

Sun Microsystems & Force10 Networks Collaborate to Bring Network Automation to The Masses

Application
NOTE

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Data Center Architecture Deployment

Data Center Managers have been dealing with Data Center Sprawl for years attempting to balance the ever increasing demands of application complexity with the "I need it now" mentality of the business world they serve. Couple this with the shadow IT efforts that spring up large enterprises with the intent of circumventing the IT departments policies and procedures it's no wonder that IT managers are all keenly focused on ways to Automate aspects of the Data Center Architecture Deployment.

While Automation is a promising technology which many customers have deployed in part across their Data Centers it for the most part stops at the edge of the Server, never venturing into the land of the Physical Network – Until now.

As the IT landscape continues to change from the physical to the logical from the Dedicated Server to the Virtual Machine the need to cross the bridge into the Physical Network is ever more important. Being able to build and deploy an instance of a large database or application server with a few mouse clicks on a GUI was a frightening concept to a Data Center Manger just a few years ago, now it's a common occurrence and ensuring that the Network Assets are orchestrated as part of this world order is not only logical it's required.

In all new technologies proprietary concepts and products often yield to the more sensible open standards approach as technology becomes more relevant, evaluated and deployed. Network Virtualization and Automation will be no exception. Enter the combination of Sun Microsystem's latest offering for Open Solaris called "Project Crossbow" and Force10 Networks.

Customers are looking to vendors for ways to address the pervasive data center virtualization and ever increasing demands for scale. Sun's Project Crossbow (Sun's Crossbow) and Force10 together are bringing a unique answer to the market in an open standards approach. Sun's Crossbow as part of a major re-architecture of the networking stack in Open Solaris 2009.06 brings several key features and benefits to market. Exceptional scaling and throughput coupled with several new concept including; IP Multipathing for High Availability network configurations. OpenSolaris also includes the IP Filter firewall and Quagga router services integrated QoS functionality and most significantly building blocks for network virtualization and resource control by virtualizing the stack and NIC around any service (HTTP, HTTPS, FTP, NFS, etc.), protocol or Virtual machine.

Having this functionality within a server and offering IT customers the control and management of VNIC's in such a tightly integrated fashion is greatly multiplied when it is extended to the physical layer of the Network. Sun and Force10 have been able to collaborate on an implementation Sun's Crossbow that offers the much needed bridge from the Server world to the Network world. Force10's Operating Systems has been extended to communicate with Sun's Crossbow, the bridge is now open.

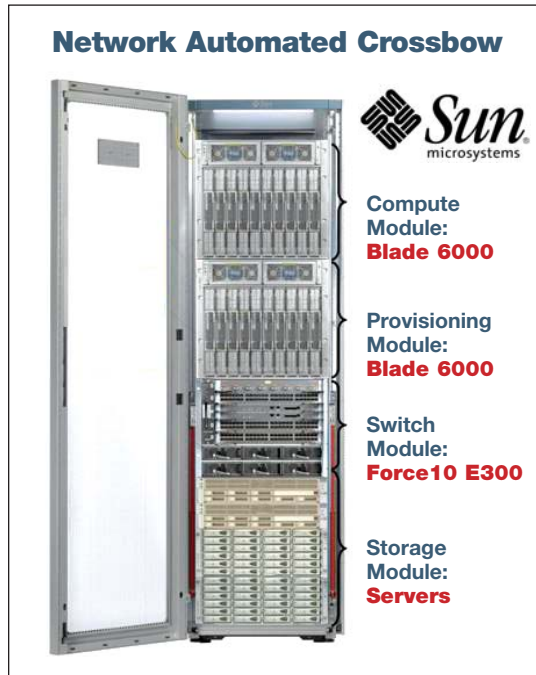
Using an open standards approach, Sun and Force10 are able to demonstrate to customers that VLAN Automation as a first step into complete Network Automation is within reach and does not require proprietary hardware or software stacks. Several business benefits are central in the proposition such as; reduced licensing costs for middleware as in no third party virtualization software required, using in place hardware versus a rip and replace strategy, leveraging



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Sun's Crossbow coupled with Force10's FTOS provides an end-to-end approach to Virtualization and Automation.



Open Solaris a proven world class "Open Source" Operating System, leveraging the TCO and density advantages of a leading provider of Ethernet switches and routers in Force10.

Customers are interested in strategies and architectures that allow adoption over replacement, flexible heterogeneous models over rigid homogeneous models. Being able to leverage in place hardware from Sun and platforms capable of running Sun Open Solaris coupled with Force10 switches and routers allow for a best in class architecture that grows with a customer's needs.

Network Automation with Sun's Crossbow and Force10 is a seamless integration leveraging standards such as GVRP which allow for a communications from Sun's Crossbow within Open Solaris directly to Force10 Operating Systems (FTOS). With a command line or simple GUI interface customers can define Virtual NIC instances on the Server and associate specific

VM's to these VNIC's and now include the required VLAN's.

Crossbow enables the creation of Virtual NICs (VNICs) that are associated with their own hardware or software lanes. Each virtual stack which now includes a VLAN on the Physical Network can be assigned its own priority and bandwidth on a shared NIC without causing any performance degradation. The architecture dynamically manages priority and bandwidth resources, and can provide better defense against denial-of-service attacks directed at a particular service or virtual machine by isolating the impact just to that entity. The virtual stacks are separated by means of H/W classification engine such that traffic for one stack does not impact other virtual stacks. Sun's Crossbow is next step in the evolution of Solaris networking stack and brings bandwidth resource control and virtualization as part of the architecture itself instead of the usual add-on layers which have a heavy overhead and complexity. Coupled with Force10 FTOS it is now an end-to-end approach to Virtualization and Automation.

Sun and Force10 continue to strive to bring solutions to market which are differentiated in their approach and simplicity. Being able to offer customers a way to accomplish Network/VLAN Automation in an open standards environment is seen as very significant.

Sun Crossbow and Force10's Collaboration Information

Cloud infrastructure located at:

http://www.force10networks.com/company/forms/whitepapers.asp?gowhere=/whitepapers/cloud_infrastructure.asp

Cloud Webinar located at:

<http://www.force10networks.com/news/webinars/>

Force10 and Sun Information located at:

www.force10networks.com/Sun



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