RHUL Site Report

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HEPSYSMAN @ RAL May 2015

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Setup

- **Arun** *sysadmin, anything -80% FTE*
- **Govind** *grid site admin*
- **Barry** *HW & network*
- **Simon** *Team Leader*

~50 users ~110 Machine IP's on LAN

67 node Tier-3 cluster 3 printers

13 GbE switches Single 10GbE core sw

Group Activities

- Dark Matter – PCs for DAQ; software & driver install
- Accelerator research – simulation (MPI), SVN
- Phenomenology – simulation (MPI)
- ATLAS analysis – lots of scratch disk, fast interactive systems & batch processing (Tier 3 compute farm), software install (CVMFS)
- ATLAS/R&D DAQ – ROBin PCI-X, PCIe cards
- Non-LHC work does not benefit from CERN resources. Therefore have to provide our own facilities; SVN, TWiki, mailing lists, log books, etc.
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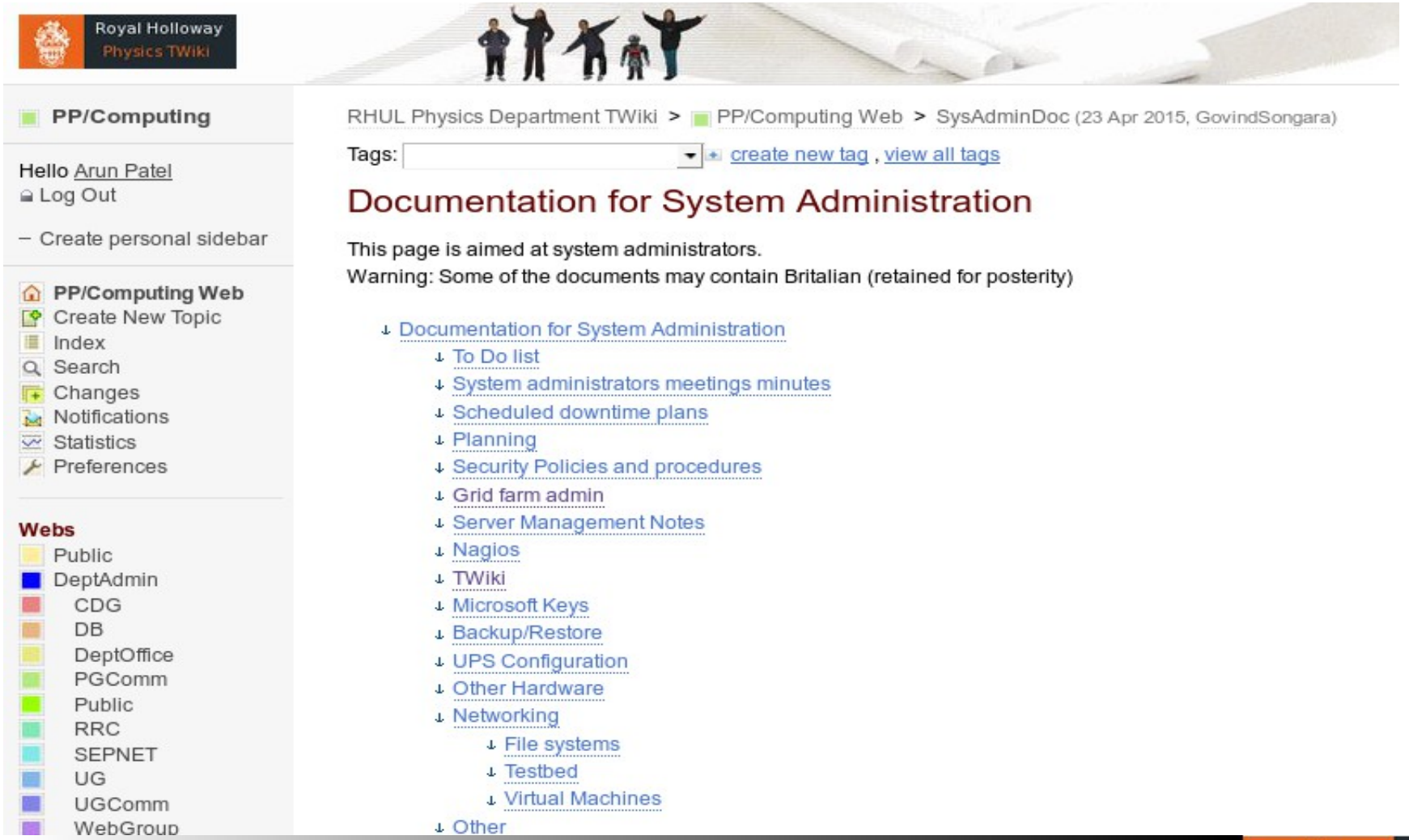
Documentation TWiki



Compute

- Tier-2 Cluster Newton: 1.7PB 13k HS06

  nice new mini Data Centre, c/o central IT

- Tier-3 Cluster Faraday: 67 nodes repurposed

  138TB RAID storage servers over NFS

  100TB non-RAID and HDFS (in theory)

  local very mini Data Centre, c/o us!

Tier-2 Installation

- Professionally installed

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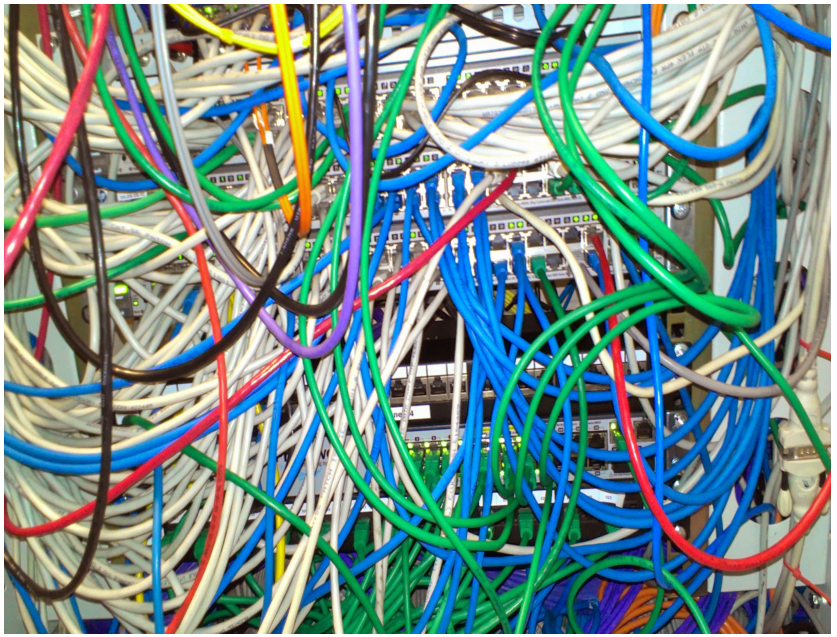
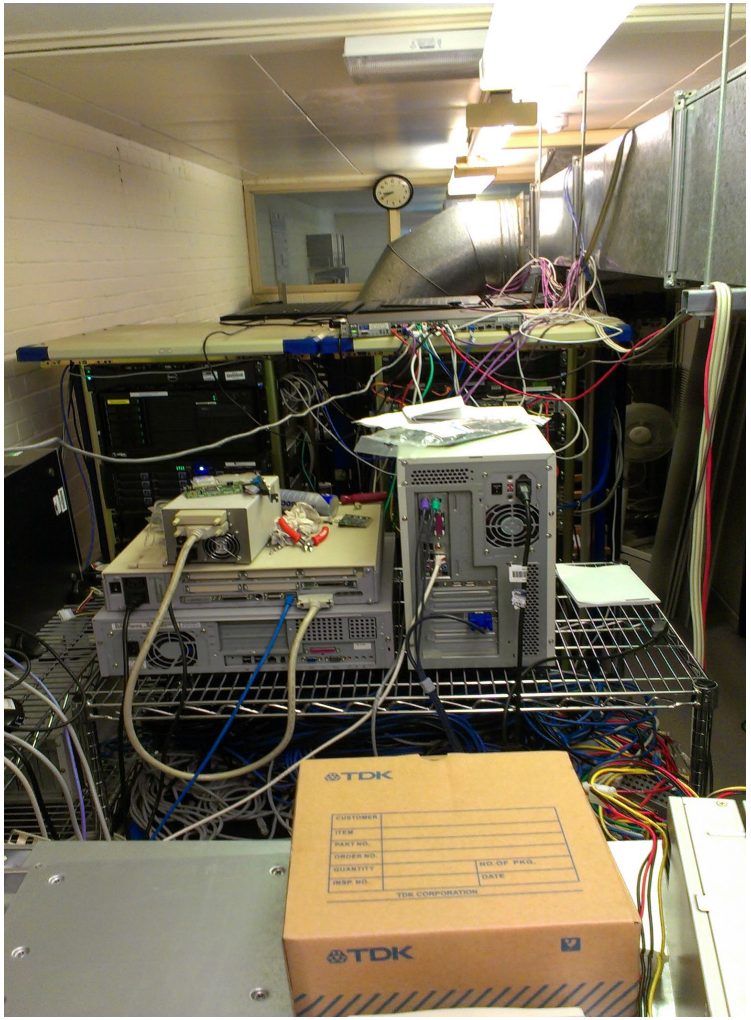
Local Data Centre Aug 2014

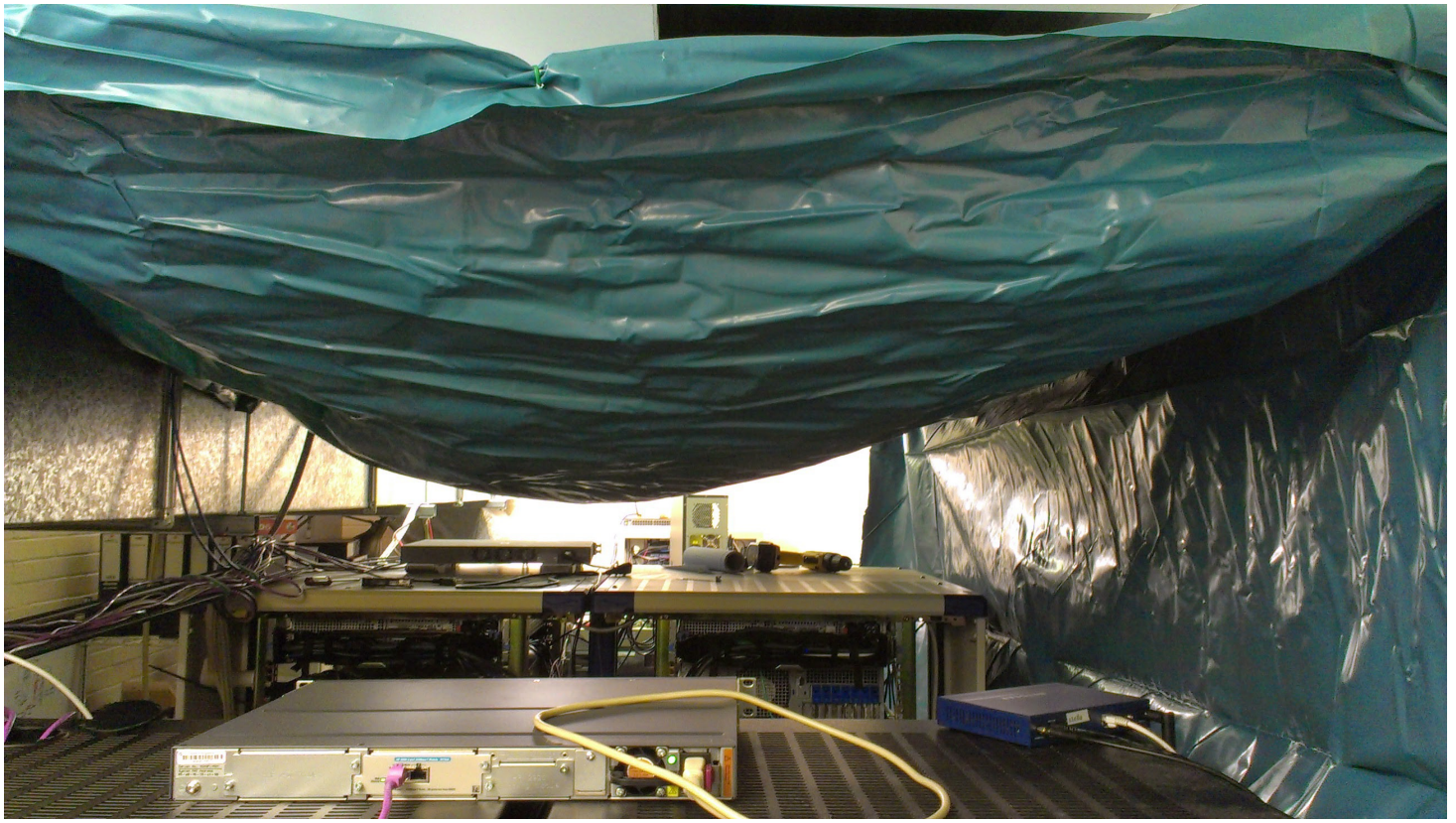
- Tier-3 at the back





Local Data Centre Sep 2014

- Unintended water cooling



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High Attrition Rate

Immediate Results:

- Switch failed -recovered
- Printers all wet, all recovered except HP A3.
- 3 HDDs failed in one RAID 6 array, just enough time for a hot-swap to sync up.

No data loss -Phew.

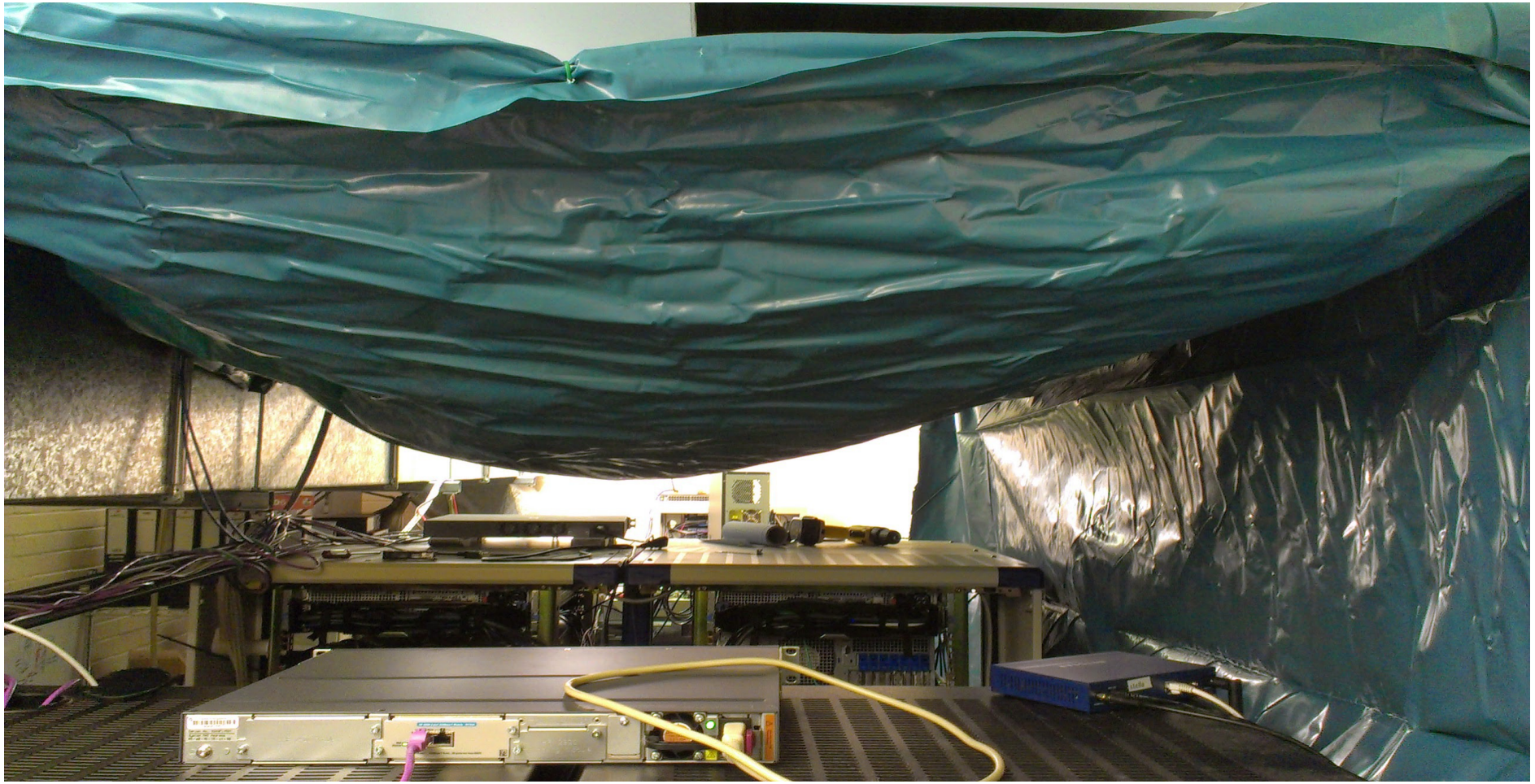
High Attrition Rate

Within a week...

- Several nodes failed
- Network management system failed.
- More storage HDD's failed...

...still Barry kept syncing new disks just in time, so no data loss!

High Attrition Rate
I built a tent...

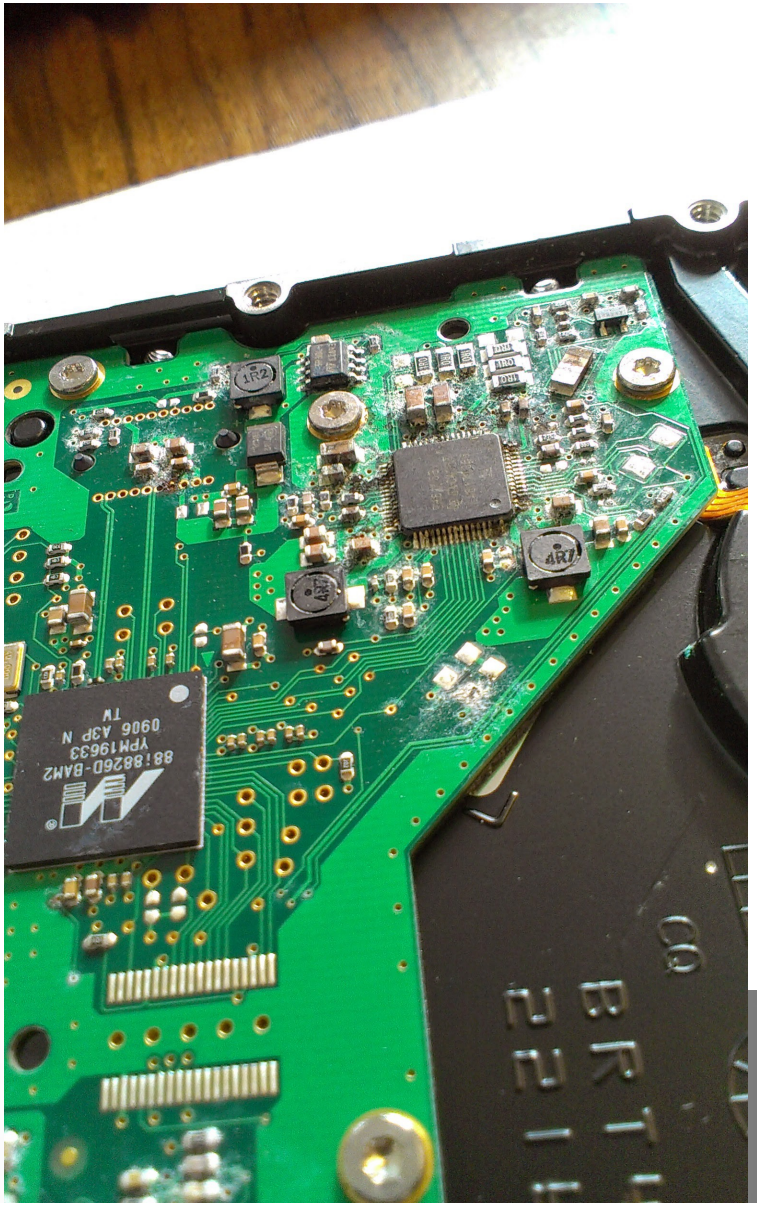


High Attrition Rate

Over the next 9 months.

- Other network management unit failed.
- Appserver failed, KVM console failed.
- Storage array backplane failed
- More nodes failed, and more HDD's
- Aircon controller failed.

Electrolysis



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More electrolysis...

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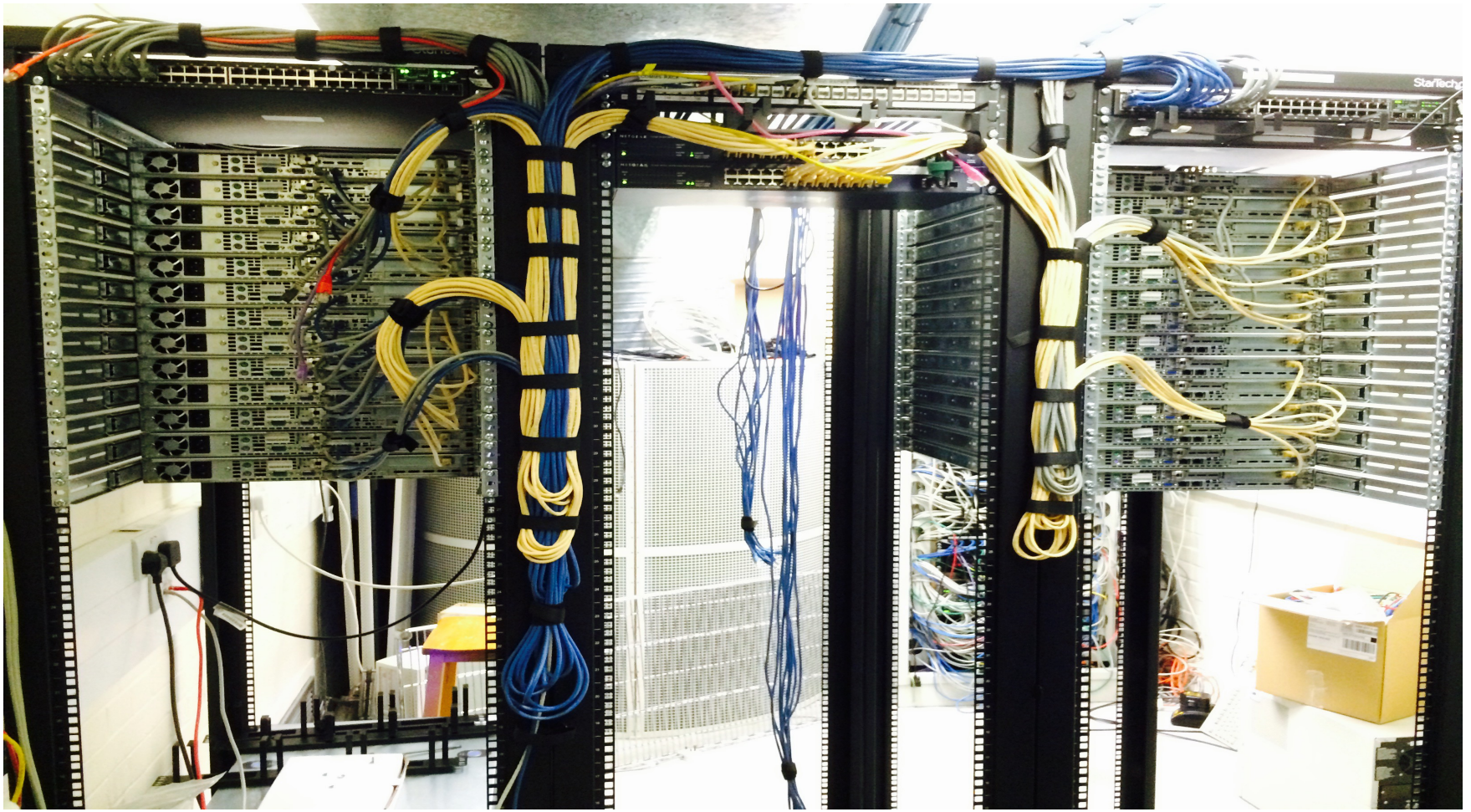
Local Data Centre March 2015



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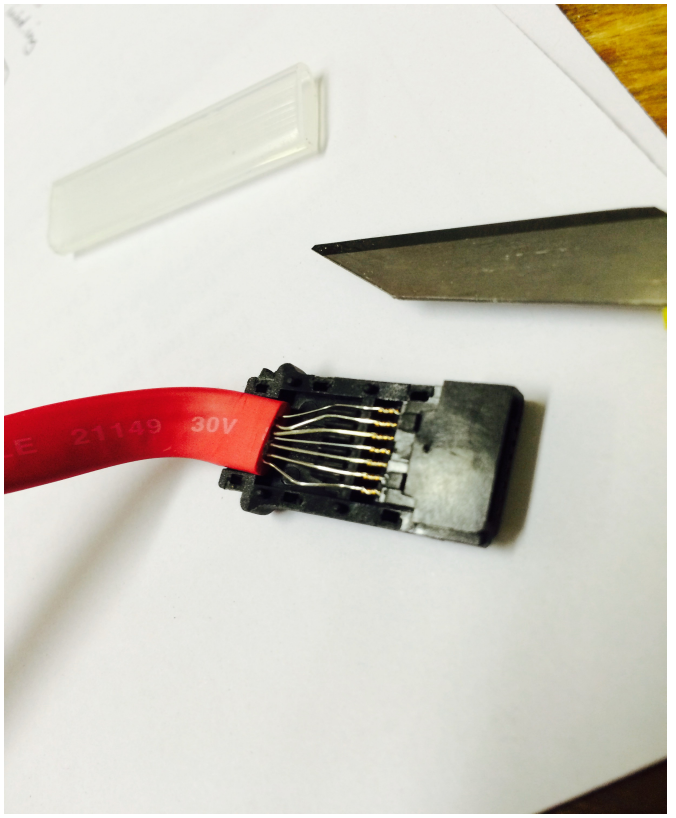
Issues of Interest

- SATA disks -rather high failure rate
- Dodgy SATA leads



Issues of Interest

SLC6 OOM condition on

Supermicro H8SMI

BIOS 080014 01/10/2011

- Hard Crash that caused the Dell 6248 to Spanning Tree reconfig and block uplink.
- **Isolating the whole rack!**
- Even RESET button had no effect.

Projects

- HDFS cluster scratch -ephemeral
- Ganglia/Graphite integration + Grafana
- ELK stack -better reporting, automate regular work
- Worker node expansion to ~100
- Replace custom scripts with Puppet
- Look at replacing kickstart with image install
- Look at diskless nodes running lite hypervisor

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Projects

- Seal roof