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Making Informed Remote Business Delivery Decisions With NETSCOUT VPN Smart Visibility

nGeniusONE with NETSCOUT visibility is helping enterprise organizations monitor virtual private network (VPN) performance, differentiate VPN from Citrix virtual desktop infrastructure (VDI) issues, and visualize Citrix VDI network traffic anomalies to successfully troubleshoot end-user experience challenges.

As seen in this Use Case, our smart visibility for VPN monitoring and analysis can also provide customers with intrinsic metrics about how straightforward business process changes can reduce the processing load on VPN and Citrix VDI resources.

Issue

With so many information technology (IT) teams facing ISP link bandwidth and VPN capacity limitations in the first weeks of the initial remote workforce transition, there was an early emphasis on adding VPN concentrators or upgrading internet links to quickly add necessary capacity. For some organizations facing capital expense (CapEx) constraints or delays in getting resources ordered and implemented from the carrier, addressing the immediate VPN bandwidth issue using that approach was not as straightforward or timely. A VPN split tunneling configuration change could provide some short-term bandwidth availability by routing non-business application traffic from the corporate network to remote users' internet service provider (ISP) networks, but that approach does not address how business applications consuming unnecessary remote network bandwidth can be visualized for granular troubleshooting.

Impact

While many vendor VPN tools provide visibility into virtual network bandwidth consumption, they do not address issues like:

- Visualizing the applications running across the VPN
- Identifying the business use of individual resources
- Providing analysis that can be used by IT to make informed decision about moving traffic for off-hours processing or via a different access method

As a result, end-user experience across the remote network is adversely impacted by just a few such instances of business apps unnecessarily consuming VPN bandwidth during peak operations hours. This can occur even when VPN split tunneling is in use. If bandwidth and capacity are constrained during the business day, it can impact customer service and retention, revenue, employee productivity, and even corporate reputation.

Troubleshooting

Even after VPN split tunneling configurations have been made, in providing a first-level troubleshooting layer, nGeniusONE® Service Dashboards can be easily customized for real-time VPN monitoring.

From the Service Dashboard, IT can then contextually drill down into an nGeniusONE Traffic Monitor view as the next step of the VPN troubleshooting workflow. With this workflow, nGeniusONE enables the IT team to clearly visualize the application or applications creating the VPN service issue. In this case, a standard TCP_Other protocol error code flagged this as an undefined app. Armed with this information, subsequent IT investigation revealed the issue as being related to two print jobs running on a printer server, as well as file server replication.

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Remediation

In this particular Use Case, a NETSCOUT® Premium Support Services (PSS) resource provided some recommended-practices guidance on how to reconcile an application performance issue that was hindering end-user experience across the remote network.

For example, a "chatty" business process (e.g., a scheduled print job) that was formerly processed "quietly" in the background during the workday across a network can quickly exhaust today's VPN resources (e.g., 5 gigabytes per hour) and adversely impact end-user experience. Similarly, database and business applications perform differently on VPN vs. the WAN. Depending on the application, it is not unusual for respective processes on the VPN to operate with latency of 20-to-50 milliseconds vs. 1 millisecond on the corporate LAN.

In this case, the NETSCOUT PSS recommendation was to remediate this issue by transitioning the printing and database workloads to the Cisco VDI environment, which better supports performance of those workloads. With this change made, the VPN offered higher available capacity, which improved end-user performance.

Summary

This IT team learned early on what many industry contemporaries would later understand in the next informal phase of the remote workforce transition – that is, a full remote workforce has very different network characteristics than that for which many businesses had planned. Identifying the business applications traversing the VPN, the workload consumed by those apps, and the resulting impact on user experience are as important in the remediation process as quickly adding bandwidth.

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