CSCS

Swiss National Supercomputing Centre

CSCS Tier-2

Phoenix cluster

Summary

- Cluster configuration
- Application software
- Monitoring tools
- Experience with LCG
- Usage reports
- Collaboration with SWITCH

PHOENIX cluster

Intel dual-Xeon 3.0 GHz, 4 GB RAM:

- 1 Master node
- 1 File Server connected to disk array
  (2 TB x VO; RAID 5)
- 15 Worker Nodes (30 CPUs)

Intel Pentium4 3.0 GHz, 1 GB RAM

- 1 Login/Monitoring node
- 1 NorduGrid frontend
- 1 DHCP server / Application software repository

Batch system

Torque: queue manager

- max # jobs
- max CPU time
- max wall-clock time
- user/group restrictions

MAUI: job scheduler

- queue/job priority
- fair resource allocation

Batch system (2)

Torque:

- 6 queues
- same configuration for all queues
- each queue can get all 30 CPUs

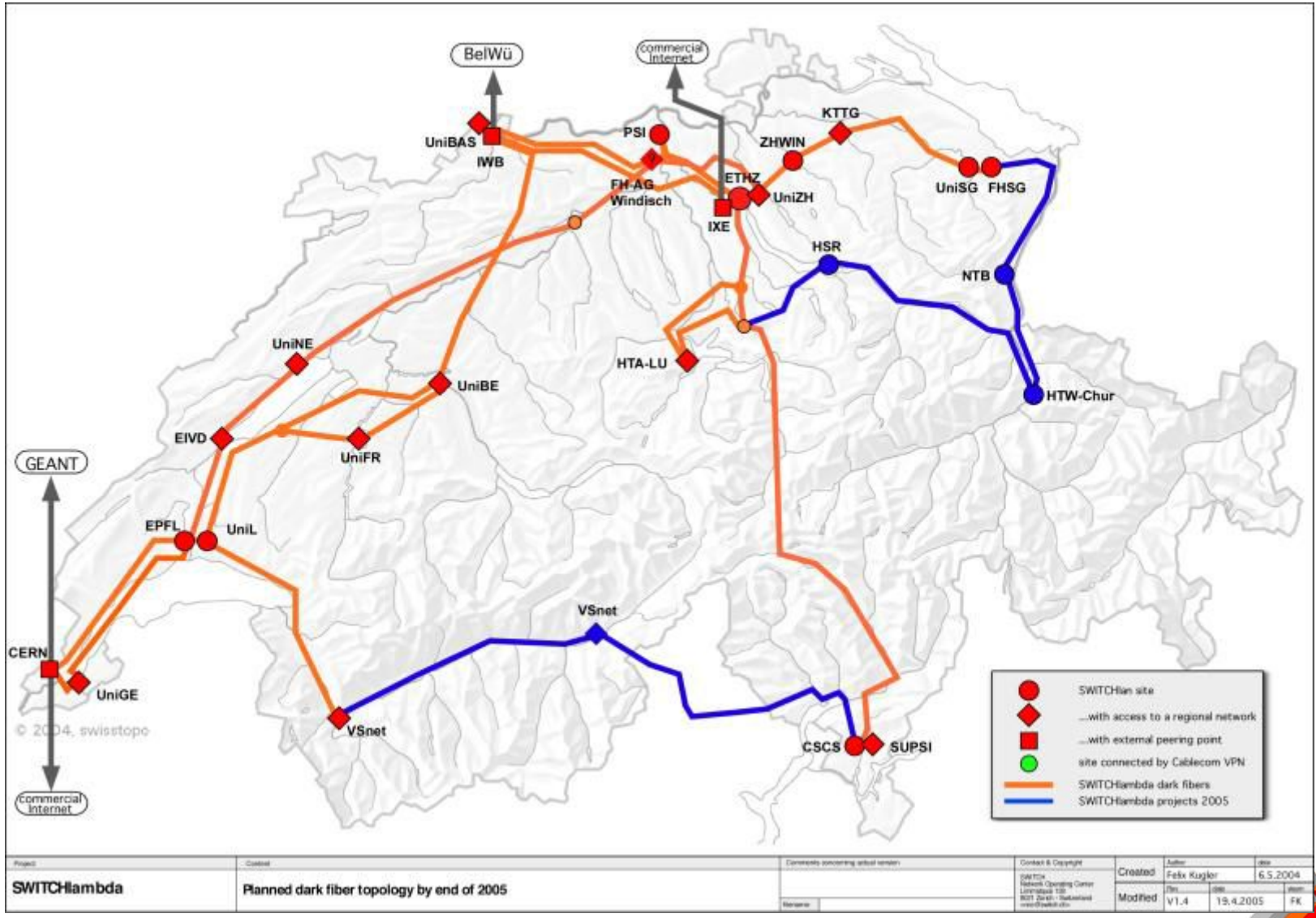
- ATLAS
- CMS
- LHCb
- NorduGrid-ATLAS
- NorduGrid-CMS
- NorduGrid-LHCb

Batch system (3)

MAUI implements job scheduling

- No FIFO
- Equal share to all queues
- Period of 7 days
- High priority to short jobs

Network connection



Application software

Scientific Linux CERN 3.0.5

ATLAS:

- release-9.0.4
- release-RH73-9.0.4
- release-10.0.1

LHCb:

- Gaudi-v15r3
- Gaudi-v15r5
- DaVinci-v12r11

CMS:

- CMKIN_4_2_0_dar
- CMKIN_4_4_0_dar
- ORCA_8_7_1_SLC3_dar
- ORCA_8_7_3
- ORCA_8_7_4
- OSCAR_3_6_5
- OSCAR_3_6_5_SLC3_dar

Monitoring

Project web page

https://savannah.cern.ch/projects/edginstall/

- LCG for CSCS Tier-2
- NorduGrid
- Phoenix queues

LCG middleware experience

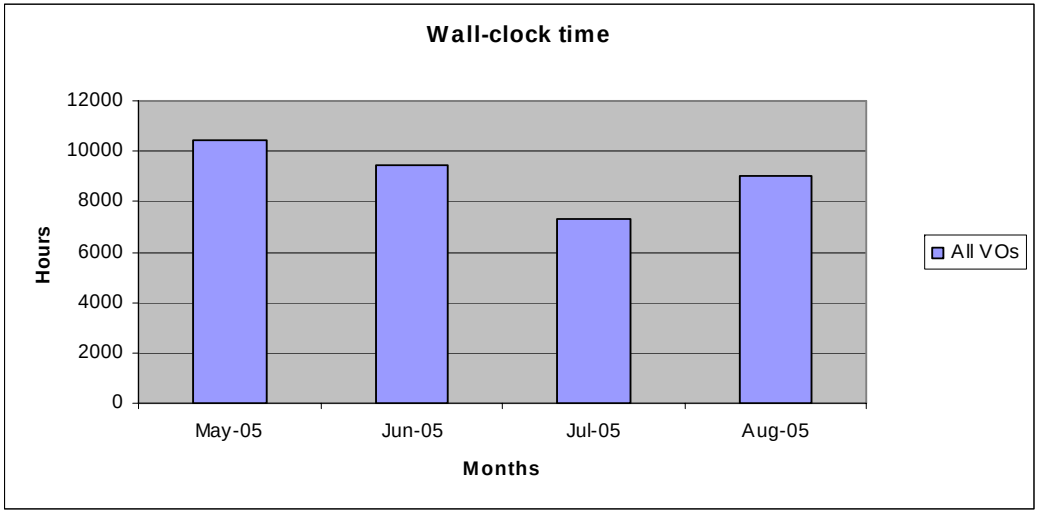
Releases are improving:

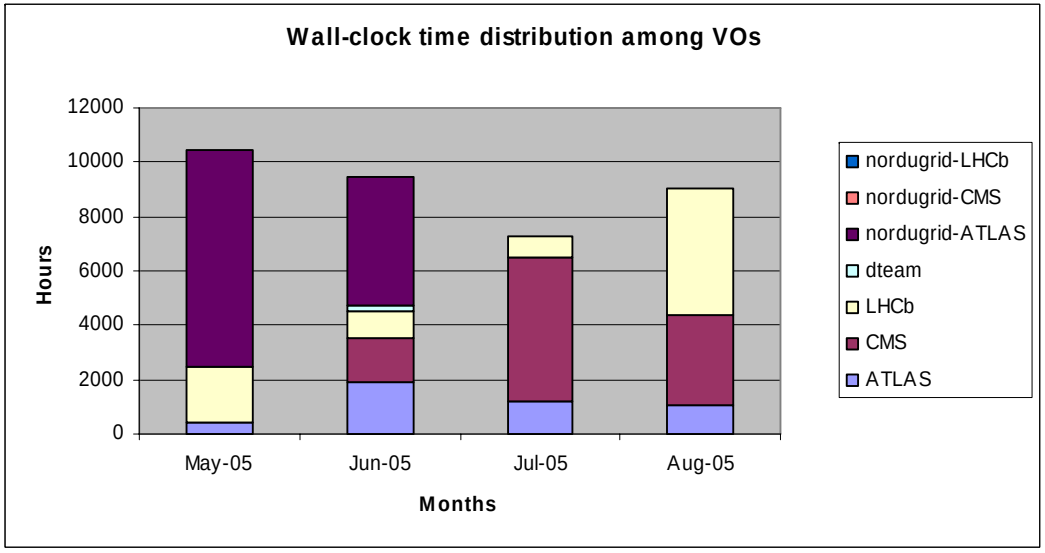
- Separation between OS and middleware
- Automatic OS updates
- One single configuration file for all the cluster
- Multiple service nodes on a single host
- No need to stop the cluster during upgrade

Yet to be provided:

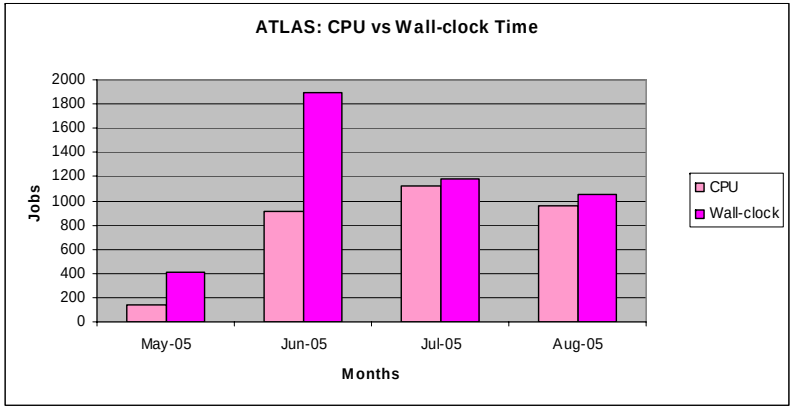
- Tools for cluster management
- Support for several Operating Systems
- Installation on non-dedicated clusters

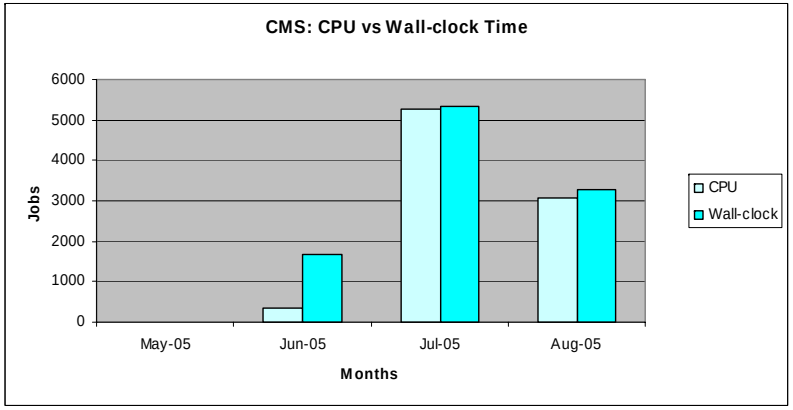
Report May-July

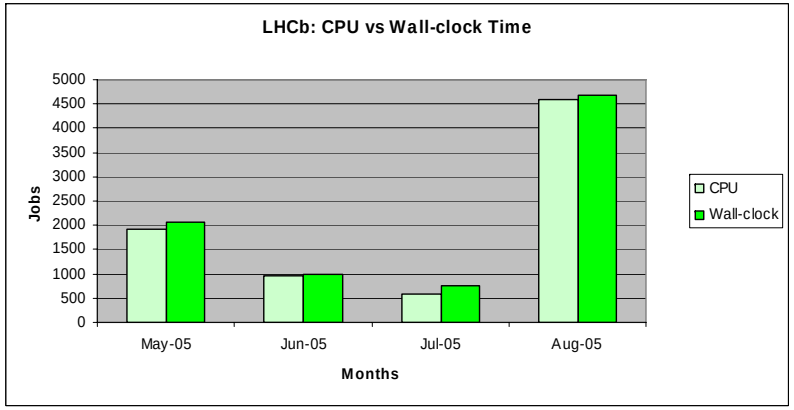


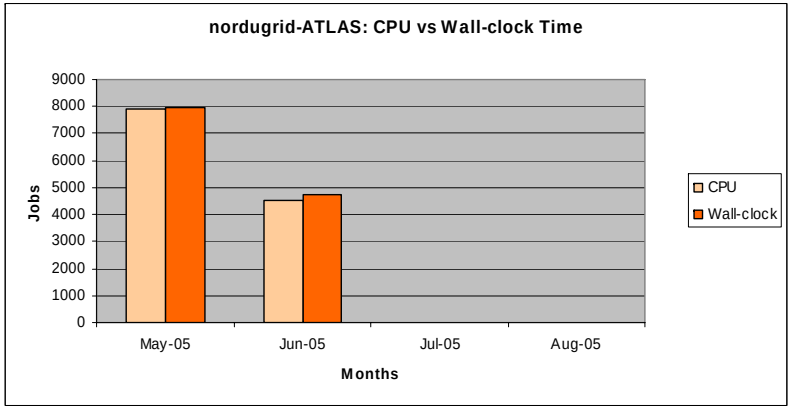


Report May-July (2)









SWITCHpki

Background:

- LCG resources accept only authenticated users
- Users need a digital certificate
- Digital certificates are issued by certification authorities (CA)
- Each country in LCG should have its own authority
- Switzerland had no authority, users were getting certificates from CERN

SWITCHpki (2)

News:

- In April 2005 SWITCH CA was accepted by the EUGridPMA
- Digital certificates issued by SWITCH CA are automatically accepted by all LCG resources
- Users can already asks for certificates
- CSCS is negotiating with SWITCH CA to obtain server certificates