Glasgow Site Report (Group Computing)

University of Glasgow | Experimental Particle Physics

Hardware - Users

Desktops

- ~ 50 'front line' desktop/lab pcs + older pcs
- Mixture of SL5 and WinXP (+legacy SL4 boxes)
- Current spec 3GHz Core2 Duo + 4GB ram

Laptops

- ~50 laptops (Dell, IBM, Apple)
- Macbook Pros purchased this year (and last)

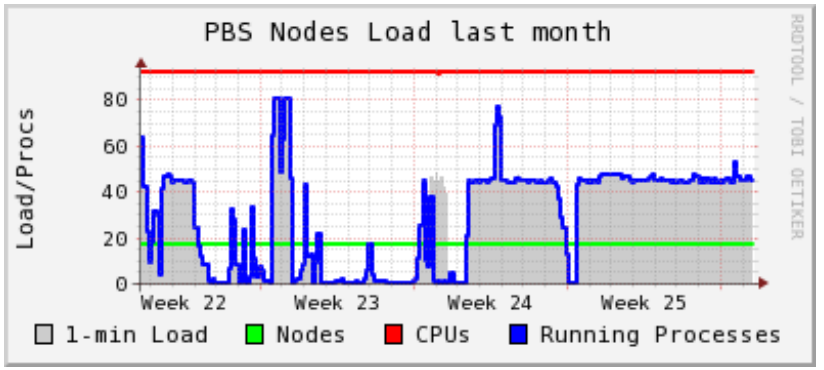
Printers

- Kyocera & HP group printers
- Smaller Kyocera printers + HP desktop printer/scanners

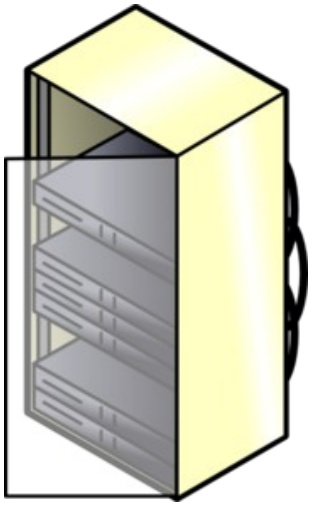
Hardware - Batch

Local Batch Farm

- Mixture of SL5 & SL4 Nodes
  - SL5: 47 job slots (2.6 GHz Xeon, 2GB/core)
  - SL4: 44 job slots (2.5 GHz Opteron, 2GB/core, ex Scotgrid nodes)
- Torque/maui
- Demand for more nodes - adding more ex Scotgrid nodes
- On/off usage pattern
  - Large number of long jobs at irregular intervals
  - Job suspension and node reservation to allow short jobs a quick turn around



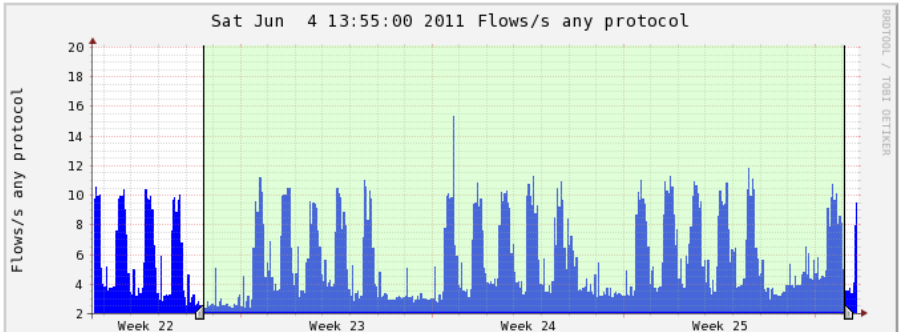
Hardware - Servers



- 5 1U servers running SL5 with KVM virtualisation
  - Each guest running one service
  - Web, printing, subversion repo, nis, dns, dhcp, ganglia, pakiti etc
- 2 storage machines
  - 48 x 1TB discs, raid 6 ~ 72TB usable storage
  - SL5, xfs filesystem
  - Exported via NFS and Samba
  - More storage early next year
- Windows 2008 terminal and printer server boxes
- Backup – to disc, using dirvish, 6 month history
  - User home areas only (20 GB per user)
- Monitoring
  - Ganglia, Nagios, Pakitik, Nfsen, cacti
- Test AFS Cell Running
  - Next storage machines will run AFS, no more NFS

Networking

- PPE group networking kit separate from Scotgrid and rest of building
  - 194.36.1.0/24 subnet
  - Plus internal private subnet
- Firebridge between PPE network/outside
  - Monitor traffic with softflowd and nfsen
- Monitor internal traffic with cacti

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** nfdump -M /var/nfsen/profiles-data/live/ppes13 -T -R 2011/06/04/nfcapd.201106041355:2011/06/28/nfcapd.201106280105 -n 20 -s record/bytes -o long
nfdump filter:
any
Aggregated flows 5827123
Top 20 flows ordered by bytes:
Date flow start          Duration Proto      Src IP Addr:Port          Dst IP Addr:Port   Flags Tos  Packets    Bytes Flows
2011-06-11 21:32:02.999 5106473.720 TCP       194.36.1.171:22     ->  131.225.242.115:56320 .AP.S.   0     20.0 M   22.0 G    11
2011-06-20 18:25:38.000 4340136.666 TCP       194.36.1.171:22     ->   159.93.112.204:49827 .AP.SF   0     12.2 M   16.8 G     9
2011-06-19 02:42:19.999 4296065.984 TCP       194.36.1.16:22      ->   172.20.220.231:43327 .AP.SF   0      9.8 M   14.3 G     8
2011-06-07 03:10:57.999 4301127.571 TCP       137.138.45.93:873   ->     194.36.1.16:38641 .AP.SF   0      9.8 M   13.5 G     7
2011-06-23 12:10:24.999 4346271.687 TCP       194.36.1.171:22     ->   159.93.112.204:41596 .AP.S.   0      8.8 M   12.0 G     6
2011-06-21 06:58:31.999 4618786.790 TCP       194.36.1.171:22     ->    71.201.149.20:41285 .AP.SF   0      9.6 M   10.5 G     6
2011-06-22 02:57:58.999 4632213.482 TCP       194.36.1.171:22     ->   131.225.233.93:59643 .AP.S.   0      9.6 M   10.0 G     5
2011-06-09 17:39:52.994 4298593.727 TCP   137.138.128.221:873     ->     194.36.1.16:48873 .AP.SF   0      6.6 M    9.1 G     5
2011-06-08 09:26:51.999 4299664.130 TCP       131.169.5.176:22    ->   194.36.1.207:37428 .AP.SF   0      6.7 M    8.9 G     5
2011-06-10 11:14:10.997 4299678.611 TCP       131.169.5.176:22    ->   194.36.1.207:39192 .AP.SF   0      6.5 M    8.7 G     5
2011-06-13 22:21:36.999 4429814.243 TCP       194.36.1.171:22     ->    71.201.149.20:42436 .AP.SF   0      6.9 M    7.8 G     4
2011-06-04 14:27:11.999 4304111.126 TCP       194.36.1.171:22     ->   159.93.112.204:59218 .APRS.   0      5.5 M    7.6 G     5
2011-06-08 02:05:46.000 4295684.498 TCP       194.36.1.16:22      ->   172.20.220.231:54794 .AP.SF   0      4.5 M    6.5 G     4
2011-06-14 02:00:49.999 4297200.066 TCP       194.36.1.16:22      ->   172.20.220.231:44898 .AP.SF   0      4.2 M    6.1 G     4
2011-06-05 04:19:39.999 4299871.176 TCP       131.225.208.9:22    ->     194.36.1.223:49456 .AP.SF   0      4.2 M    5.8 G     3
2011-06-07 14:16:09.241 6004775.471 UDP     193.60.199.170:46015  ->     194.36.1.2:46015   ......   0     10.8 M    5.7 G    23
2011-06-23 05:10:30.000 4300364.938 TCP       131.225.208.9:22    ->     194.36.1.223:47688 .AP.SF   0      4.0 M    5.5 G     3
2011-06-22 16:05:03.000 4320857.733 TCP       194.36.1.172:22     ->   159.93.112.204:40803 .APRS.   0      3.9 M    5.3 G     4
2011-06-25 17:05:24.999 4300293.612 TCP       131.225.208.9:22    ->     194.36.1.223:59512 .AP.SF   0      3.8 M    5.3 G     3
2011-06-05 18:48:02.999 4299434.180 TCP       131.225.208.9:22    ->     194.36.1.223:57826 .AP.SF   0      3.8 M    5.2 G     3

Summary: total flows: 11329409, total bytes: 1.7 T, total packets: 2.0 G, avg bps: 1.4 M, avg pps: 219, avg bpp: 853
Time window: 2011-06-04 12:50:53 - 2011-09-25 18:48:16
Total flows processed: 11329409, Records skipped: 0, Bytes read: 589522484
Sys: 10.512s flows/second: 1077718.5   Wall: 44.622s flows/second: 253892.1
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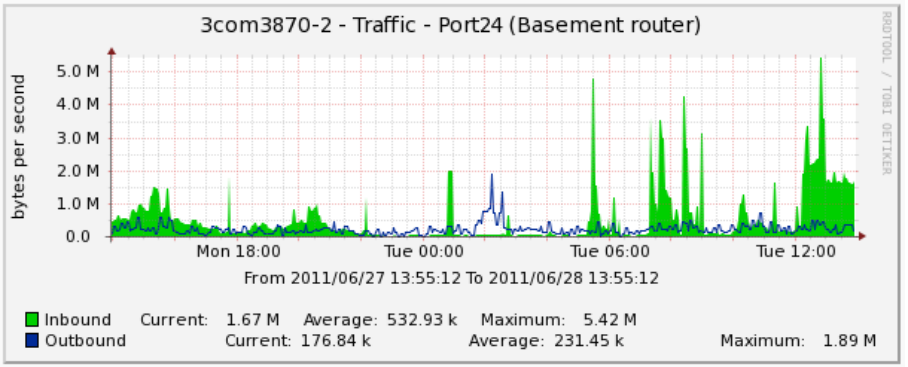

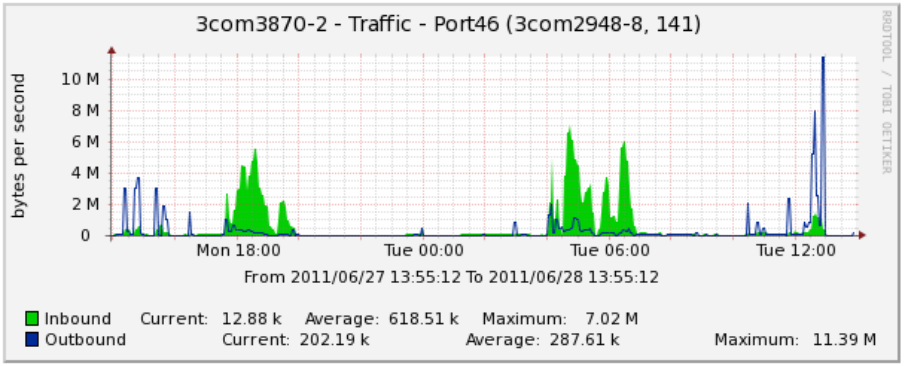

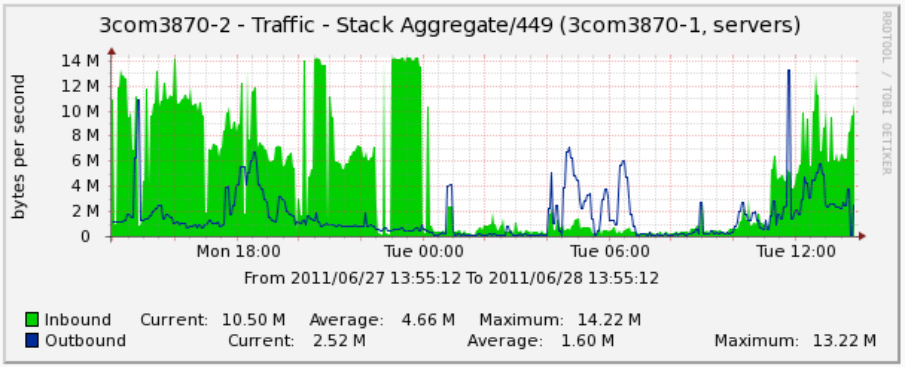

Issues

Power cuts

- Several power cuts over last year in Kelvin building
  - Some lasting a few minutes some longer
  - Inadvertent tests of the UPS kit and logic
  - Two day shutdown in August to fix the power
- Lessons learnt
  - Not working on the power to a building is not the same as not working on the power infrastructure inside a building
  - Test shutdown logic - have the UPS the switch/router is on go down last – otherwise shutdown messages don't get through
  - UPSes protect servers – some departmental servers not on UPSes got damaged, PPE only lost one desktop

Email Move

- Department in middle of email move from departmental server to central IT services Exchange server

Todo List

Storage

- More needed next year
- AFS transition

Batch

- More SL5 batch nodes

Windows 7

- Transition from WinXP to Win7
- Automated install?