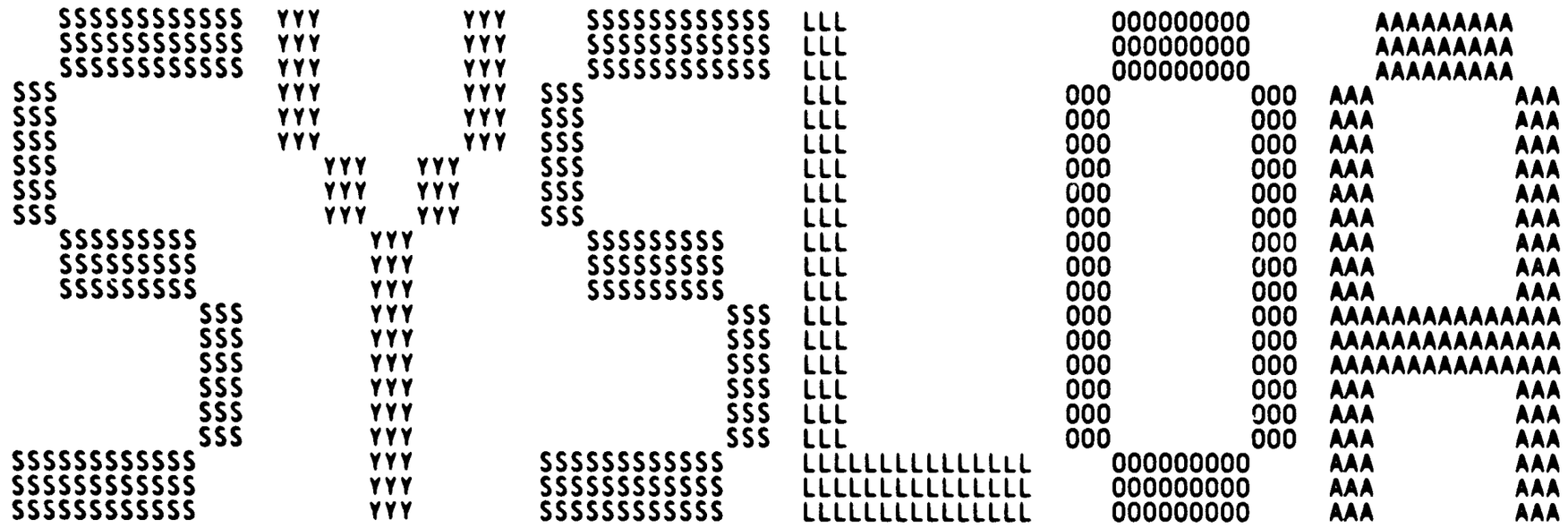
SSSSSSSSSSS YYY YYY SSSSSSSSSSS LLL 000000000 AAAAAAAAA
SSSSSSSSSSS YYY YYY SSSSSSSSSSS LLL 000000000 AAAAAAAAA
SSSSSSSSSSS YYY YYY SSSSSSSSSSS LLL 000000000 AAAAAAAAA
SSS YYY YYY SSS LLL 000 000 AAA AAA
SSS YYY YYY SSS LLL 000 000 AAA AAA
SSS YYY YYY SSS LLL 000 000 AAA AAA
SSS YYY YYY SSS LLL 000 000 AAA AAA
SSS YYY YYY SSS LLL 000 000 AAA AAA
SSS YYY YYY SSS LLL 000 000 AAA AAA
SSSSSSSSS YYY SSSSSSSSS LLL 000 000 AAA AAA
SSSSSSSSS YYY SSSSSSSSS LLL 000 000 AAA AAA
SSSSSSSSS YYY SSSSSSSSS LLL 000 000 AAA AAA
SSS YYY SSS LLL 000 000 AAAAAAAAAAAAAAA
SSS YYY SSS LLL 000 000 AAAAAAAAAAAAAAA
SSS YYY SSS LLL 000 000 AAAAAAAAAAAAAAA
SSS YYY SSS LLL 000 000 AAA AAA
SSS YYY SSS LLL 000 000 AAA AAA
SSS YYY SSS LLL 000 000 AAA AAA
SSSSSSSSSSS YYY SSSSSSSSSSS LLLLLLLLLLLLLLL 000000000 AAA AAA
SSSSSSSSSSS YYY SSSSSSSSSSS LLLLLLLLLLLLLLL 000000000 AAA AAA
SSSSSSSSSSS YYY SSSSSSSSSSS LLLLLLLLLLLLLLL 000000000 AAA AAA

FILEID**CLUMESSAG

N 5

```
  CCCCCCCC  LL          UU      UU  MM      MM  EEEEEEEEEE    SSSSSSSS    SSSSSSSS    AAAAAA      GGGGGGGG
  CCCCCCCC  LL          UU      UU  MM      MM  EEEEEEEEEE    SSSSSSSS    SSSSSSSS    AAAAAA      GGGGGGGG
CC          LL          UU      UU  MMMM  MMMM  EE          SS          SS          AA    AA    GG
CC          LL          UU      UU  MMMM  MMMM  EE          SS          SS          AA    AA    GG
CC          LL          UU      UU  MM  MM  MM  EE          SS          SS          AA    AA    GG
CC          LL          UU      UU  MM  MM  MM  EE          SS          SS          AA    AA    GG
CC          LL          UU      UU  MM      MM  EEEEEEEE      SSSSSS      SSSSSS    AA    AA    GG
CC          LL          UU      UU  MM      MM  EEEEEEEE      SSSSSS      SSSSSS    AA    AA    GG
CC          LL          UU      UU  MM      MM  EE                  SS          SS  AAAAAAAAAA  GG  GGGGGG
CC          LL          UU      UU  MM      MM  EE                  SS          SS  AAAAAAAAAA  GG  GGGGGG
CC          LL          UU      UU  MM      MM  EE                  SS          SS  AA    AA    GG      GG    ....
CC          LL          UU      UU  MM      MM  EE                  SS          SS  AA    AA    GG      GG    ....
  CCCCCCCC  LLLLLLLLLL  UUUUUUUUUU  MM      MM  EEEEEEEEEE  SSSSSSSS    SSSSSSSS    AA    AA      GGGGGG      ....
  CCCCCCCC  LLLLLLLLLL  UUUUUUUUUU  MM      MM  EEEEEEEEEE  SSSSSSSS    SSSSSSSS    AA    AA      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
```

Table of contents

```
0000     1          .TITLE  CLUMESSAG - Cluster Event Message Routines
0000     2          .IDENT  'V04-000'
0000     3  ;
0000     4  ;*****************************************************************************
0000     5  ;*                                                                           *
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0000    24  ;*                                                                           *
0000    25  ;*****************************************************************************
0000    26  ;
0000    27
0000    28  ;++
0000    29  ; FACILITY: EXECUTIVE, CLUSTER MANAGEMENT
0000    30  ;
0000    31  ; ABSTRACT:
0000    32  ;       This module produces operator and console messages when the status
0000    33  ;       of the cluster changes.  A primitive version of the code was
0000    34  ;       carved out of the CNXMAN.MAR module.
0000    35  ;
0000    36  ; ENVIRONMENT: VAX/VMS
0000    37  ;
0000    38  ; AUTHOR: David W. Thiel          CREATION DATE: 30-Aug-1983
0000    39  ;
0000    40  ; MODIFIED BY:
0000    41  ;
0000    42  ;       V03-004 WMC0001         Wayne Cardoza           17-Jul-1984
0000    43  ;               Add a quorum disk writelocked error.
0000    44  ;
0000    45  ;       V03-003 DWT0214         David W. Thiel          09-Apr-1984
0000    46  ;               Add and delete some messages.  Change defaults.
0000    47  ;
0000    48  ;       V03-002 DWT0198         David W. Thiel          23-Mar-1983
0000    49  ;               Add messages for quorum adjustment.
0000    50  ;
0000    51  ;       V03-001 DWT0131         David W. Thiel          23-Sep-1983
0000    52  ;               Remove debugging tool that forces all messages to be
0000    53  ;               broadcast to OPA0.  Stop outputting messages about
0000    54  ;               sending or receiving status and when CSB is deleted.
0000    55  ;               Use correct length instruction to fill in
0000    56  ;               CLUMBX$B_DS_VERSION field.  Add MEMREQ_MSG message
0000    57  ;               to complement REQJOIN_MSG message.
```

```
0000     58 ;
0000     59 ;--
0000     60
```

```
                     62          .SBTTL  DECLARATIONS
                     63 ;
                     64 ; INCLUDE FILES:
                     65 ;
                     66          $CLUBDEF                        ; CLUster Block offsets
                     67          $CLUMBXDEF                      ; Cluster mailbox message format
                     68          $CSBDEF                         ; CSB Offsets
                     69          $IPLDEF                         ; IPL definitions
                     70          $MSGDEF                         ; Mailbox message type codes
                     71          $SBDEF                          ; SB Offsets
                     72
                     73 ;
                     74 ; MACROS:
                     75 ;
                     76          .MACRO  CNX_MSG MSGCODE,BRDFLG,LCLFLG,CLSFLG,TEXT
                     77          .SHOW   BINARY
                     78          .IF NOT_BLANK   MSGCODE
                     79          .WORD   CLUMBX$K_'MSGCODE
                     80          .IF_FALSE
                     81          .WORD   0
                     82          .ENDC
                     83 $$$XX=   FLG_M_ERROR
                     84          .IRP    X,BRDFLG
                     85 $$$XX=   $$$XX ! FLG_M_'X
                     86          .ENDR
                     87          .BYTE   $$$XX
                     88 $$$XX=   0
                     89          .IRP    X,CLSFLG
                     90 $$$XX=   $$$XX ! FLG_M_'X
                     91          .ENDR
                     92          .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
                     93 $$$YY=   0
                     94          .IRP    X,LCLFLG
                     95 $$$YY=   $$$YY ! FLG_M_'X
                     96          .ENDR
                     97          .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
                     98          .ASCIC  @TEXT@
                     99          .NOSHOW BINARY
                    100          .ENDM   CNX_MSG
                    101
                    102 ;
                    103 ; EQUATED SYMBOLS:
                    104 ;
                    105
00000000            106 MB_W_CODE=      0                       ; Mailbox message code
00000002            107 MB_B_BRD=       2                       ; OPA0 broadcast flags byte
00000003            108 MB_B_CLS=       3                       ; OPCOM cluster message flags byte
00000004            109 MB_B_LCL=       4                       ; OPCOM local message flags byte
00000005            110 MB_T_MSG=       5                       ; OPA0 broadcast message text
                    111
00000001            112 FLG_V_NONMEMBER=        1               ; Do if local node is not a VAXcluster membe
00000002            113 FLG_M_NONMEMBER=        1@FLG_V_NONMEMBER
00000002            114 FLG_V_QUORUM=   2                       ; Do if local cluster has a dynamic quorum
00000004            115 FLG_M_QUORUM=   1@FLG_V_QUORUM
00000003            116 FLG_V_NOQUORUM= 3                       ; Do if local cluster does not have a dynami
00000008            117 FLG_M_NOQUORUM= 1@FLG_V_NOQUORUM
00000004            118 FLG_V_ERROR=    4                       ; Do after failing to put message in OPCOM m
```

```
                        00000010  0000   FLG_M_ERROR=        1@FLG_V_ERROR
                        0000000E  0000   FLG_M_ALWAYS=       FLG_M_NONMEMBER ! FLG_M_QUORUM ! FLG_M_NOQUORUM
                        0000000C  0000   FLG_M_MEMBER=       FLG_M_QUORUM ! FLG_M_NOQUORUM
                                  0000
                        00000007  0000   BELL = 7                                        ; ASCII code for bell
                        0000000D  0000   CR = ^XD                                        ; ASCII code for carriage return
                        0000000A  0000   LF = ^XA                                        ; ASCII code for line feed
                                  0000
                                  0000   ;
                                  0000   ; OWN STORAGE:
                                  0000   ;
                                  0000
                               00000000          .PSECT  $$$060,LONG                     ; R/O Data PSECT
                                  0000
                                  0000   ;
                                  0000   ;       Common message prefix
                                  0000   ;
20 20 2C 4E 41 4D 58 4E 43 25 0A 07  0000   PREFIX: .ASCII  <BELL><LF>"%CNXMAN,  "       ; Text to prefix each message
                        0000000C  000C   PREFIX_SIZ=         .-PREFIX                    ; Length of prefix text
                                  000C
                                  000C   ;
                                  000C   ;       Message control blocks
                                  000C   ;
                                  000C
                                  000C   CSB_MSG::           CNX_MSG ST_NEWSYS, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Discove
                            0001  000C           .WORD   CLUMBX$K_ST_NEWSYS
                              1E  000E           .BYTE   $$$XX
                              0C  000F           .BYTE   $$$XX                           ; Cluster-wide OPCOM broadcast flag
                              0C  0010           .BYTE   $$$YY ! $$$XX                   ; OPCOM message flags
20 64 65 72 65 76 6F 63 73 69 44 00'  0011           .ASCIC  @Discovered system@
                  6D 65 74 73 79 73  001D
                              11  0011
                                  0023   ACCPT_MSG::
                                  0023   CNCT_MSG::          CNX_MSG ST_CNX, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Establishe
                            0002  0023           .WORD   CLUMBX$K_ST_CNX
                              1E  0025           .BYTE   $$$XX
                              0C  0026           .BYTE   $$$XX                           ; Cluster-wide OPCOM broadcast flag
                              0C  0027           .BYTE   $$$YY ! $$$XX                   ; OPCOM message flags
64 65 68 73 69 6C 62 61 74 73 45 00'  0028           .ASCIC  @Established connection to system@
20 6E 6F 69 74 63 65 6E 6E 6F 63 20  0034
      6D 65 74 73 79 73 20 6F 74  0040
                              20  0028
                                  0049   REACCPT_MSG::
                                  0049   RECNCT_MSG::        CNX_MSG ST_RECNX, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Re-estab
                            0003  0049           .WORD   CLUMBX$K_ST_RECNX
                              1E  004B           .BYTE   $$$XX
                              0C  004C           .BYTE   $$$XX                           ; Cluster-wide OPCOM broadcast flag
                              0C  004D           .BYTE   $$$YY ! $$$XX                   ; OPCOM message flags
73 69 6C 62 61 74 73 65 2D 65 52 00'  004E           .ASCIC  @Re-established connection to system@
69 74 63 65 6E 6E 6F 63 20 64 65 68  005A
6D 65 74 73 79 73 20 6F 74 20 6E 6F  0066
                              23  004E
                                  0072   CNXERROR_MSG::      CNX_MSG ST_LOSTCNX, <NONMEMBER, NOQUORUM,QUORUM>, , <MEMBER>, <Lost
                            0004  0072           .WORD   CLUMBX$K_ST_LOSTCNX
                              1E  0074           .BYTE   $$$XX
                              0C  0075           .BYTE   $$$XX                           ; Cluster-wide OPCOM broadcast flag
                              0C  0076           .BYTE   $$$YY ! $$$XX                   ; OPCOM message flags
```

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63 65 6E 6E 6F 63 20 74 73 6F 4C 00' 0077              .ASCIC  @Lost connection to system@
74 73 79 73 20 6F 74 20 6E 6F 69 74  0083
                              6D 65  008F
                                 19  0077
                                     0091  149 FAILIO_MSG::    CNX_MSG ST_TIMCNX, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Timed-o
                                0005 0091              .WORD   CLUMBX$K_ST_TIMCNX
                                  1E 0093              .BYTE   $$$XX
                                  0C 0094              .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
                                  0C 0095              .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
6C 20 74 75 6F 2D 64 65 6D 69 54 00' 0096              .ASCIC  @Timed-out lost connection to system@
69 74 63 65 6E 6E 6F 63 20 74 73 6F  00A2
6D 65 74 73 79 73 20 6F 74 20 6E 6F  00AE
                                 23  0096
                                     00BA  150 DEAD_MSG::      CNX_MSG , <NONMEMBER,NOQUORUM,QUORUM>, , , <Deleting CSB for system>
                                0000 00BA              .WORD   0
                                  1E 00BC              .BYTE   $$$XX
                                  00 00BD              .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
                                  00 00BE              .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
53 43 20 67 6E 69 74 65 6C 65 44 00' 00BF              .ASCIC  @Deleting CSB for system@
6D 65 74 73 79 73 20 72 6F 66 20 42  00CB
                                 17  00BF
                                     00D7  151 TRYFORM_MSG::   CNX_MSG ST_INIFORM, <ALWAYS>, <ALWAYS>, , <Proposing formation of a
                                0006 00D7              .WORD   CLUMBX$K_ST_INIFORM
                                  1E 00D9              .BYTE   $$$XX
                                  00 00DA              .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
                                  0E 00DB              .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
66 20 67 6E 69 73 6F 70 6F 72 50 00' 00DC              .ASCIC  @Proposing formation of a VAXcluster@
20 66 6F 20 6E 6F 69 74 61 6D 72 6F  00E8
72 65 74 73 75 6C 63 58 41 56 20 61  00F4
                                 23  00DC
                                     0100  152 REQJOIN_MSG::   CNX_MSG , <ALWAYS>, , , <Sending VAXcluster membership request to sy
                                0000 0100              .WORD   0
                                  1E 0102              .BYTE   $$$XX
                                  00 0103              .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
                                  00 0104              .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
58 41 56 20 67 6E 69 64 6E 65 53 00' 0105              .ASCIC  @Sending VAXcluster membership request to system@
62 6D 65 6D 20 72 65 74 73 75 6C 63  0111
65 75 71 65 72 20 70 69 68 73 72 65  011D
6D 65 74 73 79 73 20 6F 74 20 74 73  0129
                                 2F  0105
                                     0135  153 MEMREQ_MSG::    CNX_MSG ST_MEMREQ, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, <Receive
                                0009 0135              .WORD   CLUMBX$K_ST_MEMREQ
                                  1E 0137              .BYTE   $$$XX
                                  0E 0138              .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
                                  0E 0139              .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
41 56 20 64 65 76 69 65 63 65 52 00' 013A              .ASCIC  @Received VAXcluster membership request from system@
6D 65 6D 20 72 65 74 73 75 6C 63 58  0146
75 71 65 72 20 70 69 68 73 72 65 62  0152
73 79 73 20 6D 6F 72 66 20 74 73 65  015E
                              6D 65 74  016A
                                 32  013A
                                     016D  154 RECONFIG_MSG::  CNX_MSG ST_INIRECNFIG, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, <Pro
                                0008 016D              .WORD   CLUMBX$K_ST_INIRECNFIG
                                  1E 016F              .BYTE   $$$XX
                                  0E 0170              .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
                                  0E 0171              .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
72 20 67 6E 69 73 6F 70 6F 72 50 00' 0172              .ASCIC  @Proposing reconfiguration of the VAXcluster@
```

```
69 74 61 72 75 67 69 66 6E 6F 63 65  017E
41 56 20 65 68 74 20 66 6F 20 6E 6F  018A
            72 65 74 73 75 6C 63 58  0196
                              2B     0172
                                     019E   155 QUORUM_MSG::    CNX_MSG ST_QUORUM, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, -
                                     019E   156                          <Proposing modification of quorum or quorum disk membership>
                              001C   019E                .WORD   CLUMBX$K_ST_QUORUM
                                1E   01A0                .BYTE   $$$XX
                                0E   01A1                .BYTE   $$$XX                       ; Cluster-wide OPCOM broadcast flag
                                0E   01A2                .BYTE   $$$YY ! $$$XX               ; OPCOM message flags
6D 20 67 6E 69 73 6F 70 6F 72 50 00' 01A3                .ASCIC  @Proposing modification of quorum or quorum disk membership@
20 6E 6F 69 74 61 63 69 66 69 64 6F  01AF
72 6F 20 6D 75 72 6F 75 71 20 66 6F  01BB
6B 73 69 64 20 6D 75 72 6F 75 71 20  01C7
   70 69 68 73 72 65 62 6D 65 6D 20  01D3
                              3A     01A3
                                     01DE   157 JOIN_MSG::       CNX_MSG ST_INIADD, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, <Proposi
                              0007   01DE                .WORD   CLUMBX$K_ST_INIADD
                                1E   01E0                .BYTE   $$$XX
                                0E   01E1                .BYTE   $$$XX                       ; Cluster-wide OPCOM broadcast flag
                                0E   01E2                .BYTE   $$$YY ! $$$XX               ; OPCOM message flags
61 20 67 6E 69 73 6F 70 6F 72 50 00' 01E3                .ASCIC  @Proposing addition of system@
73 20 66 6F 20 6E 6F 69 74 69 64 64  01EF
                        6D 65 74 73 79  01FB
                                 1C     01E3
                                     0200   158 UNLOCK_MSG::     CNX_MSG ST_ABORT, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, <Aborting
                              000A   0200                .WORD   CLUMBX$K_ST_ABORT
                                1E   0202                .BYTE   $$$XX
                                0E   0203                .BYTE   $$$XX                       ; Cluster-wide OPCOM broadcast flag
                                0E   0204                .BYTE   $$$YY ! $$$XX               ; OPCOM message flags
41 56 20 67 6E 69 74 72 6F 62 41 00' 0205                .ASCIC  @Aborting VAXcluster state transition@
61 74 73 20 72 65 74 73 75 6C 63 58  0211
6F 69 74 69 73 6E 61 72 74 20 65 74  021D
                              6E     0229
                              24     0205
                                     022A   159 COMPLETE_MSG::   CNX_MSG ST_COMPLETE, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, <Compl
                              001B   022A                .WORD   CLUMBX$K_ST_COMPLETE
                                1E   022C                .BYTE   $$$XX
                                0E   022D                .BYTE   $$$XX                       ; Cluster-wide OPCOM broadcast flag
                                0E   022E                .BYTE   $$$YY ! $$$XX               ; OPCOM message flags
20 67 6E 69 74 65 6C 70 6D 6F 43 00' 022F                .ASCIC  @Completing VAXcluster state transition@
73 20 72 65 74 73 75 6C 63 58 41 56  023B
74 69 73 6E 61 72 74 20 65 74 61 74  0247
                        6E 6F 69     0253
                              26     022F
                                     0256   160 FAILOVER_MSG::   CNX_MSG ST_DROPNODE, <NONMEMBER,NOQUORUM,QUORUM>, <ALWAYS>, , <Remov
                              000F   0256                .WORD   CLUMBX$K_ST_DROPNODE
                                1E   0258                .BYTE   $$$XX
                                00   0259                .BYTE   $$$XX                       ; Cluster-wide OPCOM broadcast flag
                                0E   025A                .BYTE   $$$YY ! $$$XX               ; OPCOM message flags
6F 72 66 20 64 65 76 6F 6D 65 52 00' 025B                .ASCIC  @Removed from VAXcluster system@
72 65 74 73 75 6C 63 58 41 56 20 6D  0267
               6D 65 74 73 79 73 20  0273
                              1E     025B
                                     027A   161 ADDNODE_MSG::    CNX_MSG ST_ADD, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, <Now a VAXc
                              000C   027A                .WORD   CLUMBX$K_ST_ADD
                                1E   027C                .BYTE   $$$XX
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                                    0E  027D                 .BYTE   $$$XX                     ; Cluster-wide OPCOM broadcast flag
                                    0E  027E                 .BYTE   $$$YY ! $$$XX             ; OPCOM message flags
6C 63 58 41 56 20 61 20 77 6F 4E 00'  027F                 .ASCIC  @Now a VAXcluster member -- system@
72 65 62 6D 65 6D 20 72 65 74 73 75   028B
      6D 65 74 73 79 73 20 2D 2D 20   0297
                                    21  027F
                                        02A1  162 SNDSTS_MSG::  CNX_MSG , , , , <Sending status to system>
                                  0000  02A1                 .WORD   0
                                    10  02A3                 .BYTE   $$$XX
                                    00  02A4                 .BYTE   $$$XX                     ; Cluster-wide OPCOM broadcast flag
                                    00  02A5                 .BYTE   $$$YY ! $$$XX             ; OPCOM message flags
61 74 73 20 67 6E 69 64 6E 65 53 00'  02A6                 .ASCIC  @Sending status to system@
65 74 73 79 73 20 6F 74 20 73 75 74   02B2
                                    6D  02BE
                                    18  02A6
                                        02BF  163 RCVSTS_MSG::  CNX_MSG , , , , <Received status from system>
                                  0000  02BF                 .WORD   0
                                    10  02C1                 .BYTE   $$$XX
                                    00  02C2                 .BYTE   $$$XX                     ; Cluster-wide OPCOM broadcast flag
                                    00  02C3                 .BYTE   $$$YY ! $$$XX             ; OPCOM message flags
74 73 20 64 65 76 69 65 63 65 52 00'  02C4                 .ASCIC  @Received status from system@
79 73 20 6D 6F 72 66 20 73 75 74 61   02D0
                        6D 65 74 73   02DC
                                    1B  02C4
                                        02E0  164 FORCLUS_MSG::  CNX_MSG ST_FORNCLUS, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, <Detec
                                  0010  02E0                 .WORD   CLUMBX$K_ST_FORNCLUS
                                    1E  02E2                 .BYTE   $$$XX
                                    0E  02E3                 .BYTE   $$$XX                     ; Cluster-wide OPCOM broadcast flag
                                    0E  02E4                 .BYTE   $$$YY ! $$$XX             ; OPCOM message flags
65 6D 20 64 65 74 63 65 74 65 44 00'  02E5                 .ASCIC  @Detected member of another VAXcluster -- system@
74 6F 6E 61 20 66 6F 20 72 65 62 6D   02F1
74 73 75 6C 63 58 41 56 20 72 65 68   02FD
6D 65 74 73 79 73 20 2D 2D 20 72 65   0309
                                    2F  02E5
                                        0315  165 LOSEQUORUM_MSG::
                                        0315  166               CNX_MSG ST_NOQUORUM, <ALWAYS>, <ALWAYS>, , <Quorum lost, blocking ac
                                  0019  0315                 .WORD   CLUMBX$K_ST_NOQUORUM
                                    1E  0317                 .BYTE   $$$XX
                                    00  0318                 .BYTE   $$$XX                     ; Cluster-wide OPCOM broadcast flag
                                    0E  0319                 .BYTE   $$$YY ! $$$XX             ; OPCOM message flags
74 73 6F 6C 20 6D 75 72 6F 75 51 00'  031A                 .ASCIC  @Quorum lost, blocking activity@
61 20 67 6E 69 6B 63 6F 6C 62 20 2C   0326
            79 74 69 76 69 74 63   0332
                                    1E  031A
                                        0339  167 GAINQUORUM_MSG::
                                        0339  168               CNX_MSG ST_INQUORUM, <ALWAYS>, <ALWAYS>, , <Quorum regained, resumin
                                  0011  0339                 .WORD   CLUMBX$K_ST_INQUORUM
                                    1E  033B                 .BYTE   $$$XX
                                    00  033C                 .BYTE   $$$XX                     ; Cluster-wide OPCOM broadcast flag
                                    0E  033D                 .BYTE   $$$YY ! $$$XX             ; OPCOM message flags
61 67 65 72 20 6D 75 72 6F 75 51 00'  033E                 .ASCIC  @Quorum regained, resuming activity@
69 6D 75 73 65 72 20 2C 64 65 6E 69   034A
   79 74 69 76 69 74 63 61 20 67 6E   0356
                                    22  033E
                                        0361  169 QDCON_MSG::   CNX_MSG ST_GAINDISK, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Estab
                                  0013  0361                 .WORD   CLUMBX$K_ST_GAINDISK
                                    1E  0363                 .BYTE   $$$XX
```

```
                                    0C  0364                .BYTE   $$$XX                          ; Cluster-wide OPCOM broadcast flag
                                    0C  0365                .BYTE   $$$YY ! $$$XX                 ; OPCOM message flags
64 65 68 73 69 6C 62 61 74 73 45 00' 0366                .ASCIC  @Established "connection" to quorum disk@
6E 6F 69 74 63 65 6E 6E 6F 63 22 20  0372
20 6D 75 72 6F 75 71 20 6F 74 20 22  037E
                        6B 73 69 64  038A
                                    27  0366
                                        038E    170 QDDISCON_MSG::  CNX_MSG ST_LOSTDISK, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Lost
                                  0012  038E                .WORD   CLUMBX$K_ST_LOSTDISK
                                    1E  0390                .BYTE   $$$XX
                                    0C  0391                .BYTE   $$$XX                          ; Cluster-wide OPCOM broadcast flag
                                    0C  0392                .BYTE   $$$YY ! $$$XX                 ; OPCOM message flags
65 6E 6E 6F 63 22 20 74 73 6F 4C 00' 0393                .ASCIC  @Lost "connection" to quorum disk@
75 71 20 6F 74 20 22 6E 6F 69 74 63  039F
         6B 73 69 64 20 6D 75 72 6F  03AB
                                    20  0393
                                        03B4    171 QDRDERROR_MSG:: CNX_MSG ST_DISKRDERR, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Erro
                                  0014  03B4                .WORD   CLUMBX$K_ST_DISKRDERR
                                    1E  03B6                .BYTE   $$$XX
                                    0C  03B7                .BYTE   $$$XX                          ; Cluster-wide OPCOM broadcast flag
                                    0C  03B8                .BYTE   $$$YY ! $$$XX                 ; OPCOM message flags
69 64 61 65 72 20 72 6F 72 72 45 00' 03B9                .ASCIC  @Error reading quorum disk@
69 64 20 6D 75 72 6F 75 71 20 67 6E  03C5
                        6B 73 69 64  03D1
                                    19  03B9
                                        03D3    172 QDWRERROR_MSG:: CNX_MSG ST_DISKWRERR, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Erro
                                  0015  03D3                .WORD   CLUMBX$K_ST_DISKWRERR
                                    1E  03D5                .BYTE   $$$XX
                                    0C  03D6                .BYTE   $$$XX                          ; Cluster-wide OPCOM broadcast flag
                                    0C  03D7                .BYTE   $$$YY ! $$$XX                 ; OPCOM message flags
69 74 69 72 77 20 72 6F 72 72 45 00' 03D8                .ASCIC  @Error writing quorum disk@
69 64 20 6D 75 72 6F 75 71 20 67 6E  03E4
                        6B 73 69 64  03F0
                                    19  03D8
                                        03F2    173 QDWRLERROR_MSG:: CNX_MSG ST_DISKWRERR, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Quo
                                  0015  03F2                .WORD   CLUMBX$K_ST_DISKWRERR
                                    1E  03F4                .BYTE   $$$XX
                                    0C  03F5                .BYTE   $$$XX                          ; Cluster-wide OPCOM broadcast flag
                                    0C  03F6                .BYTE   $$$YY ! $$$XX                 ; OPCOM message flags
6B 73 69 64 20 6D 75 72 6F 75 51 00' 03F7                .ASCIC  @Quorum disk write-locked@
65 6B 63 6F 6C 2D 65 74 69 72 77 20  0403
                                    64  040F
                                    18  03F7
                                        0410    174 QDINVDAT_MSG::  CNX_MSG ST_DISKINVDAT, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Rea
                                  0016  0410                .WORD   CLUMBX$K_ST_DISKINVDAT
                                    1E  0412                .BYTE   $$$XX
                                    0C  0413                .BYTE   $$$XX                          ; Cluster-wide OPCOM broadcast flag
                                    0C  0414                .BYTE   $$$YY ! $$$XX                 ; OPCOM message flags
69 6C 61 76 6E 69 20 64 61 65 52 00' 0415                .ASCIC  @Read invalid data from quorum disk@
20 6D 6F 72 66 20 61 74 61 64 20 64  0421
   6B 73 69 64 20 6D 75 72 6F 75 71  042D
                                    22  0415
                                        0438    175 QDFORCLUS_MSG:: CNX_MSG ST_FORNDISK, <NONMEMBER,NOQUORUM,QUORUM>, , <ALWAYS>, <Detec
                                  001A  0438                .WORD   CLUMBX$K_ST_FORNDISK
                                    1E  043A                .BYTE   $$$XX
                                    0E  043B                .BYTE   $$$XX                          ; Cluster-wide OPCOM broadcast flag
                                    0E  043C                .BYTE   $$$YY ! $$$XX                 ; OPCOM message flags
```

```
                                                     K 6
6E 61 20 64 65 74 63 65 74 65 44 00'  043D                  .ASCIC  @Detected another VAXcluster via the quorum disk@
75 6C 63 58 41 56 20 72 65 68 74 6F   0449
65 68 74 20 61 69 76 20 72 65 74 73   0455
6B 73 69 64 20 6D 75 72 6F 75 71 20   0461
                              2F      043D
                                      046D    176 QDTIMOUT_MSG::  CNX_MSG ST_DISKTIMEOUT, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Ti
                                      046D                .WORD   CLUMBX$K_ST_DISKTIMEOUT
                                1E    046F                .BYTE   $$$XX
                                0C    0470                .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
                                0C    0471                .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
49 20 74 75 6F 2D 64 65 6D 69 54 00'  0472                .ASCIC  @Timed-out I/O operation to quorum disk@
6E 6F 69 74 61 72 65 70 6F 20 4F 2F   047E
64 20 6D 75 72 6F 75 71 20 6F 74 20   048A
                        6B 73 69      0496
                              26      0472
                                      0499    177 ; LOSTMSG_MSG:: CNX_MSG ST_LOSTMSG, <ALWAYS>, <ALWAYS>, , <Lost VAXcluster message>
                                      0499    178
                                      0499    179 ;****************************************************************************
                                      0499    180 ;
                                      0499    181 ; NOTE: The following assumptions are in effect for this entire module.
                                      0499    182 ;
                                      0499    183 ;****************************************************************************
                                      0499    184
                                      0499    185         ASSUME  IPL$_SYNCH  EQ  IPL$_SCS
                                      0499    186         ASSUME  IPL$_SYNCH  EQ  IPL$_TIMER
                                      0499    187
                                00000000      188         .PSECT  $$$100,LONG             ; PSECT for code
                                      0000    189
                                      0000    190         .DEFAULT        DISPLACEMENT,WORD
```

```
                                0000   192          .SBTTL  CNX$CONFIG_CHANGE - Log configuration change
                                0000   193 ;++
                                0000   194 ; FUNCTIONAL DESCRIPTION:
                                0000   195 ;
                                0000   196 ;       This routine records cluster configuration changes.
                                0000   197 ;       Currently it simply broadcasts a message to OPA0.
                                0000   198 ;
                                0000   199 ; INPUT PARAMETERS:
                                0000   200 ;
                                0000   201 ;       R0      Address of .ASCIC message string
                                0000   202 ;       R5      Address of CSB  or 0
                                0000   203 ;
                                0000   204 ; OUTPUT PARAMETERS:
                                0000   205 ;
                                0000   206 ;       NONE
                                0000   207 ;
                                0000   208 ; SIDE EFFECTS:
                                0000   209 ;
                                0000   210 ;       All registers (other than R0) are preserved.
                                0000   211 ;--
                                0000   212
                                0000   213 CNX$CONFIG_CHANGE::
            03FE 8F     BB      0000   214          PUSHR   #^M<R1,R2,R3,R4,R5,R6,R7,R8,R9> ; Save registers
            58   50     D0      0004   215          MOVL    R0,R8                   ; Message control block address
            59   55     D0      0007   216          MOVL    R5,R9                   ; Remote node CSB address
    54  00000000'GF     D0      000A   217          MOVL    G^CLU$GL_CLUB,R4        ; Address of CLUB
                57     D4      0011   218          CLRL    R7                      ; Status flags mask
       04 1C A4   00     E0      0013   219          BBS     #CLUB$V_CLUSTER, -      ; Branch if cluster member
                                0018   220                  CLUB$L_FLAGS(R4),10$
          0C 57   01     E3      0018   221          BBCS    #FLG_V_NONMEMBER,R7,30$ ; Set non-member flag and branch
                                001C   222
       04 1C A4   1C     E0      001C   223 10$:     BBS     #CLUB$V_QUORUM, -       ; Branch if quorum is present
                                0021   224                  CLUB$L_FLAGS(R4),20$
             03 57   03     E3      0021   225          BBCS    #FLG_V_NOQUORUM,R7,30$  ; Set quorum absent flag and branch
                                0025   226
                57   04     C8      0025   227 20$:     BISL2   #FLG_M_QUORUM,R7        ; Set quorum present flag
             04 A8   57     93      0028   228 30$:     BITB    R7,MB_B_LCL(R8)         ; Send OPCOM a message?
                      03     12      002C   229          BNEQ    40$                     ; Branch to send OPCOM a message
                    0095     31      002E   230          BRW     100$                    ; Skip message to OPCOM
                                0031   231
          5E    00000048 8F     C2      0031   232 40$:     SUBL2   #<CLUMBX$K_LENGTH+3>&^C3,SP ; Allocate mailbox message buffer
                      54     DD      0038   233          PUSHL   R4                      ; Save CLUB address
04 AE    0048 8F    00    6E     00      003A   234          MOVC5   #0,(SP),#0, -           ; Zero allocated space
                                0043   235                  #CLUMBX$K_LENGTH,4(SP)
                      10     BA      0043   236          POPR    #^M<R4>                 ; Restore CLUB address
                6E    0059 8F     B0      0045   237          MOVW    #MSG$_CLUMBX, -         ; Message ID
                                004A   238                  CLUMBX$W_MSGTYPE(SP)
             02 AE    68     B0      004A   239          MOVW    MB_W_CODE(R8), -        ; Message subtype
                                004E   240                  CLUMBX$W_SUBTYPE(SP)
             04 AE    01     90      004E   241          MOVB    #CLUMBX$K_DS_VERSION, - ; Message structure version
                                0052   242                  CLUMBX$B_DS_VERSION(SP)
             03 A8   57     93      0052   243          BITB    R7,MB_B_CLS(R8)         ; Broadcast to cluster?
                      04     13      0056   244          BEQL    50$                     ; Branch if no
             05 AE    01     90      0058   245          MOVB    #CLUMBX$M_BRDCST, -     ; Set broadcast bit
                                005C   246                  CLUMBX$B_FLAGS(SP)
          06 AE     48 8F     9B      005C   247 50$:     MOVZBW  #CLUMBX$K_LENGTH, -     ; Message length
                                0061   248                  CLUMBX$W_LENGTH(SP)
```

```
                53    10 A4   D0  0061   249          MOVL    CLUB$L_LOCAL_CSB(R4),R3 ; Local CSB address
          05 1C A4    00   E1  0065   250          BBC     #CLUB$V_CLUSTER, -      ; Branch if not a cluster member
                                0069   251                  CLUB$L_FLAGS(R4),60$
          08 AE    4C A3   D0  006A   252          MOVL    CSB$L_CSID(R3), -       ; Store local node CSID
                                006F   253                  CLUMBX$L_CSID_L(SP)
                56    68 A3   D0  006F   254 60$:    MOVL    CSB$L_SB(R3),R6         ; Address of local node system block
       0C AE    18 A6    06   28  0073   255          MOVC3   #CLUMBX$S_SYSTEMID_L, - ; Store local system id
                                0079   256                  SB$B_SYSTEMID(R6), -
                                0079   257                  CLUMBX$B_SYSTEMID_L(SP)
       14 AE    44 A6    10   28  0079   258          MOVC3   #CLUMBX$S_NODENAME_L, - ; Store local system name
                                007F   259                  SB$T_NODENAME(R6), -
                                007F   260                  CLUMBX$T_NODENAME_L(SP)
                      59    D5  007F   261          TSTL    R9                      ; Remote node specified?
                      1A    13  0081   262          BEQL    80$                     ; Branch if not and skip remote node data
          05 60 A9    01   E1  0083   263          BBC     #CSB$V_MEMBER, -        ; Branch if not a cluster member
                                0088   264                  CSB$L_STATUS(R9),70$
          24 AE    4C A9   D0  0088   265          MOVL    CSB$L_CSID(R9), -       ; Store remote node CSID
                                008D   266                  CLUMBX$L_CSID_R(SP)
                56    68 A9   D0  008D   267 70$:    MOVL    CSB$L_SB(R9),R6         ; Address of remote node system block
       28 AE    18 A6    06   28  0091   268          MOVC3   #CLUMBX$S_SYSTEMID_R, - ; Store remote system id
                                0097   269                  SB$B_SYSTEMID(R6), -
                                0097   270                  CLUMBX$B_SYSTEMID_R(SP)
       30 AE    44 A6    10   28  0097   271          MOVC3   #CLUMBX$S_NODENAME_R, - ; Store remote system name
                                009D   272                  SB$T_NODENAME(R6), -
                                009D   273                  CLUMBX$T_NODENAME_R(SP)
     40 AE    00000000'GF    7D  009D   274 80$:    MOVQ    G^EXE$GQ_SYSTIME, -     ; Store current time
                                00A5   275                  CLUMBX$Q_TIME(SP)
                53    06 AE   3C  00A5   276          MOVZWL  CLUMBX$W_LENGTH(SP),R3  ; Message size
                   54    6E   9E  00A9   277          MOVAB   (SP),R4                 ; Message address
          55   00000000'GF    9E  00AC   278          MOVAB   G^SYS$GL_OPRMBX,R5      ; OPCOM mailbox UCB address
                                00B3   279 ;
                                00B3   280 ; R3 is message length
                                00B3   281 ; R4 is message address
                                00B3   282 ; R5 is mailbox UCB address
                                00B3   283 ;
             00000000'GF    16  00B3   284          JSB     G^EXE$WRTMAILBOX        ; Send message to OPCOM
                   03 50    E8  00B9   285          BLBS    R0,90$                  ; Branch on success
                57    10    C8  00BC   286          BISL2   #FLG_M_ERROR,R7         ; Set OPCOM message error flag
       5E   00000048 8F    C0  00BF   287 90$:    ADDL2   #<CLOMBX$K_LENGTH+3>&^C3,SP ; Deallocate mailbox message buffer
                                00C6   288
             02 A8    57    93  00C6   289 100$:   BITB    R7,MB_B_BRD(R8)         ; Check for OPA0 broadcast
                      4F    13  00CA   290          BEQL    120$                    ; Branch if no OPA0 broadcast
             51    05 A8    9A  00CC   291          MOVZBL  MB_T_MSG(R8),R1         ; ; Get length of message
                51    21    C0  00D0   292          ADDL2   #PREFIX_SIZ+SB$S_NODENAME+2+3,R1 ; Add prefix, space+CR and
                51    03    CA  00D3   293          BICL2   #3,R1                   ;  round to even number of longwords
                56    5E    D0  00D6   294          MOVL    SP,R6                   ; Address to restore SP
                5E    51    C2  00D9   295          SUBL2   R1,SP                   ; Allocate message construction buffer
     6E   0000'CF    0C    28  00DC   296          MOVC3   #PREFIX_SIZ,W^PREFIX, - ; Copy prefix into message buffer
                                00E2   297                  (SP)
             51    05 A8    9A  00E2   298          MOVZBL  MB_T_MSG(R8),R1         ; Initial message text size
       63    06 A8    51    28  00E6   299          MOVC3   R1,MB_T_MSG+1(R8),(R3)  ; Copy message text to stack
                      59    D5  00EB   300          TSTL    R9                      ; Was CSB address specified?
                      12    13  00ED   301          BEQL    110$                    ; Branch if no CSB
                83    20    90  00EF   302          MOVB    #^A/ /,(R3)+            ; Store a space
                55    68 A9    D0  00F2   303          MOVL    CSB$L_SB(R9),R5         ; System Block address
                55    44 A5    9E  00F6   304          MOVAB   SB$T_NODENAME(R5),R5    ; Address of counted node name
                   54    85    9A  00FA   305          MOVZBL  (R5)+,R4                ; Length of node name
```

```
                63   65   54    28  00FD    306           MOVC3   R4,(R5),(R3)            ; Fill in node name
                     83   0D    90  0101    307 110$:     MOVB    #CR,(R3)+               ; Insert and count final carriage return
                     52   6E    9E  0104    308           MOVAB   (SP),R2                 ; Message address
                51   53   52    C3  0107    309           SUBL3   R2,R3,R1                ; Message length
            55   00000000'GF    DE  010B    310           MOVAL   G^OPA$UCRO,R5           ; Get address of OPA0 UCB
                                     0112    311 ;
                                     0112    312 ; R1 is message length
                                     0112    313 ; R2 is message address
                                     0112    314 ; R5 is OPA0 UCB address
                                     0112    315 ;
                     00000000'GF     16  0112    316           JSB     G^IOC$BROADCAST         ; Broadcast it
                         5E   56     D0  0118    317           MOVL    R6,SP                   ; Deallocate message text buffer
                         03FE 8F     BA  011B    318 120$:     POPR    #^M<R1,R2,R3,R4,R5,R6,R7,R8,R9> ; Restore registers
                                     05  011F    319           RSB
```

```
                                0120   321          .SBTTL  SEND_JBCMSG - Send message to Job Controller
                                0120   322
                                0120   323 ;++
                                0120   324 ; FUNCTIONAL DESCRIPTION:
                                0120   325 ;
                                0120   326 ;       This routine sends a message to the Job controller when a system
                                0120   327 ;       is removed from the cluster.
                                0120   328 ;
                                0120   329 ; INPUT PARAMETERS:
                                0120   330 ;
                                0120   331 ;       R5      Address of CSB
                                0120   332 ;
                                0120   333 ; OUTPUT PARAMETERS:
                                0120   334 ;
                                0120   335 ;       None
                                0120   336 ;
                                0120   337 ; SIDE EFFECTS:
                                0120   338 ;
                                0120   339 ;       All registers (other than R0) are preserved.
                                0120   340 ;--
                                0120   341
                    00000018    0120   342 JBCMSGSIZ=      2+SB$S_SYSTEMID+SB$S_NODENAME           ; Length of job contoller me
                                0120   343 SEND_JBCMSG::
                     007E 8F    BB  0120   344          PUSHR   #^M<R1,R2,R3,R4,R5,R6>  ; Save registers
                     5E   18    C2  0124   345          SUBL2   #<JBCMSGSIZ+3>&^C3,SP   ; Allocate message buffer
                     53   6E    9E  0127   346          MOVAB   (SP),R3                 ; Message buffer address
                     83   09    B0  012A   347          MOVW    #MSG$_SMBDON,(R3)+      ; Message type
              56     68 A5    D0  012D   348          MOVL    CSB$L_SB(R5),R6         ; Address of System Block
        63    18 A6    06  28  0131   349          MOVC3   #SB$S_SYSTEMID, -       ; Copy system ID into message
                                0136   350                  SB$B_SYSTEMID(R6),(R3)
        63    44 A6    10  28  0136   351          MOVC3   #SB$S_NODENAME, -       ; Copy node name --
                                013B   352                  SB$T_NODENAME(R6),(R3) ;    R3 set by previous MOVC3
                     53   18    D0  013B   353          MOVL    #JBCMSGSIZ,R3           ; Set size of message
                     54   6E    9E  013E   354          MOVAB   (SP),R4                 ; Set address of message
        55  00000000'GF    9E  0141   355          MOVAB   G^SYS$GL_JOBCTLMB,R5    ; Set addr. of Job controller's mailbox
            00000000'GF    16  0148   356          JSB     G^EXE$WRTMAILBOX        ; Write it to mailbox (ignore errors)
                     5E   18    C0  014E   357          ADDL2   #<JBCMSGSIZ+3>&^C3,SP   ; Restore stack
                     007E 8F    BA  0151   358          POPR    #^M<R1,R2,R3,R4,R5,R6>  ; Restore all registers
                                05  0155   359          RSB                             ; Return
                                0156   360
                                0156   361
                                0156   362          .END
```

```
$$$XX                           = 0000000C
$$$YY                           = 00000000
ACCPT_MSG                         00000023 RG    02
ADDNODE_MSG                       0000027A RG    02
BELL                            = 00000007
CLU$GL_CLUB                       ********   X   03
CLUB$L_FLAGS                    = 0000001C
CLUB$L_LOCAL_CSB                = 00000010
CLUB$V_CLUSTER                  = 00000000
CLUB$V_QUORUM                   = 0000001C
CLUMBX$B_DS_VERSION             = 00000004
CLUMBX$B_FLAGS                  = 00000005
CLUMBX$B_SYSTEMID_L             = 0000000C
CLUMBX$B_SYSTEMID_R             = 00000028
CLUMBX$K_DS_VERSION             = 00000001
CLUMBX$K_LENGTH                 = 00000048
CLUMBX$K_ST_ABORT               = 0000000A
CLUMBX$K_ST_ADD                 = 0000000C
CLUMBX$K_ST_CNX                 = 00000002
CLUMBX$K_ST_COMPLETE            = 0000001B
CLUMBX$K_ST_DISKINVDAT          = 00000016
CLUMBX$K_ST_DISKRDERR           = 00000014
CLUMBX$K_ST_DISKTIMEOUT         = 00000017
CLUMBX$K_ST_DISKWRERR           = 00000015
CLUMBX$K_ST_DROPNODE            = 0000000F
CLUMBX$K_ST_FORNCLUS            = 00000010
CLUMBX$K_ST_FORNDISK            = 0000001A
CLUMBX$K_ST_GAINDISK            = 00000013
CLUMBX$K_ST_INIADD              = 00000007
CLUMBX$K_ST_INIFORM             = 00000006
CLUMBX$K_ST_INIRECNFIG          = 00000008
CLUMBX$K_ST_INQUORUM            = 00000011
CLUMBX$K_ST_LOSTCNX             = 00000004
CLUMBX$K_ST_LOSTDISK            = 00000012
CLUMBX$K_ST_MEMREQ              = 00000009
CLUMBX$K_ST_NEWSYS              = 00000001
CLUMBX$K_ST_NOQUORUM            = 00000019
CLUMBX$K_ST_QUORUM              = 0000001C
CLUMBX$K_ST_RECNX               = 00000003
CLUMBX$K_ST_TIMCNX              = 00000005
CLUMBX$L_CSID_L                 = 00000008
CLUMBX$L_CSID_R                 = 00000024
CLUMBX$M_BRDCST                 = 00000001
CLUMBX$Q_TIME                   = 00000040
CLUMBX$S_NODENAME_L             = 00000010
CLUMBX$S_NODENAME_R             = 00000010
CLUMBX$S_SYSTEMID_L             = 00000006
CLUMBX$S_SYSTEMID_R             = 00000006
CLUMBX$T_NODENAME_L             = 00000014
CLUMBX$T_NODENAME_R             = 00000030
CLUMBX$W_LENGTH                 = 00000006
CLUMBX$W_MSGTYPE                = 00000000
CLUMBX$W_SUBTYPE                = 00000002
CNCT_MSG                          00000023 RG    02
CNX$CONFIG_CHANGE                 00000C00 RG    03
CNXERROR_MSG                      00000072 RG    02
COMPLETE_MSG                      0000022A RG    02
CR                              = 0000000D
CSB$L_CSID                      = 0000004C
CSB$L_SB                        = 00000068
CSB$L_STATUS                    = 00000060
CSB$V_MEMBER                    = 00000001
CSB_MSG                           0000000C RG    02
DEAD_MSG                          000000BA RG    02
EXE$GQ_SYSTIME                    ********   X   03
EXE$SNDMAILBOX                    ********   X   03
FAILIO_MSG                        00000091 RG    02
FAILOVER_MSG                      00000256 RG    02
FLG_M_ALWAYS                    = 0000000E
FLG_M_ERROR                     = 00000010
FLG_M_MEMBER                    = 0000000C
FLG_M_NONMEMBER                 = 00000002
FLG_M_NOQUORUM                  = 00000008
FLG_M_QUORUM                    = 00000004
FLG_V_ERROR                     = 00000004
FLG_V_NONMEMBER                 = 00000001
FLG_V_NOQUORUM                  = 00000003
FLG_V_QUORUM                    = 00000002
FORCLOS_MSG                       000002E0 RG    02
GAINQUORUM_MSG                    00000339 RG    02
IOC$BROADCAST                     ********   X   03
IPL$_SCS                        = 00000008
IPL$_SYNCH                      = 00000008
IPL$_TIMER                      = 00000008
JBCMSGSIZ                       = 00000018
JOIN_MSG                          000001DE RG    02
LF                              = 0000000A
LOSEQUORUM_MSG                    00000315 RG    02
MB_B_BRD                        = 00000002
MB_B_CLS                        = 00000003
MB_B_LCL                        = 00000004
MB_T_MSG                        = 00000005
MB_W_CODE                       = 00000000
MEMREQ_MSG                        00000135 RG    02
MSG$_CLUMBX                     = 00000059
MSG$_SMBDON                     = 00000009
OPA$OCBO                          ********   X   03
PREFIX                            00000000 R     02
PREFIX_SIZ                      = 0000000C
QDCON_MSG                         00000361 RG    02
QDDISCON_MSG                      0000038E RG    02
QDFORCLUS_MSG                     00000438 RG    02
QDINVDAT_MSG                      00000410 RG    02
QDRDERROR_MSG                     000003B4 RG    02
QDTIMOUT_MSG                      0000046D RG    02
QDWRERROR_MSG                     000003D3 RG    02
QDWRLERROR_MSG                    000003F2 RG    02
QUORUM_MSG                        0000019E RG    02
RCVSTS_MSG                        000002BF RG    02
REACCPT_MSG                       00000049 RG    02
RECNCT_MSG                        00000049 RG    02
RECONFIG_MSG                      0000016D RG    02
REQJOIN_MSG                       00000100 RG    02
SB$B_SYSTEMID                   = 00000018
```

```
SB$S_NODENAME                   = 00000010
SB$S_SYSTEMID                   = 00000006
SB$T_NODENAME                   = 00000044
SEND_JBCMSG                       00000120 RG    03
SNDSTS_MSG                        000002A1 RG    02
SYS$GL_JOBCTLMB                   ********   X   03
SYS$GL_OPRMBX                     ********   X   03
TRYFORM_MSG                       000000D7 RG    02
UNLOCK_MSG                        00000200 RG    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
$$$060	00000499 (1177.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC LONG
$$$100	00000156 (342.)	03 (3.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC LONG

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.04	00:00:00.52
Command processing	108	00:00:00.44	00:00:04.47
Pass 1	273	00:00:04.61	00:00:16.86
Symbol table sort	0	00:00:00.45	00:00:02.50
Pass 2	122	00:00:01.25	00:00:03.54
Symbol table output	16	00:00:00.07	00:00:00.07
Psect synopsis output	2	00:00:00.01	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	552	00:00:06.88	00:00:27.98

The working set limit was 1500 pages.
56017 bytes (110 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 470 non-local and 12 local symbols.
362 source lines were read in Pass 1, producing 19 object records in Pass 2.
16 pages of virtual memory were used to define 14 macros.

Macro library statistics

Macro library name	Macros defined
_255DUA28:[SYSLOA.OBJ]CLUSTER.MLB;1	1
_255DUA28:[SYS.OBJ]LIB.MLB;1	4
_255DUA28:[SYSLIB]STARLET.MLB;2	5
TOTALS (all libraries)	10

492 GETS were required to define 10 macros.

There were no errors, warnings or information messages.

```
MACRO/LIS=LIS$:CLUMESSAG/OBJ=OBJ$:CLUMESSAG MSRC$:CLUMESSAG/UPDATE=(ENH$:CLUMESSAG)+EXECML$/LIB+LIB$:CLUSTER/LIB
```

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VAX/VMS V4.0

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LIS

CLUMESSAG
LIS