openstack.

November 2018

Octavia

Project Onboarding, OpenStack Summit Berlin

Carlos Goncalves IRC: cgoncalves

German Eichberger IRC: xgerman

Michael Johnson IRC: johnsom

redhat.

rackspace.

rackspace.

openstack.

What is Octavia?

Load Balancing as a Service for OpenStack.

- Octavia provides scalable, on demand, and self-service access to 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.
- 78 contributors from 29 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 the past two April OpenStack user surveys.

April 2017 OpenStack User Survey

Which features in Neutron are you actively using, interested in using, or looking forward to using?

We are here

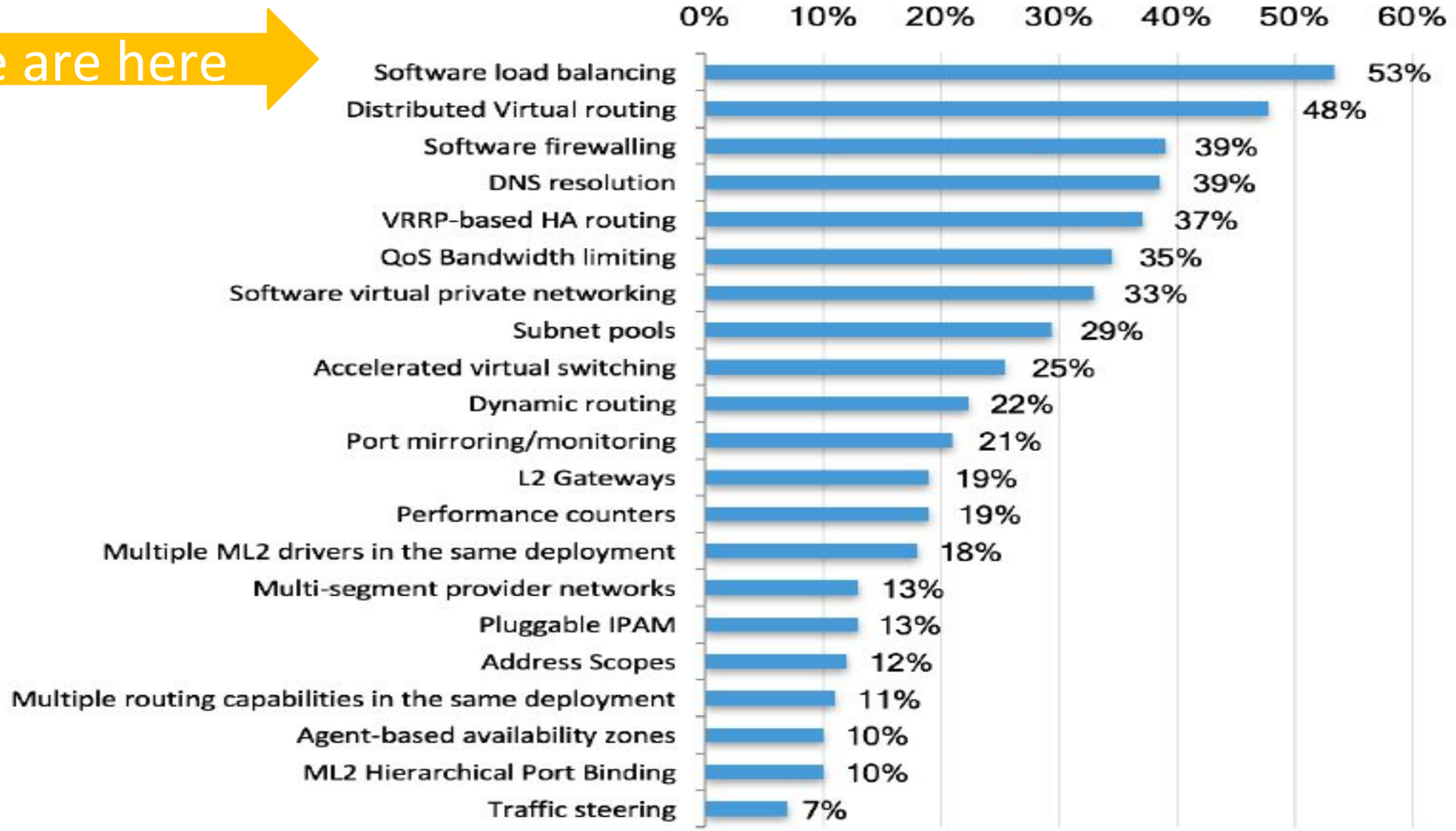

Figure 6.6 n=197

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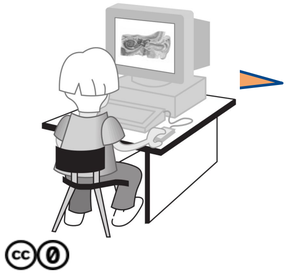
Who is the Current Octavia Core Team?

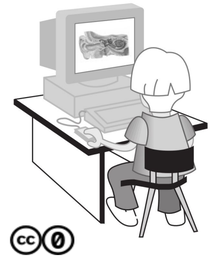
- Michael Johnson – Octavia PTL (founding member)
- Adam Harwell – Core Reviewer (founding member)
- German Eichberger – Core Reviewer (founding member, former PTL)
- Jacky Hu – Core Reviewer
- Nir Magnezi – Core Reviewer
- Carlos Goncalves – Core Reviewer

- Many more developers, reviewers, and translators!

What is network load balancing?

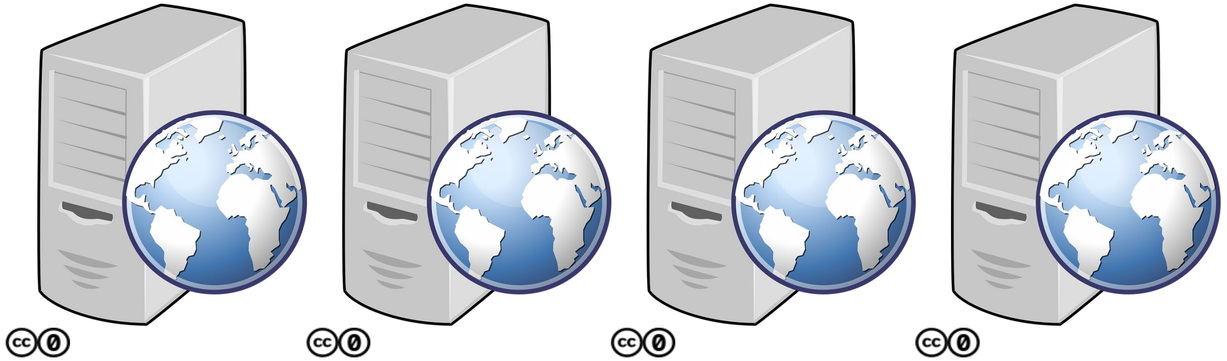


http://www.openstack.org



http://www.openstack.org

Network
Load Balancer



Use cases for using load balancing

- Distributing the network load between many servers
- Increasing the availability of the served resource
- SSL offload and centralized certificate management
- Protocol conversion
  - IPv6 VIP but IPv4 member servers
- Protocol port conversion
  - VIP may listen on port 80 when member servers listen on 8080
- L7 policies and rules
  - Static image files may be served from different member servers than the web page itself
- Abstracting the physical network topology
  - Ease the upgrade and rollback of applications or equipment
- Many more…

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The Octavia Deliverables

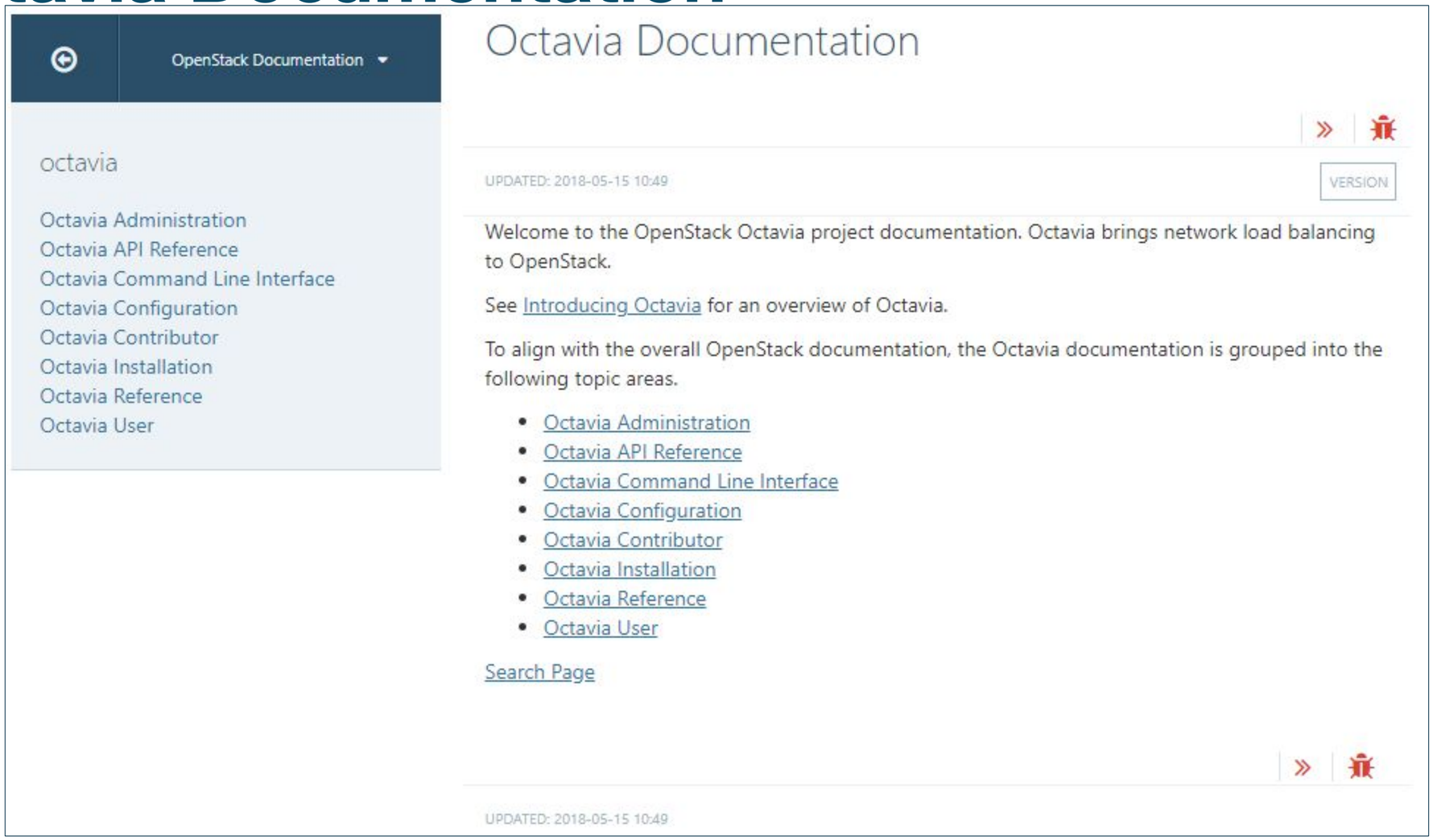
Go forward deliverables

- octavia
- octavia-lib
- octavia-dashboard
- octavia-tempest-plugin
- python-octaviaclient

Legacy deliverables (deprecated)

- neutron-lbaas
- neutron-lbaas-dashboard

Octavia Documentation



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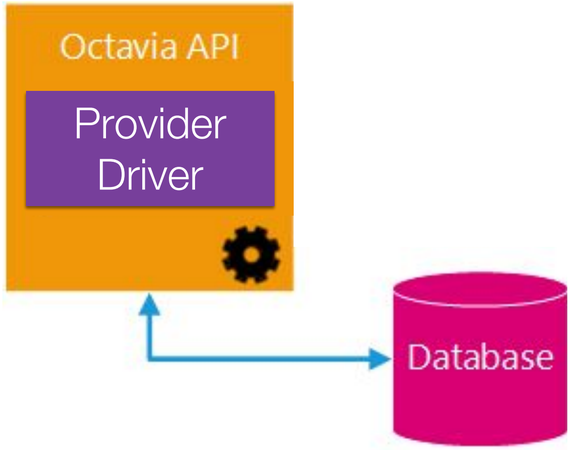
Octavia Architecture



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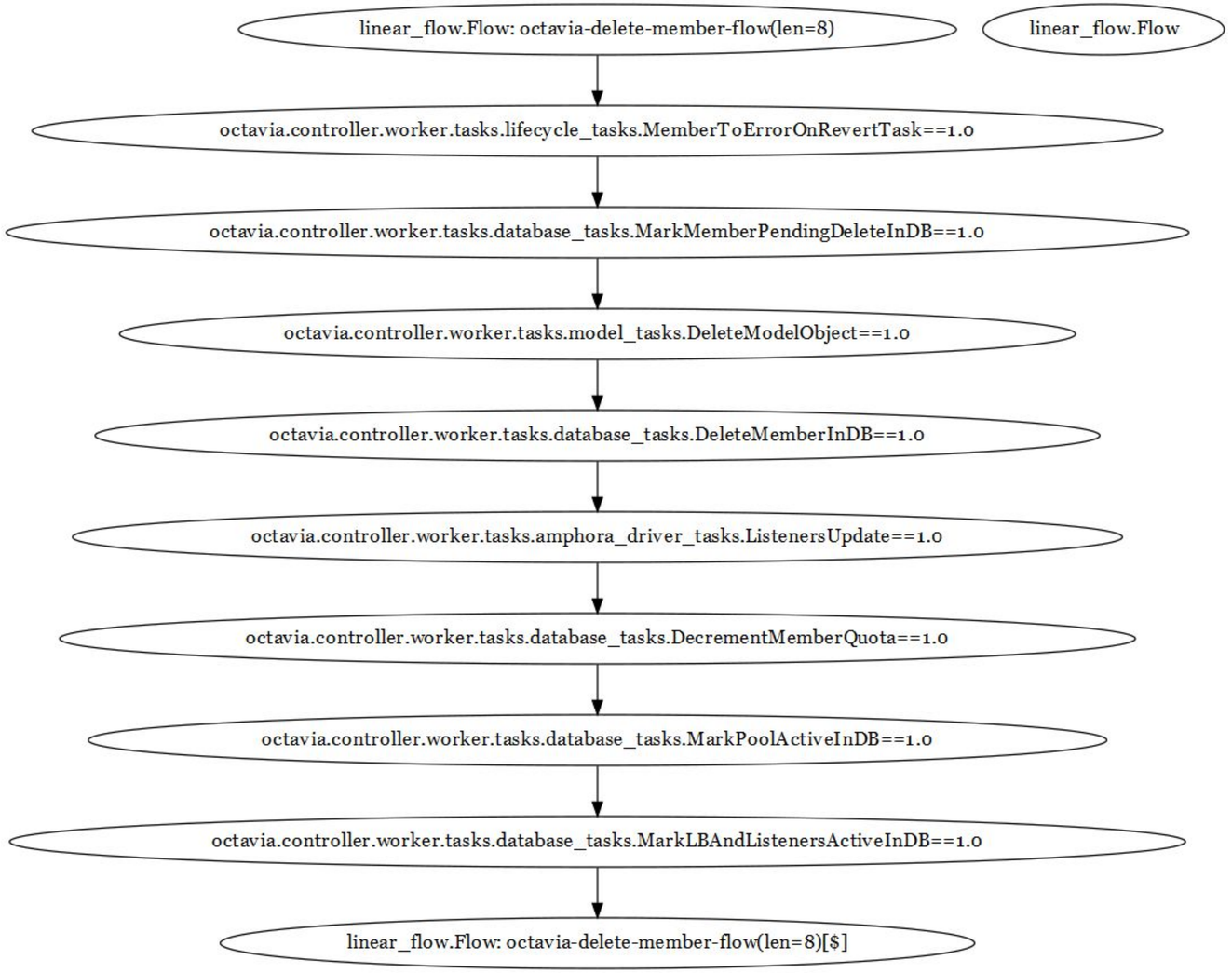
Octavia Code Structure

```
michjohn@devstackpy27:~/.../OpenStack/octavia$ ls
api-ref              HACKING.rst              setup.py
babel.cfg            httpd                    specs
bin                  LICENSE                  specs-tests
CONSTITUTION.rst     lower-constraints.txt    TESTING.rst
CONTRIBUTING.rst     octavia                  test-requirements.txt
devstack             playbooks                tools
diskimage-create     README.rst               tox.ini
doc                  releasenotes             zuul.d
elements             requirements.txt
etc                  setup.cfg
michjohn@devstackpy27:~/.../OpenStack/octavia$ cd octavia/
michjohn@devstackpy27:~/.../octavia/octavia$ ls
amphorae        cmd       controller   hacking       network   tests
api             common    db           i18n.py       opts.py   version.py
certificates    compute   distributor  __init__.py   policies
michjohn@devstackpy27:~/.../octavia/octavia$
```

Octavia TaskFlow Flow – Member Delete



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Increase log level

- Edit /etc/octavia/octavia-*.conf
  - Uncomment `debug = False` and replace False with True.
- Restart o-cw, o-api, o-hm, o-hk:
  - E.g. systemctl restart devstack@o-*
  - repeat until all services you like to debug are restarted

Log files on the host

- Review /opt/stack/logs
  - `ls /opt/stack/logs/o-*.log` = o-api.log o-cw.log o-hk.log o-hm.log
- **o-api.log** - logs the api server. Useful to see if requests made it to the system and if they actually got executed
- **o-cw.log (amphora driver)** - logs the controller worker. This does most of the work and this logs will usually aid in debugging problems with nova, neutron, etc.
- **o-hk.log** - logs the housekeeping manager. Here we do the deletion of amphora marked for deletion, certificate rotation (the ones on the amphora), etc.
- **o-hm.log (amphora driver)** - logs the information about the healthmanager and heartbeats the amphorae send; this is good for failover debugging

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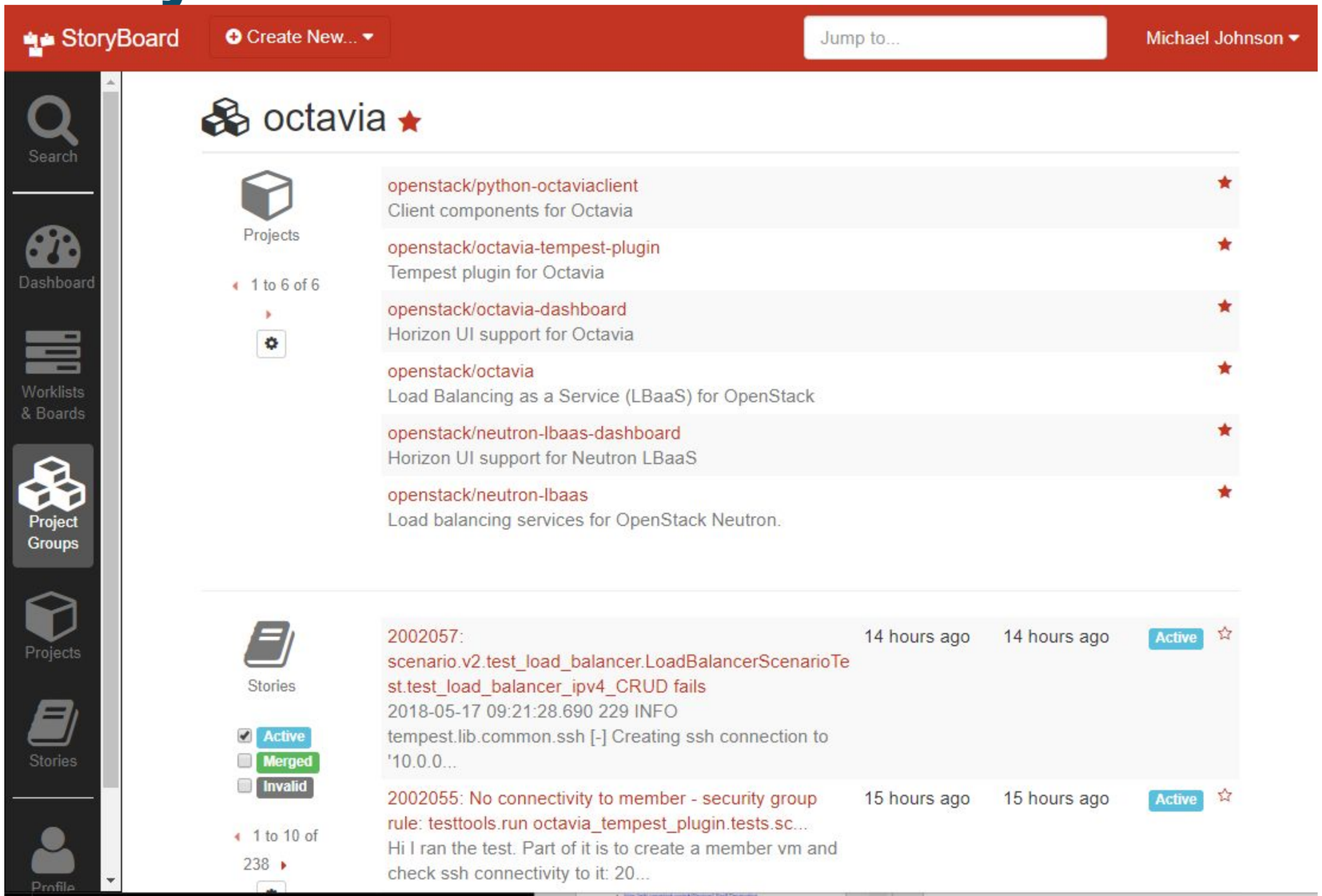
Octavia Testing

- Currently at 90% code coverage with unit and functional tests
- All tests run using both Python 2.7 and 3.5 using tox
- Unit tests
  - Approximately 1,288 unit tests
- Functional tests
  - Approximately 1,171 functional tests
  - Focused on Amphora agent, API, and database testing
- Tempest tests
  - API validation tests
  - Scenario tests

Octavia StoryBoard



Octavia Opportunities

- Provider driver development
- Active/Active
  - Looking for OVS/OpenFlow experience
- Flavors
- Installation guide
- Log offloading
- Amphora in containers
- Backend re-encryption
- Bug fixes

https://wiki.openstack.org/wiki/Octavia/Roadmap

How to contribute?

- Presentations:
  - Tuesday 3.20 pm: Octavia Project Onboarding 7.1a NY2
  - Wednesday 1.40 pm: Migrate from Neutron LBaaS To Octavia Level 1 – Hall A2
  - Thursday 2.35 pm: Octavia project update – Level 3 M3
- Weekly meetings: Wednesday @ 20:00 UTC in #openstack-lbaas
- Freenode IRC: #openstack-lbaas
- https://wiki.openstack.org/wiki/octavia
- http://www.octavia.cloud
- https://storyboard.openstack.org/#!/project_group/70
- https://github.com/openstack/octavia

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Q&A

Thank you!

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