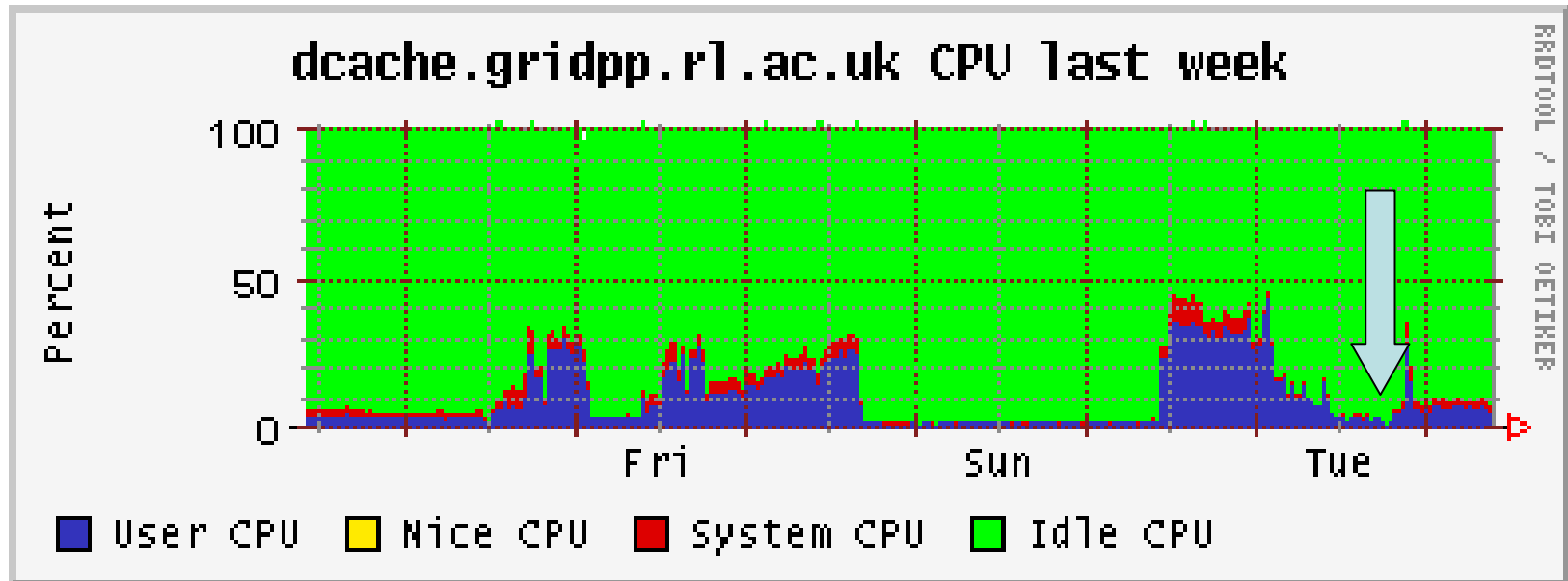# dCache at RAL

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Setup

- 8 GridFtp/GSIDcap door systems
- 10 Disk servers (more soon)
  - Some small partitions on another
  - 4*2 pools to act as tape cache to ADS
- "Head node"
  - PNFS
  - PoolManager etc, Main SRM door

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Setup 2

- Separate Postgres system
  - Mainly for CPU load reasons

dcache.gridpp.rl.ac.uk CPU last week

Legend: User CPU, Nice CPU, System CPU, Idle CPU
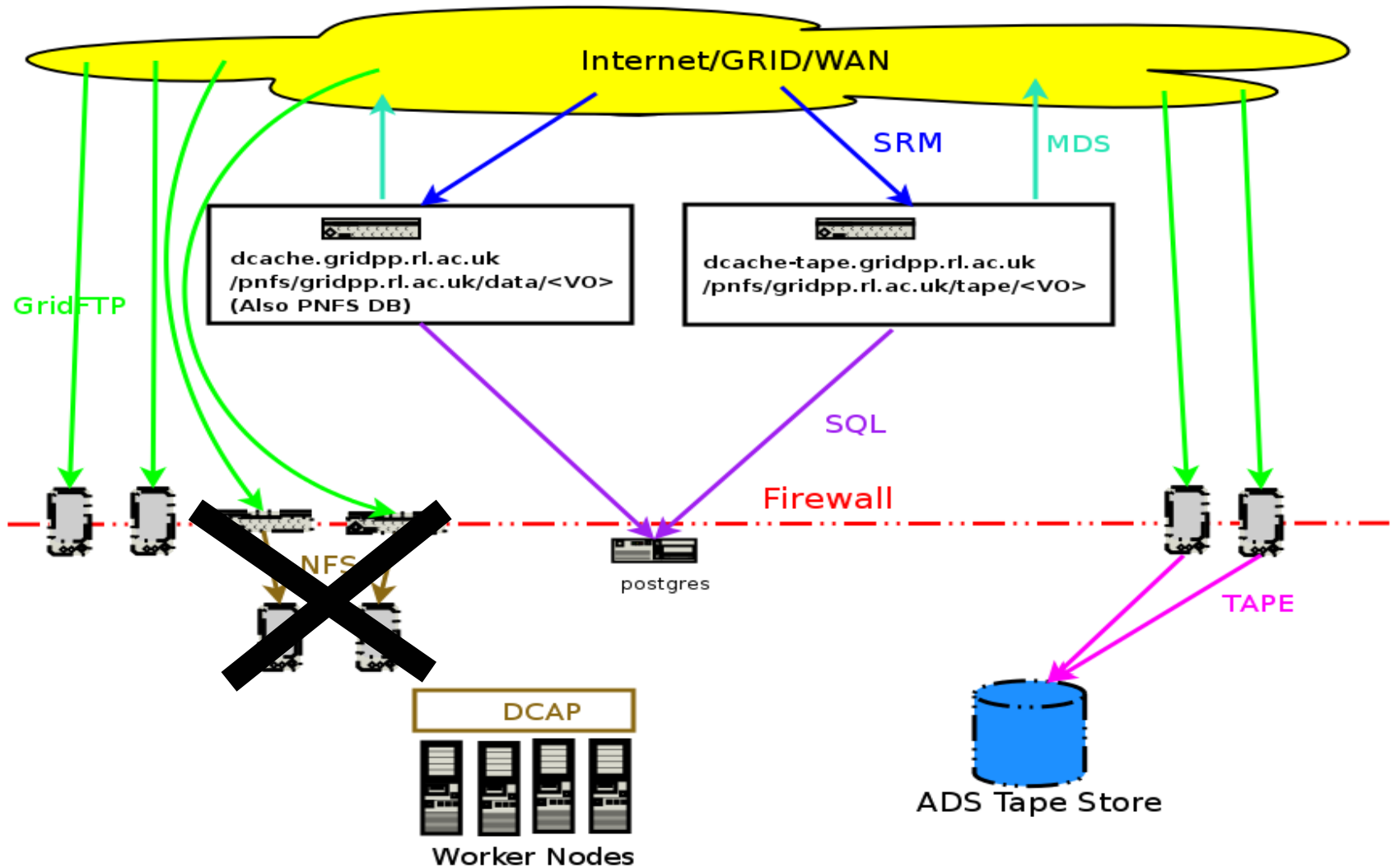
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Setup 3

- Second SRM door on separate system for tape access
  - Allows us to have different lifetimes for tape access versus disk access
  - LCG info system only allows an SE to publish one StorageRoot per VO

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Historical Setup

- Pool disk nfs mounted
  - Not successful, nfs hanging under transfers
    - Pool was running but disk inaccessible

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CCLRC

Internet/GRID/WAN

SRM

MDS

GridFTP

dcache.gridpp.rl.ac.uk
/pnfs/gridpp.rl.ac.uk/data/<VO>
(Also PNFS DB)

dcache-tape.gridpp.rl.ac.uk
/pnfs/gridpp.rl.ac.uk/tape/<VO>

SQL

Firewall

NFS

postgres

TAPE

DCAP

Worker Nodes

ADS Tape Store

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Future Setup

- Continue to add disk servers
  - New LHC experiments disk allocation
- Move SRM door off admin node
- Put admin node on more robust system

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Hardware

- Disk Servers
  - Dual 2.4GHz P4 Xeon, 1GB memory
    - 2x 1.7TB partitions RAID 5
  - Dual 2.8GHz P4 Xeon, 2GB memory
    - 4 x 1.5TB partitions RAID 5

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Hardware 2

- Other Systems
  - Head node, Postgres node
    - Dual 2.66GHz P4 Xeon, 2GB memory
  - Gftp servers
    - Dual 2.8GHz P4 Xeon, 2GB memory

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Network

- Everything on Gb network
  - But not in same room, 4Gb between rooms
- Two routes out
  - Default through site router to JANET
  - Secondary via OPN to CERN, Lancaster

Configuration

- Experiments/VOs are allocated disk
  - Need to be able to show that they have it
  - Use PNFS tags to send files to VO's pool group

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Problems

- lcg-gt as file existence check
  - no corresponding lcg-sd
  - blocks transfer slot (for 24hrs in default config)
- FTS gave up on transfers, but didn't inform SRM
- ***Pool logs filling***
  - *removeFiles : invalid syntax in remove filespec >null<*

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Problems 2

- ## PinManager hangs

- ## Can't SrmCopy from castorgrid.cern.ch

- 07/21 10:05:40 Cell(RemoteGsiftpTransferManager@utilityDomain) : [id=3419 store src=gsiftp://castorgrid.cern.ch:2811//shift/lxfs6013/data02/zh/stage/ZippedEVD.63300016.63300030.eg_Hit245_2_g1 33.eg03_jets_1e_pt2550.zip.981194 dest=///pnfs/gridpp.rl.ac.uk/data/cms/TEST FILES GO IN HERE/heartbeat]:sending error reply, reply code=8 errorObject=tranfer failed :org.globus.common.ChainedIOException: Authentication failed [Caused by: Operation unauthorized (Mechanism level: Authorization failed. Expected "/CN=host/castorgrid.cern.ch" target but received "/C=CH/O=CERN/OU=GRID/CN=host/castorgrid02.cern.ch")]

- ## PostGres

  - – Seems to slow down over time
  - – Have to drop tables

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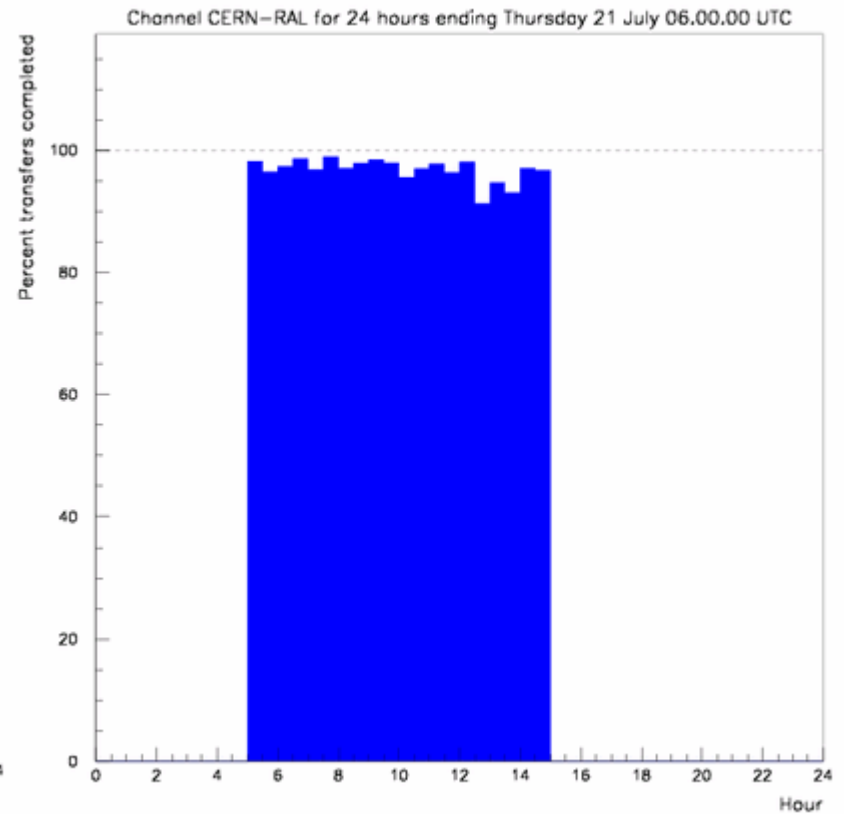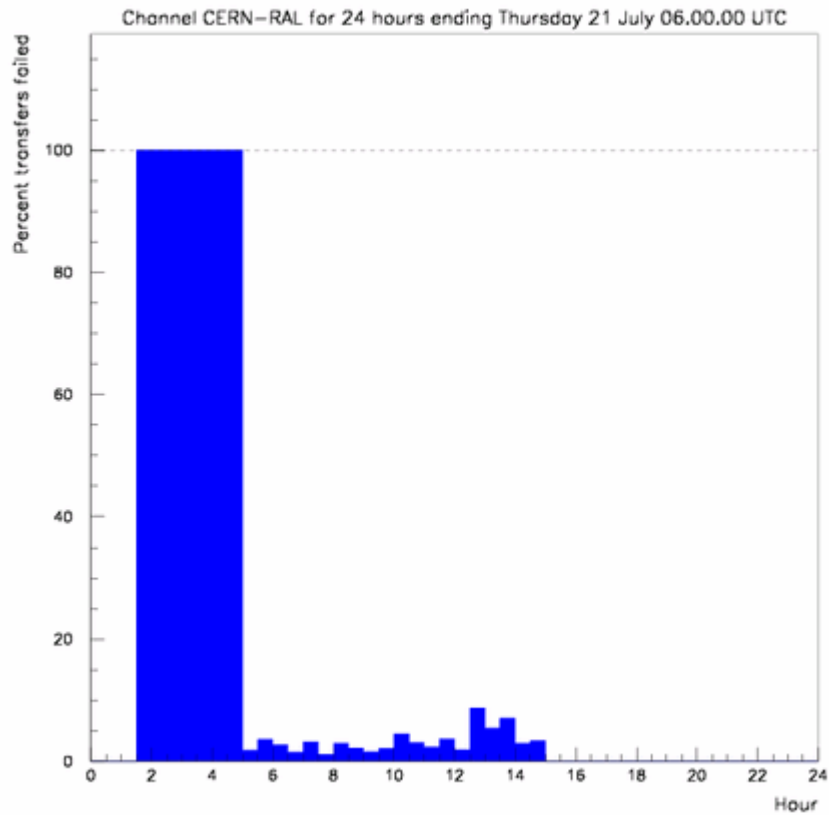
Performance

- SC2
  - 75MB/s to disk
  - 50MB/s to tape
- SC3
  - disk rate varied wildly
  - 60MB/s to disk

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Performance 2

- Seen better
  - Achieved 3000Mb/s into dCache locally(Pre-SC2)
  - Need to rerun test

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- Comment/Questions?

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