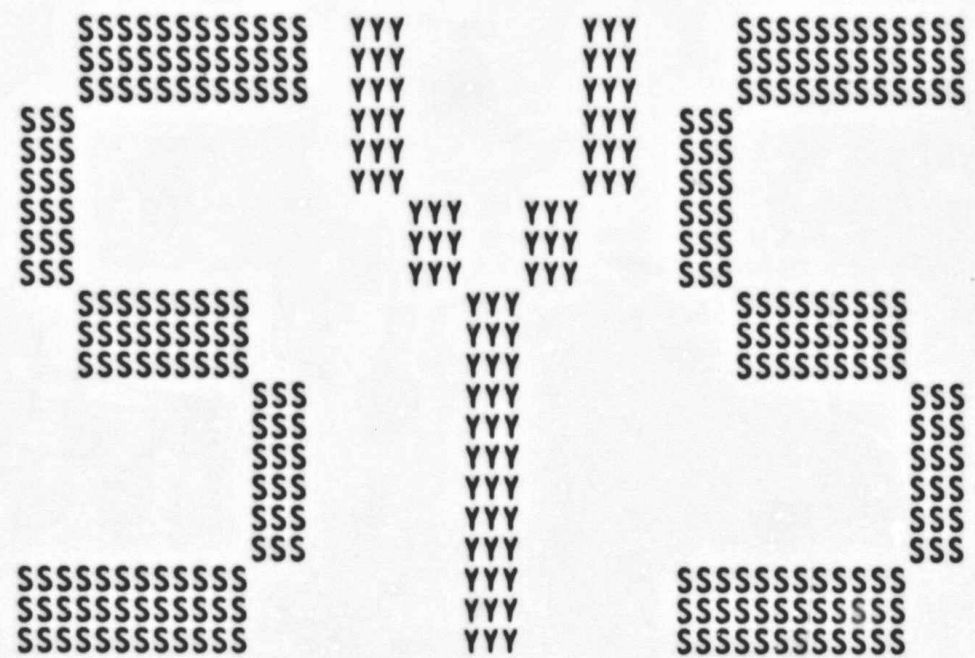




[illegible]

(2) 46
(3) 79
(4) 191

DECLARATIONS
SETPRT - SET PROTECTION FOR RANGE OF PAGES
SETPRTPAG - SET PROTECTION FOR A SINGLE PAGE

```
0000 1 .TITLE SYSSETPRT - Set Page Protection System Service
0000 2 .IDENT 'V04-000'
0000 3 :
0000 4 :*****
0000 5 :*
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0000 23 :*
0000 24 :*
0000 25 :*****
0000 26 :
0000 27 :++
0000 28 : FACILITY:
0000 29 :
0000 30 : ABSTRACT:
0000 31 :
0000 32 : ENVIRONMENT:
0000 33 :
0000 34 : AUTHOR: PETER H. LIPMAN , CREATION DATE: 24-APR-78
0000 35 :
0000 36 : MODIFIED BY:
0000 37 :
0000 38 : V03-002 WMC0001 Wayne Cardoza 02-Mar-1983
0000 39 : MMG$CRECOM1 has gone away.
0000 40 :
0000 41 : V03-001 KDM0002 Kathleen D. Morse 28-Jun-1982
0000 42 : Add $PCBDEF. Fix some comments.
0000 43 :
0000 44 :--
```

```
0000 46 .SBTTL DECLARATIONS
0000 47 :
0000 48 : INCLUDE FILES:
0000 49 :
0000 50 $PCBDEF ;PROCESS CONTROL BLOCK OFFSETS
0000 51 $JIBDEF ;JIB OFFSETS
0000 52 $MMGDEF ;OFFSETS FROM FP INTO SCRATCH AREA
0000 53 $PFNDEF ;PAGE FRAME NUMBER DATA BASE
0000 54 $PHDDEF ;PROCESS HEADER DEFINITIONS
0000 55 $PRDEF ;PROCESSOR REGISTER DEFINITIONS
0000 56 $PRTDEF ;PROTECTION CODE DEFINITIONS
0000 57 $PTEDEF ;PAGE TABLE ENTRY DEFINITIONS
0000 58 $SSDEF ;SYSTEM STATUS CODE DEFINITIONS
0000 59 :
0000 60 : EXTERNAL SYMBOLS:
0000 61 :
0000 62 :
0000 63 : MACROS:
0000 64 :
0000 65 :
0000 66 : EQUATED SYMBOLS:
0000 67 :
0000 68 : OFFSET FROM AP
0000 69 :
00000004 0000 70 INADR = 4 ;OFFSET TO INPUT RANGE
00000008 0000 71 RETADR = 8 ;OFFSET TO RETURN RANGE
0000000C 0000 72 ACMODE = 12 ;ACCESS MODE
00000010 0000 73 PROT = 16 ;NEW PROTECTION
00000014 0000 74 PRVPRT = 20 ;PREVIOUS PROTECTION ADDRESS
0000 75 :
0000 76 : OWN STORAGE:
0000 77 :
```

```
0000 79 .SBTTL SETPRT - SET PROTECTION FOR RANGE OF PAGES
0000 80 :++
0000 81 : FUNCTIONAL DESCRIPTION:
0000 82 :
0000 83 : THE SET PROTECTION SYSTEM SERVICE SETS THE PROTECTION FOR
0000 84 : THE SPECIFIED RANGE OF PAGES CHECKING THAT THE SPECIFIED MODE
0000 85 : IS AT LEAST AS PRIVILEGED AS THE OWNER OF THE PAGE.
0000 86 :
0000 87 : CALLING SEQUENCE:
0000 88 :
0000 89 : CALLG  ARGLIST,@#SYS$SETPRT
0000 90 :
0000 91 : INPUT PARAMETERS:
0000 92 :
0000 93 : INADR(AP) = ADDRESS OF 2 LONG WORDS THE 1ST OF WHICH SPECIFIES
0000 94 : THE STARTING VIRTUAL ADDRESS TO CREATE, THE 2ND SPECIFIES
0000 95 : THE ENDING VIRTUAL ADDRESS TO CREATE (INCLUSIVE).
0000 96 : RETADR(AP) = ADDRESS OF A 2 LONGWORD ARRAY INTO WHICH IS RETURNED
0000 97 : THE STARTING AND ENDING VIRTUAL ADDRESSES (INCLUSIVE)
0000 98 : OF THE PAGES JUST CREATED
0000 99 : ACMODE(AP) = THE ACCESS MODE (MAXIMIZED WITH CALLING MODE)
0000 100 : ON BEHALF OF WHICH THE CHANGE PROTECTION IS TO BE DONE
0000 101 : THIS MODE MUST BE AT LEAST AS PRIVILEGED AS THE MODE
0000 102 : OF THE PAGE OWNER.
0000 103 : PROT(AP) = THE NEW PROTECTION FOR THE PAGE(S) SPECIFIED IN
0000 104 : THE LOW 4 BITS OF THE PARAMETER IN THE HARDWARE FORMAT.
0000 105 : THE REMAINING BITS ARE IGNORED.
0000 106 : PRVPRT(AP) = THE ADDRESS TO RETURN THE PREVIOUS PROTECTION
0000 107 : OF THE LAST (ONLY) PAGE CHANGED.
0000 108 :
0000 109 : IMPLICIT INPUTS:
0000 110 :
0000 111 : CURRENT PCB LOCATED VIA SCH$GL_CURPCB
0000 112 : PROCESS HEADER AS SPECIFIED IN PCB$$_PHD OF THE PCB
0000 113 :
0000 114 : OUTPUT PARAMETERS:
0000 115 :
0000 116 : RO = SYSTEM STATUS CODE
0000 117 :
0000 118 : IMPLICIT OUTPUTS:
0000 119 :
0000 120 : NONE
0000 121 :
0000 122 : COMPLETION CODES:
0000 123 :
0000 124 : $$$_NORMAL ; SUCCESSFUL COMPLETION
0000 125 : $$$_NOPRIV ; NO PRIV TO CHANGE PROT ON SYS OR GLOBAL PAG
0000 126 : $$$_PAGOWNVIO ; PAGE OWNER VIOLATION
0000 127 : $$$_LENVIO ; LENGTH VIOLATION
0000 128 : $$$_ACCVIO ; ACCESS VIOLATION
0000 129 : ; INPUT RANGE INACCESSIBLE
0000 130 : ; RETURN RANGE NOT WRITABLE
0000 131 : ; PREVIOUS PROTECTION ADDRESS NOT WRITABLE
0000 132 :
0000 133 : SIDE EFFECTS:
0000 134 :
0000 135 : NONE
```

```
0000 136 :
0000 137 :--
0000 138 :
0000 139 :
0000 140 :*****
0000 141 :
0000 142 :***** THE FOLLOWING CODE MAY BE PAGED *****
0000 143 :
0000 144 :.PSECT Y$EXEPAGED
0000 145 :
0000 146 :*****
0000 147 :
03FC 0000 148 :.ENTRY EXE$SETPRT,^M<R2,R3,R4,R5,R6,R7,R8,R9>
0002 149 :
56 00000000'EF 0002 150 :SUBL S^#-MMG$C LENGTH,SP ;RESERVE SCRATCH AREA
DE 0005 151 :MOVAL L^MMG$SETPRTPAG,R6 ;R6 = SUBR ADR TO CALL
000C 152 :
000C 153 :ASSUME PRT$C_NA EQ 0
000C 154 :ASSUME PRT$C_RESERVED EQ 1
58 10 AC 9A 000C 155 :MOVZBL PROT(AP),R8 ;GET NEW PROTECTION
01 58 D1 0010 156 :CML R8,#PRT$C_RESERVED ;RESERVED OR NO ACCESS?
58 F0 8F 93 0013 157 :BLEQ 40$ ;BRANCH IF YES
32 15 0013 158 :BITB #^C<PTE$M_PROT @ -PTE$V_PROT>,R8 ;BAD PROTECTION CODE?
58 F0 8F 93 0015 159 :BNEQ 50$ ;BRANCH IF YES
33 12 0019 160 10$: CLRL R9 ;INIT THE RETURN PROTECTION
59 D4 001B 161 :BSBW MMG$INADRINI ;INITIALIZE RETURN ADDRESS ARAYS & SCRATCH A
FFEO' 30 001D 162 :BLBC R0,20$
1F 50 E9 0020 163 :MOVQ R4,R2 ;R2 = START OF RANGE, R3 = END
52 54 7D 0023 164 :BSBW MMG$CREDEL ;COMMON CREATE CODE
FFD7' 30 0026 165 :PUSHL R0 ;SAVE STATUS
50 DD 0029 166 :BSBW MMG$RETRANGE ;RETURN AFFECTED ADDRESS RANGE
FFD2' 30 002B 167 :BLBC R0,20$ ;USE THIS BAD STATUS RATHER THAN CREDEL
11 50 E9 002E 168 :POPR R0
52 14 AC D0 0033 169 :MOVL PRVPRT(AP),R2 ;ADDRESS TO RETURN PREVIOUS PROTECTION
09 13 0037 170 :BEQL 20$ ;BRANCH IF NONE SPECIFIED
0039 171 :IFNOWRT #1,(R2),30$ ;BRANCH IF NOT WRITABLE
62 59 90 003F 172 :MOVB R9,(R2) ;RETURN THE PREVIOUS PROTECTION
0042 173 20$:
0042 174 :RET ;EXIT WITH STATUS FROM CRECOM1
50 0C 3C 0043 175 30$: MOVZWL #SS$_ACCVIO,R0 ;ACCESS VIOLATION
04 0046 176 :RET
05 13 0047 177 40$: BEQL 50$ ;BRANCH IF RESERVED
0049 178 :
0049 179 :REQUESTED PROTECTION IS NO ACCESS
0049 180 :MUST BE AT LEAST KERNEL READ FOR THE FAULTING LOGIC TO WORK FOR
0049 181 :TRANSITION PAGES IN BOTH SETPRTPAG AND DELPAG.
0049 182 :
58 03 D0 0049 183 :MOVL #PRT$C_KR,R8 ;FORCE AT LEAST KERNEL READ
CD 11 004C 184 :BRB 10$
004E 185 :
004E 186 :ILLEGAL OR RESERVED PROTECTION CODE SPECIFIED
004E 187 :
50 02F4 8F 3C 004E 188 50$: MOVZWL #SS$_IVPROTECT,R0 ;INVALID PROTECTION CODE
04 0053 189 :RET
```

```
0054 191      .SBTTL  SETPRTPAG - SET PROTECTION FOR A SINGLE PAGE
0054 192      :++
0054 193      : FUNCTIONAL DESCRIPTION:
0054 194      :
0054 195      :
0054 196      : CALLING SEQUENCE:
0054 197      :
0054 198      :     BSBW      MMG$SETPRTPAG
0054 199      :
0054 200      :
0054 201      : INPUT PARAMETERS:
0054 202      :
0054 203      :     R0 = ACCESS MODE FOR PAGE OWNERSHIP CHECK
0054 204      :     R2 = VIRTUAL ADDRESS
0054 205      :     R4 = CURRENT PCB ADDRESS
0054 206      :     R5 = PROCESS HEADER ADDRESS - P1 OR SYSTEM SPACE
0054 207      :     R6 = COUNT - 1 OF PAGES TO BE PROCESSED INCLUDING THIS ONE
0054 208      :     R7 = +^X200 IF GOING FORWARD IN THE ADDRESS SPACE
0054 209      :         = -^X200 IF GOING BACKWARDS IN THE ADDRESS SPACE
0054 210      :     R8 = NEW PROTECTION
0054 211      :
0054 212      :     IPL = ASTDEL
0054 213      :
0054 214      : IMPLICIT INPUTS:
0054 215      :     NONE
0054 216      :
0054 217      : OUTPUT PARAMETERS:
0054 218      :
0054 219      :     R0 = STATUS CODE
0054 220      :     R2 = PRESERVED
0054 221      :
0054 222      : IMPLICIT OUTPUTS:
0054 223      :     NONE
0054 224      :
0054 225      : COMPLETION CODES:
0054 226      :
0054 227      :     SSS_NORMAL      ;SUCCESSFUL COMPLETION
0054 228      :     SSS_NOPRIV     ;NO PRIV TO CHANGE PROT ON SYS OR GLOBAL PAG
0054 229      :     SSS_PAGOWNVIO  ;PAGE OWNER VIOLATION
0054 230      :     SSS_LENvio      ;LENGTH VIOLATION
0054 231      :     SSS_ACCVIO     ;ACCESS VIOLATION
0054 232      :
0054 233      : SIDE EFFECTS:
0054 234      :
0054 235      :     NONE
0054 236      :
0054 237      :--
```

```
0054 239 :
0054 240 : *****
0054 241 :
0054 242 : ***** THE FOLLOWING CODE MUST BE RESIDENT *****
0054 243 :
0000 244 : .PSECT $MMGCODE
0000 245 :
0000 246 : *****
0000 247 :
0000 248 : MMG$SETPRTPAG::
0000 249 : SAVIPL ;SAVE CALLER'S IPL
50 DD 0003 250 : PUSHL R0 ;SAVE ACCESS MODE
FFF8' 30 0005 251 : BSBW MMG$PTEREF ;REFERENCE PTE, RETURN SVAPTE
7F 50 E9 0008 252 : BLBC R0,BRPRTAGRET ;RETURN AT IPL=SYNCH
51 63 D0 000B 253 : MOVL (R3),R1 ;BRANCH IF LENGTH VIOLATION
4F 13 000E 254 : BEQL PRTPAGACCVIO ;FETCH THE PAGE TABLE ENTRY
50 6E D0 0010 255 : MOVL (SP),R0 ;BRANCH IF DELETED
FFEA' 30 0013 256 : BSBW MMG$PAGE TYPE ;ACCESS MODE
71 50 E9 0016 257 : BLBC R0,BRPRTAGRET ;CHECK ACCESS, RETURN PAGE TYPE
0019 258 : ;BRANCH IF PAGE OWNER VIOLATION
0019 259 :
0019 260 : R1 <0:7> PTE TYPE TO CASE ON (TYP0*2 + TYP1)
0019 261 : R2 = VA, R3 = SVAPTE, IPL = SYNCH
0019 262 : 0(SP) = ACCESS MODE, 4(SP) = SAVED IPL
0019 263 :
59 63 04 1B EF 0019 264 : EXTZV #PTESV_PROT,#PTESS_PROT,(R3),R9 ;PREVIOUS PROTECTION
001E 265 :
001E 266 : THE FOLLOWING CODE SETS BIT 31 OF R8 IF THE REQUESTED PROTECTION
001E 267 : CHANGE IS FROM READ ONLY TO READ WRITE, WHICH IN TURN WILL TRIGGER
001E 268 : COPY ON REFERENCE LOGIC FOR SECTION TABLE PAGES.
001E 269 :
001E 270 : MOVZBL R8,R8 ;RESET BIT 31
03 58 02 00 ED 0021 271 : BEQL 50$ ;BRANCH IF NEW PROT IS 'NO ACCESS'
0023 272 : CMPZV #0,#2,R8,#3 ;IF EITHER OF 2 LOW BITS IS CLEAR
0028 273 : ;THEN NEW PROT ALLOWS WRITE
0028 274 : BEQL 50$ ;BRANCH IF READ ONLY
002A 275 :
002A 276 : NEW PROTECTION WILL SET PAGE WRITABLE
002A 277 : SEE IF OLD PROTECTION WAS READ ONLY
002A 278 :
03 59 02 00 ED 002A 279 : CMPZV #0,#2,R9,#3 ;IF BOTH LOW BITS WERE SET
002F 280 : ;THEN PAGE WAS READ ONLY
002F 281 : BNEQ 50$ ;BRANCH IF PAGE WAS WRITABLE
00 58 1F E2 0031 282 : BBSS #31,R8,50$ ;SET BIT INDICATING TRANSITION
0035 283 : ;FROM READ ONLY TO WRITABLE
0035 284 : 50$:
50 63 15 00 EF 0035 285 : EXTZV #PTESV_PFN,#PTESS_PFN,(R3),R0 ;R0=PFN IF PTE HAS ONE
003A 286 : CASE TYPE=B, SRC=R1, DISPLIST=<- ;DISPATCH ON PTE TYPE
003A 287 : PRTPAGFIL,- ;TRANSITION OR DZRO
003A 288 : PRTPAGFIL,- ;PAGING FILE
003A 289 : PRTPAGFIL,- ;GLOBAL
003A 290 : PRTPAGFIL,- ;SECTION TABLE INDEX
003A 291 : PRTPAGFIL,- ;VALID PAGE
003A 292 : >
0048 293 :
0048 294 : TRANSITION OR DEMAND ZERO PAGE
0048 295 : FAULT THIS PAGE TO AVOID HAVING ANY CODE OTHER THAN THE PAGE FAULT
```

```
0048 296 : UNDERSTAND ALL THE TRANSITION STATES. THE FAULTING OF DEMAND ZERO
0048 297 : PAGES ELIMINATES THE POSSIBILITY OF THE "ZERO PAGE" LOGIC IN THE
0048 298 : PAGE FAULT GETTING AN ACCESS VIOLATION.
0048 299 :
0048 300 PRTRTRANS:
0048 301 TSTL R0 ;DEMAND ZERO PAGE?
0048 302 BNEQ 20$ ;BRANCH IF NOT
0048 303 CMPZV #0,#2,R8,#3 ;NEW PROT ALLOWS WRITING IF
0048 304 ;EITHER LOW BIT IS 0
0048 305 BEQL 20$ ;CONTINUE IF PAGE WILL NOT BE WRITABLE
0048 306 BRW PRCHANGE ;BRANCH IF PAGE WILL STILL BE WRITABLE
0048 307 ;CHANGE PROTECTION WITHOUT FAULTING PAGE
0048 308 20$: POPR #^M<R0> ;R0 = SAVED ACCESS MODE
0048 309 ENBINT ;POP AND RESTORE SAVED IPL
0048 310 TSTB (R2) ;FAULT THE PAGE
0048 311 BRB MMG$SETPRTPAG ;AND RESTART THE SET PROT ROUTINE
0048 312 :
0048 313 : PAGE ALREADY DELETED, CAN'T CHANGE PROTECTION
0048 314 :
0048 315 PRTPAGACCVIO:
0048 316 MOVZWL #SS$ ACCVIO,R0 ;ACCESS VIOLATION
0048 317 BRB BRPRTPAGRET
0048 318 :
0048 319 : GLOBAL PAGE
0048 320 :
0048 321 PRGLOBAL:
0048 322 MOVL MMG$GL_GPTBASE,R0
0048 323 EXTZV #PTESV_GPTX,#PTES$GPTX,(R3),R1 ; GET GPTX
0048 324 MOVL (R0)[RT],R1 ;GET GPTÉ
0048 325 PUSHL R1
0048 326 CLRL R0 ;ASSUME KERNEL MODE ACCESS
0048 327 BSBW MMG$PAGETYPE
0048 328 MOVL (SP)+,R0 ;GET BACK THE GPTE
0048 329 CMPB R1,#3 ;IS IT A GLOBAL SECTION INDEX
0048 330 BNEQ PRNOPRIV ;NO - CAN'T CHANGE THE PROTECTION
0048 331 BBS #PTESV_CRF,R0,PRCHANGE ;ALLOWED IF CRF
0048 332 PRNOPRIV:
0048 333 MOVZWL #SS$_NOPRIV,R0 ;NO PRIVILEGE
0048 334 BRPRTPAGRET:
0048 335 BRB PRTPAGRET
0048 336 :
0048 337 : R0 - ADDRESS OF JIB
0048 338 :
0048 339 : EXCEEDED PAGE FILE QUOTA
0048 340 :
0048 341 PGFLQUOTA:
0048 342 INCL JIB$$_PGFLCNT(R0) ;FIX UP THE COUNT
0048 343 TSTL (SP)+ ;CLEAN STACK
0048 344 MOVZWL #SS$_EXQUOTA,R0 ;RETURN "EXCEEDED QUOTA"
0048 345 BRW PRTPAGRET
0048 346 :
0048 347 : SECTION TABLE PAGE
0048 348 :
0048 349 PRSTX:
0048 350 BBC #31,R8,PRCHANGE ;BRANCH IF NO NEED TO COPY ON REF
0048 351 BBS #PTESV_WRT,(R3),PRCHANGE ;BRANCH IF SECTION IS WRITABLE
0048 352 PUSHL R0 ;SAVE PFN
```

```
50 0080 C4 D0 00A1 353      MOVL      PCB$JIB(R4),R0      ;GET JIB ADDRESS
      3C A0 D7 00A6 354      DECL      JIB$PGFLCNT(R0)      ;CHARGE A PAGE FILE PAGE
      E1 19 00A9 355      BLSS      PGFLQ00TA      ;BRANCH IF OVER QUOTA
      50 8ED0 00AB 356      POPL      R0      ;RESTORE PFN
4E 63 10 E3 00AE 357      BBCS      #PTESV_CRF,(R3),PRTCHANGE ;FORCE COPY ON REFERENCE
      4C 11 00B2 358      BRB      PRTCHANGE      ;AND GO CHANGE THE PROTECTION
      00B4 359      ;
      00B4 360      ; VALID PAGE
      00B4 361      ;
      00B4 362      PRTVALID:
00000000'EF 50 D1 00B4 363      CMPL      R0,MMG$GL_MAXPFN      ;IS THIS PAGE IN SHARED MEMORY?
      CA 1A 00BB 364      BGTRU      PRTNOPRIV      ;BR IF IN SHAR MEM, MUST BE GBL SEC PAG
      C6 63 15 E0 00BD 365      BBS      #PTESV_WINDOW,(R3),PRTNOPRIV ;RETURN ERROR IF PFN MAPPED PAGE
      0000'DF40 07 93 00C1 366      ASSUME      PFNSC_PROCESS EQ 0      ;PROCESS PAGE TYPE
      BE 12 00C7 367      BITB      #PFNSM_PAGTYP,@W^PFNSAB_TYPE[R0] ;PROCESS PAGE?
      33 58 1F E1 00C9 368      BNEQ      PRTNOPRIV      ;BRANCH IF NOT
51 0000'DF40 09 9C 00CD 369      BBC      #31,R8,PRTCHANGE      ;BRANCH IF NO NEED TO COPY ON REF
      2A 18 00D4 370      ROTL      #<31-PTESV_TYPO>,@W^PFNSAL_BAK[R0],R1 ;R1<31> = TYPO BIT
      00D6 371      BGEQ      PRTCHANGE      ;BRANCH IF ALREADY PAGING FILE ADDRESS
      00D6 372      ;
      00D6 373      ; CHANGE SECTION ADDRESS TO 'NOT YET ALLOCATED' PAGING FILE ADDRESS
      00D6 374      ;
      26 51 1B E0 00D6 375      BBS      #<PTESV_WRT+<31-PTESV_TYPO>>,R1,PRTCHANGE ;BRANCH IF SECTION WRITABL
      50 DD 00DA 376      PUSHL      R0      ;SAVE PFN
50 0080 C4 D0 00DC 377      MOVL      PCB$JIB(R4),R0      ;GET JIB ADDRESS
      3C A0 D7 00E1 378      DECL      JIB$PGFLCNT(R0)      ;CHARGE PAGE FILE QUOTA
      A6 19 00E4 379      BLSS      PGFLQ00TA      ;BRANCH IF OVER QUOTA
      50 8ED0 00E6 380      POPL      R0      ;RESTORE PFN
      09 EE 00E9 381      EXTV      #<PTESV_STX+<31-PTESV_TYPO>>,- ;GET SECTION INDEX
51 51 10 00EB 382      #PTESV_STX,R1,R1      ;FROM SHIFTED BACKING STORE ADDRESS
      52 DD 00EE 383      PUSHL      R2      ;SAVE VIRTUAL ADDRESS
      FF0D' 30 00F0 384      BSBW      MMG$DECSECREP      ;COUNT ONE LESS SECTION REFERENCE
      04 BA 00F3 385      POPR      #^M<R2>      ;RESTORE SAVED VIRTUAL ADDRESS
0000'DF40 1C A5 D0 00F5 386      MOVL      PHD$JIB_PAGFIL(R5),@W^PFNSAL_BAK[R0] ;SET NULL PAGING FILE ADDRESS
      00 63 1A E2 00FC 387      BBSS      #PTESV_MODIFY,(R3),10$ ;SET NULL PAGING FILE ADR
      0100 388      ;
      0100 389      10$:
      0100 390      ;
      0100 391      ; PAGE FILE PAGE
      0100 392      ;
      0100 393      PRTPAGFIL:
      0100 394      ;
      0100 395      ; CHANGE THE PAGE PROTECTION
      0100 396      ;
      0100 397      PRTCHANGE:
63 04 1B 58 F0 0100 398      INSV      R8,#PTESV_PROT,#PTESV_PROT,(R3) ;SET NEW PROTECTION
      50 01 3C 0105 399      INVALID      R2      ;AND INVALIDATE THE TRANS BUFFER
      0108 400      MOVZWL      #SS$_NORMAL,R0      ;SUCCESSFUL COMPLETION
      010B 401      ;
      010B 402      ; EXIT HERE WITH R0 ALREADY SET
      010B 403      ; 0(SP) = ACCESS MODE, 4(SP) = IPL TO RESTORE, 8(SP) = SAVED PSL
      010B 404      ;
      010B 405      PRTPAGRET:
      02 BA 010B 406      POPR      #^M<R1>      ;POP THE SAVED ACCESS MODE
      05 010D 407      ENBINT      ;RESTORE CALLER'S IPL
      0111 408      RSB      ;AND RETURN
      0111 409
```

SYSSETPRT
V04-000

- Set Page Protection System Service
SETPRTPAG - SET PROTECTION FOR A SINGLE

16-SEP-1984 02:33:40
5-SEP-1984 03:57:22

VAX/VMS Macro V04-00
[SYS.SRC]SYSSETPRT.MAR;1

Page 9
(5)

0111 410
0111 411
0111 412

.END

SYS
Tab

SYSSETPRT
Symbol table

D 9
- Set Page Protection System Service

16-SEP-1984 02:33:40 VAX/VMS Macro V04-00
5-SEP-1984 03:57:22 [SYS.SRC]SYSSETPRT.MAR;1

Page 10
(5)

ACMODE	= 0000000C		
BRPRTAGRET	0000008A	R	03
EXESSETPRT	00000000	RG	02
INADR	= 00000004		
JIBSL_PGFLCNT	= 0000003C		
MMGSCREDEL	*****	X	02
MMGSC_LENGTH	= FFFFFFFE4		
MMGSDCSECREP	*****	X	03
MMGSGL_GPTBASE	*****	X	03
MMGSGL_MAXPFN	*****	X	03
MMGSINADRINI	*****	X	02
MMGSPAGETYPE	*****	X	03
MMGSPTEREF	*****	X	03
MMGSRETRANGE	*****	X	02
MMGSSETPRTAG	00000000	RG	03
PCBSL_JIB	= 00000080		
PFNSAB_TYPE	*****	X	03
PFNSAL_BAK	*****	X	03
PFNSC_PROCESS	= 00000000		
PFNSM_PAGTYP	= 00000007		
PGFLQUOTA	0000008C	R	03
PHDSL_PAGFIL	= 0000001C		
PRS_IPL	= 00000012		
PRS_TBIS	= 0000003A		
PROT	= 00000010		
PRTSC_KR	= 00000003		
PRTSC_NA	= 00000000		
PRTSC_RESERVED	= 00000001		
PRTCHANGE	00000100	R	03
PRTGLOBAL	00000064	R	03
PRTNOPRIV	00000087	R	03
PRTAGACCPIO	0000005F	R	03
PRTAGFIL	00000100	R	03
PRTAGRET	0000010B	R	03
PRTSTX	00000097	R	03
PRTTRANS	00000048	R	03
PRTVALID	000000B4	R	03
PRVPRT	= 00000014		
PTESM_PROT	= 78000000		
PTESS_GPTX	= 00000016		
PTESS_PFN	= 00000015		
PTESS_PROT	= 00000004		
PTESS_STX	= 00000010		
PTESV_CRF	= 00000010		
PTESV_GPTX	= 00000000		
PTESV_MODIFY	= 0000001A		
PTESV_PFN	= 00000000		
PTESV_PROT	= 0000001B		
PTESV_STX	= 00000000		
PTESV_TYPO	= 00000016		
PTESV_WINDOW	= 00000015		
PTESV_WRT	= 00000012		
RETADR	= 00000008		
SSS_ACCVIO	= 0000000C		
SSS_EXQUOTA	= 0000001C		
SSS_IVPROTECT	= 000002F4		
SSS_NOPRIV	= 00000024		

SSS_NORMAL

= 00000001

SYS
V04

+-----+
! 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
YSEXEPAGED	00000054 (84.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE
\$MMGCOD	00000111 (273.)	03 (3.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	30	00:00:00.11	00:00:00.44
Command processing	125	00:00:00.57	00:00:02.07
Pass 1	299	00:00:08.86	00:00:16.71
Symbol table sort	0	00:00:01.44	00:00:02.97
Pass 2	84	00:00:01.80	00:00:04.02
Symbol table output	8	00:00:00.08	00:00:00.28
Psect synopsis output	2	00:00:00.02	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	550	00:00:12.89	00:00:26.52

The working set limit was 1200 pages.

50505 bytes (99 pages) of virtual memory were used to buffer the intermediate code.

There were 50 pages of symbol table space allocated to hold 937 non-local and 10 local symbols.

412 source lines were read in Pass 1, producing 18 object records in Pass 2.

22 pages of virtual memory were used to define 21 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
-\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	11
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	7
TOTALS (all libraries)	18

1043 GETs were required to define 18 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:SYSSETPRT/OBJ=OBJ\$:SYSSETPRT MSRC\$:SYSSETPRT/UPDATE=(ENH\$:SYSSETPRT)+EXECML\$/LIB

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