



```

LL          IIIIII  BBBB8888  MM      MM      AAAAAA  CCCCCCCC  RRRRRRRR  000000  SSSSSSSS
LL          IIIIII  BBBB8888  MM      MM      AAAAAA  CCCCCCCC  RRRRRRRR  000000  SSSSSSSS
LL          II      BB      BB  MMMM  MMMM  AA      AA  CC      RR      RR  00      00  SS
LL          II      BB      BB  MMMM  MMMM  AA      AA  CC      RR      RR  00      00  SS
LL          II      BB      BB  MM  MM  MM  AA      AA  CC      RR      RR  00      00  SS
LL          II      BB      BB  MM  MM  MM  AA      AA  CC      RR      RR  00      00  SS
LL          II      BBBB8888  MM  MM  MM  AA      AA  CC      RRRRRRRR  00      00  SSSSSS
LL          II      BBBB8888  MM  MM  MM  AA      AA  CC      RRRRRRRR  00      00  SSSSSS
LL          II      BB      BB  MM  MM  AAAAAAAAAA  CC      RR  RR  00      00  SS
LL          II      BB      BB  MM  MM  AAAAAAAAAA  CC      RR  RR  00      00  SS
LL          II      BB      BB  MM  MM  AA      AA  CC      RR  RR  00      00  SS
LL          II      BB      BB  MM  MM  AA      AA  CC      RR  RR  00      00  SS
LLLLLLLLLL  IIIIII  BBBB8888  MM      MM  AA      AA  CCCCCCCC  RR      RR  000000  SSSSSSSS
LLLLLLLLLL  IIIIII  BBBB8888  MM      MM  AA      AA  CCCCCCCC  RR      RR  000000  SSSSSSSS

```

```

RRRRRRRR  EEEEEEEEEE  QQQQQQ
RRRRRRRR  EEEEEEEEEE  QQQQQQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RRRRRRRR  EEEEEEEEEE  QQ      QQ
RRRRRRRR  EEEEEEEEEE  QQ      QQ
RR  RR  EE      QQ  QQ  QQ
RR  RR  EE      QQ  QQ  QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EEEEEEEEEE  QQQQ  QQ
RR      RR  EEEEEEEEEE  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 LIB$PROLOG.REQ. Macros in this file are useful to any LIB$
* 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

