RAL CASTOR Report

CASTOR F2F 2017

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- Staffing:
  - Miguel Lopez-Fernandez joined DB team
  - George Patargias now trained up and doing OC work
- ECHO deployed as production service
  - More on this from others...
- CASTOR upgrade from 2.1.14-15 to 2.1.15-20 completed Jan 2017
- CASTOR upgrade from 2.1.15-20 to 2.1.16-13 ongoing
  - Central services last Tuesday
  - LHCb stager last Thursday
  - Others likely next few weeks

CASTOR Version Status

Node Type	User	Version	OS
Stager & Disk Servers	LHCb, Repack	2.1.16-13	SL6
Stager & Disk Servers	ATLAS, CMS, Gen, Facilities	2.1.15-20	SL6
Tape Servers	All	2.1.16-0	SL6
Central Services	Tier 1	2.1.16-13	SL6
Central Services	Facilities	2.1.15-20	SL6
SRM	LHCb, ATLAS	2.1.16-10	SL6
SRM	CMS, Gen	2.11	SL5

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- Encountered bug in 2.1.15-20 that caused 10s delay in some stager calls

- Problematic but tolerable with 2.1.15-20 stager/2.14 SRM

- System broke down under LHCb's merge workflow following SRM 2.14 -> 2.1.16-10 upgrade

- Second 'bug' in 2.1.16 SRM that adds another delay
  - No big deal at CERN (?)
  - At RAL clear empirical link between new SRM and LHCb problems
    - Before SRM upgrade situation difficult but manageable
    - After SRM upgrade CASTOR broke down entirely
    - After SRM downgrade things back to pre-upgrade position
  - Impact post-2.1.16-13 upgrade is unknown
  - Will be pressure for fix if problems still seen

- Diamond Light Source, ISIS Neutron Spallation source, CEDA environmental data archive

- Last holdouts of rfio usage

- No SRM, migrating direct to xroot

- rfio retirement proving good motivation for migration!

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- Complete upgrade to 2.1.16-13 (or -15?)

- Migrate everything to new config management ('Aquilon') & SL7

- Virtualise headnodes
  - Current HW stock is very old (some 2009!)
  - Headnodes are still pets, not cattle
    - Most daemons only run in one place
  - Limited budget for new kit
  - HyperV virtualisation already deployed at scale
  - CASTOR test instance on HyperV running for 5 years!

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- CASTOR upgrades still done using downtime
  - Concern that online upgrades increase damage from failed upgrade
- What can you say to ease this concern?

- Newest D1T0 hardware from 2014
  - 110 TiB RAID 6
  - All the newer machines -> Ceph
  - Plan to drain/remove hardware in synch with migration to Echo
- No urgency to move D0T1 to Ceph
  - Dell servers procured in 2015 are still fine
  - Both Echo and CASTOR teams have more pressing concerns

- All D1T0 decommissioned, running on Echo
- Single D0T1 instance with HNs on virtual infrastructure.
  - 'Generic HNs' are a nice-to-have
- No preference on whether disk storage supplied by Echo or CASTOR-managed disk.

- We note planned EOL for CASTOR at CERN
  - 'Mid 2019' still correct?
- Running tape (or tape-like) storage a requirement to remain a Tier 1
- Currently scoping out options:
  - Preference for generic solutions
  - Possibility for running CASTOR at RAL for transition period after its retirement at CERN.

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