

IBM To Build Supercomputer For U.S. Government

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(PhysOrg.com) -- The U.S. Government has contracted out IBM to build a massive supercomputer bigger than any supercomputer out there. The supercomputer system, called Sequoia, will be capable of delivering 20 petaflops (1,000 trillion sustained floating-point operations per second) and is being built for the U.S. Department of Energy.

The U.S. Department of Energy will use the supercomputer in their nuclear stockpile research. The fastest system they have today is capable of delivering up to 1 petaflop. The system will be located at the Lawrence Livermore National Laboratory in Livermore, Calif., and is expected to be up and running in 2012.

The Sequoia system will also be used for a massive power upgrade at Lawrence Livermore, which is increasing the amount of electricity

available for all their computing systems from 12.5 megawatts to 30 megawatts. This power upgrade will require running additional power lines into the facility. Sequoia alone is expected to use approximately 6 megawatts.

This Sequoia computer is so massive; IBM is building a 500 teraflop system, called Dawn that will help Researchers prepare for the larger 20 petaflop system.

The Sequoia system will be using all IBM Power chips and deploy approximately 1.6 million processing cores, running Linux OS. IBM is still developing a 45-nanometer chip for the system that may contain 8, 16, or more cores. The final chip configuration has not been determined yet but the system will have 1.6TB of memory when all completed.

IBM plans to build this supercomputer at their Rochester, Minn., plant. The cost of the system has not been disclosed.

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