```
RRRRRRRRRRR      MMM          MMM     SSSSSSSSSSS
RRRRRRRRRRRR     MMM          MMM     SSSSSSSSSSS
RRRRRRRRRRRR     MMM          MMM     SSSSSSSSSSS
RRR         RRR  MMMMMM    MMMMMM  SSS
RRR         RRR  MMMMMM    MMMMMM  SSS
RRR         RRR  MMMMMM    MMMMMM  SSS
RRR         RRR  MMM   MMM   MMM   SSS
RRR         RRR  MMM   MMM   MMM   SSS
RRR         RRR  MMM   MMM   MMM   SSS
RRRRRRRRRRR      MMM          MMM     SSSSSSSSS
RRRRRRRRRRRR     MMM          MMM     SSSSSSSSS
RRRRRRRRRRRR     MMM          MMM     SSSSSSSSS
RRR   RRR        MMM          MMM             SSS
RRR   RRR        MMM          MMM             SSS
RRR   RRR        MMM          MMM             SSS
RRR      RRR     MMM          MMM             SSS
RRR      RRR     MMM          MMM             SSS
RRR      RRR     MMM          MMM             SSS
RRR         RRR  MMM          MMM  SSSSSSSSSSS
RRR         RRR  MMM          MMM  SSSSSSSSSSS
RRR         RRR  MMM          MMM  SSSSSSSSSSS
```

FILEID**NTOACCESS

```
NN      NN  TTTTTTTTTT    000000      AAAAAA      CCCCCCCC    CCCCCCCC  EEEEEEEEEE    SSSSSSSS    SSSSSSSS
NN      NN  TTTTTTTTTT    000000      AAAAAA      CCCCCCCC    CCCCCCCC  EEEEEEEEEE    SSSSSSSS    SSSSSSSS
NN      NN      TT       00    00    AA    AA    CC          CC        EE            SS          SS
NN      NN      TT       00    00    AA    AA    CC          CC        EE            SS          SS
NNNN    NN      TT       00    0000  AA    AA    CC          CC        EE            SS          SS
NNNN    NN      TT       00    0000  AA    AA    CC          CC        EE            SS          SS
NN  NN  NN      TT       00  00  00  AA    AA    CC          CC        EEEEEEEE        SSSSSS      SSSSSS
NN  NN  NN      TT       00  00  00  AA    AA    CC          CC        EEEEEEEE        SSSSSS      SSSSSS
NN    NNNN      TT       0000    00  AAAAAAAAAA  CC          CC        EE                    SS          SS
NN    NNNN      TT       0000    00  AAAAAAAAAA  CC          CC        EE                    SS          SS
NN      NN      TT       00      00  AA    AA    CC          CC        EE                    SS          SS      ....
NN      NN      TT       00      00  AA    AA    CC          CC        EE                    SS          SS      ....
NN      NN      TT         000000    AA    AA      CCCCCCCC    CCCCCCCC  EEEEEEEEEE  SSSSSSSS    SSSSSSSS      ....
NN      NN      TT         000000    AA    AA      CCCCCCCC    CCCCCCCC  EEEEEEEEEE  SSSSSSSS    SSSSSSSS      ....

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          $BEGIN  NTOACCESS,000,NF$NETWORK,<NETWORK ACCESS/DEACCESS>
0000     2
0000     3 ;
0000     4 ;*****************************************************************************
0000     5 ;*                                                                           *
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0000    22 ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                  *
0000    23 ;*                                                                           *
0000    24 ;*                                                                           *
0000    25 ;*****************************************************************************
0000    26 ;
0000    27
0000    28 ;++
0000    29 ; Facility: RMS
0000    30 ;
0000    31 ; Abstract:
0000    32 ;
0000    33 ;       This module performs network access/deaccess functions including
0000    34 ;       assigning a channel to the network device and altering the
0000    35 ;       characteristics of the network device as appropriate. The access
0000    36 ;       function creates a logical link between this process and either:
0000    37 ;       (1) the specified target task, or
0000    38 ;       (2) FAL (file access listener) for remote file access.
0000    39 ;
0000    40 ; Environment: VAX/VMS, executive mode
0000    41 ;
0000    42 ; Author: James A. Krycka,      Creation Date:  09-DEC-1977
0000    43 ;
0000    44 ; Modified By:
0000    45 ;
0000    46 ;       V03-009 JAK0146         J A Krycka      27-Jun-1984
0000    47 ;               Copy entire task specification string to the NCB in NT$ACCESS.
0000    48 ;
0000    49 ;       V03-008 JEJ0029         J E Johnson     17-Apr-1984
0000    50 ;               Fix bug caused by previous change.
0000    51 ;
0000    52 ;       V03-007 JEJ0005         J E Johnson     08-Mar-1984
0000    53 ;               Process quoted filename specifications here to determine if
0000    54 ;               a DAP or NSP request has been made.
0000    55 ;
0000    56 ;       V03-006 JAK0124         J A Krycka      06-Sep-1983
0000    57 ;               Make corresponding source code change for VMS V3.5 patch in
```

```
0000     58 ;                  support of VAXELAN.
0000     59 ;
0000     60 ;          V03-005 RAS0174         Ron Schaefer    29-Jul-1983
0000     61 ;                  Change reference of FAB$V_UFM to FAB$V_CHAN_MODE.
0000     62 ;
0000     63 ;          V03-004 JAK0105         J A Krycka      11-May-1983
0000     64 ;                  Add comments.
0000     65 ;
0000     66 ;          V03-003 KBT0425         Keith B. Thompson       01-Dec-1982
0000     67 ;                  Change IFB$W_DEVBUFSIZ to IFB$L_DEVBUFSIZ.
0000     68 ;
0000     69 ;          V03-002 KBT0309         Keith B. Thompson       27-Aug-1982
0000     70 ;                  Fix some broken branches.
0000     71 ;
0000     72 ;          V03-001 JWH0001         Jeffrey W. Horn 29-Jun-1982
0000     73 ;                  Fix broken BSBW branch.
0000     74 ;
0000     75 ;--
```

```
                        .SBTTL  DECLARATIONS

;
; Include Files:
;

                        $DAPPLGDEF                      ; Define DAP prologue symbols
                        $DAPATTDEF                      ; Define DAP Attributes message
                        $DEVDEF                         ; Define Device Characteristics
                        $FABDEF                         ; Define File Access Block symbols
                        $FWADEF                         ; Define File Work Area symbols
                        $IFBDEF                         ; Define IFAB symbols
                        $IODEF                          ; Define I/O function codes
                        $NAMDEF                         ; Define NAM block symbols
                        $NWADEF                         ; Define Network Work Area symbols
                        $PSLDEF                         ; Define Process Status Longword symbols
                        $RMSDEF                         ; Define RMS exit code symbols

;
; Macros:
;
;       None
;
; Equated Symbols:
;

                        ASSUME  DAP$Q_DCODE_FLG EQ 0
                        ASSUME  NWA$Q_FLG EQ 0

;
; Own Storage:
;
;       None
;
```

```
                                        .SBTTL  NT$ASSIGN - NETWORK ASSIGN CHANNEL

                                ;++
                                ; NT$ASSIGN - assigns a channel to the network device (i.e., _NET0:).
                                ;
                                ; Calling Sequence:
                                ;
                                ;       BSBW    NT$ASSIGN
                                ;
                                ; Input Parameters:
                                ;
                                ;       R8      FAB address
                                ;       R9      IFAB address
                                ;       R10     FWA address
                                ;       R11     Impure Area address
                                ;
                                ; Implicit Inputs:
                                ;
                                ;       None
                                ;
                                ; Output Parameters:
                                ;
                                ;       R0      Status code (SS)
                                ;       R1-R3   Destroyed
                                ;
                                ; Implicit Outputs:
                                ;
                                ;       FAB$B_ACMODES
                                ;       FWA$V_OBJTYPE
                                ;       IFB$W_CHNL
                                ;       IFB$B_MODE
                                ;       IFB$L_NWA_PTR
                                ;       NWA$Q_NCB
                                ;
                                ; Completion Codes:
                                ;
                                ;       Standard system service status codes
                                ;
                                ; Side Effects:
                                ;
                                ;       None
                                ;
                                ;--
                                
                                NT$ASSIGN::                             ; Entry point
05 6A   1A   E1                         BBC     #FWA$V_QUOTED,(R10),5$  ; Not quoted, must be DAP request
          4C 10                         BSBB    PARSE_QUOTED_STRING     ; Parse the quoted specification
     48 50   E9                         BLBC    R0,20$                  ; If parse failed, return the error
                                
                                ;
                                ; Setup device name descriptor and associated string for input to the
                                ; Assign Channel system service.
                                ;
                                
51   3C A9   D0                 5$:     MOVL    IFB$L_NWA_PTR(R9),R1    ; Get address of NWA
52 0264 C1   7E                         MOVAQ   NWA$Q_NCB(R1),R2        ; Get address of scratch descriptor
53 052C C1   9E                         MOVAB   NWA$T_NCBBUF(R1),R3     ; Get address of scratch buffer
```

```
                62    06   D0  0017   169          MOVL    #6,(R2)                         ; Fill in string count
              04 A2   53   D0  001A   170          MOVL    R3,4(R2)                        ; Fill in string address
63  20203A30 54454E5F 8F   7D  001E   171          MOVQ    #^A\_NET0:  \,(R3)              ; Store device name string
                                0029   172
                                0029   173 ;
                                0029   174 ; Determine which mode to use in making the channel assignment.
                                0029   175 ;
                                0029   176
                51    01   D0  0029   177          MOVL    #PSL$C_EXEC,R1                  ; Assume executive mode
                      11   E1  002C   178          BBC     #FAB$V_UFO,-                    ; Branch if UFO clear
                   10 04   A8       002E   179                  FAB$L_FOP(R8),10$       ;
                      02   EF  0031   180          EXTZV   #FAB$V_CHAN_MODE,-              ; Get requested mode
                      02       0033   181                  #FAB$S_CHAN_MODE,-              ;
              51    4A   A8       0034   182                  FAB$B_ACMODES(R8),R1        ;
              51    0A   A9  91  0037   183          CMPB    IFB$B_MODE(R9),R1               ; Maximize this with caller's mode
                      04   1B  003B   184          BLEQU   10$                             ;
              51    0A   A9  9A  003D   185          MOVZBL  IFB$B_MODE(R9),R1               ; Switch to caller's mode
                                0041   186
                                0041   187 ;
                                0041   188 ; Create a control/information path to NETACP in preparation for
                                0041   189 ; non-transparent network I/O. Do not associate a mailbox with the channel,
                                0041   190 ; as secondary inbound connect initiates and interrupt messages are not
                                0041   191 ; suppported.
                                0041   192 ;
                                0041   193
                                0041   194 10$:    $ASSIGN_S-                              ; Assign the channel
                                0041   195                 DEVNAM=(R2)-                   ;  Address of device name descriptor
                                0041   196                 CHAN=IFB$W_CHNL(R9)-           ;  Address to return channel #
                                0041   197                 ACMODE=R1                      ;  Access mode
                             05 0051   198 20$:    RSB                                     ; Exit with system service code in R0
```

```
                     0052   200 ;++
                     0052   201 ; Parse the quoted file name string to determine the network specific
                     0052   202 ; information.
                     0052   203 ;
                     0052   204 ;   (1) Set the OBJTYPE flag if the quoted string contains an equals character
                     0052   205 ;       to indicate that it is of the "objecttype=..." form. This is form 1.
                     0052   206 ;
                     0052   207 ;   (2) Set the NETSTR flag if the quoted string contains a slash character
                     0052   208 ;       after the equals character to indicate that it is of the
                     0052   209 ;       "objecttype=taskname/netacp_data" form. Note that the logical name
                     0052   210 ;       translation of SYS$NET yields an equivalence string containing a
                     0052   211 ;       quoted string of this form. This is form 2.
                     0052   212 ;
                     0052   213 ;   (3) In addition, if the quoted string is of the form given in 3, then
                     0052   214 ;       store a character count that represents the number of characters
                     0052   215 ;       in the substring /netacp_data" (including the trailing quote).
                     0052   216 ;
                     0052   217 ;   (4) Set the WILDCARD character flag if test 1 failed and the quoted string
                     0052   218 ;       contains one of the following characters: asterisk, percent sign, or
                     0052   219 ;       question mark.
                     0052   220 ;
                     0052   221 ;   (5) Finally, copy the quoted string (including the quotes) to buffer in NWA.
                     0052   222 ;
                     0052   223 ;--
                     0052   224
                     0052   225 PARSE_QUOTED_STRING:                          ; Entry point
          00F0 8F    BB  0052   226         PUSHR   #^M<R4,R5,R6,R7>          ; Save working registers
     56   0170 CA    7D  0056   227         MOVQ    FWA$Q_QUOTED(R10),R6      ; Get the quoted string descriptor.
                     005B   228
                     005B   229 ;
                     005B   230 ; Check for a task specification string enclosed in quotes, i.e.,
                     005B   231 ; node::"objecttype=..." form.  (1) or (2).
                     005B   232 ;
                     005B   233
     67   56   3D    3A  005B   234         LOCC    #^A\=\,R6,(R7)            ; Search for '=' within quoted string
                15   13  005F   235         BEQL    10$                       ; Branch if no match (R0=0 on no match)
                     0061   236         SSB     #FWA$V_OBJTYPE,(R10)      ; Flag 'objecttype=...' form
                     0065   237                                           ;  of quoted string
                     0065   238
                     0065   239 ;
                     0065   240 ; Now check if it is of form (2).
                     0065   241 ;
                     0065   242
     61   50   2F    3A  0065   243         LOCC    #^A\/\,R0,(R1)            ; Search for '/' within quoted string
                33   13  0069   244         BEQL    30$                       ; Branch if no match
          04   50   B1  006B   245         CMPW    R0,#4                     ; Length of /netacp_data" must be
                3F   1F  006E   246         BLSSU   ERRQUO                    ;  at least 4 characters
                     0070   247         SSB     #FWA$V_NETSTR,(R10)       ; Flag 'objecttype=taskname/...' form
                28   11  0074   248         BRB     30$                       ;  of quoted string
                     0076   249
                     0076   250 ;
                     0076   251 ; Check for a wildcard foreign file specification string enclosed in quotes,
                     0076   252 ; i.e., node::"foreign-filespec" form.
                     0076   253 ;
                     0076   254 ; Note: Since the parse operation is perform entirely at the local node, there
                     0076   255 ;       is no way to tell for sure whether or not the file specification
                     0076   256 ;       contains any wildcard characters (as understood by the remote system).
```

```
                     0076   257 ;       The best we can do here is to scan the quoted string for likey wildcard
                     0076   258 ;       characters (*, %, and ?), and set the FWA$V_WILDCARD bit if any are
                     0076   259 ;       found.
                     0076   260 ;
                     0076   261
67   56   2A   3A     0076   262 10$:    LOCC    #^A\*\,R6,(R7)          ; Search for '*' within quoted string
                 0C  12     007A   263         BNEQ    20$             ;  and branch if found
67   56   25   3A     007C   264         LOCC    #^A\%\,R6,(R7)          ; Search for '%' within quoted string
                 06  12     0080   265         BNEQ    20$             ;  and branch if found
67   56   3F   3A     0082   266         LOCC    #^A\?\,R6,(R7)          ; Search for '?' within quoted string
                 16  13     0086   267         BEQL    30$             ;  and branch if not found
                     0088   268
                     0088   269 ;
                     0088   270 ; Store the wildcard status here as a generic wildcard only.
                     0088   271 ;
                     0088   272
                     0088   273 20$:    SSB     #FWA$V_WILDCARD,(R10)   ; Signal wildcard character present
  57   28 A8   D0     008C   274         MOVL    FAB$L_NAM(R8),R7        ; Get the name block pointer
00000000'EF   16     0090   275         JSB     RM$CHKNAM               ; Ensure that the NAM block is good.
      05 50   E9     0096   276         BLBC    R0,30$                  ; Branch if not.
                     0099   277         SSB     #NAM$V_WILDCARD,-       ; Declare the generic wildcard.
                     0099   278                 NAM$L_FNB(R7)           ;
                     009E   279
                     009E   280 ;
                     009E   281 ; Save the number of bytes in the optional "/netacp_data" in the NWA.
                     009E   282 ;
                     009E   283
  52   3C A9   D0     009E   284 30$:    MOVL    IFB$L_NWA_PTR(R9),R2    ; get address of NWA
016F C2    50   90     00A2   285         MOVB    R0,NWA$B_NETSTRSIZ(R2)  ; store # bytes in /netacp_data"
                     00A7   286
                     00A7   287         RMSSUC
00F0 8F    BA     00AA   288         POPR    #^M<R4,R5,R6,R7>        ; Restore working registers
           05     00AE   289         RSB                             ; Exit successfully
                     00AF   290
                     00AF   291 ;
                     00AF   292 ; Process quoted string error.
                     00AF   293 ;
                     00AF   294
                     00AF   295 ERRQUO: RMSERR  QUO                     ; Declare error in quoted string
00F0 8F    BA     00B4   296         POPR    #^M<R4,R5,R6,R7>        ; Restore working registers
           05     00B8   297         RSB
```

```
                     00B9   299          .SBTTL  NT$MOD_DEV_CHAR - MODIFY DEVICE CHARACTERISTICS
                     00B9   300
                     00B9   301 ;++
                     00B9   302 ; NT$MOD_DEV_CHAR - modifies the characteristics of the network device and
                     00B9   303 ;       denotes whether network I/O will be performed at the DAP or NSP level.
                     00B9   304 ;
                     00B9   305 ; Calling Sequence:
                     00B9   306 ;
                     00B9   307 ;       BSBW    NT$MOD_DEV_CHAR
                     00B9   308 ;
                     00B9   309 ; Input Parameters:
                     00B9   310 ;
                     00B9   311 ;       R8      FAB address
                     00B9   312 ;       R9      IFAB address
                     00B9   313 ;       R10     FWA address
                     00B9   314 ;       R11     Impure Area address
                     00B9   315 ;
                     00B9   316 ; Implicit Inputs:
                     00B9   317 ;
                     00B9   318 ;       FWA$V_OBJTYPE
                     00B9   319 ;       FWA$B_SUBNODCNT
                     00B9   320 ;
                     00B9   321 ; Output Parameters:
                     00B9   322 ;
                     00B9   323 ;       None
                     00B9   324 ;
                     00B9   325 ; Implicit Outputs:
                     00B9   326 ;
                     00B9   327 ;       IFB$V_DAP
                     00B9   328 ;       IFB$V_NSP
                     00B9   329 ;       IFB$L_AS_DEV
                     00B9   330 ;       IFB$L_PRIM_DEV
                     00B9   331 ;       IFB$L_DEVBOFSIZ
                     00B9   332 ;
                     00B9   333 ; Completion Codes:
                     00B9   334 ;
                     00B9   335 ;       None
                     00B9   336 ;
                     00B9   337 ; Side Effects:
                     00B9   338 ;
                     00B9   339 ;       None
                     00B9   340 ;
                     00B9   341 ;--
                     00B9   342
                     00B9   343 NT$MOD_DEV_CHAR::                        ; Entry point
                     00B9   344
                     00B9   345 ;
                     00B9   346 ; Determine whether the network request is for file access via a remote FAL or
                     00B9   347 ; for task-to-task communication.
                     00B9   348 ;
                     00B9   349 ; Note: If more than one node spec string was specified (manual routing), then
                     00B9   350 ;       treat this as a DAP level access so that RMS will connect to FAL at the
                     00B9   351 ;       adjacent node (which is actually an intermediate node).
                     00B9   352 ;
                     00B9   353
2F AA    95          00B9   354          TSTB    FWA$B_SUBNODCNT(R10)    ; Branch if more than one node spec
   04    12          00BC   355          BNEQ    10$                     ;  was specified
```

```
                 0C 6A    31    E0  00BE   356          BBS     #FWA$V_OBJTYPE,(R10),20$; Branch if device name string is
                                    00C2   357                                          ;  in NSP objtype type format
                                    00C2   358
                                    00C2   359 ;
                                    00C2   360 ; Denote that network I/O thru RMS will be at the file access level using
                                    00C2   361 ; DAP to communicate with the remote FAL.
                                    00C2   362 ;
                                    00C2   363 ; Note: IFB$L_DEVBUFSIZ may be adjusted upward by NT$EXCH_CNF after the
                                    00C2   364 ;       negotiated DAP buffer size has been determined. For record I/O mode
                                    00C2   365 ;       access to a remote file, IFB$L_DEVBUFSIZ limits the maximum record size
                                    00C2   366 ;       that can be supported because it is used at $CONNECT time to allocate
                                    00C2   367 ;       the BDB buffer through which all records must pass.
                                    00C2   368 ;
                                    00C2   369
                                    00C2   370 10$:     $SETBIT #IFB$V_DAP,(R9)             ; Set DAP flag
          48 A9    0200 8F    3C  00C6   371          MOVZWL  #512,IFB$L_DEVBUFSIZ(R9); Establish initial device buffer size
                      0A      11  00CC   372          BRB     30$                         ; Join common code
                                  00CE   373
                                  00CE   374 ;
                                  00CE   375 ; Denote that network I/O thru RMS will be at the task-to-task level using
                                  00CE   376 ; NSP to communicate with the remote partner process.
                                  00CE   377 ;
                                  00CE   378
                                  00CE   379 20$:     $SETBIT #IFB$V_NSP,(R9)             ; Set NSP flag
          48 A9    1000 8F    3C  00D2   380          MOVZWL  #4096,IFB$L_DEVBUFSIZ(R9); Establish device buffer size
                                  00D8   381
                                  00D8   382 ;
                                  00D8   383 ; Alter the device characteristics.
                                  00D8   384 ;
                                  00D8   385
                                  00D8   386 30$:     $SETBIT #DEV$V_REC,IFB$L_PRIM_DEV(R9)
                                  00DC   387                                          ; Say its a record oriented device
                                  00DC   388          $CLRBIT #DEV$V_MBX,IFB$L_PRIM_DEV(R9)
                                  00E0   389                                          ; Say its a not a mailbox-like device
                69    D0    00E0   390          MOVL    IFB$L_PRIM_DEV(R9),-        ; Copy device characteristics
            008C C9         00E2   391                  IFB$L_AS_DEV(R9)            ;
                      05    00E5   392 40$:     RSB                                 ; Exit
```

```
                     00E6   394          .SBTTL  NT$MAP_DEV_CHAR - MAP DEVICE CHARACTERISTICS
                     00E6   395
                     00E6   396 ;++
                     00E6   397 ; NT$MAP_DEV_CHAR - takes the device characteristics returned by FAL and maps
                     00E6   398 ;       them into an RMS bit pattern, then saves them in NWA for use later.
                     00E6   399 ;       If the remote device is a terminal or mailbox, this is noted also.
                     00E6   400 ;
                     00E6   401 ; Calling Sequence:
                     00E6   402 ;
                     00E6   403 ;       BSBW    NT$MAP_DEV_CHAR
                     00E6   404 ;
                     00E6   405 ; Input Parameters:
                     00E6   406 ;
                     00E6   407 ;       R7      NWA (=DAP) address
                     00E6   408 ;       R8      FAB address
                     00E6   409 ;       R9      IFAB address
                     00E6   410 ;       R10     FWA address
                     00E6   411 ;       R11     Impure Area address
                     00E6   412 ;
                     00E6   413 ; Implicit Inputs:
                     00E6   414 ;
                     00E6   415 ;       DAP$L_DEV
                     00E6   416 ;       DAP$V_DEV
                     00E6   417 ;
                     00E6   418 ; Output Parameters:
                     00E6   419 ;
                     00E6   420 ;       R0-R2   Destroyed
                     00E6   421 ;
                     00E6   422 ; Implicit Outputs:
                     00E6   423 ;
                     00E6   424 ;       NWA$L_DEV
                     00E6   425 ;       NWA$V_DEVCHAR
                     00E6   426 ;       NWA$V_DEVMBX
                     00E6   427 ;       NWA$V_DEVTRM
                     00E6   428 ;
                     00E6   429 ; Completion Codes:
                     00E6   430 ;
                     00E6   431 ;       None
                     00E6   432 ;
                     00E6   433 ; Side Effects:
                     00E6   434 ;
                     00E6   435 ;       None
                     00E6   436 ;
                     00E6   437 ;--
                     00E6   438
                     00E6   439 NT$MAP_DEV_CHAR::                            ; Entry point
              0E     E0  00E6   440          BBS     #DAP$V_DEV,-            ; Branch if partner returned device
01 40 A7                00E8   441                  DAP$L_ATTMENU(R7),10$    ;  characteristics
              05        00EB   442          RSB                             ; Exit
                        00EC   443 10$:     $SETBIT #NWA$V_DEVCHAR,(R7)     ; Flag receipt of characteristics
                        00F0   444
                        00F0   445 ;
                        00F0   446 ; Map DAP bit definitions into RMS bit definitions for the field and store them
                        00F0   447 ; in NWA for use later.
                        00F0   448 ;
                        00F0   449
51    68 A7     D0      00F0   450          MOVL    DAP$L_DEV(R7),R1        ; Get DEV bits returned by FAL
```

```
                     52   D4  00F4   451          CLRL    R2                              ; Clear corresponding RMS bits
                                 00F6   452          $MAPBIT DAP$V_DEVREC,DEV$V_REC  ; Map REC bit
                                 00FE   453          $MAPBIT DAP$V_DEVCCL,DEV$V_CCL  ; Map CCL bit
                                 0106   454          $MAPBIT DAP$V_DEVTRM,DEV$V_TRM  ; Map TRM bit
                                 010E   455          $MAPBIT DAP$V_DEVDIR,DEV$V_DIR  ; Map DIR bit
                                 0116   456          $MAPBIT DAP$V_DEVSDI,DEV$V_SDI  ; Map SDI bit
                                 011E   457          $MAPBIT DAP$V_DEVSQD,DEV$V_SQD  ; Map SQD bit
                                 0126   458          $MAPBIT DAP$V_DEVSPL,DEV$V_SPL  ; Map SPL bit
                                 012E   459          $MAPBIT DAP$V_DEVNET,DEV$V_NET  ; Map NET bit
                                 0136   460          $MAPBIT DAP$V_DEVFOD,DEV$V_FOD  ; Map FOD bit
                                 013E   461          $MAPBIT DAP$V_DEVSHR,DEV$V_SHR  ; Map SHR bit
                                 0146   462          $MAPBIT DAP$V_DEVGEN,DEV$V_GEN  ; Map GEN bit
                                 014E   463          $MAPBIT DAP$V_DEVAVL,DEV$V_AVL  ; Map AVL bit
                                 0156   464          $MAPBIT DAP$V_DEVMNT,DEV$V_MNT  ; Map MNT bit
                                 015E   465          $MAPBIT DAP$V_DEVMBX,DEV$V_MBX  ; Map MBX bit
                                 0166   466          $MAPBIT DAP$V_DEVDMT,DEV$V_DMT  ; Map DMT bit
                                 016E   467          $MAPBIT DAP$V_DEVELG,DEV$V_ELG  ; Map ELG bit
                                 0176   468          $MAPBIT DAP$V_DEVALL,DEV$V_ALL  ; Map ALL bit
                                 017E   469          $MAPBIT DAP$V_DEVFOR,DEV$V_FOR  ; Map FOR bit
                                 0186   470          $MAPBIT DAP$V_DEVSWL,DEV$V_SWL  ; Map SWL bit
                                 018E   471          $MAPBIT DAP$V_DEVIDV,DEV$V_IDV  ; Map IDV bit
                                 0196   472          $MAPBIT DAP$V_DEVODV,DEV$V_ODV  ; Map ODV bit
                                 019E   473          $MAPBIT DAP$V_DEVRND,DEV$V_RND  ; Map RND bit
                                 01A6   474          $MAPBIT DAP$V_DEVRTM,DEV$V_RTM  ; Map RTM bit
                                 01AE   475          $MAPBIT DAP$V_DEVRCK,DEV$V_RCK  ; Map RCK bit
                                 01B6   476          $MAPBIT DAP$V_DEVWCK,DEV$V_WCK  ; Map WCK bit
00C0 C7   52   D0  01BE   477          MOVL    R2,NWA$L_DEV(R7)                ; Save characteristics for use later
  04 52   02   E1  01C3   478          BBC     #DEV$V_TRM,R2,20$               ; Branch if device is not a terminal
                   01C7   479          $SETBIT #NWA$V_DEVTRM,(R7)              ; Flag remote device as a terminal
  04 52   14   E1  01CB   480 20$:     BBC     #DEV$V_MBX,R2,30$               ; Branch if device is not a mailbox
                   01CF   481          $SETBIT #NWA$V_DEVMBX,(R7)              ; Flag remote device as a mailbox
                05  01D3   482 30$:     RSB                                     ; Exit
```

```
01D4    484          .SBTTL  NT$RET_DEV_CHAR - RETURN DEVICE CHARACTERISTICS
01D4    485
01D4    486 ;++
01D4    487 ; NT$RET_DEV_CHAR - returns the true device characteristic information to the
01D4    488 ;       user's FAB iff all of the following conditions are met:
01D4    489 ;       (1) FAL returned device characteristics in the DAP Attributes message.
01D4    490 ;       (2) FAL is implemented to DAP V5.6 or later.
01D4    491 ;       (3) The remote node is running VAX/VMS or VAXELAN or the file accessed
01D4    492 ;           is a relative or an indexed file.
01D4    493 ;
01D4    494 ;       This restriction is here to accomodate the VMS COPY utility which uses
01D4    495 ;       the FAB$V_BRO and RAB$V_BIO options to defer the decision of whether
01D4    496 ;       to use record I/O ($GET7$PUT) or block I/O ($READ/$WRITE) for sequential
01D4    497 ;       files until $CONNECT time. COPY always uses block I/O to transfer
01D4    498 ;       relative and indexed files.
01D4    499 ;
01D4    500 ;       COPY examines the device characteristics returned on $OPEN (and $CREATE)
01D4    501 ;       in conjunction with other inputs to determine whether to use record
01D4    502 ;       or block I/O. Since it does not know at open time if block I/O will be
01D4    503 ;       used, it sets the FAB$V_BRO bit in FAB$B_FAC on $OPEN, and if block I/O
01D4    504 ;       mode is chosen, it sets the RAB$V_BIO bit in RAB$L_ROP on $CONNECT to
01D4    505 ;       specify block I/O mode.
01D4    506 ;
01D4    507 ;       Note that NT$GET_FAC_SHR and NT$ENCODE_ROP send the DAP$V_BRO and
01D4    508 ;       DAP$V_ROPBIO bits, respectively, based on a similar system specific
01D4    509 ;       check.
01D4    510 ;
01D4    511 ;       Note that the algorithm used to return device characteristics may become
01D4    512 ;       less restrictive in the future, especially if COPY is modified to avoid
01D4    513 ;       using the FAB$V_BRO and RAB$V_BIO options.
01D4    514 ;
01D4    515 ; Calling Sequence:
01D4    516 ;
01D4    517 ;       BSBW    NT$RET_DEV_CHAR
01D4    518 ;
01D4    519 ; Input Parameters:
01D4    520 ;
01D4    521 ;       R8      FAB address
01D4    522 ;       R9      IFAB address
01D4    523 ;       R10     FWA address
01D4    524 ;       R11     Impure Area address
01D4    525 ;
01D4    526 ; Implicit Inputs:
01D4    527 ;
01D4    528 ;       DAP$V_GEQ_V56
01D4    529 ;       DAP$V_VAXVMS, DAP$V_VAXELAN
01D4    530 ;       IFB$L_NWA_PTR
01D4    531 ;       NWA$B_ORG
01D4    532 ;       NWA$L_DEV
01D4    533 ;       NWA$V_DEVCHAR
01D4    534 ;
01D4    535 ; Output Parameters:
01D4    536 ;
01D4    537 ;       R1      Destroyed
01D4    538 ;
01D4    539 ; Implicit Outputs:
01D4    540 ;
```

```
                     01D4    541 ;       FAB$L_DEV
                     01D4    542 ;       FAB$L_SDC
                     01D4    543 ;
                     01D4    544 ; Completion Codes:
                     01D4    545 ;
                     01D4    546 ;       None
                     01D4    547 ;
                     01D4    548 ; Side Effects:
                     01D4    549 ;
                     01D4    550 ;       None
                     01D4    551 ;
                     01D4    552 ;--
                     01D4    553
                     01D4    554 NT$RET_DEV_CHAR::                           ; Entry point
   51    3C A9   D0  01D4    555         MOVL    IFB$L_NWA_PTR(R9),R1        ; Get address of NWA (and DAP)
   24 61    11   E1  01D8    556         BBC     #NWA$V_DEVCHAR,(R1),20$     ; Branch if partner did not return
                     01DC    557                                             ;  device characteristic information
   20 61    24   E1  01DC    558         BBC     #DAP$V_GEQ_V56,(R1),20$     ; Branch if partner uses DAP before V5.6
   0B 61    34   E0  01E0    559         BBS     #DAP$V_VAXVMS,(R1),10$      ; Branch if partner is VAX/VMS
   07 61    35   E0  01E4    560         BBS     #DAP$V_VAXELAN,(R1),10$     ; Branch if partner is VAXELAN
00    00C6 C1   91  01E8    561         CMPB    NWA$B_ORG(R1),#NWA$K_SEQ    ; Branch if SEQ organization
                11   13  01ED    562         BEQL    20$                     ;  else fall thru if REL or IDX
51    00C0 C1   D0  01EF    563 10$:    MOVL    NWA$L_DEV(R1),R1            ; Get actual device characteristics
                     01F4    564         $SETBIT #DEV$V_NET,R1               ; Declare this a remote network device
   40 A8    51   D0  01F8    565         MOVL    R1,FAB$L_DEV(R8)            ; Update user DEV field in FAB
   44 A8    51   D0  01FC    566         MOVL    R1,FAB$L_SDC(R8)            ; Update user SDC field in FAB
                05  0200    567 20$:    RSB                                 ; Exit
```

```
0201    569          .SBTTL  NT$ACCESS - PERFORM NETACP ACCESS FUNCTION
0201    570
0201    571 ;++
0201    572 ; NT$ACCESS - creates a logical link.
0201    573 ;
0201    574 ; Calling Sequence:
0201    575 ;
0201    576 ;       BSBW    NT$ACCESS
0201    577 ;
0201    578 ; Input Parameters:
0201    579 ;
0201    580 ;       R8      FAB address
0201    581 ;       R9      IFAB address
0201    582 ;       R10     FWA address
0201    583 ;       R11     Impure Area address
0201    584 ;
0201    585 ; Implicit Inputs:
0201    586 ;
0201    587 ;       IFB$V_DAP
0201    588 ;       IFB$W_CHNL
0201    589 ;       FWA$Q_NODE
0201    590 ;       FWA$V_NETSTR
0201    591 ;       NWA$Q_QUOTED
0201    592 ;
0201    593 ; Output Parameters:
0201    594 ;
0201    595 ;       R0      Status code (SS)
0201    596 ;       R1-R6   Destroyed
0201    597 ;       AP      Destroyed
0201    598 ;
0201    599 ; Implicit Outputs:
0201    600 ;
0201    601 ;       IFB$L_IOS
0201    602 ;       IFB$V_ACCESSED
0201    603 ;       NWA$O_NCB
0201    604 ;
0201    605 ; Completion Codes:
0201    606 ;
0201    607 ;       Standard system service status codes
0201    608 ;
0201    609 ; Side Effects:
0201    610 ;
0201    611 ;       None
0201    612 ;
0201    613 ;--
0201    614
0201    615 NT$ACCESS::                             ; Entry point
0201    616
0201    617 ;+
0201    618 ; Build a Network Connect Block (NCB) to be used as input for the NETACP
0201    619 ; access function.
0201    620 ;
0201    621 ; The NCB consists of a string with the following general syntax:
0201    622 ;
0201    623 ;       nodename"access_control_string"::"objecttype=taskid/netacp_data"
0201    624 ;
0201    625 ; Where:
```

```
                     0201   626 ;   (1) the access control string in the node spec is present only if provided
                     0201   627 ;       by the user (directly or via logical name translation).
                     0201   628 ;   (2) for accessing a remote file, the quoted string used by RMS is "FAL="
                     0201   629 ;       (to request the services of the remote file access listener).
                     0201   630 ;   (3) for user task-to-task communication, the quoted string used is the one
                     0201   631 ;       supplied which may include an optional data counted string. Note that
                     0201   632 ;       the logical name SYS$NET used as a file specification translates to a
                     0201   633 ;       string of the node::"objecttype=..." form.
                     0201   634 ;
                     0201   635 ; Obtain the node spec string.
                     0201   636 ;-
                     0201   637
  51    3C A9   D0   0201   638          MOVL    IFB$L_NWA_PTR(R9),R1     ; Get address of NWA
56    0264 C1   7E   0205   639          MOVAQ   NWA$Q_NCB(R1),R6         ; Get address of scratch descriptor
53    052C C1   9E   020A   640          MOVAB   NWA$T_NCBBUF(R1),R3      ; Get address of scratch buffer
  04 A6   53   D0   020F   641          MOVL    R3,4(R6)                 ; Fill in descriptor address
      01B4 CA   28   0213   642          MOVC3   FWA$Q_NODE1(R10),-       ; Copy primary (first) node spec string
63    01B8 DA        0217   643                  @FWA$Q_NODE1+4(R10),(R3); to NCB including double colon
                     021B   644
                     021B   645 ;
                     021B   646 ; Obtain the quoted string.
                     021B   647 ;
                     021B   648 ; Determine whether the network request is for file access via a remote FAL or
                     021B   649 ; for task-to-task communication.
                     021B   650 ;
                     021B   651
10 69    3E   E0   021B   652          BBS     #IFB$V_DAP,(R9),10$      ; Branch if file access request
                     021F   653
                     021F   654 ;
                     021F   655 ; It is a task-to-task communication request.
                     021F   656 ;
                     021F   657
                     021F   658          $TSTPT  NTACC_NSP                ;
      0170 CA   28   0225   659          MOVC3   FWA$Q_QUOTED(R10),-      ; Append quoted string to NCB
  63  0174 DA        0229   660                  @FWA$Q_QUOTED+4(R10),(R3)
          12   11   022D   661          BRB     20$                      ; We're finished building NCB
                     022F   662
                     022F   663 ;
                     022F   664 ; It is a remote file acces request.
                     022F   665 ;
                     022F   666
                     022F   667 10$:     $TSTPT  NTACC_DAP                ;
83  4C414622 8F   D0   0235   668          MOVL    #^A\"FAL\,(R3)+          ; Request object type FAL
  83  223D 8F   B0   023C   669          MOVW    #^A\="\,(R3)+            ;
                     0241   670
                     0241   671 ;
                     0241   672 ; Calculate the size of the NCB and store it in the NCB descriptor block.
                     0241   673 ;
                     0241   674
66  53   04 A6   C3   0241   675 20$:     SUBL3   4(R6),R3,(R6)            ; Fill in descriptor size
                     0246   676
                     0246   677 ;+
                     0246   678 ; Perform the NETACP access function. It will be either an NSP connect
                     0246   679 ; initiate or an NSP connect confirm function. Both use the same function and
                     0246   680 ; subfunction codes, but NETACP differentiates based on the context of the call
                     0246   681 ; (whether or not the taskspec string in the NCB contains a slash followed by
                     0246   682 ; a two-byte nonzero DECnet link identifier).
```

```
                     0246   683 ;-
                     0246   684
00000000'EF   16    0246   685          JSB     RM$SETEFN                       ; Request event flag number to use
     52   8E    D0   024C   686          MOVL    (SP)+,R2                        ;  and store it
     51   56    D0   024F   687          MOVL    R6,R1                           ; Copy address of NCB descriptor
          56 8ED0   0252   688          POPL    R6                              ; Save return PC
                     0255   689          $QIO_S-                                 ; Issue connect initiate/confirm
                     0255   690                  EFN=R2-                         ;  Event flag #
                     0255   691                  CHAN=IFB$W_CHNL(R9)-            ;  Channel #
                     0255   692                  FUNC=#IO$_ACCESS!IO$M_ACCESS- ;  Function code
                     0255   693                  IOSB=IFB$L_IOS(R9)-             ;  I/O status block
                     0255   694                  ASTADR=L^RM$STALLAST-           ;  AST address
                     0255   695                  ASTPRM=R9-                      ;  AST parameter
                     0255   696                  P1=0-                           ;  Must be zero
                     0255   697                  P2=R1                           ;  Address of NCB descriptor
      0D 50    E9   027A   698          BLBC    R0,30$                          ; Branch on failure
00000000'EF   16    027D   699          JSB     RM$STALL                        ; Await completion
      04 50    E9   0283   700          BLBC    R0,30$                          ; Branch on failure
                     0286   701
                     0286   702 ;
                     0286   703 ; State that ACP access function has been performed successfully. This will
                     0286   704 ; trigger the network deaccess code at close time.
                     0286   705 ;
                     0286   706
                     0286   707          $SETBIT #IFB$V_ACCESSED,(R9)    ; File has been accessed
           66    17   028A   708 30$:    JMP     (R6)                            ; Return to caller
```

```
                     028C   710          .SBTTL  NT$DEACCESS - PERFORM NETACP DEACCESS FUNCTION
                     028C   711
                     028C   712 ;++
                     028C   713 ; NT$DEACCESS - destroys a logical link.
                     028C   714 ;
                     028C   715 ; Calling Sequence:
                     028C   716 ;
                     028C   717 ;       BSBW    NT$DEACCESS
                     028C   718 ;
                     028C   719 ; Input Parameters:
                     028C   720 ;
                     028C   721 ;       R8      FAB address
                     028C   722 ;       R9      IFAB address
                     028C   723 ;       R10     FWA address
                     028C   724 ;       R11     Impure Area address
                     028C   725 ;
                     028C   726 ; Implicit Inputs:
                     028C   727 ;
                     028C   728 ;       IFB$W_CHNL
                     028C   729 ;
                     028C   730 ; Output Parameters:
                     028C   731 ;
                     028C   732 ;       R0      Status code (SS)
                     028C   733 ;       R1-R4   Destroyed
                     028C   734 ;       AP      Destroyed
                     028C   735 ;
                     028C   736 ; Implicit Outputs:
                     028C   737 ;
                     028C   738 ;       IFB$L_IOS
                     028C   739 ;
                     028C   740 ; Completion Codes:
                     028C   741 ;
                     028C   742 ;       Standard system service status codes
                     028C   743 ;
                     028C   744 ; Side Effects:
                     028C   745 ;
                     028C   746 ;       None
                     028C   747 ;
                     028C   748 ;--
                     028C   749
                     028C   750 NT$DEACCESS::                                ; Entry point
                     028C   751          $TSTPT  NTDEACCES                  ;
          54 8ED0    0292   752          POPL    R4                         ; Save return PC
00000000'EF   16     0295   753          JSB     RM$SETEFN                  ; Request event flag number to use
     52   8E   D0     029B   754          MOVL    (SP)+,R2                   ;  and store it
                     029E   755          $QIO_S-                            ; Issue synchronous disconnect
                     029E   756                  EFN=R2-                    ;  Event flag #
                     029E   757                  CHAN=IFB$W_CHNL(R9)-       ;  Channel #
                     029E   758                  FUNC=#IO$_DEACCESS!IO$M_SYNCH- ;  Function code
                     029E   759                  IOSB=IFB$L_IOS(R9)-        ;  I/O status block
                     029E   760                  ASTADR=L^RM$STALLAST-      ;  AST address
                     029E   761                  ASTPRM=R9-                 ;  AST parameter
                     029E   762                  P1=0-                      ;  Must be zero
                     029E   763                  P2=#0                      ;  Specify no userdata to return
        06 50    E9  02C3   764          BLBC    R0,10$                     ; Branch on failure
00000000'EF   16     02C6   765          JSB     RM$STALL                   ; Await completion
          64   17     02CC   766 10$:     JMP     (R4)                       ; Return to caller
```

```
02CE   767
02CE   768          .END                                ; End of module
```

```
$$.PSECT_EP                     = 00000000
$$RMSTEST                       = 0000001A
$$RMS_PBUGCHK                   = 00000010
$$RMS_TBUGCHK                   = 00000008
$$RMS_UMODE                     = 00000004
$$T1                            = 00000000
DAP$B_BKS                         00000050
DAP$B_BSZ                         00000052
DAP$B_DATATYPE                    00000044
DAP$B_DCODE_FID                   00000019
DAP$B_DCODE_MAC                   0000001B
DAP$B_DCODE_MSG                   0000001A
DAP$B_FSZ                         00000051
DAP$B_ORG                         00000045
DAP$B_RAT                         00000047
DAP$B_RFM                         00000046
DAP$B_X_FIELD                     00000024
DAP$C_BLN                         000000C0
DAP$K_BLN                         000000C0
DAP$K_FIX                       = 00000001
DAP$K_SEQ                       = 00000000
DAP$L_ALQ1                        0000004C
DAP$L_ATTMENU                     00000040
DAP$L_CMWA                        00000030
DAP$L_CRC_RSLT                    00000020
DAP$L_DCODE_STS                   00000018
DAP$L_DEV                         00000068
DAP$L_EBK                         00000078
DAP$L_FOP1                        00000064
DAP$L_HBK                         00000074
DAP$L_MRN                         00000058
DAP$L_MSG_MASK                    0000001C
DAP$L_SBN                         0000007C
DAP$L_SSPWA                       00000080
DAP$L_TEMP                        00000090
DAP$M_CMPFMT                    = 00000008
DAP$M_DMO                       = 00002000
DAP$M_EMBEDDED                  = 00000010
DAP$M_IMAGE                     = 00000002
DAP$M_LSA                       = 00000040
DAP$M_MACY11                    = 00000080
DAP$M_TMP1$                     = 00000040
DAP$M_TMP2$                     = FC000000
DAP$M_TMP3$                     = 00020000
DAP$M_TMP4$                     = 01000000
DAP$M_TMP5$                     = F0000000
DAP$M_ZERO                      = 00000080
DAP$Q_DCODE_FLG                   00000000
DAP$Q_MSG_BUF1                    00000008
DAP$Q_MSG_BUF2                    00000010
DAP$Q_RUNSYS                      0000005C
DAP$V_DEV                       = 0000000E
DAP$V_DEVALL                    = 0000000C
DAP$V_DEVAVL                    = 00000010
DAP$V_DEVCCL                    = 00000001
DAP$V_DEVDIR                    = 00000003
DAP$V_DEVDMT                    = 0000000B
DAP$V_DEVELG                    = 00000011
DAP$V_DEVFOD                    = 00000007
DAP$V_DEVFOR                    = 00000017
DAP$V_DEVGEN                    = 00000019
DAP$V_DEVIDV                    = 0000000D
DAP$V_DEVMBX                    = 00000012
DAP$V_DEVMNT                    = 0000000A
DAP$V_DEVNET                    = 00000018
DAP$V_DEVODV                    = 0000000E
DAP$V_DEVRCK                    = 00000015
DAP$V_DEVREC                    = 00000000
DAP$V_DEVRND                    = 00000014
DAP$V_DEVRTM                    = 00000013
DAP$V_DEVSDI                    = 00000004
DAP$V_DEVSHR                    = 00000008
DAP$V_DEVSPL                    = 00000009
DAP$V_DEVSQD                    = 00000005
DAP$V_DEVSWL                    = 0000000F
DAP$V_DEVTRM                    = 00000002
DAP$V_DEVWCK                    = 00000016
DAP$V_GEQ_V56                   = 00000024
DAP$V_VAXELAN                   = 00000035
DAP$V_VAXVMS                    = 00000034
DAP$W_BLS                         00000048
DAP$W_DEQ1                        00000054
DAP$W_FFB                         00000072
DAP$W_LRL                         00000070
DAP$W_MRS                         0000004A
DAP$W_PARTNER                     00000006
DAP$W_VERSION                     00000004
DEV$V_ALL                       = 00000017
DEV$V_AVL                       = 00000012
DEV$V_CCL                       = 00000001
DEV$V_DIR                       = 00000003
DEV$V_DMT                       = 00000015
DEV$V_ELG                       = 00000016
DEV$V_FOD                       = 0000000E
DEV$V_FOR                       = 00000018
DEV$V_GEN                       = 00000011
DEV$V_IDV                       = 0000001A
DEV$V_MBX                       = 00000014
DEV$V_MNT                       = 00000013
DEV$V_NET                       = 0000000D
DEV$V_ODV                       = 0000001B
DEV$V_RCK                       = 0000001E
DEV$V_REC                       = 00000000
DEV$V_RND                       = 0000001C
DEV$V_RTM                       = 0000001D
DEV$V_SDI                       = 00000004
DEV$V_SHR                       = 00000010
DEV$V_SPL                       = 00000006
DEV$V_SQD                       = 00000005
DEV$V_SWL                       = 00000019
DEV$V_TRM                       = 00000002
DEV$V_WCK                       = 0000001F
ERRQUO                            000000AF  R      01
FAB$B_ACMODES                   = 0000004A
```

```
FAB$L_DEV                       =  00000040
FAB$L_FOP                       =  00000004
FAB$L_NAM                       =  00000028
FAB$L_SDC                       =  00000044
FAB$S_CHAN_MODE                 =  00000002
FAB$V_CHAN_MODE                 =  00000002
FAB$V_UFO                       =  00000011
FWA$B_SUBNODCNT                 =  0000002F
FWA$Q_NODE1                     =  000001B4
FWA$Q_QUOTED                    =  00000170
FWA$V_NETSTR                    =  00000032
FWA$V_OBJTYPE                   =  00000031
FWA$V_QUOTED                    =  0000001A
FWA$V_WILDCARD                  =  00000018
IFB$B_MODE                      =  0000000A
IFB$L_AS_DEV                    =  0000008C
IFB$L_DEVBUFSIZ                 =  00000048
IFB$L_IOS                       =  0000000C
IFB$L_NWA_PTR                   =  0000003C
IFB$L_PRIM_DEV                  =  00000000
IFB$V_ACCESSED                  =  00000025
IFB$V_DAP                       =  0000003E
IFB$V_NSP                       =  0000003F
IFB$W_CHNL                      =  00000020
IO$M_ACCESS                     =  00000040
IO$M_SYNCH                      =  00000200
IO$_ACCESS                      =  00000032
IO$_DEACCESS                    =  00000034
NAM$L_FNB                       =  00000034
NAM$V_WILDCARD                  =  00000008
NT$ACCESS                          00000201  RG    01
NT$ASSIGN                          00000000  RG    01
NT$DEACCESS                        00000200  RG    01
NT$MAP_DEV_CHAR                    000000E6  RG    01
NT$MOD_DEV_CHAR                    000000B9  RG    01
NT$RET_DEV_CHAR                    000001D4  RG    01
NWA$B_ALLXABCNT                    0000011C
NWA$B_DAP_RAC                      000000C9
NWA$B_FILESYS                      000000C5
NWA$B_KEYXABCNT                    0000011D
NWA$B_NETSTRSIZ                    0000016F
NWA$B_NODBUFSIZ                    00000168
NWA$B_ORG                          000000C6
NWA$B_OSTYPE                       000000C4
NWA$B_RFM                          000000C7
NWA$B_RMS_RAC                      000000C8
NWA$C_BLN                          00000800
NWA$K_BLN                          00000800
NWA$K_SEQ                       =  00000000
NWA$L_ALLXABADR                    00000100
NWA$L_DATXABADR                    00000104
NWA$L_DEV                          000000C0
NWA$L_FHCXABADR                    00000108
NWA$L_KEYXABADR                    0000010C
NWA$L_MSG_MASK                     000000D4
NWA$L_PROXABADR                    00000110
NWA$L_RDTXABADR                    00000114
NWA$L_SAVE_FLGS                    00000128
NWA$L_SUMXABADR                    00000118
NWA$L_THREAD                       000000FC
NWA$L_XLTATTR                      00000238
NWA$L_XLTBUFFLG                    0000022C
NWA$L_XLTCNT                       00000228
NWA$L_XLTMAXINDX                   00000234
NWA$L_XLTSIZ                       00000230
NWA$Q_ACS                          00000244
NWA$Q_BIGBUF                       00000170
NWA$Q_BLD                          000000F0
NWA$Q_FLG                          00000000
NWA$Q_INODE                        0000025C
NWA$Q_IOSB                         000000D8
NWA$Q_LNODE                        00000160
NWA$Q_LOGNAME                      0000023C
NWA$Q_NCB                          00000264
NWA$Q_RCV                          000000E0
NWA$Q_SAVE_DESC                    00000120
NWA$Q_XLTBUF1                      0000024C
NWA$Q_XLTBUF2                      00000254
NWA$Q_XMT                          000000E8
NWA$T_ACSBUF                       0000026C
NWA$T_AUXBUF                       000005E0
NWA$T_DAP                          00000000
NWA$T_INODEBUF                     000004AC
NWA$T_ITM_ATTR                     00000200
NWA$T_ITM_END                      00000224
NWA$T_ITM_LST                      00000200
NWA$T_ITM_MAXINDX                  00000218
NWA$T_ITM_STRING                   0000020C
NWA$T_NCBBUF                       0000052C
NWA$T_NODEBUF                      00000169
NWA$T_RCVBUF                       000001A0
NWA$T_SCAN                         00000100
NWA$T_TEMP                         00000120
NWA$T_XLTBUF1                      000002AC
NWA$T_XLTBUF2                      000003AC
NWA$T_XMTBUF                       000003C0
NWA$V_DEVCHAR                   =  00000011
NWA$V_DEVMBX                    =  00000013
NWA$V_DEVTRM                    =  00000010
NWA$W_BUILD                        000000D2
NWA$W_DAPBUFSIZ                    000000CA
NWA$W_DIR_OFF                      000000CC
NWA$W_DISPLAY                      000000D0
NWA$W_FIL_OFF                      000000CE
NWA$W_JNLXABJOP                    0000011E
PARSE_QUOTED_STRING                00000052  R       01
PIO$A_TRACE                        ********    X     01
PSL$C_EXEC                      =  00000001
RM$CHKNAM                          ********    X     01
RM$SETEFN                          ********    X     01
RM$STALL                           ********    X     01
RM$STALLAST                        ********    X     01
RMS$_QUO                        =  00018634
SYS$ASSIGN                         ********   GX     01
```

```
SYS$QIO                         ********  GX   01
TPT$L_NTACC_DAP                 ********   X   01
TPT$L_NTACC_NSP                 ********   X   01
TPT$L_NTDEACCES                 ********   X   01
```

Psect synopsis

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
NF$NETWORK	000002CE (718.)	01 (1.)	PIC USR CON REL GBL NOSHR EXE RD NOWRT NOVEC BYTE
ABS	00000800 (2048.)	02 (2.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	47	00:00:00.15	00:00:01.17
Command processing	154	00:00:00.82	00:00:05.87
Pass 1	466	00:00:19.19	00:00:47.35
Symbol table sort	0	00:00:02.71	00:00:03.95
Pass 2	142	00:00:03.55	00:00:08.10
Symbol table output	28	00:00:00.18	00:00:00.50
Psect synopsis output	2	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	841	00:00:26.62	00:01:06.96

```
The working set limit was 1800 pages.
105919 bytes (207 pages) of virtual memory were used to buffer the intermediate code.
There were 100 pages of symbol table space allocated to hold 1925 non-local and 57 local symbols.
768 source lines were read in Pass 1, producing 15 object records in Pass 2.
35 pages of virtual memory were used to define 34 macros.
```

Macro library statistics

Macro library name	Macros defined
_255DUA28:[RMS.OBJ]RMS.MLB;1	17
_255DUA28:[SYSLIB]STARLET.MLB;2	13
TOTALS (all libraries)	30

```
2224 GETS were required to define 30 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:NTOACCESS/OBJ=OBJ$:NTOACCESS MSRC$:NTOACCESS/UPDATE=(ENH$:NTOACCESS)+LIB$:RMS/LIB
```

NT0ACCESS
LIS

NT0CLOSE
LIS

NT0BLDXAB
LIS

NT0CONN
LIS

NT0CREATE
LIS

NT0DAPIO
LIS

NT0DAPCRC
LIS

NT0ACCFIL
LIS

NT0BLKIO
LIS