





(2) 50  
(3) 89

DECLARATIONS  
LIB\$REMOTI - Remove Entry from Queue Tail

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0000 1      .TITLE LIB$REMGTI - Remove Entry from Queue at Tail, Interlocked
0000 2      .IDENT /1-002/ ; File: LIBREMGTI.MAR Edit: DGP1002
0000 3
0000 4
0000 5 *****
0000 6 *
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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     One of four procedures which give higher level languages access
0000 35     to the interlocked, self-relative queue instructions on the
0000 36     VAX-11/780 and all future machines. This library procedure permits
0000 37     the high level language user to have access to the REMGTI instruction.
0000 38
0000 39 ENVIRONMENT: User Mode, AST Reentrant
0000 40
0000 41 --
0000 42 AUTHOR: R. E. Johnston, CREATION DATE: 03-Dec-79
0000 43
0000 44 MODIFIED BY:
0000 45
0000 46     1-001 - Original. REJ 03-Dec-79
0000 47     1-002 - Retry count is off by one. DGP 14-Aug-1981
0000 48 --

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0000 50      .SBTTL  DECLARATIONS
0000 51      :
0000 52      : INCLUDE FILES:
0000 53      :
0000 54      :
0000 55      :
0000 56      : EXTERNAL DECLARATIONS:
0000 57      :
0000 58      .DSABL  GBL                ; Disable automatic generation
0000 59      :                               ; of .EXTRN
0000 60      .EXTRN  $$$ NORMAL          ; Normal successful completion
0000 61      .EXTRN  LIB$_SECINTFAI      ; Secondary Interlock still
0000 62      :                               ; locked after retry-cnt retrys
0000 63      .EXTRN  LIB$_ONEENTQUE      ; Successful Completion but
0000 64      :                               ; the queue is now empty
0000 65      .EXTRN  LIB$_QUEWASEMP      ; Queue was empty
0000 66      :                               ; Queue is not modified
0000 67      :                               ; Procedure is not successful
0000 68      :
0000 69      : MACROS:
0000 70      :
0000 71      :
0000 72      :
0000 73      : EQUATED SYMBOLS:
0000 74      :
0000000A 0000 75      DEF_RETRY_CNT = 10    ; Default retry count for
0000 76      :                               ; Secondary Interlock fails
0000 77      :
0000 78      : OWN STORAGE:
0000 79      :
0000 80      :
0000 81      :
0000 82      : PSECT DECLARATIONS:
0000 83      :
00000000 0000 84      .PSECT _LIB$CODE PIC, SHR, LONG, EXE, NOWRT
0000 85      :
0000 86      :
0000 87      :
```

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0000 89 .SBTTL LIB$REMGTI - Remove Entry from Queue Tail
0000 90 :++
0000 91 : FUNCTIONAL DESCRIPTION:
0000 92 :
0000 93 :
0000 94 : One of four procedures which give higher level languages access
0000 95 : to the interlocked, self-relative queue instructions on the
0000 96 : VAX-11/780 and all future machines. This library procedure permits
0000 97 : the high level language user to have access to the REMGTI instruction.
0000 98 : With this procedure the user may remove a queue entry from the tail of
0000 99 : a user specified queue.
0000 100 :
0000 101 : If the entry is successfully removed from the tail of the queue and the
0000 102 : queue now contains one or more entries, a successful completion status
0000 103 : is returned. If the entry is removed from the tail of the queue and no
0000 104 : other entries are now in the queue, the execution is successful but a
0000 105 : unique status value is returned indicating that the queue now contains
0000 106 : no entries (LIB$_ONEENTQUE).
0000 107 :
0000 108 : These queue instructions are synchronized across all processors
0000 109 : through the use of a secondary interlock. The user may specify a
0000 110 : secondary interlock retry count. (The default retry count is 10.)
0000 111 : If the secondary interlock remains locked through retry-count retries,
0000 112 : a secondary interlock status is returned to the user (LIB$_SECINTFAI)
0000 113 : and the entry is NOT successfully removed from the tail of the queue.
0000 114 :
0000 115 : If an attempt is made to remove an entry from a queue which is already
0000 116 : empty, a unique unsuccessful completion status is returned to the
0000 117 : user (LIB$_QUEWASEMP).
0000 118 :
0000 119 : CALLING SEQUENCE:
0000 120 :
0000 121 : ret-status.wlc.v = LIB$REMGTI (header.mq.r, addr.wl.r[, retry-cnt.rlu.r])
0000 122 :
0000 123 :
0000 124 : INPUT PARAMETERS:
0000 125 :
00000004 0000 126 : HEADER = 4 ; Address of queue header
00000008 0000 127 : ADDR = 8 ; Address where queue entry address
0000000C 0000 128 : ; is to be returned to user
0000 129 : RETRY_CNT = 12 ; Address of retry count
0000 130 :
0000 131 : IMPLICIT INPUTS:
0000 132 :
0000 133 : NONE
0000 134 :
0000 135 : OUTPUT PARAMETERS:
0000 136 :
0000 137 : NONE
0000 138 :
0000 139 : IMPLICIT OUTPUTS:
0000 140 :
0000 141 : NONE
0000 142 :
0000 143 : FUNCTION VALUE:
0000 144 :
0000 145 : SSS_NORMAL - Entry removed from tail of queue, queue still contains
```

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0000 146 :
0000 147 : LIB$_ONEENTQUE - one or more entries
0000 148 : Successful completion of instruction (REMQTI).
0000 149 : Entry removed from tail of queue, but queue is now
0000 150 : empty.
0000 151 : LIB$_SECINTFAI - Secondary Interlock failed, queue is not modified.
0000 152 : LIB$_QUEWASEMP - Unsuccessful completion of instruction (REMQTI).
0000 153 : The queue was empty before the instruction was
0000 154 : executed.
0000 155 : SIDE EFFECTS:
0000 156 :
0000 157 : SSS$_ROPRAND - reserved operand fault for:
0000 158 : 1.) either the entry or the header is at an address
0000 159 : that is not quad word aligned.
0000 160 : 2.) address of header equals address of entry.
0000 161 :
0000 162 : --
0000 163 :
0000 164 : .ENTRY LIB$REMQTI , ^M< > ; Entry point
0002 165 :
50 0A D0 0002 166 : MOVL #DEF_RETRY_CNT, R0 ; R0 = Default retry count of 10
03 6C 91 0005 167 : CMPB (AP), #<RETRY_CNT/4> ; Check for optional retry cnt operand
50 0C BC D0 0008 168 : BLSSU 20$ ; Branch if default count to be used
08 BC 04 BC D0 000A 169 : MOVL @RETRY_CNT(AP), R0 ; R0 = User specified retry count
08 BC 04 BC 5F 000E 170 20$: REMQTI @HEADER(AP), @ADDR(AP) ; Do the instruction (REMQTI)
14 1F 0013 171 : BCS 40$ ; Branch if C = 1
08 13 0015 172 : ; (Secondary Interlock fail)
0017 173 : BEQL 30$ ; Branch if Z = 1
50 0000000'8F D0 0017 174 : ; (Queue is now empty)
001E 175 : MOVL #SS$_NORMAL, R0 ; Normal status - Entry removed from
001E 176 : ; tail of queue and one or more entries
04 001E 177 : ; are still in queue
001F 178 : RET ; Successful return to user
13 1D 001F 179 30$: BVS 50$ ; Branch if V = 1
50 0000000'8F D0 0021 180 : ; (There was nothing to remove)
0021 181 : MOVL #LIB$_ONEENTQUE, R0 ; Assume the queue is just now empty
04 0028 182 : RET ; Entry successfully removed from queue
0029 183 : ; Successful return to user
50 0000000'8F F4 0029 184 40$: SOBGEQ R0, 20$ ; Loop until retry count is exhausted
002C 185 : MOVL #LIB$_SECINTFAI, R0 ; Retry count is exhausted
04 0033 186 : RET ; Secondary Interlock fail status
0034 187 : ; Unsuccessful return to user
50 0000000'8F D0 0034 188 50$: MOVL #LIB$_QUEWASEMP, R0 ; Queue was already empty before
003B 189 : ; this queue instruction was executed
04 003B 190 : RET ; Unsuccessful return to user
003C 191 : .END

```

LIB\$REMGTI  
Symbol table

ADDR	=	00000008		
DEF_RETRY_CNT	=	0000000A		
HEADER	=	00000004		
LIB\$REMGTI		00000000	RG	01
LIB\$ONEENTQUE	*****		X	00
LIB\$QUEWASEMP	*****		X	00
LIB\$SECINTFAI	*****		X	00
RETRY_CNT	=	0000000C		
SS\$NORMAL	*****		X	00

-----  
! 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	0000003C ( 60.)	01 ( 1.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG		

-----  
! Performance indicators !  
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Phase	Page faults	CPU Time	Elapsed Time
Initialization	30	00:00:00.05	00:00:03.06
Command processing	107	00:00:00.31	00:00:02.17
Pass 1	69	00:00:00.32	00:00:02.86
Symbol table sort	0	00:00:00.01	00:00:00.01
Pass 2	53	00:00:00.22	00:00:03.01
Symbol table output	2	00:00:00.01	00:00:00.02
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	265	00:00:00.95	00:00:11.14

The working set limit was 900 pages.  
2041 bytes (4 pages) of virtual memory were used to buffer the intermediate code.  
There were 10 pages of symbol table space allocated to hold 9 non-local and 4 local symbols.  
195 source lines were read in Pass 1, producing 11 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\$:LIBREMGTI/OBJ=OBJ\$:LIBREMGTI MSRC\$:LIBREMGTI/UPDATE=(ENH\$:LIBREMGTI)



