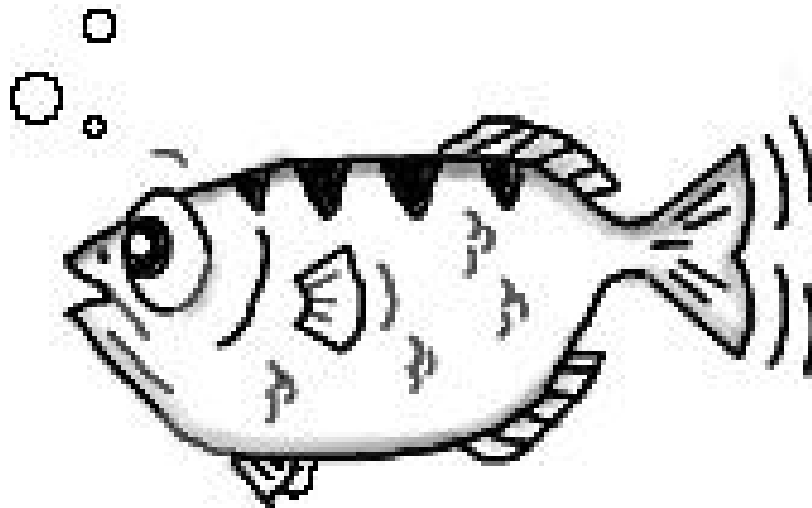


GDB BoF

GDB BoF & quick status update

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GNU Cauldron 2018



Outline

- One year, three releases (8.1, 8.1.1, 8.2)
- GDB 8.3 in the assembly line
- C++ conversion quick update
- Discussion, planning

GDB 8.1

- Dynamic XML target descriptions
- 'ptype /o', like pahole(1)
- "--readnever" command line option
- GNU MPFR library for target floating-point arithmetic emulation
- IBM z14, more registers
- Completion improvements
 - down with quoting in linespecs
 - better contextual completion in linespec and explicit locations TAB
- C++ wildmatching
- Breakpoints on functions marked with C++ ABI tags

GDB 8.1 (II)

- Python Scripting
 - New events: `gdb.new_inferior`, `gdb.inferior_deleted`, `gdb.new_thread`
 - New function, "`gdb.rbreak`"
 - explicit locations
- GDBserver
 - "`set environment`" works with GDBserver
 - "`set cwd`" / set inferior's initial working directory
 - startup with shell (globbing expansion, variable substitution)
- Ada improvements. Rust improvements.
- New remote packets

GDB 8.1 (III)

- "enable/disable" and range of breakpoint locations:
 - "enable 1.3-5"
- set cwd
- set compile-gcc
- set dump-excluded-mappings
- maint info selftests
- starti
- set print type nested-type-limit

GDB 8.1 (IV)

- TUI Single-Key mode now supports two new shortcut keys
 - 'i' for stepi and 'o' for nexti
- No longer assumes functions w/ no debug info return 'int'
- No longer assumes variables w/ no debug info are 'int'
- New ports: FreeBSD/aarch64, FreeBSD/arm, OpenRISC ELF
- Removed ports: Solaris 2.0-9

GDB 8.2

- Aarch64 SVE support
- Aarch64/Linux HW watchpoints, unaligned addresses, Linux ≥ 4.10
- New ports: Risc-V ELF
- Deleted ports: m88k OpenBSD, SH-5/SH64

- macOS: `-enable-codesign=CERT`

GDB 8.2 (II)

- 'symbol-file -o OFFSET'
- 'add-symbol-file -o OFFSET'
- 'info variables/functions/types' show source line numbers of symbols
- `<c>` disables pager for rest of command
- C `_Alignof`, and C++ `alignof`
- `set/show varsize-limit` (Ada)

GDB 8.2 (III)

- 'set disassembler-options' for MIPS
- 'info proc' now works on FreeBSD
- set|show record btrace cpu

- Python API
 - gdb.Type exposes type alignment
 - breakpoint's "commands" field is writable
 - gdb.execute can execute multi-line gdb commands
 - new gdb.convenience_variable / gdb.set_convenience_variable

GDB 8.3, in master

- Tromeey :-)
- New ports: Risc-V GNU/Linux, C-SKY GNU/LINUX
- Experimental/initial support for libcc1/C++ ("compile command")
- IPv6
- DWARF index cache
- frame apply

GDB 8.3, cooking

- macOS port resurrection
- UBSan / ASan, more -Wfoo
- more libcc1/C++
- More OpenMP improvements
- CLI improvements
 - "frame level / address / function / view"
 - terminal styling / color

GDB 8.3, cooking (II)

- More Python API extensions (HW breakpoints, bp locations, more?)
- 'target remote' + unix domain sockets
- multi-target
- inferior / gdb output decoupling (always a session)
- C++ conversion continues

C++ conversion quick update

- target_ops C++-ified
- More gdb::ref_ptr-ification
- More RAll types
- Most cleanups are gone
 - < 200 to go!
- Get rid of VEC
 - ~30 instances remain
- wrap all of gdb in "namespace gdb"

Discussion, planning

- Release numbering?
 - $7.12 - 7.11 == 8.0 - 7.12 == 8.1 - 8.0$
 - $x.y.z \rightarrow x.y$
- testsuite
 - racy tests
- website
 - CVS \rightarrow git