Trilinos Framework Product Overview and Update

James Willenbring
Trilinos Framework Product Overview and Update

• Contributing

• Testing
  • Pull Request and Develop to Master
  • Other

• Releases

• Spack
  • E4S
  • xSDK

• Current and upcoming efforts
Contributing to Trilinos

https://github.com/trilinos/Trilinos/blob/master/CONTRIBUTING.md

• Create an issue
• Implement feature/fix/etc
• Create a Pull Request (PR)
  • PR will need to be reviewed and all PR testing must pass
Trilinos Project Testing

- Pull Request testing
  - A set of testing configurations that must pass before changes are made to the develop branch

- PR test configurations
  - CUDA 10.2.2
  - CUDA 10.2.2 (UVM off)
  - gcc-8.3.0
  - gcc-7.2.0-serial
  - gcc-7.2.0-debug
  - Intel-17.0.1
  - Clang-10.0.0
  - Python-3
Trilinos Project Testing

• Develop to Master promotional testing
  • A set of testing configurations that must pass before changes are promoted from the develop to the master branch
  • Run nightly. Includes all PR configurations (except Python-3) plus:
    • gcc-7.2.0
    • Intel-19.0.5
    • Clang-7.0.1
    • Clang-9.0.0
    • CUDA 10.1.243
    • CUDA 10.1.243 rdc
Trilinos Project Testing

- Specific customer-focused testing
  - Not tied to branch promotions
  - Semi-manually triaged
  - A couple dozen builds are monitored by the framework team

- Other testing
  - Experimental
  - Package-owned
  - Customer-owned

Trilinos Releases

- Renewing a focus on tagged releases
- Target going forward is to release quarterly
- One major release per year
- Major releases allow breakages in backward compatibility
  - No current tests for backward compatibility
- Releases branches are created from the master branch
  - If a release will support a specific customer, acceptance testing may be done prior to release
- Patch updates may be made to release branches
- Most recent release was Trilinos 13.2.0 in October
Building Trilinos Through Spack

- Sameer Shende will speak about E4S and Trilinos Thursday!
- E4S installation instructions
  - [https://e4s-project.github.io/manual-installation.html](https://e4s-project.github.io/manual-installation.html)
- E4S 21.11 environments
  - [https://github.com/E4S-Project/e4s/tree/master/environments/21.11](https://github.com/E4S-Project/e4s/tree/master/environments/21.11)
- xSDK installation instructions
  - [https://xsdk.info/installing-the-software/](https://xsdk.info/installing-the-software/)
- xSDK 0.7 platform files
  - [https://github.com/xsdk-project/installxSDK/tree/r-0.7.0/platformFiles](https://github.com/xsdk-project/installxSDK/tree/r-0.7.0/platformFiles)

- These instructions are general and do not support highly customized Trilinos builds
Current and Upcoming Trilinos Framework Efforts

• Finish moving to new GenConfig build infrastructure (see talk on Thursday)
• Ramp up on Spack and take ownership of the Trilinos Spack package
• Finalize move of PR CUDA builds to a new system and assess apparent capacity problems
• Minor/major release preparation
• Numerous build additions and tweaks
  • Caraway (in progress)
  • C++17 (started, but not currently being worked)
  • Intel 2021
  • CUDA 11
  • Memory leak testing
  • ...