

Background Regarding the ASU Advanced Computing Center

The ASU Advanced Computing Center (A2C2) is a supercomputer cluster with over 5,000 compute cores or nodes. It provides high performance computer facilities for many projects at the frontiers of research. As many as several hundred compute cores may be used simultaneously in a single job, which can run continuously for many days.

The initial funding for A2C2 was provided by a Fulton grant, with an expectation that continued operations would be provided by funds from users and the University. Users obtained time on the cluster (in units of CPU-hours or cpu-h) through several methods:

- A free base allotment of 10,000 cpu-h per year;
- Proposals for internal competitive grants (RFP funding);
- Purchase time at the rate of \$0.01 per cpu-h (originally \$0.02 per cpu-h);
- Purchase of additional cores for the cluster in exchange for a cpu-h allocation.

Over the past two years, the base allocation and RFP competitive grant methods were phased out. In the Summer 2014, the “pay-per-use” purchase option was discontinued. In the Fall, a new Community Cluster Program is being instituted whereby researchers will have to buy new compute cores at the rate of \$1,000/core for every core that would be needed in a job. The cores would effectively be owned by the user or group for 5 years, at which time new ones would have to be purchased. Other users could use the cores if they were available, but those jobs would be immediately terminated if the owner submitted a job.

Advantages for the User

None

Disadvantages to the User

1. A large up-front investment by the researcher is required.
2. The effective price for CPU-hours is doubled.
3. Beginning faculty, those in departments without computing infrastructure, and faculty between grants or changing research areas are largely frozen out.
4. It becomes prohibitively expensive if a user needs to run an occasional many-core job when far fewer cores are normally utilized.
5. Depreciation is shifted from A2C2 to the user.

Users from many units are working arduously to find an alternative funding plan.