

# Research Computing Advisory Committee

Minutes Jan 4, 2016 (taken by Erik Deumens)

**Present:** Paul Avery (Skype), S. Balachandar, Ana Conesa, Erik Deumens, Rafa Munoz-Carpena, Richard Hennig, Lauren McIntyre, Alberto Riva, Laurie Taylor

## Updates

- Research Shield, the FISMA compliant computing environment for research on restricted data is now officially in use; the project to build it was completed in December. Now the tasks of auditing and tracking the logs are being established, documented, and operationalized. One lesson learned from this project is that research has rapidly demanding needs and requirements and that conflicts with the requirement from security to have a deliberate process for all changes.
- GatorVault is a new environment that has been under development for two years. It started to work with 3 early user groups during the month of January. The approach is different than Research Shield and will hopefully scale better to match the needs of researchers for quick change. The experience gained with FISMA compliance will be used to run GatorVault.
- HipErGator 2.0 is now being used by some researchers who need very large numbers of cores for MPI jobs. As soon as the system is sufficiently provisioned with software and scheduler, other groups will be invited as early users.
- Extreme Scaling programming course starts  
<http://www.rc.ufl.edu/services/training/undergraduate-research-course-extreme-scaling-programming/>
- This Fall we worked on a lecture series at Oak Hammock on Big Data this spring. More details will follow. Each lecture will start at 10:00 am and last 45 minutes, with 15 minutes for questions.
  - o March 18           Forrest Masters
  - o March 25           George Michailidis
  - o April 1             Sara Gonzalez
  - o April 8             Paul Avery
  - o April 15            Patrick Tighe
  - o April 22            Richard Hennig

## Discussion

### HiPerGator utilization

The committee discussed the target utilization of HiPerGator. The utilization has been monitored carefully and this turns out to be quite accurate. Faculty who invest get quick response on the cores they buy: The expectation agreement is that jobs start within one minute and at most within one hour. When there are idle cores, faculty sponsored research groups can use up to 10 times the investment number of cores.

The utilization data was used in January 2014 to predict that HiPerGator would reach 75% utilization in August 2015, which is what actually happened, and work for the HiPerGator 2.0 expansion was started.

In October 2014 HiPerGator reached 95% capacity. The policy in the scheduler was adjusted to be more careful about giving out idle cores. In recent months investors have averaged about 4 times their investment, instead of the 10 times limit. In December 2015 the utilization of HiPerGator reach 90%. Soon the expansion will be active for general use and there will be plenty of capacity by May 2016.

The funding model now has enough revenue to buy more capacity as the demand rises.

### **Access for external groups**

The only way external researchers can use HiPerGator is through a collaboration with a UF faculty member. We have looked into providing this service, in particular within SSERCA, but the University does not want to subsidize external users who are not benefitting UF faculty through some collaboration. Proving the service at full cost is what cloud providers do and it is not the mission of UF.

If there is interest in providing expertise to industry that involve HPC or advanced software, then this can be set up as a collaboration with a faculty at UF. Just selling compute capacity to an industry is not the mission of UF.

### **Organization**

Next meeting will be on Monday February 1, 2016 at the usual location in NPB 2205 from 1:30 – 2:30 pm.