Expanding Red Hat Ceph Storage Cluster Capacity

Objectives

After completing this section, you should be able to expand capacity to meet application storage requirements by adding OSDs to an existing cluster.

Expanding Your Ceph Cluster Capacity

You can expand the storage capacity of your Red Hat Ceph Storage cluster without disrupting active storage activity. There are two ways to expand the storage in your cluster:

- Add additional OSD nodes to the cluster, referred to as *scaling out*.
- Add additional storage space to the existing OSD nodes, referred to as *scaling up*.

Use the `cephadm shell -- ceph health` command to verify that the cluster is in the `HEALTH_OK` state before starting to deploy additional OSDs.

Configuring Additional OSD Servers

As a storage administrator, you can add more hosts to a Ceph storage cluster to maintain cluster health and provide sufficient load capacity. Add one or more OSDs to expand the storage cluster capacity when the current storage space is becoming full.

- As the root user, add the Ceph storage cluster public SSH key to the root user's `authorized_keys` file on the new host.

```
[root@adm ~]# ssh-copy-id -f -i /etc/ceph/ceph.pub root@new-osd-1
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/etc/ceph/ceph.pub"

Number of key(s) added: 1
...output omitted...
```

- As the root user, add new nodes to the inventory file located in `/usr/share/cephadm-ansible/hosts/`. Run the preflight playbook with the `--limit` option to restrict the playbook's tasks to run only on the nodes specified. The Ansible Playbook verifies that the nodes to be added meet the prerequisite package requirements.

```
[root@adm ~]# ansible-playbook -i /usr/share/cephadm-ansible/hosts/ \
/usr/share/cephadm-ansible/cephadm-preflight.yml \
--limit new-osd-1
```

- Choose one of the methods to add new hosts to the Ceph storage cluster:

  - As the root user, in the Cephadm shell, use the `ceph orch host add` command to add a new host to the storage cluster. In this example, the command also assigns host labels.

```
[ceph: root@adm /]# ceph orch host add new-osd-1 --labels=mon,osd,mgr
Added host 'new-osd-1' with addr '192.168.122.102'
```