

## ▶ Lawrence Livermore's Sequoia Supercomputer Towers above the Rest in Latest TOP500 List

Thu, 2012-06-14 13:28



- 1 Sequoia - BlueGene/Q, Power BQC 16C 1.60 GHz, Custom
- 2 K computer, SPARC64 Viii fx 2.0GHz, Tofu interconnect
- 3 Mira - BlueGene/Q, Power BQC 16C 1.60GHz, Custom
- 4 SuperMUC - iDataPlex DX360M4, Xeon E5-2680 8C 2.70GHz, Infiniband FDR
- 5 Tianhe-1A - NUDT YH MPP, Xeon X5670 6C 2.93 GHz, NVIDIA 2050
- 6 Jaguar - Cray XK6, Opteron 6274 16C 2.200GHz, Cray Gemini interconnect, NVIDIA 2090
- 7 Fermi - BlueGene/Q, Power BQC 16C 1.60GHz, Custom
- 8 JuQUEEN - BlueGene/Q, Power BQC 16C 1.60GHz, Custom
- 9 Curie thin nodes - Bullx B510, Xeon E5-2680 8C 2.700GHz, Infiniband QDR
- 10 Nebulae - Dawning TC3600 Blade System, Xeon X5650 6C 2.66GHz, Infiniband QDR, NVIDIA 2050

MANNHEIM, Germany; BERKELEY, Calif.; and KNOXVILLE, Tenn.—For the first time since November 2009, a United States supercomputer sits atop the TOP500 list of the world's top supercomputers. Named Sequoia, the IBM BlueGene/Q system installed at the Department of Energy's Lawrence Livermore National Laboratory achieved an impressive 16.32 petaflop/s on the Linpack benchmark using 1,572,864 cores.

Sequoia is also one of the most energy efficient systems on the list, which will be released Monday, June 18, at the 2012 International Supercomputing Conference in Hamburg, Germany. This will mark the 39th edition of the list, which is compiled twice each year.

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## ▶ 39th TOP500 List to be released at ISC12

Wed, 2012-06-13 22:16

The 39th TOP500 list will be released Monday, June 18, at the 2012 International Supercomputing Conference in Hamburg, Germany.

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## ▶ The TOP500 Celebrates 20th Anniversary, Will it Survive 20 More?

Tue, 2012-06-12 15:46

The TOP500 has provided a ranking of systems for two decades in a consistent fashion, which has provided the high-performance community with a way to

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### Sequoia

Sequoia is a petascale Blue Gene/Q supercomputer being constructed by IBM for the National Nuclear Security Administration as part of the Advanced Simulation and Computing Program (ASC). It was delivered to the Lawrence Livermore National Laboratory in 2011 and will be fully deployed in 2012.



### K computer

The K computer – named for the Japanese word "kei" (京?), which stands for 10 quadrillion[1] – is a supercomputer being produced by Fujitsu at the RIKEN Advanced Institute for Computational Science campus in Kobe, Japan. In June 2011, the TOP500 ranked K the world's fastest supercomputer, with a rating of over 8 petaflops, and in November 2011, K became the first computer to top 10 petaflops. It is expected to become fully operational in November 2012.



### Tianhe-1A

Located at the National Supercomputing Center in Tianjin, China, it was the fastest computer in the world from October 2010 to June 2011 and is one of the few Petascale supercomputers in the world. [



### Jaguar

Built by Cray at Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee. The massively parallel Jaguar has a peak performance of just over 1,750 teraflops (1.75 petaflops).

compare systems and to establish targets for vendors to deliver increased capabilities to the most challenging applications.

Over the past 20 years, the TOP500 has proven to be a useful and popular benchmark. To a degree, it is a corner point in performance focused on dense linear algebra (compute-intensive floating point), which is highly correlated to many applications in computational science and engineering.

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### ▶ About Counting, Dividing and Scaling Down

Thu, 2012-06-07 11:25 | [whispers](#)

Nvidia reclaims the top position in the discipline of who-has-the-biggest, AMD revises its counting-out rhyme and finds important former employees at its competitors. Intel invests in new factories – but due to a lack of satisfactory government grants, it has chosen Ireland instead of Israel.

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### ▶ Looking at Innovation Beyond the TOP500

Mon, 2012-05-21 22:47

In this video, Sumit Gupta from Nvidia shares his thoughts on the TOP500 and the innovation going on with the powerful supercomputers that never make the list. Recorded at GTC 2012 in San Jose.

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### ▶ About Big Brothers and Strong Children

Mon, 2012-05-21 22:43 | [whispers](#)

Intel launches new Xeon processors, Nvidia presents Kepler 2 and AMD rolls out Trinity – and loses its head Bulldozer developer.

The new Xeon E5 families are first of all supposed to allow for inexpensive servers with AVX and PCI Express 3.0. That's particularly true for the E5-2400 line, which, technologically, isn't very thrilling though, as it's just a more economic version of the E5-2600 line, which was already released back in March. It has three instead of four memory channels and one instead of two QPI links. This way, it reduces the system design both in complexity and price through a smaller socket (LGA1356).

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### ▶ John West from DoD Mod on the TOP500 and Sharing the Goodness of HPC

Wed, 2012-05-02 15:59

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If I had enough time, I could write less.

*Pascal*



### IBM Roadrunner

IBM Roadrunner was crowned No. 1 in June 2008 after becoming the first supercomputer to break one petaflop/s. IBM's Roadrunner managed 1.042 petaflops. The supercomputer is located at the Los Alamos National Laboratory.



### Blue Gene/L



### The Earth Simulator

Built by NEC for the Japan Aerospace Exploration Agency, the Japan Atomic Energy Research Institute and the Japan Marina Science and Technology Center, the Earth Simulator (ES) was the fastest supercomputer in the world from 2002 to 2004.



### ASCI White

ASCI White, an IBM system, replaced ASCI-Red as the fastest supercomputer in 2000. ASCI

In this video, John West, Director of the DoD HPC Modernization Program discusses the TOP500 list and how HPC users need to better communicate the benefits of high performance computing.

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### ▶ Supercomputers will reach 'exascale' speeds within decade

Mon, 2012-04-23 13:59

Supercomputers powerful enough to simulate the human brain will be developed within seven years, a leading supercomputer expert has predicted.

Professor Hans Werner Meuer, co-founder of the Top500 list of supercomputers, said that computers capable of processing a million trillion calculations a second would be available by 2019.

[Read more](#)

### ▶ About Ivy Bridges and Tegra Hitches

Tue, 2012-04-10 03:13 | [whispers](#)

Intel causes confusion with the Ivy Bridge's launch date, HP starts a second restructuring attempt and Nvidia launches rumors about a Tegra 4 – all (amongst other things) because of Apple.

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### ▶ About Armadas and Sinking Chips

Tue, 2012-03-27 08:50 | [whispers](#)

Until now, things haven't been going well for Intel in the TV market. A new media processor is supposed to help it gain a foothold with settop boxes, and concerning the television business, Intel has further grandiose plans. AMD could minimally increase its market share in the past year, but suffered severe losses in the server sector. The new Opteron 3200 family is supposed to turn the tides.

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### ▶ About Old Annoyances and New Challenges

Mon, 2012-03-12 13:50 | [whispers](#)

It is hard to believe, but with the Remote Management Module 4, for the servers with the new Xeon E5 processors, Intel gets rid of a long-standing annoyance. AMD sells its remaining stake in Globalfoundries and might equip the next Sony Playstation.

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### ▶ About Elisions and Epenthesis

White held the spot for world's fastest supercomputer for two years from 2000-2002. It was capable of computing 12.3 trillion operations per second.



### ASCI Red

The fastest computer from June 1997 to June 2000, ASCI Red was collaboration between Intel Corp and Sandia Labs. It was the first computer to break the teraflops barrier, which after the processor upgrade passed 2 teraflops.



### Fujitsu Numerical Wind Tunnel

Known as the Numerical Wind Tunnel, the machine was built by Fujitsu and Japan's National Aerospace Laboratory. The machine was used to simulate wind turbulence on airplanes and in spacecraft as well as to forecast weather.

Mon, 2012-02-27 14:10 | [whispers](#)

Intel releases the instruction extension for transactional memory and gives numerous speeches at the International Solid-State Circuits Conference (ISSCC). AMD equips the Piledriver with inductors and China delivers another new processor.

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### ▶ About TLAs and IPOs

Wed, 2012-02-15 11:47 | [whispers](#)

Intel's Haswell processor casts its shadow before it, AMD starts an open-standard IP initiative for SoCs, Apple partner Audience Inc is going public and the final end of the Itanium is on the horizon.

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### ▶ Number Crunching, Data Crunching and Energy Efficiency: the HPC Hat Trick

Tue, 2012-02-07 02:01

In the world of high performance computing, there are three distinct metrics in play: number crunching speed; data crunching speed; and energy efficiency. Can a computer excel at all three, or is our best recourse to try for something less than a hat trick?

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### ▶ 2011 China HPC TOP100 was released

Wed, 2012-02-01 15:12

The China [TOP100 List](#) of High Performance Computer was released by the Specialty Association of Mathematical & Scientific Software (SAMSS), CSIA.

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