RHUL Site Report

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HEP Sysman meeting @ RAL , June 2017

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Team

(New) Antonio – Tier-3 Sysadmin

Govind - Tier-2 Gridadmin

Simon - Site Manager

Barry - Tier-3 Hardware/Network

Tom - Tier -3 All rounder

Group Activities

ATLAS

- Benefit from strong collaboration software support
- Large Tier3 batch compute and storage resources for data analysis
- DAQ test systems

Dark Matter

- Detector development (lab DAQ systems)
- Growing need for compute and storage resources to analyse data
- Interested in using Grid for DEAP3600
- DarkSide20K, T2K, HyperK, LZ, HPTPC, DMTPC

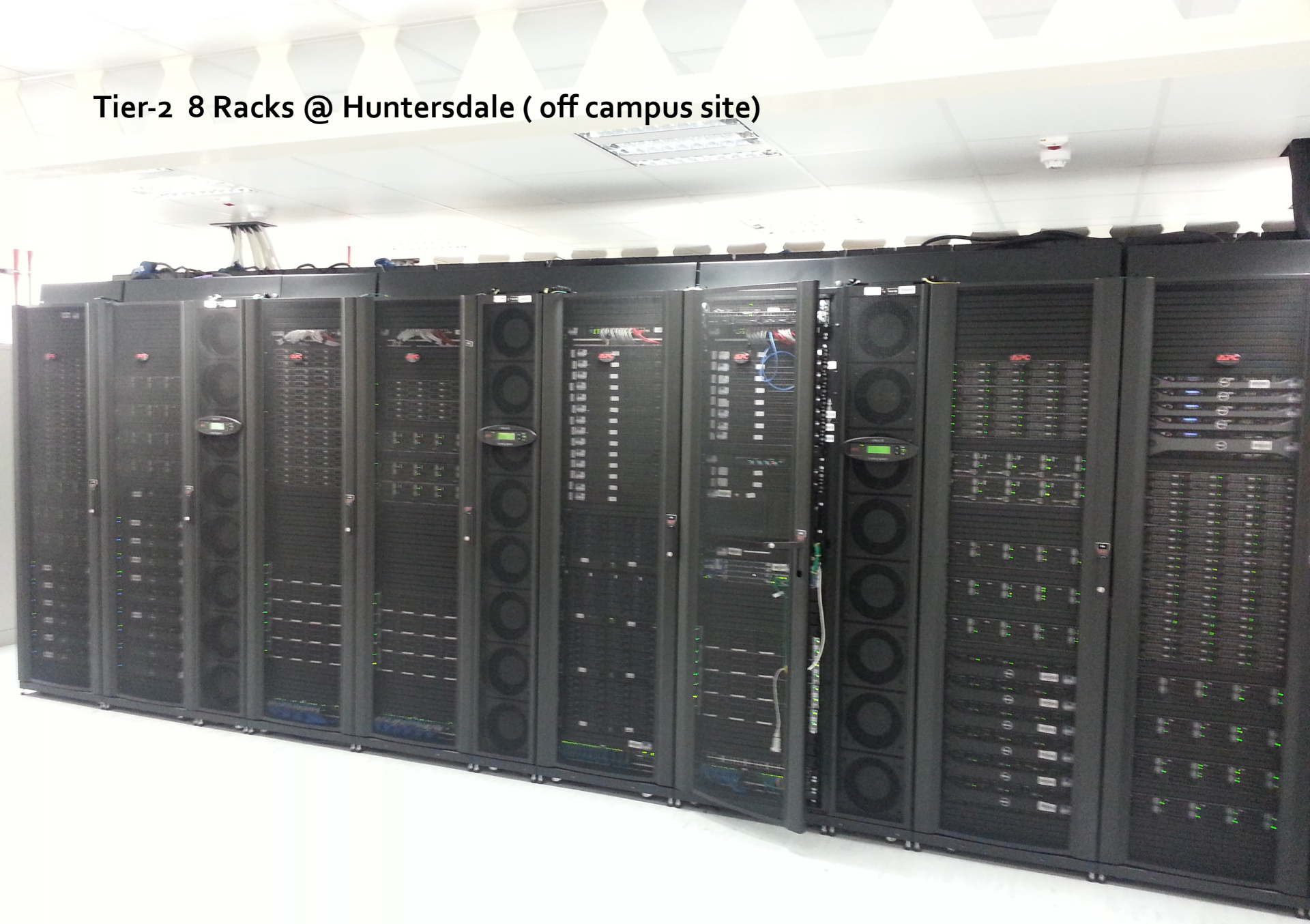
Accelerator (John Adam Institute)

- DAQ systems, HPC Cluster
- MPI simulation
- cdash server, NAS storage for backup
- HLLHCUK, FCC

Theory

- Occasional use of Tier3 cluster
- interest in MPI

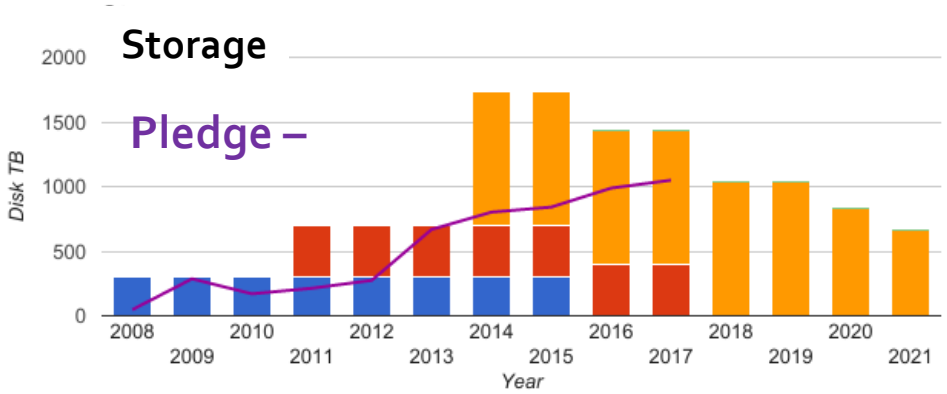
Tier-2 8 Racks @ Huntersdale (off campus site)

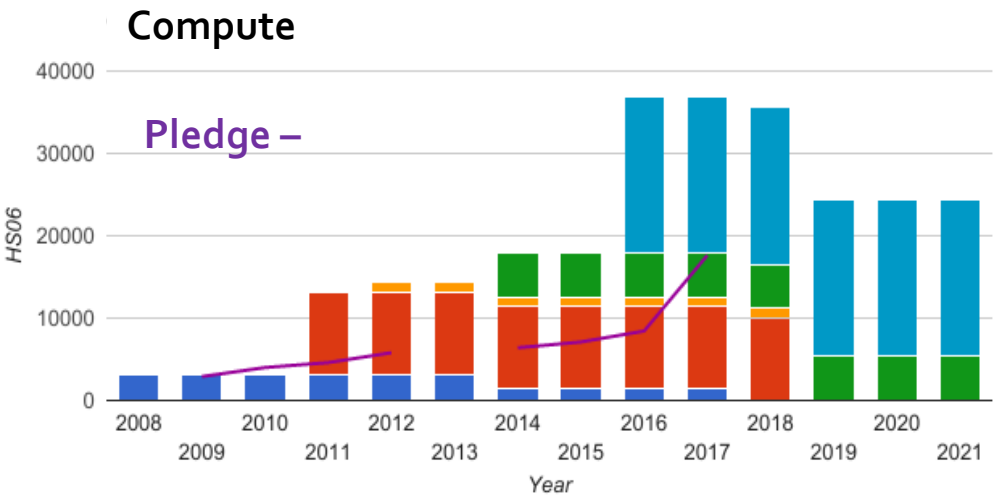


Tier-2 Grid

- 8 racks in modern machine room provided by central IT service
- 38 kHS06 in 140 WN; Cream/Torque CE x 2, moving to ARC/HTC
- 1.4 PB DPM SE in 47 servers
- 8 misc servers including 3 VM hosts running standard network services, provisioning, Grid services
- Dedicated 10 Gb/s uplink (+1 failover), 10 Gb/s network
- 1 FTE support, falling to 0.5 FTE during GridPP5

Main VO: ATLAS





Tier-2 Grid

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Issues

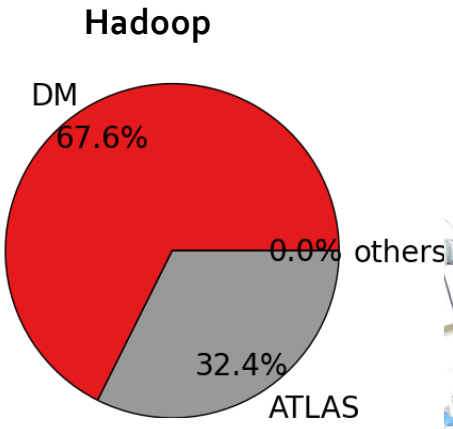
- **Limited by rack space and cooling,** need to decommissioned old kit to make room
- DPM headnode puppet migration challenging
- Working around long standing network problem resistant to understanding

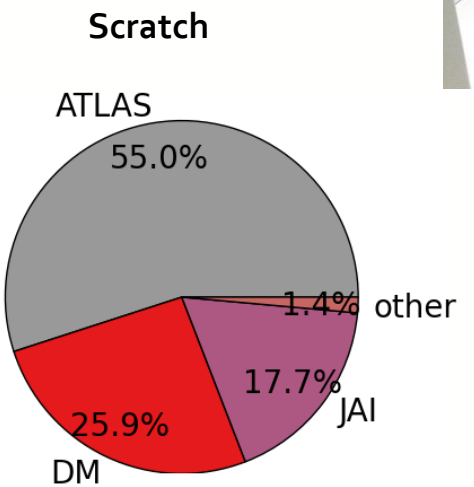
Planning

- CC7 Deployment server, services, cluster etc
- CC7 DPM pool node upgrade
- VAC test cluster
- IPV6 rollout
- ARC CE rollout
- Network hardware refresh
- Transition to low maintenance site.

Tier -3

- 8 racks packed into home-made machine room, a long way from Tier2 on 1 Gb/s link
- 6 kHS06 in ~100 old WN, mostly hand downs from Tier2, some upgraded; Torque
- Storage:
  - 80 TB Hadoop test system (3 replica) using 69 WNs
  - 170 TB NFS scratch over 7 servers
  - 10 TB NFS Home
- 11 servers running standard network services, mainly as VMs
- Recently upgraded to 48 port 10GbaseT backbone switch (Netgear XS748T





Tier-3

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Issues

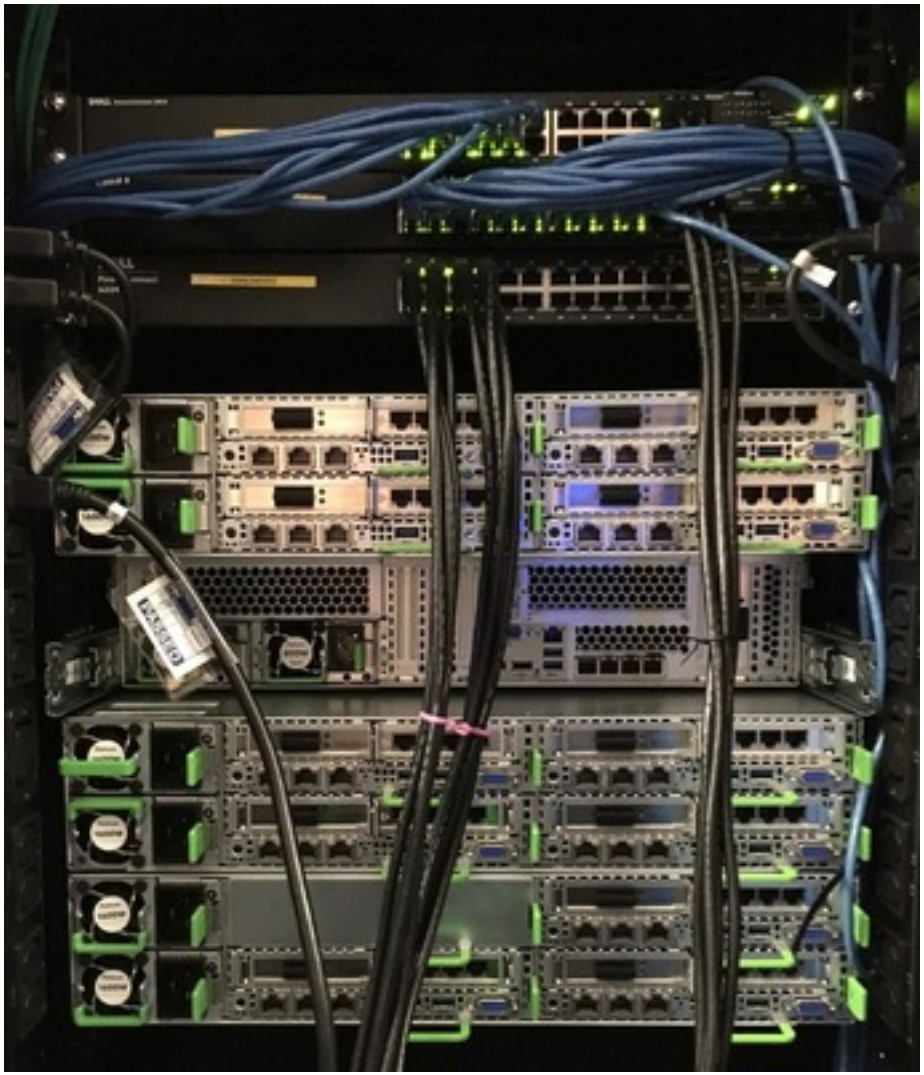
- Network bandwidth monitoring – recommendations?

Planning

- Backup name node for Hadoop, upgrade to latest release
- Add 100-200TB scratch space
  - ARC-1883IX-24, 10TB enterprise disks, 4x10Gb NIC
- Migrate batch system from torque to HT Condor
- Network mapping – NetDisco, lldp on all hosts
- Explore way to integrate more closely with Tier-2

HPC Cluster

- Use by Accelerator and other physics group
- Fujitsu - OCF kit.
- 11X compute node =~ 220 core
- less than 100TB storage.
- Infiniband interconnects with a bandwidth of 56 GBits.
- Slurm batch system, MPI stuff
- We may try back-fill it with HTC jobs from our Tier3 cluster.



Questions ?

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