

Globus Toolkit version (GT4) Tutorial

29-30 September 2005

Presenters:

Ian Foster, Lisa Childers, Charles Bacon and Olle Mulmo, Argonne National Laboratory.

Background:

This two-day tutorial will provide an in-depth introduction to programming with the latest version of the Globus Toolkit version 4 (GT4). Released at the end of April 2005, GT4 provides a robust set of new services and tools, and completes the first stage of the migration to Web services that began in 2003 with GT3.

The [Globus Toolkit](#) is the flagship product of the [Globus Alliance](#), which produces open source middleware used in building grids around the world. It provides libraries and components that enable the development of service-oriented Grid applications and infrastructures. Core Globus components address basic issues relating to security, resource access and management, data movement and management, resource discovery, and so forth. The tutorial is geared toward those who want to learn about the newest work of the Globus Alliance and how to apply fundamental concepts in grid computing.

The APAC Grid is being built using the Virtual Data Toolkit (www.cs.wisc.edu/vdt) which incorporates the Globus Toolkit. The tutorial will therefore be able to investigate the installation of GT4 for the APAC Grid. It will also provide a forum to discuss the future middleware directions for the APAC Grid. Registration information for the conference and this tutorial can be found [here](#).

September 29: Overview of GT4

The first day of the tutorial is presentation-oriented. It provides a comprehensive introduction to GT4, covering execution management services, data movement and management services, and security services, and also reviewing some of the higher-level tools that build on Globus mechanisms. An introduction to administering a GT4-based Grid is also provided.

Agenda

morning:

- Introduction to GT4, Ian Foster and Lisa Childers

afternoon:

- Administering GT4 Deployments, Charles Bacon
- Perspectives on VO Management, Olle Mulmo

September 30: How to Build a Service Using GT4

The second day teaches developers how to build a Java Service that makes use of GT4 mechanisms for state management, security, registry and related topics. It is organized as a series of hands-on exercises in which attendees add increasing functionality to a skeletal service implementation. Fundamental patterns and interactions of grid computing are highlighted.

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Important Notes

Tutorial participants must bring their own network-enabled laptops pre-loaded with a small set of open-source software. There will be no support available to debug problems with attendee laptops. A list of prerequisites for the tutorial is published at: <http://www-unix.globus.org/tutorials/toolkit/BAS/APAC/>. Attendees must be able to run all the software listed in the prerequisites in order to participate in the tutorial.

Day 2 Tutorial Prerequisites

1. Basic knowledge of Web Services and Grid computing
2. Knowledge of java, XML and WSDL
3. Laptop configuration:
 - [jakarta ant 1.5 or 1.6](#)
 - [jdk 1.4.2](#)
 - 802.11b wireless capability required
 - NTP synchronization with server of choice
 - VMware emulation not supported
 - Cygwin not supported
 - Firewall software must be disabled
 - Windows ME/95/98 is not supported. Regarding other OSes: if you can run the jdk and ant you should be ok
 - A GT-specific distribution: [to be made available the day of the tutorial]
 - A software bundle containing tutorial-specific course material: [to be made available the day of the tutorial]

Optional:

- An editor that highlights Java and XML files, such as [JEdit](#).
- You also may find that [Adobe Reader](#) will come in handy.

Note! It is the attendees' responsibility to insure that their networking, ant and jdk are configured and working properly prior to the tutorial. The integrity of ant/jdk installations can be verified by building this sample code: [Linux version](#) or [MS Windows version](#).