

创建块设备池

1. 在管理节点上，使用该ceph工具创建池（建议使用名称'rbd'）。
2. 在管理节点上，使用该rbd工具初始化池以供RBD使用：

```
cephuser@ceph-admin:~/cluster$ ceph osd pool create rbd 128 128
pool 'rbd' created
cephuser@ceph-admin:~/cluster$ rbd pool init rbd
```

```
1 rbd pool init <pool-name>
```

配置块设备

1. 在ceph-client节点上，创建块设备映像。

```
1 rbd create foo --size 4096 --image-feature layering [-m {mon-IP}] [-k /path/to/ceph.client.admin.keyring] [-p {pool-name}]
```

2. 在ceph-client节点上，将镜像映射到块设备。

```
1 sudo rbd map foo --name client.admin [-m {mon-IP}] [-k /path/to/ceph.client.admin.keyring] [-p {pool-name}]
```

3. 通过在ceph-client节点上创建文件系统来使用块设备。

```
cephuser@ceph-admin:~$ rbd create foo --size 4096 --image-feature layering
cephuser@ceph-admin:~$ sudo rbd map foo
/dev/rbd0
cephuser@ceph-admin:~$ sudo mkfs.ext4 -m0 /dev/rbd/foo
mke2fs 1.42.13 (17-May-2015)
The file /dev/rbd/foo does not exist and no size was specified.
cephuser@ceph-admin:~$ ls /dev/rbd
rbd
cephuser@ceph-admin:~$ ls /dev/rbd/rbd/
foo
cephuser@ceph-admin:~$ sudo mkfs.ext4 -m0 /dev/rbd/rbd/foo
mke2fs 1.42.13 (17-May-2015)
Discarding device blocks: done
Creating filesystem with 1048576 4k blocks and 262144 inodes
Filesystem UUID: 2615b1a1-3151-4b02-9e5d-172e7a2260d0
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736
Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done
```

```
1 sudo mkfs.ext4 -m0 /dev/rbd/{pool-name}/foo
```

4. 在ceph-client节点上挂载文件系统。

```

cephuser@ceph-admin:~$ sudo mkdir /mnt/ceph-block-device$ ls /dev/rbd
cephuser@ceph-admin:~$ sudo mount /dev/rbd/rbd/foo /mnt/ceph-block-device
mount: mount point /mnt/ceph-block-device does not exist -$ ls /dev/rbd/rbd/
cephuser@ceph-admin:~$ sudo mount /dev/rbd/rbd/foo ~/mnt/ceph-block-device
mount: mount point /home/cephuser/mnt/ceph-block-device does not exist
cephuser@ceph-admin:~$ ls
cluster  somefile  sshkey  test
cephuser@ceph-admin:~$ sudo mkdir /mnt/ceph-block-device -r
mkdir: invalid option -- 'r'
Try 'mkdir --help' for more information.
cephuser@ceph-admin:~$ sudo mkdir /mnt/ceph-block-device
mkdir: cannot create directory '/mnt/ceph-block-device': File exists
cephuser@ceph-admin:~$ ls /mnt/
ceph-block-device
cephuser@ceph-admin:~$ sudo mount /dev/rbd/rbd/foo ~/mnt/ceph-block-device
mount: mount point /home/cephuser/mnt/ceph-block-device does not exist
cephuser@ceph-admin:~$ sudo mount /dev/rbd/rbd/foo /mnt/ceph-block-device
cephuser@ceph-admin:~$ cd /mnt/ceph-block-device
cephuser@ceph-admin:/mnt/ceph-block-device$ ls
lost+found
cephuser@ceph-admin:/mnt/ceph-block-device$ ls -la
.  ..  lost+found
cephuser@ceph-admin:/mnt/ceph-block-device$ ls -l
total 16
drwx----- 2 root root 16384 May 22 21:08 lost+found
cephuser@ceph-admin:/mnt/ceph-block-device$

```

- 1 `sudo mkdir /mnt/ceph-block-device`
- 2 `sudo mount /dev/rbd/{pool-name}/foo /mnt/ceph-block-device`
- 3 `cd /mnt/ceph-block-device`

5. (可选) 将块设备配置为自动映射并在引导时挂载 (并在关闭时卸载/取消映射) - 请参阅[rbdmap联机帮助页](#)。

创建文件并检查ceph集群状态, 发现其正在发生io。

```

cephuser@ceph-admin:/mnt/ceph-block-device$ sudo vim test
cephuser@ceph-admin:/mnt/ceph-block-device$ ceph -v
ceph version 13.2.5 (cbff874f9007f1869bfd3821b7e33b2a6ffd4988) mimic (stable)
cephuser@ceph-admin:/mnt/ceph-block-device$ ceph -s
cluster:
  id:         44afd389-22b0-4333-aa0e-7d3389f98fb2pgs
  health:     HEALTH_WARN
              crush map has straw_calc_version=0
              objects: 204 objects, 14.3MiB
              usage:   4.05GiB used, 156GiB / 160GiB avail
  pgps:      148 active+clean
services:
  mon: 3 daemons, quorum ceph-node1,ceph-admin,ceph-node2
  mgr: ceph-admin(active), standbys: ceph-node1, ceph-node2
  osd: 3 osds: 3 up, 3 in
  rgw: 3 daemons active
  client: 1.58KiB/s rd, 3.00KiB/s wr, 0op/s rd, 0op/s wr
data:
  pools:      6 pools, 168 pgs
  objects:    274 objects, 134 MiB
  usage:      3.4 GiB used, 117 GiB / 120 GiB avail
  pgps:      168 active+clean
  rbd data.379b6b8b4567.0000000000000001fd
  rbd data.379b6b8b4567.00000000000000017d
io:
  client:     7.3 KiB/s wr, 0 op/s rd, 0 op/s wr

```

通过rados命令查看创建的文件

```

cephuser@ceph-admin:/mnt/ceph-block-device$ rados ls --pool rbd|grep 385f6b8b4567
rbd_data.385f6b8b4567.000000000000000060
rbd_data.385f6b8b4567.00000000000000001f1
rbd_data.385f6b8b4567.00000000000000001ed
rbd_data.385f6b8b4567.00000000000000001ee
rbd_data.385f6b8b4567.00000000000000001e2
rbd_data.385f6b8b4567.0000000000000000021
rbd_data.385f6b8b4567.00000000000000001fd
rbd_data.385f6b8b4567.00000000000000001e6
rbd_data.385f6b8b4567.0000000000000000020
rbd_data.385f6b8b4567.0000000000000000000
rbd_data.385f6b8b4567.00000000000000001f6
rbd_data.385f6b8b4567.00000000000000000e0
rbd_data.385f6b8b4567.00000000000000001e9
rbd_data.385f6b8b4567.00000000000000001f7
rbd_data.385f6b8b4567.00000000000000001f8
rbd_data.385f6b8b4567.00000000000000001fa
rbd_data.385f6b8b4567.00000000000000003ff
rbd_data.385f6b8b4567.0000000000000000360
rbd_data.385f6b8b4567.0000000000000000200
rbd_data.385f6b8b4567.0000000000000000320
rbd_data.385f6b8b4567.00000000000000001f4
rbd_data.385f6b8b4567.00000000000000001ff
rbd_data.385f6b8b4567.00000000000000001fc
rbd_data.385f6b8b4567.00000000000000001f9
rbd_data.385f6b8b4567.00000000000000001f5
rbd_data.385f6b8b4567.00000000000000001eb

```

查看其中一个文件块

```
cephuser@ceph-admin:/mnt/ceph-block-device$ ceph osd map rbd rbd_data.385f6b8b4567.0000000000001f3
osdmap e43 pool 'rbd' (6) object 'rbd_data.385f6b8b4567.0000000000001f3' -> pg 6.b947703f (6.3f) -> up ([0,1,2], p0) acting ([0,1,2], p0)
```