



CEPH

The Open Source Software Defined Storage Platform

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A LITTLE BIT ABOUT ME



- Openshift Data Foundation lead Architect @ IBM (previously Red Hat)
- 25+ years of experience
- 10+ Open source
- Work from home (Lower Galil)
- Low level programming, storage, virtualization, Cloud infrastructure ...

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WHAT IS CEPH?



The buzzwords

- “Software defined storage”
- “Unified storage system”
- “Scalable distributed storage”
- “The future of storage”
- “The Linux of storage”

The substance

- Ceph is open source **software**
- Runs on commodity hardware
 - Commodity servers
 - IP networks
 - HDDs, SSDs, NVMe, NV-DIMMs, ...
- A single cluster can serve **object, block, and file** workloads

CEPH IS RELIABLE



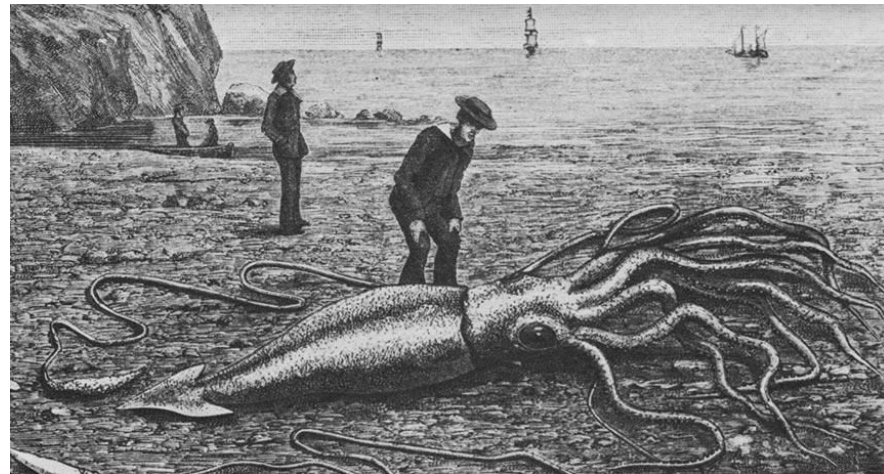
- **Reliable storage service out of unreliable components**
 - No single point of failure
 - Data durability via replication or erasure coding
 - No interruption of service from rolling upgrades, online expansion, etc.
- Favor consistency and correctness over performance



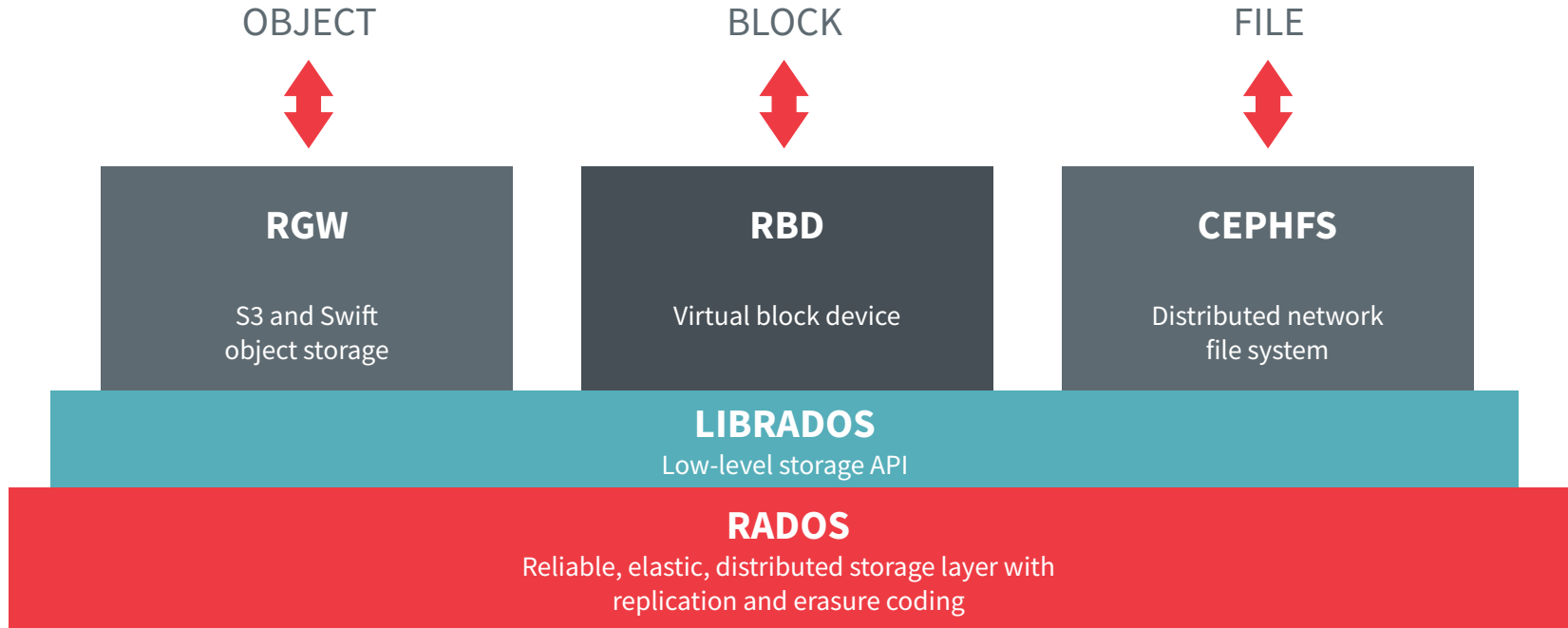
CEPH IS SCALABLE



- Ceph is elastic storage infrastructure
 - Storage cluster may grow or shrink
 - Add or remove hardware while system is online and under load
- Scale **up** with bigger, faster hardware
- Scale **out** within a single cluster for capacity and performance
- **Federate** multiple clusters across sites with asynchronous replication and disaster recovery capabilities



CEPH IS A UNIFIED STORAGE SYSTEM





COMMUNITY AND ECOSYSTEM

OPEN DEVELOPMENT COMMUNITY



- Ceph is open source software!
 - Mostly LGPL2.1/LGPL3
- We collaborate via
 - GitHub: <https://github.com/ceph/ceph>
 - <https://tracker.ceph.com/>
 - E-mail: dev@ceph.io
 - #ceph on irc.oftc.net
 - ceph-storage.slack.com
- We meet a lot over video chat
 - See schedule at <http://ceph.io/contribute>
- We publish ready-to-use packages
 - CentOS 7, Ubuntu 18.04
- We work with downstream distributions
 - Debian, SUSE, Ubuntu, Red Hat



DigitalOcean

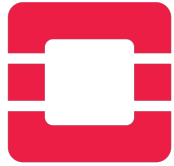


PROPHETSTOR



ZTE

WE INTEGRATE WITH CLOUD ECOSYSTEMS



openstack®



kubernetes





Ceph Days

- One-day regional event
- ~10 per year
- 50-200 people
- Normally a single track of technical talks
- Mostly user-focused

<http://ceph.io/cephdays>

Cephalocon

- Two-day global event
- Once per year, in the spring
- 300-1000 people
- Multiple tracks
- Users, developers, vendors

<http://ceph.io/cephalocon>

THE CEPH FOUNDATION



- Launched in Nov 2018 in partnership with The Linux Foundation
- 31 founding members across industries and geographies
 - 33 members as of August 2021
- Open, collaborative, and neutral home for stakeholders to
 - Pool financial resources and collectively invest in the Ceph ecosystem
 - Coordinate and collaborate on community investment, outreach, and marketing activities
 - Regularly discuss project status, strategy, and priorities
 - Plan community events, including the Cephcon conference and Ceph Days
 - Provide input to the developer community
- Not directly involved in technical governance
 - Technical governance body (Ceph Leadership Team) is represented on the Governing Board



CEPH FOUNDATION MEMBERS



Bloomberg®

clyso
cloud system solutions

intel®

DigitalOcean

OVH

SOFTIRON

IBM®

Western Digital. ZTE

arm

ubuntu®
Delivered by Canonical

cloudbase solutions

croit

Intelligent Systems Services
ISS

OSNEXUS

SEAGATE

linode

KOOR

SRIE

CERN

CROSS
cross.ucsc.edu

FASRC

grnet

UNIVERSITY OF MICHIGAN

MONASH University

NRF SARAO
National Research Foundation
South African Research Chair in ICT Research

Science & Technology
Facilities Council

BOSTON UNIVERSITY

Open Infrastructure FOUNDATION

SWITCH

FOR MORE INFORMATION



- Executive Council <council@ceph.io>
 - Neha Ojha, Josh Durgin, Dan van der Ster
- Mike Perez <mike@ceph.foundation>, Community Manager

- <https://ceph.io/>
- <https://github.com/ceph/>
- Twitter: @ceph

HOW TO JOIN



Enrollment form:

<https://enrollment.lfx.linuxfoundation.org/?project=cephfoundation>

Member agreement for members of the Linux Foundation:

<https://na3.docusign.net/Member/PowerFormSigning.aspx?PowerFormId=1c8a22a3-c3dc-4812-ad77-0d0563b56cb6>

If not yet a member of the Linux Foundation:

<https://na3.docusign.net/Member/PowerFormSigning.aspx?PowerFormId=f3b0463c-5db6-4f01-9172-71b2eb045573>



Stable Open Source

CEPH Releases



Mimic



Nautilus



Octopus



Pacific



Quincy



Reef



Stable Releases



- New version once a year (around March)
 - x.0.z - development versions
 - x.1.z - release candidates (for test clusters, brave users)
 - x.2.z - stable/bugfix releases (for users)
- 24 months support including Bug fixes backports
- Stable point release every 4 to 6 weeks
- Online, rolling upgrade support and testing from the last two (2) stable release(s) (starting from Luminous).
- Online, rolling upgrade support and testing from prior stable point releases



- Testing and CI framework
 - Long run
 - High resource usage
- New feature PR have to add Teuthology test
- Special Upstream QE Team
- Special tag for complex PR that need a full test run
- Nightly runs on the main branch
- Release candidate need to pass the full test suite

FOR MORE INFORMATION



- <http://ceph.io/>
- Twitter: **@ceph**
- Docs: <http://docs.ceph.com/>
- Mailing lists: <http://lists.ceph.io/>
 - `ceph-announce@ceph.io` → announcements
 - `ceph-users@ceph.io` → user discussion
 - `dev@ceph.io` → developer discussion
- IRC: `irc.oftc.net`
 - `#ceph`, `#ceph-devel`
- GitHub: <https://github.com/ceph/>
- YouTube ‘Ceph’ channel