

OSG End User Tools Preview

A brief summary about the system users will interact with
The hands-on session in the afternoon will be more technical and deep
Here I want to set the context and highlight some concepts.

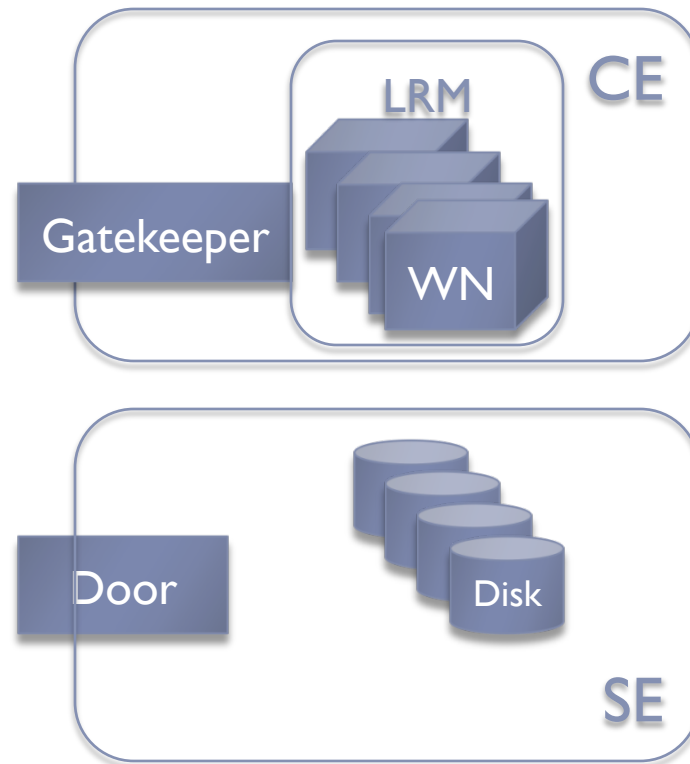
OSG All Hands Meeting – March 2, 2009

Marco Mambelli - University of Chicago

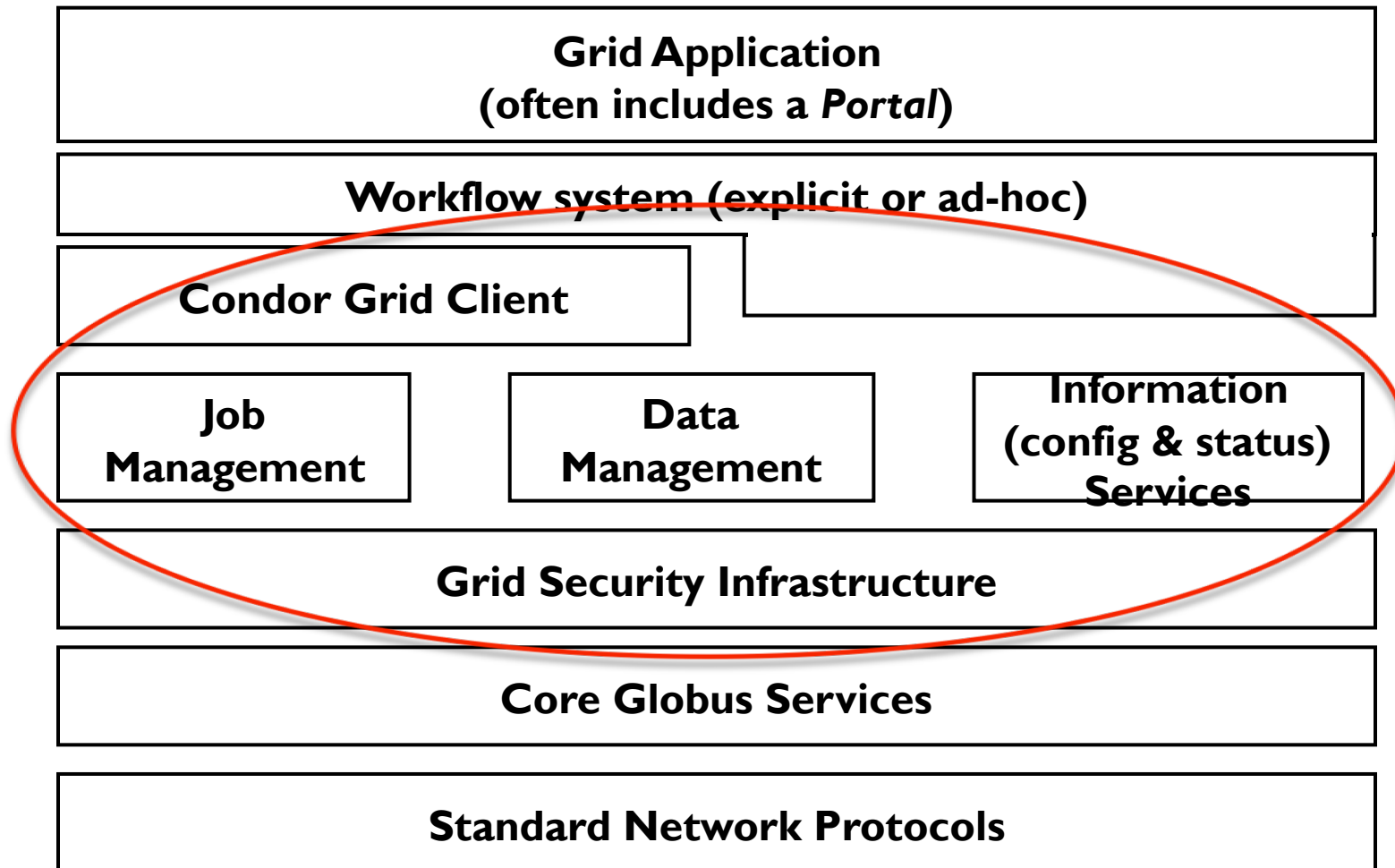
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Grid (CE, SE, ...)

- ▶ Set of services or resources containing data and providing processing power
- ▶ Computing elements
- ▶ Storage elements
- ▶ Information systems
- ▶ Clients
- ▶ How to interact?
 - ▶ validation and testing
 - ▶ active use



Grid software stack



Security: Grid Security Infrastructure

- ▶ **Grid certificate: your identity on the Grid**
 - ▶ x509 based authentication (DN, CA)
- ▶ **Secure protocols: GRAM, WVS-GRAM, GridFTP, GSI-http**
- ▶ **Grid proxy: protects your certificate**

- ▶ **Virtual Organization Management System (VOMS)**
 - ▶ extended (grid) proxy
 - ▶ VO membership from VO servers (scalable)
 - ▶ more granularity: groups and roles
 - ▶ possibility for dynamic control
 - ▶ `voms-proxy-init -voms atlas:/atlas/usatlas/Role=software`

Computing Element

- ▶ Worker node
 - ▶ real or virtual host
- ▶ Local Resource Manager (LRM)
 - ▶ PBS, Condor, LSF ...
- ▶ Jobmanager abstraction
 - ▶ GRAM (Globus GT2)
 - ▶ WS-GRAM (Globus GT4)
- ▶ Other abstractions
 - ▶ Condor-G
 - ▶ Workflow managers (SWIFT, Panda, ...)



Storage Element

- ▶ Disk pools
- ▶ Storage system
 - ▶ DRM, dCache, GPFS, Xrootd
 - ▶ uniform space (file retrieval and naming)
 - ▶ file system abstraction
- ▶ External access and file transfer
 - ▶ GridFTP (GSI, multiprotocol)
 - ▶ RFT, FTS (reliable)
- ▶ SRM Storage Resource Management
 - ▶ space management
 - ▶ transfer negotiation and queuing
 - ▶ pinning
- ▶ File catalog (RLS, LFC, RLI, LFC)

Open Science Grid for a user

- ▶ **Set of standard packages (VDT)**
 - ▶ Pacman (self contained environment, setup.sh)
 - ▶ Server packages
 - ▶ OSG-Client : for all interactive users
 - ▶ WN (client) : available to all job running on OSG
- ▶ **Standard environment**
 - ▶ in the information system and in the job environment
 - ▶ OSG_APP (to install applications), OSG_DATA, OSG_GIRD (WN client)
- ▶ **Information system and monitoring**
 - ▶ OSG Information Management (OIM)
 - ▶ VORS



Next steps

▶ Hands on session

- ▶ Track I: *OSG End User Tools*, this afternoon (1:30-3:00pm)
Main Conference Room
- ▶ <http://twiki.mwt2.org/bin/view/ITB/UserTutorial>

▶ References

- ▶ <https://twiki.grid.iu.edu/bin/view/ReleaseDocumentation/WorkerNodeClient>
- ▶ <https://twiki.grid.iu.edu/bin/view/ReleaseDocumentation/ClientInstallationGuide>
- ▶ <https://twiki.grid.iu.edu/bin/view/Documentation/UsingTheGrid>

▶ Other tutorials:

- ▶ <https://twiki.grid.iu.edu/twiki/bin/view/Education/NextSteps>
- ▶ <http://www.opensciencegrid.org/OnlineGridCourse>

