DEPLOY CEPH RADOS GATEWAY AS A REPLACEMENT FOR OPENSTACK SWIFT

Hands On Lab - L103175

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WHY USE CEPH RADOS GATEWAY?
CEPH RADOS GATEWAY

- Ceph is the **predominant block storage** solution for OpenStack already
- Unified storage entity to deploy/manage/upgrade (one learning curve)
- Ceph Rados Gateway supports **both** OpenStack Swift and Amazon S3 API
- Better Amazon S3 API support (than OpenStack Swift)
- **Multi-site** capabilities (regions and zones synchronisation)
LAB OBJECTIVES
LAB OBJECTIVES

1. Deploy Red Hat OpenStack Platform 10 with a dedicated RGW node
2. Play with OpenStack Swift and Amazon APIs via Ceph Rados Gateway
WHAT YOU NEED TO KNOW
LAB WORKFLOW

1. **PREPARATION**
   - Use composable roles to create a RGW role
   - Customise your RGW role
   - Enable RGW and disable Swift

2. **Deployment**
   - Deploy your environment
   - Verify your deployment

3. **Leverage Ceph RGW**
   - Create a test environment
   - Play with OpenStack Swift and Amazon APIs
**COMPOSABLE ROLES**

- A role is a set of services
- Composable roles allow operators to dispatch services across a set of nodes.
- RH OSP includes default roles
  - Controllers (All control services)
  - Computes (KVM, nova-compute, etc)
  - Ceph Storage (Ceph)
  - Etc
- In this lab we will:
  - Remove RGW from the controller role
  - Create a dedicated RGW role
COMPOSABLE ROLES (contd)

File: /usr/share/openstack-tripleo-heat-templates/roles_data.yaml

- name: Controller
  ServicesDefault:
  - OS::TripleO::Services::CinderApi
  - OS::TripleO::Services::SwiftProxy
  - OS::TripleO::Services::HAproxy
  - OS::TripleO::Services::RabbitMQ
  - OS::TripleO::Services::CephRgw       # Remove

(...)  

- name: RadosGW
  ServicesDefault:
  - OS::TripleO::Services::CephRgw
  - OS::TripleO::Services::CephClient

(...)  

- name: Compute
  ServicesDefault:
  - OS::TripleO::Services::CephClient
  - OS::TripleO::Services::CephExternal
  - OS::TripleO::Services::NovaLibvirt
  - OS::TripleO::Services::NovaCompute

(...)  

- name: CephStorage
  ServicesDefault:
  - OS::TripleO::Services::CephOSD

(...)  

- name: RadosGW
  ServicesDefault:
  - OS::TripleO::Services::CephRgw
  - OS::TripleO::Services::CephClient

NEW!
ENABLING CEPH RADOS GATEWAY

By default Swift is used as Object Storage & Ceph RGW is disabled.

```
resource_registry:
  OS::TripleO::Services::CephRgw: OS::Heat::None
```

To enable Ceph RGW just include the right template:
/usr/share/openstack-tripleo-heat-templates/environments/ceph-radosgw.yaml

```
resource_registry:
  OS::TripleO::Services::CephRgw: ../puppet/services/ceph-rgw.yaml
  OS::TripleO::Services::SwiftProxy: OS::Heat::None
  OS::TripleO::Services::SwiftStorage: OS::Heat::None
  OS::TripleO::Services::SwiftRingBuilder: OS::Heat::None
```
IS THAT ALL?

Almost!

Some others adjustments are required - you’ll discover them in our lab guide!
LAB ARCHITECTURE
LAB DESIGN

Environment is fully virtualised and consists of 7 VMs.

* USE HA FOR PRODUCTION *

Your deployment

Provided

UNDERCLOUD

OPENSTACK CONTROLLER

OPENSTACK COMPUTE

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CEPH OC
LAB DESIGN IN-DEPTH

What we provide:

- A fully configured undercloud
- A working set of templates
  - Ceph enabled (Nova, Glance, Cinder)
  - Network isolation (802.1q)
  - 1 Controller, 1 Compute, 3 Ceph OSD node

What you will do:

- Modify the templates
- Deploy the environment with a dedicated RGW node
- Play with OpenStack Swift and Amazon APIs via RGW
LAST MINUTE UPDATES

● Use the GUI instead of “virsh” commands
  ○ Boot the undercloud by clicking on Manage VMs

● Full templates set available
  ○ Only if you don’t feel comfortable with CLI
  ○ /usr/local/src/templates/
THANK YOU

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youtube.com/user/RedHatVideos
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#redhat #rhsummit
LEARN. NETWORK. EXPERIENCE OPEN SOURCE.
Backups slides
INTRODUCTION
LAB WORKFLOW

Things you are about to learn

During this lab you will:

- Deploy Ceph Rados Gateway as a replacement for OpenStack Swift
- Understand how the services are configured
- Play with OpenStack Swift and Amazon APIs
RHOSP
Red Hat OpenStack Platform

Build a private or public Infrastructure-as-a-Service (IaaS) cloud on top of Red Hat Enterprise Linux:

- Highly scalable, fault-tolerant platform for the development of cloud-enabled workloads
- Fully distributed object storage
- Persistent block-level storage
- Virtual machine provisioning engine and image storage
- Authentication and authorization mechanisms
- Integrated networking
- Web browser-based interface accessible to users and administrators
RHCS
Red Hat Ceph Storage

Open Source Software Defined Storage solution:

- Unified storage: object, block, filesystem
- Design for scale to petabytes
- Unique placement algorithm: CRUSH