```
[ceph: root@node /]# ceph -w
```

- Verify that the backfill process has moved all PGs off the OSD and it is now safe to remove.

```
[ceph: root@node /]# while ! ceph osd safe-to-destroy osd.OSD_ID ; \
do sleep 10 ; done
```

- When the OSD is safe to remove, replace the physical storage device and destroy the OSD. Optionally, remove all data, file systems, and partitions from the device.

```
[ceph: root@node /]# ceph orch device zap HOST_NAME _OSD_ID --force
```

Note

Find the current device ID using the Dashboard GUI, or the `ceph-volume lvm list` or `ceph osd metadata` CLI commands.

- Replace the OSD using the same ID as the one that failed. Verify that the operation has completed before continuing.

```
[ceph: root@node /]# ceph orch osd rm OSD_ID --replace
[ceph: root@node /]# ceph orch osd rm status
```

- Replace the physical device and recreate the OSD. The new OSD uses the same OSD ID as the one that failed.

Note

The device path of the new storage device might be different than the failed device. Use the `ceph orch device ls` command to find the new device path.

```
[ceph: root@node /]# ceph orch daemon add osd HOST_NAME:_DEVICE_PATH_
```

- Start the OSD and verify that the OSD is up.

```
[ceph: root@node /]# ceph orch daemon start OSD_ID
[ceph: root@node /]# ceph osd tree
```

- Re-enable scrubbing.

```
[ceph: root@node /]# ceph osd unset noscrub ; ceph osd unset nodeep-scrub
```

Adding a MON

Add a MON to your cluster by performing the following steps.

- Verify the current MON count and placement.