Deploying Red Hat Ceph Storage

Objectives

After completing this section, you should be able to prepare for and perform a Red Hat Ceph Storage cluster deployment using cephadm command-line tools.

Preparing for Cluster Deployment

Use the `cephadm` utility to deploy a new Red Hat Ceph Storage 5 cluster.

The cephadm utility consists of two main components:

- The `cephadm shell`.
- The `cephadm orchestrator`.

The `cephadm shell` command runs a bash shell within a Ceph-supplied management container. Use the cephadm shell to perform cluster deployment tasks initially and cluster management tasks after the cluster is installed and running.

Launch the cephadm shell to run multiple commands interactively, or to run a single command. To run it interactively, use the `cephadm shell` command to open the shell, then run Ceph commands.

The `cephadm orchestrator` provides a command-line interface to the orchestrator ceph-mgr modules, which interface with external orchestration services. The purpose of an orchestrator is to coordinate configuration changes that must be performed cooperatively across multiple nodes and services in a storage cluster.

```
[root@node ~]# cephadm shell
[ceph: root@node /]#
```

To run a single command, use the `cephadm shell` command followed by two dashes and the Ceph command.

```
[root@node ~]# cephadm shell -- CEPH_COMMAND
```

Planning for Cluster Service Colocation

All of the cluster services now run as containers. Containerized Ceph services can run on the same node; this is called `colocation`. Colocation of Ceph services allows for better resource utilization while maintaining secure isolation between the services.

The following daemons can be collocated with OSD daemons: RADOSGW, MDS, RBD-mirror, MON, MGR, Grafana, and NFS Ganesha.