

Contributing to Neutron 101

Open Infrastructure Summit 2022

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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**

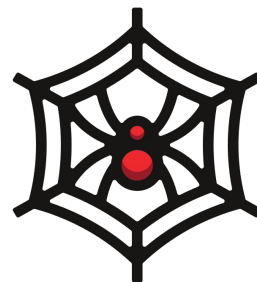


Neutron: The Openstack Networking system

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*

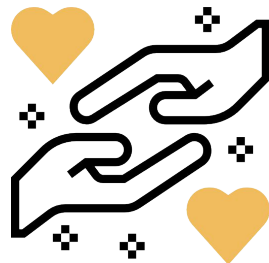


Why contributing to Neutron?

1. Because you can

It's Open Source!

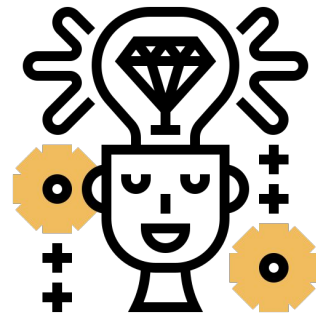
- Higher quality code
- Higher reliability (public peer reviewing)
- Users can actually improve the project by joining an active, inclusive community



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



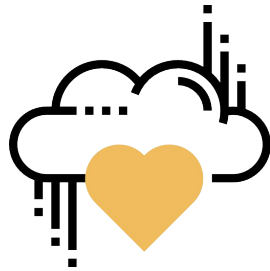
Why contributing to Neutron?

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!

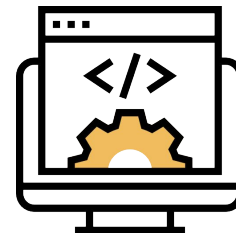
Code hosting and reviewing

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



Find a bug

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

34 of 34 results

Order by:	Importance	Status	Number	Title	Package/Project/Series name	Date last updated	Assignee	Reporter	Age	Heat
HIGH	IN PROGRESS	#1672607	test_arp_spoof_doesnt_block_normal_traffic fails with AttributeError: 'NoneType' object has no attribute 'splines'	neutron	Last updated on 2017-11-05	Assignee: Or Idgar	Reporter: Ihar Hrachyshka	5 years old	10	
MEDIUM	INCOMPLETE	#1421626	_sync_vlan_allocations throwing DBDuplicateEntry with postgres HA	neutron	Last updated on 2016-10-20	Assignee: ding bo	Reporter: Rossella Sblendido	7 years old	8	
MEDIUM	CONFIRMED	#1522636	Openvswitch-agent still uses AMQP settings from DEFAULT configuration section	neutron	Last updated on 2016-07-07	Assignee: AMIT KUMAR	Reporter: Tom Verdaat	6 years old	6	
MEDIUM	CONFIRMED	#1534954	policy rule for update_port is inconsistent	neutron	Last updated on 2019-09-19	Assignee: Dave Johnston	Reporter: ZongKai LI	6 years old	8	
MEDIUM	FIX COMMITTED	#1768209	some DVR tests in neutron_tempest_plugin not checking enabled extensions	neutron	Last updated on 2018-06-11	Assignee: Dongcan Ye	Reporter: Waldemar Znoinski	4 years old	10	
MEDIUM	CONFIRMED	#1863579	Unhandled error - WSREP has not yet prepared node for application use	neutron	Last updated on 2020-03-24	Assignee: None	Reporter: Michal Nasiadka	2 years old	12	
MEDIUM	NEW	#1877254	neutron agent. list API lacks sort and page feature	neutron	Last updated on 2021-08-15	Assignee: None	Reporter: yong sheng gong	2 years old	20	

Tags

106 ovn
100 rfe-approved
87 timeout-abandon
61 ovs
50 api
50 l3-dvr-backlog
43 l3-ipam-dhcp
39 fwaas
37 gate-failure
34 neutron-proactive-backport-potential
32 db
31 doc
31 l3-ha
31 low-hanging-fruit
28 rfe-postponed
28 vpnas
24 qos
22 loadimpact
22 tempest
21 linuxbridge
[Show more tags...](#)

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:

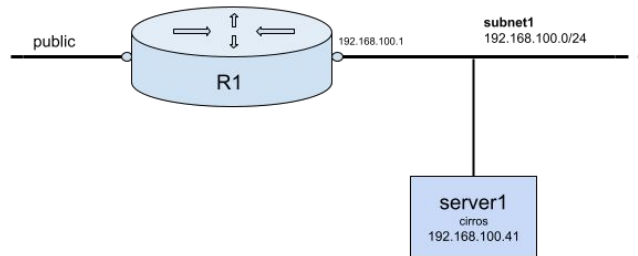
- Automate the deployment process
- Don't shut off the Devstack VM
- Take snapshots of your Devstack VM after a clean deploy



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

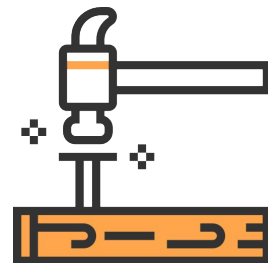


Coding time

- 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>`



Run the tests

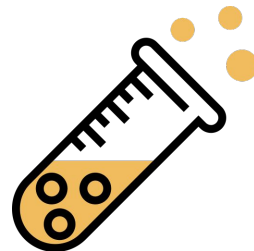
Tox is the main tool we use for testing

Before uploading a change...

- Pep8
- Unit
- Functional

Executed on the CI Gates (Zuul)

- Fullstack
- Scenario



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

The screenshot displays the Gerrit web interface for a change titled "[OVN] Log drop events per security group". The change is in the "Active" state with a star icon and the number 835014. The owner is Elvira. Reviewers include Arista CI and Zuul. CCs include Rodolfo Alonso, Daniel Alvarez, Cloudbase Ne..., and Mellanox CI. The repository is openstack/neutron and the branch is master. The topic is sgl_drop_per_sg. The change has a code review (+1) from Zuul and a verified status (+1) from Arista CI. The commit message is: "Right now dropped traffic is logged for all security groups because there's only 1 general ACL for all of the port groups. This patch creates extra ACLs for each SG that are associated to their port group and collect all of their dropped traffic." The signed-off-by is Elvira Garcia <egarcia@redhat.com> and the change ID is I0df9e9e6ef927ada4d8047c810774c2632f003bb. The change has 1 resolved comment. The merge conflicts section lists several links: [WIP][DNM][OVN] Change the default firewall policy, [OVN] Fix concurrency issue in create/update subnet, [OVN] Fix updating network segmentation ID, and [OVN] Remove DNS dependency on original port dict. The bottom section shows a table of files with their commit message, Zuul Summary, and Findings. The table has columns for File, Comments, Size, and Delta. The files listed are: neutron/common/ovn/acl.py, neutron/common/ovn/constants.py, neutron/plugins/ml2/drivers/ovn/mech_driver/ovsdb/ovn_client.py, neutron/plugins/ml2/drivers/ovn/mech_driver/ovsdb/ovn_db_sync.py, neutron/services/logapi/drivers/ovn/driver.py, neutron/tests/functional/plugins/ml2/drivers/ovn/mech_driver/ovsdb/test_ovn_db_resources.py, neutron/tests/functional/plugins/ml2/drivers/ovn/mech_driver/ovsdb/test_ovn_db_sync.py, and neutron/tests/functional/services/logapi/drivers/ovn/test_driver.py.

File	Comments	Size	Delta
neutron/common/ovn/acl.py	Reviewed	+17 -0	
neutron/common/ovn/constants.py		+2 -1	
neutron/plugins/ml2/drivers/ovn/mech_driver/ovsdb/ovn_client.py		+2 -0	
neutron/plugins/ml2/drivers/ovn/mech_driver/ovsdb/ovn_db_sync.py		+7 -0	
neutron/services/logapi/drivers/ovn/driver.py		+36 -28	
neutron/tests/functional/plugins/ml2/drivers/ovn/mech_driver/ovsdb/test_ovn_db_resources.py		+14 -6	
neutron/tests/functional/plugins/ml2/drivers/ovn/mech_driver/ovsdb/test_ovn_db_sync.py		+5 -0	
neutron/tests/functional/services/logapi/drivers/ovn/test_driver.py		+18 -11	

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 egarcia@redhat.com



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