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# Software development and performance of Fugaku and ARM architectures

*Friday, 30 July 2021 02:00 (20 minutes)*

The supercomputer “Fugaku” was jointly developed by Fujitsu Limited and RIKEN, and is the latest supercomputer installed at the RIKEN Center for Computational Science in Kobe, Japan. In the recent Top500, HPCG, and HPL-AI benchmark rankings, it has been ranked No. 1 in the world for two consecutive terms (June 2020 and November 2020). The CPU installed in Fugaku is a 48-core + 2 assistant core processor called A64FX, which is an extension of the Arm v8-A instruction set architecture for high-performance computing, and was developed by Fujitsu as the processor for Fugaku. The CPU consists of four “core memory groups” (CMGs) of 12 cores, and the L2 cache is shared by the 12 cores in the CMG. The main memory per node is 32GiB. The interconnect is a Tofu interconnect D. In this talk, we will present an overview of Fugaku, development of LQCD code for A64FX and its performance, and large-scale benchmark results on Fugaku.

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