OOKAMI PROJECT APPLICATION

Date: 5/11/2022

Project Title: Reduced- and Mixed- Precision Modeling for Ocean Hydrodynamics

Usage:

- Testbed X
- Production

Principal Investigator:

- University/Company/Institute: The Oden Institute for Computational Engineering and Sciences at The University of Texas at Austin
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Names & Email of initial project users:

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Usage Description:

Initial testing of compilers codes for reduced precision computing in preparation of submission of NSF OAC proposal.

Computational Resources:

- Total node hours per year: 50
- Size (nodes) and duration (hours) for a typical batch job: 1 node 0.1 hours
- Disk space (home, project, scratch): (10GB,10GB,10GB)

Personnel Resources (assistance in porting/tuning, or training for your users):

The project team is familiar with the Slurm environment and code development at other supercomputers. Hence, no resources are required beyond short communications for support.

Required software:

Reduced precision compilers compatible with $AVX512_BF16$ and BF_16

If your research is supported by US federal agencies:

- Agency: NSF PREEVENTS Program
- Grant number(s): 1855047

Production projects:

Production projects should provide an additional 1-2 pages of documentation about how

1. the code has been tuned to perform well on A64FX (ideally including benchmark data comparing performance with other architectures such as x86 or GPUs)
2. it can make effective use of the key A64FX architectural features (notably SVE, the high-bandwidth memory, and NUMA characteristics)
3. it can accomplish the scientific objectives within the available 32 Gbyte memory per node