Archive On Demand Training

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Aim

Understand Archive System
  • Different from your local drive or the cluster’s filesystems

Foster a sensible us of this new tool

Introduce the AOD Tools

Give a little walkthrough the AOD tools
Spectra T959

- 3PB uncompressed dat capacity
- Expandable to a maximum 6PB
- IBM TS1150 Tapes
- 2 drives or robotic arms for r/w operations
Internals

- Hardware level and software level separated
- Required a archiving software on top: Commvault

Finally, on top of Commvault, Slurm FIFO
AOD Tools

Submit archiving job
• abatch

Cancel archiving job
• acancel

Display partitions
• ainfo

Display history of operations
• aquery

Display archiving jobs running
• aqueue
Specify action: **archive**

Specify complete path of file to archive

Once archived:
- If single file, it removes it
- If directory, keeps origin

```bash
#!/usr/bin/env bash

[operation]
action=archive

[objects]
/scratch/bsc/rramos/aodprueba.tar.gz
```
**abatch: retrieve operation**

- Specify action: **retrieve**
- Specify job id of the data previously archived
- Specify complete destiny path of retrieved file (**root_dir**)
- Specify original complete path of file to retrieve

```bash
#!/usr/bin/env bash
[operation]
action=retrieve
jobid=122
root_dir=/some/path/scratch
[objects]
/scratch/bsc/rramos/aodprueba.tar.gz
```
Specify action: **purge**
Specify job id of the data previously archived
Specify original complete path of the archived data
It removes completely from tapes the data archived with the specified id and the original source path

```
#!
[operation]
action=purge
jobid=122
[objects]
/scratch/bsc/rramos/aodprueba.tar.gz
```
AOD Tools: utilities

Display partitions (Ongoing configuration)

$ /opt/aod/bin /ainfo
PARTITION AVAIL TIMELIMIT NODES STATE NODELIST
main* up infinite 1 drain archive1
main* up infinite 1 idle archive2

Display archiving jobs status

$ /opt/aod/bin/aqueue
JOBID PARTITION NAME USER ST TIME NODES NODELIST(REASON)
179 main archive. oestevez R 0:07 1 archive2
AOD Tools: utilities

Display history of archives, retrievals, purges and current archiving quota

- Every operation has a job_id
- Every retrieve or purge will show the original archived

$ aquery -s
Usage: aquery [-p][-b][-q][-s]
-p Print Operations.
-b Print Objects.
-q Print quota.
-s
Print short output or parsable.

$ /opt/aod/bin/aquery -p
Operations:

<table>
<thead>
<tr>
<th>job_id</th>
<th>arch_job_id</th>
<th>action</th>
<th>date</th>
<th>end_date</th>
<th>status</th>
<th>transferred_bytes</th>
</tr>
</thead>
</table>
**Considerations**

- **Complete FIFO scheduler**
- **Initial 200TB AOD quota**
- It is a mechanical system and, therefore, really slow:
  - Each drive has a maximum of 200MB/s bandwidth
  - If the data is just on one tape -> Bottleneck
- **Once archived**
  - It is not expected to retrieve the job immediately
  - Your Lustre quota will not decrease immediately
- **Make a smart use of the resources**
- Only files bigger than 10GB will be actually stored on tape
- Avoid archiving directories with a bazillion small files
  - Partitionate the data in different folders and archive independently
- **Still beta testing, so please report any issue :)**
Walkthrough: First archive

1) **Create an archiving script**

```bash
#!/
[operation]
action=archive
[objects]
<your_complete_path>
```

2) **Submit your archiving script**

- `$abatch archive.cmd`

3) **Check your queue**

- `$aqueue`

4) **Keep track of your job id! Otherwise, once completed:**

- `$aquery -p`
Walktrough: First retrieve

1) Did you forget your job id and from where it was retrieved?
   • /opt/aod/bin/aquery -b

2) Create a retrieve script

   #!
   [operation]
   action=retrieve
   jobid=\<job_id_from_archiving_job>\
   root_dir=\<destiny_path_for_retrieve>\
   [objects]
   \<archived_object_original_path>

3) Submit your retrieve script
   • $ abatch retrieve.cmd

4) Check your queue:
   • $ aqueue
Walkthrough: First purge

1) **1) Did you forget your job id and from where it was retrieved?**
   - `/opt/aod/bin/aquery -b`

2) **Create a purge script**
   ```
   #!
   [operation]
   action=purge
   jobid=<job_id_from_archiving_job>
   [objects]
   <archived_object_original_path>
   ```

3) **Submit your purge script**
   - `$ abatch purge.cmd`

4) **Check your queue:**
   - `$ aqueue`
Thank you for coming

For further information please contact
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http://www.bsc.es/user-support/cnag.php