

# Current status of the BY-NCPHEP Tier3 site

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# Milestones and updates

2008 Site was registered in GocDB as BY-NCPHEP.

2011 Site was registered in CMS SiteDB as T3\_BY\_NCPHEP.

2013 SE was moved to Supermicro rack mount size server.

2014 Production instance of PhEDEx was commissioned.

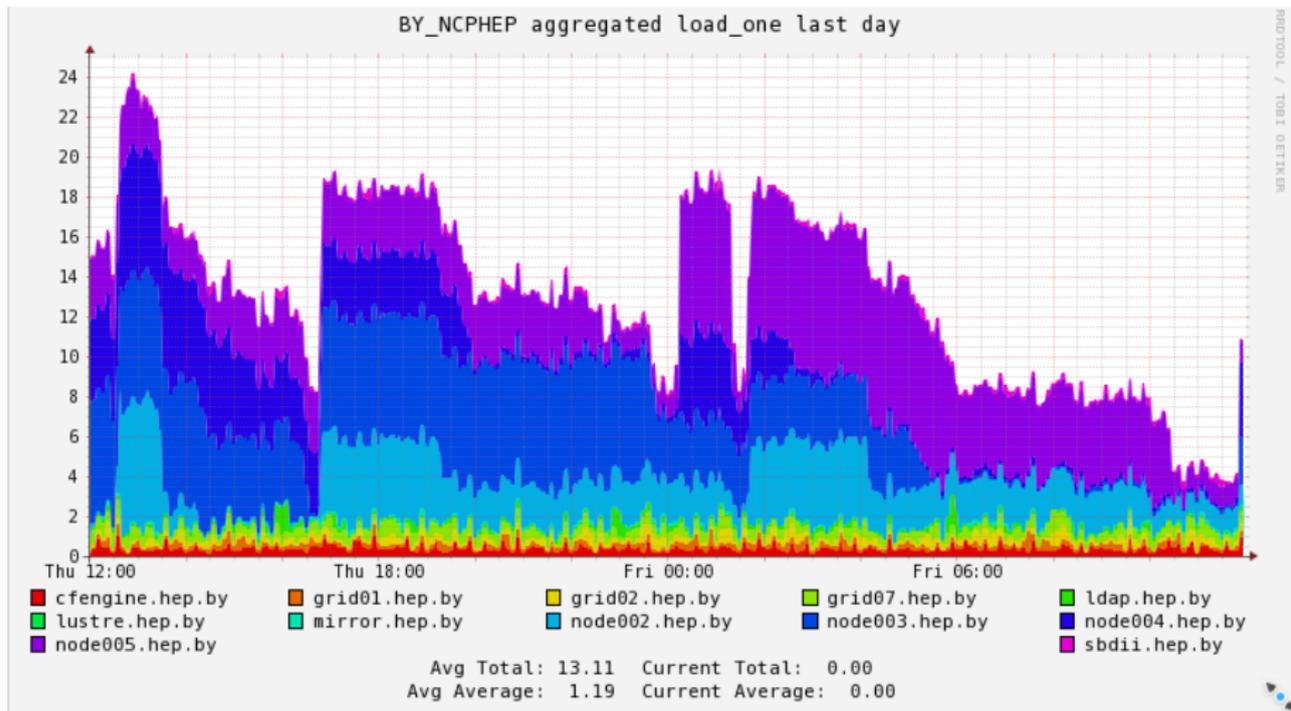
2015 Grid services were moved to virtualization environment.

2016 Storage system organization was improved.

# GRID site usage

- Long term single job calculations.
- Testing grid jobs before main submission.
- Priority job execution (with total run time less than 8h).
- Storage area for analysis output data.

# Grid site usage



# Grid site resources

Small institutions have not enough resources to setup and support large computer cluster:

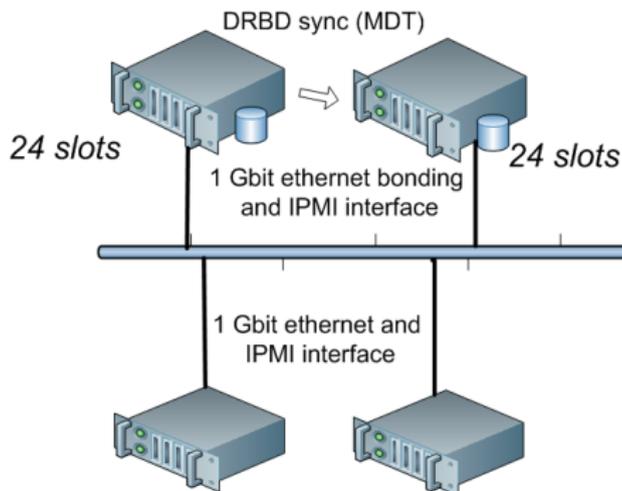
- limited computational resources (54 cores)
- upgrading of storage system in process (raid6 > 50Tb)
- 1Gbit LAN



# Site network scheme

## Lustre Cluster (2 nodes)

MDT (RAID1+DRBD primary/secondary), OST (RAID6)



## Working nodes



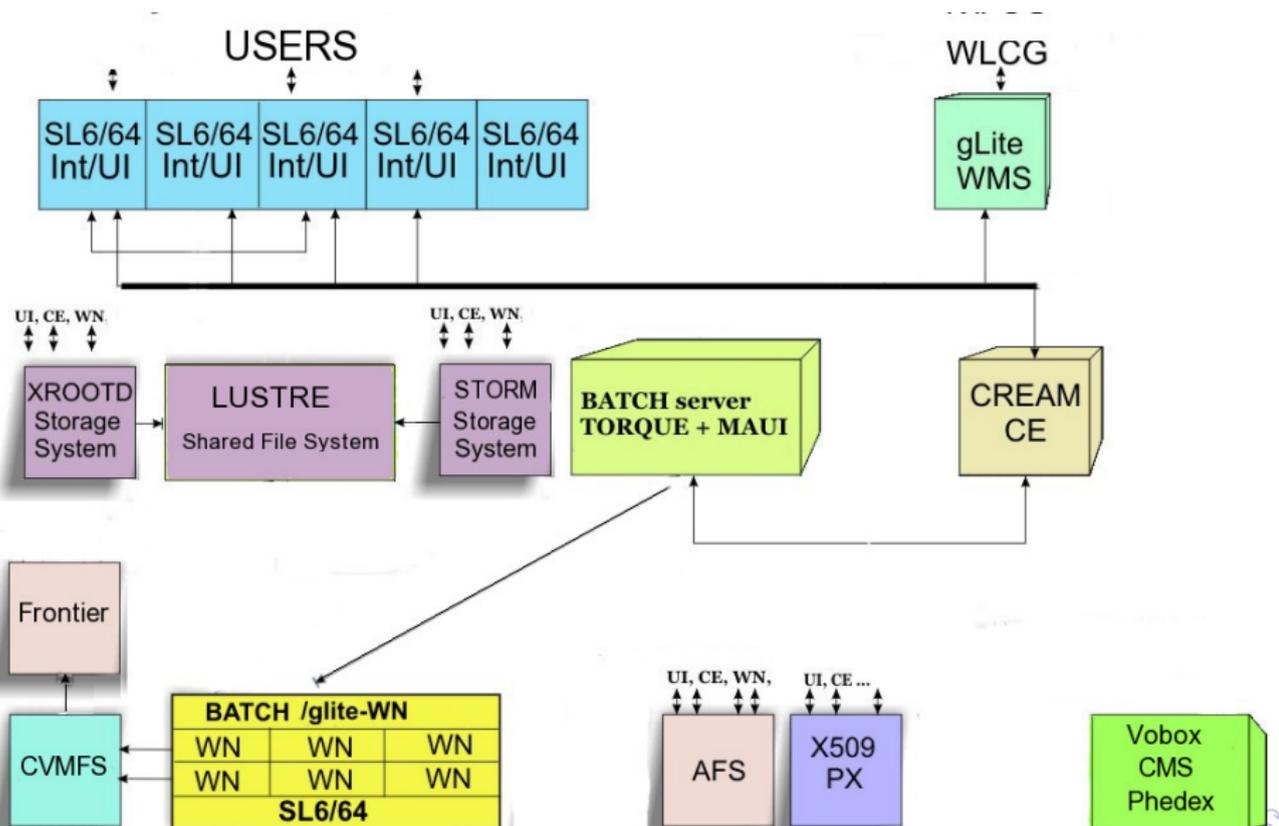
## User Interface



## Proxmox Cluster (2 nodes)

KVM virtual machines - all GRID services, LDAP server, cfengine+SVN server

# Site services scheme



# Lustre FS

## Lustre®

- Starting from 2.8.0 version DKMS build work (both on sl6 and CentOS7)!
- **LU-2994**: VM doesn't start. Adopted solution: set cache=writeback in Proxmox VE.
- **LU-1482**: Attribute not permitted. Adopted solution: map to single user in grid-mapfile.

# Presence at CMS Dashboard

**dashboard** SAM VISUALIZATION | CMS

Latest Results    Historical View    Generate Report    **Help**

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**Site-Groups**    **Profiles**

AllGroups    CMS\_CRITICAL    (OSG-CE + CREAM)

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**Sites**    **Service Flavours**    **All Metrics**

T2\_US\_Vanderbilt  
T2\_US\_Wisconsin  
T3\_AS\_Parrot  
T3\_BG\_UNI\_SOFIA  
**T3\_BY\_NCPHEP**

All Service Flavours  
SRMv2

org.cms.SRM-GetPFNFromTFC  
org.cms.SRM-VOGet (/cms/Rc  
org.cms.SRM-VOPut (/cms/Ro

    Show site metrics

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**Algorithm for calculating the Site and Service Availability**

**Legends for Metric Result Status**

Status:	OK	WARNING	CRITICAL	UNKNOWN	MAINTENANCE
Legend:	OK	W	C	U	MT

Note: darkest colors: test is 0 - 12 hours old, ... lightest colors: test is more that 12 hours old

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Legend	Metric Name
2	org.cms.SRM-GetPFNFromTFC (/cms/Role_production)
5	org.cms.SRM-VOPut (/cms/Role_production)
6	org.cms.SRM-VOGet (/cms/Role_production)

**Link to data**

Site name	Flavour	Host status in profile	Hosts	2	5	6
T3_BY_NCPHEP	SRMv2	OK	grid02.hep.by	OK	OK	OK

# Xrootd

- Easy access from anywhere to user data for analysis.
- Direct usage with ROOT.



# OwnCloud/CernBox

- Replacement for Dropbox integrated in Tier infrastructure

The screenshot shows a web browser window with the URL `https://cernbox.hep.by/index.php/apps/files/`. The interface is a file manager with a sidebar on the left containing navigation options: All files, Favorites, Shared with you, Shared with others, Tags, and External storage. The main area displays a list of files and folders:

Name	Size	Modified
Documents	35 KB	a month ago
generator-2016_paper	1.8 MB	20 days ago
Photos	663 KB	a month ago
ownCloud_User_Manual.pdf	2.4 MB	a month ago
private.root	9 KB	a month ago
Untitled.ipynb	226 KB	a month ago

At the bottom of the interface, there are navigation controls including arrows and a search icon.

# Conclusions and plans

- Further site optimization and development.
- Computational resources extension.
- Setup site Nagios and WMS servers.
- Get involved new users because of NCPHEP reorganization.