```
LLL              IIIIIIIIII   BBBBBBBBBBBB   RRRRRRRRRRRR   TTTTTTTTTTTTTTTT   LLL
LLL              IIIIIIIIII   BBBBBBBBBBBB   RRRRRRRRRRRR   TTTTTTTTTTTTTTTT   LLL
LLL              IIIIIIIIII   BBBBBBBBBBBB   RRRRRRRRRRRR   TTTTTTTTTTTTTTTT   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   IIIIIIIIII   BBBBBBBBBBBB   RRR      RRR       TTT          LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLLL   IIIIIIIIII   BBBBBBBBBBBB   RRR      RRR       TTT          LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLLL   IIIIIIIIII   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      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   VV       ::::
LLLLLLLLLL      IIIIII    BBBBBBBB    EEEEEEEEEE  XX       XX       TT     ZZZZZZZZZZ        VV   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
```

LIB$EXTZV
1-002

N 8

extracts and zero extends a field   16-SEP-1984 00:08:16   VAX/VMS Macro V04-00   Page 1
                                           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                                    *
0000    8      ;*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                     *
0000    9      ;*  ALL RIGHTS RESERVED.                                                       *
0000   10      ;*                                                                             *
0000   11      ;*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED      *
0000   12      ;*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE      *
0000   13      ;*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER      *
0000   14      ;*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY      *
0000   15      ;*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY      *
0000   16      ;*  TRANSFERRED.                                                               *
0000   17      ;*                                                                             *
0000   18      ;*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE      *
0000   19      ;*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT      *
0000   20      ;*  CORPORATION.                                                               *
0000   21      ;*                                                                             *
0000   22      ;*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS      *
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      ;--
```

LIB$EXTZV
1-002

B 9
extracts and zero extends a field   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 _LIB$CODE PIC, SHR, LONG, EXE, NOWRT
```

```
                                        0000      70              .SBTTL LIB$EXTZV - Extract a zero extended field
                                        0000      71  ;++
                                        0000      72  ; FUNCTIONAL DESCRIPTION:
                                        0000      73  ;
                                        0000      74  ;       Return a longword zero extended field which has been extracted from the spec
                                        0000      75  ;       variable bit field.  If the size specified is zero, a zero is returned.
                                        0000      76  ;       Specifying a size greater than 31 results in a reserved operand fault.
                                        0000      77  ;
                                        0000      78  ; CALLING SEQUENCE:
                                        0000      79  ;
                                        0000      80  ;       field.wlu.v = LIB$EXTZV (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$ROPRAND - reserved operand fault for size greater than 31
                                        0000     110  ;
                                        0000     111  ;--
                                        0000     112
                                        0000     113
                                        0000     114
                              0000      0000     115              .ENTRY LIB$EXTZV, ^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
LIB$EXTZV       = 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
_LIB$CODE	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