

additional erasure coded chunks to protect objects using an automatic error correction mechanism.

- The number of `placement groups (PGs)` in the pool, which store their objects in a set of OSDs determined by the CRUSH algorithm.
- Optionally, a `CRUSH rule set` that Ceph uses to identify which placement groups to use to store objects for the pool.



#### Note

Change the `osd_pool_default_pg_num` and `osd_pool_default_pgp_num` configuration settings to set the default number of PGs for a pool.

## Creating Replicated Pools

Ceph protects data within replicated pools by creating multiple copies of each object, called replicas. Ceph uses the CRUSH failure domain to determine the primary OSDs of the acting set to store the data. Then, the primary OSD finds the current replica size for the pool and calculates the secondary OSDs to write the objects to. After the primary OSD receives the acknowledgment of the writes and finishes writing the data, the primary OSD acknowledges a successful write operation to the Ceph client. This protects the data in the object if one or more of the OSDs fail.

Use the following command to create a replicated pool.

```
[ceph: root@node /]# ceph osd pool create pool-name pg-num pgp-num
replicated crush-rule-name
```

Where:

- `pool_name` is the name of the new pool.
- `pg_num` is the total configured number of placement groups (PGs) for this pool.
- `pgp_num` is the effective number of placement groups for this pool. Set this equal to `pg_num`.
- `replicated` specifies that this is a replicated pool, and is the default if not included in the command.
- `crush-rule-name` is the name of the CRUSH rule set you want to use for this pool. The `osd_pool_default_crush_replicated_ruleset` configuration parameter sets the default value.

The number of placement groups in a pool can be adjusted after it is initially configured. If `pg_num` and `pgp_num` are set to the same number, then any future adjustments to `pg_num` automatically adjusts the value of `pgp_num`. The adjustment to `pgp_num` triggers the movement of PGs across OSDs, if needed, to implement the change. Define a new number of PGs in a pool by using the following command.

```
[ceph: root@node /]# ceph osd pool set my_pool pg_num 32
set pool 6 pg_num to 32
```

When you create a pool with the `ceph osd pool create` command, you do not specify the number of replicas (size). The `osd_pool_default_size` configuration parameter defines the number of replicas, and defaults to a value of 3.