PNPI Status report
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Quick overview

- PNPI structure
- HEPD CSD responsibility
- Security
- Mail server & WiFi service upgrade
- Twiki service (recently started)
- Micro cluster minor upgrade

PNPI (www.pnpi.spb.ru) consists of ...

- High Energy Physics Division (**HEPD**) http://hepd.pnpi.spb.ru
  - Computing Systems Department (**CSD**) http://hepd.pnpi.spb.ru/CSD
- Neutron Physics Department
- Biology and Molecular Physics Division
- Theory Division

HEPD CSD responsibility...

- Institute (PNPI) mail server

  - SL55, ~1K accounts, anti{**virus**,**spam**},

- HEPD http server and http/socks proxy

- HEPD computing cluster of micro size (~140 users)

- Computer network (*~400 hosts located/distributed over 6+ buildings*)

- HEPD WiFi network

- HEPD Video conference room

Security layers

- Almost all of computer hosts have internal IPs;
- Required Internet acces is performed over proxy (http, ftp, socks) configured with anti virus (2-6 catched viruses per day);
- Mail server
  - Reject all relay hosts which have no DNS records
  - Controlled delay of incoming mails
  - Anti virus
  - Anti spam

Typical host rejection and SPAM percentage view

Mail server upgrades
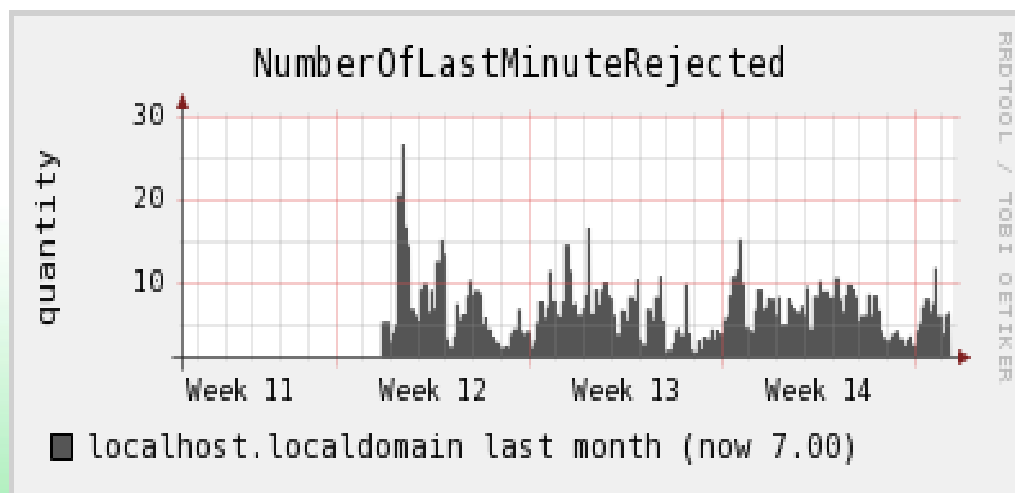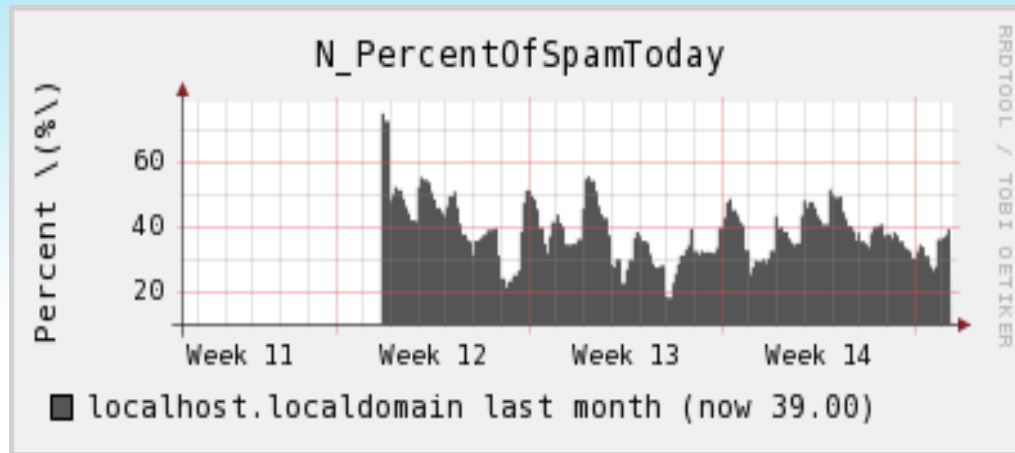
The mail server has been upgraded:
- new hardware;
- mail server moved to virtual machine
- new antiSPAM procedure

http://hcpnet.free.fr/milter-greylist/

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WiFi

- The service has been extended: (more access points) & configuration correction for RADIUS server

- Old access points: 3 Com AP9150 2.4 GHz PoE
  - Simple configuration, useful defaults, stable.

- New access points: 3 Com AP9552 2.4GHz + 5 GHz PoE
  - Significantly more complicated (more commands and less suitable defaults)
  - Firmware is not up to date for 5 GHz.

Twiki

- Recently we started Twiki service in PNPI HEPD
  - It invoked the discussion: may be we need to move such the service to a cloud (Google, CERN)?

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HEPD computing cluster of micro size

- **Computing cluster** (6 physical nodes based on CPU Xeon E5530/2.4GHz/1066/64bit/Quad-core and older, 18 virtual nodes, host OS SL5.5/**Xen**); main machine has been moved to virtual image; now the cluster consists of only virtual machines)
  - batch system = **SGE**;
  - home made set of scripts to keep cluster up;
  - **NFS**, **NIS**, autofs, **AFS** client (no **AFS** servers).
  - **SL48** as guest OSes
  - 4 TB disk space, home made backup system
  - **around 140 registered users**, 5-15 every day
  - Quite old Linux batch cluster (started in *1998* with **CODINE**, passed through many upgrades).
- **HEPD does still need for such small cluster.**

Micro computing cluster roles/aims in small physics group/laboratory

- Main aim is to use for
    - Development of new algorithms/programs;
    - There are *still plans* for analysis of small portion of the data (~200 TB) and not only for LHC;
    - Also for small laboratory the cluster might be served as pool of spare machines in case of emegency;
  - Interesting to compare with
    - www.phenix.bnl.gov/phenix/WWW/publish/shevel/tech-reports/ClusterPaper-2011-04-11.pdf

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Minor problems

- We still have the atacks to our servers with botnets (they try to guess for passwords). To prevent it we use home maid script which does block remote host from where we had more than 20 unsuccessful logins in around one minute from one remote host. The script uses mechanism /etc/{hosts.allow,hosts.deny}

- Several disks went down during the year: all of them were members of RAID-1.

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Thank you !   Questions?

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