Troubleshooting Clusters and Clients

Objectives

After completing this section, you should be able to identify key tuning parameters and troubleshoot performance for Ceph clients, including RADOS Gateway, RADOS Block Devices, and CephFS.

Beginning Troubleshooting

The hardware backing a Ceph cluster is subject to failure over time. The data in your cluster becomes fragmented and requires maintenance. You should perform consistent monitoring and troubleshooting in your cluster to keep it in a healthy state. This section presents some practices that enable troubleshooting for various issues on a Ceph cluster. You can perform this initial troubleshooting of your cluster before contacting Red Hat Support.

Identifying Problems

When troubleshooting issues with Ceph, the first step is to determine which Ceph component is causing the problem. Sometimes, you can find this component in the information provided by the `ceph health detail` or `ceph health status` commands. Other times, you must investigate further to discover the issue. Verify a cluster's status to help determine if there is a single failure or an entire node failure.

The following troubleshooting checklist suggests next steps:

- Identify the Ceph component causing the problem.
- Set debug logging for the identified component and view the logs.
- Verify that you have a supported configuration.
- Determine if there are slow or stuck operations.

Troubleshooting Cluster Health

Red Hat Ceph Storage continually runs various health checks to monitor the health of the cluster. When a health check fails, the cluster health state changes to either `HEALTH_WARN` or `HEALTH_ERR`, depending on the severity and impact of the failed health checks. Red Hat Ceph Storage also logs the health check warnings and errors to the cluster logs.

The `ceph status` and `ceph health` commands show the cluster health status. When the cluster health status is `HEALTH_WARN` or `HEALTH_ERR`, use the `ceph health detail` command to view the health check message so that you can begin troubleshooting the issue.

```
[ceph: root@node /]# ceph health detail
```

Some health status messages indicate a specific issue; others provide a more general indication. For example, if the cluster health status changes to `HEALTH_WARN` and you see the health message `HEALTH_WARN 1 osds down; Degraded data redundancy`, then that is a clear indication of the problem.