


```

PPPPPPPP      AAAAAA      TTTTTTTTTT      GGGGGGGG      EEEEEEEEEEE      NN      NN
PPPPPPPP      AAAAAA      TTTTTTTTTT      GGGGGGGG      EEEEEEEEEEE      NN      NN
PP      PP      AA      AA      TT      GG      EE      NN      NN
PP      PP      AA      AA      TT      GG      EE      NN      NN
PP      PP      AA      AA      TT      GG      EE      NNNN      NN
PP      PP      AA      AA      TT      GG      EE      NNNN      NN
PPPPPPPP      AA      AA      TT      GG      EEEEEEEEE      NN      NN      NN
PPPPPPPP      AA      AA      TT      GG      EEEEEEEEE      NN      NN      NN
PP      AAAAAAAAAA      TT      GG      GG      GG      EE      NN      NNNN
PP      AAAAAAAAAA      TT      GG      GG      GG      EE      NN      NNNN
PP      AA      AA      TT      GG      GG      GG      EE      NN      NN
PP      AA      AA      TT      GG      GG      GG      EE      NN      NN
PP      AA      AA      TT      GG      GG      GG      EE      NN      NN
PP      AA      AA      TT      GG      GG      GG      EE      NN      NN
PP      AA      AA      TT      GG      GG      GG      EE      NN      NN
PP      AA      AA      TT      GG      GG      GG      EE      NN      NN

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```

RRRRRRRR      EEEEEEEEEEE      QQQQQQ
RRRRRRRR      EEEEEEEEEEE      QQQQQQ
RR      RR      EE      QQ      QQ
RR      RR      EE      QQ      QQ
RR      RR      EE      QQ      QQ
RR      RR      EE      QQ      QQ
RRRRRRRR      EEEEEEEEEEE      QQ      QQ
RRRRRRRR      EEEEEEEEEEE      QQ      QQ
RR      RR      EE      QQ      QQ
RR      RR      EE      QQ      QQ
RR      RR      EE      QQ      QQ
RR      RR      EE      QQ      QQ
RR      RR      EEEEEEEEEEE      QQQQ      QQ
RR      RR      EEEEEEEEEEE      QQQQ      QQ

```

PATGEN.REQ - require file for PATCH facility

Version: 'V04-000'

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Modified by:

- V03-01 MTR0006 Mike Rhodes 07-Jun-1982
Add a new context flag for processing I^ immediate literals.
- V0203 MTR0001 Mike Rhodes 01-Oct-1981
Add new context bit definition, INIT_PATCH_BIT to signify that the user had issued the /INITIALIZE qualifier to the SET PATCH_AREA command. Its also added to the command qualifier bit definitions.
- V0202 CNH0013 Chris Hume 12-Sep-1979 14:00
Increase maximum symbol length to 31 characters.
- V0201 KDM0013 KATHLEEN D. MORSE 01-FEB-1979 15:00
Increase size of lexeme buffers from 20 to 25 (CHS_PER_LEXEME).
(PATGEN.REQ V0201)

MACRO

```

ALONGWORD      =0, 0, 32%,      ! OFFSET, POSITION, AND SIZE FOR A LONGWORD
NULL_POS_SIZE  =0, 0, 0%,       ! NULL PSE FOR UNDOTTED REFERENCES TO BLOCKS
TBIT_FIELD     =4, 1, 0%,       ! field in PSL containing the tbit
OPERAND_MODE   =0, 4, 4, 0%,    ! MODE PART OF AN OPERAND
OPERAND_VALUE  =0, 0, 4, 0%,    ! VALUE PART OF AN OPERAND

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ADD_THE_OFFSET =1,           ! ADD OFFSET TO VALUE

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SUB_THE_OFFSET =0,          ! SUBTRACT OFFSET FROM VALUE

!++
! VALUES FOR REGISTER NAME TABLES
!--
REGISTER_COUNT =17,         ! Seventeen REGISTERS COUNTING PSL
REG_ENTRY_LEN  =1,         ! LENGTH IN LONGWORDS OF A REGISTER NAME ENTRY

BYTES_PER_LONGW =4,        ! BYTES PER VAX LONGWORD

A_BYTE        =1,         ! ADDRESS OFFSET FOR A BYTE
A_WORD        =2,         ! ADDRESS OFFSET FOR A WORD
A_LONGWORD    =4,         ! ADDRESS OFFSET FOR A LONGWORD
A_QUADWORD    =8,         ! ADDRESS OFFSET FOR A QUADWORD
A_PAGE        =512,       ! ADDRESS OFFSET FOR A PAGE

!++
! SIZE PARAMETERS
!--
NO_OF_INP_CHARS =132,      ! MAX NUMBER OF CHARACTERS IN INPUT LINE
                        ! ****MUST BE DIVISIBLE BY 4****
CHS_PER_LEXEME  =25,      ! MAX NUMBER OF CHARACTERS IN A SINGLE LEXEME
                        ! ***MUST BE DIVISIBLE BY 4***
NO_OF_TOKENS    =30,      ! MAX NUMBER OF TOKENS PERMITTED
                        ! ***MUST BE AN EVEN NUMBER***

NUM_MAX_LENGTH  =20,      ! MAXIMUM NUMBER OF CHARACTERS PER NUMERIC STRING
SYM_MAX_LENGTH  =31,      ! MAXIMUM NUMBER OF CHARACTERS PER SYMBOL
UPPER_CASE_DIF ='a'-'A',  ! DIFFERENCE BETWEEN ASCII REPRESENTATION OF UPPER AND LOWER CASE
ASCII_OFFSET    =%0'60',  ! OFFSET FROM NUMERIC VALUE TO ASCII VALUE

!++
! ASCII CHARACTER REPRESENTATIONS
!--
LINEFEED        =%0'12',  ! ASCII REPRESENTATION OF LINEFEED
CARRIAGE_RET    =%0'15',  ! ASCII REPRESENTATION OF CARRIAGE RETURN
ASC_AT_SIGN     =%ASCII 'a', ! ASCII REPRESENTATION OF AN AT SIGN
ASC_CLOS_PAREN  =%ASCII ')', ! ASCII REPRESENTATION OF CLOSED PARENTHESIS
ASC_COMMA       =%ASCII ', ', ! ASCII REPRESENTATION OF A COMMA
ASC_MINUS       =%ASCII '-', ! ASCII REPRESENTATION OF A MINUS SIGN
ASC_OPEN_PAREN  =%ASCII '(', ! ASCII REPRESENTATION OF OPEN PARENTHESIS
asc_period      =%ASCII '.', ! ASCII representation of a period
ASC_PLUS        =%ASCII '+', ! ASCII REPRESENTATION OF A PLUS SIGN
ASC_POUNDS      =%ASCII '#', ! ASCII REPRESENTATION OF A POUNDS SIGN
ASC_QUOTE       =%ASCII "'", ! ASCII REPRESENTATION OF A QUOTE CHARACTER
ASC_SPACE       =%ASCII ' ', ! ASCII REPRESENTATION OF A SPACE
ASC_SQ_CLO_BRK  =%ASCII ']', ! ASCII REPRESENTATION OF A CLOSED SQUARE BRACKET
ASC_SQ_OPN_BRK  =%ASCII '[', ! ASCII REPRESENTATION OF AN OPEN SQUARE BRACKET
ASC_TAB         =%ASCII '\t', ! ASCII REPRESENTATION OF A TAB
asc_up_arrow    =%ASCII '^', ! ASCII representation of an up arrow

! THE 'MODE' DATA STRUCTURE IS REALLY JUST
! A BYTE VECTOR WITH THE FOLLOWING CHARACTERISTICS.

MODE_LVL_SIZE   =7,       ! NUMBER OF BYTES IN EACH 'LEVEL'.
MODE_LEVELS     =4,       ! NUMBER OF LEVELS FOR MODE SETTINGS

```

! EACH LEVEL OF THE MODE DATA STRUCTURE HAS
! THE FOLLOWING ENTRIES

MODE_RADIX	=0,	! RADIX - DEC, HEX, OCT, ETC.
MODE_LENGTH	=1,	! LENGTH - LONG, WORD, BYTE, ETC.
MODE_SYMBOLS	=2,	! BOOLEAN -> WHETHER WE KNOW VALUES ! AS "EXTERN + OFFSET" OR NOT.
MODE_INSTRUC	=3,	! BOOLEAN -> WHETHER WE INPUT/OUTPUT ! VALUES AS MACHINE INSTRUCTION.
MODE_ASCII	=4,	! BOOLEAN -> WHETHER WE OUTPUT (ONLY!) ! VALUES AS ASCII STRINGS OR NOT.
MODE_SCOPE	=5,	! Whether or not there is a CSP, ! (and whether we should apply it)
MODE_GLOBALS	=6,	! Whether or not we should apply ! global scope first in the search rules.

! THE FOUR LEVELS HAVE THE FOLLOWING
! NAMES AND INDICES.

DEFAULT_MODE	=0,	! DEFAULT SYSTEM INITIALIZED MODE
USER_DEF_MODE	=1,	! USER-SET DEFAULT MODE
OVERRIDE_MODE	=2,	! ONE-LINE OVERRIDE MODE
LOCAL_MODE	=3,	! LOCAL MODE

! THE MODE_LENGTH FIELD SHOULD BE ONE OF THE FOLLOWING

BYTE_LENGTH	=1,	! BYTE LENGTH
WORD_LENGTH	=2,	! WORD LENGTH
LONG_LENGTH	=4,	! LONGWORD LENGTH

! AND THE MODE_RADIX FIELD SHOULD BE ONE OF:

DECIMAL_RADIX	=10,	! DECIMAL RADIX
HEX_RADIX	=16,	! HEXADECIMAL RADIX
OCTAL_RADIX	=8,	! OCTAL RADIX
binary_radix	=2,	! binary radix

! THE DEFAULT SETTINGS (SEE PAT\$INIT_MODES IN PATMOD.B32)
! FOR THE FIELDS ARE:

DEF_MODE_RADIX	=HEX_RADIX,	! HEX IS DEFAULT RADIX
DEF_MODE_LENGTH	=LONG_LENGTH,	! LONG IS DEFAULT LENGTH

!++
! BIT CONFIGURATIONS FOR CONTEXT FLAGS.

CONTEXT_BITS	=32,	! NUMBER OF CONTEXT BITS
MODE_BIT	=0,	! MODE KEYWORD BIT
SET_NOT_ECO	=1,	! check not eco indicator
ALIGN_LONG	=2,	! ALIGNMENT ON LONGWORD BOUNDARY
ALIGN_QUAD	=3,	! ALIGNMENT ON QUADWORD BOUNDARY
ALIGN_WORD	=4,	! ALIGNMENT ON WORD BOUNDARY
ALIGN_PAGE	=5,	! ALIGNMENT ON PAGE BOUNDARY
ALIGN_BYTE	=6,	! ALIGNMENT ON BYTE BOUNDARY

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MODULE BIT      =7,      : MODULE KEYWORD BIT
EXAMINE_BIT     =8;      : EXAMINE COMMAND

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OVERRIDE        =10,    : OVERRIDE HAS BEEN SET
SCOPE_BIT       =16,    : Command was SET Scope.
INIT_PAT_BIT    =17,    : /INITIALIZE indicator
SET_ECO         =18,    : SETTING ECO LEVEL OF THIS PATCH
PAT_AREA_BIT    =19,    : PATCH AREA INDICATOR
INST_SUBST      =20,    : ENABLE INSTRUCTION SUBSTITUTION
VERIFY_BIT      =21,    : VERIFY COMMAND BIT
DELETE_BIT      =22,    : DELETE COMMAND BIT
INSERT_BIT      =23,    : INSERT COMMAND BIT
OPN_COM_FILE    =24,    : OPEN COMMAND FILE BIT
LITERAL_BIT     =25,    : /LITERAL INDICATOR
I_HAT_SEEN      =26,    : PROCESS I^ immediate mode operand in context.

: QUALIFIER BITS FOR COMMAND LINE QUALIFIERS
MIN_QUAL        = 0,    : MINIMUM QUALIFIER BIT USED
INSTR_QUAL      = 0,    : /INSTRUCTION
DECIMAL_QUAL    = 1,    : /DECIMAL
WORD_QUAL       = 2,    : /WORD
BYTE_QUAL       = 3,    : /BYTE
PATCH_QUAL     = 4,    : /PATCH AREA
NOINSTR_QUAL    = 5,    : /NOINSTRUCTION
LONG_QUAL       = 6,    : /LONG
HEX_QUAL        = 7,    : /HEX
ASCII_QUAL      = 8,    : /ASCII
NOASCII_QUAL    = 9,    : /NOASCII
OCTAL_QUAL      = 10,   : /OCTAL
LITER_QUAL      = 11,   : /LITERAL
INITIALIZE_QUAL = 12,   : /INITIALIZE
MAX_QUAL        = 12,   : MAXIMUM QUALIFIER BIT USED

: LOCATION TYPES FOR END RANGE ARGUMENTS
MEMORY_LOC      =0,     : MEMORY LOCATION
REGISTER_LOC    =1;    : REGISTER LOCATION

MACRO
:++
: OUT DIAG INFO OUTPUTS A DIAGNOSTIC MESSAGE TO THE TERMINAL. THIS
: MACRO CAN BE REDEFINED TO NULL WHEN THE DEBUGGER SEEMS TO FUNCTION
: MORE OR LESS AS DESIGNED.
:--
OUT_DIAG_INFO (MESSAGE) =
: BEGIN
: $FAO TT_OUT ('!/'AC!/', UPLIT BYTE (%CHARCOUNT (MESSAGE), %ASCII MESSAGE));
: END%;

```

PATGEN.REQ - last line

