

HPC Committee (RCAC-HPC)

Minutes October 17, 2011 (taken by Erik Deumens)

Present: Paul Avery, Erik Deumens, Rob Ferl, Eric Ford, Lauren McIntyre, Charles Taylor

Discussion

Four agenda items were discussed as listed in

<http://www.it.ufl.edu/governance/advisorycommittees/documents/RCAC-AgendaFall2011.pdf>

Reports: Research Computing Matching Program

Matching program details

The research computing matching program was announced by the Provost and the VP for Research on July 27, 2011. It offers faculty at UF the opportunity to receive 1-1 matching on any purchase of compute cores or storage for research made through UF Research Computing. Faculty had to make a clear commitment before September 30, 2011. UF Research computing had targeted a budget for matching of \$300,000 from its annual budget.

This program was made possible by the 5-year commitment by the VP for Research and the Provost in April 2011 to significantly increase support for research computing at the University of Florida.

Researchers can buy fully functional compute cores, i.e. with all the necessary components included, at \$400 per core for 5 years. The minimum investment to be eligible for matching is \$3,200, which corresponds to a modern compute server. They can also buy storage for research data at \$127 per TeraByte per year. At the start of the program, this storage required users to arrange for backup of the data. The need for storage with backup became clear during the program, and a new service will be developed to provide storage with backup included. The cost will be announced and is estimated to be less than double, i.e. \$250 per TB per year.

Commitments received

Research Computing received commitments from 39 faculty members, some of whom are department heads providing extra support for faculty in their units who have made individual commitments. The total amount committed is \$296K. It is a coincidence that this is very close to \$300,000, since the faculty did not have access to information about a running total. The average investment is \$7,600 per faculty.

As part of the Research Computing Matching program, the computational biology community on campus organized a campaign to collect funds to build a compute resource dedicated to computational biology. This activity aligns perfectly with the hiring on August 1, 2011 of Oleksandr "Alex" Moskalenko as a permanent staff member of Research Computing with expertise in computational biology algorithms, software tools, and performance analysis. The campaign raised \$200K from 30 faculty members.

Fall 2011 acquisition of compute and storage systems

The matching program funds will be used for an acquisition of computing and storage hardware this fall. In addition to the \$297K in commitments and the \$297K matching, that acquisition has funds from commitments by 11 other faculty members who want to work with Research Computing for acquiring the hardware for their research. These extra funds total \$686K. As a result the total budget for the Fall 2011 acquisition is \$1.3 million.

There is a clear need to connect the activities of UF Research Computing and the HPC center to research activities on campus, including grant funded research.

Reports: New web site

The new web site for UF Research Computing will fit into the Office of IT website and have the same structure and look and feel. It will be reachable from the <http://www.it.ufl.edu> under Units, as well as at the well-known URL of <http://www.hpc.ufl.edu>. The templates are ready and are being filled with data. The site is expected to go live in December after some testing.

The members of the RCAC committee and subcommittees will be asked to check the site at a test location, as soon as that becomes sufficiently mature for useful feedback.

Reports: New scheduler tools

For the new web site, a new visual interface is being developed to display the running jobs with a more user centered architecture. This will allow the user to see her/his jobs in the context of the research group they belong to so that they clearly see the resources being used in relation to the total resources available for the group. An overall system view will also be available. All views will use graphical bar-charts instead of the text based output prevalent on the current website.

Phase V acquisition process

Charlie Taylor presents some initial results as far as prices and options are concerned for the acquisition of Phase V, which includes all acquisitions made with the funds committed within the Research Computing Matching program.

Research computing has already invested in two smaller systems that will be dedicated to teaching and research and will be used temporarily to aid in the planning process for Phase V acquisition. These systems are bought with funds from Research Computing so that they can be used for teaching without causing problems with research funds being used for teaching purposes.

One system has 192 Intel compute cores will be used to run the Galaxy system and to work with the computational biology investors to learn about their specific requirements. The other system will have several NVIDIA M2070 and M2090 GPUs and will be used to find the optimal configuration for the investors interested in GPUs.

Part of the acquisition includes a group of 30 computational biology researchers who committed \$200K with \$200K matching. This group will be actively engaged in the process of designing the computational capacity and storage architecture in the form of several "town hall" meetings and one-on-one meetings. A planning meeting took place on Wednesday Oct. 19 with Alex Moskalenko, Taum Hanlon, Richard Deason, Lauren

McIntyre and Erik Deumens participating. The first “town hall” meeting will take place in the next two weeks.

Similarly, the investors interested in GPUS have already been engaged in detailed discussions about their needs so that we can determine the optimal configurations for the acquisition.

Next meeting will be of the RCAC committee on Nov 7 at 1:30 pm in NPB.