

**NAME**

gold - The GNU ELF linker

**SYNOPSIS**

**ld.gold** [*options*] *file...*

**OPTIONS**

**--help** Report usage information

**-v, --version**  
Report version information

**-V** Report version and target information

**--add-needed**  
Not supported

**--no-add-needed**  
Do not copy DT\_NEEDED tags from shared libraries

**--allow-multiple-definition** Allow multiple definitions of symbols

**--no-allow-multiple-definition**  
Do not allow multiple definitions

**--allow-shlib-undefined**  
Allow unresolved references in shared libraries

**--no-allow-shlib-undefined**  
Do not allow unresolved references in shared libraries

**--as-needed**  
Only set DT\_NEEDED for shared libraries if used

**--no-as-needed**  
Always DT\_NEEDED for shared libraries

**-assert** [*ignored*]  
Ignored

**-b** [*elf,binary*], **--format** [*elf,binary*]  
Set input format

**-Bdynamic -l** searches for shared libraries

**-Bstatic -l** does not search for shared libraries

**-dy** alias for **-Bdynamic**

**-dn** alias for **-Bstatic**

**-Bgroup**  
Use group name lookup rules for shared library

**-Bsymbolic**  
Bind defined symbols locally

**-Bsymbolic-functions**  
Bind defined function symbols locally

**--build-id** [=STYLE]  
Generate build ID note

**--build-id-chunk-size-for-treehash** SIZE  
Chunk size for '--build-id=tree'

**--build-id-min-file-size-for-treehash** SIZE  
Minimum output file size for '--build-id=tree' to work differently than '--build-id=sha1'

- check-sections**  
Check segment addresses for overlaps (default)
- no-check-sections**  
Do not check segment addresses for overlaps
- compress-debug-sections** [none,zlib]  
Compress `.debug_*` sections in the output file
- copy-dt-needed-entries**  
Not supported
- no-copy-dt-needed-entries** Do not copy `DT_NEEDED` tags from shared libraries
- cref** Output cross reference table
- no-cref**  
Do not output cross reference table
- ctors-in-init-array**  
Use `DT_INIT_ARRAY` for all constructors (default)
- no-ctors-in-init-array**  
Handle constructors as directed by compiler
- d, --define-common**  
Define common symbols
- no-define-common**  
Do not define common symbols
- dc** Alias for **-d**
- dp** Alias for **-d**
- debug** [all,files,script,task][,...]  
Turn on debugging
- defsym** SYMBOL=EXPRESSION  
Define a symbol
- demangle** [=STYLE]  
Demangle C++ symbols in log messages
- no-demangle**  
Do not demangle C++ symbols in log messages
- detect-odr-violations**  
Look for violations of the C++ One Definition Rule
- no-detect-odr-violations**  
Do not look for violations of the C++ One Definition Rule
- x, --discard-all**  
Delete all local symbols
- X, --discard-locals**  
Delete all temporary local symbols
- dynamic-list-data**  
Add data symbols to dynamic symbols
- dynamic-list-cpp-new**  
Add C++ operator new/delete to dynamic symbols
- dynamic-list-cpp-typeinfo** Add C++ typeinfo to dynamic symbols

- dynamic-list FILE**  
Read a list of dynamic symbols
- e ADDRESS, --entry ADDRESS** Set program start address
- exclude-libs lib,lib ...**  
Exclude libraries from automatic export
- E, --export-dynamic**  
Export all dynamic symbols
- no-export-dynamic**  
Do not export all dynamic symbols (default)
- export-dynamic-symbol SYMBOL**  
Export SYMBOL to dynamic symbol table
- EB** Link big-endian objects.
- EL** Link little-endian objects.
- eh-frame-hdr**  
Create exception frame header
- no-enum-size-warning**  
(ARM only) Do not warn about objects with incompatible enum sizes
- f SHLIB, --auxiliary SHLIB** Auxiliary filter for shared object symbol table
- F SHLIB, --filter SHLIB**  
Filter for shared object symbol table
- fatal-warnings**  
Treat warnings as errors
- no-fatal-warnings**  
Do not treat warnings as errors
- fini SYMBOL**  
Call SYMBOL at unload-time
- fix-cortex-a8**  
(ARM only) Fix binaries for Cortex-A8 erratum.
- no-fix-cortex-a8**  
(ARM only) Do not fix binaries for Cortex-A8 erratum.
- fix-arm1176**  
(ARM only) Fix binaries for ARM1176 erratum.
- no-fix-arm1176**  
(ARM only) Do not fix binaries for ARM1176 erratum.
- merge-exidx-entries**  
(ARM only) Merge exidx entries in debuginfo.
- no-merge-exidx-entries**  
(ARM only) Do not merge exidx entries in debuginfo.
- fix-v4bx**  
(ARM only) Rewrite BX rn as MOV pc, rn for ARMv4
- fix-v4bx-interworking**  
(ARM only) Rewrite BX rn branch to ARMv4 interworking veneer
- g** Ignored

- gdb-index**  
Generate .gdb\_index section
- no-gdb-index**  
Do not generate .gdb\_index section
- gnu-unique**  
Enable STB\_GNU\_UNIQUE symbol binding (default)
- no-gnu-unique**  
Disable STB\_GNU\_UNIQUE symbol binding
- h FILENAME, -soname FILENAME**  
Set shared library name
- hash-bucket-empty-fraction FRACTION**  
Min fraction of empty buckets in dynamic hash
- hash-style [sysv,gnu,both]**  
Dynamic hash style
- I PROGRAM, --dynamic-linker PROGRAM**  
Set dynamic linker path
- incremental**  
Do an incremental link if possible; otherwise, do a full link and prepare output for incremental linking
- no-incremental**  
Do a full link (default)
- incremental-full**  
Do a full link and prepare output for incremental linking
- incremental-update**  
Do an incremental link; exit if not possible
- incremental-base FILE**  
Set base file for incremental linking (default is output file)
- incremental-changed**  
Assume files changed
- incremental-unchanged**  
Assume files didn't change
- incremental-unknown**  
Use timestamps to check files (default)
- incremental-startup-unchanged**  
Assume startup files unchanged (files preceding this option)
- incremental-patch PERCENT** Amount of extra space to allocate for patches
- init SYMBOL**  
Call SYMBOL at load-time
- just-symbols FILE**  
Read only symbol values from FILE
- map-whole-files**  
Map whole files to memory (default on 64-bit hosts)
- no-map-whole-files**  
Map relevant file parts to memory (default on 32-bit hosts)

- keep-files-mapped**  
Keep files mapped across passes (default)
- no-keep-files-mapped**  
Release mapped files after each pass
- ld-generated-unwind-info**  
Generate unwind information for PLT (default)
- no-ld-generated-unwind-info**  
Do not generate unwind information for PLT
- l LIBNAME, --library LIBNAME**  
Search for library LIBNAME
- L DIR, --library-path DIR**  
Add directory to search path
- text-reorder**  
Enable text section reordering for GCC section names (default)
- no-text-reorder**  
Disable text section reordering for GCC section names
- nostdlib**  
Only search directories specified on the command line.
- rosegment**  
Put read-only non-executable sections in their own segment
- rosegment-gap OFFSET**  
Set offset between executable and read-only segments
- m EMULATION**  
Set GNU linker emulation; obsolete
- mmap-output-file**  
Map the output file for writing (default).
- no-mmap-output-file**  
Do not map the output file for writing.
- M, --print-map**  
Write map file on standard output
- Map MAPFILENAME**  
Write map file
- n, --nmagic**  
Do not page align data
- N, --omagic**  
Do not page align data, do not make text readonly
- no-omagic**  
Page align data, make text readonly
- enable-new-dtags**  
Enable use of DT\_RUNPATH and DT\_FLAGS
- disable-new-dtags**  
Disable use of DT\_RUNPATH and DT\_FLAGS
- noinhibit-exec**  
Create an output file even if errors occur

- no-undefined**  
Report undefined symbols (even with **--shared**)
- o FILE, --output FILE**  
Set output file name
- O LEVEL, -optimize LEVEL**  
Optimize output file size
- ofORMAT [binary]**  
Set output format
- p** (ARM only) Ignore for backward compatibility
- pie** Create a position independent executable
- no-pie**  
Do not create a position independent executable
- pic-executable**  
Create a position independent executable
- no-pic-executable**  
Do not create a position independent executable
- no-pipeline-knowledge**  
(ARM only) Ignore for backward compatibility
- plt-align [=P2ALIGN]**  
(PowerPC64 only) Align PLT call stubs to fit cache lines
- plt-static-chain**  
(PowerPC64 only) PLT call stubs should load r11
- no-plt-static-chain**  
(PowerPC64 only) PLT call stubs should not load r11
- plt-thread-safe**  
(PowerPC64 only) PLT call stubs with load-load barrier
- no-plt-thread-safe**  
(PowerPC64 only) PLT call stubs without barrier
- plugin PLUGIN**  
Load a plugin library
- plugin-opt OPTION**  
Pass an option to the plugin
- posix-fallocate**  
Use `posix_fallocate` to reserve space in the output file (default).
- no-posix-fallocate**  
Use `fallocate` or `ftruncate` to reserve space.
- pre-read-archive-symbols**  
Pre-read archive symbols when multi-threaded
- print-output-format**  
Print default output format
- print-symbol-counts FILENAME**  
Print symbols defined and used for each input
- Qy** Ignored for SVR4 compatibility

- q, --emit-relocs**  
Generate relocations in output
- r, -relocatable**  
Generate relocatable output
- i**      Synonym for **-r**
- relax**  
Relax branches on certain targets
- retain-symbols-file** FILE  
keep only symbols listed in this file
- R** DIR  
Add DIR to runtime search path
- rpath** DIR  
Add DIR to runtime search path
- rpath-link** DIR  
Add DIR to link time shared library search path
- section-ordering-file** FILENAME  
Layout sections in the order specified.
- section-start** SECTION=ADDRESS  
Set address of section
- sort-common** [= {ascending,descending}]  
Sort common symbols by alignment
- sort-section** [none,name]  
Sort sections by name. '**--no-text-reorder**' will override '**--sort-section=name**' for .text
- spare-dynamic-tags** COUNT  
Dynamic tag slots to reserve (default 5)
- s, --strip-all**  
Strip all symbols
- S, --strip-debug**  
Strip debugging information
- strip-debug-non-line**  
Emit only debug line number information
- strip-debug-gdb**  
Strip debug symbols that are unused by gdb (at least versions <= 7.4)
- strip-lto-sections**  
Strip LTO intermediate code sections
- stub-group-size** SIZE  
(ARM, PowerPC only) The maximum distance from instructions in a group of sections to their stubs. Negative values mean stubs are always after (PowerPC before) the group. 1 means use default size.
- no-keep-memory**  
Use less memory and more disk I/O (included only for compatibility with GNU ld)
- G, -shared**  
Generate shared library
- Bshareable**  
Generate shared library

**--split-stack-adjust-size** SIZE  
Stack size when **-fsplit-stack** function calls non-split

**-static**  
Do not link against shared libraries

**--icf** [none,all,safe]  
Identical Code Folding. '**--icf=safe**' Folds ctors, dtors and functions whose pointers are definitely not taken.

**--icf-iterations** COUNT  
Number of iterations of ICF (default 2)

**--print-icf-sections**  
List folded identical sections on stderr

**--no-print-icf-sections**  
Do not list folded identical sections

**--keep-unique** SYMBOL  
Do not fold this symbol during ICF

**--gc-sections**  
Remove unused sections

**--no-gc-sections**  
Don't remove unused sections (default)

**--print-gc-sections**  
List removed unused sections on stderr

**--no-print-gc-sections**  
Do not list removed unused sections

**--stats**  
Print resource usage statistics

**--sysroot** DIR  
Set target system root directory

**-t, --trace**  
Print the name of each input file

**-T** FILE, **--script** FILE  
Read linker script

**--threads**  
Run the linker multi-threaded

**--no-threads**  
Do not run the linker multi-threaded

**--thread-count** COUNT  
Number of threads to use

**--thread-count-initial** COUNT  
Number of threads to use in initial pass

**--thread-count-middle** COUNT  
Number of threads to use in middle pass

**--thread-count-final** COUNT  
Number of threads to use in final pass

**-Tbss** ADDRESS  
Set the address of the bss segment



- Tdata** ADDRESS  
Set the address of the data segment
- Ttext** ADDRESS  
Set the address of the text segment
- Ttext-segment** ADDRESS  
Set the address of the text segment
- Trodata-segment** ADDRESS  
Set the address of the rodata segment
- toc-optimize**  
(PowerPC64 only) Optimize TOC code sequences
- no-toc-optimize**  
(PowerPC64 only) Don't optimize TOC code sequences
- toc-sort**  
(PowerPC64 only) Sort TOC and GOT sections
- no-toc-sort**  
(PowerPC64 only) Don't sort TOC and GOT sections
- u** SYMBOL, **--undefined** SYMBOL  
Create undefined reference to SYMBOL
- unresolved-symbols** ignore-all,report-all,ignore-in-object-files,ignore-in-shared-libs  
How to handle unresolved symbols
- verbose**  
Synonym for **--debug=files**
- version-script** FILE  
Read version script
- warn-common**  
Warn about duplicate common symbols
- no-warn-common**  
Do not warn about duplicate common symbols (default)
- warn-constructors**  
Ignored
- no-warn-constructors**  
Ignored
- warn-execstack**  
Warn if the stack is executable
- no-warn-execstack**  
Do not warn if the stack is executable (default)
- no-warn-mismatch**  
Don't warn about mismatched input files
- warn-multiple-gp**  
Ignored
- warn-search-mismatch**  
Warn when skipping an incompatible library
- no-warn-search-mismatch**  
Don't warn when skipping an incompatible library

- warn-shared-textrel**  
Warn if text segment is not shareable
- no-warn-shared-textrel**  
Do not warn if text segment is not shareable (default)
- warn-unresolved-symbols**  
Report unresolved symbols as warnings
- error-unresolved-symbols**  
Report unresolved symbols as errors
- no-wchar-size-warning**  
(ARM only) Do not warn about objects with incompatible wchar\_t sizes
- whole-archive**  
Include all archive contents
- no-whole-archive**  
Include only needed archive contents
- wrap** SYMBOL  
Use wrapper functions for SYMBOL
- y** SYMBOL, **--trace-symbol** SYMBOL  
Trace references to symbol
- undefined-version**  
Allow unused version in script (default)
- no-undefined-version**  
Do not allow unused version in script
- Y** PATH  
Default search path for Solaris compatibility
- (, --start-group**  
Start a library search group
- ), --end-group**  
End a library search group
- start-lib**  
Start a library
- end-lib**  
End a library
- fuse-ld**  
Ignored for GCC linker option compatibility
- z** combreloc  
Sort dynamic relocs
- z** nocombreloc  
Do not sort dynamic relocs
- z** common-page-size=SIZE  
Set common page size to SIZE
- z** defs Report undefined symbols (even with **--shared**)
- z** execstack  
Mark output as requiring executable stack
- z** initfirst  
Mark DSO to be initialized first at runtime

- z interpose**  
Mark object to interpose all DSOs but executable
- z lazy** Mark object for lazy runtime binding (default)
- z loadfltr**  
Mark object requiring immediate process
- z max-page-size=SIZE**  
Set maximum page size to SIZE
- z muldefs**  
Allow multiple definitions of symbols
- z nocopyreloc**  
Do not create copy relocs
- z nodefaultlib**  
Mark object not to use default search paths
- z nodelete**  
Mark DSO non-deletable at runtime
- z nodlopen**  
Mark DSO not available to dlopen
- z nodump**  
Mark DSO not available to dldump
- z noexecstack**  
Mark output as not requiring executable stack
- z now** Mark object for immediate function binding
- z origin**  
Mark DSO to indicate that needs immediate \$ORIGIN processing at runtime
- z relro**  
Where possible mark variables read-only after relocation
- z norelro**  
Don't mark variables read-only after relocation
- z text** Do not permit relocations in read-only segments
- z notext**  
Permit relocations in read-only segments (default)
- z textoff**  
Permit relocations in read-only segments (default)
- z builddd**  
Dummy z option

ld.gold: supported targets: elf32-i386 elf32-i386-freebsd elf32-i386-nacl elf32-x86-64  
elf32-x86-64-freebsd elf32-x86-64-nacl elf64-x86-64 elf64-x86-64-freebsd elf64-x86-64-nacl ld.gold:  
supported emulations: elf\_i386 elf\_i386\_nacl elf32\_x86\_64 elf32\_x86\_64\_nacl elf\_x86\_64  
elf\_x86\_64\_nacl

## REPORTING BUGS

Report bugs to <<http://www.sourceware.org/bugzilla/>>

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