```
BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSS  RRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSS  RRRRRRRRRRR     TTTTTTTTTTTTTTT  LLL
BBBBBBBBBBBB        AAAAAAAAA        SSSSSSSSSSS  RRRRRRRRRRR     TTTTTTTTTTTTTTT  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
BBB         BBB   AAA         AAA  SSS            RRR         RRR         TTT        LLL
BBBBBBBBBBBB      AAA         AAA     SSSSSSSSS    RRRRRRRRRRR             TTT        LLL
BBBBBBBBBBBB      AAA         AAA     SSSSSSSSS    RRRRRRRRRRR             TTT        LLL
BBBBBBBBBBBB      AAA         AAA     SSSSSSSSS    RRRRRRRRRRR             TTT        LLL
BBB         BBB   AAAAAAAAAAAAAAA              SSS  RRR   RRR               TTT        LLL
BBB         BBB   AAAAAAAAAAAAAAA              SSS  RRR   RRR               TTT        LLL
BBB         BBB   AAAAAAAAAAAAAAA              SSS  RRR   RRR               TTT        LLL
BBB         BBB   AAA         AAA              SSS  RRR      RRR            TTT        LLL
BBB         BBB   AAAAAAAAAAAAAAA              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  SSSSSSSSSSS     RRR         RRR         TTT        LLLLLLLLLLLLLLL
BBBBBBBBBBBB      AAA         AAA  SSSSSSSSSSS     RRR         RRR         TTT        LLLLLLLLLLLLLLL
BBBBBBBBBBBB      AAA         AAA  SSSSSSSSSSS     RRR         RRR         TTT        LLLLLLLLLLLLLLL
```

```
BBBBBBBB      AAAAAA      SSSSSSSS    CCCCCCCC  LL          OOOOOO      SSSSSSSS  EEEEEEEEEE
BBBBBBBB      AAAAAA      SSSSSSSS    CCCCCCCC  LL          OOOOOO      SSSSSSSS  EEEEEEEEEE
BB      BB   AA      AA  SS          CC          LL        OO      OO  SS          EE
BB      BB   AA      AA  SS          CC          LL        OO      OO  SS          EE
BB      BB   AA      AA  SS          CC          LL        OO      OO  SS          EE
BB      BB   AA      AA  SS          CC          LL        OO      OO  SS          EE
BBBBBBBB     AA      AA    SSSSSS    CC          LL        OO      OO    SSSSSS    EEEEEEEE
BBBBBBBB     AA      AA    SSSSSS    CC          LL        OO      OO    SSSSSS    EEEEEEEE
BB      BB   AAAAAAAAAA          SS  CC          LL        OO      OO          SS  EE
BB      BB   AAAAAAAAAA          SS  CC          LL        OO      OO          SS  EE
BB      BB   AA      AA          SS  CC          LL        OO      OO          SS  EE
BB      BB   AA      AA          SS  CC          LL        OO      OO          SS  EE
BBBBBBBB     AA      AA  SSSSSSSS      CCCCCCCC  LLLLLLLLLL    OOOOOO    SSSSSSSS  EEEEEEEEEE
BBBBBBBB     AA      AA  SSSSSSSS      CCCCCCCC  LLLLLLLLLL    OOOOOO    SSSSSSSS  EEEEEEEEEE

LL              IIIIII      SSSSSSSS
LL              IIIIII      SSSSSSSS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II        SSSSSS
LL                II        SSSSSS
LL                II              SS
LL                II              SS
LL                II              SS
LL                II              SS
LLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLL      IIIIII    SSSSSSSS
```

```
;     1          0001  0 MODULE BAS$CLOSE (                          ! Close a BASIC file
;     2          0002  0                     IDENT = '1-008'          ! File: BASCLOSE.B32 EDIT:MDL1008
;     3          0003  0                     ) =
;     4          0004  1 BEGIN
;     5          0005  1
;     6          0006  1 !*****************************************************************************
;     7          0007  1 !*                                                                           *
;     8          0008  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
;     9          0009  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                    *
;    10          0010  1 !*  ALL RIGHTS RESERVED.                                                      *
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;    16          0016  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY     *
;    17          0017  1 !*  TRANSFERRED.                                                              *
;    18          0018  1 !*                                                                           *
;    19          0019  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE     *
;    20          0020  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT     *
;    21          0021  1 !*  CORPORATION.                                                              *
;    22          0022  1 !*                                                                           *
;    23          0023  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS     *
;    24          0024  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                   *
;    25          0025  1 !*                                                                           *
;    26          0026  1 !*                                                                           *
;    27          0027  1 !*****************************************************************************
;    28          0028  1 !
;    29          0029  1
;    30          0030  1 !++
;    31          0031  1 ! FACILITY:  BASIC-PLUS-2 I/O SUPPORT
;    32          0032  1 !
;    33          0033  1 ! ABSTRACT:
;    34          0034  1 !
;    35          0035  1 !       This module contains the routine which closes a file for
;    36          0036  1 !       a BASIC program.
;    37          0037  1 !
;    38          0038  1 ! ENVIRONMENT:  VAX-11 User Mode
;    39          0039  1 !
;    40          0040  1 ! AUTHOR: John Sauter, CREATION DATE: 16-FEB-1979
;    41          0041  1 !
;    42          0042  1 ! MODIFIED BY:
;    43          0043  1 !
;    44          0044  1 ! 1-001 - Original.  JBS 16-FEB-1979
;    45          0045  1 ! 1-002 - Use BASIOERR.REQ to define the I/O error codes.  JBS 20-FEB-1979
;    46          0046  1 ! 1-003 - Set up ISB$A_USER_FP.  JBS 25-JUL-1979
;    47          0047  1 ! 1-004 - Purge the I/O buffer explicitly, since OTS$$CLOSE_FILE doesn't
;    48          0048  1 !         any more.  JBS 27-AUG-1979
;    49          0049  1 ! 1-005 - If the file has had more than one stream connected to it, disconnect
;    50          0050  1 !         the other streams.  JBS 28-SEP-1979
;    51          0051  1 ! 1-006 - Call BAS$FIELD_CLOSE to remove fielded variables from
;    52          0052  1 !         the symbol table, in case the compiler doesn't. PLL 2-JUN-81
;    53          0053  1 ! 1-007 - Remove the call to BAS$FIELD_CLOSE, as it is unshared and BAS$CLOSE
;    54          0054  1 !         is shared.  PL 16-Jun-81
;    55          0055  1 ! 1-008 - call BAS$FIELD_CLOSE now, as all BAS$ entry points are now shared.
;    56          0056  1 !         MDL 26-Mar-1984
;    57          0057  1 !--
```

```
;   58          0058  1
;   59          0059  1 !<BLF/PAGE>
```

```
;    61          0060  1 !
;    62          0061  1 ! SWITCHES:
;    63          0062  1 !
;    64          0063  1
;    65          0064  1 SWITCHES ADDRESSING_MODE (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
;    66          0065  1
;    67          0066  1 !
;    68          0067  1 ! LINKAGES:
;    69          0068  1 !
;    70          0069  1
;    71          0070  1 REQUIRE 'RTLIN:OTSLNK';                         ! Define all the linkages
;    72          0499  1
;    73          0500  1 !
;    74          0501  1 ! TABLE OF CONTENTS:
;    75          0502  1 !
;    76          0503  1
;    77          0504  1 FORWARD ROUTINE
;    78          0505  1     BAS$CLOSE : NOVALUE;                        ! Close a file from BASIC
;    79          0506  1
;    80          0507  1 !
;    81          0508  1 ! INCLUDE FILES:
;    82          0509  1 !
;    83          0510  1
;    84          0511  1 REQUIRE 'RTLIN:RTLPSECT';                      ! Macros for defining psects
;    85          0606  1
;    86          0607  1 REQUIRE 'RTLML:OTSLUB';                        ! Define symbols in the LUB
;    87          0747  1
;    88          0748  1 REQUIRE 'RTLML:OTSISB';                        ! Define symbols in the ISB
;    89          0916  1
;    90          0917  1 REQUIRE 'RTLIN:BASIOERR';                      ! Define the I/O error codes.
;    91          0970  1
;    92          0971  1 LIBRARY 'RTLSTARLE';                           ! Define system symbols
;    93          0972  1
;    94          0973  1 !
;    95          0974  1 ! MACROS:
;    96          0975  1 !
;    97          0976  1 !       NONE
;    98          0977  1 !
;    99          0978  1 ! EQUATED SYMBOLS:
;   100          0979  1 !
;   101          0980  1 !       NONE
;   102          0981  1 !
;   103          0982  1 ! PSECTS:
;   104          0983  1 !
;   105          0984  1 DECLARE_PSECTS (BAS);                          ! Declare psects for BAS$ facility
;   106          0985  1 !
;   107          0986  1 ! OWN STORAGE:
;   108          0987  1 !
;   109          0988  1 !       NONE
;   110          0989  1 !
;   111          0990  1 ! EXTERNAL REFERENCES:
;   112          0991  1 !
;   113          0992  1
;   114          0993  1 EXTERNAL ROUTINE
;   115          0994  1     BAS$$CB_PUSH : JSB_CB_PUSH NOVALUE,        ! Load register CCB
;   116          0995  1     BAS$$CB_POP : JSB_CB_RET NOVALUE,          ! Done with register CCB
;   117          0996  1     BAS$$STOP_IO : NOVALUE,                    ! signals fatal I/O error
```

```
;  118          0997  1      BAS$$PUR_IO_CLO : CALL_CCB,                ! Purge I/O buffer
;  119          0998  1      BAS$FIELD_CLOSE : NOVALUE,                 ! delete FIELDed variables on this channel
;  120          0999  1      BAS$$CLOSE_ALL : NOVALUE,                  ! Close all files with a certain IFI
;  121          1000  1      OTS$$CLOSE_FILE;                           ! RMS Close a file
;  122          1001  1
;  123          1002  1  !+
;  124          1003  1  ! The following are the error codes used in this module.
;  125          1004  1  !-
;  126          1005  1
;  127          1006  1  EXTERNAL LITERAL
;  128          1007  1      BAS$K_PROLOSSOR : UNSIGNED (8);            ! Program lost, sorry
;  129          1008  1
;  130          1009  1
```

```
;  132          1010  1 GLOBAL ROUTINE BAS$CLOSE (                    ! Close a file
;  133          1011  1         CHANNEL                                ! The BASIC channel number
;  134          1012  1     ) : NOVALUE =
;  135          1013  1
;  136          1014  1 !++
;  137          1015  1 ! FUNCTIONAL DESCRIPTION:
;  138          1016  1 !
;  139          1017  1 !       Close an I/O channel from a BASIC-PLUS-2 program.
;  140          1018  1 !
;  141          1019  1 ! FORMAL PARAMETERS:
;  142          1020  1 !
;  143          1021  1 !       CHANNEL.rl.v    The number of an open channel, which is to
;  144          1022  1 !                       be closed.
;  145          1023  1 !
;  146          1024  1 ! IMPLICIT INPUTS:
;  147          1025  1 !
;  148          1026  1 !       NONE
;  149          1027  1 !
;  150          1028  1 ! IMPLICIT OUTPUTS:
;  151          1029  1 !
;  152          1030  1 !       NONE
;  153          1031  1 !
;  154          1032  1 ! ROUTINE VALUE:
;  155          1033  1 ! COMPLETION CODES:
;  156          1034  1 !
;  157          1035  1 !       NONE
;  158          1036  1 !
;  159          1037  1 ! SIDE EFFECTS:
;  160          1038  1 !
;  161          1039  1 !       Closes the specified channel.
;  162          1040  1 !
;  163          1041  1 !--
;  164          1042  1
;  165          1043  2     BEGIN
;  166          1044  2
;  167          1045  2     BUILTIN
;  168          1046  2         FP;
;  169          1047  2
;  170          1048  2     GLOBAL REGISTER
;  171          1049  2         CCB = K_CCB_REG : REF BLOCK [, BYTE];
;  172          1050  2
;  173          1051  2     LOCAL
;  174          1052  2         FMP : REF BLOCK [, BYTE];
;  175          1053  2
;  176          1054  2     FMP = .FP;
;  177          1055  2 !
;  178          1056  2 ! For compatability with the PDP-11 implementations, an attempt to
;  179          1057  2 ! CLOSE channel 0 is a no-operation.
;  180          1058  2 !-
;  181          1059  2
;  182          1060  3     IF (.CHANNEL NEQ 0)
;  183          1061  2     THEN
;  184          1062  3         BEGIN
;  185          1063  3
;  186          1064  3 !+
;  187          1065  3 ! Set up register CCB to point to the LUB/ISB/RAB for this channel.
;  188          1066  3 !-
```

```
;  189          1067  3          BAS$$CB_PUSH (.CHANNEL, LUB$K_LUN_MIN);
;  190          1068  3          CCB [ISB$A_USER_FP] = .FMP [SF$L_SAVE_FP];
;  191          1069  3      !+
;  192          1070  3      ! Purge the I/O buffer.  This will only happen or a non-forcible device
;  193          1071  3      ! on which the last PRINT statement ended with a comma or semicolon.
;  194          1072  3      !-
;  195          1073  3          BAS$$PUR_IO_CLO ();
;  196          1074  3
;  197          1075  3      !+
;  198          1076  3      ! get rid of any FIELDed variables on this channel, they are no longer valid.
;  199          1077  3      !-
;  200          1078  3          IF .CCB [LUB$V_FIELD_USE]
;  201          1079  3          THEN
;  202          1080  3              BAS$FIELD_CLOSE (.CHANNEL);
;  203          1081  3
;  204          1082  3      !+
;  205          1083  3      ! RMS CLOSE the file, if it is open.
;  206          1084  3      !-
;  207          1085  3
;  208          1086  4          IF (.CCB [LUB$V_OPENED])
;  209          1087  3          THEN
;  210          1088  4              BEGIN
;  211          1089  4      !+
;  212          1090  4      ! If the file might have other streams connected, disconnect them.
;  213          1091  4      !-
;  214          1092  4
;  215          1093  4              IF (.CCB [LUB$V_M_STR_C]) THEN BAS$$CLOSE_ALL (.CCB [LUB$W_IFI]);
;  216          1094  4
;  217          1095  4              IF ( NOT OTS$$CLOSE_FILE ()) THEN BAS$$STOP_IO (BAS$K_IOERR_REC);
;  218          1096  4
;  219          1097  3              END;
;  220          1098  3
;  221          1099  3      !+
;  222          1100  3      ! We are done with register CCB.  If this is the only use of this channel
;  223          1101  3      ! (as is likely), then the LUB/ISB/RAB will be deallocated.
;  224          1102  3      !-
;  225          1103  3          BAS$$CB_POP ();
;  226          1104  2          END;
;  227          1105  2
;  228          1106  1      END;                                    ! end of BAS$CLOSE

                                                                    .TITLE  BAS$CLOSE
                                                                    .IDENT  \1-008\

                                                                    .EXTRN  BAS$$CB_PUSH, BAS$$CB_POP
                                                                    .EXTRN  BAS$$STOP_IO, BAS$$PUR_IO_CLO
                                                                    .EXTRN  BAS$FIELD_CLOSE
                                                                    .EXTRN  BAS$$CLOSE_ALL, OTS$$CLOSE_FILE
                                                                    .EXTRN  BAS$K_PROLOSSOR

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

                                    080C 00000      .ENTRY  BAS$CLOSE, Save R2,R3,R11                       ; 1010
                          53        5D   D0 00002   MOVL    FP, FMP                                         ; 1054
                          52   04   AC   D0 00005   MOVL    CHANNEL, R2                                     ; 1060
                                    51   13 00009   BEQL    4$                                              ;
```

```
                                                 50  D4 0000B          CLRL    R0                                      ; 1067
                                     00000000G   00  16 0000D          JSB     BAS$$CB_PUSH                            ;
                          FF4C   CB      0C     A3  D0 00013          MOVL    12(FMP), -180(CCB)                      ; 1068
                00000000G   00                  00  FB 00019          CALLS   #0, BAS$$PUR_IO_CLO                     ; 1073
            09        A1   AB                   06  E1 00020          BBC     #6, -95(CCB), 1$                        ; 1078
                                                 52  DD 00025          PUSHL   R2                                      ; 1080
                00000000G   00                  01  FB 00027          CALLS   #1, BAS$FIELD_CLOSE                     ;
                            24      FC     AB   E9 0002E 1$:          BLBC    -4(CCB), 3$                             ; 1086
            0B        FF    AB                  03  E1 00032          BBC     #3, -1(CCB), 2$                         ; 1093
                            7E      D0     AB   3C 00037              MOVZWL  -48(CCB), -(SP)                         ;
                00000000G   00                  01  FB 0003B          CALLS   #1, BAS$$CLOSE_ALL                      ;
                00000000G   00                  00  FB 00042 2$:       CALLS   #0, OTS$$CLOSE_FILE                     ; 1095
                            0A                  50  E8 00049          BLBS    R0, 3$                                  ;
                            7E                  01  CE 0004C          MNEGL   #1, -(SP)                               ;
                00000000G   00                  01  FB 0004F          CALLS   #1, BAS$$STOP_IO                        ;
                                     00000000G   00  16 00056 3$:       JSB     BAS$$CB_POP                             ; 1103
                                                 04  0005C 4$:       RET                                             ; 1106

; Routine Size:  93 bytes,    Routine Base:  _BAS$CODE + 0000

;  229          1107  1
;  230          1108  1 END                                                   ! end of module BAS$CLOSE
;  231          1109  1
;  232          1110  0 ELUDOM

;                                  PSECT SUMMARY

;      Name                        Bytes                       Attributes

;  _BAS$CODE                         93  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         1         0         581        00:01.2


;                                     COMMAND QUALIFIERS

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

```
; Size:          93 code + 0 data bytes
; Run Time:        00:09.0
; Elapsed Time:    00:23.0
; Lines/CPU Min:    7375
; Lexemes/CPU-Min: 41534
; Memory Used:  119 pages
; Compilation Complete
```

BASCLOSE
LIS

BASCONCAT
LIS

BASCTRLO
LIS

BASCHANGE
LIS

BASCTRLC
LIS

BASCHAIN
LIS

BASCOPYFD
LIS

BASCHR
LIS

BASCMPAPP
LIS

BASCUTOUT
LIS

BASCCPOS
LIS