Operating Ceph from the Ceph Dashboard

Past, present and future

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Part 1

Introduction - Ceph Dashboard

Why and Who needs a “dashboard”?

History: Where do we came from?

Architecture

Key features: Quincy (17.2.z)

Roadmap: Reef (18.2.z)

Demo

> whoami?

Nizamudeen A - nizamial09

2023 - Software Engineer at IBM.

2022 - Became component lead of Ceph Dashboard in upstream and downstream.

2020 - As an Associate joined Ceph Dashboard team.

2019 - Started as an intern and was contributing to the rook and ocs operator at Red Hat.

> whoareyou?

Who of you ever **tried** or are currently using **Ceph**?

What **for**? RBD? CephFS? S3? NFS?

Anyone using some **dashboard/GUI**? Calamari? OpenATTIC?

Anyone tried/used **Ceph Dashboard**?

What is a **Dashboard**?

dashboard

/ˈdaʃbɔːd/

1. The panel facing the driver of a vehicle or the pilot of an aircraft, containing instruments and controls.

What is a **Dashboard**?

Why Ceph-Dashboard is not *just* a Dashboard for Ceph?

dashboard

/ˈdaʃbɔːd/

1. The panel facing the driver of a vehicle or the pilot of an aircraft, containing instruments and controls.

Who needs a **Dashboard**?

Distributed Systems are complex/complicate

install

configure

operate

maintain

troubleshoot

Ceph CLI doesn't provide unified User Experience

`ceph`

`rados`

`rbd`

`radosgw-admin`

`cephadm`

CLI is great but..

SSH vs. HTTPS

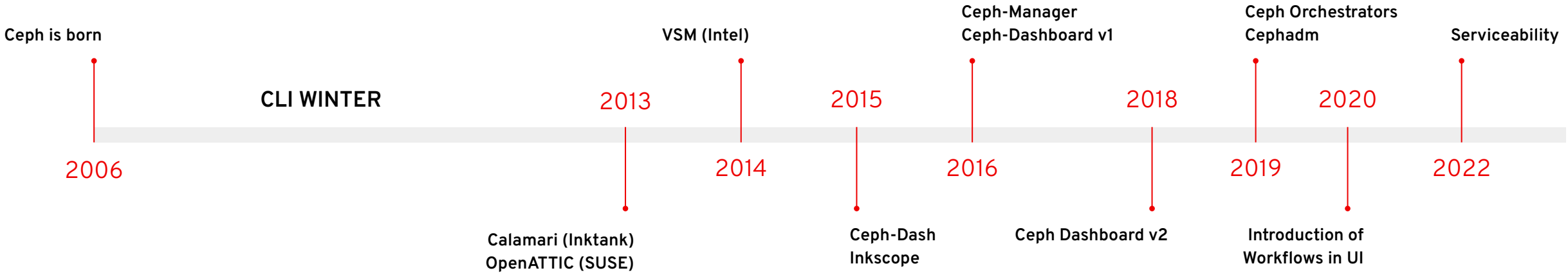
CLI vs. REST

text vs. graphics

Reference:

"Hey, You Have Given Me Too Many Knobs!": http://cseweb.ucsd.edu/~tixu/job_search/xu.fse15.pdf

Where do we come from?



Usual Suspects

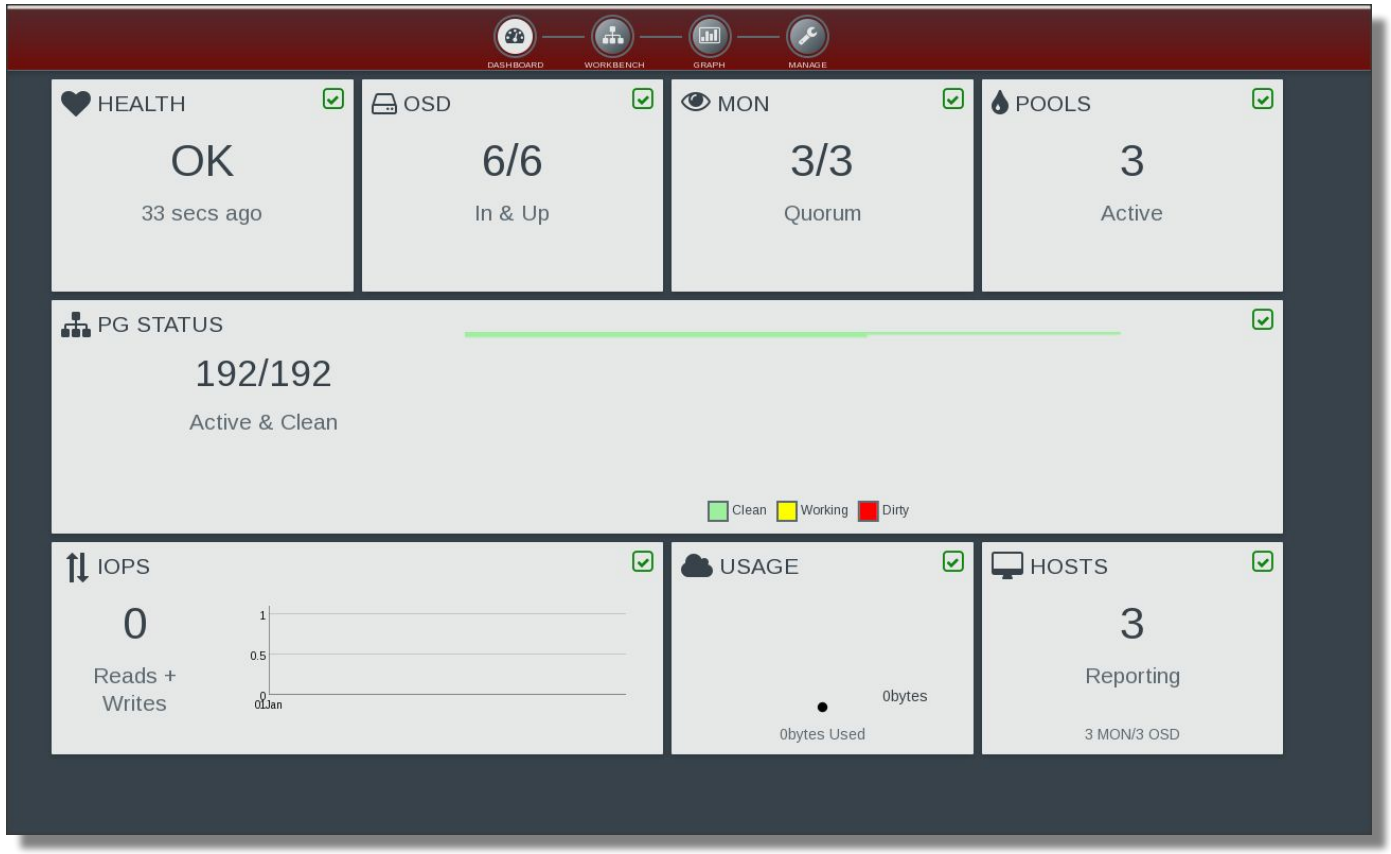
Ceph GUIs

	CALAMARI	OPENATTIC	VSM	INKSCOPE	CEPH-DASH	CEPH-DASHBOARD
WHO	Inktank / Red Hat	ITNovum / SUSE	Intel	Orange Labs		Ceph Community
HOW LONG	2013 - 2018	2013 - 2019	2014 - 2016	2015 - 2016	2015 - 2017	2018 -
CEPH MGMT	Medium	Very Advanced	Advanced	Limited	Monitor-only	Very Advanced
TECHNOLOGY STACK	Salt, Python, Django, REST, ZeroRPC, JS	Salt, Python, Django, AngularJS	Python, Agent-Controller, OpenStack Cinder, JS	Python, MongoDB	Python, Flask, InfluxDB/Graphite	Ceph-Mgr, Python, Angular, Grafana
LICENSE	LGPL 2.1	GPL 2	Apache 2.0	Apache 2.0	BDS 2	LGPL-3
URL	github.com/ceph/calamari	github.com/openattic/openattic	github.com/intel/virtual-storage-manager	https://github.com/inkscope/inkscope	github.com/Crapworks/ceph-dash	github.com/ceph/ceph/tree/master/src/pybind/mgr/dashboard

Sources:

Paul Evans, SysAdmin's Toolbox: Tools for Running Ceph in Production: https://de.slideshare.net/Inktank_Ceph/07-ceph-days-sf2015-paul-evans-static

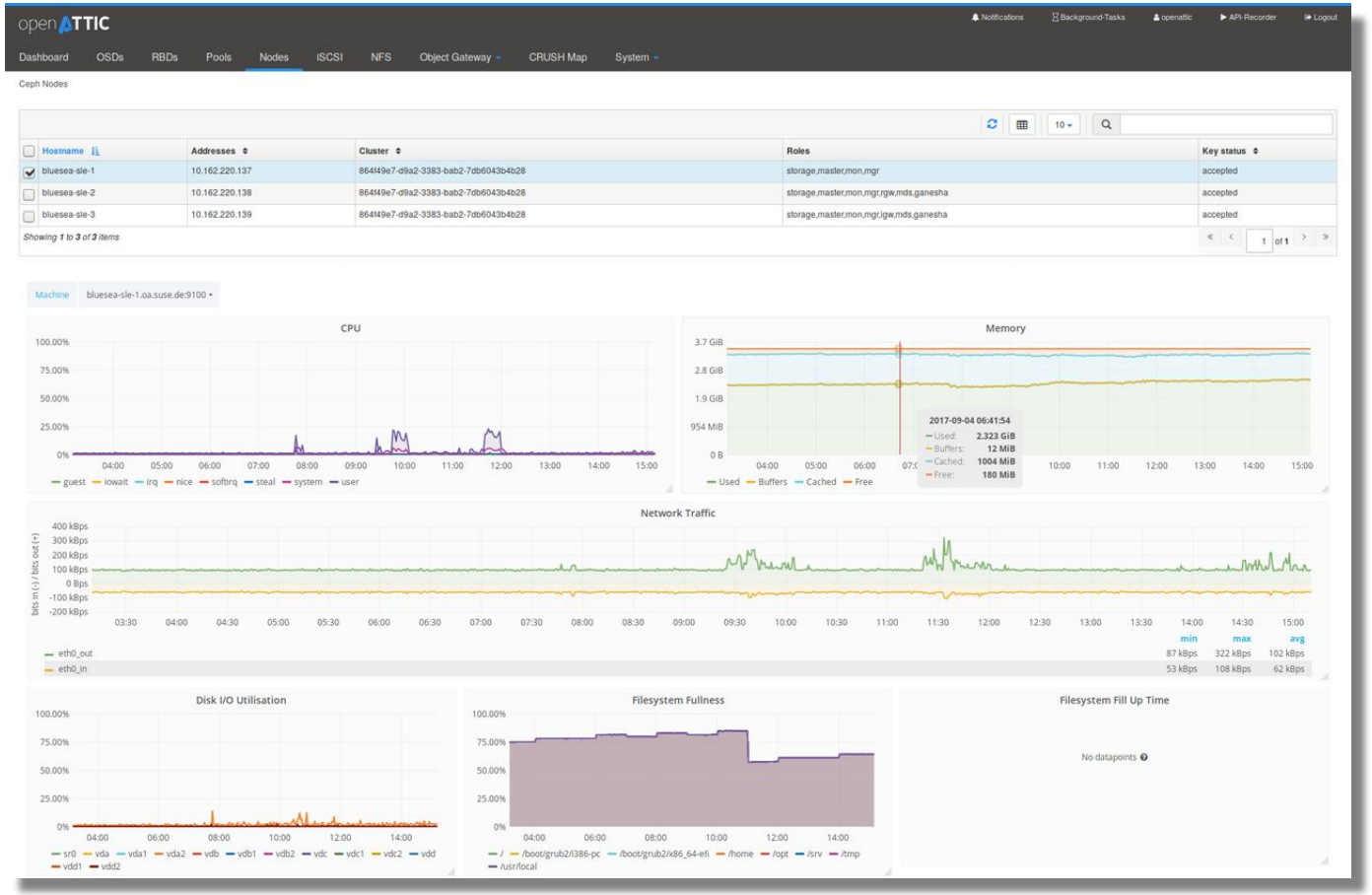
Calamari



Screenshot:

https://ceph.com/planet/ceph-calamari-the-survival-guide/, https://www.openattic.org/media.html, https://01.org/sites/default/files/documentation/virtual_storage_manager_1.0_operations_guide_0.pdf, https://github.com/inkscope/inkscope,

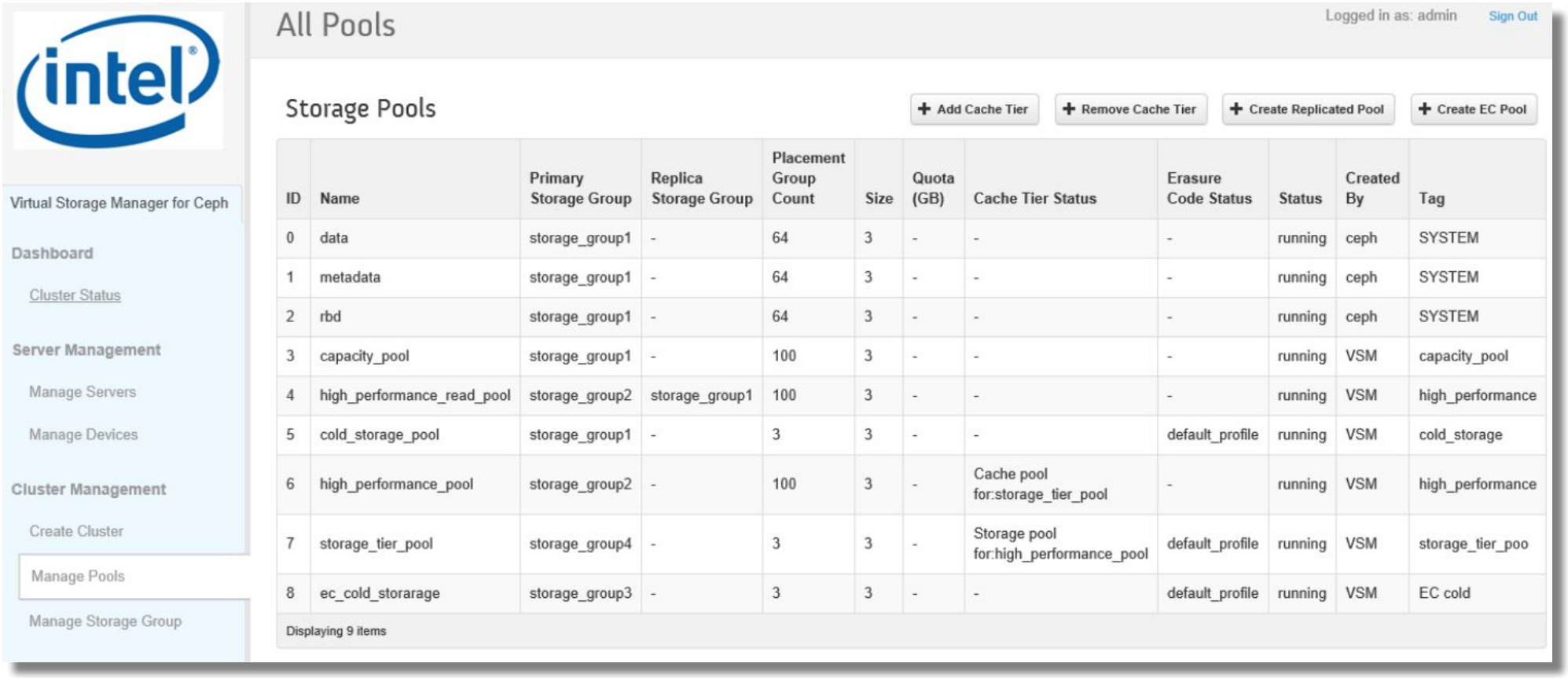
OpenATTIC



Screenshot:

https://ceph.com/planet/ceph-calamari-the-survival-guide/, https://www.openattic.org/media.html, https://01.org/sites/default/files/documentation/virtual_storage_manager_1.0_operations_guide_0.pdf, https://github.com/inkscope/inkscope,

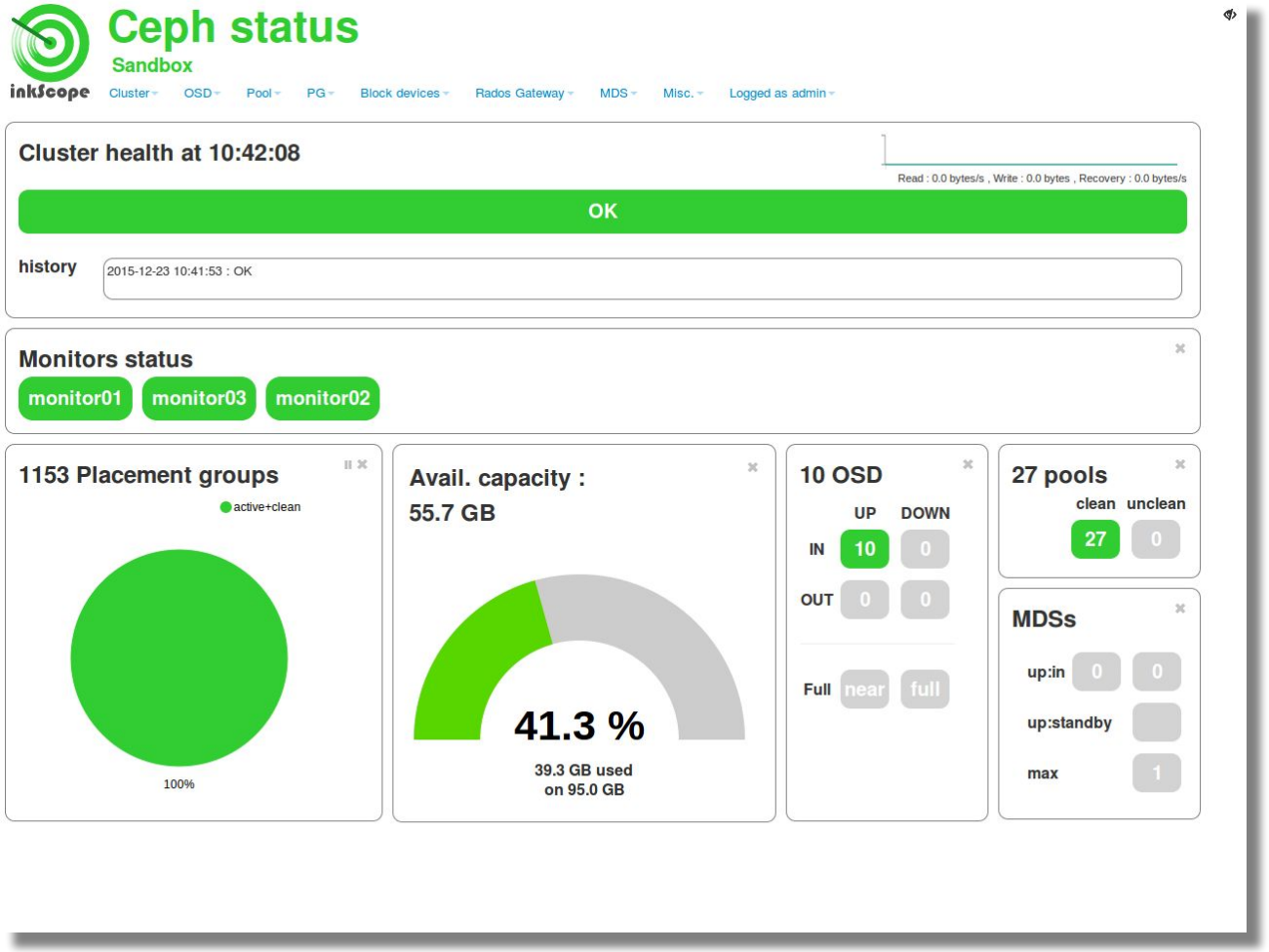
VSM



Screenshot:

https://ceph.com/planet/ceph-calamari-the-survival-guide/, https://www.openattic.org/media.html, https://01.org/sites/default/files/documentation/virtual_storage_manager_1.0_operations_guide_0.pdf, https://github.com/inkscope/inkscope,

InkScope



Screenshot:

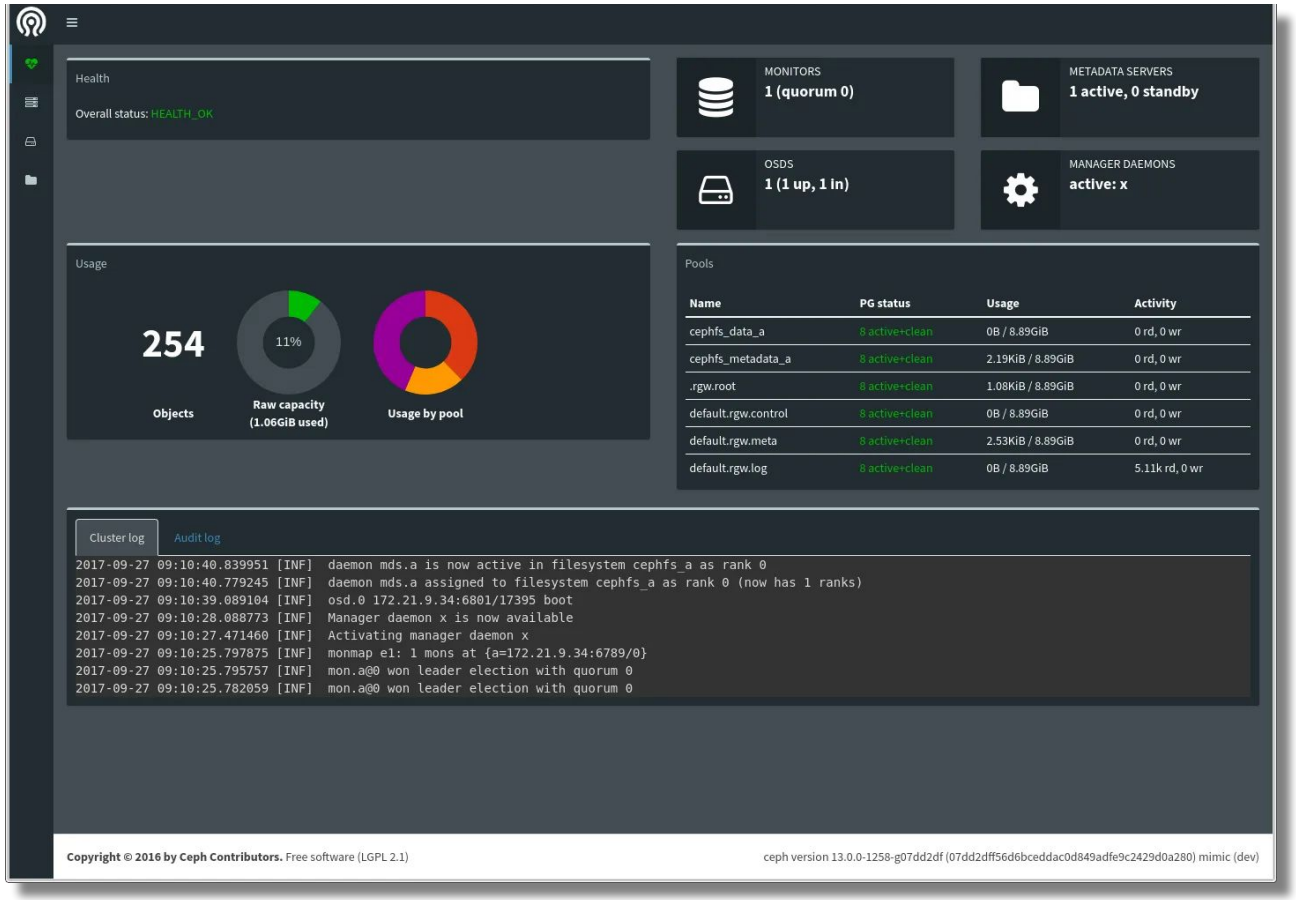
https://ceph.com/planet/ceph-calamari-the-survival-guide/, https://www.openattic.org/media.html, https://01.org/sites/default/files/documentation/virtual_storage_manager_1.0_operations_guide_0.pdf, https://github.com/inkscope/inkscope,

CephDash

Screenshot:

https://ceph.com/planet/ceph-calamari-the-survival-guide/, https://www.openattic.org/media.html, https://01.org/sites/default/files/documentation/virtual_storage_manager_1.0_operations_guide_0.pdf, https://github.com/inkscope/inkscope,

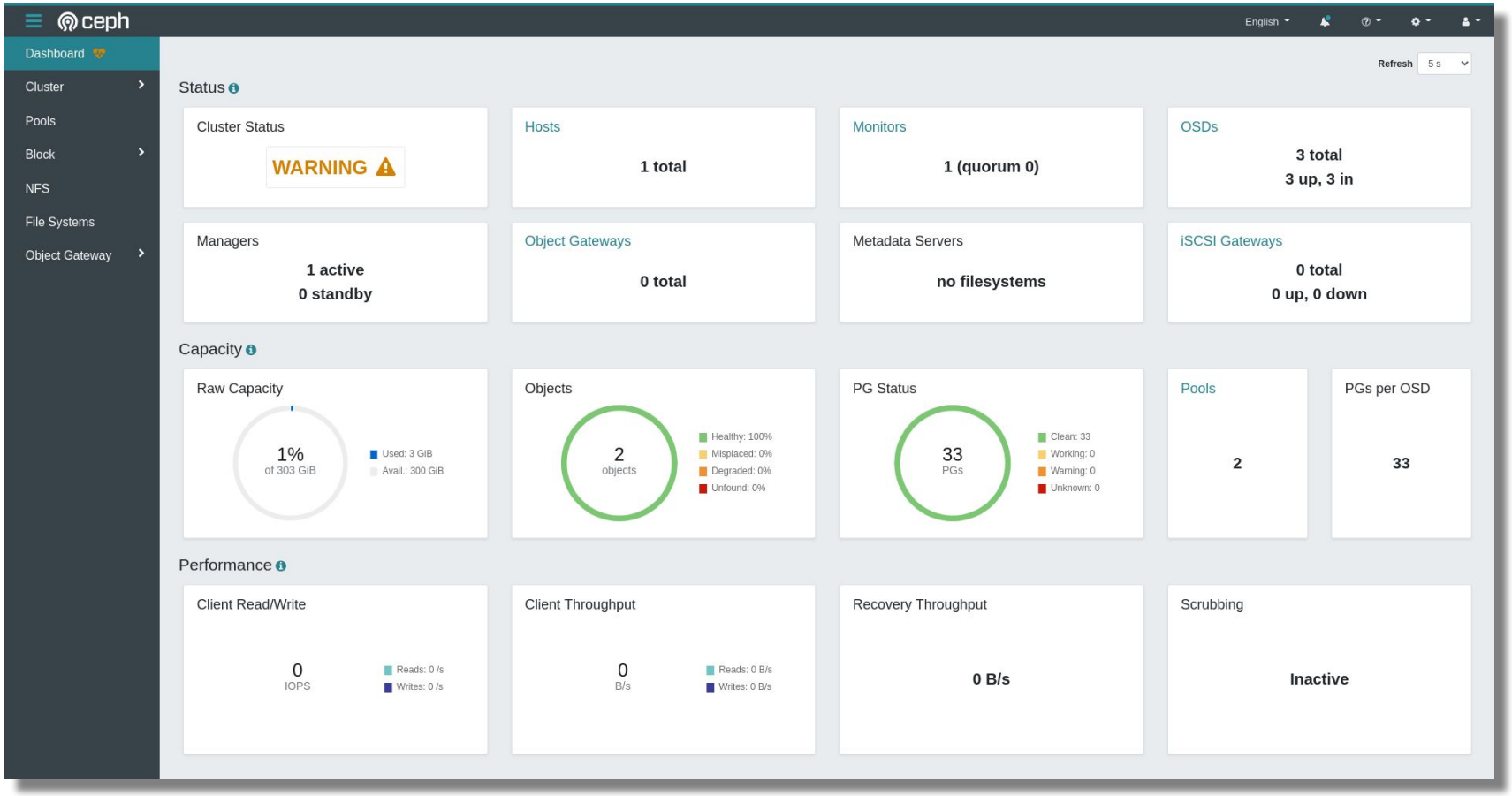
Ceph-Dashboard v1



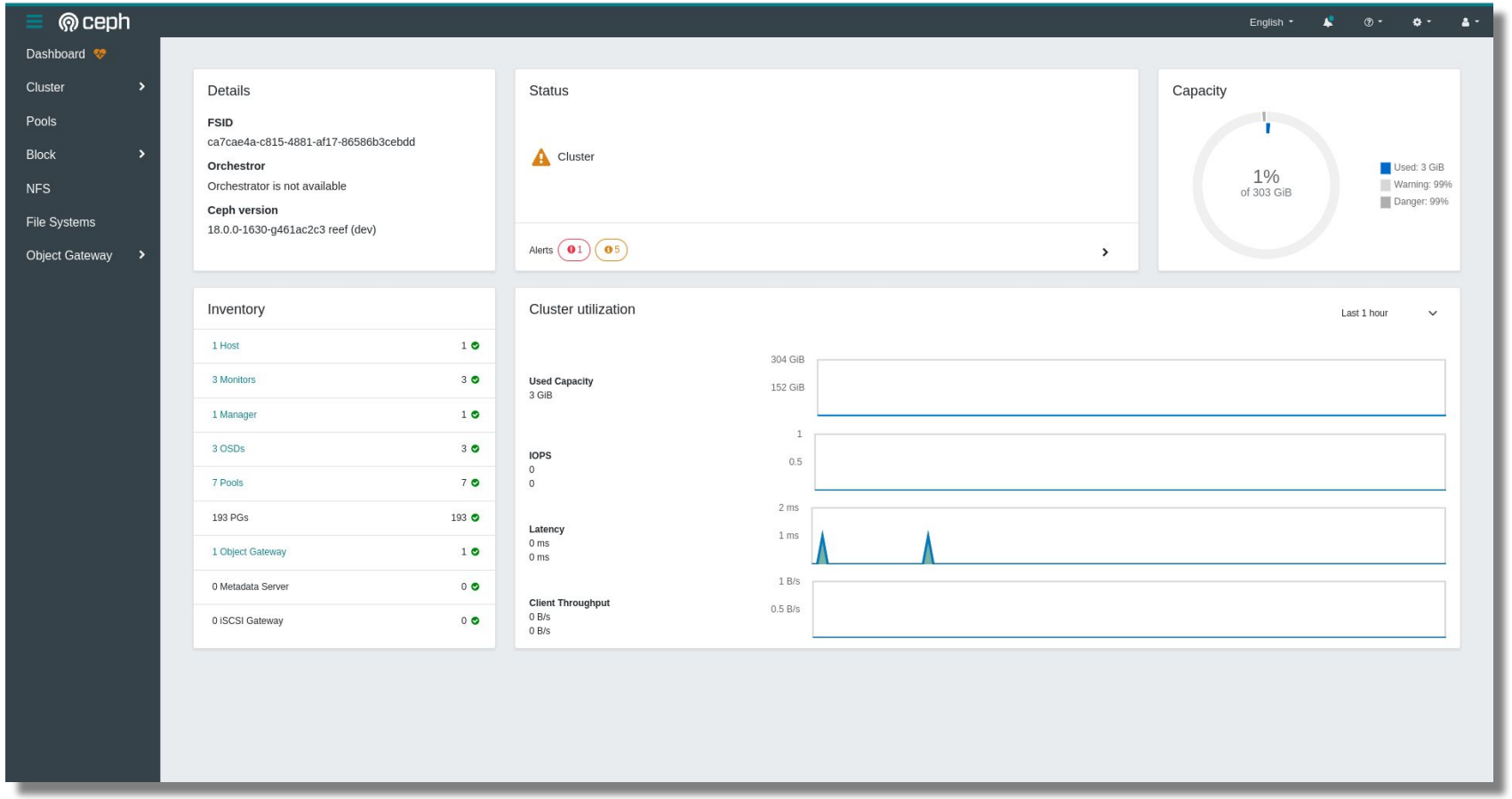
Screenshot:

https://ceph.com/planet/ceph-calamari-the-survival-guide/, https://www.openattic.org/media.html, https://01.org/sites/default/files/documentation/virtual_storage_manager_1.0_operations_guide_0.pdf, https://github.com/inkscope/inkscope,

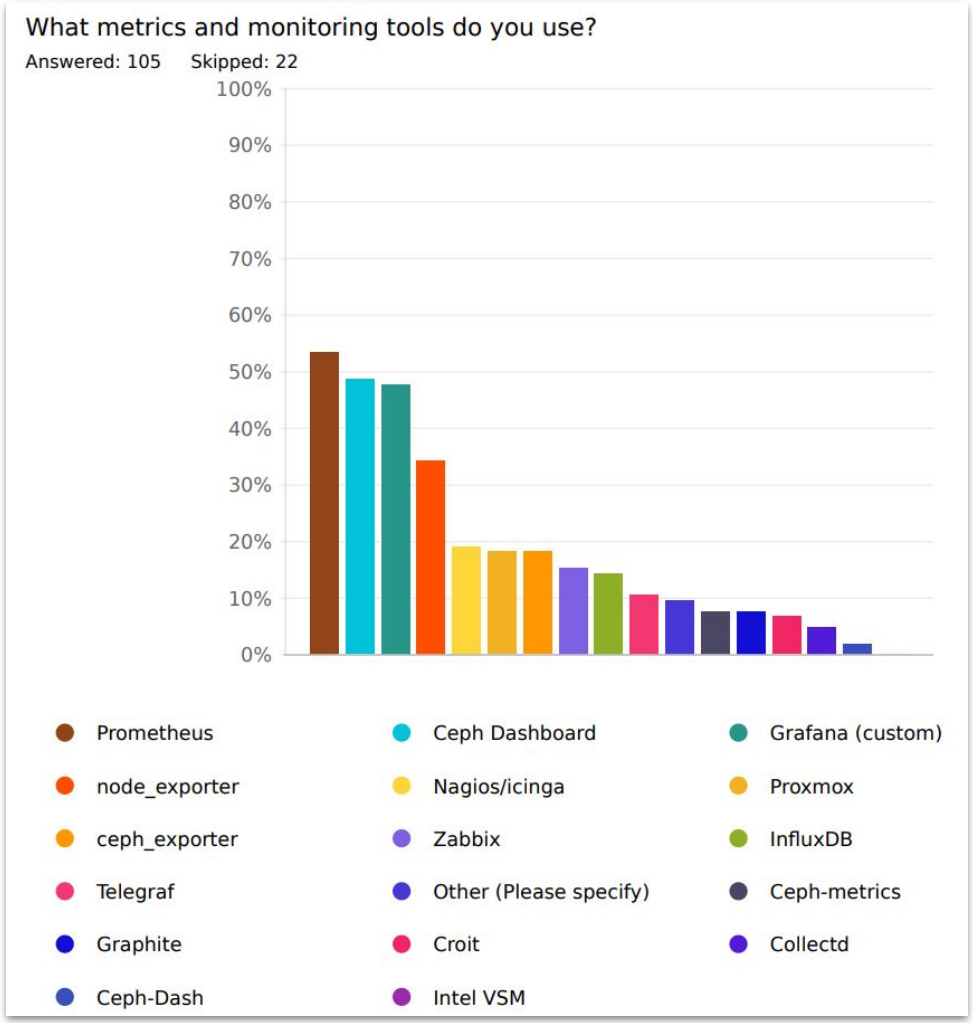
Ceph-Dashboard v2



Ceph-Dashboard v3 (soon)



How Ceph Users monitor Ceph?



Source:

Ceph User Survey 2022: https://ceph.io/en/news/blog/2022/ceph-user-survey-results-2022/images/ceph-user-survey-results-2022.pdf

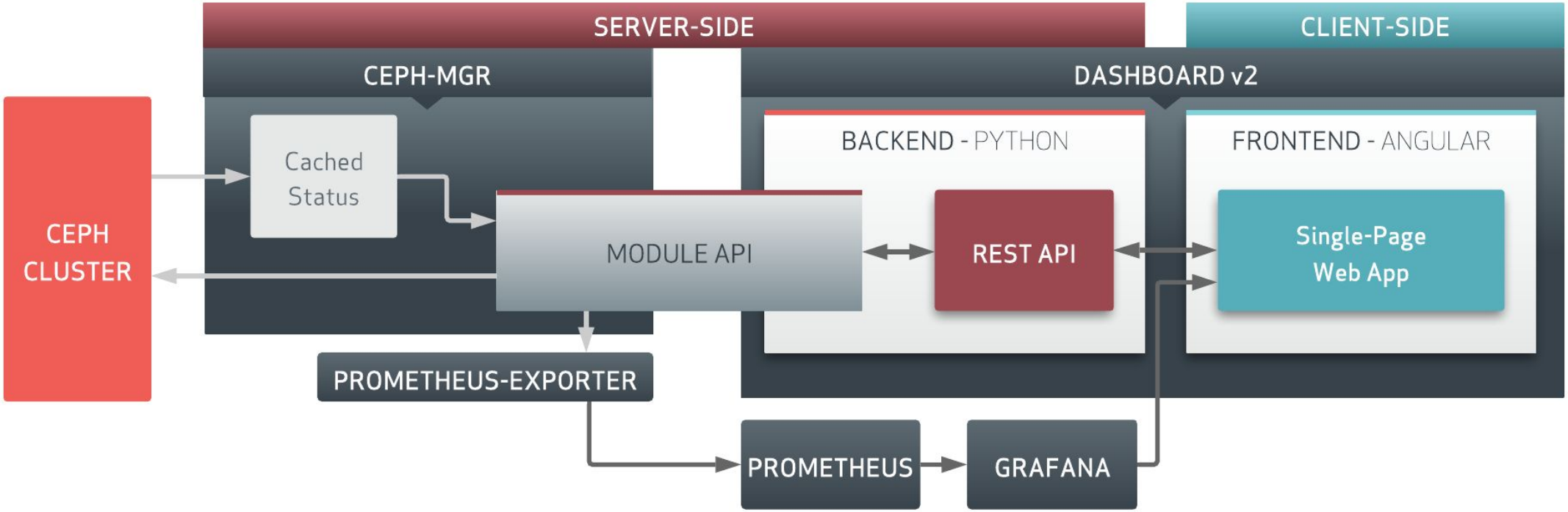
Ceph Dashboard v2

OpenATTIC

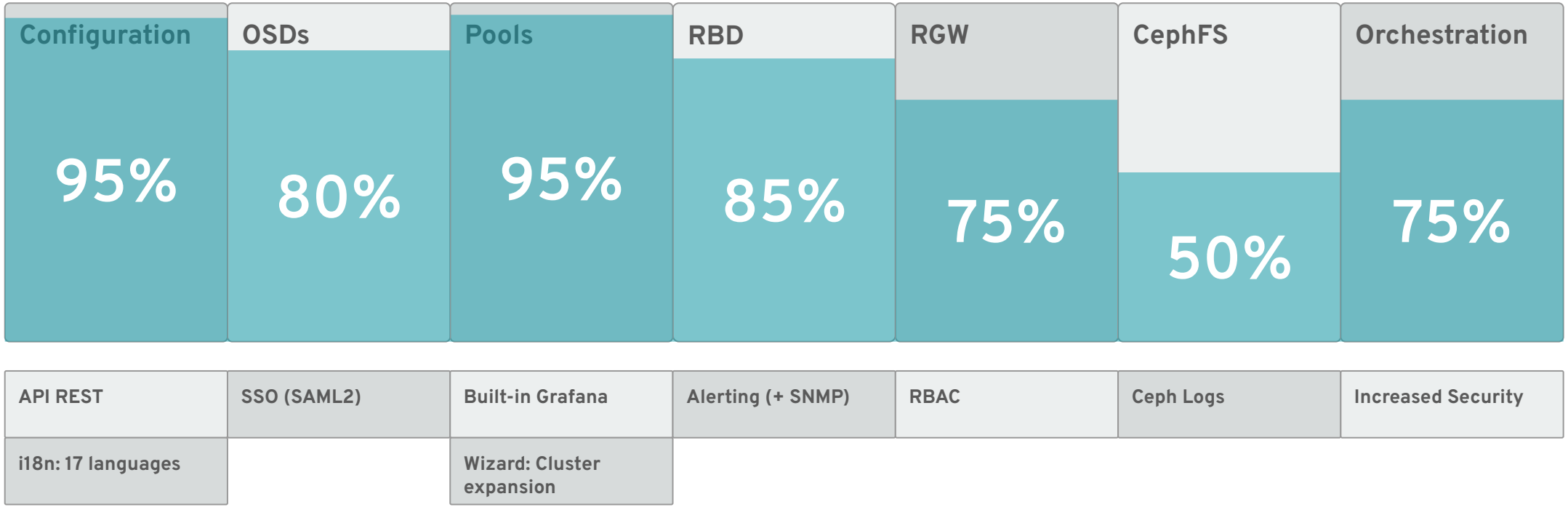
Ceph Manager

Ceph Dashboard v1

Anatomy of Ceph Dashboard



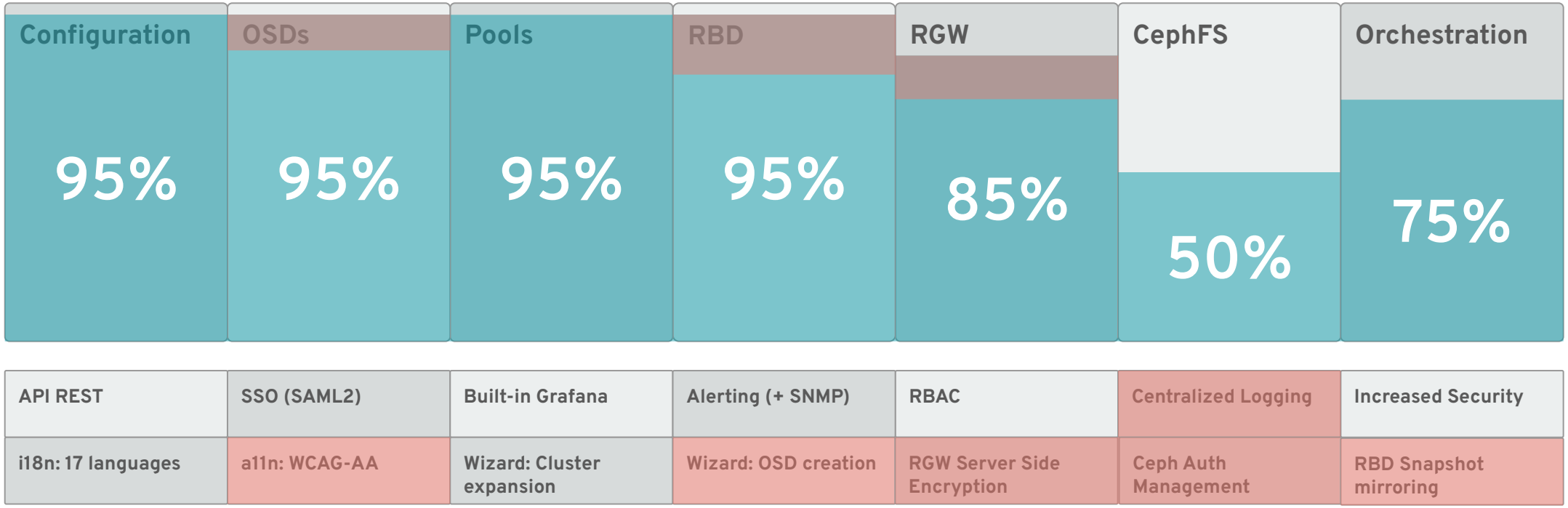
What can I do from the **Ceph Dashboard**? **Quincy** (**17**.2.z)



Sources:

Quincy 12.2.3

What can I do from the **Ceph Dashboard**? **Reef** (**18**.2.z)



Sources:

Quincy 12.2.3

Goals: Beyond Reef

- Improving the Usability Experience
- Low code initiative
- Replacing Grafana with built-in charts
- CephFS Integration
- Multi-cluster monitoring & management
- Feature parity with CLI

Ceph-Dashboard Demo

- **Build**:
  - Ceph main (7f80f5de91)
- **Environment**:
  - Ceph-Dev/kcli/cephadmbox: https://github.com/rhcs-dashboard/ceph-dev/
- **Dashboard**: https://0.0.0.0:11000

Part 2

Contributing to the Ceph Dashboard

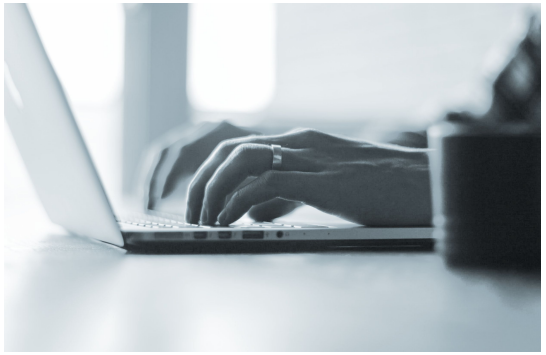
As a **User**

As a **Documenter** or **Translator**

As a **Developer**

Ceph Dashboard **Community**

How to **contribute** to the Ceph Dashboard?
Choose your own adventure



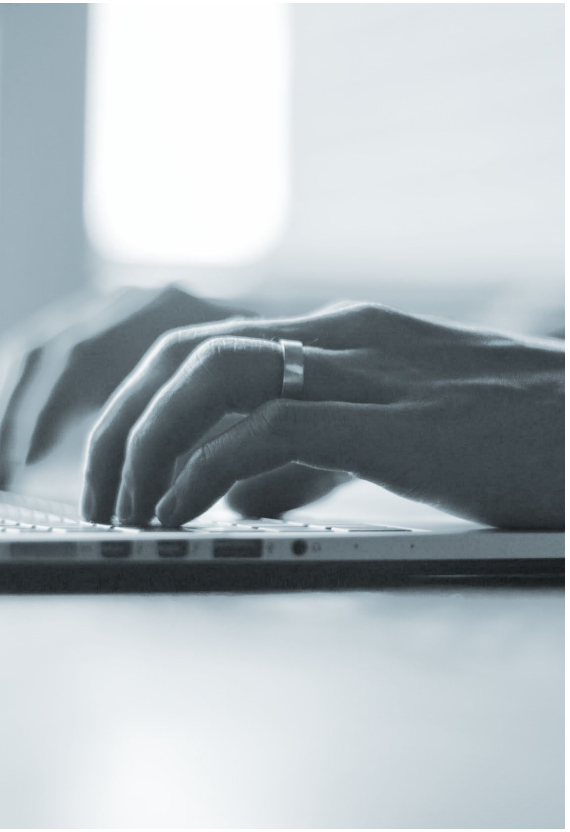
User

Translator - Documenter

Developer

Source:

https://unsplash.com/photos/gp8BLyaTaA0 , https://unsplash.com/photos/ieic5Tq8YMk , https://unsplash.com/photos/y02jEX_B0O0

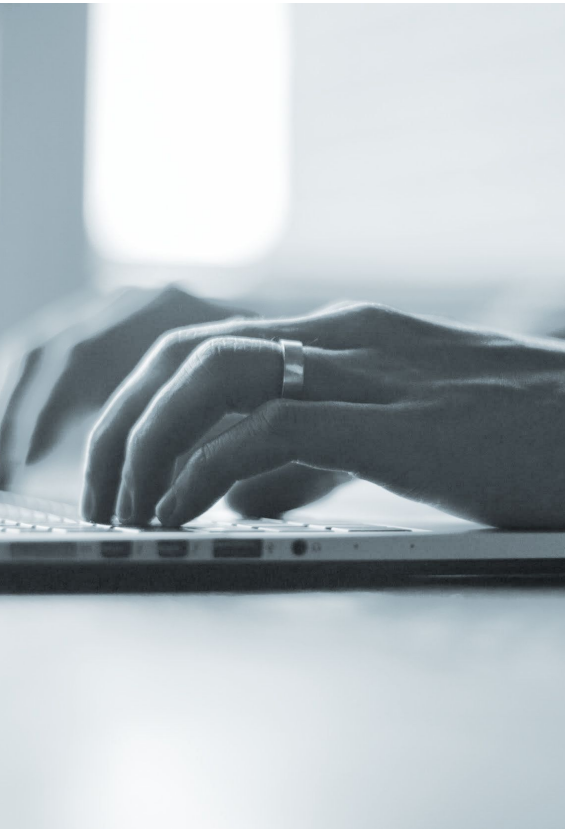


As a User

Dashboard is **enabled by default with Cephadm**.

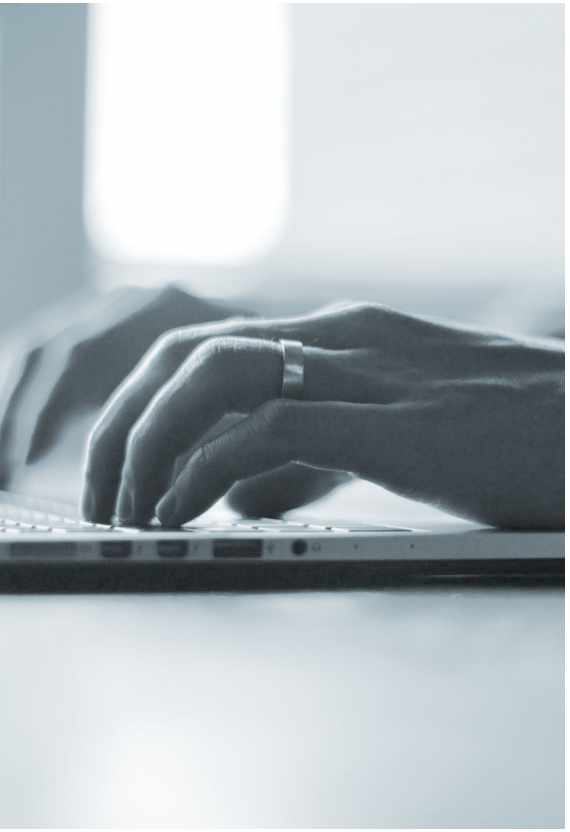
Otherwise, you can enable it manually (https://docs.ceph.com/en/latest/mgr/dashboard/):

```
$ ceph mgr module enable dashboard
$ ceph dashboard create-self-signed-cert
$ ceph dashboard ac-user-create admin -i <file_with_password>
$ ceph mgr services
{
    "dashboard": "https://<ip>:<port>/",
...
}
```



As a **User**

Give it a **try**:



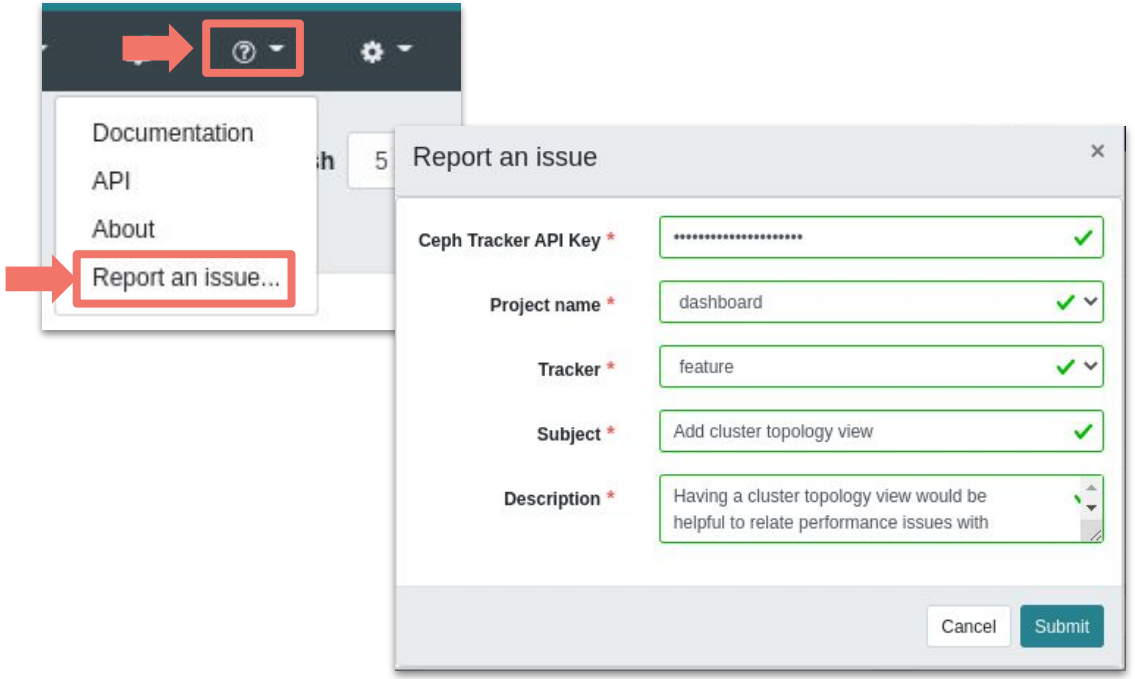
As a User

Share your **experience** o ask for **help**

ceph-users@lists.ceph.com

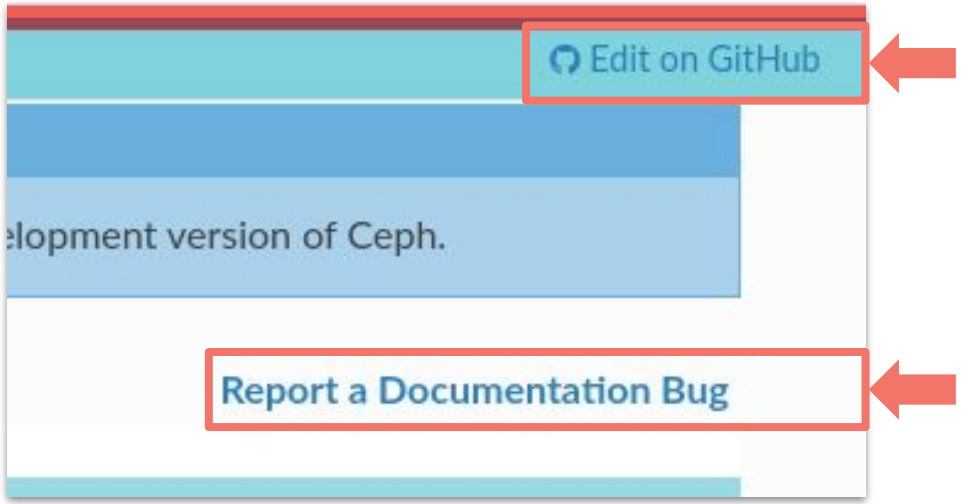
IRC: OFTC #ceph-dashboard

Report **issues**, **suggestions**, or new **features**



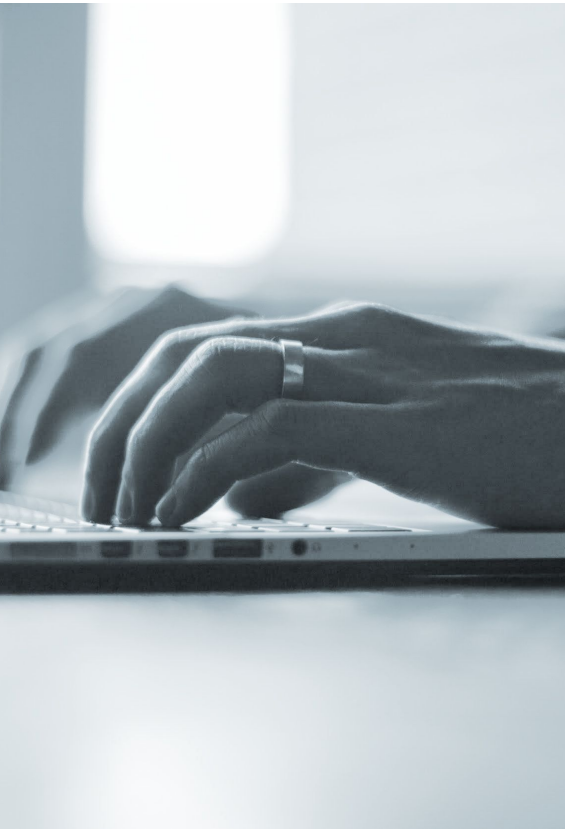
As a **Documenter**

- Where are Dashboard docs?
  - https://docs.ceph.com/en/latest/mgr/dashboard/
- You may report **issues** or review, amend or extend docs yourself:



As a Translator

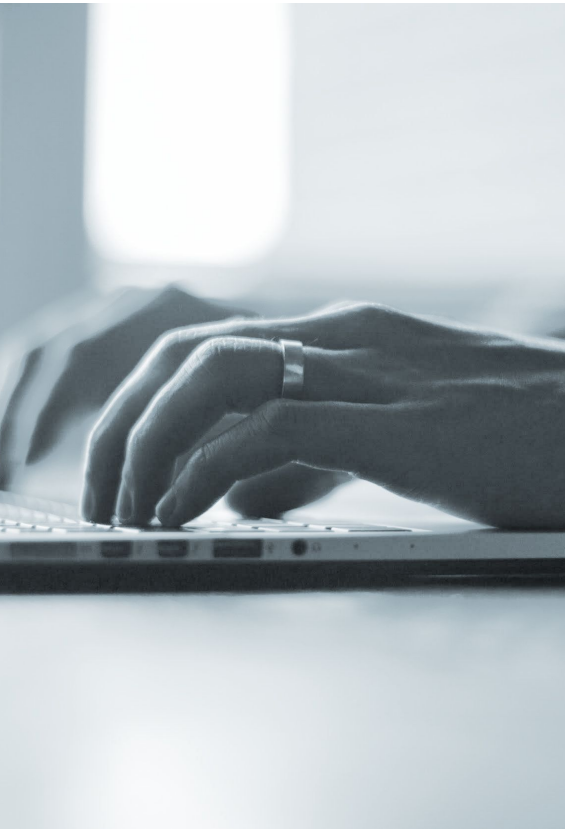
- **You may help translate** the Dashboard to other languages:
  - https://www.transifex.com/ceph/ceph-dashboard/dashboard
  - Currently available: Chinese (Cantonese), French, German, Italian, Japanese, Portuguese, Spanish, Korean, Czech, Indonesian, Polish, Finnish and Norwegian.
  - Persian and Hungarian have no translators



As a Developer

How to start:

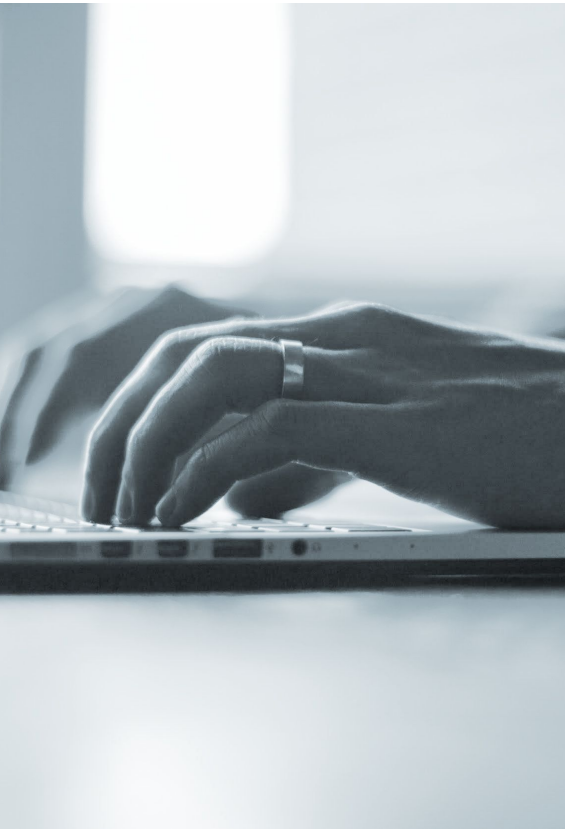
- Ceph devels Mailing List: dev@ceph.io
- IRC: OFTC `#ceph-dashboard`
- Docs:
  - https://docs.ceph.com/en/latest/dev/developer_guide/
  - https://docs.ceph.com/en/latest/dev/developer_guide/dash-devel/



As a Developer

Where is the Dashboard code?

- **Back-End:**
  - Python 3.6
  - https://github.com/ceph/ceph/blob/main/**src/pybind/mgr/dashboard**
- **Front-End:**
  - Angular 12 (Typescript) + Bootstrap 4 (CSS)
  - https://github.com/ceph/ceph/blob/main/**src/pybind/mgr/dashboard/frontend**

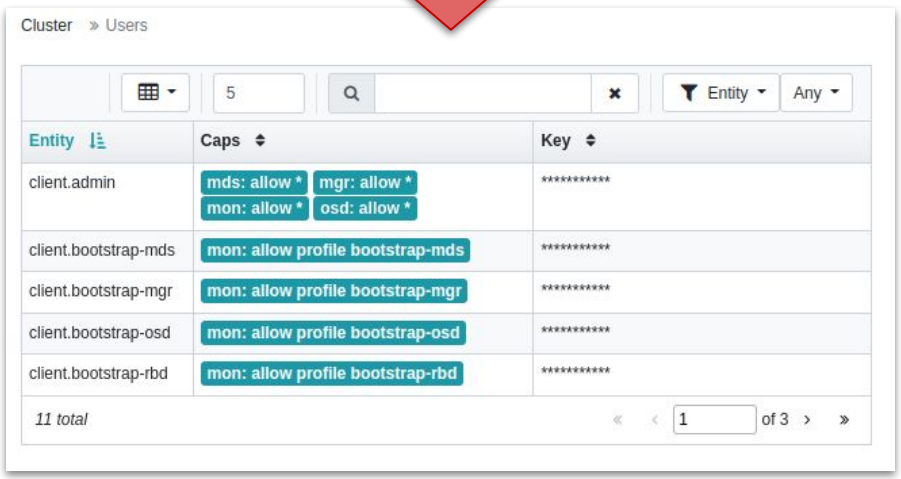


As a **Developer**

What is Low Code Initiative?

- **No UI skills** required:
  "*everyone can now extend the Ceph-Dashboard*"
- **Self-descriptive** back-end
- Similar to Openshift's "OLM Descriptors"
- First back-end only feature:
  "**Ceph Auth Management**"

```
{
  path: 'ceph-users',
  component: CRUDTableComponent,
  data: {
    breadcrumbs: 'Cluster/Users',
    resource: 'api.cluster.user@1.0'
  }
},
```



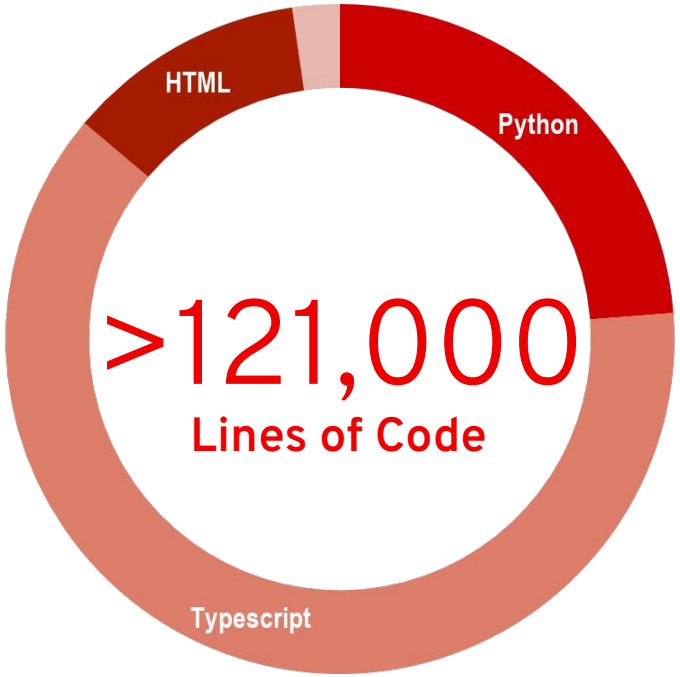
Dashboard in numbers
Since **Mar. 2018**

>2,700

Pull Requests

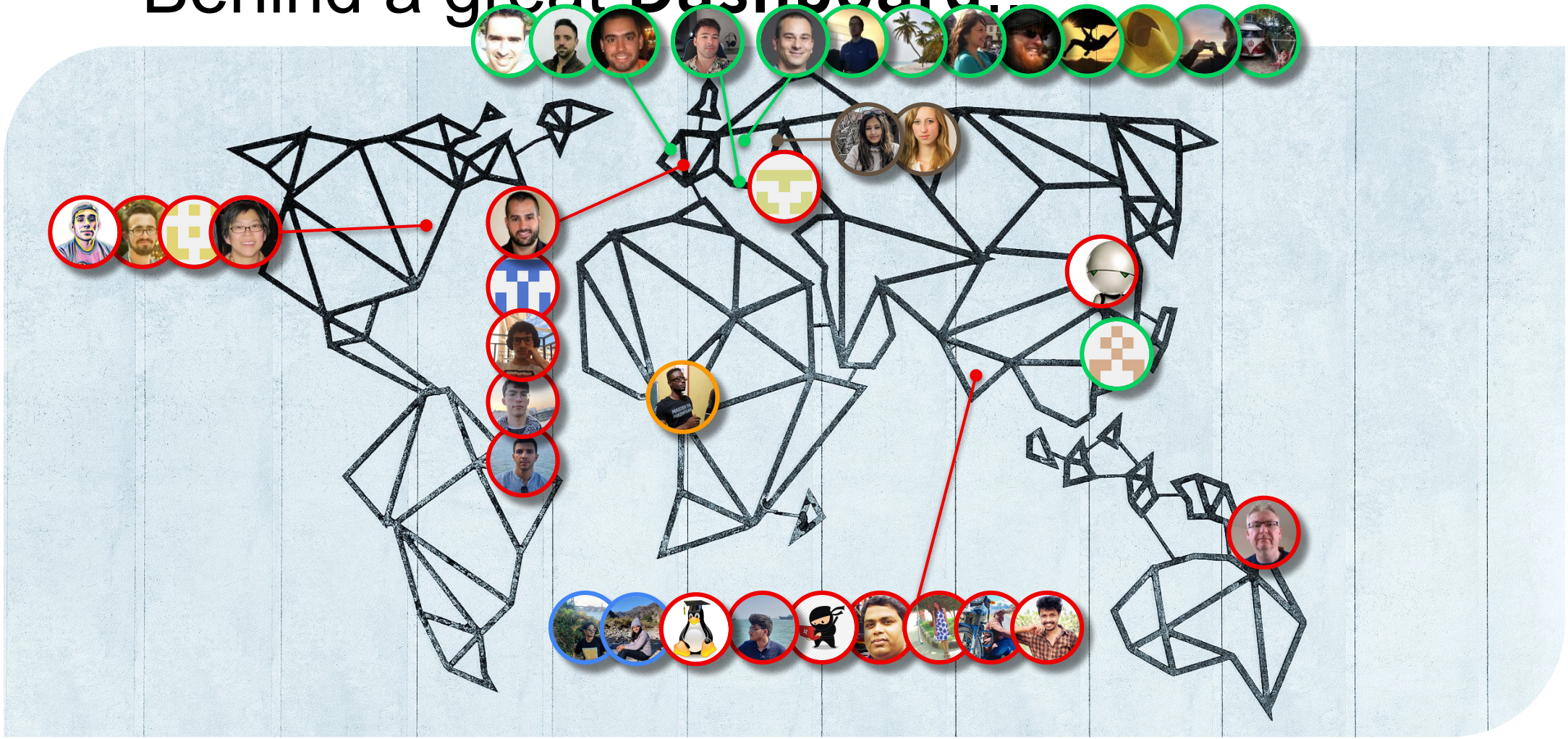
>4,200

Commits



(11-Oct-2022)

Behind a great **Dashboard**...



Map: https://unsplash.com/photos/6bXvYyAYVrE (modified)

How do we **coordinate**?

Stand-up

Daily 11.00am (CET/CEST)
30 min

“Upstream Sync”

Tuesdays, fortnightly 14.00 (CET/CEST)
30 min

“Face to Face”

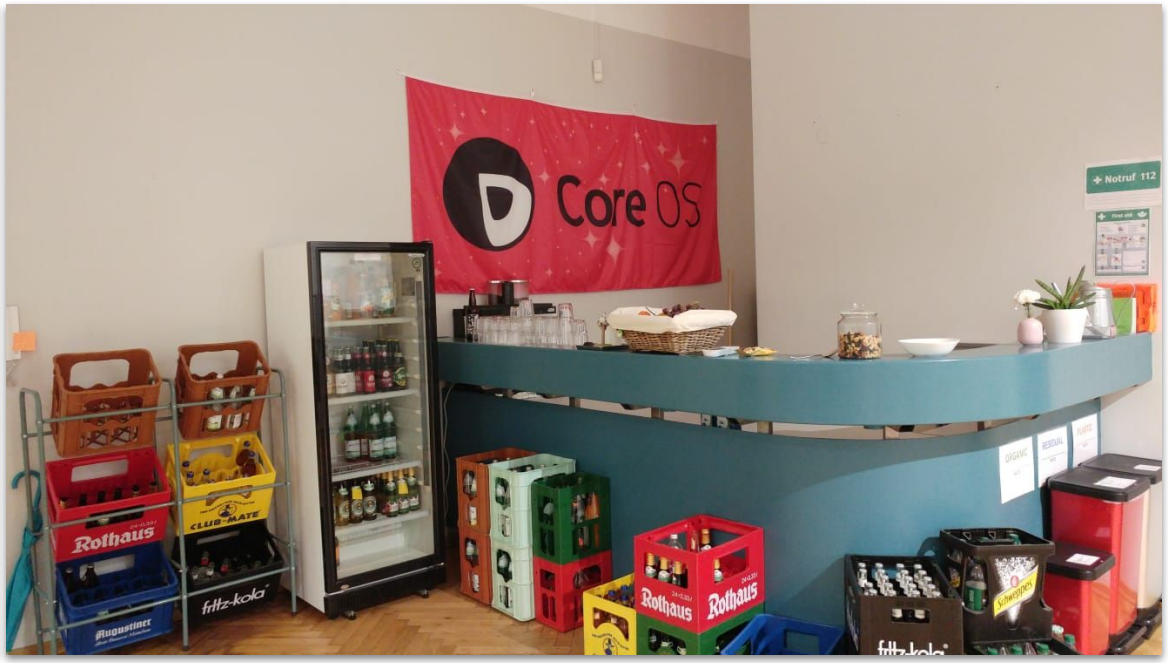
Yearly (pre-pandemic times)
~3 days

How do we **coordinate**?

1st Face to Face: SUSE HQ, Nuremberg. Jul

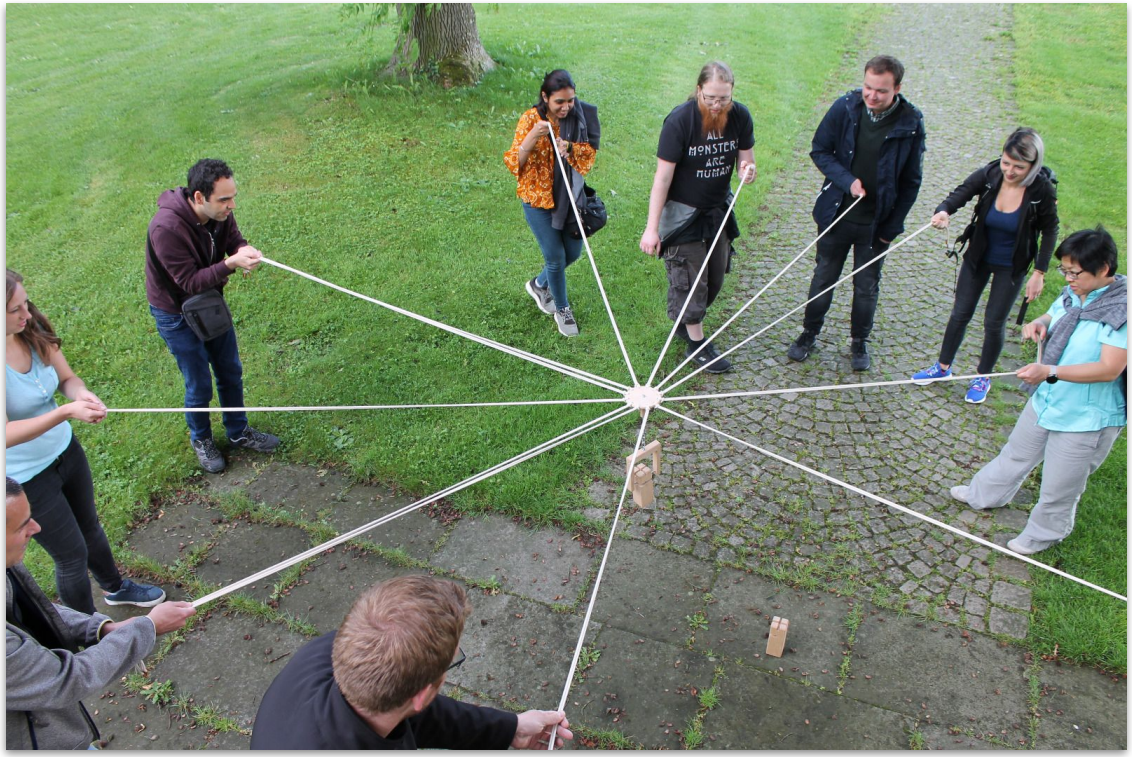
How do we **coordinate**?

Dashboard-Orchestrator F2F, OpenStack Summit Berlin



How do we **coordinate**?

2nd Face to Face, Fulda, Jun 2019



Questions?

Thank you!