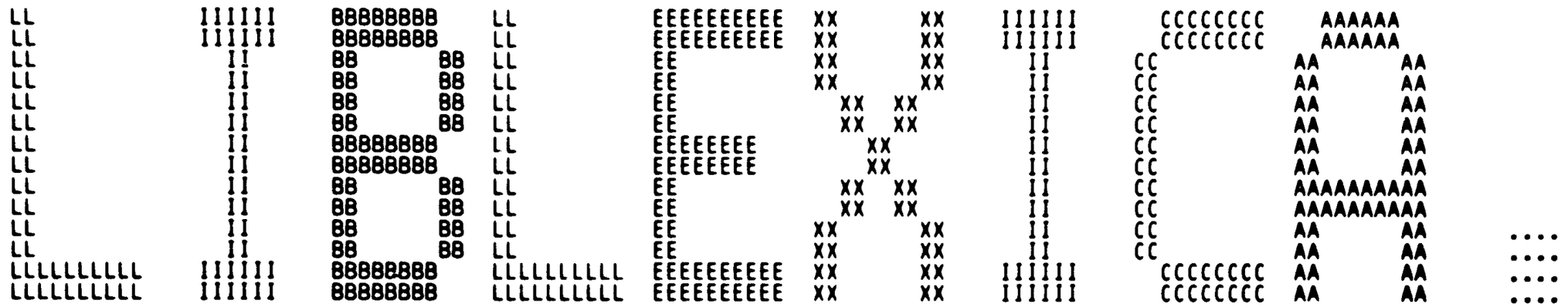
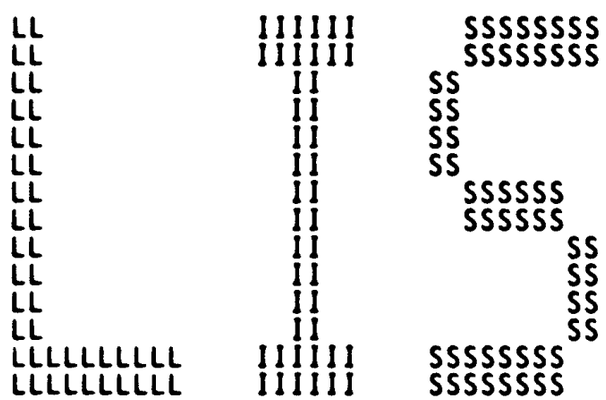
```
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBB         BBB  RRR         RRR        TTT        LLL
LLL                    III        BBBBBBBBBBBB     RRRRRRRRRRRR           TTT        LLL
LLL                    III        BBBBBBBBBBBB     RRRRRRRRRRRR           TTT        LLL
LLL                    III        BBBBBBBBBBBB     RRRRRRRRRRRR           TTT        LLL
LLL                    III        BBB         BBB  RRR   RRR              TTT        LLL
LLL                    III        BBB         BBB  RRR   RRR              TTT        LLL
LLL                    III        BBB         BBB  RRR   RRR              TTT        LLL
LLL                    III        BBB         BBB  RRR      RRR           TTT        LLL
LLL                    III        BBB         BBB  RRR      RRR           TTT        LLL
LLL                    III        BBB         BBB  RRR      RRR           TTT        LLL
LLLLLLLLLLLLLLL     IIIIIIIII     BBBBBBBBBBBB     RRR         RRR        TTT        LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL     IIIIIIIII     BBBBBBBBBBBB     RRR         RRR        TTT        LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL     IIIIIIIII     BBBBBBBBBBBB     RRR         RRR        TTT        LLLLLLLLLLLLLLL
```


LL IIIIII BBBBBBBB LL EEEEEEEEEE XX XX IIIIII CCCCCCCC AAAAAA
LL IIIIII BBBBBBBB LL EEEEEEEEEE XX XX IIIIII CCCCCCCC AAAAAA
LL II BB BB LL EE XX XX II CC AA AA
LL II BB BB LL EE XX XX II CC AA AA
LL II BB BB LL EE XX XX II CC AA AA
LL II BB BB LL EE XX XX II CC AA AA
LL II BBBBBBBB LL EEEEEEEE XX II CC AA AA
LL II BBBBBBBB LL EEEEEEEE XX II CC AA AA
LL II BB BB LL EE XX XX II CC AAAAAAAAAA
LL II BB BB LL EE XX XX II CC AAAAAAAAAA
LL II BB BB LL EE XX XX II CC AA AA
LL II BB BB LL EE XX XX II CC AA AA
LLLLLLLLLL IIIIII BBBBBBBB LLLLLLLLLL EEEEEEEEEE XX XX IIIIII CCCCCCCC AA AA
LLLLLLLLLL IIIIII BBBBBBBB LLLLLLLLLL EEEEEEEEEE XX XX IIIIII CCCCCCCC AA AA


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

```
;     1          0001  0 MODULE LIB$$LEXICAL ( %TITLE 'Internal routines for lexical functions'
;     2          0002  0                  IDENT = '1-009'          ! File: LIBLEXICA.B32 Edit: STAN1009
;     3          0003  0                  ) =
;     4          0004  1 BEGIN
;     5          0005  1 !
;     6          0006  1 !**************************************************************************
;     7          0007  1 !*                                                                        *
;     8          0008  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                               *
;     9          0009  1 !*  DIGITAL EQUIPMENT CORPORATION. MAYNARD, MASSACHUSETTS.                 *
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;    14          0014  1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER  *
;    15          0015  1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY  *
;    16          0016  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY  *
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;    18          0018  1 !*                                                                        *
;    19          0019  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE  *
;    20          0020  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT  *
;    21          0021  1 !*  CORPORATION.                                                           *
;    22          0022  1 !*                                                                        *
;    23          0023  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS  *
;    24          0024  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                *
;    25          0025  1 !*                                                                        *
;    26          0026  1 !*                                                                        *
;    27          0027  1 !**************************************************************************
;    28          0028  1 !
;    29          0029  1
;    30          0030  1 !++
;    31          0031  1 ! FACILITY:     General Utility Library, DCL
;    32          0032  1 !
;    33          0033  1 ! ABSTRACT:
;    34          0034  1 !
;    35          0035  1 !       This module contains routines which form the common kernel of
;    36          0036  1 !       the following Run-Time Library procedures and DCL lexical functions:
;    37          0037  1 !               LIB$GETDVI              F$GETDVI
;    38          0038  1 !               LIB$GETJPI              F$GETJPI
;    39          0039  1 !               LIB$GETSYI              F$GETSYI
;    40          0040  1 !
;    41          0041  1 !
;    42          0042  1 ! ENVIRONMENT:  User or supervisor mode - AST reentrant
;    43          0043  1 !
;    44          0044  1 ! AUTHOR: Steven B. Lionel, CREATION DATE: 13-July-1982
;    45          0045  1 !
;    46          0046  1 ! MODIFIED BY:
;    47          0047  1 !
;    48          0048  1 ! 1-001 - Original.  Adapted from the DCL module LEXICON.  SBL 13-July-1982
;    49          0049  1 ! 1-002 - Use tables in LIBGETTAB.MAR.  SBL 8-Mar-1983
;    50          0050  1 ! 1-003 - Change string length from LNM$C_NAMLENGTH to 512.  SBL 11-Mar-1983
;    51          0051  1 ! 1-004 - Add HEXSTR format.  SBL 20-May-1983
;    52          0052  1 ! 1-005 - HEXSTR is now HEXSTRING.  SBL 24-May-1983
;    53          0053  1 ! 1-006 - Add privileges TMPJNL, PRMJNL and SECURITY.  SBL 28-July-1983
;    54          0054  1 ! 1-007 - Add new format MODE for JPI$_MODE.  Fix format HEXSTRING so that
;    55          0055  1 !         the significant characters get returned.  SBL 9-Sep-1983
;    56          0056  1 ! 1-008 - Add support for two new arguments to SYS$GETSYI - NODENAME and
;    57          0057  1 !         CSIDADR.  DG 19-Oct-1983.
```

```
;    58          0058  1 ! 1-009 - Fix handling of counted strings. STAN 27-Feb-1984.
;    59          0059  1 !--
;    60          0060  1
```

```
;    62          0061  1 %SBTTL 'Declarations'
;    63          0062  1 !
;    64          0063  1 ! PROLOGUE FILE:
;    65          0064  1 !
;    66          0065  1
;    67          0066  1 LIBRARY 'RTLLIB';                       ! SYS$LIBRARY:LIB.L32
;    68          0067  1 REQUIRE 'RTLIN:LIBPROLOG';              ! LIB$ definitions
;    69          0138  1
;    70          0139  1 !
;    71          0140  1 ! LINKAGES:
;    72          0141  1 !
;    73          0142  1
;    74          0143  1 LINKAGE
;    75          0144  1     CALL_LEXICAL = CALL;
;    76          0145  1
;    77          0146  1 !
;    78          0147  1 ! TABLE OF CONTENTS:
;    79          0148  1 !
;    80          0149  1
;    81          0150  1 FORWARD ROUTINE
;    82          0151  1     LIB$$GETDVI: CALL_LEXICAL,          ! Get Device Information
;    83          0152  1     LIB$$GETJPI: CALL_LEXICAL,          ! Get Job/Process Information
;    84          0153  1     LIB$$GETSYI: CALL_LEXICAL,          ! Get System Imformation
;    85          0154  1     LIB$$FORMAT_RESULT: NOVALUE;        ! Format result
;    86          0155  1
;    87          0156  1 !
;    88          0157  1 ! MACROS:
;    89          0158  1 !
;    90          0159  1 !       NONE
;    91          0160  1 !
;    92          0161  1 ! EQUATED SYMBOLS:
;    93          0162  1 !
;    94          0163  1 !       NONE
;    95          0164  1 !
;    96          0165  1 ! FIELDS:
;    97          0166  1 !
;    98          0167  1 !       NONE
;    99          0168  1 !
;   100          0169  1 ! OWN STORAGE:
;   101          0170  1 !
;   102          0171  1 !       NONE
;   103          0172  1 !
;   104          0173  1 ! EXTERNAL REFERENCES:
;   105          0174  1 !
;   106          0175  1
;   107          0176  1 EXTERNAL ROUTINE
;   108          0177  1     OTS$CVT_L_TZ;               ! Convert to hex format
;   109          0178  1
;   110          0179  1 EXTERNAL
;   111          0180  1     LIB$$AB_GETDVI_TABLE,       ! Table of $GETDVI codes and types
;   112          0181  1     LIB$$AB_GETJPI_TABLE,       ! Table of $GETJPI codes and types
;   113          0182  1     LIB$$AB_GETSYI_TABLE;       ! Table of $GETSYI codes and types
```

```
;  115          0183  1 %SBTTL 'LIB$$GETDVI - Internal routine for LIB$GETDVI'
;  116          0184  1 GLOBAL ROUTINE LIB$$GETDVI (
;  117          0185  1     ITEM_CODE: WORD SIGNED,                 ! $GETSYI Item code
;  118          0186  1     RET_STRING: REF VECTOR [, BYTE],        ! Return string buffer
;  119          0187  1     RET_NUMBER: REF BLOCK [, BYTE],         ! Return numeric buffer
;  120          0188  1     RET_LENGTH: REF VECTOR [, WORD],        ! Returned length
;  121          0189  1     RET_TYPE: REF VECTOR [, LONG],          ! Returned type code
;  122          0190  1     EVENT_FLAG,                             ! Event flag to use
;  123          0191  1     CHANNEL: WORD,                          ! Channel number
;  124          0192  1     DEVNAM_DESCR: REF BLOCK [, BYTE]        ! Device name descriptor
;  125          0193  1     ): CALL_LEXICAL =
;  126          0194  1
;  127          0195  1 !++
;  128          0196  1 ! FUNCTIONAL DESCRIPTION:
;  129          0197  1 !
;  130          0198  1 !       Kernel routine called from LIB$GETDVI and DCL to get device and
;  131          0199  1 !       volume information.  See LIB$GETDVI for more information.
;  132          0200  1 !
;  133          0201  1 ! CALLING SEQUENCE:
;  134          0202  1 !
;  135          0203  1 !       ret-status.wlc.v = LIB$$GETDVI (
;  136          0204  1 !                                 item-code.rw.v,
;  137          0205  1 !                                 ret-string.wt.r,
;  138          0206  1 !                                 ret-number.wq.r,
;  139          0207  1 !                                 ret-length.wwu.r,
;  140          0208  1 !                                 ret-type.wl.r,
;  141          0209  1 !                                 event-flag.rl.v,
;  142          0210  1 !                                 channel.rwu.v,
;  143          0211  1 !                                 devnam-descr.rt.ds)
;  144          0212  1 !
;  145          0213  1 ! FORMAL PARAMETERS:
;  146          0214  1 !
;  147          0215  1 !       item-code               The $GETDVI item code
;  148          0216  1 !
;  149          0217  1 !       ret-string              A string of length 512 into which
;  150          0218  1 !                               is placed the string-formatted value.
;  151          0219  1 !
;  152          0220  1 !       ret-number              A quadword into which is placed the numeric
;  153          0221  1 !                               value, if any.
;  154          0222  1 !
;  155          0223  1 !       ret-length              A word into which is placed the length of
;  156          0224  1 !                               the string in ret-string.
;  157          0225  1 !
;  158          0226  1 !       ret-type                A longword into which is placed the type
;  159          0227  1 !                               code for the value being returned.  The
;  160          0228  1 !                               codes are LIB$K_FMT_xxx values defined
;  161          0229  1 !                               in LIBFMTDEF.SDL.
;  162          0230  1 !
;  163          0231  1 !       event-flag              A longword event flag number to use for
;  164          0232  1 !                               the $GETDVI.
;  165          0233  1 !
;  166          0234  1 !       channel                 A word containing the channel to inquire
;  167          0235  1 !                               about.
;  168          0236  1 !
;  169          0237  1 !       devnam-descr            A string descriptor for the device name
;  170          0238  1 !                               being inquired about.
;  171          0239  1 !
```

```
;  172          0240  1 ! IMPLICIT I PUTS:
;  173          0241  1 !
;  174          0242  1 !       NONE
;  175          0243  1 !
;  176          0244  1 ! IMPLICIT OUTPUTS:
;  177          0245  1 !
;  178          0246  1 !       NONE
;  179          0247  1 !
;  180          0248  1 ! COMPLETION STATUS:
;  181          0249  1 !
;  182          0250  1 !       SS$_NORMAL      Normal successful completion
;  183          0251  1 !       SS$_xxx         Any error status from $GETDVIW
;  184          0252  1 !
;  185          0253  1 ! SIDE EFFECTS:
;  186          0254  1 !
;  187          0255  1 !       NONE
;  188          0256  1 !
;  189          0257  1 !--
```

```
;  191          0258  2     BEGIN
;  192          0259  2
;  193          0260  2     !+
;  194          0261  2     ! Declare fieldset that defines the layout of a GETDVI_ITEM
;  195          0262  2     !-
;  196          0263  2
;  197          0264  2     FIELD
;  198          0265  2         GETDVI_ITEM_FIELDSET =
;  199          0266  2             SET
;  200          0267  2             W_ITEM = [0,0,16,1],        ! DVI$_ item code value
;  201          0268  2             B_TYPE = [0,16,8,0],        ! LIB$R_FMT_ type code
;  202          0269  2             A_NEXT = [3,0,0,0]          ! Offset of next item
;  203          0270  2             TES;
;  204          0271  2
```

```
;  206          0272  2     LOCAL
;  207          0273  2         TABLE_ENTRY: REF BLOCK [, BYTE] FIELD (GETDVI_ITEM_FIELDSET),
;  208          0274  2                                             ! Current table entry
;  209          0275  2         DUMMY_ENTRY: BLOCK [3, BYTE] FIELD (GETDVI_ITEM_FIELDSET),
;  210          0276  2         ITEM_LIST: BLOCK [16, BYTE],        ! Item list for $GETDVI
;  211          0277  2         IOSB: VECTOR [4, WORD],             ! Status block
;  212          0278  2         RET_STATUS;                         ! Return status
;  213          0279  2
;  214          0280  2     !+
;  215          0281  2     ! Look up ITEM_CODE in LIB$$AB_GETDVI_TABLE.
;  216          0282  2     !-
;  217          0283  2
;  218          0284  2     TABLE_ENTRY = LIB$$AB_GETDVI_TABLE;         ! Get first element.
;  219          0285  2
;  220          0286  2     WHILE .TABLE_ENTRY [W_ITEM] NEQ .ITEM_CODE
;  221          0287  2     DO
;  222          0288  3         BEGIN
;  223          0289  3         TABLE_ENTRY = TABLE_ENTRY [A_NEXT];     ! Get next item
;  224          0290  3         IF .TABLE_ENTRY [W_ITEM] EQL 0          ! No more items?
;  225          0291  3         THEN
;  226          0292  4             BEGIN
;  227          0293  4             TABLE_ENTRY = DUMMY_ENTRY;          ! Use dummy table entry
;  228          0294  4             DUMMY_ENTRY [B_TYPE] = LIB$K_FMT_BINARY;
;  229          0295  4             EXITLOOP;
;  230          0296  3             END;
;  231          0297  2         END;
;  232          0298  2
;  233          0299  2     !+
;  234          0300  2     ! Store type code.
;  235          0301  2     !-
;  236          0302  2
;  237          0303  2     RET_TYPE [0] = .TABLE_ENTRY [B_TYPE];
;  238          0304  2
;  239          0305  2     !+
;  240          0306  2     ! Fill in ITEM_LIST and do the $GETDVI.
;  241          0307  2     !-
;  242          0308  2
;  243          0309  2     ITEM_LIST [0,16,16,0] = .ITEM_CODE;         ! Item code
;  244          0310  2     IF .TABLE_ENTRY [B_TYPE] LEQ LIB$K_FMT_MAXSTRING    ! Is it a string?
;  245          0311  2     THEN
;  246          0312  3         BEGIN
;  247          0313  3         ITEM_LIST [4,0,32,0] = RET_STRING [0];  ! Return buffer
;  248          0314  3         ITEM_LIST [0,0,16,0] = 512;             ! Buffer size
;  249          0315  3         IF .TABLE_ENTRY [B_TYPE] EQL LIB$K_FMT_HEXSTRING
;  250          0316  3         THEN
;  251          0317  3             ITEM_LIST [0,0,16,0] = 256;         ! Can't cvt more than 256 bytes
;  252          0318  3         END
;  253          0319  2     ELSE
;  254          0320  3         BEGIN
;  255          0321  3         RET_NUMBER [0,0,32,0] = 0;              ! Zero the buffer
;  256          0322  3         RET_NUMBER [4,0,32,0] = 0;
;  257          0323  3         ITEM_LIST [4,0,32,0] = RET_NUMBER [0,0,0,0];    ! Return buffer
;  258          0324  3         ITEM_LIST [0,0,16,0] = 8;               ! Buffer size (Quadword)
;  259          0325  2         END;
;  260          0326  2     ITEM_LIST [8,0,32,0] = RET_LENGTH [0];      ! Return length
;  261          0327  2     ITEM_LIST [12,0,32,0] = 0;                  ! End of list
;  262          0328  2
```

```
;  263          P 0329  2     RET_STATUS = $GETDVIW (EFN = .EVENT_FLAG, CHAN = .CHANNEL,
;  264            0330  2         DEVNAM = DEVNAM_DESCR [0,0,0,0], ITMLST = ITEM_LIS , IOSB = IOSB);
;  265            0331  2
;  266            0332  2     IF .RET_STATUS
;  267            0333  2     THEN
;  268            0334  2         RET_STATUS = .IOSB [0];
;  269            0335  2
;  270            0336  2     !+
;  271            0337  2     ! Check for errors.
;  272            0338  2     !-
;  273            0339  2
;  274            0340  2     IF NOT .RET_STATUS
;  275            0341  2     THEN
;  276            0342  2         RETURN .RET_STATUS;             ! Return with error code
;  277            0343  2
;  278            0344  2     !+
;  279            0345  2     ! Now call LIB$$FORMAT_RESULT to format the result, if necessary.
;  280            0346  2     !-
;  281            0347  2
;  282            0348  2     LIB$$FORMAT_RESULT (RET_STRING [0], RET_NUMBER [0,0,0,0], RET_LENGTH [0],
;  283            0349  2         RET_TYPE [0]);
;  284            0350  2
;  285            0351  2     RETURN SS$_NORMAL;
;  286            0352  2
;  287            0353  1     END;                                        ! End of routine LIB$$GETDVI


;                                                       .TITLE  LIB$$LEXICAL Internal routines for lexical func
                                                                        tions
                                                       .IDENT  \'-009\

                                                       .EXTRN  OTS$CVT_L_TZ, LIB$$AB_GETDVI_TABLE
                                                       .EXTRN  LIB$$AB_GETJPI_TABLE
                                                       .EXTRN  LIB$$AB_GETSYI_TABLE
                                                       .EXTRN  SYS$GETDVIW

                                                       .PSECT  _LIB$CODE,NOWRT,  SHR,  PIC,2

                                                 0000 00000     .ENTRY  LIB$$GETDVI, Save nothing                       ; 0184
                                            5E   1C   C2 00002  SUBL2   #28, SP                                        ;
                                            50 00000000G 00   9E 00005  MOVAB   LIB$$AB_GETDVI_TABLE, TABLE_ENTRY       ; 0284
                                        04  AC        60   B1 0000C 1$:  CMPW    (TABLE_ENTRY), ITEM_CODE                ; 0286
                                                     0E   13 00010  BEQL    2$                                          ;
                                            50       03   C0 00012  ADDL2   #3, TABLE_ENTRY                          ; 0289
                                                     60   B5 00015  TSTW    (TABLE_ENTRY)                           ; 0290
                                                     F3   12 00017  BNEQ    1$                                          ;
                                            50       6E   9E 00019  MOVAB   DUMMY_ENTRY, TABLE_ENTRY                  ; 0293
                                        02  AE       08   90 0001C  MOVB    #8, DUMMY_ENTRY+2                       ; 0294
                                        14  BC    02 A0   9A 00020 2$:  MOVZBL  2(TABLE_ENTRY), @RET_TYPE               ; 0303
                                        0E  AE    04 AC   B0 00025  MOVW    ITEM_CODE, ITEM_LIST+2                  ; 0309
                                            03    02 A0   91 0002A  CMPB    2(TABLE_ENTRY), #3                      ; 0310
                                                     19   1A 0002E  BGTRU   3$                                          ;
                                        10  AE    08 AC   D0 00030  MOVL    RET_STRING, ITEM_LIST+4                 ; 0313
                                        0C  AE  0200 8F   B0 00035  MOVW    #512, ITEM_LIST                         ; 0314
                                            02    02 A0   91 0003B  CMPB    2(TABLE_ENTRY), #2                      ; 0315
                                                     16   12 0003F  BNEQ    4$                                          ;
                                        0C  AE  0100 8F   B0 00041  MOVW    #256, ITEM_LIST                         ; 0317
```

```
                                                    0E  11 00047                BRB     4$                                      ; 0310
                                        50      0C  AC  D0 00049 3$:            MOVL    RET_NUMBER, R0                          ; 0321
                                                    60  7C 0004D                 CLRQ    (R0)
                                    10  AE          50  D0 0004F                MOVL    R0, ITEM_LIST+4                         ; 0323
                                    0C  AE          08  B0 00053                MOVW    #8, ITEM_LIST                           ; 0324
                                    14  AE      10  AC  D0 00057 4$:            MOVL    RET_LENGTH, ITEM_LIST+8                 ; 0326
                                            18  AE  D4 0005C                   CLRL    ITEM_LIST+12                            ; 0327
                                                7E  7C 0005F                    CLRQ    -(SP)                                   ; 0330
                                                7E  D4 00061                    CLRL    -(SP)
                                            10  AE  9F 00063                   PUSHAB  IOSB
                                            1C  AE  9F 00066                   PUSHAB  ITEM_LIST
                                            20  AC  DD 00069                   PUSHL   DEVNAM_DESCR
                                        7E  1C  AC  3C 0006C                   MOVZWL  CHANNEL, -(SP)
                                            18  AC  DD 00070                   PUSHL   EVENT_FLAG
                            00000000G   00          08  FB 00073               CALLS   #8, SYS$GETDVIW
                                        17          50  E9 0007A               BLBC    RET_STATUS, 5$                          ; 0332
                                        50      04  AE  3C 0007D               MOVZWL  IOSB, RET_STATUS                        ; 0334
                                        10          50  E9 00081               BLBC    RET_STATUS, 5$                          ; 0340
                                        7E      10  AC  7D 00084               MOVQ    RET_LENGTH, -(SP)                       ; 0349
                                        7E      08  AC  7D 00088               MOVQ    RET_STRING, -(SP)
                                0000V   CF          04  FB 0008C               CALLS   #4, LIB$$FORMAT_RESULT
                                        50          01  D0 00091               MOVL    #1, R0                                  ; 0351
                                                    04  00094 5$:             RET                                             ; 0353

; Routine Size:  149 bytes,    Routine Base:  _LIB$CODE + 0000
```

```
;  289          0354  1 %SBTTL 'LIB$$GETJPI - Internal routine for LIB$GETJPI'
;  290          0355  1 GLOBAL ROUTINE LIB$$GETJPI (
;  291          0356  1     ITEM_CODE: WORD SIGNED,                 ! $GETJPI Item code
;  292          0357  1     RET_STRING: REF VECTOR [, BYTE],        ! Return string buffer
;  293          0358  1     RET_NUMBER: REF BLOCK [, BYTE],         ! Return numeric buffer
;  294          0359  1     RET_LENGTH: REF VECTOR [, WORD],        ! Returned length
;  295          0360  1     RET_TYPE: REF VECTOR [, LONG],          ! Returned type code
;  296          0361  1     EVENT_FLAG,                             ! Event flag to use
;  297          0362  1     PIDADDR,                                ! Address of PID
;  298          0363  1     PRCNAM_DESCR: REF BLOCK [, BYTE]        ! Process name descriptor
;  299          0364  1     ): CAL[_LEXICAL =
;  300          0365  1
;  301          0366  1 !++
;  302          0367  1 ! FUNCTIONAL DESCRIPTION:
;  303          0368  1 !
;  304          0369  1 !       Kernel routine called from LIB$GETJPI and DCL to get job and
;  305          0370  1 !       process information.  See LIB$GETJPI for more information.
;  306          0371  1 !
;  307          0372  1 ! CALLING SEQUENCE:
;  308          0373  1 !
;  309          0374  1 !       ret-status.wlc.v = LIB$$GETJPI (
;  310          0375  1 !                                       item-code.rw.v,
;  311          0376  1 !                                       ret-string.wt.r,
;  312          0377  1 !                                       ret-number.wq.r,
;  313          0378  1 !                                       ret-length.wwu.r,
;  314          0379  1 !                                       ret-type.wl.r,
;  315          0380  1 !                                       event-flag.rl.v,
;  316          0381  1 !                                       pidaddr.ra.v,
;  317          0382  1 !                                       prcnam-descr.rt.ds)
;  318          0383  1 !
;  319          0384  1 ! FORMAL PARAMETERS:
;  320          0385  1 !
;  321          0386  1 !       item-code               The $GETJPI item code
;  322          0387  1 !
;  323          0388  1 !       ret-string              A string of length 512 into which
;  324          0389  1 !                               is placed the string-formatted value.
;  325          0390  1 !
;  326          0391  1 !       ret-number              A quadword into which is placed the numeric
;  327          0392  1 !                               value, if any.
;  328          0393  1 !
;  329          0394  1 !       ret-length              A word into which is placed the length of
;  330          0395  1 !                               the string in ret-string.
;  331          0396  1 !
;  332          0397  1 !       ret-type                A longword into which is placed the type
;  333          0398  1 !                               code for the value being returned.  The
;  334          0399  1 !                               codes are LIB$K_FMT_xxx values defined
;  335          0400  1 !                               in LIBFMTDEF.SDL.
;  336          0401  1 !
;  337          0402  1 !       event-flag              A longword event flag number to use for
;  338          0403  1 !                               the $GETJPI.
;  339          0404  1 !
;  340          0405  1 !       pidaddr                 The address of the PID, if any, being inquired
;  341          0406  1 !                               about.
;  342          0407  1 !
;  343          0408  1 !       prcnam-descr            A string descriptor for the process name
;  344          0409  1 !                               being inquired about, if any
;  345          0410  1 !
```

```
;  346          0411  1 ! IMPLICIT INPUTS:
;  347          0412  1 !
;  348          0413  1 !       NONE
;  349          0414  1 !
;  350          0415  1 ! IMPLICIT OUTPUTS:
;  351          0416  1 !
;  352          0417  1 !       NONE
;  353          0418  1 !
;  354          0419  1 ! COMPLETION STATUS:
;  355          0420  1 !
;  356          0421  1 !       SS$_NORMAL      Normal successful completion
;  357          0422  1 !       SS$_xxx         Any error status from $GETJPIW
;  358          0423  1 !
;  359          0424  1 ! SIDE EFFECTS:
;  360          0425  1 !
;  361          0426  1 !       NONE
;  362          0427  1 !
;  363          0428  1 !--
```

```
;  365     0429  2     BEGIN
;  366     0430  2
;  367     0431  2     !+
;  368     0432  2     ! Declare fieldset that defines the layout of a GETJPI_ITEM.
;  369     0433  2     !-
;  370     0434  2
;  371     0435  2     FIELD
;  372     0436  2         GETJPI_ITEM_FIELDSET =
;  373     0437  2             SET
;  374     0438  2             W_ITEM = [0,0,16,1],        ! JPI$_ item code value
;  375     0439  2             B_TYPE = [0,16,8,0],        ! LIB$K_FMT_ type code
;  376     0440  2             A_NEXT = [3,0,0,0]          ! Offset of next item
;  377     0441  2             TES;
;  378     0442  2
```

```
;  380          0443  2      LOCAL
;  381          0444  2          TABLE_ENTRY: REF BLOCK [, BYTE] FIELD (GETJPI_ITEM_FIELDSET),
;  382          0445  2                                              ! Current table entry
;  383          0446  2          DUMMY_ENTRY: BLOCK [3, BYTE] FIELD (GETJPI_ITEM_FIELDSET),
;  384          0447  2          ITEM_LIST: BLOCK [16, BYTE],        ! Item list for $GETJPI
;  385          0448  2          IOSB: VECTOR [4, WORD],             ! Status block
;  386          0449  2          RET_STATUS;                         ! Return status
;  387          0450  2
;  388          0451  2      !+
;  389          0452  2      ! Look up ITEM_CODE in LIB$$AB_GETJPI_TABLE.
;  390          0453  2      !-
;  391          0454  2
;  392          0455  2      TABLE_ENTRY = LIB$$AB_GETJPI_TABLE;         ! Get first element.
;  393          0456  2
;  394          0457  2      WHILE .TABLE_ENTRY [W_ITEM] NEQ .ITEM_CODE
;  395          0458  2      DO
;  396          0459  3          BEGIN
;  397          0460  3          TABLE_ENTRY = TABLE_ENTRY [A_NEXT];     ! Get next item
;  398          0461  3          IF .TABLE_ENTRY [W_ITEM] EQL 0          ! No more items?
;  399          0462  3          THEN
;  400          0463  4              BEGIN
;  401          0464  4              TABLE_ENTRY = DUMMY_ENTRY;  ! Use dummy entry
;  402          0465  4              TABLE_ENTRY [B_TYPE] = LIB$K_FMT_BINARY;
;  403          0466  4              EXITLOOP;
;  404          0467  3              END;
;  405          0468  2          END;
;  406          0469  2
;  407          0470  2      !+
;  408          0471  2      ! Store type code.
;  409          0472  2      !-
;  410          0473  2
;  411          0474  2      RET_TYPE [0] = .TABLE_ENTRY [B_TYPE];
;  412          0475  2
;  413          0476  2      !+
;  414          0477  2      ! Fill in ITEM_LIST and do the $GETJPI.
;  415          0478  2      !-
;  416          0479  2
;  417          0480  2      ITEM_LIST [0,16,16,0] = .ITEM_CODE; ! Item code
;  418          0481  2      IF .TABLE_ENTRY [B_TYPE] LEQ LIB$K_FMT_MAXSTRING
;  419          0482  2      THEN
;  420          0483  3          BEGIN
;  421          0484  3          ITEM_LIST [4,0,32,0] = RET_STRING [0];  ! Return buffer
;  422          0485  3          ITEM_LIST [0,0,16,0] = 512;             ! Buffer size
;  423          0486  3          IF .TABLE_ENTRY [B_TYPE] EQL LIB$K_FMT_HEXSTRING
;  424          0487  3          THEN
;  425          0488  3              ITEM_LIST [0,0,16,0] = 256;         ! Can't cvt more than 256 bytes
;  426          0489  3          END
;  427          0490  2      ELSE
;  428          0491  3          BEGIN
;  429          0492  3          RET_NUMBER [0,0,32,0] = 0;              ! Zero the buffer
;  430          0493  3          RET_NUMBER [4,0,32,0] = 0;
;  431          0494  3          ITEM_LIST [4,0,32,0] = RET_NUMBER [0,0,0,0];    ! Return buffer
;  432          0495  3          ITEM_LIST [0,0,16,0] = 8;               ! Buffer size (Quadword)
;  433          0496  2          END;
;  434          0497  2      ITEM_LIST [8,0,32,0] = RET_LENGTH [0];      ! Return length
;  435          0498  2      ITEM_LIST [12,0,32,0] = 0;                  ! End of list
;  436          0499  2
```

```
;  437          P 0500  2     RET_STATUS = $GETJPIW (EFN = .EVENT_FLAG, PIDADR = .PIDADDR,
;  438            0501  2         PRCNAM = PRCNAM_DESCR [0,0,0,0], ITMLST = ITEM_LIST, IOSB = IOSB);
;  439            0502  2
;  440            0503  2     IF .RET_STATUS
;  441            0504  2     THEN
;  442            0505  2         RET_STATUS = .IOSB [0];
;  443            0506  2
;  444            0507  2     !+
;  445            0508  2     ! Check for errors.
;  446            0509  2     !-
;  447            0510  2
;  448            0511  2     IF NOT .RET_STATUS
;  449            0512  2     THEN
;  450            0513  2         RETURN .RET_STATUS;
;  451            0514  2
;  452            0515  2     !+
;  453            0516  2     ! Now call LIB$$FORMAT_RESULT to format the result, if necessary.
;  454            0517  2     !-
;  455            0518  2
;  456            0519  2     LIB$$FORMAT_RESULT (RET_STRING [0], RET_NUMBER [0,0,0,0], RET_LENGTH [0],
;  457            0520  2         RET_TYPE [0]);
;  458            0521  2
;  459            0522  2     RETURN SS$_NORMAL;
;  460            0523  2
;  461            0524  1     END;                                    ! End of routine LIB$$GETJPI


                                                    .EXTRN  SYS$GETJPIW

                                       0000 00000           .ENTRY  LIB$$GETJPI, Save nothing                       ; 0355
                5E                  1C   C2 00002           SUBL2   #28, SP                                         ;
                50 00000000G        00   9E 00005           MOVAB   LIB$$AB_GETJPI_TABLE, TABLE_ENTRY               ; 0455
04              AC                  60   B1 0000C 1$:        CMPW    (TABLE_ENTRY), ITEM_CODE                    ; 0457
                                    0E   13 00010           BEQL    2$                                              ;
                50                  03   C0 00012           ADDL2   #3, TABLE_ENTRY                                 ; 0460
                                    60   B5 00015           TSTW    (TABLE_ENTRY)                                   ; 0461
                                    F3   12 00017           BNEQ    1$                                              ;
                50                  6E   9E 00019           MOVAB   DUMMY_ENTRY, TABLE_ENTRY                        ; 0464
02              A0                  08   90 0001C           MOVB    #8, 2(TABLE_ENTRY)                              ; 0465
14              BC          02      A0   9A 00020 2$:        MOVZBL  2(TABLE_ENTRY), @RET_TYPE                       ; 0474
0E              AE          04      AC   B0 00025           MOVW    ITEM_CODE, ITEM_LIST+2                          ; 0480
                03          02      A0   91 0002A           CMPB    2(TABLE_ENTRY), #3                              ; 0481
                                    19   1A 0002E           BGTRU   3$                                              ;
10              AE          08      AC   D0 00030           MOVL    RET_STRING, ITEM_LIST+4                         ; 0484
0C              AE        0200      8F   B0 00035           MOVW    #512, ITEM_LIST                                 ; 0485
                02          02      A0   91 0003B           CMPB    2(TABLE_ENTRY), #2                              ; 0486
                                    16   12 0003F           BNEQ    4$                                              ;
0C              AE        0100      8F   B0 00041           MOVW    #256, ITEM_LIST                                 ; 0488
                                    0E   11 00047           BRB     4$                                              ; 0481
                50          0C      AC   D0 00049 3$:        MOVL    RET_NUMBER, R0                                  ; 0492
                                    60   7C 0004D           CLRQ    (R0)                                            ;
10              AE                  50   D0 0004F           MOVL    R0, ITEM_LIST+4                                 ; 0494
0C              AE                  08   B0 00053           MOVW    #8, ITEM_LIST                                   ; 0495
14              AE          10      AC   D0 00057 4$:        MOVL    RET_LENGTH, ITEM_LIST+8                         ; 0497
                            18      AE   D4 0005C           CLRL    ITEM_LIST+12                                    ; 0498
                                    7E   7C 0005F           CLRQ    -(SP)                                           ; 0501
```

```
                                 0C   AE  9F 00061          PUSHAB  IOSB                                    ;
                                 18   AE  9F 00064          PUSHAB  ITEM_LIST                               ;
                           7E    1C   AC  7D 00067          MOVQ    PIDADDR, -(SP)                          ;
                                 18   AC  DD 0006B          PUSHL   EVENT_FLAG                              ;
                 00000000G 00          07  FB 0006E          CALLS   #7, SYS$GETJPIW                         ;
                           17          50  E9 00075          BLBC    RET_STATUS, 5$                          ; 0503
                           50    04    AE  3C 00078          MOVZWL  IOSB, RET_STATUS                        ; 0505
                           10          50  E9 0007C          BLBC    RET_STATUS, 5$                          ; 0511
                           7E    10    AC  7D 0007F          MOVQ    RET_LENGTH, -(SP)                       ; 0520
                           7E    08    AC  7D 00083          MOVQ    RET_STRING, -(SP)                       ;
                     0000V CF          04  FB 00087          CALLS   #4, LIB$$FORMAT_RESULT                  ;
                           50          01  D0 0008C          MOVL    #1, R0                                  ; 0522
                                       04  0008F 5$:         RET                                             ; 0524

; Routine Size:  144 bytes,    Routine Base:  _LIB$CODE + 0095
```

```
;  463     0525  1 %SBTTL 'LIB$$GETSYI - Internal routine for LIB$GETSYI'
;  464     0526  1 GLOBAL ROUTINE LIB$$GETSYI (
;  465     0527  1     ITEM_CODE: WORD,                        ! $GETSYI Item code
;  466     0528  1     RET_STRING: REF VECTOR [, BYTE],        ! Return string buffer
;  467     0529  1     RET_NUMBER: REF VECTOR [, BYTE],        ! Return numeric buffer
;  468     0530  1     RET_LENGTH: REF VECTOR [, WORD],        ! Returned length
;  469     0531  1     RET_TYPE: REF VECTOR [, LONG],          ! Returned type code
;  470     0532  1     EVENT_FLAG,                             ! Event flag to use
;  471     0533  1     CSIDADR,                                ! Address of CSID src/dest
;  472     0534  1     NODENAME_DESCR: REF BLOCK [, BYTE]      ! Nodedname descriptor
;  473     0535  1     ): CALL_LEXICAL =
;  474     0536  1
;  475     0537  1 !++
;  476     0538  1 ! FUNCTIONAL DESCRIPTION:
;  477     0539  1 !
;  478     0540  1 !       Kernel routine called from LIB$GETSYI and DCL to get system-wide
;  479     0541  1 !       information.  See LIB$GETSYI for more information.
;  480     0542  1 !
;  481     0543  1 ! CALLING SEQUENCE:
;  482     0544  1 !
;  483     0545  1 !       ret-status.wlc.v = LIB$$GETSYI (
;  484     0546  1 !                                       item-code.rw.v,
;  485     0547  1 !                                       ret-string.wt.r,
;  486     0548  1 !                                       ret-number.wq.r,
;  487     0549  1 !                                       ret-length.wwu.r,
;  488     0550  1 !                                       ret-type.wl.r,
;  489     0551  1 !                                       event-flag.rl.v,
;  490     0552  1 !                                       csidadr.ra.v,
;  491     0553  1 !                                       nodename-descr.rt.ds)
;  492     0554  1 !
;  493     0555  1 ! FORMAL PARAMETERS:
;  494     0556  1 !
;  495     0557  1 !       item-code               The $GETSYI item code
;  496     0558  1 !
;  497     0559  1 !       ret-string              A string of length 512 into which
;  498     0560  1 !                               is placed the string-formatted value.
;  499     0561  1 !
;  500     0562  1 !       ret-number              A quadword into which is placed the numeric
;  501     0563  1 !                               value, if any.
;  502     0564  1 !
;  503     0565  1 !       ret-length              A word into which is placed the length of
;  504     0566  1 !                               the string in ret-string.
;  505     0567  1 !
;  506     0568  1 !       ret-type                A longword into which is placed the type
;  507     0569  1 !                               code for the value being returned.  The
;  508     0570  1 !                               codes are LIB$K_FMT_xxx values defined
;  509     0571  1 !                               in LIBFMTDEF.SDL.
;  510     0572  1 !
;  511     0573  1 !       event-flag              A longword event flag number to use for
;  512     0574  1 !                               the $GETSYI.
;  513     0575  1 !
;  514     0576  1 !       csidadr                 The address of CSID source/destination,
;  515     0577  1 !                               if any, being inquired about.
;  516     0578  1 !
;  517     0579  1 !       nodename-descr          A string descriptor for the nodename being
;  518     0580  1 !                               inquired about, in any.
;  519     0581  1 !
```

```
;  520          0582  1 ! IMPLICIT INPUTS:
;  521          0583  1 !
;  522          0584  1 !       NONE
;  523          0585  1 !
;  524          0586  1 ! IMPLICIT OUTPUTS:
;  525          0587  1 !
;  526          0588  1 !       NONE
;  527          0589  1 !
;  528          0590  1 ! COMPLETION STATUS:
;  529          0591  1 !
;  530          0592  1 !       SS$_NORMAL      Normal successful completion
;  531          0593  1 !       SS$_xxx         Any error status from $GETSYIW
;  532          0594  1 !
;  533          0595  1 ! SIDE EFFECTS:
;  534          0596  1 !
;  535          0597  1 !       NONE
;  536          0598  1 !
;  537          0599  1 !--
```

```
;  539          0600  2      BEGIN
;  540          0601  2
;  541          0602  2      !+
;  542          0603  2      ! Declare fieldset that defines the layout of a GETSYI_ITEM.
;  543          0604  2      !-
;  544          0605  2
;  545          0606  2      FIELD
;  546          0607  2          GETSYI_ITEM_FIELDSET =
;  547          0608  2              SET
;  548          0609  2              W_ITEM = [0,0,16,0],        ! SYI$_ item code
;  549          0610  2              B_TYPE = [0,16,8,0],        ! LIB$K_FMT_ type code
;  550          0611  2              A_NEXT = [3,0,0,0]          ! Offset of next item
;  551          0612  2              TES;
;  552          0613  2
```

```
;  554          0614  2     LOCAL
;  555          0615  2         TABLE_ENTRY: REF BLOCK [, BYTE] FIELD (GETSYI_ITEM_FIELDSET),
;  556          0616  2                                             ! Current table entry
;  557          0617  2         DUMMY_ENTRY: BLOCK [3, BYTE] FIELD (GETSYI_ITEM_FIELDSET),
;  558          0618  2         IOSB: VECTOR [4, WORD],             ! I/O status block
;  559          0619  2         ITEM_LIST: BLOCK [16, BYTE],        ! Item list for $GETSYI
;  560          0620  2         RET_STATUS;                         ! Return status
;  561          0621  2
;  562          0622  2     !+
;  563          0623  2     ! Look up ITEM_CODE in LIB$$AB_GETSYI_TABLE.
;  564          0624  2     !-
;  565          0625  2
;  566          0626  2     TABLE_ENTRY = LIB$$AB_GETSYI_TABLE;         ! Get first element.
;  567          0627  2
;  568          0628  2     WHILE .TABLE_ENTRY [W_ITEM] NEQ .ITEM_CODE
;  569          0629  2     DO
;  570          0630  3         BEGIN
;  571          0631  3         TABLE_ENTRY = TABLE_ENTRY [A_NEXT];     ! Get next item
;  572          0632  3         IF .TABLE_ENTRY [W_ITEM] EQL 0          ! No more items?
;  573          0633  3         THEN
;  574          0634  4             BEGIN
;  575          0635  4             TABLE_ENTRY = DUMMY_ENTRY;          ! Use dummy entry
;  576          0636  4             TABLE_ENTRY [B_TYPE] = LIB$K_FMT_BINARY;
;  577          0637  4             EXITLOOP;
;  578          0638  3             END;
;  579          0639  2         END;
;  580          0640  2
;  581          0641  2     !+
;  582          0642  2     ! Store type code.
;  583          0643  2     !-
;  584          0644  2
;  585          0645  2     RET_TYPE [0] = .TABLE_ENTRY [B_TYPE];
;  586          0646  2
;  587          0647  2     !+
;  588          0648  2     ! Fill in ITEM_LIST and do the $GETSYI.
;  589          0649  2     !-
;  590          0650  2
;  591          0651  2     ITEM_LIST [0,16,16,0] = .ITEM_CODE; ! Item code
;  592          0652  2     IF .TABLE_ENTRY [B_TYPE] LEQ LIB$K_FMT_MAXSTRING
;  593          0653  2     THEN
;  594          0654  3         BEGIN
;  595          0655  3         ITEM_LIST [4,0,32,0] = RET_STRING [0];  ! Return buffer
;  596          0656  3         ITEM_LIST [0,0,16,0] = 512;             ! Buffer size
;  597          0657  3         IF .TABLE_ENTRY [B_TYPE] EQL LIB$K_FMT_HEXSTRING
;  598          0658  3         THEN
;  599          0659  3             ITEM_LIST [0,0,16,0] = 256;         ! Can't cvt more than 256 bytes
;  600          0660  3         END
;  601          0661  2     ELSE
;  602          0662  3         BEGIN
;  603          0663  3         ITEM_LIST [4,0,32,0] = RET_NUMBER [0];  ! Return buffer
;  604          0664  3         ITEM_LIST [0,0,16,0] = 8;               ! Buffer size (Quadword)
;  605          0665  2         END;
;  606          0666  2     ITEM_LIST [8,0,32,0] = RET_LENGTH [0];      ! Return length
;  607          0667  2     ITEM_LIST [12,0,32,0] = 0;                  ! End of list
;  608          0668  2
;  609        P 0669  2     RET_STATUS = $GETSYIW (EFN = .EVENT_FLAG, CSIDADR = .CSIDADR,
;  610          0670  2         NODENAME = .NODENAME_DESCR,ITMLST = ITEM_LIST, IOSB = IOSB);
```

```
;  611          0671  2
;  612          0672  2      IF .RET_STATUS
;  613          0673  2      THEN
;  614          0674  2          RET_STATUS = .IOSB [0];
;  615          0675  2
;  616          0676  2      IF NOT .RET_STATUS
;  617          0677  2      THEN
;  618          0678  2          RETURN .RET_STATUS;
;  619          0679  2
;  620          0680  2      !+
;  621          0681  2      ! Now call LIB$$FORMAT_RESULT to format the result.
;  622          0682  2      !-
;  623          0683  2
;  624          0684  2      LIB$$FORMAT_RESULT (RET_STRING [0], RET_NUMBER [0], RET_LENGTH [0],
;  625          0685  2          RET_TYPE [0]);
;  626          0686  2
;  627          0687  2      RETURN SS$_NORMAL;
;  628          0688  2
;  629          0689  1      END;                                    ! End of routine LIB$$GETSYI


                                                                     .EXTRN  SYS$GETSYIW

                                                0000 00000           .ENTRY  LIB$$GETSYI, Save nothing                          ; 0526
                                             5E 1C   C2 00002        SUBL2   #28, SP                                            ;
                                50 00000000G 00   9E 00005        MOVAB   LIB$$AB_GETSYI_TABLE, TABLE_ENTRY                  ; 0626
                             04 AC           60   B1 0000C 1$:     CMPW    (TABLE_ENTRY), ITEM_CODE                           ; 0628
                                             0E   13 00010        BEQL    2$                                                 ;
                                50           03   C0 00012        ADDL2   #3, TABLE_ENTRY                                    ; 0631
                                             60   B5 00015        TSTW    (TABLE_ENTRY)                                      ; 0632
                                             F3   12 00017        BNEQ    1$                                                 ;
                                50           6E   9E 00019        MOVAB   DUMMY_ENTRY, TABLE_ENTRY                           ; 0635
                             02 A0           08   90 0001C        MOVB    #8, 2(TABLE_ENTRY)                                 ; 0636
                             14 BC     02    A0   9A 00020 2$:     MOVZBL  2(TABLE_ENTRY), @RET_TYPE                          ; 0645
                             06 AE     04    AC   B0 00025        MOVW    ITEM_CODE, ITEM_LIST+2                             ; 0651
                                03     02    A0   91 0002A        CMPB    2(TABLE_ENTRY), #3                                 ; 0652
                                             19   1A 0002E        BGTRU   3$                                                 ;
                             08 AE     08    AC   D0 00030        MOVL    RET_STRING, ITEM_LIST+4                            ; 0655
                             04 AE   0200    8F   B0 00035        MOVW    #512, ITEM_LIST                                    ; 0656
                                02     02    A0   91 0003B        CMPB    2(TABLE_ENTRY), #2                                 ; 0657
                                             11   12 0003F        BNEQ    4$                                                 ;
                             04 AE   0100    8F   B0 00041        MOVW    #256, ITEM_LIST                                    ; 0659
                                             09   11 00047        BRB     4$                                                 ; 0652
                             08 AE     0C    AC   D0 00049 3$:     MOVL    RET_NUMBER, ITEM_LIST+4                            ; 0663
                             04 AE           08   B0 0004E        MOVW    #8, ITEM_LIST                                      ; 0664
                             0C AE     10    AC   D0 00052 4$:     MOVL    RET_LENGTH, ITEM_LIST+8                            ; 0666
                                10     10    AE   D4 00057        CLRL    ITEM_LIST+12                                       ; 0667
                                             7E   7C 0005A        CLRQ    -(SP)                                              ; 0670
                                1C     1C    AE   9F 0005C        PUSHAB  IOSB                                               ;
                                10     10    AE   9F 0005F        PUSHAB  ITEM_LIST                                          ;
                                7E     1C    AC   7D 00062        MOVQ    CSIDADR, -(SP)                                     ;
                                18     18    AC   DD 00066        PUSHL   EVENT_FLAG                                         ;
                         00000000G     00    07   FB 00069        CALLS   #7, SYS$GETSYIW                                    ;
                                17           50   E9 00070        BLBC    RET_STATUS, 5$                                     ; 0672
                                50     14    AE   3C 00073        MOVZWL  IOSB, RET_STATUS                                   ; 0674
                                10           50   E9 00077        BLBC    RET_STATUS, 5$                                     ; 0676
```

```
                    7E      10  AC  7D 0007A        MOVQ    RET_LENGTH, -(SP)                       ; 0685
                    7E      08  AC  7D 0007E        MOVQ    RET_STRING, -(SP)                       ;
          0000V     CF          04  FB 00082        CALLS   #4, LIB$$FORMAT_RESULT                  ;
                    50          01  D0 00087        MOVL    #1, R0                                  ; 0687
                                    04 0008A 5$:    RET                                             ; 0689

; Routine Size:  139 bytes,    Routine Base:  _LIB$CODE + 0125
```

```
;  631          0690  1 %SBTTL 'LIB$$FORMAT_RESULT - Format the result'
;  632          0691  1 GLOBAL ROUTINE LIB$$FORMAT_RESULT (
;  633          0692  1     RET_STRING: REF VECTOR [, BYTE],     ! Return string buffer
;  634          0693  1     RET_NUMBER: REF BLOCK [, BYTE],      ! Return numeric buffer
;  635          0694  1     RET_LENGTH: REF VECTOR [, WORD],     ! Returned length
;  636          0695  1     RET_TYPE: REF VECTOR [, LONG]        ! Returned type code
;  637          0696  1     ): NOVALUE =
;  638          0697  1
;  639          0698  1 !++
;  640          0699  1 ! FUNCTIONAL DESCRIPTION:
;  641          0700  1 !
;  642          0701  1 !       Called by LIB$$GETxxI routines to convert the value returned
;  643          0702  1 !       by the $GETxxI service to the appropriate string format.
;  644          0703  1 !
;  645          0704  1 ! CALLING SEQUENCE:
;  646          0705  1 !
;  647          0706  1 !       CALL LIB$$FORMAT_RESULT (ret-string.mt.r, ret-number.rq.r,
;  648          0707  1 !               ret-length.mwu.r, ret-type.rl.r)
;  649          0708  1 !
;  650          0709  1 ! FORMAL PARAMETERS:
;  651          0710  1 !
;  652          0711  1 !       ret-string      A string of length 512 into which
;  653          0712  1 !                       is placed the formatted result.  If the
;  654          0713  1 !                       value type is already a string, the value
;  655          0714  1 !                       is in ret-string.
;  656          0715  1 !
;  657          0716  1 !       ret-number      A quadword containing the numeric value to
;  658          0717  1 !                       be formatted.
;  659          0718  1 !
;  660          0719  1 !       ret-length      A word containing the current length of the
;  661          0720  1 !                       string in ret-string, if any, and into which
;  662          0721  1 !                       is stored the length of the formatted result.
;  663          0722  1 !
;  664          0723  1 !       ret-type        A longword indicating the type of the value.
;  665          0724  1 !                       The type codes are LIB$K_FMT_xxx symbols and
;  666          0725  1 !                       are defined in LIBFMTDEF.SDL.
;  667          0726  1 !
;  668          0727  1 ! IMPLICIT INPUTS:
;  669          0728  1 !
;  670          0729  1 !       NONE
;  671          0730  1 !
;  672          0731  1 ! IMPLICIT OUTPUTS:
;  673          0732  1 !
;  674          0733  1 !       NONE
;  675          0734  1 !
;  676          0735  1 ! COMPLETION STATUS:
;  677          0736  1 !
;  678          0737  1 !       NONE
;  679          0738  1 !
;  680          0739  1 ! SIDE EFFECTS:
;  681          0740  1 !
;  682          0741  1 !       NONE
;  683          0742  1 !
;  684          0743  1 !--
;  685          0744  1
;  686          0745  2     BEGIN
;  687          0746  2
```

```
;  688          0747  2     LOCAL
;  689          0748  2         CTRSTR_DESCR: BLOCK [8, BYTE],  ! FAO control string descriptor
;  690          0749  2         OUTSTR_DESCR: BLOCK [8, BYTE],  ! Output string descriptor
;  691          0750  2         PRMLST: VECTOR [4, LONG];       ! FAOL parameter list
;  692          0751  2
;  693          0752  2     !+
;  694          0753  2     ! Table of ACP type names.
;  695          0754  2     !-
;  696          0755  2
;  697          0756  2     BIND
;  698          0757  2         ACP_TYPES = UPLIT BYTE (
;  699          0758  2             %ASCIC'UNKNOWN',      ! 0
;  700          0759  2             %ASCIC'F11V1',0,0,    $ASSUME (DVI$C_ACP_F11V1, EQL, 1)
;  701          0760  2             %ASCIC'F11V2',0,0,    $ASSUME (DVI$C_ACP_F11V2, EQL, 2)
;  702          0761  2             %ASCIC'MTA',0,0,0,0,$ASSUME (DVI$C_ACP_MTA, EQL, 3)
;  703          0762  2             %ASCIC'NET',0,0,0,0,$ASSUME (DVI$C_ACP_NET, EQL, 4)
;  704          0763  2             %ASCIC'REM',0,0,0,0,$ASSUME (DVI$C_ACP_REM, EQL, 5)
;  705          0764  2             %ASCIC'JNL',0,0,0,0)$ASSUME (DVI$C_ACP_JNL, EQL, 6)
;  706          0765  2             : VECTOR [, LONG];
;  707          0766  2
;  708          0767  2     !+
;  709          0768  2     ! Table of process state names.
;  710          0769  2     !-
;  711          0770  2
;  712          0771  2     BIND
;  713          0772  2         STATES = UPLIT BYTE (
;  714          0773  2             %ASCIC'UNKNOWN',      ! 0
;  715          0774  2             %ASCIC'COLPG',0,0,    $ASSUME (SCH$C_COLPG, EQL, 1)
;  716          0775  2             %ASCIC'MWAIT',0,0,    $ASSUME (SCH$C_MWAIT, EQL, 2)
;  717          0776  2             %ASCIC'CEF',0,0,0,0,$ASSUME (SCH$C_CEF, EQL, 3)
;  718          0777  2             %ASCIC'PFW',0,0,0,0,$ASSUME (SCH$C_PFW, EQL, 4)
;  719          0778  2             %ASCIC'LEF',0,0,0,0,$ASSUME (SCH$C_LEF, EQL, 5)
;  720          0779  2             %ASCIC'LEFO',0,0,0,  $ASSUME (SCH$C_LEFO, EQL, 6)
;  721          0780  2             %ASCIC'HIB',0,0,0,0,$ASSUME (SCH$C_HIB, EQL, 7)
;  722          0781  2             %ASCIC'HIBO',0,0,0,  $ASSUME (SCH$C_HIBO, EQL, 8)
;  723          0782  2             %ASCIC'SUSP',0,0,0,  $ASSUME (SCH$C_SUSP, EQL, 9)
;  724          0783  2             %ASCIC'SUSPO',0,0,   $ASSUME (SCH$C_SUSPO, EQL, 10)
;  725          0784  2             %ASCIC'FPG',0,0,0,0,$ASSUME (SCH$C_FPG, EQL, 11)
;  726          0785  2             %ASCIC'COM',0,0,0,0,$ASSUME (SCH$C_COM, EQL, 12)
;  727          0786  2             %ASCIC'COMO',0,0,0,  $ASSUME (SCH$C_COMO, EQL, 13)
;  728          0787  2             %ASCIC'CUR',0,0,0,0)$ASSUME (SCH$C_CUR, EQL, 14)
;  729          0788  2             : VECTOR [, LONG];
;  730          0789  2
;  731          0790  2     !+
;  732          0791  2     ! Table of process mode names.
;  733          0792  2     !-
;  734          0793  2
;  735          0794  2     BIND
;  736          0795  2         MODES = UPLIT BYTE (
;  737          0796  2             %ASCIC'OTHER',        $ASSUME (JPI$K_OTHER, EQL, 0)
;  738          0797  2             %ASCIC'NETWORK',      $ASSUME (JPI$K_NETWORK, EQL, 1)
;  739          0798  2             %ASCIC'BATCH',        $ASSUME (JPI$K_BATCH, EQL, 2)
;  740          0799  2             %ASCIC'INTERACTIVE',$ASSUME (JPI$K_INTERACTIVE, EQL, 3)
;  741          0800  2             0)              ! End of list
;  742          0801  2             : VECTOR [, BYTE];
;  743          0802  2
;  744          0803  2     !+
```

```
;  745          0804  2      ! Table of privilege names.
;  746          0805  2      !-
;  747          0806  2
;  748          0807  2      GLOBAL BIND
;  749          0808  2          LIB$$AT_PRV_NAMES = UPLIT BYTE (
;  750          0809  2          %ASCIC'CMKRNL',$ASSUME ($BITPOSITION(PRV$V_CMKRNL), EQL, 0)
;  751          0810  2          %ASCIC'CMEXEC',$ASSUME ($BITPOSITION(PRV$V_CMEXEC), EQL, 1)
;  752          0811  2          %ASCIC'SYSNAM',$ASSUME ($BITPOSITION(PRV$V_SYSNAM), EQL, 2)
;  753          0812  2          %ASCIC'GRPNAM',$ASSUME ($BITPOSITION(PRV$V_GRPNAM), EQL, 3)
;  754          0813  2          %ASCIC'ALLSPOOL',$ASSUME ($BITPOSITION(PRV$V_ALLSPOOL), EQL, 4)
;  755          0814  2          %ASCIC'DETACH',$ASSUME ($BITPOSITION(PRV$V_DETACH), EQL, 5)
;  756          0815  2          %ASCIC'DIAGNOSE',$ASSUME ($BITPOSITION(PRV$V_DIAGNOSE), EQL, 6)
;  757          0816  2          %ASCIC'LOG_IO',$ASSUME ($BITPOSITION(PRV$V_LOG_IO), EQL, 7)
;  758          0817  2          %ASCIC'GROUP',$ASSUME ($BITPOSITION(PRV$V_GROUP), EQL, 8)
;  759          0818  2          %ASCIC'NOACNT',$ASSUME ($BITPOSITION(PRV$V_NOACNT), EQL, 9)
;  760          0819  2          %ASCIC'PRMCEB',$ASSUME ($BITPOSITION(PRV$V_PRMCEB), EQL, 10)
;  761          0820  2          %ASCIC'PRMMBX',$ASSUME ($BITPOSITION(PRV$V_PRMMBX), EQL, 11)
;  762          0821  2          %ASCIC'PSWAPM',$ASSUME ($BITPOSITION(PRV$V_PSWAPM), EQL, 12)
;  763          0822  2          %ASCIC'SETPRI',$ASSUME ($BITPOSITION(PRV$V_SETPRI), EQL, 13)
;  764          0823  2          %ASCIC'SETPRV',$ASSUME ($BITPOSITION(PRV$V_SETPRV), EQL, 14)
;  765          0824  2          %ASCIC'TMPMBX',$ASSUME ($BITPOSITION(PRV$V_TMPMBX), EQL, 15)
;  766          0825  2          %ASCIC'WORLD',$ASSUME ($BITPOSITION(PRV$V_WORLD), EQL, 16)
;  767          0826  2          %ASCIC'MOUNT',$ASSUME ($BITPOSITION(PRV$V_MOUNT), EQL, 17)
;  768          0827  2          %ASCIC'OPER',$ASSUME ($BITPOSITION(PRV$V_OPER), EQL, 18)
;  769          0828  2          %ASCIC'EXQUOTA',$ASSUME ($BITPOSITION(PRV$V_EXQUOTA), EQL, 19)
;  770          0829  2          %ASCIC'NETMBX',$ASSUME ($BITPOSITION(PRV$V_NETMBX), EQL, 20)
;  771          0830  2          %ASCIC'VOLPRO',$ASSUME ($BITPOSITION(PRV$V_VOLPRO), EQL, 21)
;  772          0831  2          %ASCIC'PHY_IO',$ASSUME ($BITPOSITION(PRV$V_PHY_IO), EQL, 22)
;  773          0832  2          %ASCIC'BUGCHK',$ASSUME ($BITPOSITION(PRV$V_BUGCHK), EQL, 23)
;  774          0833  2          %ASCIC'PRMGBL',$ASSUME ($BITPOSITION(PRV$V_PRMGBL), EQL, 24)
;  775          0834  2          %ASCIC'SYSGBL',$ASSUME ($BITPOSITION(PRV$V_SYSGBL), EQL, 25)
;  776          0835  2          %ASCIC'PFNMAP',$ASSUME ($BITPOSITION(PRV$V_PFNMAP), EQL, 26)
;  777          0836  2          %ASCIC'SHMEM',$ASSUME ($BITPOSITION(PRV$V_SHMEM), EQL, 27)
;  778          0837  2          %ASCIC'SYSPRV',$ASSUME ($BITPOSITION(PRV$V_SYSPRV), EQL, 28)
;  779          0838  2          %ASCIC'BYPASS',$ASSUME ($BITPOSITION(PRV$V_BYPASS), EQL, 29)
;  780          0839  2          %ASCIC'SYSLCK',$ASSUME ($BITPOSITION(PRV$V_SYSLCK), EQL, 30)
;  781          0840  2          %ASCIC'SHARE',$ASSUME ($BITPOSITION(PRV$V_SHARE), EQL, 31)
;  782          0841  2          %ASCIC'UPGRADE',$ASSUME ($BITPOSITION(PRV$V_UPGRADE), EQL, 0) ! 32
;  783          0842  2          %ASCIC'DOWNGRADE',$ASSUME ($BITPOSITION(PRV$V_DOWNGRADE), EQL, 1)   33
;  784          0843  2          %ASCIC'GRPPRV',$ASSUME ($BITPOSITION(PRV$V_GRPPRV), EQL, 2) ! 34
;  785          0844  2          %ASCIC'READALL',$ASSUME ($BITPOSITION(PRV$V_READALL), EQL, 3) ! 35
;  786          0845  2          %ASCIC'TMPJNL',$ASSUME ($BITPOSITION(PRV$V_TMPJNL), EQL, 4) ! 36
;  787          0846  2          %ASCIC'PRMJNL',$ASSUME ($BITPOSITION(PRV$V_PRMJNL), EQL, 5) ! 37
;  788          0847  2          %ASCIC'SECURITY',$ASSUME ($BITPOSITION(PRV$V_SECURITY), EQL, 6) ! 38
;  789          0848  2          0)      ! End of list
;  790          0849  2          : VECTOR [, BYTE];
;  791          0850  2
;  792          0851  2      !+
;  793          0852  2      ! Fill in constant descriptor information.
;  794          0853  2      !-
;  795          0854  2
;  796          0855  2      CTRSTR_DESCR [DSC$B_DTYPE] = DSC$K_DTYPE_T;
;  797          0856  2      CTRSTR_DESCR [DSC$B_CLASS] = DSC$K_CLASS_S;
;  798          0857  2      OUTSTR_DESCR [DSC$B_DTYPE] = DSC$K_DTYPE_T;
;  799          0858  2      OUTSTR_DESCR [DSC$B_CLASS] = DSC$K_CLASS_S;
;  800          0859  2      OUTSTR_DESCR [DSC$W_LENGTH] = 512;
;  801          0860  2      OUTSTR_DESCR [DSC$A_POINTER] = RET_STRING [0];
```

```
;  802          0861  2
;  803          0862  2      !+
;  804          0863  2      ! Select the formatting action appropriate to the item type.
;  805          0864  2      !-
;  806          0865  2
;  807          0866  2      CASE .RET_TYPE [0] FROM LIB$K_FMT_MIN TO LIB$K_FMT_MAX OF
;  808          0867  2          SET
;  809          0868  2
;  810          0869  2          [LIB$K_FMT_BINARY]:
;  811          0870  3              BEGIN
;  812          0871  3              CTRSTR_DESCR [DSC$W_LENGTH] = %CHARCOUNT ('!UL');
;  813          0872  3              CTRSTR_DESCR [DSC$A_POINTER] = UPLIT BYTE ('!UL');
;  814          0873  3              PRMLST [0] = .RET_NUMBER [0,0,32,0];
;  815        P 0874  3              $FAOL (CTRSTR = CTRSTR_DESCR [0,0,0,0],
;  816        P 0875  3                     OUTLEN = RET_LENGTH [0],
;  817        P 0876  3                     OUTBUF = OUTSTR_DESCR [0,0,0,0],
;  818          0877  3                     PRMLST = PRMLST [0]);
;  819          0878  2              END;
;  820          0879  2
;  821          0880  2          [LIB$K_FMT_BOOLEAN]:
;  822          0881  3              BEGIN
;  823          0882  3              IF .RET_NUMBER [0,0,1,0]
;  824          0883  3              THEN
;  825          0884  4                  BEGIN
;  826          0885  4                  RET_LENGTH [0] = %CHARCOUNT ('TRUE');
;  827          0886  4                  CH$MOVE (%CHARCOUNT ('TRUE'), UPLIT BYTE ('TRUE'),
;  828          0887  4                      RET_STRING [0]);
;  829          0888  4                  END
;  830          0889  3              ELSE
;  831          0890  4                  BEGIN
;  832          0891  4                  RET_LENGTH [0] = %CHARCOUNT ('FALSE');
;  833          0892  4                  CH$MOVE (%CHARCOUNT ('FALSE'), UPLIT BYTE ('FALSE'),
;  834          0893  4                      RET_STRING [0]);
;  835          0894  3                  END;
;  836          0895  2              END;
;  837          0896  2
;  838          0897  2          [LIB$K_FMT_HEX]:
;  839          0898  3              BEGIN
;  840          0899  3              CTRSTR_DESCR [DSC$W_LENGTH] = %CHARCOUNT ('!XL');
;  841          0900  3              CTRSTR_DESCR [DSC$A_POINTER] = UPLIT BYTE ('!XL');
;  842          0901  3              PRMLST [0] = .RET_NUMBER [0,0,32,0];
;  843        P 0902  3              $FAOL (CTRSTR = CTRSTR_DESCR [0,0,0,0],
;  844        P 0903  3                     OUTLEN = RET_LENGTH [0],
;  845        P 0904  3                     OUTBUF = OUTSTR_DESCR [0,0,0,0],
;  846          0905  3                     PRMLST = PRMLST [0]);
;  847          0906  2              END;
;  848          0907  2
;  849          0908  2          [LIB$K_FMT_HEXSTRING]:
;  850          0909  3              BEGIN
;  851          0910  3              LOCAL
;  852          0911  3                  TEMP_STRING: VECTOR [512, BYTE];
;  853          0912  3
;  854          0913  3              CTRSTR_DESCR [DSC$W_LENGTH] = .RET_LENGTH [0] * 2;
;  855          0914  3              CTRSTR_DESCR [DSC$A_POINTER] = TEMP_STRING;
;  856          0915  3              OTS$CVT_L_TZ (RET_STRING [0], CTRSTR_DESCR [0,0,0,0],
;  857          0916  3                  .CTRSTR_DESCR [DSC$W_LENGTH], .RET_LENGTH [0]);
;  858          0917  3              RET_LENGTH [0] = .RET_LENGTH [0] * 2;
```

```
;  859          0918  3              CH$MOVE (.CTRSTR_DESCR [DSC$W_LENGTH], TEMP_STRING,
;  860          0919  3                  RET_STRING [0]);
;  861          0920  2              END;
;  862          0921  2
;  863          0922  2          [LIB$K_FMT_DATE]:
;  864          0923  3              BEGIN
;  865          0924  3              CTRSTR_DESCR [DSC$W_LENGTH] = %CHARCOUNT ('!%D');
;  866          0925  3              CTRSTR_DESCR [DSC$A_POINTER] = UPLIT BYTE ('!%D');
;  867          0926  3              PRMLST [0] = RET_NUMBER [0,0,0,0];
;  868        P 0927  3              $FAOL (CTRSTR = CTRSTR_DESCR [0,0,0,0],
;  869        P 0928  3                     OUTLEN = RET_LENGTH [0],
;  870        P 0929  3                     OUTBUF = OUTSTR_DESCR [0,0,0,0],
;  871          0930  3                     PRMLST = PRMLST [0]);
;  872          0931  2              END;
;  873          0932  2
;  874          0933  2          [LIB$K_FMT_PRIVILEGE]:
;  875          0934  3              BEGIN
;  876          0935  3              LOCAL
;  877          0936  3                  STRING_PTR,                 ! Pointer to current char in string
;  878          0937  3                  PRV_NAME: REF VECTOR [, BYTE], ! Privilege name
;  879          0938  3                  PRV;                        ! Current privilege number
;  880          0939  3
;  881          0940  3              STRING_PTR = RET_STRING [0]; ! First position in string
;  882          0941  3              PRV_NAME = LIB$$AT_PRV_NAMES [0];    ! First privilege name
;  883          0942  3              INCRU PRV FROM 0 TO 63 DO
;  884          0943  4                  BEGIN
;  885          0944  4                  IF .PRV_NAME [0] EQL 0  ! No more defined privilege names
;  886          0945  4                  THEN
;  887          0946  4                      EXITLOOP;
;  888          0947  4                  IF .RET_NUMBER [0,.PRV,1,0]
;  889          0948  4                  THEN
;  890          0949  5                      BEGIN
;  891          0950  5                      STRING_PTR = CH$MOVE (.PRV_NAME [0], PRV_NAME [1],
;  892          0951  5                          .STRING_PTR);
;  893          0952  5                      CH$WCHAR_A ('%C',', STRING_PTR);
;  894          0953  4                      END;
;  895          0954  4                  PRV_NAME = .PRV_NAME + .PRV_NAME [0] + 1;       ! Next name
;  896          0955  3                  END;
;  897          0956  3              IF .STRING_PTR NEQA RET_STRING [0]
;  898          0957  3              THEN
;  899          0958  3                  STRING_PTR = .STRING_PTR - 1;   ! Trim trailing comma
;  900          0959  3              RET_LENGTH [0] = .STRING_PTR - RET_STRING [0];      ! Get length
;  901          0960  2              END;
;  902          0961  2
;  903          0962  2          [LIB$K_FMT_UIC]:
;  904          0963  3              BEGIN
;  905          0964  3              CTRSTR_DESCR [DSC$W_LENGTH] = %CHARCOUNT ('!%U');
;  906          0965  3              CTRSTR_DESCR [DSC$A_POINTER] = UPLIT BYTE ('!%U');
;  907          0966  3              PRMLST [0] = .RET_NUMBER [0,0,32,0];
;  908        P 0967  3              $FAOL (CTRSTR = CTRSTR_DESCR [0,0,0,0],
;  909        P 0968  3                     OUTLEN = RET_LENGTH [0],
;  910        P 0969  3                     OUTBUF = OUTSTR_DESCR [0,0,0,0],
;  911          0970  3                     PRMLST = PRMLST [0]);
;  912          0971  2              END;
;  913          0972  2
;  914          0973  2          [LIB$K_FMT_PROT, LIB$K_FMT_VPROT]:
;  915          0974  3              BEGIN
```

```
;  916          0975  3              LOCAL
;  917          0976  3                  PSTRING: VECTOR [24, BYTE],
;  918          0977  3                  PSTRING_PTR,
;  919          0978  3                  PROT_CHARS: REF VECTOR [, BYTE],
;  920          0979  3                  PROT_FIELD: BLOCK [1, BYTE];
;  921          0980  3
;  922          0981  3              !+
;  923          0982  3              ! Select the correct protection codes for files or volumes.
;  924          0983  3              !-
;  925          0984  3
;  926          0985  3              IF .RET_TYPE EQL LIB$K_FMT_PROT
;  927          0986  3              THEN
;  928          0987  3                  PROT_CHARS = UPLIT BYTE ('RWED')
;  929          0988  3              ELSE
;  930          0989  3                  PROT_CHARS = UPLIT BYTE ('RWLP');
;  931          0990  3
;  932          0991  3              PSTRING_PTR = PSTRING [0];
;  933          0992  3              INCR I FROM 0 TO 3 BY 1 DO
;  934          0993  4                  BEGIN
;  935          0994  4                  LOCAL
;  936          0995  4                      THIS_STRING: REF VECTOR [, BYTE];
;  937          0996  4                  PRMLST [.I] = .PSTRING_PTR;
;  938          0997  4                  THIS_STRING = .PSTRING_PTR;
;  939          0998  4                  CH$WCHAR_A (0, PSTRING_PTR);            ! Set initial length
;  940          0999  4                  PROT_FIELD = .RET_NUMBER [0,.I*4,4,0] XOR %X'F';
;  941          1000  4                  IF .PROT_FIELD NEQ 0
;  942          1001  4                  THEN
;  943          1002  5                      BEGIN
;  944          1003  5                      CH$WCHAR_A (%C'=', PSTRING_PTR);
;  945          1004  5                      THIS_STRING [0] = .THIS_STRING [0] + 1;
;  946          1005  5                      INCR J FROM 0 TO 3 BY 1 DO
;  947          1006  6                          BEGIN
;  948          1007  6                          IF .PROT_FIELD [0,.J,1,0]
;  949          1008  6                          THEN
;  950          1009  7                              BEGIN
;  951          1010  7                              CH$WCHAR_A (.PROT_CHARS [.J], PSTRING_PTR);
;  952          1011  7                              THIS_STRING [0] = .THIS_STRING [0] + 1;
;  953          1012  6                              END;
;  954          1013  5                          END;
;  955          1014  4                      END;
;  956          1015  3                  END;
;  957          1016  3              CTRSTR_DESCR [DSC$W_LENGTH] =
;  958          1017  3                  %CHARCOUNT ('SYSTEM!AC,OWNER!AC,GROUP!AC,WORLD!AC');
;  959          1018  3              CTRSTR_DESCR [DSC$A_POINTER] =
;  960          1019  3                  UPLIT BYTE ('SYSTEM!AC,OWNER!AC,GROUP!AC,WORLD!AC');
;  961        P 1020  3              $FAOL (CTRSTR = CTRSTR_DESCR [0,0,0,0],
;  962        P 1021  3                     OUTLEN = RET_LENGTH [0],
;  963        P 1022  3                     OUTBUF = OUTSTR_DESCR [0,0,0,0],
;  964          1023  3                     PRMLST = PRMLST [0]);
;  965          1024  2              END;
;  966          1025  2
;  967          1026  2
;  968          1027  2          [LIB$K_FMT_ACP]:
;  969          1028  3              BEGIN
;  970          1029  3              LOCAL
;  971          1030  3                  ACPTYP_PTR: REF VECTOR [, BYTE];
;  972          1031  3                  IF .RET_NUMBER [0,0,32,0] GTRU DVI$C_ACP_JNL
```

```
;  973          1032  3              THEN
;  974          1033  3                  ACPTYP_PTR = ACP_TYPES [0]      ! Illegal
;  975          1034  3              ELSE
;  976          1035  3                  ACPTYP_PTR = ACP_TYPES [2*.RET_NUMBER [0,0,32,0]];
;  977          1036  3              RET_LENGTH [0] = .ACPTYP_PTR [0];
;  978          1037  3              CH$MOVE (.RET_LENGTH [0], ACPTYP_PTR [1], RET_STRING [0]);
;  979          1038  2              END;
;  980          1039  2
;  981          1040  2          [LIB$K_FMT_STATE]:
;  982          1041  3              BEGIN
;  983          1042  3              LOCAL
;  984          1043  3                  STATE_PTR: REF VECTOR [, BYTE];
;  985          1044  3              IF .RET_NUMBER [0,0,32,0] GTRU SCH$C_CUR
;  986          1045  3              THEN
;  987          1046  3                  STATE_PTR = STATES [0]  ! Illegal
;  988          1047  3              ELSE
;  989          1048  3                  STATE_PTR = STATES [2*.RET_NUMBER [0,0,32,0]];
;  990          1049  3              RET_LENGTH [0] = .STATE_PTR [0];
;  991          1050  3              CH$MOVE (.RET_LENGTH [0], STATE_PTR [1], RET_STRING [0]);
;  992          1051  2              END;
;  993          1052  2
;  994          1053  2          [LIB$K_FMT_MODE]:
;  995          1054  3              BEGIN
;  996          1055  3              LOCAL
;  997          1056  3                  MODE_PTR: REF VECTOR [, BYTE];
;  998          1057  3              MODE_PTR = MODES [0];
;  999          1058  3              INCRU I FROM 1 TO .RET_NUMBER [0,0,32,0] DO
; 1000          1059  4                  BEGIN
; 1001          1060  4                  IF .MODE_PTR [0] EQLU 0
; 1002          1061  4                  THEN
; 1003          1062  5                      BEGIN
; 1004          1063  5                      MODE_PTR = MODES [0];       ! Invalid, use OTHER
; 1005          1064  5                      EXITLOOP;
; 1006          1065  4                      END;
; 1007          1066  4                  MODE_PTR = .MODE_PTR + .MODE_PTR [0] + 1; ! Skip this string
; 1008          1067  3                  END;
; 1009          1068  3              RET_LENGTH [0] = .MODE_PTR [0];
; 1010          1069  3              CH$MOVE (.RET_LENGTH [0], MODE_PTR [1], RET_STRING [0]);
; 1011          1070  2              END;
; 1012          1071  2
; 1013          1072  2          [LIB$K_FMT_PSTRING,LIB$K_FMT_ASCIC]:    ! Strip trailing blanks
; 1014          1073  3              BEGIN
; 1015          1074  3              DECRU I FROM .RET_LENGTH [0] TO 1 DO
; 1016          1075  3                  IF .RET_STRING [.I] EQL %C' '
; 1017          1076  3                  THEN
; 1018          1077  3                      RET_LENGTH [0] = .RET_LENGTH [0] - 1;
; 1019          1078  2              END;
; 1020          1079  2
; 1021          1080  2 ! Note: $GETJPI does not return counted strings.  It returns
; 1022          1081  2 !       these strings as zero-padded strings.
; 1023          1082  2 !
; 1024          1083  2 !       [LIB$K_FMT_ASCIC]:
; 1025          1084  2 !           BEGIN
; 1026          1085  2 !           RET_LENGTH [0] = .RET_STRING [0];
; 1027          1086  2 !           CH$MOVE (.RET_LENGTH [0], RET_STRING [1], RET_STRING [0]);
; 1028          1087  2 !           END;
; 1029          1088  2
```

```
 2          [INRANGE, OUTRANGE]:
 2              :
 2
 2          TES;
 2
 2      RETURN;
 2
 1      END;                                        ! End of routine LIB$$FORMAT_RESULT;


            4E  57  4F  4E  4B  4E  55  07  001B0 P.AAA:   .ASCII  <7>\UNKNOWN\
                    31  56  31  31  46  05  001B8          .ASCII  <5>\F11V1\
                                    00  00  001BE          .BYTE   0, 0
                    32  56  31  31  46  05  001C0          .ASCII  <5>\F11V2\
                                    00  00  001C6          .BYTE   0, 0
                            41  54  4D  03  001C8          .ASCII  <3>\MTA\
                            00  00  00  00  001CC          .BYTE   0, 0, 0, 0
                            54  45  4E  03  C01D0          .ASCII  <3>\NET\
                            00  00  00  00  001D4          .BYTE   0, 0, 0, 0
                            4D  45  52  03  001D8          .ASCII  <3>\REM\
                            00  00  00  00  001DC          .BYTE   0, 0, 0, 0
                            4C  4E  4A  03  001E0          .ASCII  <3>\JNL\
                            00  00  00  00  001E4          .BYTE   0, 0, 0, 0
            4E  57  4F  4E  4B  4E  55  07  001E8 P.AAB:   .ASCII  <7>\UNKNOWN\
                    47  50  4C  4F  43  05  001F0          .ASCII  <5>\COLPG\
                                    00  00  001F6          .BYTE   0, 0
                    54  49  41  57  4D  05  001F8          .ASCII  <5>\MWAIT\
                                    00  00  001FE          .BYTE   0, 0
                            46  45  43  03  00200          .ASCII  <3>\CEF\
                            00  00  00  00  00204          .BYTE   0, 0, 0, 0
                            57  46  50  03  00208          .ASCII  <3>\PFW\
                            00  00  00  00  0020C          .BYTE   0, 0, 0, 0
                            46  45  4C  03  00210          .ASCII  <3>\LEF\
                            00  00  00  00  00214          .BYTE   0, 0, 0, 0
                        4F  46  45  4C  04  00218          .ASCII  <4>\LEFO\
                                00  00  00  0021D          .BYTE   0, 0, 0
                            42  49  48  03  00220          .ASCII  <3>\HIB\
                            00  00  00  00  00224          .BYTE   0, 0, 0, 0
                        4F  42  49  48  04  00228          .ASCII  <4>\HIBO\
                                00  00  00  0022D          .BYTE   0, 0, 0
                        50  53  55  53  04  00230          .ASCII  <4>\SUSP\
                                00  00  00  00235          .BYTE   0, 0, 0
                    4F  50  53  55  53  05  00238          .ASCII  <5>\SUSPO\
                                    00  00  0023E          .BYTE   0, 0
                            47  50  46  03  00240          .ASCII  <3>\FPG\
                            00  00  00  00  00244          .BYTE   0, 0, 0, 0
                            4D  4F  43  03  00248          .ASCII  <3>\COM\
                            00  00  00  00  0024C          .BYTE   0, 0, 0, 0
                        4F  4D  4F  43  04  00250          .ASCII  <4>\COMO\
                                00  00  00  00255          .BYTE   0, 0, 0
                            52  55  43  03  00258          .ASCII  <3>\CUR\
                            00  00  00  00  0025C          .BYTE   0, 0, 0, 0
                    52  45  48  54  4F  05  00260 P.AAC:   .ASCII  <5>\OTHER\
            4B  52  4F  57  54  45  4E  07  00266          .ASCII  <7>\NETWORK\
                    48  43  54  41  42  05  0026E          .ASCII  <5>\BATCH\
45  56  49  54  43  41  52  45  54  4E  49  0B  00274          .ASCII  <11>\INTERACTIVE\
```

```
                                                  00  00280                .BYTE   0
                                              4C  06  00281 P.AAD:         .ASCII  <6>\CMKRNL\
                                              43  06  00288                .ASCII  <6>\CMEXEC\
                                              4D  06  0028F                .ASCII  <6>\SYSNAM\
                                              4D  06  00296                .ASCII  <6>\GRPNAM\
                                          4C  08  0029D                    .ASCII  <8>\ALLSPOOL\
                                              06  002A6                    .ASCII  <6>\DETACH\
                                          4F  08  002AD                    .ASCII  <8>\DIAGNOSE\
                                              06  002B6                    .ASCII  <6>\LOG_IO\
                                              05  002BD                    .ASCII  <5>\GROUP\
                                              06  002C3                    .ASCII  <6>\NOACNT\
                                              06  002CA                    .ASCII  <6>\PRMCEB\
                                              06  002D1                    .ASCII  <6>\PRMMBX\
                                              06  002D8                    .ASCII  <6>\PSWAPM\
                                              06  002DF                    .ASCII  <6>\SETPRI\
                                              06  002E6                    .ASCII  <6>\SETPRV\
                                              06  002ED                    .ASCII  <6>\TMPMBX\
                                              05  002F4                    .ASCII  <5>\WORLD\
                                              05  002FA                    .ASCII  <5>\MOUNT\
                                              04  00300                    .ASCII  <4>\OPER\
                                          41  07  00305                    .ASCII  <7>\EXQUOTA\
                                              06  0030D                    .ASCII  <6>\NETMBX\
                                              06  00314                    .ASCII  <6>\VOLPRO\
                                              06  0031B                    .ASCII  <6>\PHY_IO\
                                              06  00322                    .ASCII  <6>\BUGCHK\
                                              06  00329                    .ASCII  <6>\PRMGBL\
                                              06  00330                    .ASCII  <6>\SYSGBL\
                                              06  00337                    .ASCII  <6>\PFNMAP\
                                              05  0033E                    .ASCII  <5>\SHMEM\
                                              06  00344                    .ASCII  <6>\SYSPRV\
                                              06  0034B                    .ASCII  <6>\BYPASS\
                                              06  00352                    .ASCII  <6>\SYSLCK\
                                              05  00359                    .ASCII  <5>\SHARE\
                                          45  07  0035F                    .ASCII  <7>\UPGRADE\
                                      45  09  00367                        .ASCII  <9>\DOWNGRADE\
                                              06  00371                    .ASCII  <6>\GRPPRV\
                                          4C  07  00378                    .ASCII  <7>\READALL\
                                              06  00380                    .ASCII  <6>\TMPJNL\
                                              06  00387                    .ASCII  <6>\PRMJNL\
                                      59  08  0038E                        .ASCII  <8>\SECURITY\
                                              00  00397                    .BYTE   0
                                          4C  21  00398 P.AAE:             .ASCII  \!UL\
                                      45  54  0039B P.AAF:                 .ASCII  \TRUE\
                                  45  46  0039F P.AAG:                     .ASCII  \FALSE\
                                          4C  21  003A4 P.AAH:             .ASCII  \!XL\
                                          44  21  003A7 P.AAI:             .ASCII  \!%D\
                                          55  21  003AA P.AAJ:             .ASCII  \!%U\
                                      44  52  003AD P.AAK:                 .ASCII  \RWED\
                                      50  52  003B1 P.AAL:                 .ASCII  \RWLP\
52  45  4E  57  4F  2C  43  41  21  4D  45  54  53  59  53  003B5 P.AAM:     .ASCII  \SYSTEM!AC,OWNER!AC,GROUP!AC,WORLD!AC\
4F  57  2C  43  41  21  50  55  4F  52  47  2C  43  41  21  003C4
                            43  41  21  44  4C  52  003D3

                                                  ACP_TYPES=           P.AAA
                                                  STATES=              P.AAB
                                                  MODES=               P.AAC
                                                  LIB$$AT_PRV_NAMES==  P.AAD
```

```
                                                        .EXTRN  SYS$FAOL

                                        07FC 00000      .ENTRY  LIB$$FORMAT_RESULT, Save R2,R3,R4,R5,R6,R7,-  ; 0691
                                                                R8,R9,R10
                                    5A      FDD1    CF  9E 00002    MOVAB   ACP_TYPES, R10                      ;
                                    5E      FDE0    CE  9E 00007    MOVAB   -544(SP), SP                        ;
                                FA  AD      010E    8F  B0 0000C    MOVW    #270, CTRSTR_DESCR+2                ; 0855
                                F0  AD  010E0200    8F  D0 00012    MOVL    #17695232, OUTSTR_DESCR             ; 0859
                                    56      04      AC  D0 0001A    MOVL    RET_STRING, R6                      ; 0860
                                F4  AD              56  D0 0001E    MOVL    R6, OUTSTR_DESCR+4
                          12        00      10      BC  CF 00022    CASEL   @RET_TYPE, #0, #18                  ; 0866
                01A9    005D        01A9        01BC    00027 1$:   .WORD   38$-T$,-                            ;
                01BC    01BC        01BC        01BC    0002F       34$-1$,-                                    ;
                0085    0033        004C        0027    00037       7$-1$,-                                     ;
                00D9    00D9        00CC        0097    0003F       34$-1$,-                                    ;
                        0179        0158        0142    00047       38$-1$,-                                    ;
                                                                    38$-1$,-                                    ;
                                                                    38$-1$,-                                    ;
                                                                    38$-1$,-                                    ;
                                                                    2$-1$,-                                     ;
                                                                    5$-1$,-                                     ;
                                                                    3$-1$,-                                     ;
                                                                    8$-1$,-                                     ;
                                                                    10$-1$,-                                    ;
                                                                    15$-1$,-                                    ;
                                                                    16$-1$,-                                    ;
                                                                    16$-1$,-                                    ;
                                                                    24$-1$,-                                    ;
                                                                    26$-1$,-                                    ;
                                                                    29$-1$                                      ;
                                        04      0004D           RET                                             ;
                                F8  AD              03  B0 0004E 2$:    MOVW    #3, CTRSTR_DESCR               ; 0871
                                FC  AD      01E8    CA  9E 00052        MOVAB   P.AAE, CTRSTR_DESCR+4          ; 0872
                                            23      11 00058            BRB     6$                             ; 0873
                                    0A      08      BC  E9 0005A 3$:    BLBC    @RET_NUMBER, 4$                ; 0882
                                0C  BC              04  B0 0005E        MOVW    #4, @RET_LENGTH                ; 0885
                                    66      01EB    CA  D0 00062        MOVL    P.AAF, (R6)                    ; 0887
                                            04      00067           RET                                        ; 0882
                                0C  BC              05  B0 00068 4$:    MOVW    #5, @RET_LENGTH                ; 0891
                        66  01EF  CA              05  28 0006C        MOVC3   #5, P.AAG, (R6)                ; 0893
                                            04      00072           RET                                        ; 0866
                                F8  AD              03  B0 00073 5$:    MOVW    #3, CTRSTR_DESCR               ; 0899
                                FC  AD      01F4    CA  9E 00077        MOVAB   P.AAH, CTRSTR_DESCR+4          ; 0900
                                E0  AD      08      BC  D0 0007D 6$:    MOVL    @RET_NUMBER, PRMLST            ; 0901
                                            37      11 00082            BRB     9$                             ; 0905
                F8  AD          0C  BC              02  A5 00084 7$:    MULW3   #2, @RET_LENGTH, CTRSTR_DESCR  ; 0913
                                FC  AD              6E  9E 0008A        MOVAB   TEMP_STRING, CTRSTR_DESCR+4    ; 0914
                                    7E      0C      BC  3C 0008E        MOVZWL  @RET_LENGTH, -(SP)             ; 0916
                                    7E      F8      AD  3C 00092        MOVZWL  CTRSTR_DESCR, -(SP)
                                            F8      AD  9F 00096        PUSHAB  CTRSTR_DESCR                   ; 0915
                                                    56  DD 00099        PUSHL   R6
                        000000000G  00              04  FB 0009B        CALLS   #4, OTS$CVT_L_TZ
                                0C  BC              02  A4 000A2        MULW2   #2, @RET_LENGTH                ; 0917
                        66              6E      F8  AD  28 000A6        MOVC3   CTRSTR_DESCR, TEMP_STRING, (R6) ; 0919
                                            04      000AB           RET                                        ; 0866
                                F8  AD              03  B0 000AC 8$:    MOVW    #3, CTRSTR_DESCR               ; 0924
                                FC  AD      01F7    CA  9E 000B0        MOVAB   P.AAI, CTRSTR_DESCR+4          ; 0925
```

```
                     E0   AD        08   AC  D0 000B6          MOVL    RET_NUMBER, PRMLST                      ; 0926
                                     0097  31 000BB 9$:        BRW     23$                                     ; 0930
                          53           56  D0 000BE 10$:      MOVL    R6, STRING_PTR                          ; 0940
                          57      00D1  CA  9E 000C1           MOVAB   LIB$$AT_PRV_NAMES, PRV_NAME             ; 0941
                                       59  D4 000C6           CLRL    PRV                                     ; 0947
                          58           67  9A 000C8 11$:      MOVZBL  (PRV_NAME), R8                          ; 0944
                                       19  13 000CB           BEQL    13$                                     ;
                08        08   BC      59  E1 000CD           BBC     PRV, @RET_NUMBER, 12$                   ; 0947
                63        01   A7      58  28 000D2           MOVC3   R8, 1(PRV_NAME), (STRING_PTR)           ; 0951
                          83           2C  90 000D7           MOVB    #44, (STRING_PTR)+                      ; 0952
                          57     01 A847  9E 000DA 12$:       MOVAB   1(R8)[PRV_NAME], PRV_NAME               ; 0954
                                       59  D6 000DF           INCL    PRV                                     ; 0942
                          3F           59  D1 000E1           CMPL    PRV, #63                                ;
                                       E2  1B 000E4           BLEQU   11$                                     ;
                          56           53  D1 000E6 13$:      CMPL    STRING_PTR, R6                          ; 0956
                                       02  13 000E9           BEQL    14$                                     ;
                                       53  D7 000EB           DECL    STRING_PTR                              ; 0958
             0C   BC                   53  A3 000ED 14$:      SUBW3   R6, STRING_PTR, @RET_LENGTH             ; 0959
                                       04  000F2             RET                                             ; 0866
                     F8   AD           03  B0 000F3 15$:      MOVW    #3, CTRSTR_DESCR                        ; 0964
                     FC   AD      01FA  CA  9E 000F7           MOVAB   P.AAJ, CTRSTR_DESCR+4                   ; 0965
                                  FF7D  31 000FD             BRW     6$                                      ; 0966
                          0E       10   AC  D1 00100 16$:      CMPL    RET_TYPE, #14                           ; 0985
                                       07  12 00104           BNEQ    17$                                     ;
                          55      01FD  CA  9E 00106           MOVAB   P.AAK, PROT_CHARS                       ; 0987
                                       05  11 0010B           BRB     18$                                     ;
                          55      0201  CA  9E 0010D 17$:      MOVAB   P.AAL, PROT_CHARS                       ; 0989
                          54        C8  AD  9E 00112 18$:      MOVAB   PSTRING, PSTRING_PTR                    ; 0991
                                       50  D4 00116           CLRL    I                                       ; 0999
                     E0 AD40           54  D0 00118 19$:      MOVL    PSTRING_PTR, PRMLST[I]                  ; 0996
                          51           54  D0 0011D           MOVL    PSTRING_PTR, THIS_STRING                ; 0997
                                       84  94 00120           CLRB    (PSTRING_PTR)+                          ; 0998
                53                     02  78 00122           ASHL    #2, I, R3                               ; 0999
52         08   BC                     53  EF 00126           EXTZV   R3, #4, @RET_NUMBER, R2                 ;
                57                     0F  8D 0012C           XORB3   #15, R2, PROT_FIELD                     ;
                                       15  13 00130           BEQL    22$                                     ; 1000
                          84           3D  90 00132           MOVB    #61, (PSTRING_PTR)+                     ; 1003
                                       61  96 00135           INCB    (THIS_STRING)                           ; 1004
                                       52  D4 00137           CLRL    J                                       ; 1005
                06                     52  E1 00139 20$:      BBC     J, PROT_FIELD, 21$                      ; 1007
                          84       6245  90 0013D           MOVB    (J)[PROT_CHARS], (PSTRING_PTR)+         ; 1010
                                       61  96 00141           INCB    (THIS_STRING)                           ; 1011
                F2                     03  F3 00143 21$:      AOBLEQ  #3, J, 20$                              ; 1005
                CD                     03  F3 00147 22$:      AOBLEQ  #3, I, 19$                              ; 0992
                     F8   AD           24  B0 0014B           MOVW    #36, CTRSTR_DESCR                       ; 1016
                     FC   AD      0205  CA  9E 0014F           MOVAB   P.AAM, CTRSTR_DESCR+4                   ; 1019
                               E0   AD  9F 00155 23$:      PUSHAB  PRMLST                                  ; 1023
                               F0   AD  9F 00158           PUSHAB  OUTSTR_DESCR                            ;
                               0C   AC  DD 0015B           PUSHL   RET_LENGTH                              ;
                               F8   AD  9F 0015E           PUSHAB  CTRSTR_DESCR                            ;
                    00000000G  00       04  FB 00161           CALLS   #4, SYS$FAOL                            ;
                                        04  00168           RET                                             ; 0866
                          06       08   BC  D1 00169 24$:      CMPL    @RET_NUMBER, #6                         ; 1031
                                        05  1B 0016D           BLEQU   25$                                     ;
                          51            6A  9E 0016F           MOVAB   ACP_TYPES, ACPTYP_PTR                   ; 1033
                                        21  11 00172           BRB     28$                                     ;
                50        08   BC       01  78 00174 25$:      ASHL    #1, @RET_NUMBER, R0                     ; 1035
```

```
                                 51          6A40  DE 00179          MOVAL   ACP_TYPES[R0], ACPTYP_PTR
                                             16  11 0017D          BRB     28$                                 ;
                                 0E      08   BC  D1 0017F 26$:     CMPL    @RET_NUMBER, #14                    ; 1036
                                             06  1B 00183          BLEQU   27$                                 ; 1044
                                 51      38   AA  9E 00185          MOVAB   STATES, STATE_PTR                   ;
                                             0A  11 00189          BRB     28$                                 ; 1046
                      50         08   BC      01  78 0018B 27$:     ASHL    #1, @RET_NUMBER, R0                 ;
                                 51      38 AA40  DE 00190          MOVAL   STATES[R0], STATE_PTR               ; 1048
                                 0C   BC      61  9B 00195 28$:     MOVZBW  (STATE_PTR), @RET_LENGTH            ;
                      66         01   A1      0C  BC  28 00199      MOVC3   @RET_LENGTH, 1(STATE_PTR), (R6)     ; 1049
                                                 04  0019F          RET                                         ; 1050
                                 50      00B0 CA  9E 001A0 29$:     MOVAB   MODES, MODE_PTR                     ; 0866
                                 52          01  D0 001A5          MOVL    #1, I                               ; 1057
                                             15  11 001A8          BRB     32$                                 ; 1058
                                             60  95 001AA 30$:     TSTB    (MODE_PTR)                          ;
                                             07  12 001AC          BNEQ    31$                                 ; 1060
                                 50      00B0 CA  9E 001AE          MOVAB   MODES, MODE_PTR                     ;
                                             10  11 001B3          BRB     33$                                 ; 1063
                                 51          60  9A 001B5 31$:     MOVZBL  (MODE_PTR), R1                      ; 1062
                                 50      01 A140  9E 001B8          MOVAB   1(R1)[MODE_PTR], MODE_PTR           ; 1066
                                             52  D6 001BD          INCL    I                                   ;
                                 08   BC      52  D1 001BF 32$:     CMPL    I, @RET_NUMBER                      ; 1058
                                             E5  1B 001C3          BLEQU   30$                                 ;
                                 0C   BC      60  9B 001C5 33$:     MOVZBW  (MODE_PTR), @RET_LENGTH             ; 1068
                      66         01   A0      0C  BC  28 001C9      MOVC3   @RET_LENGTH, 1(MODE_PTR), (R6)      ; 1069
                                                 04  001CF          RET                                         ; 0866
                                 50      0C   BC  3C 001D0 34$:     MOVZWL  @RET_LENGTH, I                      ; 1074
                                             0B  11 001D4          BRB     37$                                 ;
                                 20          6046 91 001D6 35$:     CMPB    (I)[R6], #32                        ; 1075
                                             03  12 001DA          BNEQ    36$                                 ;
                                         0C   BC  B7 001DC          DECW    @RET_LENGTH                         ; 1077
                                             50  D7 001DF 36$:     DECL    I                                   ; 1075
                                             F3  12 001E1 37$:     BNEQ    35$                                 ;
                                                 04 001E3 38$:     RET                                         ; 1096

; Routine Size:  484 bytes,    Routine Base:  _LIB$CODE + 03D9
```

```
; 1039          1097  1 END
; 1040          1098  1
; 1041          1099  0 ELUDOM

                                                        . End of module LIB$$LEXICAL


;                                   PSECT SUMMARY
;
;       Name                    Bytes                   Attributes
;
;  _LIB$CODE                      1469  NOVEC,NOWRT,  RD ,  EXE,  SHR,  LCL,  REL,  CON,  PIC,ALIGN(2)


;                                 Library Statistics
;
;                                          --------- Symbols ---------      Pages       Processing
;       File                               Total     Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]LIB.L32;1            18619         78         0        1000        00:01.4
;  _$255$DUA28:[LIBRTL.OBJ]RTLLIB.L32;1        36         17        47           8        00:00.1


;                                   COMMAND QUALIFIERS

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

; Size:         916 code + 553 data bytes
; Run Time:       00:20.2
; Elapsed Time:   01:30.6
; Lines/CPU Min:   3262
; Lexemes/CPU-Min: 42347
; Memory Used:  229 pages
; Compilation Complete
```

LIBLOCC
LIS

LIBLUN
LIS

LIBMOVC3
LIS

LIBMOVTC
LIS

LIBPOLYF
LIS

LIBINSQTI
LIS

LIBINTOVE
LIS

LIBLEXICA
LIS

LIBPKARIT
LIS

LIBMATCHC
LIS

LIBPOLYD
LIS

LIBLOOKUP
LIS

LIBLPLINE
LIS

LIBMOVC5
LIS

LIBLEN
LIS

LIBMSG
LIS

LIBINSV
LIS

LIBMATCA
LIS

LIBMOVTUC
LIS