

NIELSEN MOBILE

Summary

Company: Nielsen Mobile

Industry: Telecommunications

Challenge: After explosive data center growth, the company needed to regain visibility and control over virtualized resources.

Solutions:

- Juniper Networks Firefly Host*

Results:

- Gained total visibility into and far greater control over virtualization infrastructure
- Expedited the process of responding to and containing incidents such as virus attacks
- Established granularity to the virtual switch layer to see down to the port and protocol level for each virtual machine
- Optimized dynamic resource scheduling across VMware environment
- Experienced time savings through integration with VMware vCenter

The Nielsen Mobile division of The Nielsen Company uses proprietary measurement technology and large-scale consumer panels to measure consumer behavior and attitudes about mobile phone services. Key elements assessed include signal quality, coverage, and call metrics. Remote monitoring devices feed centralized servers, where vast amounts of data are analyzed and correlated into reports used by mobile carriers and other audiences.

The algorithms that analyze the massive amounts of data collected by Nielsen Mobile demand substantial processing and storage resources. Nicholas Portolese, the company's senior manager of data center operations, turned to virtualization to address space constraints and power consumption. The initial deployment of 10 standalone servers with local storage was used for testing, development, quality assurance, and hosting offshore contractors' workstations. Nielsen Mobile later began virtualizing its production environment. The data center now houses 26 enterprise-class virtualization servers that are configured for high availability and dynamic resource scheduling, along with a number of standalone servers.

Challenge

"Our data center experienced explosive growth, and along the way we lost visibility into and control over our virtualized resources," Portolese explains. The loss of visibility and control are the result of virtual networks that allow virtual machines (VMs) to communicate with each other within the same physical servers, such that traffic never crosses onto the external physical network.

Portolese had tools for analyzing and filtering physical network traffic but no ability to monitor or regulate virtual network traffic. He was unable to identify or restrict, for example, which protocols were passing through virtual switches. Nor could he match applications to the protocols being used. And when problems occurred, he lacked the means to isolate the root cause(s) and remedy the problems quickly and accurately. "It was frustrating because we could see all the traffic flows in the physical network, but once traffic entered a VM, we were totally blind as to how the virtual switch was operating," Portolese recalls.

Of particular concern to Portolese was the "security gap" that had opened up between traditional physical network security and the virtualization infrastructure. Physical firewalls, intrusion detection and prevention systems, and VLANs are designed to defend static—mostly perimeter-based physical networks. By themselves, they are ineffective at securing virtual switches or virtual traffic flows. In addition, Portolese was unable to take full advantage of VM features such as VMotion because traditional tools can't detect—or enforce policies on—VLAN traffic among VMs. He knew he needed to solve this problem before he could fully secure his virtualized systems.



Solution

"The vendors of virtualization software have yet to solve this problem, so I had to look elsewhere," says Portolese. After a thorough search, Portolese chose Juniper Networks. "I could tell right away it was exactly what was needed for our VMware environment."

Nielsen Mobile began by installing Juniper's virtual network monitoring agents on the company's ESX servers. The lightweight agents detected inter-VM traffic flows, providing visibility across the virtual infrastructure in the DMZ. "We started consolidating our outward-facing virtualized applications as a cluster in the DMZ. Doing that requires full visibility to proactively identify and protect against vulnerabilities in things like DNS and Web services."

"We now have far greater control over our virtualized infrastructure."

Nicholas Portolese, senior manager,
Data Center Operations, Nielsen Mobile

The more Portolese thought about the risks of virtualized systems in the DMZ, the more interested he became in the Juniper Networks® Firefly Host*. "A successful buffer overflow attack on, say, an Apache or IIS server in a virtualization host could take longer to identify and contain. The same goes for a virus or worm attack. Developers are constantly making changes, and we have external business partners using web-facing virtualized applications. So we need to mitigate these risks."

"I looked to Juniper Networks to keep us from being blindsided and being entirely reactive. You have to be able to lock down the virtual environment," Portolese reports. Beyond detecting and stopping attacks, he wanted the ability to block peer-to-peer file sharing and unwanted broadcasts and to stop undesirable network activity in general.

Portolese justified the investment in the Juniper Networks technology based solely on improving DMZ security. "Anything that does not enhance revenue these days can be difficult to justify. Eliminating a potentially serious vulnerability does get management's attention, however. Once managers understand that to get the cost-saving benefits of virtualization you really need a tool like this to maintain security, the decision then becomes a no-brainer," he explains.

*Formerly vGW Virtual Gateway

Results

While Portolese can't share many details on how security measures are implemented at Nielsen Mobile, he can comment on their value. "Juniper Networks has filled the void with respect to securing virtualization. They've expedited the process of responding to and containing incidents such as virus attacks. Before Juniper Networks, we didn't have the granularity we needed at the virtual switch layer, so we couldn't get down to the port and protocol level for each VM."

Portolese appreciates that Juniper's purpose-built technology supports virtualization features such as VMotion. "It's important to have the network security profile coincide with the VM as it moves around. We can now optimize dynamic resource scheduling across our VMware environment, which is something we could not do before. It would be very difficult, to say the least, using any alternative."

Efficiency is another big plus. "Solving this problem had to make the environment less complex, not more. Juniper's product is easy to use. The integration with VMware's VirtualCenter management system saves time, and admins like the central management console. It would require a lot more of someone's time to try to do incident response, for example, with NetFlow or traditional firewall logs."

"With Juniper's solution we now have total visibility into and far greater control over our virtualized infrastructure," Portolese concludes. "Anyone with server or desktop virtualization really needs to have something like this to help secure and optimize their available resources."

For More Information

To find out more about Juniper Networks products and solutions, please visit www.juniper.net.

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

Corporate and Sales Headquarters

Juniper Networks, Inc.
1194 North Mathilda Avenue
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER (888.586.4737)
or +1.408.745.2000
Fax: +1.408.745.2100
www.juniper.net

APAC and EMEA Headquarters

Juniper Networks International B.V.
Boeing Avenue 240
1119 PZ Schiphol-Rijk
Amsterdam, The Netherlands
Phone: +31.0.207.125.700
Fax: +31.0.207.125.701

To purchase Juniper Networks solutions, please contact your Juniper Networks representative at +1-866-298-6428 or authorized reseller.

Copyright 2013 Juniper Networks, Inc. All rights reserved. Juniper Networks, the Juniper Networks logo, Junos and QFabric are registered trademarks of Juniper Networks, Inc. in the United States and other countries. All other trademarks, service marks, registered marks, or registered service marks are the property of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.