Keystone Federated Swift: Getting the Most Out of your Object Storage in a Federated Environment

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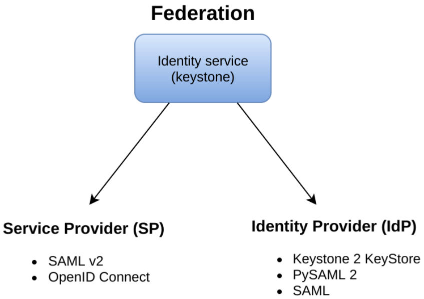
https://github.com/mtreinish/swift-keystone

Why Keystone Federation?

- Decouple OpenStack services and identity management
- Enable sharing of resources between multiple OpenStack deployments
- Can use an external identity provider or keystone to keystone



Federation

Identity service (keystone)

Service Provider (SP)

- SAML v2
- OpenID Connect

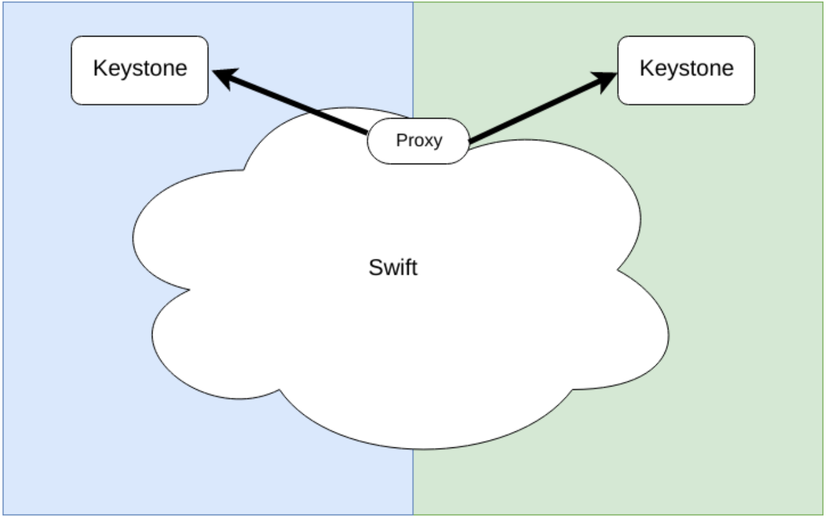
Identity Provider (IdP)

- Keystone 2 KeyStore
- PySAML 2
- SAML

Keystone with Swift

- Swift supports multiple auth types
- Leverages authtoken and keystoneauth middleware for swift to use keystone for auth

False Federation



Pros/Cons of False Federation

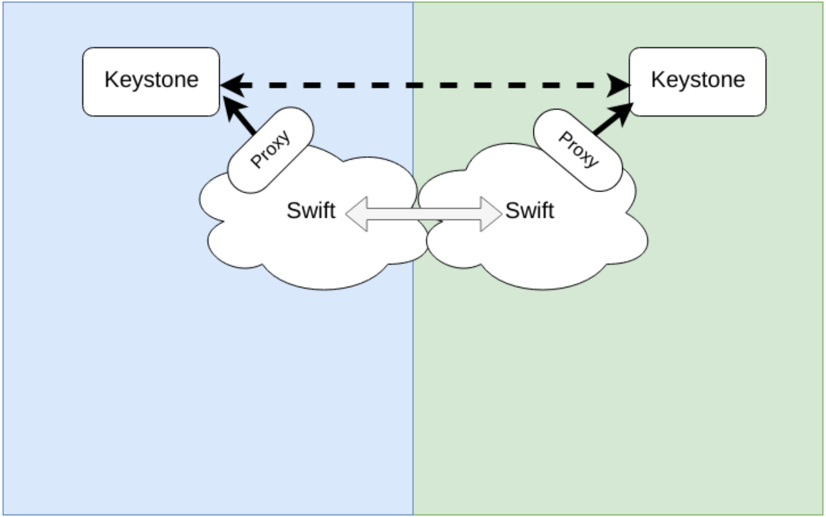
Advantages:

- Simple to setup

Disadvantages:

- Duplicate Identity with no sharing
- Potential High latency
- Needs keystoneauth patches to work

Separate Swift Clusters



Pros/Cons of Separate Clusters

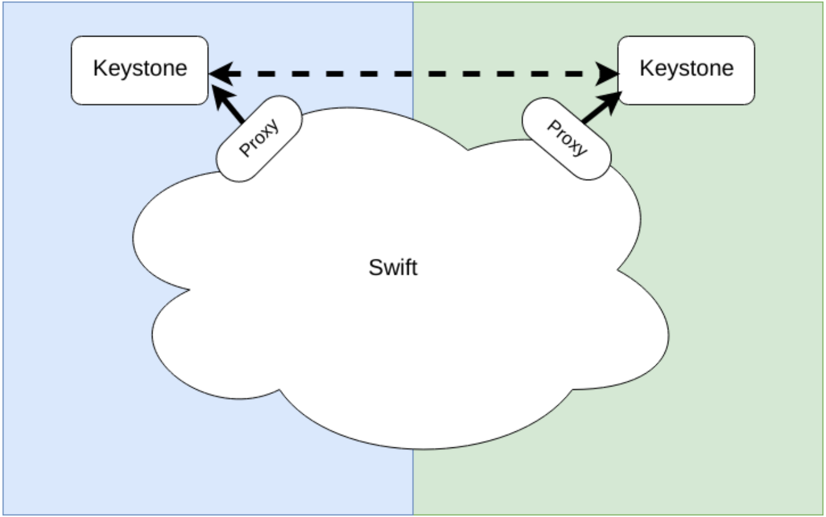
Advantages:

- Resource isolation
- Offers a great deal of deployment flexibility
- Low swift auth latency (swift only talks to local keystone)

Disadvantages:

- Complexity of configuration
- Double mapping (idp -> keystone, keystone->swift)

Global Swift Cluster



Pros/Cons of Separate Clusters

Advantages:

- Only maintain single swift cluster
- Low swift auth latency (swift only talks to local keystone)

Disadvantages:

- Complex configuration
- Double mapping (idp -> keystone, keystone->swift)

Where to get more information

- Blog Post Series: https://oliver.net.au/?p=335
- openstack-dev ML: openstack-dev@lists.openstack.org
- Details on Keystone Federation: http://www.gazlene.net/demystifying-keystone-federation.html
- Keystone federation mapping documentation: https://docs.openstack.org/keystone/pike/advanced-topics/federation/mapping_combinations.html
- These Slides: https://github.com/mtreinish/swift-keystone