```
LLL                    IIIIIIIII     BBBBBBBBBBBB    RRRRRRRRRRR    TTTTTTTTTTTTTT   LLL
LLL                    IIIIIIIII     BBBBBBBBBBBB    RRRRRRRRRRR    TTTTTTTTTTTTTT   LLL
LLL                    IIIIIIIII     BBBBBBBBBBBB    RRRRRRRRRRR    TTTTTTTTTTTTTT   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
LLLLLLLLLLLLLLL           III        BBBBBBBBBBBB    RRR      RRR        TTT         LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL        IIIIIIIII     BBBBBBBBBBBB    RRR      RRR        TTT         LLLLLLLLLLLLLLL
LLLLLLLLLLLLLLL        IIIIIIIII     BBBBBBBBBBBB    RRR      RRR        TTT         LLLLLLLLLLLLLLL
```

```
LL          IIIIII   BBBBBBBB   WW      WW     AAAAAA     IIIIII   TTTTTTTTTT
LL          IIIIII   BBBBBBBB   WW      WW     A'AAAA     IIIIII   TTTTTTTTTT
LL            II     BB    BB   WW      WW    AA    AA      II         TT
LL            II     BB    BB   WW      WW    AA    AA      II         TT
LL            II     BB    BB   WW      WW    AA    AA      II         TT
LL            II     BB         WW      WW    AA    AA      II         TT
LL            II     BBBBBBBB   WW      WW    AA    AA      II         TT
LL            II     BBBBBBBB   WW      WW    AA    AA      II         TT
LL            II     BB    BB   WW  WW  WW   AAAAAAAAAA     II         TT
LL            II     BB    BB   WW  WW  WW   AAAAAAAAAA     II         TT
LL            II     BB    BB   WWWW  WWWW   AA    AA       II         TT
LL            II     BB    BB   WWWW  WWWW   AA    AA       II         TT
LLLLLLLLLL  IIIIII   BBBBBBBB   WW      WW   AA    AA     IIIIII       TT
LLLLLLLLLL  IIIIII   BBBBBBBB   WW      WW   AA    AA     IIIIII       TT


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
```

```
    1    0001   0   MODULE LIBSWAIT ( %TITLE 'Wait for a given period of time'
    2    0002   0                     IDENT = '1-001'          ! File: LIBWAIT.B32 Edit: SBL1001
    3    0003   0                   ) =
    4    0004   1   BEGIN
    5    0005   1
    6    0006   1   !****************************************************************
    7    0007   1   !*                                                              *
    8    0008   1   !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                     *
    9    0009   1   !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.      *
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   15    0015   1   !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY  *
   16    0016   1   !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY  *
   17    0017   1   !*  TRANSFERRED.                                                *
   18    0018   1   !*                                                              *
   19    0019   1   !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE  *
   20    0020   1   !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT  *
   21    0021   1   !*  CORPORATION.                                                *
   22    0022   1   !*                                                              *
   23    0023   1   !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS  *
   24    0024   1   !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.     *
   25    0025   1   !*                                                              *
   26    0026   1   !*                                                              *
   27    0027   1   !****************************************************************
   28    0028   1   !
   29    0029   1
   30    0030   1   !++
   31    0031   1   ! FACILITY:      General Utility Library
   32    0032   1   !
   33    0033   1   ! ABSTRACT:
   34    0034   1   !
   35    0035   1   !      LIBSWAIT hibernates the current process for a specified period
   36    0036   1   !      of time.
   37    0037   1   !
   38    0038   1   ! ENVIRONMENT:  User mode - AST reentrant
   39    0039   1   !
   40    0040   1   ! AUTHOR: Steven B. Lionel, CREATION DATE: 07-Jul-1982
   41    0041   1   !
   42    0042   1   ! MODIFIED BY:
   43    0043   1   !
   44    0044   1   ! 1-001 - Original.  SBL 07-Jul-1982
   45    0045   1   !--
   46    0046   1
```

```
48      0047  1  %SBTTL 'Declarations'
49      0048  1  !
50      0049  1  ! PROLOGUE FILE:
51      0050  1  !
52      0051  1
53      0052  1  REQUIRE 'RTLIN:LIBPROLOG';                    . Switches, PSECTS, macros
53      0123  1
54      0123  1  !
55      0124  1  ! LINKAGES:
56      0125  1  !
57      0126  1  !        NONE
58      0127  1  !
59      0128  1  ! TABLE OF CONTENTS:
60      0129  1  !
61      0130  1  !
62      0131  1
63      0132  1  FORWARD ROUTINE
64      0133  1      LIB$WAIT;                                 ! Wait a given period of time
65      0134  1
66      0135  1  ! MACROS:
67      0136  1  !
68      0137  1  !        NONE
69      0138  1  !
70      0139  1  ! EQUATED SYMBOLS:
71      0140  1  !
72      0141  1  !        NONE
73      0142  1  !
74      0143  1  ! FIELDS:
75      0144  1  !
76      0145  1  !        NONE
77      0146  1  !
78      0147  1  ! OWN STORAGE:
79      0148  1  !
80      0149  1  !        NONE
81      0150  1  !
82      0151  1  ! EXTERNALS:
83      0152  1  !
84      0153  1  !
85      0154  1
86      0155  1  EXTERNAL LITERAL
87      0156  1      LIB$_INVARG;
```

```
LIBSWAIT        Wait for a given period of time          K  5
1-001           LIBSWAIT - Wait a given period of time   16-Sep-1984 01:21:57    VAX-11 Bliss-32 V4.0-742    Page  3
                                                         14-Sep-1984 12:39:38    [LIBRTL.SRC]LIBWAIT.B32;1         (3)
```

```
 89    0157  1  %SBTTL 'LIBSWAIT - Wait a given period of time'
 90    0158  1  GLOBAL ROUTINE LIBSWAIT (
 91    0159  1      SECONDS: REF VECTOR [, LONG]         ! Number of seconds to wait
 92    0160  1      ) =
 93    0161  1
 94    0162  1  !++
 95    0163  1  ! FUNCTIONAL DESCRIPTION:
 96    0164  1  !
 97    0165  1  !       This procedure places the current process into hibernation for
 98    0166  1  !       the number of seconds specified.
 99    0167  1  !
100    0168  1  ! CALLING SEQUENCE:
101    0169  1  !
102    0170  1  !       ret_status.wlc.v = LIBSWAIT (tenths.rf.r)
103    0171  1  !
104    0172  1  ! FORMAL PARAMETERS:
105    0173  1  !
106    0174  1  !       SECONDS              Number of seconds to wait expressed as an
107    0175  1  !                            F_floating value.  The value must be between 0
108    0176  1  !                            and 100000.00.  The resolution of the delay
109    0177  1  !                            is to the nearest hundredth-second.
110    0178  1  !
111    0179  1  ! IMPLICIT INPUTS:
112    0180  1  !
113    0181  1  !       NONE
114    0182  1  !
115    0183  1  ! IMPLICIT OUTPUTS:
116    0184  1  !
117    0185  1  !       NONE
118    0186  1  !
119    0187  1  ! COMPLETION STATUS:
120    0188  1  !
121    0189  1  !       SS$_NORMAL        Normal successful completion
122    0190  1  !       LIB$_INVARG       Invalid argument.  SECONDS was less than zero or was
123    0191  1  !                         greater than 100000
124    0192  1  !       LIB$_WRONUMARG    Wrong number of arguments.
125    0193  1  !       SS$_xxx           Error status returned by the $SCHDWK system service.
126    0194  1  !
127    0195  1  ! SIDE EFFECTS:
128    0196  1  !
129    0197  1  !       Schedules a wakeup for the current process and places the process into
130    0198  1  !       hibernation.
131    0199  1  !
132    0200  1  !--
133    0201  1
134    0202  2     BEGIN
135    0203  2
136    0204  2     LOCAL
137    0205  2         RET_STATUS,                        ! Return status
138    0206  2         DELTA_TIME: VECTOR [2, LONG];      ! Quadword time to wait
139    0207  2
140    0208  2     LITERAL
141    0209  2         N_OF_TICKS_IN_CENTISECOND = -100000;   ! Number of 100-nanosecond
142    0210  2                                                ! clock ticks in .01 seconds;
143    0211  2                                                ! negative because we need
144    0212  2                                                ! a negative delta time.
145    0213  2     BUILTIN
```

LIB$WAIT   Wait for a given period of time   L 5
1-001   LIB$WAIT - Wait a given period of time   16-Sep-1984 01:21:57   VAX-11 Bliss-32 V4.0-742   Page 4
                                                                     14-Sep-1984 12:39:38   [LIBRTL.SRC]LIBWAIT.B32;1   (3)   1.

```
 146    0214    2          CMPF,
 147    0215    2          CVTRFL,
 148    0216    2          EMUL,
 149    0217    2          MULF;
 150    0218    2
 151    0219    2      !+
 152    0220    2      ! Validate argument count.
 153    0221    2      !-
 154    0222    2
 155    0223    2      $LIB$VALIDATE_ARGCOUNT (1,1);
 156    0224    2
 157    0225    2      !+
 158    0226    2      ! Return the error LIB$_INVARG if SECONDS is out if range.
 159    0227    2      !
 160    0228    2      ! \\ Note:  The code generated by the CMPFs is awful, though
 161    0229    2      !    correct.  The BLISS folks say that this will be fixed
 162    0230    2      !    in a future release.  One could get the right code by
 163    0231    2      !    saying: CASE CMPF(..) FROM -1 TO 1 , but in the interest
 164    0232    2      !    of clarity, I'll wait. \\
 165    0233    2      !-
 166    0234    2
 167    0235    2      IF CMPF (SECONDS [0], %REF (%E'100000')) GTR 0 OR
 168    0236    2         CMPF (SECONDS [0], %REF (%E'0')) LSS 0
 169    0237    2      THEN
 170    0238    2          RETURN LIB$_INVARG;
 171    0239    2
 172    0240    2      !+
 173    0241    2      ! Get number of centiseconds and then round to an integer.
 174    0242    2      !-
 175    0243    2
 176    0244    2      MULF (SECONDS [0], %REF (%E'100'), DELTA_TIME [0]);
 177    0245    2      CVTRFL (DELTA_TIME [0], DELTA_TIME [0]);
 178    0246    2
 179    0247    2      !+
 180    0248    2      ! Convert the number of centiseconds to wait into a VMS delta time.
 181    0249    2      !-
 182    0250    2
 183    0251    2      EMUL (%REF (N_OF_TICKS_IN_CENTISECOND),     ! Number of ticks in .01 seconds
 184    0252    2          DELTA_TIME [0],                        ! Number of centiseconds
 185    0253    2          %REF (0),                              ! Addend - zero
 186    0254    2          DELTA_TIME);                           ! Delta time result
 187    0255    2
 188    0256    2      !+
 189    0257    2      ! Schedule a wakeup for the current process.  Note that if SECONDS is
 190    0258    2      ! zero, the wakeup happens immediately.
 191    0259    2      !-
 192    0260    2
 193    0261    2      RET_STATUS = $SCHDWK (DAYTIM = DELTA_TIME);
 194    0262    2      IF NOT .RET_STATUS
 195    0263    2      THEN
 196    0264    2          RETURN .RET_STATUS;
 197    0265    2
 198    0266    2      !+
 199    0267    2      ! Hibernate, and return the status of the $HIBER when it wakes up.
 200    0268    2      !-
 201    0269    2
 202    0270    2      RETURN ($HIBER);
```

LIB$WAIT   Wait for a given period of time   M 5   16-Sep-1984 01:21:57   VAX-11 Bliss-32 V4.0-742   Page 5
1-001   LIB$WAIT - Wait a given period of time   14-Sep-1984 12:39:38   [LIBRTL.SRC]LIBWAIT.B32;1   (3)

01
1-

```
; 203          0271 2
; 204          0272 1     END;                                              ! End of routine LIB$WAIT


                                                            .TITLE    LIB$WAIT Wait for a given period of time
                                                            .IDENT    \1-001\

                                                            .EXTRN    LIB$_INVARG, LIB$_WRONUMARG
                                                            .EXTRN    SYS$SCHDWK, SYS$HIBER

                                                            .PSECT    _LIB$CODE,NOWRT,  SHR,  PIC,2

                                0000 00000          .ENTRY    LIB$WAIT, Save nothing                        ; 0158
                           5E   08   C2 00002       SUBL2     #8, SP
                           01   6C   91 00005       CMPB      (AP), #1                                       ; 0223
                           08   13 00008            BEQL      1$
               50 00000000G 8F   D0 0000A           MOVL      #LIB$_WRONUMARG, R0
                           04 00011                 RET
        500048C3  8F    04  BC   51 00012 1$:       CMPF      aSECONDS, #100000                             ; 0235
                           50   DC 0001A            MOVPSL    R0
    50        50        02   02   EF 0001C          EXTZV     #2, #2, R0, R0
                           50   D7 00021            DECL      R0
                           13   19 00023            BLSS      2$
        00000000  8F    04  BC   51 G0025          CMPF      aSECONDS, #0                                   ; 0236
                           50   DC 0002D            MOVPSL    R0
    50        50        02   02   EF 0002F          EXTZV     #2, #2, R0, R0
                           50   D7 00034            DECL      R0
                           08   15 00036            BLEQ      3$
               50 00000000G 8F   D0 00038 2$:       MOVL      #LIB$_INVARG, R0                              ; 0238
                           04 0003F                 RET
        6E 000043C8  8F   04  BC   45 00040 3$:     MULF3     aSECONDS, #100, DELTA_TIME                    ; 0244
                           6E   6E   4B 00049        CVTRFL    DELTA_TIME, DELTA_TIME                        ; 0245
    6E        00        6E FFFE7960 8F   7A 0004C   EMUL      #-100000, DELTA_TIME, #0, DELTA_TIME          ; 0251
                           7E   D4 00055            CLRL      -(SP)                                          ; 0261
                           04   AE   9F 00057       PUSHAB    DELTA_TIME
                           7E   7C 0005A            CLRQ      -(SP)
              00000000G 00   04   FB 0005C          CALLS     #4, SYS$SCHDWK
                           07   50   E9 00063       BLBC      RET_STATUS, 4$                                ; 0262
              00000000G 00   00   FB 00066          CALLS     #0, SYS$HIBER                                 ; 0270
                           04 0006D 4$:             RET                                                      ; 0272

; Routine Size:  110 bytes,     Routine Base:  _LIB$CODE + 0000


; 205          0273 1 !<BLF/PAGE>
```

LIB$WAIT   Wait for a given period of time   N 5
1-001   LIB$WAIT - Wait a given period of time   16-Sep-1984 01:21:57   VAX-11 Bliss-32 V4.0-742   Page 6
                                                           14-Sep-1984 12:39:38   [LIBRTL.SRC]LIBWAIT.B32;1   (4)

```
; 207    0274 1 END                          ! End of module LIB$WAIT
; 208    0275 1
; 209    0276 0 ELUDOM
```

;
:
:   PSECT SUMMARY
:
:
:   Name   Bytes   Attributes
: _LIB$CODE   110 NOVEC,NOWRT, RD , EXE, SHR, LCL, REL, CON, PIC,ALIGN(2)
:
:
:
:   Library Statistics
:   -------- Symbols --------   Pages   Processing
:   File   Total   Loaded   Percent   Mapped   Time
:
: _255DUA28:[SYSLIB]STARLET.L32;1   9776   4   0   581   00:00.7
: _255DUA28:[LIBRTL.OBJ]RTLLIB.L32;1   36   1   2   8   00:00.1
:
:
:
:   COMMAND QUALIFIERS
:
:   BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS$:LIBWAIT/OBJ=OBJ$:LIBWAIT MSRC$:LIBWAIT/UPDATE=(ENH$:LIBWAIT)
:
: Size: 110 code + 0 data bytes
: Run Time: 00:03.0
: Elapsed Time: 00:18.0
: Lines/CPU Min: 5538
: Lexemes/CPU-Min: 16916
: Memory Used: 49 pages
: Compilation Complete