

SYSSETPRV
Table of contents

(1)	49	DECLARATIONS
(1)	74	SET PRIVILEGE

SYS
Sym

CTL
EXE
MAS
PSL
SS\$
SS\$

PSE

\$AB
YEX

Pha

Ini
Com
Pas
Sym
Pas
Sym
Pse
Cro
Assi

The
2131
The
66
9 p

Mac

-S2
-S2
TOT

512

The
MAC

```
0000 1 .TITLE SYSSETPRV - SYSTEM SERVICE TO SET PROCESS PRIVILEGES
0000 2 .IDENT 'V04-000'
0000 3
0000 4
0000 5 *****
0000 6 *
0000 7 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *
0000 8 * DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS. *
0000 9 * ALL RIGHTS RESERVED. *
0000 10 *
0000 11 * THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED *
0000 12 * ONLY IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE AND WITH THE *
0000 13 * INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR ANY OTHER *
0000 14 * COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY *
0000 15 * OTHER PERSON. NO TITLE TO AND OWNERSHIP OF THE SOFTWARE IS HEREBY *
0000 16 * TRANSFERRED. *
0000 17 *
0000 18 * THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE *
0000 19 * AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT *
0000 20 * CORPORATION. *
0000 21 *
0000 22 * DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS *
0000 23 * SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL. *
0000 24 *
0000 25 *
0000 26 *****
0000 27
0000 28 LEN KAWELL 10-SEP-1979
0000 29
0000 30 MODIFIED BY:
0000 31
0000 32 V03-004 RSH0093 R. Scott Hanna 31-Jan-1984
0000 33 Remove security auditing support.
0000 34
0000 35 V03-003 RSH0021 R. Scott Hanna 23-May-1983
0000 36 Add Security Auditing support.
0000 37
0000 38 V03-002 WMC54054 Wayne Cardoza 22-FEB-1983
0000 39 Allow SS$NOTALLPRIV to be returned if temp flag set.
0000 40
0000 41 V03-001 KDM0002 Kathleen D. Morse 28-Jun-1982
0000 42 Added $$SDEF.
0000 43
0000 44 **
0000 45
0000 46 SYSTEM SERVICE TO SET A PROCESS'S PRIVILEGES
0000 47
```

```
0000 49 .SBTTL DECLARATIONS
0000 50 :
0000 51 : MACRO LIBRARY CALLS
0000 52 :
0000 53 :
0000 54 $PCBDEF ;PROCESS CONTROL BLOCK
0000 55 $PHDDEF ;PROCESS HEADER
0000 56 $PSLDEF ;PROCESSOR STATUS LONGWORD
0000 57 $PRVDEF ;PRIVILEGES
0000 58 $SSDEF ;SYSTEM STATUS CODES
0000 59 :
0000 60 : LOCAL SYMBOLS
0000 61 :
0000 62 : ARGUMENT LIST OFFSET DEFINITIONS
0000 63 :
00000004 0000 64 ENBFLG = 4 ;ENABLE INDICATOR, 0=DISABLE, 1=ENABLE
00000008 0000 65 PRVADR = 8 ;PRIVILEGE MASK ADDRESS
0000000C 0000 66 PRMFLG = 12 ;PERMANENT FLAG, 0=TEMPORARY, 1=PERMANENT
00000010 0000 67 PRVPRV = 16 ;PREVIOUS PRIVILEGES BUFFER ADDRESS
0000 68 :
0000 69 : OWN STORAGE
0000 70 :
00000000 71 : .PSECT YEXEPAGED ;PAGED DATA AND CODE
0000 72 :
```

```

0000 74 .SBTTL SET PRIVILEGE
0000 75 :+
0000 76 : EXESSETPRV - SET PROCESS PRIVILEGE SYSTEM SERVICE
0000 77 :
0000 78 : THIS SERVICE PROVIDES THE CAPABILITY FOR A PROCESS TO SET ITS PRIVILEGES.
0000 79 :
0000 80 : INPUTS:
0000 81 :
0000 82 : ENBFLG(AP) = ENABLE INDICATOR.
0000 83 : 1 INDICATES PRIVILEGES ARE TO BE ENABLED.
0000 84 : 0 INDICATES PRIVILEGES ARE TO BE DISABLED.
0000 85 : PRVADR(AP) = ADDRESS OF A 64-BIT MASK SPECIFYING THE PRIVILEGES TO
0000 86 : BE ENABLED OR DISABLED.
0000 87 : PRMFLG(AP) = PERMANENT INDICATOR.
0000 88 : 1 INDICATES PROECS PERMANENT PRIVILEGES ENABLED/DISABLED.
0000 89 : 0 INDICATES ONLY THE TEMPORARY CURRENT PRIVILEGES.
0000 90 : PRVPRV(AP) = ADDRESS OF A QUADWORD BUFFER TO REVEIVE THE PREVIOUS
0000 91 : PRIVILEGE MASK.
0000 92 :
0000 93 : R4 = ADDRESS OF CURRRENT PROCESS PCB.
0000 94 :
0000 95 : OUTPUTS:
0000 96 :
0000 97 : R0 LOW BIT CLEAR INDICATES FAILURE TO SET PRIVILEGES.
0000 98 :
0000 99 : R0 = SSS$ ACCVIO - PARAMETER VALUE CANNOT BE READ BY CALLING
0000 100 : ACCESS MODE.
0000 101 :
0000 102 : R0 = SSS$ IVSTSFLG - EITHER PRMFLG OR ENBFLG HAVE RESERVED
0000 103 : BITS SET.
0000 104 :
0000 105 : R0 LOW BIT SET INDICATES SUCCESSFUL COMPLETION.
0000 106 :
0000 107 : R0 = SSS$ NORMAL - NORMAL COMPLETION, SPECIFIED PRIVILEGES
0000 108 : DISABLED OR ALL SPECIFIED PRIVILEGES ENABLED
0000 109 :
0000 110 : R0 = SSS$ NOTALLPRIV - SOME PRIVILEGES THAT WERE REQUESTED
0000 111 : WERE NOT AUTHORIZED AND WERE NOT GRANTED
0000 112 :
0000 113 :
0000 114 : -
007C 0000 115 .ENTRY EXESSETPRV, - ;SET PROCESS PRIVILEGES
0002 116 ^M<R2,R3,R4,R5,R6> ;:(ENTRY MASK)
55 00000000'9F D0 0002 117 MOVL @#CTL$GL PHD,R5 ;GET PROCESS HEADER ADDRESS
56 56 0C AC D0 0009 118 MOVL PRMFLG(AP),R6 ;GET PERMANENT/TEMPORARY FLAG
56 FFFFFFFE 8F D3 000D 119 BITL #^C<1>,R6 ;ANY BITS BUT DEFINED BIT(S) SET?
35 12 0014 120 BNEQ IVSTSFLG ;IF NEQ YES
0016 121 :
0016 122 : CHECK ACCESS TO PRIVILEGE MASK ARGUMENT
0016 123 :
52 08 AC D0 0016 124 MOVL PRVADR(AP),R2 ;GET PRIVILEGE MASK ADDRESS
09 13 001A 125 BEQL S$ ;IF EQL NONE
001C 126 IFNORD #8,(R2),ACCVIO ;CHECK READ ACCESS TO MASK
52 62 7D 0022 127 MOVQ (R2),R2 ;GET SPECIFIED PRIVILEGES
0025 128 :
0025 129 : RETURN CURRENT PRIVILEGE MASK, IF DESIRED
0025 130 :

```

```

50 10 AC D0 0025 131 5$: MOVL PRVPRV(AP),R0 ;GET PREVIOUS PRIVILEGES BUFFER ADDRESS
15 13 0029 132 BEQL 10$ ;IF EQL NONE
002B 133 IFNOWRT #8,(R0),ACCVIO ;CHECK WRITE ACCESS TO BUFFER
60 0084 C4 7D 0031 134 MOVQ PCB$Q_PRIV(R4),(R0) ;ASSUME CURRENT PRIVILEGES DESIRED
07 56 E9 0036 135 BLBC R6,10$ ;IF LBC CURRENT PRIVILEGES DESIRED
60 00000000'EF 7D 0039 136 MOVQ CTL$GQ_PROCPRV,(R0) ;RETURN PROCESS PERMANENT PRIVILEGES
0040 137
08 AC D5 0040 138 10$: TSTL PRVADR(AP) ;CHECK PRIVILEGE MASK ADDRESS
10 13 0043 139 BEQL SUCCESS ;IF EQL NONE - ALL DONE
73 04 AC E9 0045 140 BLBC ENBFLG(AP),DISABLE ;IF LBC DISABLE PRIVILEGES
OE 11 0049 141 BRB ENABLE ;ELSE ENABLE PRIVILEGES
004B 142 ;
004B 143 ; EXIT SERVICE
004B 144 ;
004B 145 IVSTSFLG: ;INVALID STATUS FLAG
50 017C 8F 3C 004B 146 MOVZWL #SS$_IVSTSFLG,R0 ;SET FAILURE STATUS
04 0050 147 RET
0051 148 ACCVIO: ;ACCESS VIOLATION
50 0C 3C 0051 149 MOVZWL S^#SS$_ACCVIO,R0 ;SET FAILURE STATUS
04 0054 150 RET
0055 151 SUCCESS: ;SUCCESSFUL COMPLETION
50 01 3C 0055 152 MOVZWL S^#SS$_NORMAL,R0 ;SET SUCCESS STATUS
04 0058 153 RET
0059 154 ;
0059 155 ; ENABLE SPECIFIED PRIVILEGES
0059 156 ;
0059 157 ENABLE: ;ENABLE SPECIFIED PRIVILEGES
7E 01 3C 0059 158 MOVZWL S^#SS$_NORMAL,-(SP) ;ASSUME SUCCESS
50 DC 005C 159 MOVPSL R0 ;GET CURRENT PSL
16 ED 005E 160 CMPZV #PSL$V_PRVMOD,- ;WAS PREVIOUS MODE EXEC OR KERNEL?
01 50 02 0060 161 #PSL$_PRVMOD,R0,#PSL$_EXEC
31 15 0063 162 BLEQ 20$ ;IF LEQ YES - CAN ENABLE ANYTHING
50 00E0 C5 7D 0065 163 MOVQ PHD$Q_AUTHPRIV(R5),R0 ;GET AUTHORIZED PRIVILEGES
28 50 0E E0 006A 164 BBS #PRV$Q_SETPRV,R0,20$ ;IF SETPRV SET, CAN ENABLE ANYTHING
0A 56 E8 006E 165 BLBS R6,10$ ;IF PERMANENT, DON'T GET IMAGE PRIVILEGES
50 00E8 C5 C8 0071 166 BISL PHD$Q_IMAGPRIV(R5),R0 ;ADD IMAGE PRIVILEGES
51 00EC C5 C8 0076 167 BISL PHD$Q_IMAGPRIV+4(R5),R1
50 50 D2 007B 168 10$: MCOML R0,R0 ;COMPLEMENT AUTHORIZED PRIVILEGES
51 51 D2 007E 169 MCOML R1,R1
52 50 D3 0081 170 BITL R0,R2 ;CHECK IF ANY REQUESTED PRIVILEGES
05 12 0084 171 BNEQ 15$ ;ARE NOT AUTHORIZED
53 51 D3 0086 172 BITL R1,R3
05 13 0089 173 BEQL 16$
6E 0681 8F 3C 008B 174 15$: MOVZWL #SS$_NOTALLPRIV,(SP) ;SET ALTERNATE SUCCESS
52 50 CA 0090 175 16$: BICL R0,R2 ;CLEAR ANY PRIVILEGES NOT AUTHORIZED
53 51 CA 0093 176 BICL R1,R3
0096 177 20$:
0084 C4 52 C8 0096 178 BISL R2,PCB$Q_PRIV(R4) ;SET CURRENT PRIVILEGES
0088 C4 53 C8 009B 179 BISL R3,PCB$Q_PRIV+4(R4)
65 52 C8 00A0 180 BISL R2,PHD$Q_PRIVMSK(R5) ;(SET OTHER COPY TOO)
04 A5 53 C8 00A3 181 BISL R3,PHD$Q_PRIVMSK+4(R5)
OE 56 E9 00A7 182 BLBC R6,30$ ;IF NOT PERMANENT - DONE
00000000'EF 52 C8 00AA 183 BISL R2,CTL$GQ_PROCPRV ;SET PERMANENT PROCESS PRIVILEGES
00000004'EF 53 C8 00B1 184 BISL R3,CTL$GQ_PROCPRV+4
50 8ED0 0088 185 30$: POPL R0 ;GET RETURN STATUS CODE
04 00BB 186
00BC 187 ;

```

```
00BC 188 ; DISABLE SPECIFIED PRIVILEGES
00BC 189 ;
00BC 190 DISABLE:
00BC 191 BICL R2,PCBSQ_PRIV(R4) ;DISABLE PRIVILEGES
00C1 192 BICL R3,PCBSQ_PRIV+4(R4) ;CLEAR CURRENT PRIVILEGES
00C6 193 BICL R2,PHDSQ_PRIVMSK(R5) ;
00C9 194 BICL R3,PHDSQ_PRIVMSK+4(R5) ;((CLEAR IN OTHER COPY TOO)
00CD 195 BLBC R6,SUCCESS ;IF NOT PERMANENT - DONE
00D0 196 BICL R2,CTLSGQ_PROCPRIV ;CLEAR PERMANENT PROCESS PRIVILEGES
00D7 197 BICL R3,CTLSGQ_PROCPRIV+4 ;
00DE 198 BRW SUCCESS ;DONE
00E1 199
00E1 200 .END
```

```
0084 C4 52 CA
0088 C4 53 CA
      65 52 CA
      04 A5 53 CA
      85 56 E9
00000000'EF 52 CA
00000004'EF 53 CA
      FF74 31
```

SYSSETPRV
Symbol table

```

ACCVIO          00000051 R      02
CTL$GL_PHD     ***** X      02
CTL$GQ-PROCPRV ***** X      02
DISABLE        0000008C R      02
ENABLE         00000059 R      02
ENBFLG         = 00000004
EXES$SETPRV    00000000 RG     02
IVSTSFLG       0000004B R      02
PCBSQ_PRIV     = 00000084
PHDSQ_AUTHPRIV = 000000E0
PHDSQ_IMAGPRIV = 000000E8
PHDSQ_PRIVMSK  = 00000000
PRMFLG         = 0000000C
PRV$V_SETPRV   = 0000000E
PRVADR         = 00000008
PRVPRV         = 00000010
PSL$C_EXEC     = 00000001
PSL$S_P$R$MOD  = 00000002
PSL$V_P$R$MOD  = 00000016
SS$ACCVIO      = 0000000C
SS$IVSTSFLG    = 0000017C
SS$NORMAL      = 00000001
SS$NOTALLPRIV = 00000681
SUCCESS        00000055 R      02
  
```

! 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 NCVEC BYTE
YEXEPAGED	000000E1 (225.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE

! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	36	00:00:00.07	00:00:20.41
Command processing	133	00:00:00.61	00:00:01.50
Pass 1	261	00:00:07.06	00:00:13.98
Symbol table sort	0	00:00:01.25	00:00:02.14
Pass 2	54	00:00:01.24	00:00:02.29
Symbol table output	4	00:00:00.04	00:00:00.04
Psect synopsis output	2	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	492	00:00:10.30	00:00:20.38

The working set limit was 1350 pages.
39396 bytes (77 pages) of virtual memory were used to buffer the intermediate code.
There were 50 pages of symbol table space allocated to hold 785 non-local and 7 local symbols.
200 source lines were read in Pass 1, producing 16 object records in Pass 2.
14 pages of virtual memory were used to define 13 macros.

SYS
Sym

ACM
CTL
CTL
EXE
EXE
INA
PSL
RET
SS\$
SS\$

PSE

\$AB
YEX

Pha

Ini
Com
Pas
Sym
Sym
Pse
Cro
Ass

The
221
The
113
11

Mac

-\$2
-\$2
TOT

520
The

! Macro library statistics !

Macro library name	Macros defined
-----	-----
-\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	4
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	6
TOTALS (all libraries)	10

859 GETS were required to define 10 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:SYSSETPRV/OBJ=OBJ\$:SYSSETPRV MSRC\$:SYSSETPRV/UPDATE=(ENH\$:SYSSETPRV)+EXECMLS/LIB

