Prague center - site report

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Outline

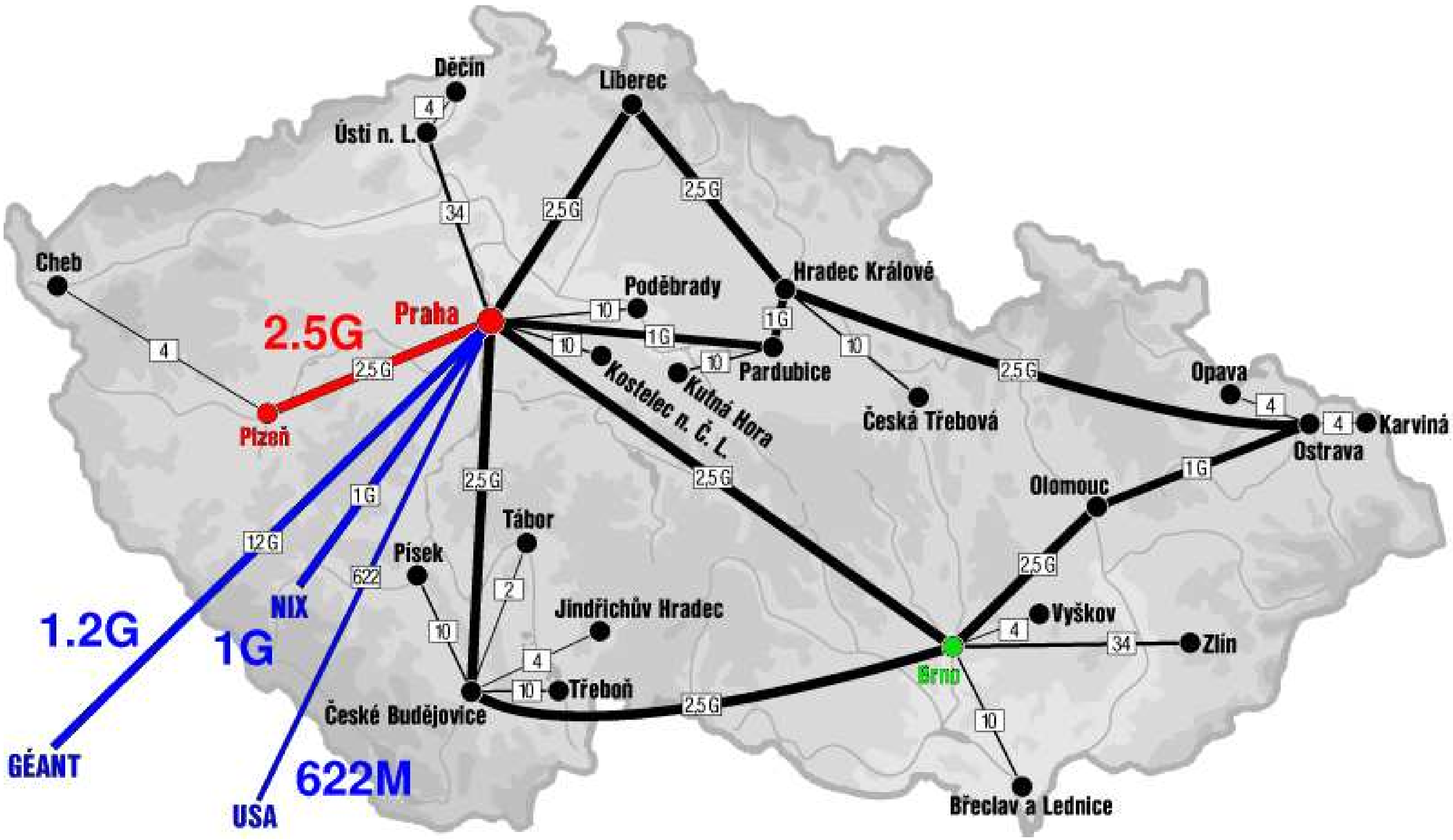
- **MC simulations**
  - CESNET farms
  - network connection
  - tests of DØ software under Debian 3.0
- **New farm**
  - hardware
  - status
  - plans
- **Our team**
- **Summary**

Prague center - CESNET farms

- CESNET - Czech National Research & Education Network operator
- we are using two farms for DØ MC simulations
  - provided by CESNET within a framework of MetaCenter project on mutual collaboration on EU Datagrid
- **Prague farm**
  - using from the beginning of 2001
  - 16 dual processor (PIII 700MHz, 1GB memory) working nodes
  - batch queue `datagrid` (28 processes) only for us
- **Plzeň farm**
  - using from the beginning of July 2002
  - 16 dual processor (PIII 1GHz, 1GB memory) working nodes
  - sharing queue `long` (up to 32 processes)
- farms are running on Debian 2.2 distribution of Linux
- PBS batch system

Network

- farms have local 100Mb network
- connection between farms and to the outside world



Scheme of DØ MC simulations

Farms

MC Server

NFS fileserver

- 90GB disks space

⇐ DØ software

⇐ minimum bias data

⇒ cache for generated data

Database server

- database of jobs
- allows to divide the process of simulations into parts
- the system is more flexible

Monitoring system

- CPU
- network traffic
- disk space

SAM station

SAM

- `linux115c.fzu.cz` located in Institute of Physics AS CR
- cache - part of 1TB disk array

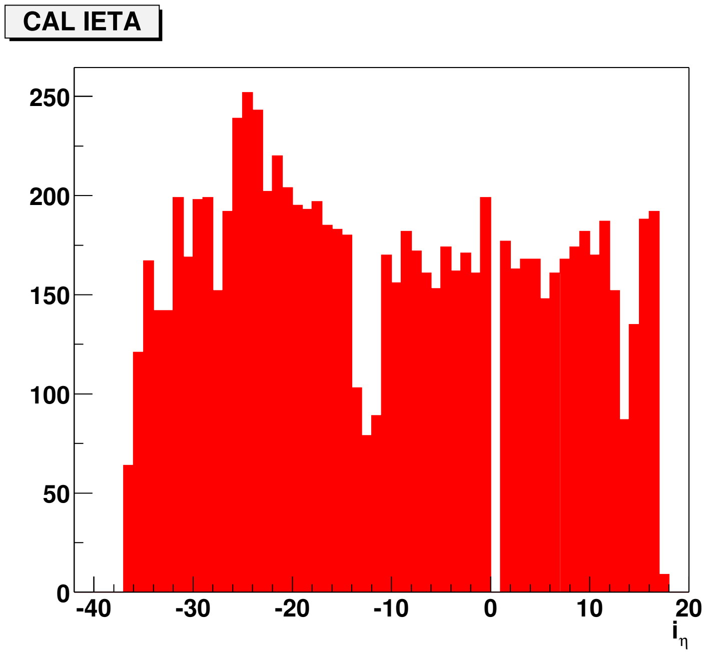
DØ Software

Current status

- ▷ only Linux2.2 mini tarfiles are used for MC simulations
  - fortunately, Debian2.2 is close enough to RedHat 6.x
- ▷ no full DØ software installation
- ▷ one SAM station used for storing MC data
  - able to read also the data from Fermilab

Test of Debian 3.0 (woody)

- ▷ officially released on July 19
- ▷ close to RH7
- ▷ both distributions are based on libc2.2
  - Debian 3.0 on libc-2.2.5
  - RH7.1 on libc-2.2.4
- ▷ p10.15.01 Linux2.4-maxopt mini tar-files
  - entire MCC chain is running



New farm

- ▷ provided by Institute of Physics AS CR
  - ▷ 31 working + 2 testing nodes
    - 2x PIII at 1.13GHz
    - 1GB of memory
    - 18GB SCSI driver
  - ▷ gate keeper
  - ▷ 1TB disk array
  - ▷ network
    - 100Mb between working nodes
    - 1Gb between storage and gate-keeper
  - ▷ connection to the outside world
    - 155Mb to CESNET now
    - upgrade to 1Gb in 2 months
  - ▷ software - RH 7.2 + PBS

New farm - current status and plans

- ▷ farm is dedicated to HEP
  - main priorities are DØ, ATLAS, and ALICE

Current status

- ▷ all hardware components are installed and running
- ▷ OS is installed on all computers
- ▷ installation and configuration of PBS
- ▷ testing software for DØ MC simulations
- ▷ trying to put **full** DØ software environment on one testing computer

Plans

- ▷ start with DØ MC simulations as soon as possible
- ▷ set up farm to allow analysis of DØ data and use it for the analysis
- ▷ move our SAM station directly to farm (and new 1TB disk array)
- ▷ integrate our 10TB tape library with farm (and later on SAM)

Prague center team

- Miloš Lokajíček (Inst. of Physics AS CR)
  - project leader, hardware, network
- Alexander Kupčo (Inst. of Physics AS CR)
  - MC simulations, system and software management
- Karel Soustružník (Charles University)
  - MC simulations
- Karel Smolek (Czech Technical University)
  - MC simulations, SAM administrator
- Lukáš Fiala (Inst. of Physics AS CR)
  - hardware, network
- Jiří Kuhn (Inst. of Physics AS CR)
  - Grid, system administrator
- Jan Švec (Inst. of Physics AS CR)
  - hardware, network, system administrator

Summary

- ▷ thanks to good cooperation with CESNET and METACENTRUM we have doubled our capacity for DØ MC simulations recently
- ▷ with new farm the capacity doubles again
- ▷ total computer power
  - about 120 PIII processors (at average speed 1GHz)
  - 1+1 TB disk arrays + 0.7 TB local hard drivers (only our farm)
- ▷ good network connection

- ▷ the goal of the project
  - establish DATAGRID computer center that will provide all necessary computer power and infrastructure to perform data analysis in HEP