Archive On Demand Training

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Aim

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

Foster a sensible use of this new tool

Introduce the AOD tools

Give a little walkthrough the AOD tools
Spectra T950

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

More info: https://www.spectralogic.com/products/spectra-t950/overview/
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 original complete path of file to retrieve (root_dir)
- Specify complete destiny path of retrieved file

```bash
#!/bin/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

```bash
#!
[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

<table>
<thead>
<tr>
<th>JOBID</th>
<th>PARTITION</th>
<th>NAME</th>
<th>USER</th>
<th>ST</th>
<th>TIME</th>
<th>NODES</th>
<th>NODELIST(REASON)</th>
</tr>
</thead>
<tbody>
<tr>
<td>179</td>
<td>main</td>
<td>archive. oestevez</td>
<td>R</td>
<td>0:07</td>
<td>1</td>
<td>archive2</td>
<td></td>
</tr>
</tbody>
</table>
```
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 job id (arch_job_id)

$ 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:

+----------+----------------+-----------+-----------------------------+-----------------------------+------------+------------------------+
| job_id   | arch_job_id |  action   | date                           | end_date                   | status    | transferred_bytes |
+----------+----------------+-----------+-----------------------------+-----------------------------+-----------+------------------------+
+----------+----------------+-----------+-----------------------------+-----------------------------+-----------+------------------------+
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 AOD quota will not decrease immediately

Make a smart use of the resources

Still beta testing, so please report any issue :)

11
Walkthrough: First archive

1) Create a archiving script

```
#!/
[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
Walktrough: First purge

1) Did you forget your job id and from where it was retrieved?
   • $ 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