

Providing iSCSI Block Storage

Objectives

After completing this section, you should be able to configure the Ceph iSCSI Gateway to export RADOS Block Devices using the iSCSI protocol, and configure clients to use the iSCSI Gateway.

Describing the Ceph iSCSI Gateway

Red Hat Ceph Storage 5 can provide highly available iSCSI access to RADOS block device images stored in the cluster. The iSCSI protocol allows clients (initiators) to send SCSI commands to storage devices (targets) over TCP/IP networks. Each initiator and target is uniquely identified by an iSCSI qualified name (IQN). Clients with standard iSCSI initiators can access cluster storage without requiring native Ceph RBD client support.

The Linux I/O target kernel subsystem runs on every iSCSI gateway to support the iSCSI protocol. Previously called LIO, the iSCSI target subsystem is now called *TCM*, or the Target Core Mod. The TCM subsystem utilizes a user-space pass-through (TCMU) to interact with the Ceph `Librbd` library to expose RBD images to iSCSI clients.

iSCSI-specific OSD Tuning

Object Storage Devices (OSDs) and Monitors (MONs) do not require any iSCSI-specific server settings. To limit client SCSI time outs, reduce the delay timeout setting that the cluster uses to detect a failing OSD.

In the `cephadm` shell, run the `ceph tell <daemon_type>.<id> config set` command to set the timeout parameters.

```
[root@node ~]# ceph config set osd osd_heartbeat_interval 5
[root@node ~]# ceph config set osd osd_heartbeat_grace 20
[root@node ~]# ceph config set osd osd_client_watch_timeout 15
```

Deploying an iSCSI Gateway

You can deploy the iSCSI gateway on dedicated nodes or collocated with the OSDs. Meet the following prerequisites before deploying a Red Hat Ceph Storage iSCSI gateway:

- Install the iSCSI gateway nodes with Red Hat Enterprise Linux 8.3 or later.
- Have an operational cluster running Red Hat Ceph Storage 5 or later.
- Have 90 MiB of RAM available for each RBD image exposed as a target on iSCSI gateway nodes.
- Open TCP ports 3260 and 5000 on the firewall on each Ceph iSCSI node.
- Create a new RADOS block device or use an existing, available device.

Create a Configuration File

To deploy iSCSI gateway nodes, use the `cephadm` shell to create a configuration file called `iscsi-gateway.yaml` in the `/etc/ceph/` directory. The file should display as follows: