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LL      IIIIII  BBBB BBBB  AAAAAA  NN  NN  AAAAAA  SSSSSSSS  TTTTTTTTTT  RRRRRRRR
LL      IIIIII  BBBB BBBB  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      BBBB BBBB  AA      AA  NN  NN  AA      AA  SS      TT      RRRRRRRR
LL      II      BBBB BBBB  AA      AA  NN  NN  AA      AA  SSSSSS  TT      RRRRRRRR
LL      II      BB      BB  AAAAAAAAAA  NN  NN  AAAAAAAAAA  SS      TT      RR      RR
LL      II      BB      BB  AAAAAAAAAA  NN  NN  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  BBBB BBBB  AA      AA  NN  NN  AA      AA  SSSSSSSS  TT      RR      RR
LLLLLLLLLL  IIIIII  BBBB BBBB  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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(2) 49
(3) 84
(4) 138

DECLARATIONS
LIB\$ANALYZE_SDESC - Analyze string descriptor
LIB\$ANALYZE_SDESC_R2 - Analyze string descriptor

```
0000 1      .TITLE LIB$ANALYZE_SDESC - Analyze string descriptor
0000 2      .IDENT /1-003/ ; File: LIBANASTR.MAR Edit: DG1003
0000 3
0000 4 :
0000 5 :*****
0000 6 :
0000 7 :*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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0000 9 :*  ALL RIGHTS RESERVED.
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0000 19 :*  AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT
0000 20 :*  CORPORATION.
0000 21 :
0000 22 :*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
0000 23 :*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
0000 24 :
0000 25 :
0000 26 :*****
0000 27 :
0000 28 :
0000 29 :++
0000 30 : FACILITY: General Utility Library
0000 31 :
0000 32 : ABSTRACT:
0000 33 :
0000 34 :     This module contains routines which extract the length and
0000 35 :     address of the first byte of a string from any supported
0000 36 :     class of string descriptor.
0000 37 :
0000 38 : ENVIRONMENT: Runs at any access mode, AST Reentrant
0000 39 :
0000 40 : AUTHOR: R. Reichert, CREATION DATE: 2-NOV-1981
0000 41 :
0000 42 : MODIFIED BY:
0000 43 :
0000 44 : 1-001 - Original. RKR 2-NOV-1981
0000 45 : 1-002 - Add support for class S0 string descriptors. DG 3-Oct-1983.
0000 46 : 1-003 - Change class S0 string descriptors to SB. DG 27-Feb-1984.
0000 47 :--
```



```
0000 49      .SBTTL  DECLARATIONS
0000 50  ::
0000 51  :: LIBRARY MACRO CALLS:
0000 52  ::
0000 53      $DSCDEF      ; DSC$_symbols
0000 54      $SSDEF      ; SS$_symbols
0000 55  ::
0000 56  :: EXTERNAL DECLARATIONS:
0000 57  ::
0000 58  :: Prevent undeclared symbols from being automatically global.
0000 59  ::
0000 60      .DSABL  GBL
0000 61      .EXTRN  LIB$_INVSTRDES      ; Invalid string descriptor
0000 62  ::
0000 63  :: MACROS:
0000 64  ::
0000 65  ::     NONE
0000 66  ::
0000 67  :: EQUATED SYMBOLS:
0000 68  ::
0000 69  ::     NONE
0000 70  ::
0000 71  :: OWN STORAGE:
0000 72  ::
00000000 73      .PSECT _LIB$DATA PIC, USR, CON, REL, LCL, NOSHR, -
0000 74      NOEXE, RD, WRT, LONG
0000 75  ::
0000 76  ::     NONE
0000 77  ::
0000 78  :: PSECT DECLARATIONS:
0000 79  ::
00000000 80      .PSECT _LIB$CODE PIC, USR, CON, REL, LCL, SHR, -
00000000 81      EXE, RD, NOWRT, LONG
0000 82  ::
```

```
0000 84 .SBTTL LIB$ANALYZE_SDESC - Analyze string descriptor
0000 85 :++
0000 86 : FUNCTIONAL DESCRIPTION:
0000 87 :
0000 88 :     Extracts length and address of 1st data byte from any supported
0000 89 :     class of string descriptor.
0000 90 :
0000 91 : CALLING SEQUENCE:
0000 92 :
0000 93 :     ret_status.wlc.v = LIB$ANALYZE_SDESC (DESC.rt.dx,
0000 94 :                                           LENGTH.ww.r,
0000 95 :                                           ADDR.wa.r )
0000 96 :
0000 97 : FORMAL PARAMETERS:
0000 98 :
0000 99 :     DESC.rt.dx      address of a string descriptor
0000 100 :
0000 101 :     LENGTH.ww.r     address of a word to receive the strings length
0000 102 :
0000 103 :     ADDR.wa.r       address of a longword to receive the address
0000 104 :                     of the 1st data byte of the string.
0000 105 : IMPLICIT INPUTS:
0000 106 :
0000 107 :     NONE
0000 108 :
0000 109 : IMPLICIT OUTPUTS:
0000 110 :
0000 111 :     NONE
0000 112 :
0000 113 : COMPLETION STATUS:
0000 114 :
0000 115 :     $$$ NORMAL      Normal successful completion
0000 116 :     LIB$_INVSTRDES  Invalid string descriptor
0000 117 :
0000 118 : SIDE EFFECTS:
0000 119 :
0000 120 :     NONE
0000 121 :
0000 122 : --
0000 123 :
0000 124 : Parameter displacements off AP
00000004 0000 125 DESC = 4
00000008 0000 126 LENGTH = 8
0000000C 0000 127 ADDR = 12
0000 128
0000 129 .ENTRY LIB$ANALYZE_SDESC, ^M<IV,R2> ; Entry point
50 04 AC 4004 0002 130 MOVL DESC(AP), R0 ; address of descriptor
00000015'GF 16 0006 131 JSB G^LIB$ANALYZE_SDESC_R2 ; length ->R1
0000C 132 ; address->R2
0000C 133 ; status ->R0
08 BC 51 B0 000C 134 MOVW R1, @LENGTH(AP) ; length to callers variable
0C BC 52 D0 0010 135 MOVL R2, @ADDR(AP) ; address to callers variable
04 0014 136 RET ; Return, with status in R0.
```



```
0015 138 .SBTTL LIB$ANALYZE_SDESC_R2 - Analyze string descriptor
0015 139 :++
0015 140 : FUNCTIONAL DESCRIPTION:
0015 141 :
0015 142 :     Extracts length and address of 1st data byte from any supported
0015 143 :     class of string descriptor.
0015 144 :
0015 145 : CALLING SEQUENCE:
0015 146 :
0015 147 :     LIB$ANALYZE_SDESC (DESC.rt.dx, LENGTH.wl.v, ADDR.wa.v )
0015 148 :
0015 149 : FORMAL PARAMETERS:
0015 150 :
0015 151 :     DESC.rt.dx      (In R0) address of a string descriptor
0015 152 :
0015 153 :     LENGTH.wl.v     (Returned in R1) the strings length
0015 154 :
0015 155 :     ADDR.wa.v       (Returned in R2) the address
0015 156 :                     of the 1st data byte of the string.
0015 157 : IMPLICIT INPUTS:
0015 158 :
0015 159 :     NONE
0015 160 :
0015 161 : IMPLICIT OUTPUTS:
0015 162 :
0015 163 :     NONE
0015 164 :
0015 165 : COMPLETION STATUS:
0015 166 :
0015 167 :     $$$ NORMAL      Normal successful completion
0015 168 :     LIB$_INVSTRDES  Invalid string descriptor
0015 169 :
0015 170 : SIDE EFFECTS:
0015 171 :
0015 172 :     NONE
0015 173 :
0015 174 :--
```

```
0015 176 LIB$ANALYZE_SDESC_R2::
0015 177
OF 52 04 A0 D0 0015 178      MOVL      DSC$A_POINTER(R0), R2      ; assume address of 1st byte
00 00 03 A0 8F 0019 179      CASEB     DSC$B_CLASS(R0), #DSC$K_CLASS_Z, #DSC$K_CLASS_SB
0028' 001E 180 10$:      .WORD      CLASS_Z-10$      ; 0 Z
0028' 0020 181      .WORD      CLASS_S-10$      ; 1 S
0028' 0022 182      .WORD      CLASS_D-10$      ; 2 D
0020' 0024 183      .WORD      CLASS_V-10$      ; 3 V (obsolete)
002F' 0026 184      .WORD      CLASS_A-10$      ; 4 A (obsolete)
0020' 0028 185      .WORD      CLASS_P-10$      ; 5 P (obsolete)
0020' 002A 186      .WORD      CLASS_PI-10$     ; 6 PI (obsolete)
0020' 002C 187      .WORD      CLASS_J-10$      ; 7 J (obsolete)
0020' 002E 188      .WORD      CLASS_JI-10$     ; 8 JI (obsolete)
0028' 0030 189      .WORD      CLASS_SD-10$     ; 9 SD
002F' 0032 190      .WORD      CLASS_NCA-10$    ; 10 NCA
0040' 0034 191      .WORD      CLASS_VS-10$     ; 11 VS
0020' 0036 192      .WORD      CLASS_VSA-10$    ; 12 VSA
0020' 0038 193      .WORD      CLASS_UBS-10$    ; 13 UBS
0020' 003A 194      .WORD      CLASS_UBA-10$    ; 14 UBA
0028' 003C 195      .WORD      CLASS_SB-10$     ; 15 SB
003E 196
003E 197 CLASS_V:      ; obsolete classes
003E 198 CLASS_P:
003E 199 CLASS_PI:
003E 200 CLASS_J:
003E 201 CLASS_JI:
003E 202 CLASS_VSA:    ; nonstring classes that fall inrange
003E 203 CLASS_UBS:
003E 204 CLASS_UBA:
50 00000000'8F D0 003E 205 ERROR: MOVL      #LIB$_INVSTRDES, R0      ; unsupported descriptor or
0045 206      ; invalid length in classes
0045 207      ; A or NCA
0045 208      RSB      ; return to caller
0046 209
0046 210 CLASS_Z:      ; read like class _S
0046 211 CLASS_S:
0046 212 CLASS_D:
0046 213 CLASS_SD:
0046 214 CLASS_SB:
51 51 60 3C 0046 215      MOVZWL     DSC$W_LENGTH(R0), R1      ; length
50 50 01 D0 0049 216      MOVL      #SS$_NORMAL, R0      ; success status
004C 217      RSB      ; return to caller
004D 218
004D 219 CLASS_NCA:      ; assume its really contiguous
004D 220 CLASS_A:
51 51 0C A0 D0 004D 221      MOVL      DSC$L_ARSIZE(R0), R1
51 FFFF0000 8F D3 0051 222      BITL      #^FFFFFF0000, R1      ; make sure < 2**16 -1
50 50 01 D0 0058 223      BNEQU     ERROR      ; else reject
005A 224      MOVL      #SS$_NORMAL, R0      ; success status
005D 225      RSB      ; return to caller
005E 226
005E 227 CLASS_VS:      ; varying string
51 51 82 3C 005E 228      MOVZWL     (R2)+, R1      ; length -> R1, R2 -> addr of
50 50 01 D0 0061 229      ; 1st data byte
0061 230      MOVL      #SS$_NORMAL, R0      ; success status
0064 231      RSB      ; return to caller
0065 232
```


LIB\$ANALYZE_SDESC.
1-003

L 8
- Analyze string descriptor
LIB\$ANALYZE_SDESC_R2 - Analyze string de
0065 233 .END
15-SEP-1984 23:47:03 VAX/VMS Macro V04-00
6-SEP-1984 11:03:18 [LIBRTL.SRC]LIBANASTR.MAR;1
; End of module LIB\$ANALYZE_SDESC
Page 6
(5)

```
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
\$AB\$\$	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

_ \$255\$DUA28:[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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