

Supercomputer “K computer” Takes Consecutive No. 1 in World Ranking

Achieving world’s fastest processing speed of 10.51 petaflops and 93.2% operating efficiency

Tokyo, November 14, 2011 – RIKEN and Fujitsu have taken the No. 1 position for the “K computer” (*1) on the 38th TOP500 (*2) list announced today in the US (November 14, PST), for a consecutive two terms in a row. The K computer, currently under joint development, was designated as being the world’s fastest supercomputer. The TOP500 was previously announced in June 2011.

The TOP500-ranked K computer system has 864 computer racks equipped with a total of 88,128 CPUs. The system achieved the world’s best LINPACK (*3) benchmark performance of 10.51 petaflops (quadrillion floating-point operations per second) with a computer efficiency ratio of 93.2%.

Top 10 Supercomputers on the TOP500 List

Rank	Computer	Site	Vendor	Country	Maximal LINPACK performance achieved
1	K computer	RIKEN Advanced Institute for Computational Science (AICS)	Fujitsu	Japan	10,510
2	Tianhe-1A	National Supercomputing Center in Tianjin	NUDT	China	2,566
3	Jaguar	DOE/SC/Oak Ridge National Laboratory	Cray Inc.	US	1,759
4	Nebulae	National Supercomputing Centre in Shenzhen (NSCS)	Dawning	China	1,271
5	TSUBAME 2.0	GSIC Center, Tokyo Institute of Technology	NEC/HP	Japan	1,192
6	Cielo	DOE/NNSA/LANL/SNL	Cray Inc.	US	1,110
7	Pleiades	NASA/Ames Research Center/NAS	SGI	US	1,088
8	Hopper	DOE/SC/LBNL/NERSC	Cray Inc.	US	1,054
9	Tera-100	Commissariat a l’Energie Atomique (CEA)	Bull SA	France	1,050
10	Roadrunner	DOE/NNSA/LANL	IBM	US	1,042

The certification ceremony will be held at SC11, the International Conference for High Performance Computing, Networking, Storage and Analysis, being held in Seattle, Washington in the United States. The ceremony is scheduled to take place on November 15, 2011 PST (November 16, 2011 in Japan).

Glossary and Terms

1. K computer

The K computer, which is being jointly developed by RIKEN and Fujitsu, is part of the High-Performance Computing Infrastructure (HPCI) initiative led by Japan’s Ministry of Education, Culture, Sports, Science and Technology (MEXT). Configuration of the K computer began in the end of September 2010, with availability for shared use scheduled for 2012. The “K computer” is the nickname RIKEN has been using for the supercomputer of this project since July 2010. “K” comes from the Japanese Kanji letter “Kei” which means ten peta or 10 to the 16th power. The logo for the K computer based on the Japanese letter for Kei, was selected in October 2010. In its original sense, “Kei” expresses a large gateway, and it is hoped that the system will be a new gateway to computational science.

2. TOP500

The TOP500 list is a project that periodically ranks the 500 fastest supercomputers in the world, using LINPACK as a benchmark. The project, begun in 1993, publishes current rankings twice a year (in June and November).

<http://www.top500.org/>

3. LINPACK

A program developed by J. Dongarra, Ph.D., of the University of Tennessee, for solving a system of linear equations using matrix computation. It is the benchmark program used to create the TOP500 list, which ranks the performance of the world's supercomputers (announced in June and November of every year).

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About RIKEN

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About Fujitsu

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