RACC subcommittee on Research Computing
Summary of March 10th, 2008 Meeting

Attendees: Bill Kath, MCC; Jeremy Freese, WCAS; Rex Chisholm, MED; Abel Kho, MED; Joe Paris, NUIT

ARTICULATION OF RESEARCH COMPUTING NEEDS

Discussions touched on the types of research computing needs that would be prevalent across the University. Expectedly, requirements will vary widely, but there is a strong need for both HPC and storage resource build-out. Additionally, any central effort would require technical staff for maintenance, software, troubleshooting, and development tasks – some of these staff could be considered part of an “Innovation Center,” while others would be needed at the system administration level.

A new survey covering the current state of research computing will articulate the various types of resource needs of the University. The plan is to specifically target current use patterns to aid in discovering what the immediate needs are for both HPC and storage. In addition to the survey, an investigation into past research oriented purchases (HPC, Storage, other) may help to define trends and allow the University to project resource needs in the near-term (3-5 years).

We quickly discovered that the general term “Research Computing” might tend to reflect a specific set of HPC users and not the broader community. It is at the suggestion of this subcommittee that we move forward on a definition of “research computing” that would apply to all forms of research at the University. This definition would help provide scope to the proposed survey and a guide for future resource and policy discussions for HPC, storage, and other.

Proposed Next Steps

• Definition of Research Computing (Group)
  o Over the next few weeks we should use both email and our scheduled meeting to decide on a definition for this term
  o Suggestions to get us thinking on this topic include
    ▪ Research Computing is activity related to scholarly work that is likely to be published
    ▪ Activity that ultimately captures data that would lead to scholarly publication

• Survey on Compute Needs
  o Tracking through Purchasing (Joe P.)
Decide on appropriate questions through email and scheduled meeting (Group)

- Suggestions to get us thinking on this topic include
  - “Where/how is your resource currently managed?”
  - “What types of backup/redundancy do you have in place?”
  - “What types of resources do you have now?”
  - “What kind of computing are you involved in?” (I.e. Data Mining, HPC, etc)

UNIVERSITY MODELS AND RESOURCE ALLOCATION POLICIES

Concerns were raised that a central model could adversely affect funding opportunities if agencies were not keen on allowing resources purchased from their grant dollars to be used in a shared central resource. It is understood that agencies may respond differently to these types of requests, and clearly established policies might need to govern usage of resources as purchased from those grants. In particular, the University needs to know if inclusion into shared environments would be disallowed outright, or if their usage patterns can be governed by a specialized set of policies articulating right to access of the resource. Hypothetical example - 80/20 model, which would guarantee 80% exclusive access of the purchased resources with the added ability to draw on the larger shared environment as needed. The same concerns also apply for any funding going towards purchase of 3rd party compute cycles.

There is an interest in investigating 3rd party compute solutions (Amazon, Google/IBM) for the majority of general purpose compute needs at the University. It is unclear, at this point, if there is a clear benefit to that environment, or if it financially feasible to utilize.

Concerns also detailed the possibility of an under-resourced environment if proper policies and procedures were not articulated for the future build-out of any central resources. This also related to the concern of funding agencies not accepting this type of shared model. Need to make sure that a clear benefit for a central model is achievable within the resources of the University and working within restrictions of the funding agencies.

There is interest in how other universities tackled these various issues. This group will define a small set of universities, both established and those just beginning its investigations, to target with specific questions as defined by this group.

Proposed Next Steps

- Define a core set of universities (3 to 5) for further questioning (Group)
  - Suggestions for Established Environments
    - Georgia Tech, Virginia, Princeton
Suggestions for Universities currently undergoing investigations
  - Harvard, MIT

• Develop questions for targeted universities (Group)
  o History of initiative
  o Funding concerns

• Funding Questions (Joe P)
  o Involve ORD in approaching funding agencies about these issues
  o Vicky contacts her program chair?

• Contact Universities with targeted questions, possibly invite for talk (Joe P/Mort)

• Investigations into 3rd Party computation and storage resources (Joe P)
  o IBM/Google
  o Amazon