

Data Center Transformation

Rapid Service Triage and Actionable Visibility for Workload Migration

Paradigm Shift in IT Priorities

In today's extremely competitive digital world, organizations are heavily investing in digital platforms and technologies, including the cloud to deliver a fast, scalable and secure experience for customers and users. The need for greater business agility has created a paradigm shift in IT priorities, technologies and operations. These include:

- Agile application development utilizing microservices architectures
- Deploying software-defined solutions across geographically dispersed hybrid infrastructures comprised of datacenters, co-locations and clouds
- Workload migrations that lead to changes in service architectures and infrastructure dependencies

What You Can't See CAN Hurt You

IT teams have a charter to adopt best-in-class technology and rapidly build out their own unique digital capabilities. But they face new visibility challenges, which makes overcoming them critical to on-going digital transformation. Companies often struggle to optimize application performance and improve security because they lack the ability to see across borders, between cloud instances, and on-premises environments.

Visibility challenges include:

- Assuring performance of modern applications running in large compute clusters (a.k.a. server farms) and exchange large volumes of messages. This requires the ability to monitor and analyze in real time large volumes of E/W (East/West) traffic exchanged at high velocity between microservices running in virtualized server farms.
- Deploying multi-vendor geographically dispersed hybrid infrastructures across on-premises datacenters, co-locations and clouds, increases IT complexity and demands for continuous monitoring with instrumentation of both E/W traffic and N/S (North/South) traffic.
- Service architectures are in a constant state of change in response to frequent workload migrations, and as a result an intelligent monitoring approach is needed to understand dependencies and assure performance and availability.

The Risk of Doing Nothing is Too Risky

Enterprises are at risk if the IT organization does not address these visibility challenges. Existing tools can't fill the huge monitoring gap presented by today's multi-cloud, multi-vendor environments as they are domain specific and unable to deliver seamless, uniform visibility and common situational awareness required by the different IT teams. What's more, these tools generate loads of uncorrelated, and often conflicting data, that obscure and bury performance and security insights that are clearly needed to propel business. Sporadic actionable intelligence means:

- Mean Time to Knowledge (MTTK) takes longer.
- Development agility measured by Continuous Delivery/Continuous Integration (CD/CI) velocity is limited.
- Application performance and security posture degrade.

KEY BENEFITS WITH NETSCOUT SOLUTIONS FOR DATA CENTER TRANSFORMATION

- Greater speed and agility in introducing new services
 - Happy users and customers with improved quality of experience through actionable insights
 - Better collaboration between NetOps, SecOps and other IT teams
 - Early warning into the risks that threaten digital services and assets
 - Improve network and service reliability, availability and responsiveness
-

The consequences are clear - broken service delivery makes customers unhappy and increases corporate expenses.

NETSCOUT Solutions: The Visibility You Need to Succeed

NETSCOUT® solutions can be the difference between digital transformation success and failure. NETSCOUT delivers actionable visibility to mitigate service performance issues, threats, and vulnerabilities. NETSCOUT has tools and technologies that make it possible to achieve Visibility Without Borders so you can reduce MTTK, increase CD/CI velocity, and control service performance and security across data centers, co-locations, and clouds.

How does NETSCOUT do it? Through continuous monitoring of wire data (traffic flows) traversing the hybrid environment—performing simultaneous deep-packet inspection and real-time analysis—NETSCOUT generates smart data at its point of collection. This smart data is used for delivering actionable intelligence such as centralized view into the performance characteristics of infrastructure and application components and their dependencies across geographically dispersed environments. With NETSCOUT, organizations obtain valuable and timely intelligence into application performance and security, helping to proactively find and fix errors, latencies, and threats before they become service delivery problems.

Use Cases

As most IT professionals will attest, slow is the new down. With applications or parts of applications services spanning on-premises, co-locations and clouds, the IT organization must overcome visibility hurdles and blurred situational awareness to avoid degradation in users experience, reduced employee productivity and diminishing customer revenue. How to do that? By offering the IT teams visibility without borders into service performance across on-premises, co-locations, branch offices, public clouds and any hybrid environment.

Extending Visibility Deeper into the On-Premises Data Center

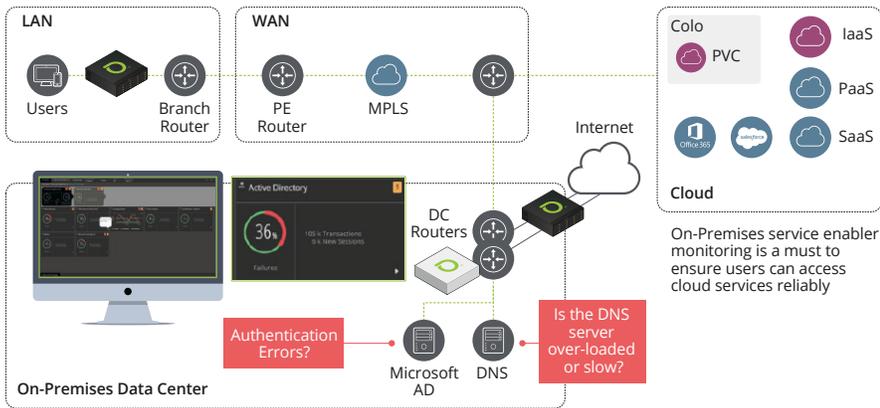
Snapshot:

- Monitor service enablers such as DNS, LDAP, AD, RADIUS
- Monitor applications on-premises owned by IT operations

Assuring service delivery requires instrumenting closer to the core network to monitor service enablers such as DNS and Active Directory. With application migration from the on-premises data center to external locations, instrumenting service enablers is no longer optional – it's a critical requirement. Instrumenting service enablers using the InfiniStreamNG™ appliance from NETSCOUT provides data that helps IT Ops retain control of their internal network and share performance and security metrics and evidence with the co-location and SaaS vendors. When done right, it significantly reduces Mean-Time-To-Resolution (MTTR) and maintains high-quality user experience. On-premises service enabler monitoring is a “must have” to assure reliable access to cloud services.

Not all applications are moving to the cloud. Some users on campus, regional headquarters and branch offices require uninterrupted access to, and depend on, legacy applications and services. The IT organization must continuously monitor these applications and services to deliver the best possible user experience. By deploying cost effective certified appliance-based instrumentation from NETSCOUT, IT teams gain deeper visibility into the on-premises data center and quickly solve performance issues such as why database transactions are running slow or applications queries are taking so long.

Gain Visibility into Service Enablers: AAA are Still Governed by On-Premises Service Enablers – DNS, LDAP, AD, RADIUS



Instrumenting data center service enablers are critical for successful cloud adoption and migration

Service Triage for Server Farm Monitoring in Hybrid Environments

Snapshot:

- Monitor N/S (North/South) traffic in data centers, co-locations and connection to the cloud
- Monitor E/W (East/West) traffic in virtualized server farms
- Monitor E/W traffic between workloads running in Software-Defined Network (SDN) such as VMware NSX-T
- Troubleshoot and triage SaaS application performance issues
- Mitigate risk associated with workload migration

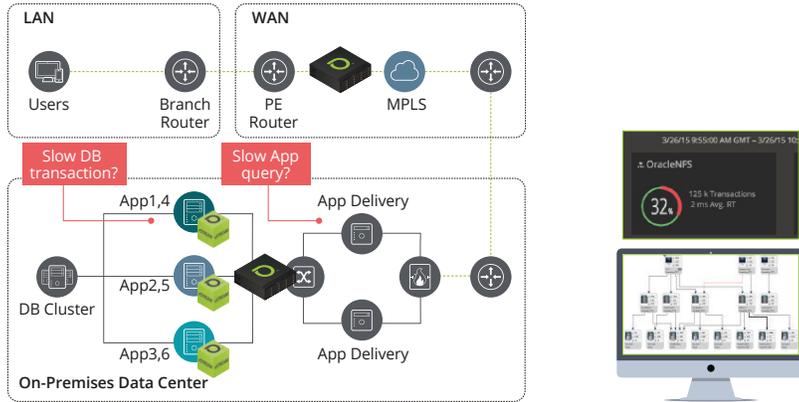
Continuous monitoring of services in hybrid environments allows the IT organization to know what applications are running and how well they are performing and quickly troubleshoot any service degradation issues. The vSTREAM virtual appliance from NETSCOUT provides much needed visibility into applications running in virtualized server farms, on-prem and in the cloud, and across any vendor landscape, including VMware NSX-T, Amazon Web Services, Microsoft Azure, and Google Cloud Platform. The InfiniStreamNG software appliance monitors N/S traffic from on-premises to the co-location and the IaaS or SaaS cloud. The nGeniusONE® Service Assurance platform provides real-time situational awareness, consistent analytics and views, to intelligently pinpoint data, network, session, and application elements that are causing performance problems to accelerate problem resolutions and reduce MTTR.

Migrating workloads to the cloud is not trivial. While cloud vendors provide the framework and platform to help with the physical aspects of workload migration, they lack the full stack L2 to L7 view into service performance and dependencies throughout the entire communications path. To make any headway with reliability, availability and responsiveness of services when migrating workloads, IT teams use NETSCOUT solutions to:

- Identify which users are impacted
- Identify infrastructure dependencies
- Establish performance baselines
- Support an application upgrade and migration strategy
- Help determine which applications to lift-and-shift, refactor, rewrite
- Monitor migrated applications and compare to performance baselines
- Report pre and post migration status
- Prove ROI to upper management

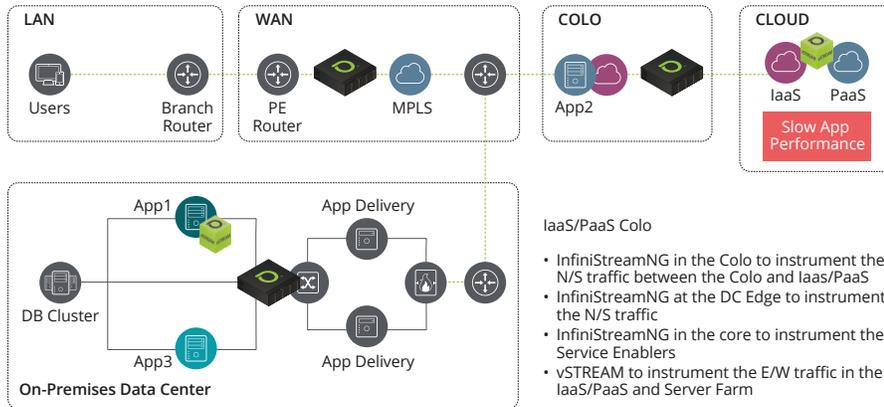
Assure service delivery in hybrid environments by instrumenting workloads in the cloud with vSTREAM. Automate VMware NSX-T and vCenter integration, in data centers and the cloud, for continuous application monitoring. Leverage nGeniusONE to understand the applications, latencies, dependencies, and workload maps before migration. Identify which users are impacted, establish performance baselines, monitor migrated applications and compare to baselines, and assure CD/CI at scale.

Gain Visibility into Server Farms: vSTREAM Extends the Visibility into Server Farms for E/W Traffic Monitoring



Multiple applications running on single host (App 1, 4) (App 2, 5) (App 3, 6)

Gain Visibility into Applications Migrated to Cloud: N/S and E/W Traffic Monitoring Needed



InfiniStreamNG at Colo identifies issues between on-premises data center and IaaS/PaaS vendor

Visibility from the Client Perspective

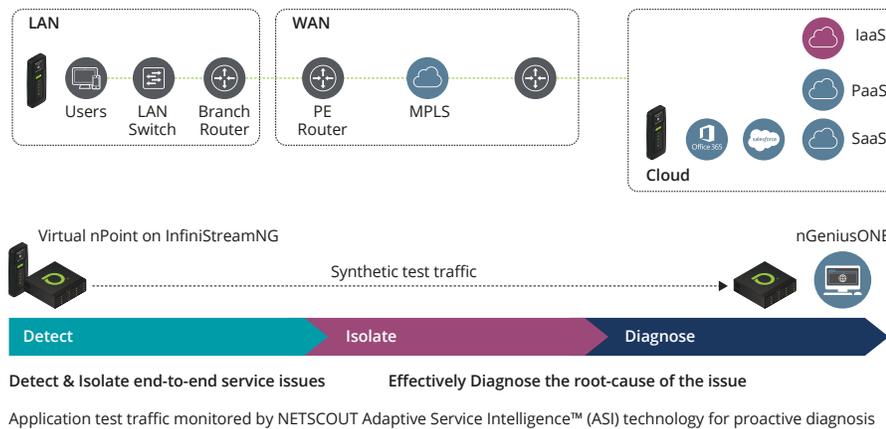
Snap shot:

- Detect service outages and slowdowns
- Isolate problems to the site, WAN and data center
- Diagnose root-cause for cloud and internal applications, VoIP, and network services

Extend visibility with nGenius®PULSE and virtual nPoint in standalone mode or nPoint on InfiniStreamNG in non-standalone mode. Combine vSTREAM instrumentation, together with nGeniusONE, to effectively detect, isolate and diagnose performance issues end-to-end. IT teams can initiate tests for user experience (UX) (for example, after a software update) and SaaS. Detect service outages and slowdowns at business locations. Isolate problems to the site, WAN, data center, or service provider. Monitor access to cloud and internal applications, VoIP, and network services.

Extend Visibility to the Client Side:

nGenius PULSE Adds Additional End User Experience Monitoring via Synthetic Service Component Testing (Standalone) and nPoint Software Running on InfiniStreamNG Emulates Mobile Clients from Remote Locations (non-Standalone)



Corporate Headquarters
 NETSCOUT Systems, Inc.
 Westford, MA 01886-4105
 Phone: +1 978-614-4000
www.netscout.com

Sales Information
 Toll Free US: 800-309-4804
 (International numbers below)

Product Support
 Toll Free US: 888-357-7667
 (International numbers below)

NETSCOUT offers sales, support, and services in over 32 countries. Global addresses, and international numbers are listed on the NETSCOUT website at: www.netscout.com/company/contact-us