Courtney - Use this as much as possible.

Advantages:
No runtime limits, large long-term storage, and higher priority.

Limits:
Communication speed (for parallel MPI programs and large/quick data output), runtime memory (1GB-2GB), and runtime storage space.

Usage:
Run serial and small MPI (using 4 or less processors) programs.

Comments:
Runtime storage (under /home) is approximately 125GB total (~30GB per user for 4 users). Fast runtime storage (under /usr2) is even smaller (about 10GB total). Long-term storage (under /archive) is largest here at 367GB total (~91GB per user for 4 users). Data from other computers can be sent to the archive here using rsync.

Bulldog J - Use as a secondary resource.

Advantages:
Fast communication speed, large runtime memory (16GB-32GB), large runtime storage, access for one user to a maximum of 256 processors, and having a higher priority than Bulldog I.

Limits:
Total runtime (24 hours) and long-term storage space.

Usage:
Run large MPI (using more than 4 processors) programs and serial programs with LARGE data output (eg. writing more than 10GB total or writing 1GB in less than 30 sec) that can be condensed (eg. by zipping or converting text to pictures) for long-term storage.

Comments:
There is a scratch file system capable of large temporary storage, but long-term storage is limited to 20GB per user. Data can be sent to Courtney's archive. We cannot use more than 5% of total resources in 1 year which, for now, amounts to our whole group using 51 processors every day for a year. I will set up a script that outputs the current usage of the cluster for our group alone. It will output the total number of processors available and a warning if we are using more than 51 processors. I will also keep an eye on our total usage and let everyone know if we're getting above our quota. They will be adding more nodes soon, however, so that 5% will probably change.

Bulldog I - Use as tertiary resource.

Advantages:
No runtime limits, fast communication speed, large runtime memory (16GB), large runtime storage space, and larger long-term storage space than Bulldog J.

Limits:
Having a low priority which in turn limits the maximum number of processors one user can access for MPI jobs.

Usage:
Run large MPI (using between 4 and 32 processors) programs and serial programs with LARGE data output that cannot be condensed as easily.

Comments:
There is a scratch file system capable of large temporary storage. There is no limit on long-term user storage here but the amount available is determined by the amount others are using so is not guaranteed. Since we have low priority, if we use too much storage here, we may get a nasty message from the system administrator telling us to delete things.

Version Control

With these 3 systems and everyone's office computer also being used, I would encourage our group to start using version control software such as CVS or subversion. The software sets up a central repository on one machine and coordinates other machines at the user's request. It is not too difficult to use and I can show people how to set up CVS.