

GDB Commands Cheat Sheet

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GDB Commands by Function

% gdb -help	% print startup help, show switches
% gdb object	% normal debug
% gdb object core	% core debug (must specify core file)
% gdb object pid	% attach to running process
% gdb	% use file command to load object

Startup

(gdb) help	% list command classes
(gdb) help running	% list commands in one command class
(gdb) help run	% bottom-level help for a command "run"
(gdb) help info	% list info commands (running program state)
(gdb) help info line	% help for a particular info command
(gdb) help show	% list show commands (gdb state)
(gdb) help show commands	% specific help for a show command

Help

(gdb) break main	% set a breakpoint on a function
(gdb) break 101	% set a breakpoint on a line number
(gdb) break basic.c:101	% set breakpoint at file and line (or function)
(gdb) info breakpoints	% show breakpoints
(gdb) delete 1	% delete a breakpoint by number
(gdb) clear	% delete breakpoints at current line
(gdb) disable 2	% turn a breakpoint off, but don't remove it
(gdb) tbreak function line ...	% set a temporary breakpoint

Breakpoints

(gdb) run	% run the program with current arguments
(gdb) set args args...	% set arguments for run
(gdb) cont	% continue the program
(gdb) step	% single step the program; step into functions
(gdb) next	% step but step over functions
(gdb) CTRL-C	% stop execution of current program
(gdb) attach process-id	% attach to a running program
(gdb) detach	% detach from a running program
(gdb) finish	% finish current function's execution

Running the Program

(gdb) bt	% print stack backtrace
(gdb) frame	% show current execution position
(gdb) up	% move up stack trace (towards main)
(gdb) down	% move down stack trace (away from main)
(gdb) info locals	% print automatic variables in frame

Stack Backtrace

(gdb) list 101	% list 10 lines around line 101
(gdb) list 1,10	% list lines 1 to 10
(gdb) list main	% list lines around function
(gdb) list basic.c:main	% list from another file basic.c
(gdb) list -	% list previous 10 lines
(gdb) search regexpr	% forward search for regular expression
(gdb) reverse-search regexpr	% backward search for regular expression

Browsing Source

(gdb) print expression	% print expression, added to value history
(gdb) print/x expression	% print in hexadecimal
(gdb) ptype name	% print type definition
(gdb) whatis expression	% print type of expression
(gdb) set variable = expression	% assign value
(gdb) display expression	% display expression result at stop
(gdb) info locals	% print local automatics only
(gdb) info functions regexp	% print function names
(gdb) info variables regexp	% print global variable names
(gdb) x/countFormatSize address	% low-level examine command
(gdb) x/x &gx	% print variable gx in hexadecimal

Browsing Data

(gdb) file object	% load new file for debug (sym+exec)
(gdb) symbol-file object	% load only symbol table
(gdb) exec-file object	% specify object to run (not sym-file)
(gdb) core-file core	% post-mortem debugging

Object File Manipulation

(gdb) info signals	% print signal setup
(gdb) handle signo actions	% set debugger actions for signal
(gdb) signal signo	% continue and send signal to program

Signal Control

(gdb) info registers	% print registers sans floats
(gdb) print/x \$pc	% print one register
(gdb) stepi	% single step at machine level
(gdb) nexti	% single step (over functions) at machine level
(gdb) display/i \$pc	% print current instruction in display
(gdb) x/10i main	% disassemble first 10 instructions in \fImain\
fR	
(gdb) disassemble addr	% disassemble code for function around addr

Machine-level Debug

(gdb) show commands	% print command history
(gdb) shell command args	% execute shell command
(gdb) source file	% load gdb commands from file
(gdb) quit	% quit gdb

History Display

(gdb) define command ... end	% define user command
(gdb) RETURN	% repeat last command
(gdb) shell command args	% execute shell command
(gdb) source file	% load gdb commands from file
(gdb) quit	% quit gdb

Miscellaneous