Managing the OSD Map

Objectives

After completing this section, you should be able to describe the purpose and modification of the OSD maps.

Describing the OSD Map

The cluster OSD map contains the address and status of each OSD, the pool list and details, and other information such as the OSD near-capacity limit information. Ceph uses these last parameters to send warnings and to stop accepting write requests when an OSD reaches full capacity.

When a change occurs in the cluster's infrastructure, such as OSDs joining or leaving the cluster, the MONs update the corresponding map accordingly. The MONs maintain a history of map revisions. Ceph identifies each version of each map using an ordered set of incremented integers known as *epochs*.

The `ceph status -f json-pretty` command displays the epoch of each map. Use the `ceph` *`map`* `dump` subcommand to display each individual map, such as `ceph osd dump`.

```
[ceph: root@serverc /]# ceph status -f json-pretty
...output omitted...
    "osdmap": {
        "epoch": 478,
        "num_osds": 15,
        "num_up_osds": 15,
        "osd_up_since": 1632743988,
        "num_in_osds": 15,
        "osd_in_since": 1631712883,
        "num_remapped_pgs": 0
    },
...output omitted...
[ceph: root@serverc /]# ceph osd dump
epoch 478
fsid 11839bde-156b-11ec-bb71-52540000fa0c
created 2021-09-14T14:50:39.401260+0000
modified 2021-09-27T12:04:26.832212+0000
flags sortbitwise,recovery_deletes,purged_snapdirs,pglog_hardlimit
crush_version 69
full_ratio 0.95
backfillfull_ratio 0.9
nearfull_ratio 0.85
require_min_compat_client luminous
min_compat_client luminous
require_osd_release pacific
stretch_mode_enabled false
```