```
   CCCCCCCCCCCC  LLL                  IIIIIIIII     UUU         UUU  TTTTTTTTTTTTTTT  LLL
   CCCCCCCCCCCC  LLL                  IIIIIIIII     UUU         UUU  TTTTTTTTTTTTTTT  LLL
   CCCCCCCCCCCC  LLL                  IIIIIIIII     UUU         UUU  TTTTTTTTTTTTTTT  LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
CCC              LLL                     III        UUU         UUU        TTT        LLL
   CCCCCCCCCCCC  LLLLLLLLLLLLLLL      IIIIIIIII     UUUUUUUUUUUUUUU        TTT        LLLLLLLLLLLLLLL
   CCCCCCCCCCCC  LLLLLLLLLLLLLLL      IIIIIIIII     UUUUUUUUUUUUUUU        TTT        LLLLLLLLLLLLLLL
   CCCCCCCCCCCC  LLLLLLLLLLLLLLL      IIIIIIIII     UUUUUUUUUUUUUUU        TTT        LLLLLLLLLLLLLLL
```

FILEID**CNVCLINUM

```
  CCCCCCCC  NN      NN  VV      VV    CCCCCCCC  LL           IIIIII    NN      NN  UU      UU  MM      MM
  CCCCCCCC  NN      NN  VV      VV    CCCCCCCC  LL           IIIIII    NN      NN  UU      UU  MM      MM
CC          NN      NN  VV      VV  CC          LL             II      NN      NN  UU      UU  MMMM  MMMM
CC          NN      NN  VV      VV  CC          LL             II      NN      NN  UU      UU  MMMM  MMMM
CC          NNNN    NN  VV      VV  CC          LL             II      NNNN    NN  UU      UU  MM  MM  MM
CC          NNNN    NN  VV      VV  CC          LL             II      NNNN    NN  UU      UU  MM  MM  MM
CC          NN  NN  NN  VV      VV  CC          LL             II      NN  NN  NN  UU      UU  MM      MM
CC          NN  NN  NN  VV      VV  CC          LL             II      NN  NN  NN  UU      UU  MM      MM
CC          NN    NNNN  VV      VV  CC          LL             II      NN    NNNN  UU      UU  MM      MM
CC          NN    NNNN  VV      VV  CC          LL             II      NN    NNNN  UU      UU  MM      MM
CC          NN      NN    VV  VV    CC          LL             II      NN      NN  UU      UU  MM      MM      ....
CC          NN      NN    VV  VV    CC          LL             II      NN      NN  UU      UU  MM      MM      ....
  CCCCCCCC  NN      NN      VV        CCCCCCCC  LLLLLLLLLL   IIIIII    NN      NN  UUUUUUUUUU  MM      MM      ....
  CCCCCCCC  NN      NN      VV        CCCCCCCC  LLLLLLLLLL   IIIIII    NN      NN  UUUUUUUUUU  MM      MM      ....

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
```

Table of contents

```
0000     1          .TITLE  CNVCLINUM - CONVERT ASCII TO BINARY
0000     2          .IDENT  'V04-000'
0000     3
0000     4 ;
0000     5 ;**********************************************************************************
0000     6 ;*                                                                                *
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0000    24 ;*                                                                                *
0000    25 ;*                                                                                *
0000    26 ;**********************************************************************************
0000    27
0000    28 ;++
0000    29 ; FACILITY: RUN-DETACHED CLI UTILITY
0000    30 ;
0000    31 ; ABSTRACT:
0000    32 ;
0000    33 ; THIS ROUTINE CONVERTS AN ASCII NUMERIC STRING TO BINARY USING THE RADIX SPECI-
0000    34 ; FIED BY THE USER (OCTAL, DECIMAL OR HEXIDECIMAL).
0000    35 ;
0000    36 ; ENVIRONMENT: USER MODE
0000    37 ;
0000    38 ; AUTHOR: C. A. MONIA    , CREATION DATE: 15-AUG-1977
0000    39 ;
0000    40 ; MODIFIED BY:
0000    41 ;
0000    42 ;          , : VERSION
0000    43 ; 01     -
0000    44 ;
0000    45 ; 101    T. Halvorsen    27-Jun-1979
0000    46 ;        Change PSECT name to avoid conflicting psects with RTL
0000    47 ;--
```

```
                     49          .SBTTL  DECLARATIONS
                     50
                     51 ;
                     52 ; INCLUDE FILES
                     53 ;
                     54
                     55          $CLIMSGDEF                          ; DEFINE CLI ERROR CODES
                     56          $SSDEF                              ; DEFINE SYSTEM STATUS CODES
                     57
                     58
                     59 ;
                     60 ; MACROS
                     61 ;
                     62 ; BUILD DISPATCH TABLE FOR CASE INSTRUCTION
                     63 ;
                     64
                     65          .MACRO  CASE,SRC,DISPLIST,TYPE=W,BASE=#0,NMODE=S^#,?START,?MAX
                     66          CASE'TYPE       SRC,BASE,NMODE'<<MAX-START>/2>-1
                     67 START:
                     68          .IRP    EP,<DISPLIST>
                     69          .WORD   EP-START
                     70          .ENDR
                     71 MAX:
                     72          .ENDM
                     73
                     74 ;
                     75 ; DEFINE DATA STRUCTURE
                     76 ;
                     77
                     78          .MACRO  $DSECT
                     79          .PSECT  $ABS$,ABS
                     80          .ENDM
                     81
                     82 ;
                     83 ; EQUATED SYMBOLS:
                     84 ;
                     85 ; OFFSET TO LOCAL VARIABLE FOR NUMERIC RESULT
                     86 ;
                     87
FFFFFFFC             88 RESULT=-4                                   ;
                     89
                     90 ;
                     91 ; ARGUMENT OFFSETS
                     92 ;
                     93
                     94          $DSECT
00000000             95 $$$=.
                     96
00000004             97          .BLKL   1                           ; ARGUMENT COUNT
00000008             98 STRNG:   .BLKL   1                           ; ADDRESS OF ASCII STRING DESCRIPTOR
0000000C             99 VALUE:   .BLKL   1                           ; ADDRESS TO RECEIVE CONVERTED VALUE
                    100
                    101 ;
                    102 ; OWN STORAGE:
                    103 ;
                    104 ; CONVERSION RADIX SPECIFIERS
                    105 ;
```

```
                                                     1  6
                000C    106
           00000000     107          .PSECT  CNVCLINUM,EXE,RD,NOWRT
                0000    108
                0000    109 CVRAD:                                          ;
             44 0000    110          .ASCII  /D/                           ; DECIMAL RADIX
             4F 0001    111          .ASCII  /O/                           ; OCTAL RADIX
             58 0002    112          .ASCII  /X/                           ; HEXADECIMAL RADIX
           00000003     113 CVRADSIZ=.-CVRAD                               ; SIZE OF RADIX SPECIFIER TABLE
                0003    114
                0003    115 ;
                0003    116 ; ASCII TO BINARY CONVERSION DISPATCH TABLE
                0003    117 ;
                0003    118
                0003    119 TABL:                                          ;
          0000' 0003    120          .WORD   LIB$CVTCLIHTB-LIB$CVTCLIDTB   ; CONVERT HEX TO BINARY
          0000' 0005    121          .WORD   LIB$CVTCLIOTB-LIB$CVTCLIDTB   ; CONVERT OCTAL TO BINARY
          0000' 0007    122          .WORD   LIB$CVTCLIDTB-LIB$CVTCLIDTB   ; CONVERT DECIMAL TO BINARY
                0009    123
                0009    124 ;++
                0009    125 ; LIB$CVT_DECBIN - CONVERT NUMERIC STRING TO BINARY (ASSUMES DECIMAL DEFAULT)
                0009    126 ; LIB$CVT_OCTBIN - CONVERT NUMERIC STRING TO BINARY (ASSUMES OCTAL DEFAULT)
                0009    127 ; LIB$CVT_HEXBIN CLI CONVERT NUMERIC STRING TO BINARY (ASSUMES HEX. DEFAULT)
                0009    128 ;
                0009    129 ; THESE PROCEDURES ARE CALLED TO CONVERT AN ASCII NUMERIC STRING TO BINARY. THE
                0009    130 ; CONVERSION RADIX IS IMPLIED OR CAN BE EXPLICITELY SPECIFIED IN THE STRING
                0009    131 ; AS FOLLOWS:
                0009    132 ;
                0009    133 ;               NO RADIX SPECIFICATION - AS DETERMINED BY ENTRY POINT
                0009    134 ;
                0009    135 ;               STRING TERMINATED BY DECIMAL POINT = DECIMAL RADIX
                0009    136 ;
                0009    137 ;               %D PREFIX = DECIMAL RADIX
                0009    138 ;
                0009    139 ;               %O PREFIX = OCTAL RADIX
                0009    140 ;
                0009    141 ;               %X PREFIX = HEXADECIMAL PREFIX
                0009    142 ;
                0009    143 ; THE DECIMAL POINT IS ILLEGAL IF USED IN CONJUNCTION WITH OTHER RADIX SPECI-
                0009    144 ; FIERS.
                0009    145 ;
                0009    146 ; CALLING SEQUENCE:
                0009    147 ;
                0009    148 ;       CALL LIB$CVT_XXX (DESCR[,VALUE])
                0009    149 ;
                0009    150 ;
                0009    151 ; INPUT PARAMETERS:
                0009    152 ;
                0009    153 ;       DESCR = QUADWORD STRING DESCRIPTOR OF THE STRING TO BE CONVERTED
                0009    154 ;
                0009    155 ;       VALUE = OPTIONAL LONGWORD TO RECEIVE THE RESULT
                0009    156 ;
                0009    157 ; OUTPUTS:
                0009    158 ;
                0009    159 ;       R0 = CLI$_NORMAL, SUCCESS
                0009    160 ;
                0009    161 ;       R1 = CONVERTED VALUE
                0009    162 ;
```

```
                     0009   163 ;                THE CONVERTED VALUE IS RETURNED TO THE RESULT ARGUMENT (IF
                     0009   164 ;                SPECIFIED).
                     0009   165 ;
                     0009   166 ;        R0 = CLI$_IVCHAR, INVALID CHARACTER IN NUMERIC STRING
                     0009   167 ;        R0 = CLI$_NUMBER, INCORRECT NUMERIC FORMAT
                     0009   168 ;
                     0009   169 ;                ONE OF THE FOLLOWING ERROR CONDITIONS HAS BEEN DETECTED:
                     0009   170 ;
                     0009   171 ;                        ILLEGAL RADIX SPECIFIER
                     0009   172 ;                        ILLEGAL CHARACTER
                     0009   173 ;                        DECIMAL POINT INCLUDED WITH RADIX SPECIFIER
                     0009   174 ;
                     0009   175 ;--
                     0009   176
                     0009   177          .ENABL  LSB
                     0009   178
                     0009   179
                     0009   180 LIB$CVT_DECBIN::                                ;
        007C         0009   181          .WORD   ^M<R2,R3,R4,R5,R6>              ; SAVE R2 - R6
50  03   D0         000B   182          MOVL    #3,R0                           ; SET FOR DEFAULT DECIMAL CONVERSION
    0C   11         000E   183          BRB     5$                              ;
                     0010   184
                     0010   185 ;
                     0010   186 ; CONVERT TO BINARY WITH OCTAL AS DEFAULT
                     0010   187 ;
                     0010   188
                     0010   189 LIB$CVT_OCTBIN::                                ;
        007C         0010   190          .WORD   ^M<R2,R3,R4,R5,R6>              ; SAVE R2 - R6
50  02   D0         0012   191          MOVL    #2,R0                           ; SET FOR DEFAULT OCTAL CONVERSION
    05   11         0015   192          BRB     5$                              ;
                     0017   193
                     0017   194 ;
                     0017   195 ; CONVERT TO BINARY WITH HEXADECIMAL AS DEFAULT
                     0017   196 ;
                     0017   197
                     0017   198 LIB$CVT_HEXBIN::                               ;
        007C         0017   199          .WORD   ^M<R2,R3,R4,R5,R6>              ; SAVE R2 - R6
    50  01   D0         0019   200          MOVL    #1,R0                       ; SET FOR DEFAULT HEX CONVERSION
                     001C   201 5$:                                             ;
52  04 BC   7D         001C   202          MOVQ    @STRNG(AP),R2               ; GET COUNT AND ADDRESS OF STRING
    52  52   3C         0020   203          MOVZWL  R2,R2                       ; EXTEND BYTE COUNT
        3E   13         0023   204          BEQL    20$                         ; IF EQL, NULL FIELD
        55   D4         0025   205          CLRL    R5                          ; ASSUME POSITIVE VALUE RETURNED
    2B  63   91         0027   206          CMPB    (R3),#^A/+/                 ; PLUS SIGN SPECIFIED?
        07   13         002A   207          BEQL    7$                          ; IF EQL YES
    2D  63   91         002C   208          CMPB    (R3),#^A/-/                 ; NEGATION SPECIFIED?
        08   12         002F   209          BNEQ    9$                          ; IF NEQ NO
        55   D7         0031   210          DECL    R5                          ; SET SIGN SPECIFIER NEGATIVE
                     0033   211 7$:                                             ;
        53   D6         0033   212          INCL    R3                          ; STRIP SIGN FROM STRING
        52   D7         0035   213          DECL    R2                          ;
        2A   13         0037   214          BEQL    20$                         ; IF EQL, NULL RESULT
                     0039   215 9$:                                             ;
    25  63   91         0039   216          CMPB    (R3),#^A/%/                 ; RADIX SPECIFIED?
        0E   13         003C   217          BEQL    10$                         ; IF EQL YES
2E  FF A342  91         003E   218          CMPB    -1(R3)[R2],#^A/./           ; STRING TERMINATED IN DECIMAL POINT?
        1E   12         0043   219          BNEQ    20$                         ; IF NEQ NO ASSUME DEFAULT
```

```
                50    03    D0   0045   220          MOVL    #3,R0                   ; SET DECIMAL RADIX
                      52    B7   0048   221          DECW    R2                      ; TRUNCATE STRING TO REMOVE DECIMAL POINT
                      17    11   004A   222          BRB     20$                     ;
                                 004C   223 10$:                                    ;
                      53    D6   004C   224          INCL    R3                      ; POINT PAST RADIX SPECIFIER
                52    02    A2   004E   225          SUBW    #2,R2                   ; STRIP RADIX SPECIFIER FROM STRING
                      07    1F   0051   226          BLSSU   15$                     ; IF LSSU ERROR
 A8 AF          03    83    3A   0053   227          LOCC    (R3)+,#CVRADSIZ,CVRAD   ; SCAN RADIX SPECIFIERS
                      09    12   0058   228          BNEQ    20$                     ; IF NEQ HAVE MATCH
                                 005A   229 15$:                                    ;
50    000380E8      8F    D0   005A   230          MOVL    #CLI$_NUMBER,R0         ; ASSUME SYNTAX ERROR
                      23    11   0061   231          BRB     40$                     ; TAKE ERROR EXIT
                                 0063   232 20$:                                    ;
   50    9A AF40     32   0063   233          CVTWL   TABL-2[R0],R0           ; GET ADDRESS OF ENTRY POINT OFFSET
 00000000'EF40     16   0068   234          JSB     LIB$CVTCLIDTB[R0]       ; ENTER CONVERSION ROUTINE
         14 50     E9   006F   235          BLBC    R0,40$                  ; IF LBC, ERROR
                                 0072   236 30$:                                    ;
                      55    D5   0072   237          TSTL    R5                      ; TEST SIGN FLAG
                      03    18   0074   238          BGEQ    35$                     ; IF GEQ, RETURN RESULT UNCHANGED
                51    51    CE   0076   239          MNEGL   R1,R1                   ; NEGATE RESULT
                                 0079   240 35$:                                    ;
                02    6C    91   0079   241          CMPB    (AP),#2                 ; ENOUGH ARGUMENTS SUPPLIED?
                      08    1F   007C   242          BLSSU   40$                     ; IF LSSU NO
                  08  AC    DD   007E   243          PUSHL   VALUE(AP)               ; PUSH ADDRESS TO RECEIVE RESULT
                      03    13   0081   244          BEQL    40$                     ; IF EQL NONE
                9E    51    D0   0083   245          MOVL    R1,@(SP)+               ; RETURN RESULT
                                 0086   246 40$:                                    ;
                      04   0086   247          RET                             ;
                                 0087   248                                    ;
                                 0087   249          .END
```

```
$$$                             = 00000000
CLI$_NUMBER                     = 000380E8
CVRAD                             00000000 R      02
CVRADSIZ                        = 00000003
LIB$CVTCLIDTB                     ********   X    02
LIB$CVTCLI4TB                     ********   X    02
LIB$CVTCLIOTB                     ********   X    02
LIB$CVT_DECBIN                    00000009 RG     02
LIB$CVT_HEXBIN                    00000017 RG     02
LIB$CVT_OCTBIN                    00000010 RG     02
RESULT                          = FFFFFFFC
STRNG                             00000004
TABL                              00000003 R      02
VALUE                             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
ABS	0000000C (12.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
CNVCLINUM	00000087 (135.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC BYTE

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	10	00:00:00.07	00:00:00.73
Command processing	78	00:00:00.86	00:00:05.20
Pass 1	220	00:00:05.54	00:00:17.66
Symbol table sort	0	00:00:00.85	00:00:02.63
Pass 2	67	00:00:01.07	00:00:03.63
Symbol table output	2	00:00:00.03	00:00:00.06
Psect synopsis output	1	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	380	00:00:08.44	00:00:29.93

The working set limit was 900 pages.
28602 bytes (56 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 573 non-local and 9 local symbols.
249 source lines were read in Pass 1, producing 13 object records in Pass 2.
11 pages of virtual memory were used to define 10 macros.

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

Macro library name                       Macros defined
------------------                       --------------
_$255$DUA28:[CLIUTL.OBJ]CLIUTL.MLB;1                0
_$255$DUA28:[SYS.OBJ]LIB.MLB;1                      0
_$255$DUA28:[SYSLIB]STARLET.MLB;2                   5
TOTALS (all libraries)                              5

631 GETS were required to define 5 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:CNVCLINUM/OBJ=OBJ$:CNVCLINUM MSRC$:CNVCLINUM/UPDATE=(ENH$:CNVCLINUM)+EXECML$/LIB+LIB$:CLIUTL/LIB
```

JBCPRSDEF
REQ

CNVCLIATB
LIS

INFO
LIS

TYPE
REQ

CHRSUB
LIS

CNVCLINUM
LIS

SHODEVDEF
REQ

CLIMAC
MAR

CNVCLIFRM
LIS

DIGRAMS
LIS

CALCMAX
LIS

JBCCMDPRS
LIS

CLIUTLMAC
MAR

CVTTIME
LIS

SHOWDEF
REQ

CREATE
LIS