Deployment of Virtual Clusters on a Commercial Cloud Platform for Molecular Docking

Subtopic: Multi-Cloud

Nara Institute of Science and Technology (NAIST)
Nara, Japan
Week 2 Progress

- **FutureGrid**
  - The FutureGrid project proposal was submitted and accepted. With this acceptance we now have access to all FutureGrid Resources. Nimbus, a toolkit type infrastructure utilized in cloud computing, has been installed on one of FutureGrid’s computing resources called “hotel”. An image of a virtual machine has also been transferred onto FutureGrid to be launched.

- **Virtual Machines (VMs)**
  - A VM based on the image of the VM created by Kevin Lam and Karen Rodriguez last year was made within our virtual machine (A VM in a VM). We are now adding new software, ViNe and Hadoop, to this VM. ViNe and Hadoop are necessary for new tests we will be conducting.
Week 2 Progress

• Multi-Cloud
  – I have continued to research ViNe software and emailed Dr. Mauricio Tsugawa, developer of ViNe and FutureGrid. Dr. Mauricio Tsugawa has sent me resources which I have read to improve my knowledge of ViNe.
  – I have gained access to AIST private cloud but have not done virtual machine work on it thus far.
Week 3 Plans

• Virtual Machines (VMs)
  – The goal is to have an initial VM with all necessary programs and software installed

• FutureGrid
  – Through next week I will be working on FutureGrid trying to get a better understand of how their cloud system works as well as learning Nimbus which I have installed on FutureGrid.
Week 3 Plans

• AIST Private Cloud
  – I am hoping to upload and launch a virtual machine image onto the AIST Private Cloud

• Multi-cloud
  – If we are able to successfully put VMs on FutureGrid and AIST private cloud, I will begin working with ViNe attempting to network between the two new cloud resources and the NAIST local server.
  – I also hope to plan a Skype conference call with Dr. Mauricio Tsugawa sometime over the next few weeks to gain a better understanding of ViNe.
Cultural Exploration
Cultural Exploration
Acknowledgements

- Dr. Jason Haga
- Dr. Kohei Ichikawa
- Dr. Mauricio Tsugawa
- Dr. Gabriele Wienhausen
- Teri Simas
- Jim Galvin
- Madhvi Acharya
- PRIME Alumna Haley Hunter-Zinck
- Nara Institute of Science and Technology (NARA)
- National Institute of Advanced Industrial Science and Technology (AIST)
- Pacific Rim Experiences for Undergraduates (PRIME)
- FutureGrid
- Japan Student Services Organization (JASSO)
- URS Ledell
- National Science Foundation