

# Extreme Networks OpenStack 2.0 Plugin for Cloud and SDN Orchestration

## Networking-as-a-Service using Extreme Networks OpenStack 2.0

### Benefits

#### SIMPLICITY

- Topology Aware Scheduler automates optimized Virtual Machine deployment and placement
- Single User Interface (UI) for Storage, Compute and Network provisioning
- Seamless integration spanning virtual and physical networks between open vSwitch and Extreme Networks.

#### AGILITY

- Tenant Isolation schema using Layer 2 or Layer 3 or a combination of Layer 2 and Layer 3.
- Speed-to-deployment optimized using single UI for system wide orchestration
- VM instances can be migrated, both live and on-live, within the OpenStack environment
- Pass-thru mode enables direct provisioning of Extreme Networks infrastructure

#### PERFORMANCE

- Hardware-based forwarding using Virtual Router instances
- Extreme OpenStack supports up to 100GE ports
- High Availability support using MLAG and automated Health Checks

#### SUPPORT AND SERVICE

- Industry-leading customer satisfaction and first call resolution rates
- Lifetime warranty for indoor access points
- Personalized services, including site surveys, network design, installation, and training

### Extreme Networks OpenStack 2.0 Overview

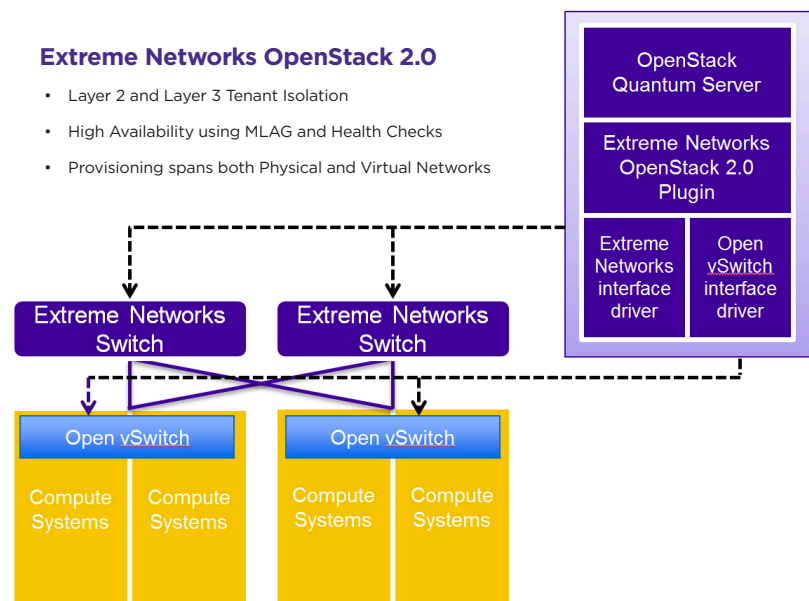
Quantum is the OpenStack project that enables “Networking-as-a-Service” within an OpenStack provisioned environment as well as enabling connectivity to external systems. *(Note: Starting with the Havana release the Quantum project is renamed to Neutron)*

OpenStack Networking is a virtual network service that provides a powerful API to define the network connectivity and addressing used by devices from other services, such as OpenStack Compute. The OpenStack Compute API has a virtual server abstraction to describe compute resources. Similarly, the OpenStack Networking API has virtual network, subnet, and port abstractions to describe network resources. In more detail:

- Network: An isolated L2 segment, analogous to VLAN in the physical networking world.
- Subnet: A block of IPv4 addresses and associated configuration state.
- Port: A connection point for attaching a single device, such as the NIC of a virtual server, to a virtual network. Also describes the associated network configuration, such as the MAC and IP addresses to be used on that port.

#### Extreme Networks OpenStack 2.0

- Layer 2 and Layer 3 Tenant Isolation
- High Availability using MLAG and Health Checks
- Provisioning spans both Physical and Virtual Networks



The Extreme Networks OpenStack 2.0 plugin is based on the OpenStack Grizzly Release and runs on Extreme XOS 15.3 and later releases. This plug-in is supported on all EXOS based platforms and includes the latest OpenStack API capabilities (OpenStack API version 2.0). The Extreme Networks OpenStack 2.0 plugin enables “Networking-as-a-Service” for both Physical and Virtual

environments and has unique capabilities, including:

- VLAN Provisioning
  - The Extreme Networks OpenStack 2.0 Plugin can provision VLANs for tenant isolation and segmentation. VLAN's are automatically assigned using the next available VLAN number in sequential order.
- Virtual Router Provisioning
  - Virtual Routers (VR) can be configured to provide hardware-based Layer 3 forwarding and isolated Virtual Router Forwarding (VRF) tables. The VR instances provide external Layer 3 Gateway services and tenant isolation capabilities.
- Layer 2 or Layer 3 Tenant Isolation
  - Tenant Isolation can be provisioned using VLANs, VRs, or a combination of VLANs and VRs.
- Topology-Aware Scheduler
  - A Virtual Machine (VM) proximity algorithm enables selective placement of VM's in Compute hosts. This helps optimize East-West traffic and the MAC address table explosions.
- Network Programmability leveraging SOAP and XML Open Standards
  - OpenStack and Extreme Networks leverage XML APIs and the SOAP to exchange XML formatted data between the Extreme Networks OpenStack 2.0 plugin and the ExtremeXOS switch modules.
- Seamless connectivity between Virtual and Physical networks
  - Tenant isolation is created on both the virtual switch (OVS) and Extreme Networks respectively, enabling seamless connectivity between the virtual and physical networks.
- Change Management
  - Changes to tenant network creation and deletion are tracked and logged into a file for audit purposes.
- Transaction Management
  - The mapping of virtual to physical networks is monitored by the Transaction Management system to ensure seamless connectivity and report any associated errors. If errors occur while mapping between physical and virtual networks, the entire transaction is rolled back.

- High Availability and Health Checking
  - Multi-Chassis Link Aggregation (MLAG) provides High Availability between devices. Extreme Universal Port Manager (UPM) provides additional levels of HA and Health Checks between the OpenStack system and Extreme Networks OpenStack 2.0 plugin and the Extreme Networks physical infrastructure.

PART NUMBER	DESCRIPTION
SDN - OpenStack 2.0	
11023	OpenStack 2.0 Base-50: OpenStack 2.0 Base-50 is a Quantum plugin that provides a comprehensive network-as-a-service orchestration software for configuration of 50 devices. Includes access key. Software downloadable.
11024	OpenStack 2.0 Add-50: OpenStack 2.0 Add-50 is a Quantum plugin that provides a comprehensive network-as-a-service orchestration software for configuration of 50 devices. Includes access key. Software downloadable.
11025	OpenStack 2.0 Add-250: OpenStack 2.0 Add-250 is a Quantum plugin that provides a comprehensive network-as-a-service orchestration software for configuration of 50 devices. Includes access key. Software downloadable.
11026	OpenStack 2.0 Unlimited: OpenStack 2.0 Unlimited is a scalability upgrade to provide configuration capability to a maximum supported devices possible. Requires OpenStack 2.0 Base-50. Key only.

## Warranty

As a customer-centric company, Extreme Networks is committed to providing quality products and solutions. In the event that one of our products fails due to a defect, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired or media replaced as soon as possible. For full warranty terms and conditions please go to:

[www.extremenetworks.com/support/warranty.aspx](http://www.extremenetworks.com/support/warranty.aspx)

## Service & Support

Extreme Networks provides comprehensive service offerings that range from Professional Services to design, deploy and optimize customer networks, customized technical training, to service and support tailored to individual customer needs. Please contact your Extreme Networks account executive for more information about Extreme Networks Service and Support.



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