CMP915
The Grid and Related Computing Technologies
Investigative Study

Due date: 20th May 2005

As the Investigative Study portion of the module you are asked to either

1. Examine and critique the software developed in the Globus project. You should include in your study a summary of the development of the various versions of the Globus Toolkit, the Open Grid Services Architecture, and the recent adoption of the Web Services Resource Framework. In addition to analysing the development of Globus, you might also like to compare and contrast it with other approaches to computing in heterogeneous distributed environments, such as .NET and CORBA; OR,
2. Describe and discuss the architecture of the Web Services Resource Framework. You may choose to illustrate this with a simple Web service implementation; OR,
3. Investigate an application-oriented Grid project, such as EGEE, MyGrid, GEODISE, or DAME.

You should present your findings in a report on it of approximately 8 to 10 pages. This portion of the course makes up 25% of the final mark in this module.

You will gain more marks for critical analysis rather than just giving a description of systems and software. You will lose marks if you cut-and-paste material from the Internet unto your report.

There are a number of resources available to help you in your study:

- The Globus project web page at http://www.globus.org/.
- "The Anatomy of the Grid: Enabling Scalable Virtual Organizations," Ian Foster, Carl Kesselman, and Steven Tuecke, The International Journal of High Performance Computing Applications, volume 15, number 3, pages 200–222, Fall 2001. It is also available online from http://www.globus.org/research/papers/anatomy.pdf.
- "The Physiology of the Grid: An Open Grid Services Architecture for Distributed Systems Integration," I. Foster, C. Kesselman, J. Nick, S. Tuecke, January, 2002. This is available online at http://www.globus.org/research/papers/ogsa.pdf.
- IBM's involvement with Globus is introduced at the following location: http://www.globus.org/about/news/IBM-index.html.
- Web Services Resource Framework web page at http://www.globus.org/wsrf.
- "Modeling Stateful Resources with Web Services," Ian Foster et al., January 2004.
- "From Open Grid Services Infrastructure to WS-Resource Framework: Refactoring and Extension," Ian Foster et al., February 2004.
- "A Grid Application Framework based on Web Services Specifications and Practices," S. Parastatidis, J. Webber, P. Watson, and T. Rischbeck, 2003. Available online at http://www.neresc.ac.uk/projects/gaf/.
- The Microsoft .NET web site at http://www.microsoft.com/net/.

- CORBA resources available at http://www.omg.org/gettingstarted/corbafaq.htm.
- The Legion web site at http://legion.virginia.edu/.
- The Unicore web site at http://www.unicore.de/.
- The Sun Grid Engine web site at http://www.sun.com/software/gridware/.
- The DCE portal at http://www.opengroup.org/dce/ and the overview of DCE at http://www.transarc.ibm.com/Product/DCE/DCEOverview/dceoverview.html.
- The EGEE web site at http://public.eu-egee.org/
- The GEODISE web site at http://www.geodise.org/
- The MyGrid web site at http://www.mygrid.org.uk/
- The DAME web site at http://www.cs.york.ac.uk/dame/
- The AstroGrid web site at http://www.astrogrid.org/
- The EPSRC Pilot Projects page at http://www.epsrc.ac.uk/ResearchFunding/Programmes/e-Science/PilotProjects/default.htm