```
[ceph: root@node /]# ceph versions
{
    "mon": {
        "ceph version 16.2.0-117.el8cp (0e34bb74700060ebfaa22d99b7d2cdc037b28a57)
 pacific (stable)": 4
    },
    "mgr": {
        "ceph version 16.2.0-117.el8cp (0e34bb74700060ebfaa22d99b7d2cdc037b28a57)
 pacific (stable)": 4
    },
    "osd": {
        "ceph version 16.2.0-117.el8cp (0e34bb74700060ebfaa22d99b7d2cdc037b28a57)
 pacific (stable)": 9
    },
    "mds": {
        "ceph version 16.2.0-117.el8cp (0e34bb74700060ebfaa22d99b7d2cdc037b28a57)
 pacific (stable)": 3
    },
    "rgw": {
        "ceph version 16.2.0-117.el8cp (0e34bb74700060ebfaa22d99b7d2cdc037b28a57)
 pacific (stable)": 2
    },
    "overall": {
        "ceph version 16.2.0-117.el8cp (0e34bb74700060ebfaa22d99b7d2cdc037b28a57)
 pacific (stable)": 22
    }
}
```

Using the Balancer Module

Red Hat Ceph Storage provides a MGR module called `balancer` that automatically optimizes the placement of PGs across OSDs to achieve a balanced distribution. This module can also be run manually.

The `balancer` module does not run if the cluster is not in the HEALTH_OK state. When the cluster is healthy, it throttles its changes so that it keeps the number of PGs that need to be moved under a 5% threshold. Configure the `target_max_misplaced_ratio` MGR setting to adjust this threshold:

```
[ceph: root@node /]# ceph config set mgr.* target_max_misplaced_ratio .10
```

The `balancer` module is enabled by default. Use the `ceph balancer on` and `ceph balancer off` commands to enable or disable the balancer.

Use the `ceph balancer status` command to display the balancer status.

```
[ceph: root@node /]# ceph balancer status
```

Automated Balancing

Automated balancing uses one of the following modes: