GETTING STARTED

Whether you want to provide RESTful object services and/or block devices to a cloud solution, deploy a CephFS filesystem or use Ceph for another purpose, all Ceph clusters begin with setting up your host computers, network and the Ceph Object Store. A Ceph object store cluster has three essential daemons:

- **OSDs**: Object Storage Daemons (OSDs) store data, handle data replication, recovery, backfilling, rebalancing, and provide some monitoring information to Ceph monitors by checking other OSDs for a heartbeat. A cluster requires at least two OSDs to achieve an `active + clean` state.
- **Monitors**: Ceph monitors maintain 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 monitors, OSDs, and PGs.
- **MDSs**: Metadata Servers (MDSs) store metadata on behalf of the CephFS filesystem (i.e., Ceph block devices and Ceph gateways do not use MDS). Ceph MDS servers make it feasible for POSIX file system users to execute basic commands like `ls`, `find`, etc. without placing an enormous burden on the object store.

STEP 1: PREFLIGHT

Client and server machines may require some basic configuration work prior to deploying a Ceph 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 git
  - Clone ceph-deploy
  - Install python-virtualenv
  - Bootstrap ceph-deploy
  - Summary

STEP 2: OBJECT STORE

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

- Object Store Quick Start
  - Install Ceph
  - Create a Cluster
  - Add a Monitor
  - Gather Keys
  - Add OSDs
    - List Disks
    - Zap a Disk
    - Add OSDs
  - Add a MDS
  - Summary

STEP 3: CEPH CLIENT(S)

Most Ceph users don’t store objects directly. They typically use at least one of Ceph block devices, the CephFS filesystem, and the RESTful gateway.

- Block Device Quick Start
- CephFS Quick Start
  - Kernel Driver
  - Filesystem in User Space (FUSE)
  - Additional Information
- Gateway Quick Start
  - Install Apache and FastCGI
  - Install RADOS Gateway
  - Modify the Ceph Configuration File
  - Create a Data Directory
  - Create a Gateway Configuration File
  - Add a FastCGI Script
  - Generate a Keyring and Key
  - Create a User
    - Gateway (S3) User
    - Subuser
  - Enable SSL

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.