

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 as they have attempted to balance the ever-increasing demands of application complexity with the “I need it now” mentality of the business world they serve. Couple this challenges with the shadow IT efforts that spring up within large enterprises that attempt to circumvent 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.

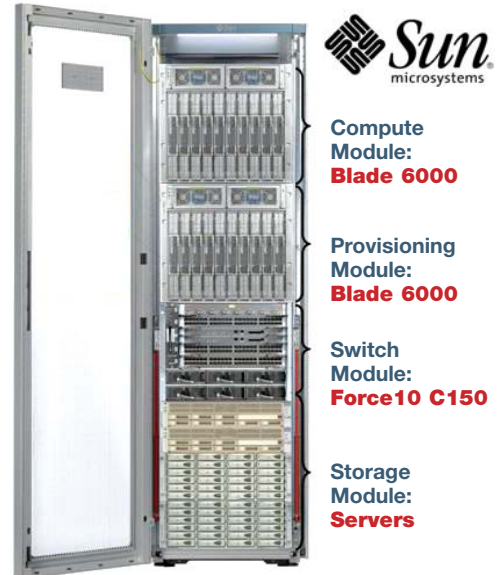
While automation is a promising technology that many customers have deployed in part across their data centers, it primarily stops at the edge of the server, never venturing into the land of the physical network – until now.

As the IT landscape continues to evolve from the physical (dedicated server) to the logical (virtual machine), the need for automation to cross the bridge into the physical network is increasingly 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 manager just a few years ago, now it’s a common task 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.

Customers look to vendors for solutions to address the challenges created by pervasive data center virtualization and ever-increasing demands for scale. Sun’s Project Crossbow and Force10 Networks together are bringing a unique answer

Network Automated Crossbow



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 concepts, including IP multipathing for high availability network configurations. Open Solaris 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 virtual NICs (VNICs) 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

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implementation that offers the much-needed bridge from the server world to the network world. Now that Force10's Operating Systems have been extended to communicate with Sun's Crossbow, the bridge is now open.

Using an open standards approach, Sun and Force10 are demonstrating 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 Open Solaris a proven world class "open source" OS, 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 enable adoption over replacement, flexible heterogeneous models over rigid homogeneous models. Being able to leverage already installed Sun hardware, 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 that enable for a communications from Sun's Crossbow within Open Solaris directly to Force10 OS (FTOS). With a command line or simple GUI interface, customers can define VNICs instances on the server and associate specific VMs to these VNICs and now include the required VLANs.

Crossbow enables the creation of Virtual NICs that are associated with their own hardware or software lanes. Each virtual stack that 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 VM by isolating the impact just to that entity. The virtual stacks are separated by means of hardware classification engine such that traffic for one stack does not impact other virtual stacks. Sun's Crossbow represents the next step in the evolution of the Solaris networking stack and brings bandwidth resource control and virtualization as part of the architecture itself instead of the usual add-on layers that have a heavy overhead and complexity. Coupled with Force10 FTOS, Crossbow is now an end-to-end approach to virtualization and automation.

Sun and Force10 continue to strive to bring solutions to market that 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.

Learn More About Sun Crossbow and Force10

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

Sun's Crossbow, coupled with Force10's FTOS, provides an end-to-end standards-based approach to virtualization and automation.



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