NETSCOUT nGenius Enterprise Performance Management solution

nGenius Performance Management – Enabling Visibility Without Borders

Enterprises worldwide are implementing digital transformations (DX) at unparalleled rates. According to Flexera's 2023 Tech Spend Pulse Report, 74% of businesses claim that digital transformation is one of their top priorities. This is a significant increase from the previous statistic of 56% gathered from their 2021 survey. The COVID-19 pandemic largely contributed to this increase, accelerating DX initiatives to evolve operations and maintain business continuity.

It has quickly become clear that cloud-only tools and code-based, end-to-end agents for analysis from client-to-application workload end-points are incomplete and inefficient. As adoption and workload migrations to the cloud have become the norm, there is greater operationalization of the services that enable organizations to maximize the value of their cloud investments. However, it is here that the performance problems have become complex and challenging – chief among them is the lack of visibility and control.

Cloud migrations, SaaS adoption, digital transformations, the modern workforce, and remote site operations have dramatically altered the complexity of the connected world. As these migrations have occurred, gaps in performance observability have impeded problem resolution. Borderless visibility is essential for isolating problems and scaling to your essential business edges – from the client to the cloud and from data centers to remote offices, and beyond.

Problems Solved by NETSCOUT

nGenius® Enterprise Performance Management brings visibility throughout the ever-evolving, multi-cloud environment to solve performance issues affecting digital services across enterprise technology and organizational boundaries. This comprehensive observability empowers IT to assure high-quality user experiences in any network, any office, any service, for any user or Internet of Things (IoT) device, regardless of where they are located.

nGenius® Enterprise Performance Management is a revolutionary combination of NETSCOUT® solutions that leverages Adaptive Service Intelligence® (ASI) smart data to deliver packet-based performance monitoring. This unique insight can also be combined with synthetic testing for user experience assurance at essential business edges. This provides borderless visibility across multiple domains, including the network edges and the data center / cloud service edges for application and network performance analysis, as well as troubleshooting throughout complex multi-cloud environments (Figure 1).

Built on a solid foundation of packet-level insights, NETSCOUT solutions can also perform synthetic testing, including business transaction tests, at critical client edges such as branch and remote offices. This provides monitoring visibility into availability and performance from the user perspective, of on-premises, cloud-based, and SaaS applications. This enables IT to gain advantages of early warning from synthetic testing to quickly pinpoint true root cause of degradations with packet-based monitoring and dramatically reduce mean time to restore (MTTR).
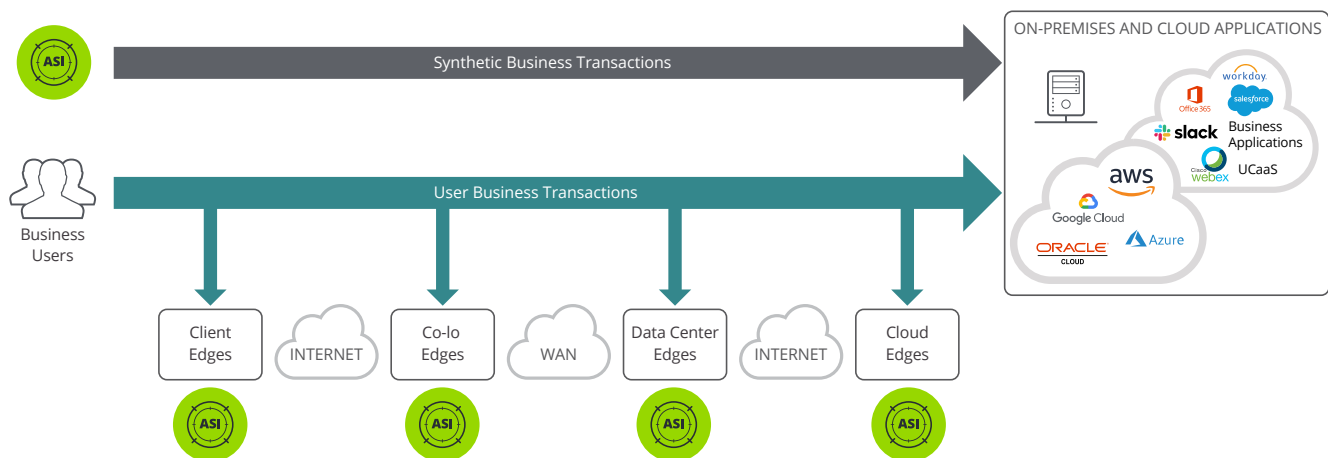

Figure 1: As users access business services from branch and remote offices (client edges), the communications path across the Internet and WAN (network edges) to applications in Data Centers and the Cloud (service edges) crosses multiple domains where there is a lack of visibility and control, making troubleshooting degradations complex, time-consuming, and inefficient.
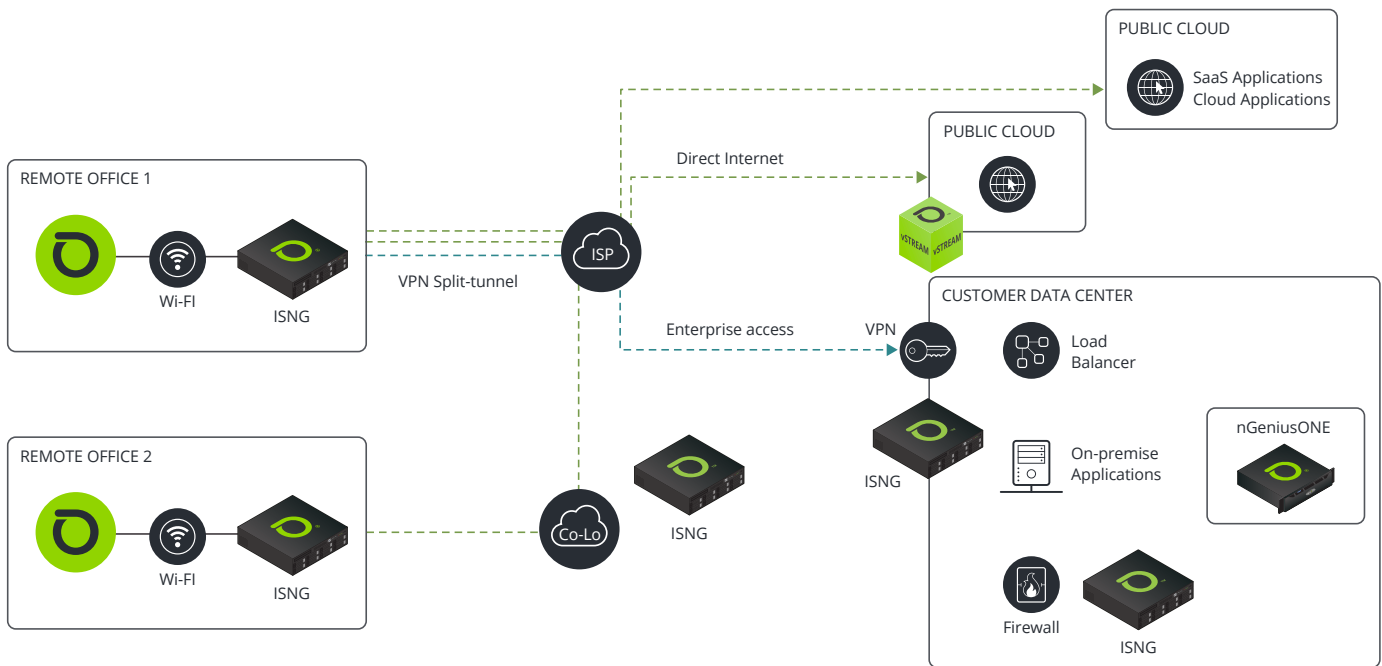
Figure 2: Comprehensive visibility comes from strategically deployed InfiniStreamNG appliances and vSTREAM appliances in Data Center / Cloud Service Edges, along with NETSCOUT instrumentation at remote sites. This enables organizations to pinpoint the true root cause of problems from the remote location network, user's ISP, VPN or corporate infrastructure, to the data center or public cloud, or any other domain the transaction depends on.

The challenges that the nGenius Performance Management solution uniquely addresses in the multi-cloud environment include performance issues such as:

- Delays logging-into data center resources via VPN.
- Evaluate reports of poor performance with newly migrated application to the cloud.
- Degraded performance of several applications felt by remote users, which could be caused either by ISP, Corporate WAN, or VPN capacity.
- Slow response times using VDI services.
- Poor quality voice using data center-based, multi-vendor VoIP implementation.
- Performance issues for all business data services for specific end user(s) or branch(es).
- Trend and track potential degradations in SaaS, UCaaS, and CCaaS applications for early warning, even when users are not active.

- Troubleshoot access and/or quality issues with collaboration services (e.g., Zoom, Microsoft Teams, and Cisco Webex).
- Diagnose an end-user experience problem to their home/remote office network, the ISP, the VPN, or the corporate data center Infrastructure.

Supporting The User Experience

NETSCOUT solutions provide IT teams with efficient, comprehensive end-through-end analysis of virtually any application, over any network infrastructure, from any end-point location to evaluate and troubleshoot performance issues that may impact user experience. Using a consistent set of smart data and logical workflows, the solution enables seamless, contextual transitioning across multiple layers of analysis to facilitate an efficient and informed hand-off of problem resolution tasks between different IT and vendor groups. Ultimately, not only is collaboration and vendor partnering improved, but troubleshooting time is reduced and overall mean-time-to-resolution (MTTR) is minimized.

The nGenius® Enterprise Performance Management solution leverages synthetic tests, including business transaction tests, performed at essential business edges. It is here that evidence of user experience is gathered, based on the integrated analysis of early-warning based on synthetic tests that are turned into ASI for alarming, viewing, trending, and contextual workflows in nGeniusONE. ISNG and vSTREAM appliances monitor packet data across network links and in virtualized environments respectively, and this smart data is also analyzed by nGeniusONE. nGeniusONE is contextually guided to analyze decrypted traffic (Figure 2).

NETSCOUT solutions streamline performance monitoring and user experience assurance by providing the following analysis capabilities:

· **Dashboards** – Provide views from packet monitoring and synthetic testing for availability and performance of applications from various user locations with details that are populated in nGeniusONE dashboard. The dashboard delivers real-time health status, metrics, alarms, and early warning of application and end-user performance problems. IT uses this information to quickly spot issues with any data center, SaaS, Co-lo, or cloud-based service. Dashboards are configurable to incorporate all the elements of a particular composite service, (e.g., Citrix or Collaboration Services) with performance metrics related to the Web components, middleware, service enablers, backend databases, etc., in a single view. Drill downs are available to Alert Monitor, Service Monitor, or Service Dependency Maps.

· **Service Test Logs** – Driven from synthetic business transaction tests, trend results of each step of a customized test are tracked to ensure all applications within a service are working and available. For instance, for an application, IT can test and trend customer-designed log-in through log-out tests to quickly ascertain when responsiveness issues emerge and where. With a baseline of what is considered normal performance for an application based on regular, repeated tests, it will be simple to recognize deviations from the norm.

· **Service Monitors** – From dashboard alerts, IT operators can drill-down to specific Service Monitors (e.g., Voice Media, Web, or DNS Monitor) or to a Universal Monitor where performance metrics by specific message types provide in-depth details on the scope and nature of the performance degradation. The Universal Monitor view provides a variety of metrics based on smart data from packet or synthetic test monitoring. The IT teams gain a consolidated view of details that may include application request workloads, number of sessions per server, application and network latencies, and/or network errors, providing holistic visibility into the performance of the overall service and supporting elements.

· **Session Analysis** – Enables session-level investigation, with hop-by-hop transaction breakdowns from smart data provided by ISNG and vSTREAM appliances at network and data center/cloud service edges.

· **Data Mining** – Derived from packet analysis, data mining provides deep-dive, protocol-level analysis and forensic evidence.

Benefits of nGenius Performance Management

NETSCOUT solutions restore observability and control throughout the complex, multi-cloud environment to solve performance issues affecting digital services across technology and organizational boundaries, including:

· **Visibility Without Borders** for troubleshooting and end-user experience assurance, delivering complete visibility in any network, any location, for any service, and any user, regardless of where they perform their jobs, by deploying NETSCOUT's highly scalable instrumentation enterprise-wide to obtain cost-effective, holistic digital infrastructure visibility.

· **Reducing time to troubleshoot and resolve user impacting issues** using performance monitoring that extends visibility beyond borders to improve mean-time-to-knowledge (MTTK) and reduce MTTR – benefiting IT and overall corporate employee productivity, as well as customer and revenue-impacting services.

· **Enhancing IT, NetOps, and Multi-Vendor efficiencies and collaboration** by leveraging the integrated capabilities of the nGenius Performance Management solution to share evidence, reports, and conclusions with third parties to resolve problems collectively and quickly.

· **Extending the value of single-vendor partnership and investments** already made in NETSCOUT packet-based smart data visibility and synthetic test monitoring technology for the most comprehensive solution for service access and user experience assurance available.

· **Assuring quality user experiences at each business-critical location** by integrating packet-based performance monitoring and user experience testing capabilities to achieve early warning, streamlined troubleshooting, and faster MTTR.

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