# GITR Install on Mac Using Clang and MacPorts

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# Why do we want to have GITR on a personal computer?

- GITR has a number of inputs and outputs
- While significant computational resources are needed for "global" problems, there are uses for GITR on YOUR computer
  - speed of set-up
  - small scale problems (number of particles and time-steps
  - observation of physics
  - Installation of dependencies can be simplified

# GITR has a number of dependencies (details on next slides)

- Thrust
- netCDF4 C++
- libConfig
- Boost
- Cmake
- open-MPI
- openMP (for some versions of Clang)

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# First things first - Xcode and Macports

- Xcode can be installed from the App Store
  - once Xcode is installed, from the Terminal run `xcode-select --install`
  - This installs some other tools you will need
- Go to https://www.macports.org/install.php and select the proper Mac OS for your computer. Download and execute the .pkg file and follow the prompts.
  - After this is finished, open a new Terminal window and run `sudo port selfupdate`

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# Let's start by pulling the git repositories we need

- Make a folder in your home directory named "Code"
- cd to Code and …
  - git clone `https://github.com/ORNL-Fusion/GITR.git`
  - git clone `https://github.com/thrust/thrust.git`

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# Simple Macports Installs

- sudo port install netcdf-cxx
- sudo port install libconfig-hr
- sudo port install cmake
- sudo port install libomp
- sudo port install openmpi-default
  - sudo port select --set mpi openmpi-mp-fortran

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# Boost Installation (Choose one between 1.61 and 1.69)

- Download a version you like and open the tarball in ~/Code
  - [https://www.boost.org/users/history/version_1_61_0.html](https://www.boost.org/users/history/version_1_61_0.html)
- cd boost_1_61_0
- mkdir ../boostBuild
- ./boostrap.sh --prefix=/Users/yourUsername/Code/boostBuild -- with-libraries=system,filesystem,chrono,timer
- ./b2 link=shared,static cxxflags="-std=c++14" install

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# Now to make GITR

- cd ~/GITR/build
- cp ../examples/d3dTutorial/CMakeLists.txt ../
- source ../env.tutorial.sh
- ./buildGITRtutorial

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