RAL PPD Tier 2

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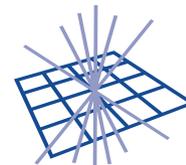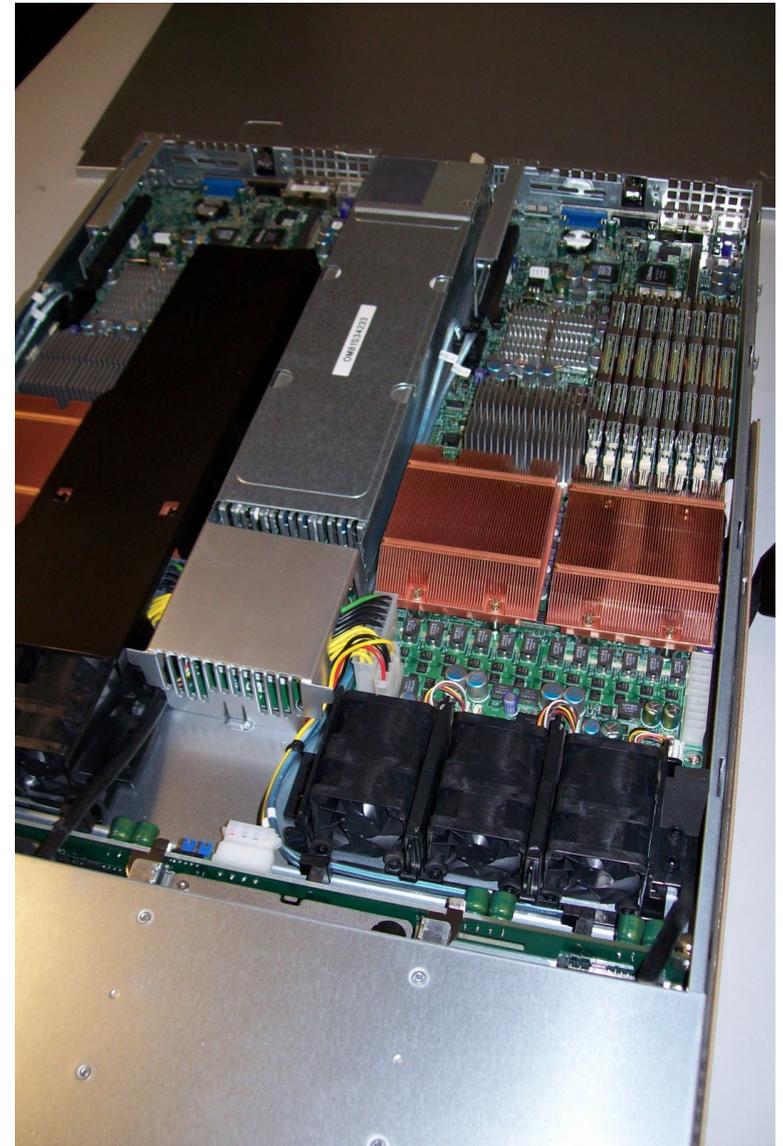
Hardware

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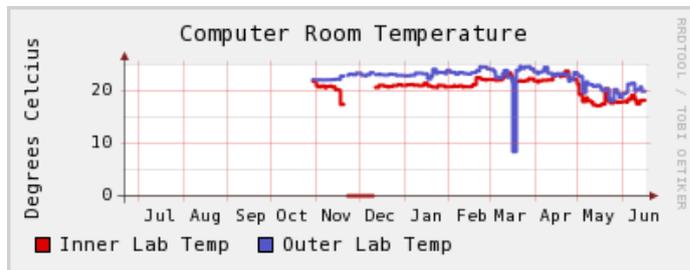 - New DB servers

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

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