TRILINOS FRAMEWORK UPDATES

Samuel E. Browne
Trilinos User-Developer Group Meeting 11/02/2023

Exceptional service in the national interest
FY23 ACCOMPLISHMENTS

• C++17 / new compiler + MPI toolchains across testing infrastructure
• LLVM AddressSanitizer instrumented build
• Deprecated 7 Trilinos packages and removed from repository
• Added ccache tooling to accelerate PR builds
• Expanded warning flags across PR builds (e.g. shadowing)
• Added nightly Clang + OpenMP build
• Added nightly C++20 build
• Turned off Epetra and other packages in CUDA PR build to prepare for FY24 deprecation
• Lots of exploratory work related to Spack and containers (e.g. nightly container build enables testing OneAPI 2023.1.0)
• Accommodated upgrade of Autotester (separate product from SEMS team)
• Added nightly Kokkos/KokkosKernels develop -> Trilinos develop build/test
FY24 PLANS

• Promote C++20 build to PR status (ensuring readiness for next standard advancement)
• Enhance support for Spack package.py from internal Trilinos developers
• Add at least one spack-based PR build
• Migrate from SEMS Autotester to GitHub Actions for CI/PR builds
  • Will also involve moving from SEMS TPL environment modules to containerized environments
• Add testing for CompSim and RAMSES configurations of Trilinos
• Stretch goal: Use Spack to manage configurations of Trilinos for PR testing (as opposed to current GenConfig system)
• Add advanced hardware builds as hardware becomes available (hopeful to have AMD GPU hardware FY24)