GDB GNU debugger

CONCEPTS

Compile with -g (and -O0 for sane stepping), otherwise GDB shows no source lines or local variables.

Break break, watch
↓ run
Stopped frame, locals
↓ step / continue
Inspect print, x, info
↓ repeat
Resume next, finish, continue

Press Enter to repeat the last command, and use short forms: b, r, c, n, s, bt, p, i.

START AND ATTACH

gdb *<prog>*
Load a program

gdb --args *<prog> <args>*
Load a program with arguments

gdb -p *<pid>*
Attach to a running process

gdb *<prog> <core>*
Inspect a core dump

run [args]
Start the program

start
Run and stop at the start of main

BREAKPOINTS

break *<func>*
Break at a function

break *<file>*:*<line>*
Break at a line of a file

break *<loc>* **if** *<cond>*
Break only when the condition holds

tbreak *<loc>*
One-shot breakpoint, deleted after first stop

info breakpoints
List breakpoints and watchpoints

delete [*<n>***]**
Delete one breakpoint, or all

disable *<n>* **/ enable** *<n>*
Turn a breakpoint off / on

WATCHPOINTS

watch *<var>*
Stop when a value changes

RUN CONTROL

continue [*<n>***]**
Resume; optionally skip n-1 further hits here

next [*<n>***]**
Step over calls to the next line

step [*<n>***]**
Step into functions with debug info

finish
Run until the current function returns

Ctrl+C
Interrupt the running program

STACK

backtrace
Show the call stack

backtrace full
Include local variables in each frame

thread apply all bt
Backtrace of every thread

frame *<n>*
Select a frame

up [*<n>***] / down [***<n>***]**
Move toward the caller / callee

info locals
Local variables of the frame

info args
Arguments of the frame

INSPECT DATA

print *<expr>*
Evaluate and show an expression

print/x *<expr>*
Print in hex (also d, o, t, c, a)

print *<arr>*@*<n>*
Show n elements from the first one

x/*<n><f><u>* *<addr>*
Examine memory

TEXT UI

layout src
Source window above the command line