


```

LL          IIIIII  BBBB BBBB  MM      MM      AAAAAA  CCCCCCCC  RRRRRRRR  000000  SSSSSSSS
LL          IIIIII  BBBB BBBB  MM      MM      AAAAAA  CCCCCCCC  RRRRRRRR  000000  SSSSSSSS
LL          II      BB      BB  MMMM  MMMM  AA      AA  CC      CC      RR      RR  00      00  SS
LL          II      BB      BB  MMMM  MMMM  AA      AA  CC      CC      RR      RR  00      00  SS
LL          II      BB      BB  MM  MM  MM  AA      AA  CC      CC      RR      RR  00      00  SS
LL          II      BB      BB  MM  MM  MM  AA      AA  CC      CC      RR      RR  00      00  SS
LL          II      BBBB BBBB  MM  MM  MM  AA      AA  CC      CC      RRRRRRRR  00      00  SSSSSS
LL          II      BBBB BBBB  MM  MM  MM  AA      AA  CC      CC      RRRRRRRR  00      00  SSSSSS
LL          II      BB      BB  MM  MM  AAAAAAAAAA  CC      CC      RR  RR  00      00  SS
LL          II      BB      BB  MM  MM  AAAAAAAAAA  CC      CC      RR  RR  00      00  SS
LL          II      BB      BB  MM  MM  AA      AA  CC      CC      RR  RR  00      00  SS
LL          II      BB      BB  MM  MM  AA      AA  CC      CC      RR  RR  00      00  SS
LLLLLLLLLL  IIIIII  BBBB BBBB  MM      MM      AA      AA  CCCCCCCC  RR      RR  000000  SSSSSSSS
LLLLLLLLLL  IIIIII  BBBB BBBB  MM      MM      AA      AA  CCCCCCCC  RR      RR  000000  SSSSSSSS

```

```

RRRRRRRR  EEEEEEEEE  QQQQQQ
RRRRRRRR  EEEEEEEEE  QQQQQQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RRRRRRRR  EEEEEEEEE  QQ      QQ
RRRRRRRR  EEEEEEEEE  QQ      QQ
RR  RR  EE      QQ  QQ  QQ
RR  RR  EE      QQ  QQ  QQ
RR      RR  EE      QQ      QQ
RR      RR  EEEEEEEEE  QQQQ  QQ
RR      RR  EEEEEEEEE  QQQQ  QQ

```

! Macros for the Run-Time Library LIB\$ facility
! File: LIBMACROS.REQ, Edit: SBL1003

```

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```

Author: Steven B. Lionel, 16-August-1982

- 1-001 - Original. SBL 16-August-1982
- 1-002 - Add macros to read, write and copy with autoincrement.
SBL 12-Apr-1983
- 1-003 - Add \$LIB\$MOVQ. SBL 17-June-1983

```

+
This file contains macros which are available to any BLISS module that
REQUIRES LIBPROLOG.REQ. Macros in this file are useful to any LIB$
module written in BLISS. All macros defined MUST have names that begin
with "$LIB$".
-

```

```
+ $LIB$VALIDATE_ARGCOUNT
```

```
Macro used to check that a LIB$ procedure was called with the correct number of arguments. If the test fails, the procedure returns with the failure status LIB$_WRONUMARG.
```

```
Format:
```

```
$LIB$VALIDATE_ARGCOUNT (lo, hi);
```

```
lo = Lowest number of arguments which are valid (0-255)  
hi = Highest number of arguments which are valid (0-255)
```

```
MACRO
```

```
$LIB$VALIDATE_ARGCOUNT (lo, hi) =
```

```
BEGIN
```

```
BUILTIN
```

```
ACTUALCOUNT;
```

```
EXTERNAL LITERAL
```

```
LIB$_WRONUMARG;
```

```
%IF lo NEQ hi
```

```
%THEN
```

```
%IF lo NEQ 0
```

```
%THEN
```

```
LOCAL
```

```
DIFF: BYTE;
```

```
DIFF = ACTUALCOUNT () - lo;
```

```
IF .DIFF GTRU (hi - lo)
```

```
THEN
```

```
RETURN LIB$_WRONUMARG;
```

```
%ELSE
```

```
IF ACTUALCOUNT () GTRU hi
```

```
THEN
```

```
RETURN LIB$_WRONUMARG;
```

```
%FI
```

```
%ELSE
```

```
IF ACTUALCOUNT () NEQU lo
```

```
THEN
```

```
RETURN LIB$_WRONUMARG;
```

```
%FI
```

```
END %;
```

```
!+
!-
!+ Macros to read, write and copy with autoincrement.
```

```
MACRO
```

```
$LIB$RBYTE_A(P) = (P = .P+1; .(.P-1)<0,8>) %;
$LIB$RWORD_A(P) = (P = .P+2; .(.P-2)<0,16>) %;
$LIB$RLONG_A(P) = (P = .P+4; .(.P-4)<0,32>) %;

$LIB$WBYTE_A(P) = (P=.P+1; .P-1)<0,8> %;
$LIB$WORD_A(P) = (P=.P+2; .P-2)<0,16> %;
$LIB$WLONG_A(P) = (P=.P+4; .P-4)<0,32> %;

$LIB$COPY_BYTE_A (S,D) = ($LIB$WBYTE_A(D)=$LIB$RBYTE_A(S)) %;
$LIB$COPY_WORD_A (S,D) = ($LIB$WORD_A(D)=$LIB$RWORD_A(S)) %;
$LIB$COPY_LONG_A (S,D) = ($LIB$WLONG_A(D)=$LIB$RLONG_A(S)) %;
$LIB$COPY_QUAD_A (S,D) = ((.D)<0,32>=.(.S)<0,32>;
    (.D+4)<0,32>=.(.S+4)<0,32>; D=.D+8; S=.S+8) %;
```

```
!+
!-
!+ Macro to move a quadword with a MOVQ instruction.
```

```
MACRO
```

```
$LIB$MOVQ (S,D) =
    BEGIN
    (D) = .(S);
    ((D)+4) = .((S)+4);
    END %;
```

```
! End of file LIBMACROS.REQ
```

BRARM5G
L15

LIBRTL

LIBRTL
MAP

LIBRTL2
MAP

LIBMTDEF
SDL

SUBS
L15

OTSISB
SDL

LIBPROLOG
REQ

OTSCCBREQ
REQ

OTSMAC
REQ

L15
LISTLIB

LIBCLIDF
SDL

LIBLNK
REQ

OTSLNK
REQ

LIBCONFDEF
SDL

PROCMO
L15

LIBMACROS
REQ

RTL1B
REQ

OTSLUB
SDL