D 8

LIBRTL

FILEID**LIBANASTR

```
LL            IIIIII    BBBBBBBB      AAAAAA    NN      NN    AAAAAA      SSSSSSSS  TTTTTTTTTT  RRRRRRRR
LL            IIIIII    BBBBBBBB      AAAAAA    NN      NN    AAAAAA      SSSSSSSS  TTTTTTTTTT  RRRRRRRR
LL              II      BB      BB  AA      AA  NN      NN  AA      AA  SS              TT      RR      RR
LL              II      BB      BB  AA      AA  NN      NN  AA      AA  SS              TT      RR      RR
LL              II      BB      BB  AA      AA  NNNN    NN  AA      AA  SS              TT      RR      RR
LL              II      BB      BB  AA      AA  NNNN    NN  AA      AA  SS              TT      RR      RR
LL              II      BBBBBBBB    AA      AA  NN  NN  NN  AA      AA    SSSSSS        TT      RRRRRRRR
LL              II      BBBBBBBB    AA      AA  NN  NN  NN  AA      AA    SSSSSS        TT      RRRRRRRR
LL              II      BB      BB  AAAAAAAAAA  NN    NNNN  AAAAAAAAAA          SS      TT      RR  RR
LL              II      BB      BB  AAAAAAAAAA  NN    NNNN  AAAAAAAAAA          SS      TT      RR  RR
LL              II      BB      BB  AA      AA  NN      NN  AA      AA          SS      TT      RR    RR        ....
LL              II      BB      BB  AA      AA  NN      NN  AA      AA          SS      TT      RR    RR        ....
LLLLLLLLLL    IIIIII    BBBBBBBB    AA      AA  NN      NN  AA      AA  SSSSSSSS        TT      RR      RR      ....
LLLLLLLLLL    IIIIII    BBBBBBBB    AA      AA  NN      NN  AA      AA  SSSSSSSS        TT      RR      RR      ....

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
```

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```
0000        .TITLE  LIB$ANALYZE_SDESC - Analyze string descriptor
0000        .IDENT  /1-003/         ; File: LIBANASTR.MAR Edit: DG1003
0000
0000    ;
0000    ;****************************************************************************
0000    ;*                                                                          *
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0000    ;*                                                                          *
0000    ;****************************************************************************
0000    ;
0000
0000    ;++
0000    ; FACILITY: General Utility Library
0000    ;
0000    ; ABSTRACT:
0000    ;
0000    ;       This module contains routines which extract the length and
0000    ;       address of the first byte of a string from any supported
0000    ;       class of string descriptor.
0000    ;
0000    ; ENVIRONMENT: Runs at any access mode, AST Reentrant
0000    ;
0000    ; AUTHOR: R. Reichert, CREATION DATE: 2-NOV-1981
0000    ;
0000    ; MODIFIED BY:
0000    ;
0000    ; 1-001 - Original. RKR 2-NOV-1981
0000    ; 1-002 - Add support for class SO string descriptors.  DG 3-Oct-1983.
0000    ; 1-003 - Change class SO string descriptors to SB.  DG 27-Feb-1984.
0000    ;--
```

```
    0000          .SBTTL  DECLARATIONS
    0000    ;
    0000    ; LIBRARY MACRO CALLS:
    0000    ;
    0000          $DSCDEF                       ; DSC$_ symbols
    0000          $SSDEF                        ; SS$_ symbols
    0000    ;
    0000    ; EXTERNAL DECLARATIONS:
    0000    ;
    0000    ; Prevent undeclared symbols from being automatically global.
    0000    ;
    0000          .DSABL  GBL
    0000          .EXTRN  LIB$_INVSTRDES            ; Invalid string descriptor
    0000    ;
    0000    ; MACROS:
    0000    ;
    0000          NONE
    0000    ;
    0000    ; EQUATED SYMBOLS:
    0000    ;
    0000          NONE
    0000    ;
    0000    ; OWN STORAGE:
    0000    ;
00000000          .PSECT _LIB$DATA PIC, USR, CON, REL, LCL, NOSHR, -
    0000                          NOEXE, RD, WRT, LONG
    0000    ;
    0000          NONE
    0000    ;
    0000    ; PSECT DECLARATIONS:
    0000    ;
    0000          .PSECT _LIB$CODE PIC, USR, CON, REL, LCL, SHR, -
00000000                          EXE, RD, NOWRT, LONG
    0000
```

```
                     0000         .SBTTL  LIB$ANALYZE_SDESC - Analyze string descriptor
                     0000   ;++
                     0000   ; FUNCTIONAL DESCRIPTION:
                     0000   ;
                     0000   ;       Extracts length and address of 1st data byte from any supported
                     0000   ;       class of string descriptor.
                     0000   ;
                     0000   ; CALLING SEQUENCE:
                     0000   ;
                     0000   ;       ret_status.wlc.v = LIB$ANALYZE_SDESC (DESC.rt.dx,
                     0000   ;                                             LENGTH.ww.r,
                     0000   ;                                             ADDR.wa.r )
                     0000   ;
                     0000   ; FORMAL PARAMETERS:
                     0000   ;
                     0000   ;       DESC.rt.dx      address of a string descriptor
                     0000   ;
                     0000   ;       LENGTH.ww.r     address of a word to receive the strings length
                     0000   ;
                     0000   ;       ADDR.wa.r       address of a longword to receive the address
                     0000   ;                       of the 1st data byte of the string.
                     0000   ; IMPLICIT INPUTS:
                     0000   ;
                     0000   ;       NONE
                     0000   ;
                     0000   ; IMPLICIT OUTPUTS:
                     0000   ;
                     0000   ;       NONE
                     0000   ;
                     0000   ; COMPLETION STATUS:
                     0000   ;
                     0000   ;       SS$_NORMAL      Normal successful completion
                     0000   ;       LIB$_INVSTRDES  Invalid string descriptor
                     0000   ;
                     0000   ; SIDE EFFECTS:
                     0000   ;
                     0000   ;       NONE
                     0000   ;
                     0000   ;--
                     0000
                     0000   ; Parameter displacements off AP
          00000004   0000   DESC            = 4
          00000008   0000   LENGTH          = 8
          0000000C   0000   ADDR            = 12
                     0000
              4004   0000         .ENTRY LIB$ANALYZE_SDESC, ^M<IV,R2>     ; Entry point
   50    04 AC  D0   0002         MOVL    DESC(AP), R0                    ; address of descriptor
00000015'GF     16   0006         JSB     G^LIB$ANALYZE_SDESC_R2          ; length ->R1
                     000C                                                 ; address->R2
                     000C                                                 ; status ->R0
   08 BC    51  B0   000C         MOVW    R1, @LENGTH(AP)                 ; length to callers variable
   0C BC    52  D0   0010         MOVL    R2, @ADDR(AP)                   ; address to callers variable
                04   0014         RET                                     ; Return, with status in R0.
```

```
0015         .SBTTL  LIB$ANALYZE_SDESC_R2 - Analyze string descriptor
0015    ;++
0015    ; FUNCTIONAL DESCRIPTION:
0015    ;
0015    ;       Extracts length and address of 1st data byte from any supported
0015    ;       class of string descriptor.
0015    ;
0015    ; CALLING SEQUENCE:
0015    ;
0015    ;       LIB$ANALYZE_SDESC (DESC.rt.dx, LENGTH.wl.v, ADDR.wa.v )
0015    ;
0015    ; FORMAL PARAMETERS:
0015    ;
0015    ;       DESC.rt.dx      (In R0) address of a string descriptor
0015    ;
0015    ;       LENGTH.wl.v     (Returned in R1) the strings length
0015    ;
0015    ;       ADDR.wa.v       (Returned in R2) the address
0015    ;                       of the 1st data byte of the string.
0015    ; IMPLICIT INPUTS:
0015    ;
0015    ;       NONE
0015    ;
0015    ; IMPLICIT OUTPUTS:
0015    ;
0015    ;       NONE
0015    ;
0015    ; COMPLETION STATUS:
0015    ;
0015    ;       SS$_NORMAL      Normal successful completion
0015    ;       LIB$_INVSTRDES  Invalid string descriptor
0015    ;
0015    ; SIDE EFFECTS:
0015    ;
0015    ;       NONE
0015    ;
0015    ;--
```

```
                              0015   LIB$ANALYZE_SDESC_R2::
                              0015
         52     04 A0   D0    0015              MOVL    DSC$A_POINTER(R0), R2   ; assume address of 1st byte
  0F     00     03 A0   8F    0019              CASEB   DSC$B_CLASS(R0), #DSC$K_CLASS_Z, #DSC$K_CLASS_SB
                      0028'   001E   10$:       .WORD   CLASS_Z-10$         ;  0    Z
                      0028'   0020              .WORD   CLASS_S-10$         ;  1    S
                      0028'   0022              .WORD   CLASS_D-10$         ;  2    D
                      0020'   0024              .WORD   CLASS_V-10$         ;  3    V  (obsolete)
                      002F'   0026              .WORD   CLASS_A-10$         ;  4    A
                      0020'   0028              .WORD   CLASS_P-10$         ;  5    P  (obsolete)
                      0020'   002A              .WORD   CLASS_PI-10$        ;  6    PI (obsolete)
                      0020'   002C              .WORD   CLASS_J-10$         ;  7    J  (obsolete)
                      0020'   002E              .WORD   CLASS_JI-10$        ;  8    JI (obsolete)
                      0028'   0030              .WORD   CLASS_SD-10$        ;  9    SD
                      002F'   0032              .WORD   CLASS_NCA-10$       ; 10    NCA
                      0040'   0034              .WORD   CLASS_VS-10$        ; 11    VS
                      0020'   0036              .WORD   CLASS_VSA-10$       ; 12    VSA
                      0020'   0038              .WORD   CLASS_UBS-10$       ; 13    UBS
                      0020'   003A              .WORD   CLASS_UBA-10$       ; 14    UBA
                      0028'   003C              .WORD   CLASS_SB-10$        ; 15    SB
                              003E
                              003E   CLASS_V:                                   ; obsolete classes
                              003E   CLASS_P:
                              003E   CLASS_PI:
                              003E   CLASS_J:
                              003E   CLASS_JI:
                              003E   CLASS_VSA:                                 ; nonstring classes that fall inrange
                              003E   CLASS_UBS:
                              003E   CLASS_UBA:
  50   00000000'8F      D0    003E   ERROR:     MOVL    #LIB$_INVSTRDES, R0        ; unsupported descriptor or
                              0045                                              ; invalid length in classes
                              0045                                              ; _A or _NCA
                        05    0045              RSB                             ; return to caller
                              0046
                              0046   CLASS_Z:                                   ; read like class _S
                              0046   CLASS_S:
                              0046   CLASS_D:
                              0046   CLASS_SD:
                              0046   CLASS_SB:
         51     60      3C    0046              MOVZWL  DSC$W_LENGTH(R0), R1    ; length
         50     01      D0    0049              MOVL    #SS$_NORMAL, R0         ; success status
                        05    004C              RSB                             ; return to caller
                              004D
                              004D   CLASS_NCA:                                 ; assume its really contiguous
                              004D   CLASS_A:
         51     0C A0   D0    004D              MOVL    DSC$L_ARSIZE(R0), R1
  51   FFFF0000 8F      D3    0051              BITL    #^XFFFF0000, R1         ; make sure < 2**16 -1
                E4      12    0058              BNEQU   ERROR                   ; else reject
         50     01      D0    005A              MOVL    #SS$_NORMAL, R0         ; success status
                        05    005D              RSB                             ; return to caller
                              005E
                              005E   CLASS_VS:                                  ; varying string
         51     82      3C    005E              MOVZWL  (R2)+, R1               ; length -> R1, R2 -> addr of
                              0061                                              ; 1st data byte
         50     01      D0    0061              MOVL    #SS$_NORMAL, R0         ; success status
                        05    0064              RSB                             ; return to caller
                              0065
```

```
0065   233          .END                        ; End of module LIB$ANALYZE_SDESC
```

```
ADDR                         = 0000000C
CLASS_A                        0000004D R      03
CLASS_D                        00000046 R      03
CLASS_J                        0000003E R      03
CLASS_JI                       0000003E R      03
CLASS_NCA                      0000004D R      03
CLASS_P                        0000003E R      03
CLASS_PI                       0000003E R      03
CLASS_S                        00000046 R      03
CLASS_SB                       00000046 R      03
CLASS_SD                       00000046 R      03
CLASS_UBA                      0000003E R      03
CLASS_UBS                      0000003E R      03
CLASS_V                        0000003E R      03
CLASS_VS                       0000005E R      03
CLASS_VSA                      0000003E R      03
CLASS_Z                        00000046 R      03
DESC                         = 00000004
DSC$A_POINTER                = 00000004
DSC$B_CLASS                  = 00000003
DSC$K_CLASS_SB               = 0000000F
DSC$K_CLASS_Z                = 00000000
DSC$L_ARSIZE                 = 0000000C
DSC$W_LENGTH                 = 00000000
ERROR                          0000003E R      03
LENGTH                       = 00000008
LIB$ANALYZE_SDESC              00000000 RG     03
LIB$ANALYZE_SDESC_R2           00000015 RG     03
LIB$_INVSTRDES                 ********    X   00
SS$_NORMAL                   = 00000001
```

```
+----------------+
! Psect synopsis !
+----------------+

PSECT name        Allocation          PSECT No.  Attributes
----------        ----------          ---------  ----------
.  ABS  .         00000000  (     0.)  00 (  0.)  NOPIC  USR  CON  ABS  LCL NOSHR NOEXE NORD  NOWRT NOVEC BYTE
$ABS$             00000000  (     0.)  01 (  1.)  NOPIC  USR  CON  ABS  LCL NOSHR   EXE   RD    WRT NOVEC BYTE
_LIB$DATA         00000000  (     0.)  02 (  2.)    PIC  USR  CON  REL  LCL NOSHR NOEXE   RD    WRT NOVEC LONG
_LIB$CODE         00000065  (   101.)  03 (  3.)    PIC  USR  CON  REL  LCL   SHR   EXE   RD  NOWRT NOVEC LONG
```

```
+------------------------+
! Performance indicators !
+------------------------+

Phase                     Page faults    CPU Time       Elapsed Time
-----                     -----------    --------       ------------
Initialization                     37    00:00:00.06    00:00:00.85
Command processing                123    00:00:00.30    00:00:02.14
Pass 1                            205    00:00:03.44    00:00:14.90
Symbol table sort                   0    00:00:00.55    00:00:01.90
Pass 2                             54    00:00:00.67    00:00:03.45
Symbol table output                 4    00:00:00.03    00:00:00.03
Psect synopsis output               2    00:00:00.02    00:00:00.02
Cross-reference output              0    00:00:00.00    00:00:00.00
Assembler run totals              427    00:00:05.07    00:00:23.29
```

The working set limit was 1200 pages.
27230 bytes (54 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 561 non-local and 1 local symbols.
233 source lines were read in Pass 1, producing 15 object records in Pass 2.
9 pages of virtual memory were used to define 8 macros.

```
+----------------------------+
! Macro library statistics !
+----------------------------+
```

Macro library name	Macros defined
_255DUA28:[SYSLIB]STARLET.MLB;2	5

604 GETS were required to define 5 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS$:LIBANASTR/OBJ=OBJ$:LIBANASTR MSRC$:LIBANASTR/UPDATE=(ENH$:LIBANASTR)

0203 AH-BT13A-SE
VAX/VMS V4.0

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LIS

LIBCLICAL
LIS

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