openstack.

Octavia

Project Update
OpenStack Summit - Shanghai

Adam Harwell - Train PTL - Verizon Media

Carlos Goncalves - Red Hat

What is Octavia?

Network Load Balancing as a Service for OpenStack.

- Octavia provides scalable, on demand, and self-service access to network load balancer services, in a technology agnostic manner, for OpenStack.
- The reference load balancing driver provides a highly available load balancer that scales with your compute environment.
- Founded during the Juno release of OpenStack.
- 61 contributors from 24 companies for latest release
- Moved from a Neutron sub-project to a top level OpenStack project during the Ocata series.
- #1 Neutron feature "actively using, interested in using, or looking forward to using" for previous OpenStack user surveys.

Octavia Stein Features
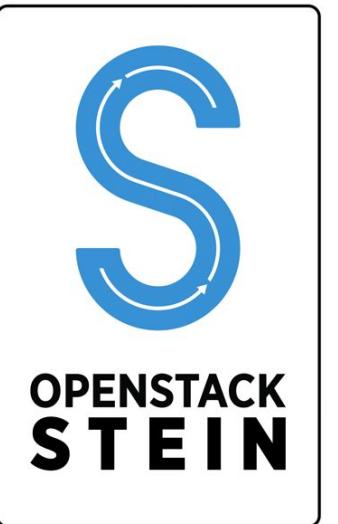
- Octavia flavors
- TLS client authentication
- TLS backend (member) re-encryption
- New L7 rules for TLS client authentication
- Tags
- Octavia-lib
- L7 policy redirects can now use a configurable HTTP status code
- New L7 policy REDIRECT_PREFIX
- Octavia API now supports Cloud Auditing Data Federation (CADF) auditing
- Admin API to update a running amphora agent configuration file

Octavia Train Features

- Neutron-LBaaS retirement
- Log offloading
- VIP Access Control Lists
- Batch member updates - additive only
- Volume based amphorae
- Provider driver agent enhancements
- Reduced image sizes
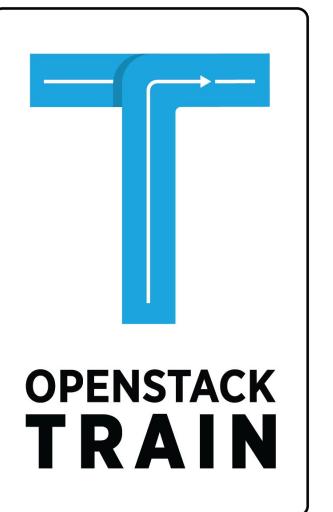
Which new features would you like to see supported in Octavia?

1. Active-active
2. Statistics (more metrics)
3. HTTP/2 protocol
4. Log offloading
5. Simultaneous IPv4 and IPv6 VIP
6. Container-based amphora driver
7. Event notifications
8. MySQL protocol
9. VIP ACL API
10. gRPC protocol
11. BGP
12. Cinder volume-based amphorae

Source: 2019 OpenStack User Survey

Octavia Ussuri Features

- Flow resumption
- Notifications
- HTTP/2
- Improved TLS cipher and protocol support
- Basic Active/Active topology support
- VIP IPv4/IPv6 dual stack
- … more

Note: These are not commited work items and the release timing may vary.

Beyond Ussuri

- Active/Active with auto scaling
- Health monitor content checking
- Additional health monitor protocols
- Compression offload
- Amphora in containers
- Statistics (more metrics)
- <Your idea here>

Note: These are not commited work items and the release timing may vary.

Neutron-LBaaS retirement

- Neutron-lbaas was declared deprecated during the Queens release cycle.
- Project was retired during the Train release cycle. **No Train release**!
  - Security and bug fixes welcome in stables branches

- A deprecation FAQ is available on the wiki
  - https://wiki.openstack.org/wiki/Neutron/LBaaS/Deprecation
- We have provided a pass-through proxy driver for neutron-lbaas that forwards requests made via the Neutron endpoint to the new Octavia endpoint
- You can also use L7 policies to redirect LBaaS requests to the Neutron API to the new Octavia v2 API
- Additional testing has been done validating that the Octavia v2 API is a compatible superset of the neutron-lbaas LBaaS v2 implementation
- Refer to "Migrate from Neutron LBaaS to Octavia LoadBalancing"
  - https://www.openstack.org/summit/berlin-2018/summit-schedule/events/22030/migrate-from-neutron-lbaas-to-octavia-loadbalancing

Cross-Project Work

- Still investigating ways to use containers for amphora
  - LXD based amphora proof of concept, but nova-lxd is shutting down
- Potential neutron-fwaas integration for a more flexible load balancer port security solution
- Working with Keystone team on default RBAC roles
- Neutron team discussions about Ryu/Ken and OpenFlow controllers

How to give feedback

Feel free to give feedback during the Q&A at the end of this session

We are available during multiple time zones on freenode IRC in #openstack-lbaas

Weekly IRC meetings:

Wednesday @ 16:00 UTC in #openstack-lbaas

We are also on the OpenStack discuss mailing list using "[octavia]" as the subject prefix.

Octavia has been migrated to storyboard for bug/RFE tracking:

https://storyboard.openstack.org

How to contribute

- We are looking for developers and code reviewers!
- We have work available:
  - Bug fixing
  - OpenFlow development
  - API feature enhancements
  - Tempest tests
  - Web dashboard
- If you are a load balancing vendor, work on creating an Octavia provider driver. There is a driver developer guide and support from the team available.
  - https://docs.openstack.org/octavia/latest/contributor/guides/providers.html