```
SSSSSSSSSSS  YYY        YYY   SSSSSSSSSSSS  LLL                    000000000        AAAAAAAAA
SSSSSSSSSSS  YYY        YYY   SSSSSSSSSSSS  LLL                   00000000000       AAAAAAAAAA
SSSSSSSSSSS  YYY        YYY   SSSSSSSSSSSS  LLL                   000000000        AAAAAAAAAA
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      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
          SSS      YYY                SSS   LLL             000          000      AAA        AAA
SSSSSSSSSSS        YYY         SSSSSSSSSSS  LLLLLLLLLLLLLL   000000000           AAA        AAA
SSSSSSSSSSS        YYY         SSSSSSSSSSS  LLLLLLLLLLLLLL   000000000           AAA        AAA
SSSSSSSSSSS        YYY         SSSSSSSSSSS  LLLLLLLLLLLLLL   000000000           AAA        AAA
```

```
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    EEEEEEE      SSSSSS    SSSSSS  AA      AA  GG
CC        LL          UU      UU  MM        MM  EEEEEEE      SSSSSS    SSSSSS  AA      AA  GG
CC        LL          UU      UU  MM        MM  EE                  SS        SS  AAAAAAAAAA  GG  GGGGG
CC        LL          UU      UU  MM        MM  EE                  SS        SS  AAAAAAAAAA  GG  GGGGG
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  GGGGG      ....
CCCCCCCC  LLLLLLLLLL  UUUUUUUUUU  MM        MM  EEEEEEEEEE  SSSSSSSS  SSSSSSSS  AA      AA  GGGGG      ....


LL          IIIIII    SSSSSSSS
LL          IIIIII    SSSSSSSS
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    SSSSSSS
LLLLLLLLLL  IIIIII    SSSSSSSS
```

```
0000     1                .TITLE   CLUMESSAG - Cluster Event Message Routines
0000     2                .IDENT   'V04-000'
0000     3        ;
0000     4        ;****************************************************************************
0000     5        ;*                                                                          *
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0000    23        ;*                                                                          *
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
```

```
              0000      62              .SBTTL  DECLARATIONS
              0000      63      ;
              0000      64      ; INCLUDE FILES:
              0000      65      ;
              0000      66              $CLUBDEF                        ; CLUster Block offsets
              0000      67              $CLUMBXDEF                      ; Cluster mailbox message format
              0000      68              $CSBDEF                         ; CSB Offsets
              0000      69              $IPLDEF                         ; IPL definitions
              0000      70              $MSGDEF                         ; Mailbox message type codes
              0000      71              $SBDEF                          ; SB Offsets
              0000      72
              0000      73      ;
              0000      74      ; MACROS:
              0000      75      ;
              0000      76              .MACRO  CNX_MSG MSGCODE,BRDFLG,LCLFLG,CLSFLG,TEXT
              0000      77              .SHOW   BINARY
              0000      78              .IF NOT_BLANK   MSGCODE
              0000      79              .WORD   CLUMBX$K_'MSGCODE
              0000      80              .IF FALSE
              0000      81              .WORD   0
              0000      82              .ENDC
              0000      83  $$$XX=      FLG_M_ERROR
              0000      84              .IRP    X,BRDFLG
              0000      85  $$$XX=      $$$XX ! FLG_M_'X
              0000      86              .ENDR
              0000      87              .BYTE   $$$XX
              0000      88  $$$XX=      0
              0000      89              .IRP    X,CLSFLG
              0000      90  $$$XX=      $$$XX ! FLG_M_'X
              0000      91              .ENDR
              0000      92              .BYTE   $$$XX                   ; Cluster-wide OPCOM broadcast flag
              0000      93  $$$YY=      0
              0000      94              .IRP    X,LCLFLG
              0000      95  $$$YY=      $$$YY ! FLG_M_'X
              0000      96              .ENDR
              0000      97              .BYTE   $$$YY ! $$$XX           ; OPCOM message flags
              0000      98              .ASCIC  @TEXT@
              0000      99              .NOSHOW BINARY
              0000     100              .ENDM   CNX_MSG
              0000     101
              0000     102      ;
              0000     103      ; EQUATED SYMBOLS:
              0000     104      ;
              0000     105
  00000000    0000     106  MB_W_CODE=          0                      ; Mailbox message code
  00000002    0000     107  MB_B_BRD=           2                      ; OPA0 broadcast flags byte
  00000003    0000     108  MB_B_CLS=           3                      ; OPCOM cluster message flags byte
  00000004    0000     109  MB_B_LCL=           4                      ; OPCOM local message flags byte
  00000005    0000     110  MB_T_MSG=           5                      ; OPA0 broadcast message text
              0000     111
  00000001    0000     112  FLG_V_NONMEMBER=           1               ; Do if local node is not a VAXcluster membe
  00000002    0000     113  FLG_M_NONMEMBER=           1@FLG_V_NONMEMBER
  00000002    0000     114  FLG_V_QUORUM=       2                      ; Do if local cluster has a dynamic quorum
  00000004    0000     115  FLG_M_QUORUM=       1@FLG_V_QUORUM
  00000003    0000     116  FLG_V_NOQUORUM=     3                      ; Do if local cluster does not have a dynami
  00000008    0000     117  FLG_M_NOQUORUM=     1@FLG_V_NOQUORUM
  00000004    0000     118  FLG_V_ERROR=        4                      ; Do after failing to put message in OPCOM m
```

```
                          00000010  0000   119 FLG_M_ERROR=       1@FLG_V_ERROR
                          0000000E  0000   120 FLG_M_ALWAYS=      FLG_M_NONMEMBER ! FLG_M_QUORUM ! FLG_M_NOQUORUM
                          0000000C  0000   121 FLG_M_MEMBER=      FLG_M_QUORUM ! FLG_M_NOQUORUM
                                    0000   122
                          00000007  0000   123 BELL = 7                                               ; ASCII code for bell
                          0000000D  0000   124 CR = ^XD                                               ; ASCII code for carriage return
                          0000000A  0000   125 LF = ^XA                                               ; ASCII code for line feed
                                    0000   126
                                    0000   127 ;
                                    0000   128 ;  OWN STORAGE:
                                    0000   129 ;
                                    0000   130
                          00000000  0000   131         .PSECT  $$$060,LONG                            ; R/O Data PSECT
                                    0000   132
                                    0000   133 ;
                                    0000   134 ;          Common message prefix
                                    0000   135 ;
   20 20 2C 4E 41 4D 58 4E 43 25 0A 07  0000   136 PREFIX: .ASCII     <BELL><LF>"%CNXMAN, "           ; Text to prefix each message
                          0000000C  000C   137 PREFIX_SIZ=        .-PREFIX                            ; Length of prefix text
                                    000C   138
                                    000C   139 ;
                                    000C   140 ;          Message control blocks
                                    000C   141 ;
                                    000C   142
                                    000C   143 CSB_MSG::          CNX_MSG ST_NEWSYS, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Discove
                              0001  000C       .WORD     CLUBX$K_ST_NEWSYS
                                1E  000E       .BYTE     $$$XX
                                0C  000F       .BYTE     $$$XX                                  ; Cluster-wide OPCOM broadcast flag
                                0C  0010       .BYTE     $$$YY ! $$$XX                          ; OPCOM message flags
      20 64 65 72 65 76 6F 63 73 69 44 00'  0011       .ASCIC    @Discovered system@
               6D 65 74 73 79 73  001D
                                11  0011
                                    0023   144 ACCPT_MSG::
                                    0023   145 CNCT_MSG::         CNX_MSG ST_CNX, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Establishe
                              0002  0023       .WORD     CLUBX$K_ST_CNX
                                1E  0025       .BYTE     $$$XX
                                0C  0026       .BYTE     $$$XX                                  ; Cluster-wide OPCOM broadcast flag
                                0C  0027       .BYTE     $$$YY ! $$$XX                          ; OPCOM message flags
   64 65 68 73 69 6C 62 61 74 73 45 00'  0028       .ASCIC    @Established connection to system@
   20 6E 6F 69 74 63 65 6E 6E 6F 63 20  0034
            6D 65 74 73 79 73 20 6F 74  0040
                                20  0028
                                    0049   146 REACCPT_MSG::
                                    0049   147 RECNCT_MSG::       CNX_MSG ST_RECNX, <NONMEMBER,NOQUORUM,QUORUM>, , <MEMBER>, <Re-estab
                              0003  0049       .WORD     CLUBX$K_ST_RECNX
                                1E  004B       .BYTE     $$$XX
                                0C  004C       .BYTE     $$$XX                                  ; Cluster-wide OPCOM broadcast flag
                                0C  004D       .BYTE     $$$YY ! $$$XX                          ; OPCOM message flags
   73 69 6C 62 61 74 73 65 2D 65 52 00'  004E       .ASCIC    @Re-established connection to system@
   69 74 63 65 6E 6E 6F 63 20 64 65 68  005A
   6D 65 74 73 79 73 20 6F 74 20 6E 6F  0066
                                23  004E
                                    0072   148 CNXERROR_MSG::     CNX_MSG ST_LOSTCNX, <NONMEMBER, NOQUORUM,QUORUM>, , <MEMBER>, <Lost
                              0004  0072       .WORD     CLUBX$K_ST_LOSTCNX
                                1E  0074       .BYTE     $$$XX
                                0C  0075       .BYTE     $$$XX                                  ; Cluster-wide OPCOM broadcast flag
                                0C  0076       .BYTE     $$$YY ! $$$XX                          ; OPCOM message flags
```

```
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@
```

H 6

CLUMESSAG   - Cluster Event Message Routines   16-SEP-1984 00:23:47   VAX/VMS Macro V04-00   Page   6
V04-000   DECLARATIONS   5-SEP-1984 04:06:59   [SYSLOA.SRC]CLUMESSAG.MAR;1   (2)

```
 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  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  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
```

I 6

CLUMESSAG   - Cluster Event Message Routines   16-SEP-1984 00:23:47   VAX/VMS Macro V04-00   Page 7
V04-000   DECLARATIONS   5-SEP-1984 04:06:59   [SYSLOA.SRC]CLUMESSAG.MAR;1   (2)

```
                           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   CLU$BX$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   CLU$BX$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   CLU$BX$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   CLU$BX$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
```

```
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
                            0017 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 2C 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)
```

M 6

CLUMESSAG   - Cluster Event Message Routines   16-SEP-1984 00:23:47 VAX/VMS Macro V04-00   Page 11
V04-000   CNX$CONFIG_CHANGE - Log configuration ch 5-SEP-1984 04:06:59 [SYSLOA.SRC]CLUMESSAG.MAR;1   (3)

```
         53   10 A4   DO  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
                           006A   251                   CLUB$L_FLAGS(R4),60$
         08 AE   4C A3   DO  006A   252            MOVL    CSB$L_CSID(R3), -            ; Store local node CSID
                           006F   253                   CLUMBX$L_CSID_L(SP)
         56   68 A3   DO  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   DO  0088   265            MOVL    CSB$L_CSID(R9), -           ; Store remote node CSID
                           008D   266                   CLUMBX$L_CSID_R(SP)
         56   68 A9   DO  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$:         ADDL2   #<CLUMBX$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   CO  00D0   292            ADDL2   #PREFIX_SIZ+SB$S_NODENAME+2+3,R1 ; Add prefix, space+CR and
         51   03   CA  00D3   293            BICL2   #3,R1                       ;  round to even number of longwords
         56   5E   DO  00D6   294            MOVL    SP,R6                       ; Address to restore SP
         5E   51   C2  00D9   295            SUBL2   R1,SP                       ; Allocate message construction buffer
      6E   0000'CF   0C  28  00DC   296            MOVC3   #PREFIX_SIZ,W^PREFIX, -     ; Copy prefix into message buffer
                           00E2   297                   (SP)
         51   05 A8   9A  00E2   298            MOVZBL  MB_T_MSG(R8),R1            ; Initial message text size
      63   06 A8   51   28  00E6   299            MOVC3   R1,MB_T_MSG+1(R8),(R3)     ; Copy message text to stack
         59   D5  00EB   300            TSTL    R9                          ; Was CSB address specified?
         12   13  00ED   301            BEQL    110$                        ; Branch if no CSB
      83   20   90  00EF   302            MOVB    #^A/ /,(R3)+              ; Store a space
         55   68 A9   DO  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$:   MOVB    #CR,(R3)+               ; Insert and count final carriage return
                   52  6E  9E  0104   308        MOVAB   (SP),R2                 ; Message address
       51  53  52  C3  0107   309        SUBL3   R2,R3,R1                ; Message length
   55  00000000'GF  DE  010B   310        MOVAL   G^OPA$UCR0,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
```

CLUMESSAG   B 7
V04-000   - Cluster Event Message Routines   16-SEP-1984 00:23:47   VAX/VMS Macro V04-00   Page 13
            SEND_JBCMSG - Send message to Job Contro   5-SEP-1984 04:06:59   [SYSLOA.SRC]CLUMESSAG.MAR;1   (4)

```
                                    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
```

```
$$$XX                     = 0000000C            CR                        = 0000000D
$$$YY                     = 00000000            CSB$L_CSID                = 0000004C
ACCPT_MSG                   00000023 RG   02     CSB$L_SB                  = 00000068
ADDNODE_MSG                 0000027A RG   02     CSB$L_STATUS              = 00000060
BELL                      = 00000007            CSB$V_MEMBER              = 00000001
CLU$GL_CLUB               ******** X   03        CSB_MSG                     0000000C RG   02
CLUB$L_FLAGS              = 0000001C            DEAD_MSG                    000000BA RG   02
CLUB$L_LOCAL_CSB          = 00000010            EXE$GQ_SYSTIME            ******** X   03
CLUB$V_CLUSTER            = 00000000            EXE$WRTMAILBOX            ******** X   03
CLUB$V_QUORUM             = 0000001C            FAILIO_MSG                  00000091 RG   02
CLUMBX$B_DS_VERSION       = 00000004            FAILOVER_MSG                00000256 RG   02
CLUMBX$B_FLAGS            = 00000005            FLG_M_ALWAYS              = 0000000E
CLUMBX$B_SYSTEMID_L       = 0000000C            FLG_M_ERROR               = 00000010
CLUMBX$B_SYSTEMID_R       = 00000028            FLG_M_MEMBER              = 0000000C
CLUMBX$K_DS_VERSION       = 00000001            FLG_M_NONMEMBER           = 00000002
CLUMBX$K_LENGTH           = 00000048            FLG_M_NOQUORUM            = 00000008
CLUMBX$K_ST_ABORT         = 0000000A            FLG_M_QUORUM              = 00000004
CLUMBX$K_ST_ADD           = 0000000C            FLG_V_ERROR               = 00000004
CLUMBX$K_ST_CNX           = 00000002            FLG_V_NONMEMBER           = 00000001
CLUMBX$K_ST_COMPLETE      = 0000001B            FLG_V_NOQUORUM            = 00000003
CLUMBX$K_ST_DISKINVDAT    = 00000016            FLG_V_QUORUM              = 00000002
CLUMBX$K_ST_DISKRDERR     = 00000014            FORCLUS_MSG                 000002E0 RG   02
CLUMBX$K_ST_DISKTIMEOUT   = 00000017            GAINQUORUM_MSG              00000339 RG   02
CLUMBX$K_ST_DISKWRERR     = 00000015            IOC$BROADCAST             ******** X   03
CLUMBX$K_ST_DROPNODE      = 0000000F            IPL$_SCS                  = 00000008
CLUMBX$K_ST_FORNCLUS      = 00000010            IPL$_SYNCH                = 00000008
CLUMBX$K_ST_FORNDISK      = 0000001A            IPL$_TIMER                = 00000008
CLUMBX$K_ST_GAINDISK      = 00000013            JBCMSGSIZ                 = 00000018
CLUMBX$K_ST_INIADD        = 00000007            JOIN_MSG                    000001DE RG   02
CLUMBX$K_ST_INIFORM       = 00000006            LF                        = 0000000A
CLUMBX$K_ST_INIRECNFIG    = 00000008            LOSEQUORUM_MSG              00000315 RG   02
CLUMBX$K_ST_INQUORUM      = 00000011            MB_B_BRD                  = 00000002
CLUMBX$K_ST_LOSTCNX       = 00000004            MB_B_CLS                  = 00000003
CLUMBX$K_ST_LOSTDISK      = 00000012            MB_B_LCL                  = 00000004
CLUMBX$K_ST_MEMREQ        = 00000009            MB_T_MSG                  = 00000005
CLUMBX$K_ST_NEWSYS        = 00000001            MB_W_CODE                 = 00000000
CLUMBX$K_ST_NOQUORUM      = 00000019            MEMREQ_MSG                  00000135 RG   02
CLUMBX$K_ST_QUORUM        = 0000001C            MSG$_CLUMBX               = 00000059
CLUMBX$K_ST_RECNX         = 00000003            MSG$_SMBDON               = 00000009
CLUMBX$K_ST_TIMCNX        = 00000005            OPA$UCB0                  ******** X   03
CLUMBX$L_CSID_L           = 00000008            PREFIX                      00000000 R    02
CLUMBX$L_CSID_R           = 00000024            PREFIX_SIZ                = 0000000C
CLUMBX$M_BRDCST           = 00000001            QDCON_MSG                   00000361 RG   02
CLUMBX$Q_TIME             = 00000040            QDDISCON_MSG                0000038E RG   02
CLUMBX$S_NODENAME_L       = 00000010            QDFORCLUS_MSG               00000438 RG   02
CLUMBX$S_NODENAME_R       = 00000010            QDINVDAT_MSG                00000410 RG   02
CLUMBX$S_SYSTEMID_L       = 00000006            QDRDERROR_MSG               000003B4 RG   02
CLUMBX$S_SYSTEMID_R       = 00000006            QDTIMOUT_MSG                0000046D RG   02
CLUMBX$T_NODENAME_L       = 00000014            QDWRERROR_MSG               000003D3 RG   02
CLUMBX$T_NODENAME_R       = 00000030            QDWRLERROR_MSG              000003F2 RG   02
CLUMBX$W_LENGTH           = 00000006            QUORUM_MSG                  0000019E RG   02
CLUMBX$W_MSGTYPE          = 00000000            RCVSTS_MSG                  000002BF RG   02
CLUMBX$W_SUBTYPE          = 00000002            REACCPT_MSG                 00000049 RG   02
CNCT_MSG                    00000023 RG   02     RECNCT_MSG                 00000049 RG   02
CNX$CONFIG_CHANGE           00000C00 RG   03     RECONFIG_MSG               0000016D RG   02
CNXERROR_MSG                00000072 RG   02     REQJOIN_MSG                00000100 RG   02
COMPLETE_MSG                0000022A 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

CNXOPT
LIS

ADPSUBUV1
LIS

CNXMAN
LIS

CJFCLUSTR
LIS

CLUSTRLOA
LIS

CONMAN
LIS

ADPSUB790
LIS

CLUMESSAG
LIS