



the globus alliance
www.globus.org

How to Join Globus: Incubators and Contributions

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Slides available soon at

<http://dev.globus.org/wiki/Outreach>



Globus is...

- A collection of solutions to problems that come up frequently when building collaborative distributed applications
- Software for Grid infrastructure
 - Service enable new & existing resources
 - Uniform abstractions & mechanisms
- Tools to build applications that exploit Grid infrastructure
 - Registries, security, data management, ...
- Open source & open standards
 - Each empowers the other
- Enabler of a rich tool & service ecosystem



Globus is an Hour Glass

- Local sites have their own policies, installs – heterogeneity!

- Queuing systems, monitors, network protocols, etc

- Globus unifies – standards!

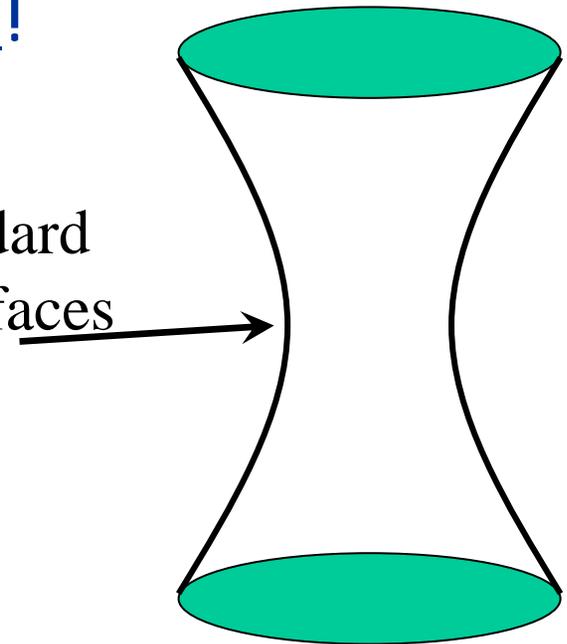
- Build on Web services

- Use WS-RF, WS-Notification to represent/access state

- Common management abstractions & interfaces

Higher-Level Services
and Users

Standard
Interfaces



Local heterogeneity



Globus is a Building Block

- Basic components for Grid functionality
 - Not turnkey solutions, but building blocks & tools for application developers & system integrators
- Highest-level services are often application specific, we let aps concentrate there
- Easier to reuse than to reinvent
 - Compatibility with other Grid systems comes for free
- We provide basic infrastructure to get you one step closer



Globus Philosophy

- Globus was first established as an open source project in 1996
- The Globus Toolkit is open source to:
 - Allow for inspection
 - > for consideration in standardization processes
 - Encourage adoption
 - > in pursuit of ubiquity and interoperability
 - Encourage contributions
 - > harness the expertise of the community
- The Globus Toolkit is distributed under the (BSD-style) Apache License version 2



- Governance model based on Apache Jakarta
 - Consensus based decision making
- Globus software is organized as several dozen “Globus Projects”
 - Each project has its own “Committers” responsible for their products
 - Cross-project coordination through shared interactions and committers meetings
- A “Globus Management Committee”
 - Overall guidance and conflict resolution



Log in

article discussion edit history

- Welcome
- List of projects
- Guidelines
- Infrastructure
- How to contribute
- Project ideas
- Mailing lists
- Globus events
- Recent changes
- dev.globus FAQ

common runtime projects

- C Core Utilities
- C WS Core
- CoG jglobus
- Core WS Schema
- Java WS Core
- Python Core
- XIO

data projects

- Data Replication
- GridFTP
- OGSA-DAI
- Reliable File Transfer
- Replica Location

execution projects

- GRAM
- GridWay
- MPICH-G2

information projects

- MDS4

Welcome

Globus was first established as an open source software project in 1996. At that time, the Globus development team has expanded from a few individuals to a distributed, international community. In response to this growth, the Globus community (the "Globus Alliance") established in October 2005 a new source code development *infrastructure* and meritocratic *governance model*, which together make the process by which a developer joins the Globus community both more open and more transparent.

The Globus governance model and infrastructure are based on those of Apache Jakarta. In brief, the governance model places control over each individual software component (*project*) in the hands of its most active and respected contributors (*committers*), with a Globus Management Committee (GMC) providing overall guidance and conflict resolution. The infrastructure comprises *repositories*, *email lists*, *Wikis*, and *bug trackers* configured to support per-project collaboration, access and management.

For more information, see:

- The [Globus Alliance Guidelines](#), which address various aspects of the Globus governance model and the Globus community.
- A description of the Globus Alliance [Infrastructure](#), and known [upcoming downtimes](#)
- A list of current Globus projects.
- Information about [Globus community events](#).
- The [conventions and guidelines](#) that apply to contributions.

Guidelines
(Apache
Jakarta)



Infrastructure
(CVS, email,
bugzilla, Wiki,
licenses)

Projects
Include
...





Globus Technology Areas

- Core runtime
 - Infrastructure for building new services
- Security
 - Apply uniform policy across distinct systems
- Execution management
 - Provision, deploy, & manage services
- Data management
 - Discover, transfer, & access large data
- Monitoring
 - Discover & monitor dynamic services



Globus Projects

MPICH G2

OGSA-DAI

Incubation
Mgmt

Java
Runtime

C
Runtime

Python
Runtime

Delegation

CAS

C Sec

MyProxy

GSI-
OpenSSH

GridWay

GRAM

Data
Rep

GridFTP

Reliable
File
Transfer

Globus Toolkit

Replica
Location

MDS4

GT4 Docs

Common
Runtime

Security

Execution
Mgmt

Data Mgmt

Info
Services

Other



Non-Technology Projects

- Distribution Projects
 - Globus Toolkit Distribution
 - Process in use since April '07
- Documentation Projects
 - GT Release Manuals
- Incubation Projects
 - Incubation management project
 - And any new projects wanting to join



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Globus Toolkit

Incubator Projects

Swift

GEMLCA

RAVI

Falkon

MonMan

GAARDS

MEDICUS

Cog WF

Virt WkSp

GARS

NetLogger

GDTE

GridShib

OGRO

UGP

Dyn Acct

Gavia JSC

DDM

Metrics

Introduce

PURSE

HOC-SA

LRMA

WEEP

Gavia MS

SGGC

ServMark

Common
Runtime

Security

Execution
Mgmt

Data Mgmt

Info
Services

Other

Incubator Process in dev.globus

- Entry point for new Globus projects
- Incubator Management Project (IMP)
 - Oversees incubator process from first contact to becoming a Globus project
 - Quarterly reviews of current projects

http://dev.globus.org/wiki/Incubator/Incubator_Process



Globus Projects

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Other



Globus Projects

Globus Toolkit

MPICH G2
OGSA-DAI
Incubation Mgmt

Java Runtime	Delegation	MyProxy	GRAM	Data Rep	Replica Location
C Runtime	CAS	GSI-OpenSSH	GridFTP	MDS4	
Python Runtime	C Sec	GridWay	Reliable File Transfer	GT4 Docs	

Incubator Projects

			Swift	GEMLCA	RAVI	Falkon	MonMan
	GAARDS	MEDICUS		Cog WF	Virt WkSp	GARS	NetLogger
GDTE	GridShib	OGRO	UGP	Dyn Acct	Gavia JSC	DDM	Metrics
Introduce	PURSE	HOC-SA	LRMA	WEEP	Gavia MS	SGGC	ServMark

Common Runtime	Security	Execution Mgmt	Data Mgmt	Info Services	Other
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Incubator Process (1 of 3)

- Project proposes itself as a *Candidate*
 - A proposed name for the project;
 - A proposed project chair, with contact info;
 - A list of the proposed committers for the project;
 - An overview of the aims of the project;
 - An overview of any current user base or user community, if applicable;
 - An overview of how the project relates to other parts of Globus;
 - A summary of why the project would enhance and benefit Globus.



Incubator Process (2 of 3)

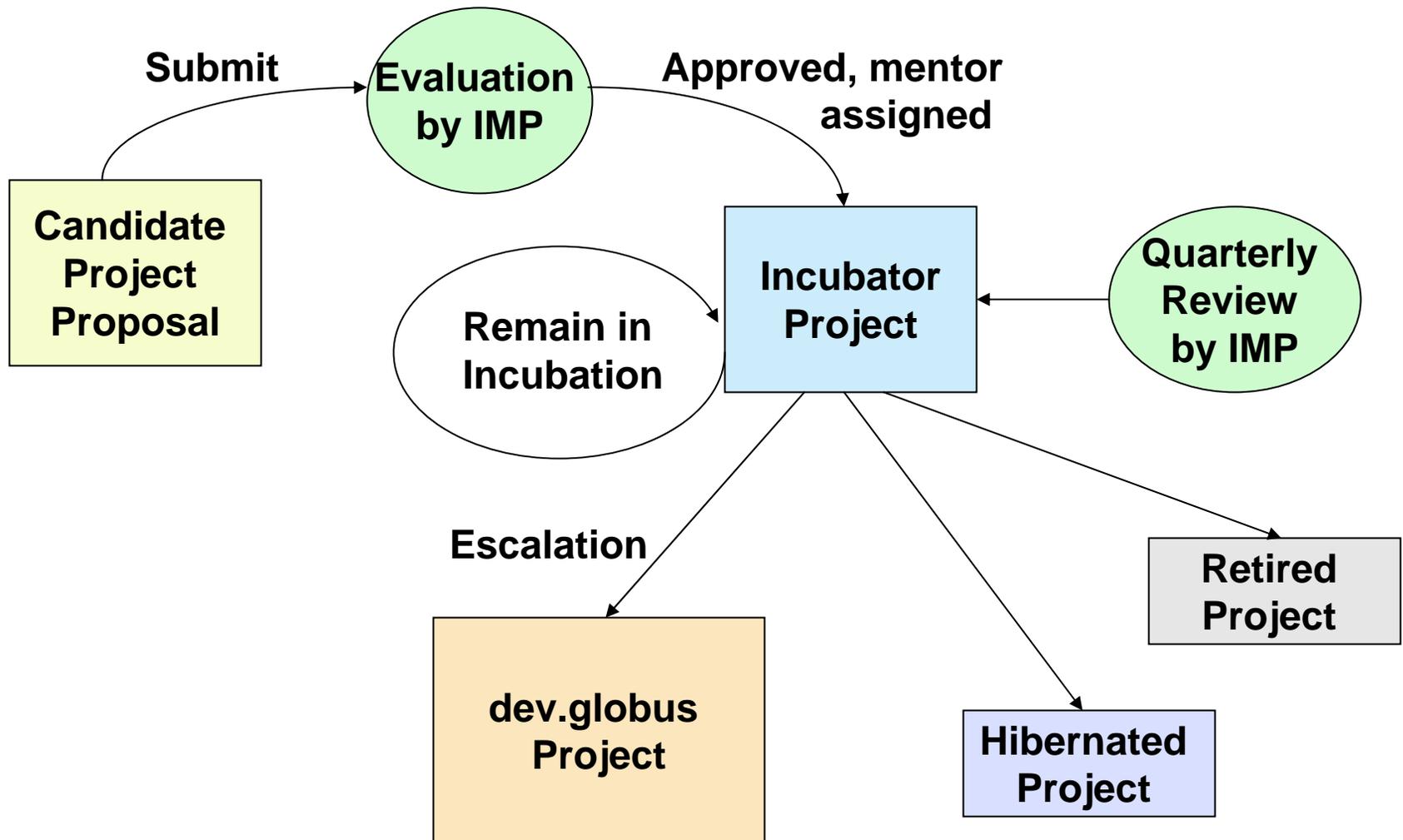
- IMP meet, discuss, and accept project as a *Incubator Project*
 - Project is now part of the Incubator framework
 - Get assigned a Mentor to help
 - > Member of IMP
 - > Bridge between Globus and new Incubator Project
 - Opportunity to get up to speed on Globus Development process



Incubator Process (3 of 3)

- Quarterly reviews by IMP determine
 - Stay an Incubator Project
 - Retire
 - Escalate to a full Globus project
- Escalation when Project passes checklist
 - Legal
 - Meritocracy
 - Alignment/Synergy
 - Infrastructure

Incubator Process



Incubator Management Project (IMP) oversees Incubator framework



Escalation

Escalation to a full dev.globus project when Incubator Project passes checklist:

- Legal
 - All code properly licensed, including copyright agreement
 - Contributor License Agreements on file
- Meritocracy / Community
 - Demonstrate an active, diverse development community
 - Demonstrate reasonable expectation for future support
 - Voting
 - Ability to tolerate and resolve conflict within community
 - Public release plans & at least 1 release during Incubation
 - Engagement with other communities
- Infrastructure
 - CVS/SVN module, mailing lists, issue tracker, project web site all used and current



27 Current Active Incubator Projects

- CoG Workflow
- Distributed Data Management (DDM)
- Dynamic Accounts
- Fast and Light execution (Falkon)
- Grid Authentication and Authorization with Reliably Distributed Services (GAARDS)
- Globus Advance Reservation Service (GARS)
- Gavia-Meta Scheduler
- Gavia- Job Submission Client
- Grid Development Tools for Eclipse (GDTE)
- Grid Execution Mgmt. for Legacy Code Apps. (GEMLCA)
- GridShib
- Higher Order Component Service Architecture (HOC-SA)
- Introduce
- Local Resource Manager Adaptors (LRMA)
- MEDICUS (Medical Imaging and Computing for Unified Information Sharing)
- Metrics
- MonMan
- NetLogger
- Open GRid OCSP (Online Certificate Status Protocol)
- Portal-based User Registration Service (PURSe)
- Remote App Virtualization Infrastr. (RAVI)
- ServMark
- SJTU GridFTP GUI Client (SGGC)
- Swift
- UCLA Grid Portal Software (UGP)
- Workflow Enactment Engine Project (WEEP)
- Virtual Workspaces

Incubator Committers: 28 Institutions

- Aachen Univ. (Germany)
- Argonne National Laboratory
- CANARIE (Canada)
- CertiVeR
- Children's Hospital Los Angeles
- Delft Univ. (The Netherlands)
- Indiana Univ.
- Kungl. Tekniska Högskolan (Sweden)
- Lawrence Berkeley National Lab
- Leibniz Supercomputing Center (Germany)
- NCSA
- National Research Council of Canada
- Ohio State Univ.
- Semantic Bits
- Shanghai Jiao Tong University (China)
- Univ. of British Columbia (Canada)
- UCLA
- Univ. of Chicago
- Univ. of Delaware
- Univ. of Marburg (Germany)
- Univ. of Muenster (Germany)
- Univ. Politecnica de Catalunya (Spain)
- Univ. of Rochester
- USC Information Sciences Institute
- Univ. of Victoria (Canada)
- Univ. of Vienna (Austria)
- Univ. of Westminster (UK)
- Univa Corp.



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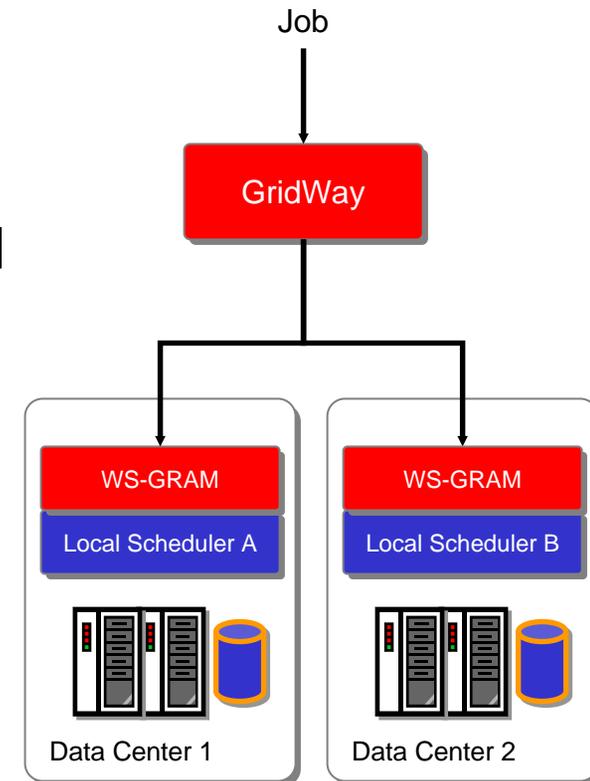
www.globus.org

GridWay



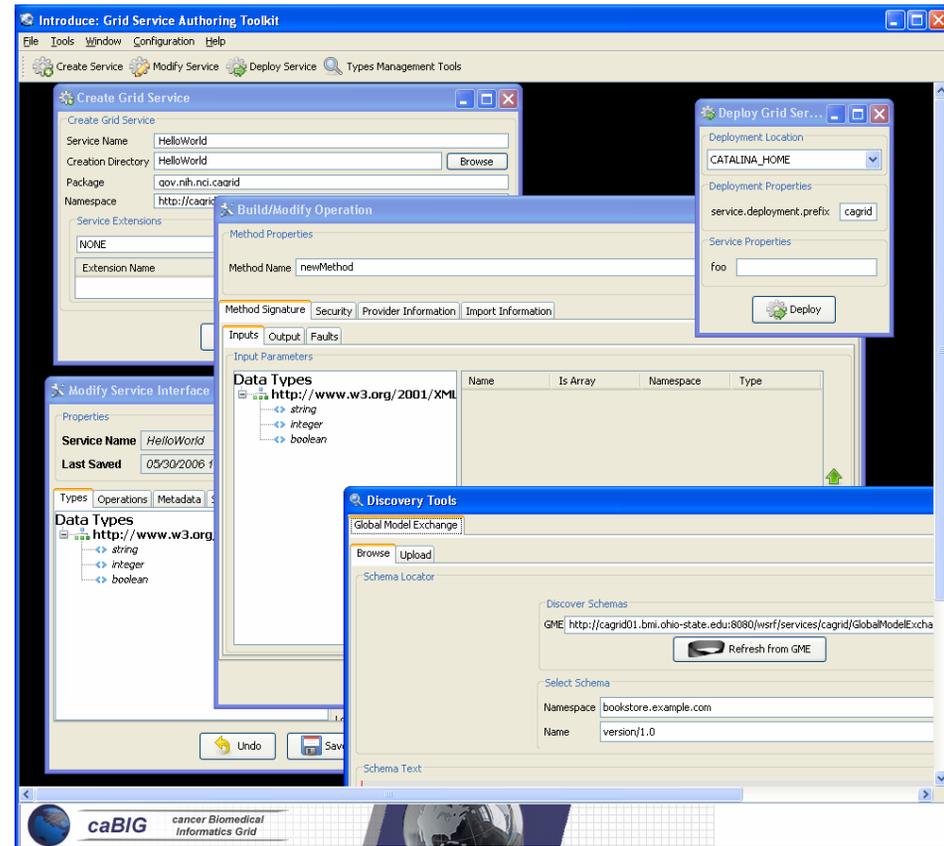
Ignacio M. Llorente,
Ruben S. Montero,
Eduardo Huedo

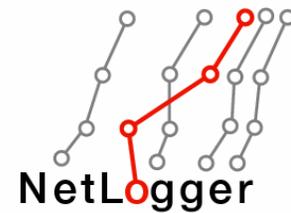
- First Incubator project to escalate to full dev.globus project
- Open source meta-scheduler
 - Across clusters, etc.
- Functionality needed by community
 - Talks to local scheduler via WS-GRAM
 - WS-GRAMs can interface to heterogeneous local schedulers
 - Example User: Univ. of Arkansas



Introduce Grid Service Authoring Toolkit

- Graphical Development Environment (GDE)
- GUI for creating and manipulating a grid service
- A framework that enables fast and easy creation of Globus-based grid services
- Utilizes a best practice layered grid service architecture
- Handles core service architecture requirements for strongly typed and highly interoperable grid services
- Using *Introduce*, our "Create a Globus Service" tutorial examples reduced from 3 hours to about 15 minutes

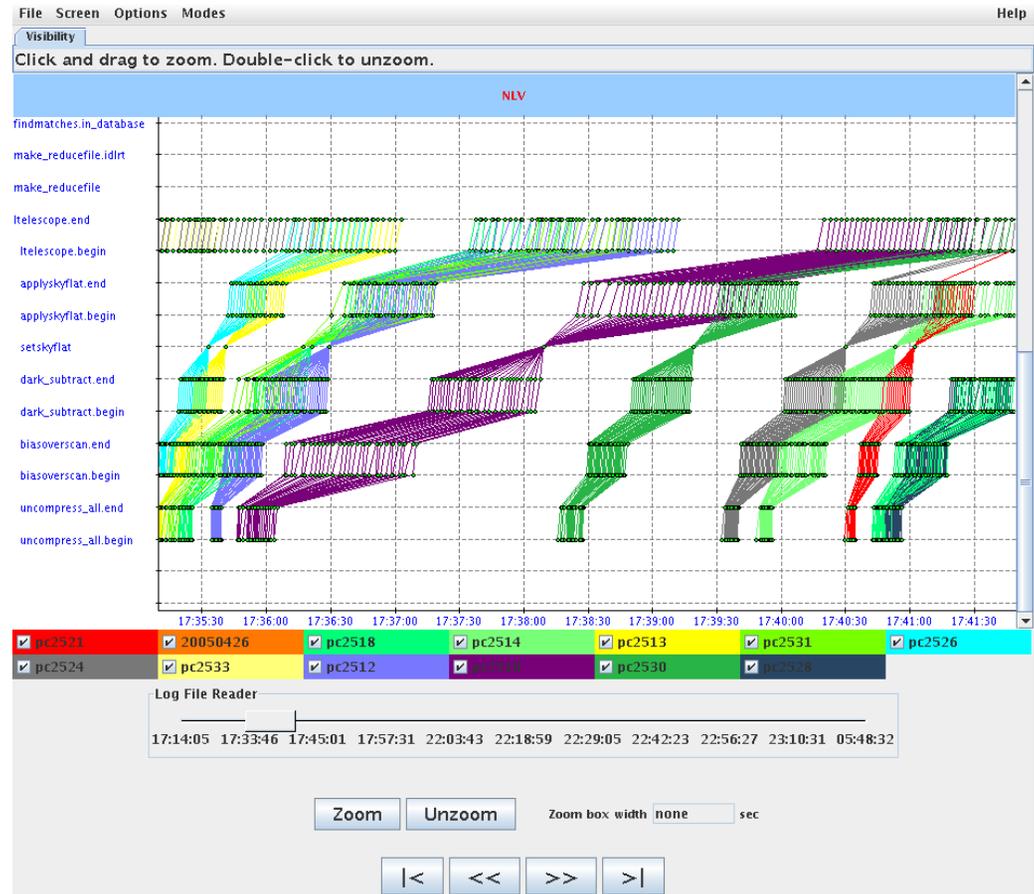




A methodology for analyzing distributed systems, and a set of tools to help implement the methodology

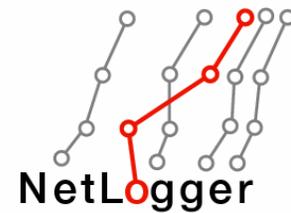
- Funded by SciDAC CEDPS

- Committers:
Lawrence Berkeley National Laboratory,
University of Delaware





NetLogger Tools



- Anomaly detection
 - look for unmatched start/end events
- Log collection
 - standalone socket server “netlogd”
 - *syslog-ng* interoperability
- Configurable translation into database tables
 - MySQL, PostgreSQL, SQLite; also as CSV



- Integrates a federated authorization infrastructure (Shibboleth) with Grid technology to provide attribute-based authorization for distributed scientific communities
- Allows the use of Shibboleth-transported attributes for authorization in GT4 deployments
 - And, more generally, SAML support
- Software package consists of two plugins, one for Globus Toolkit and another for Shibboleth
- Committers: NCSA, U. Chicago





Metrics

- Chair: Lee Liming, ANL
- Measure the use of Globus software
- Quantity issues
 - how much is the software being used
 - by how many people
 - how those people are distributed
- Quality issues
 - how the software is being used
 - how useful it has been
 - what the results of that use have been
- Libraries to generate statistics, and receiver code



ServMark

- Chair: C. Dumitrescu, University Chicago
- Set of performance evaluation tools for Globus and Grid software
- DiPerF
 - Ability to test services in a distributed and scalable way
- GrenchMark
 - Allow users to generate and run dynamic test workloads with complex structure.



PURSe

- Chair: Rachana Ananthakrishnan
- Portal-based User Registration Service (PURSe)
- Provides a set of tools for automating user registration and credential management, especially for portal-based systems
- Set of customizable components to manage the full lifecycle of credential management



How Can You Contribute? Create a New Project

- Do you have a project you'd like to contribute?
- Does your software solve a problem you think the Globus community would be interested in?
- Contact incubator-committers@globus.org



Contribute to an Existing Project

- Contribute code, documentation, design ideas, and feature requests
- Joining the mailing lists
 - *-dev, *-user, *-announce for each project
 - See the project wiki page at dev.globus.org
- Chime in at any time
- Regular contributors can become committers, with a role in defining project directions

http://dev.globus.org/wiki/How_to_contribute



For More Information

- Jennifer Schopf
 - jms@mcs.anl.gov
 - <http://www.mcs.anl.gov/~jms>
- Globus Alliance
 - <http://www.globus.org>
- Dev.globus
 - <http://dev.globus.org>
- Upcoming Events
 - <http://dev.globus.org/wiki/Outreach>

Open Source Grid & Cluster Conference

May 2008 in the USA

GlobusWorld, Grid Engine Workshop, Rocks-A-Palooza

- Hear the experiences of others who are using **Globus, Grid Engine, Rocks, Ganglia, Cluster Express**, and many other innovative software tools and techniques in their work
- Share your ideas about the benefits, incentives, and risks of using grid techniques
- Learn how you can use campus grids, community grids, and national grid systems to enhance your work and strengthen your collaborations
- Meet the developers responsible for this open source grid and cluster software.
- May 2008 in the USA
- Email info@OpenSourceGridCluster.org to be notified of details www.OpenSourceGridCluster.org