

EEEEEEEEE	DDDDDDDDDD	TTTTTTTTTT
EEEEEEEEE	DDDDDDDDDD	TTTTTTTTTT
EEEEEEEEE	DDDDDDDDDD	TTTTTTTTTT
EEE	DDD	TTT
EEEEEEEEE	DDDDDDDDDD	TTT
EEEEEEEEE	DDDDDDDDDD	TTT
EEEEEEEEE	DDDDDDDDDD	TTT

\*\*FILE\*\*ID\*\*EDT

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EEEEEEEEE	DDDDDDDD	TTTTTTTT
EEEEEEEEE	DDDDDDDD	TTTTTTTT
EE	DD	TT
EEEEEEEEE	DD	TT
EEEEEEEEE	DD	TT
EE	DD	TT
EEEEEEEEE	DDDDDDDD	TT
EEEEEEEEE	DDDDDDDD	TT

....  
....

RRRRRRRR	EEEEEEEEE	QQQQQ
RRRRRRRR	EEEEEEEEE	QQQQQ
RR RR	EE	QQ
RRRRRRRR	EEEEEEEEE	QQ
RRRRRRRR	EEEEEEEEE	QQ
RR RR	EE	QQ
RR RR	EEEEEEEEE	QQQQ Q
RR RR	EEEEEEEEE	QQQQ Q

\*\*\*\*\*  
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+ This file, EDT.REQ, contains definitions for EDT.

Edit history:

- 1-001 - Beginning of edit history.
- 1-002 - Add ASSERT macro, remove bugcheck codes. JBS 01-Jun-1981
- 1-003 - Offset the PDP-11 error codes. so they can be distinguished from system-specific error codes. JBS 16-Jul-1981
- 1-004 - Remove the error messages, putting them in ERRMSG.REQ. JBS 20-Jul-1981
- 1-005 - Add two fields to TBCB ; one points to the previous buffer, the other marks the buffer as a macro. Delete the creation of the MAC BLOCK structure TMV 6-Aug-81
- 1-006 - Add the verb number for the new bell verb. STS 10-Aug-1981
- 1-007 - Add INP\_JOURNAL and INP\_COMMAND to replace INP FILE. This lets us journal the responses to SUBSTITUTE/QUERY in the journal file. JBS 16-Aug-1981
- 1-008 - Add the verb number for the new day/time verb. STS 31-Aug-1981
- 1-009 - Update the routine and variable names. JBS & TMV 16-Aep-1981
- 1-010 - Add new verbs to set up default verb. STS 21-Sep-1981
- 1-011 - Add new verbs for delete select and toggle select. STS 23-Sep-1981
- 1-012 - Add new search and select verb. STS 24-Sep-1981
- 1-013 - Add literals for word and para types. STS 23-Oct-1981
- 1-014 - Add PREV RANGE. JBS 02-Nov-1981
- 1-015 - Add definitions for file i/o codes and streams. STS 08-Dec-1981
- 1-016 - Change edt\$\$k to edt\$k for file i/o definitions. STS 09-Dec-1981
- 1-017 - Add macro to set up address and length in string desc. STS 11-Jan-1982
- 1-018 - Fix above macro to work with 11's. STS 13-Jan-1982
- 1-019 - Add literals for open output seq and open output noseq. STS 13-Jan-1982
- 1-020 - Chang string desc macro for bliss16. STS 15-Jan-1982
- 1-021 - Change 32-bit arithmetic to 48-bit arithmetic. SMB 15-Jan-1982
- 1-022 - Modify block allocation so that odd address traps don't occur on 11's. SMB 25-Jan-1982

- 1-023 - Remove original line numbers. SMB 29-Jan-1982
- 1-024 - Make callable literals global. STS 08-Mar-1982
- 1-025 - Remove callable literals. STS 08-Mar-1982
- 1-026 - Add symbols for control C handling. JBS 24-May-1982
- 1-027 - Change VMS multiply. SMB 25-May-1982
- 1-028 - Add EDT\$SK\_FMT\_BUflen. JBS 05-Jul-1982
- 1-029 - Add verb for xlate. STS 13-Aug-1982
- 1-030 - Remove the keypad definitions to KEYPADDEF.REQ. JBS 13-Aug-1982
- 1-031 - Add ASC\_K\_CSI, for 8-bit keyboards. JBS 17-Aug-1982
- 1-032 - Add ASC\_K\_SS3, for 8-bit keyboards. JBS 20-Aug-1982
- 1-033 - Add verb K class. STS 26-Aug-1982
- 1-034 - Add K\_RDAHED\_LEN. JBS 31-Aug-1982
- 1-035 - Add new screen data structures. SMB 11-Sep-1982
- 1-036 - Put back a line that was deleted by mistake. SMB 15-Sep-1982
- 1-037 - Revise the EDIT section of the new screen data structures. JBS 17-Sep-1982
- 1-038 - Add CC\_RDCNT. JBS 17-Sep-1982
- 1-039 - Remove CC\_RDCNT. STS 20-Sep-1982
- 1-040 - Work on conditionalizing addline macro for speed. STS 30-Sep-1982
- 1-041 - Add memory allocation maximum. SMB 18-Oct-1982
- 1-042 - Add macros for comparing line numbers. STS 20-Oct-1982
- 1-043 - Work on 11-version of compare macro. STS 21-Oct-1982
- 1-044 - Bind high word of linenumbers in compare macro. STS 21-Oct-1982
- 1-045 - Fix bug in compare. STS 22-Oct-1982
- 1-046 - Work on 11 version of compare macro. STS 26-Oct-1982
- 1-047 - Change 11 compare to call EDT\$\$CMP\_LNO. STS 27-Oct-1982
- 1-048 - Add SCR\_EDIT\_MINPOS, remove a bunch of unused and obsolete definitions. JBS 27-Oct-1982
- 1-049 - Reduce the size of the screen edit area on the PDP-11. This saves space at the expense of time. JBS 15-Nov-1982
- 1-050 - Remove the edit buffer entirely. JBS 27-Dec-1982
- 1-051 - Reduce the amount of code generated by the ASSERT macro, to try to save space on the PDP-11. JBS 16-Jan-1983
- 1-052 - Correct the definition of SS3. JBS 19-Jan-1983
- 1-053 - Change the format buffer size for VMS. SMB 24-Feb-1983
- 1-054 - Remove WC\_K\_NUM\_BUKT. JBS 29-Mar-1983

```
+  
DEFINITION_DEFINITIONS
```

```
-  
The following definitions are used to facilitate further definitions.
```

```
+  
Field definition macros. This set of macros allows for definitions  
of the fields of data structures, letting the compiler compute the  
the offsets.
```

```
COMPILETIME FIELD_OFFSET = 0;  
COMPILETIME NUMBER_ONE = 1;
```

```
MACRO START_FIELDS(FIELD_NAME) =  
FIELD_FIELD_NAME =  
SET  
%ASSIGN(FIELD_OFFSET,0) %;
```

```
MACRO A_FIELD(FIELD_NAME1,LENGTH) =  
FIELD_NAME1 = [FIELD_OFFSET/8,FIELD_OFFSET MOD 8,LENGTH,0]  
%ASSIGN(FIELD_OFFSET,FIELD_OFFSET+LENGTH) %;
```

```
MACRO INC_FIELD (LENGTH) =  
%ASSIGN(FIELD_OFFSET,FIELD_OFFSET+LENGTH) %;
```

```
MACRO END_FIELDS = TES;%;
```

```
MACRO STRUC_SIZE(SIZE) = LITERAL SIZE = (FIELD_OFFSET+7)/8; %;
```

+  
IMPLEMENTATION PARAMETERS.

- The following definitions are parameters used in the work-file system  
which may require re-definition for different implementations.

## LITERAL

WF\_BLN\_LEN = 16; ! Bit length of a work-file block number.  
LINE\_NUM\_LEN = 16; ! Bit length of a line number. (actually 3\*16=48)

+ TBCB\_DEFINITION

The EDT work file can contain multiple, independent data sets referred to as Text Buffers. A text buffer corresponds to the construct of the same name found in EDT user documentation, it is a sequential file of variable length records. The records are grouped together into blocks of 512 characters. The records in a block are sequentially ordered, though the blocks themselves are not. Each block contains a two-byte link to the previous and following blocks. In addition to the lines in the work-file, an input file may be associated with a text buffer. In this case the input file is logically placed at the end of the text buffer. The Text buffer is accessed via a control block called the Text Buffer Control Block, or TBCB.

- START\_FIELDS(TBCB\_FIELDS)

A_FIELD(TBCB_LINE_ADDR,%BPADDR),	Pointer to current line.
A_FIELD(TBCB_CUR_BUKT,WF_BLN_LEN),	Current bucket number.
A_FIELD(TBCB_CUR_LIN,LINE_NUM_LEN),	Current line number.
A_FIELD(TBCB_CUR_LINM,LINE_NUM_LEN),	
A_FIELD(TBCB_CUR_LINH,LINE_NUM_LEN),	
A_FIELD(TBCB_CHAR_POS,WF_BCN_LEN),	The character position within the line
A_FIELD(TBCB_FIRST_BUKT,WF_BCN_LEN),	First bucket number.
A_FIELD(TBCB_LAST_BUKT,WF_BLNLEN),	Last bucket number.
A_FIELD(TBCB_INPUT_LINE,LINE_NUM_LEN),	Number of last input line.
A_FIELD(TBCB_INPUT_LINM,LINE_NUM_LEN),	
A_FIELD(TBCB_INPUT_LINH,LINE_NUM_LEN),	
A_FIELD(TBCB_LINE_COUNT,LINE_NUM_LEN),	Count of lines in buffer.
A_FIELD(TBCB_LC_M,LINE_NUM_LEN),	
A_FIELD(TBCB_LC_H,LINE_NUM_LEN),	
A_FIELD(TBCB_CHAR_COUNT,%BPVAL),	Count of chars in buffer.
A_FIELD(TBCB_PREV_BUF,%BPADDR),	Pointer to previous text buffer.
A_FIELD(TBCB_NEXT_BUF,%BPADDR),	Pointer to next text buffer.
A_FIELD(TBCB_INPUT_RAB,8),	Pointer to input RAB.
A_FIELD(TBCB_IS_MAC,8),	This buffer is a macro
A_FIELD(TBCB_NAME_LEN,8),	Length of buffer name.
A_FIELD(TBCB_NAME,0)	Name of buffer

- END\_FIELDS

STRUC\_SIZE(TBCB\_SIZE) ! Define size of TBCB.

MACRO TBCB\_BLOCK = BLOCK[TBCB\_SIZE,BYTE] FIELD(TBCB\_FIELDS)% :

+ The pos block is the portion of the TBCB which contains information needed to locate the current line. This block must be identical to the first part of the TBCB or everything will fail.

- START\_FIELDS(POS\_FIELDS)

A_FIELD(POS_LINE_ADDR,%BPADDR),	Pointer to current line.
A_FIELD(POS_CUR_BUKT,WF_BLN_LEN),	Current bucket number.

```
A_FIELD(POS_CUR_LIN,LINE_NUM_LEN),      ! Current line number.  
A_FIELD(POS_CUR_LINM,LINE_NUM_LEN),  
A_FIELD(POS_CUR_LINH,LINE_NUM_LEN);  
A_FIELD(POS_CHAR_POS,WF_B[N_LEN])  
END_FIELDS  
  
STRUC_SIZE(POS_SIZE)                  ! Define size of position information  
MACRO POS_BLOCK = BLOCK[POS_SIZE,BYTE] FIELD(POS_FIELDS)%;
```

**+ TEXT LINE DEFINITIONS**

- A line number contains an integer part and a fractional part.

```
START_FIELDS(LIN_FIELDS)
  A_FIELD(LIN_LENGTH,8),           ! Length of line
  A_FIELD(LIN_NUM,LINE_NUM_LEN),   ! The line number
  A_FIELD(LIN_NUMM,LINE_NUM_LEN),
  A_FIELD(LIN_NUMH,LINE_NUM_LEN),
  A_FIELD(LIN_TEXT,0)             ! The actual text
END_FIELDS
```

```
STRUC_SIZE(LIN_FIXED_SIZE)
```

```
MACRO LIN_BLOCK = BLOCK[LIN_FIXED_SIZE,BYTE] FIELD(LIN_FIELDS)%;
```

```
!+ WORK-FILE-BUCKET-DEFINITIONS
```

```
!- The work file is organized into blocks of WF_BLOCK_SIZE characters.  
Each Text Buffer in the work file consists of a linked list of blocks.
```

```
LITERAL WF_BUKT_SIZE = 512;           ! Size of a work-file block

START_FIELDS(WFB_FIELDS)
  A_FIELD(WFB_PREV_BUKT,WF_BLN_LEN),    ! Number of previous bucket
  A_FIELD(WFB_NEXT_BUKT,WF_BLN_LEN),    ! Number of next bucket
  A_FIELD(WFB_END,ZBPVAL),              ! Offset to last record in block
  A_FIELD(WFB_RECORDS,0)                ! Address of first record in block
END_FIELDS

STRUC_SIZE(WFB_FIXED_SIZE)
```

**LINE NUMBER BLOCK DEFINITIONS**

The line number is defined as a block, so it can be handled as  
three 16-bit words.

**FIELD LN\_FIELDS =****SET**  
**LN\_LO = [0,0,16,0],**  
**LN\_MD = [2,0,16,0],**  
**LN\_HI = [4,0,16,0]****TES;****MACRO LN\_BLOCK = BLOCK[6,BYTE] FIELD(LN\_FIELDS) %;****LITERAL LN\_SIZE = 6;****STRUCTURE****LNOVECTOR[I;N] = [N\*LN\_SIZE] (LNOVECTOR+I\*LN\_SIZE);**

+ Semantic node definitions.

The following defines the structures created by the EDT command parser semantic routines. These structures form a tree-like representation of the command.

The fields which are grouped together are re-definitions of the same slot for use in different types of nodes.

## FIELD NODE\_FIELDS =

SET

NODE\_TYPE = [0,0,8,0],

! Identifies the type of node

COM\_NUM = [1,0,8,0],

! Identifies the command

RAN\_TYPE = [1,0,8,0],

Identifier type of range

OP\_TYPE = [1,0,8,0],

Identifies type of operand

SEQ\_VAL = [1,0,8,0],

Did the seq switch have value.

RANGE1 = [%UPVAL,0,%BPVAL,0],

First range specifier

RAN\_VAL = [%UPVAL,0,%BPVAL,0],

Value for range specifier

SW\_BITS = [%UPVAL,0,%BPVAL,0],

Bits for each possible switch

SRCHADDR = [%UPVAL,0,%BPVAL,0],

Address of search string

SET\_TYPE = [%UPVAL,0,%BPVAL,0],

Which type of set command

LEFT\_OP = [%UPVAL,0,%BPVAL,0],

Left operand for binary ops

OP\_LEN = [%UPVAL,0,%BPVAL,0],

operand length for op nodes.

OP\_VAL = [%UPVAL,0,%BPVAL,0],

Operand value for numerics.

COM\_EXPR = [%UPVAL,0,%BPVAL,0],

Expression pointer for LET

OP\_EFTOP = [%UPVAL,0,%BPVAL,0],

Left operand for operators.

SUB\_BASE = [%UPVAL,0,%BPVAL,0],

Substring base string.

RANGE2 = [%UPVAL\*2,0,%BPVAL,0].

Second range specifier

SUB\_RANGE = [%UPVAL\*2,0,%BPVAL,0],

Pointer to range for ranges

STR\_PNT = [%UPVAL\*2,0,%BPVAL,0],

Pointer to a search string

SRCLEN = [%UPVAL\*2,0,%BPVAL,0],

Search string length

FILSPEC = [%UPVAL\*2,0,%BPVAL,0],

File specification address

SW\_VAL1 = [%UPVAL\*2,0,%BPVAL,0],

First value for switches

AS\_STR = [%UPVAL\*2,0,%BPVAL,0],

Addr of string for AS

RIGHT\_OP = [%UPVAL\*2,0,%BPVAL,0],

Right operand for binary ops.

BUF\_NAME = [%UPVAL\*2,0,%BPVAL,0],

Address of buffer name

OP\_ADDR = [%UPVAL\*2,0,%BPVAL,0],

Operand address for op nodes.

COM\_VARBL = [%UPVAL\*2,0,%BPVAL,0],

Variable pointer for LET

OP\_RIGHTOP = [%UPVAL\*2,0,%BPVAL,0],

Right operand for operators.

SUB\_START = [%UPVAL\*2,0,%BPVAL,0],

Substring start pos.

TAB\_COUNT = [%UPVAL\*2,0,%BPVAL,0],

Count for tabs adjust.

SET\_VAL1 = [%UPVAL\*3,0,%BPVAL,0].

Value for set command

REPADDR = [%UPVAL\*3,0,%BPVAL,0],

Replace string address

FSPCLEN = [%UPVAL\*3,0,%BPVAL,0],

File spec length

AS\_LEN = [%UPVAL\*3,0,%BPVAL,0],

Length of string for AS

BUF\_LEN = [%UPVAL\*3,0,%BPVAL,0],

length of buffer name

SUB\_LENGTH = [%UPVAL\*3,0,%BPVAL,0],

Substring length.

NEXT\_COM = [%UPVAL\*4,0,%BPVAL,0].

! Pointer to next command

NEXT\_RANGE = [%UPVAL\*4,0,%BPVAL,0], ! Pointer to next range  
REPLLEN = [%UPVAL\*4,0,%BPVAL,0], ! Replace string length  
SET\_VAL = [%UPVAL\*4,0,%BPVAL,0], ! Number of key for def key  
KEY\_VAL = [%UPVAL\*4,0,%BPVAL,0]  
  
PREV\_RANGE = [%UPVAL\*5,0,%BPVAL,0], ! Reverse of NEXT\_RANGE  
SWITS = [%UPVAL\*5,0,%BPVAL,0], ! Switch block pointer  
SW\_VAL2 = [%UPVAL\*5,0,%BPVAL,0], ! Second option switch value  
  
SW\_OVR1 = [%UPVAL\*6,0,%BPVAL,0], ! Part of second option switch  
SW\_OVR2 = [%UPVAL\*7,0,%BPVAL,0] ! Part of second option switch  
TES:

LITERAL  
NUM\_NODES = 20, ! Number of semantic nodes  
NODE\_SIZE = 8\*%UPVAL; ! Size of semantic node

LITERAL ! Node type equates

COM\_NODE = 1, ! Command node  
RANGE\_NODE = 2, ! Range node  
STR\_NODE = 3, ! SUBSTITUTE strings  
SW\_NODE = 4, ! Option switch value  
OP\_NODE = 5; ! Expression operand

MACRO NODE\_BLOCK = BLOCK[NODE\_SIZE,BYTE] FIELD(NODE\_FIELDS) %;

## + ASCII CHARACTER DEFINITIONS

Commonly used non-printing ASCII characters.

## LITERAL

```
ASC_K_BS    = %0'10';
ASC_K_TAB   = %0'11';
ASC_K_LF    = %0'12';
ASC_K_CTRL_K= %0'13';
ASC_K_FF    = %0'14';
ASC_K_CR    = %0'15';
ASC_K_SO    = %0'16';
ASC_K_SI    = %0'17';
ASC_K_CTRL_U= %0'25';
ASC_K_CTRL_Z= %0'32';
ASC_K_ESC   = %0'33';
ASC_K_SP    = %0'40';
ASC_K_DEL   = %0'177';
ASC_K_CSI   = ASC_K_ESC + %x'80';
ASC_K_SSS3  = ASC_K_SI + %x'80';
```

+ COMMAND NUMBER DEFINITIONS

The following values are used in a command type node to specify which command it is.

- LITERAL

COM_NULL	= 0,
COM_CHANGE	= 1,
COM_COPY	= 2,
COM_DEFINE	= 3,
COM_DELETE	= 4,
COM_EXIT	= 5,
COM_FIND	= 6,
COM_INCLUDE	= 7,
COM_INSERT	= 8,
COM_MOVE	= 9,
COM_PRINT	= 10,
COM_QUIT	= 11,
COM_REPLACE	= 12,
COM_RESEQ	= 13,
COM_SET	= 14,
COM_SHOW	= 15,
COM_SUBS	= 16,
COM_TYPE	= 17,
COM_WRITE	= 18,
COM_SUBS_NEXT	= 19,
COM_HELP	= 20,
COM_CLEAR	= 21,
COM_TADJ	= 22,
COM_FILL	= 23,
COM_DEF_MAC	= 24,
COM_MAC_CALL	= 25,
COM_VERIFY	= ?,
LAST_COM	= 25;

#### + RANGE TYPE DEFINITIONS

The following constants are used in range nodes to specify the type of range.

#### - LITERAL

RAN_NULL	= 0,
RAN_NUMBER	= 1,
RAN_DOT	= 2,
RAN_STR	= 3,
RAN_BEGIN	= 4,
RAN_END	= 5,
RAN_ORIG	= 6,
RAN_PATTERN	= 7,
RAN_LAST	= 8,
RAN_BEFORE	= 9,
RAN_REST	= 10,
RAN_WHOLE	= 11,
RAN_SELECT	= 12,
RAN_BUFFER	= 13,
RAN_PLUS	= 14,
RAN_MINUS	= 15,
RAN_FOR	= 16,
RAN_THRU	= 17,
RAN_MINSTR	= 18,
RAN_ALL	= 19,
RAN_AND	= 20,
NUM_RAN	= 20.      ! Total number of ranges
NUM_SLR	= 7;     ! number of single line ranges

#### - Operand types for operand nodes.

#### - LITERAL

OP_STRING	= 0,	Operand is a quoted string
OP_NUM	= 1,	Operand is a number
OP_VAR	= 2,	Operand is a variable
OP_DOT	= 3,	Operand is the dot pseudo variable
OP_ADD	= 4,	Operand is an addition operator
OP_SUB	= 5,	Operand is a subtractions operator
OP_MULT	= 6,	Operand is a multiplication operator
OP_DIV	= 7,	Operand is a division operator
OP_AND	= 8,	logical and
OP_OR	= 9,	logical or
OP_LSS	= 10,	compare for less
OP_LEQ	= 11,	compare for less or equal
OP_EQL	= 12,	Compare for equality
OP_GEQ	= 13,	compare for greater or equal
OP_GTR	= 14,	compare for greater
OP_NEQ	= 15,	compare for not equal
OP_AMP	= 16,	concatenation
OP_SUBSTR	= 17,	substringing
OP_NEG	= 18,	: negation

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```
OP_NOT      = 19,    ! logical not
OP_LENGTH   = 20,    ! length of
OP_COL      = 21,    ! current column
OP_FIND     = 22,
OP_POS      = 23,    ! current position
OP_LAST_OP  = 23;   ! last operand type
```

B C D E F G H I J K L M N B C D E F G H I J K L M N B C D E F G H I

```
!+
LINE NUMBER HANDLING MACROS
```

```
These macros are used for arithmetic involving line numbers, so it can  
be transportable across systems with various word lengths. At least 48  
bits of precision are required for line numbers. Line numbers are stored  
as an integer with a scale of -5, i.e. the true value * 10**5, so we can  
have 5 decimal positions and 10 integer positions in the line number.
```

```
!-
%IF %BLISS(BLISS32) %THEN
MACRO
  ADDLINE(S1,S2,DEST,MAX) =
!+
  Add 2 48-bit numbers using 2 longwords (so we can
  use the BLISS-32 Built-in macros).
!-
  BEGIN
%IF %CTCE(S1) %THEN
  %IF %LENGTH EQL 2 %THEN
!+
  add a compile time expression to s2 and store it in s2
!-
  BEGIN
  BIND
    FIRST_LWORD = S2 :LONG,
    NEXT_WORD = (S2+4) : WORD;
    FIRST_LWORD = .FIRST_LWORD +S1;
    IF .FIRST_LWORD LSSU S1
    THEN
      NEXT_WORD = .NEXT_WORD + 1;
    END
  %ELSE
!+
  add a compile time expression to s2 and store it in dest
!-
  BEGIN
  BIND FIRST_WORD = (DEST) : LONG,
    NEXT_WORD = (DEST+4) : WORD,
    SOURCE_2LO = (S2) : LONG,
    SOURCE_2HI = (S2+4) : WORD;

    FIRST_WORD = .SOURCE_2LO + S1;
    IF (.FIRST_WORD LSSU S1)
    THEN
      NEXT_WORD = .SOURCE_2HI + 1
    ELSE
      NEXT_WORD = .SOURCE_2HI;
    END
  %FI
%ELSE
!+
  we don't have a compile time expression, but we are adding two 48-bit numbers
!-
  %IF %LENGTH EQL 2 %THEN          ! store the result in S2
```

```
BEGIN
LOCAL SAVE: WORD;
BUILTIN ADDM;
BIND UPPER WORD = (S2+6) : WORD;
SAVE = .UPPER WORD;
ADDM(2,S1,S2,S2);
UPPER_WORD = .SAVE;
END
%ELSE
%IF %LENGTH EQL 3 %THEN      ! store the result in DEST
BEGIN
LOCAL
  SAVE : WORD;
BUILTIN ADDM;
BIND UPPER_WORD = (DEST+6) : WORD;

SAVE = .UPPER_WORD;
ADDM(2,S1,S2,DEST);
UPPER_WORD = .SAVE;
END
%ELSE
  BEGIN                  ! store the result in DEST and return
  LOCAL
    SAVES2 : WORD,
    SAVED : WORD;
  BIND
    S1_UP = (S1+6) : WORD,
    S2_UP = (S2+6) : WORD,
    DEST_UP = (DEST+6) : WORD;

  BUILTIN ADDM;
  SAVES2 = .S2_UP + .S1_UP;
  SAVED = .DEST_UP;
  ADDM(2,S1,S2,DEST);

  ! Get the overflow bit
  IF .DEST_UP EQL .SAVES2
  THEN
    MAX = 0
  ELSE
    MAX = 1;
  DEST_UP = .SAVED;
END
%FI
%FI
END%,

SUBLINE(S1,S2,DEST) =
! Subtract 2 48-bit numbers using 2 longwords
BEGIN
```

```
%IF %CTCE(S1) %THEN
  %IF %LENGTH EQL 2 %THEN
    + we have a compile time expression to add to S2 and store in S2
    -
      BEGIN
        LOCAL SAVE : LONG;
        BIND
          FIRST WORD = S2 : LONG,
          NEXT WORD = (S2+4) : WORD;
        SAVE = .FIRST_WORD;
        FIRST WORD = .FIRST_WORD - S1;
        IF .FIRST_WORD GTRU .SAVE
        THEN
          NEXT_WORD = .NEXT_WORD - 1;
        END
      %ELSE
    +
      add the compile time expression to S2 and store it in DEST
    -
      BEGIN
        BIND FIRST WORD = (DEST) : LONG,
        NEXT WORD = (DEST+4) : WORD,
        SOURCE_2LO = (S2) : LONG,
        SOURCE_2HI = (S2+4) : WORD;

        FIRST WORD = .SOURCE_2LO - S1;
        IF .FIRST_WORD GTRU .SOURCE_2LO
        THEN
          NEXT_WORD = .SOURCE_2HI - 1
        ELSE
          NEXT_WORD = .SOURCE_2HI;
        END
      %FI
    %ELSE
      %IF %LENGTH EQL 2 %THEN
    +
      add two 48 bit numbers and store result in S2
    -
      BEGIN
        LOCAL SAVE: WORD;
        BUILTIN SUBM;
        BIND UPPER WORD = (S2+6) : WORD;
        SAVE = .UPPER WORD;
        SUBM(2,S1,S2,S2);
        UPPER_WORD = .SAVE;
      END
    %ELSE
    +
      add two 48 bit numbers and store result in DEST
    -
      BEGIN
        LOCAL
          SAVE : WORD;
        BUILTIN SUBM;
        BIND UPPER_WORD = (DEST+6) : WORD;
```

```
SAVE = .UPPER_WORD;
SUBM(2,S1,S2,DEST);
UPPER_WORD = .SAVE;
END
XFI %FI
END%.
```

```
MULTLINE(S1,S2,DEST) =
!+ Multiply 2 48-bit numbers, but S1 MUST be <= 100,000
!-
BEGIN
BIND
M1 = S1 : BITVECTOR [32];
LOCAL M2 : VECTOR[2],
P : VECTOR[2];
BUILTIN ADDM, ASHQ;
!+
Set up the multiplicand and result in 64 bits, zeroing
out the upper 16-bits.
!-
M2[0] = .(S2)<0,32>; M2[1] = .(S2+4)<0,16>;
P[0] = 0; P[1] = 0;
!+
Since 65535 < multiplier <= 100,000... we only need to
examine the low order 17-bits.
!-
DECR I FROM 16 TO 0
DO
BEGIN
ASHQ(%REF(1), P, P);           ! Shift result left by 1 (multiply by 2)
IF (.M1[I]) THEN ADDM(2, P, M2, P);   ! Add multiplicand to result
END;
(DEST)<0,32> = .P[0]; (DEST+4)<0,16> = .P[1];
END%.
```

```
!+
compare two 48 bit line numbers to see if they are equal
!-
LINNOEQL(LIN1,LIN2) =
BEGIN
BIND
NO_1 = LIN1 : VECTOR[3,WORD];
NO_2 = LIN2 : VECTOR[3,WORD];
LOW_1 = NO_1[0] : LONG;
LOW_2 = NO_2[0] : LONG;
HIGH_1 = NO_1[2] : WORD;
HIGH_2 = NO_2[2] : WORD;
IF ((.LOW_1 EQL .LOW_2) AND (.HIGH_1 EQL .HIGH_2))
THEN
(1)
```

```
ELSE (0)
END%,
CMPLNO(LIN1,LIN2) =
BEGIN
BIND
    NO_1 = LIN1 : VECTOR[3,WORD];
    NO_2 = LIN2 : VECTOR[3,WORD];
    LOW_1 = NO_1[0] : LONG;
    LOW_2 = NO_2[0] : LONG;
    HIGH_1 = NO_1[2] : WORD;
    HIGH_2 = NO_2[2] : WORD;

    IF (.HIGH_1 LSSU .HIGH_2)
    THEN
        (-1)
    ELSE
        BEGIN
        IF (.HIGH_1 EQL .HIGH_2)
        THEN
            IF (.LOW_1 LSSU .LOW_2)
            THEN
                (-1)
            ELSE
                IF (.LOW_1 EQL .LOW_2) THEN (0) ELSE (1)
        ELSE
            (1)
        END
    END%,
MOVELINE(S,D) = (CH$MOVE(6,S,D))%,           ! Move 6 bytes of storage
BUILDLINE(S,D) = (D = S; (D+4) = 0)%;         ! Build a number
!
!ELSE %IF %BLISS(BLISS16) %THEN
MACRO
ADDLINE(S1,S2,DEST,MAX) =
BEGIN
%IF %CTCE(S1) %THEN
    %IF %LENGTH EQL 2 %THEN
        ! we are adding a constant to source_2 and storing in source_2
        !
        BEGIN
        BIND
            FIRST WORD = S2:WORD,
            NEXT WORD = (S2+2) : WORD,
            HIGH WORD = (S2+4) : WORD;
            FIRST WORD = .FIRST WORD + S1;
            IF .FIRST WORD EQL 0
            THEN
                BEGIN
                NEXT WORD = .NEXT WORD + 1;
```

```
        IF .NEXT_WORD EQL 0 THEN HIGH_WORD = .HIGH_WORD + 1;
        END;
    END
%ELSE
+ destination is DEST and we have a compile time constant
|- BEGIN
  BIND
    SOURCE_1 = S2 : WORD,
    SOURCE_2 = (S2+2) : WORD,
    SOURCE_3 = (S2+4) : WORD,
    FIRST WORD = DEST : WORD,
    NEXT WORD = (DEST+2) : WORD,
    HIGH WORD = (DEST+4) : WORD;
    FIRST WORD = .SOURCE_1 + $1;
    NEXT WORD = .SOURCE_2;
    HIGH WORD = .SOURCE_3;
    IF .FIRST WORD EQL 0
    THEN
      BEGIN
        NEXT WORD = .NEXT WORD + 1;
        IF .NEXT WORD EQL 0
        THEN
          HIGH WORD = .HIGH WORD + 1 ;
        END;
    END;
  END
%FI
+ we don't have a constant
|- %ELSE
  %IF %LENGTH EQL 2 %THEN
  BEGIN EXTERNAL ROUTINE A48_ADD; A48_ADD(S1,S2,S2) END
  %ELSE
    %IF %LENGTH EQL 3 %THEN
    BEGIN EXTERNAL ROUTINE A48_ADD; A48_ADD(S1,S2,DEST) END
    %ELSE
      BEGIN EXTERNAL ROUTINE A48_ADD; MAX = A48_ADD(S1,S2,DEST) END
    %FI
  %FI
END%,
SUBLINE(S1,S2,DEST) =
BEGIN
%IF %CTCE(S1) %THEN
  BEGIN
    %IF %LENGTH EQL 2 %THEN
      BEGIN
        LOCAL SAVE : WORD;
        BIND
          FIRST WORD = S2 : WORD,
          NEXT WORD = (S2+2) : WORD,
          HIGH WORD = (S2+4) : WORD;
        SAVE = .FIRST WORD;
      END;
    END;
  END;
```

```
FIRST_WORD = .FIRST_WORD - S1;
IF .FIRST_WORD GTRU .SAVE
THEN
BEGIN
NEXT_WORD = .NEXT_WORD - 1;
IF .NEXT_WORD EQL -1 THEN HIGH_WORD = .HIGH_WORD - 1;
END;
END
ELSE
```

```
+ subtract a compile time constant to S2 and put result in DEST
-
```

```
BEGIN
BIND
FIRST_WORD = DEST : WORD,
NEXT_WORD = (DEST+2) : WORD,
HIGH_WORD = (DEST+4) : WORD,
S2_LO = S2 : WORD,
S2_M = (S2+2) : WORD,
S2_HI = (S2+4) : WORD;
```

```
FIRST_WORD = .S2_LO - S1;
NEXT_WORD = .S2_M;
HIGH_WORD = .S2_HI;
IF .FIRST_WORD GTRU .S2_LO
THEN
BEGIN
NEXT_WORD = .NEXT_WORD - 1;
IF .NEXT_WORD EQL -1
THEN
HIGH_WORD = .HIGH_WORD - 1;
END;
```

```
END
```

```
XFI
END
```

```
ELSE
```

```
+ We don't have a compile time expression
-
```

```
XIF %LENGTH EQL 2 %THEN
BEGIN EXTERNAL ROUTINE A48_SUB; A48_SUB(S1,S2,S2) END
ELSE
BEGIN EXTERNAL ROUTINE A48_SUB; A48_SUB(S1,S2,DEST) END
```

```
XFI
```

```
END%.
```

```
MULTLINE(S5,S6,D3) =
BEGIN EXTERNAL ROUTINE A48_MUL; A48_MUL(S5,S6,D3) END %,
```

```
LINNOEQL (LIN1,LIN2) = (CH$EQL(6,LIN1,6,LIN2))%.
```

```
CMPLNO (LIN1,LIN2) =
BEGIN EXTERNAL ROUTINE EDT$SCMP_LNO; EDT$SCMP_LNO(LIN1,LIN2) END %,
```

```
MOVELINE(S11,D6) = (CH$MOVE(6,S11,D6))%.
```

```
BUILDLINE(S12,D7) = (D7 = S12; (D7+2) = 0; (D7+4) = 0)%;
```

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XFI XFI

!+  
OPTION SWITCH BIT DEFINITIONS  
!-

## LITERAL

```
OPT_QUERY = 2,  
OPT_BRIEF = 4,  
OPT_NOTYP = 8,  
OPT_SEQ = 16,  
OPT_DUPL = 32,  
OPT_SAVE = 64,  
OPT_STAY = 128;
```

## MACRO

```
OPB_QUERY = 1.1 %,  
OPB_BRIEF = 2.1 %,  
OPB_NOTYP = 3.1 %,  
OPB_SEQ = 4.1 %,  
OPB_DUPL = 5.1 %,  
OPB_SAVE = 6.1 %,  
OPB_STAY = 7.1 %;
```

! Input source definitions.

These constants define the source command line input.

LITERAL

INP_TERM = 0;	Terminal
INP_MACRO = 1;	A macro
INP_COMMAND = 2;	The startup file
INP_JOURNAL = 3;	The journal file (only during /RECOVER)

!+ Terminal type definitions.

These literals define the type of terminal we are running on.

LITERAL

TERM_UNKNOWN= 0,
TERM_VT52 = 1,
TERM_VT100 = 2,
TERM_HCPY = 3;

!+ Length of the type-ahead buffer

LITERAL

K\_RDAHED\_LEN = 32;

Editor mode definitions.

LITERAL

CHANGE_MODE = 0,
LINE_MODE = 1;

definitions for types of words and paras

LITERAL

DELIMITED = 0,
NOT_DELIMITED = 1,
WPSPARA = 0,
EDTPARA = 1;

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+ Define the error codes.  
-  
REQUIRE 'EDTSRC:ERRMSG.REQ';

+ Definition of the screen update data structure.  
This structure has an entry for each line which is represented on the screen.  
In NOTRUNCATE mode, each record may occupy one or more screen lines.

```
START_FIELDS(SCR_FIELDS)
A_FIELD(SCR_PRV_LINE,%BPADDR),           | Pointer to the previous line
A_FIELD(SCR_NXT_LINE,%BPADDR),           | Pointer to the next line
A_FIELD(SCR_LINE_IDX,8),                 | The i'th screen line of this record
A_FIELD(SCR_CHR_FROM,8),                | Workfile char position from
A_FIELD(SCR_CHR_TO,8),                  | Workfile char position to
A_FIELD(SCR_EDIT_MINPOS,8),             | Minimum position that has had an edit
A_FIELD(SCR_EDIT_MAXPOS,8),             | Maximum position that has had an edit
A_FIELD(SCR_EDIT_FLAGS,8)               | Modify, delete and insert flags
```

END\_FIELDS

STRUC\_SIZE(SCR\_SIZE);

MACRO  
SCREEN\_LINE = BLOCK[SCR\_SIZE,BYTE] FIELD(SCR\_FIELDS) %;

+ These flags go in SCR\_EDIT\_FLAGS and are also used when calling EDT\$\$MRK\_LNCHG.

LITERAL

```
SCR_EDIT MODIFY = 1,                   | This line has been modified
SCR_EDIT_INSLN = 2,                    | This line has been inserted
SCR_EDIT_DELLN = 4;                   | This line has been deleted
```

+ This hack added to get around problem in CH\$DIFF in BLISS16.  
-

```
%IF %BLISS(BLISS16) OR %BLISS(BLISS32) %THEN
MACRO
  CH$PTR_GTR(P1,P2) = (P1) GTRA (P2) %.
  CH$PTR_GEQ(P1,P2) = (P1) GEQA (P2) %.
  CH$PTR_EQL(P1,P2) = (P1) EQLA (P2) %.
  CH$PTR_LEQ(P1,P2) = (P1) LEQA (P2) %.
  CH$PTR_LSS(P1,P2) = (P1) LSSA (P2) %.
  CH$PTR_NEQ(P1,P2) = (P1) NEQA (P2) %;
%ELSE
MACRO
  CH$PTR_GTR(P1,P2) = CH$DIFF(P1,P2) GTR 0 %.
  CH$PTR_GEQ(P1,P2) = CH$DIFF(P1,P2) GEQ 0 %.
  CH$PTR_EQL(P1,P2) = CH$DIFF(P1,P2) EQL 0 %.
  CH$PTR_LEQ(P1,P2) = CH$DIFF(P1,P2) LEQ 0 %.
  CH$PTR_LSS(P1,P2) = CH$DIFF(P1,P2) LSS 0 %.
  CH$PTR_NEQ(P1,P2) = CH$DIFF(P1,P2) NEQ 0 %;
%FI
```

Define the entity types.

LITERAL

```
ENT_K_CHAR = 1,
ENT_K_WORD = 3,
ENT_K_BW = 5,
ENT_K_EW = 7,
ENT_K_LINE = 9,
ENT_K_BL = 11,
ENT_K_NL = 13,
ENT_K_VERT = 15,
ENT_K_EL = 17,
ENT_K_SEN = 19,
ENT_K_BSEN = 21,
ENT_K_ESEN = 23,
ENT_K_PAR = 25,
ENT_K_BPAR = 27,
ENT_K_EPAR = 29,
ENT_K_PAGE = 31,
ENT_K_BPAGE = 33,
ENT_K_EPAGE = 35,
ENT_K_BR = 37,
ENT_K_ER = 39,
ENT_K_QUOTE = 41,
ENT_K_SR = 43,
LAST_R_ENT = 43;
```

!+ Define the verb numbers.

These are the codes used to represent the change mode subcommands.

The verbs from VERB\_MOVE through VERB\_APPEND require entities and their verb numbers must remain contiguous.

!- LITERAL

VERB\_K\_MOVE = 0.  
VERB\_K\_DELETE= 1.  
VERB\_K\_REPLACE= 2.  
VERB\_K\_CHGC = 3.  
VERB\_K\_CHGU = 4.  
VERB\_K\_CHGL = 5.  
VERB\_K\_SSEL = 6.  
VERB\_K\_FILL = 7.  
VERB\_K\_TADJ = 8.  
VERB\_K\_CUT = 9.  
VERB\_K\_APPEND= 10.  
  
VERB\_K\_SEL = 11.

!+ verbs verb\_k\_subs through verb\_k\_cc are special since they require variable length strings - keep them together with subs always first and cc last.

VERB\_K\_SUBS = 12.  
VERB\_K\_PASTE= 13.  
VERB\_K\_INSERT= 14.  
VERB\_K\_XLATE = 15.  
VERB\_K\_CC = 16.  
VERB\_K\_EXIT = 17.  
VERB\_K\_SN = 18.  
VERB\_K\_UNDC = 19.  
VERB\_K\_UNDW = 20.  
VERB\_K\_UNDL = 21.  
VERB\_K\_ADV = 22.  
VERB\_K\_BACK = 23.  
VERB\_K\_REF = 24.  
VERB\_K\_TOP = 25.  
VERB\_K\_HELP = 26.  
VERB\_K\_ASC = 27.  
VERB\_K\_QUIT = 28.  
VERB\_K\_SHL = 29.  
VERB\_K\_SHR = 30.  
VERB\_K\_TAB = 31.  
VERB\_K\_TC = 32.  
VERB\_K\_TD = 33.  
VERB\_K\_TI = 34.  
VERB\_K\_EXT = 35.  
VERB\_K\_KS = 36.  
VERB\_K\_DEFK = 37.  
VERB\_K\_BELL = 38.

VERB\_K\_DATE = 39,  
VERB\_K\_DUPC = 40,  
VERB\_K\_DLWC = 41,  
VERB\_K\_DMOV = 42,  
VERB\_K\_DESEL = 43,  
VERB\_K\_TGSEL = 44,  
VERB\_K\_CLSS = 45,  
LAST\_K\_VERB = 45;

! Changecase types.

LITERAL

CASE\_K\_CHGC = 1; | Invert case, corresponds to VERB\_K\_CHGC  
CASE\_K\_CHGU = 2; | Upper case, corresponds to VERB\_K\_CHGU  
CASE\_K\_CHGL = 3; | Lower case, corresponds to VERB\_K\_CHGL

**!+ PARSE OP-CODE DEFINITIONS**

The following are the op-codes accepted by the parser driver.

**LITERAL**

OPC_ABORT	=	0,	Abort the parse
OPC_ACTION	=	1,	Perform action routine
OPC_CALL	=	2,	Call sub-table
OPC_RETURN	=	3,	End of table or sub-table (return)
OPC_GOTO	=	4,	Unconditional goto
OPC_OPTION	=	5,	Optional phrase check
OPC_REQUIRE	=	6,	Require a specific token
OPC_SELECT	=	7,	Select one of several options
OP_ABORT	=	0,	! now the bit values
OP_ACTION	=	32,	
OP_CALL	=	64,	
OP_RETURN	=	96,	
OP_GOTO	=	128,	
OP_OPTION	=	160,	
OP_REQUIRE	=	192,	
OP_SELECT	=	224;	

**!+ Token class definitions****LITERAL**

CL_NAME	=	0,	name class
CL_NUMBER	=	1,	the number class
CL_SPECIAL	=	2,	the special character class
CL_STRING	=	3;	The quoted string class

**!+ Parser token handling and matching macros****MACRO**

PAR\_MIN\_LENGTH = 0.0.3.0 %,  
PAR\_MAX\_LENGTH = 0.4.4.0 %,  
PAR\_OPT\_PERCENT = 0.3.1.0 %,  
PAR\_SYMBOL = 1.0.0.0 %;

!+  
! Miscellaneous definitions  
!-

%IF %BLISS(BLISS32) %THEN

MACRO STRING\_DESC(DESC,LEN,ADDR) =  
BEGIN EXTERNAL ROUTINE STR\$COPY\_R; STR\$COPY\_R(DESC,LEN,ADDR) END %;

%ELSE

!+  
! These DSC\$ macros are defined as system symbols on VAX/VMS. They are  
! fields in a string descriptor. To get the effect of a string descriptor  
! on the 11's, we will pass a 4 word field with the following macros defining  
! the pointer to the string address and the field of the string length.  
!-

MACRO

DSC\$A\_POINTER = 4,0,16,0%;  
DSC\$W\_LENGTH = 0,0,16,0%;

MACRO STRING\_DESC ( DESC, LEN, ADDR) =

BEGIN  
MAP  
 DESC: BLOCK[8,BYTE];  
 DESC[DSC\$A\_POINTER] = ADDR;  
 DESC[DSC\$W\_LENGTH] = .LEN;  
END %;

%FI

LITERAL

NO_UPDATE = 256,	! Indicating no update of current line needed
NO_REFRESH = 100,	! Indicating no refresh of screen needed
MESSAGE_LINE= 22,	! Line on which messages are displayed
COMMAND_LINE= 23,	! Line on which command prompts are displayed
DIR_FORWARD = 1,	Forward direction.
DIR_BACKWARD= 0:	Backward direction.

!+  
! Definition of the ASSERT macro. This macro calls EDT\$\$INTER\_ERR if the  
! condition is not true.  
!-

MACRO ASSERT (CONDITION) =

BEGIN  
IF (NOT (CONDITION))  
THEN  
 BEGIN  
 EXTERNAL ROUTINE EDT\$\$INTER\_ERR : NOVALUE;  
 EDT\$\$INTER\_ERR ();  
 END;  
END

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%:

ER  
I+  
I-  
XI  
XT  
LI  
I+  
I-  
MA  
CO  
LI  
UN  
XF  
I+  
I-  
I+  
I-  
MA

!+ Symbols used in control C journaling.

LITERAL

CC\_REC\_SIZE = 6; ! Size of a control C record  
J00\_REC\_ESC = %X'FF'; ! First (escape) byte of a non-text record in the journal file  
CC\_REC\_FLAG = 1; ! Second byte: control C record  
CC\_CTR\_MAX = 30000; ! Maximum counter value in control C handling

!+ Symbol used in the formatter

!- %IF %BLISS(BLISS32) %THEN

LITERAL

EDT\$\$K\_FMT\_BUflen = 512; ! Length of the format buffer

%ELSE

LITERAL

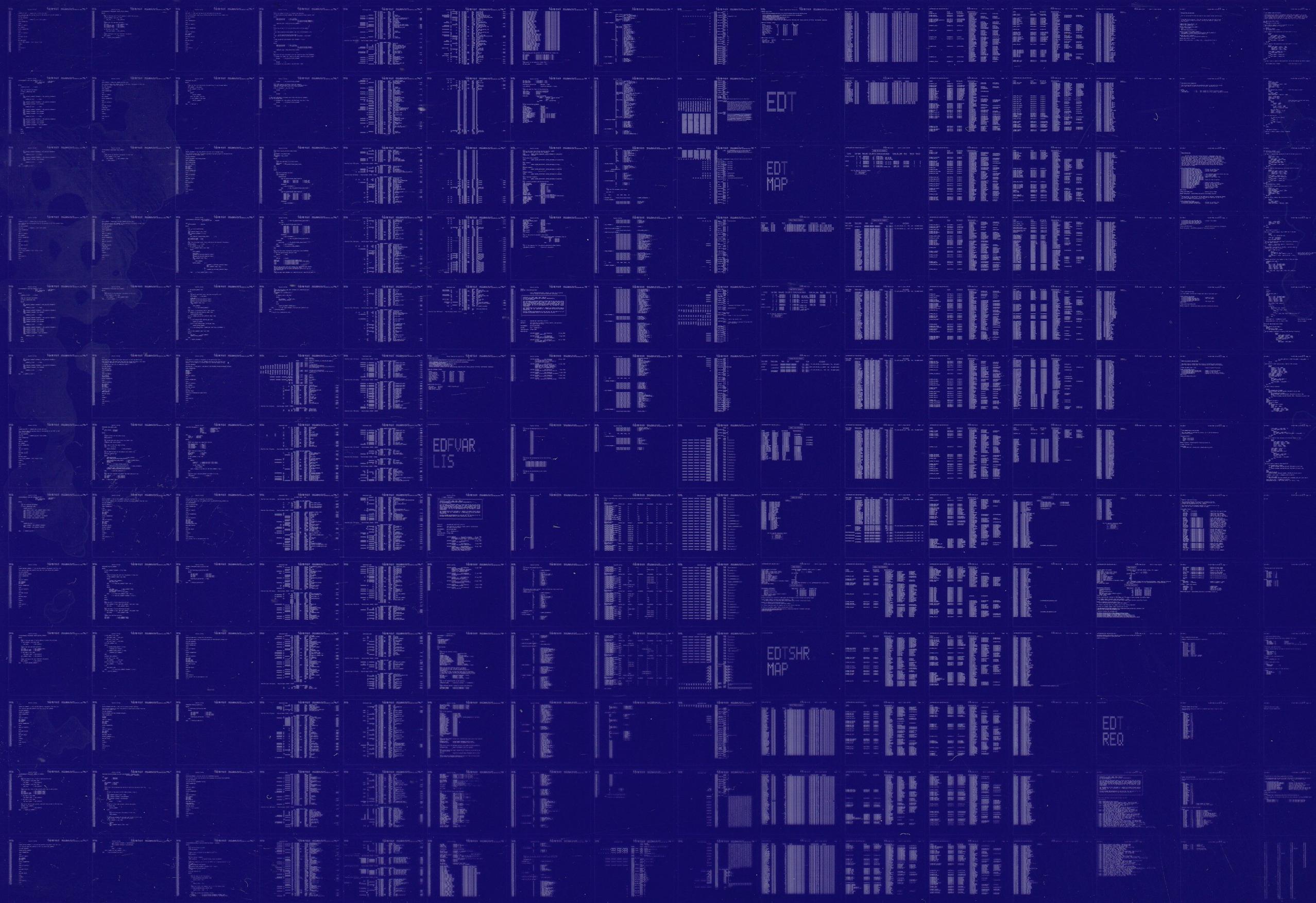
EDT\$\$K\_FMT\_BUflen = 136; ! Length of the format buffer

%FI

! End of file EDT.REQ

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ERRMSG  
REQ

TRACEOFF  
REQ

SUPPORTS  
REQ

TRACEON  
REQ

TRANSLATE  
REQ

TRAROUNAM  
REQ

BADKEY  
LIS

CALLWIO  
LIS

CHMBEGSEN  
LIS

CHMBELL  
LIS

CHMCHGE  
LIS

CHMDELLIN  
LIS

SYSSYM  
REQ

TRANNAME  
REQ

TRACELIT  
REQ

CALLFIO  
LIS

CHMBEGWRD  
LIS

CHMCRRCC  
LIS

EDTREQ  
REQ

KEYPADDEF  
REQ

RE

CHMBEEP  
LIS

CHMCHANGE  
LIS

CHMDELCHR  
LIS

TRACEMAC  
REQ

VERSION  
REQ

CHMCHKCC  
LIS

CHMEINPUT  
LIS

PSECTS  
REQ