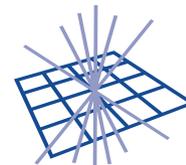


RAL PPD Tier 2

Rob Harper
2008-06-19



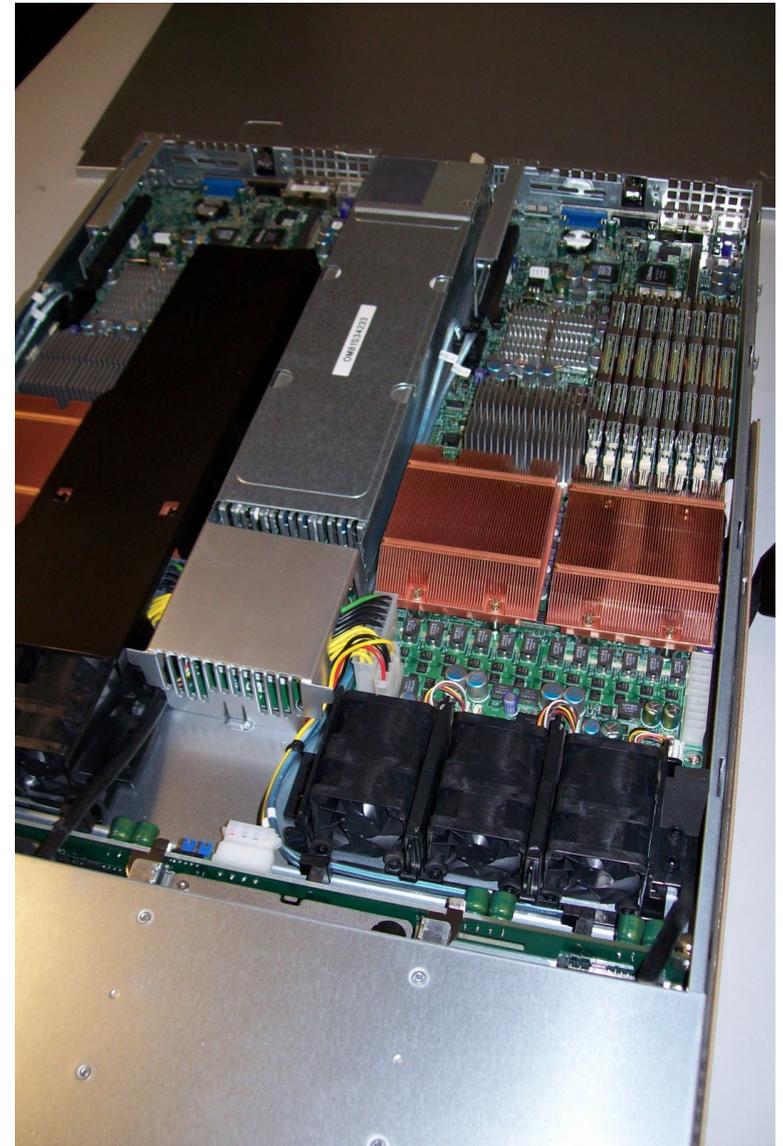
Science & Technology
Facilities Council



GridPP
UK Computing for Particle Physics

Hardware

- Currently we have:
 - ~158 TB storage
 - ~850 KSI2K worth of CPU
 - Nortel switch stack
- New kit includes:
 - Streamline Twin WNs
 - New DB servers

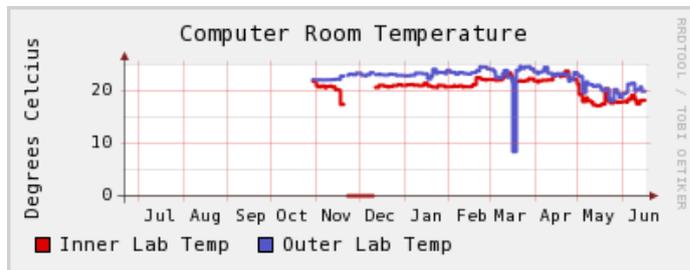


Machine Rooms

- R1 lab, inner and outer rooms, plus Atlas centre
- Now have 3-phase in R1
- Air conditioning in R1
 - New vent
 - Rebalancing
 - Chiller maintenance
- Neither the power nor the AC have been as stable as we had hoped

Management & Monitoring

- cfEngine
- Ganglia
- Nagios
- Pakiti



Nagios - Mozilla Firefox

https://nagios.pp.rl.ac.uk/

Nagios

General

- Home
- Documentation

Monitoring

- Tactical Overview
- Service Detail
- Host Detail
- Hostgroup Overview
- Hostgroup Summary
- Hostgroup Grid
- Servicegroup Overview
- Servicegroup Summary
- Servicegroup Grid
- Status Map
- 3-D Status Map
- Service Problems
- Host Problems
- Network Outages

Show Host:

Comments

- Downtime
- Process Info
- Performance Info
- Scheduling Queue

Reporting

- Trends
- Availability
- Alert Histogram
- Alert History
- Alert Summary
- Notifications
- Event Log

Configuration

- View Config

Tactical Monitoring Overview

Last Updated: Wed Jun 18 11:19:41 BST 2008
 Updated every 90 seconds
 Nagios® - www.nagios.org
 Logged in as /C=UK/O=eScience/OU=CLRC/L=RAL/CN=rob.harper

Monitoring Performance

Service Check Execution Time:	0.03 / 5.56 / 0.616 sec
Service Check Latency:	0.00 / 6.84 / 0.611 sec
Host Check Execution Time:	0.00 / 3.02 / 0.066 sec
Host Check Latency:	0.00 / 0.00 / 0.000 sec
# Active Host / Service Checks:	182 / 1629
# Passive Host / Service Checks:	0 / 9

Network Outages

0 Outages

Network Health

Host Health: █

Service Health: █

Hosts

1 Down	0 Unreachable	180 Up	1 Pending
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1 Acknowledged

Services

83 Critical	143 Warning	1 Unknown	1411 Ok	0 Pending
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5 Unhandled Problems	108 Unhandled Problems	1 Acknowledged	9 Disabled
1 on Problem Hosts	37 Acknowledged		

77 Acknowledged

Monitoring Features

Flap Detection	Notifications	Event Handlers	Active Checks	Passive Checks
Disabled	Enabled	Enabled	Enabled	Enabled
N/A	All Services Enabled All Hosts Enabled	All Services Enabled All Hosts Enabled	9 Services Disabled All Hosts Enabled	All Services Enabled All Hosts Enabled

Done nagios.pp.rl.ac.uk

SL4 Upgrade

- Only MonBox left to upgrade
- A variety of approaches taken
 - CEs: staged migration
 - BDII: used temporary substitute
 - dCache head: during scheduled downtime
 - Torque server: during unscheduled downtime

DB Optimisation

- Before moving dCache head to new server...
 - Increased shared memory available to Postgres
 - Split DB and transaction log onto different disks
 - Put DB onto XFS filesystem
 - Resulted in 20-fold increase in measured ops/second

Virtualisation

- Linux on laptops
 - Encryption issues
 - Success with both VMWare and VirtualPC
- Server virtualisation with Xen
 - Basic tests show viability
 - Will be running low-traffic web servers and other services in VMs

Staffing & Communication

- Now we are 3!
- Wiki
- Blog



Not Just Tier 2!

- Windows and general support staff: 2 plus 1 student.
- Windows XP desktops as standard
- Laptops running XP and full disk encryption
- Some PDA support
- Vista and Office 2007 rollout
- Windows 2003 Active Directory domain
- Windows-based file/print/web/AV/backup servers
- Services run at different levels: STFC, lab, business unit, department
- Computer room shared with Tier 2
- Separate network connections for Tier2 and general department

Coming Soon

- Desktop Linux
 - Looking to offer an officially supported desktop for PPD
 - Need to consult with user community
- Pre-production system
 - Initially setting up a “toy” dCache
 - Planning to expand this to cover all Tier 2 functions

Conclusion: Plans

- More...
 - Centralised management (cfEngine)
 - Monitoring (Nagios)
 - Automation
 - Virtualisation
 - CPU
 - Storage
- Less...
 - Stress