

(1)	43
(1)	130
(1)	182
(1)	258
(1)	304
(1)	345
(1)	415

HISTORY	; DETAILED
DECLARATIONS	
MEMORY MANAGEMENT DATA BASE	
SYSTEM HEADER AND PAGE TABLE	
SYSTEM PAGE TABLE	
READ-ONLY PATCH AREAS	
OTHER GLOBAL LABELS	

MD
PS

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0000 1      .IF      NDF,PRMSW      ;
0000 2      .TITLE  MDAf          ;MEMORY MANAGEMENT DATA BASE
0000 3      .IFF
0000 4      .TITLE  SPTSKEl - SKELETON SYSTEM PAGE TABLE
0000 5      .ENDC
0000 6      .IDENT  'V04-000'
0000 7
0000 8      :*****
0000 9      :*
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0000 27     :*
0000 28     :*
0000 29     :*****
0000 30
0000 31     :++
0000 32     : FACILITY:      EXECUTIVE, MEMORY MANAGEMENT DATA BASE
0000 33
0000 34     : ABSTRACT:      MDAf ALLOCATES AND INITIALIZES THE STORAGE FOR THE
0000 35     :                   MEMORY MANAGEMENT DATA BASES. IT IS ASSEMBLED IN TWO FORMS
0000 36     :                   ONE TO PRODUCE A SKELETON SPT AND THE OTHER TO PRODUCE THE SYSTEM
0000 37     :                   MEMORY MANAGEMENT DATA STRUCTURES.
0000 38
0000 39     : ENVIRONMENT:
0000 40
0000 41     : --
0000 42
0000 43     : .SBTTL  HISTORY      ; DETAILED
0000 44
0000 45     : AUTHOR: RICHARD I. HUSTVEDT , CREATION DATE: 18-MAY-1978
0000 46
0000 47     : MODIFIED BY:
0000 48
0000 49     : V03-007 WHM0001      Bill Matthews      02-May-1984
0000 50     :                   Make PAT$A NONPGD CODE_END global for use by SYSBOOT to
0000 51     :                   initial MMG$GL_PGDCOD.
0000 52
0000 53     : V03-006 LJK0273      Lawrence J. Kenah   10-Apr-1984
0000 54     :                   Only set a single page to UREW to hold file system statistics.
0000 55     :                   Add cells to hold base addresses of various loadable images.
0000 56     :                   Remove cells added for MWAIT measurements.
0000 57

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MD
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MA

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0000 58 : V03-005 RLRSCORP Robert L. Rappaport 17-Feb-1984
0000 59 : Added EX$GL_CPUNODSP, a pointer to the virtual address
0000 60 : that maps node private space on a BI. For a BI processor,
0000 61 : such as KDZ-11, this allows access to processor internal
0000 62 : registers. Also added EX$GQ_GBLHOOK1 - EX$GQ_GBLHOOKA,
0000 63 : global symbols each of which defines a quadword of data.
0000 64 : These can be used as hooks to facilitate adding support for
0000 65 : new hardware between major releases. Also add three more
0000 66 : pages of extra patch area for a total of six such pages.
0000 67 :
0000 68 : V03-004 KPL0101 Peter Lieberwirth 1-Feb-1984
0000 69 : I was talked into changing CONFREG1 to CONFREGL, since
0000 70 : CONFREGL is a more descriptive name.
0000 71 :
0000 72 : V03-003 KPL0100 Peter Lieberwirth 30-Jan-1984
0000 73 : Add cell to point to new CONFREG array, called CONFREG1.
0000 74 : Eventually, all references in the system to CONFREG will
0000 75 : be changed to refer to the new format CONFREG1. At that
0000 76 : time, the extra CONFREG cell can be deleted.
0000 77 :
0000 78 : V03-002 SSA0005 Stan Amway 10-Jan-1984
0000 79 : Reserved 148 bytes in non-paged data patch area for
0000 80 : special MWAIT counters being maintained by code in
0000 81 : module MUTEX. This change will be backed out before
0000 82 : V4 release.
0000 83 :
0000 84 : V03-001 LJK0159 Lawrence J. Kenah 9-Apr-1982
0000 85 : Include holes caused by page alignment into patch areas.
0000 86 : Change names of PSECTs and global labels to include
0000 87 : string "PATCH".
0000 88 :
0000 89 : V02-013 LJK0095 Lawrence J. Kenah 3-Dec-1981
0000 90 : Move definition of label that marks boundary between
0000 91 : nonpaged and pageable executive to SYSPARAM so that
0000 92 : cell containing the boundary is accessible to SYSBOOT.
0000 93 :
0000 94 : V02-012 LJK0078 Lawrence J. Kenah 6-Nov-1981
0000 95 : Increase size of read-only (pageable and nonpaged) patch
0000 96 : areas to two pages each. Add two more pages that can be
0000 97 : used for either pageable or nonpaged patch area.
0000 98 :
0000 99 : V02-011 LJK0074 Lawrence J. Kenah 6-Oct-1981
0000 100 : Point MMG$GL_RMSBASE to procedure that always returns success.
0000 101 : This prevents anomalous system failures when RMS is called
0000 102 : inadvertently before the RMS image is mapped.
0000 103 :
0000 104 : V02-010 WMC0002 Wayne Cardoza 20-Aug-1981
0000 105 : Add MMG$GL_GBLPAGFIL to limit page file utilization for global
0000 106 : sections with page file backing store.
0000 107 :
0000 108 : V02-009 WMC0001 Wayne Cardoza 12-Aug-1981
0000 109 : Add MMG$GL_GBLSECFND to assist in finding section tables for
0000 110 : global sections with page file backing store.
0000 111 :
0000 112 : V02-008 HRJ0023 Herb Jacobs 06-Jul-1981
0000 113 : Indicate system process doesn't need swap space.
0000 114 :

```

0000	115	:	V02-007	LJK0030	Lawrence J. Kenah	28-May-1981
0000	116	:			Add global labels for three arrays used by INIT for opcode	
0000	117	:			fixup that occurs at bootstrap time.	
0000	118	:				
0000	119	:	V02-006	HRJ0021	Herb Jacobs	10-May-1981
0000	120	:			Fix historic reference to WSNEXT-1 to WSNEXT.	
0000	121	:				
0000	122	:	V02-005	TCM0001	Trudy C. Matthews	8-May-1981
0000	123	:			Delete the definition of MMGSAL_SBICONF array. Instead add	
0000	124	:			EXESGL_CONFREG and MMGSGL_SBICONF, which hold the addresses	
0000	125	:			of the arrays (which are allocated in pool).	
0000	126	:			Add definition of EXESGL_NUMNEXUS field, to hold number of	
0000	127	:			nexuses present on the system.	
0000	128	:				

```

0000 130      .SBTTL  DECLARATIONS
0000 131
0000 132      :
0000 133      : INCLUDE FILES:
0000 134      :
0000 135      $DYNDEF      ;DYNAMIC DATA STRUCTURE TYPE DEFINITIONS
0000 136      $PHDDEF     ;DEFINE PROCESS HEADER
0000 137      $PTEDEF     ;PAGE TABLE ENTRY DEFINITIONS
0000 138      $$SECDEF    ;PSTE/GSTE DEFINITIONS
0000 139      $$SGNDEF    ;DEFINE SYSGEN VALUES
0000 140      $WSLDEF     ;WORKING SET LIST DEFINITIONS
0000 141      :
0000 142      : EXTERNAL SYMBOLS:
0000 143      :
0000 144      :
0000 145      :
0000 146      : MACROS:
0000 147      :
0000 148      .MACRO  SYSPTE  NUM,ACCESS,PFN=0
0000 149      .IF      DF,PRMSW
0000 150      .PSECT  $$$065
0000 151      .ENDC
0000 152      .REPT   NUM
0000 153      .IF      DF,PRMSW
0000 154      .LONG   PTESM_VALID!PTESC_'ACCESS
0000 155      .ENDC
0000 156      PFN...=PFN...+1
0000 157      SPTLEN=SPTLEN+1
0000 158      .ENDR
0000 159      .ENDM   SYSPTE
0000 160
0000 161      .MACRO  PHD      SYM
0000 162      .=SAV...+PHDS'SYM
0000 163      .ENDM   PHD
0000 164
0000 165      .MACRO  PCB      SYM
0000 166      .=SAV...+PCBS'SYM
0000 167      .ENDM   PCB
0000 168
0000 169      .LIST   MEB
0000 170      :
0000 171      : EQUATED SYMBOLS:
0000 172      :
000001F8 0000 173      NPGDPATCH = 504      ; ONE PAGE OF NONPAGED CODE PATCH AREA
000001F8 0000 174      NPGDRWPATCH = 504     ; ONE PAGE OF NONPAGED DATA PATCH AREA
000003F8 0000 175      PGDPATCH = 504 + 512    ; TWO PAGES OF PAGED CODE PATCH AREA
00000C00 0000 176      PATCH_AREA = 6*512     ; SIX PAGES OF EXTRA PATCH AREA
0000 177      :
0000 178      : OWN STORAGE:
0000 179      :
0000 180

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0000 182 .SBTTL MEMORY MANAGEMENT DATA BASE
0000 183
0000 184 .IF NDF,PRMSW ;
0000 185 ;
0000 186 ; PROCESS HEADER VECTOR
0000 187 ;
00000000 188 .PSECT $$$222, LONG
00000000 189 PHV$GL_PIXBAS:: ;BASE OF PROCESS INDEX VECTOR
00000000 190 .LONG 0 ;
00000000 191 PHV$GL_REFCBAS:: ;BASE OF PROCESS HDR REFERENCE COUNT VECTOR
00000000 192 .LONG 0 ;
0008 193 ;
0008 194 ;
0008 195 ; Define Global Hooks
0008 196 ;
0008 197 ;
00000000 00000000 0008 198 EXE$GQ_GBLHOOK1::
00000000 00000000 0010 199 .QUAD 0
00000000 00000000 0010 200 EXE$GQ_GBLHOOK2::
00000000 00000000 0018 201 .QUAD 0
00000000 00000000 0018 202 EXE$GQ_GBLHOOK3::
00000000 00000000 0020 203 .QUAD 0
00000000 00000000 0020 204 EXE$GQ_GBLHOOK4::
00000000 00000000 0028 205 .QUAD 0
00000000 00000000 0028 206 EXE$GQ_GBLHOOK5::
00000000 00000000 0030 207 .QUAD 0
00000000 00000000 0030 208 EXE$GQ_GBLHOOK6::
00000000 00000000 0038 209 .QUAD 0
00000000 00000000 0038 210 EXE$GQ_GBLHOOK7::
00000000 00000000 0040 211 .QUAD 0
00000000 00000000 0040 212 EXE$GQ_GBLHOOK8::
00000000 00000000 0048 213 .QUAD 0
00000000 00000000 0048 214 EXE$GQ_GBLHOOK9::
00000000 00000000 0050 215 .QUAD 0
00000000 00000000 0050 216 EXE$GQ_GBLHOOKA::
0058 217 .QUAD 0
0058 218 ;
0058 219 ; Define data to identify the nexus on a system.
0058 220 ;
00000000 0058 221 EXE$GL_CPUNODSP:: ; Holds virtual address that maps BI
0058 222 .LONG 0 ; Node Private Space. Used only for
005C 223 ; Scorpio, and allows access to Port
005C 224 ; Controller, Watch Chip, and RX50
005C 225 ; registers.
00000000 005C 226 EXE$GL_CONFREG1:: ; Holds the address of a longword array
00000000 0060 227 .LONG 0 ; of nexus device types.
00000000 0060 228 EXE$GL_CONFREG2:: ; Holds the address of a byte array
00000000 0064 229 .LONG 0 ; of nexus-device types.
00000000 0064 230 MMG$GL_SBICONF:: ; Holds the address of a longword
00000000 0068 231 .LONG 0 ; array of nexus slot VAs.
00000000 0068 232 EXE$GL_NUMNEXUS:: ; Number of nexuses present on system.
006C 233 .LONG 0
006C 234 ;
006C 235 ; The following cell contains the base address of the RMS image
006C 236 ;
00000000' 006C 237 MMG$GL_RMSBASE:: ; Base of RMS image
006C 238 .ADDRESS EXE$SUCCESS ; This procedure always succeeds

```



```
0070 239
0070 240 ; The following cells contain the base addresses of various images
0070 241 ; that may be loaded when the system is started.
0070 242
0070 243 MMG$GL_FPEMUL_BASE:: ; Base address of folating point
00000000 0070 244 .LONG 0 ; instruction emulator
0074 245
0074 246 MMG$GL_SYSLOA_BASE:: ; Base address of SYSLOAzzz.EXE
00000000 0074 247 .LONG 0
0078 248
0078 249 MMG$GL_VAXEMUL_BASE:: ; Base address of decimal/string
00000000 0078 250 .LONG 0 ; instruction emulator
007C 251
007C 252 MMG$GL_GBLSECFND:: ; Last global section table entry found
00000000 007C 253 .LONG 0 ; when deleting page file backing store addr
0080 254 MMG$GL_GBLPAGFIL::
FFFFFFFF 0080 255 .LONG -1 ; page file allowed (remaining) for global s
0084 256 .ENDC ;
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0084 258 .SBTTL SYSTEM HEADER AND PAGE TABLE
0084 259 -----
0084 260 :
0084 261 : SYSTEM HEADER / SYSTEM WORKING SET LIST / SYSTEM PAGE TABLE
0084 262 :
0084 263 :-----
0084 264 .IF DF,PRMSW ;
0084 265 .PSECT $$$063,PAGE ; PAGE ALIGNED
0084 266
0084 267 BOO$A_SYSPHD:: ; SYSTEM PROCESS HEADER
0084 268 SAV...=. ; REFERENCE POINT FOR FILLING PHD
0084 269 .BLKB PHD$C_LENGTH ; RESERVE SPACE FOR IT
0084 270 SYSPHDEND=. ; MARK END OF PHD
0084 271
0084 272 WSL...=<.-SAV...>@-2 ; LONGWORD INDEX TO FIRST WS ENTRY
0084 273 PHD W WSLOCK ; POINTER TO START OF LOCKED PAGES
0084 274 .WORD WSL... ;
0084 275
0084 276 PHD W WSDYN ; POINTER TO START OF DYNAMIC WS
0084 277 .WORD WSL... ;
0084 278
0084 279 PHD W WSLIST ; START OF WORKING SET LIST
0084 280 .WORD WSL... ;
0084 281
0084 282 PHD W WSNEXT ; NEXT WORKING SET ENTRY
0084 283 .WORD WSL... ;
0084 284
0084 285 PHD L FREP1VA ; SMALLEST VA IN P1 SPACE (EMPTY)
0084 286 .LONG -T
0084 287
0084 288 PHD W EXTDYNWS ; EXTRA DYNAMIC WORKING SET LIST
0084 289 .WORD 4096 ; LARGE NUMBER TO DEFEAT TEST FOR
0084 290
0084 291 PHD W SWAPSIZE ; SWAP SPACE SIZE TO SWAP PROCESS
0084 292 .WORD -T ; DISABLE FOR SYSTEM PROCESS
0084 293
0084 294 PHD L PTWSLELCK ; POINTER TO LOCKED PAGE TABLE ARRAY
0084 295 .LONG ^X40000000 ; FORCE ACCESS VIOLATION FOR SYSTEM SPACE
0084 296
0084 297 PHD L PTWSLEVAL ; POINTER TO VALID PAGE TABLE ARRAY
0084 298 .LONG ^X40000000 ; FORCE ACCESS VIOLATION FOR SYSTEM SPACE
0084 299
0084 300 .=SYSPHDEND ; RESTORE LOCATION COUNTER
0084 301 SYSPHDLEN=.-SAV... ; LENGTH OF SYSTEM HEADER
0084 302 .ENDC ;

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0084 304 .SBTTL SYSTEM PAGE TABLE
0084 305 :
0084 306 : BUILD THE SYSTEM PAGE TABLE
0084 307 :
0084 308 .IF DF,PRMSW ;
0084 309 .PSECT $$$065,PAGE ;
0084 310 .ENDC ;
00000000 0084 311 PFN...=0 ;
00000000 0084 312 SPTLEN=0 ; INITIALIZE LENGTH COUNTER
0084 313 .IF DF,PRMSW ;
0084 314 MMG$AL_SYSPAGTB:: ; SYSTEM VIRTUAL ADDRESS OF SPT
0084 315 .ENDC ;
0084 316 :
0084 317 : SYSTEM SERVICE VECTORS - PSECT $$$000 HAS SGN$C_SYSVECPGS PAGES ALLOCATED ELSEWHERE
0084 318 :
0084 319 SYSPTC SGN$C_SYSVECPGS,UR ; SYSTEM SERVICE VECTORS ($$$000)
0084 320 SYSPTC 1,UREQ ; FCP PERFORMANCE DATA PAGE
0084 321 :
0084 322 .IF DF,PRMSW ;
0084 323 MMG$C_SPTSKELE==SPTLEN ; LENGTH OF SKELETON SPT IN LONGWORDS
0084 324 .ENDC ;
0084 325 :
0084 326 :
0084 327 .IF NDF,PRMSW ;
0084 328 .ENDC ;
0084 329 .IF NDF,PRMSW ;
00000000 330 .PSECT $$$000ENDVEC,PAGE,EXE ;
00000000 331 MMG$A_ENDVEC:: ; MARKER FOR END OF VECTOR PAGES
00000000 332 .PSECT $$$900,PAGE ; MARKER FOR BASE OF SYSPARAM
00000000 333 MMG$A_SYSPARAM:: ;
00000000 334 .PSECT $$$890_PATCH_NONPGD_DATA, LONG, EXE, WRT ;
00000000 335 PAT$A_NONPGD_DATA:: ; NONPAGED DATA PATCH AREA
FFFFFFFF8' 0000 336 .LONG MMG$A_SYSPARAM-<. +8> ; SIZE OF AREA (INCLUDE EXCESS)
00000008' 0004 337 .ADDRESS +4 ; POINTER TO FIRST AVAILABLE BYTE
00000200 0008 338 .BLKB NPGDRWPATCH ;
00000200 339 :
00000000 340 .PSECT $$$999,PAGE,EXE ; END OF WRITABLE REGION
0000 341 MMG$FRSTRONLY:: ; SYSTEM VIRTUAL ADDRESS
0000 342 ; OF FIRST READ ONLY PAGE
0000 343

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0000 345      .SUBTITLE      READ-ONLY PATCH AREAS
0000 346
0000 347 :+
0000 348 : There is a single page of read-only patch space located at the boundary
0000 349 : between the nonpaged and pageable exec routines. This page is used for
0000 350 : patches to the nonpaged routines in SYS.EXE. There are two pages located
0000 351 : in the middle of the pageable exec routines that are used for a pageable
0000 352 : patch area.
0000 353
0000 354 : In addition, there are three more pages located at the boundary
0000 355 : between the nonpaged and pageable exec routines. These pages are all
0000 356 : initially pageable. If either read-only patch area needs room to
0000 357 : expand, one of these pages can be used.
0000 358
0000 359 :   o If a pageable page is required, it should be taken from the
0000 360 :     high address end (the third page). A patch descriptor must
0000 361 :     be added for each page in this area used for pageable patch
0000 362 :     area.
0000 363
0000 364 :   o If more nonpaged patch space is needed, that can be obtained
0000 365 :     by extending the current nonpaged patch area. This expansion
0000 366 :     consists of two steps. The first longword in the patch
0000 367 :     descriptor (global label PATSA_NONPGD_CODE) must be increased by
0000 368 :     512 to reflect the size increase in the patch area. The
0000 369 :     contents of the cell MMG$GL_PGDCOD, the boundary between the
0000 370 :     nonpaged and pageable exec, must be increased by 512 to reflect
0000 371 :     the fact that the nonpaged exec has grown by a page. To simplify
0000 372 :     location of these two cells, they have additional labels that
0000 373 :     clearly relate them to expanding nonpaged read-only patch area.
0000 374 :     MMG$GL_PGDCOD is now loaded from BOO$GL_PGDCOD in SYSBOOT and
0000 375 :     therefore BOO$GL_PGDCOD must be patched with the increased size.
0000 376 :     MMG$GL_PGDCOD will get the increased size on reboot.
0000 377
0000 378 :           PATSA_NONPGD_CODE      PAT$GL_EXP_NPG1
0000 379 :           MMG$GL_PGDCOD         PAT$GL_EXP_NPG2
0000 380 :-
0000 381
00000000 382 : .PSECT X__PATCH_NONPGD_CODE,EXE      : NONPAGED CODE PATCH AREA
0000 383 PATSA_NONPGD_CODE::                  : NONPAGED PURE
0000 384 PAT$GL_EXP_NPG1::                   : (SYNONYM)
FFFFF8' 0000 385 : .LONG  PATSA_NONPGD_CODE_END-<.+8>  : SIZE OF NONPAGED PATCH AREA
00000008' 0004 386 : .ADDRESS  +4                        : POINTER TO START
00000200 0008 387 : .BLKB  NPGDPATCH                    : ALLOCATE PAGE AREA
0200 388
0200 389 : The rest of this patch area starts out as pageable exec. It may be
0200 390 : made part of the nonpaged exec if more than one page of nonpaged
0200 391 : patch space is needed.
0200 392
00000000 393 : .PSECT Y$$$PATCH_EXTEND_CODE,PAGE
00000C00 0000 394 PATSA_NONPGD_CODE_END::                : END OF NONPAGED PATCH AREA
0C00 395 : .BLKB  PATCH_AREA
00000000 396
00000000 397 : .PSECT YF$$$PATCH_PAGED_CODE,LONG   : PATCH ARE FOR PAGED CODE
0000 398
0000 399 : The pageable read-only patch area is placed approximately in the middle
0000 400 : of the pageable exec to allow control to be passed into and out of the
0000 401 : patch area with BRW instructions rather than JMP instructions.

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```
0000 402
0000 403 PATSA_PAGED CODE::
000003F8 0000 404 .LONG PGDPATCH ; SIZE OF AREA
00000008 0004 405 .ADDRESS .+4 ; START OF FREE AREA
00000400 0008 406 .BLKB PGDPATCH ;
0400 407
0400 408 :
0400 409 : MARK END OF PAGED CODE
0400 410 :
00000000 411 .PSECT YZ99$PAGEDEND,PAGE
0000 412 MM$AL_PGDCODEN:: ;
0000 413
```

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0000 415          .SUBTITLE          OTHER GLOBAL LABELS
0000 416
0000 417  :
0000 418  : DEFINE BEGINNING AND END OF DRIVER REGION
0000 419  :
0000 420
00000000 421          .PSECT $$$110_BEGDRIVE, LONG
0000 422 MMGSAL_BEGDRIVE::          ;
00000000 423          .PSECT $$$120_ENDDRIVE, LONG
0000 424 MMGSAL_ENDDRIVE::          ;
0000 425
0000 426  :
0000 427  : Define global labels for opcode/address table used by fixup code in
0000 428  : INI when more than 32 Mbytes of memory is present on the system.
0000 429  : Each six byte entry in this table consists of an address whose contents
0000 430  : are to be altered, a byte containing the current contents of that location
0000 431  : to be used as a sanity check, and a byte containing the new opcode. The
0000 432  : table is terminated with an address of zero.
0000 433  :
0000 434
00000000 435          .PSECT Z$INIT$PFN_FIXUP_TABLE
0000 436 MMGSAL_FIXUPTBL::          ; Listhead for opcode/address table
0000 437
0000 438          .ENDC          ;
0000 439          .END

```

MDAT
Symbol table

;MEMORY MANAGEMENT DATA BASE

C 9

16-SEP-1984 00:33:45 VAX/VMS Macro V04-00
5-SEP-1984 03:44:52 [SYS.SRC]MDAT.MAR;1

Page 12
(1)

ME
VO

EXESGL_CONFREG	00000060	RG	02
EXESGL_CONFREGL	0000005C	RG	02
EXESGL_CPUNODSP	00000058	RG	02
EXESGL_NUMNEXUS	00000068	RG	02
EXESGQ_GBLHOOK1	00000008	RG	02
EXESGQ_GBLHOOK2	00000010	RG	02
EXESGQ_GBLHOOK3	00000018	RG	02
EXESGQ_GBLHOOK4	00000020	RG	02
EXESGQ_GBLHOOK5	00000028	RG	02
EXESGQ_GBLHOOK6	00000030	RG	02
EXESGQ_GBLHOOK7	00000038	RG	02
EXESGQ_GBLHOOK8	00000040	RG	02
EXESGQ_GBLHOOK9	00000048	RG	02
EXESGQ_GBLHOOKA	00000050	RG	02
EXESSUCCESS	*****	X	02
MMGSAL_BEGDRIVE	00000000	RG	0B
MMGSAL_ENDDRIVE	00000000	RG	0C
MMGSAL_FIXUPTBL	00000000	RG	0D
MMGSAL_PGDCODEN	00000000	RG	0A
MMGSA_ENDVEC	00000000	RG	03
MMGSA_SYSPARAM	00000000	RG	04
MMGSRSTRONLY	00000000	RG	06
MMG\$GL_FPEMUL_BASE	00000070	RG	02
MMG\$GL_GBLPAGFIL	00000080	RG	02
MMG\$GL_GBLSECFND	0000007C	RG	02
MMG\$GL_RMSBASE	0000006C	RG	02
MMG\$GL_SBICONF	00000064	RG	02
MMG\$GL_SYSLOA_BASE	00000074	RG	02
MMG\$GL_VAXEMUL_BASE	00000078	RG	02
NPGDPATCH	= 000001F8		
NPGDRWPATCH	= 000001F8		
PATSA_NONPGD_CODE	00000000	RG	07
PATSA_NONPGD_CODE_END	00000000	RG	08
PATSA_NONPGD_DATA	00000000	RG	05
PATSA_PAGED_CODE	00000000	RG	09
PATSGC_EXP_NPG1	00000000	RG	07
PATCH_AREA	= 00000C00		
PFN...	= 00000006		
PGDPATCH	= 000003F8		
PHV\$GL_PIXBAS	00000000	RG	02
PHV\$GL_REFCBAS	00000004	RG	02
SGN\$C_SYSVECPGS	= 00000005		
SPTLEN	= 00000006		

! Psect synopsis !

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$ABSS	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
:-\$222	00000084 (132.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC LONG
\$\$\$000ENDVEC	00000000 (0.)	03 (3.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC PAGE
\$\$\$900	00000000 (0.)	04 (4.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC PAGE
\$\$\$890_PATCH_NONPGD_DATA	00000200 (512.)	05 (5.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC LONG
\$\$\$999	00000000 (0.)	06 (6.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC PAGE
X PATCH_NONPGD_CODE	00000200 (512.)	07 (7.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE
Y\$\$\$PATCH_EXTEND_CODE	00000C00 (3072.)	08 (8.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC PAGE
YF\$\$\$PATCH_PAGED_CODE	00000400 (1024.)	09 (9.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC LONG
YZ99\$PAGEDEND	00000000 (0.)	0A (10.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC PAGE
\$\$\$110_BEGDRIVE	00000000 (0.)	0B (11.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC LONG
\$\$\$120_ENDDRIVE	00000000 (0.)	0C (12.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC LONG
Z\$INIT\$PFN_FIXUP_TABLE	00000000 (0.)	0D (13.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE

! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	35	00:00:00.05	00:00:02.05
Command processing	117	00:00:00.49	00:00:06.21
Pass 1	193	00:00:04.57	00:00:14.72
Symbol table sort	0	00:00:00.57	00:00:01.40
Pass 2	93	00:00:01.26	00:00:05.06
Symbol table output	6	00:00:00.08	00:00:00.36
Psect synopsis output	4	00:00:00.06	00:00:00.06
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	450	00:00:07.08	00:00:29.86

The working set limit was 1350 pages.
26101 bytes (51 pages) of virtual memory were used to buifer the intermediate code.
There were 30 pages of symbol table space allocated to hold 456 non-local and 0 local symbols.
439 source lines were read in Pass 1, producing 36 object records in Pass 2.
16 pages of virtual memory were used to define 15 macros.

! Macro library statistics !

Macro library name	Macros defined
-\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	5
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	4
TOTALS (all libraries)	9

493 GETS were required to define 9 macros.

There were no errors, warnings or information messages.

MDAT
VAX-11 Macro Run Statistics

:MEMORY MANAGEMENT DATA BASE

E 9

16-SEP-1984 00:33:45 VAX/VMS Macro V04-00
5-SEP-1984 03:44:52 [SYS.SRC]MDAT.MAR;1

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ME
VO

MACRO/LIS=LIS\$:MDAT/OBJ=OBJ\$:MDAT MSRCS\$:MDAT/UPDATE=(ENHS\$:MDAT)+EXECMLS\$/LIB

