NAME

ld – link editor

SYNOPSIS

ld [–**sulxrdni**] name ...

DESCRIPTION

Ld combines several object programs into one; resolves external references; and searches libraries. In the simplest case the names of several object programs are given, and *ld* combines them, producing an object module which can be either executed or become the input for a further *ld* run. (In the latter case, the –**r** option must be given to preserve the relocation bits.) The output of *ld* is left on **a.out.** This file is made executable only if no errors occurred during the load.

The argument routines are concatenated in the order specified. The entry point of the output is the beginning of the first routine.

If any argument is a library, it is searched exactly once at the point it is encountered in the argument list. Only those routines defining an unresolved external reference are loaded. If a routine from a library references another routine in the library, the referenced routine must appear after the referencing routine in the library. Thus the order of programs within libraries is important.

The symbols "_etext", "_edata", and "_end" are reserved by the loader and, if referred to, are set to the first location above the program, the first location above initialized data, and the first location above all data, respectively. It is erroneous to define these symbols.

Ld understands several flag arguments which are written preceded by a '–'. Except for –**l**, they should appear before the file names.

–**s** 'squash' the output, that is, remove the symbol table and relocation bits to save space (but impair the usefulness of the debugger). This information can also be removed by *strip.*

–**u** take the following argument as a symbol and enter it as undefined in the symbol table. This is useful for loading wholly from a library, since initially the symbol table is empty and an unresolved reference is needed to force the loading of the first routine.

–**l** This option is an abbreviation for a library name. –**l** alone stands for '/lib/liba.a', which is the standard system library for assembly language programs. –**l***x* stands for '/lib/lib*x*.a' where *x* is any character. A library is searched when its name is encountered, so the placement of a –**l** is significant.

–**x** do not preserve local (non-.globl) symbols in the output symbol table; only enter external symbols. This option saves some space in the output file.

–**X** Save local symbols except for those whose names begin with 'L'. This option is used by *cc* to discard internally generated labels while retaining symbols local to routines.

–**r** generate relocation bits in the output file so that it can be the subject of another *ld* run. This flag also prevents final definitions from being given to common symbols, and suppresses the 'undefined symbol' diagnostics.

–**d** force definition of common storage even if the –**r** flag is present.

–**n** Arrange that when the output file is executed, the text portion will be read-only and shared among all users executing the file. This involves moving the data areas up the the first possible 4K word boundary following the end of the text.

−i When the output file is executed, the program text and data areas will live in separate address spaces. The only difference between this option and **−n** is that here the data starts at location 0.

FILES

/lib/lib?.a libraries
a.out output file

SEE ALSO

as (I), ar (I)

BUGS