

Teragrid Internship - Y798 final report*

Arvind Gopu
[agopu@cs.indiana.edu]

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1 Objective

This is a final report explaining my views on an internship I did with University Information Technology Services (UITS) at Indiana University between Jan 5 2004 and March 12 2004. The objective of this internship was to get myself acquainted with grid-computing, investigate various requirements for Indiana university's participation in the NSF funded Extensible Terascale Facility (ETF) project a.k.a. Teragrid [1, 2] and implement some components of the project. Other issues that were possible areas of work were building and testing IU's own certificate authority, discuss with other grid-computing experts on campus and in other institutions, design and write reporters for INCA test harness.

2 Accomplishments

I was a key member of our sub-group within RATS (Research And Technical Services) at UITS [3]. We discussed many aspects related to getting IU ready for Teragrid - including design of infrastructure, software and hardware issues, security, etc.

One of my main accomplishments was building a Certificate Authority machine. To this effect, I built a Redhat Linux 7.3 box from scratch on a Dell Poweredge 2650 server. On top of that, I installed Globus 2.4 [4] using their GPT installer. Then I installed Globus' SimpleCA (Certificate Authority) package. At the end of the whole exercise, I could have users request for

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certificates under our certifying realm and then could sign those certificates (to validate them). We could also provide host certificates in addition to user-certs. The above stated exercise actually required considerable researching-into to figure out various, basic as well as advanced, details. I did the whole process on a testbed node that I built before migrating it to the production system. I also documented the whole exercise - that document is under restricted RATS only access.

I was also part of the Test Harness and Information Services working group (THIS-wg). To this effect, I participated in phone conferences in which issues relating to the INCA test harness were discussed. I also contributed to the working group by writing two reporters for INCA - a generic compiler unit reporter as well as a PBS unit reporter. A unit reporter is used to test functionality of a particular software installation, whether or not it works as expected.

I also learnt a great deal about Linux system administration working with all the sys-admins (RATS group). More specifically, I learnt about Redhat and Suse Enterprise Linux administration, Globus, etc.

3 Conclusion

All in all, I was very satisfied with the internship experience I went through. I got to learn a whole lot ranging from basics of grid-computing to advanced topics like building Globus, building a certificate authority, working on reporters for a test harness, etc. Also, the internship got me interested enough in the ETF-Teragrid project that I decided to go back and work with the RATS group once I got done with my masters course work.

References

- [1] Teragrid homepage <http://www.teragrid.org/>.
- [2] Teragrid at Indiana University <http://iu.teragrid.org/>.
- [3] UITS-RATS Homepage <https://www.indiana.edu/rats/>.
- [4] Globus Homepage <http://www.globus.org/>.

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