

# **JUNO Data Centers Working Group**

meeting September 25th, 2019

# Fixed points

- The infrastructure map to be used as starting point
- DIRAC
- FTS to move data

# Agreed actions

1) **JUNO VO**

2) Data:

3) **Network monitoring**

4) design the job submission system, defining how each data center will provide resources (CE, cloud, cluster, ...) and if and how those fit with DIRAC

5) **CernVMFS**: the goal is to replicate what CNAF did with JUNO CernVMFS in the other data centers

6) Small prototype by September 15

Done or almost done actions

# Status: Action 1

## JUNO VO

- CNAF, CC-IN2P3 joined VO
- JINR joined + VOMS replica done

**Pending action:** check if VO is working properly in all the sites

# Status: Action 3 DONE

## Network monitoring

Based on perfSONAR:

- at IHEP a network monitoring system exist

Action:

- Each data center should verify that a perfSONAR sensor exist and that can send data at the IHEP monitoring system
  - Sites connected: JINR, CC-IN2P3, CNAF, MSU
- At IHEP a specific dashboard should be created with data from JUNO data centers
  - Dashboard: <http://netdash.ihep.ac.cn/maddash-webui/>
- **Pending action:** On IHEP request Marcelo(CNAF) is looking on how integrate perfSonar in Dirac monitoring view

# Status: action 5 DONE

**CernVMFS:** all Data Centers joined

Proposal:

- Stratum 0 at IHEP
- Stratum 1 at CNAF
- Other European sites using SQUID cache system

Status

- MSU has troubles trying to connect JUNO CernVMFS
- CNAF granted RO access to JUNO CernVMFS Stratum-1; no issues reported

**Pending actions:**

- Check synchronization and coherence with IHEP

Actions in progress



# Status: action 2

To study **data movement service**, gridftp, DIRAC and verify compatibility with storage services in each data centers to design the JUNO infrastructure storage subsystem. CC-IN2P3 is currently using Dcache, but yet willing to move to XRootD when it will works

Tested data transfer between IHEP and JINR, IHEP+JINR and CNAF:

- PMT characterization data (~11TB)
- Trying gfal-copy
- **May 24th**: from IHEP to JINR, 50MB/s average, 123MB/s peak without optimization
- **May 28th**: DIRAC optimized, from IHEP to JINR at 1Gb/s
- **June 11th**: from IHEP+JINR and CNAF, 11TB, speed 80MB/s peak
- In progress: preparing to test SPADE between IHEP and Catania, where we have a SPADE installation

## Pending actions:

- Monitor consistency between file system and catalog
- Check relevance of raw data file in File Catalog
- Check how to reach 1 Gb/s for all
- Next test with FTS
- Further test FTS with DIRAC and File Catalog

# Status: action 4

Joao was able to submit an hello world type job using CLI ("dirac-wms-job-submit file.jdl") which ran on JINR and CCIN2P3  
JUNO has a module that handles most job submissions for running simulation and reconstruction.

Xiaomei worked a lot to have a version of JUNO SW that can be submitted by DIRAC or by means of JDL. Joao is preparing to test the environment.

20190910: JINR jobs hang in status Waiting; solved

## Pending actions:

- More users to try
- No test with SE yet
- Something more complex with input, output and more
- Designing a set of job test to check functionalities needed; for example:
  - Can read and write from different SEs
  - That jobs can run everywhere
  - Tests on file catalog

# Action 6: **prototype**

- Fixed deadline by September 15

Any Other Business