Data organization and data management

Artem Petrosyan (MLIT JINR)

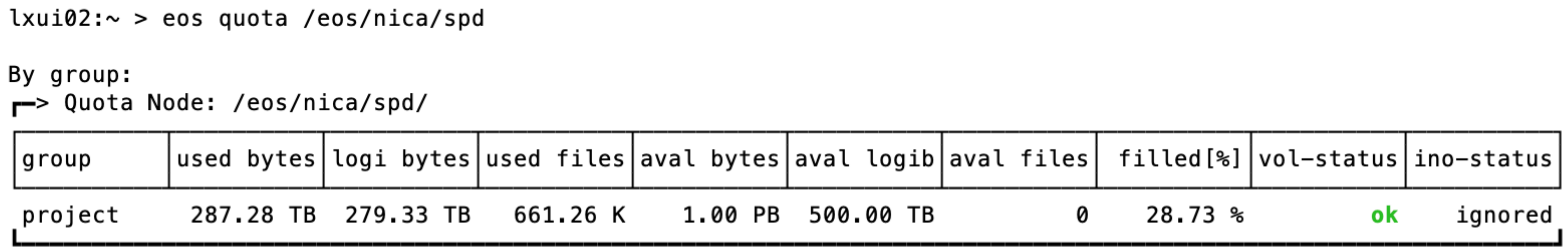
October 17, 2023

Our storage resources

- Disc: EOS
- Tapes: CTA
- External (bright, but near future)

EOS

- Users dir, there are already some data
  - /eos/nica/spd/users
- Prod dir, there will be some data, hopefully, pretty soon
  - /eos/nica/production
- It is wrong to think that EOS storage is infinite



```
lxui02:~ > eos quota /eos/nica/spd

By group:
┏━> Quota Node: /eos/nica/spd/
┌──────────┬──────────┬──────────┬──────────┬──────────┬──────────┬──────────┬──────────┬──────────┬──────────┐
│group     │used bytes│logi bytes│used files│aval bytes│aval logib│aval files│ filled[%]│vol-status│ino-status│
└──────────┴──────────┴──────────┴──────────┴──────────┴──────────┴──────────┴──────────┴──────────┴──────────┘
 project     287.28 TB  279.33 TB   661.26 K    1.00 PB  500.00 TB          0    28.73 %         ok    ignored
┗━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━┛
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- Bright future: a dedicated endpoint and EOS instance for our data, say /eos/spd
- Far bright future: to have a separated quota for users and for production

CTA

- The CERN Tape Archive (CTA) is the tape backend to EOS
- There is ongoing work and tests here in MLIT to enable CTA
- Once its done we'll be able to write our the most valuable data there
- Write access will be granted only for a service user
- We expect to have quota at least 10 times larger than the one that we have at EOS from the beginning
- In the future, for production, we expect to use EOS as a disk pool for the data during its processing, not as a long term storage

External storage

- There are already propositions to store some our data on the external storages, for example, at Minsk
- In order to start doing this we must build a data catalog to know where and which our data is stored to avoid creating a grey data
- The natural way to manage data on the external source is to do it through the data management service

Data management service

- We’ve deployed an instance of Rucio data management system and now we’re in the middle of the configuration process

- Rucio provides not only a data catalog, but also a metadata catalog, can manage replicas and data integrity on the different storages, allows to define a lifetime of the data basing on its type, etc.

- Manpower: 1 person holds a laborant position at MLIT till the end of June, 2024

Summary

- We have everything to store our data at the service level: disk, tape storages

- We need to make efforts in the following directions: data and metadata catalog preparation, data types definition, data lifetime definition, data management service configuration

- The most important task now is to define a “business processes”, identify data types and define lifetime for each type; basing on data type we’ll organize its storage on the suitable storage type

Thank you!