

Facilities, Equipment, and Other Resources

The current facilities in physics include a computing cluster developed in 2001 with NSF and University funds plus an array of workstations. The original system consisted of 49 remote machines (1.4 GHz) running the Linux operating system, a master node, 3 TByte of RAID storage, and 18 GByte of disk space on each node. It resides in a laboratory with a 50-ton, 60,000-BTU air conditioner, an upgraded electrical panel, and a connection to the building's backup power. Nearby rooms provide space for workstations and our students. The system is now at the end of its useful life and only about 24 nodes still work and 2 out of 3 RAIDs. This is not surprising since the system is almost seven years old. At JLab, for example, replacement of failing nodes begins after two years and all machines are replaced after four years of use.

The remainder of the nuclear physics and astrophysics laboratories consists of nine linux machines for student and faculty use. The software used in the both the nuclear physics and astrophysics research is non-proprietary.

The Department of Mathematics and Computer Science maintains a network of ten Pentium-based workstations running Linux (the primary platform for the simulation experiments performed by co-PIs Lawson and Szajda) with external NFS disk sharing. These workstations are shared by department faculty and students for both research and course work. Co-PIs Lawson and Szajda also maintain four additional workstations for undergraduate research assistants. The University also maintains several publicly-available Windows-based laboratories (approximately 600 machines) and Macintosh-based laboratories (approximately 50 machines).

One member of the University's Information Services is a linux expert and he devotes half of his time to academic projects. He is responsible now for keeping the CLAS software up-to-date, updating the linux software on the cluster and in our laboratory, and general troubleshooting.

The anticipated operating costs are for power and linux support staff. The University has covered those costs for the existing cluster since 2001. See the letter from the University of Richmond dean supporting this project in the supplementary documents.