

December 11th, 2018

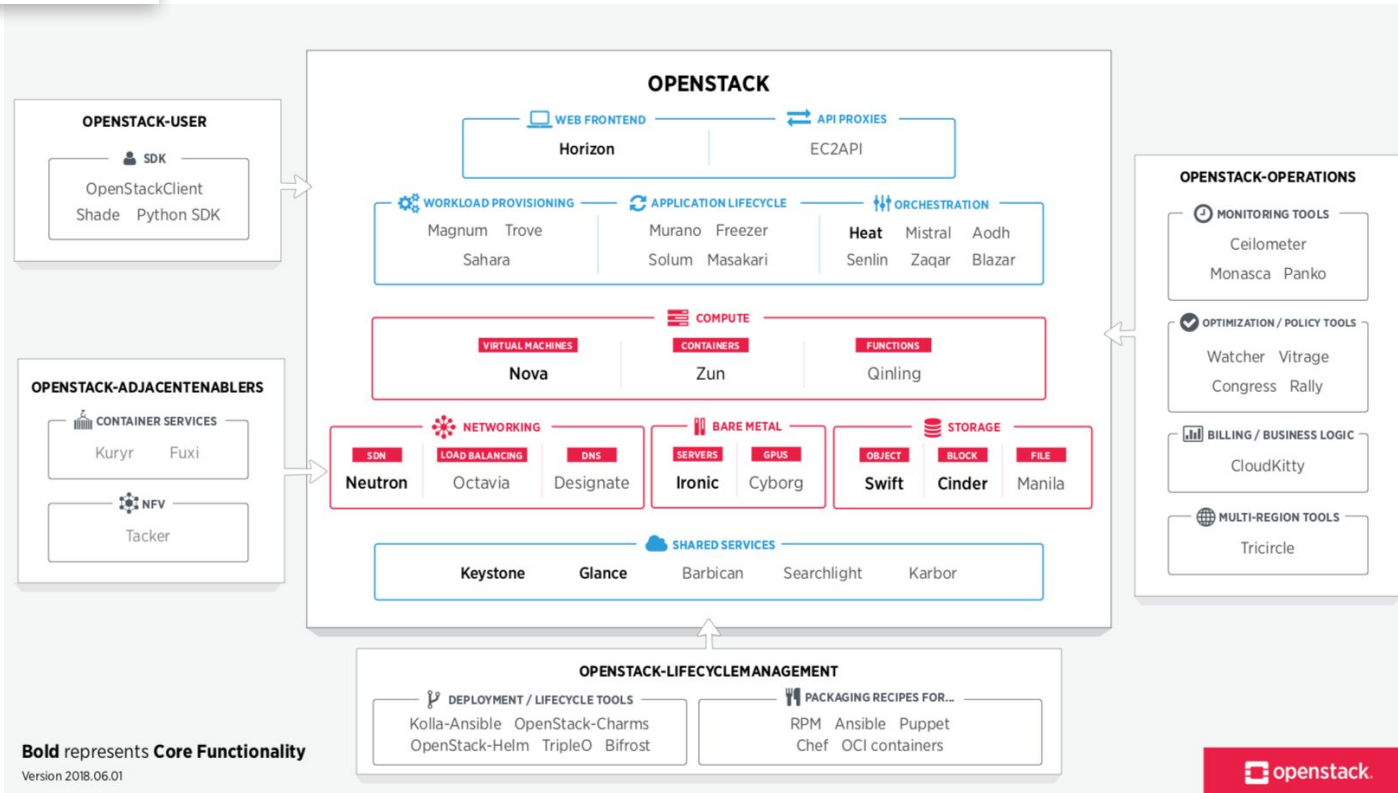


SIG OpenStack Update

KubeCon 2018

Chris Hoge, OpenStack Foundation, @hogepodge

David Lyle, Intel, @dklyle



Programmable infrastructure that lays a common set of APIs on top of compute, networking and storage

One platform for virtual machines, containers and bare metal

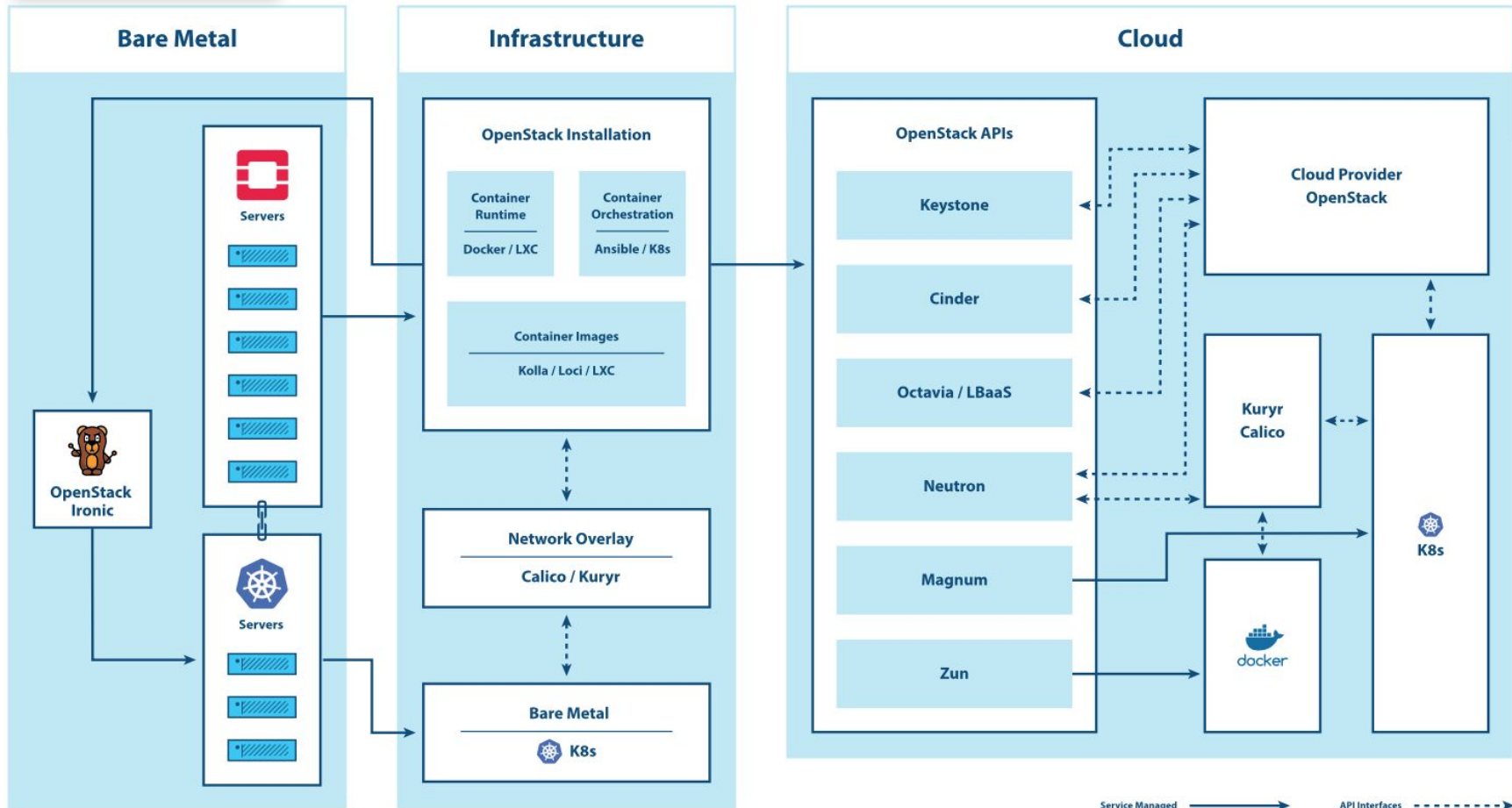
What is SIG OpenStack?

Coordinates the cross-community efforts of the OpenStack and Kubernetes communities.

Includes OpenStack-related contributions to Kubernetes projects with OpenStack as:

- a **deployment platform** for Kubernetes;
- a **service provider** for Kubernetes; and
- a **collection of applications** to run on Kubernetes

<https://github.com/kubernetes/community/tree/master/sig-openstack>



What is SIG OpenStack...in practice?

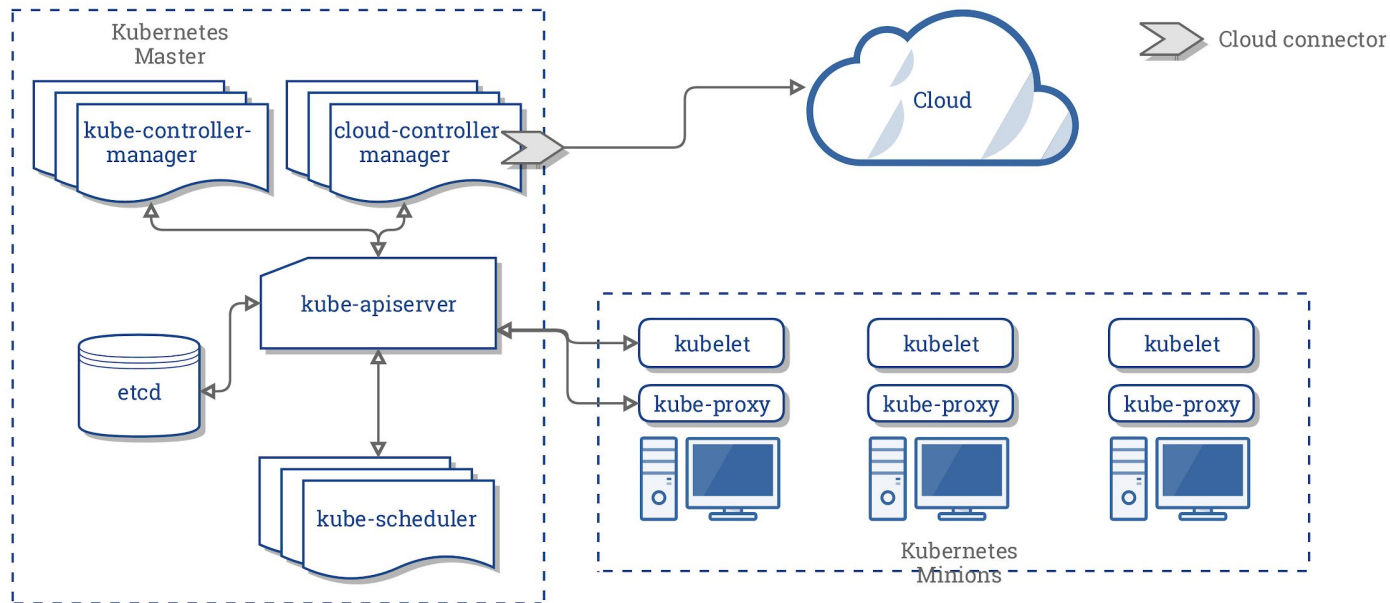
What we're working on now:

- Maintaining the Cloud Provider OpenStack implementation and drivers
 - <https://github.com/kubernetes/cloud-provider-openstack>
 - Cloud provider
 - Cinder and Manilla CSI Drivers
 - Keystone Authentication/Authorization Webhook
 - e2e and conformance testing
- Removing the in-tree provider from kubernetes/kubernetes
- Beginning work on Cluster-API implementation
 - <https://github.com/kubernetes-sigs/cluster-api-provider-openstack>

OpenStack Cloud Provider

- It's a plugin to Kubernetes that provides a cloud-specific implementation of the Cloud Controller Manager interface to deliver advanced cloud functionality.
- Actually, a collection of interfaces to control:
 - Clusters
 - Instances
 - Zones
 - Load Balancers
 - Routes

Cloud Provider in Environment



Configuration

See the getting started docs at <https://github.com/kubernetes/cloud-provider-openstack/>

```
[Global]
username=user
password=pass
auth-url=https://<keystone ip>/identity/v3
tenant-id=c869168a828847f39f7f06edd7305637
domain-id=2a73b8f597c04551a0fdc8e95544be8a
```

```
[LoadBalancer]
subnet-id=6937f8fa-858d-4bc9-a3a5-18d2c957166a
```

Can also used sourced environment variables.

Deploying It

Set the environment variables and start the cluster

```
export EXTERNAL_CLOUD_PROVIDER_BINARY=...  
export EXTERNAL_CLOUD_PROVIDER=true  
export CLOUD_PROVIDER=openstack  
export CLOUD_CONFIG=/etc/kubernetes/cloud-config  
./hack/local-up-cluster.sh
```

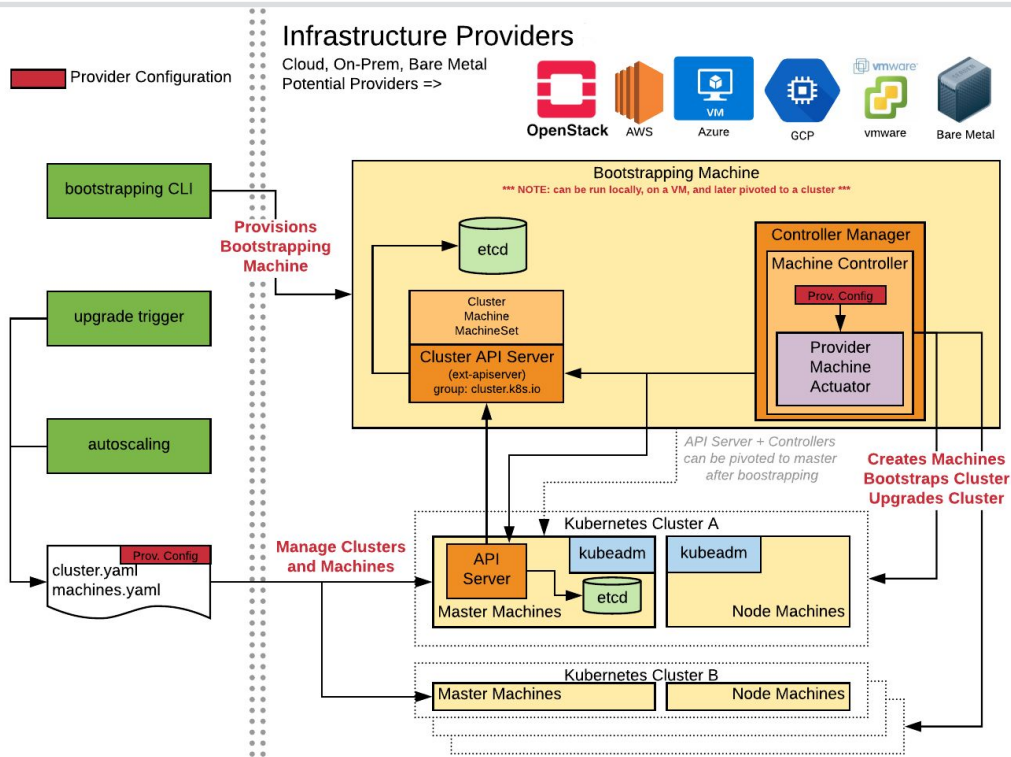
Create cluster role and cluster role binding so that the provider can talk to the API

```
./cluster/kubect1.sh create -f cluster/addons/rbac/
```

cluster-api-provider-openstack

- It's more of a concrete implementation than a true provider.
 - "Note that Cluster API effort is still in the prototype stage while we get feedback on the API types themselves. All of the code here is to experiment with the API and demo its abilities, in order to drive more technical feedback to the API design. Because of this, all of the prototype code is rapidly changing."
- Fast paced development effort, looking for more developers and more robust implementations.
- Cloud credentials are configured differently than for cloud-provider.
 - Potential avenue for new work, abstracting credential loading.

cluster-api-provider-openstack



Achievements for 2018

- Deprecated the in-tree provider in favor of the external provider.
 - If you have a project that relies on in-tree, start migrating away now!
- Four full releases of the external provider, synced up with K8s releases.
- OpenStack now testes on CNCF/CICD
 - <https://cncf.ci>
- Full integration testing of Kubernetes on OpenStack.
 - Passing e2e tests and reporting back to test grid.
- Magnum now a Certified Kubernetes Installer.
- Initial provider implementation for Cluster API project.
- Published OpenStack and Containers whitepaper.
 - <https://www.openstack.org/containers>

Plans for 2019

- Finalize removal of in-tree provider.
 - Both openstack in general and cinder as a special API instance.
- Continue working on standalone drivers.
 - Keystone for RBAC
 - Cinder for CSI.
- Build out robust Cluster API implementation.
- Common credential library

Finding out more/getting involved?

In general:

- Kubernetes Slack: **#sig-openstack**
- Google Group: **Kubernetes-sig-openstack**
 - <https://groups.google.com/forum/#!forum/kubernetes-sig-openstack>

THANKS!

Questions and Community Discussion



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