



PRESS RELEASE (2018/07/12)

K computer grabs top Graph500 ranking for seventh consecutive time

For the seventh consecutive time, Japan's K computer has taken the top ranking on the Graph500 ranking, which gauges the ability of supercomputers on data-intensive loads rather than simple speed. The goal of the benchmark is to improve computing involving complex data problems in "big data" areas such as cybersecurity, medical informatics, data enrichment, social networks, symbolic networks, and modeling neuronal circuits in the brain. The top rank this time was won by a collaboration involving RIKEN, Kyushu University, Tokyo Institute of Technology, the Barcelona Supercomputing Center, Fujitsu, and Fixstars Corporation. The achievement was announced on June 27 at the ISC High Performance conference in Frankfurt. In order to encourage the further development of such tools, the group has published the program as open source code on the GitHub repository.

To conduct the benchmark measurement, the group used 82,944 of the K computer's 88,128 compute nodes to solve a breadth-first search of an extremely large graph of 1 trillion nodes and 16 trillion edges in 0.45 of a second. With this achievement it gained the top place again with a score of 38,621 gigaTEPS.

Two research projects funded by the Japan Science and Technology Agency (JST) CREST programs contributed to this achievement: "Advanced Computing and Optimization Infrastructure for Extremely Large-Scale Graphs on Post Peta-Scale Supercomputers" (PI: Prof. Katsuki Fujisawa of Kyushu University and Co-PI: Prof. Toyotaro Suzumura of Barcelona Supercomputing Center), which is a project in the research area of Development of System Software Technologies for Post-Peta Scale High Performance Computing (Research Supervisor: Prof. Mitsuhsa Sato of RIKEN), and "EBD: Extreme Big Data - Convergence of Big Data and HPC for Yottabyte Processing" (PI: Prof. Satoshi Matsuoka of Tokyo Institute of Technology), which is a project in the Advanced Core Technologies for Big Data Integration area (Research Supervisor: Prof. Masaru Kitsuregawa of the National Institute of Informatics).

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