Latency of MPI Allreduce @ Fugaku (384 nodes, 1536 ranks) Julia (MPI.jl) C (Riken-CCS) 10<sup>-4</sup> time [sec]  $10^{-6}$ 4 KiB 16 KiB 64 KiB 256 KiB 1 MiB 1 B 4 B 16 B 64 B 256 B 1 KiB 4 MiB message size