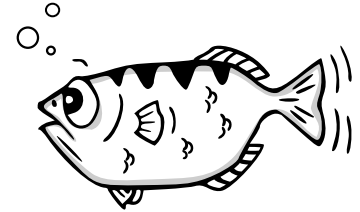


GDB: The GNU Project Debugger



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GDB: The GNU Project Debugger

What is GDB?

GDB, the GNU Project debugger, allows you to see what is going on `inside' another program while it executes -- or what another program was doing at the moment it crashed.

GDB can do four main kinds of things (plus other things in support of these) to help you catch bugs in the act:

- Start your program, specifying anything that might affect its behavior.
- Make your program stop on specified conditions.
- Examine what has happened, when your program has stopped.
- Change things in your program, so you can experiment with correcting the effects of one bug and go on to learn about another.

Those programs might be executing on the same machine as GDB (native), on another machine (remote), or on a simulator. GDB can run on most popular UNIX and Microsoft Windows variants, as well as on Mac OS X.

What Languages does GDB Support?

GDB supports the following languages (in alphabetical order):

- Ada
- Assembly
- C
- C++
- D
- Fortran
- Go
- Objective-C
- OpenCL
- Modula-2
- Pascal
- Rust

GDB version 12.1

Version [12.1](#) of GDB, the GNU Debugger, is now available for [download](#). See the [ANNOUNCEMENT](#) for details including changes in this release.

An errata list ([PROBLEMS](#)) and [documentation](#) are also available.

News

Dec 18th, 2022: GDB 13 branch created

The GDB 13 branch (gdb-13-branch) has been created. To check out a copy of the branch use:

git clone --branch gdb-13-branch https://sourceware.org/git/binutils-gdb.git
 May 1st, 2022: **GDB 12.1 Released!**

The latest version of GDB, version 12.1, is available for [download](#).

This version of GDB includes the following changes and enhancements:

- New support for the following native configuration:
 - GNU/Linux/OpenRISC or1k*-*-linux*
- New support for the following targets:
 - GNU/Linux/LoongArch loongarch*-*-linux*
- New GDBserver support on the following configuration:
 - GNU/Linux/OpenRISC or1k*-*-linux*
- Support for the following target has been removed:
 - S+core score*-*-*
- Multithreaded symbol loading is now enabled by default
- Deprecation Notices:
 - GDB 12 is the last release of GDB that will support building against Python 2
 - DBX mode is deprecated, and will be removed in GDB 13
- GDB/MI changes:
 - The '-add-inferior' with no option flags now inherits the connection of the current inferior, this restores the behaviour of GDB as it was prior to GDB 10.
 - The '-add-inferior' command now accepts a '--no-connection' option, which causes the new inferior to start without a connection.
- Python API enhancements:
 - It is now possible to add GDB/MI commands implemented in Python
 - New function `gdb.Architecture.integer_type()`
 - New `gdb.events.gdb_exiting` event
 - New 'gdb.events.connection_removed' event registry
 - New `gdb.TargetConnection` object
 - New `gdb.Inferior.connection` property
 - New read-only attribute `gdb.InferiorThread.details`
 - New `gdb.RemoteTargetConnection.send_packet` method
 - New read-only attributes `gdb.Type.is_scalar` and `gdb.Type.is_signed`
 - The `gdb.Value.format_string` method now takes a 'styling' argument
 - Various new function in the "gdb" module
- Miscellaneous:
 - The FreeBSD native target now supports async mode
 - Improved C++ template support
 - Support for disabling source highlighting through GNU of the Pygments library instead.
 - The "print" command has been changed so as to print floating-point values with a base-modifying formats such as "/x" to display the underlying bytes of the value in the desired base.
 - The "clone-inferior" command now ensures that the TTY, CMD and ARGS settings are copied from the original inferior to the new one. All modifications to the environment variables done using the 'set environment' or 'unset environment' commands are also copied to the new inferior.
 - Various new commands have been introduced

See the [NEWS](#) file for a more complete and detailed list of what this release includes.

January 16th, 2022: **GDB 11.2 Released!**

The latest version of GDB, version 11.2, is available for [download](#).

This is a minor corrective release over GDB 11.1, fixing the following issues:

- [PR sim/28302](#) (gdb fails to build with glibc 2.34)
- [PR build/28318](#) (std::thread support configure check does not use CXX_DIALECT)

- [PR gdb/28405](#) (arm-none-eabi: internal-error: ptid_t remote_target::select_thread_for_ambiguous_stop_reply(const target_waitstatus*): Assertion `first_resumed_thread != nullptr' failed)
- [PR tui/28483](#) ([gdb/tui] breakpoint creation not displayed)
- [PR build/28555](#) (uclibc compile failure since commit 4655f8509fd44e6efabefa373650d9982ff37fd6)
- [PR rust/28637](#) (Rust characters will be encoded using DW_ATE_UTF)
- [PR gdb/28758](#) (GDB 11 doesn't work correctly on binaries with a SHT_RELR (.relr.dyn) section)
- [PR gdb/28785](#) (Support SHT_RELR (.relr.dyn) section)

See the [NEWS](#) file for a more complete and detailed list of what this release includes.

Nov 28, 2006: **Reversible Debugging**

The GDB maintainers are looking for contributors interested in [reversible debugging](#).

Late breaking information, such as recently added features, can be found in the [NEWS](#) file in the gdb source tree. Old announcements are in the news [archive](#).

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Please send FSF & GNU inquiries & questions to gnu@gnu.org. There are also [other ways to contact the FSF](#).

This page is maintained by [the GDB developers](#).

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