```
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
LLL                 IIIIIIIII     BBBBBBBBBBBB     RRRRRRRRRRR     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     RRRRRRRRRRR         TTT         LLL
LLL                    III        BBBBBBBBBBBB     RRRRRRRRRRR         TTT         LLL
LLL                    III        BBBBBBBBBBBB     RRRRRRRRRRR         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
LLLLLLLLLLLLLLL     IIIIIIIII     BBBBBBBBBBBB     RRR         RRR       TTT         LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL     IIIIIIIII     BBBBBBBBBBBB     RRR         RRR       TTT         LLLLLLLLLLLLLLL
```

```
LL             IIIIII    BBBBBBBB    FFFFFFFFFF    IIIIII    NN      NN    CCCCCCCC  VV      VV  TTTTTTTTTT
LL             IIIIII    BBBBBBBB    FFFFFFFFFF    IIIIII    NN      NN    CCCCCCCC  VV      VV  TTTTTTTTTT
LL               II      BB      BB  FF              II      NN      NN  CC          VV      VV      TT
LL               II      BB      BB  FF              II      NN      NN  CC          VV      VV      TT
LL               II      BB      BB  FF              II      NNNN    NN  CC          VV      VV      TT
LL               II      BB      BB  FF              II      NNNN    NN  CC          VV      VV      TT
LL               II      BBBBBBBB    FFFFFFF         II      NN  NN  NN  CC          VV      VV      TT
LL               II      BBBBBBBB    FFFFFFF         II      NN  NN  NN  CC          VV      VV      TT
LL               II      BB      BB  FF              II      NN    NNNN  CC          VV      VV      TT
LL               II      BB      BB  FF              II      NN    NNNN  CC          VV      VV      TT
LL               II      BB      BB  FF              II      NN      NN  CC            VV  VV        TT          ....
LL               II      BB      BB  FF              II      NN      NN  CC            VV  VV        TT          ....
LLLLLLLLLL     IIIIII    BBBBBBBB    FF            IIIIII    NN      NN    CCCCCCCC      VV          TT          ....
LLLLLLLLLL     IIIIII    BBBBBBBB    FF            IIIIII    NN      NN    CCCCCCCC      VV          TT          ....

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 %TITLE 'LIB$$FIND_CVT_PATH  for internal use of LIB$CVT_DX_DX'
;  2          0002  0 MODULE LIB$$FIND_CVT_PATH (                ! DFA of general data type conversion.
;  3          0003  0                     IDENT = '1-006'        ! File:LIBFINCVT.B32 Edit: STAN1006
;  4          0004  0                     ) =
;  5          0005  1 BEGIN
;  6          0006  1 !
;  7          0007  1 !*****************************************************************************
;  8          0008  1 !*                                                                           *
;  9          0009  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
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; 26          0026  1 !*                                                                           *
; 27          0027  1 !*                                                                           *
; 28          0028  1 !*****************************************************************************
; 29          0029  1 !
; 30          0030  1
; 31          0031  1 !++
; 32          0032  1 ! FACILITY:     General Utility Library
; 33          0033  1 !
; 34          0034  1 ! ABSTRACT:
; 35          0035  1 !
; 36          0036  1 !       This module contains LIB$$FIND_CVT_PATH routine which is called only
; 37          0037  1 !       by LIB$CVT_DX_DX routine.  The reason that these two routines are in
; 38          0038  1 !       different modules is because of anticipation of future updates to this
; 39          0039  1 !       data conversion routines.  They are very large, and it is easier to
; 40          0040  1 !       update them seperately.
; 41          0041  1 !
; 42          0042  1 ! ENVIRONMENT:  User mode - AST reentrant
; 43          0043  1 !
; 44          0044  1 ! AUTHOR:       Farokh Morshed          01-09-1981
; 45          0045  1 !
; 46          0046  1 ! MODIFIED BY:
; 47          0047  1 !
; 48          0048  1 ! 1-001 - Original.  FM1001     01-09-1981
; 49          0049  1 ! 1-002 - Put in a check for DSC$W_LENGTH to be 1 when class A, or NCA, and
; 50          0050  1 !         if class NCA stride must be 1.  FM 9-9-81
; 51          0051  1 ! 1-003 - Put in a new data type, DSC$K_DTYPE_VT.  FM 1-DEC-81.
; 52          0052  1 ! 1-004 - Put in a feature where DST_INFO [D_[EN] can be picked up for
; 53          0053  1 !         LIB$CVT_DX_DX. FM 2-DEC-81.
; 54          0054  1 ! 1-005 - Fix the bug that in [K_S_NLO, K_SD_NLO] negative inputs are picked
; 55          0055  1 !         up as positive.  FM 1-Mar-83
; 56          0056  1 ! 1-006 - Remove informational errors. STAN 24-Jul-1984.
; 57          0057  1 !--
```

; 58 0058 1

```
;    60          0059  1 %SBTTL 'Declarations'
;    61          0060  1 !
;    62          0061  1 ! SWITCHES:
;    63          0062  1 !
;    64          0063  1
;    65          0064  1 SWITCHES ADDRESSING_MODE (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
;    66          0065  1
;    67          0066  1 !+
;    68          0067  1 ! LINKAGE
;    69          0068  1 !-
;    70          0069  1
;    71          0070  1 LINKAGE
;    72          0071  1     JSB_R1 = JSB (REGISTER = 0, REGISTER = 1) : PRESERVE (0, 1);
;    73          0072  1
;    74          0073  1 !
;    75          0074  1 ! TABLE OF CONTENTS:
;    76          0075  1 !
;    77          0076  1
;    78          0077  1 FORWARD ROUTINE
;    79          0078  1     LIB$$FIND_CVT_PATH;                     ! Routine to find the conversion
;    80          0079  1
;    81          0080  1                                             ! being done and report any
;    82          0081  1                                             ! unsupported fields in the descriptors.
;    83          0082  1 !
;    84          0083  1 ! INCLUDE FILES:
;    85          0084  1 !
;    86          0085  1
;    87          0086  1 LIBRARY 'RTLSTARLE';                        ! System symbols, from SYS$LIBRARY:STARLET.L32
;    88          0087  1
;    89          0088  1 REQUIRE 'RTLIN:RTLPSECT';                   ! Define PSECT declarations macros
;    90          0183  1
;    91          0184  1 !
;    92          0185  1 ! PSECTS:
;    93          0186  1 !
;    94          0187  1 DECLARE_PSECTS (LIB);                       ! Declare PSECTs for LIB$ facility
;    95          0188  1 !
;    96          0189  1 ! OWN STORAGE:
;    97          0190  1 !
;    98          0191  1 !       NONE
```

```
;  100          0192  1 %SBTTL 'Deterministic Finite Automata for LIB$CVT_DX_DX'
;  101          0193  1
;  102          0194  1 GLOBAL ROUTINE LIB$$FIND_CVT_PATH (                     ! Deterministic Finite Automata
;  103          0195  1                                                        ! that will parse the source
;  104          0196  1                                                        ! and destination descriptors.
;  105          0197  1         SOURCE                                         ! Source descriptor that was passed
;  106          0198  1                                                        ! to LIB$CVT_DX_DX.
;  107          0199  1     , DESTINATION                                      ! Destination descriptor that was
;  108          0200  1                                                        ! passed to LIB$CVT_DX_DX.
;  109          0201  1     , SRC_INFO                                         ! Address of a record that this
;  110          0202  1                                                        ! routine will put the source
;  111          0203  1                                                        ! information in.
;  112          0204  1     , DST_INFO                                         ! Address of a record that this
;  113          0205  1                                                        ! routine will put the destination
;  114          0206  1                                                        ! information in.
;  115          0207  1     , CVT_PATH                                         ! This code will determine what
;  116          0208  1                                                        ! label of the LIB$CVT_DX_DX
;  117          0209  1                                                        ! routine's CASE statement will
;  118          0210  1                                                        ! be taken.
;  119          0211  1     ) =
;  120          0212  1
;  121          0213  1 !++
;  122          0214  1 ! FUNCTIONAL DESCRIPTION:
;  123          0215  1 !
;  124          0216  1 !       This routine is comprised of a Deterministic Finite Automaton, defined
;  125          0217  1 !       as a 5 tuple :
;  126          0218  1 !       STATES          : There is a state for each CLASS, and CLASS, DATA TYPE
;  127          0219  1 !                         combination.
;  128          0220  1 !       Alphabet        : Classes and Data types.
;  129          0221  1 !       Mappings        : M(CLASS_S , DTYPE_B) := CLASS_S_DTYPE_B
;  130          0222  1 !                         . . . . . .
;  131          0223  1 !                         . . . . . .
;  132          0224  1 !                         M(CLASS_D , DTYPE_W) := error
;  133          0225  1 !                         . . . . . .
;  134          0226  1 !                         . . . . . .
;  135          0227  1 !       Start state     :
;  136          0228  1 !       Final states    : All possible combinations of CLASS, DTYPE.
;  137          0229  1 !                         Some of these combinations are allowed, others
;  138          0230  1 !                         are not. The error combinations are denoted by
;  139          0231  1 !                         negative numbers as states.
;  140          0232  1 !
;  141          0233  1 ! MAINTENANCE OF THIS ROUTINE :
;  142          0234  1 !
;  143          0235  1 !This routine knows about all classes and data types of Appendix C V8.3.
;  144          0236  1 !(You may want to update the above line everytime a change is made)
;  145          0237  1 !To make an already existing CLASS, DATA TYPE combination a valid one, as
;  146          0238  1 !opposed to an error you must :
;  147          0239  1 !       1. Insert the symbol for that data type in DTYPE_TABLE in place of the
;  148          0240  1 !          error state.
;  149          0241  1 !       2. Define a FINAL_STATE for this combination.
;  150          0242  1 !       3. Give it an action routine.
;  151          0243  1 !
;  152          0244  1 !To add a new data type you must :
;  153          0245  1 !       1. Increment K_MAX_DATA_TYPES.
;  154          0246  1 !       2. Set K_MAX_DTYPE_STA to value of the new data type.
;  155          0247  1 !       3. Does any of the following need to be changed ?
;  156          0248  1 !               a. K_SMLFINSTA
```

```
;  157          0249  1 !                   b. K_LRGFINSTA
;  158          0250  1 !                   c. K_TOP_SD
;  159          0251  1 !                   d. K_BOTTOM_SD
;  160          0252  1 !           4. Define a new FINAL_STATE.
;  161          0253  1 !           5. Each category in DTYPE_TABLE must have a new entry for the data type.
;  162          0254  1 !              Note that the position (starting at 0) of each entry in each category is equivalent
;  163          0255  1 !              to the data type value.
;  164          0256  1 !           6. Add the new lable into the action routines CASE statement and
;  165          0257  1 !              the sub-CASE statements in LIB$CVT_DX_DX will need to be modified to
;  166          0258  1 !              include this new data type.
;  167          0259  1 !
;  168          0260  1 !To add a new class you must :
;  169          0261  1 !           1. Increment K_MAX_CLASSES
;  170          0262  1 !           2. Set K_MAX_CLASS_STA to value of the new class.
;  171          0263  1 !           3. Increment K_ACTUAL_CLASSES.
;  172          0264  1 !           4. Make a new K_STATEx_CLASS_y, where x is class value and y is the
;  173          0265  1 !              symbol of the class.
;  174          0266  1 !           5. Make a new FINAL_STATE.
;  175          0267  1 !           6. Add a new category to the STATES structure at the end, with a index
;  176          0268  1 !              value of one higher than the last category.
;  177          0269  1 !           7. Make a new entry in CLASS_TABLE.
;  178          0270  1 !           8. Make a new category in DTYPE_TABLE.
;  179          0271  1 !           9. Make a new lable in the action routine CASE statement.
;  180          0272  1 !
;  181          0273  1 !
;  182          0274  1 ! CALLING SEQUENCE:
;  183          0275  1 !
;  184          0276  1 !       ret_status.wlc.v = FIND_CVT_PATH ( SOURCE.rx.dx,
;  185          0277  1 !                                          DESTINATION.rx.dx,
;  186          0278  1 !                                          SRC_INFO.wr.r,
;  187          0279  1 !                                          DST_INFO.wr.r,
;  188          0280  1 !                                          CVT_PATH.wlu.r )
;  189          0281  1 !
;  190          0282  1 ! FORMAL PARAMETERS:
;  191          0283  1 !
;  192          0284  1 !       SOURCE          Address of source descriptor passed to LIB$CVT_DX_DX.
;  193          0285  1 !       DESTINATION     Address of destination descriptor passed to LIB$CVT_DX_DX.
;  194          0286  1 !       SRC_INFO        Address of a record in LIB$CVT_DX_DX.
;  195          0287  1 !       DST_INFO        Address of a record in LIB$CVT_DX_DX.
;  196          0288  1 !       CVT_PATH        Address of a longword in LIB$CVT_DX_DX.
;  197          0289  1 !
;  198          0290  1 ! IMPLICIT INPUTS:
;  199          0291  1 !
;  200          0292  1 !       NONE
;  201          0293  1 !
;  202          0294  1 ! IMPLICIT OUTPUTS:
;  203          0295  1 !
;  204          0296  1 !       NONE
;  205          0297  1 !
;  206          0298  1 ! COMPLETION STATUS: (or ROUTINE VALUE:)
;  207          0299  1 !
;  208          0300  1 !       K_UNSCLAROU             : -1 Unsupported CLASS by routine.
;  209          0301  1 !       K_UNSDTYROU             : -2 Unsupported DTYPE by routine.
;  210          0302  1 !       K_UNSDESROU             : -3 Unsupported descriptor by routine.
;  211          0303  1 !       K_UNSDESSTA             : -4 Unsupported descriptor by standard.
;  212          0304  1 !       K_UNSCLASTA             : -5 Unsupported CLASS by standard.
;  213          0305  1 !       K_UNSDTYSTA             : -6 Unsupported DTYPE by standard.
```

```
;  214          0306  1 !       K_INVNBDS               : -7 Invalid NBDS because array size is greater
;  215          0307  1 !                                    than WU or dimension is not one.
;  216          0308  1 !       K_SUPPORTED             :  1 This descriptor is supported.
;  217          0309  1 !
;  218          0310  1 ! SIDE EFFECTS:
;  219          0311  1 !
;  220          0312  1 !       Caller of LIB$CVT_DX_DX must have LIB$EMULATE as a handler, if the
;  221          0313  1 !       source or destination descriptor explicitely ask for G, H, O conversions.
;  222          0314  1 !
;  223          0315  1 !--
;  224          0316  1
;  225          0317  2     BEGIN
;  226          0318  2
;  227          0319  2     BUILTIN
;  228          0320  2         CVTTP,
;  229          0321  2         CVTSP,
;  230          0322  2         CVTPT,
;  231          0323  2         CVTPS,
;  232          0324  2         CMPP;
;  233          0325  2
;  234          0326  2 !+
;  235          0327  2 ! MACRO
;  236          0328  2 !-
;  237          0329  2 !<BLF/MACRO>
;  238          0330  2
;  239          0331  2     MACRO
;  240          0332  2 !+
;  241          0333  2 ! These MACROs are used for clarity of code, since there is not builtin for them.
;  242          0334  2 !-
;  243        M 0335  2         CVTGH =
;  244          0336  2             LIB$$CVT_CVTGH_R1 %,
;  245          0337  2 !+
;  246          0338  2 ! These MACROs define portions of intermediate data buffer.
;  247          0339  2 !-
;  248        M 0340  2         LONG_1 =
;  249          0341  2             0, 0, 32, 0 %,
;  250        M 0342  2         LONG_2 =
;  251          0343  2             4, 0, 32, 0 %,
;  252        M 0344  2         LONG_3 =
;  253          0345  2             8, 0, 32, 0 %,
;  254        M 0346  2         LONG_4 =
;  255          0347  2             12, 0, 32, 0 %,
;  256        M 0348  2         LONG_5 =
;  257          0349  2             16, 0, 32, 0 %,
;  258        M 0350  2         LONG_6 =
;  259          0351  2             20, 0, 32, 0 %,
;  260        M 0352  2         LONG_7 =
;  261          0353  2             24, 0, 32, 0 %,
;  262        M 0354  2         LONG_8 =
;  263          0355  2             28, 0, 32, 0 %,
;  264        M 0356  2         S_LONG_1 =
;  265          0357  2             0, 0, 32, 1 %,
;  266        M 0358  2         S_LONG_2 =
;  267          0359  2             4, 0, 32, 1 %,
;  268        M 0360  2         S_BYTE_1 =
;  269          0361  2             0, 0, 8, 1 %,
;  270        M 0362  2         BYTE_1 =
```

```
;  271          0363  2                0, 0, 8, 0 %,
;  272        M 0364  2          BYTE_2 =
;  273          0365  2                1, 0, 8, 0 %,
;  274        M 0366  2          S_WORD_1 =
;  275          0367  2                0, 0, 16, 1 %,
;  276        M 0368  2          WORD_1 =
;  277          0369  2                0, 0, 16, 0 %,
;  278        M 0370  2          WORD_2 =
;  279          0371  2                2, 0, 16, 0 %,
;  280        M 0372  2          NIBBLE_1 =
;  281          0373  2                0, 0, 4, 0 %,
;  282          0374  2      !+
;  283          0375  2      ! This MACRO calculates final states given the state and the token.
;  284          0376  2      !-
;  285        M 0377  2          FINAL_STATE (CLASS, DATA_TYPE) =
;  286          0378  2                CLASS*K_MAX_DATA_TYPES + DATA_TYPE %,
;  287          0379  2      !+
;  288          0380  2      ! This macro is used for SRC_INFO or DST_INFO scale field.
;  289          0381  2      !-
;  290        M 0382  2          M_SCALE =
;  291          0383  2                0, 0, 8, 1 %,
;  292          0384  2      !+
;  293          0385  2      ! This macro is used for SRC_INFO or DST_INFO length field.
;  294          0386  2      !-
;  295        M 0387  2          M_LEN =
;  296          0388  2                5, 0, 16, 0 %,
;  297          0389  2      !+
;  298          0390  2      ! Define the start state data structure of the DFA.
;  299          0391  2      !-
;  300        M 0392  2          START_STATE =
;  301          0393  2              VECTOR [K_MAX_CLASSES, BYTE, SIGNED] %;
;  302          0394  2
;  303          0395  2      !+
;  304          0396  2      ! EXTERNAL
;  305          0397  2      !-
;  306          0398  2
;  307          0399  2          EXTERNAL ROUTINE
;  308          0400  2              LIB$STOP : NOVALUE,
;  309          0401  2              CVTGH : JSB_R1 NOVALUE;
;  310          0402  2
;  311          0403  2      !+
;  312          0404  2      ! These are the translation tables used when translating from or to packed decimal.
;  313          0405  2      !-
;  314          0406  2
;  315          0407  2          EXTERNAL
;  316          0408  2              LIB$AB_CVTTP_U,
;  317          0409  2              LIB$AB_CVT_O_U,
;  318          0410  2              LIB$AB_CVTTP_O,
;  319          0411  2              LIB$AB_CVT_U_O,
;  320          0412  2              LIB$AB_CVTPT_U,
;  321          0413  2              LIB$AB_CVTPT_O,
;  322          0414  2              LIB$AB_CVTPT_Z,
;  323          0415  2              LIB$AB_CVTTP_Z;
;  324          0416  2
;  325          0417  2          EXTERNAL LITERAL                        ! Condition value symbols
;  326          0418  2              LIB$_FATERRLIB;                     ! Fatal error in library.
;  327          0419  2
```

```
;   328          0420  2
;   329          0421  2 !+
;   330          0422  2 ! FIELD DECLARATIONS
;   331          0423  2 !-
;   332          0424  2
;   333          0425  2     FIELD
;   334          0426  2         SRC_INFO_FIELDS =
;   335          0427  2             SET
;   336          0428  2             S_SCALE = [0, 0, 8, 1],
;   337          0429  2             S_POINTER = [1, 0, 32, 0],
;   338          0430  2             S_LEN = [5, 0, 16, 0],
;   339          0431  2             S_SIGN = [7, 0, 1, 0]
;   340          0432  2             TES;
;   341          0433  2
;   342          0434  2     FIELD
;   343          0435  2         DST_INFO_FIELDS =
;   344          0436  2             SET
;   345          0437  2             D_SCALE = [0, 0, 8, 1],
;   346          0438  2             D_LEN = [5, 0, 16, 0]
;   347          0439  2             TES;
;   348          0440  2
;   349          0441  2 !+
;   350          0442  2 ! Define some literals.
;   351          0443  2 !-
;   352          0444  2
;   353          0445  2     LITERAL
;   354          0446  2 !+
;   355          0447  2 !Status returned by FIND_CVT_PATH.
;   356          0448  2 !-
;   357          0449  2         K_UNSCLAROU = -1,                   ! Unsupported CLASS by routine.
;   358          0450  2         K_UNSDTYROU = -2,                   ! Unsupported DATA TYPE by routine.
;   359          0451  2         K_UNSDESROU = -3,                   ! Unsupported descriptor by routine.
;   360          0452  2         K_UNSDESSTA = -4,                   ! Unsupported descriptor by standard.
;   361          0453  2         K_UNSCLASTA = -5,                   ! Unsupported CLASS by standard.
;   362          0454  2         K_UNSDTYSTA = -6,                   ! Unsupported DTYPE by standard
;   363          0455  2         K_INVNBDS = -7,                     ! Invalid NBDS
;   364          0456  2                                             ! because either array size is larger
;   365          0457  2                                             ! than a WU or it is not a one
;   366          0458  2                                             ! dimensional array.
;   367          0459  2         K_SUPPORTED = 1,                    ! This descriptor is supported, and valid.
;   368          0460  2 !+
;   369          0461  2 !Some general values :
;   370          0462  2 !-
;   371          0463  2         K_INTMED_DATA_LENGTH = 32,          ! Intermediate data buffer length
;   372          0464  2         K_LRGST_WU = 65535,
;   373          0465  2         K_LRGST_LU = 4294967295,            ! Largest unsigned longword.
;   374          0466  2         K_LRGST_NEG_L = -2147483648,        ! Largest negative longword.
;   375          0467  2         K_LRGCLSSUP = DSC$K_CLASS_VS,       ! Largest CLASS supported by routine
;   376          0468  2         K_SMLCLSSUP = DSC$K_CLASS_S,        ! Smallest CLASS supported by routine
;   377          0469  2         K_MAX_DATA_TYPES = 38,              !Total number of DATA TYPES in the standard
;   378          0470  2         K_MAX_CLASSES = 15,                 !Total number of classes supported,
;   379          0471  2                                             !Including the error case 0.
;   380          0472  2         K_MIN_CLASS = DSC$K_CLASS_S,        !Smalles class supported.
;   381          0473  2         K_MAX_CLASS = DSC$K_CLASS_VS,       !Largest class supported.
;   382          0474  2         K_MAX_CLASS_STA = DSC$K_CLASS_UBA,  !Max. class number supported by standard.
;   383          0475  2         K_MAX_DTYPE_STA = DSC$K_DTYPE_VT,   !Max. data type number supported by standard.
;   384          0476  2         K_ACTUAL_CLASSES = 6,               !Total classes that are allowed by the STATES table.
```

```
;  385          0477  2          K_MSTNEGERR = -7,                          !Most negative error state
;  386          0478  2          K_SMLFINSTA = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_BU),      !Smallest final state supported.
;  387          0479  2          K_LRGFINSTA = FINAL_STATE (DSC$K_CLASS_VS, DSC$K_DTYPE_VT),     !Largest final state supported.
;  388          0480  2          K_TOP_SD = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_H), !Top state for class SD.
;  389          0481  2          K_BOTTOM_SD = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_B),      !Bottom state for class SD.
;  390          0482  2      !+
;  391          0483  2      !These are the values of the members of K_ACTUAL_CLASSES :
;  392          0484  2      !-
;  393          0485  2          K_STATE1_CLASS_S = DSC$K_CLASS_S,
;  394          0486  2          K_STATE2_CLASS_D = DSC$K_CLASS_D,
;  395          0487  2          K_STATE4_CLASS_A = DSC$K_CLASS_A
;  396          0488  2          K_STATE9_CLASS_SD = DSC$K_CLASS_SD,
;  397          0489  2          K_STATE10_CLASS_NCA = DSC$K_CLASS_NCA,
;  398          0490  2          K_STATE11_CLASS_VS = DSC$K_CLASS_VS,
;  399          0491  2      !+
;  400          0492  2      !These are the final states that are valid CLASS, DATA TYPE combinations.
;  401          0493  2      !The rest of the final states are error states.
;  402          0494  2      !The first argument to the macro is CLASS, and the second is the DATA TYPE.
;  403          0495  2      !-
;  404          0496  2          K_S_BU = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_BU),
;  405          0497  2          K_S_WU = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_WU),
;  406          0498  2          K_S_LU = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_LU),
;  407          0499  2          K_S_B = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_B),
;  408          0500  2          K_S_W = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_W),
;  409          0501  2          K_S_L = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_L),
;  410          0502  2          K_S_Q = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_Q),
;  411          0503  2          K_S_F = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_F),
;  412          0504  2          K_S_D = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_D),
;  413          0505  2          K_S_T = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_T),
;  414          0506  2          K_S_NU = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_NU),
;  415          0507  2          K_S_NL = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_NL),
;  416          0508  2          K_S_NLO = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_NLO),
;  417          0509  2          K_S_NR = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_NR),
;  418          0510  2          K_S_NRO = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_NRO),
;  419          0511  2          K_S_NZ = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_NZ),
;  420          0512  2          K_S_P = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_P),
;  421          0513  2          K_S_G = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_G),
;  422          0514  2          K_S_H = FINAL_STATE (DSC$K_CLASS_S, DSC$K_DTYPE_H),
;  423          0515  2          K_D_T = FINAL_STATE (DSC$K_CLASS_D, DSC$K_DTYPE_T),
;  424          0516  2          K_A_BU = FINAL_STATE (DSC$K_CLASS_A, DSC$K_DTYPE_BU),
;  425          0517  2          K_A_T = FINAL_STATE (DSC$K_CLASS_A, DSC$K_DTYPE_T),
;  426          0518  2          K_SD_BU = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_BU),
;  427          0519  2          K_SD_WU = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_WU),
;  428          0520  2          K_SD_LU = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_LU),
;  429          0521  2          K_SD_B = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_B),
;  430          0522  2          K_SD_W = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_W),
;  431          0523  2          K_SD_L = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_L),
;  432          0524  2          K_SD_Q = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_Q),
;  433          0525  2          K_SD_F = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_F),
;  434          0526  2          K_SD_D = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_D),
;  435          0527  2          K_SD_G = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_G),
;  436          0528  2          K_SD_H = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_H),
;  437          0529  2          K_SD_T = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_T),
;  438          0530  2          K_SD_NU = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_NU),
;  439          0531  2          K_SD_NL = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_NL),
;  440          0532  2          K_SD_NLO = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_NLO),
;  441          0533  2          K_SD_NR = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_NR),
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;  442          0534  2          K_SD_NRO = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_NRO),
;  443          0535  2          K_SD_NZ = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_NZ),
;  444          0536  2          K_SD_P = FINAL_STATE (DSC$K_CLASS_SD, DSC$K_DTYPE_P),
;  445          0537  2          K_NCA_BU = FINAL_STATE (DSC$K_CLASS_NCA, DSC$K_DTYPE_BU),
;  446          0538  2          K_NCA_T = FINAL_STATE (DSC$K_CLASS_NCA, DSC$K_DTYPE_T),
;  447          0539  2          K_VS_T = FINAL_STATE (DSC$K_CLASS_VS, DSC$K_DTYPE_T),
;  448          0540  2          K_VS_VT = FINAL_STATE (DSC$K_CLASS_VS, DSC$K_DTYPE_VT),
;  449          0541  2  !+
;  450          0542  2  ! These are the left or right hand side of the conversion index.
;  451          0543  2  !-
;  452          0544  2          K_SMLINT = 1,
;  453          0545  2          K_LRGINT = 2,
;  454          0546  2          K_SMLFLT = 3,
;  455          0547  2          K_LRGFLT = 4,
;  456          0548  2          K_DEC = 5,
;  457          0549  2          K_NBDS = 6,
;  458          0550  2          K_TOT_CAT = 6;
;  459          0551  2
;  460          0552  2  !+
;  461          0553  2  ! Define two structures.
;  462          0554  2  ! START_STATE is just a vector of bytes, so we just use a macro to define it.
;  463          0555  2  ! STATES is a structure that we put all the states in other than the first state,
;  464          0556  2  ! and of course the final states and the states that never get used such as
;  465          0557  2  ! the states that contain non-supported CLASSes will not be in this structure.
;  466          0558  2  !-
;  467          0559  2
;  468          0560  2      STRUCTURE
;  469          0561  2          STATES [STATE, TOKEN] =
;  470          0562  2              [K_ACTUAL_CLASSES*K_MAX_DATA_TYPES]
;  471          0563  4              (STATES + (K_MAX_DATA_TYPES*
;  472          0564  5              BEGIN
;  473          0565  5
;  474          0566  5              CASE_STATE FROM K_MIN_CLASS TO K_MAX_CLASS OF
;  475          0567  5                  SET
;  476          0568  5
;  477          0569  5                  [K_STATE1_CLASS_S] :
;  478          0570  5                      0;
;  479          0571  5
;  480          0572  5                  [K_STATE2_CLASS_D] :
;  481          0573  5                      1;
;  482          0574  5
;  483          0575  5                  [K_STATE4_CLASS_A] :
;  484          0576  5                      2;
;  485          0577  5
;  486          0578  5                  [K_STATE9_CLASS_SD] :
;  487          0579  5                      3;
;  488          0580  5
;  489          0581  5                  [K_STATE10_CLASS_NCA] :
;  490          0582  5                      4;
;  491          0583  5
;  492          0584  5                  [K_STATE11_CLASS_VS] :
;  493          0585  5                      5;
;  494          0586  5
;  495          0587  5                  [INRANGE, OUTRANGE] :
;  496          0588  6                      BEGIN
;  497          0589  6                      LIB$STOP (LIB$_FATERRLIB);
;  498          0590  6                      0
```

```
;  499          0591  5                    END;
;  500          0592  5                TES
;  501          0593  5
;  502          0594  5            END
;  503          0595  2            ) + TOKEN)<0, %BPUNIT, 1>;
;  504          0596  2
;  505          0597  2  !+
;  506          0598  2  ! This is the start state entries.
;  507          0599  2  ! For each CLASS in the standard there is an entry here.  They are :
;  508          0600  2  !       Z     ,S    ,D    ,V     ,A
;  509          0601  2  !      ,P     ,none ,J    ,none  ,SD
;  510          0602  2  !      ,NCA   ,VS   ,VSA  ,UBS   ,UBA.
;  511          0603  2  !-
;  512          0604  2
;  513          0605  2      BIND
;  514          0606  2          CLASS_TABLE = UPLIT BYTE
;  515          0607  2           %( Start state.  All classes. )%
;  516          0608  2           (K_UNSCLAROU,DSC$K_CLASS_S,DSC$K_CLASS_D,K_UNSCLAROU,DSC$K_CLASS_A
;  517          0609  2           ,K_UNSCLAROU,K_UNSCLASTA,K_UNSCLAROU,K_UNSCLASTA,DSC$K_CLASS_SD
;  518          0610  2           ,DSC$K_CLASS_NCA,DSC$K_CLASS_VS,K_UNSCLAROU,K_UNSCLAROU,K_UNSCLAROU) : START_STATE;
;  519          0611  2
;  520          0612  2  !+
;  521          0613  2  ! This is the rest of the state table.  It is seperate because of space efficiency
;  522          0614  2  ! Each state cortains entries for each data type supported by the standard.
;  523          0615  2  ! Note that for space efficiency The final states are not in the vector.
;  524          0616  2  ! Also since each state represents a supported CLASS, if a CLASS is not
;  525          0617  2  ! supported ( by the standard or routine ), then the state has no entry in
;  526          0618  2  ! the vector.  The index table for the vector will index to the proper place
;  527          0619  2  ! in the vector below.
;  528          0620  2  ! This table shows graphically what descriptors are valid.
;  529          0621  2  !                                        DSC$K_DTYPE_x
;  530          0622  2  !                    BU WU LU B W L Q F D G H T NU NL NLO NR NRO NZ P VT
;  531          0623  2  !DSC$K_CLASS_S       x  x  x  x x x x x x x x x x  x  x   x  x   x  x
;  532          0624  2  !DSC$K_CLASS_D                                  x
;  533          0625  2  !DSC$K_CLASS_SD             x x x x x x x x x x  x  x   x  x   x  x
;  534          0626  2  !DSC$K_CLASS_VS                                 x                      x
;  535          0627  2  !DSC$K_CLASS_A     x                           x
;  536          0628  2  !DSC$K_CLASS_NCA   x                           x
;  537          0629  2  !
;  538          0630  2  !
;  539          0631  2  !Note that these data types are hard coded in ( zero based vector, and position
;  540          0632  2  !of each data type is determined be the value of the symbol ) so if data type
;  541          0633  2  !values are ever rearranged this table must be rearranged.
;  542          0634  2  !-
;  543          0635  2
;  544          0636  2      BIND
;  545          0637  2          DTYPE_TABLE = UPLIT BYTE
;  546          0638  2           %( State zero. Class z. )%
;  547          0639  2           %( State one.  Class s. )%
;  548          0640  2           (K_UNSDTYROU,K_UNSDTYROU,DSC$K_DTYPE_BU,DSC$K_DTYPE_WU,DSC$K_DTYPE_LU
;  549          0641  2           ,K_UNSDTYROU,DSC$K_DTYPE_B,DSC$K_DTYPE_W,DSC$K_DTYPE_L,DSC$K_DTYPE_Q
;  550          0642  2           ,DSC$K_DTYPE_F,DSC$K_DTYPE_D,K_UNSDTYROU,K_UNSDTYROU,DSC$K_DTYPE_T
;  551          0643  2           ,DSC$K_DTYPE_NU,DSC$K_DTYPE_NL,DSC$K_DTYPE_NLO,DSC$K_DTYPE_NR,DSC$K_DTYPE_NRO
;  552          0644  2           ,DSC$K_DTYPE_NZ,DSC$K_DTYPE_P,K_UNSDTYROU,K_UNSDTYROU,K_UNSDESSTA
;  553          0645  2           ,K_UNSDTYROU,K_UNSDTYROU,DSC$K_DTYPE_G,DSC$K_DTYPE_H,K_UNSDTYROU
;  554          0646  2           ,K_UNSDTYROU,K_UNSDTYROU,K_UNSDTYROU,K_UNSDTYROU,K_UNSDTYROU,K_UNSDTYROU
;  555          0647  2           ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
```

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;  556          0648  2      %( State two.  Class d. )%
;  557          0649  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  558          0650  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  559          0651  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,DSC$K_DTYPE_T
;  560          0652  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  561          0653  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  562          0654  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  563          0655  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  564          0656  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  565          0657  2      %( State three.  Class v. )%
;  566          0658  2      %( State four.  Class a. )%
;   67          0659  2      ,K_UNSDTYROU,K_UNSDTYROU,DSC$K_DTYPE_BU,K_UNSDESROU,K_UNSDESROU
;   68          0660  2      ,K_UNSDTYROU,K_UNSDESROU,K_UNSDESROU,K_UNSDESROU,K_UNSDESROU
;  69           0661  2      ,K_UNSDESROU,K_UNSDESROU,K_UNSDTYROU,K_UNSDTYROU,DSC$K_DTYPE_T
;  70           0662  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  571          0663  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDTYROU
;  572          0664  2      ,K_UNSDTYROU,K_UNSDTYROU,K_UNSDESROU,K_UNSDESROU,K_UNSDTYROU
;  573          0665  2      ,K_UNSDESSTA,K_UNSDTYROU,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  574          0666  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  575          0667  2      %( State five.  Class p. )%
;  576          0668  2      %( State six.  Class 'undefined' )%
;  577          0669  2      %( State seven.  Class j. )%
;  578          0670  2      %( State eight.  Class 'undefined' )%
;  579          0671  2      %( State nine.  Class sd. )%
;  580          0672  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  581          0673  2      ,K_UNSDESSTA,DSC$K_DTYPE_B,DSC$K_DTYPE_W,DSC$K_DTYPE_L,DSC$K_DTYPE_Q
;  582          0674  2      ,DSC$K_DTYPE_F,DSC$K_DTYPE_D,K_UNSDESSTA,K_UNSDESSTA,DSC$K_DTYPE_T
;  583          0675  2      ,DSC$K_DTYPE_NU,DSC$K_DTYPE_NL,DSC$K_DTYPE_NLO,DSC$K_DTYPE_NR,DSC$K_DTYPE_NRO
;  584          0676  2      ,DSC$K_DTYPE_NZ,DSC$K_DTYPE_P,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  585          0677  2      ,K_UNSDESSTA,K_UNSDTYROU,DSC$K_DTYPE_G,DSC$K_DTYPE_H,K_UNSDESSTA
;  586          0678  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  587          0679  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  588          0680  2      %( State ten.  Class nca. )%
;  589          0681  2      ,K_UNSDTYROU,K_UNSDTYROU,DSC$K_DTYPE_BU,K_UNSDESROU,K_UNSDESROU
;  590          0682  2      ,K_UNSDTYROU,K_UNSDESROU,K_UNSDESROU,K_UNSDESROU,K_UNSDESROU
;  591          0683  2      ,K_UNSDESROU,K_UNSDESROU,K_UNSDTYROU,K_UNSDTYROU,DSC$K_DTYPE_T
;  592          0684  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  593          0685  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDTYROU
;  594          0686  2      ,K_UNSDTYROU,K_UNSDTYROU,K_UNSDESROU,K_UNSDESROU,K_UNSDTYROU
;  595          0687  2      ,K_UNSDESSTA,K_UNSDTYROU,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  596          0688  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  597          0689  2      %( State eleven.  Class vs. )%
;  598          0690  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  599          0691  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  600          0692  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,DSC$K_DTYPE_T
;  601          0693  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  602          0694  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  603          0695  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  604          0696  2      ,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA,K_UNSDESSTA
;  605          0697  2      ,K_UNSDESSTA,K_UNSDESSTA,DSC$K_DTYPE_VT
;  606          0698  2      %( State twelve.  Class vsa. )%
;  607          0699  2      %( State thirteen.  Class ubs. )%
;  608          0700  2      %( State fourteen.  Class uba. )%
;  609          0701  2      %( Add more states below )%
;  610          0702  2         ) : STATES;
;  611          0703  2
;  612          0704  2      LOCAL
```

```
;  613          0705  2          STATUS,                                     ! Status of this routine
;  614          0706  2          STATE,                                      ! State
;  615          0707  2          CLASS,                                      ! Current CLASS being looked at
;  616          0708  2          DTYPE,                                      ! Current DTYPE being looked at
;  617          0709  2          TOKEN,                                      ! The value of each data type supported
;  618          0710  2          LEFT_CVT : VOLATILE VECTOR [1],             ! Left side of conversion index.
;  619          0711  2          RIGHT_CVT : VOLATILE VECTOR [1],            ! Right side of conversion index.
;  620          0712  2          LEFT_OR_RIGHT_CVT : REF VECTOR,             ! Left or right side of conversion index.
;  621          0713  2          SRC_OR_DST_INFO : REF BLOCK [, BYTE],       ! Source or destination info.
;  622          0714  2          SRC_OR_DST : REF BLOCK [, BYTE],            ! Source or destination.
;  623          0715  2          TEMP_BUF : BLOCK [K_INTMED_DATA_LENGTH, BYTE];  ! Temporary buffer for reshuffling things.
;  624          0716  2
;  625          0717  2      MAP
;  626          0718  2          SOURCE : REF BLOCK [, BYTE],
;  627          0719  2          DESTINATION : REF BLOCK [, BYTE],
;  628          0720  2          SRC_INFO : REF BLOCK [, BYTE] FIELD (SRC_INFO_FIELDS),
;  629          0721  2          DST_INFO : REF BLOCK [, BYTE] FIELD (DST_INFO_FIELDS);
;  630          0722  2
;  631          0723  2  !+
;  632          0724  2  ! Traverse through the state table twice.  Once for source, and once for
;  633          0725  2  ! destination descriptor.
;  634          0726  2  ! Each time come up with a final state that indicates which left hand side
;  635          0727  2  ! (for the first traversing), or right hand side (for the second traversing) of
;  636          0728  2  ! conversion we have got, e.g. SMLINT, or LRGFLT, etc.
;  637          0729  2  ! The action codes also build SRC_INFO, and DST_INFO, and they do
;  638          0730  2  ! the conversions to the intermediate values.
;  639          0731  2  ! After we have the left hand side of conversion for source and the right hand
;  640          0732  2  ! side of conversion for destination
;  641          0733  2  ! descriptor, then stick them in a formula that maps these two into
;  642          0734  2  ! one final answer that indicates which general CLASS, DTYPE is being
;  643          0735  2  ! converted to which general CLASS, DTYPE, e.g. SMLINT_LRGFLT, or DEC_SMLFLT, etc.
;  644          0736  2  ! These final answers are the output parameter CVT_PATH that will end up as the
;  645          0737  2  ! index to the CASE statement in LIB$CVT_DX_DX.
;  646          0738  2  !-
;  647          0739  2  !+
;  648          0740  2  ! This loop is from 0 to 3, but we EXITLOOP at 2 because that is the second time
;  649          0741  2  ! through the loop and the end of the road.
;  650          0742  2  ! When the state table indicates an error, or we detect an error in an action routine,
;  651          0743  2  ! we will just EXITLOOP with the value given by the state table, or of our own choice.
;  652          0744  2  ! Note that we EXITLOOP when we detect errors in the action routines, e.g. if array
;  653          0745  2  ! size is greater than a WU.
;  654          0746  2  !-
;  655          0747  3      BEGIN
;  656          0748  4      STATUS = (INCRU TURN FROM 0 TO 3 DO
;  657          0749  5          BEGIN
;  658          0750  5  !+
;  659          0751  5  ! Determine CLASS and DTYPE of this go around, also set up LEFT_OR_RIGHT_CVT,
;  660          0752  5  ! and SRC_OR_DST, and SRC_OR_DST_INFO.
;  661          0753  5  ! If this is the third time through this loop, we are finished.
;  662          0754  5  !-
;  663          0755  5
;  664          0756  5          CASE .TURN FROM 0 TO 2 OF
;  665          0757  5              SET
;  666          0758  5
;  667          0759  5              [0] :
;  668          0760  6                  BEGIN
;  669          0761  6                  CLASS = .SOURCE [DSC$B_CLASS];
```

```
;  670          0762  6                  DTYPE = .SOURCE [DSC$B_DTYPE];
;  671          0763  6                  SRC_OR_DST = .SOURCE;
;  672          0764  6                  SRC_OR_DST_INFO = .SRC_INFO;
;  673          0765  6                  LEFT_OR_RIGHT_CVT = LEFT_CVT;
;  674          0766  5                  END;
;  675          0767  5
;  676          0768  5              [1] :
;  677          0769  6                  BEGIN
;  678          0770  6                  CLASS = .DESTINATION [DSC$B_CLASS];
;  679          0771  6                  DTYPE = .DESTINATION [DSC$B_DTYPE];
;  680          0772  6                  SRC_OR_DST = .DESTINATION;
;  681          0773  6                  SRC_OR_DST_INFO = .DST_INFO;
;  682          0774  6                  LEFT_OR_RIGHT_CVT = RIGHT_CVT;
;  683          0775  5                  END;
;  684          0776  5
;  685          0777  5              [2] :
;  686          0778  5                  EXITLOOP K_SUPPORTED;
;  687          0779  5              TES;
;  688          0780  5
;  689          0781  5 !+
;  690          0782  5 ! Filter out the out-of-range CLASS and DTYPE.
;  691          0783  5 !-
;  692          0784  5
;  693          0785  5          IF .CLASS GTRU K_MAX_CLASS_STA THEN EXITLOOP K_UNSCLASTA;
;  694          0786  5
;  695          0787  5          IF .DTYPE GTRU K_MAX_DTYPE_STA THEN EXITLOOP K_UNSDTYSTA;
;  696          0788  5
;  697          0789  5 !+
;  698          0790  5 ! Crank up the finite state machine. start looking in the start state.
;  699          0791  5 !-
;  700          0792  5          STATE = .CLASS_TABLE [.CLASS];
;  701          0793  5 !+
;  702          0794  5 ! Action code for each state that results from the start state.
;  703          0795  5 !-
;  704          0796  5
;  705          0797  5          CASE .STATE FROM K_MSTNEGERR TO K_LRGCLSSUP OF
;  706          0798  5              SET
;  707          0799  5
;  708          0800  5              [K_INVNBDS TO K_UNSCLAROU] :
;  709          0801  5                  EXITLOOP .STATE;                ! Exit the INCR with the error
;  710          0802  5                                                  ! resulted from the start state.
;  711          0803  5
;  712          0804  5              [K_SMLCLSSUP TO K_LRGCLSSUP] :
;  713          0805  6                  BEGIN
;  714          0806  6                  TOKEN = .DTYPE_TABLE [.STATE, .DTYPE];  ! This is a final state, but
;  715          0807  6                                                  ! some constants need to be
;  716          0808  6                                                  ! Applied to it yet.
;  717          0809  6                                                  ! This is just a data type, or a negative number if error.
;  718          0810  6
;  719          0811  6                  IF .TOKEN LSS 0 THEN EXITLOOP .TOKEN;   ! Exit INCR with the error resulted
;  720          0812  6
;  721          0813  6                                                  ! in a final state.
;  722          0814  6                  STATE = FINAL_STATE (.STATE, .TOKEN);   ! Find the final state.
;  723          0815  5                  END;
;  724          0816  5
;  725          0817  5              [INRANGE, OUTRANGE] :
;  726          0818  5                  LIB$STOP (LIB$_FATERRLIB);
```

```
;  727          0819  5              TES;
;  728          0820  5
;  729          0821  5 !+
;  730          0822  5 ! This CASE statement contains the action code for each final state other than
;  731          0823  5 ! the error states.
;  732          0824  5 ! The caller of this routine has set up the pointer and length of SRC_INFO
;  733          0825  5 ! to be the intermediate data area (INTMED_DATA), so in the CASE below we
;  734          0826  5 ! will change pointer and length if needed (e.g. any NBDS), otherwise we never
;  735          0827  5 ! touch it.
;  736          0828  5 ! If .TURN is 0 then we are processing the left side of the conversion, when
;  737          0829  5 ! it is 1 we are processing the right side of the conversion. Another words
;  738          0830  5 ! if .TURN is 0 we are looking at the CLASS, DATA TYPE of source, and if
;  739          0831  5 ! it is 1 we are looking at CLASS, DATA TYPE of destination.
;  740          0832  5 ! These action codes determine which category (e.g. K_SMLINT or K_DEC as
;  741          0833  5 ! described in LIB$CVT_DX_DX documentation) source or destination data type
;  742          0834  5 ! falls into.  They also convert the source data type to an intermediate
;  743          0835  5 ! data type.  For more detail refer to the functional description of
;  744          0836  5 ! LIB$CVT_DX_DX.
;  745          0837  5 !-
;  746          0838  5
;  747          0839  5          CASE .STATE FROM K_SMLFINSTA TO K_LRGFINSTA OF
;  748          0840  5              SET
;  749          0841  5
;  750          0842  5              [K_S_BU, K_SD_BU] :
;  751          0843  6                  BEGIN
;  752          0844  6                  .LEFT_OR_RIGHT_CVT = K_SMLINT;
;  753          0845  6
;  754          0846  6                  IF .TURN EQL 0
;  755          0847  6                  THEN
;  756          0848  6                      .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 8, 0;,
;  757          0849  6                          BYTE];
;  758          0850  6
;  759          0851  5                  END;
;  760          0852  5
;  761          0853  5              [K_S_WU, K_SD_WU] :
;  762          0854  6                  BEGIN
;  763          0855  6                  .LEFT_OR_RIGHT_CVT = K_SMLINT;
;  764          0856  6
;  765          0857  6                  IF .TURN EQL 0
;  766          0858  6                  THEN
;  767          0859  6                      .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 16, 0;,
;  768          0860  6                          BYTE];
;  769          0861  6
;  770          0862  5                  END;
;  771          0863  5
;  772          0864  5              [K_S_LU, K_SD_LU] :
;  773          0865  6                  BEGIN
;  774          0866  6                  .LEFT_OR_RIGHT_CVT = K_LRGINT;
;  775          0867  6
;  776          0868  6                  IF .TURN EQL 0
;  777          0869  6                  THEN
;  778          0870  6                      .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 32, 0;,
;  779          0871  6                          BYTE];
;  780          0872  6
;  781          0873  5                  END;
;  782          0874  5
;  783          0875  5              [K_S_B, K_SD_B] :
```

```
;  784          0876  6                BEGIN
;  785          0877  6                .LEFT_OR_RIGHT_CVT = K_SMLINT;
;  786          0878  6
;  787          0879  6                IF .STATE EQL K_SD_B THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  788          0880  6
;  789          0881  6                IF .TURN EQL 0
;  790          0882  6                THEN
;  791          0883  6                    .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 8, 1;,
;  792          0884  6                        BYTE];
;  793          0885  6
;  794          0886  5                END;
;  795          0887  5
;  796          0888  5            [K_S_W, K_SD_W] :
;  797          0889  6                BEGIN
;  798          0890  6                .LEFT_OR_RIGHT_CVT = K_SMLINT;
;  799          0891  6
;  800          0892  6                IF .STATE EQL K_SD_W THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  801          0893  6
;  802          0894  6                IF .TURN EQL 0
;  803          0895  6                THEN
;  804          0896  6                    .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 16, 1;,
;  805          0897  6                        BYTE];
;  806          0898  6
;  807          0899  5                END;
;  808          0900  5
;  809          0901  5            [K_S_L, K_SD_L] :
;  810          0902  6                BEGIN
;  811          0903  6                .LEFT_OR_RIGHT_CVT = K_SMLINT;
;  812          0904  6
;  813          0905  6                IF .STATE EQL K_SD_L THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  814          0906  6
;  815          0907  6                IF .TURN EQL 0
;  816          0908  6                THEN
;  817          0909  6                    .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 32, 1;,
;  818          0910  6                        BYTE];
;  819          0911  6
;  820          0912  5                END;
;  821          0913  5
;  822          0914  5            [K_S_Q, K_SD_Q] :
;  823          0915  6                BEGIN
;  824          0916  6                .LEFT_OR_RIGHT_CVT = K_LRGINT;
;  825          0917  6
;  826          0918  6                IF .STATE EQL K_SD_Q THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  827          0919  6
;  828          0920  6                IF .TURN EQL 0
;  829          0921  6                THEN
;  830          0922  7                    BEGIN
;  831          0923  7                    .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 32, 0;, BYTE];
;  832          0924  7                    (.SRC_INFO [S_POINTER] + 4) = .BLOCK [.SOURCE [DSC$A_POINTER] + 4, 0, 0, 32, 0;, BYTE];
;  833          0925  7
;  834          0926  7                    IF .BLOCK [.SRC_INFO [S_POINTER], 4, 31, 1, 0;, BYTE]
;  835          0927  7                    THEN
;  836          0928  8                        BEGIN
;  837          0929  8                        .SRC_INFO [S_POINTER] = ..SRC_INFO [S_POINTER] XOR %X'FFFFFFFF';
;  838          0930  8                        .SRC_INFO [S_POINTER] + 4 = .(.SRC_INFO [S_POINTER] + 4) XOR %X'FFFFFFFF';
;  839          0931  8
;  840          0932  8                        IF ..SRC_INFO [S_POINTER] EQLU K_LRGST_LU
```

```
;  841          0933  8                          THEN
;  842          0934  9                              BEGIN
;  843          0935  9                              .SRC_INFO [S_POINTER] = 0;
;  844          0936  9                              .SRC_INFO [S_POINTER] + 4 = .(.SRC_INFO [S_POINTER] + 4) + 1;
;  845          0937  9                              END
;  846          0938  8                          ELSE
;  847          0939  8                              .SRC_INFO [S_POINTER] = ..SRC_INFO [S_POINTER] + 1;
;  848          0940  8
;  849          0941  8                          SRC_INFO [S_SIGN] = 1;
;  850          0942  7                          END;
;  851          0943  7
;  852          0944  6                      END;
;  853          0945  6
;  854          0946  5                  END;
;  855          0947  5
;  856          0948  5              [K_S_F, K_SD_F] :
;  857          0949  6                  BEGIN
;  858          0950  6                  .LEFT_OR_RIGHT_CVT = K_SMLFLT;
;  859          0951  6
;  860          0952  6                  IF .STATE EQL K_SD_F THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  861          0953  6
;  862          0954  6                  IF .TURN EQL 0
;  863          0955  6                  THEN
;  864          0956  6                      .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 32, 0;,
;  865          0957  6                          BYTE];
;  866          0958  6
;  867          0959  5                  END;
;  868          0960  5
;  869          0961  5              [K_S_D, K_SD_D] :
;  870          0962  6                  BEGIN
;  871          0963  6                  .LEFT_OR_RIGHT_CVT = K_SMLFLT;
;  872          0964  6
;  873          0965  6                  IF .STATE EQL K_SD_D THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  874          0966  6
;  875          0967  6                  IF .TURN EQL 0
;  876          0968  6                  THEN
;  877          0969  7                      BEGIN
;  878          0970  7                      .SRC_INFO [S_POINTER] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 32, 0;, BYTE];
;  879          0971  7                      (.SRC_INFO [S_POINTER] + 4) = .BLOCK [.SOURCE [DSC$A_POINTER] + 4, 0, 0, 32, 0;, BYTE];
;  880          0972  6                      END;
;  881          0973  6
;  882          0974  5                  END;
;  883          0975  5
;  884          0976  5              [K_S_G, K_SD_G] :
;  885          0977  6                  BEGIN
;  886          0978  6                  .LEFT_OR_RIGHT_CVT = K_LRGFLT;
;  887          0979  6
;  888          0980  6                  IF .STATE EQL K_SD_G THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  889          0981  6
;  890          0982  6                  IF .TURN EQL 0 THEN CVTGH (.SOURCE [DSC$A_POINTER], .SRC_INFO [S_POINTER]);
;  891          0983  6
;  892          0984  5                  END;
;  893          0985  5
;  894          0986  5              [K_S_H, K_SD_H] :
;  895          0987  6                  BEGIN
;  896          0988  6                  .LEFT_OR_RIGHT_CVT = K_LRGFLT;
;  897          0989  6
```

```
;  898          0990  6                  IF .STATE EQL K_SD_H THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  899          0991  6
;  900          0992  6                  IF .TURN EQL 0 THEN CH$MOVE (16, .SOURCE [DSC$A_POINTER], .SRC_INFO [S_POINTER]);
;  901          0993  6
;  902          0994  5                  END;
;  903          0995  5
;  904          0996  5              [K_S_T, K_SD_T] :
;  905          0997  6                  BEGIN
;  906          0998  6                  .LEFT_OR_RIGHT_CVT = K_NBDS;
;  907          0999  6                  SRC_OR_DST_INFO [M_LEN] = .SRC_OR_DST [DSC$W_LENGTH];
;  908          1000  6
;  909          1001  6                  IF .STATE EQL K_SD_T THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  910          1002  6
;  911          1003  6                  IF .TURN EQL 0
;  912          1004  6                  THEN
;  913          1005  7                      BEGIN
;  914          1006  7                      SRC_INFO [S_POINTER] = .SOURCE [DSC$A_POINTER];
;  915          1007  6                      END;
;  916          1008  6
;  917          1009  5                  END;
;  918          1010  5
;  919          1011  5              [K_S_NU, K_SD_NU] :
;  920          1012  6                  BEGIN
;  921          1013  6                  .LEFT_OR_RIGHT_CVT = K_DEC;
;  922          1014  6
;  923          1015  6                  IF .STATE EQL K_SD_NU THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  924          1016  6
;  925          1017  6                  IF .TURN EQL 0
;  926          1018  6                  THEN
;  927          1019  7                      BEGIN
;  928          1020  7                      SRC_INFO [S_LEN] = 31;
;  929          1021  7                      CVTTP (SOURCE [DSC$W_LENGTH], .SOURCE [DSC$A_POINTER], LIB$AB_CVTTP_U,
;  930          1022  7                          SRC_INFO [S_LEN], .SRC_INFO [S_POINTER]);
;  931          1023  6                      END;
;  932          1024  6
;  933          1025  5                  END;
;  934          1026  5
;  935          1027  5              [K_S_NL, K_SD_NL] :
;  936          1028  6                  BEGIN
;  937          1029  6                  .LEFT_OR_RIGHT_CVT = K_DEC;
;  938          1030  6
;  939          1031  6                  IF .STATE EQL K_SD_NL THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  940          1032  6
;  941          1033  6                  IF .TURN EQL 0
;  942          1034  6                  THEN
;  943          1035  7                      BEGIN
;  944          1036  7                      SRC_INFO [S_LEN] = 31;
;  945          1037  7                      CVTSP (%REF (
;  946          1038  7
;  947          1039  7                          IF .SOURCE [DSC$W_LENGTH] EQL 0 THEN 0 ELSE .SOURCE [DSC$W_LENGTH] - 1),
;  948          1040  7                      .SOURCE [DSC$A_POINTER], SRC_INFO [S_LEN], .SRC_INFO [S_POINTER]);
;  949          1041  7
;  950          1042  6                      END;
;  951          1043  6
;  952          1044  5                  END;
;  953          1045  5
;  954          1046  5              [K_S_NLO, K_SD_NLO] :
```

```
;  955          1047  6                BEGIN
;  956          1048  6                .LEFT_OR_RIGHT_CVT = K_DEC;
;  957          1049  6
;  958          1050  6                IF .STATE EQL K_SD_NLO THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  959          1051  6
;  960          1052  6                IF .TURN EQL 0
;  961          1053  6                THEN
;  962          1054  7                    BEGIN
;  963          1055  7
;  964          1056  7                    BIND FIRST_BYTE = SOURCE [DSC$A_POINTER] : REF VECTOR [,BYTE];
;  965          1057  7
;  966          1058  7                    SRC_INFO [S_LEN] = 31;
;  967          1059  7                    CH$TRANSLATE (LIB$AB_CVT_O_U, .SOURCE [DSC$W_LENGTH], .SOURCE [DSC$A_POINTER], 0,
;  968          1060  7                        .SOURCE [DSC$W_LENGTH], TEMP_BUF);
;  969          1061  7                    CVTTP (SOURCE [DSC$W_LENGTH], TEMP_BUF, LIB$AB_CVTTP_U, SRC_INFO [S_LEN],
;  970          1062  7                        .SRC_INFO [S_POINTER]);
;  971          1063  7
;  972          1064  7                    IF (.FIRST_BYTE [0] GEQU %X'4A' AND .FIRST_BYTE [0] LEQU %X'52') OR
;  973          1065  7                        .FIRST_BYTE [0] EQLU %X'7D'
;  974          1066  7                    THEN
;  975          1067  7                        BLOCK [.SRC_INFO [S_POINTER] + .SRC_INFO [S_LEN]/2, 0, 0, 4, 0;, BYTE] =
;  976          1068  7                            .BLOCK [LIB$AB_CVTTP_O + .FIRST_BYTE [0], 0, 0, 4, 0;, BYTE];
;  977          1069  7
;  978          1070  6                    END;
;  979          1071  6
;  980          1072  5                END;
;  981          1073  5
;  982          1074  5            [K_S_NR, K_SD_NR] :
;  983          1075  6                BEGIN
;  984          1076  6                .LEFT_OR_RIGHT_CVT = K_DEC;
;  985          1077  6
;  986          1078  6                IF .STATE EQL K_SD_NR THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  987          1079  6
;  988          1080  6                IF .TURN EQL 0
;  989          1081  6                THEN
;  990          1082  7                    BEGIN
;  991          1083  7
;  992          1084  7                    LOCAL
;  993          1085  7                        SOU_LEN;
;  994          1086  7
;  995          1087  7                    SOU_LEN =
;  996          1088  8                    BEGIN
;  997          1089  8
;  998          1090  8                    IF .SOURCE [DSC$W_LENGTH] EQL 0 THEN 0 ELSE .SOURCE [DSC$W_LENGTH] - 1
;  999          1091  8
; 1000          1092  7                    END;
; 1001          1093  7                    TEMP_BUF [0, 0, 8, 0] = .BLOCK [.SOURCE [DSC$A_POINTER] + .SOU_LEN, 0, 0, 8, 0;, BYTE];
; 1002          1094  7                    CH$MOVE (.SOU_LEN, .SOURCE [DSC$A_POINTER], TEMP_BUF + 1);
; 1003          1095  7                    SRC_INFO [S_LEN] = 31;
; 1004          1096  7                    CVTSP (SOU_LEN, TEMP_BUF, SRC_INFO [S_LEN], .SRC_INFO [S_POINTER]);
; 1005          1097  6                    END;
; 1006          1098  6
; 1007          1099  5                END;
; 1008          1100  5
; 1009          1101  5            [K_S_NRO, K_SD_NRO] :
; 1010          1102  6                BEGIN
; 1011          1103  6                .LEFT_OR_RIGHT_CVT = K_DEC;
```

```
;  1012          1104  6
;  1013          1105  6                   IF .STATE EQL K_SD_NRO THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  1014          1106  6
;  1015          1107  6                   IF .TURN EQL 0
;  1016          1108  6                   THEN
;  1017          1109  7                       BEGIN
;  1018          1110  7                       SRC_INFO [S_LEN] = 31;
;  1019          1111  7                       CVTTP (SOURCE [DSC$W_LENGTH], .SOURCE [DSC$A_POINTER], LIB$AB_CVTTP_0,
;  1020          1112  7                           SRC_INFO [S_LEN], .SRC_INFO [S_POINTER]);
;  1021          1113  6                       END;
;  1022          1114  6
;  1023          1115  5                   END;
;  1024          1116  5
;  1025          1117  5               [K_S_NZ, K_SD_NZ] :
;  1026          1118  6                   BEGIN
;  1027          1119  6                   .LEFT_OR_RIGHT_CVT = K_DEC;
;  1028          1120  6
;  1029          1121  6                   IF .STATE EQL K_SD_NZ THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  1030          1122  6
;  1031          1123  6                   IF .TURN EQL 0
;  1032          1124  6                   THEN
;  1033          1125  7                       BEGIN
;  1034          1126  7                       SRC_INFO [S_LEN] = 31;
;  1035          1127  7                       CVTTP (SOURCE [DSC$W_LENGTH], .SOURCE [DSC$A_POINTER], LIB$AB_CVTTP_Z,
;  1036          1128  7                           SRC_INFO [S_LEN], .SRC_INFO [S_POINTER]);
;  1037          1129  6                       END;
;  1038          1130  6
;  1039          1131  5                   END;
;  1040          1132  5
;  1041          1133  5               [K_S_P, K_SD_P] :
;  1042          1134  6                   BEGIN
;  1043          1135  6                   .LEFT_OR_RIGHT_CVT = K_DEC;
;  1044          1136  6
;  1045          1137  6                   IF .STATE EQL K_SD_P THEN SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;  1046          1138  6
;  1047          1139  6                   IF .TURN EQL 0
;  1048          1140  6                   THEN
;  1049          1141  7                       BEGIN
;  1050          1142  7                       CVTPS (SOURCE [DSC$W_LENGTH], .SOURCE [DSC$A_POINTER], %REF (31), TEMP_BUF);
;  1051          1143  7                       CVTSP (%REF (31), TEMP_BUF, %REF (31), .SRC_INFO [S_POINTER]);
;  1052          1144  7                       SRC_INFO [S_LEN] = 31;
;  1053          1145  6                       END;
;  1054          1146  6
;  1055          1147  5                   END;
;  1056          1148  5
;  1057          1149  5               [K_D_T] :
;  1058          1150  6                   BEGIN
;  1059          1151  6                   .LEFT_OR_RIGHT_CVT = K_NBDS;
;  1060          1152  6                   SRC_OR_DST_INFO [M_LEN] = .SRC_OR_DST [DSC$W_LENGTH];
;  1061          1153  6
;  1062          1154  6                   IF .TURN EQL 0
;  1063          1155  6                   THEN
;  1064          1156  7                       BEGIN
;  1065          1157  7                       SRC_INFO [S_POINTER] = .SOURCE [DSC$A_POINTER];
;  1066          1158  6                       END;
;  1067          1159  6
;  1068          1160  5                   END;
```

```
;1069     1161  5
;1070     1162  5              [K_A_BU, K_A_T, K_NCA_BU, K_NCA_T] :
;1071     1163  6                  BEGIN
;1072     1164  6                  .LEFT_OR_RIGHT_CVT = K_NBDS;
;1073     1165  6
;1074     1166  7                  IF (.SRC_OR_DST [DSC$L_ARSIZE] GTR K_LRGST_WU OR .SRC_OR_DST [DSC$B_DIMCT] NEQ 1 OR
;1075     1167  7                      .SRC_OR_DST [DSC$W_LENGTH] NEQ 1)
;1076     1168  6                  THEN
;1077     1169  6                      EXITLOOP K_INVNBDS;
;1078     1170  6
;1079     1171  7                  IF (.STATE EQL K_NCA_BU OR .STATE EQL K_NCA_T)
;1080     1172  6                  THEN
;1081     1173  7                      BEGIN
;1082     1174  7
;1083     1175  7                      IF .SRC_OR_DST [DSC$L_S1] NEQ 1 THEN EXITLOOP K_INVNBDS;
;1084     1176  7
;1085     1177  6                      END;
;1086     1178  6
;1087     1179  6                  SRC_OR_DST_INFO [M_SCALE] = .SRC_OR_DST [DSC$B_SCALE];
;1088     1180  6                  SRC_OR_DST_INFO [M_LEN] = .SRC_OR_DST [DSC$L_ARSIZE];
;1089     1181  6
;1090     1182  6                  IF .TURN EQL 0
;1091     1183  6                  THEN
;1092     1184  7                      BEGIN
;1093     1185  7                      SRC_INFO [S_POINTER] = .SOURCE [DSC$A_POINTER];
;1094     1186  6                      END;
;1095     1187  6
;1096     1188  5                  END;
;1097     1189  5
;1098     1190  5              [K_VS_T, K_VS_VT] :
;1099     1191  6                  BEGIN
;1100     1192  6                  .LEFT_OR_RIGHT_CVT = K_NBDS;
;1101     1193  6
;1102     1194  6                  IF .TURN EQL 0
;1103     1195  6                  THEN
;1104     1196  7                      BEGIN
;1105     1197  7                      SRC_INFO [S_POINTER] = .SOURCE [DSC$A_POINTER] + 2;
;1106     1198  7                      SRC_INFO [S_LEN] = .BLOCK [.SOURCE [DSC$A_POINTER], 0, 0, 16, 0;, BYTE];
;1107     1199  7                      END
;1108     1200  6                  ELSE
;1109     1201  6                      DST_INFO [D_LEN] = .DESTINATION [DSC$W_LENGTH];
;1110     1202  6
;1111     1203  5                  END;
;1112     1204  5
;1113     1205  5              [INRANGE] :
;1114     1206  5                  LIB$STOP (LIB$_FATERRLIB);
;1115     1207  5              TES;
;1116     1208  5
;1117     1209  5          END
;1118     1210  4      )                                          ! End of INCRU, with a EXITLOOP value.
;1119     1211  2      END;                                       ! End of STATUS.
;1120     1212  2  !+
;1121     1213  2  ! Map the left and right of the conversion, (i.e. if the conversion is
;1122     1214  2  ! K_SMLINT_LRGFLT, then LEFT_CVT is SMLINT and RIGHT_CVT is LRGFLT)
;1123     1215  2  ! into a final conversion index and return with the status of this routine.
;1124     1216  2  !-
;1125     1217  2      .CVT_PATH = (.LEFT_CVT - 1)*K_TOT_CAT + .RIGHT_CVT;
```

```
; 1126          1218  2     RETURN .STATUS;
; 1127          1219  1     END;                                    ! End of routine LIB$$FIND_CVT_PATH


                                                                     .TITLE  LIB$$FIND_CVT_PATH LIB$$FIND_CVT_PATH  for inte
;                                                                                                       rnal use of LIB$CVT
                                                                     .IDENT  \1-006\

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

FF  FF  FF  0B  0A  09  FB  FF  FB  FF  04  FF  02  01  FF  00000 P.AAA: .BYTE   -1, 1, 2, -1, 4, -1, -5, -1, -5, 9, 10, -     ;
                                                                             11, -1, -1, -1                                  ;
0E  FE  FE  0B  0A  09  08  07  06  FE  04  03  02  FE  FE  0000F P.AAB: .BYTE   -2, -2, 2, 3, 4, -2, 6, 7, 8, 9, 10, 11, -  ;
FE  1C  1B  FE  FE  FC  FE  FE  15  14  13  12  11  10  0F  0001E             -2, -2, 14, 15, 16, 17, 18, 19, 20, 21, -       ;
FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FE  FE  FE  FE  FE  0002D             -2, -2, -4, -2, -2, 27, 28, -2, -2, -2, -       ;
FC  FC  FC  FC  FC  FC  FC  0E  FC  FC  FC  FC  FC  FC  FC  0003C             -2, -2, -2, -4, -4, -4, -4, -4, -4, -4, -       ;
FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  0004B             -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -       ;
FE  FE  FD  FD  FD  FD  FD  FD  FE  FD  FD  02  FE  FE  FC  0005A             14, -4, -4, -4, -4, -4, -4, -4, -4, -4, -       ;
FD  FD  FE  FE  FE  FC  FC  FC  FC  FC  FC  FC  FC  FC  0E  00069             -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -       ;
FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FE  FC  FE  00078             -4, -4, -4, -4, -2, -2, 2, -3, -3, -2, -        ;
14  13  12  11  10  0F  0E  FC  FC  0B  0A  09  08  07  06  00087             -3, -3, -3, -3, -3, -3, -2, -2, 14, -4, -       ;
FC  FC  FC  FC  FC  FC  FC  1C  1B  FE  FC  FC  FC  FC  15  00096             -4, -4, -4, -4, -4, -4, -4, -4, -2, -2, -       ;
FE  FD  FD  FD  FD  FD  FD  FE  FD  FD  02  FE  FE  FC  FC  000A5             -2, -3, -3, -2, -4, -2, -4, -4, -4, -4, -       ;
FD  FE  FE  FE  FC  FC  FC  FC  FC  FC  FC  FC  FC  0E  FE  000B4             -4, -4, -4, -4, -4, -4, -4, -4, 6, 7, 8, -      ;
FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FE  FC  FE  FD  000C3         9, 10, 11, -4, -4, 14, 15, 16, 17, 18, -        ;
FC  FC  FC  FC  FC  0E  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  000D2         19, 20, 21, -4, -4, -4, -4, -4, -2, 27, 28, -   ;
FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  FC  000E1         -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -2, -   ;
                                                    25  FC  FC  FC  000F0     -2, 2, -3, -3, -2, -3, -3, -3, -3, -3, -        ;
                                                                             -3, -2, -2, 14, -4, -4, -4, -4, -4, -4, -       ;
                                                                             -4, -4, -4, -2, -2, -2, -3, -3, -2, -4, -       ;
                                                                             -2, -4, -4, -4, -4, -4, -4, -4, -4, -4, -       ;
                                                                             -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -       ;
                                                                             -4, 14, -4, -4, -4, -4, -4, -4, -4, -4, -       ;
                                                                             -4, -4, -4, -4, -4, -4, -4, -4, -4, -4, -       ;
                                                                             -4, -4, -4, -4, 37                              ;

                                                        CLASS_TABLE=         P.AAA
                                                        DTYPE_TABLE=         P.AAB
                                                                     .EXTRN  LIB$STOP, LIB$$CVT_CVTGH_R1
                                                                     .EXTRN  LIB$AB_CVTTP_U, LIB$AB_CVT_O_U
                                                                     .EXTRN  LIB$AB_CVTTP_O, LIB$AB_CVT_U_O
                                                                     .EXTRN  LIB$AB_CVTPT_U, LIB$AB_CVTPT_O
                                                                     .EXTRN  LIB$AB_CVTPT_Z, LIB$AB_CVTTP_Z
                                                                     .EXTRN  LIB$_FATERRLIB

                                                        0FFC 00000           .ENTRY  LIB$$FIND_CVT_PATH, Save R2,R3,R4,R5,R6,R7,-; 0194
                                                                                     R8,R9,R10,R11                               ;
                                    5E                    38  C2 00002      SUBL2   #56, SP                                     ;
                                                0C        AE  D4 00005      CLRL    TURN                                        ; 0748
                                  02                0C    AE  CF 00008 1$:  CASEL   TURN, #0, #2                                ; 0756
                                003C                0021        0006  0000D 2$:  .WORD   3$-2$,-                                ;
                                                                                     4$-2$,-                                     ;
                                                                                     5$-2$                                       ;
                                    50          04    AC  D0 00013 3$:  MOVL    SOURCE, R0                                  ; 0761
                                04  AE          03    A0  9A 00017      MOVZBL  3(R0), CLASS                                ;
                                    6E          02    A0  9A 0001C      MOVZBL  2(R0), DTYPE                                ; 0762
                                    58                50  D0 00020      MOVL    R0, SRC_OR_DST                              ; 0763
```

```
                                 5B      0C    AC  D0 00023          MOVL    SRC_INFO, SRC_OR_DST_INFO                ; 0764
                              08 AE      34    AE  9E 00027          MOVAB   LEFT_CVT, LEFT_OR_RIGHT_CVT              ; 0765
                                            20  11 0002C          BRB     6$                                       ; 0756
                                 50      08    AC  D0 0002E 4$:      MOVL    DESTINATION, R0                          ; 0770
                              04 AE      03    A0  9A 00032          MOVZBL  3(R0), CLASS                             ;
                                 6E      02    A0  9A 00037          MOVZBL  2(R0), DTYPE                             ; 0771
                                 58            50  D0 0003B          MOVL    R0, SRC_OR_DST                           ; 0772
                                 5B      10    AC  D0 0003E          MOVL    DST_INFO, SRC_OR_DST_INFO                ; 0773
                              08 AE      30    AE  9E 00042          MOVAB   RIGHT_CVT, LEFT_OR_RIGHT_CVT             ; 0774
                                            05  11 00047          BRB     6$                                       ; 0756
                                 50            01  D0 00049 5$:      MOVL    #1, STATUS                               ; 0778
                                               5F  11 0004C          BRB     12$                                      ;
                                 0E      04    AE  D1 0004E 6$:      CMPL    CLASS, #14                               ; 0785
                                               05  1B 00052          BLEQU   7$                                       ;
                                 50            05  CE 00054          MNEGL   #5, STATUS                               ;
                                               54  11 00057          BRB     12$                                      ;
                                 25            6E  D1 00059 7$:      CMPL    DTYPE, #37                               ; 0787
                                               05  1B 0005C          BLEQU   8$                                       ;
                                 50            06  CE 0005E          MNEGL   #6, STATUS                               ;
                                               4A  11 00061          BRB     12$                                      ;
                                 50      04    AE  D0 00063 8$:      MOVL    CLASS, R0                                ; 0792
                                 56    FEA1 CF40   98 00067          CVTBL   CLASS_TABLE[R0], STATE                   ;
                           12 FFFFFFF9     8F      56  CF 0006D          CASEL   STATE, #-7, #18                          ; 0797
          0035            0035            0035          0035     00075 9$:      .WORD   11$-9$,-                                 ;
          0026            0035            0035          0035     0007D          11$-9$,-                                 ;
          003A            003A            003A          003A     00085          11$-9$,-                                 ;
          003A            003A            003A          003A     0008D          11$-9$,-                                 ;
                          003A            003A          003A     00095          11$-9$,-                                 ;
                                                                                11$-9$,-                                 ;
                                                                                11$-9$,-                                 ;
                                                                                10$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$,-                                 ;
                                                                                13$-9$                                   ;
                                    00000000G   8F  DD 0009B 10$:      PUSHL   #LIB$_FATERRLIB                          ; 0818
                        00000000G   00          01  FB 000A1          CALLS   #1, LIB$STOP                             ;
                                                65  11 000A8          BRB     25$                                      ;
                                 50             56  D0 000AA 11$:      MOVL    STATE, STATUS                            ; 0801
                                                55  11 000AD 12$:      BRB     23$                                      ;
                           0A            01     56  CF 000AF 13$:      CASEL   STATE, #1, #10                           ; 0806
          002C            0016            0027          0023     000B3 14$:      .WORD   16$-14$,-                                ;
          0016            0016            0016          0016     000BB          17$-14$,-                                ;
                          003B            0036          0031     000C3          15$-14$,-                                ;
                                                                                18$-14$,-                                ;
                                                                                15$-14$,-                                ;
                                                                                15$-14$,-                                ;
                                                                                15$-14$,-                                ;
                                                                                15$-14$,-                                ;
                                                                                19$-14$,-                                ;
```

```
                                                                                                                20$-14$,-
                                                                                                                21$-14$
                                                00000000G  8F   DD 000C9 15$:     PUSHL   #LIB$_FATERRLIB
                                    00000000G   00             01  FB 000CF       CALLS   #1, LIB$STOP
                                                50             D4  000D6 16$:     CLRL    R0
                                                               17  11  000D8       BRB     22$
                                                50             01  D0  000DA 17$:     MOVL    #1, R0
                                                               12  11  000DD       BRB     22$
                                                50             02  D0  000DF 18$:     MOVL    #2, R0
                                                               0D  11  000E2       BRB     22$
                                                50             03  D0  000E4 19$:     MOVL    #3, R0
                                                               08  11  000E7       BRB     22$
                                                50             04  D0  000E9 20$:     MOVL    #4, R0
                                                               03  11  000EC       BRB     22$
                                                50             05  D0  000EE 21$:     MOVL    #5, R0
                                                50             26  C4  000F1 22$:     MULL2   #38, R0
                                                50         FE23 CF40  9E  000F4       MOVAB   DTYPE_TABLE[R0], R0
                                                57           00 BE40  98  000FA       CVTBL   @DTYPE[R0], TOKEN
                                                               06  18  000FF       BGEQ    24$                             0811
                                                50             57  D0  00101       MOVL    TOKEN, STATUS
                                                             073C  31  00104 23$:     BRW     105$
                                     50                      56  C5  00107 24$:     MULL3   #38, STATE, R0                  0814
                                     56                      50  C1  0010B       ADDL3   TOKEN, R0, STATE
                               0000019F   8F                28  CF  0010F 25$:     CASEL   STATE, #40, #415                0839
                0710                    0370               0358               0340    00117 26$:     .WORD   27$-26$,-
                03CF                    03C0               039B               0376    0011F           28$-26$,-
                0710                    0710               0444               041F    00127           29$-26$,-
                0545                    050C               04DB               04C3    0012F           102$-26$,-
                0658                    0627               05F6               05B1    00137           30$-26$,-
                0710                    0710               0710               0710    0013F           32$-26$,-
                0710                    049D               046F               0710    00147           35$-26$,-
                0710                    0710               0710               0710    0014F           37$-26$,-
                0710                    0710               0710               0710    00157           43$-26$,-
                0710                    0710               0710               0710    0015F           46$-26$,-
                0710                    0710               0710               0710    00167           102$-26$,-
                0710                    0710               0710               0710    0016F           102$-26$,-
                0710                    068A               0710               0710    00177           57$-26$,-
                0710                    0710               0710               0710    0017F           59$-26$,-
                0710                    0710               0710               0710    00187           63$-26$,-
                0710                    0710               0710               0710    0018F           69$-26$,-
                0710                    0710               0710               0710    00197           76$-26$,-
                0710                    0710               0710               0710    0019F           81$-26$,-
                0710                    0710               0710               0710    001A7           85$-26$,-
                0710                    0710               0710               0710    001AF           89$-26$,-
                0710                    0710               0710               0710    001B7           102$-26$,-
                0710                    0710               0710               0710    001BF           102$-26$,-
                0710                    0710               0710               0710    001C7           102$-26$,-
                0710                    0710               0710               0710    001CF           102$-26$,-
                0710                    0710               0710               0710    001D7           102$-26$,-
                0710                    0710               0710               0710    001DF           50$-26$,-
                0710                    0710               0710               0710    001E7           53$-26$,-
                0710                    0710               0710               0710    001EF           102$-26$,-
                0710                    0694               0710               0710    001F7           102$-26$,-
                0710                    0710               0710               0710    001FF           102$-26$,-
                0710                    0710               0710               0710    00207           102$-26$,-
                0710                    0694               0710               0710    0020F           102$-26$,-
                0710                    0710               0710               0710    00217           102$-26$,-
```

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0710    0710    0710    0710    0021F           102$-26$,-
0710    0710    0710    0710    00227           102$-26$,-
0710    0710    0710    0710    0022F           102$-26$,-
0710    0710    0710    0710    00237           102$-26$,-
0710    0710    0710    0710    0023F           102$-26$,-
0710    0710    0710    0710    00247           102$-26$,-
0710    0710    0710    0710    0024F           102$-26$,-
0710    0710    0710    0710    00257           102$-26$,-
0710    0710    0710    0710    0025F           102$-26$,-
0710    0710    0710    0710    00267           102$-26$,-
0710    0710    0710    0710    0026F           102$-26$,-
0710    0710    0710    0710    00277           102$-26$,-
0710    0710    0710    0710    0027F           102$-26$,-
0710    0710    0710    0710    00287           102$-26$,-
0710    0710    0710    0710    0028F           102$-26$,-
0710    0710    0710    0710    00297           102$-26$,-
0710    0710    0710    0710    0029F           102$-26$,-
0710    0710    0710    0710    002A7           92$-26$,-
0710    0710    0710    0710    002AF           102$-26$,-
0710    0710    0710    0710    002B7           102$-26$,-
0710    0710    0710    0710    002BF           102$-26$,-
0710    0710    0710    0710    002C7           102$-26$,-
0710    0710    0710    0710    002CF           102$-26$,-
0710    0710    0710    0710    002D7           102$-26$,-
0710    0710    0710    0710    002DF           102$-26$,-
0710    0710    0710    0710    002E7           102$-26$,-
0710    0710    0710    0710    002EF           102$-26$,-
0710    0710    0710    0710    002F7           102$-26$,-
0710    0710    0710    0710    002FF           102$-26$,-
0710    0710    0710    0710    00307           102$-26$,-
0710    0710    0710    0710    0030F           102$-26$,-
0710    0710    0710    0710    00317           102$-26$,-
0710    0710    0710    0710    0031F           102$-26$,-
0710    0710    0710    0710    00327           102$-26$,-
0710    0710    0710    0710    0032F           102$-26$,-
0710    0710    0710    0710    00337           102$-26$,-
0710    0710    0710    0710    0033F           102$-26$,-
0710    0710    0710    0710    00347           102$-26$,-
0710    0710    0710    0710    0034F           102$-26$,-
0710    0710    0710    0710    00357           102$-26$,-
0710    0710    0710    0710    0035F           102$-26$,-
0710    0710    0710    0710    00367           102$-26$,-
0710    0710    0710    0710    0036F           102$-26$,-
0710    0370    0358    0340    00377           102$-26$,-
03CF    03C0    039B    0376    0037F           102$-26$,-
0710    0710    0444    041F    00387           102$-26$,-
0545    050C    04DB    04C3    0038F           102$-26$,-
0658    0627    05F6    05B1    00397           102$-26$,-
0710    0710    0710    0710    0039F           102$-26$,-
0710    049D    046F    0710    003A7           102$-26$,-
0710    0710    0710    0710    003AF           102$-26$,-
0710    0710    0710    0710    003B7           102$-26$,-
0710    0694    0710    0710    003BF           102$-26$,-
0710    0710    0710    0710    003C7           102$-26$,-
0710    0710    0710    0710    003CF           102$-26$,-
0710    0694    0710    0710    003D7           102$-26$,-
0710    0710    0710    0710    003DF           102$-26$,-
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        0710      0710      0710      0710    003E7             102$-26$,-
        0710      0710      0710      0710    003EF             102$-26$,-
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        0710      0710      0710      0710    00407             102$-26$,-
        0710      0710      0710      0710    0040F             102$-26$,-
        0710      0710      0710      0710    00417             102$-26$,-
        0710      0710      0710      0710    0041F             102$-26$,-
        0710      0710      0710      06E7    00427             102$-26$,-
        0710      0710      0710      0710    0042F             102$-26$,-
        0710      0710      0710      0710    00437             102$-26$,-
        0710      0710      0710      0710    0043F             102$-26$,-
        0710      0710      0710      0710    00447             102$-26$,-
        06E7      0710      0710      0710    0044F             102$-26$,-
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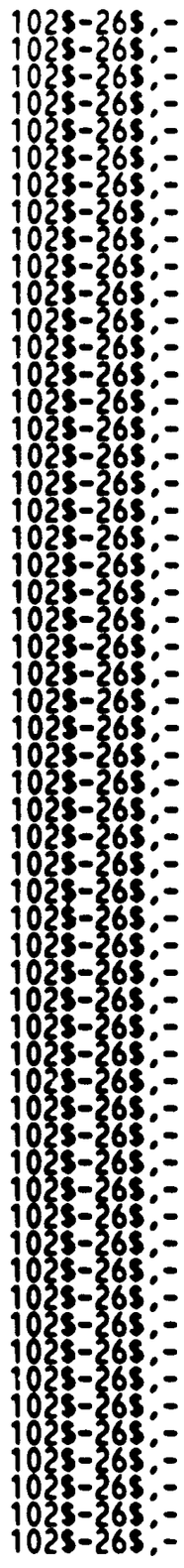

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                                                                        99$-26$                                    ;
    08   BE              01  D0 00457 27$:      MOVL     #1, @LEFT_OR_RIGHT_CVT                                    ; 0844
                   0C    AE  D5 0045B           TSTL     TURN                                                      ; 0846
                         75  12 0045E           BNEQ     34$                                                       ;
         51        0C    AC  D0 00460           MOVL     SRC_INFO, R1                                              ; 0848
         50        04    AC  D0 00464           MOVL     SOURCE, R0                                                ;
    01   B1        04    B0  9A 00468           MOVZBL   @4(R0), @1(R1)                                            ;
                         66  11 0046D           BRB      34$                                                       ; 0839
    08   BE              01  D0 0046F 28$:      MOVL     #1, @LEFT_OR_RIGHT_CVT                                    ; 0855
                   0C    AE  D5 00473           TSTL     TURN                                                      ; 0857
                         5D  12 00476           BNEQ     34$                                                       ;
         51        0C    AC  D0 00478           MOVL     SRC_INFO, R1                                              ; 0859
         50        04    AC  D0 0047C           MOVL     SOURCE, R0                                                ;
    01   B1        04    B0  3C 00480           MOVZWL   @4(R0), @1(R1)                                            ;
                         4E  11 00485           BRB      34$                                                       ; 0839
    08   BE              02  D0 00487 29$:      MOVL     #2, @LEFT_OR_RIGHT_CVT                                    ; 0866
                         57  11 0048B           BRB      36$                                                       ; 0868
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                                08   BE            01   D0 0048D 30$:     MOVL    #1, @LEFT_OR_RIGHT_CVT                  ; 0877
                          0000015C   8F            56   D1 00491          CMPL    STATE, #348                             ; 0879
                                                   04   12 00498          BNEQ    31$                                     ;
                                   6B       08     A8   90 0049A          MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)        ;
                                            0C     AE   D5 0049E 31$:     TSTL    TURN                                    ; 0881
                                                   57   12 004A1          BNEQ    39$                                     ;
                                   51       0C     AC   D0 004A3          MOVL    SRC_INFO, R1                            ; 0883
                                   50       04     AC   D0 004A7          MOVL    SOURCE, R0                              ;
                                01 B1       04     B0   98 004AB          CVTBL   @4(R0), @1(R1)                          ;
                                                   23   11 004B0          BRB     34$                                     ; 0839
                                08 BE                  01   D0 004B2 32$:     MOVL    #1, @LEFT_OR_RIGHT_CVT          ; 0890
                          0000015D   8F            56   D1 004B6          CMPL    STATE, #349                             ; 0892
                                                   04   12 004BD          BNEQ    33$                                     ;
                                   6B       08     A8   90 004BF          MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)        ;
                                            0C     AE   D5 004C3 33$:     TSTL    TURN                                    ; 0894
                                                   6C   12 004C6          BNEQ    42$                                     ;
                                   51       0C     AC   D0 004C8          MOVL    SRC_INFO, R1                            ; 0896
                                   50       04     AC   D0 004CC          MOVL    SOURCE, R0                              ;
                                01 B1       04     B0   32 004D0          CVTWL   @4(R0), @1(R1)                          ;
                                                   5D   11 004D5 34$:     BRB     42$                                     ; 0839
                                08 BE                  01   D0 004D7 35$:     MOVL    #1, @LEFT_OR_RIGHT_CVT          ; 0903
                          0000015E   8F            56   D1 004DB          CMPL    STATE, #350                             ; 0905
                                                   5F   13 004E2          BEQL    44$                                     ;
                                                   61   11 004E4 36$:     BRB     45$                                     ; 0907
                                08 BE                  02   D0 004E6 37$:     MOVL    #2, @LEFT_OR_RIGHT_CVT          ; 0916
                          0000015F   8F            56   D1 004EA          CMPL    STATE, #351                             ; 0918
                                                   04   12 004F1          BNEQ    38$                                     ;
                                   6B       08     A8   90 004F3          MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)        ;
                                            0C     AE   D5 004F7 38$:     TSTL    TURN                                    ; 0920
                                                   73   12 004FA 39$:     BNEQ    48$                                     ;
                                   53       0C     AC   D0 004FC          MOVL    SRC_INFO, R3                            ; 0923
                                   50       01     A3   D0 00500          MOVL    1(R3), R0                               ;
                                   51       04     AC   D0 00504          MOVL    SOURCE, R1                              ;
                                   52       04     A1   D0 00508          MOVL    4(R1), R2                               ;
                                   60                 62   D0 0050C          MOVL    (R2), (R0)                              ;
                                   51       04     A0   9E 0050F          MOVAB   4(R0), R1                               ; 0924
                                   61       04     A2   D0 00513          MOVL    4(R2), (R1)                             ;
                                                   6B   18 00517          BGEQ    49$                                     ; 0926
                                   60                 60   D2 00519          MCOML   (R0), (R0)                              ; 0929
                                   61                 61   D2 0051C          MCOML   (R1), (R1)                              ; 0930
                          FFFFFFFF   8F                60   D1 0051F          CMPL    (R0), #-1                               ; 0932
                                                   06   12 00526          BNEQ    40$                                     ;
                                                   60   D4 00528          CLRL    (R0)                                    ; 0935
                                                   61   D6 0052A          INCL    (R1)                                    ; 0936
                                                   02   11 0052C          BRB     41$                                     ; 0932
                                                   60   D6 0052E 40$:     INCL    (R0)                                    ; 0939
                                07 A3              01   88 00530 41$:     BISB2   #1, 7(R3)                               ; 0941
                                                   7C   11 00534 42$:     BRB     52$                                     ; 0839
                                08 BE                  03   D0 00536 43$:     MOVL    #3, @LEFT_OR_RIGHT_CVT          ; 0950
                          00000160   8F            56   D1 0053A          CMPL    STATE, #352                             ; 0952
                                                   04   12 00541          BNEQ    45$                                     ;
                                   6B       08     A8   90 00543 44$:     MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)        ;
                                            0C     AE   D5 00547 45$:     TSTL    TURN                                    ; 0954
                                                   7C   12 0054A          BNEQ    55$                                     ;
                                   51       0C     AC   D0 0054C          MOVL    SRC_INFO, R1                            ; 0956
                                   50       04     AC   D0 00550          MOVL    SOURCE, R0                              ;
                                01 B1       04     B0   D0 00554          MOVL    @4(R0), @1(R1)                          ;
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                                                 7D  11 00559          BRB     56$                                                     ; 0839
                                          08     BE      03  D0 0055B 46$:    MOVL    #3, @LEFT_OR_RIGHT_CVT                          ; 0963
                                    00000161     8F      56  D1 0055F         CMPL    STATE, #353                                     ; 0965
                                                 04  12 00566               BNEQ    47$                                             ;
                                          6B     08      A8  90 00568         MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)                ;
                                                 0C      AE  D5 0056C 47$:    TSTL    TURN                                            ; 0967
                                                 67  12 0056F 48$:          BNEQ    56$                                             ;
                                          50     0C      AC  D0 00571         MOVL    SRC_INFO, R0                                    ; 0970
                                          51     01      A0  D0 00575         MOVL    1(R0), R1                                       ;
                                          50     04      AC  D0 00579         MOVL    SOURCE, R0                                      ;
                                          50     04      A0  D0 0057D         MOVL    4(R0), R0                                       ;
                                          61             60  7D 00581         MOVQ    (R0), (R1)                                      ;
                                                 52  11 00584 49$:          BRB     56$                                             ; 0839
                                          08     BE      04  D0 00586 50$:    MOVL    #4, @LEFT_OR_RIGHT_CVT                          ; 0978
                                    00000171     8F      56  D1 0058A         CMPL    STATE, #369                                     ; 0980
                                                 04  12 00591               BNEQ    51$                                             ;
                                          6B     08      A8  90 00593         MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)                ;
                                                 0C      AE  D5 00597 51$:    TSTL    TURN                                            ; 0982
                                                 6A  12 0059A               BNEQ    61$                                             ;
                                          53     0C      AC  D0 0059C         MOVL    SRC_INFO, R3                                    ;
                                          52     04      AC  D0 005A0         MOVL    SOURCE, R2                                      ;
                                          51     01      A3  D0 005A4         MOVL    1(R3), R1                                       ;
                                          50     04      A2  D0 005A8         MOVL    4(R2), R0                                       ;
                                              00000000G  00  16 005AC         JSB     LIB$$CVT_CVTGH_R1                               ;
                                                 6D  11 005B2 52$:          BRB     62$                                             ; 0839
                                          08     BE      04  D0 005B4 53$:    MOVL    #4, @LEFT_OR_RIGHT_CVT                          ; 0988
                                    0000G172     8F      56  D1 005B8         CMPL    STATE, #370                                     ; 0990
                                                 04  12 005BF               BNEQ    54$                                             ;
                                          6B     08      A8  90 005C1         MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)                ;
                                                 0C      AE  D5 005C5 54$:    TSTL    TURN                                            ; 0992
                                                 6D  12 005C8 55$:          BNEQ    65$                                             ;
                                          51     04      AC  D0 005CA         MOVL    SOURCE, R1                                      ;
                                          50     0C      AC  D0 005CE         MOVL    SRC_INFO, R0                                    ;
                                    01    B0       04     B1  10 28 005D2     MOVC3   #16, @4(R1), @1(R0)                             ;
                                                 47  11 005D8 56$:          BRB     62$                                             ; 0839
                                          08     BE      06  D0 005DA 57$:    MOVL    #6, @LEFT_OR_RIGHT_CVT                          ; 0998
                                          05     AB      68  B0 005DE         MOVW    (SRC_OR_DST), 5(SRC_OR_DST_INFO)                ; 0999
                                    00000164     8F      56  D1 005E2         CMPL    STATE, #356                                     ; 1001
                                                 04  12 005E9               BNEQ    58$                                             ;
                                          6B     08      A8  90 005EB         MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)                ;
                                                01FB  31 005EF 58$:          BRW     97$                                             ; 1003
                                          08     BE      05  D0 005F2 59$:    MOVL    #5, @LEFT_OR_RIGHT_CVT                          ; 1013
                                    00000165     8F      56  D1 005F6         CMPL    STATE, #357                                     ; 1015
                                                 04  12 005FD               BNEQ    60$                                             ;
                                          6B     08      A8  90 005FF         MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)                ;
                                                 0C      AE  D5 00603 60$:    TSTL    TURN                                            ; 1017
                                                 68  12 00606 61$:          BNEQ    71$                                             ;
                                          50     0C      AC  D0 00608         MOVL    SRC_INFO, R0                                    ; 1020
                                          05     A0      1F  B0 0060C         MOVW    #31, 5(R0)                                      ;
                                          51     04      AC  D0 00610         MOVL    SOURCE, R1                                      ; 1021
                                05    A0 00000000G  00     04  B1  61 26 00614 CVTTP   (R1), @4(R1), LIB$AB_CVTTP_U, 5(R0), @1(R0)  ; 1022
                                                 01      B0      0061F                                                               ;
                                                 37  11 00621 62$:          BRB     68$                                             ; 0839
                                          08     BE      05  D0 00623 63$:    MOVL    #5, @LEFT_OR_RIGHT_CVT                          ; 1029
                                    00000166     8F      56  D1 00627         CMPL    STATE, #358                                     ; 1031
                                                 04  12 0062E               BNEQ    64$                                             ;
                                          6B     08      A8  90 00630         MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)                ;
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                                                    0C    AE   D5 00634 64$:     TSTL    TURN                                                    ; 1033
                                                          76   12 00637 65$:     BNEQ    73$                                                     ;
                                                50        0C    AC   D0 00639     MOVL    SRC_INFO, R0                                            ; 1036
                                             05   A0             1F   B0 0063D     MOVW    #31, 5(R0)                                              ;
                                                51        04    AC   D0 00641     MOVL    SOURCE, R1                                              ; 1039
                                                                61   B5 00645     TSTW    (R1)                                                    ;
                                                                04   12 00647     BNEQ    66$                                                     ;
                                                                52   D4 00649     CLRL    R2                                                      ;
                                                                05   11 0064B     BRB     67$                                                     ;
                                                52                  61   3C 0064D 66$:     MOVZWL  (R1), R2                                        ;
                                                                    52   D7 00650     DECL    R2                                                      ;
      01   B0        05   A0        04   B1                       52   09 00652 67$:     CVTSP   R2, @4(R1), 5(R0), @1(R0)                       ; 1040
                                                                    6A   11 0065A 68$:     BRB     75$                                             ; 0839
                                             08   BE               05   D0 0065C 69$:     MOVL    #5, @LEFT_OR_RIGHT_CVT                          ; 1048
                                   00000167   8F                   56   D1 00660     CMPL    STATE, #359                                             ; 1050
                                                                    04   12 00667     BNEQ    70$                                                     ;
                                                6B        08    A8   90 00669     MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)                        ;
                                                          0C    AE   D5 0066D 70$:     TSTL    TURN                                                    ; 1052
                                                                6A   12 00670 71$:     BNEQ    78$                                                     ;
                                                5A        04    AC   D0 00672     MOVL    SOURCE, R10                                             ; 1056
                                                59        0C    AC   D0 00676     MOVL    SRC_INFO, R9                                            ; 1058
                                             05   A9             1F   B0 0067A     MOVW    #31, 5(R9)                                              ;
00000000G  00             00        04   BA   04   BC   2E 0067E     MOVTC   @SOURCE, @4(R10), #0, LIB$AB_CVT_O_U, -                         ; 1059
                                             10   AE   04   BC      00689                                                                       ;
      05   A9 00000000G   00        10   AE   04   BC   26 0068D     CVTTP   @SOURCE, TEMP_BUF, LIB$AB_CVTTP_U, 5(R9), -                     ; 1062
                                                          01   B9      00699                                                                       ;
                                                51        04   BA   9A 0069B     MOVZBL  @4(R10), R1                                             ; 1064
                                          4A   8F                   51   91 0069F     CMPB    R1, #74                                                 ;
                                                                    06   1F 006A3     BLSSU   72$                                                     ;
                                          52   8F                   51   91 006A5     CMPB    R1, #82                                                 ;
                                                                    06   1B 006A9     BLEQU   74$                                                     ;
                                          7D   8F                   51   91 006AB 72$:     CMPB    R1, #125                                        ; 1065
                                                                    70   12 006AF 73$:     BNEQ    83$                                             ;
                                                50        05    A9   3C 006B1 74$:     MOVZWL  5(R9), R0                                       ; 1067
                                                50                  02   C6 006B5     DIVL2   #2, R0                                                  ;
                                                      00000000G0041   9F   006B8     PUSHAB  LIB$AB_CVTTP_O[R1]                              ; 1068
   01 B940                  04                    00                9E   F0 006BF     INSV    @(SP)+, #0, #4, @1(R9)[R0]                              ;
                                                                    74   11 006C6 75$:     BRB     84$                                             ; 0839
                                             08   BE               05   D0 006C8 76$:     MOVL    #5, @LEFT_OR_RIGHT_CVT                          ; 1076
                                   00000168   8F                   56   D1 006CC     CMPL    STATE, #360                                             ; 1078
                                                                    04   12 006D3     BNEQ    77$                                                     ;
                                                6B        08    A8   90 006D5     MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)                        ;
                                                          0C    AE   D5 006D9 77$:     TSTL    TURN                                                    ; 1080
                                                                74   12 006DC 78$:     BNEQ    87$                                                     ;
                                                50        04    AC   D0 006DE     MOVL    SOURCE, R0                                              ; 1090
                                                                60   B5 006E2     TSTW    (R0)                                                    ;
                                                                04   12 006E4     BNEQ    79$                                                     ;
                                                                5A   D4 006E6     CLRL    SOU_LEN                                                 ;
                                                                05   11 006E8     BRB     80$                                                     ;
                                                5A                  60   3C 006EA 79$:     MOVZWL  (R0), SOU_LEN                                   ;
                                                                    5A   D7 006ED     DECL    SOU_LEN                                                 ;
                                             10   AE        04 B0 4A   90 006EF 80$:     MOVB    @4(R0)[SOU_LEN], TEMP_BUF                       ; 1093
                                   11   AE   04   B0              5A   28 006F5     MOVC3   SOU_LEN, @4(R0), TEMP_BUF+1                     ; 1094
                                                50        0C    AC   D0 006FB     MOVL    SRC_INFO, R0                                            ; 1095
                                             05   A0             1F   B0 006FF     MOVW    #31, 5(R0)                                              ;
   01   B0        05   A0        10   AE                       5A   09 00703     CVTSP   SOU_LEN, TEMP_BUF, 5(R0), @1(R0)                        ; 1096
                                                                60   11 0070B     BRB     88$                                                     ; 0839
```

```
                                  08  BE           05  D0 0070D 81$:  MOVL    #5, @LEFT_OR_RIGHT_CVT                       ; 1103
                            00000169  8F           56  D1 00711       CMPL    STATE, #361                                  ; 1105
                                                   04  12 00718       BNEQ    82$                                          ;
                                      6B      08   A8  90 0071A       MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)             ;
                                              0C   AE  D5 0071E 82$:  TSTL    TURN                                         ; 1107
                                                   7C  12 00721 83$:  BNEQ    91$                                          ;
                                      50      0C   AC  D0 00723       MOVL    SRC_INFO, R0                                 ; 1110
                                  05  A0           1F  B0 00727       MOVW    #31, 5(R0)                                   ;
                                      51      04   AC  D0 0072B       MOVL    SOURCE, R1                                   ; 1111
05    A0 00000000G    00          04  B1           61  26 0072F       CVTTP   (R1), @4(R1), LIB$AB_CVTTP_O, 5(R0), @1(R0)  ; 1112
                                              01   B0     0073A                                                            ;
                                                   61  11 0073C 84$:  BRB     91$                                          ; 0839
                                  08  BE           05  D0 0073E 85$:  MOVL    #5, @LEFT_OR_RIGHT_CVT                       ; 1119
                            0000016A  8F           56  D1 00742       CMPL    STATE, #362                                  ; 1121
                                                   04  12 00749       BNEQ    86$                                          ;
                                      6B      08   A8  90 0074B       MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)             ;
                                              0C   AE  D5 0074F 86$:  TSTL    TURN                                         ; 1123
                                                   4B  12 00752 87$:  BNEQ    91$                                          ;
                                      50      0C   AC  D0 00754       MOVL    SRC_INFO, R0                                 ; 1126
                                  05  A0           1F  B0 00758       MOVW    #31, 5(R0)                                   ;
                                      51      04   AC  D0 0075C       MOVL    SOURCE, R1                                   ; 1127
05    A0 00000000G    00          04  B1           61  26 00760       CVTTP   (R1), @4(R1), LIB$AB_CVTTP_Z, 5(R0), @1(R0)  ; 1128
                                              01   B0     0076B                                                            ;
                                                   30  11 0076D 88$:  BRB     91$                                          ; 0839
                                  08  BE           05  D0 0076F 89$:  MOVL    #5, @LEFT_OR_RIGHT_CVT                       ; 1135
                            0000016B  8F           56  D1 00773       CMPL    STATE, #363                                  ; 1137
                                                   04  12 0077A       BNEQ    90$                                          ;
                                      6B      08   A8  90 0077C       MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)             ;
                                              0C   AE  D5 00780 90$:  TSTL    TURN                                         ; 1139
                                                   77  12 00783       BNEQ    98$                                          ;
                                      50      04   AC  D0 00785       MOVL    SOURCE, R0                                   ; 1142
10    AE              1F          04  B0           60  08 00789       CVTPS   (R0), @4(R0), #31, TEMP_BUF                  ;
                                      54      0C   AC  D0 00790       MOVL    SRC_INFO, R4                                 ; 1143
01    B4              1F          10  AE           1F  09 00794       CVTSP   #31, TEMP_BUF, #31, @1(R4)                   ;
                                  05  A4           1F  B0 0079B       MOVW    #31, 5(R4)                                   ; 1144
                                                   79  11 0079F 91$:  BRB     100$                                         ; 0839
                                  08  BE           06  D0 007A1 92$:  MOVL    #6, @LEFT_OR_RIGHT_CVT                       ; 1151
                                  05  AB           68  B0 007A5       MOVW    (SRC_OR_DST), 5(SRC_OR_DST_INFO)             ; 1152
                                                   3F  11 007A9       BRB     97$                                          ; 1154
                                  08  BE           06  D0 007AB 93$:  MOVL    #6, @LEFT_OR_RIGHT_CVT                       ; 1164
                            0000FFFF  8F      0C   A8  D1 007AF       CMPL    12(SRC_OR_DST), #65535                       ; 1166
                                                   23  14 007B7       BGTR    95$                                          ;
                                      01      0B   A8  91 007B9       CMPB    11(SRC_OR_DST), #1                           ;
                                                   1D  12 007BD       BNEQ    95$                                          ;
                                      01           68  B1 007BF       CMPW    (SRC_OR_DST), #1                             ; 1167
                                                   18  12 007C2       BNEQ    95$                                          ;
                            0000017E  8F           56  D1 007C4       CMPL    STATE, #382                                  ; 1171
                                                   09  13 007CB       BEQL    94$                                          ;
                            0000018A  8F           56  D1 007CD       CMPL    STATE, #394                                  ;
                                                   0B  12 007D4       BNEQ    96$                                          ;
                                      01      14   A8  D1 007D6 94$:  CMPL    20(SRC_OR_DST), #1                           ; 1175
                                                   05  13 007DA       BEQL    96$                                          ;
                                      50           07  CE 007DC 95$:  MNEGL   #7, STATUS                                   ;
                                                   62  11 007DF       BRB     105$                                         ;
                                      6B      08   A8  90 007E1 96$:  MOVB    8(SRC_OR_DST), (SRC_OR_DST_INFO)             ; 1179
                                  05  AB      0C   A8  B0 007E5       MOVW    12(SRC_OR_DST), 5(SRC_OR_DST_INFO)           ; 1180
                                              0C   AE  D5 007EA 97$:  TSTL    TURN                                         ; 1182
```

```
                                                    45  12 007ED          BNEQ    103$                                    ;
                                              51    0C  AC  D0 007EF          MOVL    SRC_INFO, R1                        ; 1185
                                              50    04  AC  D0 007F3          MOVL    SOURCE, R0                          ;
                                        01    A1    04  A0  D0 007F7          MOVL    4(R0), 1(R1)                        ;
                                                    36  11 007FC 98$:        BRB     103$                                ; 0839
                                        08    BE        06  D0 007FE 99$:     MOVL    #6, @LEFT_OR_RIGHT_CVT              ; 1192
                                                    0C  AE  D5 00802          TSTL    TURN                                ; 1194
                                                    15  12 00805          BNEQ    101$                                ;
                                              50    0C  AC  D0 00807          MOVL    SRC_INFO, R0                        ; 1197
                                              51    04  AC  D0 0080B          MOVL    SOURCE, R1                          ;
                                  01  A0        04  A1  02  C1 0080F          ADDL3   #2, 4(R1), 1(R0)                    ;
                                        05    A0    04  B1  B0 00815          MOVW    @4(R1), 5(R0)                       ; 1198
                                                    18  11 0081A 100$:       BRB     103$                                ; 1194
                                              50    10  AC  D0 0081C 101$:     MOVL    DST_INFO, R0                        ; 1201
                                        05    A0    08  BC  B0 00820          MOVW    @DESTINATION, 5(R0)                 ;
                                                    0D  11 00825          BRB     103$                                ; 0839
                                                00000000G 8F  DD 00827 102$:     PUSHL   #LIB$_FATERRLIB                     ; 1206
                                    00000000G   00        01  FB 0082D          CALLS   #1, LIB$STOP                        ;
                                                    0C  AE  D6 00834 103$:     INCL    TURN                                ; 0748
                                              03    0C  AE  D1 00837          CMPL    TURN, #3                            ;
                                                    03  1A 0083B          BGTRU   104$                                ;
                                                  F7C8  31 0083D          BRW     1$                                  ;
                                              50        01  CE 00840 104$:     MNEGL   #1, STATUS                          ;
                                  51      34    AE        06  C5 00843 105$:     MULL3   #6, LEFT_CVT, R1                    ; 1217
                                              51    30  AE  C0 00848          ADDL2   RIGHT_CVT, R1                       ;
                                        14    BC    FA  A1  9E 0084C          MOVAB   -6(R1), @CVT_PATH                   ;
                                                        04 00851          RET                                         ; 1219

; Routine Size:  2130 bytes,    Routine Base:  _LIB$CODE + 00F3

; 1128          1220  1
; 1129          1221  1 END                                     ! End of module LIB$$FIND_CVT_PATH.
; 1130          1222  1
; 1131          1223  0 ELUDOM
```

```
;                                PSECT SUMMARY
;
;      Name                      Bytes                           Attributes
;
;  _LIB$CODE                       2373  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]STARLET.L32;1        9776        35         0        581          00:00.8
```

```
;                                       COMMAND QUALIFIERS

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

; Size:         2130 code + 243 data bytes
; Run Time:       00:24.0
; Elapsed Time:   01:37.9
; Lines/CPU Min:   3057
; Lexemes/CPU-Min: 25740
; Memory Used:  433 pages
; Compilation Complete
```

LIBEMODH
LIS

LIBEMODD
LIS

LIBESTEMU
LIS

LIBEF
LIS

LIBEMULAT
LIS

LIBFFS
LIS

LIBFINCVT
LIS

LIBE2AREV
LIS

LIBFAO
LIS

LIBEMODG
LIS

LIBEXTV
LIS

LIBEDIV
LIS

LIBESTABL
LIS

LIBFFC
LIS

LIBEMODF
LIS

LIBEMUL
LIS

LIBFILSCA
LIS

LIBEXTZV
LIS

LIBEBCASC
LIS

LIBFAOL
LIS

LIBFLTUND
LIS

LIBGETSYI
LIS

LIBICHAR
LIS

LIBINITIA
LIS

LIBFIXUPF
LIS

LIBGETFOR
LIS

LIBGETINP
LIS

LIBINISHR
LIS

LIBGETDVI
LIS

LIBGETOPC
LIS

LIBFNDIMG
LIS

LIBGETMSG
LIS

LIBINDEX
LIS

LIBINSQHI
LIS

LIBGETJPI
LIS

LIBGETTAB
LIS