Operations and plans - Polish sites

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3 ALICE sites in Poland:

• Outline:
  – ALICE sites in Poland
  – ALICE sites in Poland – operations
  – WUT site:
    • Operations
    • Technical details
    • Plans
  – Summary
3 ALICE sites in Poland:

- **CYFRONET**
  - is Academic Computer Centre CYFRONET at AGH University of Science and Technology in Cracow/Kraków/

- **POZNAN**
  - is Poznan Supercomputing and Networking Center at Institute of Bioorganic Chemistry of the Polish Academy of Sciences

- **WUT**
  - is Warsaw University of Technology
Polish ALICE sites - operations

- **CYFRONET** (ZEUS cluster also for ATLAS and LHCb)
  - has increased load from 300 to 800 jobs last year
  - present in PIONIER and LCHONE

- keeps SE 28TB storage at 80% used
Polish ALICE sites - operations

- **POZNAN** (REEF cluster also for ATLAS and LHCb)
  - has increased load from 300 to 1000 jobs last year
  - present in GEANT and peering with LHCONE:
    CERNlight, RU-VRF

- keeps SE 187TB storage at 53% used
Polish ALICE sites - operations

- **WUT**
  - has increased load from 20-30 to 300 jobs last week

- SE 12TB XRD
WUT site - operations

– now 300 jobs run last week from 450 CPU cores
– in co-operation between:

Faculty of Physics

and

Faculty of Civil Engineering

– New hardware bought after consultation with CERN/ALICE main specialists (Latchezar et al. - Thanks!)
WUT site – technical details

coopération between:

Faculty of Physics
- now CREAM CE, SE, BDII, APEL
  on VMs under VMware

and

Faculty of Civil Engineering
– now Torque server and 50 WNs
  (Hypertheaded, 8 VCPUs, 16GB RAM, 100GB disk)
on OpenStack (Mitaka, RackSpace)
WUT site – technical details

at Faculty of Civil Engineering – OpenStack with:

• 60 (Nova) nodes with:
  – 2 x Intel Xeon CPU E5-2680 v3 @ 2.50GHz (12 cores, 24 logical/HT)
  – 96 GB RAM
  – disc SSD 480GB
  – ethernet 10GBit/s

• Together it is: 120 CPUs, 1440 cores, 2880 VCPUs

• Storage on CEPH with 18 nodes:
  – Intel Xeon CPU E5-2630 v3 @ 2.40GHz
  – 64 GB RAM
  – 2 x 300GB /system, 2 x 128GB SSD / journal, 8 x 4TB /raw data
  – 10Gbit/s to Nova nodes and 56Gbit/s InfiniBand to storage with raw 576 TB
WUT site – network bottleneck

Faculty of Physics and Faculty of Civil Engineering
– now connected with 1Gpbs VLAN
- outside connectivity is quite low (ingress below 75 Mbps, egress 800 Mbps)

MonALISA Repository for ALICE
WUT site – plans (short term)

In co-operation of 2 faculties
– to apply for funding this year with a goal to double current IT capacities

Faculty of Physics
- move SE to OpenStack(EOS)

and

Faculty of Civil Engineering – OpenStack:
- more than 50 WNs and HEAT orchestration for opportunistic use of free CPUs (max 2880 VCPUs with 2GB RAM/VCPU)
- install EOS SE with ca 100TB on Ceph device type
WUT site – plans (long term)

In co-operation of 2 faculties

– to apply for **IPv6** (there is local pool of IPv6 addresses waiting for local division and implementation)

- to apply for **LHCONE** network (there is local country 100G network and ICM (HYDRA cluster for CMS and LHCb) center in Warsaw got connected to LHCONE recently)

**Faculty of Physics**
- Upgrade „WUT” to Centos 7/ UMD4/ ARC/ Slurm/ VAC?
- Tuning of network 10G/firewall/IPv6 issues

and

**Faculty of Civil Engineering** –OpenStack:
- upgrade of OpenStack itself
- increase of computing and storage resources with new funds
Summary for ALICE sites in Poland:

- **CYFRONET**
  - More cores, stable, no news

- **POZNAN**
  - More cores, stable, no news

- **WUT**
  - new „cloud” type setup on flexible OpenStack
  - EOS SE under way with ca 100TB
  - plans to improve networking (IPv6 and PIONIER/LHCONE and local 10G)
  - plans to gain financial support in co-operation between local faculties of WUT
Thanks!

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SEVENTH ANNUAL ALICE TIER-1/TIER-2 WORKSHOP IN STRASBOURG

HTTPS://INDICO.CERN.CH/EVENT/595536