Contributing to Neutron **101**

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What is this talk about?

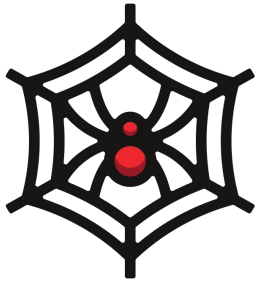
- Brief intro to **Neutron**
- **Reasons** to contribute
- How to **fix your first bug**
- How to submit changes using **gerrit**

Neutron: The Openstack Networking system

Allows the creation and management of all the virtual networking infrastructure needed to run a cloud.

Main components are:

- Neutron-server
- Neutron DB
- Plug-ins and Drivers - *E.g. ML2 Plugin / ML2/OVN Driver*

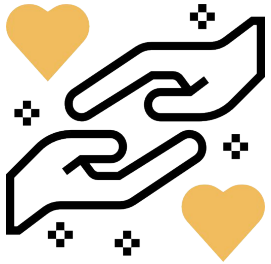


Why contributing to Neutron?

1. Because you can

It's Open Source!

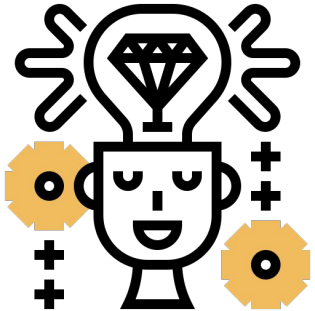
- ➔ Higher quality code
- ➔ Higher reliability (public peer reviewing)
- ➔ Users can actually improve the project by joining an active, inclusive community



Why contributing to Neutron?

2. Because you want to learn

- ➔ There is no better way to understand Neutron than to play with the codebase
- ➔ There is a community of professionals that make their best effort to help everyone regardless of their company or location



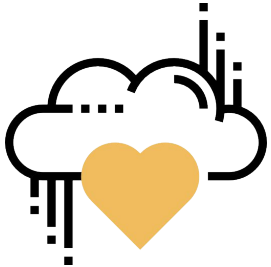
Why contributing to Neutron?

3. Because you want to improve your Openstack cloud

Active developers have voice and can take part of the decisions in the community.

E.g.:

> *The best way of getting the features you need for your cloud is to formalize those petitions through the Neutron Launchpad as an RFE*



Fixing your first bug in Neutron

Stay connected

The community is active in the **openstack-discuss** mailing list.

And in the **OFTC** IRC:

#openstack-neutron

#opendev (for questions about the project infrastructure)

#openstack (for OpenStack usage questions)

#openstack-dev (for OpenStack development questions)

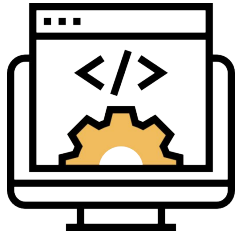
We have weekly meetings on the Neutron channel, new contributors are welcomed!

https://lists.openstack.org/cgi-bin/mailman/listinfo/openstack-discuss
https://docs.openstack.org/neutron/latest/contributor/contributing.html#communication
IRC client: https://weechat.org/
Neutron meetings: https://meetings.opendev.org/#Neutron_Team_Meeting

Code hosting and reviewing

Opendev is a portal that contains code managing tools

- Code hosting
- Gerrit
- Continuous integration
- Collaborative editing



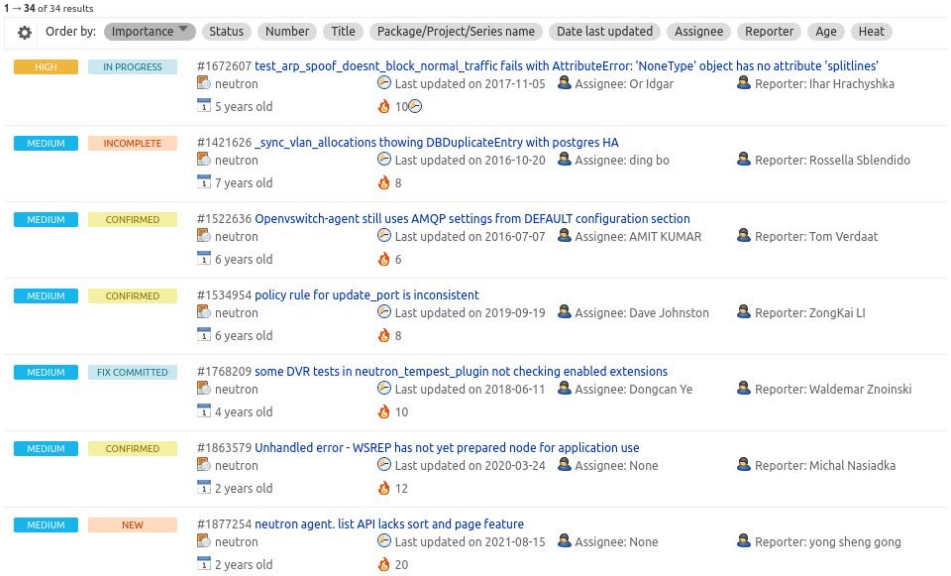
Gerrit is a git server that provides…

- Code Review
- Access Control on the Git repositories

https://opendev.org/openstack/neutron
Step by step guide to setup Gerrit: https://docs.openstack.org/contributors/common/setup-gerrit.html

Find a bug

Launchpad is the bug managing tool for most Openstack related issues:



https://launchpad.net/neutron

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Deploy Devstack

Devstack is a system for quickly deploying a minimal Openstack version for developing and testing purposes.

Run this environment inside a VM!

- ➔ Use the *local.conf* file to tweak and personalize the deployment
- ➔ Devstack environments are disposable
- ➔ You can use CentOS 8 or the latest Ubuntu LTS as the host VM OS

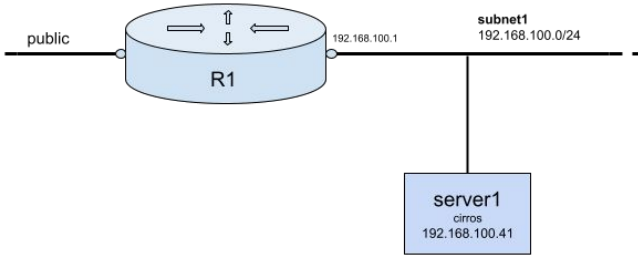
Some tricks:

- ➔ Automate the deployment process
- ➔ Don't shut off the Devstack VM
- ➔ Take snapshots of your Devstack VM after a clean deploy

https://docs.openstack.org/neutron/latest/contributor/testing/ml2_ovn_devstack.html

Create a small workload

Most times, you will need to add some resources to reproduce a problem.



- Use Cirros as OS for quick testing
- Create tiny flavors for spawning those VMs
  `$ flavor create tiny --disk 1 --vcpus 1 --ram 64`
- Openstack is blacklisting connections by default, remember to allow traffic through security group rules!
- To access the VM through the network, attach a floating IP

All commands listed in: https://elviragruiz.net/2021/11/09/fixing-a-bug-in-neutron.html

Coding time

- Reload the neutron service after making a change
- Use a text editor you are comfortable with

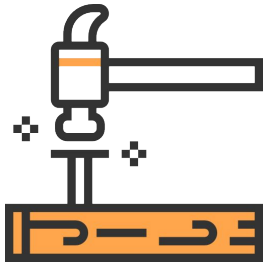
Tools for debugging:

- Neutron logs!

```
$ journalctl -u devstack@q-svc.service
```

- To debug using unit tests, you can use **pdb**.
  Set a trace in the code and then run:

```
$ source .tox/py38/bin/activate
$ stestr run -n <test path>
```



https://docs.python.org/3/library/pdb.html

Run the tests

Tox is the main tool we use for testing

Before uploading a change...

- ➔ Pep8
- ➔ Unit
- ➔ Functional

Executed on the CI Gates (Zuul)

- ➔ Fullstack
- ➔ Scenario

https://docs.openstack.org/neutron/latest/contributor/testing/testing.html
https://tox.wiki/en/latest/

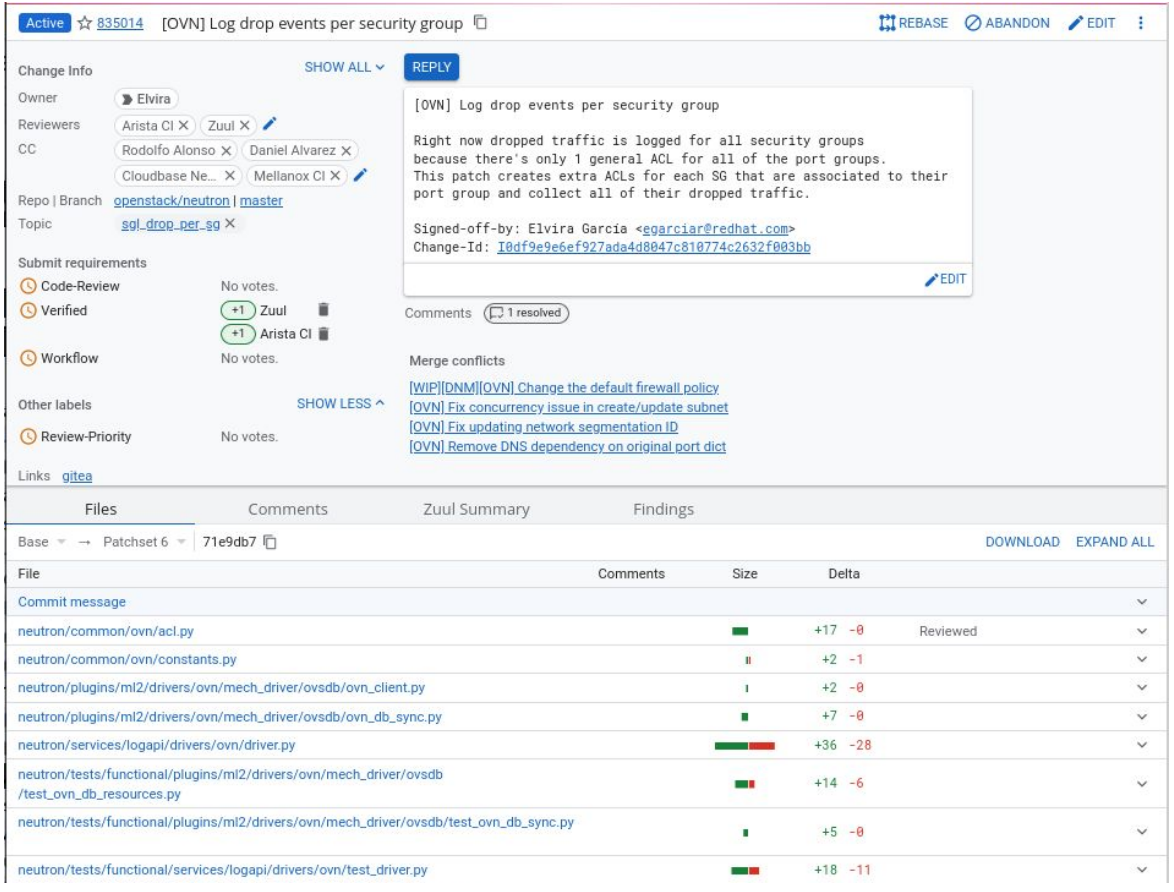
Submit your change

Before submitting the code...

- ➔ Ensure your code is well formatted
- ➔ Create atomic commits
- ➔ Write your commit message

Submit with `$ git review` and see your change!

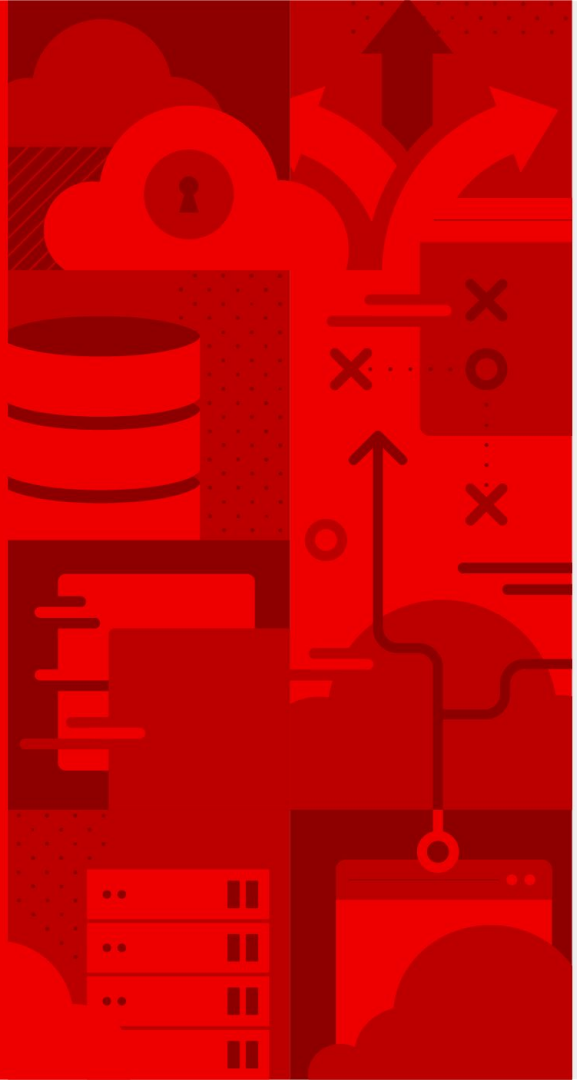
Once your change is submitted is time to wait for Zuul testing results and peer reviews



Summing up...

1. Set up your communication tools
2. Set up your gerrit account
3. Find a good first issue
4. Deploy a devstack environment
5. Coding time!
6. Test your changes
7. Submit & wait for reviews
8. Revise the reviews and resubmit
9. Code submitted!!

} *These steps might be repeated several times. Don't panic at your 5th resubmission!*



Ask any questions!

You can also send them later to egarciar@redhat.com

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