

Force10 Networks VirtualView: Taking the Mystery and Risk out of Virtualization

Application
NOTE

If data center managers are to achieve network flexibility and efficiency goals, then they must first be able to automate network behavior.

More than ever, CIOs and data center managers are striving to maximize network performance and minimize infrastructure and management costs. While the obstacles to achieve these objectives may be as numerous as the number of server operating systems in their data center, businesses must be relentless in order to ensure their network is as agile, efficient and reliable as possible.

Data centers are also facing server sprawl and the difficulty it creates for effectively managing these growing and increasingly complex environments. To gain an upper hand on managing their infrastructure – whether to reduce overall complexity and/or optimize network resources – businesses are turning to virtualization technology. While running a virtualized infrastructure can optimize resources and reduce overhead, network administrators are finding it difficult to manage and diagnose specific application or infrastructure behavior.

Promise and Complexity

The days of one application tethered to one server had several management advantages. The precise problem with a particular server and the person who had the skills to fix it were more easily identified. The application administrator took care of applications, the network administrator managed the network, and so on. However, as these environments expanded beyond the effective control of IT staff, virtualization technology was introduced to automate and consolidate management tasks by having the ability to operate several applications on one server. As a result, greater CPU utilization helped slow the rate of server acquisition, and buying fewer servers lead to lower power, space, and cooling costs.

However, like many emerging technologies, network virtualization today can create new problems that must be remedied before it can realize its full potential. Virtualizing several applications on a single server brings an added layer of complexity for troubleshooting. Benchmarking can also be difficult to implement since a particular application may only represent a percentage of particular overall server I/O. Virtualization also erased the one-server-one-application connection, and clouded what once was clear responsibility for the respective layers of the data center.

Culturally, losing control of their application server did not sit well with internal groups or clients who believed uptime or performance would be adversely affected or that security policies would no longer be their own. Some virtualized environments have also experienced sluggish WAN performance and found difficulty integrating existing equipment with software.

Automating Network Behavior with Force10 VirtualView

Overcoming the cultural changes created by virtualization are temporary and important concerns; however, over the long haul, businesses need their data centers to be a strategic asset by having the ability to seamlessly react to the demands placed on it. Another primary objective for today's data center managers is to increase overall efficiency as a means to lower capital and operation expenditures. However, if they are to achieve these network flexibility and efficiency goals, data center managers must first be able to automate network behavior.

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VirtualView technology from Force10 Networks offers a core-to-edge, real-time traffic analysis solution that provides data sampling and subsequent analysis.

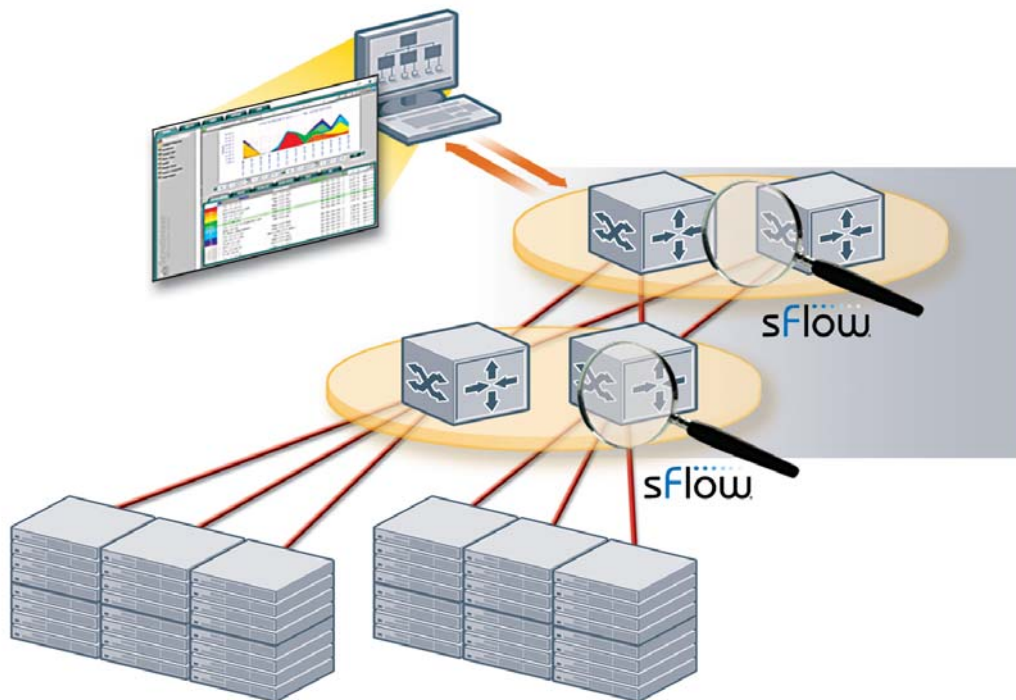


Figure 1: VirtualView real time visibility and management

To ensure that a network infrastructure is flexible enough to both coexist and contribute to the virtualized data center environment, VirtualView™ technology from Force10 Networks offers a core-to-edge, real-time traffic analysis solution that provides data sampling and subsequent analysis to establish both baseline and ongoing application performance statistics. As demonstrated in Figure 1, by establishing a baseline of overall measurement, data center managers can offer virtual machines (VM) or application service level agreements (SLAs) that can be monitored and enforced for internal and external customers.

Force10 VirtualView technology delivers comprehensive serviceability, management, and reliability for virtual environments by helping provide a unified fabric that eliminates the mystery behind the activities within virtualized environments. VirtualView collects real-time

traffic statistics on VMs, identifies and provides details on traffic behavior of end systems, and deciphers application/protocol usage.

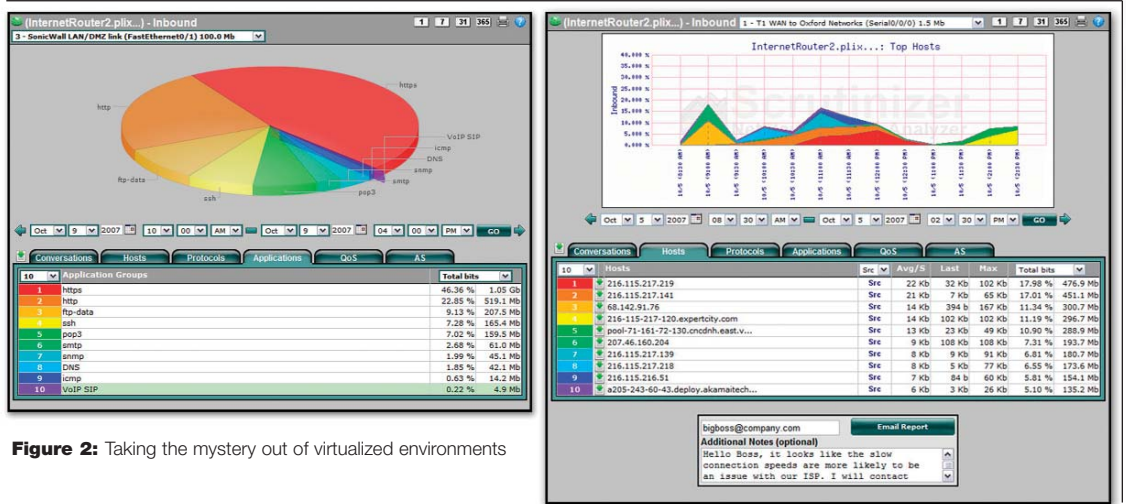
Cohesive Solution Set Brings Additional Value

VirtualView is a suite of features in the Force10 modular operating system (FTOS), built on a modular NetBSD kernel and available across the versatile Force10 switch/router product lines. Its architecture makes it an ideal OS for high performance, virtualized networks since a hardware abstraction layer is used to make FTOS applications, such as VirtualView, portable across product lines—without having to rewrite the application software for each platform. This modularity includes an industry-standard command line interface so administrators new to implementing Force10 solutions can quickly deploy the devices with minimal training.

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By automatically provisioning and managing VMs anywhere in the network, data center managers can deploy new VM-based services rapidly with lower TCO.



Virtualized network environments hold great promise for businesses that demand agility and efficiency from the capital and operating expenses invested in these areas. However, using wiring diagrams and server locations is no longer adequate to troubleshoot network issues. Delivering real-time traffic analysis, as shown in Figure 2, removes the mystery from troubleshooting and benchmarking

performance in virtualized environments. By automatically provisioning and managing VMs anywhere in the network, data center managers can deploy new VM-based services rapidly with lower TCO and tune their network for greater application agility, flexibility, and efficiency.



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