GETTING STARTED

Whether you want to provide Ceph Object Storage and/or Ceph Block Device services to Cloud Platforms, deploy a Ceph Filesystem or use Ceph for another purpose, all Ceph Storage Cluster deployments begin with setting up each Ceph Node, your network and the Ceph Storage Cluster. A Ceph Storage Cluster has three essential daemons:

- **OSDs**: A Ceph OSD Daemon (OSD) stores data, handles data replication, recovery, backfilling, rebalancing, and provides some monitoring information to Ceph Monitors by checking other Ceph OSD Daemons for a heartbeat. A Ceph Storage Cluster requires at least two Ceph OSD Daemons to achieve an `active + clean` state.
- **Monitors**: A Ceph Monitor maintains maps of the cluster state, including the monitor map, the OSD map, the Placement Group (PG) map, and the CRUSH map. Ceph maintains a history (called an “epoch”) of each state change in the Ceph Monitors, Ceph OSD Daemons, and PGs.
- **MDSs**: A Ceph Metadata Server (MDS) stores metadata on behalf of the Ceph Filesystem (i.e., Ceph Block Devices and Ceph Object Storage do not use MDS). Ceph Metadata Servers make it feasible for POSIX file system users to execute basic commands like `ls`, `find`, etc. without placing an enormous burden on the Ceph Storage Cluster.

STEP 1: PREFLIGHT

A Ceph Client and a Ceph Node may require some basic configuration work prior to deploying a Ceph Storage Cluster. You can also avail yourself of help from the Ceph community by getting involved.

- Get Involved
- Preflight
  - Install an Operating System
  - Install an SSH Server
  - Create a User
  - Configure SSH
  - Install ceph-deploy
  - Ensure Connectivity
  - Hostname Resolution
  - Summary

STEP 2: STORAGE CLUSTER

Once you’ve completed your preflight checklist, you should be able to begin deploying a Ceph Storage Cluster.

- Storage Cluster Quick Start
  - Create a Cluster
  - Install Ceph
  - Add a Monitor
  - Gather Keys
  - Add Ceph OSD Daemons
    - Multiple OSDs on the OS Disk (Demo Only)
    - List Disks
    - Zap a Disk
    - Add OSDs on Standalone Disks
  - Add a MDS
  - Summary

STEP 3: CEPH CLIENT(S)

Most Ceph users don’t store objects directly in the Ceph Storage Cluster. They typically use at least one of Ceph Block Devices, the Ceph Filesystem, and Ceph Object Storage.

- Block Device Quick Start
- Filesystem Quick Start
  - Prerequisites
  - Create a Secret File
  - Kernel Driver
  - Filesystem in User Space (FUSE)
  - Additional Information
- Object Storage Quick Start
  - Install Apache and FastCGI
  - Install Ceph Object Storage
  - Create a Data Directory
  - Modify the Ceph Configuration File
  - Create a Gateway Configuration File
  - Add a FastCGI Script
  - Generate a Keyring and Key
  - Enable SSL
  - Add Wildcard to DNS
  - Restart Services
  - Create a User
    - Gateway (S3) User
    - Subuser
    - Summary

For releases prior to Cuttlefish, see the 5-minute Quick Start for deploying with mkcephfs. To transition a cluster deployed with `mkcephfs` for use with `ceph-deploy`, see Transitioning to ceph-deploy.