

# DESY site report

## News from the Labs



Wolfgang Friebe

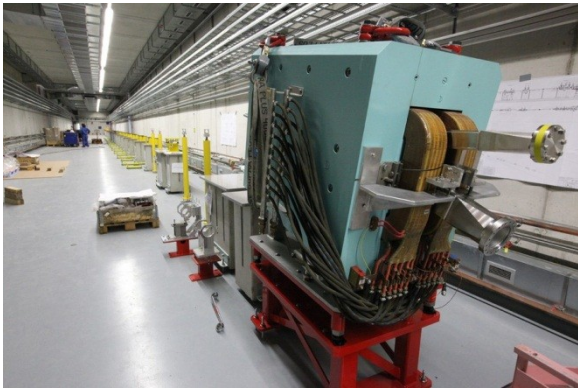
DESY site report Fall 2013

Ann Arbor, Oct 28, 2013

# Laboratory activities

## > Hamburg

- Lots of extension activities for the Petra III accelerator complex
- Much ongoing work for the FLASH project (Free electron Laser)
- New Building “Center for Free Electron Laser” opened (CFEL) on Campus
- Starting to build a Center for Structural System Biology (CSSB) on Campus



## > Zeuthen

- Cerenkov Telescope Array (CTA): telescope prototype installed in Berlin
- Strong involvement in the H.E.S.S (High Energy Stereoscopic System) experiment

## > Hamburg

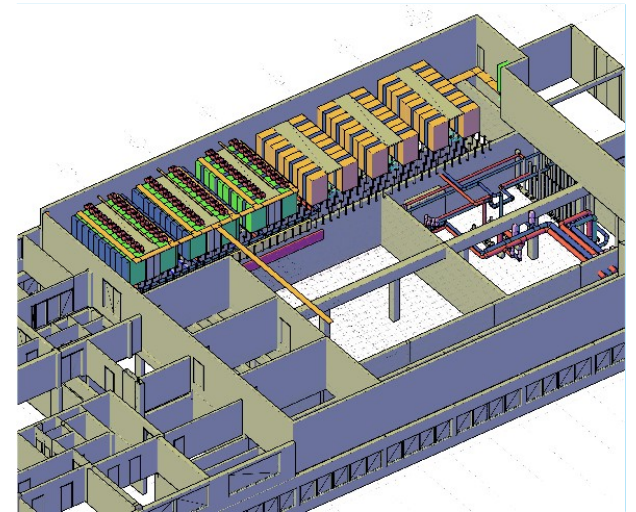
- currently 7700 slots
- Mostly 4-socket AMD, old machines 2 GByte RAM /core now buying 4GB/core
- Installed with current EMI-3 middleware on SL6 64bit. Installation via Puppet, middleware configuration via YAIM
- currently supporting 20 production VOs, for about 10 DESY is the primary site (Tier 0)
- All server nodes run in XEN VMs – no plan to deploy VMs for Worker Nodes
- Currently ~1000 slots: Normal CMS analysis read using NFS v4.1 (-> Patricks talk)

## > Zeuthen

- currently 1600 slots
- Intel 2 socket systems, 4GByte RAM/core
- UMD-2 middleware, SL6 64 bit, configured with YAIM
- Mostly ATLAS, LHCb, IceCube and CTA

## > Planned Expansion of Hamburg Computer Center

- Currently 250 racks on 1000 m<sup>2</sup> in the HH computer center, 1.5 MW water cooling
- Plans for additional 50..60 racks in 6 rows
- Additional power consumption > 1.5 MW
- New water cooling from central cooling facility 2x2MW



## > Wide Area Network

- DESY has now 2 x 10GE public Internet, 2 x 10GE LHCONE lines
- 2 x 10GE planned for HH – Zn (currently 1 x 10GE)

# Icecube Tier 1 activities (Zn)

- > Using CVMFS stratum 0 server in Madison
  - Zeuthen will publish stratum 1 mirror
  - IceCube software distribution to other centers via CVMFS planned
- > Mirror of the level 2 data
- > Storage of 50 percent of the MC data
- > Disaster recovery center for Madison



## > dCache Storage

- currently 10 +3 PB in 5 + 3 dCache installations (+capacity on tape) (HH + Zn)
- largest one is the CMS instance with 4 PB
- Mostly running dCache Golden Release 2.6 (Zeuthen still on 2.2).
- recent purchases based on DELL MD3620 with each 2xDELL R620 headnodes (60 4TB-disks in 4-U Chassis with LSI controller + 2x1-U for headnodes)

## > NAF (National Analysis Facility)

- currently rebuilding the NAF in HH (more details in Annecy next Hepix)
- Total of ~4000 CPU cores.
- **Storage** (in addition to dCache): Sonas ~650 TB (+200 TB to come) / No Lustre in Hamburg Site since 1.10.2013 / Prospects: Will install NFS v4.1 on SL6 WNs for BELLE2 experiment by end 2013

# CVMFS usage at Hamburg site

## > Using CVMFS-over-NFS

- For all batch systems
- Why? We host many VO, many repositories are needed, resulting in too large cache directories with the normal, local-installed CVMFS client

## > Benefits:

- Easy configuration on WNs (only auto-mounter config and NFS mount)
- No cache – thus no repartitioning and reinstallation needed
- No problems due to pinning of files

## > Performance:

- Currently four machines do NFS export – enough for currently ~10k jobs



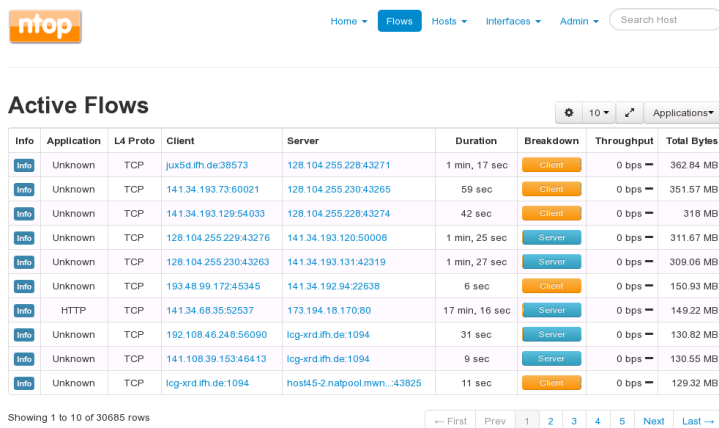
# Exchange 2003 -> Zimbra Migration

- > We are not scared by Zimbra changing owner – actually we think we profit both from strong VMware legacy and future focus of new company
- > Unifying the DESY mail-server landscape: Successor of Exchange2003 and later replace Unix-Mail System
- > Have purchased Zimbra licenses (in the last days of it being owned by VMware)
- > Integration of Zimbra in IT environment in 2013Q4
- > Migration of *some* groups still 2013 – mass migration early 2014
- > Starting with Zimbra 8, although Zimbra 9 is on the horizon with many interesting features ... but upgrade planned at a later stage



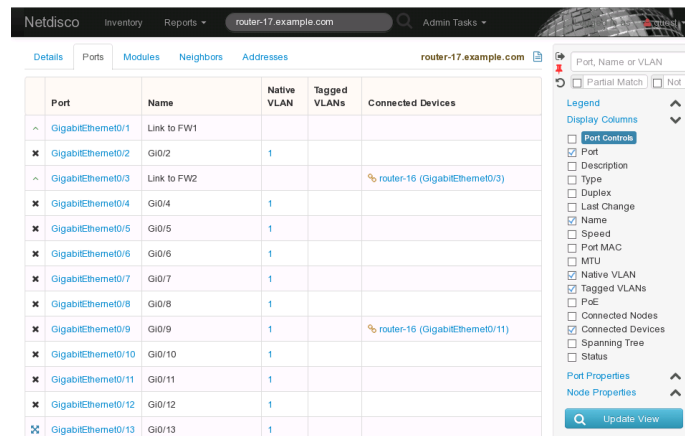
# Networking tools (update)

- On HEPiX Fall 2012 I reported on networking tools
  - Some tools with new concepts available
- New netflow collector nProbe
  - Takes netflows or raw packets, can convert and redistribute data
  - Uses TCP sockets or zeromq endpoints for data distribution
- New version of ntop: ntopng
  - Takes inputs from nProbe or raw packets, no more directly processing netflows
- New web interface for netdisco: netdisco2



The screenshot shows the ntopng web interface with the 'Active Flows' tab selected. The table displays network flows with columns for Application, L4 Proto, Client, Server, Duration, Breakdown, Throughput, and Total Bytes. The data is filtered to show 10 rows out of 30685.

| Info | Application | L4 Proto | Client                | Server                       | Duration       | Breakdown | Throughput | Total Bytes |
|------|-------------|----------|-----------------------|------------------------------|----------------|-----------|------------|-------------|
| Info | Unknown     | TCP      | jux5d.iff.de:38573    | 128.104.255.228:43271        | 1 min, 17 sec  | Client    | 0 bps      | 362.84 MB   |
| Info | Unknown     | TCP      | 141.34.193.73:60021   | 128.104.255.230:43265        | 59 sec         | Client    | 0 bps      | 351.57 MB   |
| Info | Unknown     | TCP      | 141.34.193.129:54033  | 128.104.255.228:43274        | 42 sec         | Client    | 0 bps      | 318 MB      |
| Info | Unknown     | TCP      | 128.104.255.229:43276 | 141.34.193.120:50008         | 1 min, 25 sec  | Server    | 0 bps      | 311.67 MB   |
| Info | Unknown     | TCP      | 128.104.255.230:43263 | 141.34.193.131:42319         | 1 min, 27 sec  | Server    | 0 bps      | 309.06 MB   |
| Info | Unknown     | TCP      | 193.48.99.172:45345   | 141.34.192.94:22638          | 6 sec          | Client    | 0 bps      | 150.93 MB   |
| Info | HTTP        | TCP      | 141.34.68.35:52537    | 173.194.18.170:80            | 17 min, 16 sec | Server    | 0 bps      | 149.22 MB   |
| Info | Unknown     | TCP      | 192.108.46.248:56090  | icg-xrd.iff.de:1094          | 31 sec         | Server    | 0 bps      | 130.82 MB   |
| Info | Unknown     | TCP      | 141.108.39.153:46413  | icg-xrd.iff.de:1094          | 9 sec          | Server    | 0 bps      | 130.55 MB   |
| Info | Unknown     | TCP      | icg-xrd.iff.de:1094   | hos445-2.natpool.mwn...43825 | 11 sec         | Client    | 0 bps      | 129.32 MB   |



The screenshot shows the Netdisco web interface with the 'Ports' tab selected for router-17.example.com. The table displays port details with columns for Port, Name, Native VLAN, Tagged VLANs, and Connected Devices. The data is filtered to show 10 rows out of 13.

| Port                | Name        | Native VLAN | Tagged VLANs | Connected Devices               |
|---------------------|-------------|-------------|--------------|---------------------------------|
| GigabitEthernet0/1  | Link to FW1 |             |              |                                 |
| GigabitEthernet0/2  | Gi0/2       | 1           |              |                                 |
| GigabitEthernet0/3  | Link to FW2 |             |              | router-16 (GigabitEthernet0/3)  |
| GigabitEthernet0/4  | Gi0/4       | 1           |              |                                 |
| GigabitEthernet0/5  | Gi0/5       | 1           |              |                                 |
| GigabitEthernet0/6  | Gi0/6       | 1           |              |                                 |
| GigabitEthernet0/7  | Gi0/7       | 1           |              |                                 |
| GigabitEthernet0/8  | Gi0/8       | 1           |              |                                 |
| GigabitEthernet0/9  | Gi0/9       | 1           |              | router-16 (GigabitEthernet0/11) |
| GigabitEthernet0/10 | Gi0/10      | 1           |              |                                 |
| GigabitEthernet0/11 | Gi0/11      | 1           |              |                                 |
| GigabitEthernet0/12 | Gi0/12      | 1           |              |                                 |
| GigabitEthernet0/13 | Gi0/13      | 1           |              |                                 |



# Miscellaneous and pointers

- > Puppet status: See talk by Jan Engels
- > Phishing: Yes, even our users are taken in by phishers ^^
  - to limit damage and allow time for reaction, we put a throttle on outgoing mails
  - ... and blocking IP addresses of well-known Webform hoster
- > Purchased Bomgar appliance as remote assistance tool for special applications (e.g. IDEAS)
- > Project Manager for AFS since 2012: S. Wiesand
- > Project to investigate logfile analysis (similar to talk by GSI)
  - Done by a student as a bachelor work
  - Used logstash, elasticsearch and kibana3 and patterns for mail logs only
  - Got quickly insights into logfile contents



# A variation of the classical “Digger hits cable” news



... fortunately, cable was not directly damaged