

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.



Documentation TWiki



PP/Computing

Hello [Arun Patel](#)

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– Create personal sidebar

PP/Computing Web

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[UGComm](#)

[WebGroup](#)

RHUL Physics Department TWiki > [PP/Computing Web](#) > [SysAdminDoc](#) (23 Apr 2015, GovindSongara)

Tags: [create new tag](#) , [view all tags](#)

Documentation for System Administration

This page is aimed at system administrators.

Warning: Some of the documents may contain Britalian (retained for posterity)

↓ [Documentation for System Administration](#)

↓ [To Do list](#)

↓ [System administrators meetings minutes](#)

↓ [Scheduled downtime plans](#)

↓ [Planning](#)

↓ [Security Policies and procedures](#)

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↓ [Server Management Notes](#)

↓ [Nagios](#)

↓ [TWiki](#)

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↓ [Virtual Machines](#)

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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!



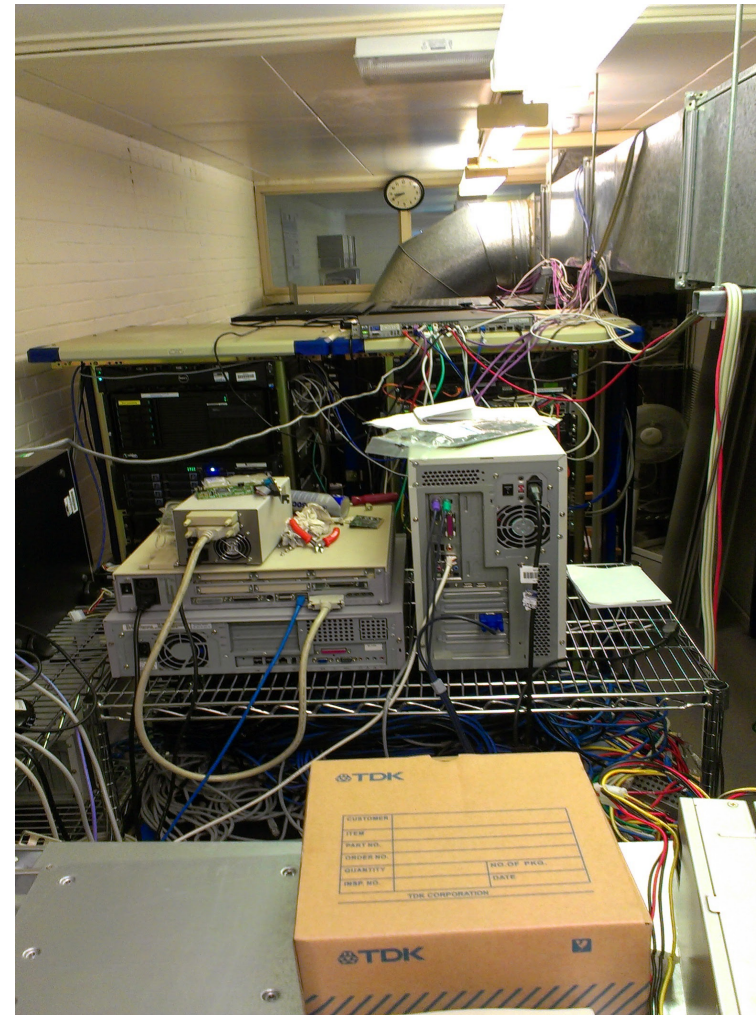
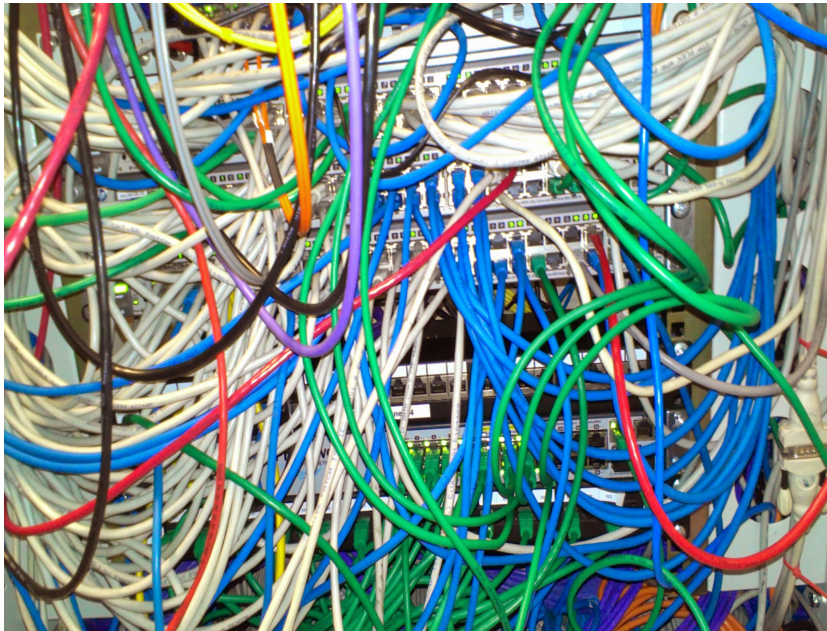
Tier-2 Installation

- Professionally installed



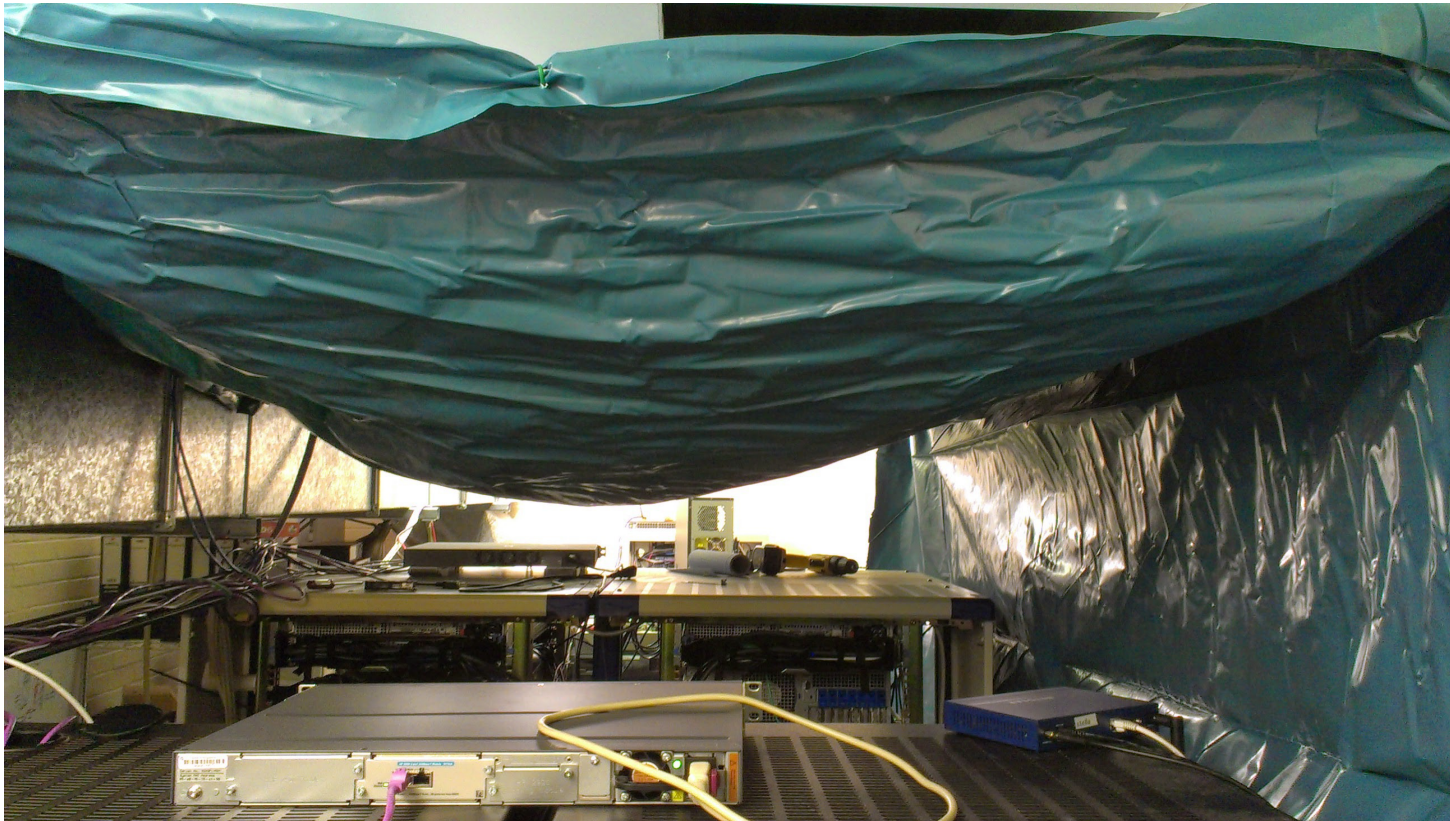
Local Data Centre Aug 2014

- Tier-3 at the back



Local Data Centre Sep 2014

- Unintended water cooling



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

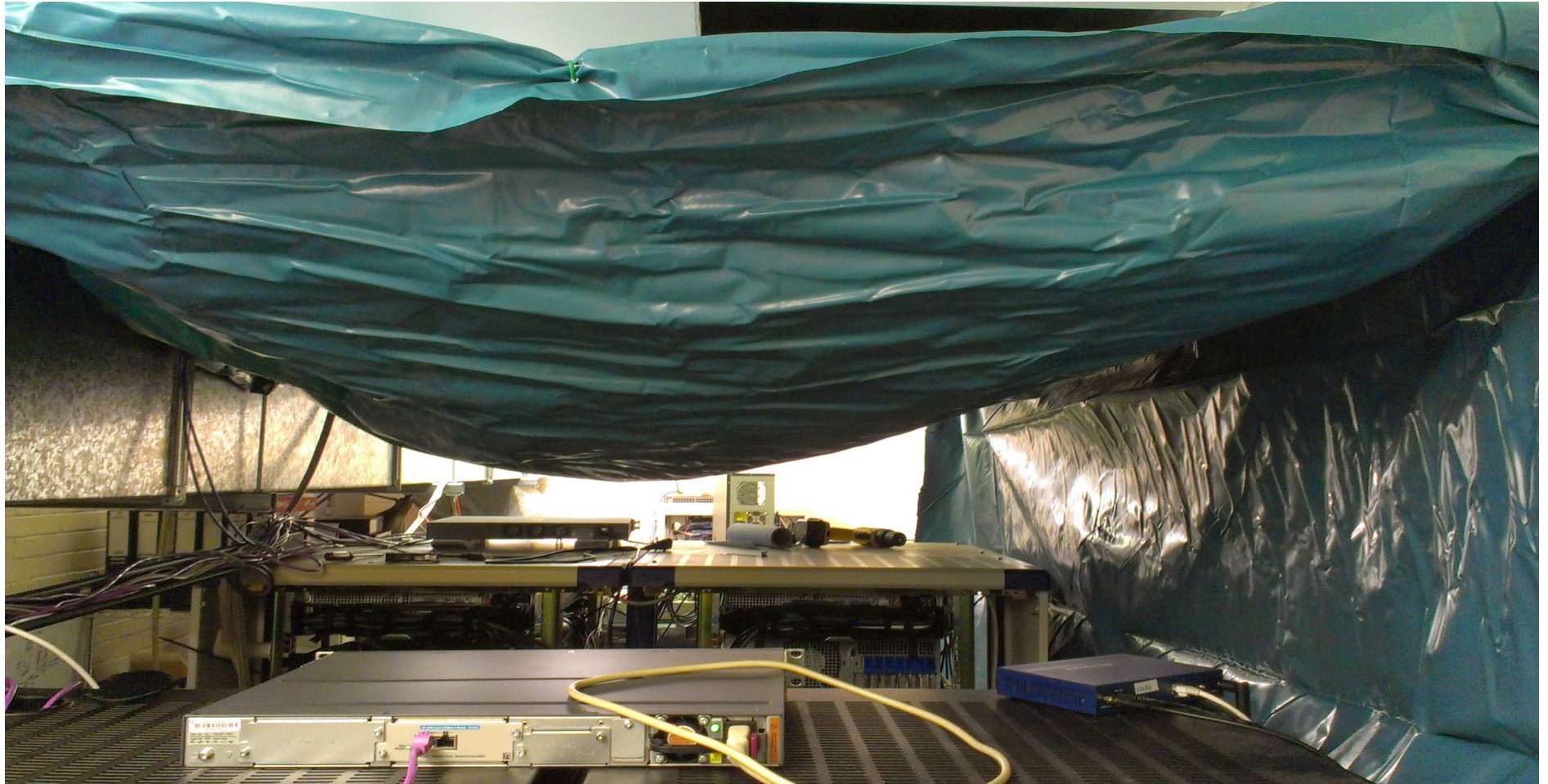
Within a week...

- 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...



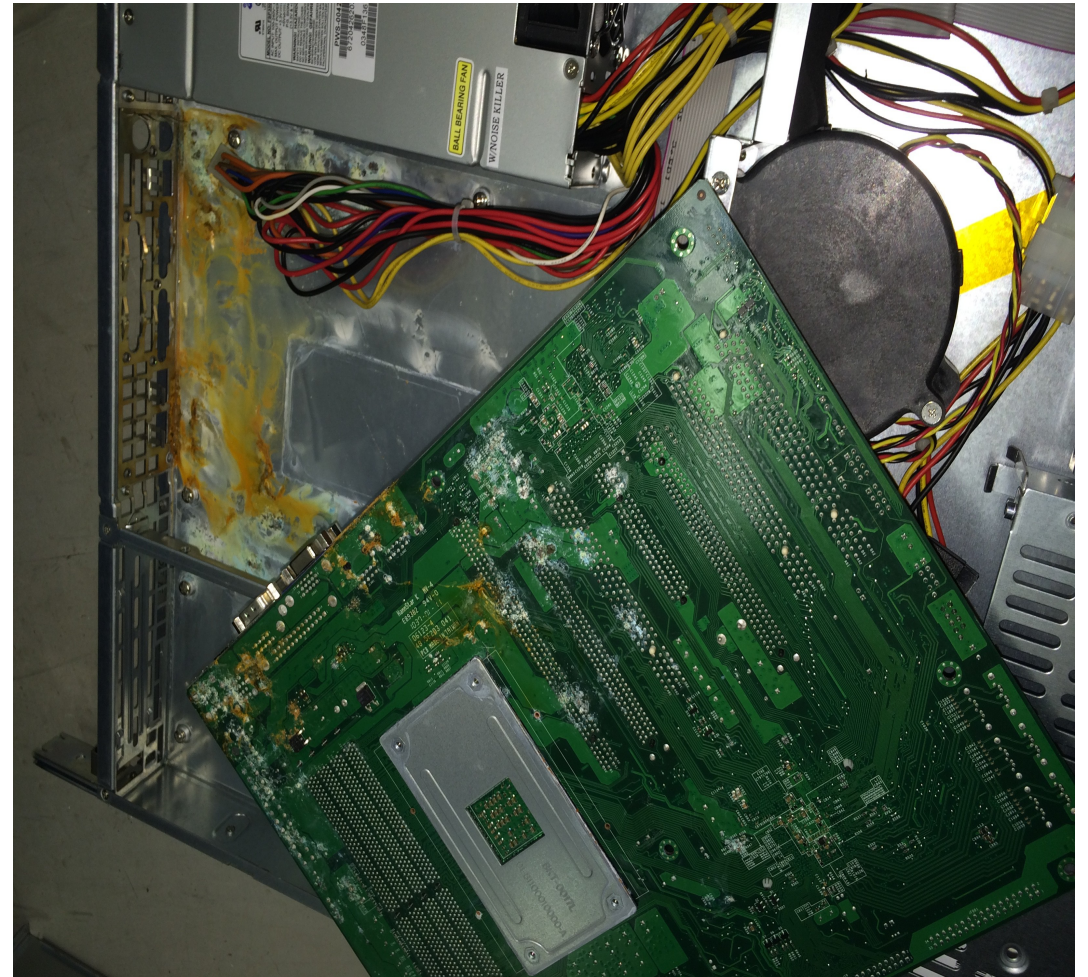
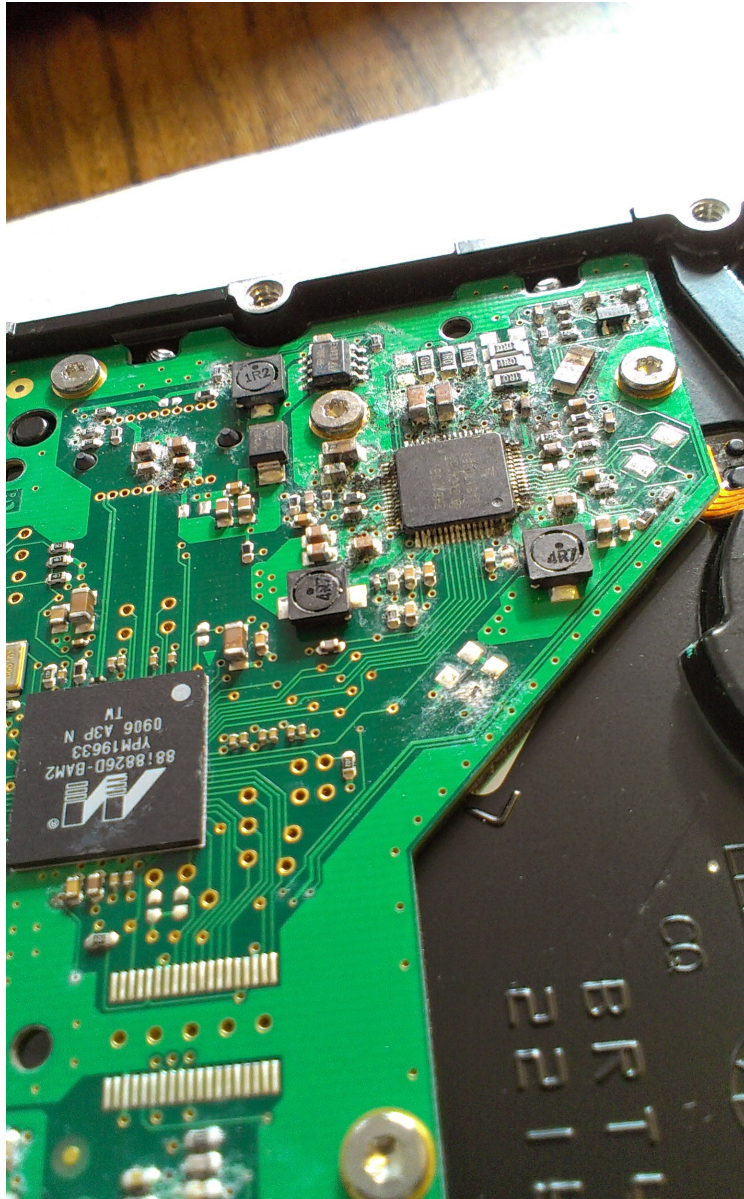
High Attrition Rate

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.



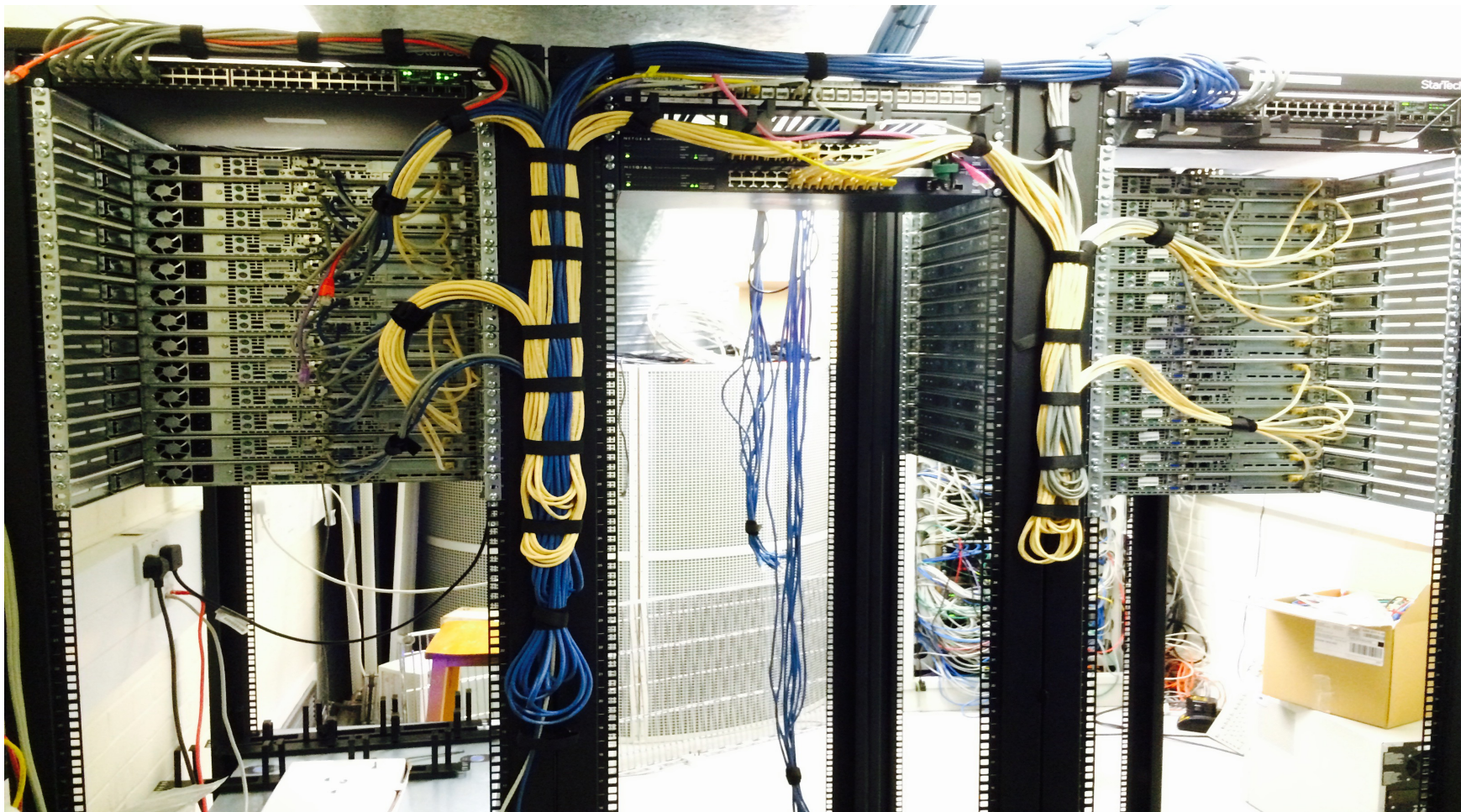
Electrolysis



More electrolysis...



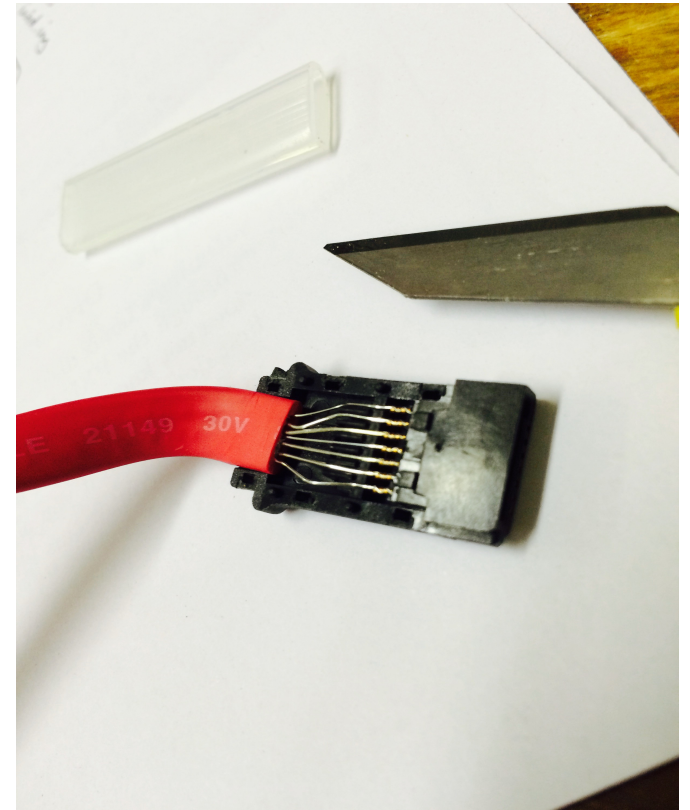
Local Data Centre March 2015



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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



Projects

- Seal roof

