ScotGrid Site Report

Mike Kenyon
HEPSysMan - June 2008

Facts 'n' Figures.

The ScotGrid Team

- ## Glasgow

  - Graeme Stewart - Technical Co-ordinator.

  - Andrew Elwell - Data Management Expert.

  - Mike Kenyon - Glasgow Grid System Manager.

- ## Edinburgh Compute and Data Facility

  - Sam Skipsey.

  - Steve Thorn.

  - Greig Cowan.

- ## Durham

  - Phil Roffe.

  - David Ambrose Pearce.

Hardware

- ## Glasgow

  - 140 Worker Nodes: 2 x Dual Core Opteron 280 CPUs = 560 Job slots.

  - 9 Grid servers: 85TB of useable SRM storage (RAID 6 + 1 "hot spare"/server).
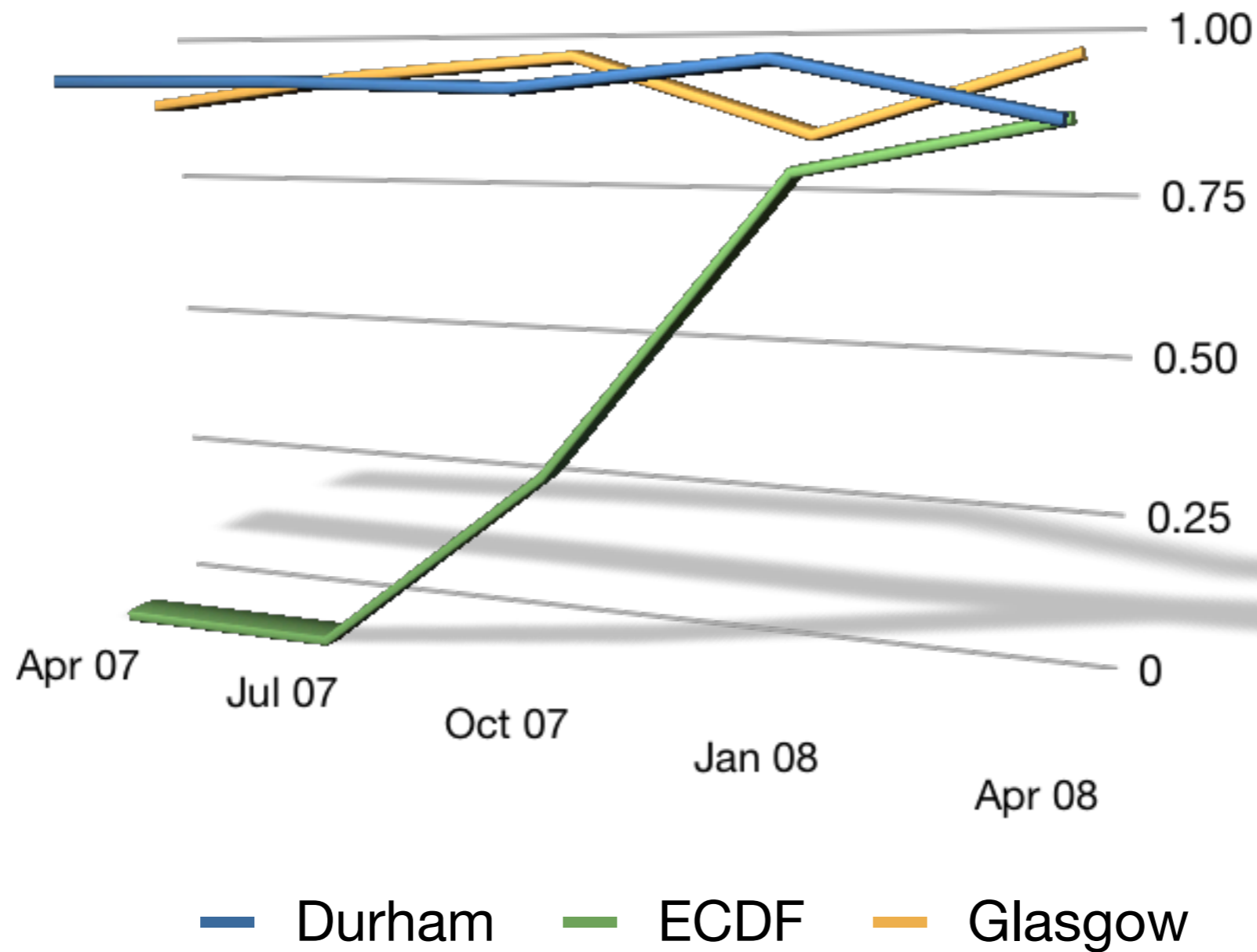
- ## ECDF

  - 230 Worker Nodes: Mix of 2- and 4-CPU 64bit Intels ~1500 Job slots.

  - 5TB of useable SRM storage.

- ## Durham

  - 53 Worker Nodes: Pentium 2.0/2.4/2.6 GHz = 106 Job slots.
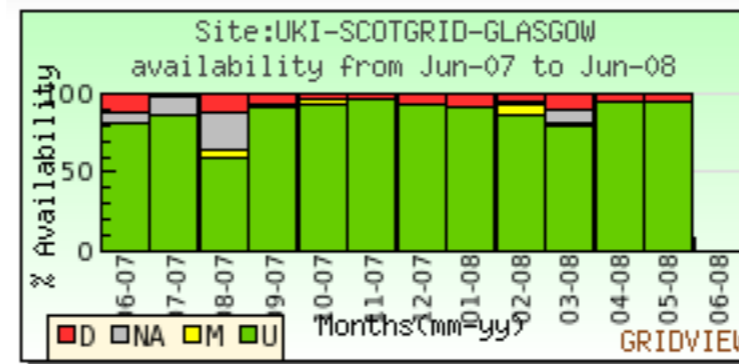
  - 12TB of useable SRM storage.

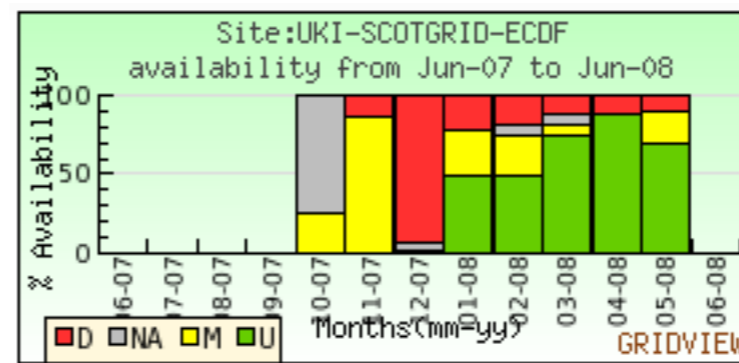# Site Availability
(Steve Lloyd's Tests)
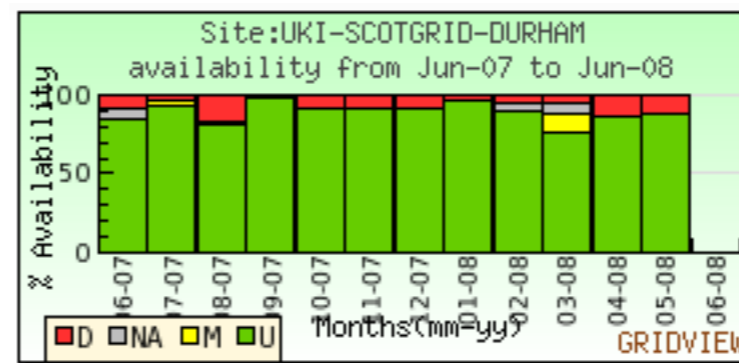
GridView "Overall" Availability
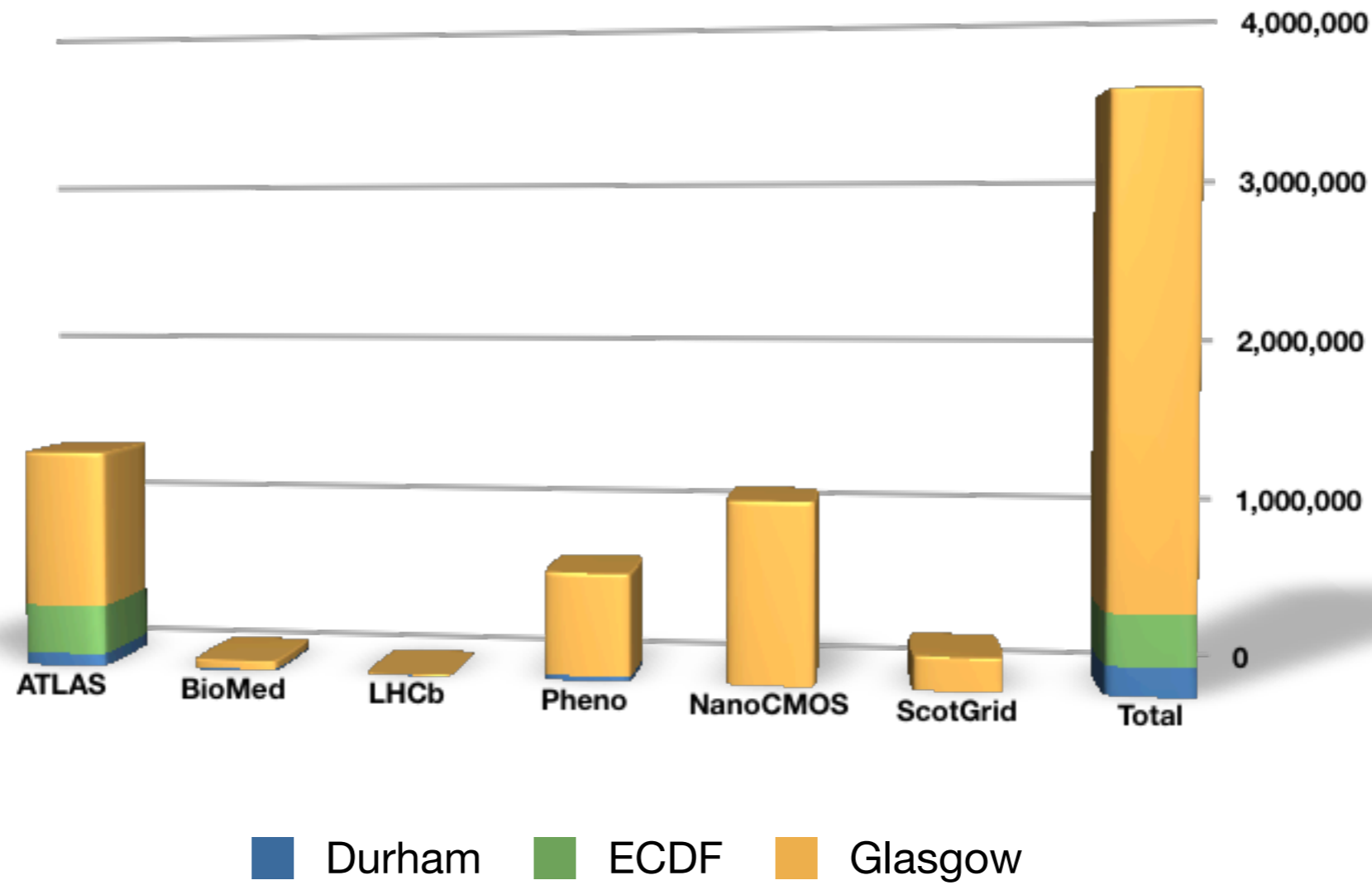
Glasgow

ECDF

Durham

CPU Used

Normalised CPU time per VO (K SI2000 Hours YTD)

Data Storage

- Disk pool manager: SRM v2.2 across ScotGrid.

- Glasgow: Migrated to xfs now that x86_64 is supported by DPM.

- ScotGrid now has space tokens.

- Reliability excellent: 0 failures over 12 months for 220 Western Digital 0.5TB

WLCG Nagios Monitoring

- Prototype Nagios Grid Service monitoring.

- Installed as per TWIKI instructions.

- "Remote & Local" installation.

  - Results from SAM tests & local tests are monitored.

- Biggest problem was getting the MyProxy proxy working.

  - Caused by bug in the old MyProxy code that runs on myproxy-fts.cern.ch.

ScotGrid

Tactical Overview

Tactical Overview

ScotGrid

Current Network Status
Last Updated: Wed Jun 18 00:25:33 BST 2008
Updated every 90 seconds
Nagios® 3.0.1 - www.nagios.org
Logged in as /C=UK/O=eScience/OU=Glasgow/L=Compserv/CN=michael kenyon

View History For all hosts
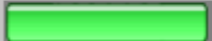View Notifications For All Hosts
View Host Status Detail For All Hosts

Display Filters:
Host Status Types: Pending | Up
Host Properties: Any
Service Status Types: Critical
Service Properties: Not In Scheduled Downtime & Has Not Been Acknowledged & Active Checks Enabled

Host Status Totals

Up	Down	Unreachable	Pending
202	3	0	0

All Problems	All Types
3	205

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
2000	2	13	46	0

All Problems	All Types
61	2061

Service Status Details For All Hosts

| Host ↑↓	Service ↑↓	Status ↑↓	Last Check ↑↓	Duration ↑↓	Attempt ↑↓	Status Information
ce.glite.ecdf.ed.ac.uk	org.nagios.LocalLogger-PortCheck	CRITICAL	06-18-2008 00:24:11	29d 14h 33m 8s	4/4	(Service Check Timed Out)
ce01.dur.scotgrid.ac.uk	hr.srce.CAdist-Version	CRITICAL	06-17-2008 21:01:52	6d 9h 23m 40s	4/4	Official IGTF version is 1.22. Old CA distribution version found, new version is 8 days old.
	hr.srce.GRAM-Auth	CRITICAL	06-18-2008 00:14:05	1d 7h 41m 27s	4/4	(Service Check Timed Out)
	hr.srce.GRAM-CertLifetime	CRITICAL	06-17-2008 16:59:42	0d 10h 25m 50s	4/4	(Service Check Timed Out)
	hr.srce.GRAM-Command	CRITICAL	06-17-2008 23:44:43	6d 9h 10m 49s	4/4	(Service Check Timed Out)
	org.nagios.BDII-Check	CRITICAL	06-18-2008 00:11:03	1d 7h 59m 29s	4/4	Could not search/find objectclasses in GlueSiteUniqueID=UKI-SCOTGRID-DURHAM,Mds-Vo-Name=UKI-SCOTGRID-DURHAM,O=Grid
	org.nagios.LocalLogger-PortCheck	CRITICAL	06-18-2008 00:21:04	29d 14h 33m 7s	4/4	(Service Check Timed Out)
gallows.dur.scotgrid.ac.uk	hr.srce.CAdist-Version	CRITICAL	06-17-2008 20:00:23	6d 9h 25m 9s	4/4	Official IGTF version is 1.22. Old CA distribution version found, new version is 8 days old.
	hr.srce.GridFTP-Transfer	CRITICAL	06-17-2008 23:50:31	6d 9h 5m 1s	4/4	Upload to remote computer failed failed with error: globus_ftp_client: the server responded with an error500 Command failed. : open/create error: No space left on device

Tactical Monitoring Overview
Last Updated: Wed Jun 18 00:22:54 B
Updated every 90 seconds
Nagios® 3.0.1 - www.nagios.org
Logged in as /C=UK/O=eScience/OU

Network Outages
0 Outages

Hosts
3 Down   0 Unre
1 Unhandled Problems
2 Acknowledged

Services
45 Critical   2 Wa
16 Unhandled Problems   2 Disable
12 on Problem Hosts
1 Acknowledged
16 Disabled

Sites' Headline News.

Glasgow CE Woes

- In February we suffered a failure of the CE.

- At 17.00: load started to rise to ~100.

svr016.gla.scotgrid.ac.uk Load last day

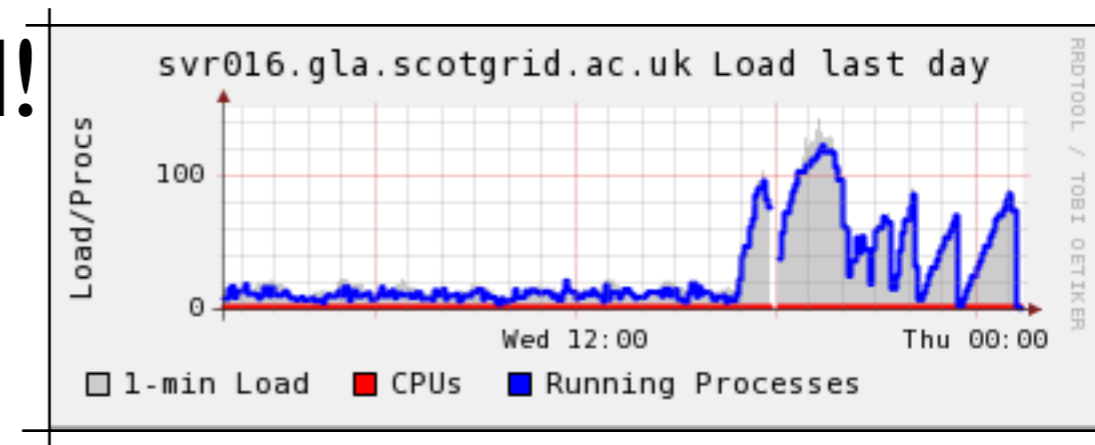# Glasgow CE Woes

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- At 17.00: load started to rise to ~100.

- At 18.00: hard crash.

svr016.gla.scotgrid.ac.uk Load last day
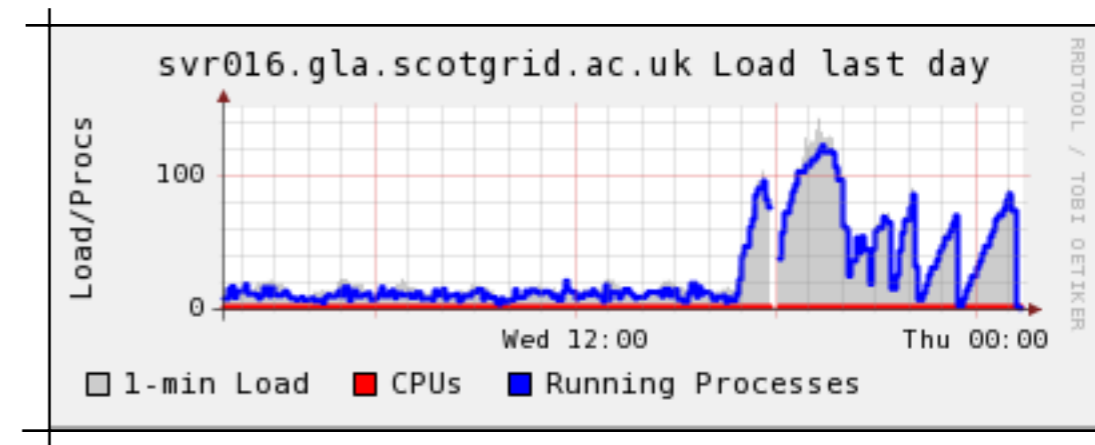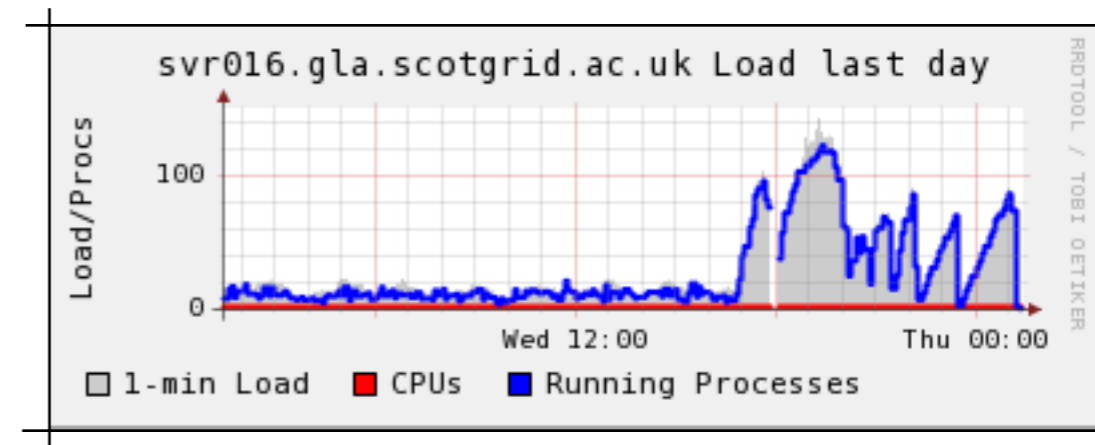
Glasgow CE Woes

- In February we suffered a failure of the CE.

- At 17.00: load started to rise to ~100.

- At 18.00: hard crash.

- At 22.00: defeat accepted!

svr016.gla.scotgrid.ac.uk Load last day

"Every cloud..."

- Took the opportunity to bring March's downtime forward.

- CE & DPM headnode moved to SL4 x8_64.

  - SL4 CE appears to scale much better.

- Batch system upgraded to Torque 2.1.9/ Maui 3.2.6, running on SL4 x86_64.

- Queues reduced to 4, with queue lengths of 30m, 6h, 3d and 7d.

ECDF

- ECDF now online & validated.

- SAM tests were being killed by the batch system.

  - Problems due to SGE "virtual size limit" on jobs.

- ATLAS software validation kit couldn't "phone home".

  - Outbound port 443 was firewalled!
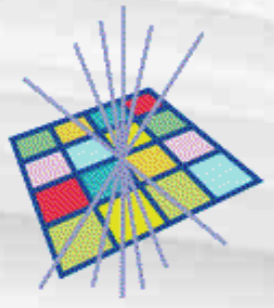
Durham

- March 08: Upgraded CE, SE, UI & WNs to SL4.6.

- cfengine'd: installs packages, config files & runs YAIM.

  - Had previously used "home-brew" installation scripts.

- Conclusion: cfengine is worth the time & effort of installation!

New/Improved Services.

ScotGrid wiki

http://www.scotgrid.ac.uk/wiki

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Glasgow gLite WMSLB

- Combined gLite 3.0 WMS/LB on same (SL3) machine.

- [Installation] was relatively pain-free.

  - gLite user must exist.

  - gLite-WMSLB meta-package does not install the gLite-yaim-lb package.

Glasgow gLite WMSLB

- Combined gLite 3.0 WMS/LB on same (SL3) machine.

- Installation was relatively pain-free.

- However, have observed very high loads.
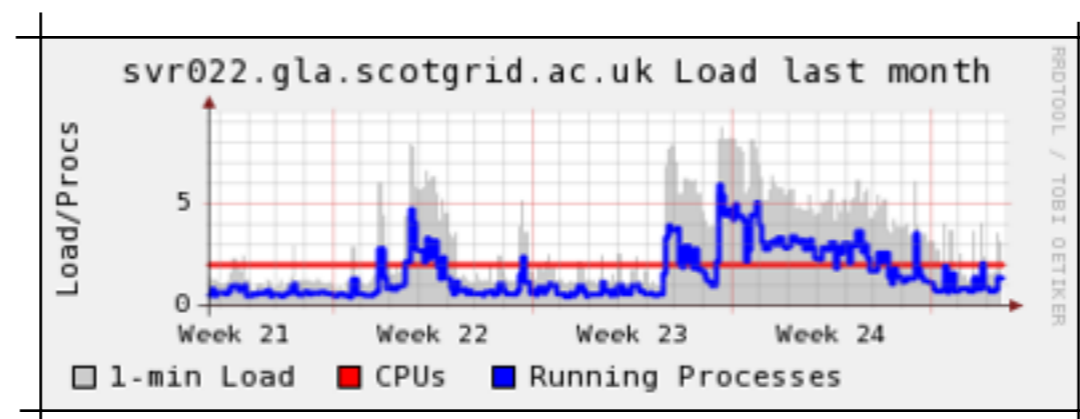
Glasgow gLite WMSLB

- High load killed WMS in early June.

- Pheno user:

  - Submitted ~20,000 jobs.

  - Without proxy renewal.

  - Couldn't kill their jobs!

- Reverted back to RB.

- Considering an additional WMS.

Our poor WMS was killed from the end of last week when a pheno user submitted about 20k jobs into it. Worse, they hadn't used a proxy renewal service, so their VOMS extension on the proxy expired and so the jobs they had submitted suffered shallow failures, promting further resubmission attempts and further load.

We have contacted the user, but they were having a great deal of trouble even cancelling the jobs. We've left things for 2 days now, but the situation is really not improving. I can't see much hope for the machine in its current state - we'll probably have to blow it away and start again next week.

For the moment we've asked our users to revert to using ye olde RB, which we were just about to switch off but hadn't actually decomissioned.

There's a serious question now about what level of WMS service we want to provide. It's a complex service and rather difficult to debug when it goes wrong. Certainly an upgrade to the SL4 version should be done, but do we want to have 2 WMS hosts and possibly even a separate LB service?

POSTED BY GRAEME STEWART AT 11:11 AM   0 COMMENTS
LABELS: UKI-SCOTGRID-GLASGOW, WMS

ScotGrid VOMS Server

- VOMS server [installed](#) at Glasgow.

- Enables us to quickly respond to local users' needs.

- vo.scotgrid.ac.uk, vo.nanocmos.ac.uk, vo.panda.gsi.de

ScotGrid-Glasgow Tier 2.5

- Interface local (PPE) resources with Grid.

- Local-level access for data, job preparation.

- ScotGrid's DPM ATLAS datasets available via RFIO.

- gLite 3.1 UI available on all Linux desktops.

- Removes need for ScotGrid username (e.g., gla046 $\Rightarrow$ mkenyon).

And Finally...

Vendor Hardware Support

- ClusterVision

  - "...little more than replacing faulty/suspect components."

  - "...no real support in the sense of problem solving."

  - "...didn't even supply PC Doctor or similar."

Procurement '08

- Tendering for ~ £400,000 of CPU & disk.

- Aiming to bring ScotGrid up to:

  - ~500TB of storage.

  - ~2,000 KSpecInt2000 of CPU.

- Targeting Q4 2008 for switch on.

- Machine-room work to start next week.

Glasgow Machine Room II