

NETSCOUT Smart Edge Monitoring Solution

Smart Edge Monitoring Solution – Enabling Visibility Without Borders

Enterprises worldwide are implementing digital transformations at unparalleled rates. In fact, 90 percent of those responding to a question related to the pandemic in the Flexera 2021 State of the Cloud report indicated that their organization's use of the cloud would exceed expected levels due to changes in corporate business and IT strategies in the wake of the COVID-19 pandemic. Not surprisingly, the report also reveals the heavy adoption of cloud, with 92 percent of the survey respondents stating that their enterprise had a multi-cloud strategy today.

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 matured, 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, and a hybrid workforce have dramatically altered the complexity of the connected world. As these migrations have occurred, gaps in performance visibility have impeded problem resolution. Borderless visibility is essential for isolating problems – from home, to data center, to cloud.

Problems Solved by Smart Edge Monitoring

NETSCOUT® Smart Edge Monitoring brings visibility throughout the ever-evolving, multi-cloud environment to solve performance issues affecting digital services across enterprise technology and organizational boundaries. Assure high-quality end-user experience in any network, any location, any service, for any user, regardless of where they perform their jobs.

Smart Edge Monitoring is a revolutionary combination of NETSCOUT's nGeniusONE®

Service Assurance solution with nGenius®PULSE. nGeniusONE leverages Adaptive Service Intelligence® (ASI) smart data from InfiniStreamNG® (ISNG) appliances and vSTREAM® virtual appliances for packet monitoring and deployed at key service 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).

NETSCOUT's nGeniusPULSE platform leverages synthetic testing, including configurable business transaction tests, performed by nPoint devices deployed in the critical client edges, including home and remote locations. This provides monitoring visibility into availability and performance from the user perspective, of on-premises, cloud-based, and SaaS applications. By leveraging NETSCOUT's Edge Adaptor technology, synthetic transaction test results are integrated into ASI for early warning of end-user experience issues.

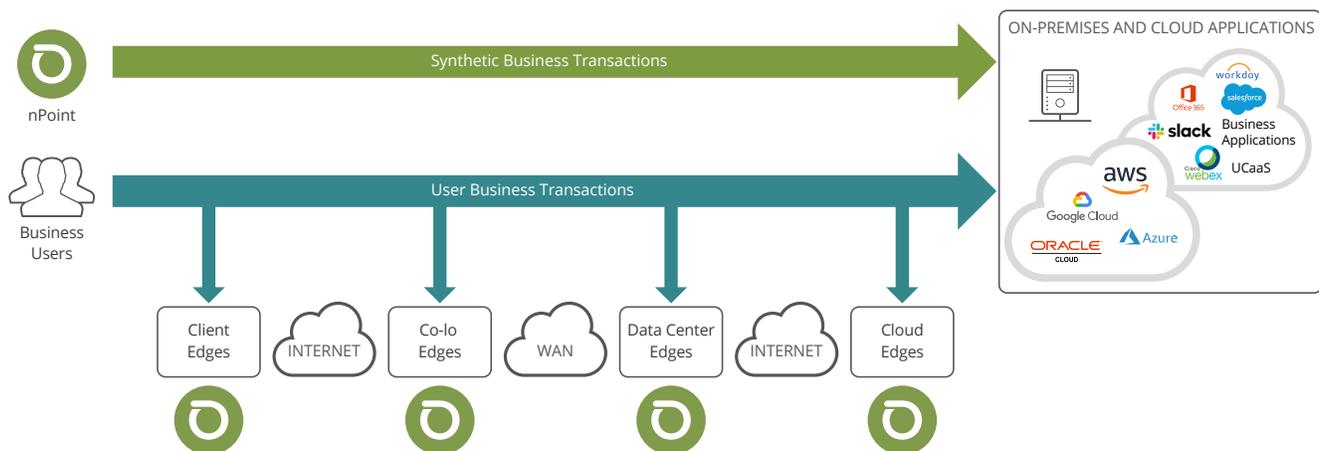


Figure 1: As users access business services from home and remote offices (client edges), the communications path across the Internet and WAN (network edges) to applications in Data Centers and the Cloud (service edges) crosses multiple domains where there is a lack of visibility and control, making troubleshooting degradations complex, time-consuming, and inefficient.

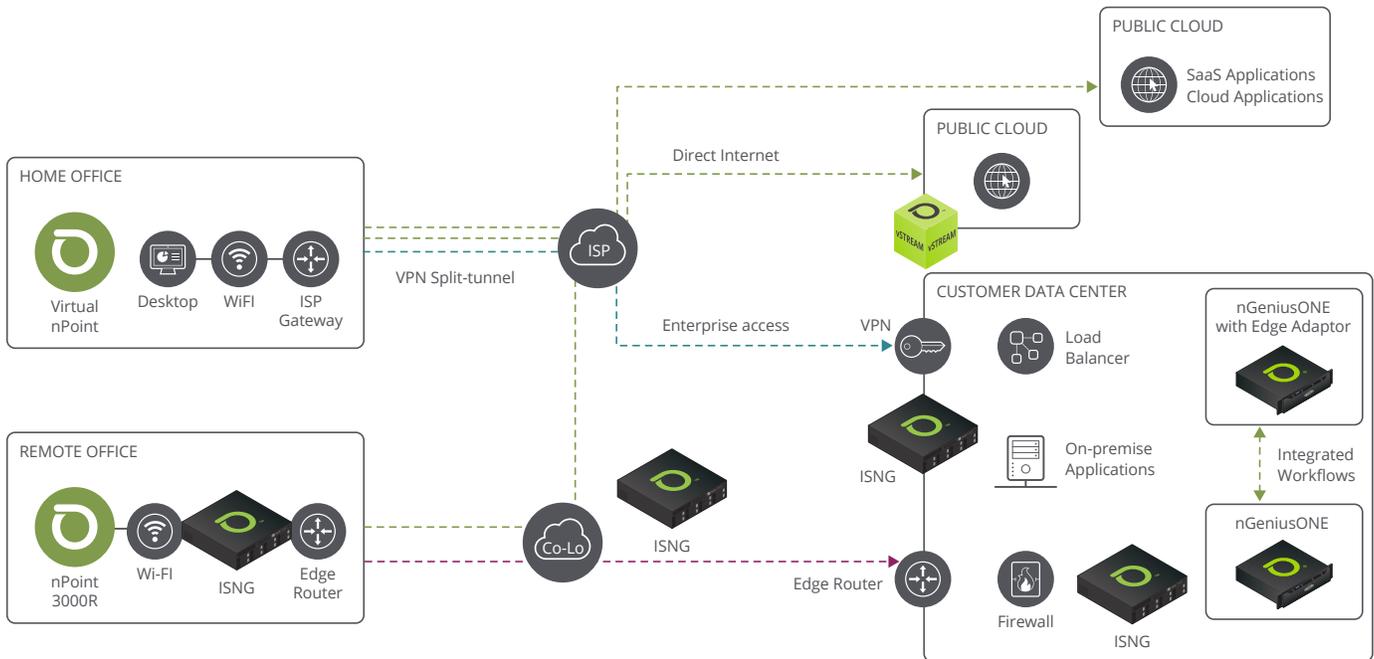


Figure 2: Comprehensive visibility comes from the unique combination of strategically deployed InfiniStreamNG appliances with Edge Adaptor at the Network Edges and vSTREAM appliances in Data Center / Cloud Service Edges, along with nPoint devices at end-use sites. This enables organizations to pinpoint 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 Smart Edge Monitoring 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.

How Smart Edge Monitoring Supports End-User Experience Assurance

The Smart Edge Monitoring solution provides 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.

Smart Edge Monitoring leverages synthetic tests, including business transaction tests, performed by the nPoint at the client edges. It is here that evidence of end-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).

The Smart Edge Monitoring solution streamlines end-user experience monitoring and overall service assurance and performance management 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 and configurable business transaction tests in nPoints, 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 Smart Edge Monitoring

NETSCOUT Smart Edge Monitoring restores visibility 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 end-user impacting issues** using Smart Edge 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 Smart Edge Monitoring 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 with nGeniusONE and/or nGeniusPULSE for the most comprehensive solution for service access and user experience assurance available.



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