


```

SSSSSSSS YY YY SSSSSSS AAAAAA SSSSSSS TTTTTTTTTT CCCCCCCC 000000 NN NN
SSSSSSSS YY YY SSSSSSS AAAAAA SSSSSSS TTTTTTTTTT CCCCCCCC 000000 NN NN
SS SS YY YY SS SSSSSSS AA AA SS SS TT TT CC CCCC 00 00 NN NN
SS SS YY YY SS SSSSSSS AA AA SS SS TT TT CC CCCC 00 00 NN NN
SS SS YY YY SS SSSSSSS AA AA SS SS TT TT CC CCCC 00 00 NN NN
SSSSSS YY YY SSSSSS AA AA SSSSSS TT TT CC CCCC 00 00 NN NN
SSSSSS YY YY SSSSSS AA AA SSSSSS TT TT CC CCCC 00 00 NN NN
SS YY YY YY YY SSSSSS AA AA SSSSSS TT TT CC CCCC 00 00 NN NN
SS YY YY YY YY SSSSSS AA AA SSSSSS TT TT CC CCCC 00 00 NN NN
SS YY YY YY YY SSSSSS AA AA SSSSSS TT TT CC CCCC 00 00 NN NN
SSSSSSSS YY YY SSSSSSS AA AA SSSSSSS TT TT CCCCCCCC 000000 NN NN
SSSSSSSS YY YY SSSSSSS AA AA SSSSSSS TT TT CCCCCCCC 000000 NN NN

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```
0000 1
0000 2 .TITLE SYSASTCON ASTCONTROL SYSTEM SERVICES
0000 3 .IDENT 'V04-000'
0000 4
0000 5
0000 6 .....
0000 7 .....
0000 8 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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0000 25
0000 26 .....
0000 27 .....
0000 28
0000 29 **
0000 30 * FACILITY: EXECUTIVE, SYSTEM SERVICES
0000 31
0000 32 * ABSTRACT:
0000 33 * THIS MODULE CONTAINS THE SYSTEM SERVICES SETAST WHICH CONTROLS
0000 34 * THE STATE OF THE AST ENABLES AND DCLAST WHICH DECLARES AN
0000 35 * AST FOR A PARTICULAR ACCESS MODE.
0000 36
0000 37 * ENVIRONMENT:
0000 38
0000 39 * --
0000 40
0000 41 * .PAGE
0000 42 * .SBTTL HISTORY ; DETAILED
0000 43
0000 44 * AUTHOR: R. HUSTVEDT CREATION DATE: 21-SEP-76
0000 45
0000 46 * MODIFIED BY:
0000 47 * : VERSION
0000 48 * 01 -
0000 49
```

```
0000 51 .SBTTL DECLARATIONS
0000 52
0000 53 :
0000 54 : INCLUDE FILES:
00C0 55 :
0000 56 $ACBDEF : DEFINE AST CONTROL BLOCK OFFSETS
0000 57 $IPLDEF : DEFINE IPL VALUES
0000 58 $PCBDEF : DEFINE PCB OFFSETS
0000 59 $PRDEF : DEFINE PROCESSOR REGISTER VALUES
0000 60 $PSLDEF : DEFINE PSL FIELDS
00C0 61 $RSNDEF : DEFINE RESOURCE NUMBERS
0000 62 $SSDEF : DEFINE STATUS CODE VALUES
0000 63
0000 64 :
0000 65 : EQUATES:
0000 66 :
0000 67
0000000C 0000 68 ACMODE=12 : DISPLACEMENT TO ACCESS MODE
00000004 0000 69 AST=4 : DISPLACEMENT TO AST ADDRESS
00000008 0000 70 ASTPRM=8 : DISPLACEMENT TO AST PARAMETER
00000004 0000 71 ENABLE=4 : DISPLACEMENT TO ENABLE ARGUMENT
0000 72 :
0000 73 : OWN STORAGE:
000C 74 :
00000000 75 .PSECT YSEXEPAGED, BYTE : PAGED PSECT
```

```

0000 77 .SBTTL EXESSETAST - SET AST ENABLES
0000 78
0000 79 :++
0000 80 : FUNCTIONAL DESCRIPTION:
0000 81 : EXESSETAST ALLOWS A PROCESS TO ENABLE OR DISABLE THE DELIVERY
0000 82 : OF ASTS FOR THE PROCESS AT THE ACCESS MODE ISSUING THE CALL TO
0000 83 : EXESSETAST. THE PREVIOUS STATE OF THE AST ENABLE FOR THAT
0000 84 : ACCESS MODE IS RETURNED IN BIT 1 OF REGISTER 0 AS PART OF
0000 85 : THE SUCCESSFUL COMPLETION STATUS CODE.
0000 86
0000 87 : CALLING SEQUENCE:
0000 88 : CALLG  ARGLIST,EXESSETAST
0000 89
0000 90 : INPUT PARAMETERS:
0000 91 : U4(AP) - NEW SETTING FOR AST ENABLE
0000 92 : R4 - PCB ADDRESS OF CURRENT PROCESS
0000 93
0000 94 : IMPLICIT INPUTS:
0000 95 : SCH$GL_CURPCB - POINTER TO CURRENT PROCESS PCB
0000 96
0000 97 : OUTPUT PARAMETERS:
0000 98 : R0 - COMPLETION STATUS CODE
0000 99
0000 100 : IMPLICIT OUTPUTS:
0000 101 : AST ENABLE FOR PREVIOUS MODE IS SET ACCORDING TO ARGUMENT
0000 102
0000 103 : THE NEW SETTING FOR THE ASTLVL REGISTER IS PLACED BOTH IN
0000 104 : THE PROCESSOR REGISTER AND THE CURRENT HARDWARE PCB.
0000 105
0000 106 : COMPLETION CODES:
0000 107 : SSS_WASCLR - AST ENABLE FOR ACCESS MODE WAS CLEAR
0000 108 : SSS_WASSET - AST ENABLE FOR ACCESS MODE WAS SET
0000 109
0000 110 : SIDE EFFECTS:
0000 111 : ANY PENDING ASTS FOR THIS PROCESS WHICH BECOME DELIVERABLE
0000 112 : AS A RESULT OF SETTING AN AST ENABLE MAY BE DELIVERED UPON
0000 113 : EXIT FROM THIS SERVICE.
0000 114
0000 115 :--
0000 116

```

```

0000 117 EXESSETAST:: ; SET AST ENABLE SYSTEM SERVICE
0000 118 .WORD ^M<R2,R3,R4,R5> ; SAVE REGISTERS R2-R5
0002 119 MOVPSL R1 ; GET CURRENT PSL
51 51 02 51 DC 0004 120 EXTZV #PSL$V PRVMOD,#PSL$S_PRVMOD,R1,R1 ; EXTRACT PREVIOUS MODE
03 0D A4 51 3C 0009 121 MOVZWL #SS$ WASSET,R5 ; ASSUME SET
OD A4 01 51 04 AC FO 0011 122 BBS R1,PCB$B_ASTEN(R4),10$ ; TEST OLD ENABLE SETTING
50 55 30 001B 123 MOVZWL #SS$ WASCLR,R5 ; IT WAS CLEAR
FFE2 001E 124 10$: INSV ENABLE(AP),R1,#1,PCB$B_ASTEN(R4) ; SET NEW ENABLE VALUE
04 0021 125 BSBW SCH$NEWLVL ; COMPUTE NEW ASTLVL
001E 126 MOVL R5,R0 ; SET COMPLETION STATUS
0021 127 RET ; AND RETURN TO CALLER

```

```

0022 129 .SBTTL EXESDCLAST - DECLARE AST SYSTEM SERVICE
0022 130
0022 131 :--
0022 132 :--
0022 133 :--
0022 134 :--
0022 135 :--
0022 136 :--
0022 137 :--
0022 138 :--
0022 139 :--
0022 140 :--
0022 141 :--
0022 142 :--
0022 143 :--
0022 144 :--
0022 145 :--
0022 146 :--
0022 147 :--
0022 148 :--
0022 149 :--
0022 150 :--
0022 151 :--
0022 152 :--
0022 153 :--
0022 154 :--
0022 155 :--
0022 156 :--
0022 157 :--
0022 158 :--
0022 159 :--
0022 160 :--
0022 161 :--
0022 162 :--
0022 163 :--
0022 164 :--
0022 165 :--
0022 166 EXESDCLAST::
0022 167 .WORD ^M<R2,R3,R4,R5> ; DECLARE AST SYSTEM SERVICE
0022 168 TSTW PCBSW_ASTCNT(R4) ; SAVE REGISTERS R2-R5
0022 169 BLEQ 20$ ; TEST FOR QUOTA
0022 170 BSBW EXESALLOCIRP ; YES, ERROR RETURN
0022 171 BLBC R0,10$ ; ALLOCATE PACKET
0022 172 DECW PCBSW_ASTCNT(R4) ; DID NOT GET IT
0022 173 MOVL R2,R5 ; ACCOUNT FOR IT
0022 174 EXTZV #0,#2,ACMODE(AP),R0 ; SAVE BASE ADDRESS OF ACB
0022 175 BSBW EXESMAXACMODE ; GET ACCESS MODE ARGUMENT
0022 176 BISB #<1@ACBSV QUOTA>,R0 ; MAXIMIZE ACCESS MODE
0022 177 MOVB R0,ACBSB_RMOD(R5) ; SET QUOTA FLAG FOR PROCESS
0022 178 MOVL PCB$PID(R4),ACB$PID(R5) ; SET ACCESS MODE FOR AST
0022 179 MOVQ AST(AP),ACB$AST(R5) ; SET PID IN AST CB
0022 180 CLRL R2 ; STORE AST,ASTPRM
0022 181 BSBW SCH$QAST ; NULL PRIORITY INCR
0022 182 MOVZWL #SS$NORMAL,R0 ; AND ENQUEUE IT
0022 183 SETIPL #0 ; SET NORMAL STATUS
0022 184 RET ; ENABLE
0022 185 MOVZWL #SS$EXQUOTA,R0 ; AND RETURN TO CALLER
0022 185 20$ : SET ERROR STATUS

```

SYSASTCON
V04-000

ASTCONTROL SYSTEM SERVICES F 16
EXESDCLAST - DECLARE AST SYSTEM SERVICE

16-SEP-1984 01:41:51 VAX/VMS Macro V04-00
5-SEP-1984 03:48:56 [SYS.SRC]SYSASTCON.MAR;1

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(1)

04 005F 186 RET
0060 187 .END

; RETURN

SYSASTCON
Symbol table

ASTCONTROL SYSTEM SERVICES

G 16

16-SEP-1984 01:41:51
5-SEP-1984 03:48:56

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

Page 6
(1)

```

ACBSB_RMOD      = 0000000B
ACBSL_AST       = 00000010
ACBSL_PID       = 0000000C
ACBSV_QUOTA     = 00000006
ACMODE         = 0000000C
AST            = 00000004
ASTPRM         = 00000008
ENABLE        = 00000004
EXESALLOCIRP   ***** X 02
EXESDCLAST     00000022 RG 02
EXESMAXACMODE ***** X 02
EXESSETAST     00000000 RG 02
PCBSB_ASTEN    = 0000000D
PCBSL_PID      = 00000060
PCBSW_ASTCNT   = 00000038
PRB_IPL        = 00000012
PSLSS_PRVMOD   = 00000002
PSLSV_PRVMOD   = 00000016
SCHSNEWLVL    ***** X 02
SCHSQAST       ***** X 02
SSS_EXQUOTA    = 0000001C
SSS_NORMAL     = 00000001
SSS_WASCLR     = 00000001
SSS_WASSET     = 00000009
  
```

! 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	00000060 (96.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE

! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	36	00:00:00.05	00:00:02.65
Command processing	125	00:00:00.54	00:00:04.92
Pass 1	258	00:00:06.47	00:00:25.37
Symbol table sort	0	00:00:01.08	00:00:03.53
Pass 2	49	00:00:01.19	00:00:03.69
Symbol table output	5	00:00:00.04	00:00:00.04
Psect synopsis output	1	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	476	00:00:09.41	00:00:40.53

The working set limit was 1350 pages.
36358 bytes (72 pages) of virtual memory were used to buffer the intermediate code.
There were 40 pages of symbol table space allocated to hold 717 non-local and 3 local symbols.
187 source lines were read in Pass 1, producing 13 object records in Pass 2.
15 pages of virtual memory were used to define 14 macros.

! Macro library statistics !

Macro library name	Macros defined
-----	-----
\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	5
~\$255\$DUA28:[SYSLIB]STARLET.MLB;2	6
TOTALS (all libraries)	11

800 GETS were required to define 11 macros.

There were no errors, warnings or information messages.

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

