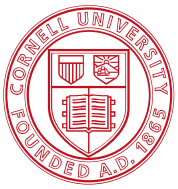

Cornell University
Center for Advanced Computing

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Machine Room Highlights

Login Servers

The login servers are provided to compile programs, create and edit files, establish input data sets, submit and monitor jobs, and check resulting data from batch runs.

System Name	OS	Server	Speed/Memory/Connection
linuxlogin3.cac.cornell.edu	Red Hat Linux v5	Dell 1950 1 server 2 quad-cores/server	8 x 2.92 GHz Intel Pentium 8GB RAM Force10 Gigabit Ethernet
winlogin.cac.cornell.edu	Windows Server 2008	Dell 1950 1 server 1 quad-core	2.33 GHz Intel Xeon 8GB RAM Force10 Gigabit Ethernet

General Use Computational Systems

The servers described here provide exclusive access to the researcher via the Moab batch system.

Queue Name (s)	OS	Servers	Speed/Memory/Connection
v4 v4dev	Red Hat Linux v5	Dell M600 blades 1024 cores 128 servers 2 quad-cores/server	2.5 GHz Intel Xeon 16GB RAM/server Force10 Gigabit Ethernet
v4-64g	Red Hat Linux v5	Dell R900 servers 32 cores 4 servers 2 quad-cores/server	2.5 GHz Intel Xeon 64GB RAM/server Force10 Gigabit Ethernet
NORMAL	Windows HPC Server 2008	Dell M600 blades 128 cores 16 servers 2 quad-cores/server	2.5 GHz Intel Xeon 16GB RAM/server Force10 Gigabit Ethernet

Restricted Use Computational Systems

Name/PI	OS	Servers	Speed/Memory/Connection
CBSU Computational Biology Service Unit J. Pillardy	Red Hat Linux v5	Dell 1855, M600 376 cores 92 servers 2 single, 2 quad-core	2.5 & 3.4 GHz Intel Xeon 4 & 16GB RAM/server Gigabit Ethernet
CISER Research Nodes Cornell Institute for Social and Economic Research J. Heslop	Windows 2003 Data-Center	Dell R900 servers 64 cores 4 servers 4 quad-cores/server	2.93 GHz Intel Xeon 128GB RAM/server Gigabit Ehternet
Combustion & Turbulence Simulator Cluster (CATS) Mech & Aero Engineering S. Pope	Windows HPC Server 2008	Dell 1950 blades 144 cores 36 servers 2 quad-cores/server	2.99 GHz Intel Xeon 8GB RAM/server QLogic InfiniBand
Cornell Fracture Group HPC System (CFGHPCS) A. Ingraffea	Windows HPC Server 2008	Dell M600 blades 256 cores 32 servers 2 quad-cores/server	2.5 GHz Intel Xeon 16GB RAM/server Gigabit Ethernet
DSS Statistical Science J. Bunge	Red Hat Linux v5	Dell 1955 blades 40 cores 10 servers 2 dual-cores/server	3.0 GHz Intel Xeon 8GB RAM/server Gigabit Ethernet
KINGLAB Biomedical Engineering M. King	Red Hat Linux v5	Sun v20z, x2100, x2200 102 cores 36 servers 2 single, 2 dual-cores	1.8 & 2.8 GHz AMD 2 & 4GB RAM/server Gigabit Ethernet
Tardis Applied & Eng Physics C. Fennie	Red Hat Linux v5	Dell M600 blades 128 cores 16 servers 2 quad-cores/server	2.66 GHz Intel Xeon 16GB RAM/server Cisco InfiniBand
USDA US Government P. Stodghill	Mac OS X	Apple Xserve 36 cores 18 servers 2 single-cores/server	2.3 GHz Power-PC G5 8GB RAM/server Gigabit Ethernet
WALLER Astronomy J. Cordes	Red Hat Linux v5	Dell 2950 blades 64 cores 8 servers 2-quad cores/server	2.66 GHz Intel Xeon 16GB RAM/server Gigabit Ethernet
WEB LAB Hadoop Cluster Computer Science W. Arms	Red Hat Linux v5	Dell 2950 blades 480 cores 60 servers 2 quad-cores/server	2.66 GHz Intel Xeon 16GB RAM/server Gigabit Ethernet

General Use and Restricted Use Database Servers

CAC designs, deploys, and/or operates general use and restricted use database servers. Examples are:

- Arecibo SQL database server – the Arecibo Legacy Fast ALFA survey is a blind (untargeted) extragalactic survey in neutral hydrogen; the goal is to find 25,000 galaxies: http://arecibo.tc.cornell.edu/hiarchive/alfalfa/search.php
- CTCSQL database server – Project BudBreak helps citizen scientists observe the effects of climate change on native plants in NY: http//budbreak.tc.cornell.edu
- Scidata1 database server – the Cornell/Internet Archive Web Lab supports in-depth analysis of the Web: http://weblab.infosci.cornell.edu/

Selected Storage System

Storage Type	Total Capacity
Rorke Data Storage Array	226 terabytes
Quantum I2K Tape Library	1000 LT03 tapes 400 terabytes native 800 terabytes compressed
DataDirect Networks S2A9700	50 terabytes

Data Compression

To prepare for growing data demands, CAC is performing extensive data compression testing across a wide range of research applications using Ocarina Network's ECOSystem. The ECOSystem reads stored files and uses content-aware compression and deduplication to reduce the amount of space those files take. Data compression storage savings is averaging 65%.

Networking

CAC has 10GB connectivity to the National Science Foundation TeraGrid in order to provide the scientific community with access to Cornell's data resources and analysis tools. Using high-speed network connections, the TeraGrid integrates high-performance computers, data resources and tools, and high-end experimental facilities around the country.

For More Information

- Cornell CAC home page: http://www.cac.cornell.edu
- Services: http://www.cac.cornell.edu/services/Default.aspx
- Technologies: http://www.cac.cornell.edu/technologies/Default.aspx

- Tech Docs: http://www.cac.cornell.edu/wiki/index.php?title=Main_Page
- News: http://www.cac.cornell.edu/about/news.aspx

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