CHIPP Computing Group Meeting 2004-03-25

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Requirements

- Hardware requirements from experiments

- Setup requirements from experiments + Grid software

- Hardware and setup requirements imposed for effeciently operating the system

CMS requirements

- CURRENT
  - 500 MB RAM/CPU
  - 100 MBit Ethernet ok
  - 80 GB local disk ok
  - Ca. 5 TB staging space (if necessary, could include local disks)

- IDEAL
  - 1GB RAM /CPU
  - Gbit Ethernet
  - Large local disk space (40+120 very satisfactory)
  - Ca. 5 TB staging space (if necessary, could include local disks) with MSS attached in some form.

- SETUP
  - Mail client on worker nodes (currently)
  - SRM/SRB would be ideal

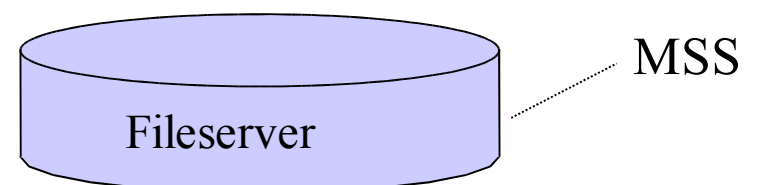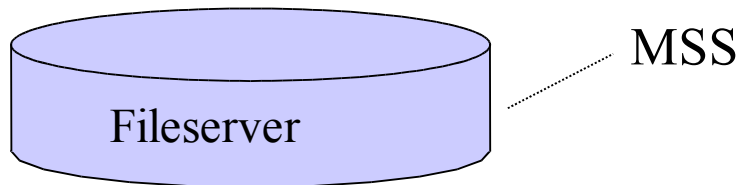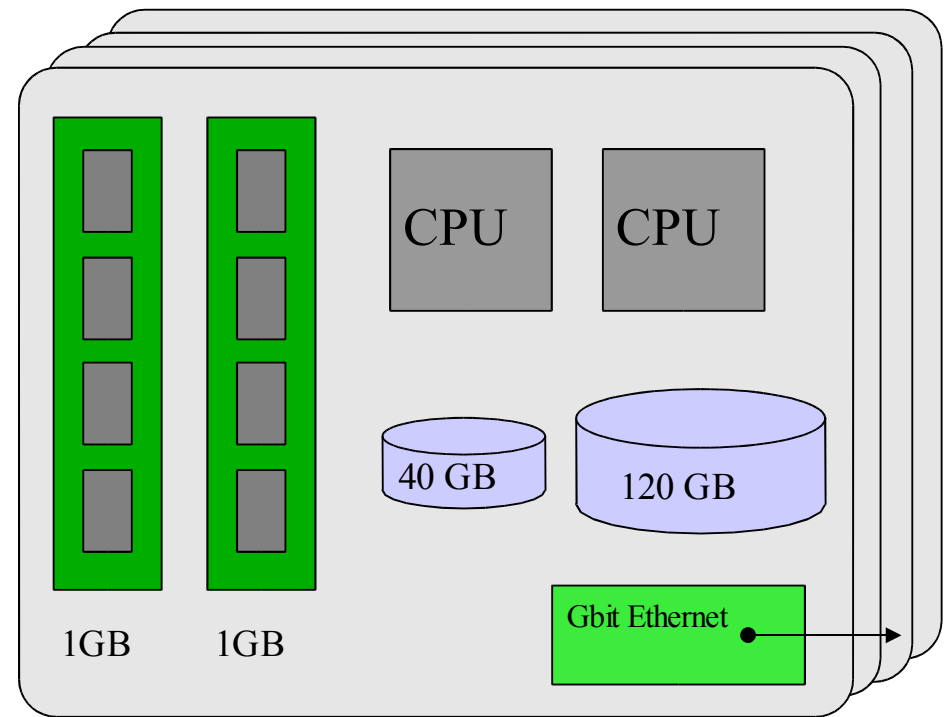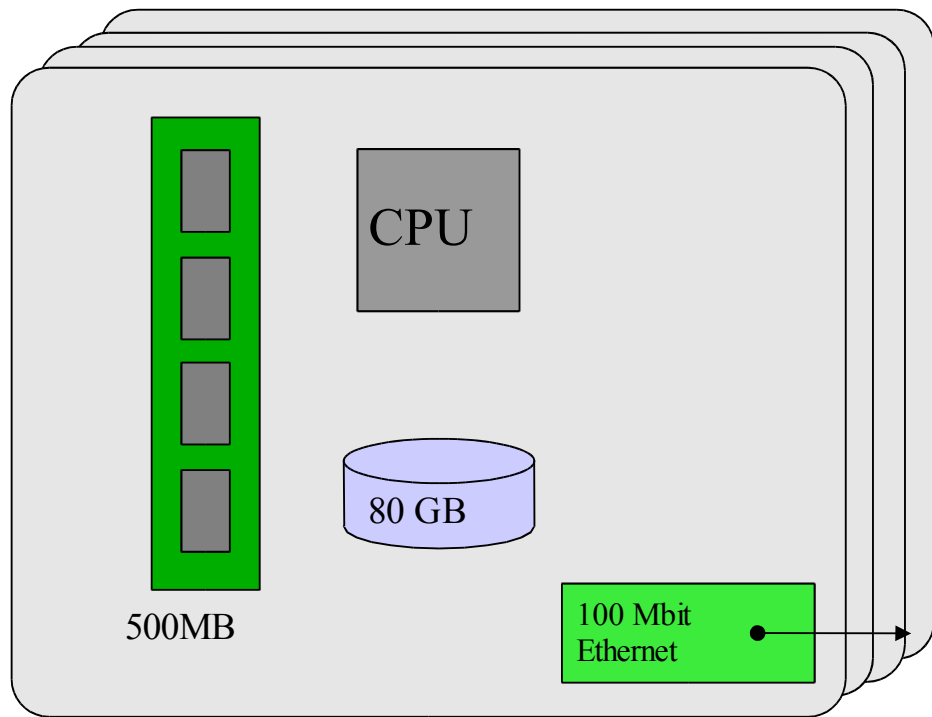Sources: Tony Wildish, Julia Andreeva, Andre Holzner

LHCb requirements

- CURRENT

  - 500 MB RAM/CPU

  - Typical production chain runs in 8 steps, each step produces ~250 MB of data. Last part shipped to CERN.

  - MSS: Site can decide whether to keep intermediate steps. Any MSS system is ok, if we provide some simple I/O commands or scripts.

  - Setup: Outside connectivity needed (bbftp)

Administration requirements

- Terminal server solution
  - Remote on/off
  - Console exported via terminal server
  - Possibility to save/reload different configurations via a system image

Minimal and ideal (analysis) systems

CPU

500MB

80 GB

100 Mbit
Ethernet

CPU   CPU

1GB   1GB

40 GB   120 GB

Gbit Ethernet

MSS

Fileserver

MSS

Fileserver

CPU: 64 bit architecture ?

Offers

- System:
  - 20 + 1 node dual AMD Opteron Rack system + Terminal Server
  - 500 MB/CPU
  - 40 GB + 120 GB local disk / node
  - Gigabit Ethernet
  - 2.5 TB / 5 TB Fileserver, RAID system
- DALCO
  - Cluster: 68804 SFr
  - Fileservers: 14557 SFr (2.5 TB), 23953 SFr (5 TB)
- TRANSTEC
  - Cluster: 70940
  - Fileservers: 9770 SFr (3TB), 13360 SFr (5 TB)   (less performance)

ZBox

- See slides of J. Stadel and A. Adelmann

To insure operabability

- BEFORE BUYING:

  - Benchmarks on example systems can be arranged with the companies. BUT: Impossible due to staus of the current HEP/Grid softwares. Very intrusive setup procedures. Only can be done by experts

  - Obtain sample machines for testing. BUT: This only allows for limited tests due to not having a whole cluster infrastructure.

- AFTER BUYING:

  - Burn in phase with standard tests

    - Memtest+, bonnie+, kernel compilations

  - Immediately deploy standard experimental SW