



Enabling Grids for E-science

EGEE-II SLA Progress Report & Initial Proposal

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Information Society



- Collecting relevant examples of SLAs and other documentation and making these available within the working group.
- Reviewing the example documents and extracting a list of useful items from each one.
- Identifying the broad areas which a minimal SLA should cover. These are areas for which all ROCs should have some sort of agreement with their resource centres.
- Deciding whether there should be a single SLA or whether we should follow a WLCG model in which there are several SLAs with varying levels of commitment from the resource centres and corresponding various levels of support from the ROC.
- Creating one or more draft SLAs which incorporate points 3) and 4). In each area covered by the SLA there should be suggestions on the type of metrics which could be applied. These draft SLAs should *not* contain details of numbers for limits, thresholds, etc. for specific metrics.
- After the draft SLA(s) has/have been approved by the ROC Managers, the SLA working group will make a proposal for the metrics to appear in each of the sections of the SLA.
 - Wherever possible, metrics should be used which are already measured.
 - The number of metrics should be kept to a minimum set which will apply to all ROCs.

- Identify what will be the consequences for resource centres failing SLA(s). This will be discussed by the ROC managers at a later stage.
- Propose specific limits, thresholds, targets, etc. for metrics.

- **SEE-GRID SLA**
- **WLCG MoU**
- **INFN MoU**
- **UK Tier-2 MoU**
- **WLCG MoU**
- **Oxford NGS Service Level Description**
- **Service Level Description for NGS Heldesk**
- **BalticGrid SLA (Networking)**
- **EGEE-II SA2 SLA (Networking)**

- **Hardware and connectivity criteria**
 - Minimum amount of CPUs
 - Network Connectivity enough to pass SAM tests and support SEEGRID VO
 - Service Nodes must support execution of SAM tests
- **Level of support**
 - Site admin, security admin, 9-5 weekday support, response within following working day
- **Level of expertise**
 - 1 experienced site admin, relations with network support stuff, 1 security admin, names of responsible people should be stated in HGSM
- **VO support**
 - Support and deliver to SEEGRID-VO and support OPS role
- **Conformance to Operational Metrics**

- **Site Availability (Quality Metric)**

- Sites must have 90% availability during uptime in a given quarter (3months)

This metric is calculated as follows:

If a site has degraded performance during a given day (>50% of the SAM test fail) then site is considered down for that day.

- **Site declared Downtime**

- Sites must not be in downtime for more that 10% of the time in a given quarter (3 months) except for reasons out of sites responsibility negotiated with country GIMs.

- **Different Levels of service are provided for different service providers**
 - Host Laboratory Services
 - Tier-1 Services
 - Tier-2 Services
- **Definition of Grid Operation Services**
- **List of supported VOs**
- **Minimal Computing Resources for participation**
- **Network Connectivity criteria**
- **Storage availability**
- **Minimum delay in responding to operational problems**
- **Average availability measured over a period of time.**
- **Provision of Grid Operations centers**
- **User support facilities provision**
- **Table with available and foreseen available computing power made available to the grid**

- **Hardware Support Stuff**
 - GridPP Supports Hardware Support Stuff
 - FTE Allocation defined for support stuff
 - Support Stuff should produce quarterly reports
- **Hardware Resources**
 - Hardware resources should be made available to the Grid.
 - Table with offered hardware resources provided in the MoU
- **Availability of resources**
 - Level of service agreed between Deployment Board and Tier 2 board
 - Provide support for VO but not installation and maintenance of experiment software
- **Monitoring of Hardware resources**
 - Monitoring software provided by Grid PP
 - Installed at sites
 - Results should be public and available in a web sites
- **Target Shares**
 - Overall target shares are defined by boards
 - Individual target shares are defined by Tier-2s
- **Software**
 - GridPP? provides middleware releases
 - Timescale for deployment of software is decided by Tier-2 board
- **Network Connectivity**
- **GridPP provides network monitoring software**
 - Site agree to run this software
 - Security and availability
 - Defined by various boards
- **Management**
 - Reporting and information exchange procedures defined

- Provide adequate computing and storage resources (and optional services where available). The farm size (at least 10 CPUs) and the storage capacity will be settled by contractors involved;
- Guarantee sufficient manpower in order to manage the site: at least 2 people and a minimum of 1 FTE are required;
- Manage site resources efficiently: carry out m/w installation, perform updates, apply patches, properly modify configurations as requested by CMT and *within maximum time expected and agreed for the several operations.*
- Take the responsibility and update the tickets assigned to the site within 24 hours (tier 2) or 48 hours (other sites) Monday to Wednesday.
- Actively monitor the site, checking both resources and services status on a regular basis (using existing tools: GridICE, GSTAT, SAM, etc.)
- Guarantee continuity to the support and management of the site, also during holidays in one of the following forms:
 - a. Local shift;
 - b. Delegate site management (with full access) to CMT;
 - c. Signal site downtime and close queues (only for the sites with no special INFN commitments);
- Guarantee proper site-manager participation to fortnightly EGEE SA1 phone conferences and SA1/production grid meetings.
- Keep site information on GOC-DB up-to-date;
- Enable test VOs (infngRID, dteam and ops), giving them an higher priority than the one of other VOs

- **Applies to Oxford NGS node at Oxford University**
- **Service Inclusions**
 - Available Middleware and middleware services
 - User level software available and the support level
 - Accepted certificates
 - Various other service details...
- **Service Exclusions**
 - Turnaround time cannot be guaranteed
- **Service Level**
 - Quality
 - Availability
 - Reliability
 - Filestore
 - Compliance
 - Operational Framework
- **Definition of Support Categories**
- **Problem severity definitions**
- **Escalation Mechanisms**

- **Service Provided by the NGS Support Centre**
 - HelpDesk
 - Certification and Registration
 - Site Resources
 - User Support
 - Web site
 - Training
 - Application Repository
 - Documentation
 - User Account Management
 - Promotion and education
 - Global Activities and Collaboration
- **Monitoring and Auditing of Services.**
 - Development Board
 - Technical Board
 - Operations Board
- **Creation of New Services**
- **Termination of Services**
- **Performance Reporting Procedures**
- **Definition of Monitoring Tools and other services**

- **Packet loss: < 0.1%**
- **One-way delay between the BalticGrid resource centres is in the range of 20-50ms, but does not exceed 150 ms under any conditions.**
- **MTU of at least 1500 bytes all along the traffic path.**
- **Minimal jitter by avoiding extra routing/buffering hops on the path.**
- **Traffic load does not exceed 75% of available bandwidth for more than 10% a month.**
- **Available bandwidth should be increased so that traffic load does not exceed 50%.**
- **Qos Levels:**
 - Amber
 - Rock
 - Timber
 - Time scales for implementation of these levels of service defined.

- Based On Premium IP offered by GEANT

- **EGEE SLA Structure**

- Purpose
- Summary
 - SLA Between Sites and ROCs
 - With a view towards the NGI-Sites relationship
- Parties to the Agreement
 - Grid Management Service Providers
 - ROCs
 - Service Providers (Sites)
- Duration and Extensions
- Amendment
- Description of Services Covered
 - Grid Management Service
 - Core Services
 - Site Services
- Responsibilities
 - GRIDOPS
 - ROCs
 - Service Providers (Sites)
- Requirements
 - It is proposed to have 2-3 level of SLA requirements from sites by changing the limits

Requirements - Hardware and connectivity criteria

Site Hardware	Metric	Operator	Value	Measurement Method
Service Nodes	Must Support the Execution of SAM tests			
Worker Nodes Cluster	Total Number of CPUs	>	xxx	Information System
	Total Si2k	>	xxx	Information System
Storage Capacity	Total Storage	>	xxx	Information System
Nodes Interconnection	Interconnection BW	>	xxx	

Network Connectivity	Metric	Operator	Value	Measurement Method
Connectivity with GEANT	Bandwidth	>	xxx	

Requirements – Level of Expertise

- **1 experienced site admin**
- **1 experienced network support person, or a direct link to network support / network operations center**
- **1 security administrator to be available for advice any time**
- **Names and contact details (e-mail) of the above people should be available via GOCDB**

Requirements – Level of Support

Support	Metric	Operator	Value	Measurement Method
Ticket Response Time**	Mean Response Time	<	xxx	GGUS
Ticket Solution Time***	Mean Solution Time	<	xxx	GGUS
***If solution can be provided by site personnel				
Support Calendar				
	Mon-Friday 09:00-17:00 Local Time			
	Except Public Holidays and Scheduled Institution Closures			

SLA - Conformance to Operational Metrics

Availability	Metric	Operator	Value	Measurement Method
Site	Availability(time up/scheduled up-time)	>	xxx%/quarter	SAM
Site Downtime*	Declared Uptime	>	Xxx%/quarter	GOCB
*As declared in OPS manual declaration of scheduled interventions				

- **Site needs to define a minimum amount of resource priorities for supporting specific VOs**