Providing Object Storage Using the Swift API

Objectives

After completing this section, you should be able to configure the RADOS Gateway to provide access to object storage compatible with the Swift API, and manage objects stored using that API.

OpenStack Swift Support in a RADOS Gateway

The OpenStack Swift API enables developers to manage object storage resources using a Swift compatible interface. Applications implemented with the S3 API can inter-operate with other Swift-compatible object storage services besides the RADOS Gateway, and migrate storage from other locations to your Ceph storage cluster. In a hybrid cloud environment, you can configure your applications to mix private enterprise OpenStack or standalone Swift resources and public cloud OpenStack resources and storage locations seamlessly using the same API.

The OpenStack Swift API is an alternative to the Amazon S3 API to access objects stored in the Red Hat Ceph Storage cluster through a RADOS Gateway. There are important differences between the OpenStack Swift and Amazon S3 APIs.

OpenStack Swift refers to the namespace in which objects are stored as a *container*.

The OpenStack Swift API has a different user model than the Amazon S3 API. To authenticate with a RADOS Gateway using the OpenStack Swift API, you must configure *subusers* for your RADOS Gateway user accounts.

Creating a Subuser for OpenStack Swift

The Amazon S3 API authorization and authentication model has a single-tier design. A single user account might have multiple access keys and secrets, which the user can use to provide different types of access.

The OpenStack Swift API, however, has a multi-tier design, built to accommodate *tenants* and assigned *users*. A Swift tenant owns the storage and its containers used by a service. Swift users are assigned to the service and have different levels of access to the storage owned by the tenant.

To accommodate the OpenStack Swift API authentication and authorization model, RADOS Gateway has the concept of subusers. This model allows Swift API tenants to be handled as RADOS Gateway users, and Swift API users to be handled as RADOS Gateway subusers. The Swift API `tenant:user` tuple maps to RADOS Gateway authentication system as a `user:subuser`. A subuser is created for each Swift user, and it is associated with a RADOS Gateway user and an access key.

To create a subuser, use the `radosgw-admin subuser create` command as follows:

```
[ceph: root@node /]# radosgw-admin subuser create --uid=username \
  --subuser=username:swift --access=full
```

The `--access` option sets the user permissions (read, write, read/write, full), and `--uid` specifies the existing associated RADOS Gateway user. Use the `radosgw-admin key create` command