Ceph Management and Monitoring with the Ceph Manager Dashboard

Lenz Grimmer <lgrimmer@suse.com>
Engineering Team Lead
SUSE Enterprise Storage
Dashboard v1 (Luminous)

Read-only
Ceph health status, logs, performance metrics
List of nodes, OSDs
RBD images, mirroring status, iSCSI daemon status
Python Backend (CherryPy)
Javascript UI (Rivets.JS)
New features added to master after Luminous
  - RGW details
  - MON list
  - Perf counters
  - Config settings browser
Dashboard v2 History

Jan. 2018: Initial discussions with Sage and John
POC of a Ceph Mgr Dashboard converted to Angular
  • http://pad.ceph.com/p/ceph-dashboard-angular-prototype
  • https://github.com/tspmelo/ceph/tree/ceph-dashboard-angular/
Feb. 22nd 2018: Dashboard v2 development branch created
  • https://github.com/openattic/ceph/tree/wip-mgr-dashboard_v2
Milestone 1 (Dashboard v1 feature parity) merged on 2018-03-06
  • https://github.com/ceph/ceph/pull/20103
Ceph Mimic Release on 2018-06-01
  • https://ceph.com/releases/v13-2-0-mimic-released/
  • https://ceph.com/community/mimic-new-ceph-manager-dashboard/
Dashboard v2 Overview (Mimic)

Modular Python backend (CherryPy), RESTful API
WebUI (Angular/Typescript/Bootstrap)
Inspired by / derived from openATTIC UI
Basic username/password authentication
SSL/TLS support
All features of Dashboard v1 from master branch
RBD Management
RGW Management
Config settings browser
New Dashboard Features for Nautilus

OSD management (mark as down/out, OSD settings, recovery profiles)
Config settings editor
Ceph Pool management (create/modify/delete)
ECP management
RBD mirroring configuration
Embedded Grafana Dashboards (Ceph Metrics)
CRUSH map viewer
NFS Ganesha management (WIP)
ISCSI target management (WIP)
RBD QoS configuration (WIP)
Prometheus Alert Management (WIP)
New Dashboard Features for Nautilus (cont.)

Multiple users / roles
SSO (SAML 2)
Auditing
New landing page
I18N
Swagger REST API
Demo / Screencast / Screen Shots
### OSDs List

<table>
<thead>
<tr>
<th>Host</th>
<th>Status</th>
<th>PDs</th>
<th>Size</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>new ceph-container</td>
<td>0</td>
<td>38</td>
<td>10.1 GB</td>
<td>11%</td>
</tr>
<tr>
<td>new ceph-container</td>
<td>1</td>
<td>34</td>
<td>10.1 GB</td>
<td>11%</td>
</tr>
<tr>
<td>new ceph-container</td>
<td>2</td>
<td>34</td>
<td>10.1 GB</td>
<td>11%</td>
</tr>
<tr>
<td>new ceph-container</td>
<td>3</td>
<td>47</td>
<td>10.1 GB</td>
<td>11%</td>
</tr>
<tr>
<td>new ceph-container</td>
<td>4</td>
<td>39</td>
<td>10.1 GB</td>
<td>11%</td>
</tr>
</tbody>
</table>

### OSD Performance

**OSD 0 Latency**

**OSD 0 R/W IOPS**

**OSD 0 R/W Bytes**

### Physical Device Performance

**Physical Device Latency for OSD 0**

**Physical Device R/W IOPS for OSD 0**

**Physical Device R/W Bytes for OSD 0**

**Physical Device UFS for OSD 0**
## OSDs List

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>PGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>in up</td>
<td>38</td>
</tr>
<tr>
<td>1</td>
<td>in up</td>
<td>34</td>
</tr>
<tr>
<td>2</td>
<td>in up</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>in up</td>
<td>47</td>
</tr>
<tr>
<td>4</td>
<td>in up</td>
<td>39</td>
</tr>
</tbody>
</table>

0 selected / 5 total
Add pool

Name: new_pool
Pool type: erasure
Placement groups: 128

Calculation help
The current PGs settings were calculated for you, you should make sure the values suit your needs before submit.

Erasure code profile: default

Flags
- EC Overwrites

Applications
- No applications added

Compression
Mode: none

Create pool  Back
## User Management » Roles

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>System Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>administrator</td>
<td>Administrator</td>
<td>✓</td>
</tr>
<tr>
<td>block-manager</td>
<td>Block Manager</td>
<td>✓</td>
</tr>
<tr>
<td>cephfs-manager</td>
<td>CephFS Manager</td>
<td>✓</td>
</tr>
<tr>
<td>cluster-manager</td>
<td>Cluster Manager</td>
<td>✓</td>
</tr>
<tr>
<td>pool-manager</td>
<td>Pool Manager</td>
<td>✓</td>
</tr>
<tr>
<td>read-only</td>
<td>Read-Only</td>
<td>✓</td>
</tr>
<tr>
<td>rgw-manager</td>
<td>RGW Manager</td>
<td>✓</td>
</tr>
</tbody>
</table>

0 selected / 7 total
# Ceph-Dashboard REST API

Please note that this API is not an official Ceph REST API to be used by third-party applications. Its primary purpose is to serve the requirements of the Ceph Dashboard and is subject to change at any time. Use at your own risk.

## Servers

[https://192.168.178.64:41990/api/](https://192.168.178.64:41990/api/)  

## Auth

<table>
<thead>
<tr>
<th>Method</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td>/auth</td>
</tr>
<tr>
<td>POST</td>
<td>/auth/check</td>
</tr>
<tr>
<td>POST</td>
<td>/auth/logout</td>
</tr>
</tbody>
</table>

## CephFS

<table>
<thead>
<tr>
<th>Method</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/cephfs</td>
</tr>
<tr>
<td>GET</td>
<td>/cephfs/{fs_id}</td>
</tr>
<tr>
<td>GET</td>
<td>/cephfs/{fs_id}/clients</td>
</tr>
<tr>
<td>GET</td>
<td>/cephfs/{fs_id}/mds_counters</td>
</tr>
</tbody>
</table>

## ClusterConfiguration

<table>
<thead>
<tr>
<th>Method</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/cluster_conf</td>
</tr>
<tr>
<td>POST</td>
<td>/cluster_conf</td>
</tr>
<tr>
<td>PUT</td>
<td>/cluster_conf</td>
</tr>
</tbody>
</table>
Next Steps (Nautilus)

Reaching feature parity with openATTIC 3.x
- iSCSI target management (ceph-iscsi-cli)
- NFS Ganesha

Display and manage Prometheus Alerts

Setting RBD QoS

Enable/configure Telemetry plugin

Update/create translations
- German (Germany) (de_DE), Portuguese (Portugal) (pt_PT), Chinese (China) (zh_CN)
- Chinese (Taiwan) (zh_TW), French (France) (fr_FR), Italian (Italy) (it_IT)
- Japanese (Japan) (ja_JP), Spanish (Spain) (es_ES)
Outlook

Usability / workflow enhancements

Orchestrator integration
  • Adding / removing nodes and services
  • Adding / removing / replacing disk drives

CephFS management
Getting involved / Planning

Feedback, Patches, Bug reports welcome!

IRC: #ceph-dashboard on OFTC

https://ceph.com/get-involved/