

POOL, PG AND CRUSH CONFIG REFERENCE

When you create pools and set the number of placement groups for the pool, Ceph uses default values when you don't specifically override the defaults. **We recommend** overriding some of the defaults. Specifically, we recommend setting a pool's replica size and overriding the default number of placement groups. You can specifically set these values when running **pool** commands. You can also override the defaults by adding new ones in the `[global]` section of your Ceph configuration file.

`[global]`

```
# By default, Ceph makes 2 replicas of objects. If you want to make three
# copies of an object the default value--a primary copy and two replica
# copies--reset the default values as shown in 'osd pool default size'.
# If you want to allow Ceph to write a lesser number of copies in a degraded
# state, set 'osd pool default min size' to a number less than the
# 'osd pool default size' value.

osd pool default size = 3 # Write an object 3 times.
osd pool default min size = 1 # Allow writing one copy in a degraded state.

# Ensure you have a realistic number of placement groups. We recommend
# approximately 100 per OSD. E.g., total number of OSDs multiplied by 100
# divided by the number of replicas (i.e., osd pool default size). So for
# 10 OSDs and osd pool default size = 3, we'd recommend approximately
# (100 * 10) / 3 = 333.

osd pool default pg num = 333
osd pool default pgp num = 333
```

`mon max pool pg num`

Description: The maximum number of placement groups per pool.
Type: Integer
Default: 65536

`mon pg create interval`

Description: Number of seconds between PG creation in the same Ceph OSD Daemon.
Type: Float
Default: 30.0

`mon pg stuck threshold`

Description: Number of seconds after which PGs can be considered as being stuck.
Type: 32-bit Integer
Default: 300

`osd pg bits`

Description: Placement group bits per Ceph OSD Daemon.
Type: 32-bit Integer
Default: 6

`osd pgp bits`

Description: The number of bits per Ceph OSD Daemon for PGPs.
Type: 32-bit Integer
Default: 6

`osd crush chooseleaf type`

Description: The bucket type to use for chooseleaf in a CRUSH rule. Uses ordinal rank rather than name.
Type: 32-bit Integer
Default: 1. Typically a host containing one or more Ceph OSD Daemons.

osd min rep

Description: The minimum number of replicas for a ruleset.
Type: 32-bit Integer
Default: 1

osd max rep

Description: The maximum number of replicas for a ruleset.
Type: 32-bit Integer
Default: 10

osd pool default crush rule

Description: The default CRUSH ruleset to use when creating a pool.
Type: 32-bit Integer
Default: 0

osd pool default size

Description: Sets the number of replicas for objects in the pool. The default value is the same as `ceph osd pool set {pool-name} size {size}`.
Type: 32-bit Integer
Default: 2

osd pool default min size

Description: Sets the minimum number of written replicas for objects in the pool in order to acknowledge a write operation to the client. If minimum is not met, Ceph will not acknowledge the write to the client. This setting ensures a minimum number of replicas when operating in degraded mode.
Type: 32-bit Integer
Default: 0, which means no particular minimum. If 0, minimum is $\text{size} - (\text{size} / 2)$.

osd pool default pg num

Description: The default number of placement groups for a pool. The default value is the same as `pg_num` with `mkpool`.
Type: 32-bit Integer
Default: 8

osd pool default pgp num

Description: The default number of placement groups for placement for a pool. The default value is the same as `pgp_num` with `mkpool`. PG and PGP should be equal (for now).
Type: 32-bit Integer
Default: 8

osd pool default flags

Description: The default flags for new pools.
Type: 32-bit Integer
Default: 0

osd max pgls

Description: The maximum number of placement groups to list. A client requesting a large number can tie up the Ceph OSD Daemon.
Type: Unsigned 64-bit Integer
Default: 1024
Note: Default should be fine.

osd min pg log entries

Description: The minimum number of placement group logs to maintain when trimming log files.
Type: 32-bit Int Unsigned

Default: 1000

osd default data pool replay window

Description: The time (in seconds) for an OSD to wait for a client to replay a request.

Type: 32-bit Integer

Default: 45