H 5

```
FFFFFFFFFFFFFFF        111              111         XXX         XXX
FFFFFFFFFFFFFFF        111              111         XXX         XXX
FFFFFFFFFFFFFFF        111              111         XXX         XXX
FFF                 111111           111111         XXX         XXX
FFF                 111111           111111         XXX         XXX
FFF                 111111           111111         XXX         XXX
FFF                    111              111            XXX   XXX
FFF                    111              111            XXX   XXX
FFF                    111              111            XXX   XXX
FFFFFFFF.FFF           111              111               XXX
FFFFFFFFFFFF           111              111               XXX
FFFFFFFFFFFF           111              111               XXX
FFF                    111              111            XXX   XXX
FFF                    111              111            XXX   XXX
FFF                    111              111            XXX   XXX
FFF                    111              111         XXX         XXX
FFF                    111              111         XXX         XXX
FFF                    111              111         XXX         XXX
FFF                 111111111        111111111      XXX         XXX
FFF                 111111111        111111111      XXX         XXX
FFF                 111111111        111111111      XXX         XXX
```

```
_$25

Symb
----
IOC1
IO_C
IO_C
IO_D
IO_F
IO_S
KILL

KILL
KILL
LB_E
LB_D
LB_F
LB_H
LB_L
LOCA
LOCA
LOCK

LOCK
LOCK
LOCK
LOC_
LOC_
L_CC
L_CC
L_DA
L_DA
MAIN
MAKE
MAKE
MAKE
MAKE
MAKE
MAKE

MAKE
MAKc
MAP_
MAP_

MAP
MARK
MARK
MARK
MARK
MARK
```

FILEID**GETLOC

```
  GGGGGGGG  EEEEEEEEEE  TTTTTTTTTT  LL            OOOOOO      CCCCCCCC
  GGGGGGGG  EEEEEEEEEE  TTTTTTTTTT  LL            OOOOOO      CCCCCCCC
GG          EE              TT      LL          OO      OO  CC
GG          EE              TT      LL          OO      OO  CC
GG          EE              TT      LL          OO      OO  CC
GG          EE              TT      LL          OO      OO  CC
GG          EEEEEEEE        TT      LL          OO      OO  CC
GG          EEEEEEEE        TT      LL          OO      OO  CC
GG  GGGGGG  EE              TT      LL          OO      OO  CC
GG  GGGGGG  EE              TT      LL          OO      OO  CC
GG      GG  EE              TT      LL          OO      OO  CC              ....
GG      GG  EE              TT      LL          OO      OO  CC              ....
  GGGGGG    EEEEEEEEEE      TT      LLLLLLLLLL    OOOOOO      CCCCCCCC      ....
  GGGGGG    EEEEEEEEEE      TT      LLLLLLLLLL    OOOOOO      CCCCCCCC      ....

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

```
GET
V04

; R

; S
; R
; E
; L
; L
; M
; C
```

```
0 MODULE GETLOC (
0                 LANGUAGE (BLISS32),
0                 IDENT = 'V04-000'
0                 ) =
1 BEGIN
1
1 !
1 !****************************************************************************
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1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
1 !*                                                                          *
1 !*                                                                          *
1 !****************************************************************************
1
1 !++
1 !
1 ! FACILITY:  F11ACP Structure Level 2
1 !
1 ! ABSTRACT:
1 !
1 !       This routine computes the desired placement LBN and RVN from the
1 !       placement control data supplied by the caller.
1 !
1 ! ENVIRONMENT:
1 !
1 !       STARLET operating system, including privileged system services
1 !       and internal exec routines.
1 !
1 !--
1
1 !
1 ! AUTHOR:  Andrew C. Goldstein,  CREATION DATE:  11-Dec-1978  10:41
1 !
1 ! MODIFIED BY:
1 !
1 !       V03-001 CDS0001         Christian D. Saether    30-Dec-1983
1 !               Use L_NORM linkage and BIND_COMMON macro.
1 !
1 !       B0101   ACG0121         Andrew C. Goldstein,    16-Jan-1980  21:44
1 !               Make context save and restore into subroutines
1 !
```

```
;   58        0058  1 !**
;   59        0059  1
;   60        0060  1
;   61        0061  1 LIBRARY 'SYS$LIBRARY:LIB.L32';
;   62        0062  1 REQUIRE 'SRC$:FCPDEF.B32';
```

```
1 GLOBAL ROUTINE GET_LOC (FIB, LOCRVN, LOCLBN) : L_NORM NOVALUE =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       This routine computes the desired placement LBN and RVN from the
1 !       placement control data supplied by the caller.
1 !
1 !
1 ! CALLING SEQUENCE:
1 !       GET_LOC (ARG1, ARG2, ARG3)
1 !
1 ! INPUT PARAMETERS:
1 !       ARG1: address of user FIB
1 !
1 ! IMPLICIT INPUTS:
1 !       CURRENT_VCB: VCB of volume in process
1 !       CURRENT_UCB: UCB of volume in process
1 !
1 ! OUTPUT PARAMETERS:
1 !       ARG2: address to return placement RVN
1 !       ARG3: address to return placement LBN
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       volume context may be switched
1 !
1 !--
1
2 BEGIN
2
2 MAP
2       FIB             : REF BBLOCK;   ! user FIB arg
2
2 LITERAL
2       MAX_CODE        = MAXU (FIB$C_CYL, ! highest alignment code
2                               FIB$C_LBN,
2                               FIB$C_VBN,
2                               FIB$C_RFI);
2
2 LOCAL
2       LBN,                            ! LBN resulting from map operation
2       WINDOW          : REF BBLOCK;   ! window used to map related file
2
2 BIND_COMMON;
2
2 EXTERNAL ROUTINE
2       SWITCH_VOLUME   : L_NORM,       ! switch context to specified volume
2       SAVE_CONTEXT    : L_NORM,       ! save reentrant context area
2       RESTORE_CONTEXT : L_NORM,       ! restore reentrant context area
2       OPEN_FILE       : L_NORM,       ! open file for internal use
```

```
2              MAP_VBN         : L_NORM,       ! map virtual to logical block
2              CLOSE_FILE      : L_NORM;       ! close internal file
2
2      ! Case on the different alignment types, converting each to RVN and LBN.
2      !
2
2      CASE .FIB[FIB$B_ALALIGN] FROM 0 TO MAX_CODE OF
2          SET
2
2          [0]:                                ! zero means no placement
3              BEGIN
3              .LOCRVN = 0;
3              .LOCLBN = 0;
2              END;
2
2          [FIB$C_CYL]:                        ! cylinder number supplied
3              BEGIN
3              SWITCH_VOLUME (.FIB[FIB$W_LOC_RVN]);
3              .LOCLBN = .FIB[FIB$L_LOC_ADDR] *
3                         .CURRENT_UCB[UCB$B_SECTORS] *
3                         .CURRENT_UCB[UCB$B_TRACKS] /
3                         .CURRENT_VCB[VCB$B_BLOCKFACT];
4              .LOCRVN = (IF .CURRENT_VCB[VCB$V_EXTFID]
4                          THEN .FIB[FIB$B_LOC_RVN]
4                          ELSE .FIB[FIB$W_LOC_RVN]
3                         );
2              END;
2
2          [FIB$C_LBN]:                        ! LBN suppplied
3              BEGIN
3              .LOCLBN = .FIB[FIB$L_LOC_ADDR];
4              .LOCRVN = (IF .CURRENT_VCB[VCB$V_EXTFID]
4                          THEN .FIB[FIB$B_LOC_RVN]
4                          ELSE .FIB[FIB$W_LOC_RVN]
3                         );
2              END;
2
2      ! For both related file and VBN placement (the latter being being a special
2      ! subset of the former), we open the specified file in secondary context and
2      ! map the given VBN.
2      !
2
2          [FIB$C_VBN, FIB$C_RFI]:
3              BEGIN
3              SAVE_CONTEXT ();
3              CH$MOVE (FID$C_LENGTH, FIB[FIB$W_FID], SECOND_FIB[FIB$W_FID]);
3              IF .FIB[FIB$B_ALALIGN] EQL FIB$C_RFI
4              AND (.FIB[FIB$W_LOC_NUM] NEQ 0
4                   OR .FIB[FIB$W_LOC_RVN] NEQ 0)
3              THEN CH$MOVE (FID$C_LENGTH, FIB[FIB$W_LOC_FID], SECOND_FIB[FIB$W_FID]);
3
3              WINDOW = OPEN_FILE (SECOND_FIB[FIB$W_FID], 2);
3              LBN = MAP_VBN (.FIB[FIB$L_LOC_ADDR], .WINDOW);
3              IF .LBN EQL -1
3              THEN LBN = MAP_VBN (.BBLOCK [.WINDOW[WCB$L_FCB], FCB$L_FILESIZE], .WINDOW);
3
```

```
;  178          1167  3         CLOSE_FILE (.WINDOW);
;  179          1168  3         RESTORE_CONTEXT ();
;  180          1169  3
;  181          1170  3         .LOCLBN = .LBN + 1;             . convert -1 result to 0
;  182          1171  3         .LOCRVN = .CURRENT_RVN;
;  183          1172  3
;  184          1173  2         END;
;  185          1174  2
;  186          1175  2     [OUTRANGE]:
;  187          1176  2         ERR_EXIT (SS$_BADPARAM);
;  188          1177  2
;  189          1178  2     TES;
;  190          1179  2
;  191          1180  1 END;                                    ! end of routine GET_LOC


                                                                          .TITLE  GETLOC
                                                                          .IDENT  \V04-000\

                                                                          .EXTRN  SWITCH_VOLUME, SAVE_CONTEXT
                                                                          .EXTRN  RESTORE_CONTEXT
                                                                          .EXTRN  OPEN_FILE, MAP_VBN
                                                                          .EXTRN  CLOSE_FILE

                                                                          .PSECT  $CODE$,NOWRT,2

                                                       007C 00000         .ENTRY  GET_LOC, Save R2,R3,R4,R5,R6                : 1053
                                       56     0244   CA  9E 00002         MOVAB   580(BASE), R6                               : 1101
                                       50       04   AC  D0 00007         MOVL    FIB, R0                                     : 1117
                         04            00       21   A0  8F 0000B         CASEB   33(R0), #0, #4                              :
         0065          0044          0014          000D     00010 1$:     .WORD   2$-1$,-                                     :
                                                   0065     00018                 3$-1$,-                                     :
                                                                                  4$-1$,-                                     :
                                                                                  8$-1$,-                                     :
                                                                                  8$-1$                                       :
                                                     14  BF 0001A         CHMU    #20                                         : 1176
                                                         04 0001C         RET                                                 :
                                                08   BC  D4 0001D 2$:     CLRL    @LOCRVN                                     : 1122
                                                0C   BC  D4 00020         CLRL    @LOCLBN                                     : 1123
                                                         04 00023         RET                                                 : 1117
                                       7E       26   A0  3C 00024 3$:     MOVZWL  38(R0), -(SP)                               : 1128
                                0000G  CF            01  FB 00028         CALLS   #1, SWITCH_VOLUME                           :
                                       51       04   AC  D0 0002D         MOVL    FIB, R1                                     : 1129
                                       50       94   AA  D0 00031         MOVL    -108(BASE), R0                              : 1130
                                       52       44   A0  9A 00035         MOVZBL  68(R0), R2                                  :
                         51       28   A1            52  C5 00039         MULL3   R2, 40(R1), R1                              :
                                       53       45   A0  9A 0003E         MOVZBL  69(R0), R3                                  : 1131
                                       51            53  C4 00042         MULL2   R3, R1                                      :
                                       50       98   AA  D0 00045         MOVL    -104(BASE), R0                              : 1132
                                       52       52   A0  9A 00049         MOVZBL  82(R0), R2                                  :
                    0C   BC            51            52  C7 0004D         DIVL3   R2, R1, @LOCLBN                             :
                                                     05  11 00052         BRB     5$                                          : 1134
                                  0C   BC       28   A0  D0 00054 4$:     MOVL    40(R0), @LOCLBN                             : 1141
                                       50       04   AC  D0 00059 5$:     MOVL    FIB, R0                                     : 1143
                                       51       98   AA  D0 0005D         MOVL    -104(BASE), R1                              : 1142
                         06       0B   A1            05  E1 00061         BBC     #5, 11(R1), 6$                              :
                                       50       26   A0  9A 00066         MOVZBL  38(R0), R0                                  : 1143
```

```
                                          04  11 0006A          BRB     7$                                  ;
                         50         26    A0  3C 0006C 6$:      MOVZWL  38(R0), R0                          ; 1144
                  08     BC               50  D0 00070 7$:      MOVL    R0, @LOCRVN                         ; 1142
                                              04 00074          RET                                         ; 1117
               0000G     CF               00  FB 00075 8$:      CALLS   #0, SAVE_CONTEXT                    ; 1155
                         50         04    AC  D0 0007A          MOVL    FIB, R0                             ; 1156
       04    A6     04   A0               06  28 0007E          MOVC3   #6, 4(R0), 4(R6)                    ;
                         50         04    AC  D0 00084          MOVL    FIB, R0                             ; 1157
                         04         21    A0  91 00088          CMPB    33(R0), #4                          ;
                                          10  12 0008C          BNEQ    10$                                 ;
                                    22    A0  B5 0008E          TSTW    34(R0)                              ; 1158
                                          05  12 00091          BNEQ    9$                                  ;
                                    26    A0  B5 00093          TSTW    38(R0)                              ; 1159
                                          06  13 00096          BEQL    10$                                 ;
       04    A6     22   A0               06  28 00098 9$:      MOVC3   #6, 34(R0), 4(R6)                   ; 1160
                                          02  DD 0009E 10$:     PUSHL   #2                                  ; 1162
                                    04    A6  9F 000A0          PUSHAB  4(R6)                               ;
               0000G     CF               02  FB 000A3          CALLS   #2, OPEN_FILE                       ;
                         52               50  D0 000A8          MOVL    R0, WINDOW                          ;
                                          52  DD 000AB          PUSHL   WINDOW                              ; 1163
                         50         04    AC  D0 000AD          MOVL    FIB, R0                             ;
                                    28    A0  DD 000B1          PUSHL   40(R0)                              ;
               0000G     CF               02  FB 000B4          CALLS   #2, MAP_VBN                         ;
                         53               50  D0 000B9          MOVL    R0, LBN                             ;
            FFFFFFFF     8F               53  D1 000BC          CMPL    LBN, #-1                            ; 1164
                                          11  12 000C3          BNEQ    11$                                 ;
                                          52  DD 000C5          PUSHL   WINDOW                              ; 1165
                         50         18    A2  D0 000C7          MOVL    24(WINDOW), R0                      ;
                                    38    A0  DD 000CB          PUSHL   56(R0)                              ;
               0000G     CF               02  FB 000CE          CALLS   #2, MAP_VBN                         ;
                         53               50  D0 000D3          MOVL    R0, LBN                             ;
                                          52  DD 000D6 11$:     PUSHL   WINDOW                              ; 1167
               0000G     CF               01  FB 000D8          CALLS   #1, CLOSE_FILE                      ;
               0000G     CF               00  FB 000DD          CALLS   #0, RESTORE_CONTEXT                 ; 1168
                  0C     BC         01    A3  9E 000E2          MOVAB   1(R3), @LOC[BN                      ; 1170
                  08     BC         A0    AA  D0 000E7          MOVL    -96(BASE), @LOCRVN                  ; 1171
                                              04 000EC          RET                                         ; 1180

; Routine Size:  237 bytes,    Routine Base:  $CODE$ + 0000


;   192          1181  1
;   193          1182  1 END
;   194          1183  0 ELUDOM




;                                        PSECT SUMMARY
;
;        Name                        Bytes                      Attributes
;
;  $CODE$                                237  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         35         0      1000          00:01.9





;                                         COMMAND QUALIFIERS

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

; Size:          237 code + 0 data bytes
; Run Time:         00:17.6
; Elapsed Time:     00:33.7
; Lines/CPU Min:     4042
; Lexemes/CPU-Min: 50265
; Memory Used:  224 pages
; Compilation Complete
```

0170 AH-BT13A-SE
VAX/VMS V4.0

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