Solution

Creating and Customizing Storage Maps

In this lab, you will modify the CRUSH map, create a CRUSH rule, and set the CRUSH tunables profile.

Outcomes

You should be able to create a new CRUSH hierarchy and move OSDs into it, create a CRUSH rule and configure a replicated pool to use it, and set the CRUSH tunables profile.

Before You Begin

As the `student` user on the `workstation` machine, use the `lab` command to prepare your system for this lab.

```
[student@workstation ~]$ lab start map-review
```

This command confirms that the hosts required for this exercise are accessible, backs up the CRUSH map, and sets the `mon_allow_pool_delete` setting to `true`.

Instructions

1. Create a new CRUSH hierarchy under `root=review-cl260` that has two data center buckets (`dc1` and `dc2`), two rack buckets (`rack1` and `rack2`), one in each data center, and two host buckets (`hostc` and `hostd`), one in each rack.

   Place `osd.1` and `osd.2` into `dc1`, `rack1`, `hostc`.

   Place `osd.3` and `osd.4` into `dc2`, `rack2`, `hostd`.

   1.1. Log in to `clienta` as the `admin` user and use `sudo` to run the `cephadm shell`.

```
[student@workstation ~]$ ssh admin@clienta
[admin@clienta ~]$ sudo cephadm shell
[ceph: root@clienta /]#
```

   1.2. Create the buckets with the `ceph osd crush add-bucket` command.

```
[ceph: root@clienta /]# ceph osd crush add-bucket review-cl260 root
added bucket review-cl260 type root to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket dc1 datacenter
added bucket dc1 type datacenter to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket dc2 datacenter
added bucket dc2 type datacenter to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket rack1 rack
added bucket rack1 type rack to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket rack2 rack
added bucket rack2 type rack to crush map
[ceph: root@clienta /]# ceph osd crush add-bucket hostc host
```