

# Grid Infrastructure Monitoring

James Casey, CERN, IT-GT-TOM  
1<sup>st</sup> ROC LA Workshop, 6<sup>th</sup> October 2010

- WLCG provides a set of tools for operational monitoring and management
- Aim is to
  - Enable sites to operate a reliable infrastructure
  - Report on the reliability and usage to WLCG users
- Many of the tools developed previously within EGEE/OSG
  - Now operated by EGI.eu, OSG, other NGIs

- GOCDB
  - Configuration management
- SAM/Nagios
  - Checking the operational status of resources
- Gstat
  - Information system monitoring and reporting
- Gridview
  - Availability/reliability calculation and reporting
- Gridmap
  - High level views of the infrastructure

- I will talk about most of the previous tools
  - SAM/Nagios, GStat, Gridview, Gridmap
- Other exist too
  - Accounting – APEL
  - VO Cards - CIC Portal
  - 1<sup>st</sup> line support - Operations Dashboard
- And in OSG
  - OIM, MyOSG, Gratia, ...

- All these tools depend on common low-level components
  - Nagios – an open-source monitoring system
  - Apache ActiveMQ – an open source messaging system
- We many other open-source components when developing these tools
  - Python, Django, JQuery, RRD, Google charts
- A short detour on what they are and why we use them

- What is Nagios?
  - open source monitoring framework
  - highly flexible with advanced features
  - widely used & actively developed
- Why do we need it?
  - Many tests need to be scheduled for execution
  - avoid development & maintenance of home-grown tools
  - provide solution that site admins are familiar with
    - Nagios is a standard monitoring component at many sites

- Nagios Core
  - Scheduler: Runs checks at a predefined interval
- Plugins
  - Scripts used to check particular pieces of functionality
- Web interface
- Powerful notification system
  - E-mail, SMS, Pager, ...
- All parts are pluggable and extensible

# Nagios Web Interface

The screenshot displays the Nagios web interface in a browser window. The interface is divided into several sections:

- Left Sidebar:** Contains navigation links for General, Home, Documentation, Current Status, Tactical Overview, Map, Hosts, Services, Host Groups, Service Groups, Problems, Reports, Availability, Trends, Alerts, Notifications, Event Log, and System.
- Tactical Monitoring Overview:** Provides a summary of the system's status, including the last update time (Tue Oct 5 21:58:22 CEST 2010), update frequency (every 601 seconds), and the user logged in (James Casey).
- Monitoring Performance:** Displays performance metrics for service and host checks, such as execution time and latency.
- Network Outages:** Shows the current number of network outages (0).
- Network Health:** Displays the health status of the network, with green bars indicating good health for both Host and Service.
- Hosts:** A table showing the status of hosts: 0 Down, 0 Unreachable, 8 Up, and 0 Pending.
- Services:** A table showing the status of services: 0 Critical, 1 Warning, 0 Unknown, 101 Ok, and 0 Pending. It also highlights 1 Unhandled Problem and 57 Disabled services.
- Monitoring Features:** A table showing the status of various monitoring features, including Flap Detection, Notifications, Event Handlers, Active Checks, and Passive Checks.

The bottom of the browser window shows the URL: <https://egi-mon.cro-ngi.hr/nagios/cgi-bin/tac.cgi>.



# Site Nagios – CE Tests

The screenshot shows the Nagios web interface in a browser window. The browser's address bar displays the URL <https://egi-mon.cro-ngi.hr/nagios/>. The Nagios logo is visible in the top left corner of the interface.

The left sidebar contains the following navigation links:

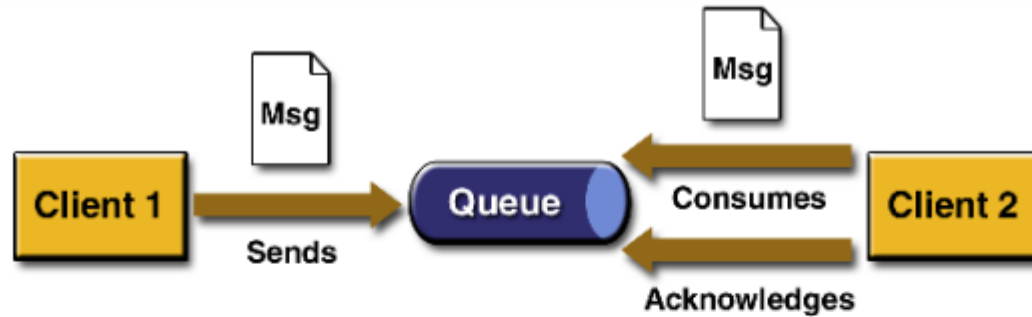
- General
- Home
- Documentation
- Current Status
- Tactical Overview
- Map
- Hosts
- Services
- Host Groups
  - Summary
  - Grid
- Service Groups
  - Summary
  - Grid
- Problems
  - Services (Unhandled)
  - Hosts (Unhandled)
  - Network Outages
- Quick Search:
- Reports
  - Availability
  - Trends
  - Alerts
    - History
    - Summary
    - Histogram
  - Notifications
  - Event Log
- System
- Comments

The main content area displays a table of service status for the host **ce1-eggee.fesb.hr**. The table has the following columns: Host, Service, Status, Last Check, Duration, Attempt, and Status Information.

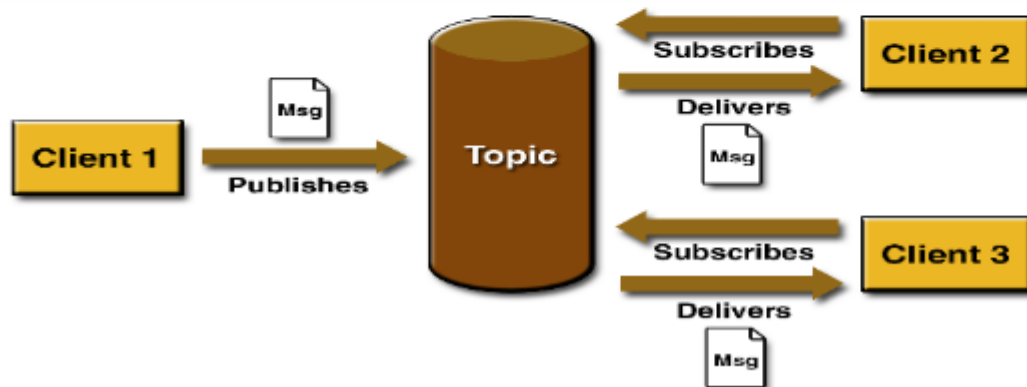
Host	Service	Status	Last Check	Duration	Attempt	Status Information
ce1-eggee.fesb.hr	hr.srce.GRAM-CertLifetime	OK	10-05-2010 20:31:55	140d 6h 35m 28s	1/2	CERT LIFETIME OK - Certificate will expire in 38.84 days (Nov 13 14:46:02 2010 GMT)
	org.bdii.Entries	OK	10-05-2010 21:28:57	91d 9h 36m 32s	1/4	OK: time=0.03s, entries=11
	org.qgus.Tickets	OK	10-05-2010 21:34:17	6d 12h 24m 41s	1/4	GGUS OK - Site: eggee.fesb.hr, SU: all. 0 tickets in states 'waiting for reply,on hold', 0 other open tickets.
	org.gstat.SanityCheck	OK	10-05-2010 21:00:01	47d 7h 4m 21s	1/4	OK - errors 0, warnings 0, info 2
	org.sam.CE-JobState-ops	OK	10-05-2010 21:11:11	2d 4h 47m 47s	1/2	OK: success.
	org.sam.CE-JobSubmit-ops	OK	10-05-2010 21:11:11	2d 4h 37m 48s	1/2	OK: success.
	org.sam.WN-Bi-ops	OK	10-05-2010 21:04:43	48d 9h 20m 56s	1/2	node06.local: OK: getCE: ce1-eggee.fesb.hr:2119/jobmanager-pbs-oper
	org.sam.WN-CAver-ops	OK	10-05-2010 21:04:48	0d 4h 52m 55s	1/2	node06.local: OK
	org.sam.WN-Csh-ops	OK	10-05-2010 21:04:45	48d 9h 20m 54s	1/2	node06.local: OK
	org.sam.WN-Rep-ops	OK	10-05-2010 21:05:31	48d 9h 20m 8s	1/2	node06.local: OK: success.
	org.sam.WN-RepCr-ops	OK	10-05-2010 21:05:00	48d 9h 20m 38s	1/2	node06.local: OK: File was copied to SE se1-eggee.fesb.hr and registered in LFC prod-lfc-shared-central.cern.ch. CLI
	org.sam.WN-RepDel-ops	OK	10-05-2010 21:05:31	48d 9h 20m 7s	1/2	node06.local: OK: Replicas for [/fn:/grid/ops/SAM/sam-lcg-rm-cr-node06.local.101005190450.3940835] were deleted. CLI
	org.sam.WN-RepFree-ops	OK	10-05-2010 21:04:46	48d 9h 20m 52s	1/2	node06.local: OK: ok
	org.sam.WN-RepGet-ops	OK	10-05-2010 21:05:08	48d 9h 20m 30s	1/2	node06.local: OK: File was copied from SRM. Diff successful. CLI
	org.sam.WN-RepI Serv-ops	OK	10-05-2010 21:04:46	48d 9h 20m 52s	1/2	node06.local: OK: LOG_GFAL_INFOSYS is set to bdii.cyf-kr.edu.pl:2170
	org.sam.WN-RepRep-ops	OK	10-05-2010 21:05:26	48d 9h 20m 13s	1/2	node06.local: OK: File was replicated to SE samdpm002.cern.ch. Replicas listed successfully. CLI
	org.sam.WN-SoftVer-ops	OK	10-05-2010 21:04:47	48d 9h 20m 51s	1/2	node06.local: OK: 3.1.0

- What is a messaging system?
  - Method of communication between applications
  - **Standardized, asynchronous and scalable** communication between **distributed** entities
  - Reliable network of brokers that provides guaranteed delivery of messages
  - Messaging is for applications what IM is for people
  - Mainly acts as an integration framework between many separate applications

# JMS messaging models



*Point-to-Point Messaging*

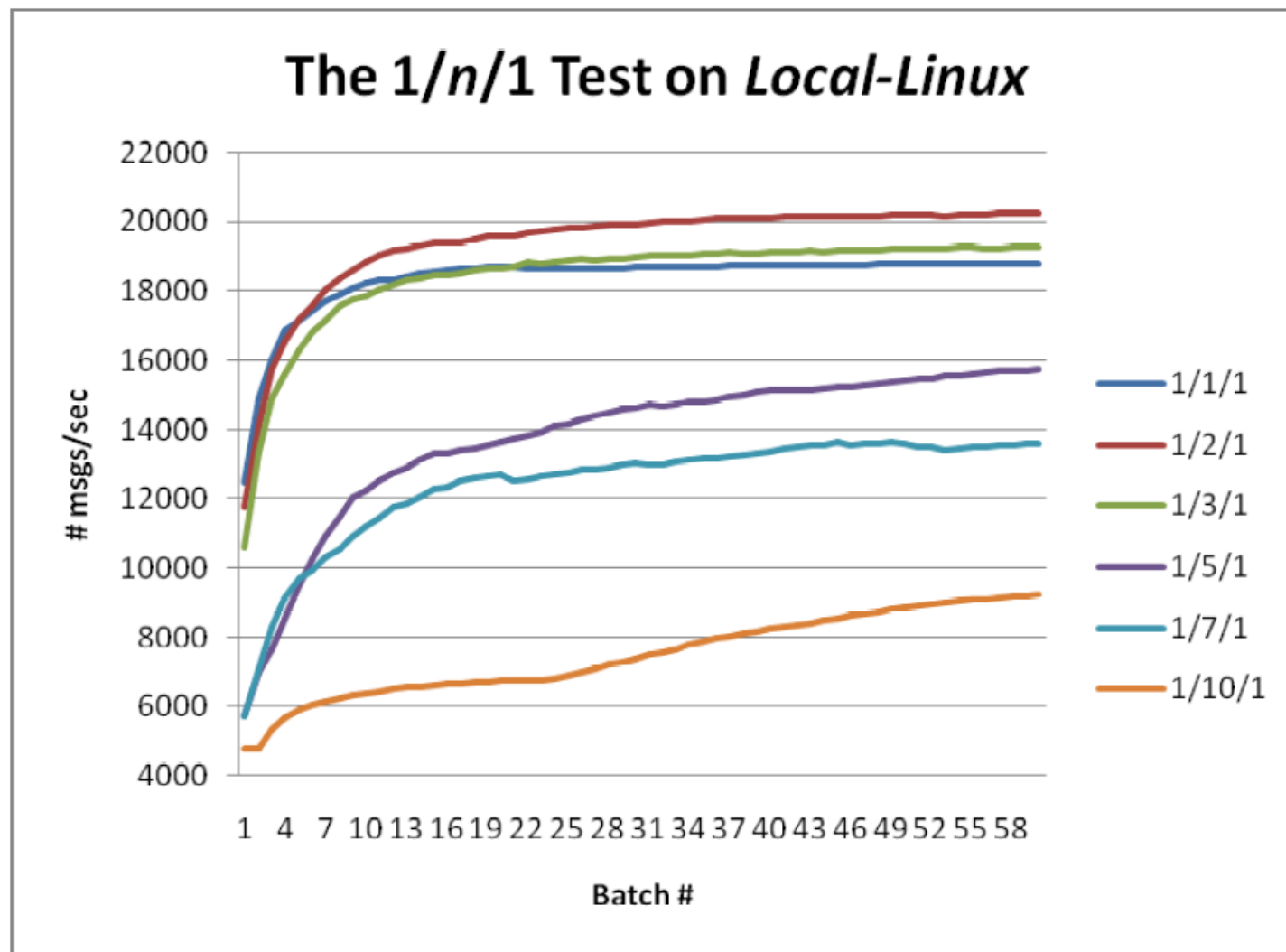


*Publish/Subscribe Messaging*

- Why do we need it?
  - Interaction between distributed monitoring components
  - Standard interfaces enables easy integration of monitoring software
  - Scalable
    - Main use-cases are in finance for high message rate ( > 1M/sec)reliable multicast e.g. trading floor
  - Reliable
  - Distributed

**Messaging is pre-existing grid-scale technology**

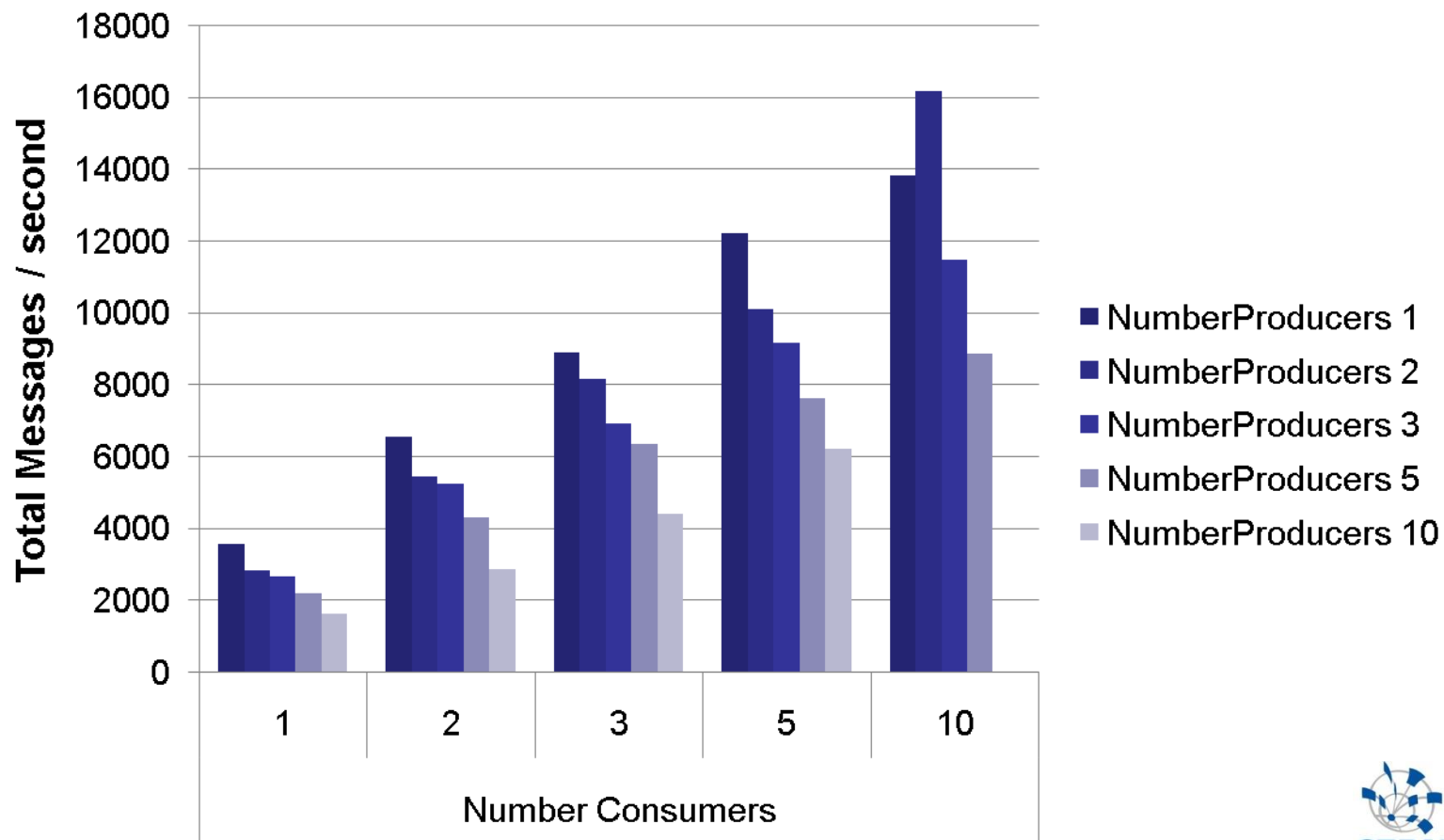
- FUSE Message Broker
  - based on Apache ActiveMQ
- Good performance characteristics
  - 1K – 20K messages per second depending on features used
- Distributed network of 4 brokers, hosted by EGI.eu
  - CERN, Croatia, Greece
  - Provides reliability and locality



From “Optimizing FUSE Message Broker” -

<http://open.ionac.com/resources/collateral/#whitepapers>

## Total 100B message throughput



- WLCG Experiments are buying into messaging
  - ATLAS DDM
    - Moving to a production messaging service
  - Ganga
  - VO Job monitoring
  - Alice data transfers
- dCache can use it for distributed pools
  - Developments by NDGF
- CERN Beams use it for monitoring in the control room



- Service Availability Monitoring (SAM)
  - A distributed monitoring system
  - Based on open-source components
    - Nagios for test execution
    - ActiveMQ for communication via messaging
  - With custom visualization
    - MyEGEE/MyWGI/MyWLCG/...
- Aims to test all resources on the production grid
  - And provides data to other components for availability and reliability calculation

- Simplest model
  - A site wants fabric monitoring for the grid services
- 1. Download 'EGEE-Nagios' meta-package
- 2. Configure it as a site Nagios
  - Point at your site BDII
  - Give it a certificate & email of local administrator
- 3. Nagios now will test all resources in your site
  - Mail admin list on errors
  - Provides web interface for more details
  - Detailed low-level tests for all services

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- Network Health:** Displays Host Health and Service Health, both indicated by green bars.
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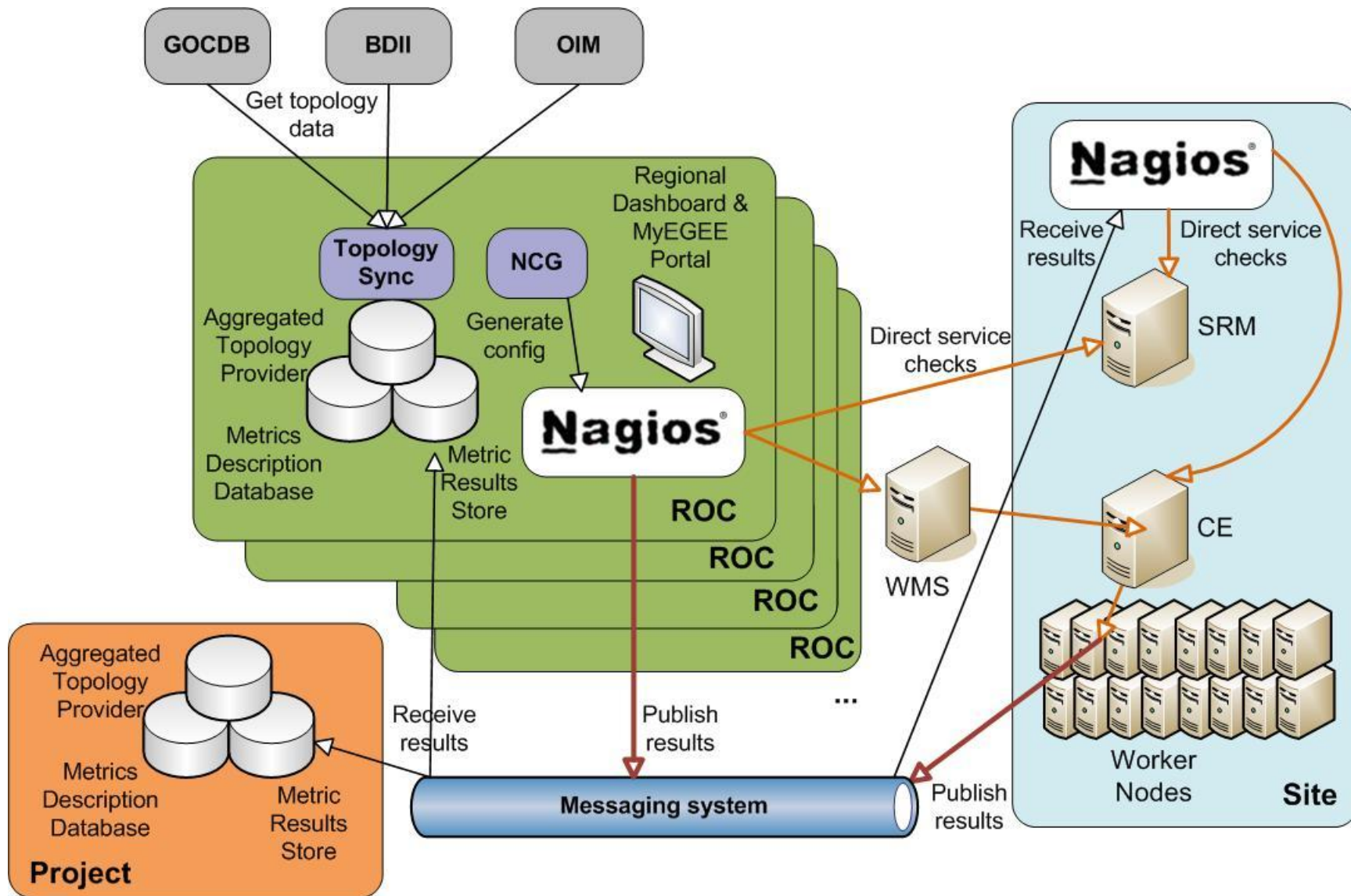
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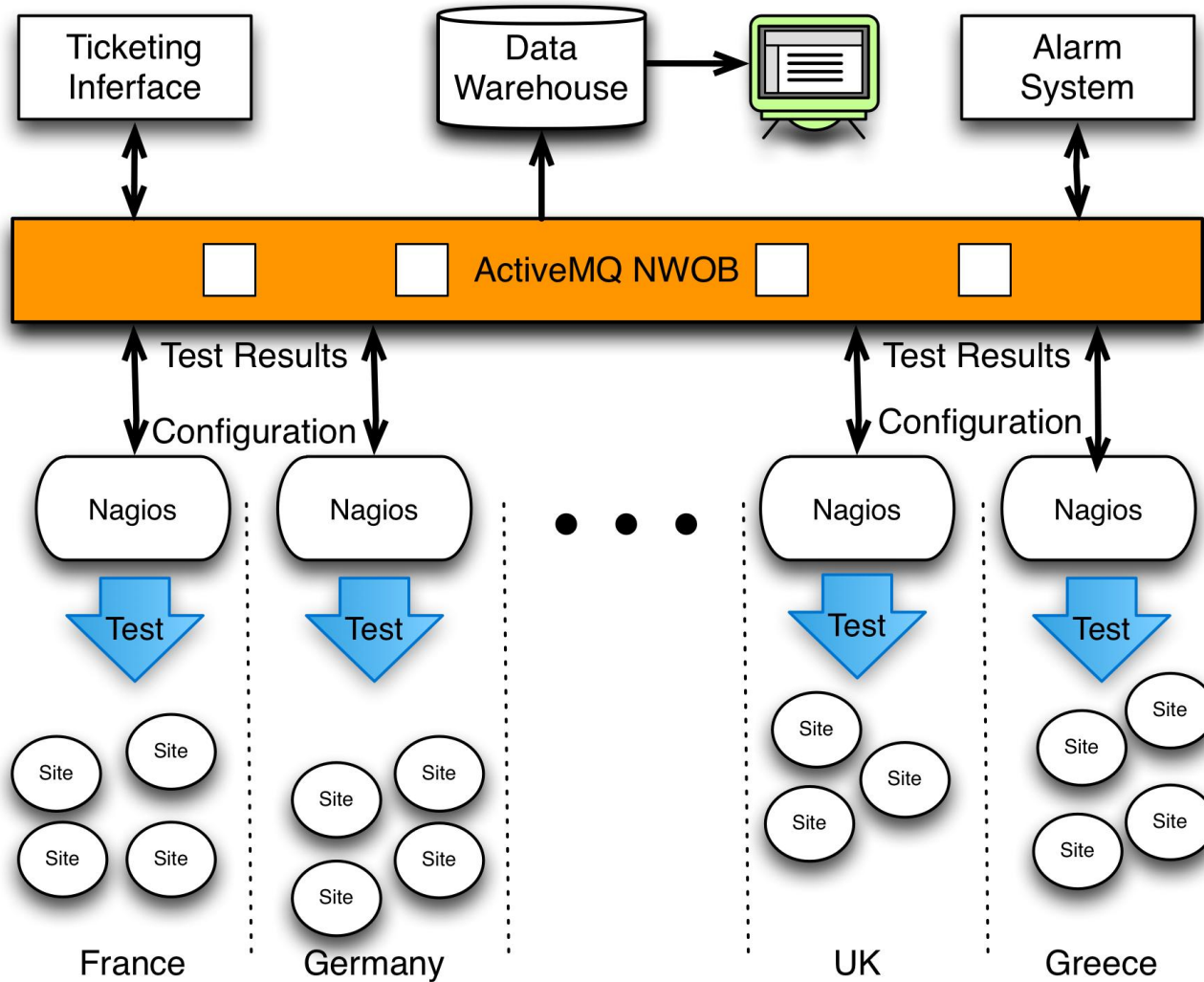
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- A NGI or ROC monitors all its sites
  - “Simulates users actions via the public interfaces”
  - At a higher level than the site monitoring
- Allows regional operations to help manage the site
- Feeds into availability calculations
- Feeds back into the site monitoring
  - You see the view the ROC has of you
  - And it can trigger local alerts into the operational process

# Architecture - Regions







- 27 national level Nagios servers
  - Should grow out to full WLCG scale in next few months
- Clients distributed across 40 countries
- 315 sites
- 5K services
- 500,000 test results/day
- 5 consumers of full data stream to database for analysis and post processing



# MyEGEE – Resource summary

Resource Summary – My EGEE | Loading...

cern.ch

https://samnag012.cern.ch/myegee/wizardsummary/index?datasource=summar

Google

jamesc.net links page

1st. Regional Operating Centre ...

Resource Summary – My EGEE | ...

MY EGEE

by Regional Operations Center

Home

Resources

Current Status

Status History

Probes and Metrics

GGUS

Help

Resource Summary

Table

List

Show 10 entries

Search:

Site	Resource	Service	Supported VOs	Status
Australia-ATLAS	agh2.atlas.unimelb.edu.au	CE	ops	<a href="#">StatDetail</a> <a href="#">StatHistory</a>
Australia-ATLAS	agh3.atlas.unimelb.edu.au	SRMv2	ops	<a href="#">StatDetail</a> <a href="#">StatHistory</a>
Australia-ATLAS	agh6.atlas.unimelb.edu.au	Site-BDII	ops	<a href="#">StatDetail</a> <a href="#">StatHistory</a>
FZK-LCG2	alice-tape-srm.gridka.de	SRMv2	ops, cms	<a href="#">StatDetail</a> <a href="#">StatHistory</a>
FZK-LCG2	atlassrm-fzk.gridka.de	SRMv2	ops	<a href="#">StatDetail</a> <a href="#">StatHistory</a>
IN2P3-CC	cclcgceli01.in2p3.fr	CE	ops	<a href="#">StatDetail</a> <a href="#">StatHistory</a>
IN2P3-CC	cclcgceli02.in2p3.fr	CE	ops	<a href="#">StatDetail</a> <a href="#">StatHistory</a>
IN2P3-CC	cclcgceli03.in2p3.fr	CE	ops, cms	<a href="#">StatDetail</a> <a href="#">StatHistory</a>
IN2P3-CC	cclcgceli04.in2p3.fr	CE	ops, lhcb, cms	<a href="#">StatDetail</a> <a href="#">StatHistory</a>

Done

Update Page

Information to display

Resource Summary

☒ Show basic information about resources.

☐ Show Description

☒ Show Services

☒ Show Current Status

☐ Show FQDN

☒ Show Supported VOs

Resources to display

Select resources that you want to show above information (conditions are or-ed).

☒ All Resources

☐ Resources in Sites

☐ Specific Resources

Profile selection

Please select correspondig profile. Default is the one for the ROC.

ROC\_CRITICAL

Filter

Only show resources that matches following criteria (conditions are and-ed).

# MyEGEE – Status history

Status History – My EGEE |

cern.chhttps://samnag012.cern.ch/myegee/wizardstatushistory/index?datasource=statu

jamesc.net links page1st. Regional Operating Centre ...Status History – My EGEE |

My EGEE

by Regional Operations Center

HomeResourcesCurrent StatusStatus HistoryProbes and MetricsGGUSHelp

Status History

FIRSTPREV123456789NEXTLAST

Number of entries: 10

Between Sep 29, 2010 and Oct 6, 2010Total: 161

1.AU-PPS: cgh1.collab.unimelb.edu.au (Site-BDII)

Sep 30 19:19 | Oct 2 14:39 | Oct 4 09:59 | now |

2.AU-PPS: cgh15.collab.unimelb.edu.au (SRMv2)

Sep 30 19:19 | Oct 2 14:39 | Oct 4 09:59 | now |

3.Australia-ATLAS: agh6.atlas.unimelb.edu.au (Site-BDII)

Sep 30 19:19 | Oct 2 14:39 | Oct 4 09:59 | now |

4.Australia-ATLAS: agh3.atlas.unimelb.edu.au (SRMv2)

Sep 30 19:19 | Oct 2 14:39 | Oct 4 09:59 | now |

Waiting kernel update for vulnerability CVE-2010-3081. (From Jan 1, 1970 00:33:30 UTC to Jan 1, 1970 00:33:30 UTC)

Internal Status :OK

Internal Status Detail:

Probes executed

✓

hr.srce.SRM2-CertLifetime

Reported at Oct 5, 2010 01:37:21 UTC

CERT LIFETIME OK - Certificate will expire in 212.17 days (May 5 05:39:54 2011 GMT)

Update Page

Information to display

Status History

This page shows graphs of past statuses.

Start Date:

7 Days Ago

End Date:

Now

OAM of the specified date will be used for both start & end time of the graph.

Resources to display

Select resources that you want to show above information (conditions are or-ed).

☒ All Resources

☐ Resources in Sites

☐ Specific Resources

Profile selection

Please select correspondig profile. Default is the one for the ROC.

ROC\_CRITICAL

Filter

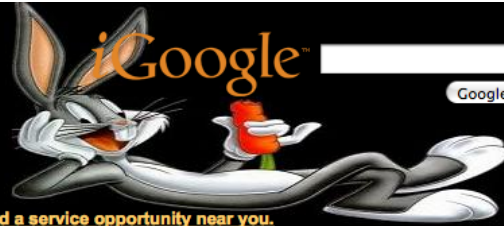
Done

# MyEGEE portal & iGoogle



MyOSG  
by Grid Operations Center

Advanced  
Search  
Language



Google Search I'm Feeling Lucky

Today is a day to give back. Find a service opportunity near you.

Change theme from Cool | Add stuff »

Home  
Google Calendar  
Top Stories  
Date & Time  
bluewin.ch - Infos To...  
BBC News | News F...  
Weather  
Google Reader  
Dictionary  
ToDo  
SAM Status History

Chat  
Google Talk  
AIM Messenger  
Chat Gadget  
MSN Messenger 3.2

Updates  
Friends

Chat  
Search, add, or invite  
John Shade  
Set status here  
Chat with friends in iGoogle!  
Rather stay offline?  
Sign out of chat.  
Wojciech Lapka  
@CERN (google.c...

## SAM Status History

Between Aug 12, 2009 and Sep 11, 2009

argoce01.na.infn.it  
Site-BDII

Aug 19, 2009 | Aug 27, 2009 | Sep 3, 2009 | Sep 11, 2009 |

atlasce1.lnf.infn.it  
Site-BDII

Aug 19, 2009 | Aug 27, 2009 | Sep 3, 2009 | Sep 11, 2009 |

bdli-site.frascati.enea.it  
Site-BDII

Aug 19, 2009 | Aug 27, 2009 | Sep 3, 2009 | Sep 11, 2009 |

ce-01.grid.sissa.it  
Site-BDII

Aug 19, 2009 | Aug 27, 2009 | Sep 3, 2009 | Sep 11, 2009 |

ce-01.roma3.infn.it  
Site-BDII

Aug 19, 2009 | Aug 27, 2009 | Sep 3, 2009 | Sep 11, 2009 |

ce-cyb.ca.infn.it  
Site-BDII

Aug 19, 2009 | Aug 27, 2009 | Sep 3, 2009 | Sep 11, 2009 |

ce-enmr.cern.unifi.it  
Site-BDII

Aug 19, 2009 | Aug 27, 2009 | Sep 3, 2009 | Sep 11, 2009 |

ce.scope.unina.it  
Site-BDII

Aug 19, 2009 | Aug 27, 2009 | Sep 3, 2009 | Sep 11, 2009 |

## Date & Time



## Dictionary

Search Dictionary.com

Search

### Quel Es Ton Niveau De QI?

Réponds à Toutes Les Questions & Compare tes Résultats Maintenant!

Ads by Google

## bluewin.ch - Infos Top Stories

Information is temporarily unavailable.

## Google Reader (11)

All items (11) refresh mark all as read

- Washington drama 'was exercise'  
from BBC News | News Front Page | World Edition
- Ancelotti calm over transfer ban  
from BBC News | News Front Page | World Edition
- Baby P trio's appeal bid refused  
from BBC News | News Front Page | World Edition
- Foster child at bomb plotter home  
from BBC News | News Front Page | World Edition
- Rockets hit Israel from Lebanon  
from BBC News | News Front Page | World Edition

## Weather

Geneva



19°C

Current: Mostly Cloudy  
Wind: E at 2 km/h  
Humidity: 60%



Fri  
24° | 11°



Sat  
22° | 8°



Sun  
22° | 6°



Mon  
18° | 5°

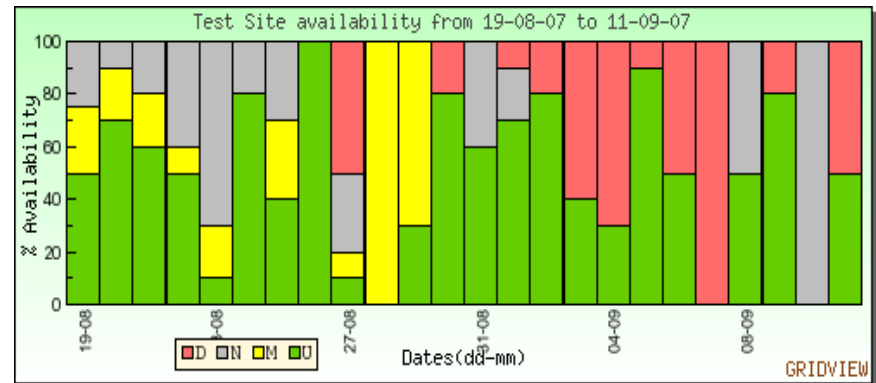
## Top Stories

- Obama Speaks at Capital's 9/11 Commemoration  
New York Times - all 1618 related »
- Defiant in Campaign Video, Wilson Says "I Will Not Be Muzzled"  
Gant Daily - all 3678 related »
- Rockets hit Israel from Lebanon

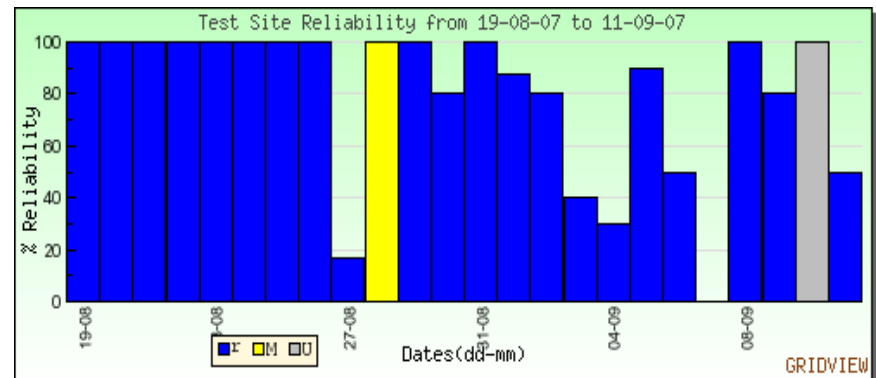
- Gridview computes Service Availability Metrics per VO using SAM test results
- Computed Metrics include
  - Service Status, Availability, Reliability
- All Metrics are computed
  - per Service Instance, per Service (eg. CE) for a site
  - per Site, Aggregate of all Tier-1/0 sites
- Various periodicities like Hourly, Daily, Weekly and Monthly
- Also shows:
  - statistics of data transfers, FTS file transfers, jobs running

- Consider Status for a day as
  - UP – 12 Hrs
  - Scheduled Down – 6 Hrs
  - Unknown – 6 Hrs
- Availability Graphs (1<sup>st</sup> bar in Graph) would show
  - Availability (Green) – 50 %
  - Sch. Down (Yellow) – 25 %
  - Unknown (Grey) – 25 %
- Reliability Graph (1<sup>st</sup> bar in Graph) would show 100%
- Reliability =  $\text{Availability}(\text{Green}) / (\text{Availability}(\text{Green}) + \text{Unscheduled Downtime}(\text{Red}))$
- Reliability not affected by Scheduled Downtime or Unknown Interval

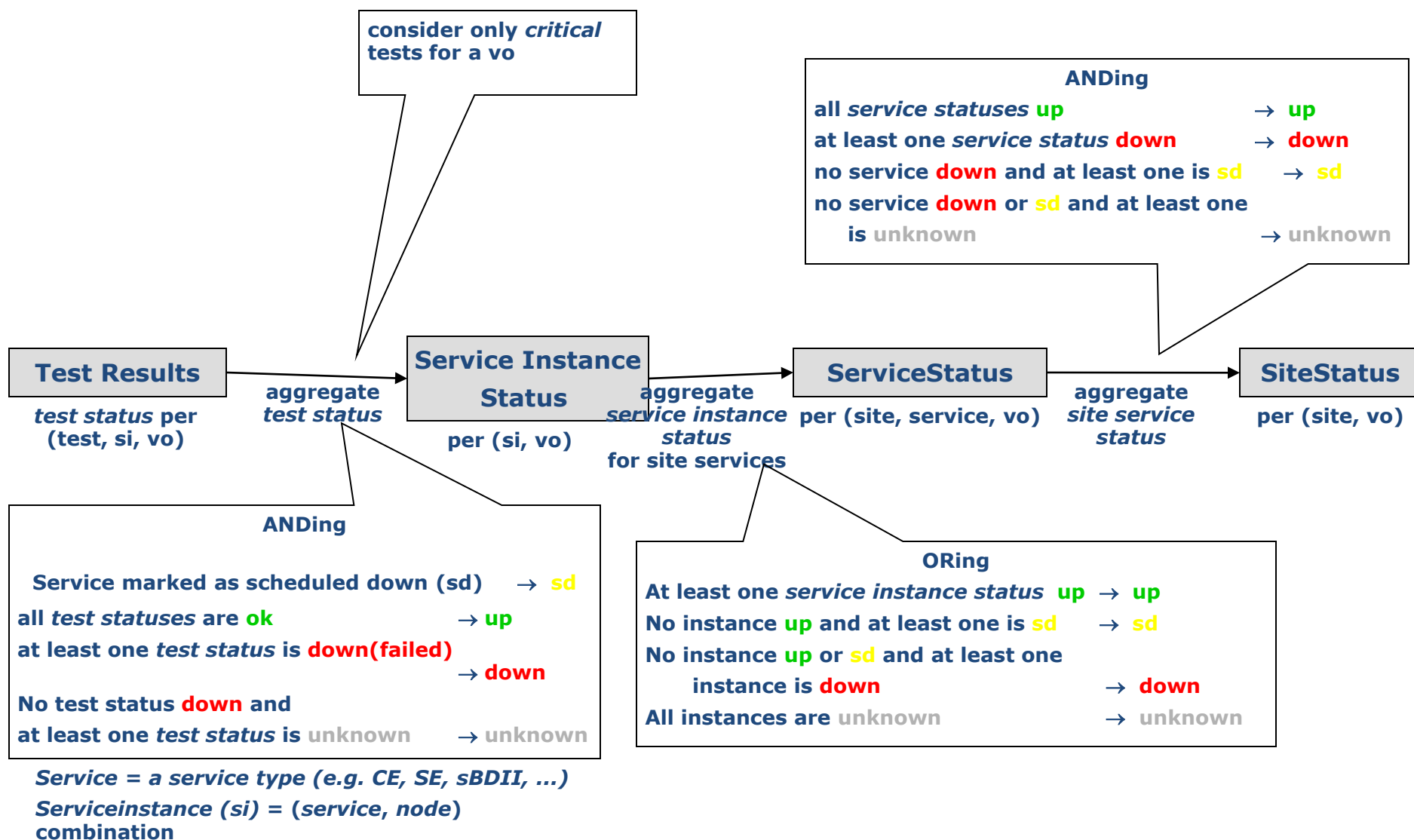
## Sample Availability Graph



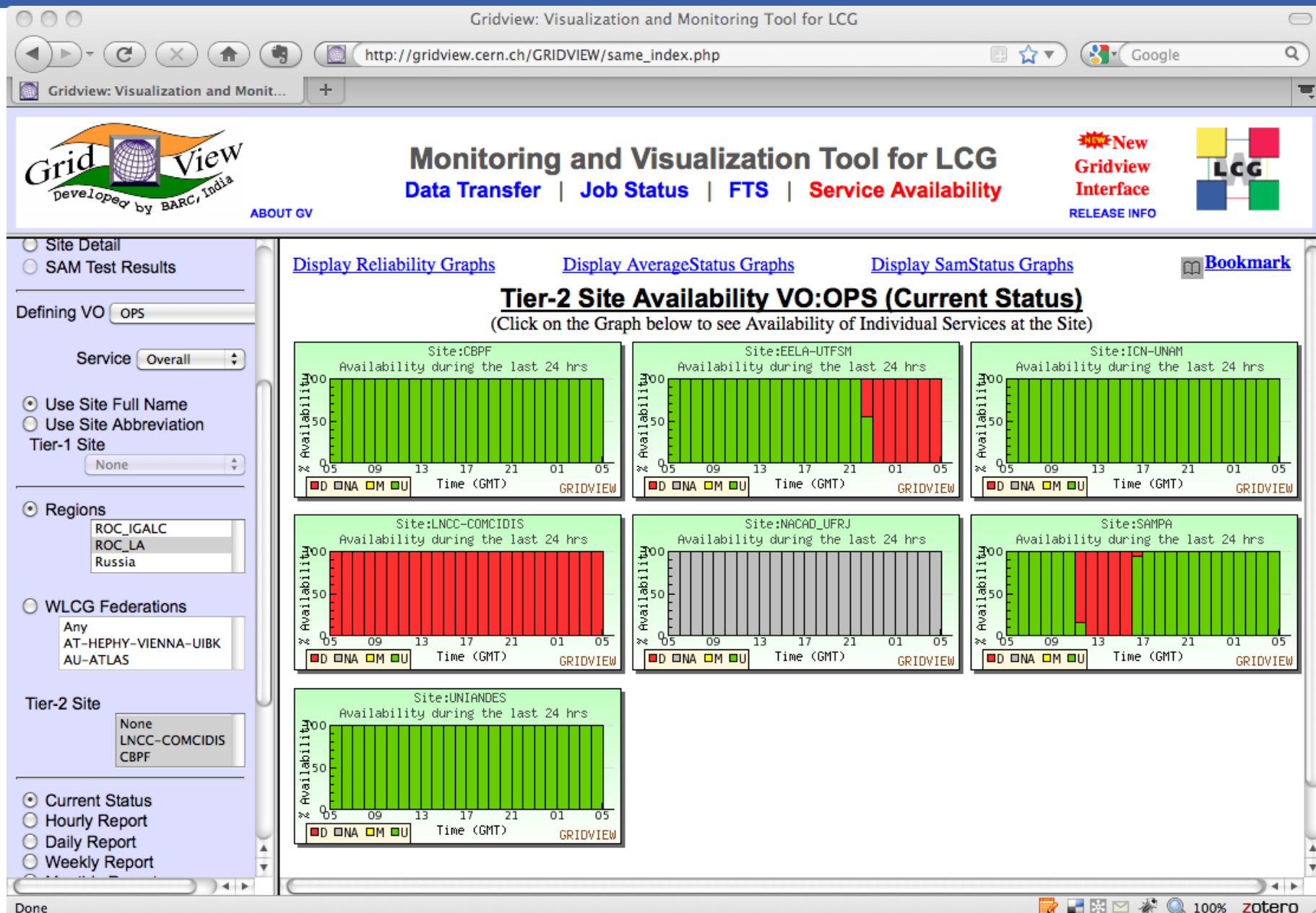
## Sample Reliability Graph



# Service & Site Service Status Calculation



# Gridview – Site availability details





# Gridview – ROC report



## EGI Availability and Reliability Report for VO OPS

Region Summary - Sorted by Name

September 2010

### Data from Nagios and Gridview

[https://twiki.cern.ch/twiki/pub/LCG/GridView/Gridview\\_Service\\_Availability\\_Computation.pdf](https://twiki.cern.ch/twiki/pub/LCG/GridView/Gridview_Service_Availability_Computation.pdf)

Availability = Uptime / (Total time - Time\_status\_was\_UNKNOWN)

Reliability = Uptime / (Total time - Scheduled Downtime - Time\_status\_was\_UNKNOWN)

HS06 : Installed capacity of the site measured in HEPSEC06 (HS06)

Reliability and Availability for Region - Weighted average of sites in the Region (supporting this VO) based on installed capacity

Colour coding :

N/A

< 50%

< Target

>= Target

EGI SLA Availability Target is 70 % and Reliability Target is 75 %

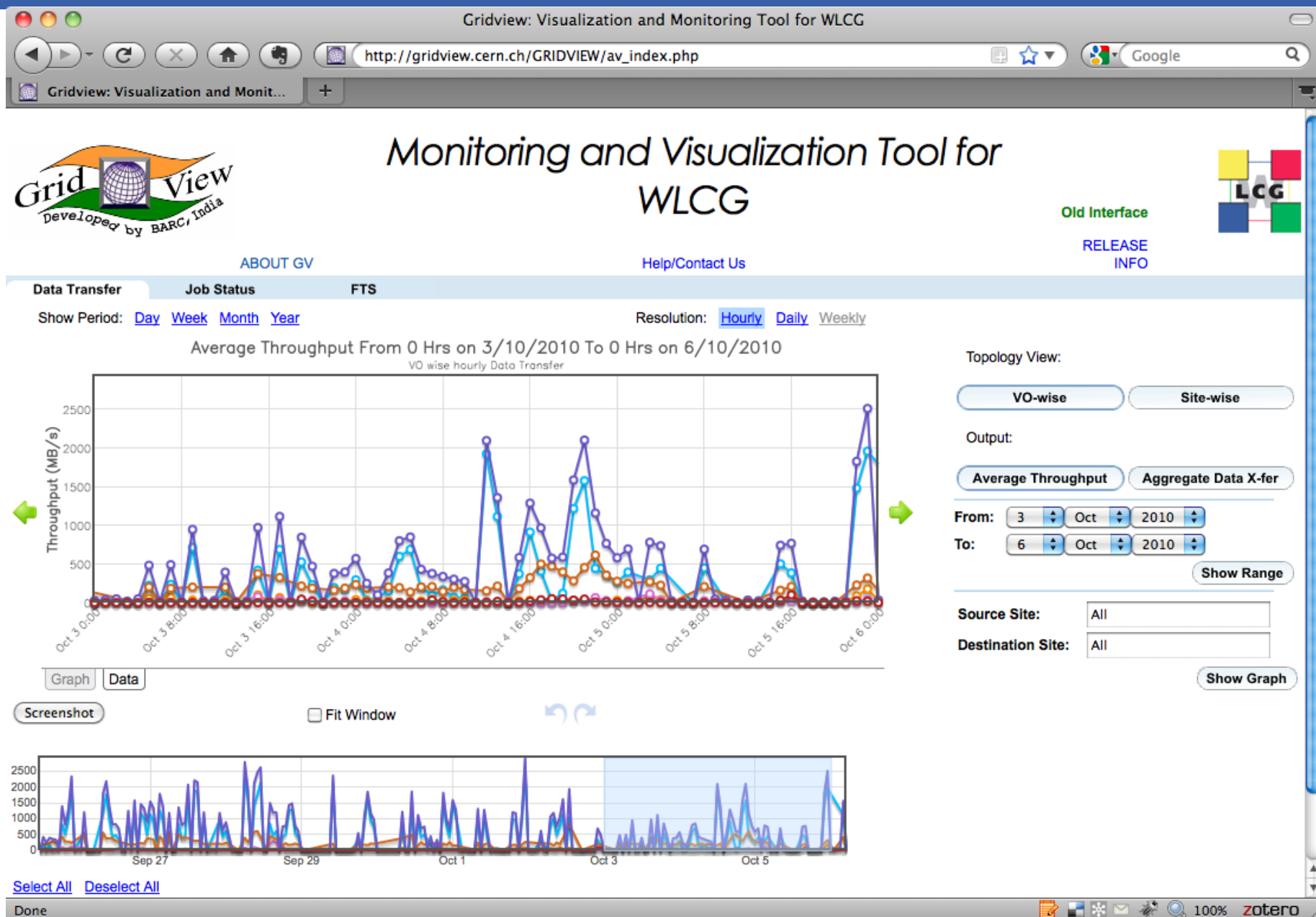
Region	Avail- ability	Reli- ability	Region	Avail- ability	Reli- ability
AsiaPacific	78 %	78 %	SouthEasternEurope	87 %	90 %
CERN	96 %	96 %	UKI	88 %	89 %
Italy	91 %	93 %			
NGI_AEGIS	99 %	99 %			
NGI_BY	86 %	86 %			
NGI_CH	37 %	39 %			
NGI_CYGRID	99 %	99 %			
NGI_CZ	99 %	99 %			
NGI_DE	87 %	87 %			
NGI_FRANCE	85 %	88 %			
NGI_GRNET	94 %	96 %			
NGI_HR	100 %	100 %			
NGI_HU	99 %	99 %			
NGI_IBERGRID	96 %	97 %			
NGI_NDGF	96 %	97 %			
NGI_NL	95 %	95 %			
NGI_PL	84 %	84 %			



# Gridview – ROC Drilldown

Region	Site	Phy. CPU	Log. CPU	HS06	Availa bility	Relia bility	Unkn own	Availability History		
								Jun-10	Jul-10	Aug-10
ROC_LA ( ROC_LA )										
	CBPF	84	312	N/A	83 %	90 %	1 %	78 %	84 %	88 %
	EELA-UTFSM	22	44	299	85 %	85 %	2 %	94 %	89 %	98 %
	ICN-UNAM	19	58	N/A	57 %	75 %	9 %	94 %	72 %	85 %
	SAMPA	30	120	1,440	53 %	91 %	1 %	0 %	68 %	99 %
	UNIANDES	42	168	1,512	88 %	88 %	1 %	82 %	81 %	99 %
Russia ( Russia )										
	ITEP	136	240	N/A	97 %	97 %	0 %	98 %	99 %	75 %
	JINR-LOG2	350	1,132	10,692	98 %	98 %	1 %	99 %	100 %	100 %
	Kharkov-KIPT-LOG2	33	66	420	99 %	99 %	1 %	92 %	97 %	93 %
	RRC-KI	1,784	1,784	N/A	99 %	99 %	1 %	46 %	72 %	83 %
	RU-ISA-CGTDC	4	16	N/A	98 %	98 %	2 %	0 %	69 %	97 %
	RU-Protvino-IHEP	120	400	N/A	99 %	99 %	0 %	95 %	95 %	100 %
	RU-SPbSU	12	48	N/A	73 %	79 %	0 %	71 %	80 %	72 %
	Ru-Troitsk-INR-LOG2	41	162	N/A	80 %	80 %	0 %	85 %	95 %	89 %
	ru-IMPB-LOG2	18	36	281	93 %	93 %	0 %	72 %	62 %	58 %
	ru-Moscow-FIAN-LOG2	30	52	N/A	95 %	95 %	1 %	46 %	77 %	99 %
	ru-Moscow-GCRAS-LOG2	2	4	N/A	100 %	100 %	1 %	85 %	69 %	98 %
	ru-Moscow-SINP-LOG2	108	216	N/A	98 %	98 %	1 %	97 %	81 %	91 %
	ru-PNPI	152	304	3,264	98 %	98 %	0 %	90 %	85 %	99 %

# Gridview – Data Transfers



- Information system contains the middleware view of the infrastructure
- Main usage:
  - Service Discovery – what is there?
  - Installed Capacity – how much is there ?
  - VO Views – what can a VO use ?
- Gstat provides visual representation of this
  - Management tool for NGI/WLCG managers
  - Debugging tool for site admins

# Gstat – LDAP Browser

GStat 2.0 – LDAP Browser

http://gstat-prod.cern.ch/gstat/ldap#ldap://lcg-bdii.cern.ch:2170/glueceuniqueid=cream

GStat 2.0

Geo View LDAP View Site Views Service View VO View

:: Home :: LDAP Browser

Query a BDII: lcg-bdii.cern.ch ldap://lcg-bdii.cern.ch:2170/

LDAP Tree

- gluecebindinggroupceuniqueid=cream-lac.cat.cbpf.br:8443/cream-pbs-trio
- + gluecebindinggroupceuniqueid=cream-lac.cat.cbpf.br:8443/cream-pbs-ops
- + glueceuniqueid=ce01.cat.cbpf.br:2119/jobmanager-lcgpbs-auger
- + glueceuniqueid=ce01.cat.cbpf.br:2119/jobmanager-lcgpbs-biomed
- + glueceuniqueid=ce01.cat.cbpf.br:2119/jobmanager-lcgpbs-cms
- + glueceuniqueid=ce01.cat.cbpf.br:2119/jobmanager-lcgpbs-dteam
- + glueceuniqueid=ce01.cat.cbpf.br:2119/jobmanager-lcgpbs-fusion
- + glueceuniqueid=ce01.cat.cbpf.br:2119/jobmanager-lcgpbs-lhcb
- + glueceuniqueid=ce01.cat.cbpf.br:2119/jobmanager-lcgpbs-ops
- glueceuniqueid=cream-ce.cat.cbpf.br:8443/cream-pbs-auger
  - + gluevoviewlocalid=auger
- + glueceuniqueid=cream-ce.cat.cbpf.br:8443/cream-pbs-biomed
- + glueceuniqueid=cream-ce.cat.cbpf.br:8443/cream-pbs-cms
- glueceuniqueid=cream-ce.cat.cbpf.br:8443/cream-pbs-dteam
  - + gluevoviewlocalid=dteam
- + glueceuniqueid=cream-ce.cat.cbpf.br:8443/cream-pbs-fusion
- + glueceuniqueid=cream-ce.cat.cbpf.br:8443/cream-pbs-lhcb
- + glueceuniqueid=cream-ce.cat.cbpf.br:8443/cream-pbs-ops
- + glueceuniqueid=cream-lac.cat.cbpf.br:8443/cream-pbs-biomed
- + glueceuniqueid=cream-lac.cat.cbpf.br:8443/cream-pbs-dteam

Viewing Entry

Attributes	Values
GlueCEAccessControlBaseRule	VO:dteam
GlueCEAccessControlBaseRule	VOMS:/dteam/Role=lcgadmin
GlueCEAccessControlBaseRule	VOMS:/dteam/Role=production
GlueCECapability	CPUScalingReferenceSI00=1680
GlueCEHostingCluster	cream-ce.cat.cbpf.br
GlueCEImplementationName	CREAM
GlueCEImplementationVersion	32
GlueCEInfoApplicationDir	/opt/exp_soft
GlueCEInfoContactString	https://cream-ce.cat.cbpf.br:8443/ce-cream/services
GlueCEInfoDataDir	unset
GlueCEInfoDefaultSE	se01.cat.cbpf.br
GlueCEInfoGatekeeperPort	8443
GlueCEInfoHostName	cream-ce.cat.cbpf.br
GlueCEInfoJobManager	pbs

Done

100% Zotero

# Gstat – ROC Summary

GStat 2.0 – Summary View – EGEE\_ROC LatinAmerica

http://gstat-prod.cern.ch/gstat/summary/EGEE\_ROC/LatinAmerica/

GGUS | Contact | About

## GStat 2.0

Geo View | LDAP View | **Site Views** | Service View | VO View

:: Home :: Site Summary

Filters: EGEE\_ROC Values: LatinAmerica

Show 25 entries | Go to a site: --SELECT A SITE NAME--

Search:

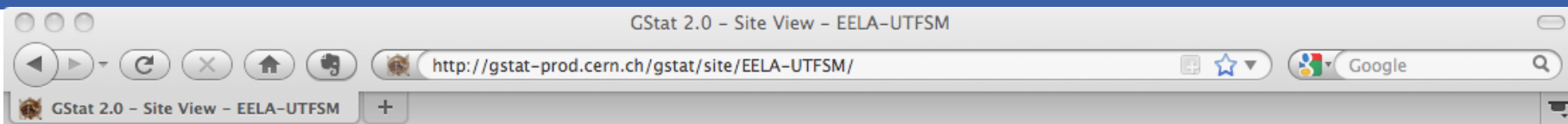
Name	Status	CPUs			Online Storage Space (GB)		Nearline Storage Space (GB)		Grid Jobs		
		Physical	Logical	SI2000	TotalSize	UsedSize	TotalSize	UsedSize	Total	Running	Waiting
CBPF	CRITICAL	84	312	524,160	22,546	<div><div></div></div> 7%	0	<div><div></div></div> 0%	101	<div><div></div></div> 32%	<div><div></div></div> 0%
EELA-UTFSM	OK	22	44	74,800	5,777	<div><div></div></div> 11%	0	<div><div></div></div> 0%	2	<div><div></div></div> 4%	<div><div></div></div> 0%
ICN-UNAM	CRITICAL	19	58	14,858	984	<div><div></div></div> 5%	0	<div><div></div></div> 0%	50	<div><div></div></div> 15%	<div><div></div></div> 82%
SAMPA	CRITICAL	30	120	368,640	1,036	<div><div></div></div> 5%	0	<div><div></div></div> 0%	0	<div><div></div></div> 0%	<div><div></div></div> 0%
UNIANDDES	CRITICAL	42	168	386,064	0	<div><div></div></div> 0%	0	<div><div></div></div> 0%	5	<div><div></div></div> 2%	<div><div></div></div> 0%
Total		197	702	1,368,522	30,343	2,389	0	0	158	117	41

Showing 1 to 5 of 5 entries

Done

100% zotero

# Gstat - Site View drilldown

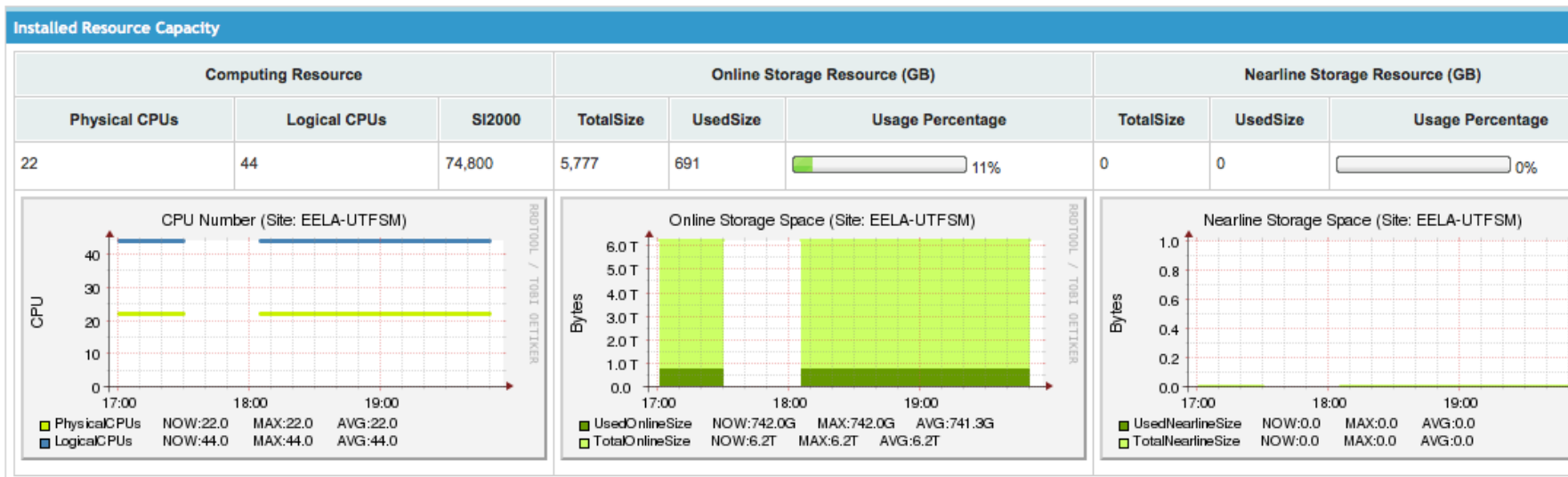


Site Information	
Attribute	Value
Site name	EELA-UTFSM
Description	Universidad Tecnica Federico Santa Maria
Location	Valparaiso, Chile
Web	<a href="http://www.labmc.inf.utfsm.cl">http://www.labmc.inf.utfsm.cl</a>
Sysadmin Email	<a href="mailto:grid@labmc.inf.utfsm.cl">grid@labmc.inf.utfsm.cl</a>
User-Support Email	<a href="mailto:grid@labmc.inf.utfsm.cl">grid@labmc.inf.utfsm.cl</a>
Security Email	<a href="mailto:grid@labmc.inf.utfsm.cl">grid@labmc.inf.utfsm.cl</a>

Information System Monitoring and Validation	
Site BDII Alias	Status
<a href="http://ce.labmc.inf.utfsm.cl">ce.labmc.inf.utfsm.cl</a> <span>LOAD</span>	OK

Resources Information	
Resource	Entities
CE	1
SE	1
Service	5

GStat Site Report Update	
Last Update	
5-Oct-2010 19:50:7 UTC	




# WLCG Topology view

Topology

Topology

+

Log In

 **Topology**

Topology

Pledges

Capacities

Topology

Federation Information

Tier ^	Country ^	Federation Name ^	Accounting Name ^
Tier 2	Brazil	SPRACE, Sao Paulo	BR-SP-SPRACE

Showing 1 to 1 of 1 entries

Site Capacities

Year: 2010 Month: 9

Infrastructure ^	Site Name ^	Physical CPU ^	Logical CPU ^	HEPSPEC06 ^	Disk (GB) ^	Tape (GB) ^
EGEE	GridUNESP_CENTRAL	0	0	0	0	0
EGEE	SPRACE	152	368	0	0	0

Showing 1 to 2 of 2 entries


Federation Pledges

Please select a year: 2009

Pledge Type ^	ALICE ^	% of Req. ^	ATLAS ^	% of Req. ^	CMS ^	% of Req. ^	LHCb ^	% of Req. ^	SUM ^	% of Req. ^
CPU (HEP-SPEC06)					3,200	2%			3,200	2%
Disk (Tbytes)					120	1%			120	1%

Showing 1 to 2 of 2 entries

Done

 100% zotero

- Idea
  - visualize the Grid by using *Treemaps*  
(Grid + Treemap = *GridMap*)

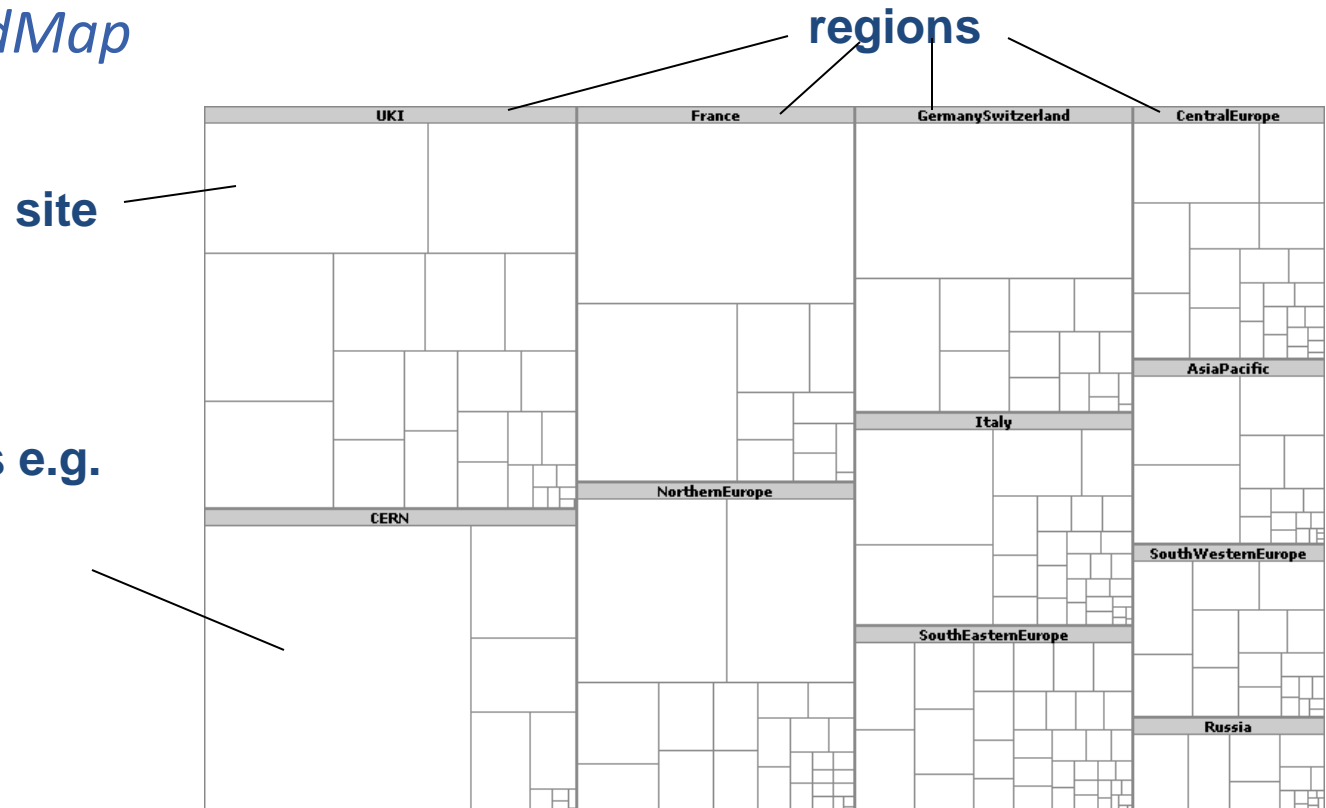
- Example *GridMap*

**Size of rectangle is e.g.**

- size of site (#CPUs)

- #running jobs

- ...



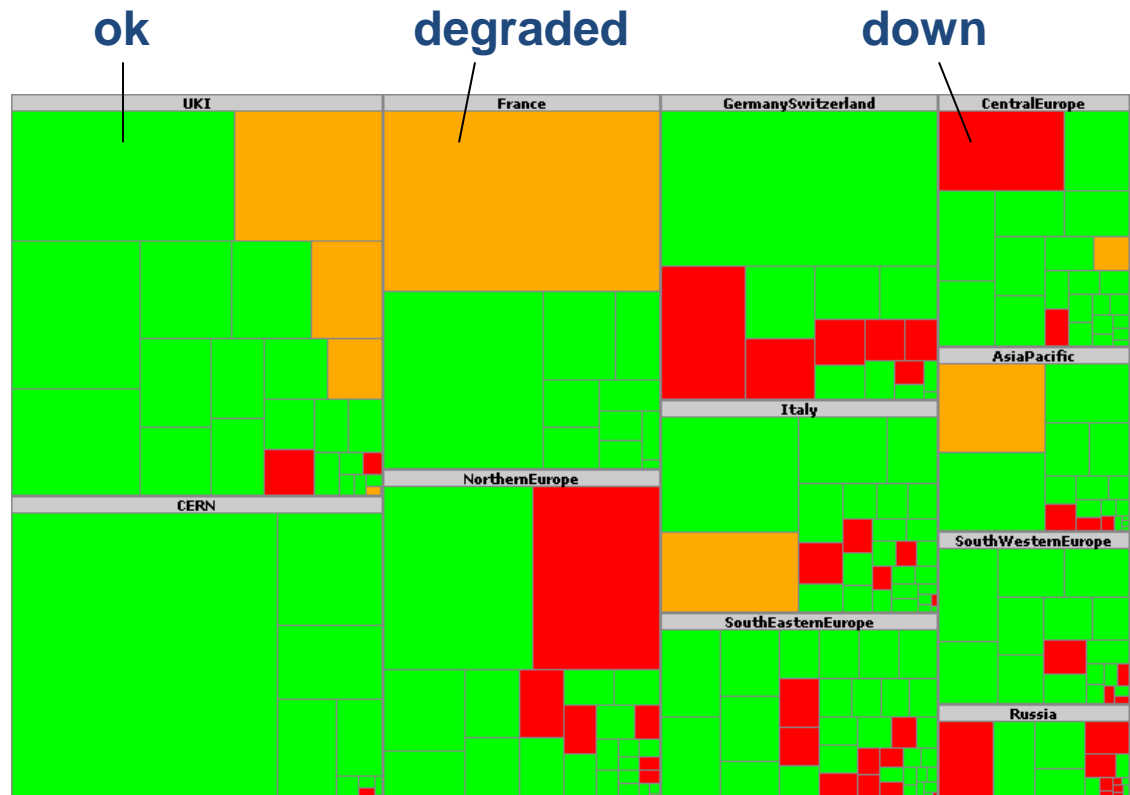


- Idea
  - visualize the Grid by using *Treemaps*  
(Grid + Treemap = *GridMap*)

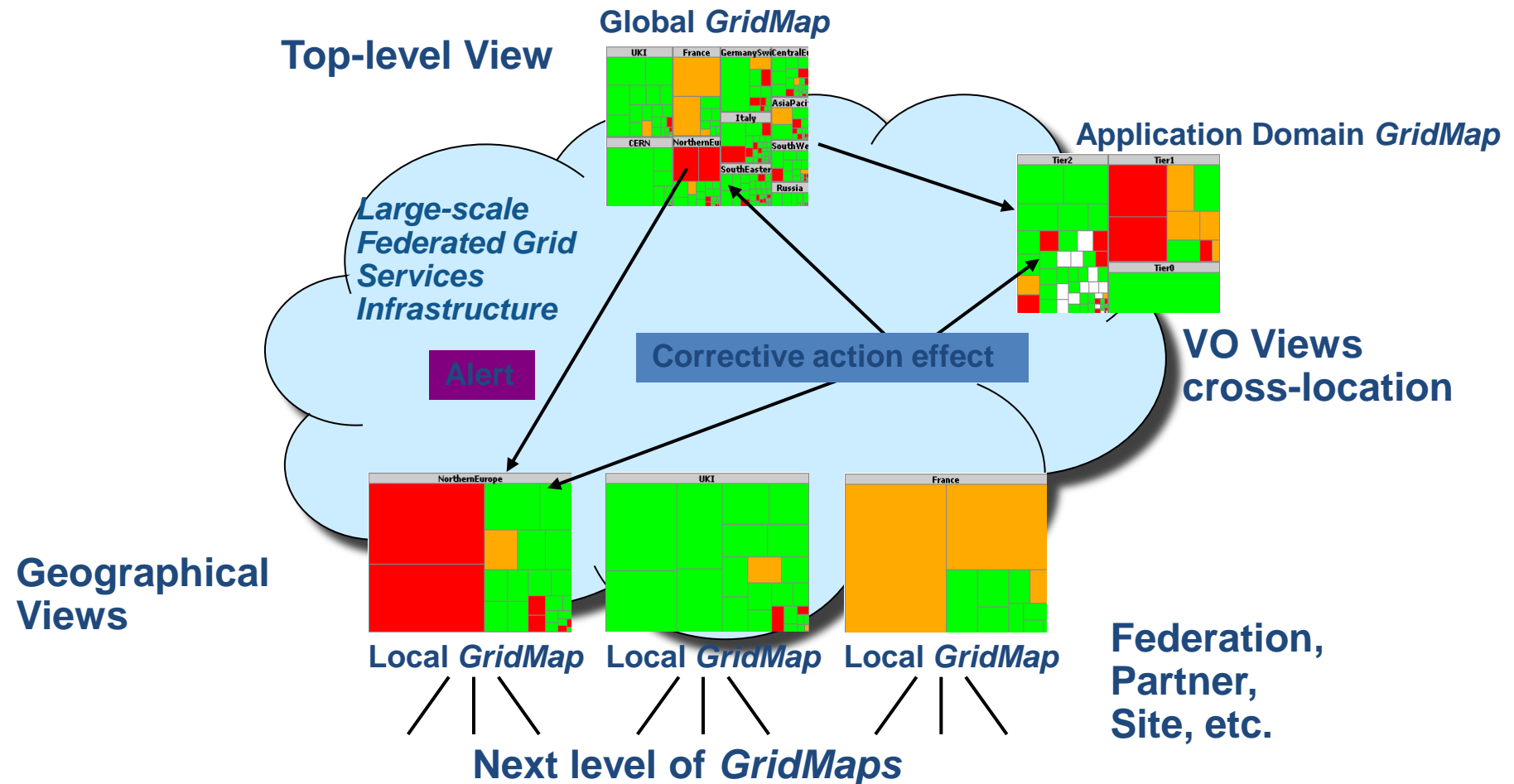
- Example *GridMap*

Colour of rectangle is e.g.

- SAM status of site / service
- Availability of site / service
- ...

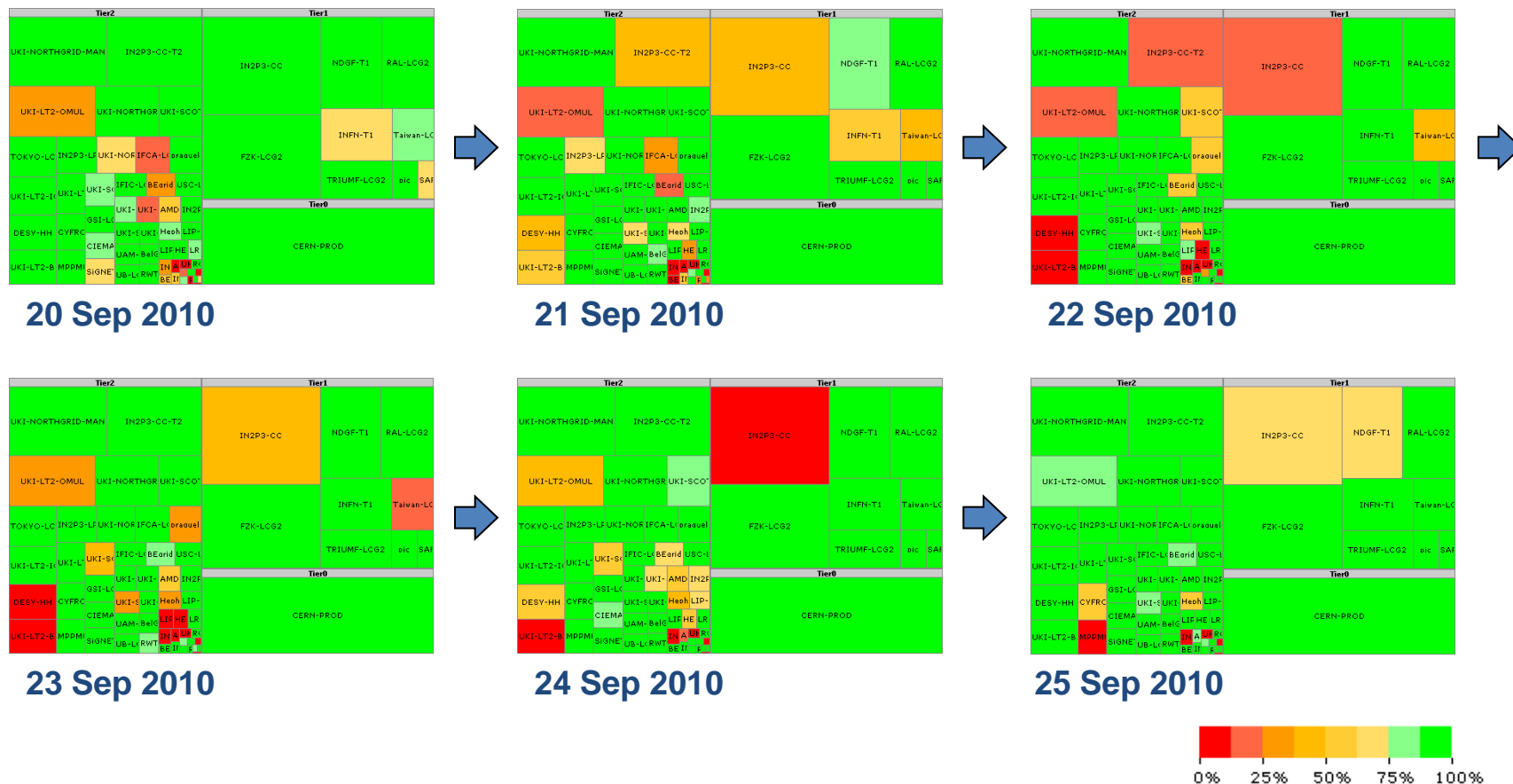


- GridMaps* can be used for *top-level*, *geographical* and *VO* views



Trends can be understood by looking at a sequence of *GridMaps*

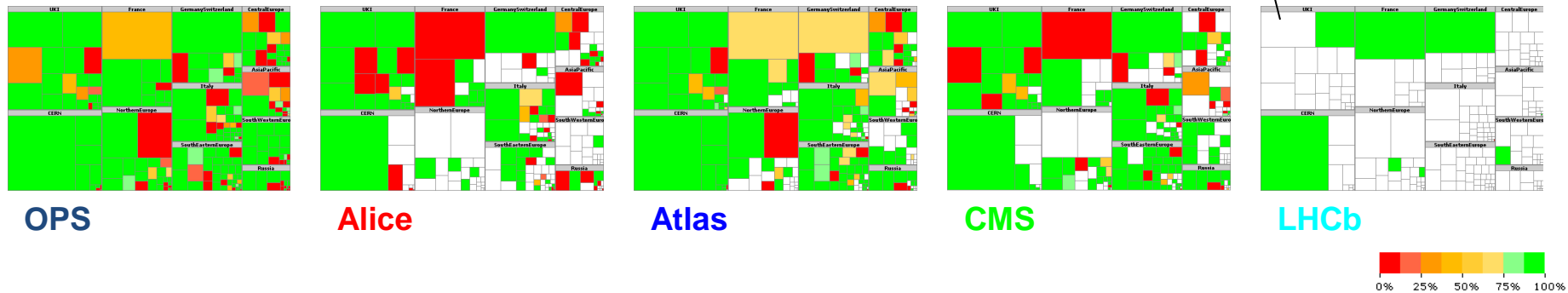
## Site Availability over time:



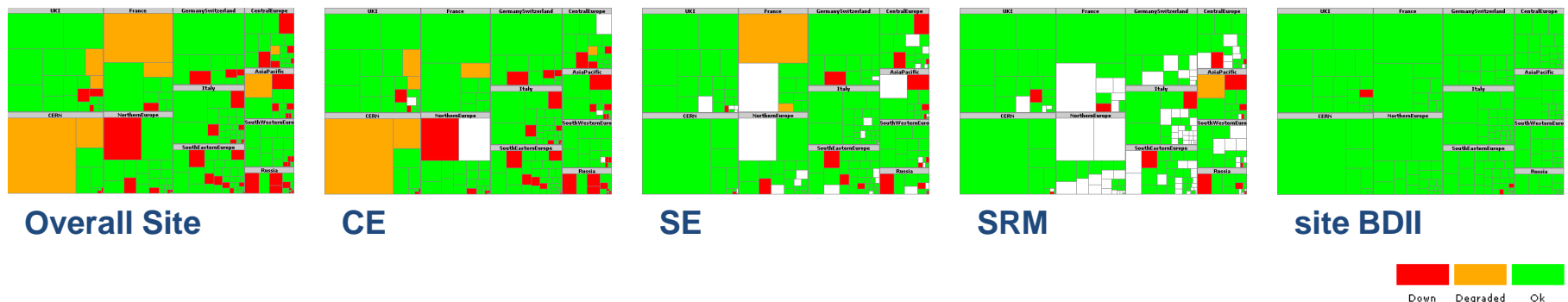
Correlations of metrics can be discovered by switching between different views

Site Availability from different VO perspectives:

sites without colour do not support the VO



Status of different Site Services:



- An integration of the existing visualization tools
  - Gridmap
  - MyEGEE
  - Gridview
- Being developed for EGI right now
  - To satisfy the NGI and site manager requirements
- A single portal for operational information

## Views list



### Gridmap view

Show a gridmap-style graph of the current status for all the services in all the sites of a concrete region.

### Service view

Show all services with its current status.

### Metric Status view

Show the status of all tests per service and flavour.



### History view

Show a graph of the current status of a service over time.

## Latest news

[August \(update 04\) release of SAM/Nagios](#)

Date: Wed, 01 Sep 2010 15:09:09 GMT

Author: jamesc

[July \(Update-03\) release of SAM/Nagios/Messaging](#)

Date: Tue, 03 Aug 2010 12:30:46 GMT

Author: jamesc

[New Nagios/ATP/Messaging release](#)

Date: Tue, 29 Jun 2010 13:55:34 GMT

Author: jamesc



# MyEGI service status drilldown

## Services

Show/hide filters

Search hostname column:

Site	Service Flavour	Hostname	Status	Actions
AU-PPS <small>GStat</small>	SRMv2	cgh15.collab.unimelb.edu.au	✓	
AU-PPS <small>GStat</small>	Site-BDII <small>LDAP</small>	cgh1.collab.unimelb.edu.au	✓	
Australia-ATLAS <small>GStat</small>	SRMv2	agh3.atlas.unimelb.edu.au	✓	
Australia-ATLAS <small>GStat</small>	Site-BDII <small>LDAP</small>	agh6.atlas.unimelb.edu.au	✓	
Australia-ATLAS <small>GStat</small>	CE	agh2.atlas.unimelb.edu.au	✓	
CERN-PROD <small>GStat</small>	CE	ce128.cern.ch	🔧	
CERN-PROD <small>GStat</small>	SRMv2	samdpm002.cern.ch	🔧	
CERN-PROD <small>GStat</small>	CE	ce111.cern.ch	🔧	
CERN-PROD <small>GStat</small>	SRMv2	srm-lhcb.cern.ch	🔧	
CERN-PROD <small>GStat</small>	CE	ce130.cern.ch	🔧	

Show  entries

Showing 1 to 10 of 158 entries

[First](#) [Previous](#) [1](#) [2](#) [3](#) [4](#) [5](#) [Next](#) [Last](#)

[Status Summary](#) | [XML](#) | [CSV](#) | [JSON](#)

**Legend:** 🛑 Critical 🛑 Downtime ✕ Missing ✓ OK 🛑 Removed 🛑 Unknown ⚠ Warning

History graph for this service

🕒 This status has been updated more than 24 hours ago (hover on the icon to see what was the exact update time)

- Wide range of tools available for you
- Aim is to help you to manage your site
- Integrates well with the Glite middleware and WLCG operational processes
- The future leads towards better integrated portals for complete monitoring of your systems
  - All open source
  - Contributions always welcome !!!



## – Nagios

- <https://nagios.roc-la.org/nagios/>

## – MyEGEE

- <https://nagios.roc-la.org/myegee/>

## – Gstat

- <https://gstat-prod.cern.ch/>
- <https://gstat-wlwg.cern.ch/apps/topology/>

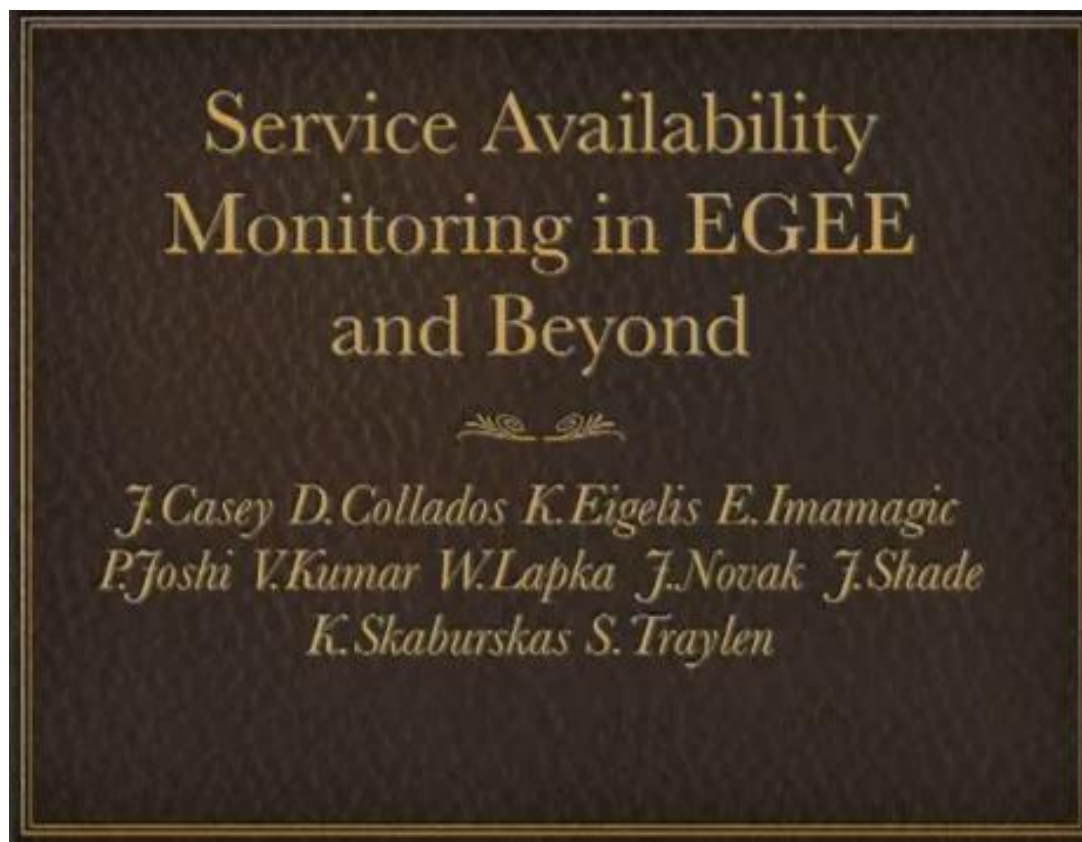
## – Gridview Availability

- [http://gridview.cern.ch/GRIDVIEW/same\\_index.php](http://gridview.cern.ch/GRIDVIEW/same_index.php)
- [https://twiki.cern.ch/twiki/pub/LCG/GridView/Gridview\\_Service\\_Availability\\_Computation.pdf](https://twiki.cern.ch/twiki/pub/LCG/GridView/Gridview_Service_Availability_Computation.pdf)

## – Gridmap

- <http://gridmap.cern.ch/gm/>

- Watch our demo:
  - <http://tinyurl.com/EgeeSAM> (YouTube)
  - <http://www.youtube.com/watch?v=PADq2x8q0kw>





Questions ?