

This Memorandum of Understanding (MOU) contains basic provisions that will guide the working relationship between the Purdue researcher referred to here as *The Faculty Partner* and *ITaP* concerning the Conte Community Compute Cluster.

Term

This agreement will be in effect until the Conte Community Cluster decommissioning, which is expected to occur when the 5-year hardware warranty on its systems expires in 2018.

Service Overview

The Faculty Partner agrees to purchase access to compute nodes in the Conte Community Cluster, which will be in production beginning Fall 2013. A batch job queue will be established for *The Faculty Partner* and his/her research team. No other users will have access to this queue unless a special short-term arrangement is made. However, *ITaP* may run HTCondor on all nodes in the cluster when the nodes are otherwise idle.

ITaP Responsibilities

- Provide cluster infrastructure, including racks, power, cooling, and networking.
- Establish and maintain user accounts and job submission queues.
- Maintain cluster system hardware and software.
- Provide system administration services and technical support.
- Provide a base suite of software including compilers, operating system software, and some applications and libraries, not to exceed limits provided in current licensing agreements with vendors.
- Install and provide best-effort support for commercial and public domain packages and libraries beyond the base software suite. Additional applications will be provided by *The Faculty Partner* and installed in accordance with licensing agreements. However, primary responsibility for support of discipline-specific application software will remain with the research team.
- Provide information regarding this system via the RCAC website, the login Message-of-the-Day (MOTD), and email to the system stakeholders.

Faculty Partner Responsibilities

- Provide funding for access to the equipment as identified.
- Recommend queue characteristics and identify users who are allowed to access *The Faculty Partner's* queue.
- License discipline-specific software as needed. *ITaP* will install and maintain the software on the Conte cluster upon receipt of the software, licensing, and vendor contact information. When multiple software packages are requested, *The Faculty Partner's* research team will advise *ITaP* staff on a priority and target installation date for each package to be installed. The research team has responsibility for support of discipline-specific application software.

- Ensure that data that must be protected by Federal security or privacy laws (e.g., HIPAA, ITAR, classified information, etc.) is not stored on this system. This system is not intended to meet the enhanced security required by those laws or regulations.
- Help establish general guidelines for the management and use of the Conte cluster.
- Manage user accounts through the Self-Service Account Management Application.
- Provide timely reports of all problems to *ITaP* at rcac-help@purdue.edu.
- Routinely check the RCAC website, the MOTD, and email from RCAC for information regarding this system.
- Send requests for additional information to rcac-help@purdue.edu.

Job Scheduling

Dedicated Queue

ITaP will provide and operate batch job scheduling and resource management software for the cluster. *The Faculty Partner's research group* will be given access to a dedicated job queue. Jobs submitted to the dedicated queue will begin execution within four hours or less, which is the maximum length of time a standby job is allowed to run (see Standby Queue section below).

Standby Queue

One of the advantages of the community cluster program is the ability to share hardware. A shared *standby* queue will exist, which will allow all Conte users access to any idle nodes in the cluster.

Standby queue jobs have lower priority than jobs associated with the dedicated faculty partner queues, and only run when a sufficient number of idle nodes are available. The standby queue will have a time limit of four hours per job. Should the Conte community cluster partners desire to alter these limits, *ITaP* can change the limits associated with the standby queue.

HTCondor

ITaP has the option to run HTCondor, a distributed computing system, on any idle nodes so long as HTCondor's presence does not interfere with batch jobs running in the system.

Changes

The queuing parameters for the dedicated job queue can be changed upon request by *The Faculty Partner*. *ITaP* will act as a broker to facilitate short-term scheduling changes as needed – perhaps to help meet a research deadline.

Governance

Meetings related to management of the Conte cluster may be scheduled as necessary. The meetings will focus on reviewing any potential issues or avenues for improvement, highlight key successes, and discuss potential future plans.

Service Availability

ITaP will maintain the cluster system as a highly available, 24/7 resource. However, there are exceptions to these terms of service:

- Unplanned system outages due to issues with other aspects of the facility such as power, HVAC, network, or emergency maintenance to address computer security incidents may prevent the use of the system in a timely manner.
- Routine software and hardware maintenance of the system. Maintenance windows are typically announced at least 4 weeks in advance.

Acceptable Use Policies

The Faculty Partner, his/her research team, and *ITaP* staff agrees to comply with all Purdue University and ITaP/RCAC policies and procedures, including the University's information technology policies located at: <http://www.purdue.edu/securePurdue>. The system is not intended to store data protected by Federal privacy and security laws (e.g., HIPAA, ITAR, classified, etc.). It is the responsibility of the faculty partner to ensure that no protected data is stored on the system. Questions about information security may be directed to the ITaP Help Desk at (765) 494-4000.

Facilities

ITaP will house the Conte cluster in the Math Building machine room (G109/G190) or in a suitable facility chosen by *ITaP*.

Support Process

All incident reporting should start with email to rcac-help@purdue.edu. *ITaP* will provide a response within one business day. In general, critical issues will be addressed as soon as possible. Critical issues are defined as disruptions to large portions of the cluster or infrastructure.

Termination

Either party may terminate this agreement by providing written notification to the other party thirty (30) days in advance of termination. In the event of termination, all equipment will remain the property of *ITaP*. *The Faculty Partner* may sell or transfer the remainder of his/her access to Conte to another Purdue researcher. *ITaP* will facilitate the transfer of access to the cluster to the new partner.

Storage

ITaP provides access to multiple types of storage for working with the Conte cluster. Requests for *ITaP* to support custom storage needs beyond these types can be discussed, and will be considered on a case-by-case basis.

Home Directories

Home directories are provided for each user of the cluster. These directories are backed up via snapshots, and files can be recovered when needed. Information on home directories can be found at <http://www.rcac.purdue.edu/userinfo/resources/home/>.

Group Storage

Persistent, shared group storage spaces are provided for each research group using the cluster. These directories are backed up via snapshots, and files can be recovered when needed. Information on group storage can be found at <http://www.rcac.purdue.edu/userinfo/resources/group/>.

Scratch Storage

Conte will use a high performance parallel Lustre scratch system that is available for each user of the cluster. Files in the scratch file system are subject to being automatically purged. Information on the purging policy can be found at <http://www.rcac.purdue.edu/userinfo/policies>.

The integrity of the scratch storage components will be accomplished via a redundant disk system. No backup, either via remote copy or transfer of data to other media will be performed. No disaster recovery other than the redundant disk systems will be provided.

Archival Storage

Long-term storage is also available via the archival storage system. Information on the archival storage system can be found at <http://www.rcac.purdue.edu/userinfo/resources/fortress/>.