


```
LL          IIIIII  BBBB BBBB  CCCCCCCC  RRRRRRRR  CCCCCCCC
LL          IIIIII  BBBB BBBB  CCCCCCCC  RRRRRRRR  CCCCCCCC
LL          II      BB      BB      CC      RR      RR      CC
LL          II      BB      BB      CC      RR      RR      CC
LL          II      BB      BB      CC      RR      RR      CC
LL          II      BB      BB      CC      RR      RR      CC
LL          II      BBBB BBBB  CC      RRRRRRRR  CC
LL          II      BBBB BBBB  CC      RRRRRRRR  CC
LL          II      BB      BB      CC      RR      RR      CC
LL          II      BB      BB      CC      RR      RR      CC
LL          II      BB      BB      CC      RR      RR      CC
LL          II      BB      BB      CC      RR      RR      CC
LLLLLLLLLLL IIIIII  BBBB BBBB  CCCCCCCC  RR      RR      CCCCCCCC
LLLLLLLLLLL IIIIII  BBBB BBBB  CCCCCCCC  RR      RR      CCCCCCCC
```

```
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
LLLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLLL IIIIII  SSSSSSSS
```



(2) 58
(3) 87

DECLARATIONS

LIB\$CRC - Calculate cyclic redundancy check

LI
V0
:
:
:
:
:
:
:

```

0000 1 .TITLE LIB$CRC - Calculate cyclic redundancy check
0000 2 .IDENT /1-006/ ; File: LIBCRC.MAR Edit: RKR1006
0000 3
0000 4
0000 5 *****
0000 6 *
0000 7 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *
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0000 24 *
0000 25 *
0000 26 *****
0000 27
0000 28
0000 29 ++
0000 30 : FACILITY: General Utility Library
0000 31
0000 32 : ABSTRACT:
0000 33 :
0000 34 : Calculate the CRC of a data stream
0000 35 :
0000 36 : ENVIRONMENT: User Mode, AST Reentrant
0000 37 :
0000 38 --
0000 39 : AUTHOR: Donald G. Petersen, CREATION DATE: 30-Dec-77
0000 40
0000 41 : MODIFIED BY:
0000 42 :
0000 43 : DGP,30-Dec-77 : VERSION 00
0000 44 : 01 - Original
0000 45 :
0000 46 : 1-001 - Updated version number and copyright notice. JBS 16-NOV-78
0000 47 : 1-002 - Add "" to PSECT directive. JBS 21-DEC-78
0000 48 : 1-003 - Add R2 and R3 to the entrymask since they are clobbered by
0000 49 : the CRC instruction. JBS 21-DEC-78
0000 50 : 1-004 - Enhance to recognize additional classes of string descriptors
0000 51 : by invoking LIB$ANALYZE_SDESC R3 to extract length and
0000 52 : address of 1st data byte. RKR 26-MAY-1981.
0000 53 : 1-005 - Add special-case code to process classes of descriptors that
0000 54 : "read" like fixed strings more efficiently. RKR 7-OCT-1981
0000 55 : 1-006 - Redirect jsb from LIB$ANALYZE_SDESC R3 to
0000 56 : LIB$ANALYZE_SDESC_R2. RKR 18-NOV-1981.

```

```
0000 58      .SBTTL  DECLARATIONS
0000 59      :
0000 60      : INCLUDE FILES: NONE
0000 61      :
0000 62      :
0000 63      : EXTERNAL SYMBOLS
0000 64      .DSABL  GBL      ; Only explicit externals
0000 65      .EXTRN  LIB$ANALYZE_SDESC_R2 ; Extract length and address of
0000 66      ; 1st data byte of string.
0000 67      :
0000 68      : MACROS:
0000 69      :
0000 70      $DSCDEF      ; symbols for parts of a
0000 71      ; descriptor
0000 72      :
0000 73      :
0000 74      : EQUATED SYMBOLS: NONE
0000 75      :
0000 76      :
0000 77      :
0000 78      : OWN STORAGE: NONE
0000 79      :
0000 80      :
0000 81      :
0000 82      : PSECT DECLARATIONS:
0000 83      :
00000000 84      .PSECT _LIB$CODE PIC, SHR, LONG, EXE, NOWRT
0000 85
```

```

0000 87      .SBTTL LIB$CRC - Calculate cyclic redundancy check
0000 88      :++
0000 89      : FUNCTIONAL DESCRIPTION:
0000 90      :
0000 91      :     The CRC of the data stream specified is calculated and returned.
0000 92      :
0000 93      : CALLING SEQUENCE:
0000 94      :
0000 95      :     crc.wl.v = LIB$CRC (table.rl.ra, inicrc.rl.r, stream.rt.dx)
0000 96      :
0000 97      :
0000 98      : INPUT PARAMETERS:
0000 99      :
00000004 0000 100      :     TABLE = 4                ; Adr. of table
00000008 0000 101      :     INICRC = 8                ; Adr. of adr. of initial CRC longword
0000000C 0000 102      :     STREAM = 12             ; Adr. of data stream desc.
0000 103      :
0000 104      : IMPLICIT INPUTS:
0000 105      :
0000 106      :     NONE
0000 107      :
0000 108      : OUTPUT PARAMETERS:
0000 109      :
0000 110      :     NONE
0000 111      :
0000 112      : IMPLICIT OUTPUTS:
0000 113      :
0000 114      :     NONE
0000 115      :
0000 116      : FUNCTION VALUE:
0000 117      :
0000 118      :     crc.wl.v
0000 119      :
0000 120      : SIDE EFFECTS:
0000 121      :
0000 122      :     NONE
0000 123      :
0000 124      :--
0000 125      :
0000 126      :.ENTRY LIB$CRC, ^M<R2,R3>      ; Entry point
50 0C AC D0 0002 127      MOVL  STREAM(AP), R0      ; Address of STREAM descriptor
02 03 A0 91 0006 128      CMPB  DSC$B_CLASS(R0), #DSC$K_CLASS_D ; read like fixed ?
0C 1A 000A 129      BGTRU  1$      ; used general path
0000 130      :
61 50 08 BC 04 BC 7D 000C 131      MOVQ  @STREAM(AP), R0      ; length ->R0, addr -> R1
0010 132      CRC   @TABLE(AP), @INICRC(AP), R0, (R1) ; calc crc
0017 133      RET      ; return result in R0
0018 134      :
62 51 08 BC 04 BC 00000000'GF 16 0018 135 1$: JSB  G^LIB$ANALYZE_SDESC R2 ; Extract: length->R1, addr->R2
001E 136      CRC   @TABLE(AP), @INICRC(AP), R1, (R2) ; Calculate CRC
0025 137      RET      ; return result in R0
0026 138      .END

```

LIB\$CRC
Symbol table

- Calculate cyclic redundancy check^{F 4}

15-SEP-1984 23:49:22 VAX/VMS Macro V04-00
6-SEP-1984 11:03:56 [LIBRTL.SRC]LIBCRC.MAR;1

Page 4
(3)

DSC\$B_CLASS	=	00000003
DSC\$K_CLASS_D	=	00000002
INICRC	=	00000008
LIB\$ANALYZE_SDESC_R2	*****	X 00
LIB\$CRC	00000000	RG 02
STREAM	=	0000000C
TABLE	=	00000004

! Psect synopsis !

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$AB\$\$	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
_LIB\$CODE	00000026 (38.)	02 (2.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.05	00:00:01.29
Command processing	118	00:00:00.34	00:00:05.76
Pass 1	132	00:00:01.11	00:00:08.64
Symbol table sort	0	00:00:00.11	00:00:00.47
Pass 2	38	00:00:00.32	00:00:04.72
Symbol table output	2	00:00:00.01	00:00:00.01
Psect synopsis output	3	00:00:00.01	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	324	00:00:01.95	00:00:20.90

The working set limit was 900 pages.
7651 bytes (15 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 136 non-local and 1 local symbols.
138 source lines were read in Pass 1, producing 13 object records in Pass 2.
8 pages of virtual memory were used to define 7 macros.

! Macro library statistics !

Macro library name	Macros defined
-----	-----
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	4

190 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

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

0204 AH-BT13A-SE
VAX/VMS V4.0

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The image displays a grid of 100 terminal windows, each showing the output of a VAX/VMS command. The windows are arranged in a 10x10 grid. The primary focus is on the use of the 'LIB' command to list the contents of various libraries. The libraries shown include: LIBCUTDX, LIBCUTMAC, LIBRETAB, LIBCUTD, LIBCUTB, LIBCUTM, LIBCUTS, LIBCUTR, LIBCUSTOM, LIBCREDIT, LIBCUTAB, LIBCOMMON, and LIBC. Each window displays the library name followed by a list of files, often with their attributes. For example, LIBCUTDX shows a list of files like 'CUTD1.PIC', 'CUTD2.PIC', etc. The output format is consistent across all windows, showing the file name, its type (e.g., 'TEXT'), and its location (e.g., 'SYS\$LIBRARY'). The text is small and densely packed, but the overall structure of each window is clear and repetitive.