Ceph S3 Cloud Integration Tests
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What is Ceph

**OBJECT**
- RGW
  - S3 and Swift object storage

**BLOCK**
- RBD
  - Virtual block device with robust feature set

**FILE**
- CEPHFS
  - Distributed network file system

**LIBRADOS**
- Low-level storage API

**RADOS**
- Reliable, elastic, highly-available distributed storage layer with replication and erasure coding
### S3@CERN

**Healthy**
- Write Throughput: 8.6 MB/s
- Read Throughput: 108.2 MB/s
- Cluster Capacity: 2.539 PB
- Available Capacity: 85.8%
- Used Capacity: 361 TB
- Number of Objects: 129.5 million
- Difference: 24.90 K

**Alerts**
- 0

**Write IOPS**
- 82.27 ops

**Read IOPS**
- 4.05K ops

**Requests served**
- 6952208

**Data read**
- 3.66 TB

**Data written**
- 1.634 TB

**Interval:** 24h

Logos include:
- GitLab
- ATLAS
- BOINC
- Indico
- CernVM File system
- GitBook
- docker
- Backup
Multisite Object Gateway

New in Ceph 13.2 *Mimic*: Cloud sync module
Configuration Tested

Realm "Earth"

Zonegroup "Ch" (Master)

- Rados GW
- Master Zone CERN
- Secondary Zone Exoscale
- Secondary Zone Exoscale S3
- S3
CERN S3 vs Exoscale S3

CERN

throughput Graph

Exoscale

throughput Graph

8 nodes, 128 workers, 100 containers, 1000 4K obj/c, mixed rw 80/20
Conclusion

• Multisite / Cloud sync, works!
• Allow more use cases
  • Offsite copy of data
  • Disaster Recovery
  • Backup
• Ceph Future

Future

- RGW as a gateway to a mesh of sites
  - With great on-site performance
- RGW may redirect or proxy to right zone
  - Single point of access for application
  - Proxying enables coherent local caching

- RGW may replicate at bucket granularity
  - Individual applications set durability needs
  - Enable granular application mobility

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