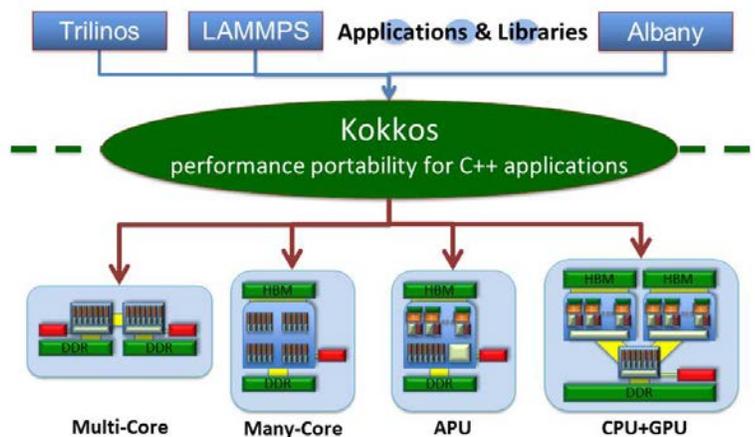


A Hands-on Kokkos Tutorial for Application and Library Developers
A Full Day at CSRI / Room 90
September 1 or 2, 2015 (repeated for two opportunities to sign up)



The Center for Computing Research (CCR) has developed and is supporting the Kokkos programming model and library enabling C++ application performance portability across modern many-core architectures such as Intel Xeon Phi and NVIDIA GPUs. Kokkos supports thread-parallelism by integrating user computations with commonly used parallel patterns (for-each, reduce, scan) for execution on CPU or attached accelerators, and managing user data across CPU and accelerator memory systems.



Participants will learn Kokkos' programming model for implementing thread-scalable algorithms that are performance portable across diverse architectures. We will use hands-on exercises and a walk-through of examples to demonstrate how Kokkos' abstractions and C++ library enable developers to more easily and concisely express non-trivial parallel algorithms and data structures than with OpenMP or CUDA. Participants will also see that implementing computations with the Kokkos library introduces minimal overhead compared to implementations of the same algorithm using native OpenMP or CUDA.

REGISTER BY August 10, 2015: email Phyllis Rutka parutka@sandia.gov

The full day tutorial will be repeated on September 1 and 2, 2015. Email Phyllis Rutka no later than August 10, 2015 to register. Include the following information in your email: preferred day, name, organization, and the program/project you are supporting. Participation is limited to 40 persons each day. Kokkos is funded through the Advanced Simulation & Computing (ASC) program so priority will be given to participants involved in ASC projects.

PREREQUISITES:

- Experience developing software with the C++ language.
- Active account on at least one of the following CCR Advanced Technology Testbeds. Register for accounts by August 24, 2015 to insure account request has time to be processed. Sandians register via webcars.sandia.gov under "High Performance Computing" / "High Performance Computing – Unclassified" / "Clusters". Non-Sandians (e.g., LANL, LLNL) register via their local SARAPE portals.
 - Shannon (dual socket Intel Sandy Bridge + NVIDIA GPU)
 - Compton (dual socket Intel Sandy Bridge + Intel Knights Corner)
 - White (dual socket IBM Power8 + NVIDIA GPU)
- Access to Sandia's T-bird or SHN wireless networks is strongly recommended as there will be very limited wired SRN connectivity available.
- Foreign nationals must have Sandia's CSRI facility on a Sandia FNR by August 31, 2015.