Super Fast Molecular Simulator

SGI Altix4700

SGI Altix4700 is a super-parallel computer with the peak performance of 4096 GFLOPS. This system consists of two node; one has 512 Cores (256 dual-core CPUs) with 6 TB shared memory, and the other 128 Cores (64 CPUs) with 2 TB, where the extensive shared memory is logically provided by the cc-NUMA architecture. As a peripheral configuration, the system has also a high-performance RAID disk device with the total effective amount of about 114 TB and with the I/O speed of 40Gbps. This I/O speed of the disk is nearly equivalent to that of the memory transfer. This system is particularly suitable to large and accurate calculations of electronic states and other purposes which require huge memory and/or disk space.


Fujitsu PRIMEQUEST

Fujitsu PRIMEQUEST has scalar-parallel architecture, providing the total performance of 4096 GFLOPS by 10 nodes. Each node consists of 64 Cores (32 dual-core CPUs) and 256 GB of shared memory. The nodes are connected with the fiber inter-connect, and any pair of nodes can thereby communicate at the bandwidth of 160 Gbps using the message-passing library (MPI). The system is also equipped with a RAID disk device about 24 TB for temporal storage. This server is mainly used for large-scale molecular dynamics and Monte Carlo calculations, including application to biomolecules.

General Purpose Fast Calculator

NEC SX-7

NEC SX-7 is a vector-parallel computer which provides the performance of 282 GFLOPS, shared memory of 256 GB, and a RAID disk device of about 4.5 TB. This system has vector computing units, which enable high-speed processing of some application programs not amenable to efficient parallel processing by other scalar machines.
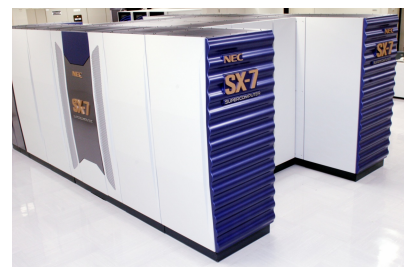
NEC TX7

NEC TX7 is a scalar parallel computer with the total peak performance of 332 GFLOPS. This system is constructed with 2 nodes, each of which has 32 CPUs and 128 GB of shared memory, and a RAID disk device of about 3 TB. This machine is used for multi purpose, mostly for executing medium and small jobs.

Front-end server

The front-end server of RCCS consists of 2 nodes of NEC TX7. The front-end machines are open to the RCCS users via telnet, ssh or other protocols for interactive use. The job-queuing system (JQS) for the batch uses of other system is also controlled by the front-end server.

File Server

The file server consists of 2 sets of NEC (1CPU model) with 10 TB RAID disk device and backup tape device. The disk device is NFS mounted by other system, and is used as the home directories of the RCCS users.