**Cray-1**

Cray-1 was a supercomputer released in 1975 by Cray research.

It was used to read large amounts of data, transform them in some way, and then output them again. It usually did the same transformation, meaning that it could be thought of as a SIMD machine. This made it faster as it only had to fetch and decode on instruction, and it can just repeat it on lots of data. If it had to do this on a million pieces of data, then it would only need to fetch and decode 1 instruction instead of a million.

It took advantage of pipelining to increase its speed.

Its memory was 1,000,000 64-bit words, which is about 8MB. It had a speed of 160 million floating-point operations per second, which at the time was a world record.

At the time, it could do more calculations than any other computer, and therefore was first installed at Los Alamos National Laboratory, at a cost of $8.86 million.

**IBM Sequoia**

The IBM Sequoia is a supercomputer constructed by IMB. It was created for the National Nuclear Security Administration in the USA, and was the world’s fastest supercomputer from June 2012 until June 2013.

The IBM Sequoia uses some RISC Processors, but also CISC Processors.

The main purpose of the IBM Sequoia is to simulate the effect of nuclear weapons, however, it will also be available for scientific purposes such as astronomy, study of the human genome, and climate change.

It contains 96 racks of 1024 compute nodes. Each of these are a 16 core processor with 16GB of memory each. In total, this means that the IBM Sequoia consists of 1,572,864 processor cores, and around 1.5 PiB memory. (1.5 Pebibytes = about 1.7 Petabytes, or 1689 Terabytes) The 1,572,864 cores can all run parallel to each other, which means it can complete 16 thousand trillion calculations per second.

**Sources:**

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