clients do not support the `PG upmap` feature. Verify the minimum version required by your cluster with the `ceph osd` command:

```
[ceph: root@node /]# ceph osd get-require-min-compat-client
luminous
```

Working with Cephx

Red Hat Ceph Storage provides the Cephx protocol for cryptographic authentication. If Cephx is enabled, then Ceph looks for the key ring in the default `/etc/ceph/` path.

Either enable Cephx for all components, or disable it completely. Ceph does not support a mixed setting, such as enabling Cephx for clients but disabling it for communication between the Ceph services. By default, Cephx is enabled and a client trying to access the Ceph cluster without Cephx receives an error message.

Important
Red Hat recommends using authentication in your production environment.

All Ceph commands authenticate as the `client.admin` user by default, although you can specify the user name or the user ID by using the `--name` and `--id` options.

Problems with Cephx are usually related to:

- Incorrect permissions on the key ring or `ceph.conf` files.
- Missing key ring and `ceph.conf` files.
- Incorrect or invalid `cephx` permissions for a given user. Use the `ceph auth list` command to identify the issue.
- Incorrect or misspelled user names, which you can also verify by using the `ceph auth list` command.

Troubleshooting Ceph Monitors

You can identify error messages by the `ceph health detail` command, or by reviewing the information provided by the Ceph logs.

The following is a list of the most common Ceph MON error messages:

mon.X is down (out of quorum)

If the Ceph MON daemon is not running, then an error is preventing the daemon from starting. For example, it is possible that the daemon has a corrupted store, or the `/var` partition might be full.

If the Ceph MON daemon is running but it is reported as `down`, then the cause depends on the MON state. If the Ceph MON is in the probing state longer than expected, then it cannot find the other Ceph Monitors. This problem can be caused by networking issues, or the Ceph Monitor can have an outdated Ceph Monitor map (`monmap`) is trying to reach the other Ceph Monitors on incorrect IP addresses.

If the Ceph MON is in the `electing` state longer than expected, then its clock might not be synchronized. If the state changes from `synchronizing` to `electing`, then it means that the Ceph MON is generating maps faster than the synchronization process can handle. If the state is either `leader` or `peon`, then the Ceph Mon has reached a quorum, but the rest