NETSCOUT.

Successfully Migrating to SD-WAN With NETSCOUT Visibility

Along with expanding Virtual Private Network (VPN) and Citrix Virtual Desktop Infrastructure (VDI) deployments, many enterprises are turning to Software-defined WAN (SD-WAN) to enable information technology (IT) teams to overcome costs, complexity, and performance of traditional WAN in digitally transformed networks with distributed locations.

As seen in this Use Case, gaining smart visibility required for SD-WAN monitoring and analysis can provide IT teams with intrinsic metrics about the performance of this virtual solution and the services running on it, as well as intelligence about service quality offered by the VMware platforms frequently comprising these environments.

Issue

This company had experienced exponential growth in its remote office network, involving a jump from 50 locations to hundreds of them. Wanting to efficiently manage business service delivery to this large-scale remote office network using centralized IT resources, company leadership made the decision to convert from a traditional hardware-based WAN deployment to SD-WAN, which would also offer increased IT agility, reduced deployment costs, and enhanced security.

In addition to the challenges associated with deploying SD-WAN on this scale, IT needed to assure this transition did not impact the company's business continuity during the early stages of the COVID-19 pandemic. As a result, the IT team needed visibility and analysis of SD-WAN performance before wide-scale migration to ensure they were not putting business continuity at risk.

Impact

Lack of visibility into the SD-WAN test environment established for production rollout could result in lack of accurate analysis of potential issues with the overall migration of the new deployment, which in turn could delay the project. This could be costly for a company needing to continue to support expensive WAN services they are trying to replace, as well as cause department reputational damage for an executive-level sponsored project.

This IT team was experienced in use of the VMware VeloCloud technology employed by many enterprises for agile SD-WAN deployment. This SD-WAN conversion involved IT deploying Universal CPE (uCPE) platforms at each of the hundreds of remote sites to host SD-WAN and other virtual network functions (VNFs). IT also used the VMware VeloCloud Orchestrator to provide centralized installation, configuration, and real-time status data.

Wanting to avoid adverse impact on business continuity during migration, the IT team designed a pre-deployment test ahead of the SD-WAN rollout that included how this transition would support Voice over IP (VoIP) business services. This effort involved IT VoIP team running VoIP synthetic test scripts to assess performance over the SD-WAN solution. This testing effort quickly became problematic, as the tests showed VoIP was not performing as designed on the SD-WAN platform. With the IT team validating the VoIP platform was operational, concerns surfaced about possible false positives in the testing.
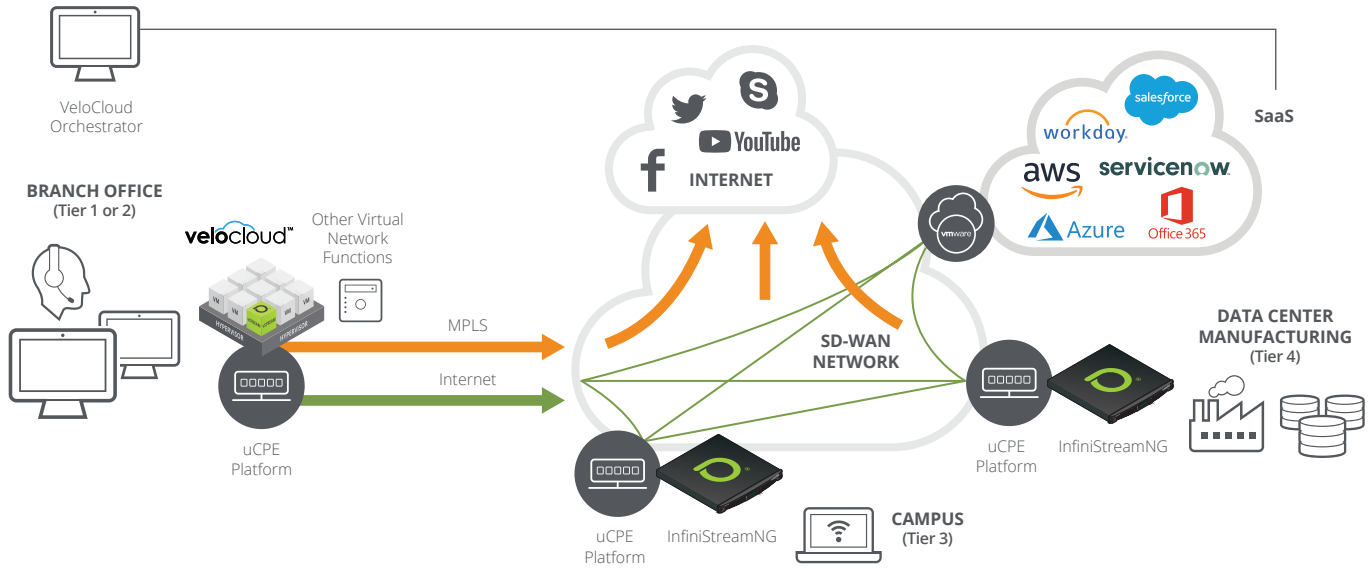
Figure 1: The company's SD-WAN solution operates on VeloCloud, with NETSCOUT providing necessary visibility into performance and real-time performance of business services and applications running in this environment.

Troubleshooting

The company had made an earlier investment in nGeniusONE® Unified Communications analytics and vSTREAM™ virtual appliances, and IT approached NETSCOUT® about challenges associated with VoIP testing the SD-WAN deployment. With the installation of vSTREAM virtual appliance, the SD-WAN and VoIP testing environment could be evaluated more accurately.

vSTREAM provided insight into network packet traffic and application workloads running in this environment, with which the nGeniusONE analytics workflow was able to identify performance issues associated with a specific IP address, which happened to be that used to support synthetic VoIP testing.

Remediation / Restoration

This troubleshooting identified the issue was not linked to VoIP or the SD-WAN environment, but simply was associated with the synthetic test data itself, whose errors were generating the false positives incorrectly linking the issue to the technology.

In turn, in using successful pre-production testing that showed VoIP required specific data transfer support in this virtual environment, the IT team fine-tuned the SD-WAN deployment using this data, installing a lightweight version of vSTREAM running in a two virtual CPU configuration to fit, in this case, the VeloCloud and uCPE platform configuration at each of its remote sites.

Summary

The IT team realized the company's goals for an efficient transition to SD-WAN for hundreds of remote locations. Furthermore, the solution, which offered a zero-touch deployment, enabled all the sites to download the required software to complete the transition.

Internally, IT's ability to effectively troubleshoot the issue as being related to faulty test scripts helped get this high-profile project back on track, which was a major win for the business.

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