

```
SSSSSSSSSSSSS  MMM      MMM      GGGGGGGGGGGG  RRRRRRRRRRRR  TTTTTTTTTTTTTT  LLL
SSSSSSSSSSSSS  MMM      MMM      GGGGGGGGGGGG  RRRRRRRRRRRR  TTTTTTTTTTTTTT  LLL
SSSSSSSSSSSSS  MMM      MMM      GGGGGGGGGGGG  RRRRRRRRRRRR  TTTTTTTTTTTTTT  LLL
SSS            MMMMMM  MMMMMM  GGG            RRR      RRR      TTT      LLL
SSS            MMMMMM  MMMMMM  GGG            RRR      RRR      TTT      LLL
SSS            MMMMMM  MMMMMM  GGG            RRR      RRR      TTT      LLL
SSS            MMM      MMM      GGG            RRR      RRR      TTT      LLL
SSS            MMM      MMM      GGG            RRR      RRR      TTT      LLL
SSS            MMM      MMM      GGG            RRR      RRR      TTT      LLL
SSS            MMM      MMM      GGG            RRR      RRR      TTT      LLL
SSSSSSSSSSS    MMM      MMM      GGG            RRRRRRRRRRRR  TTT      LLL
SSSSSSSSSSS    MMM      MMM      GGG            RRRRRRRRRRRR  TTT      LLL
SSSSSSSSSSS    MMM      MMM      GGG            RRRRRRRRRRRR  TTT      LLL
SSS            SSS      MMM      GGG      GGGGGGGGGG  RRR      RRR      TTT      LLL
SSS            SSS      MMM      GGG      GGGGGGGGGG  RRR      RRR      TTT      LLL
SSS            SSS      MMM      GGG      GGGGGGGGGG  RRR      RRR      TTT      LLL
SSS            SSS      MMM      GGG      GGG      GGG  RRR      RRR      TTT      LLL
SSS            SSS      MMM      GGG      GGG      GGG  RRR      RRR      TTT      LLL
SSS            SSS      MMM      GGG      GGG      GGG  RRR      RRR      TTT      LLL
SSS            SSS      MMM      GGG      GGG      GGG  RRR      RRR      TTT      LLL
SSSSSSSSSSSSS  MMM      MMM      GGGGGGGGGG      RRR      RRR      TTT      LLLLLLLLLLLLLLLL
SSSSSSSSSSSSS  MMM      MMM      GGGGGGGGGG      RRR      RRR      TTT      LLLLLLLLLLLLLLLL
SSSSSSSSSSSSS  MMM      MMM      GGGGGGGGGG      RRR      RRR      TTT      LLLLLLLLLLLLLLLL
```

SOR
LIB
SOR
SOR
UT I
SOR
LIB
CLI
CLI
LIB
SYS

[illegible]

SMG\$VECTOR
Table of contents

- Entry vectors for SMGSHR.EXE

K 4

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(3) 118

DECLARATIONS
SMGSHR Vector

_S2

SOR

LIB

COD

DEF

```
0000 1 .TITLE SMG$VECTOR - Entry vectors for SMGSHR.EXE
0000 2 .IDENT /1-009/ ; File: SMGVECTOR.MAR Edit: LEB1009
0000 3
0000 4
0000 5 *****
0000 6 *
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0000 23 * SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
0000 24 *
0000 25 *
0000 26 *****
0000 27
0000 28
0000 29 ++
0000 30 FACILITY: Run-Time Library - Screen Management
0000 31
0000 32 ABSTRACT:
0000 33
0000 34 This module contains the entry vector definitions for the
0000 35 VAX-11 Run-Time Library shareable image SMGSHR.EXE
0000 36
0000 37 ENVIRONMENT: User mode, AST Reentrant
0000 38
0000 39 AUTHOR: Steven B. Lionel, CREATION DATE: 29-April-1983
0000 40
0000 41 MODIFIED BY:
0000 42
0000 43 1-001 - Original. SBL 29-April-1983
0000 44 1-002 - Change PSECT name to guarantee coming first. SBL 18-May-1983
0000 45 1-003 - Add SMG$LIST_KEY_DEFS and SMG$SET_DEFAULT_STATE. SBL 6-Sep-1983
0000 46 1-004 - Add screen mgmt. output routines. PLL 30-Jun-1983
0000 47 1-005 - Add new vectors. STAN 17-Jan-1983.
0000 48 1-006 - Add new entries for autobended routines, termtable routines
0000 49 and for additional SMG routine - SMG$GET_CHAR_AT_PHYSICAL_CURSOR.
0000 50 LEB 6-Mar-1984
0000 51 1-007 - Change name to SMG$INIT_TERM_TABLE BY TYPE (instead of BY NAME).
0000 52 Also change name of SMG$DEL_TERM_DATA to SMG$DEL_TERM_TABLE.
0000 53 Also change the way that the calls to the screen package are
0000 54 done (are in reverse order) due to a BLISS bug.
0000 55 LEB 8-Mar-1984
0000 56 1-008 - Add in entries for SMG$INVALIDATE_DISPLAY and SMG$GET_PHYSICAL_CURSOR
0000 57 which replace the entries for SMG$DISABLE_BROADCAST_TRAPPING and
```


SMG\$VECTOR
1-009

- Entry vectors for SMGSHR.EXE

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(1)

6-SEP-1984 11:47:33

[SMGRTL.SRC]SMGVECTOR.MAR;1

```
0000 58 : SMG$DISABLE_OUT_OF_BAND_ASTS.  
0000 59 : Also change names of SMG$ENABLE BROADCAST TRAPPING and  
0000 60 : SMG$ENABLE OUT OF BAND ASTS to SMG$SET...LEB 20-Mar-1984  
0000 61 : 1-009 - Take out the Screen Package entry points so we don't do  
0000 62 : 'autobended' by default. LEB 22-Mar-1984  
0000 63 :--
```

_\$2

Sym

CHK
CHK
CHK
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
CLI
LIB
LIB
LIB
LIB
LIB
LIB
LIB
LIB
PRI
SOR
SOR
SOR
SOR
SOR
SOR
SOR
SOR
SOR
SOR

```
0000 65      .SBTTL  DECLARATIONS
0000 66      :
0000 67      : LIBRARY MACRO CALLS:
0000 68      :
0000 69      :     NONE
0000 70      :
0000 71      : EXTERNAL DECLARATIONS:
0000 72      :
0000 73      :     .DSABL  GBL                ; Force all external symbols to be declared
0000 74      :
0000 75      : MACROS:
0000 76      :
0000 77      :
0000 78      :+
0000 79      : Macro to define an entry vector for a CALL entry point
0000 80      :-
0000 81      :
0000 82      :     .MACRO  VCALL      NAME
0000 83      :     .EXTRN      NAME
0000 84      :     .ALIGN   QUAD
0000 85      :     .TRANSFER      NAME
0000 86      :     .MASK        NAME
0000 87      :     JMP          NAME+2
0000 88      :     .ENDM
0000 89      :
0000 90      :+
0000 91      : Macro to define an entry vector for a JSB entry point
0000 92      :-
0000 93      :
0000 94      :     .MACRO  VJSB      NAME
0000 95      :     .EXTRN      NAME
0000 96      :     .ALIGN   QUAD
0000 97      :     .TRANSFER      NAME
0000 98      :     JMP          NAME
0000 99      :     .BLKB        2
0000 100     :     .ENDM
0000 101     :
0000 102     :
0000 103     : EQUATED SYMBOLS:
0000 104     :
0000 105     :     NONE
0000 106     :
0000 107     :
0000 108     : OWN STORAGE:
0000 109     :
0000 110     :     NONE
0000 111     :
0000 112     : PSECT DECLARATIONS:
0000 113     :
0000 114     :     .PSECT $$$SMG$VECTOR PIC, USR, CON, REL, LCL, SHR, -
0000 115     :     EXE, RD, NOWRT, QUAD
0000 116     :
```



```
0000 118      .SBTTL  SMGSHR Vector
0000 119
0000 120      ;+
0000 121      ; Define vectored entry points for the Screen Management Procedures.
0000 122      ;
0000 123      ; Any additions to this file should be reflected in
0000 124      ; COM$;SMGSHRVEC.DAT. All new entry points must be appended to the end
0000 125      ; of the list. NEVER change existing entries unless you are sure that
0000 126      ; what you do won't break existing programs.
0000 127      ; -
0000 128
0000 129      ; Module SMG$INPUT
0000 130
0000 131          VCALL  SMG$CREATE_VIRTUAL_KEYBOARD
0008 132          VCALL  SMG$DELETE_VIRTUAL_KEYBOARD
0010 133          VCALL  SMG$READ_STRING
0018 134          VCALL  SMG$READ_COMPOSED_LINE
0020 135          VCALL  SMG$SET_KEYPAD_MODE
0028 136          VCALL  SMG$CANCEL_INPUT
0030 137
0030 138      ; Module SMG$KEYPAD
0030 139
0030 140          VCALL  SMG$CREATE_KEY_TABLE
0038 141          VCALL  SMG$ADD_KEY_DEF
0040 142          VCALL  SMG$GET_KEY_DEF
0048 143          VCALL  SMG$DELETE_KEY_DEF
0050 144          VCALL  SMG$DEFINE_KEY
0058 145          VCALL  SMG$LOAD_KEY_DEFS
0060 146
0060 147      ; Module SMG$KEYPAD (continued)
0060 148
0060 149          VCALL  SMG$LIST_KEY_DEFS
0068 150          VCALL  SMG$SET_DEFAULT_STATE
0070 151
0070 152      ; Module SMG$DISPLAY_LINKS
0070 153
0070 154          VCALL  SMG$CHANGE_VIRTUAL_DISPLAY
0078 155          VCALL  SMG$CREATE_PASTEBOARD
0080 156          VCALL  SMG$CREATE_VIRTUAL_DISPLAY
0088 157          VCALL  SMG$DELETE_PASTEBOARD
0090 158          VCALL  SMG$DELETE_VIRTUAL_DISPLAY
0098 159          VCALL  SMG$GET_DISPLAY_ATTR
00A0 160          VCALL  SMG$LABEL_BORDER
00A8 161          VCALL  SMG$MOVE_VIRTUAL_DISPLAY
00B0 162          VCALL  SMG$PASTE_VIRTUAL_DISPLAY
00B8 163          VCALL  SMG$REPASTE_VIRTUAL_DISPLAY
00C0 164          VCALL  SMG$SET_DISPLAY_SCROLL_REGION
00C8 165          VCALL  SMG$UNPASTE_VIRTUAL_DISPLAY
00D0 166
00D0 167      ; Module SMG$DISPLAY_CHANGE
00D0 168
00D0 169          VCALL  SMG$CHANGE_RENDITION
00D8 170          VCALL  SMG$DELETE_CHARS
00E0 171          VCALL  SMG$DELETE_LINE
00E8 172          VCALL  SMG$ERASE_CHARS
00F0 173          VCALL  SMG$ERASE_DISPLAY
00F8 174          VCALL  SMG$ERASE_LINE
```



```
0230 232 VCALL SMG$POP_VIRTUAL_DISPLAY
0238 233 VCALL SMG$PUT_CHARS_HIGHWIDE
0240 234 VCALL SMG$PUT_CHARS_WIDE
0248 235 VCALL SMG$PUT_LINE_WIDE
0250 236 VCALL SMG$READ_FROM_DISPLAY
0258 237 VCALL SMG$RESTORE_PHYSICAL_SCREEN
0260 238 VCALL SMG$SAVE_PHYSICAL_SCREEN
0268 239 VCALL SMG$SET_PHYSICAL_CURSOR
0270 240
0270 241 :+
0270 242 : End of SMGSHR vector. All subsequent additions must be made
0270 243 : after this point.
0270 244 :-
0270 245
0270 246 :+
0270 247 : Add autobended routines (entries for old screen package now calling
0270 248 : SMG entry points) and TERMTABLE routines.
0270 249 :-
0270 250
0270 251 : Module SMG$DISPLAY_OUTPUT
0270 252
0270 253 VCALL SMG$GET_CHAR_AT_PHYSICAL_CURSOR
0278 254
0278 255 : Module SMG$INTERFACE_TERM_TABLE
0278 256
0278 257 VCALL SMG$INIT_TERM_TABLE
0280 258 VCALL SMG$INIT_TERM_TABLE_BY_TYPE
0288 259 VCALL SMG$GET_TERM_DATA
0290 260 VCALL SMG$DEL_TERM_TABLE
0298 261
0298 262 :+
0298 263 : The following are the autobended routines.
0298 264 :-
0298 265
0298 266 : .TRANSFER SCR$ERASE ; Obsolete
0298 267 : VCALL SCR$ERASE_PAGE
0298 268 : VCALL LIB$ERASE_PAGE
0298 269 :
0298 270 : VCALL LIB$ERASE_LINE
0298 271 : VCALL SCR$ERASE_LINE
0298 272 :
0298 273 : VCALL LIB$PUT_LINE
0298 274 : VCALL SCR$PUT_LINE
0298 275 :
0298 276 : VCALL LIB$SET_CURSOR
0298 277 : VCALL SCR$SET_CURSOR
0298 278 :
0298 279 : VCALL LIB$PUT_SCREEN
0298 280 : VCALL SCR$PUT_SCREEN
0298 281 :
0298 282 : .TRANSFER LIB$GET_SCREEN
0298 283 : VCALL SCR$GET_SCREEN
0298 284 :
0298 285 : .TRANSFER LIB$DOWN_SCROLL
0298 286 : VCALL SCR$DOWN_SCROLL
0298 287 :
0298 288 : .TRANSFER LIB$UP_SCROLL
```

SMG\$VECTOR
1-009

- Entry vectors for SMGSHR.EXE
SMGSHR Vector

E 5

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6-SEP-1984 11:47:33

VAX/VMS Macro V04-00
[SMGRTL.SRC]SMGVECTOR.MAR;1

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```
0298 289 : VCALL SCR$UP_SCROLL
0298 290 :
0298 291 : VCALL LIB$SET_SCROLL
0298 292 : VCALL SCR$SET_SCROLL
0298 293 :
0298 294 : .TRANSFER LIB$SET_BUFFER
0298 295 : VCALL SCR$SET_BUFFER
0298 296 :
0298 297 : VCALL LIB$PUT_BUFFER
0298 298 : VCALL SCR$PUT_BUFFER
0298 299 :
0298 300 : VCALL LIB$SCREEN_INFO
0298 301 : VCALL SCR$SCREEN_INFO
0298 302 :
0298 303 : VCALL LIB$SET_OUTPUT
0298 304 : VCALL SCR$SET_OUTPUT
0298 305 :
0298 306 : .TRANSFER LIB$STOP_OUTPUT
0298 307 : VCALL SCR$STOP_OUTPUT
0298 308 :
0298 309 :
0298 310 :
0298 311 : .END
```

; End of module SMG\$VECTOR

**F

SMG\$VECTOR
Symbol table

- Entry vectors for SMGSHR.EXE

F 5

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6-SEP-1984 11:47:33 [SMGRTL.SRC]SMGVECTOR.MAR;1

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SMG\$ADD_KEY_DEF	*****	X	01
SMG\$ALLOW_ESCAPE	*****	X	01
SMG\$BEGIN_DISPLAY_UPDATE	*****	X	01
SMG\$BEGIN_PASTEBOARD_UPDATE	*****	X	01
SMG\$CANCEL_INPUT	*****	X	01
SMG\$CHANGE_PBD_CHARACTERISTICS	*****	X	01
SMG\$CHANGE_RENDITION	*****	X	01
SMG\$CHANGE_VIRTUAL_DISPLAY	*****	X	01
SMG\$CHECK_FOR_OCCLUSION	*****	X	01
SMG\$CONTROL_MODE	*****	X	01
SMG\$CREATE_KEY_TABLE	*****	X	01
SMG\$CREATE_PASTEBOARD	*****	X	01
SMG\$CREATE_VIRTUAL_DISPLAY	*****	X	01
SMG\$CREATE_VIRTUAL_KEYBOARD	*****	X	01
SMG\$CURSOR_COLUMN	*****	X	01
SMG\$CURSOR_ROW	*****	X	01
SMG\$DEFINE_KEY	*****	X	01
SMG\$DELETE_CHARS	*****	X	01
SMG\$DELETE_KEY_DEF	*****	X	01
SMG\$DELETE_LINE	*****	X	01
SMG\$DELETE_PASTEBOARD	*****	X	01
SMG\$DELETE_VIRTUAL_DISPLAY	*****	X	01
SMG\$DELETE_VIRTUAL_KEYBOARD	*****	X	01
SMG\$DEL_TERM_TABLE	*****	X	01
SMG\$DISABLE_UNSOLICITED_INPUT	*****	X	01
SMG\$DRAW_LINE	*****	X	01
SMG\$DRAW_RECTANGLE	*****	X	01
SMG\$ENABLE_UNSOLICITED_INPUT	*****	X	01
SMG\$END_DISPLAY_UPDATE	*****	X	01
SMG\$END_PASTEBOARD_UPDATE	*****	X	01
SMG\$ERASE_CHARS	*****	X	01
SMG\$ERASE_DISPLAY	*****	X	01
SMG\$ERASE_LINE	*****	X	01
SMG\$ERASE_PASTEBOARD	*****	X	01
SMG\$FIND_CURSOR_DISPLAY	*****	X	01
SMG\$FLUSH_BUFFER	*****	X	01
SMG\$GET_BROADCAST_MESSAGE	*****	X	01
SMG\$GET_CHAR_AT_PHYSICAL_CURSOR	*****	X	01
SMG\$GET_DISPLAY_ATTR	*****	X	01
SMG\$GET_KEY_DEF	*****	X	01
SMG\$GET_PASTEBOARD_ATTRIBUTES	*****	X	01
SMG\$GET_PHYSICAL_CURSOR	*****	X	01
SMG\$GET_TERM_DATA	*****	X	01
SMG\$HOME_CURSOR	*****	X	01
SMG\$INIT_TERM_TABLE	*****	X	01
SMG\$INIT_TERM_TABLE_BY_TYPE	*****	X	01
SMG\$INSERT_CHARS	*****	X	01
SMG\$INSERT_LINE	*****	X	01
SMG\$INVALIDATE_DISPLAY	*****	X	01
SMG\$LABEL_BORDER	*****	X	01
SMG\$LIST_KEY_DEFS	*****	X	01
SMG\$LOAD_KEY_DEFS	*****	X	01
SMG\$MOVE_VIRTUAL_DISPLAY	*****	X	01
SMG\$PASTE_VIRTUAL_DISPLAY	*****	X	01
SMG\$POP_VIRTUAL_DISPLAY	*****	X	01
SMG\$PUT_CHARS	*****	X	01
SMG\$PUT_CHARS_HIGHWIDE	*****	X	01

SMG\$PUT_CHARS_WIDE	*****	X	01
SMG\$PUT_LINE	*****	X	01
SMG\$PUT_LINE_WIDE	*****	X	01
SMG\$PUT_PASTEBOARD	*****	X	01
SMG\$PUT_VIRTUAL_DISPLAY_ENCODED	*****	X	01
SMG\$PUT_WITH_SCROLL	*****	X	01
SMG\$READ_COMPOSED_LINE	*****	X	01
SMG\$READ_FROM_DISPLAY	*****	X	01
SMG\$READ_STRING	*****	X	01
SMG\$REPAINT_SCREEN	*****	X	01
SMG\$REPASTE_VIRTUAL_DISPLAY	*****	X	01
SMG\$RESTORE_PHYSICAL_SCREEN	*****	X	01
SMG\$RETURN_CURSOR_POS	*****	X	01
SMG\$RING_BELL	*****	X	01
SMG\$SAVE_PHYSICAL_SCREEN	*****	X	01
SMG\$SCROLL_DISPLAY_AREA	*****	X	01
SMG\$SET_BROADCAST_TRAPPING	*****	X	01
SMG\$SET_CURSOR_ABS	*****	X	01
SMG\$SET_CURSOR_REL	*****	X	01
SMG\$SET_DEFAULT_STATE	*****	X	01
SMG\$SET_DISPLAY_SCROLL_REGION	*****	X	01
SMG\$SET_KEYPAD_MODE	*****	X	01
SMG\$SET_OUT_OF_BAND_ASTS	*****	X	01
SMG\$SET_PHYSICAL_CURSOR	*****	X	01
SMG\$SNAPSHOT	*****	X	01
SMG\$UNPASTE_VIRTUAL_DISPLAY	*****	X	01

EXEC

Mod

SOR

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COL

SOR

SRT

P1\$

P2\$

P3\$

P4\$

P5\$

ICT

SDE

GFS

PCS

PK\$

PT\$

PI\$

PMS

CC\$

CRE

LIB

LIB

LIB

LIB

LIB

LIB

SYS

LIB

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes															
ABS	00000000 (0.)	00 (0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE					
\$\$\$SMG\$VECTOR	00000298 (664.)	01 (1.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	QUAD					

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	10	00:00:00.09	00:00:00.49
Command processing	81	00:00:00.43	00:00:04.84
Pass 1	75	00:00:01.99	00:00:05.06
Symbol table sort	0	00:00:00.06	00:00:00.07
Pass 2	73	00:00:00.83	00:00:02.31
Symbol table output	10	00:00:00.05	00:00:00.14
Psect synopsis output	1	00:00:00.02	00:00:00.04
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	250	00:00:03.49	00:00:12.95

The working set limit was 600 pages.
9297 bytes (19 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 83 non-local and 0 local symbols.
311 source lines were read in Pass 1, producing 28 object records in Pass 2.
2 pages of virtual memory were used to define 2 macros.

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

Macro library name	Macros defined
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	0

0 GETS were required to define 0 macros.
There were no errors, warnings or information messages.
MACRO/ENABLE=SUPPRESSION/LIS=LIS\$:SMGVECTOR/OBJ=OBJ\$:SMGVECTOR MSRC\$:SMGVECTOR/UPDATE=(ENH\$:SMGVECTOR)

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