

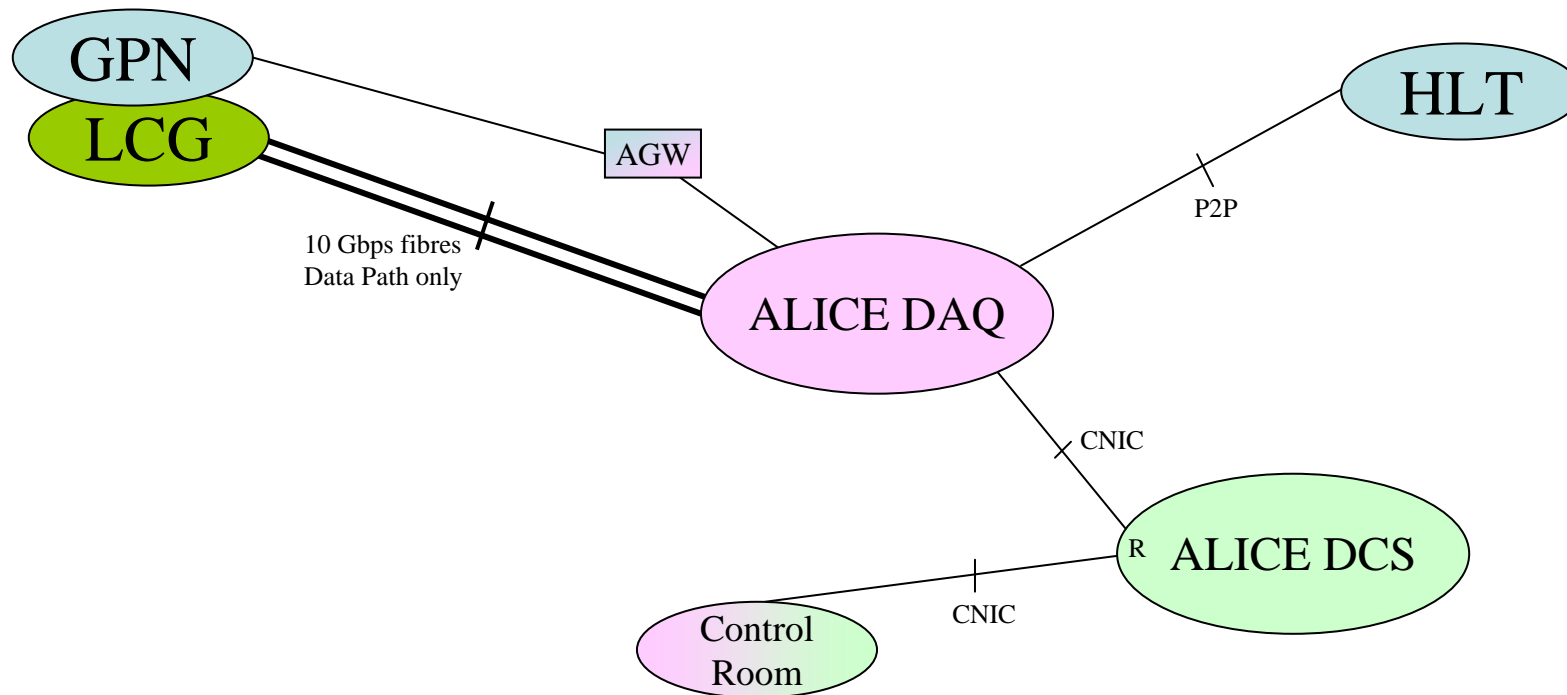


Joint Meeting on Farm Management

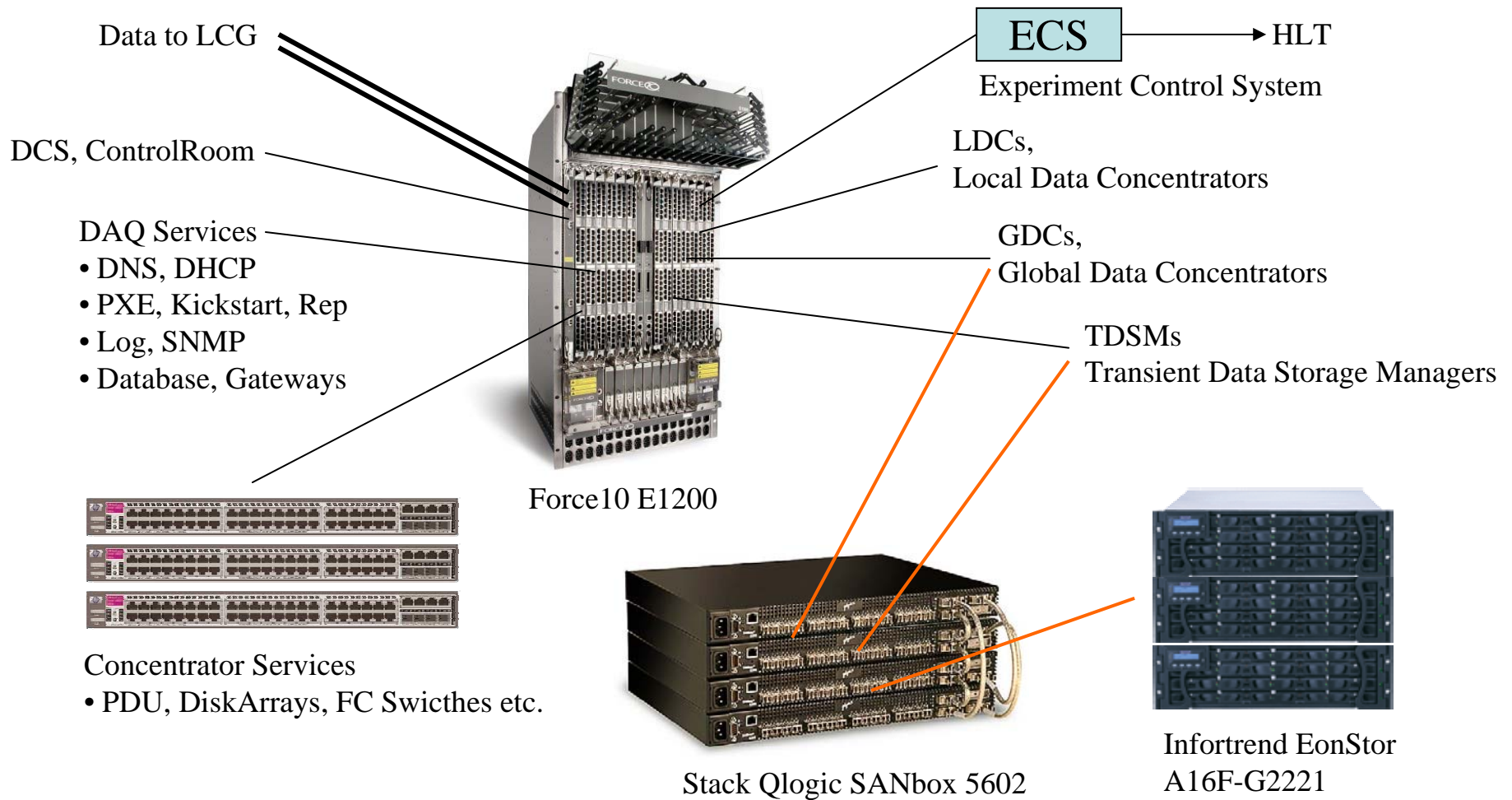
ALICE DAQ Installation @ Pt. 2

Ulrich Fuchs
PH / AID

- ALICE DAQ Network, Very high level view



- ALICE DAQ Network, High level view



- Hardware, a few numbers & facts

- Machine Types

- PC Type

- Supermicro X6DHE-XB
- Dual-Xeon 2.4 GHz, 4 GB
- 6 slots PCI-X, >100MHz

- PC Type (tested)

- Supermicro X7DBE-X
- Dual Dual-Core WoodCrest 3GHz
- 6 slots PCI-X, 133MHz

- Server Type (DAQ Service):

- Dual AMD Opteron board
- Dual Dual-Core Opteron 275
- 8 GB

- Machine Count

- ~ 200 LDCs
- ~ 30 - 50 Eventbuilders
- ~ 30 - 50 TDSMs
- ~ 20 - 30 Disk Arrays

- Throughput

- Ethernet Gbps to each machine
- 2 (3) 10 Gbps fibres to LCG
- FC 4 Gbps to GDC/TDSM
- FC 10 Gbps Stack
- ~ 50 - 75 TB local storage
- ~ 2500 - 3000 MB/sec agrg. transfer rate

- Software

- SLC4
- ADIC StorNext CFS

- Power

- Remote control through SpectrumControl PDU



- Cooling

- Cooling-Doors, LCHb-type

- Installation Db

DAQ Database for Machines and Racks in CR1

Machine Types

- [All Machines](#)
- [DATE GDC](#)
- [DATE LDC](#)
- [DATE Server](#)
- [DATE TDSM](#)
- [F10 Module](#)
- [FC Switch](#)
- [IPH Server](#)
- [Network](#)
- [Paragon](#)
- [PDU](#)
- [Storage](#)
- [TDS Array](#)

aldaqiph01 (IP Helper 1)

General Info

ID: aldaqiph01
 Type: [IPH Server](#)
 Serial Number: CH595-624-2
 Rack: [Z04 \(DS\)](#)
 Rack Position: 40
 Status: Unknown
 Comment: IP Helper 1

[Show Actions History](#)

Network Info

Port: KVM (KVM ports on PC)
 Cable: Z04-01kvm
 Switch Port: [PARAGON:13](#)

Port: Net (Ethernet on Control Devices)
 MAC Address: 00304859000e
 IP Address: 10.161.16.5 ([IPHELP-1](#))
 IP Address: 10.161.16.6 ([IPHELP-1](#))
 IP Address: 10.161.16.62 ([IPHELP-1](#))
 IP Address: 10.161.16.69 ([NTP-1](#))
 Cable: Z04-01
 Switch Port: [R06:45](#)

Power Info

PDU Port: [aldaq pdu14:1](#)
 PDU Port: [aldaq pdu14:2](#)
 Power Strip: L02-01
 Source: EOD102
 Electric Phase: L02
 Temp. Sensor Pos: Bottom

Racks

X01	X02	X03	X04	X05
X06	X07	X08	X09	X10
X11	Y01	Y02	Y03	Y04
Y05	Y06	Y07	Y08	Y09
Y10	Y11	Y12	Y13	Y14
Z01	Z02	Z03	Z04	Z05
Z06	Z07	Z08	Z09	Z10

Search Machines By

Cable: 🔍

Switch: 🔍 ➤

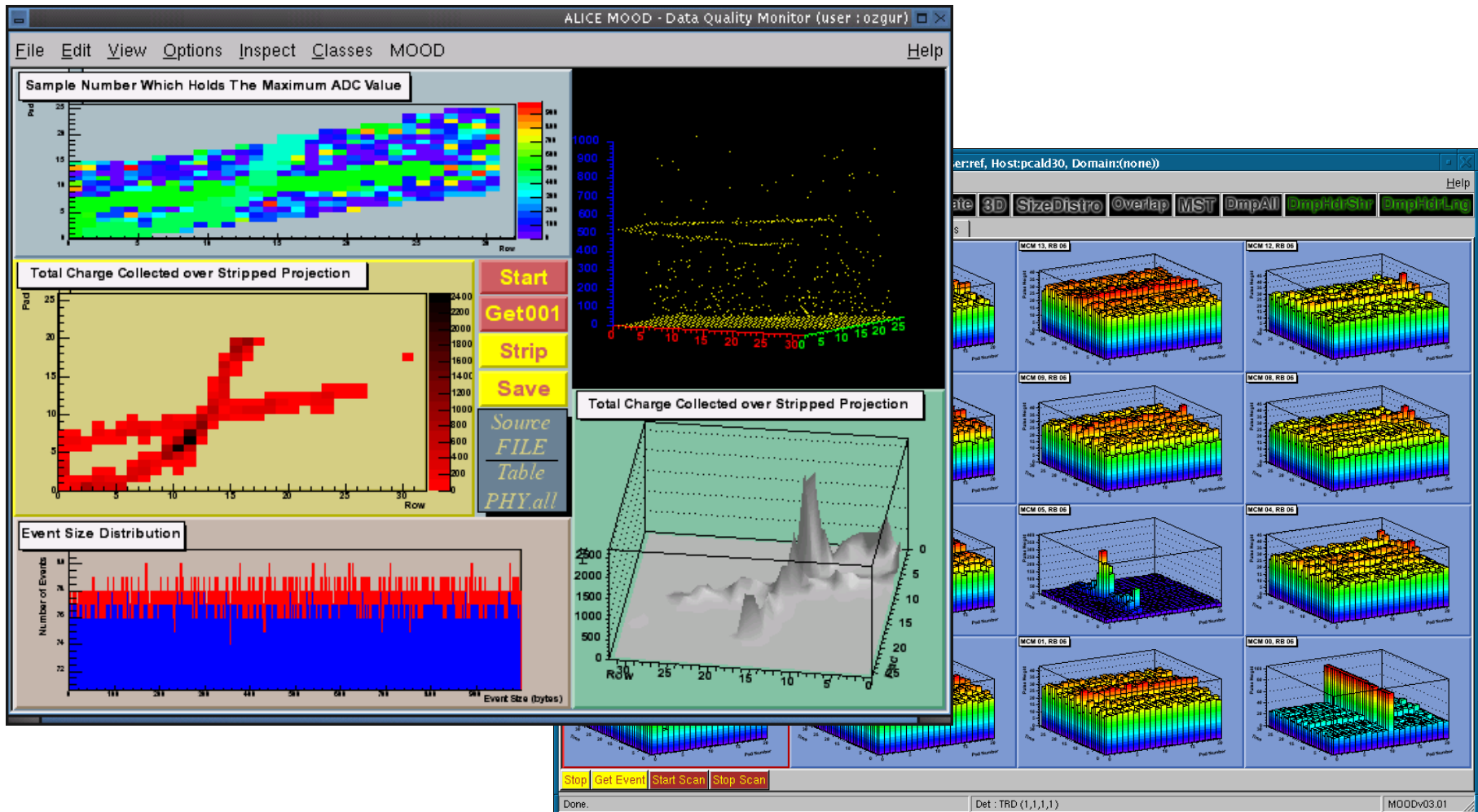
Network Service: 🔍 ➤

Setup: 🔍 ➤

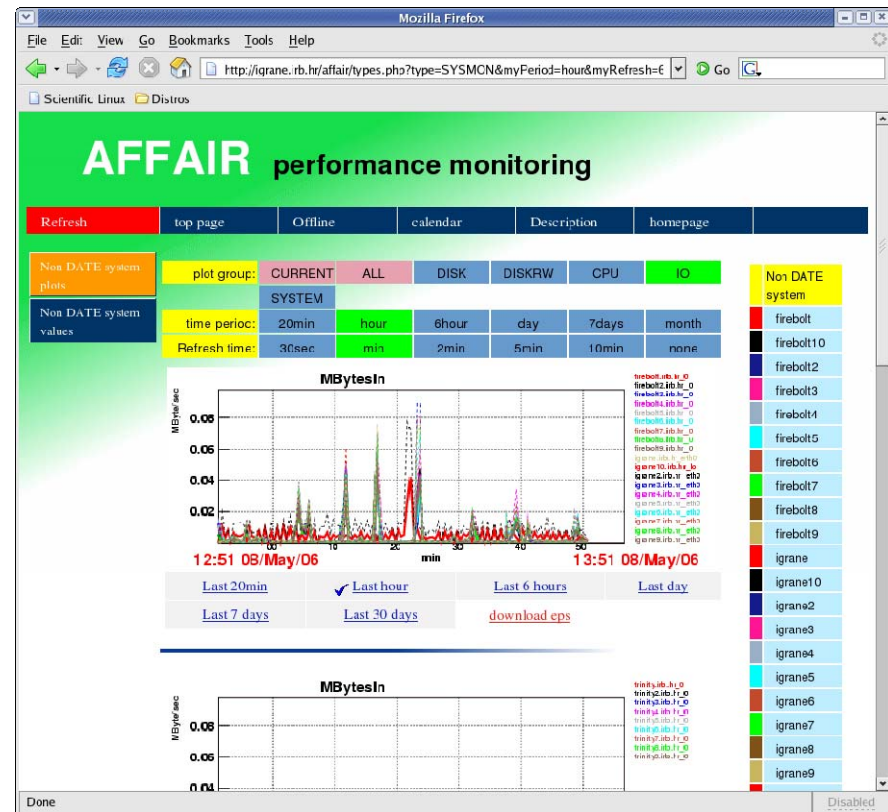
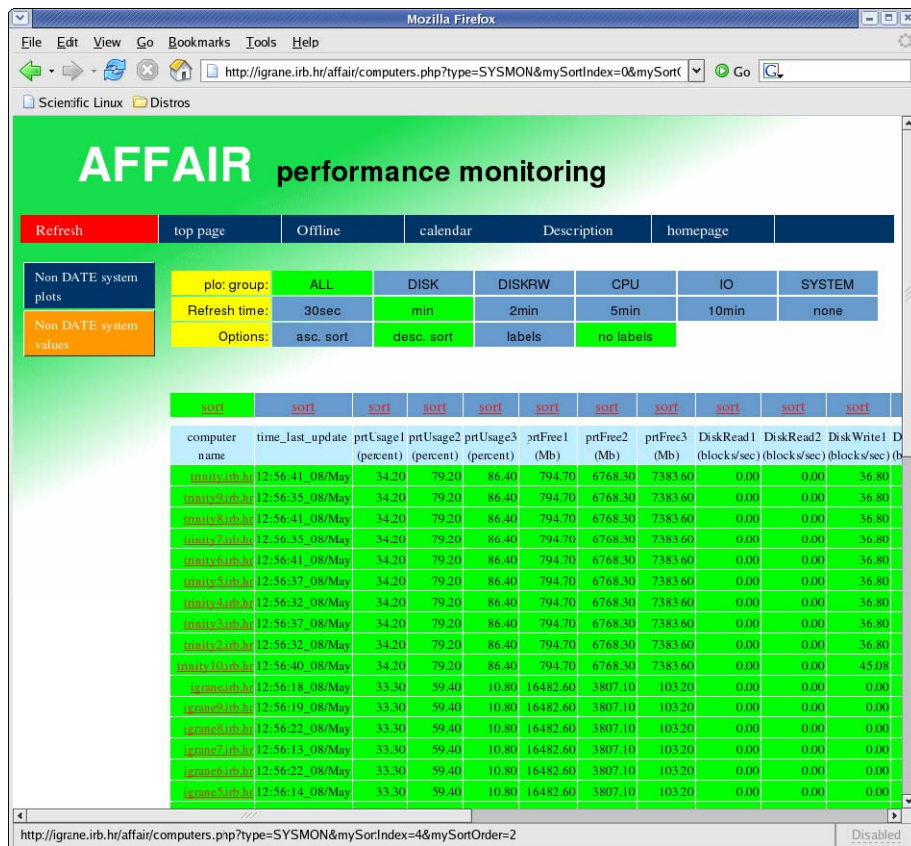


- Software
 - Installation
 - PXE boot, Kickstart-Installation from local repository
 - All machine configuration done in KS
 - All DAQ software installation and configuration in KS ("install ready-to-use")
 - Full installation: ~ 5min (no need for pre-installed hot-spares)
 - No changes to system afterwards, NO automatic updates (YUM off)
 - Servers
 - All software & OS are local on each machine
 - No shared file space
 - Central servers for DNS, HCP, PXEboot, KS server, Repository
 - Updates
 - OS updates: installed outside run period after tests, i.e. re-install machine
 - Urgent updates: after tests per ssh/rsync, i.e. scripted
- Access to machines
 - Ssh, RARITAN Console, RARITAN IPreach
 - Access to DAQ from outside through gateway, only for DAQ experts !

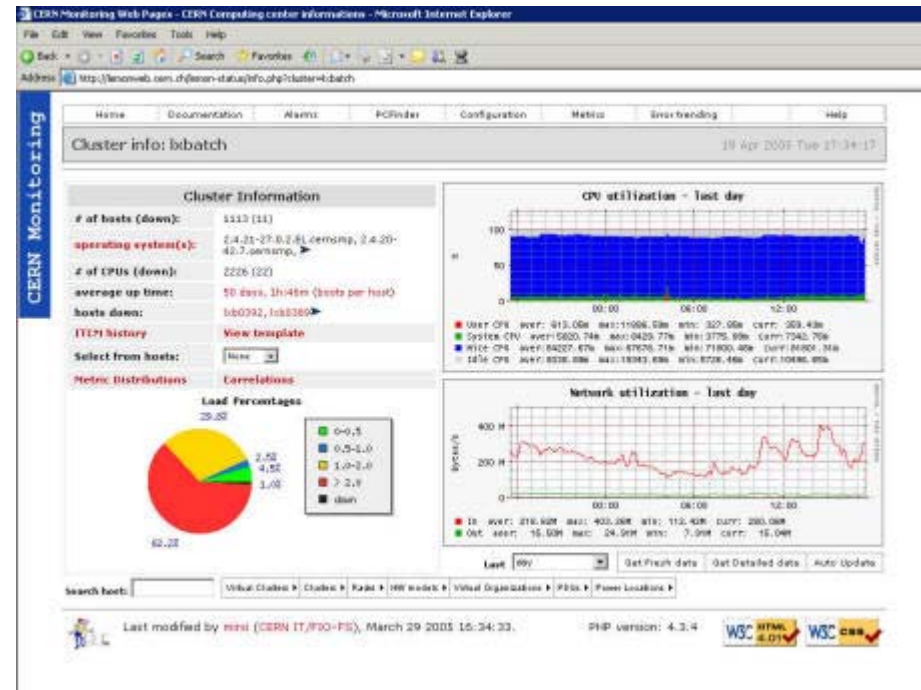
- Monitoring on 3 independent levels:
 - Level 3: DAQ Quality: MOOD (<http://cern.ch/ph-dep-aid/MOOD/>)



- Monitoring on 3 independent levels:
 - Level 2: DAQ functionality and Performance: AFFAIR (<http://cern.ch/alice-affair/>)



- Monitoring on 3 independent levels:
 - Level 1: Hardware functionality and Performance: LEMON ? (<http://cern.ch/lemon>)



- ACR, ALICE Control Room
 - Machines set up only for Control of DAQ, DCS, DQM, HLT, Trigger
 - No remote access to ACR or DAQ
 - No GPN/internet access from ACR or DAQ

- DAQ implemented as FSM objects
 - Log on/off of experts or SL without stopping DAQ (only change of ownership)
 - Ownership of partitions (=Detectors) can change (release/take)
 - include/exclude detectors from data taking
 - Start sub-DAQs for debugging

- ToDo List:
 - Authentication to machines by
 - SmartCards
 - CERN Card