```
BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSSS    RRRRRRRRRRR    TTTTTTTTTTTTTTT  LLL
BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSSS    RRRRRRRRRRR    TTTTTTTTTTTTTTTT LLL
BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSSS    RRRRRRRRRRR    TTTTTTTTTTTTTTTT LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT         LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT         LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT         LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT         LLL
BBB         BBB  AAA         AAA  SSS              RRR         RRR        TTT         LLL
BBBBBBBBBBBB     AAA         AAA              SSSSSSSSS  RRRRRRRRRRRR      TTT         LLL
BBBBBBBBBBBB     AAA         AAA              SSSSSSSSS  RRRRRRRRRRRR      TTT         LLL
BBBBBBBBBBBB     AAA         AAA              SSSSSSSSS  RRRRRRRRRRRR      TTT         LLL
BBB         BBB  AAAAAAAAAAAAAAAA        SSS  RRR   RRR                    TTT         LLL
BBB         BBB  AAAAAAAAAAAAAAAA        SSS  RRR   RRR                    TTT         LLL
BBB         BBB  AAAAAAAAAAAAAAAA        SSS  RRR   RRR                    TTT         LLL
BBB         BBB  AAA         AAA         SSS  RRR         RRR              TTT         LLL
BBB         BBB  AAA         AAA         SSS  RRR         RRR              TTT         LLL
BBB         BBB  AAA         AAA         SSS  RRR         RRR              TTT         LLL
BBBBBBBBBBBB     AAA         AAA  SSSSSSSSSSSS  RRR         RRR            TTT  LLLLLLLLLLLLLLLL
BBBBBBBBBBBB     AAA         AAA  SSSSSSSSSSSS  RRR         RRR            TTT  LLLLLLLLLLLLLLLL
BBBBBBBBBBBB     AAA         AAA  SSSSSSSSSSSS  RRR         RRR            TTT  LLLLLLLLLLLLLLLL
```

```
BBBBBBBB        AAAAAA        SSSSSSSS   TTTTTTTTTT   RRRRRRRR    MM        MM
BBBBBBBB        AAAAAA        SSSSSSSS   TTTTTTTTTT   RRRRRRRR    MM        MM
BB      BB    AA      AA    SS              TT        RR      RR  MMMM    MMMM
BB      BB    AA      AA    SS              TT        RR      RR  MM  MM  MM  MM
BB      BB    AA      AA    SS              TT        RR      RR  MM    MM    MM
BBBBBBBB      AA      AA    SSSSSS          TT        RRRRRRRR    MM        MM
BBBBBBBB      AA      AA    SSSSSS          TT        RRRRRRRR    MM        MM
BB      BB    AAAAAAAAAA          SS        TT        RR    RR    MM        MM
BB      BB    AAAAAAAAAA          SS        TT        RR    RR    MM        MM
BB      BB    AA      AA          SS        TT        RR      RR  MM        MM
BB      BB    AA      AA          SS        TT        RR      RR  MM        MM    ....
BBBBBBBB      AA      AA    SSSSSSSS        TT        RR      RR  MM        MM    ....
BBBBBBBB      AA      AA    SSSSSSSS        TT        RR      RR  MM        MM    ....

LL              IIIIII        SSSSSSSS
LL              IIIIII        SSSSSSSS
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
```

```
0000     1          .TITLE  BAS$TRM
0000     2          .IDENT  /1-008/              ; File: BASTRM.MAR      Edit: SBL1008
0000     3
0000     4   ;
0000     5   ;*******************************************************************************
0000     6   ;*                                                                             *
0000     7   ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                    *
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0000    23   ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                    *
0000    24   ;*                                                                             *
0000    25   ;*                                                                             *
0000    26   ;*******************************************************************************
0000    27   ;
0000    28
0000    29   ;++
0000    30   ; FACILITY: BASIC code support
0000    31   ;
0000    32   ; ABSTRACT:
0000    33   ;
0000    34   ;       This module implements the BASIC-PLUS-2 EDIT$ function.
0000    35   ;
0000    36   ; ENVIRONMENT: User Mode, AST Reentrant
0000    37   ;
0000    38   ;--
0000    39   ; AUTHOR: R. WILL, CREATION DATE: 2-May-79
0000    40   ;
0000    41   ; MODIFIED BY:
0000    42   ;
0000    43   ; R. Will, : VERSION 1
0000    44   ; 1-001 - Original
0000    45   ; 1-002 - Fix order of source and dest strs in TRM. RW 16-May-79
0000    46   ; 1-003 - Enable IV in entry masks.  RW 23-May-79
0000    47   ; 1-004 - Change calls to STR$COPY.   JBS 16-JUL-1979
0000    48   ; 1-005 - Make PIC.  RW  13-Sept-79
0000    49   ; 1-006 - String cleanup, call STR$TRM.  RW 31-Oct-79
0000    50   ; 1-007 - Make TRM a separate module.  RW  13-Nov-79
0000    51   ; 1-008 - Use general mode addressing.  SBL 30-Nov--1981
```

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1-008

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DECLARATIONS

15-SEP-1984 23:58:04   VAX/VMS Macro V04-00   Page 2
6-SEP-1984 10:38:28   [BASRTL.SRC]BASTRM.MAR;1   (2)

```
                0000      53                    .SBTTL   DECLARATIONS
                0000      54  ;
                0000      55  ; INCLUDE FILES:
                0000      56  ;
                0000      57
                0000      58          $DSCDEF                                    ; Define descriptor offsets
                0000      59
                0000      60  ;
                0000      61  ; EXTERNAL DECLARATIONS:
                0000      62  ;
                0000      63          .DSABL   GBL                              ; Prevent undeclared
                0000      64                                                    ; symbols from being
                0000      65                                                    ; automatically global.
                0000      66
                0000      67          .EXTRN   STR$TRIM                         ; routine to trim blanks and tabs
                0000      68
                0000      69  ; MACROS:
                0000      70  ;
                0000      71  ;
                0000      72
                0000      73  ;+
                0000      74  ; Macro to generate tables to translate ASCII characters.  This macro
                0000      75  ; will generate a table of bytes starting at the designated character
                0000      76  ; for the series of characters needed.
                0000      77  ;-
                0000      78
                0000      79          .MACRO  GEN_TRANS_TABLE, NUMBER_OF_CHARS, STARTING_CHAR
                0000      80          I = STARTING_CHAR
                0000      81          .REPT   NUMBER_OF_CHARS
                0000      82          .BYTE   I
                0000      83          I = I + 1
                0000      84          .ENDR
                0000      85          .ENDM
                0000      86
                0000      87  ;
                0000      88  ; EQUATED SYMBOLS:
                0000      89  ;
                0000      90
      00000020  0000      91          blank            = ^A/ /
      00000001  0000      92          space_or_tab     = ^X0001
      00000002  0000      93          junk_byte        = ^X0002
      00000004  0000      94          quote            = ^X0004
      00000003  0000      95          space_tab_junk   = ^X0003
                0000      96
      00000000  0000      97          trim_parity_bit = 0
      00000001  0000      98          disc_sp_tab_bit = 1
      00000002  0000      99          disc_junk_bit   = 2
      00000003  0000     100          disc_lead_bit   = 3
      00000004  0000     101          compact_bit     = 4
      00000005  0000     102          upper_case_bit  = 5
      00000006  0000     103          parens_bit      = 6
      00000007  0000     104          disc_trail_bit  = 7
      00000008  0000     105          ignor_quote_bit = 8
                0000     106
                0000     107  ;
                0000     108  ; OWN STORAGE:
                0000     109  ;
```

BAS$TRM
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DECLARATIONS

15-SEP-1984 23:58:04   VAX/VMS Macro V04-00
6-SEP-1984 10:38:28   [BASRTL.SRC]BASTRM.MAR;1

Page   3
(2)

```
0000      110
0000      111 ;
0000      112 ; PSECT DECLARATIONS:
0000      113 ;
00000000  114           .PSECT _BAS$CODE PIC, USR, CON, REL, LCL, SHR, -
0000      115                   EXE, RD, NOWRT, LONG
0000      116
```

BAS$TRM
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DECLARATIONS

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15-SEP-1984 23:58:04   VAX/VMS Macro V04-00   Page   4
6-SEP-1984 10:38:28   [BASRTL.SRC]BAS$TRM.MAR;1   (4)

```
              0000  118
              0000  119          .SBTTL  BAS$TRM              - Delete trailing blanks and spaces
              0000  120  ;++
              0000  121  ; FUNCTIONAL DESCRIPTION:
              0000  122  ;
              0000  123  ;       This routine deletes trailing tabs and spaces from the source string
              0000  124  ;       and then uses STR$COPY to write the string in the destination.  It
              0000  125  ;       finds the last non-blank character by starting at the end of the
              0000  126  ;       string and using each character to index into a table that has a
              0000  127  ;       flag for spaces and tabs.
              0000  128  ;
              0000  129  ; CALLING SEQUENCE:
              0000  130  ;
              0000  131  ;       CALL BAS$TRM (dest_string.wx.dx, src_string.rx.dx)
              0000  132  ;
              0000  133  ; INPUT PARAMETERS:
              0000  134  ;
    00000008  0000  135  ;       src_string = 8
              0000  136  ;
              0000  137  ; IMPLICIT INPUTS:
              0000  138  ;
              0000  139  ;       NONE
              0000  140  ;
              0000  141  ; OUTPUT PARAMETERS:
              0000  142  ;
    00000004  0000  143  ;       dest_string = 4
              0000  144  ;
              0000  145  ; IMPLICIT OUTPUTS:
              0000  146  ;
              0000  147  ;       NONE
              0000  148  ;
              0000  149  ; FUNCTION VALUE:
              0000  150  ; COMPLETION CODES:
              0000  151  ;
              0000  152  ;       NONE
              0000  153  ;
              0000  154  ; SIDE EFFECTS:
              0000  155  ;
              0000  156  ;       STR$COPY may allocate space to the destination string.  Any of
              0000  157  ;       STR$COPY's errors may be signalled.
              0000  158  ;
              0000  159  ;--
              0000  160
        0000  0000  161          .ENTRY BAS$TRM, ^M<>
              0002  162
              0002  163  ;+
              0002  164  ; Register usage
              0002  165  ;-
              0002  166
00000000'GF  6C  FA  0002  167          CALLG   (AP), G^STR$TRIM
            04  0009  168          RET                                    ; End of BAS$TRM
              000A  169
              000A  170
```

I 11

BAS$TRM   15-SEP-1984 23:58:04   VAX/VMS Macro V04-00   Page   5
1-008   BAS$TRM   - Delete trailing blanks and   6-SEP-1984 10:38:28   [BASRTL.SRC]BASTRM.MAR;1   (5)

```
                    000A       172  ;+
                    000A       173  ; The following tables are used for the SPANC, SCANC, and MOVTC instructions
                    000A       174  ; used in the BAS$EDIT routine
                    000A       175  ;-
                    000A       176
                    000A       177
                    000A       178  ;+
                    000A       179  ; Table used to 'remove parity bit' from all characters in the character
                    000A       180  ; string.  Used to ensure that the high bit is clear on all characters.
                    000A       181  ;-
                    000A       182
                    000A       183  PARITY_TAB:
                    000A       184       GEN_TRANS_TABLE 128, 0              ; fill ASCII character set
                    008A       185       GEN_TRANS_TABLE 128, 0              ; truncate hi bit
                    010A       186
                    010A       187  ;+
                    010A       188  ; Table used to translate lower case to uppercase.  Translate rest of
                    010A       189  ; ASCII character set to self.
                    010A       190  ;-
                    010A       191
                    010A       192  UPCASE_TAB:
                    010A       193       GEN_TRANS_TABLE 97, 0               ; fill table to start of lowercase
                    016B       194       GEN_TRANS_TABLE 26, 65             ; translate lower to upper
                    0185       195       GEN_TRANS_TABLE 133, 123           ; finish table, translate to self
                    020A       196
                    020A       197  SQBRAK_TO_PAREN:
                    020A       198       GEN_TRANS_TABLE 91, 0               ; translate to self
        28          0265       199       .BYTE            40                ; translate [ to (
        5C          0266       200       .BYTE            92                ; translate to self
        29          0267       201       .BYTE            41                ; translate ] to )
                    0268       202       GEN_TRANS_TABLE 162, 94            ; translate remainder to self
                    030A       203
                    030A       204  UPCASE_PAREN:
                    030A       205       GEN_TRANS_TABLE 91, 0               ; translate to self
        28          0365       206       .BYTE            40                ; translate [ to (
        5C          0366       207       .BYTE            92                ; translate to self
        29          0367       208       .BYTE            41                ; translate ] to )
                    0368       209       GEN_TRANS_TABLE 3, 94              ; translate to self
                    036B       210       GEN_TRANS_TABLE 26, 65             ; translate lower to upper
                    0385       211       GEN_TRANS_TABLE 133, 123           ; finish table, translate to self
                    040A       212
                    040A       213  SCAN_SPAN_TABLE:
        02          040A       214       .BYTE            junk_byte         ; NUL
00'00'00'00'00'00'00'00'  040B  215       .BYTE            0[8]              ; skip over
        01          0413       216       .BYTE            space_or_tab      ; tab
        02          0414       217       .BYTE            junk_byte         ; LF
        00          0415       218       .BYTE            0                 ; skip over
     02'02'         0416       219       .BYTE            junk_byte[2]      ; FF and CR
00'00'00'00'00'00'00'00'00'00'  0418  220       .BYTE            0[13]             ; skip over
        00'         0424
        02          0425       221       .BYTE            junk_byte         ; ESC
     00'00'00'00'   0426       222       .BYTE            0[4]              ; skip over
        01          042A       223       .BYTE            space_or_tab      ; space
        00          042B       224       .BYTE            0                 ; skip over
        04          042C       225       .BYTE            quote             ; double quote
     00'00'00'00'   042D       226       .BYTE            0[4]              ; skip over
        04          0431       227       .BYTE            quote             ; single quote
```

BAS$TRM
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BAS$TRM   - Delete trailing blanks and   15-SEP-1984 23:58:04   VAX/VMS Macro V04-00   Page   6
6-SEP-1984 10:38:28   [BASRTL.SRC]BASTRM.MAR;1   (5)

```
00'00'00'00'00'00'00'00'00'00'00'00' 0432   228      .BYTE        0[87]            ; skip over
00'00'00'00'00'00'00'00'00'00'00'00' 043E
00'00'00'00'00'00'00'00'00'00'00'00' 044A
00'00'00'00'00'00'00'00'00'00'00'00' 0456
00'00'00'00'00'00'00'00'00'00'00'00' 0462
00'00'00'00'00'00'00'00'00'00'00'00' 046E
00'00'00'00'00'00'00'00'00'00'00'00' 047A
                          00'00'00' 0486
                                02 0489   229      .BYTE        junk byte        ; DEL
00'00'00'00'00'00'00'00'00'00'00'00' 048A   230      .BYTE        0[128]           ; skip over
00'00'00'00'00'00'00'00'00'00'00'00' 0496
00'00'00'00'00'00'00'00'00'00'00'00' 04A2
00'00'00'00'00'00'00'00'00'00'00'00' 04AE
00'00'00'00'00'00'00'00'00'00'00'00' 04BA
00'00'00'00'00'00'00'00'00'00'00'00' 04C6
00'00'00'00'00'00'00'00'00'00'00'00' 04D2
00'00'00'00'00'00'00'00'00'00'00'00' 04DE
00'00'00'00'00'00'00'00'00'00'00'00' 04EA
00'00'00'00'00'00'00'00'00'00'00'00' 04F6
                 00'00'00'00'00'00'00'00' 0502
                                    050A   231      .END
```

```
BAS$TRM                          00000000 RG    02
JUNK_BYTE                      = 00000002
PARITY_TAB                       0000000A R     02
QUOTE                          = 00000004
SCAN_SPAN_TABLE                  0000040A R     02
SPACE_OR_TAB                   = 00000001
SQBRAK_TO_PAREN                  0000020A R     02
STR$TRIM                         *******  X     00
UPCASE_PAREN                     0000030A R     02
UPCASE_TAB                       0000010A R     02
```

```
                          +------------------+
                          ! 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
_BAS$CODE	0000050A (1290.)	02 (2.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.07	00:00:00.54
Command processing	104	00:00:00.48	00:00:02.44
Pass 1	226	00:00:07.60	00:00:15.55
Symbol table sort	0	00:00:00.19	00:00:00.40
Pass 2	57	00:00:01.72	00:00:03.86
Symbol table output	2	00:00:00.02	00:00:00.02
Psect synopsis output	2	00:00:00.03	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	422	00:00:10.11	00:00:22.84

The working set limit was 1350 pages.
53938 bytes (106 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 155 non-local and 0 local symbols.
231 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	4

190 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

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

BASUDFWF
LIS

BASSTRING
LIS

BASTERMIO
LIS

BASTRM
LIS

BASTAB
LIS

BASUDFRM
LIS

BASSYS
LIS

BASSTR
LIS

BASUDFRL
LIS