



## Knocking on the Door of the Petaflop/s Era: Will We See a Petaflop/s System on the June 2008 TOP500 List?

**DRESDEN, Germany—The International Supercomputing Conference has long had the reputation as the conference to attend to get the answers to the most pressing questions in high performance computing. But when ISC '08 convenes June 17-20, one question is likely to predominate: will the twice-yearly TOP500 list of the world's top supercomputers be dominated by a system performing one quadrillion calculations per second (one petaflop/s)?**

While a number of research organizations around the world have announced plans to reach the petaflop/s performance level, whether any will achieve this milestone in time for the next TOP500 list remains to be seen. Following tradition, the 31<sup>st</sup> edition of the TOP500 list will be unveiled during the opening session of ISC '08 on Wednesday, June. 18.

ISC '08, which is Europe's premier HPC event, is conducted in English and includes three days of technical sessions, pre-conference sessions aimed at the automotive industry and scientific researchers, poster and birds-of-a-feather sessions, and after-hours networking opportunities. Advance registration at discounted rates is available until Monday, May 19. To register, go to [www.isco8.org/registration](http://www.isco8.org/registration)

“While I was willing to go out on a limb in 1997 and predict that within eight years we would only have teraflops systems on the TOP500 list in 2005 – and fortunately this was the case – I am not quite ready to predict what we will see in June at position number one,” said Prof. Hans Meuer, general chair of ISC '08 and co-founder of the TOP500 list. “But there is certainly a hot candidate in IBM's Roadrunner machine at Los Alamos National Laboratory in the U.S.”

Currently, the number one position on the list is held by the BlueGene/L eServer at Lawrence Livermore National Laboratory in the U.S. Having been in the top slot since November 2004, the current system has been significantly expanded and now achieves a Linpack benchmark performance of 478.2 TFlop/s (teraflops or trillions of calculations per second), compared to 280.6 TFlop/s six months ago before its upgrade.



Other questions are also drawing attention to the next edition of the list:

- How will Sun's consolidation system "Ranger" at the Texas Advanced Computing Center (TACC) at the University of Texas, Austin, rank on the list? Ranger, which missed the 30th list last November, has a theoretical peak performance of above 500 Teraflop/s. Can Ranger help Sun Microsystems catch up with the other HPC manufacturers?
- In the 30th list, more than 70 percent of the processors in all 500 systems were manufactured by Intel—the largest share ever of Intel chips in the TOP500. Especially successful are Intel's dual-core Woodcrest and quad-core Clovertown processors. In the 31st list, will AMD bounce back with more systems?
- How will the Asian countries perform? Will the rapid drop in Japan's share be stopped? Are China and India already new players in the TOP500?
- Last but not least, what will be the performance of IBM's BG series, representing the "power-efficient systems" class, on the new list?

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ISC, which marks its 23<sup>rd</sup> anniversary in 2008, has a well-established reputation for presenting well-founded, precise and up-to-date information in an environment that encourages informal conversations and sharing of ideas. ISC is also the largest high performance computing exhibition in Europe, and 90 of the leading hardware, software and services vendors are expected to fill the exhibition hall in Dresden during ISC'08. To learn more about the conference program, please visit the ISC '08 website at <http://www.isco8.org/>.

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