

# NetScout Goes Virtual, Adds VM Visibility

## Event

On October 7<sup>th</sup>, 2009, NetScout Systems announced nGenius Virtual Agent, a new performance data source product that will extend the visibility provided by NetScout's nGenius<sup>®</sup> Service Assurance Solution inside virtualized server hosts. The nGenius Virtual Agent is designed to be installed as a guest VM within a virtualized server, and will operate either in full probe analysis mode or as a virtual tap, harvesting traffic for export to an external extended Deep Packet Capture engine – the nGenius InfiniStream appliance. Based on their long-standing packet-flow probe technology, the new product represents a software-based instrumentation option for NetScout customers who wish to extend the solution's visibility into virtualized data centers. nGenius Virtual Agent itself comes at no extra cost for customers with nGenius Performance Manager and is available immediately for VMware ESX and ESXi deployments.

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## Context

NetScout is one of the longest-standing and arguably the largest independent provider of network management solutions, and focuses exclusively on application-aware network performance monitoring and management. Their passive packet-flow nGenius Probe and nGenius InfiniStream data sources are commonplace in Global 2000 shops, as well as the nGenius Performance Manager reporting and analysis platform. Relatively recently, NetScout also introduced an overlay advanced analytics and service management platform called nGenius K2 Service Delivery Manager – an important supporting component in this newly announced solution for virtual environments.

With the widespread adoption of server virtualization technologies, new virtual network constructs have proliferated, living between host hypervisors and their multiple guest virtual machines (VMs). This creates two blind spots for operations:

1. Traversing the host-VM boundary while troubleshooting performance issues
2. Understanding the health and nature of intra-host VM-to-VM traffic and activity

Until now, NetScout had not offered a solution for clearing up these blind spots, even though many of their packet-oriented competitors have made announcements over the past year of this type. Specifically, NetQoS, OPNET, Network Instruments, and Wildpackets have all announced versions of their products which were redesigned or repackaged to run within a guest VM. The only other solutions that provide some measure of application-aware virtual network performance monitoring are based on collecting experimental NetFlow records from hypervisor virtual network switches (vSwitches); however, those solutions suffer from short-falls in application-level detail and only VMware offers a flow-record option.

## Key Ramifications

As with many offerings in the market, NetScout's new nGenius Virtual Agent will deliver detailed visibility to deal with both of the major blind spots. What is unique about this particular offering is that it offers both tap and probe functionalities, it will be integrated into NetScout's market-leading analysis and reporting capabilities, and it is being offered in a commercially unique manner.

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Most of NetScout's competitors have focused their virtual product offerings on either virtual tap or intrinsic monitoring/troubleshooting sets of functionality. The idea behind a virtual tap is to have software running on one VM that captures (and optionally filters) all VM-VM traffic happening across the hypervisor's vSwitches and sends a copy of that traffic out one of the host's physical network interface cards to an external system for analysis. Intrinsic solutions recreate typical "probe-like" packet analysis functions in the software installed on a VM, either for the purposes of troubleshooting or interpreting/consolidating performance metrics which are forwarded to an external reporting system. By supporting both options from within the same product, NetScout's solution will benefit customers via the ability to flexibly decide how to best utilize each instance of nGenius Virtual Agent, both initially and as needs arise and change over time.

NetScout's decision to make the nGenius Virtual Agent available at no direct cost is worthy of note. This eliminates one of the major barriers organizations face in deploying instrumentation – namely the upfront license costs of covering even a subset of what can be hundreds of virtual hosts. NetScout will recoup the value by having each instance consume one instrumentation "ticket" from the nGenius Performance Manager system to which it connects. Since each nGenius Performance Manager can handle 50 such data source devices, the effective list price of each nGenius Virtual Agent is a modest \$US 1,000.

Accommodating VM movements, such as vMotion, is one of the greatest challenges facing tools that seek to provide definitive management over virtualized server environments. Change management within non-virtualized environments is already a substantial challenge, and requires disciplined process and practice. Virtualized systems are designed to allow wholesale relocation of whole VMs, usually for load balancing or systems integrity purposes, at any time via automated vMotion or HA, or at the whim and discretion of the host system administrators. In practice, most operations teams are not directly notified when a server moves from one host to another, and as a result are in the dark when trying to understand or track down performance or availability issues arising from the change. Management tools are taking a variety of measures to compensate for this challenge. NetScout's answer is to use the intrinsic, automated application discovery functionality which has long been a core element of its technology, though in order to realize this capability customers will need to deploy NetScout's nGenius K2 Service Delivery Management product. This is different from other solutions, which use event triggers from the central virtualization management console, such as vCenter, to recognize movements – a method which provides notifications nearer real-time, but which requires reliable integration and synchronization with vCenter.

## EMA Perspective

Server virtualization is one of the hottest trends in current IT development, and ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) analysts have been closely monitoring the challenges of introducing and scaling up this disruptive technology. In Enterprise Management Associates' view, this announcement by NetScout is another concrete example of server virtualization being pulled into the mainstream. Management technology providers like NetScout are assisting this maturation by extending proven solutions for the non-virtualized realm into the virtualized. Also, as the largest independent network management solutions provider, NetScout's announcement represents an important benchmark for network managers as well as the future of server virtualization.

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Perhaps one of the most important elements of this announcement is the way NetScout's new performance data source will improve performance troubleshooting workflows and optimize planning efforts. By adding application-aware visibility into the activity and performance of the virtualized portions of the service delivery infrastructure, IT operations professionals will be able to more rapidly uncover root cause issues as well as recognize the impacts of changes in virtual system configurations. Further, NetScout offers some of the most advanced predictive analytics capabilities available in the market today, and with the advent of instrumentation inside virtual systems, the full proactive power of their automated early warning capabilities can be brought to bear against this fast-growing and highly visible technology.

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Opportunities exist for NetScout to expand its capabilities in this area. Specifically, their solution is currently available only on VMware platforms, and yet there are many other hypervisor architectures which will need to be supported, especially in view of the fact that most large enterprises (which are typical NetScout customers) often multi-source key technologies, including hypervisors. Also, NetScout would benefit from continuing to work closely with hypervisor vendors to find means and methods for better behavioral understanding of virtual network elements and closer synchronization with change processes.

Strategically, this is a very important expansion step for NetScout. By moving to embrace and include virtualized data center technologies, the considerable weight and value of their performance management solutions will be extended, and their customers will now have options allowing them to re-establish lost visibility without having to buy into alternative toolsets. And while their existing customers will enjoy the most immediate benefits from this new element of NetScout's solution suite, it also opens the doors to non-NetScout shops who are feeling the pinch of performance blind spots as they scale up server virtualization deployments.

## About EMA

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that specializes in going "beyond the surface" to provide deep insight across the full spectrum of IT management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise IT professionals and IT vendors at [www.enterprisemanagement.com](http://www.enterprisemanagement.com) or follow EMA on Twitter ([http://twitter.com/ema\\_research](http://twitter.com/ema_research)).

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