```
SSSSSSS   TTTTTTTTTT    AAAAAA      CCCCCCCC    OOOOOO    NN      NN   FFFFFFFFFF    IIIIII     GGGGGGGG
SSSSSSS   TTTTTTTTTT    AAAAAA      CCCCCCCC    OOOOOO    NN      NN   FFFFFFFFFF    IIIIII     GGGGGGGG
SS            TT       AA    AA    CC         OO    OO    NN      NN   FF              II       GG
SS            TT       AA    AA    CC         OO    OO    NN      NN   FF              II       GG
SS            TT       AA    AA    CC         OO    OO    NNNN    NN   FF              II       GG
SS            TT       AA    AA    CC         OO    OO    NNNN    NN   FF              II       GG
  SSSSSS      TT       AA    AA    CC         OO    OO    NN  NN  NN   FFFFFFF         II       GG
  SSSSSS      TT       AA    AA    CC         OO    OO    NN  NN  NN   FFFFFFF         II       GG
      SS      TT      AAAAAAAAAA   CC         OO    OO    NN    NNNN   FF              II       GG   GGGGG
      SS      TT      AAAAAAAAAA   CC         OO    OO    NN    NNNN   FF              II       GG   GGGGG
      SS      TT       AA    AA    CC         OO    OO    NN      NN   FF              II       GG      GG     ....
      SS      TT       AA    AA    CC         OO    OO    NN      NN   FF              II       GG      GG     ....
SSSSSSS       TT       AA    AA    CCCCCCC     OOOOOO     NN      NN   FF            IIIIII      GGGGGG        ....
SSSSSSS       TT       AA    AA    CCCCCCC     OOOOOO     NN      NN   FF            IIIIII      GGGGGG        ....

LL          IIIIII     SSSSSSSS
LL          IIIIII     SSSSSSSS
LL            II     SS
LL            II     SS
LL            II     SS
LL            II     SS
LL            II       SSSSSS
LL            II       SSSSSS
LL            II            SS
LL            II            SS
LL            II            SS
LL            II            SS
LLLLLLLLLL  IIIIII     SSSSSSSS
LLLLLLLLLL  IIIIII     SSSSSSSS
```

K 5

```
0000      1              .TITLE  STACONFIG - MAIN PROGRAM FOR STANDALONE CONFIGURE
0000      2              .IDENT  'V04-000'
0000      3
0000      4
0000      5      ;****************************************************************************
0000      6      ;*                                                                          *
0000      7      ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
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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:      STANDALONE CONFIGURE
0000     31      ;
0000     32      ; ABSTRACT:
0000     33      ;       THIS ROUTINE IS THE MAIN PROGRAM AND SUBROUTINES FOR
0000     34      ;       STANDALONE CONFIGURE.  THIS PROCESS IS USED TO CONFIGURE ALL
0000     35      ;       DISK AND PORT DRIVERS (CO-INCIDENTALLY, PAPER TAPE AS WELL) FROM
0000     36      ;       SYSINIT.  ALL MSCP- AND HSC-SERVED DEVICES ARE CONFIGURED AS WELL,
0000     37      ;       IF A QUORUM DISK IS NEEDED.
0000     38      ;
0000     39      ; ENVIRONMENT: USER, EXEC, AND KERNEL MODE
0000     40      ;
0000     41      ; AUTHOR: MARYANN HINDEN,        CREATION DATE:  18-SEP-1979
0000     42      ;         (ADAPTED FROM STASYSGEN)
0000     43      ;
0000     44      ; MODIFIED BY:
0000     45      ;
0000     46      ;       V03-005 RSH0075         R. Scott Hanna  14-oct-1983
0000     47      ;               Change the call to the ast routine AST_REC to cause
0000     48      ;               it to execute in exec mode.
0000     49      ;
0000     50      ;       V03-004 RSH0073         R. Scott Hanna  10-Oct-1983
0000     51      ;               Change the call to the ast routine AST_REC to cause
0000     52      ;               it to execute in kernel mode.
0000     53      ;
0000     54      ;       V03-003 WMC0003         Wayne Cardoza   09-Aug-1983
0000     55      ;               Put D devices back.
0000     56      ;
0000     57      ;       V03-002 WMC0002         Wayne Cardoza   05-Aug-1983
```

```
0000    58 ;                    Add lbr$output_help.
0000    59 ;                    Disable autoconfigure of D devices until this module is made
0000    60 ;                    to deal with noncontigous drivers.
0000    61 ;
0000    62 ;        V03-001 WMC0001         Wayne Cardoza    01-Aug-1983
0000    63 ;                    Add BOO$EXEOPEN, BOO$FILCLOSE, BOO$UFOOPEN, EXE$LOAD_CODE
0000    64 ;
0000    65 ;--
```

N 5

STACONFIG   - MAIN PROGRAM FOR STANDALONE CONFIGURE   16-SEP-1984 00:03:36   VAX/VMS Macro V04-00   Page   3
V04-000   DECLARATIONS   4-SEP-1984 23:06:06   [BOOTS.SRC]STACONFIG.MAR;1   (2)

```
                                  0000        67          .SBTTL  DECLARATIONS
                                  0000        68 ;
                                  0000        69 ; INCLUDE FILES:
                                  0000        70 ;
                                  0000        71         $CLUBDEF                                ; Define cluster symbols
                                  0000        72
                                  0000        73 ; MACROS:
                                  0000        74 ;
                                  0000        75 ;
                                  0000        76
                                  0000        77 ;
                                  0000        78 ; EQUATED SYMBOLS:
                                  0000        79 ;
                                  0000        80
                                  0000        81 ;
                                  0000        82 ; OWN STORAGE:
                                  0000        83 ;
                                  0000        84
                            00000000          85          .PSECT  BOO$SYSGEN,WRT
                                  0000        86
                 00000000         0000        87 BOO$GL_CMDOPT:: .LONG 0                          ; Options longword
                                  0004        88
                                  0004        89 SELECT_LIST:                                     ; Select list for AUTOCONFIGURE ALL
                    44 00'        0004        90          .ASCIC  /D/                             ; All disks
                    01            0004
                    50 00'        0006        91          .ASCIC  /P/                             ; All port drivers (and paper tape!)
                    01            0006
                    00            0008        92          .BYTE   0                               ; End of list
                                  0009        93
30 3A 30 30 20 30 00000011'010E0000'  0009    94 ASCII_TIME:      .ASCID  /0 00:00:05.00/
          30 30 2E 35 30 3A 30    0017
                    00000026      001E        95 BIN_TIME:        .BLKQ   1
20 20 20 20 20 20 20 20 20 20 20 20   0026    96 BLANKS:          .ASCII  /                /       ; 16 blanks
             20 20 20 20          0032
                                  0036        97
```

B 6

STACONFIG   - MAIN PROGRAM FOR STANDALONE CONFIGURE   16-SEP-1984 00:03:36 VAX/VMS Macro V04-00   Page   4
V04-000   BOO$STACONFIG - main program   4-SEP-1984 23:06:06 [BOOTS.SRC]STACONFIG.MAR;1   (3)

```
                        0036    99              .SBTTL  BOO$STACONFIG - main program
                        0036   100      ;++
                        0036   101      ;  FUNCTIONAL DESCRIPTION:
                        0036   102      ;        This is the main program for standalone CONFIGURE.  It does the
                        0036   103      ;        following:
                        0036   104      ;
                        0036   105      ;             1)  Locks the entire image into the working set.
                        0036   106      ;             2)  Autoconfigures disks and port devices.
                        0036   107      ;             3)  If we are not using a quorum disk in order to
                        0036   108      ;                 form a cluster, the image exits.
                        0036   109      ;             4)  Sets a timer. Every 5 seconds, a check is made
                        0036   110      ;                 to see if we are in a cluster yet.  If so, we
                        0036   111      ;                 exit; else we reset the timer.
                        0036   112      ;             5)  Call BOO$CONFIGURE, which will configure all MSCP-
                        0036   113      ;                 and HSC-served devices.  At some point the disk which
                        0036   114      ;                 is needed to form the cluster will be configured, the
                        0036   115      ;                 cluster will form, and the image will exit.
                        0036   116      ;
                        0036   117      ;        Note that no determination is made about which specific disk is to
                        0036   118      ;        be the quorum disk - they are simply all configured.
                        0036   119      ;
                        0036   120      ;  CALLING SEQUENCE:
                        0036   121      ;
                        0036   122      ;        Called by SYSINIT (via the image activator)
                        0036   123      ;
                        0036   124      ;  INPUT PARAMETERS:
                        0036   125      ;
                        0036   126      ;        NONE
                        0036   127      ;
                        0036   128      ;  OUTPUT PARAMETERS:
                        0036   129      ;
                        0036   130      ;        NONE
                        0036   131      ;
                        0036   132      ;  ERROR INDICATIONS:
                        0036   133      ;
                        0036   134      ;        Various errors printed on the system console
                        0036   135      ;
                        0036   136      ;--
                        0036   137
                 000C   0036   138              .ENTRY  BOO$STACONFIG,^M<R2,R3>
                        0038   139              $LKWSET_S -                              ; Lock entire image in working set
                        0038   140                      INADR=BOO$GQ_LIMITS, -   ;
                        0038   141                      RETADR=BOO$GQ_RETADR     ;
                        004D   142
                        004D   143      ;
                        004D   144      ; Get current values for local copy of SYSPARAM
                        004D   145      ;
   00000000'EF   00  FB 004D   146              CALLS   #0,BOO$USEACT
                        0054   147
                        0054   148      ;
                        0054   149      ; Autoconfigure disks and port devices.
                        0054   150      ;
00000000'EF  AD AF  9E 0054   151              MOVAB   SELECT_LIST,BOO$GL_SELECT ; Use builtin select list
   00000000'EF   00  FB 005C   152              CALLS   #0,BOO$CONFIGALL          ; Autoconfigure all adapters
                        0063   153
                        0063   154      ;
                        0063   155      ; If the quorum disk system parameter is non-blank, then we configure
```

C 6

STACONFIG   - MAIN PROGRAM FOR STANDALONE CONFIGURE 16-SEP-1984 00:03:36 VAX/VMS Macro V04-00   Page 5
V04-000   BOO$STACONFIG - main program   4-SEP-1984 23:06:06 [BOOTS.SRC]STACONFIG.MAR;1   (3)

```
                                          0063    156 ; all "served" devices in case one of them is the quorum disk; else
                                          0063    157 ; the image exits.
                                          0063    158 ;
   BA AF   00000000'GF   10   29          0063    159         CMPC3     #4*4,G^CLU$GB_QDISK,BLANKS
                         23   13          006C    160         BEQL      10$
                                          006E    161
                                          006E    162 ;
                                          006E    163 ; Get binary equivalent of 5 seconds to set timer.
                                          006E    164 ;
                                          006E    165         $BINTIM_S          timbuf = ASCII_TIME,-
                                          006E    166                            timadr = BIN_TIME
                                          007B    167         $CMEXEC_S          AST_REC                    ; Check if we are a cluster member
                                          008A    168
                                          008A    169 ;
                                          008A    170 ; Start threads which will configure MSCP- and HSC-served disks.
                                          008A    171 ;
           00000000'EF   00   FB          008A    172         CALLS     #0,BOO$CONFIGURE
                                          0091    173
                         04               0091    174 10$:    RET
                                          0092    175
                         0004             0092    176 AST_REC:            .WORD ^M<R2>
                                          0094    177
   52      00000000'GF   D0               0094    178         MOVL      G^CLU$GL_CLUB,R2           ; Get cluster info block
                         00   E1          009B    179         BBC       #CLUB$V_CLUSTER,-          ; Br if we are not a cluster member
           0A 1C A2                       009D    180                   CLUB$L_FLAGS(R2),10$
                                          00A0    181
                                          00A0    182 ;
                                          00A0    183 ; Cluster has been formed - exit
                                          00A0    184 ;
                                          00A0    185         $EXIT_S
                         04               00A9    186         RET
                                          00AA    187
                                          00AA    188 ;
                                          00AA    189 ; Cluster not yet formed
                                          00AA    190 ;
                                          00AA    191 10$:    $SETIMR_S          efn    = #3,-              ; Reset timer
                                          00AA    192                            daytim = BIN_TIME,-
                                          00AA    193                            astadr = AST_REC
                         04               00BC    194         RET                                  ; Dismiss AST
                                          00BD    195
```

```
              00BD      197              .SBTTL  Dummy entry points
              00BD      198
              00BD      199  ;
              00BD      200  ; These entry points are need to resolve references to routines
              00BD      201  ; not linked with the standalone version of CONFIG.
              00BD      202  ;
              00BD      203
              00BD      204  EXE$LOAD_CODE::
              00BD      205  LBR$OUTPUT_HELP::
        0000  00BD      206              .WORD   0                      ; ENTRY MASK
     50   D4  00BF      207              CLRL    R0
         04   00C1      208              RET
              00C2      209
              00C2      210  BOO$READFILE::
              00C2      211  BOO$FILCLOSE::
              00C2      212  BOO$UFOOPEN::
              00C2      213  BOO$EXEOPEN::
     50   D4  00C2      214              CLRL    R0
         05   00C4      215              RSB
              00C5      216
              00C5      217
              00C5      218              .END    BOO$STACONFIG
```

```
$$T1                    = 00000000
ASCII_TIME                00000009 R     02
AST_REC                   00000092 R R   02
BIN_TIME                  0000001E R R   02
BLANKS                    00000026 R     02
BOO$CONFIGALL             ********      X 02
BOO$CONFIGURE             ********      X 02
BOO$EXEOPEN               000000C2 RG    02
BOO$FILCLOSE              000000C2 RG    02
BOO$GL_CMDOPT             00000000 RG    02
BOO$GL_SELECT             ********      X 02
BOO$GQ_LIMITS             ********      X 02
BOO$GQ_RETADR             ********      X 02
BOO$READFILE              000000C2 RG    02
BOO$STACONFIG             00000036 RG    02
BOO$UFOOPEN               000000C2 RG    02
BOO$USEACT                ********      X 02
CLU$GB_QDISK              ********      X 02
CLU$GL_CLUB               ********      X 02
CLUB$L_FLAGS            = 0000001C
CLUB$V_CLUSTER         = 00000000
EXE$LOAD_CODE             000000BD RG    02
LBR$OUTPUT_HELP           000000BD RG    02
SELECT_LIST               00000004 R     02
SYS$BINTIM                ********     GX 02
SYS$CMEXEC                ********     GX 02
SYS$EXIT                  ********     GX 02
SYS$LKWSET                ********     GX 02
SYS$SETIMR                ********     GX 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
ABS	00000000 (0.)	01 (1.)	NOPIC	USR	CON	ABS	LCL	NOSHR	EXE	RD	WRT	NOVEC	BYTE
BOO$SYSGEN	000000C5 (197.)	02 (2.)	NOPIC	USR	CON	REL	LCL	NOSHR	EXE	RD	WRT	NOVEC	BYTE

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	37	00:00:00.09	00:00:00.26
Command processing	142	00:00:00.71	00:00:04.12
Pass 1	164	00:00:02.46	00:00:07.24
Symbol table sort	0	00:00:00.21	00:00:00.26
Pass 2	54	00:00:00.64	00:00:01.59
Symbol table output	5	00:00:00.04	00:00:00.27
Psect synopsis output	0	00:00:00.02	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	404	00:00:04.17	00:00:13.77

The working set limit was 1200 pages.

11071 bytes (22 pages) of virtual memory were used to buffer the intermediate code.
There were 20 pages of symbol table space allocated to hold 184 non-local and 2 local symbols.
218 source lines were read in Pass 1, producing 16 object records in Pass 2.
16 pages of virtual memory were used to define 15 macros.

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

Macro library name	Macros defined
_255DUA28:[BOOTS.OBJ]BOOTS.MLB;1	0
_255DUA28:[SYS.OBJ]LIB.MLB;1	1
_255DUA28:[SYSLIB]STARLET.MLB;2	11
TOTALS (all libraries)	12

281 GETS were required to define 12 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:STACONFIG/OBJ=OBJ$:STACONFIG MSRC$:STACONFIG/UPDATE=(ENH$:STACONFIG)+EXECML$/LIB+LIB$:BOOTS.MLB/LIB

SYSBOOCMD
LIS

SHOWADAP
LIS

STANDCONF
LIS

SHODEV
LIS

STAPUTERR
LIS

STALOCK
LIS

STASGNMSG
LIS

STACONFIG
LIS

STASYSGEN
LIS

SYSBOOT
LIS

STARDRIV
LIS