MSI SDN Controller solution

SDN brings New Network Architecture

Traditional network architecture is not enough to fulfill the requirements of today's telco, enterprises, data centers and end users. A new network architecture is under developing for years and carry out based on software-defined. Software-Defined networking (SDN) is the key technology that enables automated provision, network virtualization, and improving network programmability.

In the SDN architecture, the control plane and data plane are decoupled and using the underlying network infrastructure so that make SDN real for a new network architecture. Furthermore, in order to consolidate all devices between variety servers, networks and software. OpenFlow is the first protocol that structures the communication between the control and data plane. There are three key elements that SDN supposed to have:

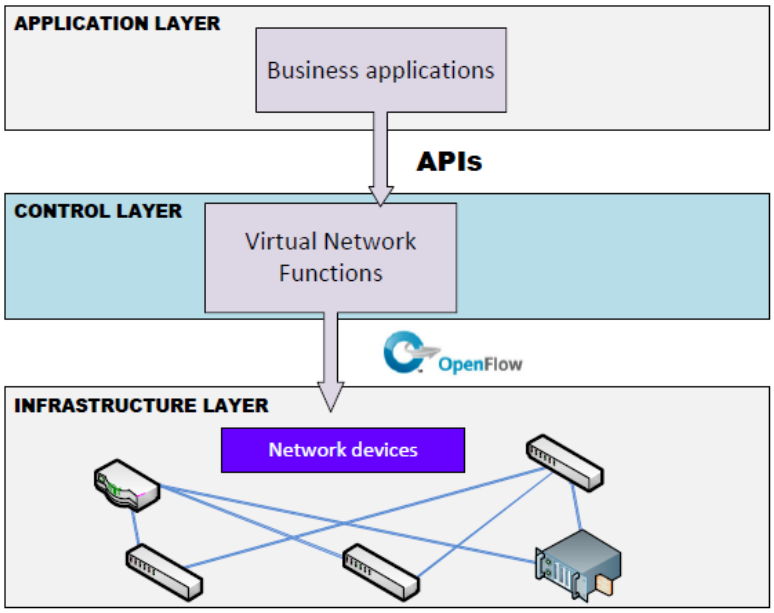
1. Separation of control and data plane.
2. Centralized virtual network functions and devices management from multiple vendors.
3. Highly programmable network behavior via well-defined interfaces such as OpenFlow protocol.

A well paired SDN and NFV deployment also brings many benefits, including but not limited:

1. Improving automation and management by using common APIs to abstract underlying networking from orchestration and provisioning systems and applications such as Openstack.
2. Increasing network reliability and security since centralized and automated management.
3. Enable dynamic traffic patterns to meet today's bulk communication data.

A simple SDN architecture as figure 1 for reference.

Figure 1. SDN architecture



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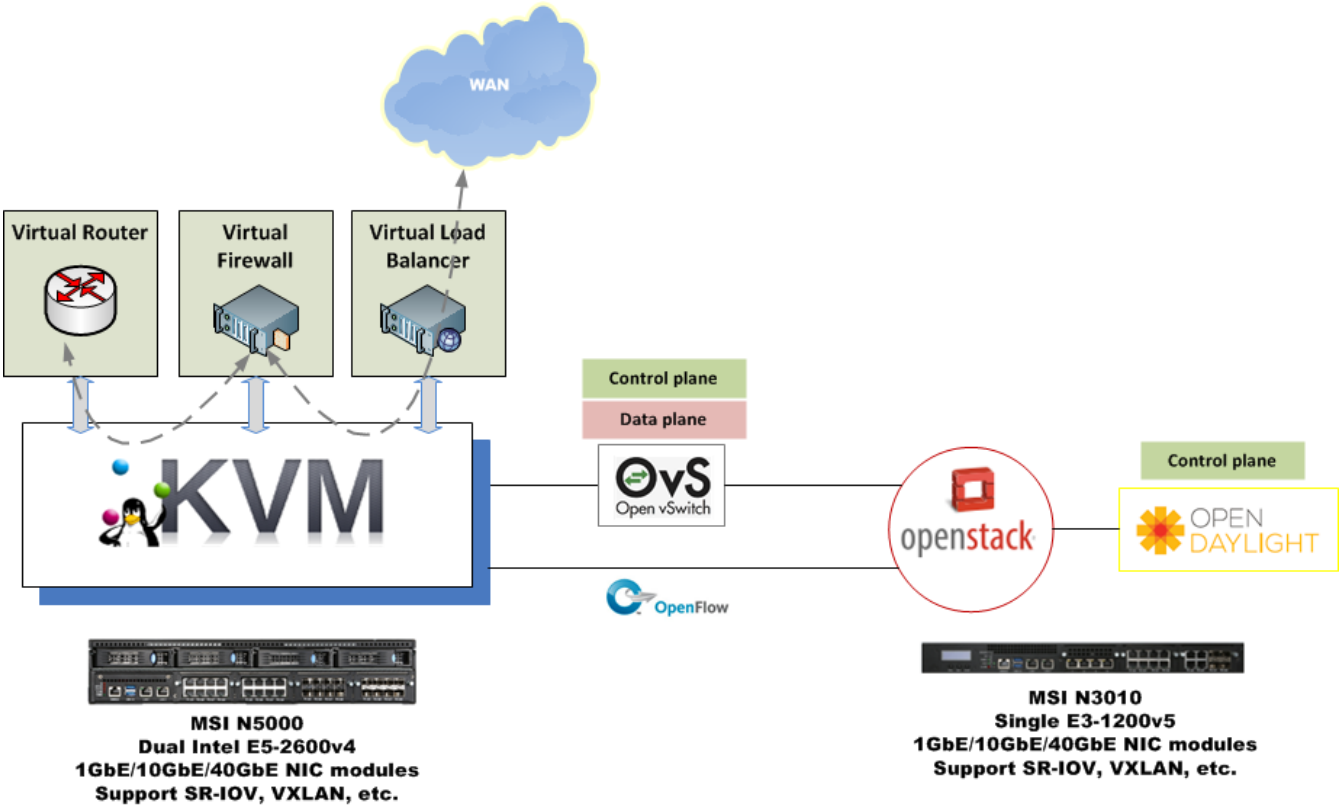
SDN and NFV is paired with highly complementary in practical next-generation networking framework. Many software vendors developing network functions for NFV deployment. The applications include vRouter, vFirewall, DHCP, VPN, vLoad Balancer and vEPC. Virtualizing the network functions is the first step, how to chain every single function between VMs and

physical devices in such complicated legacy assets and new devices is the key challenge to proceed. SDN technology opens the gate to chain VNFs with a smart programming. The OpenDaylight is an open-source as SDN controller for building programmable networks that are flexible and responsive to organizations' and users' needs. MSI provides rich network security appliances to work out this smart and new network architecture as figure 2.

Figure 2. Service Chain on MSI network security reference



MSI network security series has rich optimizations for building a SDN/NFV framework, and there are N5000 and N3000 series to play as SDN controller based on Intel® ONP. SDN controller is the most important heart of new network architecture. Surely, to adopt a reliable and high modular designed network appliance is key to sustain and catch up the global trend with rapid growing.

Summary

SDN allows network administrators to easily manage and program network services chaining through decoupled control plane and L3 forwarding functions. Based on MSI network solutions and Intel® ONP to develop a robust SDN controller in a new network architecture would be a necessary path to reach and enjoy the great networking revolution.

Quotation: Software-Defined Networking The New Norm for Networks ONF White Paper

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