

Site report HIP / CSC

HIP : Helsinki Institute of Physics
CSC: Scientific Computing Ltd.
(Technology Partner)

Storage Elements (dCache)
for ALICE and CMS



What's happening here ?

ALICE : part of the NDGF T1-centre

CMS : T2-centre

Storage-Elements (dCache)

Computing-Elements (arc, gLite)



Hardware installation

Disk :

- ⌘ CMS : ~100 TB
- ⌘ ALICE : ~70 TB

Tape :

- ⌘ ALICE : ~64 TB 1styr

Server (HP-Blades):

- ⌘ CMS : 5
- ⌘ ALICE : 2
- ⌘ Cold spare : 1



Server-Installation:

HP-Blades with own chassis

- ⌘ 64Bit, 2x4 cores, 2.33 GHz
- ⌘ 12 GB RAM
- ⌘ mirrored System Disk
- ⌘ 6x 1GB Ethernet
- ⌘ 2x FC 4Gb (QLogic)
- ⌘ Scientific Linux 5.x



Server-Installation:

CMS :

- 1 Admin-Node
- 1 SRM-Node
+ xrootd-Door
- 3 Pool-Nodes
(+gridftpDoor)

ALICE :

- 2 Pool-Nodes
- Tape-Server
(CSC-internal, SAM-FS)



Disk-Installation:

Hitachi Mid-Range Raid-System



Mostly SATA, some FC
connected via multipathed SAN

Tape-Installation:

Use of existing Tape-server at CSC.

Type : SAMFS

Connectors to dCache written by CSC
(but still to be implemented)



Network:

dCache-Servers:

private and public interfaces (1GB/s)

public: 1GB FUNET uplink

(Will be connected to OPN “after summer”)

private: shared with CE “sepeli”, pools are bonded to 4GB/s each, admin/srm : 1GB/s



dCache Setup:

admin-Node : pnfs, psql, adminDoor et. al.

srm-Node : srm, psql, xrootd

pool-Nodes : pool, gridftp, 24 TB disk



Monitoring:

Accessible with Grid-certificate via:

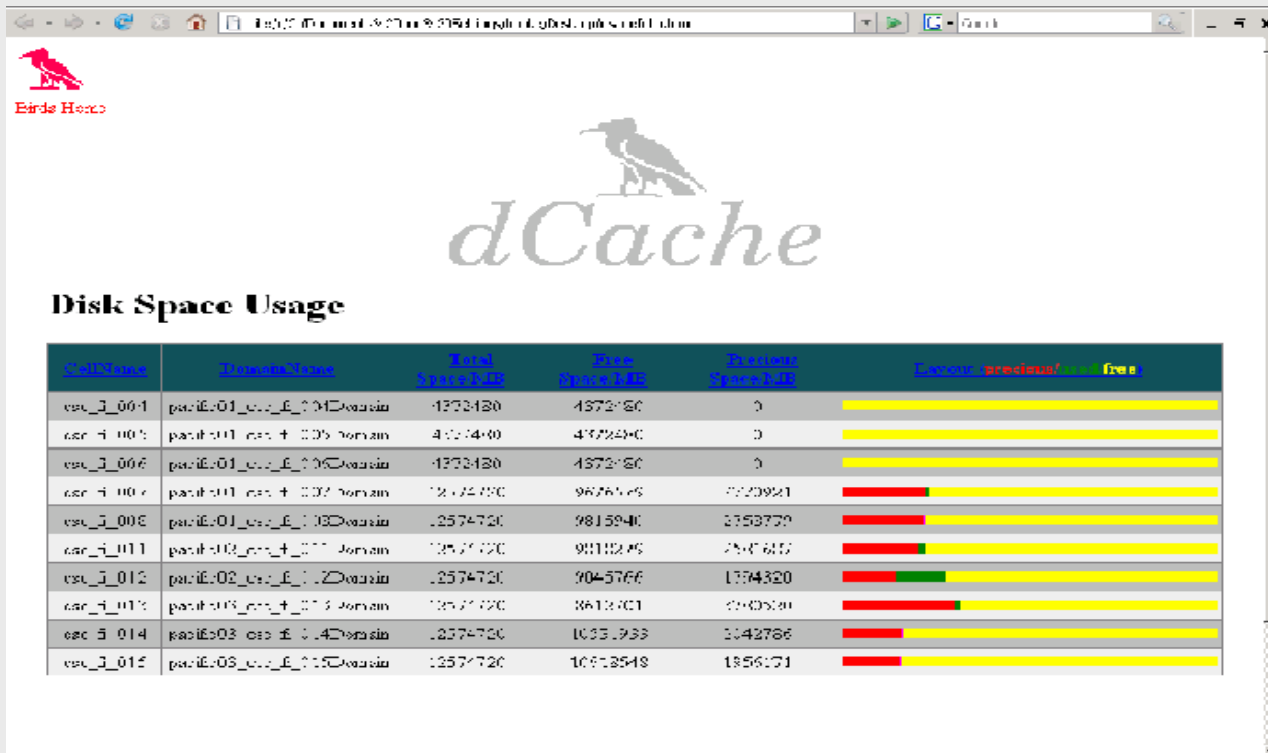
<https://duchess.csc.fi>

- ⌘ dCache-pages
- ⌘ srmwatch
- ⌘ ntop



Monitoring - dCachepages

www.dcache.org

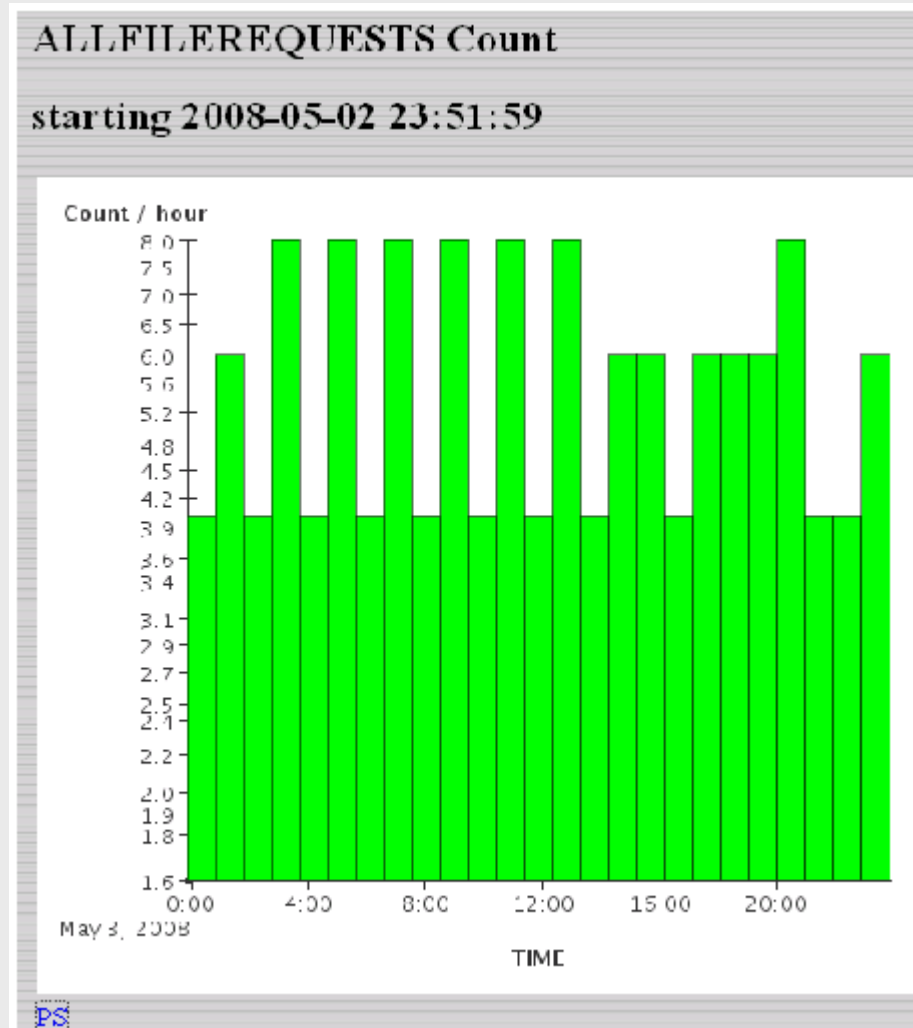


Site report HIP / CSC

Monitoring - srmwatch

search web for :
srmwatch dcache,

not yet fully functional.



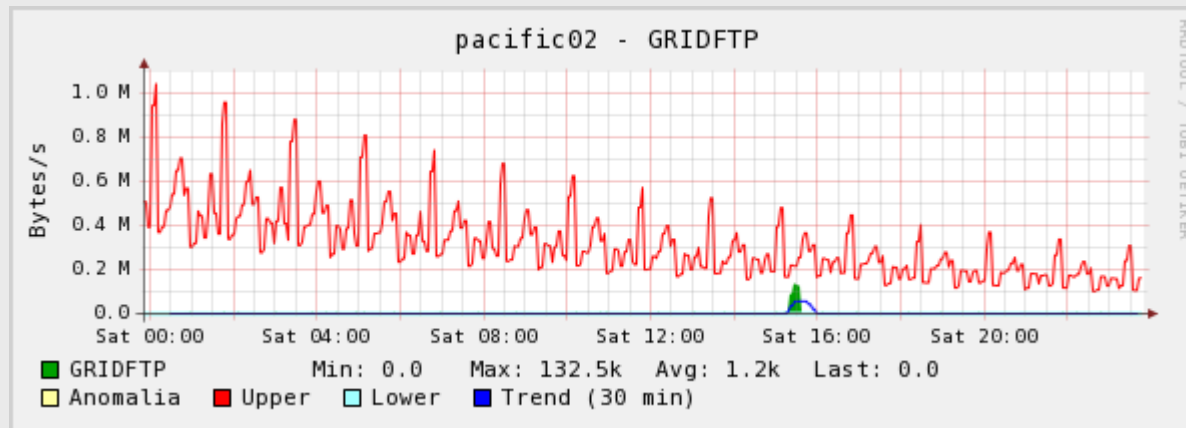
Christof Hanke, HEPIX Spring Meeting 2008, CERN



Monitoring - ntop

www.ntop.org

dCache traffic, here gridftp WAN-ifce pool-node,
still some work to be done here.



Future plans

- ⊗ attach tape to ALICE pools
- ⊗ work in progress :
 - ⊗ srmwatch
 - ⊗ ntop/dCache
- ⊗ nagios monitoring
- ⊗ set up workflows for dCache (remove pools, consistency checks, functionality checks)



Thank you for your attention.

Comments ? Questions ?

