Big Virtual Switch and Extreme Networks

Key Value of Extreme Networks Switches and Big Switch Big Tap
- Provide ubiquitous network traffic visibility to all security and monitoring appliances using the Open SDN architecture.
- Ability to dynamically filter and selectively forward network traffic to security and monitoring appliances.
- High cost savings relative to alternative solutions.
- Allows seamless scalability to thousands of inputs/sources.
- Work on existing deployed Extreme Networks switches that are OpenFlow enabled.

Key Value – Extreme Networks Switches and Big Switch Networks Big Virtual Switch (BVS)
- Increased speed and agility – networks can be provisioned in seconds without human intervention
- Works at 1G/10G/40Gbs and higher speeds
- Best of breed approach to address physical and virtual switching
- Cloud scalability – virtual networks are decoupled from VLAN limitations
- Improved datacenter utilization by the elimination of network boundaries
- Persistent security policies that isolate ensure tenant isolation regardless of the physical locations of virtual machines
- Support for both physical and virtual networking infrastructure extends virtual networks beyond virtual machines to physical servers and storage as well

Network Visibility with Big Tap

Challenge
Network visibility and traffic monitoring in large scale, high speed networks presents several challenges due to the high costs of monitoring software and the complexity of physically moving monitoring ports to specific network switches when monitoring is required and the technical challenge of filtering out specific traffic flows. Extreme Networks switches in OpenFlow-enabled networks, in combination with the Big Switch Big Tap application, provide a innovative solution for traffic monitoring and dynamic network visibility with flow filtering.

Solution Description
Extreme Networks OpenFlow-enabled switches offer the ability to run in hybrid mode so that traditional network architectures work in conjunction with OpenFlow-enabled networks.

When used in conjunction with Big Tap, Extreme Ethernet switches provide fine-grained filtering and monitoring capability down to the individual flow level, without requiring a pervasive deployment of dedicated tap devices and while preserving the traditional switching capabilities of the switches.

The Big Tap application provides the ability to filter specific flows on Extreme Networks OpenFlow-enabled switches, and forward just that flow to a central network-monitoring device on the network, while the actual traffic conversation between the end points continues. This type of activity monitoring provides a flexible solution for security and troubleshooting many other applications. Existing deployments of Extreme Networks infrastructure products that support OpenFlow can fully benefit from this solution without going through an expensive “rip and replace” cycle. New deployments can also greatly benefit, due to the hybrid mode of operation of the Extreme Networks switches at speeds scaling up from 1Gps to 10Gps to 40Gps and soon to 100Gbs.
Challenge
Data center network management, control and provisioning is an increasing challenge because workflows are placed within silos. In both physical and virtual infrastructures, scaling issues results from the the growing number of VMs as well as VM mobility and the use of constructs such as VLANs for security and policy. Addressing SLAs associated with applications running in both private and public cloud environments is also a challenge due to poor visibility and control across physical and virtual environments and in hybrid cloud models.

A centralized approach addressing both the physical and virtual environments and overcoming these network silos can significantly reduce the challenges associated with these environments, reduce the scope for manual errors and dramatically increase operational efficiency.

Solution Overview
Extreme Networks OpenFlow-enabled switches, in conjunction with Big Virtual Switch, provide a high performance solution that can address the scaling and automation challenges in data centers and cloud deployments.

Big Virtual Switch, in conjunction with Extreme Networks OpenFlow-enabled switches, enables the physical network to be provisioned into multiple logical networks from Layer 2 to Layer 7. The logical slices of the network are called Virtual Network Segments. Virtual Network Segments can be mapped to applications and tenants, as well as to the security and access policies that are required in these types of deployments.

By providing a centralized platform that can work with both physical network switches from Extreme as well as virtual switches, Big Virtual Switch provides a consistent end-to-end solution from the server and storage edge to the network core, while overcoming the challenges of traditional network virtualization approaches, such as VLANs.

Existing deployments using Extreme Networks infrastructure that support OpenFlow can benefit from this solution without going through an expensive “rip and replace” cycle. New deployments can also benefit greatly due hybrid mode of operation of the Extreme switches and Big Switch Network’s Hybrid Network Virtualization, which supports both physical and virtual switches.
About Big Switch Networks

Big Switch Networks is the leading platform-independent Software-Defined Networking (SDN) vendor. The company’s highly scalable Open SDN architecture leverages industry standards and open APIs that enable customers to deploy dynamic and flexible networking applications, including data center network virtualization. Big Switch Networks is backed by the largest SDN ecosystem of OpenFlow applications and physical and hypervisor switches. The company’s commercial controller, network virtualization, and applications, which accelerate delivery of cloud services, are in customer trials today. For more information, visit bigswitch.com

About Extreme Networks

Extreme Networks, Inc. is a technology leader in high-performance Ethernet switching for cloud, data center and mobile networks. Based in Santa Clara, CA, Extreme Networks has more than 6,000 customers in more than 50 countries. For more information, visit the company’s website at http://www.extremenetworks.com.