

An Open Approach to Enhancing Networking for OpenStack

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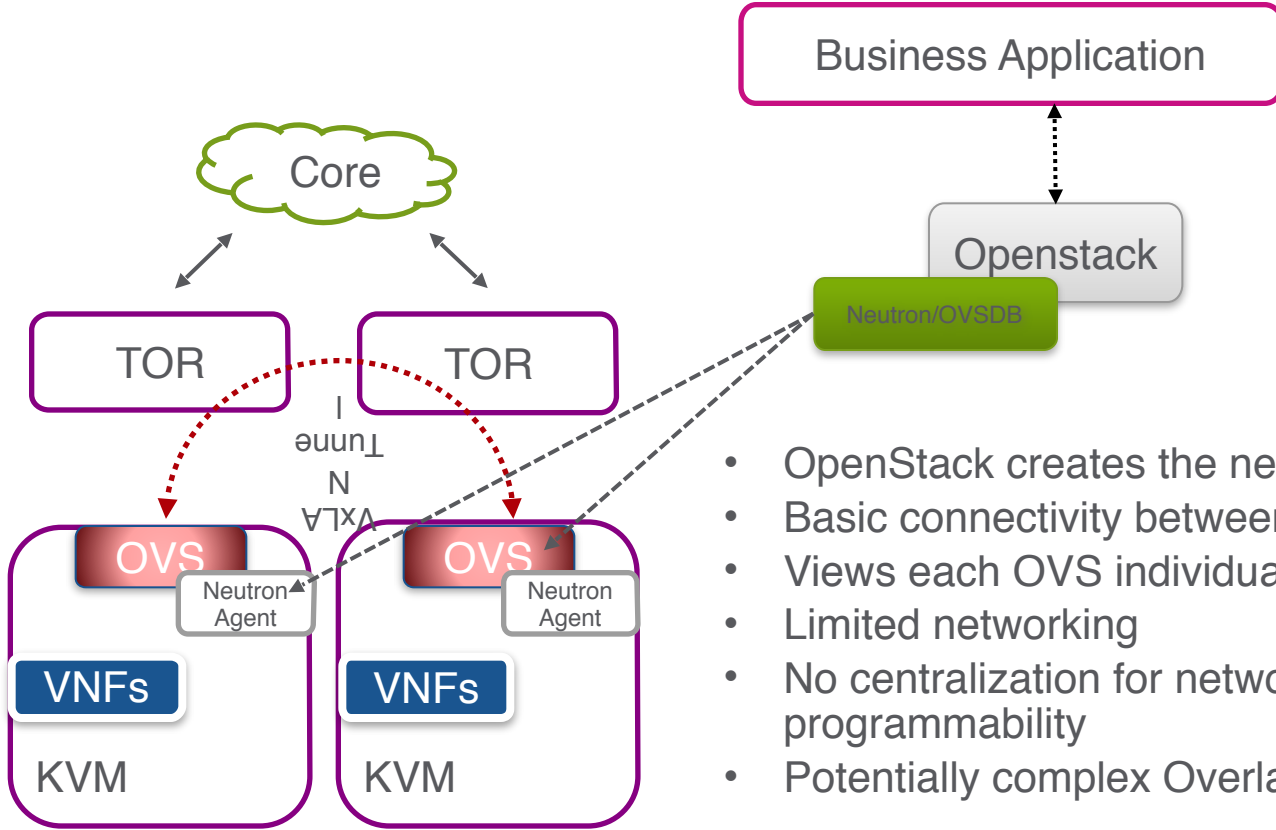
What are we going to talk about today?

- OpenStack and OpenDaylight better together
- Consolidation and Integration through Neutron
- Extending enhanced networking to OpenStack
- An Open Solution for both the Underlay and Overlay



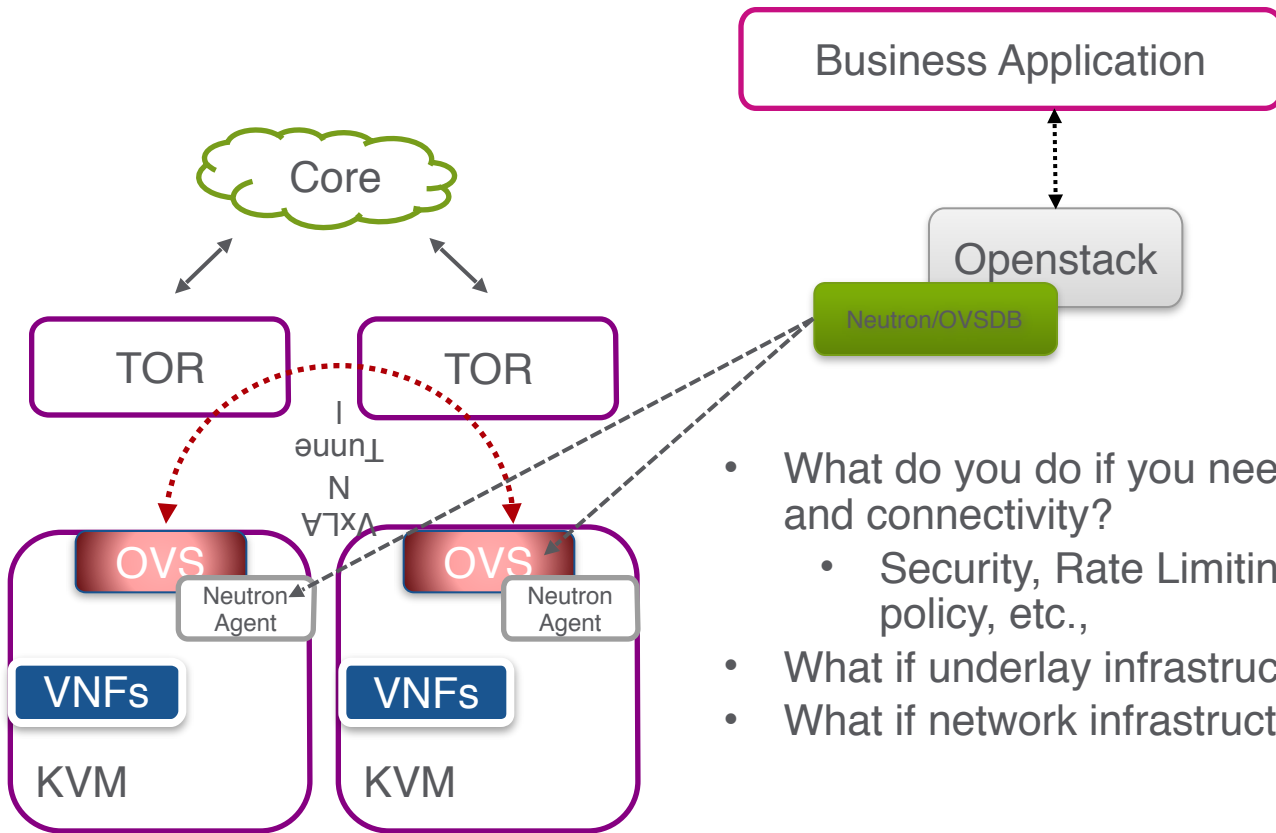
The Challenge

Where we were



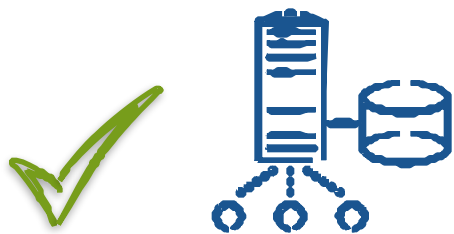
- OpenStack creates the network
- Basic connectivity between relevant nodes
- Views each OVS individually
- Limited networking
- No centralization for network control and programmability
- Potentially complex Overlay (OVS) management

Ok, so what?



- What do you do if you need more than Tunnel setup and connectivity?
 - Security, Rate Limiting, QOS, Routing protocol policy, etc.,
- What if underlay infrastructure uses OpenFlow?
- What if network infrastructure was not single vendor?

What was missing?



Storage
Compute



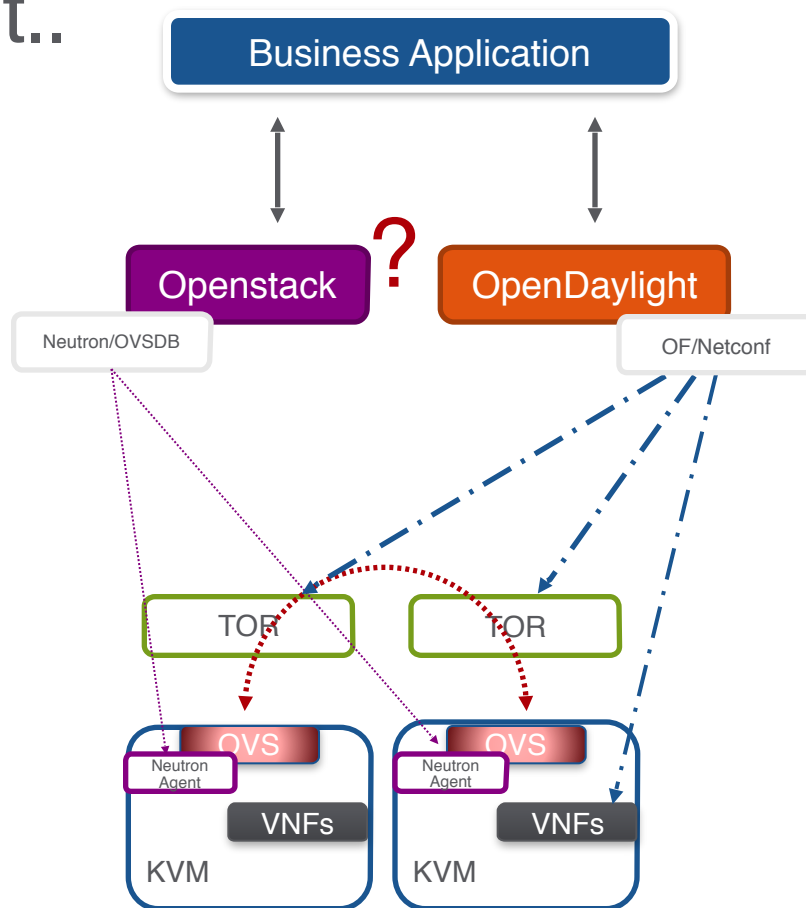
Vlans
Tunnels
XaaS
Basic Net connection



OSPF?
BGP?
Rate Limiting?
QOS?
Routing Policy?
Dynamic Change?
Traffic Engineering?
Net Fault Management?
OpenFlow?

One approach... But..

- Two separate applications
- Different network views
- No integration
- Multi-vendor environment is challenging



But why not make networking be integrated?

Centralization can be a good thing

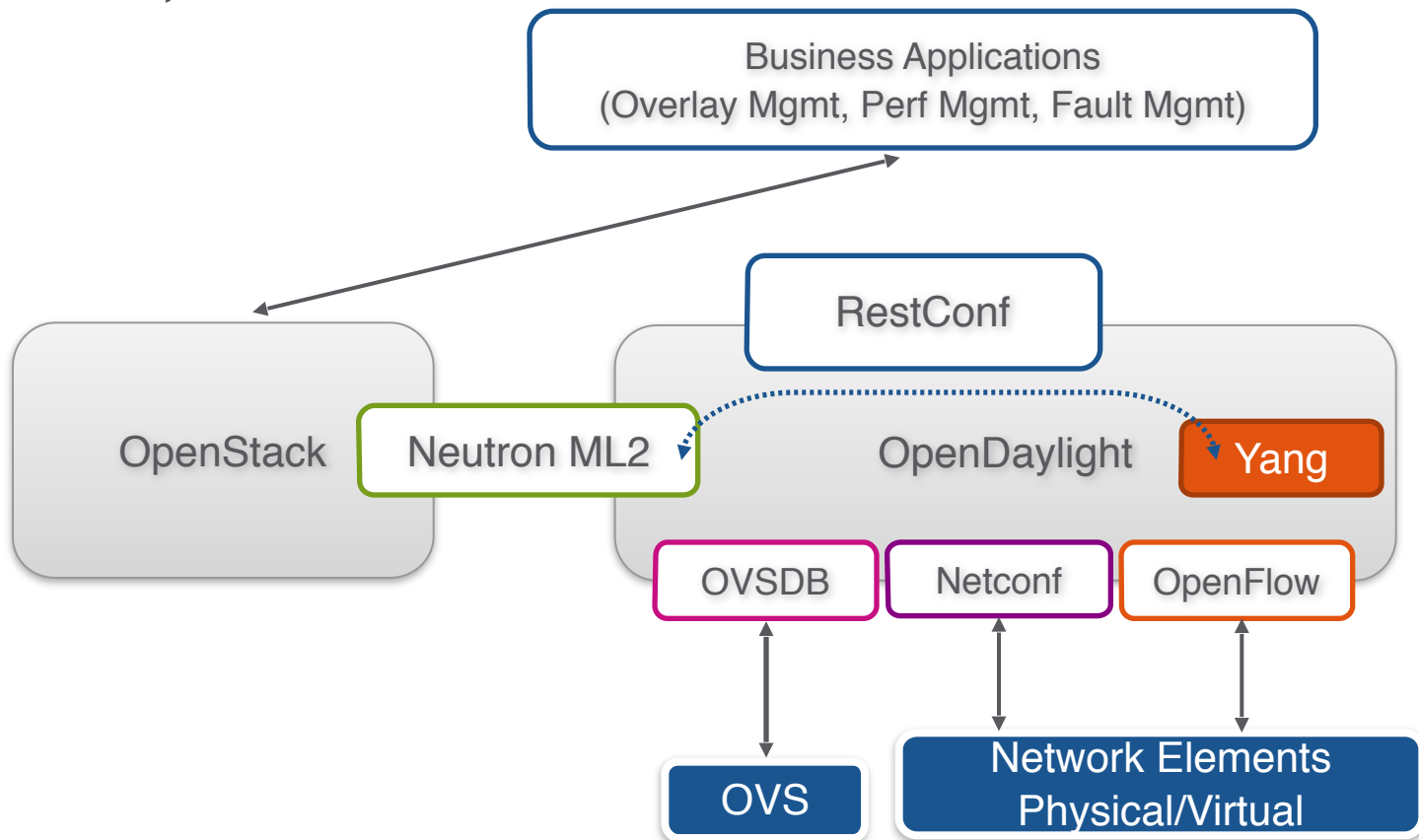
Simplify Openstack view

Basic connectivity not enough

Also, keep it “open”

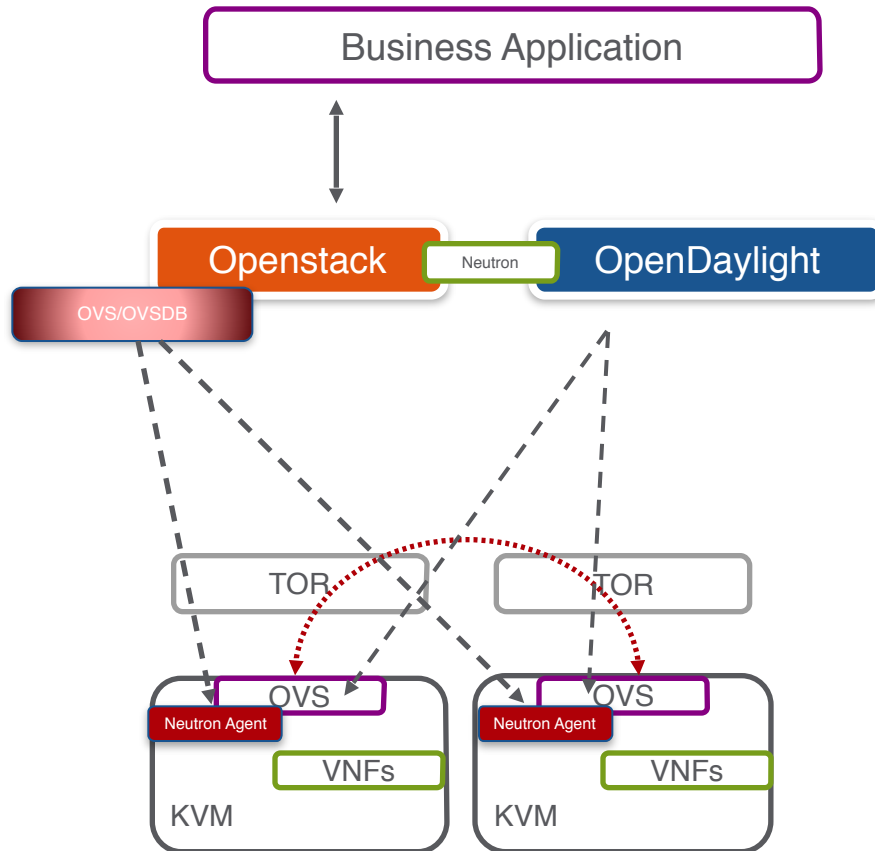
The solution

Ok, so what is new



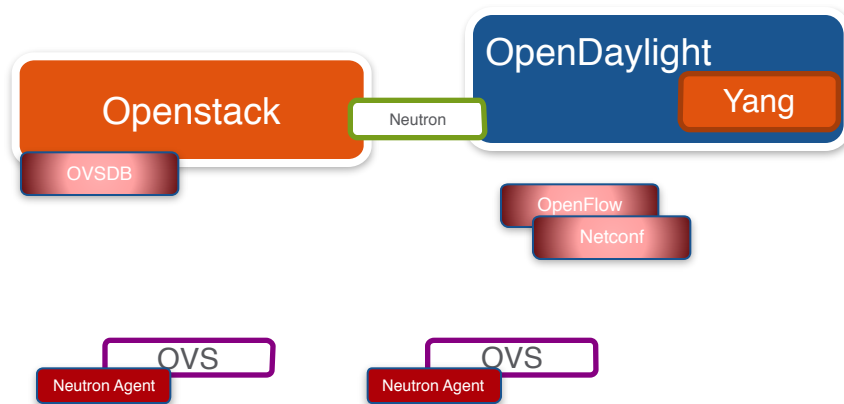
How exactly is this done?

- ODL Neutron ML2 is now interface for OVS for Openstack
 - Single IP
- ODL is aware of OVS end points
- Neutron Agent removed from OVS
- ODL now configures VxLAN tunneling for KVM hosts
- Can now also extend OF to OVS or Physical Underlay



Why was this done?

- Simplify for OpenStack
- Consistency and Standardization
- Extensibility
- Consolidate Network control to ODL



What can you use this for?

- Provide network management service with OpenDaylight using ML2
- Overlay Management for KVM with OVSDb through Neutron
- Utilize Netconf, OpenFlow for managing, automating, traffic engineering and monitoring of the underlay

Benefit

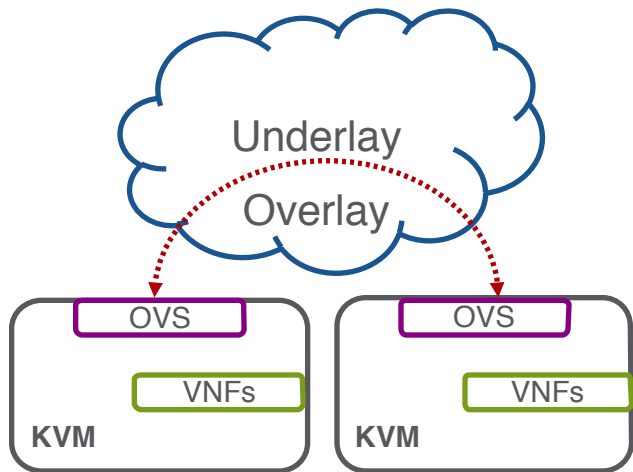
Openstack

Virtual Infrastructure Mgmt



OpenDaylight

Network automation,
traffic engineering, monitoring

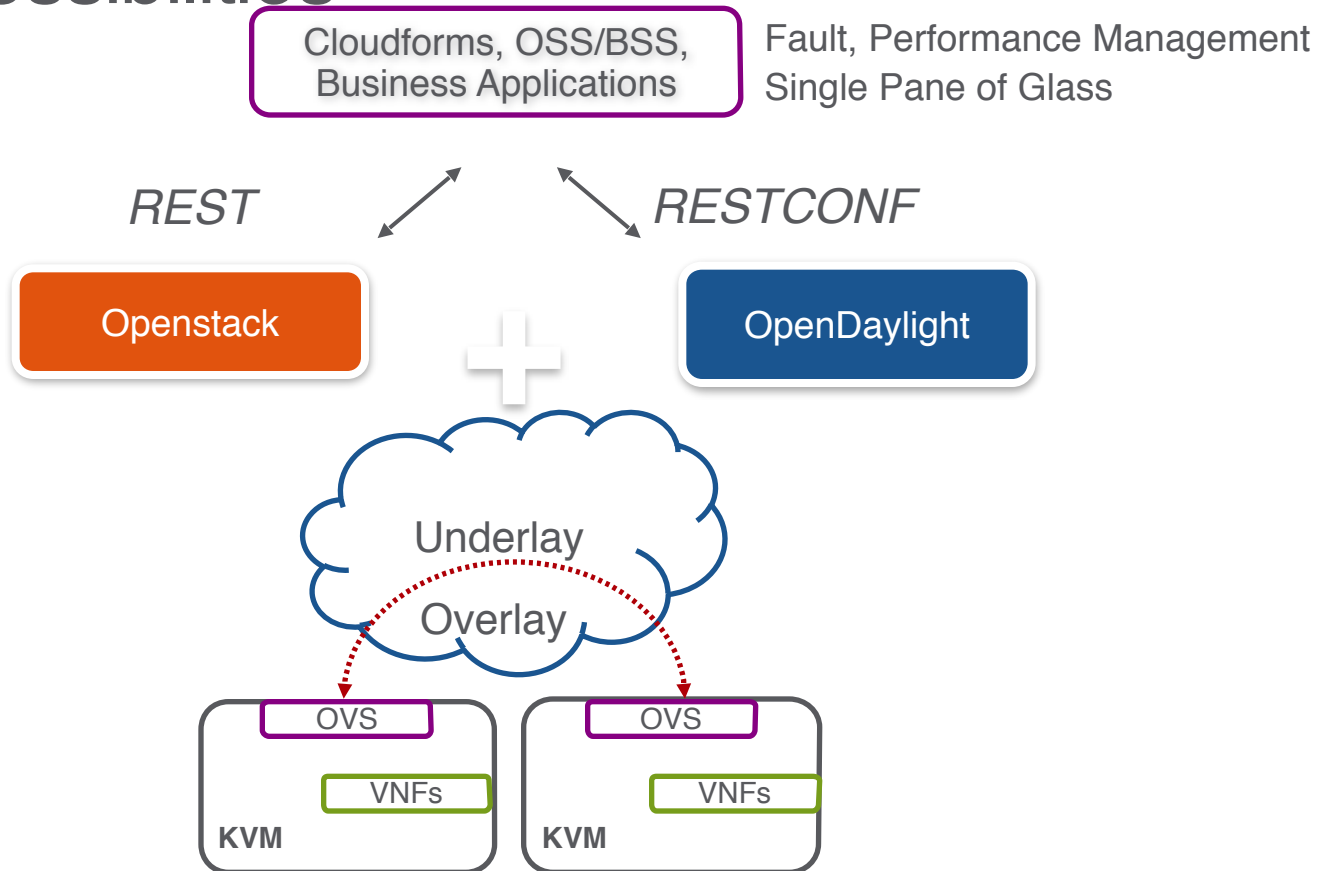


Open joint and integrated platforms
Consistent heterogeneous capability
Underlay Neutral
Decouple business application evolution from network

Availability

- OpenDaylight Neutron ML2 MD-SAL enhancements up streamed
- Support with Lithium release!
- Certified first with RHEL OSP 6
- Shown here at RH Summit!
- Brocade SDN Controller 2.0
- Available with other popular ODL based controllers
- Ripe for Heterogeneous data centers and cloud environments
- Network engineering and Devops

Other possibilities



Thank You