

# Support Tools, Underlying Services and WLCG Operations

Lionel Cons  
Maria Dimou  
John Gordon  
Stefan Roiser  
Andrea Sciabà

WLCG-TEG-OPS F2F  
January 23, 2011  
Amsterdam

- Summary of preliminary recommendations
  - Everything is open to discussion
- Support tools
- Underlying services
- WLCG Operations and procedures

Name	Description	Effort
R2.1	Ensure continuous development and funding of GGUS, including WLCG requirements, in particular a failsafe solution for the full stack and interfaces with other ticketing systems/request trackers as appropriate	Moderate
R2.2	Provide a unique portal to infrastructure information (now published via GOCDB and OIM) via a “WLCG Operations Portal” similar to the EGI portal, including the ability to send broadcasts or downtime announcements for all WLCG sites and including the publication of VO-specific information about the existing services	Significant
R2.3	Improve Benchmarking	Moderate
R2.4	Storage Accounting	Significant
R2.5	Portal Additions	Moderate

**Definition**

- Ensure continuous development and funding of GGUS after EGI, including WLCG requirements, in particular a failsafe solution for the full stack and interfaces with other ticketing systems/request trackers as appropriate
- Discuss requirements and issues in a “WLCG central operations” (see R4.1) meeting and keep having weekly meetings with GGUS developers

**Impact**

- An increase in the reliability of the ticketing infrastructure and a reduction of time and manpower inefficiencies due to technical problems in ticketing systems
- An improved match between the ways VOs and sites want to communicate and the functionality provided by GGUS
- Changes implemented as normal GGUS upgrades

**Effort**

Moderate – Time devoted to discussing requirements and issues and 1 FTE in addition for development and maintenance of the interfaces with external systems and a full-stack fail-safe solution

**Deployment/transition constraints**

Gradual evolution – No significant constraints

**Definition**

- Provide a unique portal to infrastructure information (now published via GOCDB and OIM) via a “WLCG Operations Portal” similar to the EGI portal, including the ability to send broadcasts or downtime announcements for all WLCG sites and including the publication of VO-specific information about the existing services
- A common system will contain all Grid sites, no matter to which infrastructure they belong, as it is currently the case for systems like REBUS and SAM

**Impact**

- Information about WLCG sites and downtimes will be easier to find
- Less time spent by users to interface to different systems (GOCDB, OIM)

**Effort**

Significant – Development required to provide a common interface and required WLCG customizations

**Deployment/transition constraints**

New addition – It does not supersede existing services. Time scale can be relaxed due to the lack of urgency and to better cope with the significant effort required

## Definition

- Benchmarking: Normalisation of CPU data requires a reliable knowledge of the power of the CPUs. The required benchmark is HEPSPROC06. The quality of the published data is not reliable. It is not certain that all sites actually run the benchmark on their clusters. Published values for the same nominal CPU vary greatly. Sites also make mistakes in averaging results across their cluster and forgetting to update when they add new CPUs

## Impact

## Effort

Moderate

## Deployment/transition constraints

**Definition**

- Storage Accounting: under development in EMI for their supported storage systems. The new central infrastructure (mentioned below) will receive and store storage accounting usage records (StAR) and the portal will develop required visualisation of the data. Non-EMI storage solutions (Castor, xrootd, Bestman, ...) will also need to publish if WLCG is to have complete data on storage

**Impact**

More reliable reports of storage allocated and used at sites by VO

**Effort**

Significant for EMI, low for WLCG. WLCG will need to define a use case for reporting etc. which will be developed by the accounting portal

**Deployment/transition constraints**

Gradual evolution – Will come with new releases of storage products. Will probably need extensive reality checks for quality assurance.

## Definition

- The Accounting Portal should show data on more users and be able to search on a particular User DN or FQAN (subject to the usual authorisation) .
- RESTful programmatic Interface
- Additional views for Storage and other new resource types

## Impact

Reduce/remove need for experiments to keep parallel accounting. Easy extraction of data for the experiment to merge with other data, display in dashboards etc.

## Effort

Moderate – Mainly EGI effort provided WLCG requirements are well-formed

## Deployment/transition constraints

Gradual evolution – Once centrally deployed, new central portal features be exploited when desired



Name	Description	Effort
R3.1	Implement the WLCG Messaging Roadmap being drafted, which aims at improving security, scalability and reliability/availability	Moderate
R3.2	See slide 9	
R3.4	Start a WLCG survey on batch systems used in the community to understand what funding is necessary to maintain their Grid layer and ensure continuous support provision	Low

**Definition**

- Implement the WLCG Messaging Roadmap being drafted, which aims at improving security, scalability and reliability/availability
- The roadmap is at the draft stage but can be [consulted](#)

**Impact**

- Limited at this time, as there are only a few applications currently using MSG
- Possibly significant for these few applications, in particular due to the move to secure messaging

**Effort**

Moderate – Tentatively quantified around 2-3 FTE × year, most of it already budgeted for in EMI (from the EMI Product Team) and EGI (from the MSG operations team)

**Deployment/transition constraints**

Gradual evolution – Timescale is 12-24 months and the goal is progressively evolve towards better security and reliability

- The current problems are clear (stability, information validity and information accuracy) but we are still at the crossroad that Lorenzo Dini presented at the June 2011 GDB. With his words the roads are:
  - The Lazy – no action
  - The Radical – decommission
  - The Slow and Steady – improve
  - The Rocky – evolve
- The TEG should indicate a preferred road before specific recommendations are issued

**Definition**

- Start a WLCG survey on batch systems used in the community to understand what funding is necessary to maintain their Grid layer and ensure continuous support provision

**Impact**

- Act on time when batch systems and/or underlying middleware change
- If the survey shows that we can reduce the batch solutions supported, resources will be spared

**Effort**

Moderate/Significant – Moderate for the survey, after that it may depend on the outcome

**Deployment/transition constraints**

Gradual evolution – Most probably a fair amount of time will be allowed to replace batch systems, should such decision need to be taken

Name	Description	Effort
R4.1	Establish a WLCG central operations team which takes care of driving all actions required and approved at a central level after discussions with site and experiment representatives	Significant
R4.2	Evolve the Tier-1 Service Coordination Meeting into a “WLCG Operations Coordination” meeting where issues related to WLCG operations can be discussed among experiments, sites (including Tier-2 sites) and WLCG and capable of approving actions to be executed and followed up	Low
R4.3	Strengthen the contacts with Tier-2 sites by identifying new representative roles to allow Tier-2’s to influence the decision process and to ensure a correct information flow to/from the experiments	Moderate

**Definition**

- Establish a WLCG central operations team which takes care of driving all actions required and approved at a central level after discussions with site and experiment representatives
- The idea is to have a team to coordinate the execution of actions, surveys, interactions with sites, as done until now e.g. for the Information System and Data Management but for all aspects of WLCG operations

**Impact**

- A single entity in charge of WLCG operations coordination is expected to improve the effectiveness of action execution, which is now done by individuals or by meetings such as the Tier-1 Service Coordination Meeting
- Information flow from experiments to sites should be enforced, e.g. experiments informing about current / future activities, changes in the VO card, etc.

**Effort**

Significant – Time needs to be devoted to define the exact mandate of such body and move to a new work organisation

**Deployment/transition constraints**

Disruptive change – It requires to change to a different coordination model and mechanisms, e.g. to track actions on a full WLCG scale in a more automated way

## Definition

- Evolve the Tier-1 Service Coordination Meeting into a “WLCG Operations Coordination” meeting where issues related to WLCG operations can be discussed among experiments, sites (including Tier-2 sites) and WLCG and capable of approving actions to be executed and followed up
- This would be part of a rethinking of the scope of WLCG meetings including the GDB

## Impact

- Nothing is expected to change for Tier-0/1 sites, while actions on Tier-2 sites could be more thoroughly discussed and on the same time scale

## Effort

Low – A redefinition of the scope and structure of 1-2 meetings is easy to accomplish

## Deployment/transition constraints

Gradual evolution – Any change would be a relatively minor perturbation of the current situation

**Definition**

- Strengthen the contacts with Tier-2 sites by identifying new representative roles to allow Tier-2's to influence the decision process and to ensure a correct information flow to/from experiments
- Assign a “regional” contact person (e.g. per NGI or OSG/EGI/NorduGrid)

**Impact**

- The information flow from experiments to T2 sites will be improved
- Such new role(s) ensures that the Tier-2 point of view is properly represented, while still allowing each site to express their opinion (as it – rarely – happens now)

**Effort**

Moderate – A non-negligible amount of time would have to be allocated to perform this duty and to exactly define the related responsibilities

**Deployment/transition constraints**

Gradual evolution – The new role would be seamlessly integrated in existing bodies



# BACKUP SLIDES

From the 2011/12/12 meeting

Impact	Improvement area
5	The whole GGUS stack (web frontend, Remedy system and Oracle DB) should be fail-safe
5	Convince the entities funding GGUS of its sophisticated use by WLCG to ensure sustainability of our development priorities
5	Interfaces among different ticketing systems should become more reliable and consistent
5	Consolidate request trackers (Savannah, Trac, JIRA, ...) and provide adequate support

Impact	Improvement area
5	The CPU benchmarking data should be more accurate
5	Storage accounting and its visualisation must be further developed
5	The messaging infrastructure should be more reliable and its usage extended
1	The Accounting Portal should have a better API and show more users data

Impact	Improvement area
5	Provide an easy way to define new service types
5	Provide a reliable way to publish VO-specific service downtime information (in GOCDB or elsewhere)
1	Make broadcasts and downtime notifications more reliable
1	Provide a better integration of GOCDB and OIM through a uniform interface
1	The GOCDB/OIM information should be better kept up to date

Impact	Improvement area
5	Improve the security of the messaging services
5	Improve the scalability of the messaging services
5	Improve the reliability and the availability of the messaging services
5	Improve the stability of the information services
5	Improve the validity of the information
5	Improve the accuracy of the information
5	Provide a long term solution for a scalable and open source batch system
5	Ensure that currently used batch systems are properly supported (not just on a best effort basis)

Impact	Improvement area
5	Establish a proper channel to reach the T2 sites from experiments
5	Strengthen the WLCG central operations
5	Reduce the need for experiment contact persons while improving the quality of the link between experiments and sites where needed
1	Make better and more consistent use of VO cards to express requirements to sites