Service Challenge 3: Experiment Support

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Scope of this talk

Give you a report of the Experiment Support Group regarding the SC3

- Services deployed by SC3
  - Assistance to the SC3 Team
  - On-call shifts
- Experiment requirements and needs

Who we are?

- ALICE: Patricia Mendez Lorenzo
- ATLAS: Simone Campana
- BIOMED: Antonio Delgado Peris
- CMS: Andrea Sciaba
- LHCb: Roberto Santinelli

For all the Services

- **WIKI Page to have detailed information of all the Services:**
  - FAQ, installation guides for the services, status, etc

`uimon.cern.ch/twiki/bin/view/LCG/LCGServiceChallenges`

- **Continuous updates of the page**
- **Feedback of the experiments is needed to complete the page**

For the FTS

FTS Servers

Generalities:

- A FTS pilot server (v1.1.2QF1) has been deployed at CERN for each experiment
- It runs inside the SC3 Network
- It has access to the high-speed routes to T1s
- Access for a reduced set of persons from each experiment
- 1st element of gLite Movements paths in the Request Store: the point to point network connection
  - **fts-<vo_name>-test.cern.ch**
  - **CERN-CERN**
  - **CERN-GRIDKA**
  - **CERN-IN2P3**
  - **CERN-INFN**
  - **CERN-NDGF**
  - **CERN-SARA**

/opt/gLite/bin/gLite-transfer-channel-list

Channels defined for transfers. These are: the point to point network connections

For the FTS

In Terms of Deployment

Server included in all T1 sites taking part in SC3

- Client rpm part of LCG2.5.0
- Server rpm is in the release, but configuration is not covered by it

Installation of a FTS UI to access to the service:

`lxb1387.cern.ch`

- VOs: alice, atlas, cms, lhcb and dteam
- AFS Accounts
- Sourcing of a gLite env script
  - `/etc/profile.d/gLite-setenv.csh(sh)`

For the FTS

In Terms of (EIS) Support

The EIS group is taking part in several tutorials (learning and teaching) to get familiar with the service

Followup of the UIs status to identify and include missing middleware in the standard LCG Uis

- Experiments are requiring the testing of FTS
- During the setup phase small number of transfers will be performed
- Intended to get familiar with the service and not to perform production
- LFC client and information system tools: (lcg-infosites)
- Collecting and summarizing the experiments feedback

Contact with the T1s to get the srm endpoints

- Wiki pages contains the dteam endpoints only

BDII Configuration

Host: `sc3-bdii.cern.ch`

- Contains the information about the LFC catalogs at CERN and the T0 and T1 Storage Elements
- From the UI lxb1387:
  - `setenv LCG_GFAL_INFOSYS sc3-bdii.cern.ch:2170`
  - `lcg-infosites –vo cms lfc`
    - lfc-cms-test.cern.ch (output)
  - `lcg-infosites –vo alice se`

```
**************************************************************************
These are the related data for alice: (in terms of SE))
**************************************************************************
AvailSpace(Kb)    UsedSpace(Kb)    Type    SEs
--------------------------------------------------------------------------------
1000000000000     500000000000     mss     ccsrm.in2p3.fr
1000000000000     500000000000     mss     lcg00115.grid.sinica.edu.tw
```

LFC Catalog

- **A pilot server has been deployed at CERN for each experiment**
  - gain familiarity with the service
  - run scalability tests
  - perform tests
- **Host name: `lfc-<vo_name>-test.cern.ch`**
  - Client install in the EIS testbed
  - Visible from the FTS Server
  - EIS Group assisting with the installation of the servers (together with the SC3 Team) before if required
- **Information on migrating data between the RLS Catalog and LFC (Atlas and LHCb) at the LCG Goc Wiki**
  - `goc.grid.sinica.edu.tw/gocwiki`
  - `hep-service-lfc@cern.ch`

VO Boxes

Motivation:

- Some experiments are running service jobs for other jobs running on a site
  - In some cases use of the Fork Jobmanager to run on the gatekeeper node

The Base Line Services Workgroup identified the need for the experiments to run exp. specific services on the sites

It was understood that this has to be done in a way acceptable by the sites.

To identify possible solutions LHCb agreed to discuss requirements in detail with GD and test a pilot

Solution:

- Services run in user spaces delivered at each site for each VO
  - Direct gsissh loggin is allowed to SGM persons
  - Registration of a proxy for automatic renewal
  - Delivered for the experiment software installation

Time left Utility

Motivation:

- Many grid jobs get stuck in a queue trying to perform some data transfer and afterwards get killed by the batch system because they run out of Wall Clock Time. No output is available.

The knowledge of the CPU and RUN time left to a job might also optimize the usage of the resources booked for the job.

Solution:

- A set of tools has been developed in order to let the job know how much CPU and RUN time is still remaining before it is killed:

- **These tools recognize which batch system is running, and, on top of this information, instantiate the appropriate class that invokes the relative batch system command.**
- **The user job knows:**
  - **The effective CPU (and RUN) time spent**
  - **The percentage still remaining (or used)**
  - **The real CPU (and RUN) time spent on the queue**

Stdout/err monitoring tools

Motivation:

- Loosing track of the stdout/err until the end of the job (sometimes lost)
  - In some cases the debug is done through the stdout

Came up in the Baseline Services Workgroup

Solution based on experience gained with ad hoc tools provided by EIS for Geant4 production

Solution:

- A set of tools have been developed to:
  - At certain times partial stdout/err files are copied to a specific DPM (defined in default of decided by the user)
  - A script executed in the UI merges the partial files
- If required by the experiment DPMs can be setup for using this tool

Experiments Support

Alice: Alice will run the DC05 in the SC3 Framework

Requirements:

- VO-managed node at each site

Alice takes the responsibility to deploy and support the software at each site

  - VO Box rpm deployed in LCG2.6.0
  - VO Box prototype already deployed at CERN

- Central Catalog (Metadata Catalog) provided by Alice

Local LFC Catalog required at each site

  - Installation of a LFC server in Torino
  - Support of the LFC testing

- FTS server
  - Support for FTS testing
  - Maintenance of the FTS UI

Experiments Support

Atlas: Planning to run a Tier-0 exercise in October along with MC production at T2 and reprocessing at T1

Focusing mostly on Data Management

Requirements:

- Deployment of FTS

Comparison of FTS performance with Don Quijote RFT

Following the throughput phase and investigating the integration of FTS in Don Quijote

- For the moment RLS entries are being migrated to global LFC
  - Using their pilot as a global copy of the RLS to run some analysis
  - Cleaning the entries in the catalog before splitting it in many local catalogs

Experiments Support

CMS: the SC3 activity (throughput phase) is aimed to test the data transfer infrastructure

Requirements:

- **Transfers: Done with PhEDEx**
  - FTS is not currently used
  - integration with PhEDEx likely to happen later
- **Catalog: Local file catalog is needed by PhEDEx**
  - Only POOL MySQL catalog in use now
  - POOL-LFC interface is being tested by EIS
    - Functionality tests (done)
    - Performance tests (partially done)
    - Catalog migration from XML, MySQL to LFC (partially done)
    - Some issues discovered and already fixed, some yet to be solved

Experiments Support

lhcb: Evaluation of the services during the throughput phase

Requirements:

- **LFC central catalog**
  - **Needed a conversion of their replicas PFN format in order to let LFC be used through DLI interface by the WMS.**
  - **Incompatibilities among both catalogs**
  - **Inclusion in Dirac (Python APIS have been required)**

- **Data Transfer: FTS**
  - **Inclusion of the FTS Client in Dirac and first tests:**

CERN-CERN CERN-GRIDKA
CERN-INFN CERN-IN2P3
CERN-PIC CERN-SARA

On-call Services

- Our Group is taking care of the 2nd level support
  - Two persons, weekly 24 hours support for SC3
  - It is not intended to be contacted directly by the experiments
  - Basic maintenance of the service nodes is performed
  - Always supported by the 3rd level support (experts, developers)