

Grid in a Grid

Deployment of a gLite Grid inside Grid'5000

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Grid'5000 Spring School – April 2011

Table of contents

Introduction

- gLite

- Scientific Linux

- gDeploy Script

gLite Middleware

- Information Service

- Batch

- Computing Element

- Workers Nodes

Demo

- gDeploy script

Conclusion

- Next Steps

- Sources

Introduction

gLite

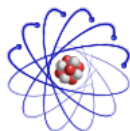
- ▶ Middleware stack for Grid Computing
- ▶ Developed and used by the EGI production grid
e.g for CERN LHC experiments
- ▶ Provides a complete set of services for building a production grid



Introduction

Scientific Linux

- ▶ Based on RedHat Enterprise Linux (RHEL)
- ▶ Version used in that experiment : Scientific Linux 5.5 (Boron)
- ▶ Kadeploy3 used for deployment on Grid'5000



Scientific Linux

Introduction : gDeploy Script

Goal

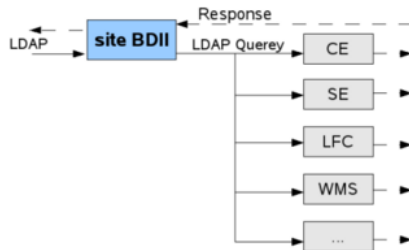
- ▶ Deploy a gLite site
- ▶ composed of :
 - ▶ a BDII element
 - ▶ a Batch scheduler
 - ▶ a Computing element
 - ▶ Workers nodes

Script

- ▶ Written in ruby
- ▶ available on <http://sbadia.github.com/gdeploy/>

Information Service – gLite BDII

- ▶ Information Service is a BDII (Berkley Database Information Index), OpenLDAP Server
- ▶ BDII provide information about the grid resources and their status

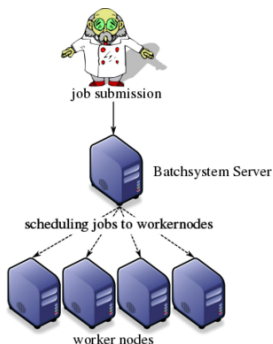


gLite Middleware

gLite Batch

- ▶ Batch scheduler
- ▶ Queue manager

= Torque server + Maui scheduler

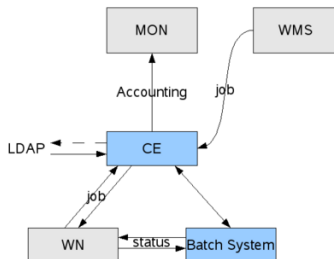


gLite Middleware

Computing Element

- ▶ Store information about workers nodes
- ▶ Interface with cluster (WN)

Cream computing element (torque client, mysql, tomcat)



Worker nodes

- ▶ Cluster on Scientific Linux 5.5
- ▶ Belong to a Virtual Organisation



Demo

- ▶ Reserve nodes and deploy Scientific Linux (using Grid'5000 API)
- ▶ Launch gdeploy script
- ▶ Test your gLite site

Conclusion

Next steps

Future work for gLite on Grid'5000

TODO

- ▶ Generic SL image that works on all clusters
- ▶ Storage : SE, LFC
- ▶ WMS and UI
- ▶ Multi-VO, inter-VO communications

Sources - Links

- ▶ <http://glite.web.cern.ch/glite/>
- ▶ <http://en.wikipedia.org/wiki/GLite>
- ▶ <http://www.sysadmin.hep.ac.uk/>

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