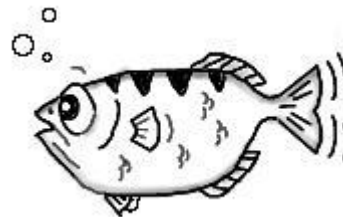


Using GDB with MPI (and C/C++ in general)

Clarissa Garvey
Emory University

What is GDB?

- GDB is the GNU debugger
- Command-line program
- Helps with debugging C, C++, Objective-C, and many* other languages**



*even Julia

*with some restrictions/extra software/more work

How to install GDB

- On Linux: It's probably already installed.
 - If not, you can install from source at <ftp.gnu.org/gnu/gdb> and follow directions at www.tutorialspoint.com/gnu_debugger/installing_gdb.htm
 - On Ubuntu, run `sudo apt-get install gdb`
- On Mac:
 - Support was discontinued since OS X :(
 - Instead, you can use LLDB! It's just like GDB. :)
 - If you can compile C/C++ code, you probably already have one of these

Usage Basics

- Special compiler flag: -g
 - You must compile with -g to set up debugging info
- With one process: start the process using GDB or LLDB, set up the debugger, and run

Demo!

With Multiple Processes

- We'll run the program, then attach GDB as it's running
- Add an infinite loop to the program.
- Compile with -g
- Run the program with multiple processes
- Find their process IDs using ps and grep
- Attach the debugger and debug like normal, but in *parallel* (they're both debugged separately)

Demo!

More Info

- This presentation demo can be found at <https://github.com/ccgarvey/gdb-presentation>
- GDB tutorial: <http://www.unknownroad.com/rtfm/gdbtut/>
- LLDB official tutorial: <http://lldb.llvm.org/tutorial.html>
- LLDB better tutorial: [via developer.apple.com](http://developer.apple.com)
- I'm also happy to help! I'm in office N410

Thank you!