gLite FTS Server Installation

Emidio Giorgio
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Outline

- gLite DMS overview
- gLite FPS Server
- gLite FTS Server
- UI clients
- Functionality tests

Data Management Services

- **Storage Element**
  - Storage Resource Manager — not provided by gLite
  - POSIX-I/O — gLite-I/O
  - Access protocols — gsiftp, https, rfio, …

rely on existing implementations

- **Catalogs**
  - File Catalog
  - Replica Catalog
  - File Authorization Service
  - Metadata Catalog

gLite FiReMan Catalog (MySQL and Oracle)

gLite Standalone Metadata Catalog AMGA

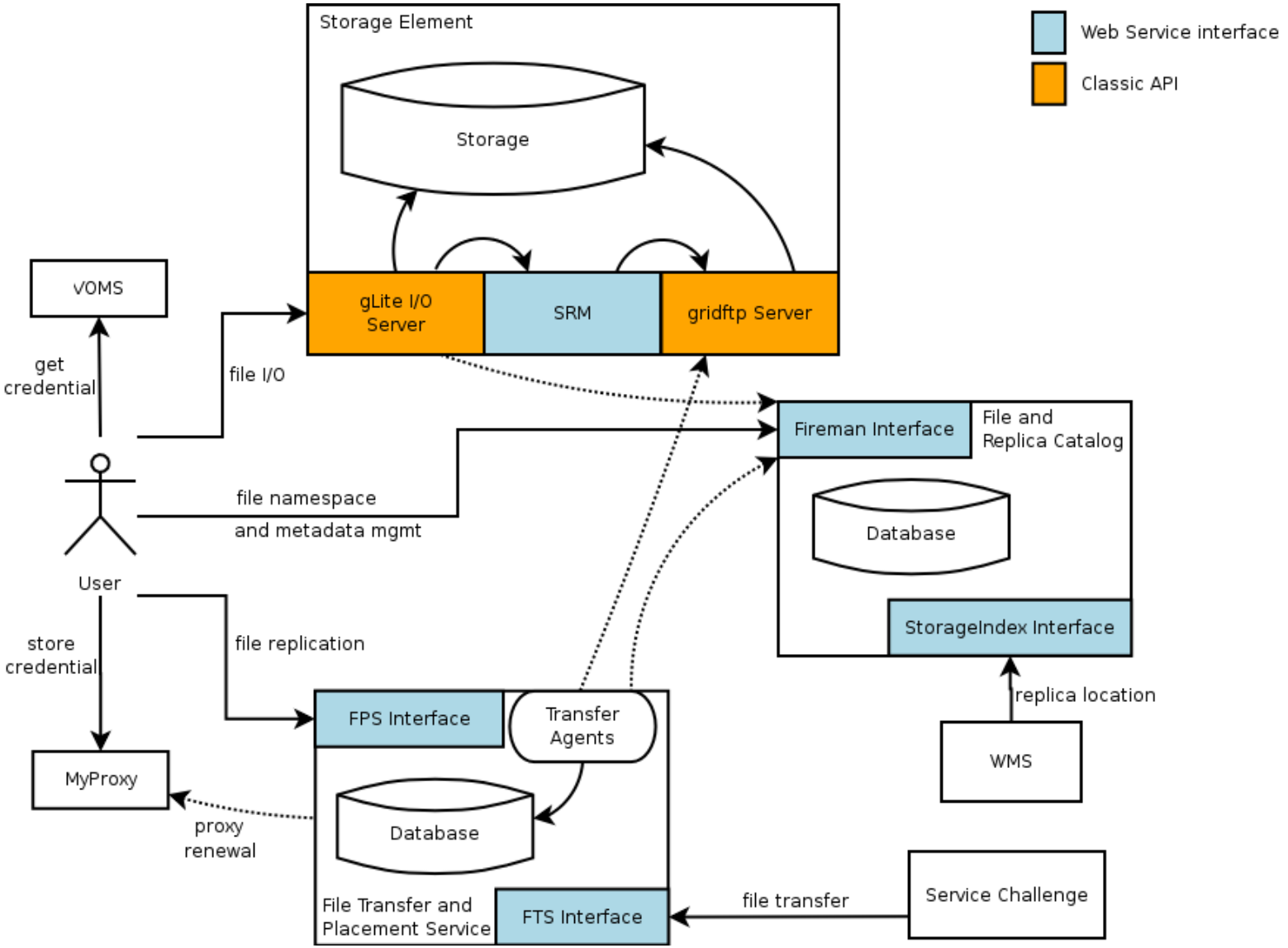
- **File Transfer**

Data Scheduler — planned for Release 2

File Transfer Service — gLite FTS and glite-url-copy

File Placement Service — gLite FPS

Interaction Overview

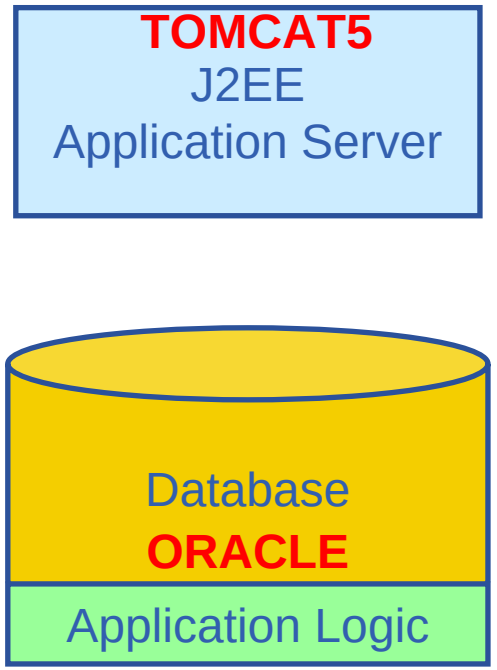


Service Implementation

- **2 independent implementations exist**

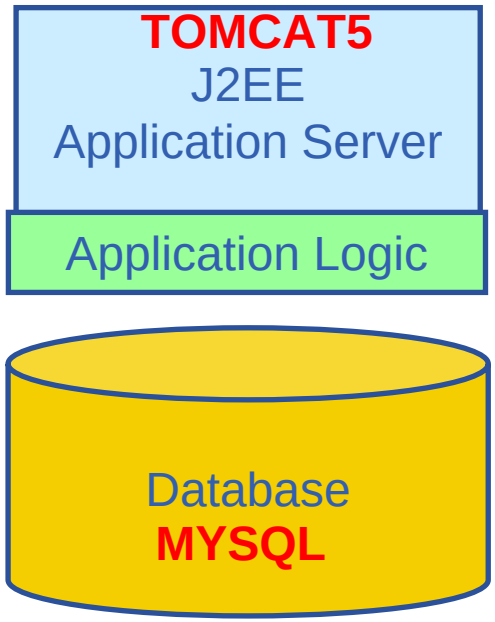
Oracle Implementation

- **Catalog Logic lives inside Oracle as Stored Procedures**
- **Tomcat parses credential only, passes operations through to DB**



MySQL Implementation

- **Simple Table Structure using InnoDB tables**
- **Credential parsing and all of the logic is in Tomcat**



gLite general installation – short reminder

- **Start from a fresh install of Scientific Linux >= 3.0.4**
- **FPS--FTS can be installed via a gLite deployment package**
  - Download: http://glite.web.cern.ch/glite/packages
- **Installation via**
  - Installer script
  - APT
- **Installation will install all dependencies, including**
  - other necessary gLite modules
- **You will need to install non-freely available packages yourself (e.g. Java or Oracle)**
- **Security module *(gLite Security Utilities)* will install only LCG supported CA rpms…**

Installing FTS server via apt

1. **Verify if apt is present:**
   - rpm -qa | grep apt
   - Install apt if necessary:
     - rpm -ivh http://linuxsoft.cern.ch/cern/slc30X/i386/SL/RPMS/apt-0.5.15cnc6-8.SL.cern.i386.rpm
2. **Add gLite apt repository:**
   - Put one of the following lines in a file (e.g. glite.list) inside the /etc/apt/sources.list.d directory
   - rpm http://glitesoft.cern.ch/EGEE/gLite/APT/R1.4/ rhel30 externals Release1.4 updates
3. **Update apt repository:**
   - apt-get update
   - apt-get upgrade
4. **Install IO server:**
   - apt-get install glite-file-transfer-service-config
   - apt-get install glite-file-transfer-agents-config

Extra packages needed (non freely distributable) :

- **J2SE v 1.4.2_08 JRE: http://java.sun.com/j2se/1.4.2/download.html**

See http://glite.web.cern.ch/glite/packages/APT.asp

gLite FTS server configuration

- From `/opt/glite/etc/config/templates` copy conf files to the configuration directory

```
[root@glite-se-test root]# cd /opt/glite/etc/config/
[root@glite-se-test config]# ls -1
glite-file-transfer-service.cfg.xml
glite-file-transfer-agents.cfg.xml
glite-file-transfer-service-clients.cfg.xml
glite-global.cfg.xml
glite-service-discovery.cfg.xml
security_checks.cfg.xml
glite-rgma-common.cfg.xml
glite-rgma-servicetool.cfg.xml
glite-security-utils.cfg.xml
```

FTS server specific parameters

Transfer agents settings

FTS client parameters

Common environment variables

Parameters for RGMA client

Other Security parameters

Settings for R-GMA service tools

GSI and security parameters

glite-file-transfer-service.cfg.xml

- Defines parameters for webservices which provides interface for Channel Management and File Transfer services
- Defines parameters for R-GMA servicetool which will publish to R-GMA Server
- Key Parameters :
  - DB backend settings:

DBBackend	oracle | mysql	Only this are supported
DBHost	host.domain.org	Host where DB server runs
DBUser	trinity	Authorized DB user
DBPassword	topSecret	Password of DB user
DBServicename	FTS_for_MyVO	DB name

  - ACL definition

SUBMIT_VOMS_ATTRIBUTES	VOMS attributes requested to use services
SUBMIT_MAPFILE	User's subject allowed to use service
ADMIN_VOMS_ATTRIBUTES	Attributes of user allowed for management tasks
ADMIN_MAPFILE	Subject of user allowed for management tasks
VETO_MAPFILE	Subject of user banned from services

  - R-GMA servicetools — Predefined values are fine

Agents configuration

- **Defines agents behaviour**
  - Two kind of agent
    - VO Agents
      - *Performs all VO related operations (applies VO policies, catalog selection)*
    - Channel agents
      - *Manages all files transfer through a channel.*
- **Channel is a monodirectional link between two sites**
- **VO agent can be FTS or FPS type**
  - FTS manages job where source and destination contains SURL or TURL
  - FPS extends FTS adding Catalog interaction. Job needs only LFN and source – destination sites

glite-file-transfer-agents.cfg.xml

- **Agents declarations is done on**
  `glite-file-transfer-agents.cfg.xml`
- **Each agent is defined through an `instance`**
- **Each agent type has predefined (even customizable) parameters**
- **`service` attribute on `instance` defines agent type**

  transfer-channel-agent-urlcopy — Channel Agent (copy performed through globus-url-copy)

  transfer-channel-agent-srmcopy — Channel Agent (copy performed with SrmCopy) working only when source and destination SE is dCache

  transfer-vo-agent-fps
  transfer-vo-agent-fts
  } **Define respectively fps and fts agents**
  Name must be equal to vo name

- **DB backend used is re-defined, with identical values of `glite-file-transfer-service.cfg.xml`**
- **Additional services used by agents are defined**
  - SRM's
  - Fireman Catalog
  - MyProxy Server
  - GridFtp servers

Other configuration files

Generally attribute description is self-explaining, and identical to the other just saw

Check that value for JAVA_HOME attribute in

`glite-global.cfg.xml`

is coherent with the path of installed JVM

Check DB access

- Before continuing configuration is a good idea to check DB connection
- According to the choosen backend, be sure to have corresponding client installed

  Oracle → oracle-instantclient-basic-10-1-0.X, X > 3

  Mysql → MySQL-client-4.1.11.0
- Test connection (MySql)

```
mysql -u trinity -h host.domain.org -D FTS_for_MyVO -p
Enter password:[topSecret]
```

- If everything fine, you can go ahead, else contact database administrator

Channel creation

- **Before launching python start scripts, channel creation has to be done**
- **Configure and start channel and file transfer interface**

```
./glite-file-transfer-service-config.py --configure
./glite-file-transfer-service-config.py –start
```

- **Go to the scripts directory**
  - `cd /opt/glite/etc/config/scripts`
  - Launch the configuration script
  1. **`./glite-file-transfer-agents-config.py –configure`**
  2. For each channel agent defined in `glite-file-transfer-agents.cfg.xml` an agent will be created
  3. If not existing, setup the channel through the client commands

Channel creation/2

- **N.B. Passages 1-3 have to be done for each channel created**
- **`glite-transfer-channel-add CHANNELNAME site-a site-b`**
  - **`CHANNELNAME`** has to be equal to the instance name set in **`glite-file-transfer-agents.cfg.xml`**
- **`glite-transfer-channel-set -S Active -b NUM -f NUM -T NUM CHANNELNAME`**
  - `-b` nominal bandwidth
  - `-s` channel status (Active)
  - `-T` number of concurrent streams
  - `-f` number of file can contemporary transfer
- **`glite-transfer-channel-setvoshare CHANNEL VONAME sharesize`**
  - **`CHANNEL`** has to be set previously
  - **`VONAME`** must be a valid vo name, and an instance as VO-agent should exist
- **Check out channels : `glite-transfer-channel-list`**
  - if CHANNELNAME is specified shows all infos on that channel
    - Needs admin privileges on the **CHANNEL** (see admin-mapfile)

Post configuration

Finally you can start agents

```
 cd /opt/glite/etc/config/scripts/
./glite-file-transfer-agents-config.py -start
```

Troubleshooting

- A Common error is that, for each channel created, FTS server subject is not inserted on SRM gridmap file.

Questions…