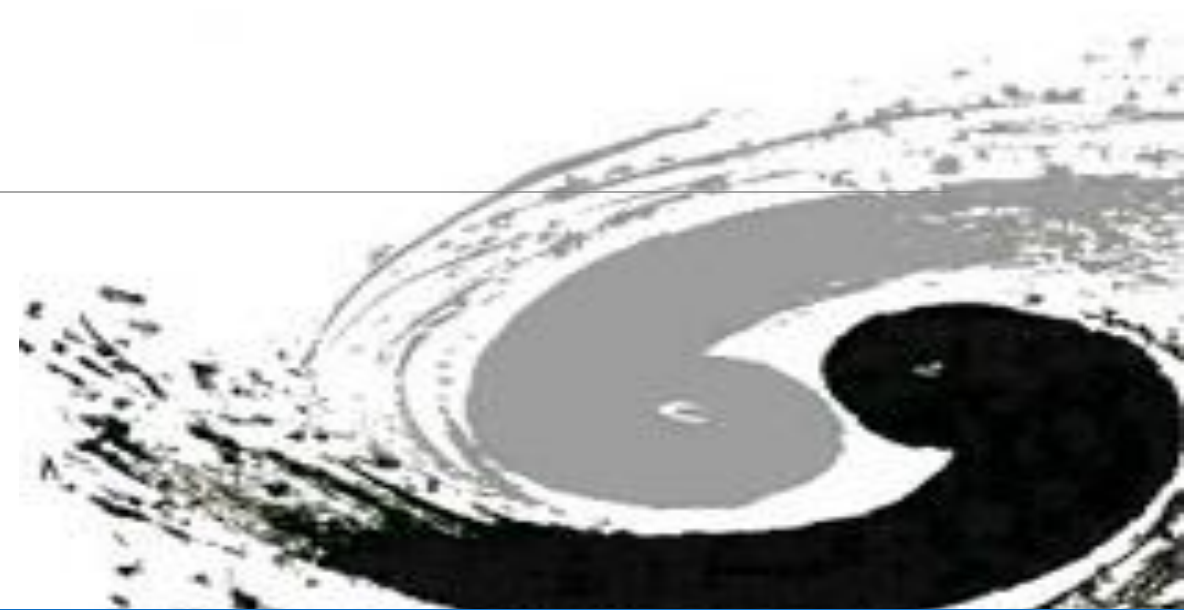


DPM to EOSSE Migration Status at IHEP

Xiaofei Yan

22/03/2023

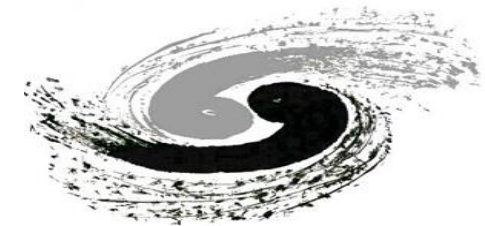


Outline

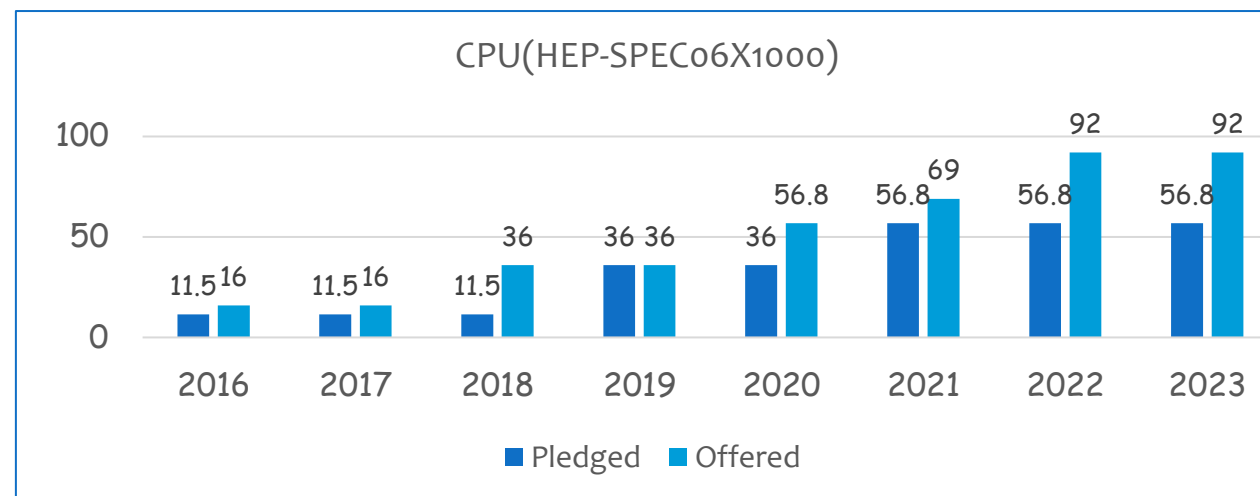


- **BEIJING-LCG2 Tier2 Resource**
- **DPM Infrastructure**
- **DPM Storage Accounting**
- **EOSSE introduce**
- **Migration time line**

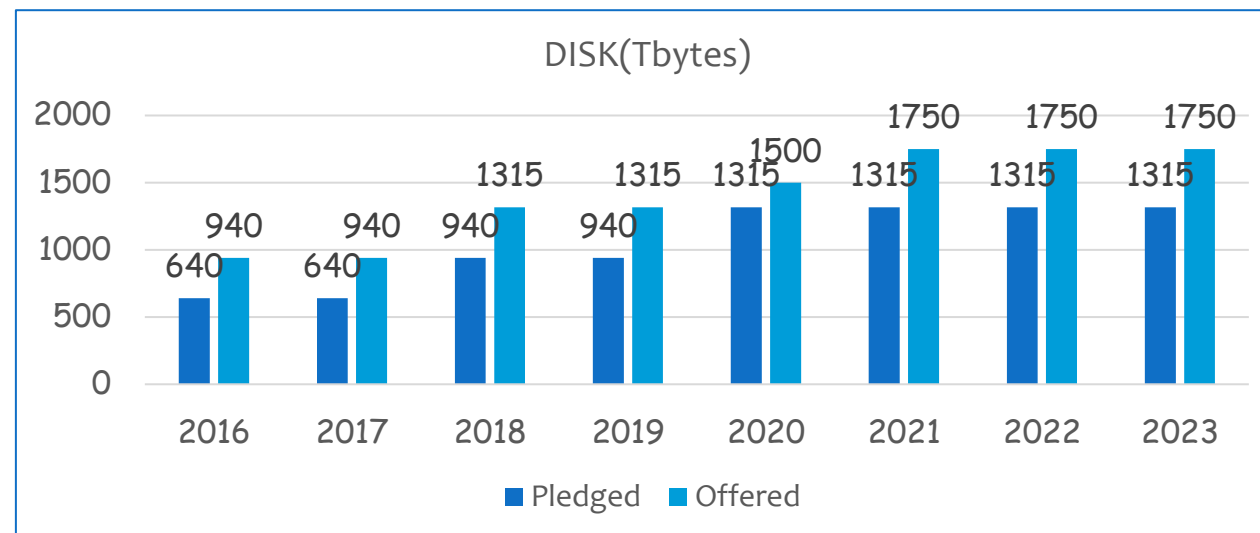
BEIJING-LCG2 Tier2 Resource



- CPU: 4232 cores
 - Intel Golden 6338: 1152 Cores
 - Intel Golden 6238R: 672 Cores
 - Intel Golden 6140: 2160 Cores
 - Intel E5-2680V3: 696 Cores
 - Intel X5650: 192 Cores
- CE & Batch: HTCondorCE & HTCondor
- VO: ATLAS, CMS, LHCb, BelleII, JUNO, CEPC



- DPM: 1750TB
 - 4TB * 24 slots with Raid 6, 5 Array boxes
 - DELL MD3860 8TB * 60 slots
 - DELL ME4084 10TB * 42 slots
 - DELL ME4084 12TB * 84 slots



DPM Infrastructure



■ ATLAS: 400TB 85% Used

- Poolnodes: dpmds01-03 DELL R620 10/2014
- Disk Array: 5 X TONGYOU 24Slots Array

■ CMS: 680TB 92% Used

- Poolnodes: dpmcms01/02 DELL R640 07/2014
- Disk Array: DELL ME4084, 12TB*84

■ LHCB: 250TB 60% Used

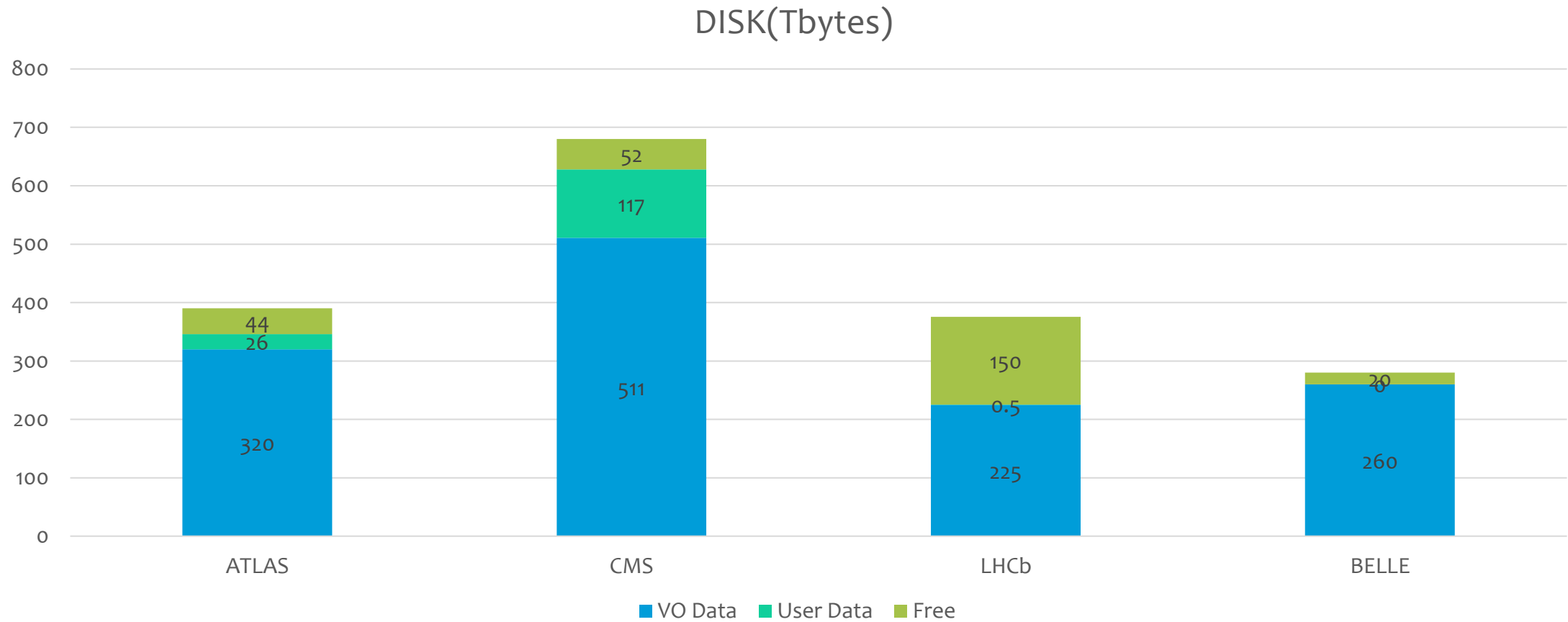
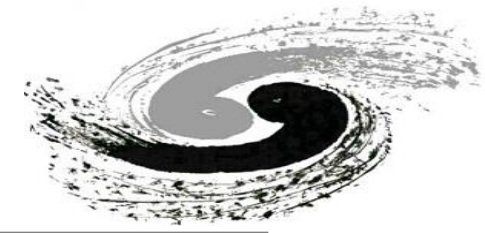
- Poolnodes: dpmlhcb01 DELL R630 11/2018
- Disk Array: DELL MD 3860F

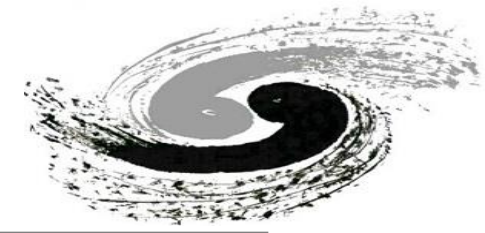
■ BELLE II: 280TB 93%

- Poolnodes: dpmbelle01 DELL R740 07/2019,
- Disk Array: DELL ME4084

fqdn	Node type	Ipv4/ipv6
ccsrm.ihep.ac.cn	Headnode	202.122.33.64/ 2401:de00:2:33::64
dpmdso1.ihep.ac.cn	Pool node	202.122.33.31/ 2401:de00:2:33::31
dpmdso2.ihep.ac.cn	Pool node	202.122.33.32/ 2401:de00:2:33::32
dpmdso3.ihep.ac.cn	Pool node	202.122.33.33/ 2401:de00:2:33::33
dpmlhcb01.ihep.ac.cn	Pool node	202.122.33.71/ 2401:de00:2:33::71
dpmbelle01.ihep.ac.cn	Pool node	202.122.33.51/ 2401:de00:2:33::51
dpmcms01.ihep.ac.cn	Pool node	202.122.33.81/ 2401:de00:2:33::81
dpmcms02.ihep.ac.cn	Pool node	202.122.33.88/ 2401:de00:2:33::88

DPM Storage Accounting





VO Data migration

■ ATLAS

- DATADISK 60TB will be moved by ATLAS DDM.
- LOCALGROUPDISK 27TB stored by user.

■ CMS

- Data moved by CMS VO.
- User data store by user.

■ LHCb

- DATA moved to IHEP Tier1.

■ Belle II

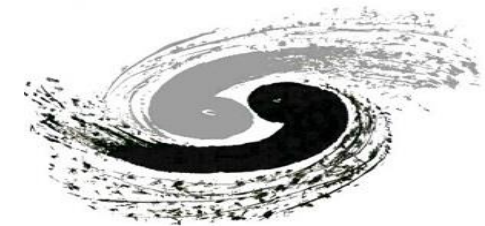
- Notification to VO

Why do we choose EOS instead of DPM?

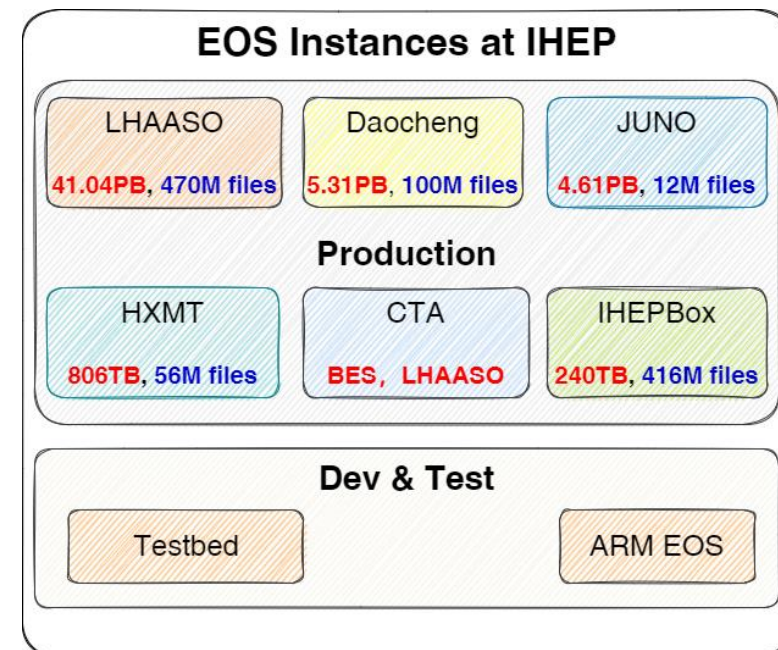


- Most new HEP experiments use EOS as main storage
- IHEP LHCb T1 will use EOS as its storage system
- EOS is the main storage at CERN

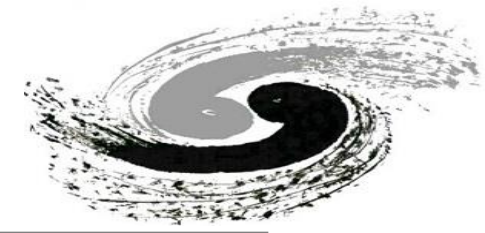
Status of EOS at IHEP



- **EOS is one of the major storage systems at IHEP**
 - 6 instances, support 3 experiment, IHEPBox and CTA
 - 50PB Raw capacity
 - 700M files
- **EOSSE exports data in JUNO EOS to the DIRAC world and RUCIO**
 - Enables user authentication by X.509 certificate and tokens
 - Provides unified storage management interface
 - Supports TPC transfer with XRootD and WebDav protocols



EOS SE Configuration



- **EOS SE and MGM are deployed on one server**

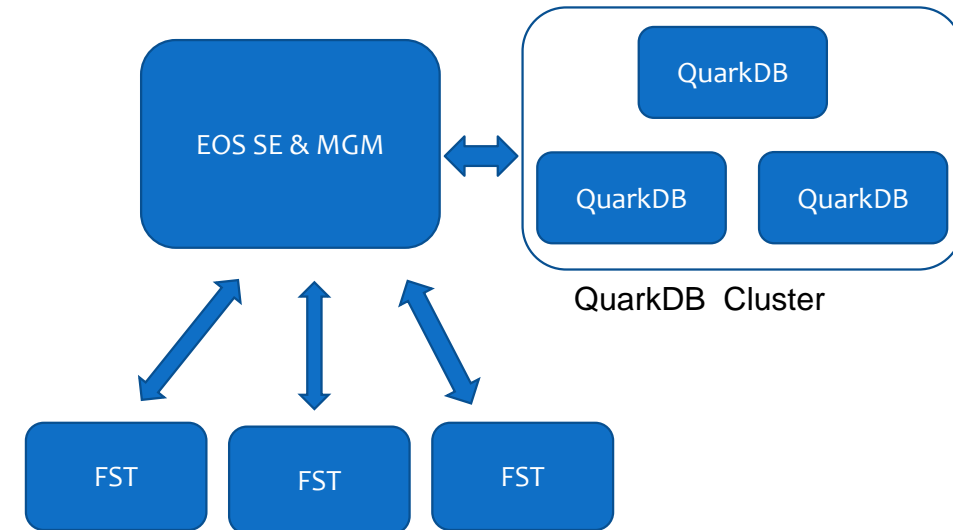
- VO configuration
- Add gsi authentication to xrd.cf.mgm
- Provide XRootD and WebDAV access
- Space Token for ATLAS

- **ccsrn.ihep.ac.cn -> cceos.ihep.ac.cn**

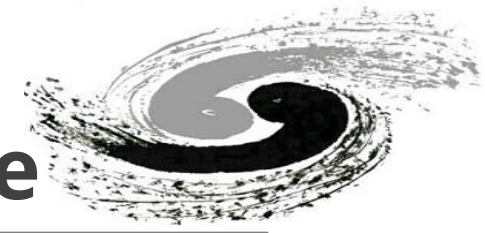
- /eos/ihep/atlas
- /eos/ihep/belle
- /eos/ihep/cms

- **Each experiment will have a group in EOS**

- with independent space and hardware



BEIJING-LCG2 Tier2 DPM to EOSSE Time line



- **17/03/2023 Send first Notifications to All China users.**

- Second: 27/03/2023, Third: 14/04/2014

- **03/2023 Send Notifications to VO.**

- **Before the Downtime**

- Data migration.
- EOSSE test platform

- **Downtime for Migrations:**

- 8:00 08/05/2023 – 23:30 10/05/2023 (BEIJING Time)

- **EOSSE Online:**

- Before 23:30 10/05/2023 (BEIJING Time)



Thanks