First attempt for validating/testing Testbed 1 Globus and middleware services

WP6 Meeting, 11-12 December 2001

Flavia Donno, Marco Serra for IT and WPs

LCFG group
massimo.biasotto@lnl.infn.it
andrea.chierici@cnaf.infn.it
enrico.ferro@lnl.infn.it
marco.serra@roma1.infn.it

Test suite group
stefano.barale@to.infn.it
antonio.forte@to.infn.it
stefano.lusso@to.infn.it

Outline

- Common installation platform:
  - SE, CE, WN, UI list of RPMs (basic for a site to join)
  - Manual and automatic (via WP4 tools) configuration
- The Resource Broker, Logging & Bookeeping, Information Index
  - Special cases. Only few needed. Installation instructions are coming. Good support from WP1
- Creating a test suite to avoid most common problems. It can be used to verify an installation before joining testbed
  - SE test suite (under testing)
  - CE test suite (few addition missing)
  - WN and UI test suite (only basic functionalities are tested. Almost ready)
- Wide deployment

Common Installation Platform (1)

- Installation of an SE:
  - For what concerns Globus2:
    - GRIS
    - gsincftpd
  - The SE information providers implemented by WP5/WP3
  - The GDMP server and client libraries by WP2
  - In /etc/grid-security all the RPMs concerning the "trusted" EDG CAs should be installed.
  - A proper grid-mapfile needs to exist to allow for GDMP transfers.
  - GDMP needs to be properly configured
  - Optionally a gatekeeper for issuing gdmp commands remotely

Common Installation Platform (2)

- Installation of a CE:
  - For what concerns Globus2:
    - GRAM
    - GRIS
  - The CE information providers implemented by WP4/WP3
  - The local logger services (provided by WP1)
  - Since a running job can update the Replica Catalog (RC) with new "produced" data (by the job), it is necessary to install the RC API (provided by WP2)
  - Since a running job can query info about the close SEs, then, it is necessary to installthe GDMP BrokerInfo API provided by WP2
  - Grid-mapfile and /etc/grid-security/certificates in place
  - A LRMS (Local Resource Management System) must be installed and properly configured (only PBS and LSF are supported) from sys-admin

Common Installation Platform (3)

- Installation of a WN:
  - For what concerns Globus2:
    - gridftp client
  - Since a running job can update the Replica Catalog (RC) with new data "produced" by the job, it is necessary to install the RC API (provided by WP2)
  - Since a running job can query info about the close SEs, then, it is necessary to install the GDMP BrokerInfo API provided by WP2
  - /etc/grid-security/certificates in place
  - A LRMS client must be installed and properly configured (only PBS and LSF are supported) from sys-admin

Common Installation Platform (4)

- Installation of a UI:
  - For what concerns Globus2:
    - services required by the user (eventually none)
  - UserInterface as provided by WP1
  - User accounts and certificates
  - /etc/grid-security/ in place
  - VERY LIGHT INSTALLATION

Installation and Configuration via LCFG

- The deployment of testbed sites, requires a common installation and configuration tool. A LCFG working group has been created to:
  - "integrate" all software needed (OS, Globus, WPs middleware, Applications)
    - test the RPM compatibility/dependencies and the full installation procedure
  - prepare a "LCFG toolkit" for automatic installation and configuration of testbed machines (SE, CE, WN, UI)
  - provide documentation and help for farm administrators
    - to install quickly a new machine
    - also for users management, NFS, ...

LCFG kit summary

- "LCFG toolkit" for automatic installation and configuration of testbed machines:
  - RPM lists (ComputingElement.h, StorageElement.h, ...)
  - set of configuration/templates files
- LCFG Globus object for configuration of Globus components
  - different actions for CE, SE, UI
- Web page with software and installation guide:
  - www.hl.infn.it/datagrid/wp4-install
  - ..... moving to the official documentation site

Test suite

- We put together a test suite per machine type to avoid most frequent errors:
  - Configuration problems for the various machine types (missing rpms)
  - Miss-configured grid-mapfiles (CE,SE,UI)
  - CRLs expired or /etc/grid-security/certificates not correct. (CE,WN,SE,UI)
  - home directories not exported/mounted via NFS (between CE and WNs)
  - GRIS not answering correctly/Information Providers not correctly configured. (CE,SE)
  - Main Globus commands (CE)
  - gsincftp (SE,CE,WN)
  - GDMP commands (SE)
  - Replica Catalogue/BrokerInfo operations. (SE,CE,WN)
  - WP1 UI commands/configuration (UI)
- Still under development ... for the moving target

Wide deployment

- To verify that what we produced was useful:
  - LCFG installation and the developed configuration objects successfully tested (alpha15+ ☺ … beta21 ??).
  - Some sites already tried out the produced templates and the instructions
  - The work done has been a very good starting point to test a farm-installation procedure to join testbed1, and useful tools have been produced
- The tools are ready to start a wide deployment of the testbed1 farms.

Conclusions

- The machine types defined seem to be OK
- Lists/Templates produced are valid and LCFG objects make (~)automatic the process of setting up a site
  - (with a 100Mb/s network ~10 min to install a node)
- The testing suite is a good starting point for a validation process. A more comprehensive test is needed, but preconfigured testing "services" need to be in place
- The process of registering a site which has passed the validation tests can be made more automatic
- The tools are ready to start a wide deployment of the testbed1 farms.