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## IBM "Powers" to Victory on TOP500 Supercomputer List

**Machines Based on Power Architecture surge; MareNostrum Reclaims Title as Europe's Top Supercomputer; IBM Claims 47 Percent Share of the Systems on the List With Growth in Blue Gene System and BladeCenter Technology-Based Clusters**



ARMONK, NY -- (MARKET WIRE) -- 11/13/2006 -- A surge in the number of IBM® Power® technology-based supercomputers enabled IBM to seize the number one ranking on the just-released TOP500 Supercomputer Sites List. Overall, IBM (NYSE: [IBM](#)) systems accounted for 237 of the 500 most powerful supercomputers in the world and 49.6% the total processing power.

The IBM Blue Gene®/L system, developed with the Department of Energy's National Nuclear Security Administration and installed at Lawrence Livermore National Laboratory, topped the list with a sustained performance of 280.6 teraflops, or trillions of floating point calculations per second. IBM's supercomputer MareNostrum at the Barcelona Supercomputing Center, based on the IBM BladeCenter® JS21 blade server, regained its position as the most powerful supercomputer in Europe.

The number of systems based on the Power Architecture™ increased to 91 from 83 on the previous list, published in June. IBM's industry-leading performance was also propelled by its strength across diverse computing platforms: including growth in the number of Blue Gene systems (from 24 to 28, compared with the previous list) and IBM clusters based on AMD Opteron systems (from 31 to 55).

IBM BladeCenter systems grew from 132 to 145 systems since the June, 2006 TOP500 rankings. IBM BladeCenter technology-based systems accounted for more than 636 teraflops of total performance in the November list. BladeCenter systems offer clients an innovative and high density computing solution with the ability to combine servers, storage, networking, and software all in one system.

"IBM's leadership in supercomputing continues, attributable to our ability to offer customers the widest array of high performance computing solutions in the industry today," said Dave Turek, vice president, Deep Computing, IBM. "IBM systems -- in many cases designed and deployed in partnership with our clients -- are pushing the boundaries of scientific discovery, enabling the emergence of virtual worlds and advanced simulation and driving deep innovation among our commercial clients."

Joining the Blue Gene/L system at Lawrence Livermore in the TOP500 list's top five slots are IBM's own Blue Gene/L Watson system at 91.29 teraflops; ASC Purple supercomputer at Lawrence Livermore National Laboratory, now with 75.76 teraflops; and the MareNostrum supercomputer at the Barcelona Supercomputing Center, which was upgraded with the new JS21 blades, doubling the performance to 62.63 teraflops. The Blue Gene/L system and the Purple system are systems in the National Nuclear Security Administration's Advanced Simulation and Computing (ASC) Program, which is dedicated to ensuring the safety, security and reliability of the nation's nuclear stockpile without underground testing.

IBM technology is responsible for more than 1.75 petaflops of the list's aggregate performance total of 3.527 petaflops, which is over a petaflop more than the total throughput of nearest rival, HP. IBM systems accounted for four of the top 10 machines on the list. IBM also had 44 of the top 100 systems.

### IBM Highlights from TOP500:

- Leads the list with four of the world's top-five supercomputers: Blue Gene/L system, for US Department of Energy/NNSA/LLNL - 280.6 TFlops), Blue Gene/W system at Watson Research, ASC Purple at LLNL and MareNostrum JS21 cluster at the Barcelona Supercomputing Center
- Leads list with 237 entries (47.4%)
- Leads installed aggregate throughput with over 1,750 out of 3,527 Teraflops (49.6%)
- Most systems in TOP10 by any single vendor (4)
- Most systems in TOP20 with 6 systems (30%)
- Most systems in TOP100 with 44 (44%)
- Most cluster systems with 171 of 361 (47.3%)
- Fastest machine in USA (Blue Gene/L system at LLNL)
- Fastest machine in Europe (JS21 cluster at Barcelona)

IBM is debuting four new Blue Gene systems on the TOP500 List, including an installation at Harvard University.

Since IBM announced the commercial availability of the IBM System Blue Gene Solution, a commercial version of the research project, in November 2004, a record number of 28 Blue Gene systems appear on the list. Based on IBM's Power Architecture, the IBM System Blue Gene Solution is optimized for bandwidth, scalability and the ability to handle large amounts of data while consuming a fraction of the power and floor space required by today's fastest systems. IBM and its teammates are exploring a growing list of high performance computing (HPC) applications including life sciences, financial modeling, hydrodynamics, quantum chemistry, molecular dynamics, astronomy and space research and climate modeling for Blue Gene solutions.

The "TOP500 Supercomputer Sites" is compiled and published by supercomputing experts Jack Dongarra from the University of Tennessee, Erich Strohmaier and Horst Simon of NERSC/Lawrence Berkeley National Laboratory and Hans Meuer of the University of Mannheim (Germany). The entire list can be viewed at [www.top500.org](http://www.top500.org).

For more information about IBM, visit [www.ibm.com](http://www.ibm.com).

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