

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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