

Backup and Restore

1. Ceph Configuration

- *Command:* There isn't a specific Ceph command for this. Simply copy the configuration files.
- *Steps:*
 - Locate the Ceph configuration files in the `/etc/ceph/` directory.
 - Use the `cp` or `rsync` command to copy the `ceph.conf` and `ceph.client.admin.keyring` files to a secure location.

2. Monitor State

- *Command:* There isn't a specific Ceph command for this. You can use standard file copy commands.
- *Steps:*
 - Identify the Ceph monitor nodes. You can use the following command to do this:

```
ceph mon stat
```

or

```
ceph mon dump
```

- To check the current monitor quorum status and monitor health, use the following command:

```
ceph quorum_status
```

- For each monitor node, copy the monitor store data and monitor map files:

```
cp -r /var/lib/ceph/mon/ceph-<mon-id> /path/to/backup/
```

or

```
ceph mon dump <mon-id> > <backup-file>
```

- Verify the backup file. You can use the following command to do this:

```
ceph mon check <backup-file>
```

- Restore the monitor data from the backup file. You can use the following command to do this:

```
ceph mon restore <mon-id> <backup-file>
```

3. OSD Metadata

- *Command:* There isn't a specific Ceph command for this. Use file copy commands.
- *Steps:*
 - To gather OSD information, use the following command:

```
ceph osd tree
```

- To gather OSD information, use the following command:

```
ceph osd dump > osd_dump.txt
```

or

```
```\nceph osd dump <osd-id> > <backup-file>\n```
```

- Copy the OSD map and crush map files:

```
cp /var/lib/ceph/osd/ceph-<osd-id>/fsid /path/to/backup/
cp /var/lib/ceph/osd/ceph-<osd-id>/whoami /path/to/backup/
cp /etc/ceph/osd/ceph-<osd-id>/keyring /path/to/backup/
```

- Verify the backup file. You can use the following command to do this:

```
ceph osd check <backup-file>
```

- Create a new OSD. You can use the following command to do this:

```
ceph osd create
```

- Restore the OSD data from the backup file. You can use the following command to do this:

```
ceph osd restore <osd-id> <backup-file>
```

## 4. Data Backups

- **RBD Images**

- *Commands:*

- To create an RBD snapshot:

```
rbid snap create <pool>/<image>@snapshot-name
```

- To export an RBD snapshot:

```
rbid export <pool>/<image>@snapshot-name
/path/to/backup/image-export.img
```

- To import an RBD snapshot:

- **CephFS**

- *Command:*

- Use the following command to create a CephFS metadata dump:

```
ceph fs dump > cephfs_dump.txt
```

- Restore the metadata from the backup file. You can use the following command to do this:

```
ceph fs restore <fs-name> <backup-file>
```

- Mount the Ceph file system. You can use the following command to do this:

```
mount -t ceph <fs-name> <mount-point>
```

## 5. Database Backups

- **Ceph Manager Database**

- *Commands:*

- Use `ceph-mgr` to create a database backup:

```
ceph-mgr ceph fsid dump --format=json-pretty > mgr-database-backup.json
```

## 6. Cluster Monitoring and Logs

- *Commands:*
  - To copy log files, you can use standard file copy commands. Logs are typically located in `/var/log/ceph/` on Ceph nodes.