Network and Application Performance

Gaining 20-20 insight into network and application performance

Citrix NetScaler with ActionAnalytics takes network visibility one giant step further by eliminating manual optimizations and simplifying IT processes.

Introduction
As Peter Valters, executive director of Scouts Canada, sees it, “You can’t manage what you can’t measure. The ability to manage your network is only achievable by having the visibility of the entire network and the applications transmitting data across it.”

The challenge for many network administrators is that the traditional means of garnering network intelligence leaves them ill-equipped to handle the demands that today’s high-volume, real-time applications have placed on network infrastructure. According to a recent study by Network World, lack of application visibility into the end-user experience and persistent performance issues are two of the top three challenges plaguing those who oversee enterprise application delivery.

Ancillary effects of dynamic environments
The primary factor impacting visibility into the network is the growth of increasingly dynamic and virtual environments. Virtualization has enabled VMs to migrate throughout the data center, which has, in turn, obfuscated visibility into where an application resides at any given time.

“How are we supposed to gain insight into how our application is performing if we cannot put a tap on that source?” asks Steve Shah, senior director of product management at Citrix. “If you cannot put a tap somewhere to record that network traffic, then you’re unable to gain the pertinent metrics that guide administrative decisions and drive improved network performance.”

Couple the rise of virtualization with other macro trends in IT, such as cloud computing, mobile, social, and big data, which increase both network load—impacting bandwidth capacity—and distance—impacting latency. The result: IT is left with a network environment burdened by increased demands and lacking the critical infrastructure necessary to drill down into it.

Traditional solutions fall short
Around since the late 1990s, traditional load balancers are designed to distribute traffic, largely from static sources, across computing resources. But today, many data sources are not static. Thus load balancers, which can provide such basic statistics into network infrastructure as the number of packets crossing the wire or how busy a CPU is, do not provide insight into how applications are doing.

“Old-school load balancers tend to lack the depth to adequately assess network traffic,” says Nik Rouda, senior analyst at Enterprise Strategy Group. “They’re often too rigid and complex in implementing fixed rules, often fail to detect or block malicious attacks, and don’t scale smoothly as demand grows and spikes.”

What’s needed is deeper insight all the way up to the application level.

“Network visibility is no longer just about the network and a series of packets; it’s about the application, the transactions with that application, and the relationship between those transactions, the users, and the servers behind them,” says Shah. “It’s being able to trace that whole stack from packet to connection to application to user.”

A strong case for data-driven networking
Deeper visibility into the network and the application data running over it enables administrators to more quickly detect degraded performance and...
diagnosis the problem. Is there a performance issue impacting end-user productivity? Does the problem reside on the network or the application? If on the network, where precisely? A router? The firewall? A switch?

Insight into the root cause of performance degradation allows organizations to more efficiently troubleshoot issues that not only impact end-user experience and productivity, but also directly affect bottom-line results. “Without insights into network traffic, you may be only minutes away from your company’s own CNN moment,” warns Valters of Scouts Canada. “Network degradation or outage or no online sales for a period of time are just a couple [of] examples of events that will impact your bottom line and raise an IT issue to a business issue, and C-level attention.”

A second benefit of improved visibility into the network is the enabling of more intelligent distribution of traffic based on a deeper knowledge of the request. In other words, it allows for proper allocation of scarce network resources and the prioritization of mission-critical and real-time applications, such as VoIP and video conferencing, over requests for static content or non-business-related usage, which can be sent to less powerful servers.

“My company doesn’t have a specific policy against streaming music over the WAN,” explains Scott Steinke, network and security engineer at Hain Celestial Group. “But I can easily detect when it’s happening in conjunction with user reports of network slowness. This allows me to phone the person doing the streaming and coach them on the topic.”

**The solution: Citrix NetScaler with ActionAnalytics**

According to Network World’s study, 94% of respondents consider this ability to extract and act on information from network and application traffic to make real-time decisions valuable if not highly valuable. However, 73% are unaware that application delivery controllers (ADCs) enable organizations to quickly act on the application intelligence from the network and application traffic. In fact, some ADCs can do this, but largely as manual operations.

ActionAnalytics, a feature unique to Citrix NetScaler, takes ADC capabilities one giant step further by eliminating manual optimizations and simplifying IT processes. While NetScaler Insight Center collects run-time statistics of application and client traffic, ActionAnalytics provides real-time analysis and dynamic execution of those insights on the basis of custom-defined criteria and adaptive policy. Altogether, NetScaler automatically optimizes delivery of resources, an essential capability for dynamic applications or websites.

In addition to automation, ActionAnalytics has the ability to take detailed information about traffic flows and generate multidimensional views of what is happening, as it happens. Also known as visualization, it is the most sought-after usage of meta-data collected from network and application traffic, according to the Network World study.

**Conclusion**

The growing volume of data traversing the network, coupled with the added complexity of today’s applications and environments, is making it all the more difficult for IT leaders to have the network visibility required for actionable insights. Solutions like Citrix NetScaler’s ActionAnalytics provide both the visibility and automation necessary to simplify IT processes, while also improving network performance and end-user experience.

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**Benefits that Could be Gained by Having Real-Time Intelligence Regarding Application Performance**

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<thead>
<tr>
<th>Benefit</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Improved end-user experience &amp; satisfaction</td>
<td>61%</td>
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<tr>
<td>Ability to react quickly to performance and security issues that require policy changes</td>
<td>48%</td>
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<tr>
<td>Increased operational efficiency, due to simplified troubleshooting and capacity planning</td>
<td>43%</td>
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<tr>
<td>An optimized user experience that drives greater employee productivity</td>
<td>39%</td>
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<tr>
<td>Improved application visibility</td>
<td>36%</td>
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The top perceived benefit of having real-time intelligence regarding application performance from device to server is improved end-user experience and satisfaction (61%). Additionally, respondents would expect the ability to react more quickly to performance and security issue (48%).

Source: IDG Research, September 2014

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ActionAnalytics is the Real-Time BigData DNS Analytics
www.citrix.com/netscaler