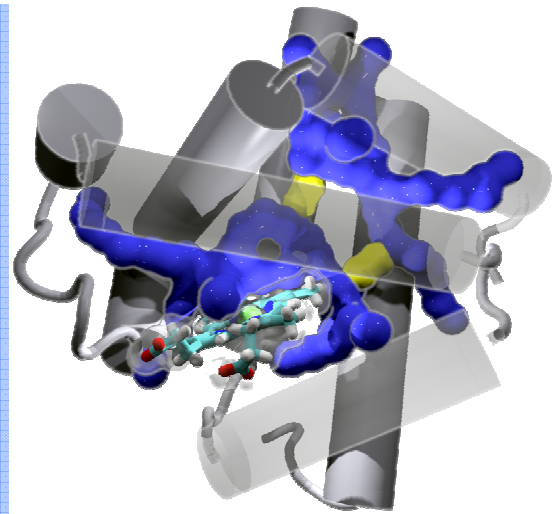


Advanced Research Computing (ARC)

Mission

ARC is an innovative and interdisciplinary environment advancing computational science, engineering and technology. Our mission is to:

- Provide leadership, advanced infrastructure and support to invigorate computational science and engineering at Virginia Tech
- Offer educational programs and training on scientific computing, encouraging the development of knowledge and skills in computational tools and techniques for undergraduate, graduate and research faculty and staff
- Affiliate with business, industry, and government to help drive economic development growth in Virginia
- Collaborate with other computational science and engineering driven research centers in advancing knowledge and leading the evolution of scientific computing tools, techniques, and facilities that accelerate scientific discovery



HPC Facilities

System X Cluster: 1100 Apple Xserve G5 cluster nodes with the following specifications:

- Dual 2.3 GHz PowerPC 970FX processors
- 4 GB ECC DDR400 (PC3200) RAM
- 80 GB S-ATA hard disk drive
- One Mellanox Cougar InfiniBand 4x HCA

Faculty & Department Co-locations: hosting and admin services for numerous machines and clusters

Shared Memory Machines: SGI and Sun hardware

Visualization Facilities

Visual Computing Lab: numerous Linux, Win, and Mac workstations with modeling, rendering, and file translation software

Stereo Walls: passive and active systems running VMD, Paraview & Visit, and other VR applications

CAVE: immersive venue with floor + 3 back-projected walls running stereo with head and input device tracking

Visualization Server Gateway: brokers data access, rendering and interaction for remote users

Support

Application Support

Full-time faculty and staff provide assistance with job queuing, debugging errors, application installation and tuning

System & Data Center

Operations Center, staffed 24/7 covering hardware status, log review, patch analysis, security and performance monitoring, and hardware status.

Education & Training

Faculty Development Institute

During Spring, Summer and Fall courses are offered on: Deep Media for Research and Education, Parallel Computing, Visualization for Computation Science

HPC Bootcamp

An annual event with UVa, faculty and students converge for an intensive skills session on OpenMP, MPI, and visualization techniques