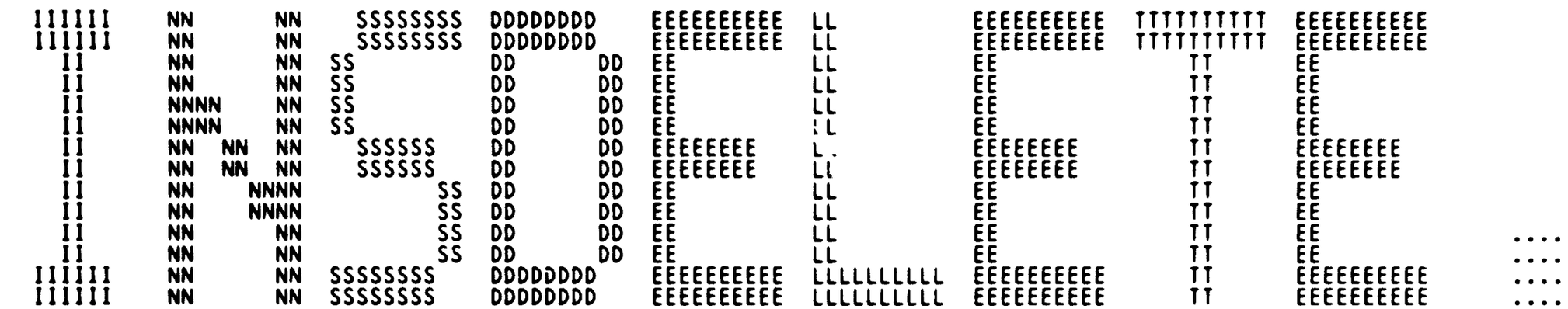
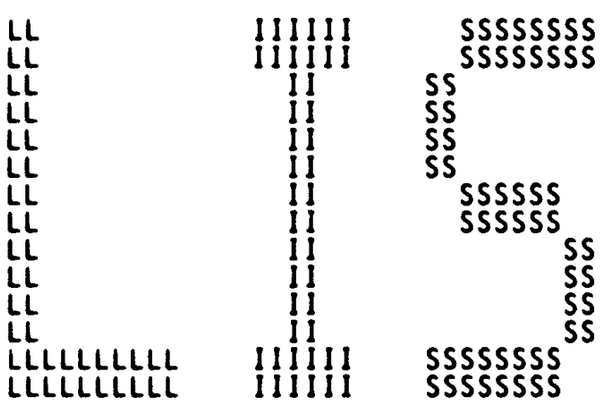
```
IIIIIIIII      NNN          NNN     SSSSSSSSSSS  TTTTTTTTTTTTTTT     AAAAAAAAA     LLL
IIIIIIIII      NNN          NNN     SSSSSSSSSSS  TTTTTTTTTTTTTTT     AAAAAAAAA     LLL
IIIIIIIII      NNN          NNN     SSSSSSSSSSS  TTTTTTTTTTTTTTT     AAAAAAAAA     LLL
   III         NNN          NNN  SSS                   TTT          AAA         AAA  LLL
   III         NNN          NNN  SSS                   TTT          AAA         AAA  LLL
   III         NNN          NNN  SSS                   TTT          AAA         AAA  LLL
   III         NNNNNN       NNN  SSS                   TTT          AAA         AAA  LLL
   III         NNNNNN       NNN  SSS                   TTT          AAA         AAA  LLL
   III         NNNNNN       NNN  SSS                   TTT          AAA         AAA  LLL
   III         NNN    NNN   NNN     SSSSSSSSS          TTT          AAA         AAA  LLL
   III         NNN    NNN   NNN     SSSSSSSSS          TTT          AAA         AAA  LLL
   III         NNN    NNN   NNN     SSSSSSSSS          TTT          AAA         AAA  LLL
   III         NNN       NNNNNN               SSS      TTT          AAAAAAAAAAAAAAA  LLL
   III         NNN       NNNNNN               SSS      TTT          AAAAAAAAAAAAAAA  LLL
   III         NNN       NNNNNN               SSS      TTT          AAAAAAAAAAAAAAA  LLL
   III         NNN          NNN               SSS      TTT          AAA         AAA  LLL
   III         NNN          NNN               SSS      TTT          AAA         AAA  LLL
   III         NNN          NNN               SSS      TTT          AAA         AAA  LLL
IIIIIIIII      NNN          NNN  SSSSSSSSSSS           TTT          AAA         AAA  LLLLLLLLLLLLLLL
IIIIIIIII      NNN          NNN  SSSSSSSSSSS           TTT          AAA         AAA  LLLLLLLLLLLLLLL
IIIIIIIII      NNN          NNN  SSSSSSSSSSS           TTT          AAA         AAA  LLLLLLLLLLLLLLL
```

FILEID**INSDELETE





```
;     1          0001  0 MODULE INSDELETE (                       ! DELETE a KFE entry
;     2          0002  0                     IDENT = 'V04-000',
;     3          0003  0                     ADDRESSING_MODE(EXTERNAL = GENERAL)
;     4          0004  0                 ) =
;     5          0005  1 BEGIN
;     6          0006  1
;     7          0007  1 !
;     8          0008  1 !*****************************************************************************
;     9          0009  1 !*                                                                           *
;    10          0010  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
;    11          0011  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                    *
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;    15          0015  1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE    *
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;    18          0018  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY     *
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;    20          0020  1 !*                                                                           *
;    21          0021  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE     *
;    22          0022  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT     *
;    23          0023  1 !*  CORPORATION.                                                              *
;    24          0024  1 !*                                                                           *
;    25          0025  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS     *
;    26          0026  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                   *
;    27          0027  1 !*                                                                           *
;    28          0028  1 !*                                                                           *
;    29          0029  1 !*****************************************************************************
;    30          0030  1
;    31          0031  1 !++
;    32          0032  1 ! FACILITY:  Install
;    33          0033  1 !
;    34          0034  1 ! ABSTRACT:
;    35          0035  1 !
;    36          0036  1 !       This module executes the REPLACE and DELETE options on INSTALL
;    37          0037  1 !
;    38          0038  1 ! ENVIRONMENT:
;    39          0039  1 !
;    40          0040  1 !       VAX/VMS operating system.
;    41          0041  1 !
;    42          0042  1 ! AUTHOR:  Bob Grosso, April 1983
;    43          0043  1 !
;    44          0044  1 ! Modified by:
;    45          0045  1 !
;    46          0046  1 !       V03-012 MSH0061         Michael S. Harvey       5-Jul-1984
;    47          0047  1 !               Add EXEONLY support.
;    48          0048  1 !
;    49          0049  1 !       V03-011 MSH0057         Michael S. Harvey       26-Jun-1984
;    50          0050  1 !               Propagate WRITEABLE attribute across REPLACE command.
;    51          0051  1 !
;    52          0052  1 !       V03-010 MSH0050         Michael S. Harvey       18-May-1984
;    53          0053  1 !               Convert match control to MATEQU before deleting global
;    54          0054  1 !               sections. This ensures that DELETE/REMOVE doesn't
;    55          0055  1 !               delete newly created global sections of the same name
;    56          0056  1 !               but with different idents. In other words, we only
;    57          0057  1 !               want to delete global sections that are likely to have
```

```
;    58          0058  1 !                   been created at the time the about-to-be-deleted image
;    59          0059  1 !                   was created, not any global sections of the same name
;    60          0060  1 !                   that have been created since that time.
;    61          0061  1 !
;    62          0062  1 !       V03-009 MSH0027         Michael S. Harvey       6-Apr-1984
;    63          0063  1 !                   Ensure that files get closed during the PURGE operation.
;    64          0064  1 !
;    65          0065  1 !       V03-008 MSH0022         Michael S. Harvey       19-Mar-1984
;    66          0066  1 !                   Convert and compress directory brackets correctly.
;    67          0067  1 !
;    68          0068  1 !       V03-007 MSH0017         Michael S. Harvey       7-Mar-1984
;    69          0069  1 !                   Convert FIND_KFE into a global routine for use during
;    70          0070  1 !                   known file creation.
;    71          0071  1 !
;    72          0072  1 !       V03-006 MSH0003         Michael S. Harvey       27-Jan-1984
;    73          0073  1 !                   Prevent crash from executing system service at elevated
;    74          0074  1 !                   IPL by resetting IPL on wierd error paths, such as is
;    75          0075  1 !                   done on success paths.
;    76          0076  1 !
;    77          0077  1 !       V03-005 RPG0005         Bob Grosso              08-Sep-1983
;    78          0078  1 !                   Raise IPL to protect memory deallocation, so a process
;    79          0079  1 !                   won't result in pool loss.
;    80          0080  1 !                   Do not decrement REFCNT in WCB when deleting entry.
;    81          0081  1 !
;    82          0082  1 !       V03-004 RPG0004         Bob Grosso              16-Aug-1983
;    83          0083  1 !                   Fix /REPLACE so it retains attributes.
;    84          0084  1 !                   Activate REMOVE command.
;    85          0085  1 !
;    86          0086  1 !       V03-003 RPG0003         Bob Grosso              July 25, 1983
;    87          0087  1 !                   Decrement entry count upon deletion.
;    88          0088  1 !                   Clean up PURGE.
;    89          0089  1 !                   Clean up error reporting.
;    90          0090  1 !
;    91          0091  1 !       V03-002 RPG0002         Bob Grosso              July 19, 1983
;    92          0092  1 !                   Do not decrement REFCNT in WCB when deleting entry.
;    93          0093  1 !
;    94          0094  1 !       V03-001 RPG0001         Bob Grosso              July 7, 1983
;    95          0095  1 !                   Take out exclusive lock when purging
;    96          0096  1 !
;    97          0097  1 !--
;    98          0098  1
;    99          0099  1 !
;   100          0100  1 ! Include files
;   101          0101  1 !
;   102          0102  1
;   103          0103  1 LIBRARY 'SYS$LIBRARY:LIB';              ! VAX/VMS system definitions
;   104          0104  1
;   105          0105  1 REQUIRE 'SRC$:INSPREFIX.REQ';
;   106          0247  1 REQUIRE 'LIB$:INSDEF.R32';
```

```
;  108     0306  1 %SBTTL  'Declarations';
;  109     0307  1
;  110     0308  1 LINKAGE
;  111     0309  1     CALL_S_4 = CALL (STANDARD, REGISTER=4),                 ! for calling routines to execute in kernel mode,
;  112     0310  1                                                             ! the change mode dispatcher passes PCB address in R
;  113     0311  1
;  114     0312  1     JSB_0 = JSB (REGISTER = 0),                             ! Deallocate paged pool
;  115     0313  1
;  116     0314  1     JSB_0_1_2 = JSB (REGISTER = 0; REGISTER = 1, REGISTER = 2)  ! Verify I/O channel
;  117     0315  1                 : NOPRESERVE (3)
;  118     0316  1                   NOTUSED (4,5,6,7,8,9,10,11),
;  119     0317  1
;  120     0318  1     JSB_G1_G2_3 = JSB (REGISTER = 3)                        ! Allocate memory in P1 space
;  121     0319  1                 : GLOBAL (length = 1, entry_block = 2);
;  122     0320  1
;  123     0321  1 !
;  124     0322  1 ! Table of contents
;  125     0323  1 !
;  126     0324  1
;  127     0325  1 EXTERNAL
;  128     0326  1     ctl$gq_allocreg,                        ! Memory allocation listhead
;  129     0327  1     ctl$gl_knownfil,                        ! Process known file listhead queues
;  130     0328  1     EXE$GL_KNOWN_FILES : REF BBLOCK,        ! Pointer to knownfil list queues
;  131     0329  1     SGN$GB_KFHSHSIZ;                        ! Number of buckets in KF hash table
;  132     0330  1
;  133     0331  1 EXTERNAL ROUTINE
;  134     0332  1     IOC$VERIFYCHAN : JSB_0_1_2,
;  135     0333  1     EXE$DEAPAGED : JSB_0,
;  136     0334  1     SYS$ASSIGN,
;  137     0335  1     SYS$DASSGN;
;  138     0336  1
;  139     0337  1
;  140     0338  1 EXTERNAL LITERAL
;  141     0339  1     INS$_EMPTYLST,                          ! The Known File List is empty
;  142     0340  1     INS$_INTRNLERR,                         ! no known file entry found
;  143     0341  1     INS$_NOKFEFND,                          ! no known file entry found during REMOVE
;  144     0342  1     INS$_NOLIST,                            ! There is no Known File list
;  145     0343  1     INS$_REMOVED;                           ! Dangling entry was removed
;  146     0344  1
;  147     0345  1 EXTERNAL
;  148     0346  1     INS$GL_CTLMSK : BLOCK [1],              ! Control f.ags
;  149     0347  1     INS$GL_REPLACE_MSK : BLOCK [1],         ! Control flags for REPLACE
;  150     0348  1     INS$L_INTRNLERR,                        ! Pass back internal error descriptor
;  151     0349  1     INS$GL_KFECHAN,                         ! Channel known image file is open on.
;  152     0350  1     INS$G_KFENAM : $NAM_DECL,               ! NAM block for the filename of the known image
;  153     0351  1     INS$GQ_KFEPRIVS,                        ! Privilege mask, save it if REPLACE
;  154     0352  1     INS$GL_KFEADR;                          ! Return the KFE address when it has been replaced
;  155     0353  1
;  156     0354  1 EXTERNAL ROUTINE
;  157     0355  1     INS$EXECUTE_IN_KRNL_WITH_W_LOCK,
;  158     0356  1     INS$CNVRT_KF_LOCK,
;  159     0357  1     INS$BLD_GBLSECNAM,
;  160     0358  1     INS$CVT_DIR,
;  161     0359  1     INS$HASH;
;  162     0360  1
;  163     0361  1 FORWARD ROUTINE
;  164     0362  1     INS$FIND_KFE,
```

```
;  165          0363  1      INS_DELETE,
;  166          0364  1      INS_PURGE,
;  167          0365  1      PURGE,
;  168          0366  1      DETACH_KFE,                     ! Remove entry from list
;  169          0367  1      RETURN_KFE,                     ! Deallocate entry
;  170          0368  1      DEALLOC_PAGED;                  ! Deallocate paged pool
;  171          0369  1
;  172          0370  1  BIND
;  173          0371  1      SGN_B_KFHSHSIZ = SGN$GB_KFHSHSIZ : BYTE;
;  174          0372  1
;  175          0373  1  BIND
;  176          0374  1      HSHKFE_ERR_DSC = $DESCRIPTOR (' KFE for deletion not found in hash'),
;  177          0375  1      IMGHDR_ERR_DSC = $DESCRIPTOR (' No image header found for delete'),
;  178          0376  1      KFD_ERR_DSC = $DESCRIPTOR (' KFD for deletion not found'),
;  179          0377  1      KFDKFE_ERR_DSC = $DESCRIPTOR (' KFE for deletion not found in KFD list'),
;  180          0378  1      EMPTYKFPB_ERR_DSC = $DESCRIPTOR (' Deletion from empty pointer block');
```

```
;  182          0379  1 %SBTTL 'INS$DELETE';
;  183          0380  1
;  184          0381  1 GLOBAL ROUTINE  INS$DELETE =
;  185          0382  2 BEGIN
;  186          0383  2 !+++
;  187          0384  2 !
;  188          0385  2 !  FUNCTIONAL DESCRIPTION:
;  189          0386  2 !
;  190          0387  2 !       Delete a Known File entry.
;  191          0388  2 !       If this was the last entry for the listhead, delete it
;  192          0389  2 !
;  193          0390  2 !  EXPLICIT INPUT:
;  194          0391  2 !
;  195          0392  2 !       none
;  196          0393  2 !
;  197          0394  2 !  ROUTINE VALUE:
;  198          0395  2 !
;  199          0396  2 !    R0 = return status, low bit set for success, else error status
;  200          0397  2 !
;  201          0398  2 !---
;  202          0399  2
;  203          0400  2 LOCAL
;  204          0401  2     STATUS;
;  205          0402  2
;  206          0403  2 IF .INS$GL_CTLMSK [INS$V_PROCESS] THEN RETURN TRUE;
;  207          0404  2
;  208          0405  2 STATUS = INS$EXECUTE_IN_KRNL_WITH_W_LOCK (INS_DELETE, 0);
;  209          0406  2 RETURN .STATUS;
;  210          0407  1 END;              ! Global routine INS$DELETE

                                                                .TITLE  INSDELETE
                                                                .IDENT  \V04-000\

                                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

69 74 65 6C 65 64 20 72 6F 66 20 45 46 4B 20  00000 P.AAB:  .ASCII  \ KFE for deletion not found in hash\
6E 69 20 64 6E 75 6F 66 20 74 6F 6E 20 6E 6F  0000F
                        68 73 61 68 20        0001E
                                              00023        .BLKB   1
                                 00000023     00024 P.AAA: .LONG   35
                                 00000000'    00028        .ADDRESS P.AAB
65 74 61 65 68 20 65 67 61 6D 69 20 6F 4E 20  0002C P.AAD:  .ASCII  \ No image header found for delete\
3C 55 64 20 72 6F 66 20 64 6E 75 6F 66 20 72  0003B
                                 65 74 65     0004A
                                              0004D        .BLKB   3
                                 00000021     00050 P.AAC: .LONG   33
                                 00000000'    00054        .ADDRESS P.AAD
69 74 65 6C 65 64 20 72 6F 66 20 44 46 4B 20  00058 P.AAF:  .ASCII  \ KFD for deletion not found\
                  64 6E 75 6F 66 20 74 6F 6E  00067
                                 20 6E 6F     00073        .BLKB   1
                                 0000001B     00074 P.AAE: .LONG   27
                                 00000000'    00078        .ADDRESS P.AAF
69 74 65 6C 65 64 20 72 6F 66 20 45 46 4B 20  0007C P.AAH:  .ASCII  \ KFE for deletion not found in KFD list\
6E 69 20 64 6E 75 6F 66 20 74 6F 6E 20 6E 6F  0008B
                        74 73 69 6C 20 44 46  0009A
                                 4B 20        000A3        .BLKB   1
```

```
                                00000027  000A4 P.AAG:  .LONG   39                                          ;
                                00000000' 000A8         .ADDRESS P.AAH                                     ;
20 6D 6F 72 66 20 6E 6F 69 74 65 6C 65 44 20  000AC P.AAJ:  .ASCII  \ Deletion from empty pointer block\     ;
62 20 72 65 74 6E 69 6F 70 20 79 74 70 6D 65  000BB                                                        ;
                                           6B 63 6F 6C  000CA                                               ;
                                                        000CE         .BLKB   2                             ;
                                00000022  000D0 P.AAI:  .LONG   34                                          ;
                                00000000' 000D4         .ADDRESS P.AAJ                                     ;

                                                        HSHKFE_ERR_DSC=     P.AAA
                                                        IMGHDR_ERR_DSC=     P.AAC
                                                        KFD_ERR_DSC=        P.AAE
                                                        KFDKFE_ERR_DSC=     P.AAG
                                                        EMPTYKFPB_ERR_DSC=  P.AAI
                                                                .EXTRN  CTL$GQ_ALLOCREG
                                                                .EXTRN  CTL$GL_KNOWNFIL
                                                                .EXTRN  EXE$GL_KNOWN_FILES
                                                                .EXTRN  SGN$GB_KFHSHSIZ
                                                                .EXTRN  IOC$VERIFYCHAN, EXE$DEAPAGED
                                                                .EXTRN  SYS$ASSIGN, SYS$DASSGN
                                                                .EXTRN  INS$_EMPTYLST, INS$_INTRNLERR
                                                                .EXTRN  INS$_NOKFEFND, INS$_NOLIST
                                                                .EXTRN  INS$_REMOVED, INS$GL_CTLMSK
                                                                .EXTRN  INS$GL_REPLACE_MSK
                                                                .EXTRN  INS$L_INTRNLERR
                                                                .EXTRN  INS$GL_KFECHAN, INS$G_KFENAM
                                                                .EXTRN  INS$GQ_KFEPRIVS
                                                                .EXTRN  INS$GL_KFEADR, INS$EXECUTE_IN_KRNL_WITH_W_LOCK
                                                                .EXTRN  INS$CNVRT_KF_LOCK
                                                                .EXTRN  INS$BLD_GBLSECNAM
                                                                .EXTRN  INS$CVT_DIR, INS$HASH

                                                                .PSECT  $CODE$,NOWRT,2

                                   0000 00000                   .ENTRY  INS$DELETE, Save nothing            ; 0381
                 04 00000000G   00    01   E1 00002           BBC     #1, INS$GL_CTLMSK, 1$               ; 0403
                                50    01   D0 0000A           MOVL    #1, R0                              ;
                                      04   0000D           1$: RET                                         ;
                                      7E   D4 0000E           CLRL    -(SP)                               ; 0405
                           0000V      CF   9F 00010           PUSHAB  INS_DELETE                          ;
                    00000000G   00    02   FB 00014           CALLS   #2, INS$EXECUTE_IN_KRNL_WITH_W_LOCK ;
                                      04   0001B           1$: RET                                         ; 0407

; Routine Size:  28 bytes,    Routine Base:  $CODE$ + 0000

;  211          0408  1
```

```
;  213          0409  1 %SBTTL 'INS_DELETE';
;  214          0410  1
;  215          0411  1 GLOBAL ROUTINE  INS_DELETE =
;  216          0412  2 BEGIN
;  217          0413  2 !+++
;  218          0414  2 !
;  219          0415  2 !   FUNCTIONAL DESCRIPTION:
;  220          0416  2 !
;  221          0417  2 !        Delete a Known File entry.
;  222          0418  2 !        If this was the last entry for the listhead, delete it
;  223          0419  2 !
;  224          0420  2 !   EXPLICIT INPUT:
;  225          0421  2 !
;  226          0422  2 !        none                                                                    ;
;  227          0423  2 !
;  228          0424  2 !   IMPLICIT INPUT:
;  229          0425  2 !
;  230          0426  2 !        INS$GL_KFEADR   =       Channel on which the known file image is open   ;
;  231          0427  2 !
;  232          0428  2 !   IMPLICIT OUTPUT:
;  233          0429  2 !
;  234          0430  2 !        INS$GL_KFEADR   =       Address of KFE, will be set to zero
;  235          0431  2 !
;  236          0432  2 !   ROUTINE VALUE:
;  237          0433  2 !
;  238          0434  2 !     R0 = return status, low bit set for success, else error status
;  239          0435  2 !
;  240          0436  2 !---
;  241          0437  2
;  242          0438  2 LOCAL
;  243          0439  2     HASH_INDEX,
;  244          0440  2     KFD : REF BBLOCK,
;  245          0441  2     KFE,
;  246          0442  2     STATUS;
;  247          0443  2
;  248          0444  2 !
;  249          0445  2 !   If this is a REMOVE,  i.e. We suspect there is a dangling entry,
;  250          0446  2 !   then compute which hash table bucket Known File Entry should be in.
;  251          0447  2 !   If we find the entry, remove it, else return normally.
;  252          0448  2 !
;  253          0449  2 IF .INS$GL_KFEADR EQL 0
;  254          0450  2 THEN
;  255          0451  3     BEGIN
;  256          0452  3     HASH_INDEX = INS$HASH (.INS$G_KFENAM [NAM$B_NAME],
;  257          0453  3                            .INS$G_KFENAM [NAM$L_NAME], .SGN_B_KFHSHSIZ );
;  258          0454  3
;  259          0455  3     KFE = INS$FIND_KFE (.HASH_INDEX, INS$G_KFENAM);
;  260          0456  3
;  261          0457  3     IF .KFE EQL 0 THEN RETURN INS$_NOKFEFND;
;  262          0458  3
;  263          0459  3     INS$CNVRT_KF_LOCK (LCK$K_EXMODE);    ! Convert protected read to exclusive
;  264          0460  3                                          !  to lock out any image activations
;  265          0461  3     SET_IPL (IPL$_ASTDEL);               ! Block deletion of process so pool is not lost
;  266          0462  3     STATUS = DETACH_KFE (.KFE, KFD);
;  267          0463  3     IF .KFD NEQ 0
;  268          0464  3     THEN
;  269          0465  4         BEGIN
```

```
;  270     0466  4          STATUS = DEALLOC_PAGED (.KFD);
;  271     0467  3          END;
;  272     0468  3
;  273     0469  3      STATUS = RETURN_KFE (.KFE,0);
;  274     0470  3
;  275     0471  3      SET_IPL (0);                          ! reset to IPL 0
;  276     0472  3      INS$CNVRT_KF_LOCK (LCK$K_PRMODE);     ! Convert exclusive to protected read
;  277     0473  3                                            !  to allow image activations
;  278     0474  3      RETURN INS$_REMOVED;
;  279     0475  2      END;
;  280     0476  2
;  281     0477  2
;  282     0478  2 !
;  283     0479  2 !    Take out write lock and remove entry from list
;  284     0480  2 !
;  285     0481  2 INS$CNVRT_KF_LOCK (LCK$K_EXMODE);          ! Convert protected read to exclusive
;  286     0482  2                                            !  to lock out any image activations
;  287     0483  2 SET_IPL (IPL$_ASTDEL);                     ! Block deletion of process so pool is not lost
;  288     0484  2
;  289     0485  2 STATUS = DETACH_KFE (.INS$GL_KFEADR, KFD);
;  290     0486  2 IF .STATUS
;  291     0487  2 THEN
;  292     0488  3      BEGIN
;  293     0489  3      IF .KFD NEQ 0
;  294     0490  3      THEN
;  295     0491  3          STATUS = DEALLOC_PAGED (.KFD);
;  296     0492  3
;  297     0493  3          !
;  298     0494  3          !  Clean up entry and deallocate it
;  299     0495  3          !
;  300     0496  3      STATUS = RETURN_KFE (.INS$GL_KFEADR,0);
;  301     0497  3      INS$GL_KFEADR = 0;
;  302     0498  2      END;
;  303     0499  2
;  304     0500  2 SET_IPL (0);
;  305     0501  2 INS$CNVRT_KF_LOCK (LCK$K_PRMODE);          ! Convert exclusive to protected read
;  306     0502  2                                            !  to allow image activations
;  307     0503  2
;  308     0504  2 RETURN .STATUS;
;  309     0505  1 END;                ! Global routine INS_DELETE


                                                007C 00000          .ENTRY  INS_DELETE, Save R2,R3,R4,R5,R6          ; 0411
                          56 00000000G      00  9E 00002          MOVAB   INS$G_KFENAM+76, R6                      ;
                          55 00000000G      00  9E 00009          MOVAB   INS$GL_KFEADR, R5                        ;
                          54 00000000G      00  9E 00010          MOVAB   INS$CNVRT_KF_LOCK, R4                    ;
                          5E                04  C2 00017          SUBL2   #4, SP                                   ;
                                            65  D5 0001A          TSTL    INS$GL_KFEADR                            ; 0449
                                            69  12 0001C          BNEQ    3$                                       ;
                          7E 00000000G      00  9A 0001E          MOVZBL  SGN_B_KFHSHSIZ, -(SP)                    ; 0453
                                            66  DD 00025          PUSHL   INS$G_KFENAM+76                          ;
                          7E          EF    A6  9A 00027          MOVZBL  INS$G_KFENAM+59, -(SP)                   ; 0452
                00000000G 00                03  FB 0002B          CALLS   #3, INS$HASH                             ;
                                      B4    A6  9F 00032          PUSHAB  INS$G_KFENAM                             ; 0455
```

```
                                50  DD 00035          PUSHL   HASH_INDEX                                ;
                        0000V   CF  02  FB 00037          CALLS   #2, INS$FIND_KFE                    ;
                                52  50  D0 0003C          MOVL    R0, KFE                             ;
                                    08  12 0003F          BNEQ    1$                                  ; 0457
                                50 00000000G    8F  D0 00041          MOVL    #INS$_NOKFEFND, R0      ;
                                    04  00048          RET                                         ;
                                    05  DD 00049 1$:     PUSHL   #5                                  ; 0459
                                64  01  FB 0004B          CALLS   #1, INS$CNVRT_KF_LOCK               ;
                                12  02  DA 0004E          MTPR    #2, #18                             ; 0461
                                        4004    8F  BB 00051          PUSHR   #^M<R2,SP>              ; 0462
                        0000V   CF  02  FB 00055          CALLS   #2, DETACH_KFE                      ;
                                53  50  D0 0005A          MOVL    R0, STATUS                          ;
                                    6E  D5 0005D          TSTL    KFD                                 ; 0463
                                    0A  13 0005F          BEQL    2$                                  ;
                                    6E  DD 00061          PUSHL   KFD                                 ; 0466
                        0000V   CF  01  FB 00063          CALLS   #1, DEALLOC_PAGED                   ;
                                53  50  D0 00068          MOVL    R0, STATUS                          ;
                                    7E  D4 0006B 2$:      CLRL    -(SP)                               ; 0469
                                52  DD 0006D          PUSHL   KFE                                 ;
                        0000V   CF  02  FB 0006F          CALLS   #2, RETURN_KFE                      ;
                                53  50  D0 00074          MOVL    R0, STATUS                          ;
                                12  00  DA 00077          MTPR    #0, #18                             ; 0471
                                    03  DD 0007A          PUSHL   #3                                  ; 0472
                                64  01  FB 0007C          CALLS   #1, INS$CNVRT_KF_LOCK               ;
                                50 00000000G    8F  D0 0007F          MOVL    #INS$_REMOVED, R0       ; 0474
                                    04  00086          RET                                         ;
                                    05  DD 00087 3$:     PUSHL   #5                                  ; 0481
                                64  01  FB 00089          CALLS   #1, INS$CNVRT_KF_LOCK               ;
                                12  02  DA 0008C          MTPR    #2, #18                             ; 0483
                                    5E  DD 0008F          PUSHL   SP                                  ; 0485
                                    65  DD 00091          PUSHL   INS$GL_KFEADR                       ;
                        0000V   CF  02  FB 00093          CALLS   #2, DETACH_KFE                      ;
                                53  50  D0 00098          MOVL    R0, STATUS                          ;
                                1C  53  E9 0009B          BLBC    STATUS, 5$                          ; 0486
                                    6E  D5 0009E          TSTL    KFD                                 ; 0489
                                    0A  13 000A0          BEQL    4$                                  ;
                                    6E  DD 000A2          PUSHL   KFD                                 ; 0491
                        0000V   CF  01  FB 000A4          CALLS   #1, DEALLOC_PAGED                   ;
                                53  50  D0 000A9          MOVL    R0, STATUS                          ;
                                    7E  D4 000AC 4$:      CLRL    -(SP)                               ; 0496
                                    65  DD 000AE          PUSHL   INS$GL_KFEADR                       ;
                        0000V   CF  02  FB 000B0          CALLS   #2, RETURN_KFE                      ;
                                53  50  D0 000B5          MOVL    R0, STATUS                          ;
                                    65  D4 000B8          CLRL    INS$GL_KFEADR                       ; 0497
                                12  00  DA 000BA 5$:      MTPR    #0, #18                             ; 0500
                                    03  DD 000BD          PUSHL   #3                                  ; 0501
                                64  01  FB 000BF          CALLS   #1, INS$CNVRT_KF_LOCK               ;
                                50  53  D0 000C2          MOVL    STATUS, R0                          ; 0504
                                    04  000C5          RET                                         ; 0505

; Routine Size:  198 bytes,    Routine Base:  $CODE$ + 001C

;  310          0506  1
```

```
;  312          0507  1 %SBTTL 'INS$PURGE';
;  313          0508  1
;  314          0509  1 GLOBAL ROUTINE  INS$PURGE =
;  315          0510  2 BEGIN
;  316          0511  2 !+++
;  317          0512  2 !
;  318          0513  2 !  FUNCTIONAL DESCRIPTION:
;  319          0514  2 !
;  320          0515  2 !       Purge all known file entries that are purgeable.
;  321          0516  2 !       For each that is the last entry for the listhead, delete it
;  322          0517  2 !
;  323          0518  2 !  EXPLICIT INPUT:
;  324          0519  2 !
;  325          0520  2 !       none
;  326          0521  2 !
;  327          0522  2 !  ROUTINE VALUE:
;  328          0523  2 !
;  329          0524  2 !    R0 = return status, low bit set for success, else error status
;  330          0525  2 !
;  331          0526  2 !---
;  332          0527  2 LOCAL
;  333          0528  2     STATUS;
;  334          0529  2
;  335          0530  2 IF .INS$GL_CTLMSK [INS$V_PROCESS] THEN RETURN TRUE;
;  336          0531  2
;  337          0532  2 STATUS = INS$EXECUTE_IN_KRNL_WITH_W_LOCK (INS_PURGE, 0);
;  338          0533  2 RETURN .STATUS;
;  339          0534  1 END;                 ! Global routine INS$PURGE


                                    0000 00000          .ENTRY  INS$PURGE, Save nothing                         ; 0509
                04 00000000G   00   01   E1 00002          BBC     #1, INS$GL_CTLMSK, 1$                       ; 0530
                               50   01   D0 0000A          MOVL    #1, R0                                      ;
                                    04   0000D          RET                                                 ;
                                    7E   D4 0000E 1$:      CLRL    -(SP)                                       ; 0532
                          0000V     CF   9F 00010          PUSHAB  INS_PURGE                                   ;
                   00000000G   00   02   FB 00014          CALLS   #2, INS$EXECUTE_IN_KRNL_WITH_W_LOCK         ;
                                    04   0001B          RET                                                 ; 0534

; Routine Size:  28 bytes,    Routine Base:  $CODE$ + 00E2

;  340          0535  1
```

```
;  342     0536  1 %SBTTL 'INS_PURGE';
;  343     0537  1
;  344     0538  1 ROUTINE  INS_PURGE =
;  345     0539  2 BEGIN
;  346     0540  2 !+++
;  347     0541  2 !
;  348     0542  2 !  FUNCTIONAL DESCRIPTION:
;  349     0543  2 !
;  350     0544  2 !       Purge all Known File entries that are purgeable.
;  351     0545  2 !       For each that is the last entry for the listhead, delete it
;  352     0546  2 !
;  353     0547  2 !  EXPLICIT INPUT:
;  354     0548  2 !
;  355     0549  2 !       none
;  356     0550  2 !
;  357     0551  2 !  IMPLICIT INPUT:
;  358     0552  2 !
;  359     0553  2 !       INS$GL_KFEADR   =       Channel on which the known file image is open
;  360     0554  2 !
;  361     0555  2 !  IMPLICIT OUTPUT:
;  362     0556  2 !
;  363     0557  2 !       INS$GL_KFEADR   =       Address of KFE, will be set to zero
;  364     0558  2 !
;  365     0559  2 !  ROUTINE VALUE:
;  366     0560  2 !
;  367     0561  2 !    R0 = return status, low bit set for success, else error status
;  368     0562  2 !
;  369     0563  2 !---
;  370     0564  2 LOCAL
;  371     0565  2     RET_STATUS,
;  372     0566  2     STATUS;
;  373     0567  2
;  374     0568  2
;  375     0569  2 BIND
;  376     0570  2     KFPB = EXE$GL_KNOWN_FILES : REF BBLOCK;
;  377     0571  2
;  378     0572  2 IF .KFPB EQL 0
;  379     0573  2 THEN
;  380     0574  2     RETURN INS$_NOLIST;
;  381     0575  2
;  382     0576  2 IF .KFPB [KFPB$L_KFDLST] EQL 0
;  383     0577  2 THEN
;  384     0578  2     RETURN INS$_EMPTYLST;
;  385     0579  2
;  386     0580  2
;  387     0581  2 STATUS = INS$CNVRT_KF_LOCK (LCK$K_EXMODE);      ! Convert protected read to exclusive
;  388     0582  2                                                 !  to lock out any image activations
;  389     0583  2 IF NOT .STATUS THEN RETURN .STATUS;
;  390     0584  2
;  391     0585  2 RET_STATUS = PURGE ();
;  392     0586  2
;  393     0587  2 INS$CNVRT_KF_LOCK (LCK$K_PRMODE);       ! Convert exclusive to protected read
;  394     0588  2                                         !  to allow image activations
;  395     0589  2 IF NOT .STATUS THEN RETURN .STATUS;
;  396     0590  2
;  397     0591  2 INS$GL_KFEADR = 0;
;  398     0592  2
```

```
;  399          0593  2 RETURN .RET_STATUS;
;  400          0594  1 END;                ! Global routine INS_PURGE



                                    001C 00000 INS_PURGE:
                                                .WORD   Save R2,R3,R4                           ; 0538
                        54 00000000G   00   9E 00002    MOVAB   INS$CNVRT_KF_LOCK, R4
                        50 00000000G   00   D0 00009    MOVL    KFPB, R0                        ; 0572
                                       08   12 00010    BNEQ    1$
                        50 00000000G   8F   D0 00012    MOVL    #INS$_NOLIST, R0                ; 0574
                                       04   00019    RET
                                       60   D5 0001A 1$: TSTL    (R0)                            ; 0576
                                       08   12 0001C    BNEQ    2$
                        50 00000000G   8F   D0 0001E    MOVL    #INS$_EMPTYLST, R0              ; 0578
                                       04   00025    RET
                                       05   DD 00026 2$: PUSHL   #5                              ; 0581
                              64       01   FB 00028    CALLS   #1, INS$CNVRT_KF_LOCK
                              52       50   D0 0002B    MOVL    R0, STATUS
                              10       52   E9 0002E    BLBC    STATUS, 3$                      ; 0583
                    0000V     CF       00   FB 00031    CALLS   #0, PURGE                       ; 0585
                              53       50   D0 00036    MOVL    R0, RET_STATUS
                                       03   DD 00039    PUSHL   #3                              ; 0587
                              64       01   FB 0003B    CALLS   #1, INS$CNVRT_KF_LOCK
                              04       52   E8 0003E    BLBS    STATUS, 4$                      ; 0589
                              50       52   D0 00041 3$: MOVL    STATUS, R0
                                       04   00044    RET
                           00000000G   00   D4 00045 4$: CLRL    INS$GL_KFEADR                   ; 0591
                              50       53   D0 0004B    MOVL    RET_STATUS, R0                  ; 0593
                                       04   0004E    RET                                     ; 0594

; Routine Size:  79 bytes,    Routine Base:  $CODE$ + 00FE

;  401          0595  1
```

```
;  403          0596  1 %SBTTL 'PURGE';
;  404          0597  1
;  405          0598  1 ROUTINE  PURGE =
;  406          0599  2 BEGIN
;  407          0600  2 !+++
;  408          0601  2 !
;  409          0602  2 !   FUNCTIONAL DESCRIPTION:
;  410          0603  2 !
;  411          0604  2 !        Purge all Known File entries that are purgeable.
;  412          0605  2 !        For each that is the last entry for the listhead, delete it
;  413          0606  2 !
;  414          0607  2 !   EXPLICIT INPUT:
;  415          0608  2 !
;  416          0609  2 !
;  417          0610  2 !---
;  418          0611  2 LOCAL
;  419          0612  2     DEV_DSC : $BBLOCK [DSC$C_S_BLN],
;  420          0613  2     CHAN,
;  421          0614  2     CCB : REF $BBLOCK,
;  422          0615  2     KFD : REF BBLOCK,
;  423          0616  2     KFE : REF BBLOCK,
;  424          0617  2     RET_KFE : REF BBLOCK,
;  425          0618  2     RET_KFD,
;  426          0619  2     STATUS;
;  427          0620  2
;  428          0621  2
;  429          0622  2 BIND
;  430          0623  2     KFPB = EXE$GL_KNOWN_FILES : REF BBLOCK;
;  431          0624  2
;  432          0625  2 KFD = .KFPB [KFPB$L_KFDLST];
;  433          0626  2
;  434          0627  2 !
;  435          0628  2 !   Traverse the list of KFDs and access all its KFEs.
;  436          0629  2 !   The KFD is the header block which contains the Device, directory and
;  437          0630  2 !   file type which several Known File Entries (KFE) share in common.
;  438          0631  2 !
;  439          0632  2 WHILE .KFD NEQ 0 DO
;  440          0633  3     BEGIN
;  441          0634  3     KFE = .KFD [KFD$L_KFELIST];
;  442          0635  3     !
;  443          0636  3     ! Set up device string descriptor for assignment.
;  444          0637  3     !
;  445          0638  3     DEV_DSC [DSC$W_LENGTH] = .KFD [KFD$B_DEVLEN];
;  446          0639  3     DEV_DSC [DSC$A_POINTER] = KFD [KFD$T_DDTSTR];
;  447          0640  3     KFD = .KFD [KFD$L_LINK];            ! Follow link now to next KFD
;  448          0641  3     !
;  449          0642  3     !   DELETE each KFE in the KFD's ordered list of KFEs
;  450          0643  3     !
;  451          0644  3     WHILE .KFE NEQ 0 DO
;  452          0645  4         BEGIN
;  453          0646  4         RET_KFE = .KFE;                 ! KFE to be deleted
;  454          0647  4         KFE = .KFE [KFE$L_KFELINK];     ! Follow link now for next one
;  455          0648  4
;  456          0649  4         IF NOT .RET_KFE [KFE$V_NOPURGE]
;  457          0650  4         THEN
;  458          0651  5             BEGIN
;  459          0652  5             !
```

```
;  460          0653  5          ! Get ready to close the file. Do this now before the data
;  461          0654  5          ! structures get cleaned up at elevated IPL.
;  462          0655  5          !
;  463          0656  5          SYS$ASSIGN (DEV_DSC,CHAN,0,0);
;  464          0657  5          IOC$VERIFYCHAN (.CHAN, CCB);
;  465          0658  5          !
;  466          0659  5          !    Take out write lock and remove entry from list
;  467          0660  5          !
;  468          0661  5          SET_IPL (IPL$_ASTDEL);      ! Block deletion of process so pool is not lost
;  469          0662  5
;  470          0663  5          STATUS = DETACH_KFE (.RET_KFE, RET_KFD);
;  471          0664  5
;  472          0665  5          IF NOT .STATUS
;  473          0666  5          THEN
;  474          0667  6              BEGIN
;  475          0668  6              SET_IPL (0);
;  476          0669  6              RETURN .STATUS;
;  477          0670  5              END;
;  478          0671  5
;  479          0672  5          IF .RET_KFD NEQ 0
;  480          0673  5          THEN
;  481          0674  6              BEGIN
;  482          0675  6              STATUS = DEALLOC_PAGED (.RET_KFD);
;  483          0676  6
;  484          0677  6              IF NOT .STATUS
;  485          0678  6              THEN
;  486          0679  7                  BEGIN
;  487          0680  7                  SET_IPL (0);
;  488          0681  7                  RETURN .STATUS;
;  489          0682  6                  END;
;  490          0683  5              END;
;  491          0684  5
;  492          0685  5
;  493          0686  5                  !    Clean up entry and deallocate it
;  494          0687  5                  !
;  495          0688  5                  STATUS = RETURN_KFE (.RET_KFE, .CCB);
;  496          0689  5                  SET_IPL (0);
;  497          0690  5                  !
;  498          0691  5                  ! Now, prepare for final file closing
;  499          0692  5                  !
;  500          0693  5                  SYS$DASSGN (.CHAN);
;  501          0694  5
;  502          0695  5                  IF NOT .STATUS THEN RETURN .STATUS;
;  503          0696  4                  END;                    ! If it's purgeable
;  504          0697  3              END;                        ! WHILE traversing KFD's ordered KFE list
;  505          0698  2          END;                            ! WHILE traversing KFD list
;  506          0699  2
;  507          0700  2 RETURN TRUE;
;  508          0701  1 END;              ! Global routine PURGE


                                  01FC 00000 PURGE:  .WORD   Save R2,R3,R4,R5,R6,R7,R8                    ; 0598
                              5E          10  C2 00002         SUBL2   #16, SP                             ;
                              50 00000000G  00  D0 00005         MOVL    KFPB, R0                            ; 0625
```

```
                    54              60   D0 0000C          MOVL    (R0), KFD                       ;
                                    54   D5 0000F 1$:      TSTL    KFD                             ; 0632
                                    03   12 00011          BNEQ    2$                              ;
                                  0081   31 00013          BRW     7$                              ;
                08  AE        0E   A4   9B 00016 2$:      MOVZBW  14(KFD), DEV_DSC                ; 0638
                0C  AE        11   A4   9E 0001B          MOVAB   17(R4), DEV_DSC+4               ; 0639
                    54              64   7D 00020          MOVQ    (KFD), KFD                      ; 0640
                                    55   D5 00023 3$:      TSTL    KFE                             ; 0644
                                    E8   13 00025          BEQL    1$                              ;
                    56              55   D0 00027          MOVL    KFE, RET_KFE                    ; 0646
                    55        04    A5   D0 0002A          MOVL    4(KFE), KFE                     ; 0647
                    F1        11    A6   E8 0002E          BLBS    17(RET_KFE), 3$                 ; 0649
                                    7E   7C 00032          CLRQ    -(SP)                           ; 0656
                              08    AE   9F 00034          PUSHAB  CHAN                            ;
                              14    AE   9F 00037          PUSHAB  DEV_DSC                         ;
          00000000G             00       04 FB 0003A      CALLS   #4, SYS$ASSIGN                  ;
                    50              6E   D0 00041          MOVL    CHAN, R0                        ; 0657
                       00000000G    00   16 00044          JSB     IOC$VERIFYCHAN                  ;
                    58              51   D0 0004A          MOVL    R1, R8                          ;
                    12              02   DA 0004D          MTPR    #2, #18                         ; 0661
                              04    AE   9F 00050          PUSHAB  RET_KFD                         ; 0663
                                    56   DD 00053          PUSHL   RET_KFE                         ;
              0000V CF              02   FB 00055          CALLS   #2, DETACH_KFE                  ;
                    57              50   D0 0005A          MOVL    R0, STATUS                      ;
                    13              57   E9 0005D          BLBC    STATUS, 4$                      ; 0665
                              04    AE   D5 00060          TSTL    RET_KFD                         ; 0672
                                    13   13 00063          BEQL    5$                              ;
                              04    AE   DD 00065          PUSHL   RET_KFD                         ; 0675
                0C00V CF              01   FB 00068          CALLS   #1, DEALLOC_PAGED               ;
                    57              50   D0 0006D          MOVL    R0, STATUS                      ;
                    05              57   E8 00070          BLBS    STATUS, 5$                      ; 0677
                    12              00   DA 00073 4$:      MTPR    #0, #18                         ; 0680
                                    1B   11 00076          BRB     6$                              ; 0681
                                0140 8F   BB 00078 5$:      PUSHR   #^M<R6,R8>                      ; 0688
              0000V CF              02   FB 0007C          CALLS   #2, RETURN_KFE                  ;
                    57              50   D0 00081          MOVL    R0, STATUS                      ;
                    12              00   DA 00084          MTPR    #0, #18                         ; 0689
                                    6E   DD 00087          PUSHL   CHAN                            ; 0693
          00000000G             00       01 FB 00089      CALLS   #1, SYS$DASSGN                  ;
                    90              57   E8 00090          BLBS    STATUS, 3$                      ; 0695
                    50              57   D0 00093 6$:      MOVL    STATUS, R0                      ;
                                    04   00096            RET                                     ;
                    50              01   D0 00097 7$:      MOVL    #1, R0                          ; 0700
                                    04   0009A            RET                                     ; 0701

; Routine Size:  155 bytes,    Routine Base:  $CODE$ + 014D

;  509          0702  1
```

```
;  511          0703  1 %SBTTL 'detach_kfe      Remove from Known File List';
;  512          0704  1
;  513          0705  1 ROUTINE  DETACH_KFE (KFE, RET_KFD_ADR) =
;  514          0706  2 BEGIN
;  515          0707  2 !+++
;  516          0708  2 !
;  517          0709  2 !  FUNCTIONAL DESCRIPTION:
;  518          0710  2 !
;  519          0711  2 !       Delete a Known File entry.
;  520          0712  2 !       If this was the last entry for the listhead, delete it
;  521          0713  2 !
;  522          0714  2 !  EXPLICIT INPUT:
;  523          0715  2 !
;  524          0716  2 !       none
;  525          0717  2 !
;  526          0718  2 !  ROUTINE VALUE:
;  527          0719  2 !
;  528          0720  2 !    R0 = return status, low bit set for success, else error status
;  529          0721  2 !
;  530          0722  2 !---
;  531          0723  2
;  532          0724  2 LOCAL
;  533          0725  2     CMPHSHKFE : REF BBLOCK,      ! KFE from hash table list to compare with
;  534          0726  2     CMPKFE : REF BBLOCK,         ! KFE from KFD to compare with
;  535          0727  2     HSHTAB : REF VECTOR [,LONG],! Hash table
;  536          0728  2     PRVHSHKFE : REF BBLOCK,      ! Previous KFE from hash table
;  537          0729  2     PRVKFE : REF BBLOCK,         ! Previous KFE from KFD list
;  538          0730  2     STATUS;
;  539          0731  2
;  540          0732  2 MAP
;  541          0733  2     KFE : REF BBLOCK;
;  542          0734  2
;  543          0735  2 BIND
;  544          0736  2     KFPB = EXE$GL_KNOWN_FILES : REF BBLOCK,
;  545          0737  2     RET_KFD = .RET_KFD_ADR;
;  546          0738  2
;  547          0739  2 IF .KFPB EQL 0
;  548          0740  2 THEN
;  549          0741  3     BEGIN
;  550          0742  3     INS$L_INTRNLERR = EMPTYKFPB_ERR_DSC;
;  551          0743  3     RETURN INS$_INTRNLERR;
;  552          0744  2     END;
;  553          0745  2
;  554          0746  2 HSHTAB = .KFPB [KFPB$L_KFEHSHTAB];
;  555          0747  2
;  556          0748  2 RET_KFD = 0;                                  ! Anything other than zero indicates this was the last
;  557          0749  2                                              ! KFE in the KFD and the KFD should be deallocated
;  558          0750  2
;  559          0751  2 PRVHSHKFE = HSHTAB [.KFE [KFE$B_HSHIDX]];     ! Previous KFE
;  560          0752  2 CMPHSHKFE = .HSHTAB [.KFE [KFE$B_HSHIDX]];    ! Comparison KFE
;  561          0753  2 WHILE .CMPHSHKFE NEQ 0 DO                    ! Single linked list ending in zero
;  562          0754  3     BEGIN
;  563          0755  3     IF .KFE EQL .CMPHSHKFE                   ! Same entry block?
;  564          0756  3     THEN
;  565          0757  4         BEGIN
;  566          0758  4         LOCAL
;  567          0759  4             KFD : REF BBLOCK;
```

```
;  568     0760  4
;  569     0761  4          PRVHSHKFE [KFE$L_HSHLNK] = .KFE [KFE$L_HSHLNK]; ! Remove it
;  570     0762  4          KFE [KFE$L_HSHLNK] = 0;
;  571     0763  4          PRVHSHKFE = 0;  ! Mark that it was found
;  572     0764  4          CMPHSHKFE = 0;  ! Terminate traversal
;  573     0765  4
;  574     0766  4          KFD = .KFE [KFE$L_KFD];
;  575     0767  4
;  576     0768  4          !
;  577     0769  4          !  Remove KFE from the ordered singly linked list starting in the
;  578     0770  4          !  KFD.
;  579     0771  4          !
;  580     0772  4          PRVKFE = .KFD;
;  581     0773  4          CMPKFE = .KFD [KFD$L_KFELIST];
;  582     0774  4
;  583     0775  4          WHILE .CMPKFE NEQ 0 DO
;  584     0776  5              BEGIN
;  585     0777  5              IF .CMPKFE EQL .KFE
;  586     0778  5              THEN
;  587     0779  6                  BEGIN
;  588     0780  6                  PRVKFE [KFE$L_KFELINK] = .KFE [KFE$L_KFELINK];  ! Link around it.
;  589     0781  6                  KFE [KFE$L_KFELINK] = 0;                        ! Clean up
;  590     0782  6                  PRVKFE = 0;                                     ! mark successful traversal
;  591     0783  6                  CMPKFE = 0;                                     ! terminate traversal
;  592     0784  6                  END
;  593     0785  5              ELSE
;  594     0786  6                  BEGIN
;  595     0787  6                  PRVKFE = .CMPKFE;
;  596     0788  6                  CMPKFE = .CMPKFE [KFE$L_KFELINK];
;  597     0789  5                  END;
;  598     0790  4              END;                    ! While traversing ordered list of KFE's
;  599     0791  4
;  600     0792  4          !
;  601     0793  4          !  Traversed whole list and didn't find it, something is broken.
;  602     0794  4          !
;  603     0795  4          IF .PRVKFE NEQ 0
;  604     0796  4          THEN
;  605     0797  5              BEGIN
;  606     0798  5              INS$L_INTRNLERR = KFDKFE_ERR_DSC;
;  607     0799  5              RETURN INS$_INTRNLERR;
;  608     0800  4              END;
;  609     0801  4
;  610     0802  4          KFD [KFD$W_REFCNT] = .KFD [KFD$W_REFCNT] - 1;
;  611     0803  4
;  612     0804  4          !
;  613     0805  4          !  If this was the only KFE off it's KFD, then disconnect the
;  614     0806  4          !  KFD.
;  615     0807  4          !
;  616     0808  4          IF .KFD [KFD$W_REFCNT] EQL 0
;  617     0809  4          THEN
;  618     0810  5              BEGIN
;  619     0811  5              LOCAL
;  620     0812  5                  PRVKFD : REF BBLOCK,
;  621     0813  5                  CMPKFD : REF BBLOCK;
;  622     0814  5
;  623     0815  5              RET_KFD = .KFD;
;  624     0816  5              PRVKFD = KFPB [KFPB$L_KFDLST];
```

```
;  625          0817  5              CMPKFD = .PRVKFD;
;  626          0818  5              WHILE .CMPKFD NEQ 0 DO
;  627          0819  6                  BEGIN
;  628          0820  6                  IF .KFD EQL .CMPKFD     ! This is it, disconnect it
;  629          0821  6                  THEN
;  630          0822  7                      BEGIN
;  631          0823  7                      PRVKFD [KFD$L_LINK] = .KFD [KFD$L_LINK];
;  632          0824  7                      KFD [KFD$L_LINK] = 0;
;  633          0825  7                      CMPKFD = 0;
;  634          0826  7                      PRVKFD = 0;
;  635          0827  7                      END
;  636          0828  6                  ELSE
;  637          0829  7                      BEGIN
;  638          0830  7                      PRVKFD = .CMPKFD;
;  639          0831  7                      CMPKFD = .CMPKFD [KFD$L_LINK];
;  640          0832  6                      END;
;  641          0833  5                  END;    ! While traversing KFD list
;  642          0834  5
;  643          0835  5              IF .PRVKFD NEQ 0
;  644          0836  5              THEN
;  645          0837  6                  BEGIN
;  646          0838  6                  INS$L_INTRNLERR = KFD_ERR_DSC;
;  647          0839  6                  RETURN INS$_INTRNLERR;
;  648          0840  5                  END;
;  649          0841  5
;  650          0842  5              KFPB [KFPB$W_KFDLSTCNT] = .KFPB [KFPB$W_KFDLSTCNT] - 1;
;  651          0843  4              END;        ! Then remove KFD
;  652          0844  4          END
;  653          0845  3      ELSE                ! Same name, different file, keep traversing
;  654          0846  4          BEGIN
;  655          0847  4          PRVHSHKFE = .CMPHSHKFE;
;  656          0848  4          CMPHSHKFE = .CMPHSHKFE [KFE$L_HSHLNK];
;  657          0849  3          END;
;  658          0850  2      END;                    ! WHILE traversing hash bucket list
;  659          0851  2
;  660          0852  2 !
;  661          0853  2 !       Have traversed whole list.
;  662          0854  2 !
;  663          0855  2 IF .PRVHSHKFE NEQ 0
;  664          0856  2 THEN
;  665          0857  3     BEGIN
;  666          0858  3     INS$L_INTRNLERR = HSHKFE_ERR_DSC;
;  667          0859  3     RETURN INS$_INTRNLERR;      ! It wasn't on the list it was supposed to be on
;  668          0860  2     END;
;  669          0861  2
;  670          0862  2 KFPB [KFPB$W_KFDLSTCNT] = .KFPB [KFPB$W_KFDLSTCNT] - 1;
;  671          0863  2
;  672          0864  2 RETURN TRUE;
;  673          0865  1 END;                     ! routine DETACH_KFE


                                        03FC 00000 DETACH_KFE:
                                                    .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9                ; 0705
                              59 00000000G   00  9E 00002   MOVAB   INS$L_INTRNLERR, R9                 ;
```

```
                                52 00000000G   00  D0 00009          MOVL    KFPB, R2                                        ; 0739
                                               07  12 00010          BNEQ    1$
                                69      0000'  CF  9E 00012          MOVAB   EMPTYKFPB_ERR_DSC, INS$L_INTRNLERR              ; 0742
                                               5C  11 00017          BRB     7$                                              ; 0743
                                53        04   A2  D0 00019 1$:      MOVL    4(R2), HSHTAB                                   ; 0746
                                          08   BC  D4 0001D          CLRL    @RET_KFD_ADR                                    ; 0748
                                51        04   AC  D0 00020          MOVL    KFE, R1                                         ; 0751
                                50        0B   A1  9A 00024          MOVZBL  11(R1), R0
                                58           6340  DE 00028          MOVAL   (HSHTAB)[R0], PRVHSHKFE
                                57           6340  D0 0002C          MOVL    (HSHTAB)[R0], CMPHSHKFE                         ; 0752
                                               57  D5 00030 2$:      TSTL    CMPHSHKFE                                       ; 0753
                                               03  12 00032          BNEQ    3$
                                             0081  31 00034          BRW     15$
                                57               51  D1 00037 3$:      CMPL    R1, CMPHSHKFE                               ; 0755
                                               74  12 0003A          BNEQ    14$
                                68               61  D0 0003C          MOVL    (R1), (PRVHSHKFE)                           ; 0761
                                               61  D4 0003F          CLRL    (R1)                                            ; 0762
                                               57  7C 00041          CLRQ    CMPHSHKFE                                       ; 0764
                                50        0C   A1  D0 00043          MOVL    12(R1), KFD                                     ; 0766
                                56             50  D0 00047          MOVL    KFD, PRVKFE                                     ; 0772
                                55        04   A0  D0 0004A          MOVL    4(KFD), CMPKFE                                  ; 0773
                                               1C  13 0004E 4$.      BEQL    6$                                              ; 0775
                                51             55  D1 00050          CMPL    CMPKFE, R1                                      ; 0777
                                               0E  12 00053          BNEQ    5$
                          04    A6        04   A1  D0 00055          MOVL    4(R1), 4(PRVKFE)                                ; 0780
                                          04   A1  D4 0005A          CLRL    4(R1)                                           ; 0781
                                               56  D4 0005D          CLRL    PRVKFE                                          ; 0782
                                               55  D4 0005F          CLRL    CMPKFE                                          ; 0783
                                               EB  11 00061          BRB     4$                                              ; 0777
                                56             55  D0 00063 5$:      MOVL    CMPKFE, PRVKFE                                  ; 0787
                                55        04   A5  D0 00066          MOVL    4(CMPKFE), CMPKFE                               ; 0788
                                               E2  11 0006A          BRB     4$                                              ; 0775
                                               56  D5 0006C 6$:      TSTL    PRVKFE                                          ; 0795
                                               07  13 0006E          BEQL    8$
                                69      0000'  CF  9E 00070          MOVAB   KFDKFE_ERR_DSC, INS$L_INTRNLERR                 ; 0798
                                               4A  11 00075 7$:      BRB     16$                                             ; 0799
                                          0C   A0  B7 00077 8$:      DECW    12(KFD)                                         ; 0802
                                               B4  12 0007A          BNEQ    2$                                              ; 0808
                          08    BC             50  D0 0007C          MOVL    KFD, @RET_KFD_ADR                               ; 0815
                                54             52  D0 00080          MOVL    R2, PRVKFD                                      ; 0816
                                53             54  D0 00083          MOVL    PRVKFD, CMPKFD                                  ; 0817
                                               53  D5 00086 9$:      TSTL    CMPKFD                                          ; 0818
                                               16  13 00088          BEQL    11$
                                5?             50  D1 0008A          CMPL    KFD, CMPKFD                                     ; 0820
                                               09  12 0008D          BNEQ    10$
                                64             60  D0 0008F          MOVL    (KFD), (PRVKFD)                                 ; 0823
                                               60  D4 00092          CLRL    (KFD)                                           ; 0824
                                               53  7C 00094          CLRQ    CMPKFD                                          ; 0825
                                               EE  11 00096          BRB     9$                                              ; 0820
                                54             53  D0 00098 10$:     MOVL    CMPKFD, PRVKFD                                  ; 0830
                                53             63  D0 0009B          MOVL    (CMPKFD), CMPKFD                                ; 0831
                                               E6  11 0009E          BRB     9$                                              ; 0818
                                               54  D5 000A0 11$:     TSTL    PRVKFD                                          ; 0835
                                               07  13 000A2          BEQL    12$
                                69      0000'  CF  9E 000A4          MOVAB   KFD_ERR_DSC, INS$L_INTRNLERR                    ; 0838
                                               16  11 000A9          BRB     16$                                             ; 0839
                                          0C   A2  B7 000AB 12$:     DECW    12(R2)                                          ; 0842
```

```
                                 80  11 000AE 13$:    BRB     2$                              ; 0755
                          58     57  D0 000B0 14$:    MOVL    CMPHSHKFE, PRVHSHKFE            ; 0847
                          57     67  D0 000B3         MOVL    (CMPHSHKFE), CMPHSHKFE          ; 0848
                                 F6  11 000B6         BRB     13$                             ; 0753
                                 58  D5 000B8 15$:    TSTL    PRVHSHKFE                       ; 0855
                                 0D  13 000BA         BEQL    17$                             ;
                          69  0000'  CF  9E 000BC      MOVAB   HSHKFE_ERR_DSC, INS$L_INTRNLERR ; 0858
                          50 00000000G  8F  D0 000C1 16$:    MOVL    #INS$_INTRNLERR, R0     ; 0859
                                 04 000C8         RET                                     ;
                             0C  A2  B7 000C9 17$:    DECW    12(R2)                          ; 0862
                          50     01  D0 000CC         MOVL    #1, R0                          ; 0864
                                 04 000CF         RET                                     ; 0865

; Routine Size:  208 bytes,    Routine Base:  $CODE$ + 01E8

;  674          0866  1
```

```
;  676          0867  1 %SBTTL 'return_kfe      Cleanup and deallocate entry';
;  677          0868  1
;  678          0869  1 ROUTINE  RETURN_KFE (KFE,CCB) =
;  679          0870  2 BEGIN
;  680          0871  2 !+++
;  681          0872  2 !
;  682          0873  2 !  FUNCTIONAL DESCRIPTION:
;  683          0874  2 !
;  684          0875  2 !       Deallocate a Known File entry which has been removed from the list.
;  685          0876  2 !       If the file was installed /OPEN, take steps which will allow the
;  686          0877  2 !       file to be closed later.
;  687          0878  2 !
;  688          0879  2 !  EXPLICIT INPUT:
;  689          0880  2 !
;  690          0881  2 !       none
;  691          0882  2 !
;  692          0883  2 !  IMPLICIT INPUT:
;  693          0884  2 !
;  694          0885  2 !       KFE             Address of known file entry block to be returned
;  695          0886  2 !       CCB             Address of channel control block
;  696          0887  2 !
;  697          0888  2 !  ROUTINE VALUE:
;  698          0889  2 !
;  699          0890  2 !    R0 = return status, low bit set for success, else error status
;  700          0891  2 !
;  701          0892  2 !---
;  702          0893  2
;  703          0894  2 LOCAL
;  704          0895  2     PTR,
;  705          0896  2     WCB : REF BBLOCK,
;  706          0897  2     STATUS;
;  707          0898  2
;  708          0899  2 MAP
;  709          0900  2     CCB : REF $BBLOCK,
;  710          0901  2     KFE : REF BBLOCK;
;  711          0902  2
;  712          0903  2 BIND
;  713          0904  2     SUFFIX = UPLIT (%ASCII '_001') : VECTOR [,BYTE];
;  714          0905  2
;  715          0906  2 IF .KFE [KFE$V_HDRRES]
;  716          0907  2 THEN
;  717          0908  3     BEGIN
;  718          0909  3     BIND
;  719          0910  3         KFRH = .KFE [KFE$L_IMGHDR] - KFRH$C_LENGTH;
;  720          0911  3
;  721          0912  3     IF .KFE [KFE$L_IMGHDR] EQL 0
;  722          0913  3     THEN
;  723          0914  4         BEGIN
;  724          0915  4         INS$L_INTRNLERR = IMGHDR_ERR_DSC;
;  725          0916  4         RETURN INS$_INTRNLERR;
;  726          0917  3         END;
;  727          0918  3
;  728          0919  3     STATUS = DEALLOC_PAGED (KFRH);
;  729          0920  2     END;
;  730          0921  2
;  731          0922  2 !
;  732          0923  2 !   Delete any global sections created if this was installed /SHARE
```

```
;  733          0924  2 !
;  734          0925  2 IF .KFE [KFE$V_SHARED]
;  735          0926  2 THEN
;  736          0927  3     BEGIN
;  737          0928  3     LOCAL
;  738          0929  3         GBLSECNAM_DSC : BBLOCK [DSC$C_S_BLN],
;  739          0930  3         GBLSECNAM : BBLOCK [INS$C_GBLNAMLEN];
;  740          0931  3
;  741          0932  3     !
;  742          0933  3     !   Initialize
;  743          0934  3     !
;  744          0935  3     GBLSECNAM_DSC = 0;
;  745          0936  3     GBLSECNAM_DSC [DSC$A_POINTER] = GBLSECNAM;
;  746          0937  3     CH$FILL (0, INS$C_GBLNAMLEN, GBLSECNAM);
;  747          0938  3     GBLSECNAM_DSC [DSC$W_LENGTH] = .KFE [KFE$B_FILNAMLEN] + 4;
;  748          0939  3     PTR = CH$MOVE(.KFE [KFE$B_FILNAMLEN], KFE [KFE$T_FILNAM], GBLSECNAM);
;  749          0940  3     CH$MOVE(4, SUFFIX, .PTR);
;  750          0941  3
;  751          0942  3     !
;  752          0943  3     !   At this point, we convert the match control to be 'MATEQU'. This
;  753          0944  3     !   ensures that we only delete global sections that are likely to
;  754          0945  3     !   have been created at the time this image was installed. This avoids
;  755          0946  3     !   the problem where a newer copy of the global section set with, most
;  756          0947  3     !   likely, a greater minor ID from being deleted instead if the match
;  757          0948  3     !   control in the KFE happened to be 'MATLEQ', as is typical.
;  758          0949  3     !
;  759          0950  3     !   For instance, if the shareable image is installed twice (with
;  760          0951  3     !   different KFDs, of course) and the global section ident for the
;  761          0952  3     !   second image has a larger minor ID than the first, then two
;  762          0953  3     !   different sets of global sections will be created. Now, if the
;  763          0954  3     !   match control is set, as is typical, to be 'MATLEQ', this means
;  764          0955  3     !   that not only will the second set of global sections be referenced
;  765          0956  3     !   for both images during image activation, but should either image
;  766          0957  3     !   be deleted, the second set of global section will also be deleted!
;  767          0958  3     !   This is incorrect in the case of the first image being deleted because
;  768          0959  3     !   the first set of global sections had been created just for that image
;  769          0960  3     !   and the second image may not be able to work with the first set of
;  770          0961  3     !   global sections.
;  771          0962  3     !
;  772          0963  3     !   To make a long story short, by converting the match control to 'MATEQU',
;  773          0964  3     !   we ensure deletion of the correct set of global sections.
;  774          0965  3
;  775          0966  3     KFE [KFE$B_MATCHCTL] = ISD$K_MATEQU;
;  776          0967  3
;  777          0968  3     !
;  778          0969  3     !   Delete all the global sections
;  779          0970  3     !
;  780          0971  3     INCR I FROM 1 TO .KFE [KFE$W_GBLSECCNT] DO
;  781          0972  4         BEGIN
;  782        P 0973  4         STATUS = $DGBLSC (
;  783        P 0974  4             FLAGS = SEC$M_SYSGBL,              ! Deleting a system global section
;  784        P 0975  4             GSDNAM = GBLSECNAM_DSC,            ! Global section name
;  785        P 0976  4             IDENT = KFE [KFE$B_MATCHCTL]       ! Address of match control and ident quadword
;  786          0977  4                     );
;  787          0978  4         INS$BLD_GBLSECNAM (GBLSECNAM_DSC);
;  788          0979  3         END;                                   ! For as many global sections as were created
;  789          0980  3
```

```
;  790          0981  2      END;                    ! Delete global sections
;  791          0982  2
;  792          0983  2 IF .KFE [KFE$V_OPEN]
;  793          0984  2 THEN
;  794          0985  2     IF .CCB EQL 0
;  795          0986  2     THEN
;  796          0987  3         BEGIN
;  797          0988  3         WCB = .KFE [KFE$L_WCB];
;  798          0989  3         WCB [WCB$W_REFCNT] = .WCB [WCB$W_REFCNT] - 1;    ! Allow file to be closed
;  799          0990  3         END
;  800          0991  2     ELSE
;  801          0992  2         !
;  802          0993  2         ! Jam the WCB address into the CCB so that the file can be closed later.
;  803          0994  2         !
;  804          0995  2         CCB [CCB$L_WIND] = .KFE [KFE$L_WCB];
;  805          0996  2
;  806          0997  2
;  807          0998  2 IF .INS$GL_CTLMSK [INS$V_REPLACE]
;  808          0999  2 THEN
;  809          1000  2     !
;  810          1001  2     !   Preserve attributes so they can be duplicated on a REPLACE
;  811          1002  2     !
;  812          1003  3     BEGIN
;  813          1004  3     INS$GL_REPLACE_MSK [INS$V_OPEN] = .KFE [KFE$V_OPEN];
;  814          1005  3     INS$GL_REPLACE_MSK [INS$V_SHARED] = .KFE [KFE$V_SHARED];
;  815          1006  3     INS$GL_REPLACE_MSK [INS$V_PRIV] = .KFE [KFE$V_PROCPRIV];
;  816          1007  3     CH$MOVE (8, KFE [KFE$Q_PROCPRIV], INS$GQ_KFEPRIVS);
;  817          1008  3     INS$GL_REPLACE_MSK [INS$V_NOPURGE] = .KFE [KFE$V_NOPURGE];
;  818          1009  3     INS$GL_REPLACE_MSK [INS$V_ACCOUNT] = .KFE [KFE$V_ACCOUNT];
;  819          1010  3     INS$GL_REPLACE_MSK [INS$V_HDRRES] = .KFE [KFE$V_HDRRES];
;  820          1011  3     INS$GL_REPLACE_MSK [INS$V_PROTECT] = .KFE [KFE$V_PROTECT];
;  821          1012  3     INS$GL_REPLACE_MSK [INS$V_WRITABLE] = .KFE [KFE$V_WRITEABLE];
;  822          1013  3     INS$GL_REPLACE_MSK [INS$V_EXEONLY] = .KFE [KFE$V_EXEONLY];
;  823          1014  2     END;
;  824          1015  2
;  825          1016  2 STATUS = DEALLOC_PAGED (.KFE);
;  826          1017  2
;  827          1018  2 RETURN TRUE;
;  828          1019  1 END;             ! routine RETURN_KFE


                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

                    31  30  30  5F  000D8 P.AAK: .ASCII  \_001\                                    ;

                                        SUFFIX=         P.AAK
                                                .EXTRN  SYS$DGBLSC

                                                .PSECT  $CODE$,NOWRT,2

                            03FC 00000 RETURN_KFE:
                                                .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9            ; 0869
                59 00000000G    00  9E 00002    MOVAB   INS$GL_REPLACE_MSK, R9                  ;
                5E              34  C2 00009    SUBL2   #52, SP                                 ;
                56          04  AC  D0 0000C    MOVL    KFE, R6                                 ; 0906
                57          10  A6  9E 00010    MOVAB   16(R6), R7                              ;
```

```
                 25              67              04  E1 00014          BBC     #4, (R7), 2$                                    ;
                 50        1C    A6              0C  C3 00018          SUBL3   #12, 28(R6), R0                                  ; 0910
                                         1C      A6  D5 0001D          TSTL    28(R6)                                          ; 0912
                                                 11  12 00020          BNEQ    1$                                              ;
                    00000000G    00      0000'   CF  9E 00022          MOVAB   IMGHDR_ERR_DSC, INS$L_INTRNLERR                 ; 0915
                                 50 00000000G    8F  D0 0002B          MOVL    #INS$_INTRNLERR, R0                             ; 0916
                                                 04  00032          RET                                                     ;
                                                 50  DD 00033 1$:     PUSHL   R0                                              ; 0919
                          0000V  CF              01  FB 00035          CALLS   #1, DEALLOC_PAGED                               ;
                                 58              50  D0 0003A          MOVL    R0, STATUS                                      ;
                 53              67              05  E1 0003D 2$:     BBC     #5, (R7), 5$                                    ; 0925
                                         2C      AE  D4 00041          CLRL    GBLSECNAM_DSC                                   ; 0935
                              30 AE              6E  9E 00044          MOVAB   GBLSECNAM, GBLSECNAM_DSC+4                      ; 0936
              2B                 00              6E  2C 00048          MOVC5   #0, (SP), #0, #43, GBLSECNAM                    ; 0937
                                                 6E      0004D
                              2C AE      36      A6  9B 0004E          MOVZBW  54(R6), GBLSECNAM_DSC                           ; 0938
                              2C AE              04  A0 00053          ADDW2   #4, GBLSECNAM_DSC                               ;
                                 50      36      A6  9A 00057          MOVZBL  54(R6), R0                                      ; 0939
                 6E              37      A6      50  28 0005B          MOVC3   R0, 55(R6), GBLSECNAM                           ;
                                 63      0000'   CF  D0 00060          MOVL    SUFFIX, (PTR)                                   ; 0940
                              28 A6              01  90 00065          MOVB    #1, 40(R6)                                      ; 0966
                                 53      12      A6  3C 00069          MOVZWL  18(R6), R3                                      ; 0971
                                                 52  D4 0006D          CLRL    I                                               ;
                                                 1F  11 0006F          BRB     4$                                              ;
                                         28      A6  9F 00071 3$:     PUSHAB  40(R6)                                          ; 0977
                                         30      AE  9F 00074          PUSHAB  GBLSECNAM_DSC                                   ;
                                 7E      8000    8F  3C 00077          MOVZWL  #32768, -(SP)                                   ;
                    00000000G    00              03  FB 0007C          CALLS   #3, SYS$DGBLSC                                  ;
                                 58              50  D0 00083          MOVL    R0, STATUS                                      ;
                                         2C      AE  9F 00086          PUSHAB  GBLSECNAM_DSC                                   ; 0978
                    00000000G    00              01  FB 00089          CALLS   #1, INS$BLD_GBLSECNAM                           ;
                 DD              52              53  F3 00090 4$:     AOBLEQ  R3, I, 3$                                       ; 0971
                 14              67              03  E1 00094 5$:     BBC     #3, (R7), 7$                                    ; 0983
                                 51      08      AC  D0 00098          MOVL    CCB, R1                                         ; 0985
                                                 09  12 0009C          BNEQ    6$                                              ;
                                 50      18      A6  D0 0009E          MOVL    24(R6), WCB                                     ; 0988
                                         0E      A0  B7 000A2          DECW    14(WCB)                                         ; 0989
                                                 05  11 000A5          BRB     7$                                              ; 0985
                              04 A1      18      A6  D0 000A7 6$:     MOVL    24(R6), 4(R1)                                   ; 0995
                 63 00000000G    00              05  E1 000AC 7$:     BBC     #5, INS$GL_CTLMSK, 8$                           ; 0998
              50                 67              01  03  EF 000B4          EXTZV   #3, #1, (R7), R0                                ; 1004
           01 A9                 01              05  50  F0 000B9          INSV    R0, #5, #1, INS$GL_REPLACE_MSK+1                ;
              50                 67              01  05  EF 000BF          EXTZV   #5, #1, (R7), R0                                ; 1005
           02 A9                 01              01  50  F0 000C4          INSV    R0, #1, #1, INS$GL_REPLACE_MSK+2                ;
              50                 67              01  02  EF 000CA          EXTZV   #2, #1, (R7), R0                                ; 1006
           01 A9                 01              07  50  F0 000CF          INSV    R0, #7, #1, INS$GL_REPLACE_MSK+1                ;
                 00000000G    00      20      A6  08  28 000D5          MOVC3   #8, 32(R6), INS$GQ_KFEPRIVS                     ; 1007
           02 A9                 01              03  01  A7 F0 000DE          INSV    1(R7), #3, #1, INS$GL_REPLACE_MSK+2             ; 1008
              50                 67              01  09  EF 000E5          EXTZV   #9, #1, (R7), R0                                ; 1009
           02 A9                 01              04  50  F0 000EA          INSV    R0, #4, #1, INS$GL_REPLACE_MSK+2                ;
              50                 67              01  04  EF 000F0          EXTZV   #4, #1, (R7), R0                                ; 1010
           01 A9                 01              06  50  F0 000F5          INSV    R0, #6, #1, INS$GL_REPLACE_MSK+1                ;
           02 A9                 01              00  67  F0 000FB          INSV    (R7), #0, #1, INS$GL_REPLACE_MSK+2              ; 1011
              50                 67              01  0A  EF 00101          EXTZV   #10, #1, (R7), R0                               ; 1012
           02 A9                 01              02  50  F0 00106          INSV    R0, #2, #1, INS$GL_REPLACE_MSK+2                ;
              50                 67              01  0B  EF 0010C          EXTZV   #11, #1, (R7), R0                               ; 1013
           02 A9                 01              05  50  F0 00111          INSV    R0, #5, #1, INS$GL_REPLACE_MSK+2                ;
```

```
                                    56  DD 00117 8$:    PUSHL   R6                                      ; 1016
                          0000V CF  01  FB 00119        CALLS   #1, DEALLOC_PAGED                       ;
                             58     50  D0 0011E        MOVL    R0, STATUS                              ;
                             50     01  D0 00121        MOVL    #1, R0                                  ; 1018
                                    04  00124        RET                                             ; 1019

; Routine Size:  293 bytes,    Routine Base:  $CODE$ + 02B8

;  829          1020  1
```

```
;   831          1021  1 %SBTTL 'INS$FIND_KFE    Locate KFE given name and hash bucket';
;   832          1022  1
;   833          1023  1 GLOBAL ROUTINE  INS$FIND_KFE (HSHIDX, NAM) =
;   834          1024  2 BEGIN
;   835          1025  2 !+++
;   836          1026  2 !
;   837          1027  2 !   FUNCTIONAL DESCRIPTION:
;   838          1028  2 !
;   839          1029  2 !        This routine locates a KFE (if one exists) for the specified
;   840          1030  2 !        filespec.
;   841          1031  2 !
;   842          1032  2 !   EXPLICIT INPUT:
;   843          1033  2 !
;   844          1034  2 !        none
;   845          1035  2 !
;   846          1036  2 !   ROUTINE VALUE:
;   847          1037  2 !
;   848          1038  2 !     R0 = 0 if no such known file exists
;   849          1039  2 !                else, KFE address
;   850          1040  2 !
;   851          1041  2 !---
;   852          1042  2
;   853          1043  2 LOCAL
;   854          1044  2     CMPKFE : REF BBLOCK,
;   855          1045  2     HSHTAB : REF VECTOR [,LONG],
;   856          1046  2     PRVKFE : REF BBLOCK,
;   857          1047  2     STATUS;
;   858          1048  2
;   859          1049  2 MAP
;   860          1050  2     NAM : REF BBLOCK;
;   861          1051  2
;   862          1052  2 BIND
;   863          1053  2     KFPB = EXE$GL_KNOWN_FILES : REF BBLOCK;
;   864          1054  2
;   865          1055  2 IF .KFPB EQL 0 THEN RETURN 0;
;   866          1056  2
;   867          1057  2 HSHTAB = .KFPB [KFPB$L_KFEHSHTAB];
;   868          1058  2 IF .HSHTAB [.HSHIDX] EQL 0 THEN RETURN 0;
;   869          1059  2
;   870          1060  2 PRVKFE = HSHTAB [.HSHIDX];                ! Previous KFE
;   871          1061  2 CMPKFE = .HSHTAB [.HSHIDX];                ! Comparison KFE
;   872          1062  2 WHILE .CMPKFE NEQ 0 DO                     ! Single linked list ending in zero
;   873          1063  3     BEGIN
;   874          1064  3     CASE CH$COMPARE (.NAM [NAM$B_NAME], .NAM [NAM$L_NAME],
;   875          1065  3                      .CMPKFE [KFE$B_FILNAMLEN], CMPKFE [KFE$T_FILNAM], %C' ')
;   876          1066  3     FROM -1 TO 1 OF                 ! Either less than, equal to, or greater than
;   877          1067  3         SET
;   878          1068  3
;   879          1069  3         [-1]:   ! Less than, therefore its not in the list, ERROR
;   880          1070  4             BEGIN
;   881          1071  4             RETURN 0;
;   882          1072  3             END;
;   883          1073  3
;   884          1074  3         [0] :   ! Same file name, check if KFD is the same
;   885          1075  4             BEGIN
;   886          1076  4             LOCAL
;   887          1077  4                 DDTSTR : BBLOCK [NAM$C_MAXRSS],
```

```
;  888          1078  4                  DDT_DSC : $BBLOCK [DSC$C_S_BLN],
;  889          1079  4                  KFD : REF BBLOCK;
;  890          1080  4
;  891          1081  4              KFD = .CMPKFE [KFE$L_KFD];
;  892          1082  4              !
;  893          1083  4              !   Build an ASCII string of the concatenated Device, Directory
;  894          1084  4              !   Type strings.
;  895          1085  4              !
;  896          1086  4              DDT_DSC [DSC$W_LENGTH] = .NAM [NAM$B_DEV] + .NAM [NAM$B_DIR] +
;  897          1087  4                          .NAM [NAM$B_TYPE];      ! Length of DDT string
;  898          1088  4
;  899          1089  4              DDT_DSC [DSC$A_POINTER] = DDTSTR;   ! DDT string address
;  900          1090  4
;  901          1091  4              DDT_DSC [DSC$A_POINTER] = CH$MOVE (.NAM [NAM$B_DEV], .NAM [NAM$L_DEV],
;  902          1092  4                                                 .DDT_DSC [DSC$A_POINTER]);
;  903          1093  4              DDT_DSC [DSC$A_POINTER] = CH$MOVE (.NAM [NAM$B_DIR], .NAM [NAM$L_DIR],
;  904          1094  4                                                 .DDT_DSC [DSC$A_POINTER]);
;  905          1095  4              DDT_DSC [DSC$A_POINTER] = CH$MOVE (.NAM [NAM$B_TYPE], .NAM [NAM$L_TYPE],
;  906          1096  4                                                 .DDT_DSC [DSC$A_POINTER]);
;  907          1097  4
;  908          1098  4              DDT_DSC [DSC$A_POINTER] = DDTSTR;   ! DDT string address
;  909          1099  4
;  910          1100  4              INS$CVT_DIR (DDT_DSC);                      ! Convert and compress brackets
;  911          1101  4
;  912          1102  4              IF CH$COMPARE (.DDT_DSC [DSC$W_LENGTH], DDTSTR,
;  913          1103  4                  .KFD [KFD$B_DDTSTRLEN], KFD [KFD$T_DDTSTR], %C' ')
;  914          1104  4                 EQL 0
;  915          1105  4              THEN
;  916          1106  4                  RETURN .CMPKFE;         ! They were the same
;  917          1107  4
;  918          1108  4                  !
;  919          1109  4                  !    Same file name, different file, keep traversing
;  920          1110  4                  !
;  921          1111  4                  PRVKFE = .CMPKFE;
;  922          1112  4                  CMPKFE = .CMPKFE [KFE$L_HSHLNK];
;  923          1113  3                  END;
;  924          1114  3
;  925          1115  3              [1] :   ! Greater than, keep looking
;  926          1116  4                  BEGIN
;  927          1117  4                  PRVKFE = .CMPKFE;
;  928          1118  4                  CMPKFE = .CMPKFE [KFE$L_HSHLNK];
;  929          1119  3                  END;
;  930          1120  3              TES;
;  931          1121  2          END;                            ! WHILE traversing hash bucket list
;  932          1122  2
;  933          1123  2 !
;  934          1124  2 !       Have traversed whole list and didn't find it.
;  935          1125  2 !
;  936          1126  2 RETURN 0;
;  937          1127  2
;  938          1128  1 END;                ! routine INS$FIND_KFE


                                    03FC 00000        .ENTRY  INS$FIND_KFE, Save R2,R3,R4,R5,R6,R7,R8,R9  ; 1023
```

```
                                5F     FEF8   CE   9E 00002          MOVAB   -264(SP), SP                                    ;
                                50 00000000G  00   D0 00007          MOVL    KFPB, R0                                       ; 1055
                                              1B   13 0000E          BEQL    2$                                             ;
                                51       04   A0   D0 00010          MOVL    4(R0), HSHTAB                                  ; 1057
                                50       04   AC   D0 00014          MOVL    HSHIDX, R0                                     ; 1058
                                           6140   D5 00018          TSTL    (HSHTAB)[R0]                                   ;
                                              0E   13 0001B          BEQL    2$                                             ;
                                59           6140   DE 0001D          MOVAL   (HSHTAB)[R0], PRVKFE                           ; 1060
                                57           6140   D0 00021          MOVL    (HSHTAB)[R0], CMPKFE                           ; 1061
                                56       08   AC   D0 00025          MOVL    NAM, R6                                        ; 1064
                                              57   D5 00029 1$:       TSTL    CMPKFE                                         ; 1062
                                              03   12 0002B 2$:       BNEQ    3$                                             ;
                                            008D   31 0002D          BRW     6$                                             ;
                                51       3B   A6   9A 00030 3$:       MOVZBL  59(R6), R1                                     ; 1064
                                50       36   A7   9A 00034          MOVZBL  54(CMPKFE), R0                                 ; 1065
        50          20       4C   B6              51   2D 00038          CMPC5   R1, @76(R6), #32, R0, 55(CMPKFE)               ;
                                          37   A7        0003E                                                               ;
                                              72   1A 00040          BGTRU   5$                                             ;
                                              79   1F 00042          BLSSU   6$                                             ;
                                58       0C   A7   D0 00044          MOVL    12(CMPKFE), KFD                                ; 1081
                                50       39   A6   9A 00048          MOVZBL  57(R6), R0                                     ; 1086
                                51       3A   A6   9A 0004C          MOVZBL  58(R6), R1                                     ;
                                50            51   C0 00050          ADDL2   R1, R0                                         ;
                                52       3C   A6   9A 00053          MOVZBL  60(R6), R2                                     ; 1087
                    6E          50            52   A1 00057          ADDW3   R2, R0, DDT_DSC                                ;
                                      04   AE   08   AE 9E 0005B          MOVAB   DDTSTR, DDT_DSC+4                          ; 1089
                                50       39   A6   9A 00060          MOVZBL  57(R6), R0                                     ; 1091
                04   BE       44   B6              50   28 00064          MOVC3   R0, @68(R6), @DDT_DSC+4                        ; 1092
                                      04   AE        53   D0 0006A          MOVL    R3, DDT_DSC+4                              ;
                                50       3A   A6   9A 0006E          MOVZBL  58(R6), R0                                     ; 1093
                04   BE       48   B6              50   28 00072          MOVC3   R0, @72(R6), @DDT_DSC+4                        ; 1094
                                      04   AE        53   D0 00078          MOVL    R3, DDT_DSC+4                              ;
                                50       3C   A6   9A 0007C          MOVZBL  60(R6), R0                                     ; 1095
                04   BE       50   B6              50   28 00080          MOVC3   R0, @80(R6), @DDT_DSC+4                        ; 1096
                                      04   AE        53   D0 00086          MOVL    R3, DDT_DSC+4                              ;
                                      04   AE   08   AE 9E 0008A          MOVAB   DDTSTR, DDT_DSC+4                          ; 1098
                                              5E   DD 0008F          PUSHL   SP                                             ; 1100
                    00000000G         00            01   FB 00091          CALLS   #1, INS$CVT_DIR                            ;
                                50       10   A8   9A 00098          MOVZBL  16(KFD), R0                                    ; 1103
                                54            01   D0 0009C          MOVL    #1, R4                                         ;
        50          20       08   AE              6E   2D 0009F          CMPC5   DDT_DSC, DDTSTR, #32, R0, 17(KFD)              ;
                                          11   A8        000A5                                                               ;
                                              03   1A 000A7          BGTRU   4$                                             ;
                                54            01   D9 000A9          SBWC    #1, R4                                         ;
                                              54   D5 000AC 4$:       TSTL    R4                                             ; 1104
                                              04   12 000AE          BNEQ    5$                                             ;
                                50            57   D0 000B0          MOVL    CMPKFE, R0                                     ; 1106
                                              04   C0 0B3          RET                                                    ;
                                59            57   D0 000B4 5$:       MOVL    CMPKFE, PRVKFE                                 ; 1117
                                57            67   D0 000B7          MOVL    (CMPKFE), CMPKFE                               ; 1118
                                            FF6C   31 000BA          BRW     1$                                             ; 1062
                                50            04   D4 000BD 6$:       CLRL    R0                                             ; 1128
                                              04   000BF          RET                                                    ;

; Routine Size:  192 bytes,    Routine Base:  $CODE$ + 03DD
```

; 939 1129 1

```
;   941          1130  1 %SBTTL 'dealloc_paged  Return memory to paged pool';
;   942          1131  1
;   943          1132  1 ROUTINE  DEALLOC_PAGED (ADR) =
;   944          1133  2 BEGIN
;   945          1134  2 !+++
;   946          1135  2 !
;   947          1136  2 !  FUNCTIONAL DESCRIPTION:
;   948          1137  2 !
;   949          1138  2 !       Deallocate the paged pool which is specified by ADR.
;   950          1139  2 !       Size of block to return is specified in size offset
;   951          1140  2 !       start of block.
;   952          1141  2 !
;   953          1142  2 !---
;   954          1143  2
;   955          1144  2 LOCAL
;   956          1145  2     STATUS;
;   957          1146  2
;   958          1147  2 STATUS = EXE$DEAPAGED (.ADR);    ! Deallocate to paged pool
;   959          1148  2
;   960          1149  2 RETURN .STATUS;
;   961          1150  1 END;                        ! Routine DEALLOC_PAGED




                                    0FFC 00000 DEALLOC_PAGED:
                                                .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11        ; 1132
                               50       04   AC  D0 00002          MOVL    ADR, R0                 ; 1147
                          00000000G     00   16 00006          JSB     EXE$DEAPAGED
                                             04 0000C          RET                                 ; 1150

; Routine Size:  13 bytes,    Routine Base:  $CODE$ + 049D

;   962          1151  1
```

```
;  964          1152  1 END                 ! Module insdelete
;  965          1153  0 ELUDOM
```

```
;                                  PSECT SUMMARY

;       Name                     Bytes                          Attributes

;  $PLIT$                          220  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $CODE$                         1194  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)


;                               Library Statistics

;                                        -------- Symbols --------      Pages       Processing
;       File                             Total    Loaded   Percent      Mapped      Time

;  _$255$DUA28:[SYSLIB]LIB.L32;1          18619        61         0      1000          00:01.8
```

```
;                                    COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:INSDELETE/OBJ=OBJ$:INSDELETE MSRC$:INSDELETE/UPDATE=(ENH$:INSDELETE)

; Size:          1194 code + 220 data bytes
; Run Time:        00:25.3
; Elapsed Time:    01:21.1
; Lines/CPU Min:    2738
; Lexemes/CPU-Min: 17337
; Memory Used:  167 pages
; Compilation Complete
```

INSMAIN
LIS

INSDELETE
LIS

INSOLDCMD
LIS

INSPRSOLD
LIS

INSGLOBAL
LIS

INSKFSCAN
LIS

INSLIST
LIS

INSMSG
LIS