```
LLL              IIIIIIIII    BBBBBBBBBBBB   RRRRRRRRRRR    TTTTTTTTTTTTTTT   LLL
LLL              IIIIIIIII    BBBBBBBBBBBB   RRRRRRRRRRR    TTTTTTTTTTTTTTT   LLL
LLL              IIIIIIIII    BBBBBBBBBBBB   RRRRRRRRRRR    TTTTTTTTTTTTTTT   LLL
LLL                 III       BBB      BBB   RRR      RRR         TTT         LLL
LLL                 III       BBB      BBB   RRR      RRR         TTT         LLL
LLL                 III       BBB      BBB   RRR      RRR         TTT         LLL
LLL                 III       BBB      BBB   RRR      RRR         TTT         LLL
LLL                 III       BBB      BBB   RRR      RRR         TTT         LLL
LLL                 III       BBBBBBBBBBBB   RRRRRRRRRRR         TTT         LLL
LLL                 III       BBBBBBBBBBBB   RRRRRRRRRRR         TTT         LLL
LLL                 III       BBB      BBB   RRR   RRR           TTT         LLL
LLL                 III       BBB      BBB   RRR   RRR           TTT         LLL
LLL                 III       BBB      BBB   RRR   RRR           TTT         LLL
LLL                 III       BBB      BBB   RRR      RRR         TTT         LLL
LLL                 III       BBB      BBB   RRR      RRR         TTT         LLL
LLL                 III       BBB      BBB   RRR      RRR         TTT         LLL
LLLLLLLLLLLLLLLL    IIIIIIIII BBBBBBBBBBBB   RRR      RRR         TTT         LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLLL    IIIIIIIII BBBBBBBBBBBB   RRR      RRR         TTT         LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLLL    IIIIIIIII BBBBBBBBBBBB   RRR      RRR         TTT         LLLLLLLLLLLLLLL
```

```
LL          IIIIII   BBBBBBBB    EEEEEEEEEE  XX      XX   TTTTTTTTTT   ZZZZZZZZZZ   VV        VV
LL          IIIIII   BBBBBBBB    EEEEEEEEEE  XX      XX   TTTTTTTTTT   ZZZZZZZZZZ   VV        VV
LL            II     BB      BB  EE          XX      XX       TT               ZZ   VV        VV
LL            II     BB      BB  EE            XX  XX         TT             ZZ      VV        VV
LL            II     BB      BB  EE            XX  XX         TT             ZZ      VV        VV
LL            II     BBBBBBBB    EEEEEEE         XX           TT           ZZ        VV      VV
LL            II     BBBBBBBB    EEEEEEE         XX           TT           ZZ        VV      VV
LL            II     BB      BB  EE            XX  XX         TT         ZZ          VV      VV
LL            II     BB      BB  EE            XX  XX         TT         ZZ          VV      VV
LL            II     BB      BB  EE          XX      XX       TT       ZZ              VV  VV        ....
LL            II     BB      BB  EE          XX      XX       TT       ZZ              VV  VV        ....
LLLLLLLLLL  IIIIII   BBBBBBBB    EEEEEEEEEE  XX      XX       TT     ZZZZZZZZZZ          VV          ....
LLLLLLLLLL  IIIIII   BBBBBBBB    EEEEEEEEEE  XX      XX       TT     ZZZZZZZZZZ          VV          ....

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
```

N 8

LIB$EXTZV   extracts and zero extends a field   16-SEP-1984 00:08:16   VAX/VMS Macro V04-00   Page 1
1-002   6-SEP-1984 11:06:45   [LIBRTL.SRC]LIBEXTZV.MAR;1   (1)

```
0000     1              .TITLE  LIB$EXTZV                 extracts and zero extends a field
0000     2              .IDENT  /1-002/                 ; File: LIBEXTZV.MAR
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: General Utility Library
0000    31      ;
0000    32      ; ABSTRACT:
0000    33      ;
0000    34      ;        Extract a longword zero extended field
0000    35      ;
0000    36      ; ENVIRONMENT: AST Reentrant
0000    37      ;
0000    38      ; AUTHOR: Donald G. Petersen, CREATION DATE: 29-Dec-77
0000    39      ;
0000    40      ; MODIFIED BY:
0000    41      ;
0000    42      ;        Donald G. Petersen, 29-Dec-77 : VERSION 00
0000    43      ; 01      - original
0000    44      ; 1-001 - Update copyright notice and version number.  JBS 16-NOV-78
0000    45      ; 1-002 - Add "_" to PSECT directive.  JBS 21-DEC-78
0000    46      ;--
```

LIBSEXTZV
1-002

extracts and zero extends a field   B 9   16-SEP-1984 00:08:16 VAX/VMS Macro V04-00   Page 2
DECLARATIONS   6-SEP-1984 11:06:45 [LIBRTL.SRC]LIBEXTZV.MAR;1   (2)

```
0000      48          .SBTTL  DECLARATIONS
0000      49  ;
0000      50  ; INCLUDE FILES:
0000      51  ;
0000      52
0000      53  ;
0000      54  ; MACROS:
0000      55  ;
0000      56
0000      57  ;
0000      58  ; EQUATED SYMBOLS:
0000      59  ;
0000      60
0000      61  ;
0000      62  ; OWN STORAGE:
0000      63  ;
0000      64
0000      65  ;
0000      66  ; PSECT DECLARATIONS:
0000      67  ;
00000000  68          .PSECT _LIBSCODE PIC, SHR, LONG, EXE, NOWRT
```

C 9

LIBSEXTZV   extracts and zero extends a field   16-SEP-1984 00:08:16   VAX/VMS Macro V04-00   Page 3   LI
1-002   LIBSEXTZV - Extract a zero extended fiel   6-SEP-1984 11:06:45 [LIBRTL.SRC]LIBSEXTZV.MAR;1   (3)   1-

```
                        0000      70              .SBTTL LIBSEXTZV - Extract a zero extended field
                        0000      71    ;++
                        0000      72    ; FUNCTIONAL DESCRIPTION:
                        0000      73    ;
                        0000      74    ;       Return a longword zero extended field which has been extracted from the spec
                        0000      75    ;       variable bit field.  If the size specified is zero, a zero is returned.
                        0000      76    ;       Specifying a size greater than 31 results in a reserved operand fault.
                        0000      77    ;
                        0000      78    ; CALLING SEQUENCE:
                        0000      79    ;
                        0000      80    ;       field.wlu.v = LIBSEXTZV (pos.rl.r, size.rbu.r, base.rv.r)
                        0000      81    ;
              00000004  0000      82              POSITION = 4                      ; Adr. of longword position
              00000008  0000      83              SIZE = 8                          ; Adr. of byte containing size
              0000000C  0000      84              BASE = 12                         ; Adr. of base of field
                        0000      85
                        0000      86
                        0000      87    ; INPUT PARAMETERS:
                        0000      88    ;
                        0000      89    ;       NONE
                        0000      90
                        0000      91    ; IMPLICIT INPUTS:
                        0000      92    ;
                        0000      93    ;       NONE
                        0000      94
                        0000      95    ; OUTPUT PARAMETERS:
                        0000      96    ;
                        0000      97    ;       NONE
                        0000      98    ;
                        0000      99    ; IMPLICIT OUTPUTS:
                        0000     100    ;
                        0000     101    ;       NONE
                        0000     102    ;
                        0000     103    ; FUNCTION VALUE:
                        0000     104    ;
                        0000     105    ;       field
                        0000     106    ;
                        0000     107    ; SIDE EFFECTS:
                        0000     108    ;
                        0000     109    ;       SS$ROPRAND - reserved operand fault for size greater than 31
                        0000     110    ;
                        0000     111    ;--
                        0000     112
                        0000     113
                        0000     114
                  0000  0000     115              .ENTRY LIBSEXTZV, ^M<>  ; ENTRY POINT (OR MASK)
                        0002     116
50  0C BC  08 BC  04 BC  EF  0002 117              EXTZV   @POSITION(AP), @SIZE(AP), -
                        000A     118                      @BASE(AP), R0                    ; extract and zero extend
                  04    000A     119              RET
                        000B     120
                        000B     121
                        000B     122              .END
```

```
BASE           = 0000000C
LIBSEXTZV        00000000 RG   01
POSITION       = 00000004
SIZE           = 00000008
```

```
                              +-------------------+
                              ! Psect synopsis !
                              +-------------------+
```

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
_LIBSCODE	0000000B (11.)	01 (1.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.06	00:00:00.73
Command processing	106	00:00:00.35	00:00:02.52
Pass 1	63	00:00:00.23	00:00:01.39
Symbol table sort	0	00:00:00.00	00:00:00.01
Pass 2	37	00:00:00.17	00:00:01.26
Symbol table output	1	00:00:00.00	00:00:00.00
Psect synopsis output	2	00:00:00.01	00:00:00.13
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	240	00:00:00.83	00:00:06.04

The working set limit was 900 pages.
1166 bytes (3 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 4 non-local and 0 local symbols.
122 source lines were read in Pass 1, producing 10 object records in Pass 2.
0 pages of virtual memory were used to define 0 macros.

```
                      +-------------------------------+
                      ' Macro library statistics !
                      +-------------------------------+
```

Macro library name	Macros defined
_255DUA28:[SYSLIB]STARLET.MLB;2	0

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

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

LIBEMODH
LIS

LIBEMODD
LIS

LIBESTEMU
LIS

LIBEF
LIS

LIBEMULAT
LIS

LIBFFS
LIS

LIBFINCVT
LIS

LIBE2AREV
LIS

LIBFAO
LIS

LIBEMODG
LIS

LIBEXTV
LIS

LIBEDIV
LIS

LIBESTABL
LIS

LIBFFC
LIS

LIBEMODF
LIS

LIBEMUL
LIS

LIBFILSCA
LIS

LIBEXTZV
LIS

LIBEBCASC
LIS

LIBFAOL
LIS