



CSCS

Swiss National Supercomputing Centre

LCG Cluster at CSCS

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Background

June 30th → replacement of LCG cluster hosted at CSCS

New system integrated and tested by the vendor



Requirements

1 Master node

- Dual-CPU \geq 2.0 GHz
- RAM \geq 2 GB
- 2 hard disks \sim 160 GB, RAID 1
- Redundant power supply
- 1 Gbit network card

40 computing nodes

- CPU \geq 2.0 GHz
- RAM \geq 1 GB
- 1 hard disk \geq 100 GB
- 1 Gbit network card



Requirements

1 File Server

- CPU \geq 2.0 GHz
- RAM \geq 1 GB
- Storage = 6 TB
- 1 Gbit network card

Remote management system

No operating system installation, but compatibility with Linux RedHat 7.3



Architecture

Dual-CPU for better cost/performance

32 vs. 64 bit

Intel Xeon vs. AMD Opteron



Xeon vs. Opteron

Benchmarks show:

- Opteron is better for server applications
 - MySQL
 - FPU
 - SPEC
 - Web server
- Xeon is better for workstation applications
 - Multimedia (MPEG, DiVX)
 - Rendering
 - 3D Studio



AMD clusters in Switzerland

- **Matterhorn (University of Zurich)**

- 261 dual-Opteron 1.8 GHz
- 2 login nodes
- 3 file servers

- **Hreidar (ETH Zurich)**

- 128 dual-Opteron 1.8 GHz
- 2 login nodes
- 2 file servers



Experience from other centers

Matterhorn:

- Good performance
- Lots of management problems for configuration of all special features (vendor system, Rocks, SuSE)

Forschungszentrum Karlsruhe

- Difference in output of test jobs (compilers and library setup)
- Reduced power consumption w.r.t. Xeon

