


```
CCCCCCCC 000000 BBBB8888 CCCCCCCC VV VV TTTTTTTTTT QQQQQQ PPPPPPPP
CCCCCCCC 000000 BBBB8888 CCCCCCCC VV VV TTTTTTTTTT QQQQQQ PPPPPPPP
CC        00      00 BB      BB CC        VV VV VV      TT      QQ      PP      PP
CC        00      00 BB      BB CC        VV VV VV      TT      QQ      PP      PP
CC        00      00 BB      BB CC        VV VV VV      TT      QQ      PP      PP
CC        00      00 BB      BB CC        VV VV VV      TT      QQ      PP      PP
CC        00      00 BBBB8888 CC        VV VV VV      TT      QQ      PPPPPPPP
CC        00      00 BBBB8888 CC        VV VV VV      TT      QQ      PPPPPPPP
CC        00      00 BB      BB CC        VV VV VV      TT      QQ      PP
CC        00      00 BB      BB CC        VV VV VV      TT      QQ      PP
CC        00      00 BB      BB CC        VV VV VV      TT      QQ      PP
CC        00      00 BB      BB CC        VV VV VV      TT      QQ      PP
CCCCCCCC 000000 BBBB8888 CCCCCCCC VV VV TTTTTTTTTT QQQQQQ PPPPPPPP
CCCCCCCC 000000 BBBB8888 CCCCCCCC VV VV TTTTTTTTTT QQQQQQ PPPPPPPP
```

```
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
LLLLLLLLLL IIIIII SSSSSSSS
LLLLLLLLLL IIIIII SSSSSSSS
```

(2) 49
(3) 63
(4) 99

HISTORY ; Detailed Current Edit History
DECLARATIONS
COBSCVTQP_R9

```
0000 1 .TITLE COBSCVTQP_R9 COBOL Convert Quad to Packed
0000 2 .IDENT /1-008/ ; File: COBSCVTQP.MAR
0000 3
0000 4
0000 5 *****
0000 6 *
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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 FACILITY: COBOL TYPE CONVERSION
0000 29 ++
0000 30 ABSTRACT:
0000 31 This module contains the routine which converts signed quadwords
0000 32 to packed.
0000 33
0000 34
0000 35 --
0000 36
0000 37 VERSION: 1
0000 38
0000 39 HISTORY:
0000 40
0000 41 AUTHOR:
0000 42 John Sauter, 29-DEC-78
0000 43
0000 44 MODIFIED BY:
0000 45
0000 46
0000 47
```

```
0000 49      .SBTTL HISTORY          ; Detailed Current Edit History
0000 50
0000 51
0000 52 : Edit History for Version 1 of COBSCVTQP
0000 53 :
0000 54 : 1-001 - Original from Marty Jack.
0000 55 : 1-002 - Use byte displacement lengths. JBS 29-DEC-78
0000 56 : 1-003 - Make entry point symbol global. JBS 03-JAN-1979
0000 57 : 1-004 - Minor editing cleanup. JBS 11-JAN-1979
0000 58 : 1-005 - Bug fixes and cleanup. MLJ 10-Mar-1979
0000 59 : 1-006 - 19 digit temps. MLJ 13-Mar-1979
0000 60 : 1-007 - Cosmetic changes. RKR 18-OCT-79
0000 61 : 1-008 - Add comments to header. 05-NOV-79
```

```
0000 63      .SBTTL  DECLARATIONS
0000 64
0000 65 :
0000 66 : INCLUDE FILES:
0000 67 :
0000 68
0000 69 :
0000 70 : EXTERNAL SYMBOLS:
0000 71 :     NONE
0000 72 :
0000 73
0000 74 :
0000 75 : MACROS:
0000 76 :     NONE
0000 77 :
0000 78
0000 79 :
0000 80 : PSECT DECLARATIONS:
0000 81 :     .PSECT  _COB$CODE          PIC, SHR, LONG, EXE, NOWRT
0000 82
0000 83 :
0000 84 : EQUATED SYMBOLS:
0000 85 :     NONE
0000 86 :
0000 87
0000 88 :
0000 89 : OWN STORAGE:
0000 90 :
0000 91 :+
0000 92 : The following constant has the value 2**32.  It is used for scaling
0000 93 : the high 32 bits and for compensating for unsigned arithmetic.
0000 94 :-
6C 29 67 49 29 04 0000 95 BIAS:  .PACKED 4294967296      ; 2**32
0000 96 BIAS_DIGITS=10
0006 97 :
```

```

0006 99      .SBTTL COBSCVTQP_R9
0006 100
0006 101 :++
0006 102 : FUNCTIONAL DESCRIPTION:
0006 103 :
0006 104 :     Converts a 64-bit (quadword) integer to packed.
0006 105 :
0006 106 : CALLING SEQUENCE:
0006 107 :
0006 108 :     JSB COBSCVTQP_R9 (scale.rl.v, src.rq.r, dstlen.rl.v, dst.wp.r)
0006 109 :
0006 110 :     Arguments are passed in R6, R7, R8 and R9.
0006 111 :
0006 112 : INPUT PARAMETERS:
0006 113 :
0006 114 :     SCALE.rl.v           The power of ten by which the internal
0006 115 :                          representation of the source must be
0006 116 :                          multiplied to scale the same as the
0006 117 :                          internal representation of the dest.
0006 118 :     SRC.rq.r             The number to be converted
0006 119 :     DSTLEN.rl.v         The number of digits in the destination
0006 120 :
0006 121 : IMPLICIT INPUTS:
0006 122 :
0006 123 :     ALL of the trap bits in the PSL are assumed off.
0006 124 :
0006 125 : OUTPUT PARAMETERS:
0006 126 :
0006 127 :     DST.wp.r             The place to store the converted number
0006 128 :
0006 129 : IMPLICIT OUTPUTS:
0006 130 :
0006 131 :     NONE
0006 132 :
0006 133 : FUNCTION VALUE
0006 134 :
0006 135 :     1 = SUCCESS, 0 = FAILURE
0006 136 :
0006 137 :
0006 138 : COMPLETION CODES:
0006 139 :
0006 140 :     NONE
0006 141 :
0006 142 : SIDE EFFECTS:
0006 143 :
0006 144 :     Destroys registers R0 through R9.
0006 145 :
0006 146 : --
0006 147 :

```

```

0006 148 COBSCVTQP R9::
0006 149     SUBL2 #20,SP           : Allocate temp space
0009 150     CMPV #31,#1,(R7),4(R7) : Is number in longword range?
000F 151     BNEQ 11$           : Br if not to do slower code
0011 152     CVTLP (R7),#10,(SP) : Convert low order longword
0015 153     ASHP R6,#10,(SP),#0,R8,(R9) : Scale to destination
001C 154     : (also clears R0)
001C 155     BVS 10$             : Br if overflowed

```

```

04 A7 67 5E 14 C2
01 1F EC
13 12
6E 0A 67 F9
6E 0A 56 F8
02 1D

```

```

      5E 50 D6 001E 156      INCL  R0      : Indicate success, R0 = 1
      14 C0 0020 157 10$: ADDL2 #20,SP  : Deallocate temp space
      05 0023 158      RSB              : Return
      0024 159 :+
      0024 160 : Come here if the input number is not in longword range. Sum the
      0024 161 : converted high order longword, multiplied by 2**32, and the converted
      0024 162 : low order longword, considered as an unsigned number.
      0024 163 :-
      13 6E 6E 0A 04 A7 F9 0024 164 11$: CVTLP 4(R7),#10,(SP) : Convert high order longword
      6E 0A D3 AF 0A 25 0029 165      MULP #BIAS_DIGITS,BIAS,#10,(SP),#19,8(SP)
      08 AE 0030 166
      6E 0A 67 F9 0032 166      : Multiply by 2**32
      06 18 0032 167      CVTLP (R7),#10,(SP) : Convert low order longword
      6E 0A C4 AF 0A 20 0036 168      BGEQ 12$ : Br if nonnegative
      0038 169      ADDP4 #BIAS_DIGITS,BIAS,#10,(SP)
      003E 170
      69 58 08 AE 13 6E 0A 20 003E 171 12$: ADDP4 #10,(SP),#19,8(SP) : Correct for signed conversion
      00 63 13 56 F8 0044 172      ASHP R6,#19,(R3),#0,R8,(R9) : Sum low and high order parts
      004B 173      : Scale to destination
      02 1D 004B 174      BVS 13$ : (also clears R0)
      50 D6 004B 174      : Br if overflowed
      14 C0 004D 175      INCL R0 : Indicate success, R0 = 1
      5E 14 C0 004F 176 13$: ADDL2 #20,SP  : Deallocate temp space
      05 0052 177      RSB              : Return
      0053 178 :
      0053 179      .END

```

COB\$CVTQP_R9
Symbol table

COBOL Convert Quad to Packed

K 14

15-SEP-1984 23:40:45
6-SEP-1984 10:43:35

VAX/VMS Macro V04-00
[COBRTL.SRC]COB\$CVTQP.MAR;1

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(4)

BIAS 00000000 R 01
BIAS DIGITS = 0000000A
COB\$CVTQP_R9 00000006 RG 01

! Psect synopsis !

PSECT name	Allocation	PSECT No.	Attributes												
ABS	00000000 (0.)	00 (0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE		
_COB\$CODE	00000053 (83.)	01 (1.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG		

! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	32	00:00:00.05	00:00:01.01
Command processing	114	00:00:00.28	00:00:03.45
Pass 1	70	00:00:00.33	00:00:01.36
Symbol table sort	0	00:00:00.00	00:00:00.00
Pass 2	46	00:00:00.22	00:00:01.40
Symbol table output	2	00:00:00.00	00:00:00.00
Psect synopsis output	2	00:00:00.01	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	268	00:00:00.91	00:00:07.24

The working set limit was 750 pages.
2251 bytes (5 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 3 non-local and 4 local symbols.
179 source lines were read in Pass 1, producing 8 object records in Pass 2.
0 pages of virtual memory were used to define 0 macros.

! Macro library statistics !

Macro library name	Macros defined
_\$255\$DUA28:[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\$:COB\$CVTQP/OBJ=OBJ\$:COB\$CVTQP MSRC\$:COB\$CVTQP/UPDATE=(ENH\$:COB\$CVTQP)

