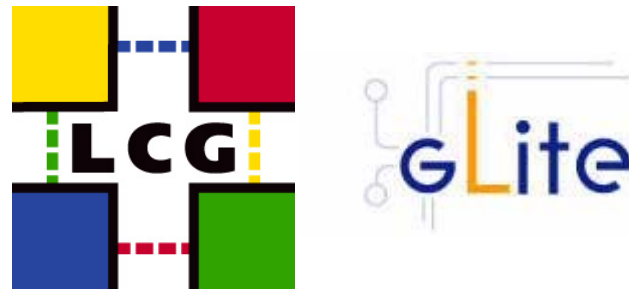# Current status of transfer service

FTS Workshop

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Outline

- Summary of FTS deployment in SC

- Status of current version

- Current work-plan

- Issues

Reminder: FTS?

- File Transfer Service is a fabric service
- It provides point to point movement of SURLs
  - Aims to provide reliable file transfer between sites, and that's it!
  - Allows sites to control their resource usage
  - Does not do 'routing' (e.g like PheDEx)
  - Core FTS does not deal with GUID, LFN, Dataset, Collections

- It's a fairly simple service that provides sites with a reliable and manageable way of serving file movement requests from their VOs

- We are understanding together with the experiments the places in the software where extra functionality can be plugged in

What is the FTS?

- Hope you all know this by now ;)

- Some points to stress:

- Decouple the "FTS" software component from the "fts" service.
    - The "FTS" software component of gLite is something which does a simple well-defined thing: point-to-point movement of SURLs
    - The "fts" service (or "transfer service"?) is more
        - Service: e.g. monitoring and debugging of SRMs
        - Related functionality: how to find FTSes, etc
    - Warning: I have a tendency to talk about the two together and mix them, often in the same sentence

- We should try to focus on the overall service

Why would I want to use it?

- …instead of using say…
- … plain globus-url-copy or lcg-cr?

- FTS is a fabric service
  - The exposed functionality to the experiments is rather simple
  - Much of the work is to expose management / monitoring functionality and resource control to the sites so that they can actually operate and debug the overall service (with limited staff)
  - Includes (active) service monitoring
    - We should know before you do!
  - Is integrated into the service debugging
    - We can make tools to mine the logs or DB to debug problems at sites
  - Improvements here allow us to provide a better overall service

SC3 summary

- Throughput phase was completed using version 1.1.2 of FTS
  - A rewrite of the Radiant prototype
- 1.3 version came in for the service phase, adding
  - Multi-VO support: fair-share
  - Introducing basic VO-agent framework
  - VO production manager role
  - Better logging / monitoring
- FTS software has been ~stable operation for some months now
  - Many issues / bugs resolved
  - A lot of new ~small features added
    - Some from experiments / many on the service side
  - Try to maintain high availability of the service
  - Interventions scheduled but frequency has been a little too high!

Service deployment

- FTS deployed at CERN initially to manage the T0 to T1 transfers
  - Extended for T1 to T0 channels, still managed by CERN FTS
  - T1 site managers can control the service even though it is hosted at CERN

- Also deployed at tier-1 sites to manage T1 to T2 and T2 to T1 transfers
  - Analogous model: T1 hosts the FTS, but T2 site mangers also have control
  - Reasonable experiences here - though with many versions the support load is rather high

- Used against Castor, Castor2, dCache and DPM SRMs
  - All currently using SRM v1 interface

Service deployment

- Now trying out a T1 to T1 'mesh' of transfers
  - Just a few sites
  - Interested to understand from the experiments how sparse (or not) the mesh is?

- Don't yet have a (good) deployment model for supporting T2 to T2 transfers
  - Software can 'do' it, but the challenge is to make it manageable given the resource limitations of T2 sites
  - What are the use-cases for this?

Status of 1.4.1 release

- New gLite release 1.4.1 FTS pre-deployed at CERN
  - Plan to roll out to T1 sites soon
  - Backwards-compatible clients (c.f. 1.1.2 -> 1.3!)
- Added new features
  - User can specify which MyProxy server to use
  - BDII publication of channels
  - SRM-copy support
  - MySQL support

  - Basic monitoring API
  - Cleaner configuration
  - Agent registration
  - Improvements in logging / monitoring

Current work-plan

- Items (non-exhaustive) on current work-plan
- One of the purposes of the workshop
    - Subject to discussion / change !
    - ...and in no particular order

- Staging support
    - Currently the FTS times out, so jobs fail

- SRM v2 support
    - Initially will be basic support for the early versions

Current work-plan

- Topology discovery
  - Where is/are the FTS endpoint(s) that can move from CERN to Glasgow?
  - Better information system integration

- Channel halting / error recovery
  - How many retries should we do?
  - When does it halt a channel rather than drain the queue?

- Horde of 'service' issues
  - Logging / monitoring / procedures / problem tracing / integration with CERN CC infrastructure

- The work-plan is tracked here:
  - https://uimon.cern.ch/twiki/bin/view/EGEE/DMFtsWorkPlan

Issues

Don't want to steal your thunder…

Issues: finding FTSes

- Issue:
  - The FTS servers do not communicate, each manages its own (set of) channels
  - If I know I want to go from XXX to YYY, where is the server endpoint I need to talk to

- Two issues:
  - Routing: I need to go from XXX to YYY (via ZZZZ)
  - Endpoint resolution: I know I need to go from XXX to YYY, where is the endpoint that deals with the XXX-YYY channel?

Issues: staging

- Issue:
  - No explicit stage support – staging not managed as a separate state
  - SRM.get makes implicit stage but FTS times-out
    - Increasing timeout is no good since we 'block' a 'transfer slot'
  - Should have explicit "stage" step in state machine
    - Control staging separately from transfer

- It's VO specific (potentially)
  - Managed by VO agents
  - We provide default, you can override if you want to write the code e.g. if you software framework already manages its pool in a specific way

Issues: VO framework

- Description of VO plug-in framework
    - See Paolo's talk

- Retry policies and channel halting
    - How much of the retry policy can be absorbed into the transfer service

- FPS Cataloguing functionality
    - Looking to provide a more integrated overall 'service'
    - VO specific catalog functionality

- Staging
    - Potentially VO specific

Issues: various

- SRM v2 support
  - Timelines, etc

- ….what else ?

Summary

- ... at the end ...