

Status Update on OpenStack Integration

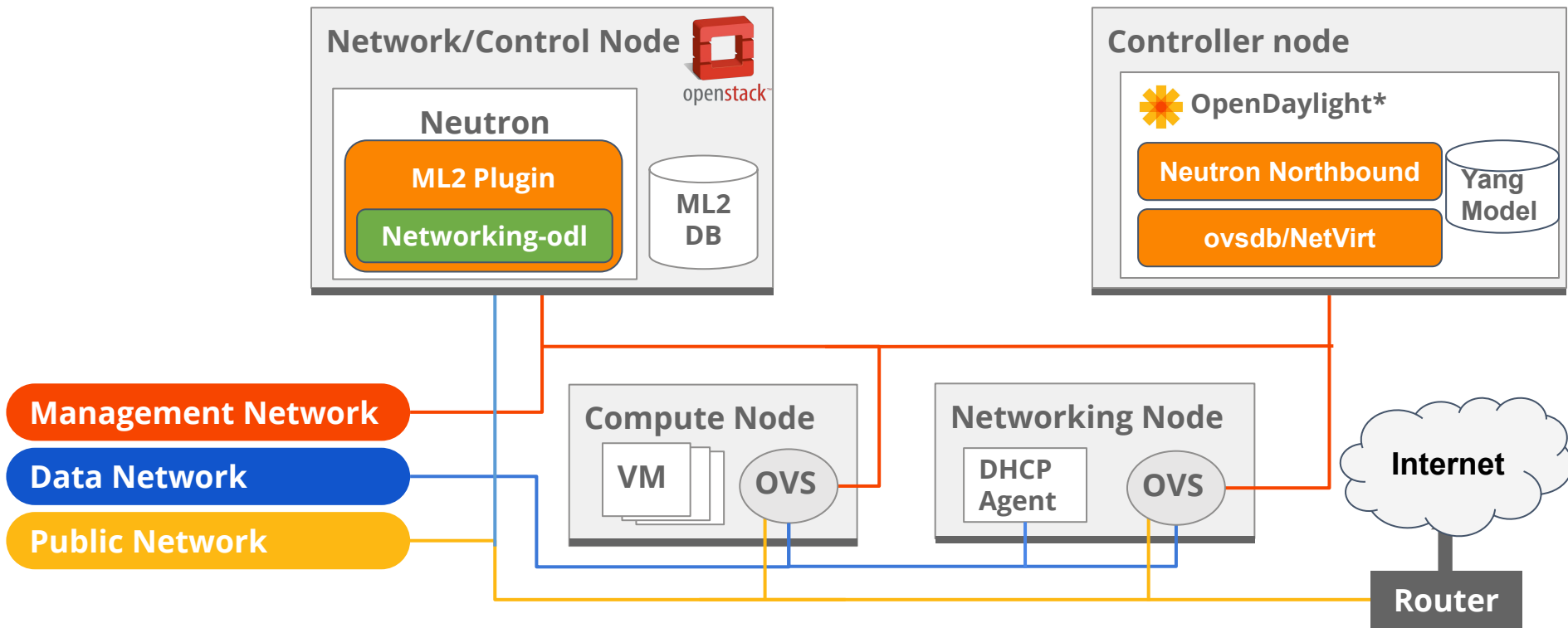
How to Contribute to Both OpenStack & OpenDaylight

Agenda

- OpenStack integration and status update
- V2 driver deep dive

OpenStack Integration

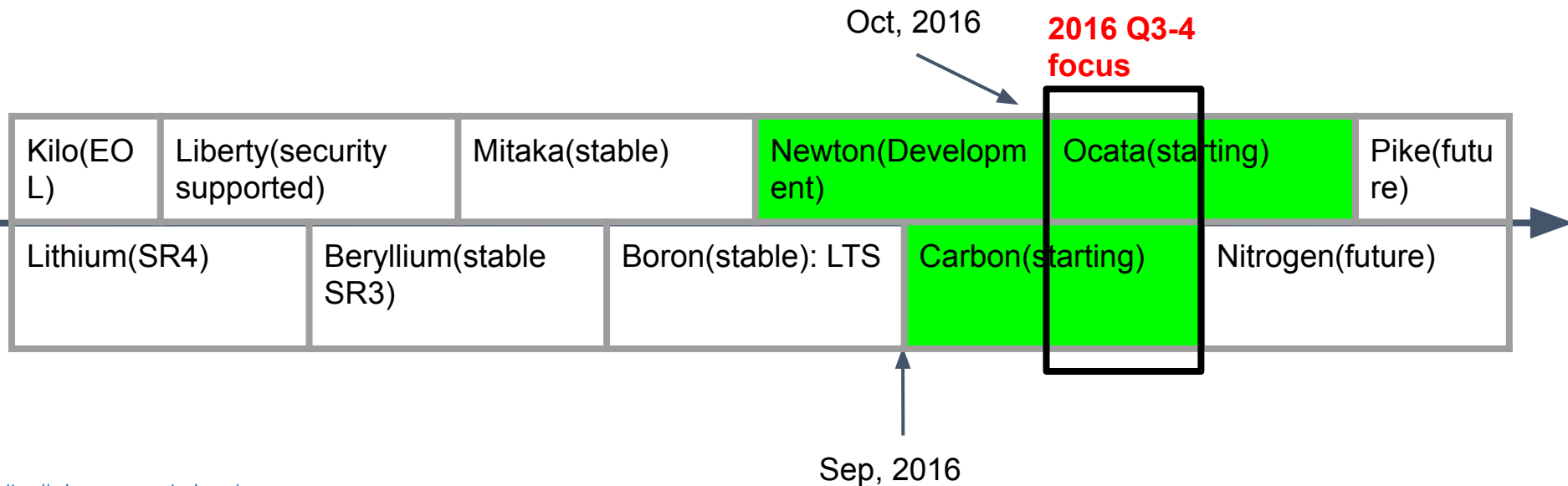
OpenStack and OpenDaylight Integration



Networking-ODL and ODL Neutron Northbound

- Key components of the integration
- OpenStack networking-odl
 - <https://launchpad.net/networking-odl>
 - OpenStack Neutron Stadium Project
 - Basically follows openstack rule, but a bit more flexible
- ODL Neutron Northbound
 - <https://wiki.opendaylight.org/view/NeutronNorthbound:Main>
- **Work in tandem**
- **Each has its own project governance**

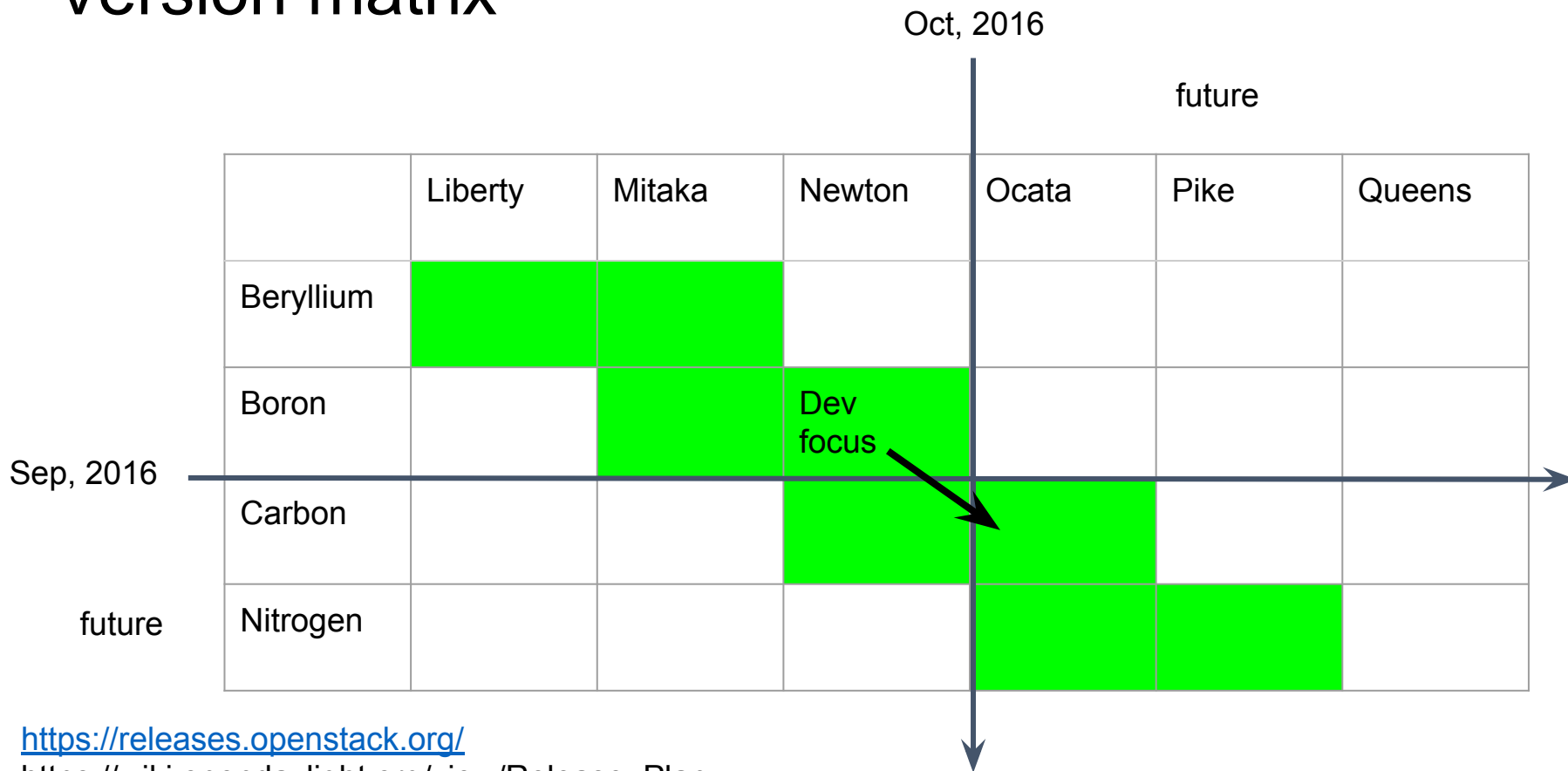
Release: OpenStack vs OpenDaylight



<https://releases.openstack.org/>

https://wiki.opendaylight.org/view/Release_Plan

Version matrix



Tips for contribution

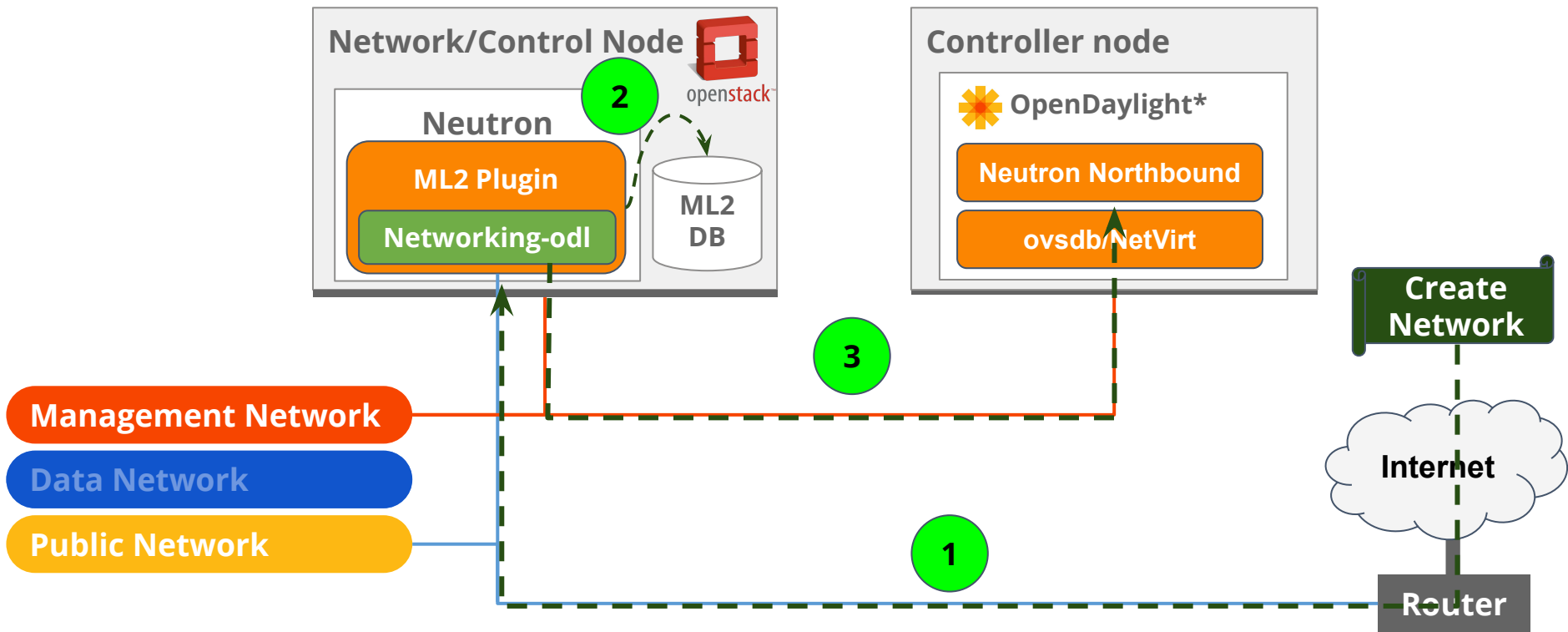
- The process follows the normal one of openstack/ODL.
- Developers of both projects are mostly same.
- Some areas require knowledge of **both** OpenStack Neutron and ODL.
 - New api/model
 - JSON format in request body
- Some areas require only one of openstack or ODL.
- OpenStack has its own release policy
 - <http://docs.openstack.org/project-team-guide/stable-branches.html>
 - Maintained by Neutron release team (!= networking-odl team)

Current status and future plan

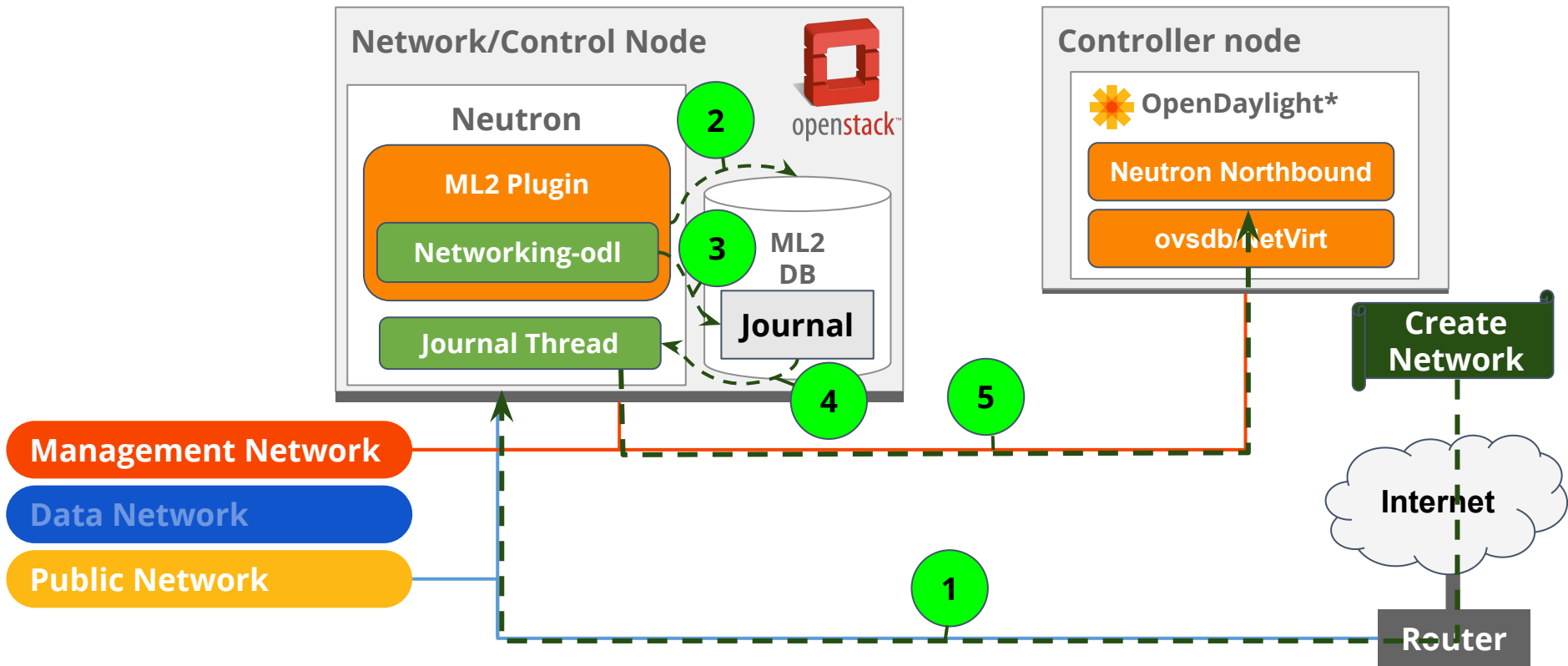
	networking-odl	ODL neutron northbound
Current Status - Newton/Boron Release	<ul style="list-style-type: none">● V2 driver<ul style="list-style-type: none">○ Logging○ Log recovery○ Full sync● Pseudo Agent Port Binding<ul style="list-style-type: none">○ OVS-DPDK○ VPP (Fast Data Stack)● QoS● Networking-SFC	<ul style="list-style-type: none">● Neutron L2GW● Networking-SFC● Neutron QoS● HostConfig● Extension discovery● Yang Model clean up● Improved test coverage
Future plan - Ocata/Carbon Cycle	<ul style="list-style-type: none">● More on v2 driver<ul style="list-style-type: none">○ Data healing○ Monitoring Neutron Server● More on QoS● trunk API(A.K.A vlan-aware-VMs)● Routed networks● L3 plugin flavor● Agent API● More tests/CI with HA deployment	<ul style="list-style-type: none">● trunk API● Error reporting to neutron● Catching up Neutron update of Newton

V2 Driver Deep Dive

V1 Driver Recap



V2 Driver @ Work



V2 Driver Details

- Journal based
 - Ordered queue of operations
 - “Dependency graphs”
 - A-synchronous from the API
- DB level locking
- Journal thread
- Maintenance thread
 - Full sync
 - Recovery
 - Cleanups

V2 Driver Benefits

- **A-synchronous**
 - Free up Neutron faster
 - Fits ODL design paradigm
- **Ordered & Dependency checked**
 - Same resource won't hit race conditions
 - Dependant resources won't hit race conditions
- **DB level locking**
 - Supports HA deployment of Neutron
 - Scale out

V2 Driver Shortcomings & Possible Improvement

- **A-synchronous**
 - No way to know resource state in ODL
 - However.. ODL is actually a-sync, so need to tackle somehow
- **Becomes a bottleneck on scale**
 - Consider allowing journal thread to scale on single server
 - Move dependency calculations to row creation
- **Complexity is bug prone**
 - Need to simplify as much as possible

Summary:

- Networking-odl and odl neutron northbound are key components for the integration
- They are actively developed
- Call To Action
 - Give it a try, Feedback and Contribute
 - <https://launchpad.net/networking-odl>
 - <https://wiki.opendaylight.org/view/NeutronNorthbound:Main>
 - <https://lists.opendaylight.org/mailman/listinfo/neutron-dev>
 - IRC: #opendaylight-neutron on freenode

backup

	openstack security support	openstack stable release	openstack development
opendaylight SR	No Major activity	No Major activity	-
opendaylight stable release	No Major activity	No major activity	test by openstack CI
opendaylight development	-	test by ODL CI	test by opensatck CI test by ODL CSIT Developer major focus

Philosophy

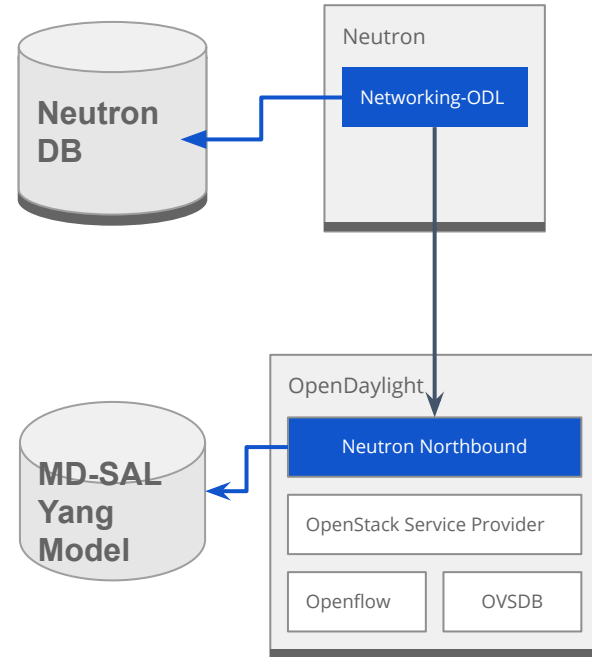
- Service OpenStack Neutron as common communication layer
 - Model/API/design is led by Neutron, not by ODL.
 - Only takes care of communication.. Southbound programming is out of scope.
- Transparent communication
 - Model in ODL is mostly mirror of openstack Neutron's.
 - Communication is mostly pass-through. (HA is another topic!)
- Holistic design
 - Optimize as a whole
 - Appropriate layer at appropriate place

Yang Model/Northbound API Update Policy

- Yang model/northbound
 - Basically mirror of Neutron definition.
 - Networking-odl/Neutron Northbound should be pass-through.
- New (big) API/feature
 - On demand: If someone steps up to support it, it will be helped.
 - All components need to be contributed to..
 - Driver/plugin in networking-odl.
 - Model/northbound in neutron northbound.
 - Openstack provider.
- Minor model/northbound update
 - Proactively addressed to catch up Neutron updates.

Philosophy

- Service OpenStack Neutron as common communication layer
- Transparent communication
- Holistic design



Yang Model/Northbound API Update Policy Cont.

- Minor model/northbound update
 - Proactively addressed to catch up Neutron updates.
 - E.g. Adding new parameters to an existing model.
- Some big features would be proactively addressed
 - Some features requires long-term effort.
 - E.g. Routed network.
 - Need to nudge openstack providers (netvirt, gbp, ...) to support it.

Current Status - Newton/Boron Release

OpenStack Networking-ODL

- V2 driver
 - Logging
 - Log recovery
 - Full sync
- Pseudo Agent Port Binding
 - OVS-DPDK
 - VPP (Fast Data Stack)
- QoS
- Networking-SFC(?)

ODL Neutron Northbound

- Neutron L2GW
- Networking-SFC
- Neutron QoS
- HostConfig
- Extension discovery
- Yang Model clean up
- Improved test coverage

Ocata/Carbon Plan

Openstack Netowking-odl

- More v2 driver
 - Data healing
 - Monitoring Neutron Server
- More on QoS
- TRUNK API
 - A.K.A vlan-aware-VMs
- Routed networks

ODL Neutron Northbound

- TRUNK API
- Error reporting to neutron
- Catching up Neutron update of Newton

Ocata/Carbon Plan Cont.

Openstack Netowking-odl

- L3 plugin flavor
- Agent API
- Upgrade?
- More tests/CI with HA deployment

ODL Neutron Northbound

