



Hewlett Packard
Enterprise

HPE Cray MPI Update

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HPE Cray MPI Enables the World's Top Supercomputers

1. ORNL Frontier
2. ANL Aurora
5. EuroHPC/CSC Lumi
12. DOE/SC/LBNL/NERSC Perlmutter
17. GENCI-CINES Adatastra
20. KAUST Shaheen III
24. DOE/NNSA/LANL/SNL Crossroads
25. Pawsey Supercomputing Centre Setonix



What's New in 2023?

- New HPE Cray MPI Features
 - MPIxlate – Application Binary Interface (ABI) translator for MPI programs (Open MPI to MPICH)
 - MPI Spawn / Connect / Accept support (Slurm and PBS Pro / PALs)
 - Enhanced Spack support for NVIDIA, AMD, and Intel versions
 - Miscellaneous improvements to PMI and support for global environment variable configuration
- NIC, GPU, and Hardware Support
 - Integrated Cassini counters and network timeout feature
 - Enhanced Slingshot traffic class interaction with WLMs
 - Support for GPU-NIC async stream triggered RMA operations
 - Enabled GPU kernel-based reductions for certain collectives
 - Support for AMD MI300 APU
 - Support for Intel GPUs
 - Support for Intel Sapphire Rapids CPU with HBM
- Key Optimizations
 - Further performance tuning for AMD and NVIDIA GPUs
 - Collective performance improvements for MPI_Igatherv, MPI_lallgather, and MPI_lallgatherv

Plans for 2024

- Support the MPI 4.1 standard
- Support Slingshot hardware-accelerated collectives
- Support Slingshot NIC triggered-operation non-blocking collectives
- Support next-generation Slingshot hardware
- Support the Grace ARM architecture
- Add Thread-Hot RMA optimizations



Thank you

