

# Large Public School District Ensures a Quality Return to In-Person Learning With NETSCOUT

Leverages nGeniusONE and nGenius PFS for assuring hybrid learning services for students and teachers

## HIGHLIGHTS

### The Challenge

- Assuring a high-quality learning experience for students and faculty during on-campus and hybrid learning
- Providing troubleshooting visibility throughout the network infrastructure for quick resolution of security, network, and/or application issues – to improve MTTR

### The Solution

- nGeniusONE® Service Assurance platform
- InfiniStreamNG® software and hardware appliances and vSTREAM® virtual appliances
- nGenius® Packet Flow Switches

### The Results

- Reduced MTTR for student and faculty-facing issues
- Cost-effective implementation of visibility and service assurance solution to enable high quality connectivity



## Customer Profile

This large, public school district has over one hundred separate buildings and tens of thousands of students. Despite their recent return to in-person instruction on campus, there is now an expectation that remote instruction can be returned to at any time. Specifically, it is not uncommon to have days when the weather makes it difficult or impossible for this school district to transport all of their students to school in a safe manner. To maximize class time for students, the district wishes to eliminate weather related closures and re-engage their remote learning facilities at those times. Students regaining educational ground from long periods of remote learning, especially before the district perfected it, cannot afford further interruptions.

Certain government funds were available to assist in these efforts and were applied for and used to better prepare the district to enable remote learning during inclement weather conditions or other circumstances. In addition to this ongoing commitment to remote learning, the IT Staff at the district has now turned its attention to upgrading the monitoring of network operations and applications within the local area network and linking their other facilities. Supporting hybrid learning means balancing the creative efforts of the IT teams and financial resources across the district's whole infrastructure.

## The Challenge

For this school district, student and teacher experience is the top priority. Enhancing the IT teams' visibility into all the traffic traversing their data center is the goal of the current project.

- Remote learning is delivered to a wide variety of end user devices, for both the students and those mastering this new, demanding type of teaching. As other school systems have done, the district has provided students with end user devices and accounts which are centrally managed to enable remote learning.

- The traffic between various data centers and schools within the district is becoming more important in real time and must be monitored and analyzed when troubleshooting is needed.
- Services among teachers and administration including Azure cloud, Microsoft Office 360 SaaS, MS Teams, and some Cisco voice services are used for example.
- The essential services for remote learning support the Zoom, Google Meet, and Blackboard applications, which are either cloud based or hosted locally in the district's data centers, and better information about the performance of these services is required.

It is critical to deliver quality services so that learning can happen smoothly and continuously. Network and application performance management and service assurance visibility are necessary to utilize troubleshooting capabilities, identify the location of any bottle necks, and quickly determine if infrastructure or security issues are at the bottom of any faltering support for learning or collaborative applications. This information must be readily available for distribution to the correct part of the IT team. This is key to shortened Mean Time to Resolution (MTTR).

### Solution in Action

Having embraced NETSCOUT's nGeniusONE Service Assurance solution, this school district already benefited from strategically deployed InfiniStreamNG (ISNG) appliances in some locations throughout its private data center environment. With the addition of ISNG appliances and nGenius Packet Flow Switches (PFS) to route various streams of traffic of interest to the ISNG tools, the visibility into packets outside and inside the DMZ, and inbound and outbound is now complete.

With packets from the high-capacity links in the data centers being distributed by nGenius Packet Flow Switches to downstream tools including the ISNG appliances, the school district is gaining service assurance visibility in the following ways:

- **Student and Faculty connections** to the central environment take place through Virtual Private Cloud edge devices and they reach the central routers of the data center through high-capacity links which are also monitored by NETSCOUT®.
- **Unified Communications & Collaboration (UCC) Environment** is monitored for call and voice performance.
- **vSTREAM virtual instance** is deployed in the VMware environment to monitor east-west traffic activity in the virtual infrastructure.
- **Application Assurance for services** for both cloud-hosted and their central data center routing and switching architecture, smart data monitoring and smart analytics from nGeniusONE with ISNG appliances is provided. Key applications include learning platforms such as Google Meet, Blackboard and Zoom, as well as communication applications for staff such as email, Office 365, and VoIP.
- **Additional Capabilities** – Accelerated troubleshooting, problem resolution, and capacity planning, leveraging the entire NETSCOUT solution, to reduce the MTTR for services by pinpointing the true source of degradations, outages, bottlenecks and errors throughout the transaction path, including the data center servers, the network itself and any associated VPNs.

### The Results

A unified NETSCOUT solution provides detailed analysis of the operation and availability of key applications and services that support on-campus and remote learning, as the re-balancing of this new hybrid learning environment takes place. Assuring quality student and instructor experience optimizes learning time and understanding of the instruction being provided.

The District is finding that the role of technology in learning, even when it primarily takes place on-campus, is a growing one. Having this new level of deep visibility into network, voice, and application services system-wide with a single pane of glass view, is necessary for maintaining these new learning tools and enhancing them to offer students and faculty an ever-improving educational experience.

As the technologies used here become more complex, they unfortunately also become harder to protect. DDoS attacks, and network wide DNS issues are becoming more common, yet there needs to be a way to reduce the impact on students and teachers from degradations and threats. With detailed information about the causes of interruptions or degradations of service, threats and infrastructure issues can be quickly identified and troubleshooting can proceed so efficiently that individual incidents can be addressed, sometimes even before users are aware of the consequences.

Making this a more cost-efficient addition to their NETSCOUT solution, this school district was able to apply for specific government funds that have been made available through recent COVID-19-related federal government legislation and use them to keep students on track educationally by implementing this solution. NETSCOUT is proud to play a part in this school district's continuing success in meeting their goal of providing a quality public education to such a large number of students, under the current, and ever changing conditions.

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