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

```
**FILE**ID**LIBSCOPY                               L 11




LL            IIIIII   BBBBBBBB      SSSSSSSS     CCCCCCCC     000000    PPPPPPPP   YY        YY
LL            IIIIII   BBBBBBBB      SSSSSSSS     CCCCCCCC     000000    PPPPPPPP   YY        YY
LL              II     BB      BB  SS           CC           00      00  PP      PP YY        YY
LL              II     BB      BB  SS           CC           00      00  PP      PP YY        YY
LL              II     BB      BB  SS           CC           00      00  PP      PP   YY    YY
LL              II     BB      BB  SS           CC           00      00  PP      PP   YY    YY
LL              II     BBBBBBBB      SSSSSS     CC           00      00  PPPPPPPP       YY
LL              II     BBBBBBBB      SSSSSS     CC           00      00  PPPPPPPP       YY
LL              II     BB      BB          SS   CC           00      00  PP             YY
LL              II     BB      BB          SS   CC           00      00  PP             YY
LL              II     BB      BB          SS   CC           00      00  PP             YY
LL              II     BB      BB          SS   CC           00      00  PP             YY        ....
LLLLLLLLLL    IIIIII   BBBBBBBB    SSSSSSSS       CCCCCCCC     000000    PP             YY        ....
LLLLLLLLLL    IIIIII   BBBBBBBB    SSSSSSSS       CCCCCCCC     000000    PP             YY        ....
                                                                                                  ....

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
```

```
0 MODULE LIB$SCOPY (
0
0                 IDENT = '1-018' ! File: LIBSCOPY.B32    Edit: DG1018
0
0                  ) =
1 BEGIN
1 !
1 !****************************************************************************
1 !*                                                                          *
1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                  *
1 !*  ALL RIGHTS RESERVED.                                                    *
1 !*                                                                          *
1 !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE   *
1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
1 !*  TRANSFERRED.                                                            *
1 !*                                                                          *
1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
1 !*  CORPORATION.                                                            *
1 !*                                                                          *
1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
1 !*                                                                          *
1 !*                                                                          *
1 !****************************************************************************
1 !
1
1 !++
1 ! FACILITY: General library: string handling
1 !
1 ! ABSTRACT:
1 !
1 !       This module contains routines to allocate and deallocate
1 !       strings.  Also included are the basic string copying routines.
1 !
1 ! ENVIRONMENT:  VAX-11 User Mode
1 !
1 ! ORIGINAL AUTHOR: Tomas N. Hastings, 08-OCT-1977
1 ! REWRITTEN BY: John Sauter, 14-MAR-1979
1 !
1 ! MODIFIED BY:
1 !
1 ! 0-09  - Pass by-reference.  TNH 19-DEC-77
1 ! 0-10  - Change order of arguments to conform to manual.  JMT 5-Mar-78
1 ! 0-11  - Fix typo in PIC case table.  DGP 29-Jun-78
1 ! 0-12  - Change JSB entry point names to DX6.  TNH 5-July-78
1 ! 0-14  - Add dynamic descriptors.  TNH 5-July-78
1 ! 0-28  - Remove entry points not in manual.  TNH 1-Aug-78
1 ! 0-29  - Make REMQUE be PIC.  TNH 2-Aug-78
1 ! 0-31  - And INSQUE be PIC.  TNH 2-Aug-78
1 ! 0-32  - Compute effective adr before REMQUE to be PIC.  TNH 2-Aug-78
1 ! 1-001 - Update version number and copyright notice.  JBS 16-NOV-78
1 ! 1-002 - Add "_" to the PSECT directives.  JBS 21-DEC-78
```

```
;    58         0058  1 ! 1-003 - Make external references use 32-bit addresses. JBS 11-FEB-1979
;    59         0059  1 ! 1-004 - Fix allocation of 1- and 2-character strings so that they
;    60         0060  1 !          don't expand the region unconditionally, but instead use
;    61         0061  1 !          an 8-character string.  JBS 11-FEB-1979
;    62         0062  1 ! 1-005 - Edit 004 introduced a bug: strings just too large for the
;    63         0063  1 !          queues try to allocate from them.  Fix it.  JBS 18-FEB-1979
;    64         0064  1 ! 1-006 - Do a total rewrite: these routines are now maintained
;    65         0065  1 !          just for compatability: they call the STR facility.
;    66         0066  1 !          JBS 20-MAR-1979
;    67         0067  1 ! 1-007 - Call the string facility using input scalars by reference.
;    68         0068  1 !          JBS 18-MAY-1979
;    69         0069  1 ! 1-008 - Change calls to STR$COPY.  JBS 16-JUL-1979
;    70         0070  1 ! 1-009 - LIB$SCOPY_DXDX was incorrectly checking for truncation.
;    71         0071  1 !         DGP 09-Oct-79
;    72         0072  1 ! 1-010 - Make compatible with release 1 return codes.  RW  21-Jan-1980
;    73         0073  1 ! 1-011 - Reorganized string routines to all find their way to
;    74         0074  1 !         LIB$SCOPY_R_DX6.  Introduce new classes of descriptors
;    75         0075  1 !         to be recognized by string copying routines.
;    76         0076  1 !         Change LIB$SFREEN_DD6 to accept count by immediate value,
;    77         0077  1 !         they way its external documentation says it should operate.
;    78         0078  1 !         RKR 27-MAR-1981
;    79         0079  1 ! 1-012 - Correct some comments to more accurately reflect actual code.
;    80         0080  1 !         RKR 24-AUG-1981
;    81         0081  1 ! 1-013 - Correct which error codes are returned in LIB$SCOPY_R_DX6.
;    82         0082  1 !         RKR 4-SEP-1981.
;    83         0083  1 ! 1-014 - Return an error if the caller attempts to deallocate a non-dynamic
;    84         0084  1 !         string.  SBL 9-Sep-1981
;    85         0085  1 ! 1-015 - Add special-case code to process string descriptors that
;    86         0086  1 !         "read" like fixed string descriptors.  RKR 7-OCT-1981.
;    87         0087  1 ! 1-016 - Change code in LIB$SGET1_DD and LIB$SGET1_DD_R6 so that
;    88         0088  1 !         if either is called with a descriptor that is not CLASS_D,
;    89         0089  1 !         no problems will result -- i.e., replace validity check for
;    90         0090  1 !         CLASS_D with code to force CLASS_D.  This is what occurred
;    91         0091  1 !         in VMS RTL V2.x of these routines.  Functionality was
;    92         0092  1 !         inadvertently changed in producing Version 3 routines.
;    93         0093  1 !         In LIB$SCOPY_DXDX6, don't use $STR$GET_LEN_ADDR macro, since
;    94         0094  1 !         this macro uses STR$ANALYZE_SDESC_R1 -- don't want the
;    95         0095  1 !         signaling routine used by a LIB$ routine.
;    96         0096  1 !         Redirect jsb's from LIB$ANALYZE_SDESC_R3 to
;    97         0097  1 !         LIB$ANALZYE_SDESC_R2.
;    98         0098  1 !         Remove checks on contents of desciptors other than insuring
;    99         0099  1 !         that DSC$A_ARSIZE is < 65K for class_A and class_NCA.
;   100         0100  1 !         RKR 18-NOV-1981.
;   101         0101  1 ! 1-017 - Add support for class SO string descriptors.  DG 3-OCT-1983.
;   102         0102  1 ! 1-018 - Change class SO string descriptors to SB.  DG 27-Feb-1984.
;   103         0103  1 !--
;   104         0104  1
;   105         0105  1 !<BLF/PAGE>
```

```
:  107          0106  1 !
:  108          0107  1 ! SWITCHES:
:  109          0108  1 !
:  110          0109  1
:  111          0110  1 SWITCHES ADDRESSING_MODE
:  112          0111  1                 (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
:  113          0112  1
:  114          0113  1 !
:  115          0114  1 ! LINKAGES:
:  116          0115  1 !
:  117          0116  1 REQUIRE 'RTLIN:STRLNK';         ! Linkages
:  118          0301  1
:  119          0302  1 !
:  120          0303  1 ! TABLE OF CONTENTS:
:  121          0304  1 !
:  122          0305  1
:  123          0306  1 FORWARD ROUTINE
:  124          0307  1     LIB$SGET1_DD,                               ! Allocate a string
:  125          0308  1     LIB$SGET1_DD_R6 : STRING_JSB,               ! (JSB entry point)
:  126          0309  1     LIB$SFREE1_DD,                              ! Deallocate a string
:  127          0310  1     LIB$SFREE1_DD6 : STRING_JSB,                ! (JSB entry point)
:  128          0311  1     LIB$SFREEN_DD,                              ! Deallocate N strings
:  129          0312  1     LIB$SFREEN_DD6 : STRING_JSB,                ! (JSB entry point)
:  130          0313  1     LIB$SCOPY_DXDX,                             ! Copy a string by
:  131          0314  1                                                 ! descriptor
:  132          0315  1     LIB$SCOPY_DXDX6 : STRING_JSB,               ! (JSB entry point)
:  133          0316  1     LIB$SCOPY_R_DX,                             ! Copy a string by
:  134          0317  1                                                 ! reference
:  135          0318  1     LIB$SCOPY_R_DX6 : STRING_JSB;               ! (JSB entry point)
:  136          0319  1
:  137          0320  1 !
:  138          0321  1 ! INCLUDE FILES:
:  139          0322  1 !
:  140          0323  1
:  141          0324  1 REQUIRE 'RTLIN:STRMACROS';      ! String macros
:  142          1240  1 REQUIRE 'RTLIN:RTLPSECT';       ! Macros for defining psects
:  143          1335  1
:  144          1336  1 LIBRARY 'RTLSTARLE';           ! System symbols
:  145          1337  1
:  146          1338  1 !
:  147          1339  1 ! MACROS: NONE
:  148          1340  1 !
:  149          1341  1 !
:  150          1342  1 ! EQUATED SYMBOLS:
:  151          1343  1 !
:  152          1344  1 LITERAL
:  153          1345  1         MAX_SIZE = 65535;      ! Maximum size string
:  154          1346  1
:  155          1347  1 !
:  156          1348  1 ! PSECTS:
:  157          1349  1 !
:  158          1350  1 DECLARE_PSECTS (LIB);          ! Declare psects for LIB$ facility
:  159          1351  1 !
:  160          1352  1 ! OWN STORAGE:
:  161          1353  1 !
:  162          1354  1 !       NONE
:  163          1355  1 !
```

```
;  164            1356  1 ! EXTERNAL REFERENCES:
;  165            1357  1 !
;  166            1358  1
;  167            1359  1 EXTERNAL LITERAL
;  168            1360  1     STR$_NORMAL,              ! (Used in macro $STR$DEALLOCATE)
;  169            1361  1     LIB$_FATERRLIB,           ! Fatal error in the library
;  170            1362  1     LIB$_INSVIRMEM,           ! Insufficient virtual memory
;  171            1363  1     LIB$_INVSTRDES,           ! Invalid string descriptor
;  172            1364  1     LIB$_STRTRU;              ! String truncated
;  173            1365  1
;  174            1366  1 EXTERNAL ROUTINE
;  175            1367  1     LIB$ANALYZE_SDESC_R2 : LIB$ANALYZE_SDESC_JSB_LINK ;
```

```
1 GLOBAL ROUTINE LIB$SGET1_DD (               ! Allocate a dynamic string
1
1         LEN,                                ! Number of bytes to allocate
1         DESCRIP                             ! Descriptor to allocate into
1                           ) =
1
1 !++
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       Allocate a string.  LEN bytes are allocated to DESCRIP, which
1 !       is assumed to be a dynamic descriptor.  If the descriptor
1 !       already has storage allocated to it, but not enough, the old
1 !       storage is deallocated.
1 !
1 ! FORMAL PARAMETERS:
1 !
1 !       LEN.rwu.r        The number of bytes to allocate.
1 !       DESCRIP.wqu.r    The descriptor.  The DSC$B_DTYPE field is not
1 !                        touched.
1 !
1 ! IMPLICIT INPUTS:
1 !
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !
1 !       NONE
1 !
1 ! COMPLETION CODES:
1 !
1 !       SS$_NORMAL       All is OK.
1 !       LIB$_INSVIRMEM   There was not enough virtual memory to allocate
1 !                        the string.
1 !       LIB$_FATERRLIB   Fatal error in the library
1 !
1 ! SIDE EFFECTS:
1 !
1 !       May deallocate the descriptor's storage and allocate new
1 !       storage for it.
1 !
1 !--
1
2     BEGIN
2
2     MAP
2         DESCRIP : REF BLOCK [ , BYTE];
2
2 !+
2 ! Deallocate old space (if necesaary) and allocate new space.
2 !-
2     RETURN LIB$SGET1_DD_R6 ((..LEN AND %X'FFFF'), .DESCRIP) ;
1     END;                                    ! end of LIB$SGET1_DD

                                                .TITLE  LIB$SCOPY
                                                .IDENT  \1-018\
                                                                  .EXTRN  STR$_NORMAL, LIB$_FATERRLIB
                                                                  .EXTRN  LIB$_INSVIRMEM, LIB$_INVSTRDES
                                                                  .EXTRN  LIB$_STRTRU, LIB$ANALYZE_SDESC_R2

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

                                              007C 00000          .ENTRY  LIB$SGET1_DD, Save R2,R3,R4,R5,R6           ; 1368
                              51       08  AC  D0 00002          MOVL    DESCRIP, R1                                  ; 1418
                              50       04  BC  3C 00006          MOVZWL  @LEN, R0                                     ;
                                          0000V 30 0000A          BSBW    LIB$SGET1_DD_R6                              ;
                                              04 0000D          RET                                                   ; 1419

; Routine Size:  14 bytes,    Routine Base:  _LIB$CODE + 0000
```

```
1 GLOBAL ROUTINE LIB$SGET1_DD_R6 (          ! Allocate a dynamic string
1
1           LEN,                            ! Number of bytes to allocate
1           DESCRIP                         ! Descriptor to allocate into
1                               ) : STRING_JSB =
1
1 !++
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !         Allocate a string.  LEN bytes are allocated to DESCRIP, which
1 !         is assumed to be a dynamic descriptor.  If the descriptor
1 !         already has storage allocated to it, but not enough, the old
1 !         storage is deallocated.
1 !
1 ! FORMAL PARAMETERS:
1 !
1 !         LEN.rwu.v        The number of bytes to allocate.
1 !         DESCRIP.wqu.r    The descriptor.  The DSC$B_DTYPE field is not
1 !                          touched.
1 !
1 ! IMPLICIT INPUTS:
1 !
1 !         NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !
1 !         NONE
1 !
1 ! COMPLETION CODES:
1 !
1 !         SS$_NORMAL       All is OK.
1 !         LIB$_INSVIRMEM   There was not enough virtual memory to allocate
1 !                          the string.
1 !         LIB$_FATERRLIB   Fatal error in the library
1 !
1 ! SIDE EFFECTS:
1 !
1 !         May deallocate the descriptor's storage and allocate new
1 !         storage for it.
1 !
1 !--
1
2     BEGIN
2     LOCAL
2         RETURN_STATUS ;
2
2     MAP
2         DESCRIP : REF BLOCK [, BYTE] ;
2
2 !+
2 ! Make the descriptor be a dynamic string.
2 !-
2     DESCRIP [DSC$B_CLASS] = DSC$K_CLASS_D;
2
2     RETURN_STATUS = SS$_NORMAL ;          ! assume success
2
2 !+
;  287          1477  2  ! see if current space needs to be deallocated and reallocated
;  288          1478  2  !-
;  289        P 1479  3       IF ( $STR$NEED_ALLOC (( .LEN AND %X'FFFF'),
;  290          1480  3                            $STR$DYN_AL_LEN (DESCRIP)))
;  291          1481  2       THEN
;  292          1482  3           BEGIN
;  293          1483  3           !
;  294          1484  3           ! give back old space
;  295          1485  3           !
;  296          1486  4           IF ( RETURN_STATUS = $STR$DEALLOCATE (DESCRIP))
;  297          1487  3           THEN
;  298          1488  3               !
;  299          1489  3               ! and get new space
;  300          1490  3               !
;  301        P 1491  3               RETURN_STATUS = $STR$ALLOCATE (( .LEN AND %X'FFFF'),
;  302          1492  3                                         DESCRIP ) ;
;  303          1493  3           END
;  304          1494  3
;  305          1495  2       ELSE
;  306          1496  2
;  307          1497  2           !
;  308          1498  2           ! old space can be reused
;  309          1499  2           !
;  310          1500  2           $STR$LENGTH (DESCRIP) = (.LEN AND %X'FFFF') ;
;  311          1501  2  !+
;  312          1502  2  ! at this point, RETURN_STATUS contains one of:
;  313          1503  2  !       A.  originally assigned status i.e., SS$_NORMAL
;  314          1504  2  !       B.  failure status from $STR$DEALLOCATE
;  315          1505  2  !       C.  status from $STR$ALLOCATE
;  316          1506  2  !-
;  317          1507  2
;  318          1508  2      RETURN .RETURN_STATUS ;
;  319          1509  1      END ;                           ! of routine LIB$GET1_DD_R6


                                                          .EXTRN  STR$$Q_SHORT_Q, LIB$FREE_VM
                                                          .EXTRN  STR$_FATINTERR, STR$$INIT
                                                          .EXTRN  STR$$V_INIT, STR$$ALOC_SHORT
                                                          .EXTRN  LIB$GET_VM, STR$_INSVIRMEM

                   5E           04  C2 00000 LIB$GET1_DD_R6::
                                                          SUBL2   #4, SP                                  ; 1420
                   52           51  D0 00003              MOVL    R1, R2                                  ;
                   54           50  D0 00006              MOVL    R0, R4                                  ;
              03   A2           02  90 00009              MOVB    #2, 3(DESCRIP)                          ; 1472
                                01  DD 0000D              PUSHL   #1                                      ; 1474
                   53      04   A2  D0 0000F              MOVL    4(DESCRIP), R3                          ; 1480
                                50  D4 00013              CLRL    R0                                      ;
                                53  D5 00015              TSTL    R3                                      ;
                                06  12 00017              BNEQ    1$                                      ;
                                50  D6 00019              INCL    R0                                      ;
                                51  D4 0001B              CLRL    R1                                      ;
                                13  11 0001D              BRB     3$                                      ;
            00F0   8F           62  B1 0001F  1$:         CMPW    (DESCRIP), #240                         ;
                                05  1B 00024              BLEQU   2$                                      ;
                   51           62  3C 00026              MOVZWL  (DESCRIP), R1                           ;
```

```
                                             07   11 00029          BRB      3$                                    :
                         51                  53   D0 0002B 2$:      MOVL     R3, STRING_BLOCK                      :
                         51           FE     A1   3C 0002E          MOVZWL   -2(STRING_BLOCK), R1                  :
                  000000F0   8F              51   D1 00032 3$:      CMPL     R1, #240                              :
                                             23   1F 00039          BLSSU    7$                                    :
                         04                  50   E9 0003B          BLBC     R0, 4$                                :
                                             51   D4 0003E          CLRL     R1                                    :
                                             13   11 00040          BRB      6$                                    :
                      00F0   8F              62   B1 00042 4$:      CMPW     (DESCRIP), #240                       :
                                             05   1B 00047          BLEQU    5$                                    :
                             51              62   3C 00049          MOVZWL   (DESCRIP), R1                         :
                                             07   11 0004C          BRB      6$                                    :
                         51                  53   D0 0004E 5$:      MOVL     R3, STRING_BLOCK                      :
                         51           FE     A1   3C 00051          MOVZWL   -2(STRING_BLOCK), R1                  :
      51         54      10                  00   ED 00055 6$:      CMPZV    #0, #16, LEN, R1                      :
                                             23   13 0005A          BEQL     11$                                   :
                                             24   11 0005C          BRB      12$                                   :
                         04                  50   E9 0005E 7$:      BLBC     R0, 8$                                :
                                             51   D4 00061          CLRL     R1                                    :
                                             13   11 00063          BRB      10$                                   :
                      00F0   8F              62   B1 00065 8$:      CMPW     (DESCRIP), #240                       :
                                             05   1B 0006A          BLEQU    9$                                    :
                             51              62   3C 0006C          MOVZWL   (DESCRIP), R1                         :
                                             07   11 0006F          BRB      10$                                   :
                         51                  53   D0 00071 9$:      MOVL     R3, STRING_BLOCK                      :
                         51           FE     A1   3C 00074          MOVZWL   -2(STRING_BLOCK), R1                  :
      51         54      10                  00   ED 00078 10$:     CMPZV    #0, #16, LEN, R1                      :
                                             03   1A 0007D          BGTRU    12$                                   :
                                           00CE   31 0007F 11$:     BRW      25$                                   :
                         50  00000000G       8F   D0 00082 12$:     MOVL     #STR$_NORMAL, RETURN_STATUS           : 1486
                                             53   D5 00089          TSTL     R3                                    :
                                             3C   13 0008B          BEQL     14$                                   :
                      00F0   8F              62   B1 0008D          CMPW     (DESCRIP), #240                       :
                                             1A   1A 00092          BGTRU    13$                                   :
                         51                  53   D0 00094          MOVL     R3, STRING_BLOCK                      :
                         51           FE     A1   3C 00097          MOVZWL   -2(STRING_BLOCK), ALLOC_LENGTH        :
                                             51   D7 0009B          DECL     R1                                    :
                         51                  07   8A 0009D          BICB2    #7, R1                                :
                         51  00000000G0041        9E 000A0          MOVAB    STR$$Q_SHORT_Q[R1], INSQUE_ADDR       :
                        00   B1              63   0E 000A8          INSQUE   (R3), @0(INSQUE_ADDR)                 :
                                             1B   11 000AC          BRB      14$                                   :
                                      04     A2   9F 000AE 13$:     PUSHAB   4(DESCRIP)                            :
                        08   AE              62   3C 000B1          MOVZWL   (DESCRIP), 8(SP)                      :
                                      08     AE   9F 000B5          PUSHAB   8(SP)                                 :
                 00000000G   00              02   FB 000B8          CALLS    #2, LIB$FREE_VM                       :
                             07              50   E8 000BF          BLBS     RETURN_STATUS, 14$                    :
                         50  00000000G       8F   D0 000C2          MOVL     #STR$_FATINTERR, RETURN_STATUS        :
                             6E              50   D0 000C9 14$:     MOVL     RETURN_STATUS, RETURN_STATUS          :
                             7F              50   E9 000CC          BLBC     RETURN_STATUS, 24$                    :
                         07  00000000G       00   E8 000CF          BLBS     STR$$V_INIT, 15$                      : 1492
                 00000000G   00              00   FB 000D6          CALLS    #0, STR$$INIT                         :
                         50  00000000G       8F   D0 000DD 15$:     MOVL     #STR$_NORMAL, RETURN_STATUS           :
                      00F0   8F              54   B1 000E4          CMPW     LEN, #240                             :
                                             40   1A 000E9          BGTRU    21$                                   :
                                             54   B5 000EB          TSTW     LEN                                   :
                                             04   12 000ED          BNEQ     16$                                   :
                                             55   D4 000EF          CLRL     TEMP                                  :
```

```
                               2F  11 000F1        BRB      20$                                     ;
                    51         54  3C 000F3 16$:   MOVZWL   LEN, R1                                 ;
                               51  D7 000F6        DECL     R1                                      ;
                    51         07  8A 000F8        BICB2    #7, R1                                  ;
                    56 00000000G0041  9E 000FB     MOVAB    STR$$Q_SHORT_Q[R1], REMQUE_ADDR         ;
                    55        00  B6  0F 00103 17$: REMQUE  @0(REMQUE_ADDR), TEMP                   ;
                               05  1D 00107        BVS      18$                                     ;
                    53         01  D0 00109        MOVL     #1, ALLOC_DONE                          ;
                               0C  11 0010C        BRB      19$                                     ;
                               53  D4 0010E 18$:   CLRL     ALLOC_DONE                              ;
                    7E         54  3C 00110        MOVZWL   LEN, -(SP)                              ;
          00000000G 00         01  FB 00113        CALLS    #1, STR$$ALOC_SHORT                     ;
                    05         53  E8 0011A 19$:   BLBS     ALLOC_DONE, 20$                         ;
                    2B         50  E9 0011D        BLBC     RETURN_STATUS, 23$                      ;
                               E1  11 00120        BRB      17$                                     ;
                    26         50  E9 00122 20$:   BLBC     RETURN_STATUS, 23$                      ;
               04   A2         55  D0 00125        MOVL     TEMP, 4(DESCRIP)                        ;
                               1D  11 00129        BRB      22$                                     ;
                         04    A2  9F 0012B 21$:   PUSHAB   4(DESCRIP)                              ;
               08   AE         54  3C 0012E        MOVZWL   LEN, 8(SP)                              ;
                         08    AE  9F 00132        PUSHAB   8(SP)                                   ;
          00000000G 00         02  FB 00135        CALLS    #2, LIB$GET_VM                          ;
                    09         50  E8 0013C        BLBS     RETURN_STATUS, 22$                      ;
                    50 00000000G  8F  D0 0013F     MOVL     #STR$_INSVIRMEM, RETURN_STATUS          ;
                               03  11 00146        BRB      23$                                     ;
                    62         54  B0 00148 22$:   MOVW     LEN, (DESCRIP)                          ;
                    6E         50  D0 0014B 23$:   MOVL     RETURN_STATUS, RETURN_STATUS            ;
                               03  11 0014E 24$:   BRB      26$                                     ; 1479
                    62         54  B0 00150 25$:   MOVW     LEN, (DESCRIP)                          ; 1500
                    50         8E  D0 00153 26$:   MOVL     RETURN_STATUS, R0                       ; 1508
                    5E         04  C0 00156        ADDL2    #4, SP                                  ; 1509
                                   05 00159        RSB                                              ;

; Routine Size:  346 bytes,    Routine Base:  _LIB$CODE + 000E
;  321          1510  1 GLOBAL ROUTINE LIB$SFREE1_DD (          ! Deallocate a dynamic string
;  322          1511  1
;  323          1512  1         DESCRIP                         ! The descriptor to deallocate
;  324          1513  1                             ) =
;  325          1514  1
;  326          1515  1 !++
;  327          1516  1 ! FUNCTIONAL DESCRIPTION:
;  328          1517  1 !
;  329          1518  1 !       Deallocate a string.  The string is assumed to by dynamic.
;  330          1519  1 !
;  331          1520  1 ! FORMAL PARAMETERS:
;  332          1521  1 !
;  333          1522  1 !       DESCRIP.wqu.r   The descriptor of the string to deallocate.
;  334          1523  1 !
;  335          1524  1 ! IMPLICIT INPUTS:
;  336          1525  1 !
;  337          1526  1 !       NONE
;  338          1527  1 !
;  339          1528  1 ! IMPLICIT OUTPUTS:
;  340          1529  1 !
;  341          1530  1 !       NONE
;  342          1531  1 !
;  343          1532  1 ! COMPLETION CODES:
;  344          1533  1 !
;  345          1534  1 !       SS$_NORMAL      All is OK.
;  346          1535  1 !       LIB$_INVSTRDES  Invalid string descriptor
;  347          1536  1 !       LIB$_FATERRLIB  Fatal error in the library
;  348          1537  1 !
;  349          1538  1 ! SIDE EFFECTS:
;  350          1539  1 !
;  351          1540  1 !       May deallocate virtual storage.
;  352          1541  1 !
;  353          1542  1 !--
;  354          1543  1
;  355          1544  2    BEGIN
;  356          1545  2
;  357          1546  2
;  358          1547  2 !+
;  359          1548  2 ! Free the string
;  360          1549  2 !-
;  361          1550  2    RETURN LIB$SFREE1_DD6 (.DESCRIP) ;
;  362          1551  1    END;                                         ! end of LIB$SFREE1_DD



                                        007C 00000        .ENTRY  LIB$SFREE1_DD, Save R2,R3,R4,R5,R6           ; 1510
                       50       04   AC  D0 00002        MOVL    DESCRIP, R0                                  ; 1550
                                   0000V 30 00006        BSBW    LIB$SFREE1_DD6                               ;
                                        04 00009        RET                                                  ; 1551

; Routine Size:  10 bytes,    Routine Base:  _LIB$CODE + 0168
```

```
1 GLOBAL ROUTINE LIB$SFREE1_DD6 (          ! Deallocate a dynamic string
1
1           DESCRIP                         ! The descriptor to deallocate
1
1                                   ) : STRING_JSB =
1
1 !++
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !         Deallocate a string.  The string is assumed to by dynamic.
1 !
1 ! FORMAL PARAMETERS:
1 !
1 !         DESCRIP.wqu.r   The descriptor of the string to deallocate.
1 !
1 ! IMPLICIT INPUTS:
1 !
1 !         NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !
1 !         NONE
1 !
1 ! COMPLETION CODES:
1 !
1 !         SS$_NORMAL      All is OK.
1 !         LIB$_INVSTRDES  Invalid string descriptor
1 !         LIB$_FATERRLIB  Fatal error in the library
1 !
1 ! SIDE EFFECTS:
1 !
1 !         May deallocate virtual storage.
1 !
1 !--
1
2     BEGIN
2
2     LOCAL
2         RETURN_STATUS ;
2
2     MAP
2         DESCRIP : REF BLOCK [ , BYTE] ;
2
2     !
2     ! see if this is a dynamic descriptor
2     !
2     IF .DESCRIP [DSC$B_CLASS] EQL DSC$K_CLASS_D
2     THEN
3         BEGIN
3         !
3         ! deallocate the string
3         !
4         IF (RETURN_STATUS = $STR$DEALLOCATE (DESCRIP))
3         THEN
4             BEGIN
4             !
4             ! Make sure the pointer and length field are zero, so the
```

```
;  421          1609 4                  ! user is less likely to mistakenly use an old address.
;  422          1610 4                  ! Also, if he calls to reallocate without reinitalizing,
;  423          1611 4                  ! he will not get confused.
;  424          1612 4                  !
;  425          1613 4                  DESCRIP [DSC$W_LENGTH]  = 0 ;
;  426          1614 4                  DESCRIP [DSC$A_POINTER] = 0 ;
;  427          1615 3                  END;
;  428          1616 3              END
;  429          1617 3              !
;  430          1618 3              ! at this point, RETURN_STATUS contains the status returned
;  431          1619 3              ! by $STR$DEALLOCATE
;  432          1620 3              !
;  433          1621 2          ELSE
;  434          1622 2              !
;  435          1623 2              ! not a dynamic descriptor
;  436          1624 2              !
;  437          1625 2
;  438          1626 2              RETURN_STATUS = LIB$_INVSTRDES ;
;  439          1627 2
;  440          1628 2          RETURN .RETURN_STATUS
;  441          1629 2
;  442          1630 1          END ;                           ! of routine LIB$SFREE1_DD6



                      5E            04  C2 00000 LIB$SFREE1_DD6::
                                                             SUBL2    #4, SP                                     ; 1552
                      52            50  D0 00003             MOVL     R0, R2                                     ;
                      02       03   A2  91 00006             CMPB     3(DESCRIP), #2                             ; 1598
                                    56  12 0000A             BNEQ     3$                                         ;
                      50 00000000G  8F  D0 0000C             MOVL     #STR$_NORMAL, RETURN_STATUS                ; 1604
                      53       04   A2  D0 00013             MOVL     4(DESCRIP), R3                             ;
                                    3C  13 00017             BEQL     2$                                         ;
              00F0    8F            62  B1 00019             CMPW     (DESCRIP), #240                            ;
                                    1A  1A 0001E             BGTRU    1$                                         ;
                      51            53  D0 00020             MOVL     R3, STRING_BLOCK                           ;
                      51       FE   A1  3C 00023             MOVZWL   -2(STRING_BLOCK), ALLOC_LENGTH             ;
                                    51  D7 00027             DECL     R1                                         ;
                      51            07  8A 00029             BICB2    #7, R1                                     ;
                      51 00000000G0041  9E 0002C             MOVAB    STR$$Q_SHORT_Q[R1], INSQUE_ADDR            ;
                00    B1            63  0E 00034             INSQUE   (R3), @0(INSQUE_ADDR)                      ;
                                    1B  11 00038             BRB      2$                                         ;
                               04   A2  9F 0003A 1$:         PUSHAB   4(DESCRIP)                                 ;
                04    AE            62  3C 0003D             MOVZWL   (DESCRIP), 4(SP)                           ;
                               04   AE  9F 00041             PUSHAB   4(SP)                                      ;
         00000000G    00            02  FB 00044             CALLS    #2, LIB$FREE_VM                            ;
                      07            50  E8 0004B             BLBS     RETURN_STATUS, 2$                          ;
                      50 00000000G  8F  D0 0004E             MOVL     #STR$_FATINTERR, RETURN_STATUS             ;
                      51            50  D0 00055 2$:         MOVL     RETURN_STATUS, RETURN_STATUS               ;
                      0E            50  E9 00058             BLBC     RETURN_STATUS, 4$                          ;
                                    62  B4 0005B             CLRW     (DESCRIP)                                  ; 1613
                               04   A2  D4 0005D             CLRL     4(DESCRIP)                                 ; 1614
                                    07  11 00060             BRB      4$                                         ; 1598
                      51 00000000G  8F  D0 00062 3$:         MOVL     #LIB$_INVSTRDES, RETURN_STATUS             ; 1626
                      50            51  D0 00069 4$:         MOVL     RETURN_STATUS, R0                          ; 1628
```

```
                              5E          04  C0 0006C         ADDL2   #4, SP                               ; 1630
                                              05 0006F         RSB                                          ;

; Routine Size:  112 bytes,    Routine Base:  _LIB$CODE + 0172
;  444          1631  1 GLOBAL ROUTINE LIB$SFREEN_DD (           ! Deallocate dynamic strings
;  445          1632  1
;  446          1633  1         NUM_DESC,                        ! Number of descriptors
;  447          1634  1         DESC_PTR                         ! First descriptor to deallocate
;  448          1635  1                                 ) =
;  449          1636  1
;  450          1637  1 !++
;  451          1638  1 ! FUNCTIONAL DESCRIPTION:
;  452          1639  1 !
;  453          1640  1 !       Deallocate a number of strings.  The strings are all assumed
;  454          1641  1 !       to be dynamic.
;  455          1642  1 !
;  456          1643  1 ! FORMAL PARAMETERS:
;  457          1644  1 !
;  458          1645  1 !       NUM_DESC.rl.r   The number of descriptors to deallocate.
;  459          1646  1 !       DESC_PTR.wqu.r  The first of these descriptors.
;  460          1647  1 !
;  461          1648  1 ! IMPLICIT INPUTS:
;  462          1649  1 !
;  463          1650  1 !       NONE
;  464          1651  1 !
;  465          1652  1 ! IMPLICIT OUTPUTS:
;  466          1653  1 !
;  467          1654  1 !       NONE
;  468          1655  1 !
;  469          1656  1 ! COMPLETION CODES:
;  470          1657  1 !
;  471          1658  1 !       SS$_NORMAL
;  472          1659  1 !       LIB$_FATERRLIB                   Fatal error in the library
;  473          1660  1 !
;  474          1661  1 ! SIDE EFFECTS:
;  475          1662  1 !
;  476          1663  1 !       May deallocate virtual storage.
;  477          1664  1 !
;  478          1665  1 !--
;  479          1666  1
;  480          1667  2    BEGIN
;  481          1668  2
;  482          1669  2    LIB$SFREEN_DD6 (..NUM_DESC, .DESC_PTR)
;  483          1670  2
;  484          1671  1    END;                                          ! end of LIB$SFREE1_DD



                                            007C 00000          .ENTRY  LIB$SFREEN_DD, Save R2,R3,R4,R5,R6          ; 1631
                          51       08   AC   D0 00002          MOVL    DESC_PTR, R1                                 ; 1669
                          50       04   BC   D0 00006          MOVL    @NUM_DESC, R0                                ;
                                        0000V 30 0000A          BSBW    LIB$SFREEN_DD6                               ;
                                             04 0000D          RET                                                  ; 1671

; Routine Size:  14 bytes,    Routine Base:  _LIB$CODE + 01E2


;  485          1672  1
```

```
1 GLOBAL ROUTINE LIB$SFREEN_DD6 (           ! Deallocate dynamic strings
1
1         NUM_DESC,                         ! Number of descriptors
1         DESC_PTR                          ! First descriptor to deallocate
1
1                                   ) : STRING_JSB =
1
1 !++
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       Deallocate a number of strings.  The strings are all assumed
1 !       to be dynamic.
1 !
1 ! FORMAL PARAMETERS:
1 !
1 !       NUM_DESC.rl.v   The number of descriptors to deallocate.
1 !       DESC_PTR.wqu.r  The first of these descriptors.
1 !
1 ! IMPLICIT INPUTS:
1 !
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !
1 !       NONE
1 !
1 ! COMPLETION CODES:
1 !
1 !       SS$_NORMAL
1 !       LIB$_FATERRLIB  Fatal error in the library
1 !
1 ! SIDE EFFECTS:
1 !
1 !       May deallocate virtual storage.
1 !
1 !--
1
2     BEGIN
2
2     LOCAL
2         RETURN_STATUS,
2         DESCRIP : REF BLOCK [ , BYTE];
2
2 !+
2 ! Loop through all the descriptors, freeing them.
2 ! Quit when one fails to deallocate
2 !-
2
2     INCR COUNTER FROM 1 TO .NUM_DESC DO
3         BEGIN
3         DESCRIP = .DESC_PTR + ((.COUNTER - 1)*DSC$K_D_BLN);
3
3 !+
3 ! Now try freeing it.
3 !-
3         RETURN_STATUS = LIB$SFREE1_DD6 (.DESCRIP) ;
3         IF .RETURN_STATUS NEQ SS$_NORMAL
```

```
;  544        1730  3          THEN
;  545        1731  3              RETURN .RETURN_STATUS ;
;  546        1732  3
;  547        1733  2          END;     ! of INCR loop
;  548        1734  2
;  549        1735  2 !+
;  550        1736  2 ! Since we fell out of the loop above, all strings have been
;  551        1737  2 ! successfully deallocated, so...
;  552        1738  2 !-
;  553        1739  2
;  554        1740  2      RETURN (SS$_NORMAL);
;  555        1741  1      END;                                       ! end of LIB$SFREE1_DD6



                          7E           50  7D 00000 LIB$SFREEN_DD6::
                                                            MOVQ     R0, NUM_DESC                        ; 1673
                                       7E  D4 00003         CLRL     COUNTER                             ; 1723
                                       1F  10 00005         BSBB     2$                                  ;
          50        04    AE           03  78 00007 1$:     ASHL     #3, COUNTER, R0                     ;
                          50      0C   AE  C0 0000C         ADDL2    DESC_PTR, R0                        ;
                          6E           70  7E 00010         MOVAQ    -(R0), DESCRIP                      ;
                          50           6E  D0 00013         MOVL     DESCRIP, R0                         ; 1728
                                     FF69  30 00016         BSBW     LIB$SFREE1_DD6                      ;
                          51           50  D0 00019         MOVL     R0, RETURN_STATUS                   ;
                          01           51  D1 0001C         CMPL     RETURN_STATUS, #1                   ; 1729
                                       05  13 0001F         BEQL     2$                                  ;
                          50           51  D0 00021         MOVL     RETURN_STATUS, R0                   ; 1731
                                       09  11 00024         BRB      3$                                  ;
          DB        04    AE      08   AE  F3 00026 2$:     AOBLEQ   NUM_DESC, COUNTER, 1$               ; 1721
                          50           01  D0 0002C         MOVL     #1, R0                              ; 1740
                          5E           10  C0 0002F 3$:     ADDL2    #16, SP                             ; 1741
                                       05  00032            RSB                                          ;

; Routine Size:  51 bytes,    Routine Base:  _LIB$CODE + 01F0


;  556        1742  1
```

```
: 558       1743  1 GLOBAL ROUTINE LIB$SCOPY_DXDX (            ! Copy string by descriptor
: 559       1744  1
: 560       1745  1         SRC_DESC,                            ! Source string
: 561       1746  1         DEST_DESC                            ! Destination string
: 562       1747  1                       ) =
: 563       1748  1
: 564       1749  1 !++
: 565       1750  1 ! FUNCTIONAL DESCRIPTION:
: 566       1751  1 !
: 567       1752  1 !       Copy any supported class string passed by descriptor to any
: 568       1753  1 ! supported class string passed by descriptor.
: 569       1754  1 !
: 570       1755  1 ! FORMAL PARAMETERS:
: 571       1756  1 !
: 572       1757  1 !       SRC_DESC.rt.dx  Address of source string descriptor.
: 573       1758  1 !       DEST_DESC.wt.dx Address of destination descriptor.
: 574       1759  1 !                       The class and dtype fields are not disturbed.
: 575       1760  1 !
: 576       1761  1 ! IMPLICIT INPUTS:
: 577       1762  1 !
: 578       1763  1 !       NONE
: 579       1764  1 !
: 580       1765  1 ! IMPLICIT OUTPUTS:
: 581       1766  1 !
: 582       1767  1 !       NONE
: 583       1768  1 !
: 584       1769  1 ! COMPLETION CODES:
: 585       1770  1 !
: 586       1771  1 !       SS$_NORMAL      Success
: 587       1772  1 !
: 588       1773  1 !       LIB$_STRTRU     The source string was truncated to fit the
: 589       1774  1 !                       fixed-length destination string.
: 590       1775  1 !
: 591       1776  1 !       LIB$_INSVIRMEM  Not enough virtual memory available.
: 592       1777  1 !
: 593       1778  1 !       LIB$_INVSTRDES  Invalid DSC$B_CLASS field contents  or
: 594       1779  1 !                               If class = A or NCA, ARSIZE => 65K
: 595       1780  1 !
: 596       1781  1 ! SIDE EFFECTS:
: 597       1782  1 !
: 598       1783  1 !       May allocate and deallocate virtual storage.
: 599       1784  1 !
: 600       1785  1 !--
: 601       1786  1
: 602       1787  2     BEGIN
: 603       1788  2         RETURN LIB$SCOPY_DXDX6 (.SRC_DESC, .DEST_DESC) ;
: 604       1789  1     END;                                     ! end of LIB$SCOPY_DXDX



                              007C 00000         .ENTRY  LIB$SCOPY_DXDX, Save R2,R3,R4,R5,R6          ; 1743
         50        04   AC  7D 00002         MOVQ    SRC_DESC, R0                                 ; 1788
                        0000V 30 00006         BSBW    LIB$SCOPY_DXDX6                              ;
                              04 00009         RET                                                  ; 1789
```

```
; Routine Size:  10 bytes,    Routine Base:  _LIB$CODE + 0223

;  605          1790  1
```

; R

```
1 GLOBAL ROUTINE LIB$SCOPY_DXDX6 (                ! Copy string by descriptor
1         SRC_DESC,                               ! Source string
1         DEST_DESC                               ! Destination string
1
1                               ) : STRING_JSB =
1
1 !++
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       Copy any supported class string passed by descriptor to any
1 ! supported class string passed by descriptor.
1 !
1 ! FORMAL PARAMETERS:
1 !
1 !       SRC_DESC.rt.dx  Address of source string descriptor.
1 !       DEST_DESC.wt.dx Address of destination string descriptor.
1 !                       The class and dtype fields are not disturbed.
1 !
1 ! IMPLICIT INPUTS:
1 !
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !
1 !       NONE
1 !
1 ! COMPLETION CODES:
1 !
1 !       SS$_NORMAL      Success
1 !
1 !       LIB$_STRTRU     The source string was truncated to fit the
1 !                       fixed-length destination string.
1 !
1 !       LIB$_INSVIRMEM  Not enough virtual memory available.
1 !
1 !       LIB$_INVSTRDES  Invalid DSC$B_CLASS field contents  or
1 !                               If class = A or NCA, ARSIZE => 65K
1 !
1 ! SIDE EFFECTS:
1 !
1 !       May allocate and deallocate virtual storage.
1 !
1 !--
1
2     BEGIN
2
2     MAP
2         SRC_DESC  : REF BLOCK [, BYTE],
2         DEST_DESC : REF BLOCK [, BYTE];
2
2 !+
2 ! Extract the length and address of 1st byte of data from the source
2 ! descriptor.  JSB to LIB$SCOPY_R_DX6 to do work.
2 !-
2     IF .SRC_DESC [DSC$B_CLASS] GTRU DSC$K_CLASS_D
2     THEN                    ! Use generalized extraction
3         BEGIN
```

```
;  664         1848  3           LOCAL
;  665         1849  3               LENGTH : VECTOR [1, LONG],  ! length of string
;  666         1850  3               DATA_ADDR : VECTOR [1, LONG] ,      ! start of data address
;  667         1851  3               RETURN_STATUS ;
;  668         1852  3
;  669         1853  3           RETURN_STATUS = LIB$ANALYZE_SDESC_R2 ( .SRC_DESC ;
;  670         1854  3                                                  LENGTH [0],
;  671         1855  3                                                  DATA_ADDR [0]) ;
;  672         1856  3
;  673         1857  3           IF NOT .RETURN_STATUS THEN RETURN (.RETURN_STATUS) ;
;  674         1858  3
;  675         1859  3           RETURN (LIB$SCOPY_R_DX6 ( .LENGTH, .DATA_ADDR, .DEST_DESC)) ;
;  676         1860  3
;  677         1861  3           END
;  678         1862  3
;  679         1863  2       ELSE                ! can jsb with lenth and address directly
;  680         1864  3           BEGIN
;  681         1865  4           RETURN (LIB$SCOPY_R_DX6 ( .SRC_DESC [DSC$W_LENGTH],
;  682         1866  4                                     .SRC_DESC [DSC$A_POINTER],
;  683         1867  3                                     .DEST_DESC ) ) ;
;  684         1868  2           END ;
;  685         1869  2
;  686         1870  1       END;                                         ! end of LIB$SCOPY_DXDX6



                         53            50  7D 00000 LIB$SCOPY_DXDX6::
                                                            MOVQ     R0, R3                              ; 1791
                         02       03   A3  91 00003         CMPB     3(SRC_DESC), #2                     ; 1845
                                       1D  1B 00007         BLEQU    1$                                  ;
                         50            53  D0 00009         MOVL     SRC_DESC, R0                        ; 1853
                            00000000G  00  16 0000C         JSB      LIB$ANALYZE_SDESC_R2                ;
                         56            51  D0 00012         MOVL     R1, R6                              ;
                         55            52  D0 00015         MOVL     R2, R5                              ;
                         18            50  E9 00018         BLBC     RETURN_STATUS, 3$                   ; 1857
                         52            54  D0 0001B         MOVL     DEST_DESC, R2                       ; 1859
                         51            55  D0 0001E         MOVL     DATA_ADDR, R1                       ;
                         50            56  D0 00021         MOVL     LENGTH, R0                          ;
                                       0A  11 00024         BRB      2$                                  ;
                         52            54  D0 00026 1$:     MOVL     DEST_DESC, R2                       ; 1865
                         51       04   A3  D0 00029         MOVL     4(SRC_DESC), R1                     ;
                         50            63  3C 0002D         MOVZWL   (SRC_DESC), R0                      ;
                                    0000V  30 00030 2$:     BSBW     LIB$SCOPY_R_DX6                     ;
                                           05 00033 3$:     RSB                                          ; 1870

; Routine Size:  52 bytes,    Routine Base:  _LIB$CODE + 022D


;  687         1871  1
;  689        1872  1 GLOBAL ROUTINE LIB$SCOPY_R_DX (         . Copy string by reference
;  690        1873  1
;  691        1874  1         SRC_LEN,                        ! Length of source
;  692        1875  1         SRC_ADDR,                       ! Address of source data
;  693        1876  1         DEST_DESC                       ! Destination string
;  694        1877  1                         ) =
;  695        1878  1
;  696        1879  1 !++
;  697        1880  1 ! FUNCTIONAL DESCRIPTION:
;  698        1881  1 !
;  699        1882  1 !       Copy any class string passed by reference to any supported
;  700        1883  1 ! class string passed by descriptor.
;  701        1884  1 !
;  702        1885  1 ! FORMAL PARAMETERS:
;  703        1886  1 !
;  704        1887  1 !       SRC_LEN.rwu.r   Address of length of source
;  705        1888  1 !       SRC_ADDR.rt.r   Address of source
;  706        1889  1 !       DEST_DESC.wt.dx Address of destination string descriptor.
;  707        1890  1 !                       The class and dtype fields are not disturbed.
;  708        1891  1 !
;  709        1892  1 ! IMPLICIT INPUTS:
;  710        1893  1 !
;  711        1894  1 !       NONE
;  712        1895  1 !
;  713        1396  1 ! IMPLICIT OUTPUTS:
;  714        1897  1 !
;  715        1898  1 !       NONE
;  716        1899  1 !
;  717        1900  1 ! COMPLETION CODES:
;  718        1901  1 !
;  719        1902  1 !       SS$_NORMAL      Success
;  720        1903  1 !
;  721        1904  1 !       LIB$_STRTRU     The source string was truncated to fit the
;  722        1905  1 !                       fixed-length destination string.
;  723        1906  1 !
;  724        1907  1 !       LIB$_INSVIRMEM  Not enough virtual memory available.
;  725        1908  1 !
;  726        1909  1 !       LIB$_INVSTRDES  Invalid DSC$B_CLASS field contents  or
;  727        1910  1 !                               If class = A or NCA, ARSIZE => 65K
;  728        1911  1 !
;  729        1912  1 ! SIDE EFFECTS:
;  730        1913  1 !
;  731        1914  1 !       May allocate and deallocate virtual storage.
;  732        1915  1 !
;  733        1916  1 !--
;  734        1917  1
;  735        1918  2     BEGIN
;  736        1919  2     RETURN LIB$SCOPY_R_DX6 (..SRC_LEN, .SRC_ADDR, .DEST_DESC) ;
;  737        1920  1     END;                                ! end of LIB$SCOPY_R_DX



                                        007C 00000         .ENTRY  LIB$SCOPY_R_DX, Save R2,R3,R4,R5,R6           ; 1872
                     51        08   AC   7D 00002          MOVQ    SRC_ADDR, R1                                  ; 1919
                     50        04   BC   D0 00006          MOVL    @SRC_LEN, R0                                  ;
```

```
                          0000V 30 0000A          BSBW    LIB$COPY_R_DX6                          ;
                                04 0000D          RET                                             ; 1920

; Routine Size:  14 bytes,    Routine Base:  _LIB$CODE + 0261

;  738          1921  1
```

```
1 GLOBAL ROUTINE LIB$SCOPY_R_DX6 (         ! Copy string by descriptor
1
1         SRC_LEN,                         ! Number of bytes in source
1         SRC_ADDR,                        ! Address of source data
1         DEST_DESC                        ! Destination string
1
1                               ) : STRING_JSB =
1
1 !++
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       Copy any class string passed by reference to any supported
1 ! class string passed by descriptor.
1 !
1 ! FORMAL PARAMETERS:
1 !
1 !       SRC_LEN.rwu.v           ! (in R0) length of source
1 !       SRC_ADDR.rt.r           ! (in R1) pointer to source string
1 !       DEST_DESC.wt.dx         ! (in R2) pointer to destination
1 !                                         string descriptor
1 !
1 ! IMPLICIT INPUTS:
1 !
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !
1 !       NONE
1 !
1 ! COMPLETION CODES:
1 !
1 !       SS$_NORMAL        Success
1 !
1 !       LIB$_STRTRU       The source string was truncated to fit the
1 !                         fixed-length destination string.
1 !
1 !       LIB$_INSVIRMEM    Not enough virtual memory available.
1 !
1 !       LIB$_INVSTRDES    Invalid DSC$B_CLASS field contents  or
1 !                                 If class = A or NCA, ARSIZE => 65K
1 !
1 ! SIDE EFFECTS:
1 !
1 !       May allocate and deallocate virtual storage.
1 !--
1
2     BEGIN
2
2     LOCAL
2         RETURN_STATUS;
2
2     MAP
2         DEST_DESC : REF BLOCK [ , BYTE] , ! destination descriptor
2         SRC_LEN : WORD UNSIGNED ;         ! length of input
2
```

```
2 !+
2 ! Select the class of descriptor.
2 ! Return the status resulting from the copy operation.
2 !-
2
2     RETURN_STATUS = SS$_NORMAL ;          ! Assume success
3     RETURN ( CASE .DEST_DESC[DSC$B_CLASS]
3                FROM DSC$K_CLASS_Z TO DSC$K_CLASS_SB OF
3     SET
3
3 !+
3 ! fixed string descriptor (CLASS _Z, _S, _SD, _SB)
3 ! ********************************************
3 !
3 ! Use fixed length semantics. Copy to destination with fill or
3 ! truncation.
3 !-
3         [DSC$K_CLASS_Z,
3          DSC$K_CLASS_S,
3          DSC$K_CLASS_SD,
3          DSC$K_CLASS_SB] :
4            BEGIN
4            BUILTIN R0; ! length of uncopied src from MOVC5
4
4            CH$COPY (.SRC_LEN, .SRC_ADDR, STR$K_FILL_CHAR,
4                     .DEST_DESC [DSC$W_LENGTH],
4                     .DEST_DESC [DSC$A_POINTER]); ! do copy
4
4            IF .R0 EQLU 0   ! if no uncopied src
4               THEN
4                  SS$_NORMAL                     ! then success
4               ELSE
4                  LIB$_STRTRU                    ! else truncation
3            END;
3
```

```
;  833          2013  3 !+
;  834          2014  3 ! dynamic destination string
;  835          2015  3 ! ***************************
;  836          2016  3 !-
;  837          2017  3         [DSC$K_CLASS_D] :
;  838          2018  4             BEGIN
;  839        P 2019  4             IF $STR$NEED_ALLOC (.SRC_LEN,
;  840          2020  5                                 ($STR$DYN_AL_LEN (DEST_DESC)) )
;  841          2021  5
;  842        L 2022  5 %IF %BLISS (BLISS16) OR %BLISS (BLISS36)         ! if not VAX must not
;  843        U 2023  5 %THEN                                            ! CH$MOVE with overlap
;  844        U 2024  5 OR $STR$OVERLAP (.SRC_ADDR, .SRC_LEN,
;  845        U 2025  5                     .DEST_DESC [DSC$A_POINTER], .SRC_LEN)
;  846          2026  5 %FI
;  847          2027  4             THEN
;  848          2028  5                 BEGIN                       ! cannot directly fill dest
;  849          2029  5                 LOCAL
;  850          2030  5                     LOC_RET_STAT,           ! status of calls to Allocate
;  851          2031  5                                             !  and Deallocate
;  852          2032  5                     TEMP_DESC : $STR$DESCRIPTOR;        ! create temp
;  853          2033  5
;  854          2034  5                     LOC_RET_STAT = $STR$ALLOCATE (.SRC_LEN, TEMP_DESC);
;  855          2035  5                                                         ! alloc temp
;  856          2036  5                     !+
;  857          2037  5                     ! Allocate will only return STR$_NORMAL or
;  858          2038  5                     ! STR$_INSVIRMEM, therefore if it wasn't success,
;  859          2039  5                     ! don't continue copying
;  860          2040  5                     !-
;  861          2041  5
;  862          2042  6                     IF (.LOC_RET_STAT)
;  863          2043  5                         THEN
;  864          2044  6                             BEGIN       ! successful allocate
;  865          2045  6                             CH$MOVE (.SRC_LEN, .SRC_ADDR, ! copy to temp
;  866          2046  6                                     .TEMP_DESC [DSC$A_POINTER]);
;  867          2047  6                             $STR$EXCH_DESCS (TEMP_DESC, DEST_DESC);
;  868          2048  6                                                         ! switch temp
;  869          2049  6                                                         ! and dest
;  870          2050  6                             LOC_RET_STAT = $STR$DEALLOCATE (TEMP_DESC);
;  871          2051  6                                                         ! return former
;  872          2052  6                                                         ! string
;  873          2053  6                             !+
;  874          2054  6                             ! $STR$DEALLOCATE returns either STR$_NORMAL
;  875          2055  6                             ! or STR$_FATINTERR.
;  876          2056  6                             !-
;  877          2057  6                             IF NOT .LOC_RET_STAT
;  878          2058  6                             THEN
;  879          2059  6                                 RETURN_STATUS = LIB$_FATERRLIB ;
;  880          2060  6                             END         ! successful allocate
;  881          2061  5                         ELSE
;  882          2062  5                             RETURN_STATUS = LIB$_INSVIRMEM ;
;  883          2063  5                 END                         ! cannot directly fill dest
;  884          2064  5
;  885          2065  4             ELSE
;  886          2066  4
;  887          2067  5                 BEGIN                       ! directly fill dest
;  888          2068  5                 CH$MOVE (.SRC_LEN, .SRC_ADDR,   ! write dest
;  889          2069  5                         .DEST_DESC [DSC$A_POINTER]);
;  890          2070  5            DEST_DESC [DSC$W_LENGTH] = .SRC_LEN;
;  891          2071  4            END;                     ! directly fill dest
;  892          2072  4
;  893          2073  4         .RETURN_STATUS                        ! return the status
;  894          2074  3         END;
;  895          2075  3
```

```
3 !+
3 ! Class A and NCA array descriptor
3 ! *********************************
3 !-
3         [DSC$K_CLASS_A,           ! Class A Array descriptor
3          DSC$K_CLASS_NCA]:        ! Class NCA array descriptor
4             BEGIN
4             BUILTIN R0; ! len of uncopied src from MOVC5
4
4             IF .DEST_DESC [DSC$L_ARSIZE] GTR MAX_SIZE ! If size>max
4             THEN LIB$_INVSTRDES ;                         ! then quit
4
4             CH$COPY (.SRC_LEN, .SRC_ADDR, STR$K_FILL_CHAR,
4                      .DEST_DESC [DSC$L_ARSIZE],
4                      .DEST_DESC [DSC$A_POINTER]); ! do copy
4
4             IF .R0 EQLU 0    ! if no uncopied src
4             THEN
4                 RETURN_STATUS = SS$_NORMAL        ! then success
4             ELSE
4                 RETURN_STATUS = LIB$_STRTRU    !else truncation
4
3             END ;                 ! of Class A and NCA Array Descriptor
```

```
3 !+
3 ! Varying string descriptor
3 ! *************************
3 !-
3
3           [DSC$K_CLASS_VS]:       ! Varying string descriptor
4               BEGIN
5               IF (.SRC_LEN LEQU .DEST_DESC [DSC$W_MAXSTRLEN] )
4               THEN        ! fits within MAXLEN, copy and update CURLEN
5                   BEGIN
5                   CH$MOVE (.SRC_LEN, .SRC_ADDR,
5                            .DEST_DESC [DSC$A_POINTER] + 2);
5                   (.DEST_DESC [DSC$A_POINTER])<0,16> = .SRC_LEN ;
5                   SS$_NORMAL      ! return success status
5                   END
5
4               ELSE        ! Won't fit within MAXLEN. Only copy MAXLEN's
4                           ! worth of data and update CURLEN to MAXLEN
4
5                   BEGIN
5                   CH$MOVE (.DEST_DESC [DSC$W_MAXSTRLEN], .SRC_ADDR,
5                            .DEST_DESC [DSC$A_POINTER] + 2);
5                   (.DEST_DESC [DSC$A_POINTER])<0,16> =
5                                       .DEST_DESC [DSC$W_MAXSTRLEN] ;
5                   LIB$_STRTRU     ! return truncation status
5                   END
5
3               END ;               ! of Varying string descriptor
3
3
3 !+
3 ! Unsupported class descriptor
3 ! ****************************
3 !-
3
3           [INRANGE, OUTRANGE]:    ! Unsupported class of descriptor
3               LIB$_INVSTRDES ;
2       TES);                       ! end of set on class code
2
1       END;                                            ! end of LIB$SCOPY_R_DX6


                                                        .EXTRN  STR$$MOVQ_R1

                        5E            1C  C2 00000 LIB$SCOPY_R_DX6::
                                                        SUBL2   #28, SP                              ; 1922
                  04    AE            52  D0 00003      MOVL    R2, DEST_DESC                        ;
                                      51  DD 00007      PUSHL   R1                                   ;
                  04    AE            50  D0 00009      MOVL    R0, SRC_LEN                          ;
                        56            01  D0 0000D      MOVL    #1, RETURN_STATUS                    ; 1983
            7E    08    AE            03  C1 00010      ADDL3   #3, DEST_DESC, -(SP)                 ; 1984
            0F          00            9E  8F 00015      CASEB   @(SP)+, #0, #15                      ;
   0020     004F      0029          0029     00019 1$:  .WORD   3$-1$,-                              ;
   0020     0020      0020          020D     00021              3$-1$,-                              ;
   022F     020D      0029          0020     00029              7$-1$,-                              ;
   0029     0020      0020          0020     00031              2$-1$,-                              ;
```

```
                                                                        34$-1$,-                          :
                                                                        2$-1$,-                           :
                                                                        2$-1$,-                           :
                                                                        2$-1$,-                           :
                                                                        2$-1$,-                           :
                                                                        3$-1$,-                           :
                                                                        34$-1$,-                          :
                                                                        35$-1$,-                          :
                                                                        2$-1$,-                           :
                                                                        2$-1$,-                           :
                                                                        2$-1$,-                           :
                                                                        3$-1$                             :
                        56 00000000G   8F   D0 00039 2$:       MOVL     #LIB$_INVSTRDES, R6               :
                                       23   11 00040           BRB      6$                                :
                7E          08    AE        04   C1 00042 3$:       ADDL3    #4, DEST_DESC, -(SP)              : 2004
                                       9E   DD 00047           PUSHL    @(SP)+                            :
  0C    BE      20          04    BE      08   AE   2C 00049   MOVC5    SRC_LEN, @SRC_ADDR, #32, @DEST_DESC, @(SP)+ :
                                       9E      00051                                                      :
                                       50   D5 00052           TSTL     R0                                : 2006
                                       05   12 00054           BNEQ     4$                                :
                              50       01   D0 00056           MOVL     #1, R0                            :
                                       07   11 00059           BRB      5$                                :
                        50 00000000G   8F   D0 0005B 4$:       MOVL     #LIB$_STRTRU, R0                  :
                              56       50   D0 00062 5$:       MOVL     R0, R6                            :
                                     0217   31 00065 6$:       BRW      39$                               :
                51          08    AE   04   C1 00068 7$:       ADDL3    #4, DEST_DESC, R1                 : 2020
                              50       61   D0 0006D           MOVL     (R1), R0                          :
                                       51   D4 00070           CLRL     R1                                :
                                       50   D5 00072           TSTL     R0                                :
                                       06   12 00074           BNEQ     8$                                :
                                       51   D6 00076           INCL     R1                                :
                                       52   D4 00078           CLRL     R2                                :
                                       15   11 0007A           BRB      10$                               :
                      00F0    8F      08   BE   B1 0007C 8$:       CMPW     @DEST_DESC, #240                  :
                                       06   1B 00082           BLEQU    9$                                :
                              52      08   BE   3C 00084           MOVZWL   @DEST_DESC, R2                    :
                                       07   11 00088           BRB      10$                               :
                              52       50   D0 0008A 9$:       MOVL     R0, STRING_BLOCK                  :
                              52      FE   A2   3C 0008D           MOVZWL   -2(STRING_BLOCK), R2              :
                   000000F0   8F       52   D1 00091 10$:      CMPL     R2, #240                          :
                                       26   1F 00098           BLSSU    14$                               :
                              04       51   E9 0009A           BLBC     R1, 11$                           :
                                       52   D4 0009D           CLRL     R2                                :
                                       15   11 0009F           BRB      13$                               :
                      00F0    8F      08   BE   B1 000A1 11$:      CMPW     @DEST_DESC, #240                  :
                                       06   1B 000A7           BLEQU    12$                               :
                              52      08   BE   3C 000A9           MOVZWL   @DEST_DESC, R2                    :
                                       07   11 000AD           BRB      13$                               :
                              52       50   D0 000AF 12$:      MOVL     R0, STRING_BLOCK                  :
                              52      FE   A2   3C 000B2           MOVZWL   -2(STRING_BLOCK), R2              :
        52          04    AE          10   00   ED 000B6 13$:      CMPZV    #0, #16, SRC_LEN, R2              :
                                       26   13 000BC           BEQL     18$                               :
                                       27   11 000BE           BRB      19$                               :
                              04       51   E9 000C0 14$:      BLBC     R1, 15$                           :
                                       52   D4 000C3           CLRL     R2                                :
                                       15   11 000C5           BRB      17$                               :
                      00F0    8F      08   BE   B1 000C7 15$:      CMPW     @DEST_DESC, #240                  :
```

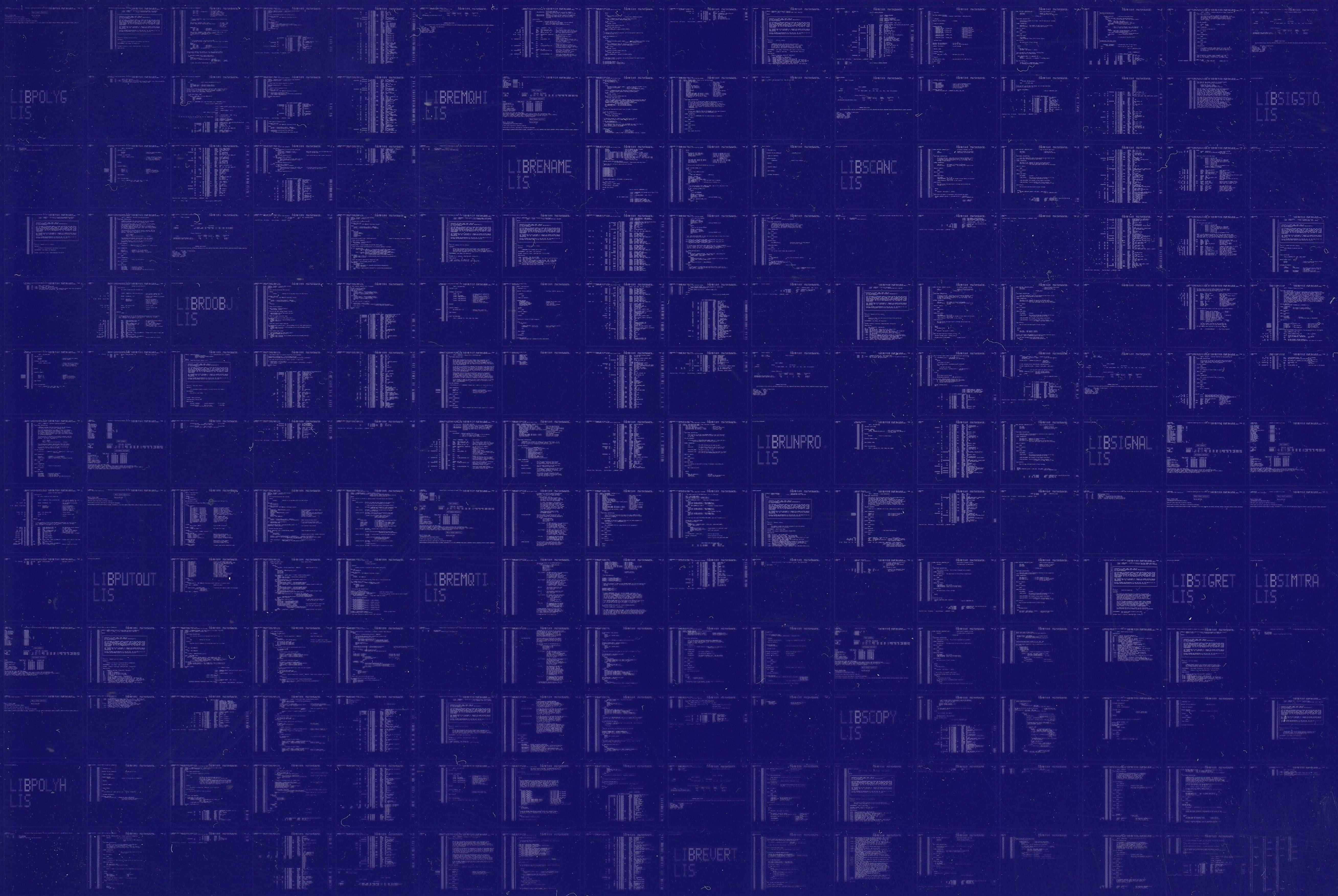
```
                                           06  1B 000CD         BLEQU   16$                                           :
                             52        08  BE  3C 000CF         MOVZWL  @DEST_DESC, R2                                :
                                           07  11 000D3         BRB     17$                                           :
                             52            50  D0 000D5 16$:    MOVL    R0, STRING_BLOCK                              :
                             52        FE  A2  3C 000D8         MOVZWL  -2(STRING_BLOCK), R2                          :
52       04    AE            10            00  ED 000DC 17$:    CMPZV   #0, #16, SRC_LEN, R2                          :
                                           03  1A 000E2         BGTRU   19$                                           :
                                         0132  31 000E4 18$:    BRW     33$                                           :
                             07 00000000G  00  E8 000E7 19$:    BLBS    STR$$V_INIT, 20$                              : 2034
                  00000000G  00            00  FB 000EE         CALLS   #0, STR$$INIT                                 :
                             50 00000000G  8F  D0 000F5 20$:    MOVL    #STR$_NORMAL, RETJRN_STATUS                   :
                       00F0  8F        04  AE  B1 000FC         CMPW    SRC_LEN, #240                                 :
                                           43  1A 00102         BGTRU   26$                                           :
                                       04  AE  B5 00104         TSTW    SRC_LEN                                       :
                                           04  12 00107         BNEQ    21$                                           :
                                           53  D4 00109         CLRL    TEMP                                          :
                                           31  11 0010B         BRB     25$                                           :
                             51        04  AE  3C 0010D 21$:    MOVZWL  SRC_LEN, R1                                   :
                                           51  D7 00111         DECL    R1                                            :
                             51            07  8A 00113         BICB2   #7, R1                                        :
                             54 00000000G0041  9E 00116         MOVAB   STR$$Q_SHORT_Q[R1], REMQUE_ADDR               :
                             53        00  B4  0F 0011E 22$:    REMQUE  @0(REMQUE_ADDR), TEMP                         :
                                           05  1D 00122         BVS     23$                                           :
                             52            01  D0 00124         MOVL    #1, ALLOC_DONE                                :
                                           0D  11 00127         BRB     24$                                           :
                                           52  D4 00129 23$:    CLRL    ALLOC_DONE                                    :
                             7E        04  AE  3C 0012B         MOVZWL  SRC_LEN, -(SP)                                :
                  00000000G  00            01  FB 0012F         CALLS   #1, STR$$ALOC_SHORT                           :
                             05            52  E8 00136 24$:    BLBS    ALLOC_DONE, 25$                               :
                             2E            50  E9 00139         BLBC    RETURN_STATUS, 28$                            :
                                           E0  11 0013C         BRB     22$                                           :
                             29            50  E9 0013E 25$:    BLBC    RETURN_STATUS, 28$                            :
                         1C  AE            53  D0 00141         MOVL    TEMP, TEMP_DESC+4                             :
                                           1E  11 00145         BRB     27$                                           :
                                       1C  AE  9F 00147 26$:    PUSHAB  TEMP_DESC+4                                   :
                         10  AE        08  AE  3C 0014A         MOVZWL  SRC_LEN, 16(SP)                               :
                                       10  AE  9F 0014F         PUSHAB  16(SP)                                        :
                  00000000G  00            02  FB 00152         CALLS   #2, LIB$GET_VM                                :
                             09            50  E8 00159         BLBS    RETURN_STATUS, 27$                            :
                             50 00000000G  8F  D0 0015C         MOVL    #STR$_INSVIRMEM, RETURN_STATUS                :
                                           05  11 00163         BRB     28$                                           :
                         18  AE        04  AE  B0 00165 27$:    MOVW    SRC_LEN, TEMP_DESC                            :
                         0C  AE            50  D0 0016A 28$:    MOVL    RETURN_STATUS, LOC_RET_STAT                   :
                             03        0C  AE  E8 0016E         BLBS    LOC_RET_STAT, 29$                             : 2042
                                         009B  31 00172         BRW     32$                                           :
         1C    BE        00  BE        04  AE  28 00175 29$:    MOVC3   SRC_LEN, @SRC_ADDR, @TEMP_DESC+4              : 2046
                         10  AE        08  BE  B0 0017C         MOVW    @DEST_DESC, $STR$TEMP_DESC                    : 2047
               50        08  AE            04  C1 00181         ADDL3   #4, DEST_DESC, R0                             :
                         14  AE            60  D0 00186         MOVL    (R0), $STR$TEMP_DESC+4                        :
               50        08  AE            02  C1 0018A         ADDL3   #2, DEST_DESC, R0                             :
                         1A  AE            60  90 0018F         MOVB    (R0), TEMP_DESC+2                             :
               50        08  AE            03  C1 00193         ADDL3   #3, DEST_DESC, R0                             :
                         1B  AE            60  90 00198         MOVB    (R0), TEMP_DESC+3                             :
                             50        18  AE  9E 0019C         MOVAB   TEMP_DESC, R0                                 :
                             51        08  AE  D0 001A0         MOVL    DEST_DESC, R1                                 :
                                00000000G  00  16 001A4         JSB     STR$$MOVQ_R1                                  :
                         18  AE        10  AE  B0 001AA         MOVW    $STR$TEMP_DESC, TEMP_DESC                     :
```

```
                      1C    AE         14    AE  D0 001AF          MOVL    $STR$TEMP_DESC+4, TEMP_DESC+4                   ;
                            50  00000000G    8F  D0 001B4          MOVL    #STR$_NORMAL, RETURN_STATUS                     ; 2050
                            52         1C    AE  D0 001BB          MOVL    TEMP_DESC+4, R2                                 ;
                                             3E  13 001BF          BEQL    31$                                             ;
                    00F0    8F         18    AE  B1 001C1          CMPW    TEMP_DESC, #240                                 ;
                                             1A  1A 001C7          BGTRU   30$                                             ;
                            51               52  D0 001C9          MOVL    R2, STRING_BLOCK                                ;
                            51         FE    A1  3C 001CC          MOVZWL  -2(STRING_BLOCK), ALLOC_LENGTH                  ;
                                             51  D7 001D0          DECL    R1                                              ;
                            51               07  8A 001D2          BICB2   #7, R1                                          ;
                            51  00000000G0041    9E 001D5          MOVAB   STR$$Q_SHORT_Q[R1], INSQUE_ADDR                 ;
                      00    B1               62  0E 001DD          INSQUE  (R2), @0(INSQUE_ADDR)                           ;
                                             1C  11 001E1          BRB     31$                                             ;
                                       1C    AE  9F 001E3 30$:     PUSHAB  TEMP_DESC+4                                     ;
                      0C    AE         1C    AE  3C 001E6          MOVZWL  TEMP_DESC, 12(SP)                               ;
                                       0C    AE  9F 001EB          PUSHAB  12(SP)                                          ;
               00000000G    00               02  FB 001EE          CALLS   #2, LIB$FREE_VM                                 ;
                            07               50  E8 001F5          BLBS    RETURN_STATUS, 31$                              ;
                            50  00000000G    8F  D0 001F8          MOVL    #STR$_FATINTERR, RETURN_STATUS                  ;
                      0C    AE               50  D0 001FF 31$:     MOVL    RETURN_STATUS, LOC_RET_STAT                     ;
                            78         0C    AE  E8 00203          BLBS    LOC_RET_STAT, 39$                               ; 2057
                            56  00000000G    8F  D0 00207          MOVL    #LIB$_FATERRLIB, RETURN_STATUS                  ; 2059
                                             6F  11 0020E          BRB     39$                                             ; 2042
                            56  00000000G    8F  D0 00210 32$:     MOVL    #LIB$_INSVIRMEM, RETURN_STATUS                  ; 2062
                                             66  11 00217          BRB     39$                                             ; 2019
                60    00    BE         04    AE  28 00219 33$:     MOVC3   SRC_LEN, @SRC_ADDR, (R0)                        ; 2069
                      08    BE         04    AE  B0 0021F          MOVW    SRC_LEN, @DEST_DESC                             ; 2070
                                             59  11 00224          BRB     39$                                             ; 2073
                50    08    AE               0C  C1 00226 34$:     ADDL3   #12, DEST_DESC, R0                              ; 2085
                7E    08    AE               04  C1 0022B          ADDL3   #4, DEST_DESC, -(SP)                            ; 2090
                                             9E  DD 00230          PUSHL   @(SP)+                                          ;
                7E    0C    AE               0C  C1 00232          ADDL3   #12, DEST_DESC, -(SP)                           ;
     9E         20    08    BE         0C    AE  2C 00237          MOVC5   SRC_LEN, @SRC_ADDR, #32, @(SP)+, @(SP)+         ;
                                             9E     0023E                                                                  ;
                                             50  D5 0023F          TSTL    R0                                              ; 2092
                                             35  12 00241          BNEQ    38$                                             ;
                            56               01  D0 00243          MOVL    #1, RETURN_STATUS                               ; 2094
                                             1D  11 00246          BRB     36$                                             ;
                51    08    AE               04  C1 00248 35$:     ADDL3   #4, DEST_DESC, R1                               ; 2110
                            50               61  9E 0024D          MOVAB   (R1), R0                                        ;
                      08    BE         04    AE  B1 00250          CMPW    SRC_LEN, @DEST_DESC                             ; 2106
                                             13  1A 00255          BGTRU   37$                                             ;
                            56               60  D0 00257          MOVL    (R0), R6                                        ; 2110
          02    A6    00    BE         04    AE  28 0025A          MOVC3   SRC_LEN, @SRC_ADDR, 2(R6)                       ;
                            66         04    AE  B0 00261          MOVW    SRC_LEN, (R6)                                   ; 2111
                            56               01  D0 00265 36$:     MOVL    #1, R6                                          ; 2108
                                             15  11 00268          BRB     39$                                             ;
                            56               60  D0 0026A 37$:     MOVL    (R0), R6                                        ; 2120
          02    A6    00    BE         08    BE  28 0026D          MOVC3   @DEST_DESC, @SRC_ADDR, 2(R6)                    ;
                            66         08    BE  B0 00274          MOVW    @DEST_DESC, (R6)                                ; 2122
                            56  00000000G    8F  D0 00278 38$:     MOVL    #LIB$_STRTRU, R6                                ; 2118
                            50               56  D0 0027F 39$:     MOVL    R6, R0                                          ; 1984
                            5E               20  C0 00282          ADDL2   #32, SP                                         ; 2138
                                                 05 00285          RSB                                                     ;

; Routine Size:  646 bytes,    Routine Base:  _LIB$CODE + 026F
```

```
;  962          2139  1 END
;  963          2140  0 ELUDOM




;                                       PSECT SUMMARY
;
;       Name                      Bytes                         Attributes
;
;   _LIB$CODE                         1269  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        16         0        581         00:00.8




;                                       COMMAND QUALIFIERS
;
;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS$:LIB$COPY/OBJ=OBJ$:LIB$COPY MSRC$:LIB$COPY/UPDATE=(ENH$:LIB$COPY)

; Size:         1269 code + 0 data bytes
; Run Time:        00:18.3
; Elapsed Time:    01:17.2
; Lines/CPU Min:    7012
; Lexemes/CPU-Min: 32267
; Memory Used:  205 pages
; Compilation Complete
```

0209 AH-BT13A-SE
VAX/VMS V4.0

DIGITAL EQUIPMENT CORPORATION
CONFIDENTIAL AND PROPRIETARY



LIBPOLYG
LIS

LIBREMQHI
LIS

LIBSIGSTO
LIS

LIBRENAME
LIS

LIBSCANC
LIS

LIBRDOBJ
LIS

LIBRUNPRO
LIS

LIBSIGNAL
LIS

LIBPUTOUT
LIS

LIBREMQTI
LIS

LIBSIGRET
LIS

LIBSIMTRA
LIS

LIBSCOPY
LIS

LIBPOLYH
LIS

LIBREVERT
LIS