Tentative Agenda

Tuesday, Nov. 30, 2021

Opening	
8:00	Welcome (C. Ober)
8:15	Keynote – *HPC Software Platform Trends: The Evolution of Trilinos from 2001 to 2026* (M. Heroux) (see below)
9:00	20th Anniversary Celebration
Presentations and Updates from Trilinos Product Areas	
9:30	Framework (J. Willenbring)
	1. *Update*
10:00	Data Services (K. Devine)
	1. Update 2. *How to use Tpetra without UVM*
10:30	Discretizations (M. Perego)
	1. *Update* (M. Perego) 2. *Introduction to Krino* (D. Noble)
11:00	Linear Solvers (S. Rajamanickam)
	1. *Update* (S. Rajamanickam) 2. *Trilinos Support on AMD and Intel GPUs* (B. Kelley) 3. *Mixed Precision* (J. Loe, S. Rajamanickam)
11:45	Nonlinear Analysis (R. Pawlowski)
	1. Update
12:00	Adjourn

Wednesday, Dec. 1, 2021

Applications Session	
8:00	Welcome (C. Ober)
8:15	*SPARC Leveraging of Trilinos Components* (Travis Fisher)
8:40	*EMPIRE Title TBD* (R. Pawlowski, K. Cartwright, …)
9:05	*EIGER / GEMMA Electromagnetic Code Capabilities* (Joe D. Kotulski, Vinh Dang)
9:30	*Sierra/Thermal Fluids Title TBD* (J. Clausen, …)
9:55	Break
10:10	*Developing a GPU-enabled 3D Discontinuous Petrov-Galerkin Toolkit: Experiences with Intrepid2* (Julia Plews)
10:35	*Fluid Plasma Model Development in Drekar* (Michael M. Crockatt (SNL), John N. Shadid (SNL), Roger P. Pawlowski (SNL), Sidafa Conde, Sibu Mabuza (Clemson), Jesús Bonilla (LANL))
11:00	Refactoring Amanzi-ATS to leverage Tpetra/Kokkos abstractions for heterogeneous architectures (Julien Loiseau, David Moulton (LANL) and Ethan Coon (ORNL))

11:25	*FROSch Preconditioners for Land Ice Simulations of Greenland and Antarctica* (Alexander Heinlein*, Mauro Perego, Sivasankaran Rajamanickam, and Ichitaro Yamazaki)
11:50	Adjourn

Thursday, Dec. 2, 2021

Developers Session	
8:00	Welcome (C. Ober)
8:00	*A Common Tool for Building Trilinos: Introduction to GenConfig* (Evan Harvey, Joshua Braun, and James Willenbring)
8:15	*PR Testing and the 'Terrible Diagram'* (W. McLendon)
8:30	*TriBits Modernization* (R. Bartlett)
9:00	*User Experience: Defined and Applied* (Ashley Fate)
9:30	*Automated Performance Testing and Tuning* (J. Watkins)
10:00	*Using Trilinos with E4S* (Sameer Shende, University of Oregon)
10:30	Break
Developer Driven Discussions	
10:45	Selection of Topics
11:00	Breakout Discussions
11:30	Full Group Discussion
12:00	Adjourn

Keynote: Mike Heroux

HPC Software Platform Trends: The Evolution of Trilinos from 2001 to 2026

The Trilinos Project started in 2001 as a software platform to support the collaborative development of inter-dependent scientific libraries using a shared software and communications infrastructure. In its early days, Trilinos used CVS, Bugzilla, Mailman, and Autotools to support developers and users. The Trilinos community could count on file system backups, training, mail lists for questions and announcements, and more. Trilinos also provided a "New Package" package as a template for rapid start-up of new packages, or integration of existing external packages.

Since those early days, the broader software community has increasingly provided new and improved tools and processes that superseded what Trilinos initially provided, and the Trilinos Project has evolved to adjust. More change and opportunities are on the horizon.

In this presentation, we discuss the history of scientific software platforms, illustrated through the evolution of Trilinos. We also use this history and current trends to project some of the next possibilities for Trilinos to continue adapting and providing value to its stakeholder communities.