents of field CBCNST

Symbol	Value	Meaning
.CSCLO	1	Closed (CLOSED)
.CSLIS	2	Listening (LISTENING)
.CSCSE	3	Connect request was sent (CONNECTSENT)
.CSCRE	4	Connect request was received (CONNECTREC)
.CSCAK	5	Connect response was received (CONNECTACK)
.CSACS	6	Accept request was sent (ACCEPTSENT)
.CSRJS	7	Reject request was sent (REJECTSENT)
.CSOPN	10	Connection is open (OPEN)
.CSDSE	11	Disconnect request was sent (DISCONNECTSENT)
.CSDRE	12	Disconnect request received (DISCONNECTREC)
.CSDAK	13	Disconnect response received (DISCONNECTACK)
.CSDMC	14	Waiting for disconnect response (DISCONNECTMATCH)

MONITOR TABLES
SCA CONNECTION BLOCK (Cont.)



Symbol	Bits	Contents
CBFNNC	0	Needs credit notify
CBFJSY	1	CB is for SCS% conn
CBFABT	2	CB has been aborted
CBFRAP	3	CB is to be reaped
CBFDCL	4	This was DC listener
CBFKIL	5	Fork has been killed
CBFMDC	6	Maint data CB
CBFCVC	7	Virtual circuit was closed
CBFSOB	8	Stuck on buffers
CBFPTC	9	Protocol completed
CBFERR	10	SC.ERR deferred
CBFDIS	11	SC.DIS deferred
CBFDRQ	12	SC.DRQ deferred
CBFSNM	13	SC.SNM deferred

MONITOR TABLES

SCA BUFFER RETURNED TO CLUDGR

This SCA message buffer gives CLUDGR the flexibility to be used for other functions, that can be added as they are needed. The buffer has the following setup for CLUDGR:

Defined in: CLUPAR

SCA buffer returned to CLUDGR (.SSMGR)

		Invisible SYSAP header	
.CLFLI	-1	Word used by CLUDGR to link SCA buffer together	
.PKFLI	+>	SCA and port header area	
.MHPKL	0	Packet length	
.MHUDA	0	Packet # in group (.CLPKT)	# of packets total (.CLTPK)
CLDFLG	1	Flags (described below) (.CLFLG)	Remote request number (.CLREQ)
CLDFUN	2	Function code (.CLFUN)	Pointer to CLDATA (.CLPTR)
CLDFRK	3	Fork number (.CLFRK)	CI node to reply (.CLNOD)
CLDUSR	4	User number who requested this function (.CLUSR)	
CLDLEN	5	Number of words needed to reassemble SCA buffers (.CLLEN)	
CLDATA	6	Function specific data	

MONITOR TABLES
SCA BUFFER RETURNED TO CLUDGR (Cont.)

CLDFLG Flags (Word 1)		
Symbol	Bits	Description
CL%REQ	0	1=local CLUDGR to perform requested function 0=remote request
CL%PRV	1	1=remote user has WHEEL or OPERATOR privileges enabled
CL%GAL	2	1=remote process is a GALAXY component
CL%ERR	3	1=remote system error for the given function
	4-17	Unused

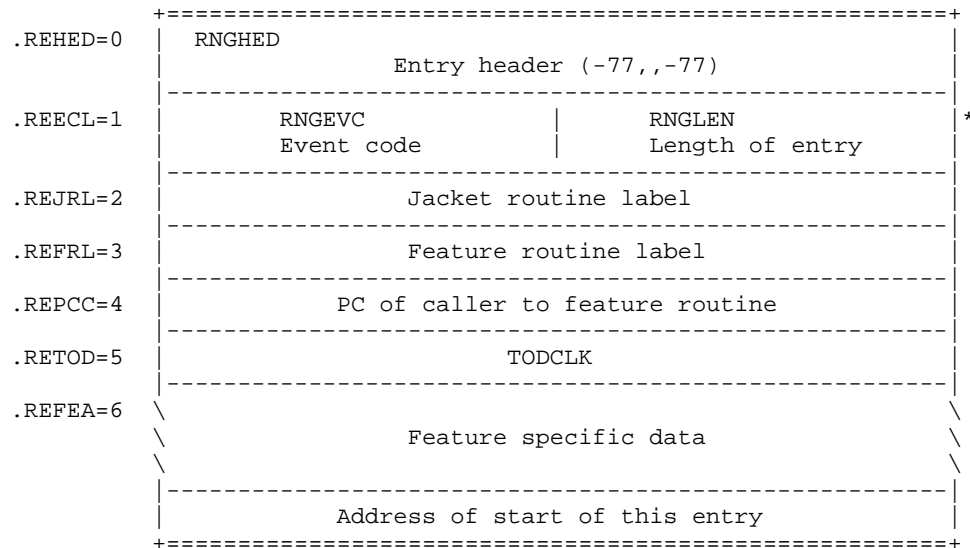
MONITOR TABLES

SCA RING BUFFER ENTRY

The SCA ring buffer is present in the monitor only if the monitor has been built with the flags DEBUG and SCARNG non-zero. These flags are found in PROLOG.MAC. Also, the bits that are set in the location RINGSW ultimately controls which events get recorded in the ring buffer.

The following is the format of an SCA ring buffer entry. The symbols given are not offsets into the entire ring buffer. They are offsets into a particular ring buffer entry. The pointer to the current ring buffer position is stored in RINGADR and the address of the most recent ring buffer entry is stored in RINGCUR. The top of the ring buffer is stored in RINGTOP and the bottom address is in RINGBOT. The total number of entries written is in RINGNUM and the total size of the ring buffer is in RINGSIZ.

Defined in: SCAPAR



MONITOR TABLES
SCA RING BUFFER ENTRY (Cont.)

.REECL=1	RNGEVC Event code	RNGLEN Length of entry
----------	----------------------	---------------------------

Contents of field RNGEVC

Symbol	Value	Meaning
SYSSCA	1	SYSAP to SCA events
SCASYS	2	SCA to SYSAP
BUFMAN	3	Buffer manipulation
PKTEVT	4	Packet transaction
PITRAN	5	PI transition
PORTQU	6	Port queue manipulation
INTLOK	7	Interlocks

Contents of RNGSW - the flag word which controls event recording

Symbol	Bit	Meaning
RSYSCA	0	Record SYSAP to SCA events
RSCASY	1	Record SCA to SYSAP events (callbacks)
RBUFMG	2	Record buffer management events
RPACKT	3	Record packet events (outgoing and incoming)
RPITRN	4	Record PI transitions
RPRTQU	5	Record port queue events
RINTLK	6	Record interlocks

SCA ring buffer entry--Feature data (SYSSCA)

Below is the format of the feature specific data for the SYSAP to SCA ring buffer entry.

.RESNN=6	Node number
.RESCB=7	Connect block address
.RESST=10	.CBSTS (Block state,,Connect state)
.RESFL=11	.CBFLG
.RESSI=12	.CBSCI (Source connect ID)
.RESDI=13	.CBDCI (Destination connect ID)

MONITOR TABLES
SCA RING BUFFER ENTRY (Cont.)

SCA ring buffer entry--Feature data (SCASYS)

Below is the format of the feature specific data for the SCA to SYSAP (callback) ring buffer entry.

.RECNN=6	Node number
.RECCB=7	Connect block address
.RECCR=10	Callback reason code

SCA ring buffer entry--Feature data (BUFMAN)

Below is the format of the feature specific data for the buffer manipulation ring buffer entry. The .REBCT word can contain one of three values. If the buffer is being returned, .REBCT contains a -1. If the buffer is being created or allocated and it has been obtained successfully, .REBCT contains the number of buffers. If the allocation was not successful, .REBCT contains the number of refused requests (RMRCNT for messages, RDRCNT for datagrams). Also, on an unsuccessful allocation attempt, the .REBAD word contains -1 since no buffer was allocated. Otherwise, this word always contains a buffer address, which is either the address of a newly created/allocated buffer chain or the address of a buffer just returned.

.REBCT=6	# of Buffers, or refused count, or -1 if returned
.REBAD=7	Address of 1st buffer or -1 if can't allocate
.REBMC=10	FQCNT (number of buffers on message free queue)
.REBMT=11	TOPFQ (pointer to top of message free queue)
.REBMB=12	BOTFQ (pointer to bottom of message free queue)
.REBDC=13	DFQCNT (number of buffers on datagram free queue)
.REBDT=14	TOPDFQ (pointer to top of datagram free queue)
.REBDB=15	BOTDFQ (pointer to bottom of datagram free queue)

MONITOR TABLES
SCA RING BUFFER ENTRY (Cont.)

SCA ring buffer entry--Feature data (PKTEVT)

Below is the format of the feature-specific data for the packet transaction ring buffer entry. The flags word contains the PPD flag bits (F.RTB, F.SPM, F.RSP). F.RSP tells you whether the packet was locally or remotely generated (F.RSP) and indicates which connect ID is the one from the local system. The mode of the packet is indicated by F.SPM.

The message priority is the priority of the packet and ranges from a high priority of 0 to a low of 3.

.REPNN=6	Node number	
.REPCB=7	Connect block address	
.REPAD=10	Packet address	
.REPFL=11	Flags	
.REPMP=12	Message priority Packet length	
.REPTY=13	MH\$TYP (credit, message type)	
.REPSI=14	MH\$SCI (Source connect ID)	
.REPDI=15	MH\$DCI (Destination connect ID)	

SCA ring buffer entry--Feature data (PITRAN)

Below is the format of the feature specific data for the PI transition ring buffer entry.

.REPIC=6	CHNCTL	
.REPIF=7	PIFLAG	

MONITOR TABLES
SCA RING BUFFER ENTRY (Cont.)

SCA ring buffer entry--Feature data (PORTQU)

| Below is the format of the feature specific data for the port queue
| manipulation ring buffer entry.

```

+=====+
.REPQN=6 | Node number |
+-----+
.REPQF=7 | Flags      | Buffer count | *
+-----+
.REPQB=10| Buffer address
+=====+

```

```

+-----+
.REPQF=7 | Flags      | Buffer count |
+-----+

```

Contents of flags field

Symbol	Bit	Meaning
RPQFLK	0	Link to port queue
RPQFMG	1	Message free queue used

SCA ring buffer entry--Feature data (INTLCK)

Below is the format of the feature specific data for the interlock
ring buffer entry.

```

+=====+
.REICB=6 | Connect block address |
+-----+
.REICL=7 | Connect block lock value (.CBLCK)
+-----+
.REIFL=10| Connect block flags (.CBFLG)
+-----+
.REISL=11| Count of locked connect blocks on system block
+=====+

```

MONITOR TABLES

SCDB

The MSCP Server Connection Data Block, which SCDBTB points to.

Defined in: PHYMVR

.SVCIS=0	Status of connection	*
.SVCID=1	Connect ID	
.SVTMO	Time of last message	
.SVTV	Time-out interval set by driver	
.SVCMD	Head of command queue	
.SVSCL	Last SCA error location	
.SVSCE	Last SCA error code	
.SVCME	Tail of command queue	
	0	5 6 35
.SVCIS		

Symbol	Bits	Meaning
SVSTA	0-5	State of the connection, which can be:
SCLIS==0		Null or listening. NOTE: Must be state 0
SCWOK==1		Waiting for OK to send
SCOKS==2		OK to send
SCDIS==3		Shutdown - Disconnect (SCA function .SSRID)
SCNOF==4		Shutdown - Node offline (SCA function .SSNWO)
SCPBC==5		Shutdown - Port error (SCA function .SSPBC)
SCFSD==6		Shutdown - Due to internal error or protocol
MCATN	6	Attention messages enabled

MONITOR TABLES

SCDBTB

Table of pointers to MSCP server connection data blocks.

Defined in: STG

SCDBTB:	Address of server connection data block	/\
		CFSNUM
\		\ \ /

MONITOR TABLES

SCHED-VARIABLES

This storage contains the variables used in the SCHED module. It contains pointers to the GOLST and to the wait lists. Clock and other parameters needed are also contained.

Defined in: STG, SCHED, APRSRV

Format

SKDPDL:	Scheduler local PDL	/ \
		NSKDP
		=700
		\ \ /
SCKATM:	Alarm time - min. of all SCHED clocks	
OLDTCK:	Alarm time - old time - used to calculate interval	
PISC7R:		/ \
		4
		\ \ /
PI7AC1:	Temps at PISC7	/ \
		2
		\ \ /
ALARMT:	Min. time of forks on clk1st	
SKDTHS:	Time in SCHED so far this pass	
SKDLST:	Last reading of HP clock	
SKDLRT:	Runtime of last trip thru scheduling cycle	
NULJBF:	Non-zero if running null job	
SNPSV1:	Place to save AC while ck'ing PC for SNOOP break pt.	
LSTPFK:	Last Fork Scheduled	
LFORKX:	Last Fork Before Background Tasks	
FORKX:	Index of currently running fork	
FREJOB:	Pointer to list of free jobs	
WTLST:	Pointer to waiting fork list	

MONITOR TABLES
 SCHED-VARIABLES (Cont.)

WT2LST:	Pointer to waiting forks to be waked by UNBLK1	
TTILST:	Pointer to list of forks waiting for TTY input	
TTOLST:	Pointer to list of TTY output events	
FRZLST:	Pointer to list waiting for unfreezing	
TRMLST:	Pointer to list waiting for inferior fork termination	
CLKLST:	Pointer to list waiting for Clock	
JTLST:	JSYS traps queue	
JTLSTL:	Linked list of forks wait on JTLCK to PSI some mon fork	
GOLST:	Pointer to runnable fork list	
JB0FLG:	Run JOB 0 request	
FRECB:	Free core number bits	
FREFK:	List of free forks	
SYSIFG:	System has been initialized if not 0	
PWRDWN:	Power failure detected if .g. 0, done if .l. 0	
SPWFFL:	Spurious power fail if -1, restart if 0	
RLODPC:	PCs for keep alive reload	/ \ 4 \ \ /
FPTABL:	PAGEM dispatch for section numbers	/ \ HGHSEC +1 \ \ /
NBPROC:	Number of processes in balance set	
NBWT:	Number waiting processes in balance set	
NBSWP:	Number of forks in swap wait	
NHOLDF:	Number of forks in balance set mold	
MAXBP:	Max number of jobs in balance set	

MONITOR TABLES
 SCHED-VARIABLES (Cont.)

BSQNT0:	Value of BSQNT at start of last running
SUMNR:	Sum of reserve pages, all processes in memory
SUMBNR:	Sum of working sets in balance set
NWSEPG:	Number pages WSETs entering memory
BALSHC:	Count of pages in balance set because of sharing
NXTCNF:	Next fork to check - GCNO
RELCB:	Mask of core numbers released but not cleared
MAXNR:	Max value of SUMNR
MAXHNR:	Max NR of balance set holding forks
BSLST:	Pointer to list of balance set holding forks
NBSL:	Number of balance set holding forks
NEBAL:	Number of processes now entering balance set
REMFSG:	Flags set on REMBSJ/REMBSF
NPMAX:	Max number of pages in core for one proces
SNPMAX:	Small NPMAX for loaded conditions
IRJAV:	Nearest integer to RJAV
WSMTIM:	Time for next WSMGT
RWSOKF:	Flag - OK to do REMWS
NWSMEM:	Number WS in mem
NHQFK:	Number forks on non-maxq
NLQFK:	Number forks on maxq
SCHFLG:	Permanent scheduling flags
SKEDF1:	Start process by way of CH7 break in 1
SKEDF3:	Process clock counted to 0
SKEDFC:	Force clear of balance set and memory

MONITOR TABLES
 SCHED-VARIABLES (Cont.)

INSKED:	In scheduler if non-zero	
SSKED:	Last job running was NOSKED	
SETPAG:	Temp for setting pager at SCDR	
RSKCHK:	XPCW destination	/ \
		4
		\ \ /
PSKED:	Page transfer completed and dismiss job	
QSKED:	Blocked fork now unblocked if .g. 0	
TSKED:	TTU output event if non-zero	
BSKED:	Fork voluntarily left balance set if .g. 0	
NGOJOB:	Number of runnable jobs	
RJTTIM:	Time at last update to RJTSUM	
RJATIM:	Time of next RJAV update	
RJAVS1:	RJTSUM at last RJAV update	
SKDFST:	Minimize processing for fork scheduling	
BKIDLF:	Flags in Background, Charging IDLE	
IDLFUG:	IDLE time (ms) for Any Overflow of SKDIDL	
GOLPWC:	Number of wait credit boosts after BSWT	
SKDSHS:	Number of BKGND1 cycles	
SKDSHQ:	Number of bad background decisions	
SKDBRM:	Number of DISMT removals	
SKDBSK:	Number of DISMT successes	
MXQNB0:	Number of forks on MAXQ after NEWST3	
MXQGB0:	Subset of MXQNB0 that got special boost	

MONITOR TABLES
 SCHED-VARIABLES (Cont.)

SKDSHN:	Count of times routine in SKDSHK changes NGOJOB	/ \ NSHAKL \ \/
RJAVS2:	HQFSUM at last RJAV update	
RJAVS3:	LQFSUM at last RJAV update	
BSQNT:	Running job remaining quantum	
TIM1:	SCHED fast clock	
TIM2:	Second clock	
FKT0:	Clock at start of running	
FKT1:	Time used since SETRT	
TIM0:	TODCLK atlast C1STAT	
TODCLK:	Millisecond clock, monotonically increasing	
TODPWL:	Time of day (in seconds) by power line clock	
CHKTIM:	Time at which JOB 0 considered overdue	
CHKDUE:	Count of consecutive overdues for JOB 0	
DDPTIM:	Time at which DDMP considered overdue	
DDPDUE:	Count of consecutive overdues for DDMP	
SCDRN1:	Run only job N if n .g. -1	

MONITOR TABLES

SCOUNT

Subsystem Counts. Each entry contains a count of times each subsystem is invoked. This table is parallel to S NAMES.

Defined in: STG

Format

SCOUNT:	Count	/ \ NNAMES \ /

MONITOR TABLES

SDB

Structure Data Block. This block, one per structure, contains information about the structure's units, master directory (that is, Root-Directory), bit map for disk page allocation/deallocation, and assigned swapping area. It also contains mount and open-file information. SDBBLO is the name of the storage area reserved for handling the SDB for the Public Structure (PS). Individual Structure Data Blocks are pointed to by slots in STRTAB.

Defined in: STG

Format

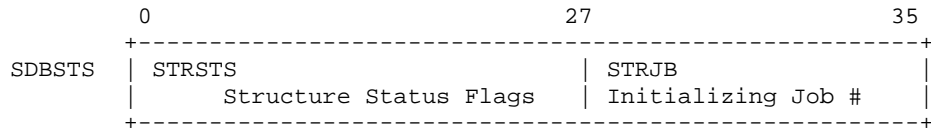
SDBNAM=0	STRNAM	Structure Name (in SIXBIT)
SDBNUM=1	STRNUM	Number of Units in Structure
SDBSIZ	STRSIZ	Size (in sectors) of Each Unit in Structure
SDBSTS	STRSTS	Status Flags
	STRJB	Initing Fork Number
SDBRXB	STRRXB	Address of Root Directory Index Block
SDBBXB	STRBXB	Address of Backup Copy of Root Directory Index Block
SDBNSS	STRNSS	Number of Swapping Sectors per Unit
SDBFSS	STRFSS	First Swapping Sector per Unit
SDBBTB	STRBTB	OFN of Bit Table
SDBFRC	STRFC	Count of Free Pages on Structure
SDBIDX	STRRDO	OFN of Root Directory
	STRIDX	Handle of Index Table
SDBLDN	STRLDN	Last Directory Number on This Structure

MONITOR TABLES
SDB (Cont.)

SDBLCA	STRLCA	Last Cylinder Assigned by DSKASN	
SDBCYL	STRCYL	Total Cylinders in Structure	
SDBBT0	STRB0	Length of Top Half of Bit Table	
SDBBT1	STRB1	Length of Bottom Half of Bit Table	
SDBTYP	STRTYP	Address of DSKSIZ Table for This Type of Disk	
SDBFLK	STRUC	STRUS	STRLK
	Unique Code in SDB	Str #	File Lock Count
SDBCNT	STRMC	Mount Count	STROF
			Open File Count
SDBPUC	STRMI	Pack Unique Code for Media Identification	
SDBOMF		Original Minimum Free Page Limit	
SDBMXF		Boundary Above Which SDBMFP=SDBOMF	
SDBMFP		Min. Free Pgs. below which DSKASA Changes Assignment Algorithm	
SDBALS		Alias name	
SDBTMR	STRTMR	Structure Offline Timer	
SDBUDB	STRUDB	Flags	Pointer to UDB
		.	.
		.	.
		.	.

/ \
|
MXSTRU
|
/ \
+

MONITOR TABLES
SDB (Cont.)



Symbol	Bits	Pointer	Content
MS%PS	0	STPS	Structure is login structure
MS%DIS	1	STDIS	Structure is being dismantled
MS%DOM	2	STDOM	Structure is domestic
MS%PPS	3		Protected Permanent Structure
MS%INI	4		Structure is being initialized
MS%LIM	5		Structure is limited
MS%NRS	6	STNRS	Structure is not regulated
MS%RWS	7		Read after write for swapping
MS%RWD	8		Read after write for data
MS%ASG	9		Disk assignments are prohibited (Bit table is bad)
MS%MXB	10		Bit table too large for monitor address space
MS%CRY	11		Enable password encryption
MS%IDT	12		Enable password invalidation by date
MS%IUS	13		Enable password invalidation by use
MS%DMP	14		Structure is dumpable
MS%EXC	15	STEXL	Exclude structure from multi-system access
MS%IDX	16	STIDX	Index table file OFN has been set up
MS%CRD	17	STCRD	Creating Root Directory on this Structure
MS%OFS	18	STOFS	Structure is offline
MS%BS	19	STBS	Structure is boot structure
	20-26		Reserved for future expansion
	27-35	STRJB	Initializing job (only legal user while structure is being initialized)

MONITOR TABLES

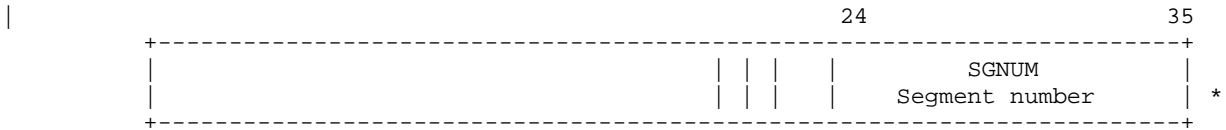
SG-LLINKS

The SG structure is used by DECnet for extracting the SEGNUM field from an NSP header.

Defined in: LLINKS

Format

The SEGNUM field in an NSP header



Field SGDLY (21-21) ACK DELAY allowed

Field SGMBZ (22-23) Must be zero

MONITOR TABLES

SL

This is the DECnet Session Control Link Block. It contains all the per-logical link data.

Defined in: D36PAR

Format

Session control link block																																				
SLASQ	Next SLB on all SLBs queue																																			
SLNXP	Next SLB with active PSI																																			
SLJFQ	Next SLB with active jiffy request																																			
SLSLB	Check pointer to this SLB																																			
SLSJB	Pointer to job block (SJB)																																			
SLCHN	Channel number (starts at 1)																																			
	<table border="1"> <thead> <tr> <th>SLDOB Destination object type</th> <th>SLSOB Source object type</th> </tr> </thead> <tbody> <tr> <td> <table border="1"> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> <tr> <td colspan="10">SLFLG</td> </tr> </table> </td> <td> <table border="1"> <tr> <td>SLSTA Session control state</td> <td>SLXFL</td> <td>SLRFL</td> </tr> </table> </td> </tr> <tr> <td>SLGOL Receive data request goal</td> <td>SLINQ Input quota for link</td> </tr> <tr> <td>SLOTQ Output quota for link</td> <td>SLINU Input buffers in use</td> </tr> <tr> <td>SLOTU Output buffers in use</td> <td>SLSST Link status word</td> </tr> <tr> <td>SLPSM The PSI mask</td> <td></td> </tr> </tbody> </table>	SLDOB Destination object type	SLSOB Source object type	<table border="1"> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> <tr> <td colspan="10">SLFLG</td> </tr> </table>											SLFLG										<table border="1"> <tr> <td>SLSTA Session control state</td> <td>SLXFL</td> <td>SLRFL</td> </tr> </table>	SLSTA Session control state	SLXFL	SLRFL	SLGOL Receive data request goal	SLINQ Input quota for link	SLOTQ Output quota for link	SLINU Input buffers in use	SLOTU Output buffers in use	SLSST Link status word	SLPSM The PSI mask	
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SLPSM The PSI mask																																				
SLNSL	"Normal" sublink	SS.LEN																																		
SLOSL	"Other" sublink	SS.LEN																																		

MONITOR TABLES
SL (Cont.)

	SLDRR Normal data requests to resend at clock level		SLRSN Reason code of disconnect or reject (16 bits)
SLPID	NSPPid of port		
	SLDNA Destination node address		SLSIZ Segment size in bytes
SLCTM	Connect initiate timer		
SLWKA	Address of wakeup routine		
SLCDM	Ptr to connect/disconnect message		
SLCBP	Pointer to connect block for passive task		
SLOTM	Ptr to partially filled output message		
SLUID	Serial number - for stale detection		
	SLBYS User bytes sent		SLBYR User bytes received
	SLPKS Packets sent out		SLPKR Packets recieved

For field SLFLG(0-17):

SLCCB	0	Check connect block
SLKCB	1	Keep connect block for life of link
SLPSI	2	PSI pending flag
SLPH2	3	Phase II has no resend capability
SLABO	4	Trying to close after abort & release
SLFSL	5	Free the SLB when done with all processing
SLBSY	6	SLB is busy (cannot be freed)
SLLBC	7	Link is being closed by NSP
SLJFR	8	Jiffy request outstanding
SLEOM	9	Last segment output was end of message
SLPAS	10	Set if this SLB belongs to a passive task

Field SLXFL (24-26) Transmit flow control option

Field SLRFL (27-29) Receive flow control option

MONITOR TABLES

SN

SN is the common portion of the NI Send Datagram command block for both BSD and non-BSD style sends.

Defined in: PHYKNI

Format

		20	SNTXL	35
			Text Length (bytes)	
		16	SNPTY	31
			Protocol Type	
SNFRQ	Free queue header address			
SNHAD	High order address			
SNLAD	Low order			

MONITOR TABLES
SPT (Cont.)

Storage Address

Symbol	Bits	Pointer	Contents
	12-35	STGADR	Storage address (Interpretation follows)
NCORTM	12-17		Non-Core Test Mask yielding type of storage. Bits <12-17>=0 => Bits <18-35>=Memory Pg Adr. Bits <12-17> 0 => Bits <18-35>=Drum/DSK Adr.
DSKAB	14		Storage address is a disk address
DSKNB	15		Temporary bit used with DSKAB to say that disk address is newly assigned.
DRMAB	16-17		Storage address is a drum address
DRMOB	17		Used with DRMAB to indicate that the swapping area has overflowed to the disk file system. (Since TOPS-20 cur- rently uses only the disk file system for swapping, a drum storage address always has bits 16_17 set.)
UAABC	17&35		Temporary bit used by the monitor's page trap handler when a copy-on-write page trap has occurred. If the page to be copied is a drum address, it is faulted in before these bits are used, avoiding conflict over bit 17. These bits signify to a lower level routine, SWPIN, that the page just gotten from the free list has no backup address and that it is to get a copy of another page.

MONITOR TABLES

SPTD

This table is parallel to the OFN area of the SPT table and contains the count and address of preallocated pages for an OFN. The system may preallocate pages for an OFN to reduce assignment overhead.

| Defined in: STG, PROLOG

Index: OFN Number

0	SPTCT	11	12	Storage Address	35
	Preallocation count			of next preallocated page	
		.			
		.			
		.			
		.			

/ \

|

NOFN

|

\ /

MONITOR TABLES
SPTH (Cont.)

Symbol	Bits	Content
FILUB	0	Unrestricted bit
FILWB	1	File write bit in SPTH and ASOFN argument
THAWB	2	Thawed bit
FILNB	3	"File new" bit
SPTLKB	4	OFN is locked against modification
OFNWRB	5	OFN has been modified
OFNBAT	6	Index block contains a bad block
OFNERR	7	Error in file (that is, MPE)
OFNDMO	8	OFN is on a dismounted structure
OFNDUD	9	Suppress DDMP
OFN2XB	10	Second level XB
OFNLAC	11	Lost access to this cached OFN

If a file is OPENed with thawed access (OF%THW), then both FILWB and THAWB is set to 1. If OPENed with restricted access, then the THAWB bit is on and the FILWB is off.

NOTE

A file is opened by searching the OFN part of SPTH for the index block address. If the address is found and the write and thawed bits are legal, it is a shared opening and the same index is used. If the address is not found, a new entry is made from one of the free (-1) slots in SPTH.

MONITOR TABLES

SPT02

Special Pages Table 02. This table is parallel to the OFN area of the SPT table and contains various state information about the OFN. It is used by CFS to maintain the page state.

Defined in: STG, PROLOG

Index: OFN number

SPT02:	OFOPC	CFS flags	/ \
	Count of normal opens		*
	.		NOFN
			\ /
Count of normal opens		CFS flags	

Contents of CFS flags

Symbol	Bits	Meaning
SPTFO	18	Force out in progress
SPTCDO	19	XB checksum already verified
SPTSFD	20	XB needs checksum done on next swap in
SPTDSF	21	Need DDMP to verify the XB
SPTFR	22-23	Signal from CFS to do force-out
SPTSR	22	Sub-field of above (set = memory flush)
SPTNA	24	If set, don't preallocate pages for OFN
SPTMR	25	Preallocation meter bit
OFNCSH	26	OFN is cached
OFNMGB	27	Garbage collection pass 1 done
SPTST	34-35	OFN state (for CFS)
.SPSRD==:1		;Read-only
.SPSWR==:2		;Read/write

MONITOR TABLES

SPT03

Special Pages Table 3. This table is parallel to the OFN area of the SPT table and is available only under the DEBUG conditional. It contains the number and the PC the system fork who last locked the OFN.

Defined in: STG

Index: OFN number

Format

SPT03:	System Fork #	PC of fork
	.	
	.	
	.	
	.	

/ \
|
|
NOFN
|
|
\
/

MONITOR TABLES

SPT04

This table contains information about OFNs. It is primarily used to speed access to long files.

Defined in: STG

+-----+ / \	
OFN which "own" this OFN,,file section number (for a second level OFN)	
or	NOFN
0 (for a short file or "super" OFN of a long file)	
or	
-1 (if the OFN is unassigned)	
+-----+ / \	
+-----+ / \	

MONITOR TABLES

SS

This is the DECnet Session Control sublink block. There are two of these in the SL block, one for the normal sublink and one for the other sublink.

Defined in: D36PAR

Format

SSINQ	SSFLG	SSXDO Sublink transmit DRQS outstanding	SSRDO Sublink receive DRQS outstanding	*
	Sublink input queue			QH.LEN

For field SSFLG(0-17):

SSOTH 0 Indicates this is the "other" sub-link

MONITOR TABLES

ST

This is the SAB indirect table pointed to by PSBSAB.

Defined in: SCPAR

Format

STNP	Normal priority
STP1	PSI level 1
STP2	
STP3	

MONITOR TABLES

STIMES

Subsystem Runtimes. Each entry contains the accumulated runtime of a subsystem program. This is a parallel table to S NAMES.

Defined in: STG

Format

STIMES:	Accumulated Runtime	NNAMES
	.	
	.	
	.	
	.	
	.	
	.	
	.	
	.	
	.	
	.	

MONITOR TABLES

SV-LLMOP

This is the DECnet LLMOP generic server variable block. The definition, structure and use of this block are shared between the Loopback Protocol Server and the Remote Console Server.

Defined in: LLMOP

Format

Server Variable Block

SVIFG	Initialization Flag				
SVDLS	Data Link State				
SVSTT	Server State				
SVAST	Server Assistant State				
	S	13	17	19	35
	V	SVICH		SVN XR	
	A	Interrupt		Next Receipt Number	
	I	Channel			
	C	Number (0			
		to 35)			
SVQLK	Queue Lock				
SVRQH	Request Queue Head				
SVRQT	Request Queue Tail				
SVRCT	Total Receive Count				
SVTIC	Total Invalid Receive Count				
SVUSF	Total of unsupported functions received				
SVSRC	Server Receive Count				
SVSIC	Server Invalid Receive Count				
SVRRC	Requestor Receive Count				
SVRIC	Requestor Invalid Receive Count				
SVTTI	Total Transmit Initiated Count				
SVTCT	Total Transmit Complete Count				

MONITOR TABLES
SV-LLMOP (Cont.)

SVTTF	Total Transmit Failure Count	
SVSTC	Server Transmit Count	
SVRTC	Requestor Transmit Count	
SVBPC	Buffer Post Count	
SVLBC	Lost Buffer Count	
SVIBN	Initial Buffer Number	
SVMCA	Multicast Address	/\ 2 \
SVCJN	Configurator Job Number	
SVCFN	Configurator Fork Number	
SVIXB	DLL Interface Block	/\ UN.LEN \
SVCCB	Start of Channel Counters Block	/\ CC.LEN \

Field SVAIC (0-0) Assign Interrupt Channel
 Field SVICH (13-17) Interrupt Channel Number
 Field SVNXR (19-35) Next Receipt Number

MONITOR TABLES

SWAP-FREE-SPACE (NON-EXTENDED)

Swappable Free Space Pool Format. This table describes the header area that is used in the assignment and deassignment of swappable free space (by ASGFRE) and the usage of this space when assigned.

Defined in: STG

Format

SWPFRE:	Adr of 1st Free Block	Unused	/ \
	Lock on Free Space		
	Space Counter		
	Most Common Block Size		7
	Max Top of Free Area	Bottom of Free Area	
	Temporary Work Space		
	Temporary Work Space		\ /
SWFREE:	Free Space Pool		/ \
	Space for the Assignment of:		
	System Wide Logical Name List and		SWFREL
	Definitions Blocks		
	USAGE JSYS Blocks		
	Checkpoint Records		\ \ /

MONITOR TABLES

SYNMTB

System Logical Name Table: This table contains pointers to the initial ASCIZ strings for the system logical names.

Defined in: STG

Format

SYNMTB:	XWD[ASCIZ/SYS/],[ASCIZ/ <SUBSYS>/]
	XWD[ASCIZ/HLP/],[ASCIZ/SYS:/]
	XWD[ASCIZ/SYSTEM/],[ASCIZ/ <NEW-SYSTEM, <SYSTEM>/]
	XWD[ASCIZ/EDITOR/],[ASCIZ/SYS:EDIT.EXE/]
	XWD[ASCIZ/ACCOUNT],[ASCIZ/ /ACCOUNTS/]
	XWD[ASCIZ/DEFAULT-EXEC/],[ASCIZ/SYSTEM:EXEC.EXE/]
	XWD[ASCIZ/PS/],[ASCIZ/ :/]
	XWD[ASCIZ/POBOX/],[ASCIZ/ :/]
	XWD[ASCIZ/BS/],[ASCIZ/ :/]
	XWD[ASCIZ/SPOOL/],[ASCIZ/ :<SPOOL>/]
	XWD[ASCIZ/SERR/],[ASCIZ/ :<SYSTEM-ERROR>/]
	XWD[ASCIZ/TGHA-DATA/],[ASCIZ/ :<SYSTEM>/]

When six spaces precede the colon, SLNINI inserts the name of the primary structure into that location.

MONITOR TABLES

SYS-STARTUP-VECTORS

System Startup Transfer Vectors. This table, in resident locations 140-147, contains the startup vectors for the monitor as well as vectors to enter EDDT.

Defined in: STG

Format

SVECT=140

EVDDT:	JRST DDTZ	(EDDT)
	JRST SYSDDT	(Reset and go to EDDT)
EVDDT2:	JRST DDTZ	(Copy of EDDT in case other clobbered)
EVSL0D:	JRST SYSLOD	(Initialize disk file system)
EVVSM:	JRST SYSVSM	(Verify swappable monitor on startup)
EVRST:	JRST SYSRST	(Restart)
EVL0GO:	JRST SYSGO	(Reload and start)
EVGO:	JRST SYSG01	(Start)

MONITOR TABLES

SYSERR-STORAGE-AREA

SYSERR STORAGE AREA. In and out pointers into the buffer area are maintained for JOB0 as well as pointers to the free and released SYSERR blocks.

Defined in: STG, SERCOD

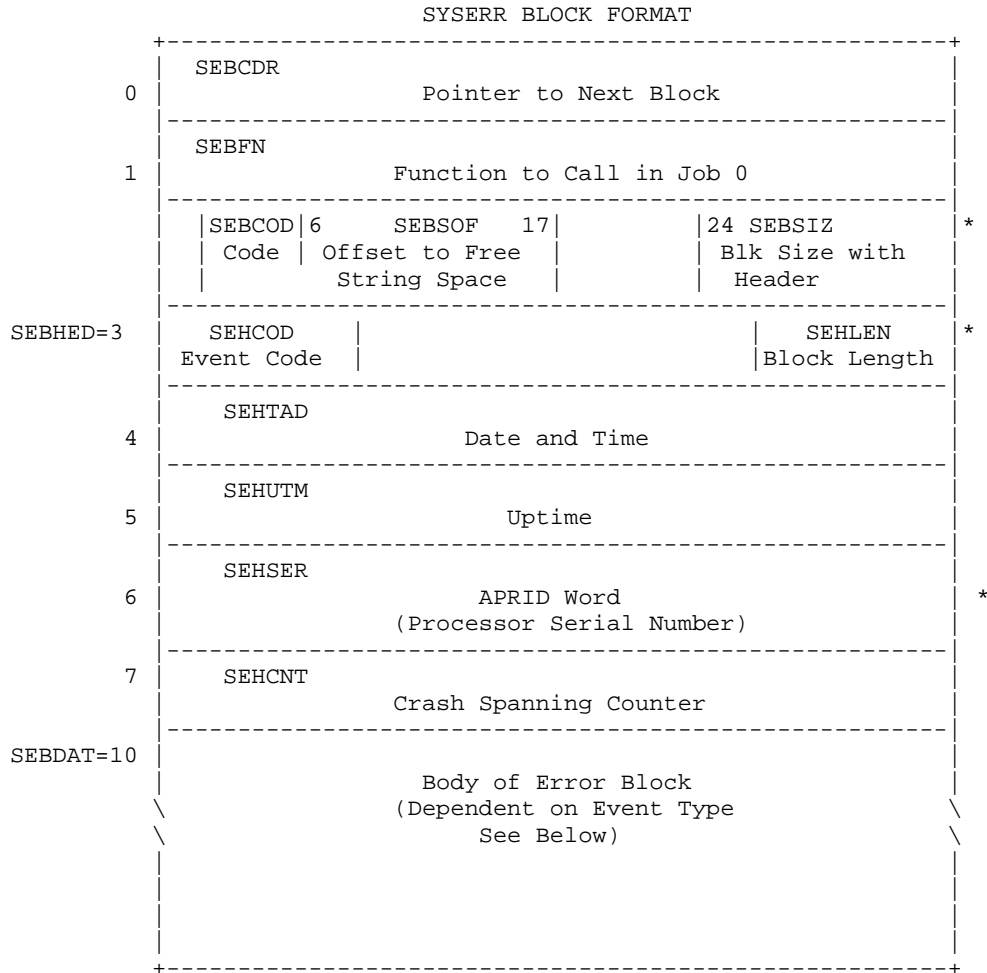
SEBQIN:	Job 0 queue In-pointer
SEBJFN:	JFN for SYSERR.LOG File
SECHKF:	Flag to wake Job 0 SYSERR FORK
SEIETM:	Time after which failing to OPEN SYSERR LOG File can try again
SERCNT:	Count of queued SYSERR blocks
SPRFLG:	-1 if SERCNT needs initializing

Although the In-pointer is in this storage area the corresponding Out-pointer in SEBQUO is in a fixed place in lower core (that is, location 24), so JOB 0 can queue up a BUGHLT block after a crash. One can examine the last SYSERR block by adding to the right half of the contents of SEBQUO, SEBDAT plus offset into SYSERR block.

ALCLST:	Count of lost section 0 all locations
BUGLST:	Count of lost bug entries
SYELST:	Count of lost syserr entries

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

SYSERR BUFFER BLOCKS

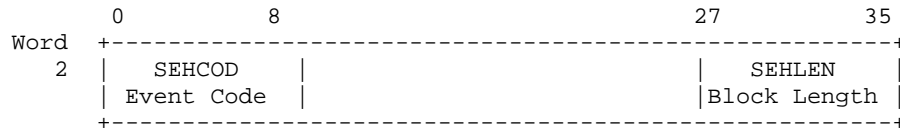


MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

	0	2	3	4	5	6		17	18		23	24		35
Word														
2	SEBCOD	6				SEBSOF	17							SEBSIZ
	Code				Offset to Free String Space						Blk Size with Header			

Bits	Pointer	Meaning
3-5	SEBCOD	State Code SBCFRE=0 on Free List SBCREL=1 Released SBCACT=2 Active
6-17	SEBSOF	Offset to Free String Space
24-35	SEBSIZ	Block Size Including Header

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)



Bits	Pointer	Meaning
0-8	SEHCOD	Event Code (that is, Block Type) SEC%RL=101 System Reload SEC%BG=102 BUGHLT/BUGCHK/BUGINF SEC%MB=111 Massbus Device Error SEC%CS=115 Configuration Status Change (MTCO) SEC%FE=130 Front End Error SEC%11=131 F.E. Reload Entry (Gives -11 Reboot Info.) SEC%HS=133 Halt for KS10 SEC%PT=160 Processor Parity Trap SEC%PI=161 Processor Parity Intrp. SEC%P1=162 Parity for Extensible Controllers SB%BLK=163 Status Block SEC%6S=232 DN64 event SEC%KS=241 KLIPA Statistics Event SEC%CI=242 CI Disk/Tape Endpacket SEC%EL=243 MSCP Error Log Event SEC%KP=244 KLIPA Error Event SEC%KE=246 KLIPA Error-Log Packet
27-35	SEHLEN	Block Length (Including Header) RL%LEN - System Reload Block Length BG%LEN - BUGHLT/CHK/INF Block Length MB%LEN - Massbus Dev. Err Blk Length CS%SIZ - Change Blk Length FE%LEN - F.E. Errors Blk Length R1%LEN - F.E. Reload Entry Blk Length HS%LEN - KS10 Block Length PT%LEN - Proc. Parity Trap Blk Length PI%LEN - Proc. Parity Interrupt Blk Lgh PI%LN2 - Extensible Controllers Blk Lgh SB%MAX - Maximum Status Block Length CI%LEN - CI Endpacket Blk Length EL%LEN - MSCP Error Log Block Length KP%LEN - KLIPA Error Block Length KS%LEN - KLIPA Statistics Block Length KE%LEN - KLIPA Error Log Block Length
Word 6 to End (Body of Error Block - Dependent on Event Type)		

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

Event Type 101
System Reloaded Error Block Data

RL%SVN=0	ASCII Byte Pointer to System Name	
RL%STD=1	Time of System Build (Univ. Format)	
RL%VER=2	System Version Number	
RL%SER=3	APR Serial Number	
RL%OPR=4	ASCII Byte Pointer to "Why Reload"	
RL%HLT=5	BUGHLT Address (if Auto-Reloaded)	
RL%FLG=6	Flags	
RL%SIZ=7	Monitor Name (Text)	/ \ NSVNT= 26.
	"Why Reload" Answer String (Text)	\ / / \ RLBSZ= 16.
RL%LEN=61		\ /

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

Event type 102
BUGHLT/CHK/INF Error Block Data

BG%SVN=0	System Name (ASCIZ)	
BG%SER=1	APR Serial Number	
BG%VER=2	Monitor Version	
BG%SDT=3	TAD of Monitor Build	
BG%FLG=4	Type (1,2 or 3) of BUG Call: (BG%CHK=1;BG%INF=2;BG%HLT=3)	
BG%ADR=5	Address of HLT/CHK	
BG%JOB=6	FORKX Job Number	
BG%USR=7	User Number	
BG%PNM=10	Program Name (SIXBIT)	
BG%MSG=11	Message (ASCIZ)	
BG%ACS=12	ACS	/ \
BG%PIS=32	PI Status	
BG%RCT=33	Register Count	\ 16.
BG%REG=34	Registers (Maximum of 4)	\ /
BG%NAM=40	SIXBIT Name of Check	
BG%DAT=41	Time and Date of BUGHLT/BUGCHK	
BG%CNT=42	Number of BUG Checks Since Startup	
BG%APS=43	APR Flags (CONI APR,)	
BG%PGS=44	Pager Flags (CONI PAG,)	
BG%PGD=45	Pager Data (DATAI PAG,)	

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

BG%ERG=46	Error Register	
BG%SIZ=47	String Area	/ \
BG%LEN=111+		 34.

Event Type 111
MASS BUS DEV Error Data Block

MB%NAM=0	Device Name (if available)	
MB%VID=1	Volume ID (SIXBIT)	
MB%TYP=2	Channel,,Device Type - See PHYPAR	
MB%LOC=3	Location of Error - Sector or File,,Record	
MB%FES=4	Final Error State - Device Dependant	
MB%CNI=5	CONI Initial	
MB%CIF=6	CONI Final	
MB%SEK=7	Number of Seeks	
MB%RED=10	Number of Blocks/Frames Read	
MB%WRT=11	Number of Blocks/Frames Written	
MB%FIL=12	Filename (Pointer)	
MB%USR=13	User Making Request (directory number)	
MB%PGM=14	Program Running	
MB%D1I=15	DATAI PTCR Initial	
MB%D1F=16	DATAI PTCR Final	
MB%D2I=17	DATAI PBAR Initial	
MB%D2F=20	DATAI PBAR Final	
MB%UDB=21	Unit Data Block for JOB 0 BAT Blocks	

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

MB%IRS=22	IORB Status Word, IS.ERR if Hard (See PHYPAR)
MB%SRE=23	Soft Read Errors
MB%SWE=24	Soft Write Errors
MB%HRE=25	Hard Read Errors
MB%HWE=26	Hard Write Errors
MB%PS1=27	Position, CYL if Disk, File if Tape
MB%PS2=30	SURF/SEC or Record
MB%CS0=31	Channel Logout 0
MB%CS1=32	Channel Logout 1
MB%CS2=33	Channel Logout 2
MB%CC1=34	First CCW
MB%CC2=35	Second CCW
MB%MPE=36	Count of MPE
MB%NXM=37	Count of NXM
MB%FEC=40	Final Error Count
MB%CAD=41	Channel Address
MB%UAD=42	Unit Address
MB%SPE=43	Soft Positioning Errors
MB%HPE=44	Hard Positioning Errors
MB%OVR=45	Overruns
MB%ICR=46	Initial TCR
MB%REG=47	Units Massbus Registers in order with their: Final Contents,, Initial Error Contents
MB%LEN=124	

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

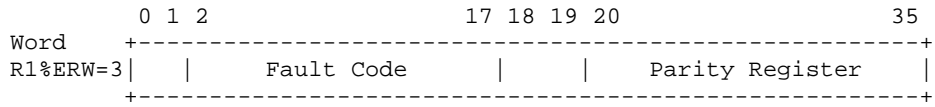
Event Type 115
Configuration Status Change (logged by MTCN)

CS%OPW=0	<p style="text-align: center;">Operation Code Codefield is CS%OPR=77B17 Codes are: CS%ADV=0; Attach Device CS%DDV=1; Detach Device</p>						
CS%HTP=1	<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center;">Hardware Type</td> </tr> <tr> <td style="width: 33%; text-align: center;">Channel Type</td> <td style="width: 33%; text-align: center;"> </td> <td style="width: 33%; text-align: center;">Unit Type</td> </tr> </table>	Hardware Type			Channel Type		Unit Type
Hardware Type							
Channel Type		Unit Type					
CS%DNM=2	<p style="text-align: center;">Logical Device Name (SIXBIT)</p>						
CS%APS=3	<p style="text-align: center;">Device Address and Serial Number</p>						
CS%RSW=4	<p style="text-align: center;">Offset to Reason String</p>						

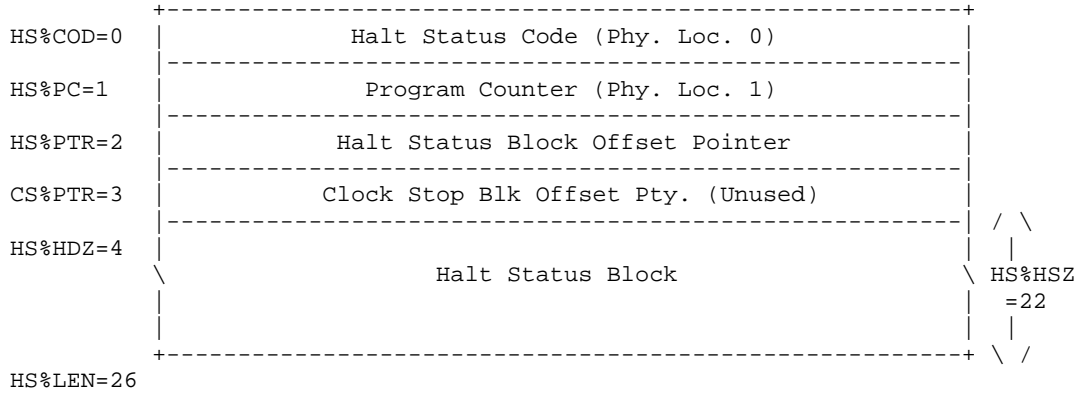
Event Type 130
Front End Errors Data Block

FE%FJB=0	<p style="text-align: center;">Fork Number,,Job Number</p>
FE%DIR=1	<p style="text-align: center;">Directory Numbers</p>
FE%ID=2	<p style="text-align: center;">Front End Software Version</p>
FE%NAM=3	<p style="text-align: center;">SIXBIT Name of Program</p>
FE%DEV=4	<p style="text-align: center;">Protocol Device Code (1B0=Unknown)</p>
FE%PTR=5	<p style="text-align: center;">-Length of Data,,Start of Data</p>
FE%DTE=6	<p style="text-align: center;">DTE Number</p>
FE%BYT=7	<p style="text-align: center;">Number of -11 Bytes in the Message</p>
FE%LEN=10	

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)



	Bits	Contents
	2-17	Fault code as 3 RAD50 characters
	20-35	Parity Register Valid Only if it is Nonzero
Event Type 133		
Halt for KS10		



MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

Halt Status Block

HS%NUL=0	Magnitude
HS%PC=1	PC
HS%HR=2	Current Instruction
HS%AR=3	AR
HS%ARX=4	ARX
HS%BR=5	Base Register
HS%BRX=6	Base Register Extension
HS%ONE=7	Constant One
HS%EBR=10	Exec Base Register
HS%UBR=11	User Base Register
HS%MSK=12	Mask
HS%FLG=13	Microcode Status Flags
HS%PI=14	PI Status
HS%X1=15	1 1
HS%T0=16	T0
HS%T1=17	T1
HS%VMA=20	VMA Flags VMA
HS%FE=21	FE SC

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

Event Type 160
Processor Parity Trap Error Block Data

PT%PFW=0	Page Fail Word														
PT%BDW=1	Bad Data Word														
PT%GDW=2	Good Data Word														
PT%USR=3	User Number														
PT%JOB=4	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">FORKX</td> <td style="width: 10%; text-align: center;"> </td> <td style="width: 40%; text-align: center;">JOBN</td> </tr> </table>	FORKX		JOBN											
FORKX		JOBN													
PT%PGM=5	Program Name (SIXBIT)														
PT%PMA=6	Physical Memory Address														
PT%TRY=7	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Flags</td> <td style="width: 10%; text-align: center;"> </td> <td style="width: 40%; text-align: center;">Retry Count</td> </tr> </table>	Flags		Retry Count											
Flags		Retry Count													
PT%EPA=10	EPT Offset Physical Address														
PT%EPD=11	EPT Offset Data														
PT%UPA=12	UPT Offset Physical Address														
PT%UPD=13	UPT Offset Data														
PT%LEN=14															
Word	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; text-align: center;">0 1 2 3 4</td> <td style="width: 33%; text-align: center;">17 18</td> <td style="width: 33%; text-align: center;">35</td> </tr> </table>	0 1 2 3 4	17 18	35											
0 1 2 3 4	17 18	35													
PT%TRY=7	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> </tr> </table> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 40%; border: none;">Retry Count</td> <td style="width: 10%; border: none;"> </td> </tr> </table>	<table style="width: 100%; border: none;"> <tr> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> </tr> </table>												Retry Count	
<table style="width: 100%; border: none;"> <tr> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> <td style="width: 10%; border: none;"> </td> </tr> </table>												Retry Count			

Symbol	Bits	Contents
PT%HRO	1	Hard Error
PT%CCP	2	Cache Failure
PT%CCH	3	Cache in Use
PT%ESW	4	Error on Sweep to Core
	18-35	Retry Count

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

Event Type 161
Processor Parity Interrupt Error Data Block

PI%CNI=0	CONI APR	
PI%ERA=1	ERA	
PI%FPC=2	PC	
PI%SWP=3	Number of Errors This Sweep	
PI%AAD=4	Logical "AND" of Bad Addresses	
PI%OAD=5	Logical "OR" of Bad Addresses	
PI%ADA=6	Logical "AND" of Bad Data	
PI%ODA=7	Logical "OR" of Bad Data	
PI%SBD=10	SBUS DIAG Function Data	/ \
		\ 10.
PI%ADD=22	First 10. Bad Addresses	/ \
		/ \
		\ 10.
PI%DAT=34	First 10. Bad Data Words	/ \
		/ \
		\ 10.
PI%CDA=46	Core Ref of First 10. Bad Addresses	/ \
		/ \
		\ 10.
PI%FFL=60	Flags	/ \
		/ \
PI%LEN=61		

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

Event Type 162
Parity Format for Extensible Controllers

PI%CN2=0	CONI APR		
PI%ER2=1	ERA		
PI%FL2=2	flags		
PI%PC2=3	PC		
PI%ERC=4	Error count		
PI%AA2=5	logical "AND" of bad addresses		
PI%OR2=6	logical "OR" of bad addresses		
PI%AD2=7	Logical "AND" of bad data		
PI%OD2=10	Logical "OR" of bad data		
PI%SB2=11	-Count of controllers	first offset	
PI%BAD=12	First ten bad addresses		/\ 10. \
PI%DA2=24	First ten bad words		/\ 10. \
PI%MDA=36	Memory references of first ten words		/\ 10. \
PI%SBA=50	SBDIAG data		/\ PI%MXS =100 \

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

Event Type 163
Status Block Entry

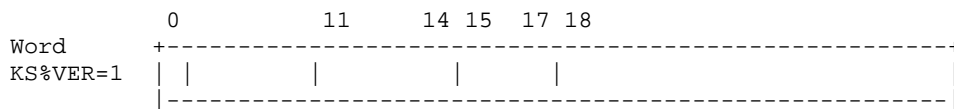
SB%API=0	APRID	
SB%APR=1	CONI APR	
SB%PIC=2	CONI PI	
SB%PGD=3	DATAI PAG	
SB%PGC=4	CONI PAG	
SB%UP0=5	UPT locations 424-427	/ \ 4
SB%ERA=11	RDERA	\ /
SB%RHC=12	CONI RH20 -- for all 8 possible	/ \ SB%RHL =8
SB%DTC=22	CONI DTEN -- for all 4 possible	/ \ SB%DTL =4
SB%EP0=26	EPT locations 0-37	/ \ 40
SB%EP1=66	EPT locations 140-177	/ \ 40
SB%UP1=126	UPT locations 500-503	/ \ 4
SB%6=132	AC block 6 REGS 0-3 and 12	/ \ 5
SB%7=137	AC block 7 REGS 0-2	/ \ 3
SB%SBD=142	SBDIAG data	/ \ SB%SBL =50
SB%MAX=213		/ \

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

Event Type 241
KLIPA Statistics Entry

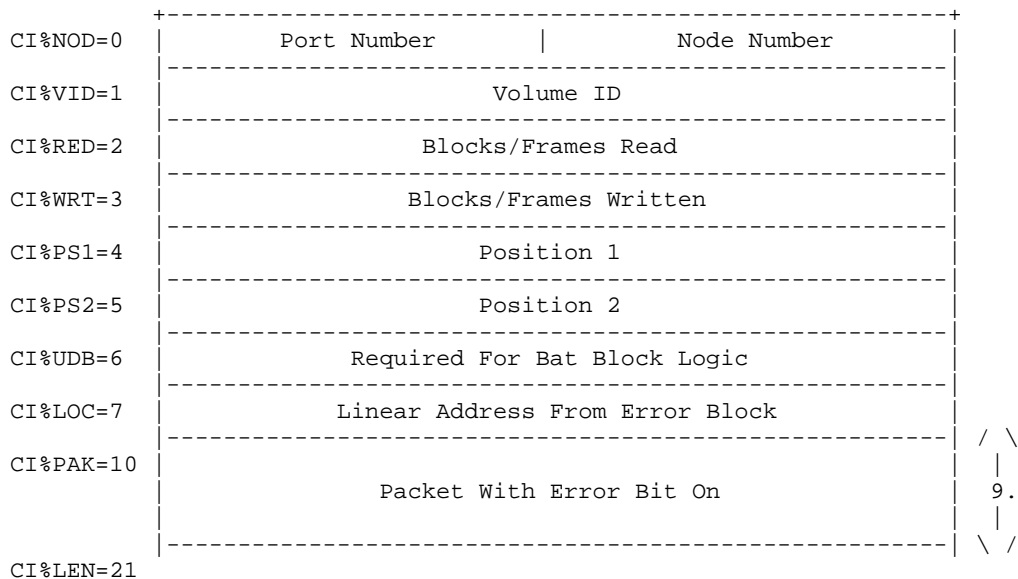
KS%OFF=0	Offset to Counters		
KS%VER=1	Microcode Version Word		*
KS%AAK=2	Path A Acks		
KS%ANK=3	Path A Nacks		
KS%ANR=4	Path A No-Responses		
KS%BAK=5	Path B Acks		
KS%BNK=6	Path B Nacks		
KS%BNR=7	Path B No-Responses		
KS%DGD=10	Datagrams Discarded		
KS%PXM=11	Packets Transmitted		
KS%PRC=12	Packets Received		
KS%DPT=13	Designated Port Word		
		28 KS%PRT Designated Port	
KS%CRC=14	Packets Received With Crc Errors		
KS%EW1=15	KS%MPE Mover PAR Pre Errors	KS%CPE CBUS Parity Errors	
KS%EW2=16	KS%RPE Register PLIPE Errors	KS%DPE Data PLIPE Errors	
KS%EW3=17	KS%CHE Channels Errors	KS%EPE EBUS Parity Errors	
KS%EW4=20	KS%SCE Spurious Channel Errors	KS%CAT CBUS Available Timeouts	
KS%EW5=21	KS%SRA Spurious Receive Atten.	KS%STA Spurious Transmit Atten.	
KS%EW6=22	KS%TBP Xmit Buffer Parity Errors	KS%TTM Transmitter Timeouts	
KS%LEN=23			

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)



Symbol	Bits	Contents
KS%NI	0	O=CI, 1=NI
KS%RSN	11-14	Reason for Doing Read-Counters 0, Illegal KS%CPE=1, CRAM Parity Error KS%AGB=2, Wire A Went From Good to Bad KS%ABG=3, Wire A Went From Bad to Good KS%BGB=4, Wire B Went From Good to Bad KS%BBG=5, Wire B Went From Bad to Good KS%PER=6, Periodic Reading of Counters KS%GUC=7, Get Microcode Version KS%DIA=10, DIAG% Did It
KS%CHN	15-17	KLIPA Channel Number
KS%VSN	18-35	Microcode Version

Event Type 242
CI Disk/Tape Endpacket



MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)

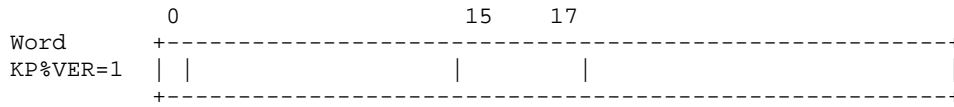
Event Type 243
MSCP Error Log

EL%NOD=0	Port		Node	
EL%PAK=1	Data Packet			/ \ 96. \ /
EL%LEN=141				

Event Type 244
KLIPA Error Event

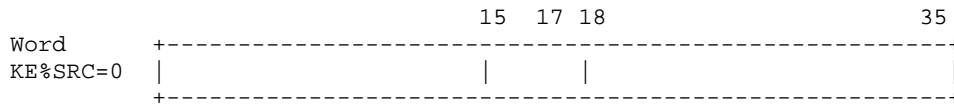
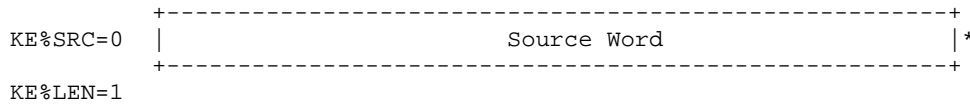
KP%CSR=0	CONI Status	
KP%VER=1	Microcode Version	*
KP%DSP=2	Error Disposition	
KP%CRA=3	CRAM Address	
KP%CRD=4	CRAM Data (2 Words)	
KP%LG0=6	Logout Word 0	
KP%LG1=7	Logout Word 1	
KP%LG2=10	Logout Word 2	
KP%ECW=11	Port's Error Word	
KP%PE0=12	Port's Error Logout Word 0	
KP%PE1=13	Port's Error Logout Word 1	
KP%LEN=14		

MONITOR TABLES
SYSERR-STORAGE-AREA (Cont.)



Symbol	Bits	Contents
KP%NI	0	Set if this is a KLNI
KP%CHN	15-17	Port's RH20 Channel 202

Event Type 246
KLIPA Error-Log Packet



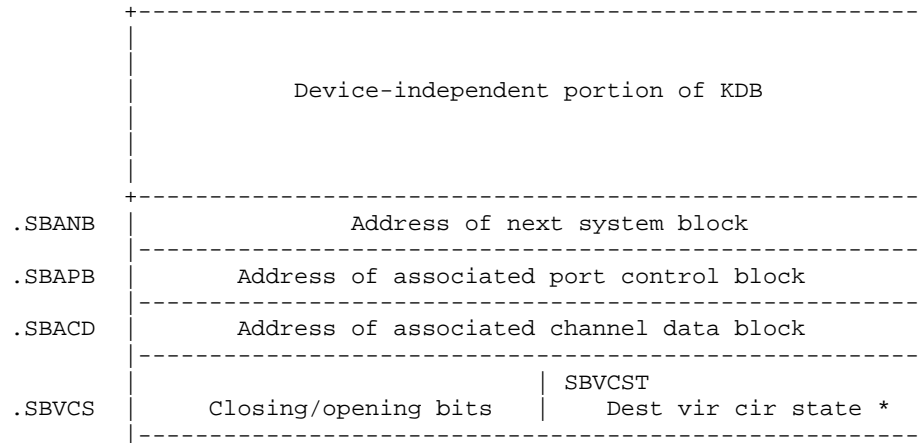
Symbol	Bits	Contents
KE%CHN	15-17	KLIPA Channel Number
KE%NOD	18-35	HSC50 Node Number

MONITOR TABLES

SYSTEM BLOCK

There is a system block for each node on the CI that TOPS-20 has detected. System block addresses are found in the table SBLIST. The system block is the device-dependent portion of the KDB representing the CI node.

Defined in: SCAPAR



Symbol	Bit	Contents	Symbol	Value	Meaning
SBNTC	0	Need to close VC	VC.CLO	0	Closed
SBOKO	1	OK to open VC	VC.STS	1	Start sent
SBWFI	2	Waiting for new IDREC	VC.STR	2	Start received
			VC.OPN	3	Open

MONITOR TABLES
SYSTEM BLOCK (Cont.)

.SBDSP	SBCHN Channel number	SBDPA Destination port
.SBDRQ	SBDQRH Datagram return queue header	
.SBLMB	SBLMBH Local message buffer header	
.SBFCB	Pointer to first connection block	
.SBLCB	Pointer to last connection block	
.SBTWQ	FLINK for SCA work queue	
.SQBWQ	BLINK for SCA work queue	
.SBCLC	Count of locked connections	
.SBQOR	Pointer to queue of outstanding requests	
.SBDSS	\ Destination system \	
.SBMMS	SBMXMG Max mess size (bytes)	SBMXDG Max DG size (Bytes)
.SBDST	SBDTSW Destination software type	
.SBDVSW	SBDVSW Destination software version	
.SBDSE	Destination software edit level	
.SBDHT	SBDTHW Destination hardware type	
.SBDHV	\ SBDVHW Destination hardware version \	
.SBNNM	\ Destination port name \	
.SBDPC	Destination port characteristics	
.SBDRC	Destination Port Code Revision Level	

MONITOR TABLES
SYSTEM BLOCK (Cont.)

.SBDPF	Destination Port Functionality	
.SBDPS	Destination Port State	
.SBTIM	TODCLK at last message from this remote	
.SBFLG		Flags *
	Symbol	Bit Contents
	SBFTMG	0 Timed message
	SBFOVC	1 VC needs open
	SBFOFL	3 Node offline
.SBSST	SBSST	Start Sequence Timer
.SBOBB	SBOBB	Out bound buffer for system block

MONITOR TABLES

TR

DECnet Router test message data block.

Defined in: D36PAR

Format

TRTND	Node to test with
TRTSN	Serial number of message
TRTAF	Time when message reaches RTRFWD
TRTIC	Time at input complete
TRTOC	Time when output complete is received
TRTTD	Time given to DLL
TRTTA	Total time to turn around (TIC-TAF)
TRTED	Time to get from FWD to DLL (TTD-TAF)
TRTFD	Time from forward to output done (TTF-TOC)

MONITOR TABLES

TT-LINE-DYN-DATA-BLK

Teletype Line Dynamic Data Block. This block pointed to by the line's entry in TTACTL, holds line specific data and is built when the line becomes active. It is deallocated when the line becomes inactive.

There are two shortened forms of the dynamic data block, one used for a SENDALL type of message and the other for sending a "ding" when any character but CTRL/C is typed on an inactive line.

Defined in: TTYDEF

Format

TTFLG1=0	Flags					*										
TTDAT1=1	Buffer Info & Term. Type			TINTL Internal Line Number		*										
TTTAL1=2	TLTYP Line Type	TSALT Send All Timeout Count	TSALC Send All Character Count			*										
TTTAL2=3	Send All Byte Pointer															
TTDEV=4	Device dependent word (See Device modules for definitions)															
TTBFRC=5	0	7	8	11	12	15	16	25	26	35						
	TOWRN	Wake Up	Count	TTNIN	# of	Input	TTNOU	# of	Output	Bufs	TIMAX	Max bytes	In Input Buf	TOMAX	Max bytes	In Output Buf
TTOCT=6	Number of Characters in Output Buffer															
TTOOUT=7	Pointer for Removing Char from Output Buffer															
TTOIN=10	Pointer for Entering Char into Output Buffer															
TTDAT2=11	Input Info. & Page Width										*					
TTICT=12	Number Characters in Input Buffer															
TTIOUT=13	Pointer for Removing Char from Input Buffer															
TTIIN=14	Pointer for Entering Char into Input Buffer															

MONITOR TABLES
TT-LINE-DYN-DATA-BLK (Cont.)

FCMOD1=15	Control Character Output Control Words			
FCMOD2=16	Possible Values for each Char. (2 Bits/Char)			
	CCNONE = 0 Send nothing			
	CCIND = 1 Indicate via ^			
	CCSEND = 2 Send Actual Code			
	CCSIM = 3 Simulate Format Action			
TTDPSI=17	Bit for Terminal Code Set if Deferred Interrupt			
TTPSI=20	Bit for Terminal Code Set if Interrupt			
TTLINK=21	Lines linked to (9 bits per line)			
TTLPOS=22	TPGPS			TLNPS
	Cur Line Position in Page			Current Character Position within Line
TTFLGS=23	0	10	17	32 35
	TOFLG	TPLEN		TTDUM
	^O was typed	page length		duplex mode
TTFORK=24	TCJOB			TWFRK
	Controlling Job Number			Fork Number in Input Wait on this Line
TTFRK1=25	TTPSFK			TTPFK
	PSI Fork # for Non-controlling TTY			Fork which is Top Fork of a SCTTY Tree (-1 if None)
TTCHR1=26	Wake Up Character Mask (ASCII Codes 0-31.)			
TTCHR2=27	Wake Up Character Mask (ASCII Codes 32.-63.)			
TTCHR3=30	Wake Up Character Mask (ASCII Codes 64.-95.)			
TTCHR4=31	Wake Up Character Mask (ASCII Codes 96.-127.)			

MONITOR TABLES
TT-LINE-DYN-DATA-BLK (Cont.)

TTFWTH=32	PSI Level Info	TTFCNT	Byte Count	*				
TTLINE=33	Line Counter							
TTLMAX=34	Maximum of TTLINE							
TTFLG2=35	0	1	2	4	5	11	12	18
	TTFLA	TTETP	TTCH1	TTCH2				
	First char seen flag	Type	First char	Second char				
TTSVPD=36	Saved Line Speed							
TTDDLN=37								

	0	1	2	3	4	5	6	7	8	9	10	11		30		35
TTFLG1																
													TTLCK			

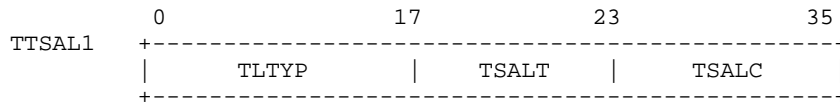
Symbol	Bits	Pointer	Contents
TT%SAL	0	TTSAL	Sendall being done to this line
TT%SHT	1	TTSHT	This is a short block
TT%MES	2	TTMES	This is a system message block
TT%OTP	3	TTOTP	Output is enrout to the line
TT%FWK	4	TTFWK	Forced wakeup
TT%SFG	5	TTSFG	CTRL/S was typed
TT%RFG	6	TTRFG	Repeat last character (BKJFN)
TT%WFG	7	TTWFG	Blocked on input
TT%PRM	8	TTPRM	Don't deallocate dynamic data
TT%BAC	9	TTBAC	Permanent and becoming active
TT%NXO	10	TTNXO	Is 0, no page output stop
TT%BKO	11	TTBKO	Fork blocked for output event
TT%NUS	12	TTNUS	Net user state
TT%DD1	13	TTDD1	Device dependent bit
TT%NPM	14	TTNPM	MCB NVT old page mode
TT%RXF	15	TTRXF	Received XDN on line
TT%FLO	16	TTFLO	Flushing output at TTSND

MONITOR TABLES
TT-LINE-DYN-DATA-BLK (Cont.)

TT%HPO	17	TTHPO	High priority output queued
TT%DAL	18	TTDAL	Deallocate of block requested
TT%XFF	19	TTXFF	Force XOFF/XON status to front-end
TT%SEC	20	TTSEC	Server should echo
TT%WKC	21	TTWKC	Wake-up set has changed
TT%SPG	22	TTSPG	Page stop is turned on in the server
TT%BIN	23	TTBIN	Current data mode is binary (0=ASCII)
TT%NUL	24	TTNUL	ASCII mode nul pass through
TT%LCK	30-35	TTLCK	Count of locks on this block



Bit	Pointer	Contents
4-5	TYLMD	Terminal data mode for last input character
5-7	TTOCN	Count of extra buffers
8	TTOMX	Extra buffers in use
9-17	TTTYP	Terminal type
18-35	TINTL	Internal line number (index into static data)



Bit	Pointer	Contents
0-17	TLTYP	Line type
18-23	TSALT	Sendall timeout count
24-35	TSALC	Sendall character count

MONITOR TABLES
TT-LINE-DYN-DATA-BLK (Cont.)

	0	6 7 8 9	17 18	26 27	35
TTDAT2					
	TYLCH			TPWID	

Bit	Pointer	Contents
0-8	TTUPC	Unpause on page character
9-17	TYLCH	Last char removed from input buffer
18-26	TPWID	Page width
27-35	TTPPC	Pause/unpause on page character

	0	5 6	11 12	17 18	35
TTFWTH					
	TTIPSI		TTOPSI	TFCNT	

Bit	Pointer	Contents
6-11	TTIPSI	Input PSI level
12-17	TTOPSI	Output PSI level
18-35	TFCNT	Byte count for wakeup (0=> disabled for wakeup)

MONITOR TABLES

TTACTL

Teletype Active Line Table. This resident table contains a pointer to each active line's dynamic data block.

Defined in: STG

Index: Line Number

Format

TTACTL:	Address of dynamic data block if active or -1 if becoming active or 0 if inactive	/ \
	.	
	.	NLINES
	.	
	.	
	.	
	.	
\		\ \ /

NOTE

Bit 0 can be on if the entry is an address. This indicates the address is to a short message block.

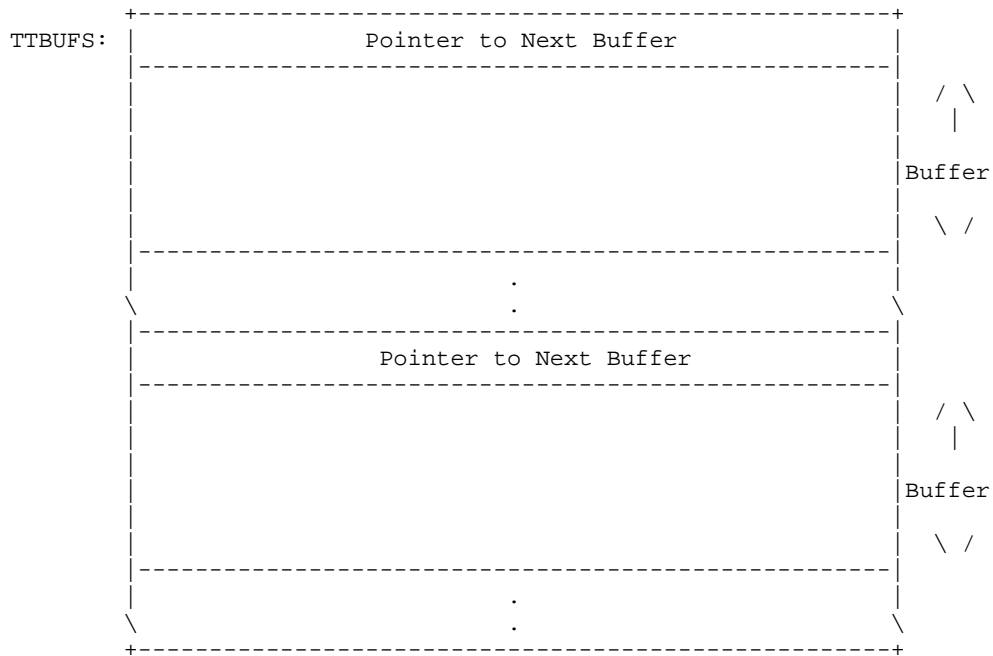
MONITOR TABLES

TTBUFS

Teletype Buffers. This storage area contains the input and output buffers for each line (TTY and PTY) on the system. Input and output pointers to each buffer are kept in the line's dynamic data block. These buffers are fixed length and are assigned on demand. When there is no character activity, the buffers are deassigned.

Defined in: STG

Format



NOTE

The free buffers are linked and are pointed to by TTFREB.

MONITOR TABLES

TTCSAD

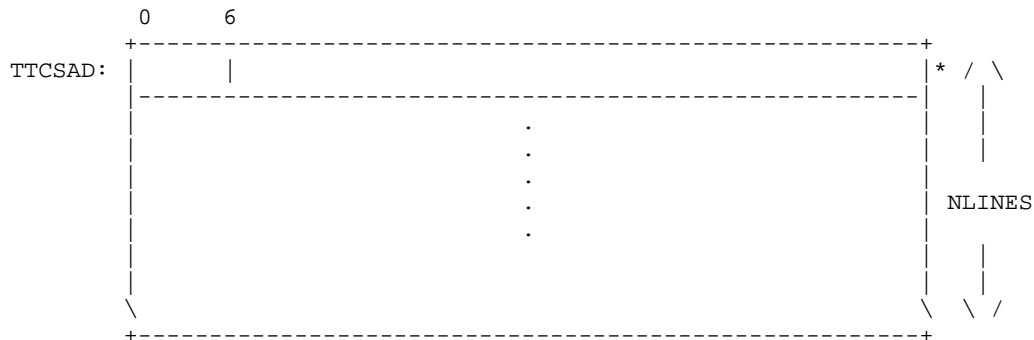
Terminal Call Special Request Address Table. This resident table is used to dispatch to a scheduler routine for a special line request.

Special line requests are made when the DTEQ routine is unable to obtain space for a packet and cannot block to wait for the space. (i.e. process is NOSKED, or request made at interrupt or scheduler level). A special line request is made so that a packet will be queued later by SCHED. (See Table, TTCSTM).

Defined in: STG

Index: Line Number

Format



Bit	Routine	Meaning
0	TTTOBL	Turn on line
1	TTSMIO	TTMSG action
2	TTCOF	Carrier off check
3	TTCO1	Carrier on action
4	DZHV2	Hang up DZ line
5	NTYCOF	Carrier off action
6	CKSALL	Unhang stuck TTMSG line
7	CKNOIS	Noisy line check
8-35		Reserved for future use

MONITOR TABLES

TTSPWD

Terminal Speed Word Table. This resident table contains the terminal speeds for each terminal.

Defined in: STG

Index: Line number

Format

TTSPWD:	TTISP Input Speed	TTOSP Output Speed	/ \
	.		
	.		
	.		NLINES
	.		
	.		
	.		/ \

MONITOR TABLES
TTSTAT (Cont.)

TT%NUM	12	TTNUM	Line does not want nonprivileged TTMSG's
	14-17	TTYSTY	Line type which yields the offset into the TTLINV table
	18-19	TTNOI	Count of noise characters on inactive line
	20-27	TSFMC	Max count for front-end buffer
	28-35	TTFBB	Entry count in Big Buf

MONITOR TABLES

TTY-STORAGE-AREA

Teletype Storage Area. This resident area contains hung and special line information, the Big Buffer, and information about the Big Buffer. (See TT-LINE-DYN-DATA-BLK, TTRACTL, TTBUFS, TTCSAD, TTCSTM, TTLINV, TTSPWD, TTSTAT, and TTXXT Tables).

Defined in: STG

Format

CTYINT:	Unit No. on the .FEDLS Device by which the Front End Knows the CTY	
TCOERR:	TCOUT Sets this if Fails in Scheduler Context	
JORLDF:	Interlock FE Reload Because CTY Hung	
SALLCK:	SENDALL lock	
SALCNT:	Count of Lines Doing SENDALL	
SALBFR:	SENDALL Buffer Address	
TTFREC:	Count of Free Buffers	
TTFREB:	List of Free Buffers	
TTSOQ:	Start Output Queue One Bit Per Line	/ \ NTSQWD
CHSOQ:	CTERM Start Output Queue 1 bit per line	\ / / \ CHSQWD
PTYSTM:	PTY Start Time	\ /
TNETRQ:	Bit Mask for Active Net User Lines	/ \ NTSQWD
TQLNQ:	Bit Matrix for Line Function Queue	\ / / \ NTSQWD

MONITOR TABLES
TTY-STORAGE-AREA (Cont.)

SBBITS:	SBVECT Bit Mask 1 bit per line	\\ / / \ SBBWDS \\ /
TTBIGI:	Input Index into Big Buffer	
TTBIGO:	Output Index into Big Buffer	
TTBIGC:	Char Count in Big Buffer	
TTBBUF:	Big Buffer Storage for all TTY Input Chars. Before Being Placed Into Individual Input Line Buffers in TTBUFS Area	/ \ TTBSIZ = 200 \\ /
TTQCNT:	Count of Special Line Items	
TTCQLN:	Control of Current Line Number	
TTHNGL:	Line Being Examined for Hung	
TTHNGT:	Time at Which Line Will be Defined as Hung	
TTHNGN:	Last Hung Line No. of Unhangs Done	
LINKF:	Linked Output Character if not 0	
IMECHF:	Immediate Echo Output Char if not 0	
TTCHIC:	Input Character in TTCHI	

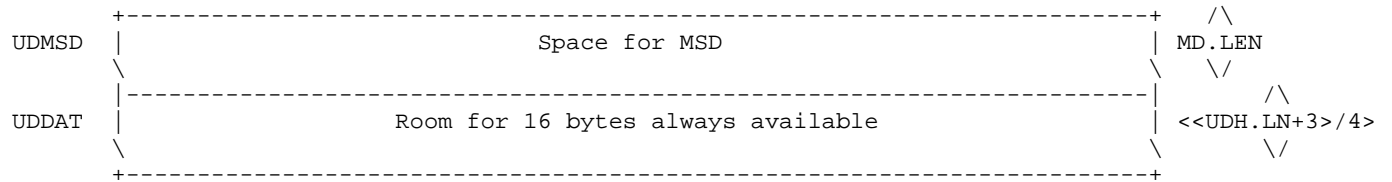
MONITOR TABLES

UD

This is structure UD, the user data area of a DECnet message.

Defined in: D36PAR

Format



MONITOR TABLES

UDB

Unit Data Block. This block, one per unit, contains information about the current activity on the unit.

Defined in: PHYPAR

Format

UDBSTS	Status and Configuration Information	*
UDBST1	Secondary Status Word	*
UDBMBW	Memory Bandwidth Scheduling Information	
UDBODT	Overdue Timer for Seeks and the Like	
UDBERR	Error Recovery Status Word	
UDBERP	Error Reporting Work Area if Nonzero	
UDBDSP	Unit Routine Main Entry Dispatch	
UDBCDB	Secondary CDB Primary CDB	
UDBADR	Secondary Unit Address Primary Unit Address	
UDBAKA	Current CDB Current Chain Address	
UDBVID	Volume ID	
UDBSTR	Unit Within Structure Structure Number	
UDBKDB	Pointer to KDB, if any	
UDBDSH	High Order Drive Serial Number	
UDBDSN	Drive Serial Number	
UDBSEK	Seeks	
UDBRED	Reads (Sectors if Disk, Frames if Tape)	
UDBWRT	Writes (Sectors if Disk, Frames if Tape)	
UDBRCT	Actual read count	
UDBWCT	Actual write count	
UDBRVC	Actual Skip Read (Read Verify) Count	

MONITOR TABLES
 UDB (Cont.)

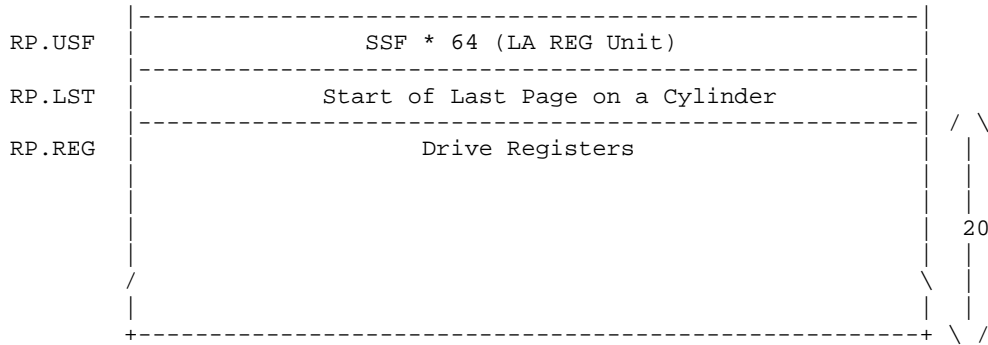
UDBSRE	Soft Read Errors
UDBSWE	Soft Write Errors
UDBHRE	Hard Read Errors
UDBHWE	Hard Write Errors
UDBPS1	Current Cylinder (if Disk), File (if Tape)
UDBSP2	Current Sector (if Disk), Record (if Tape)
UDBPWQ	Position Wait Queue Tail Position Wait Queue Head
UDBTWQ	Transfer Wait Queue Tail Transfer Wait Queue Head
UDBONR	Fork Which Owns This Unit (Maint. Mode)
UDBERC	Current Retry Count
UDBSPE	Soft Positioning Error
UDBHPE	Hard Positioning Error
UDBPNM	Program Name to Log on Error
UDBUDR	User Directory Number to Log on Error
UDBSIZ	Unit Size (Number of Cylinders)
UDBFCT	Seek Fairness Count
UDBCHB	IORB Used by Home Block Check
UDBFCR	Fairness Cnt. for Read Seek Preference
UDBSLV	Slave number if tape
UDBCHR	Characteristics word
UDB2ND	Pointer to UDB for Dynamic Alternate Port
UDBALT	Pointer to UDB for Static Alternate Port
UDBDDP	Device Dependent Parts for MTA or for DSK

MONITOR TABLES
 UDB (Cont.)

Device Dependent Parts for disks:

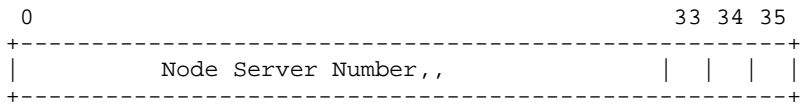
UDBDDP= UDBNAM	HOMNAM SIXBIT/HOM/	
UDBHID:	HOMID SIXBIT/Unit ID/	
UDBHM2:	Unused	
UDBSNM:	HOMSNM SIXBIT/Structure Name/	
UDBLUN:	# of Parks in STR Logical Park # in STR	
UDBMID:	HOMMID Pack Unique Code	
UDBDCF:	Don't care Flags word	
UDBCOD:	HOMCOD 0 CODHOM (707070)	
UDBPDB= UDBSER	Two-word Serial Number	
UDBNPR:	Non-CI Processor Info	
UDBP00:	Node 0 Info	/ \
UDBP01:	Node 1 Info	*
.	.	*
.	.	*
.	.	*
.	.	*
UDBP15:	Node 15 Info	*
UDBDDD= RP.CNI	CONI of RH	
RP.CRC	DATAI of RH Control Register	
RP.DBF	DATAI of RH Data Register	
RP.CYL	Number of Cylinders per unit	
RP.SCL	Number of Sectors per Cylinder	
RP.SSF	Number of Sectors per Surface	
RP.USU	Number of USEC per LA REG Unit	

MONITOR TABLES
UDB (Cont.)



L.RP4 = Length of RP04/5/6/7 UDB

Words UDBP00 through UDBP15 have the following format:



Symbol	Bit	Meaning
UDB%MA	33	Node in maintenance mode
UDB%WA	34	Wire A is good
UDB%WB	35	Wire B is good

MONITOR TABLES
 UDB (Cont.)

Device Dependent Parts for Tapes:

UDBDDP= UDBRNR	Frames Read in NRZJ (Magtape)
UDBRPE	Frames Read in PE
UDBRGC	Frames Read in GCR
UDBRNR	Frames Written in NRZI
UDBWPE	Frames Written in PE
UDBWGC	Frames Written in GCR
UDBDDM= TU6HDN	Hardware-Determined Density
TU6EPS	Error Position
TU6EBP	Error Byte Pointer
TU6EBC	Error Byte Counter
TU6ECL	Tape Cleaner Flag

LU.TM2 = Length of TM02 UDB

UDBPDB through UDBP15 is a copy of the PDB (processor data block) which resides on sector 3 of a disk. It has the same format.

MONITOR TABLES
 UDB (Cont.)



Symbol	Bits	Pointer	Content
US.OFS	0	USOFL	Offline or unsafe
US.CHB	1		Check home blocks before any normal I/O
US.POS	2		Positioning in progress
US.ACT	3		Active
US.BAT	4		Off if bad BAT blocks on this unit
US.BLK	5		Lock bit for this units BAT blocks
US.PGM	6		Dual port switch in (A or B) (RP04,5,6)
US.MAI	7		Unit is in MAINT mode
US.MRQ	8		MAINT mode is requested on this unit
US.BOT	9		Unit is at BOT
US.REW	10		Unit is rewinding
US.WLK	11		Unit is write locked
US.CIP	12		Unit is on a CI port
US.OIR	13		Operator intervention required. Set at interrupt level, checked at SCHED.
US.OMS	14		Once a minute message to operator. Used in conjunction with US.OIR
US.PRQ	15		Positioning required on this unit
US.TAP	16		Tape type device
US.PSI	17		PSI online/offline/rewind done transition occurred
US.DSK	18		Disk type device
US.OR1	19		1st overdue rewind timer bit
US.OR2	20		2nd overdue rewind timer bit
US.2PT	21		Drive may be dual-ported between systems
US.TPD	22		Disk is offline to prevent three ports
US.BDK	23		CI broadcast needed
US.RTY	24-26		Retry count field
US.CIA	27		CI available
US.UNA	28		Device unavailable (like 16 bit disk)
	31-35	USTYP	Unit Type

MONITOR TABLES
 UDB (Cont.)

Type Code for USTYP

Symbol	Code	Unit	Symbol	Code	Unit
.UTRP4	1	RP04	.UTT70	17	TU70
.UTRS4	2	RS04	.UTT71	20	TU71
.UTT45	3	TU45	.UTT72	21	TU72
.UTTM2	4	TM02 (as unit)	.UTT73	22	TU7X
.UTRP5	5	RP05	.UTDXB	23	DX20B for RP20 disks
.UTRP6	6	RP06	.UTP20	24	RP20
.UTRP7	7	RP07	.UTNOD	25	CI node w/o MSCP server
.UTRP8	10	RP08	.UTHSC	26	HSC50
.UTRM3	11	RM03	.UTR80	27	RA80
.UTTM3	12	TM03	.UTR81	30	RA81
.UTT77	13	TU77	.UTR60	31	RA60
.UTTM7	14	TM78	.UTR82	32	RA82 (future)
.UTT78	15	TU78	.UTR62	33	RA62 (future)
.UTDXA	16	DX20A for tapes	.UTTA7	34	TA78

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
UDBST1															

Symbol	Bits	Content
U1.OFS	0	Forced offline dual ported disk
U1.FED	1	UDB ported to front-end
U1.DCD	2	Disk with don't care set
U1.DCU	3	UDB don't care set
U1.HBR	4	Home block read in progress
U1.PDW	5	PDW write in progress
U1.STC	6	Status change while reading home blocks therefore we must do it again
U1.DCR	7	Don't care about this dual ported disk (U1.DCD!U1.DCU composite)
U1.PHB	8	Primary Home block bad
U1.SHB	9	Secondary home block bad
U1.PDR	10	PDV read in progress
U1.VV	11	Volume valid
U1.ODT	12	Overdue IORB Indicator
U1.SOF	13	Structure timer is triggered
U1.NOL	14	Unit not online; wait while searching for login structure

MONITOR TABLES

UDS

Unit Dispatch Service Routine Table. This table, one per unit type, contains vectored addresses to unit dependent functions, and is given in its generalized form. The specific unit dispatch tables are RP4DSP (in PHYP4) for the disk device, and TM2DSP (in PHYM2) for the magtape device. See PHYPAR for definitions of arguments given and returned on calls to these unit routines.

Defined in: PHYPAR

Format

UDSINI=0	Initialize
UDSSIO=1	Start I/O on an IORB, skips if O.K.
UDSINT=2	Interrupt Routine (called on interrupts for XFER done)
UDSERR=3	Initiate Error Retry (skips if no more retrys)
UDSHNG=4	Hung Reset (called from TIMER to reset hung devices)
UDSCNV=5	Convert Unit Linear Address to CYL, SURF, SEC
UDSLTM=6	Return Latency or Best Request
UDSPOS=7	Start Positioning on IORB (skips if O.K.)
UDSATN=10	Attention Interrupt
UDSPRQ=11	Skip if Positioning Required
UDSSTK=12	Stack Second Command, Skip if OK
UDSEXT=13	Check Legality of Unit, Skip if Existant
UDSCCK=14	Check for Halted Microcode in Controllers
UDSPRL=15	Release Port

MONITOR TABLES

UE

This is an NI% user argument block (UN) extension, used for linking message buffers on and off the LAT message queues.

Defined in: LATSrv

Format

UELWO	Queue Link Word for linking buffers to CB Qs
UELW1	Queue Link Word for linking buffers to NI Qs

MONITOR TABLES

UN

UN is the common argument block passed by all users of NISRV, the Network Interconnect Server.

Defined in: NIPAR

Format

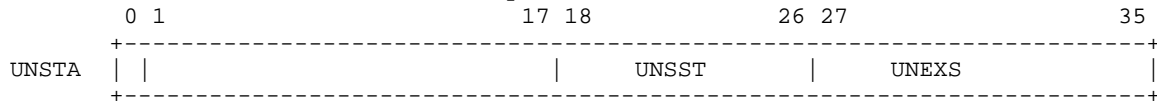
	0	2	3	4	5	6	7	8	
	-----+-----								
									UNPRO Protocol type
	-----+-----								*
	UNTDR Time Domain Reflectometry value				UNPMS PI level mask				
UNPID	Portal ID								
UNUID	User's ID for this portal								
UNRID	Request ID								
UNSTA	Channel status								*
UNCBA	Call back address (NU.OPN only)								
UNBFA	Buffer address								\ / 2
UNBSZ	Buffer size								\ / 2
UNSAD	Source Ethernet address								\ / 2
UNDAD	Destination Ethernet address								\ / 2
UNSPI	Secondary portal ID								\ / 2
UNCAR	Current Ethernet address								\ / 2
UNHAD	Hardware address								\ / 2
	-----+-----								
	UNOXM # Outstanding transmits				UNORC # Outstanding receives				
	-----+-----								

MONITOR TABLES
UN (Cont.)

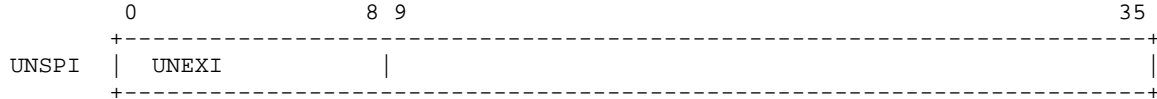
Field	Bit	Meaning
UNCHN	0-2	Storage for the NI channel number
UNPAD	#3	Use padding for this portal (NU.OPN only)
UNZRO	#4	Zero counters after reading
UNADS	5-6	Address space of xmit or rcv buffer
		UNA.EV=0 Exec virtual
		UNA.UV=1 User virtual
		UNA.PH=2 Physical

UNPTR #7 UNPAD contains a byte pointer

UNRSP #8 Response desired



Symbol	Bit	Contents
UNRUN	0-1	Channel is running; should be 1b0
UNSSST	18-26	Channel substate
UNEXS	27-35	Channel external state



Symbol	Bit	Contents
UNEXI	0-8	External portal ID

MONITOR TABLES

UPT

User Process Table. A one page User Process Table is associated with the process controller and with each fork in the system. (Those associated with forks may be swapped out with the fork.) However, there is only one UPT known to the hardware/firmware at any one time. The UPT known is the one whose address is pointed to by the hardware User Base Register (UBR), which is set-up when a process is chosen to run. UPT contains the dispatch address for process events (i.e., traps) and the user's section map table.

Defined in: STG

Format

HWPTA:	-----		
	Available to Software		

UPTPPM= HWPTA+400\	Reserved		/ \

	Address of LUUO Block		\ /
UPTTPI= KLLUUO=HWPTA+420	-----		
UPTOVI= HWPTA+421	User Arith. Overflow Trap Instruction		

	User Stack Overflow Trap Instruction		

	User Trap 3 Trap Instruction		

KIMUFL= FFL= HWPTA+424	MUO flags	MUO OP-AC	

KIMUPC= FPC= HWPTA+425	MUO Old PC		

KIMUEF= HWPTA+426	E of MUO		

KIMPCW= UPTPCW=HWPTA+427	MUO Process Context		

MONITOR TABLES
UPT (Cont.)

UPTDSP= HWPTA+430	Kernel No Trap MUUO New PC (word)
	Kernel Trap MUUO New PC (word)
	Supervisor No Trap MUUO New PC (word)
	Supervisor Trap MUUO New PC (word)
	Concealed No Trap MUUO New PC (word)
	Concealed Trap MUUO New PC (word)
	Public No Trap MUUO New PC (word)
	Public Trap MUUO New PC (word)
HWPTA+440	Reserved for software
UPTPFW= TRAPSO=HWPTA+500	Page Fail Word
UPTPFL= TRAPFL=HWPTA+501	Page Fail Flags
UPTPFO= TRAPPC=HWPTA+502	Page Fail Old PC
UPTPFN= HWPTA+503	Page Fail New PC
HWPTA+504 HWPTA+505	User Process Execution Time
HWPTA+506 HWPTA+507	User Memory Reference Count
HWPTA+510	

MONITOR TABLES
UPT (Cont.)

USSPTB= HWPTA+520	User Super Section Table
USECTB= HWPTA+540	User Section 0 Pointer User Section 1 Pointer . . .
HWPTA+577\	User Section 37 Pointer \
HWPTA+600	Available to software
HWPTA+777\	\

Note: Approximately 1/4 of the UPT is used for hardware cells, leaving the rest available to software. The monitor currently uses this area to house the first page of the PSB table. (See PSB table description.)

MONITOR TABLES

USER-PG-MAP-TBL

User Page Map Table. This 512-word swappable table, holds or points to other tables that hold all of the mapping information needed by the firmware to translate user mode virtual addresses in a given section into physical memory addresses. It is pointed to by an entry in the forks' section table in its User Process Table (UPT). (See UPT table description.)

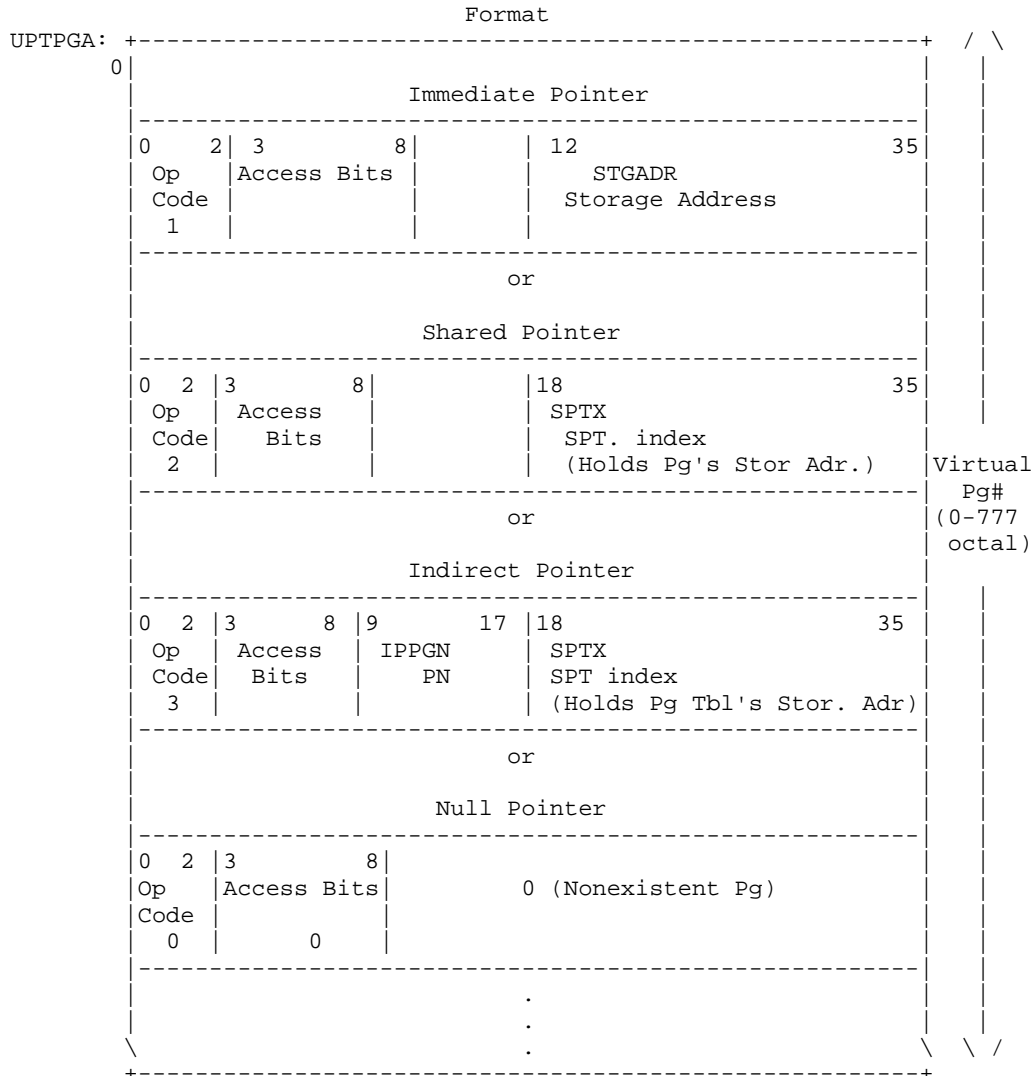
The User Page Map, indexed by a 9 bit virtual page number (1), contains either the storage address for the virtual page if the page exists (immediate pointer) or a pointer to where the storage address resides in another table (shared or indirect pointer). The storage address can be a memory, swapping area, or disk page address.

If the Storage address for the virtual page referenced by the process contains a memory page address (i.e., Storage Address Bits <12-17>=0), then the microcode, after copying this translation information along with the page's access bits into the CPU's Hardware Page Table (2), concatenates this memory page number with the index into the page to compose the complete physical address.

If the storage address for the virtual page referenced does not contain a memory address (i.e., Storage Address Bits <12-17> not equal to 0), or the page is non-existent (i.e., Null Pointer word) or the page is being illegally accessed, the microcode will cause a page trap to the User Process Table (UPT). The monitor is then invoked to perform the analysis and resolution of the trap condition.

Defined in: PROLOG

MONITOR TABLES
USER-PG-MAP-TBL (Cont.)

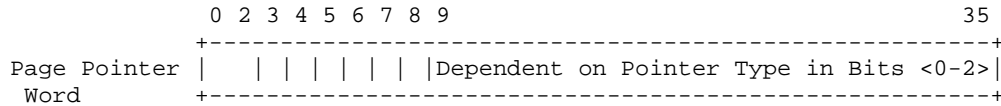


* UPTPGA is the monitor's symbol used when it wishes to reference the current user's page map table for section 0.

- (1) A fork's virtual 18-bit address within a section is viewed as an address within a 512-word page, (i.e., virtual page number - 9 bits), Index into page 9-bits.

MONITOR TABLES
USER-PG-MAP-TBL (Cont.)

(2) This 512-word table is examined first by the microcode for the virtual page translation information. If not there, it then goes to the fork's UPTA in memory.



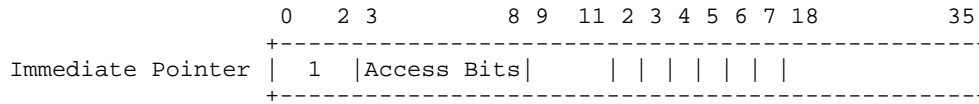
Symbol	Bits	Meaning
PTRCOD	0-2	Operation Code for the page pointer type IMMCOD = 1 Immediate Pointer SHRCOD = 2 Share Pointer INDCOD = 3 Indirect
PTPUB	3	Public Bit
PTWR	4	Write Access
PTKEEP	5	'Keep' Bit*
PTCACH	6	Cache Bit
PTCPY	7	Copy-on-Write (Software Only)
PTSECM	8	Section is mapped
PTLOK	9	Page is Locked (Immediate Pointer only)

* Once the Keep bit is set in the hardware page table, the entry is kept until one of the following conditions occurs:

1. DATAO PAG is executed with bit 3 reset in E
2. CONO PAG is executed
3. A reference to another section causes a refill that overwrites the entry.

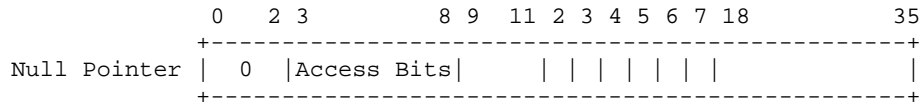
MONITOR TABLES
USER-PG-MAP-TBL (Cont.)

Pointer Types:

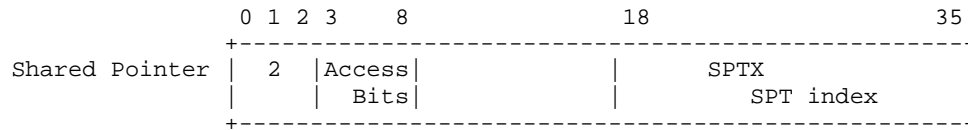


Symbol	Bits	Pointer	Meaning
	0-8	See above	
		STORAGE ADDRESS	
	12-35	STGADR	Storage address (Interpretation follows)
NCORTM	12-17		Non-Core Test Mask yielding type of storage. Bits <12-17>=0 => Bits <18-35>=Memory Pg Adr. Bits <12-17> not equal 0 => Bits <18-35>=Drum/DSK Adr.
DSKAB	14		Storage address is a disk address
DSKNB	15		Temporary bit used with DSKAB to say that disk address is newly assigned.
DRMAB	16		Storage address is a drum address
DRMOB	17		Used with DRMAB to indicate that the swapping area has overflowed to the disk file system. (Since TOPS-20 currently uses only the disk file system for swapping, a drum storage address will always have bits 16_17 set.)
UAABC	17&35		Temporary bit used by the monitor's page trap handler when a copy-on-write page trap has occurred. If the page to be copied is a drum address, it will be faulted in before these bits are used, avoiding conflict over bit 17. These bits will signify to a lower level routine, SWPIN, that the page just gotten from the free list has no backup address and that it is to get a copy of another page.

MONITOR TABLES
USER-PG-MAP-TBL (Cont.)

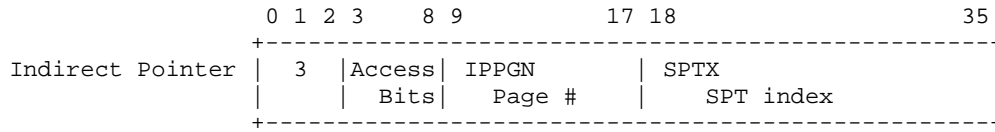


Symbol	Bits	Meaning
	0-8	These bits will have a value of 0 for the Null Pointer case.
UAAB	17	Temporary bit used by the monitor's page trap handler to say that the page has no assigned backup address on disk/drum.



Bits	Pointer	Meaning
0-8		See Above
18-35	SPTX	The SPT index is used to obtain from the SPT, the page's storage address.

MONITOR TABLES
USER-PG-MAP-TBL (Cont.)



Bits	Pointer	Meaning
0-8		See Above
9-17	IPPGN	Page # whose value is used as an offset into the Page Table (pointed to by the SPT table address plus the SPT index in bits <18-35>) to obtain the page's translation information.
18-35	SPTX	The SPT index is used to obtain from the SPT the page table's storage address. The table's address plus the offset specified in bits <9-17> holds the virtual page's translation information.

MONITOR TABLES

VANA

Vote Answer Area. The VANA is used by routines which compose the reply to an incoming vote (Request Message Set). VANA has the same format as VRQA with the exception that "Assorted Reserved Locations" is not used.

Defined in: ENQSRV

VANA:	+-----+ Header Area (Not Used) -----			
.MHUDA	EBDOFF .MHUDA offset to data start	EBPKTN Total # msg	EBPNUM This msg #	
.EBFFW	EBFLAG Flags	EBCFSC Function	EBUNIQ Unique code for message set	
.EBEOH	EBNODE CI node number	EBFTYP Opcode	EBTOTT User words for this packet	
.EBSOD	EBQFLG ENQFLG	Reserved	EBTYPE OFN or -2 or -3	
.EBFL1	EBSTRN Structure name in Sixbit			
.EBFL2	EBADDR Storage Address (from SPTH)			
.EBGHV	EBGRP Group number	EBHASH Hash value for Lock-Block		
.EBWCT	EBMBWS # of words in Mask Block	EBTSWS # of words in Text String		
.EBSMB	Mask Block			/ \ 15 Words
	ASCIZ String or 50000,,0 + User Code			/ \ 50 Words \

MONITOR TABLES
VANA (Cont.)

-----		/ \
\		\ 3
\	Additional Data Area	\ Words
\		\ \ /
-----		+

MONITOR TABLES

VN

VN contains the DECnet NSP and Routing Version number words.

Defined in: D36PAR

Format

0	7 8	15 16	23
VNVER Version number	VNECO ECO number	VNUCO User ECO number	

MONITOR TABLES

VRB

Vote Request Buffer. VRB is used to send the reply back to the node which issued the vote request. All replies only require a single SCA message buffer.

Defined in: ENQSRV

	Port Header and SCA Header		
.MHUDA	EBDOFF .MHUDA offset to data start	EBPKTN Total # msg	EBPNUM This msg #
.EBFFW	EBFLAG Flags	EBCFSC Function	EBUNIQ Unique code for message set
.EBEOH	EBNODE CI node number	EBFTYP Opcode	EBTOTT User words for this packet
.EBSOD	EBQFLG ENQFLG	Reserved	EBTYPE OFN or -2 or -3
.EBFL1	EBSTRN Structure name in Sixbit		
.EBFL2	EBADDR Storage Address (from SPTH)		
.EBGHV	EBGRP Group number	EBHASH Hash value for Lock-Block	
.EBWCT	EBMBWS # of words in Mask Block	EBTSWS # of words in Text String	
.EBAD1	Additional Data word 1		
.EBAD2	Additional Data word 2		
.EBAD3	Additional Data word 3		

MONITOR TABLES

VRPA

Vote Reply Area. VRPA is used to collect the replies to the vote request.

Defined in: ENQSRV

VRPA:	-----		
.VPWD0	VPFLAG Flags	Reserved	VPUNIQ Unique code for message set
.VPAD1	Additional Data word 1		
.VPAD2	Additional Data word 2		
.VPAD3	Additional Data word 3		

.VPWD0	VPFLAG Flags	Reserved	VPUNIQ Unique code for message set

Contents of VPFLAG:

<u>Symbol</u>	<u>Bits</u>	<u>Meaning</u>
VPNOV	0	No vote required for this lock
VPNO	1	A "NO" reply was received from another node
VPRTY	2	A cluster state change occurred

MONITOR TABLES

VRQA

Vote Request Area. VRQA is used by Interface Routines to compose the Request Message Set. The ten words of header exist so that the offsets exactly match the SCA message buffer in the Request Message Set.

Defined in: ENQSRV

VRQA:	Assorted Reserved Locations		
.MHUDA	EBDOFF .MHUDA offset to data start	EBPKTN Total # msg	EBPNUM This msg #
.EBFFW	EBFLAG Flags	EBCFSC Function	EBUNIQ Unique code for message set
.EBEOH	EBNODE CI node number	EBFTYP Opcode	EBTOTT User words for this packet
.EBSOD	EBQFLG ENQFLG	Reserved	EBTYPE OFN or -2 or -3
.EBFL1	EBSTRN Structure name in Sixbit		
.EBFL2	EBADDR Storage Address (from SPTH)		
.EBGHV	EBGRP Group number	EBHASH Hash value for Lock-Block	
.EBWCT	EBMBWS # of words in Mask Block	EBTSWS # of words in Text String	
.EBSMB	Mask Block		\ / \ \ 15 \ Words
	ASCIZ String or 500000,,0 + User Code		\ / \ \ 50 \ Words \ \ \ /

MONITOR TABLES
VRQA (Cont.)

```

|-----| /|\
| \      \ 3
| \      \ Words
| \      \ \|/
+-----+

```

```

|-----|
| EBFLAG   | EBCFSC | EBUNIQ
| .EBFFW   | Flags   | Function| Unique code for message set
|-----|

```

Contents of EBFLAG:

<u>Symbol</u>	<u>Bits</u>	<u>Meaning</u>
EQNOV	0	No vote required for this lock
EQNO	1	A "NO" reply was received from another node
EQANS	2	This is a reply to a vote request
EQBLN	3	Ignore level numbers for this vote
EQTXT	4	The lock is described by a text string

```

+-----+
| \      \
| \      \
| \      \ Assorted Reserved Locations
| \      \
| \      \
+-----+

```

Contents of Port and SCA Header Section of VRQA:

<u>Symbol</u>	<u>Location</u>	<u>Meaning</u>
VOTUNI	VRQA+0	Vote Unique Code
VOTVCT	VRQA+1	The count of outstanding replies
VRBADR	VRQA+2	The address of the vote reply buffer
ASMPTR	VRQA+3	Offset into VRQA used by EQMSG
RPLYND	VRQA+4	CFS host index to send reply to
EQLBLT	VRQA+5	Lock-Block Action List
EQLBCT	VRQA+6	Count of blocks on action list
EQCSTF	VRQA+7	Cluster state change flag

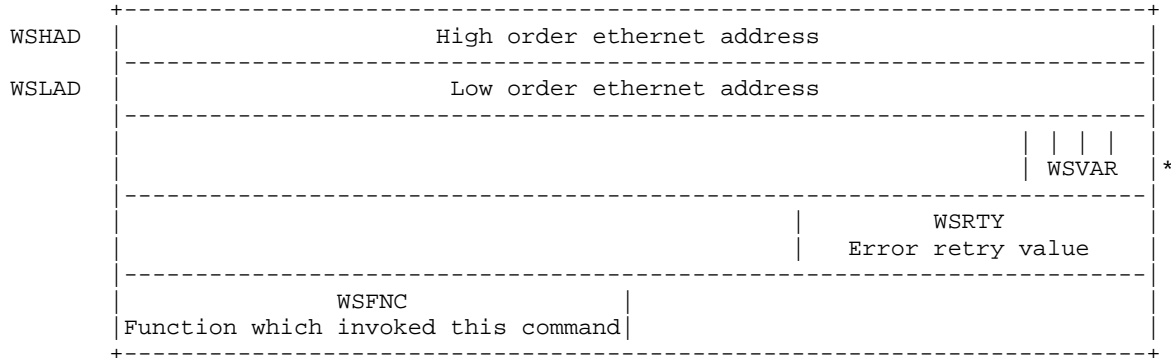
MONITOR TABLES

WS

WS defines the format for the NI Write Station Info command.

Defined in: PHYKNI

Format



For field WSVAR(32-35):

- WSCRC 32 Allow receipt of frames with CRC errors
- WSPMC 33 Promiscious multicast mode
- WSH40 34 H4000 mode
- WSPRM 35 Promiscious mode

MONITOR TABLES

XR

The XR structure defines the format of the queue header for NI portal block transmit and receive queues (see NI Portal Block -- PR).

Defined in: NIUSR

Format

Queue headers

XRQUH	Pointer to first item
XRQUE	Pointer to last item

APPENDIX A
LISTING BY MONITOR MODULES

This appendix lists the TOPS-20 modules and the monitor tables defined in each.

Defined in	Table Title
APRSRV	SCHED-Variables
CFSPAR	CFS Resource Block
CFSSRV	CFS Voter Message Buffer
CLULSN	CLUHST CLUSTS
CLUPAR	CLUDGR Message Buffer
CSTnX	CSTnX
CTERMD	CA CH-CTERMD
D36COM	CH-D36COM FB
D36PAR	AA AJ BP CT DL EC EL

LISTING BY MONITOR MODULES

	ES
	ET
	FA
	IA
	IB
	KB
	LI
	MB
	MD-D36PAR
	NE
	NF
	NM
	NX
	OA
	PA
	QA
	QH-D36PAR
	QP
	RC-D36PAR
	RM
	SA
	SJ
	SL
	SS
	TR
	UD
	VN
DNADLL	LT
	QB
DSKALC	HOM
ENQPAR	ENQ/DEQ-LOCK-BLOCK
	Q-BLOCK
ENQSRV	VANA
	VRB
	VRPA
	VRQA
FREE	FREESPACE BLOCK HEADER/TRAILER
	FREESPACE DESCRIPTOR
	FREESPACE-DESCRIPTOR INDEX TABLE
	FREESPACE HISTORY RECORD
IPCF	IPCF-MESSAGE-HEADER
	IPCF-PID-HEADER
IPCIDV	PT-IPCIDV

LISTING BY MONITOR MODULES

LATSRV	AC CB-LATSRV CC-LATSRV GB HC HN QL SB-LATSRV UE
LLINKS	AK LK LS NN RT SG-LLINKS SV-LLINKS
LLMOP	CB-LLMOP CD CH-LLMOP IM LB LD LH RB RI SV-LLMOP
LOGNAM	LOGICAL-NAME-DEFINITION
MONSYM	DEVCH1 FDB INIDVT
NIPAR	CC-NIPAR MD-NIPAR PC UN
NISRV	PR-NISRV
NIUSR	BR PI PL PR-NIUSR XR
NRTSRV	NR

LISTING BY MONITOR MODULES

NTMAN	DNA Parameter and Counter Data Base NT PRMP
PHYKLP	RIDSTS (Request-ID Status)
PHYKNI	BD C1 CM FL MT PB-PHYKNI PS-PHYKNI PT-PHYKNI QE QH-PHYKNI RC-PHYKNI RD RS SB-PHYKNI SN WS
PHYM2	KDB
PHYMSC	CICMST CIDATA MSCCID MSCINT MSCOLD MSCTMO
PHYMVR	MSCP Server Command Header MSCP SERVER STORAGE SCDB
PHYP2	KDB
PHYPAR	CDB CDBCAD CDS IORB KDB UDB UDS
PHYSIO	DSKSIZ DSKUTP NAMUTP

LISTING BY MONITOR MODULES

PROLOG	BAT DEV`DTB DIRECTORY DIRECTORY CACHE DST FDB FKCNO FKSWP IDXFIL JOBRTL SPT SPTD SPTH SPTO SPTO2 USER-PG-MAP-TBL
SCAMPI	CI Related Variables SBLIST (System Block List)
SCAPAR	Connect ID Format KDB PCB (Port Control Block) SCA Connection Block SCA Ring Buffer Entry System Block
SCHED	SCHED-VARIABLES
SCLINK	BU CF LN NO-SCLINK
SCPAR	CB-SCPAR MN NO-SCPAR PB-SCPAR PS-SCPAR PT-SCPAR SB-SCPAR ST
SERCOD	SYSERR-STORAGE-AREA
STG	ALOC1 ALOC2 BTB BUG-HLT/CHK/INF-STORAGE-AREA CDBCAD

LISTING BY MONITOR MODULES

CDR-STORAGE-AREA
CFHSHT
CFHSTS
CFNNAM
CFSHNM
CFSHST
CFSOFN
CFS Resource Block
CFSSTR
CHNTAB
CLASS-SCHEDULER-STORAGE
CST0
CST1
CST2
CST3
CST5
DEVCH1
DEVCH2
DEVCHR
DEVDSP
DEVNAM
DEVUNT
DIRECTORY CACHE
DRMBBT
DRMCNT
DSKSZ`n
DST
DTE-STORAGE-AREA
DTEDTV
ENQ/DEQ - STORAGE AREA
EPT
EXEC-PG-MAP-TBL
FE-STORAGE-AREA
FKBSPW
FKCNO
FKINT
FKINTB
FKJOB
FKJTQ
FKNBW
FKNR
FKPGS
FKPGST
FKPT
FKQ1
FKQ2
FKSTA2
FKSTAT
FKSWP
FKTIME

LISTING BY MONITOR MODULES

FKWSP
GTOKPR
HOME
HOMTAB
INIDEV
INIDV1
INIDVT
IPCF-STORAGE-AREA
JOB AREA
JOBDIR
JOBNAM
JOBPNM
JOBPT
JOBRT
JOBRTL
JSB
LOGICAL-NAMES-LIST
LPT-STORAGE-AREA
MONITOR-STATISTICS
MSCP SERVER STORAGE
MTA-STORAGE-AREA
MTCUTB
NTCTAB
OFNLEN
PHYUNT
PIDCNT
PIDTBL
PROCESS STORAGE AREA
PSB
PTYSTS
RES-FREE-SPACE
SCDBTB
SCHED-VARIABLES
SCOUNT
SDB
SNAMES
SNBLKS
SPFLTS
SPT
SPTD
SPTH
SPTO
SPTO2
SPTO3
SPTO4
SSIZE
STIMES
STRTAB
SWAP-FREE-SPACE (NON-EXTENDED)
SYNMTB

LISTING BY MONITOR MODULES

SYS-STARTUP-VECTORS
SYSERR-STORAGE-AREA
TTACTL
TTBUFS
TTCSAD
TTCSTM
TTSPWD
TTSTAT
TTY-STORAGE-AREA
UDIORB
UPT

TTYDEF

TT-LINE-DYN-DATA-BLK