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** overridding 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 maximium number of placement groups per pool.
Type: Integer
Default: `65536`

`mon pg create interval`

Description: Number of seconds between PG creation in the same OSD.
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 OSD.
Type: 32-bit Integer
Default: `6`

`osd pgp bits`

Description: The number of bits per OSD 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 OSDs.

`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`

Descrption: 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 `size - (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 OSD.
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