NETSCOUT

Large Public School District Ensures Quality Student Learning Experience With NETSCOUT

Leverages nGeniusONE for assuring remote learning services for students and teachers

HIGHLIGHTS

The Challenge

- Assuring a high-quality learning experience for students and faculty during remote and hybrid learning
- Providing troubleshooting visibility throughout the network infrastructure for quick discrimination between security threats, network, or application issues, with excellent 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 single vendor for packet flow switches and service assurance of voice, video, and learning applications

Customer Profile

This public school district, the largest in its state, has over ten thousand employees and many tens of thousands of students. Although they have years of experience providing quality education to their diverse student population, the challenges of remote learning are now upon them, not as an emerging trend - but as a requirement to facilitate learning during a COVID Pandemic. The district's commitment to delivering an engaging, instructive experience to students as well as first-class support for their teaching staff continues as always.

The Challenge

For this school district, student experience is the top priority, and this is apparent in the efforts of the IT team. All students from the early elementary grades on must have the same educational experience as always, but in many cases, it now must be delivered digitally. The district has implemented a transformative software defined network that leverages Cisco's Application Centric Infrastructure (ACI) with a sophisticated spine and leaf design which is well suited for the changes necessary to accommodate the challenges the pandemic and remote learning have created.

- Recent pandemic conditions have made most instruction beyond the third grade mandated as remote. No matter how the districts adjust to the very latest conditions, the mix of on-campus and remote learning is now required to be an adjustable variable.
- 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. Like so many other school systems, the district-issued Chrome Books and accounts are managed by IT using Google Domain with Domain Controller. All of the schools in the district use a mix of voice and video platforms including Zoom, Google Meets, and Google Hangouts. For teachers operating from within the district's classrooms, the wireless networks provide access to the data centers and the Internet for these services.

- Services among teachers and administration including Cisco Jabber, Cisco WebEx, and Microsoft Office 365, delivered over VPN, must be highly responsive and available. This makes the capacity and security issues which IT has always faced even more challenging.
- The other essential service IT delivers for the district is their Student Information System (SIS), in this case Infinite Campus, used for Web-based K-12 student management services, which is hosted locally in the district's data centers. Performance is essential to provide real-time access to student, parent, and teacher portals for administration, instruction, communication, curriculum, and reporting.

As well as providing Service Assurance so that learning can happen smoothly and continuously, troubleshooting capabilities must be enhanced, to both identify the location in the infrastructure of any bottle necks, and to quickly determine if infrastructure or security issues are at the bottom of any faltering support for learning or collaborative applications. This information must be quickly at hand so that the proper IT team can be engaged, and mean time to restore (MTTR) can be as short as possible.

Solution in Action

The school district was already utilizing the nGeniusONE Service Assurance solution with strategically deployed InfiniStreamNG (ISNG) appliances across its private data center environments. NETSCOUT® gear is deployed outside and inside the DMZ and examines both inbound and outbound traffic. In addition, specialized NETSCOUT probes are used to help monitor the performance of some wireless networks as well. The following outlines how the IT teams are leveraging their service assurance visibility from NETSCOUT.

- End-user experience assurance when using application services, whether remote hosted, or through their Cisco ACI data center, with smart data monitoring and smart analytics from nGeniusONE with

ISNG appliances for applications. These applications include learning platforms, collaborative communication for staff such as email, Office 365, Cisco Jabber, WebEx, VoIP, and their SIS, Infinite Campus, etc.

- Accelerated troubleshooting and problem resolution, leveraging the entire NETSCOUT solution, to reduce the MTTR for services by pinpointing the true source of degradations, outages, and errors throughout the transaction path, including the data center servers, the network itself and any associated VPNs. In one case, the IT team was able to use nGeniusONE with the ISNG appliances to uncover a DNS issue that impacted use of all their cloud application services that are accessed via URL.
- Network traffic aggregation and distribution with nGenius Packet Flow Switches for visibility into and delivery of packet data to monitoring tools including the ISNG appliances for service assurance and performance management throughout their data centers and colocations.

The Results

For this school district, NETSCOUT solutions are providing insights into critical applications and services that are essential to their remote learning operations, as they gain trusted, comprehensive visibility with unified views into voice, network, and application services system-wide with a single solution.

Reducing impact on students and teachers from degradations and threat of potential disruptions is essential to optimize the limited learning time they have together. DDoS attacks, and network wide DNS issues have already been identified by the installed solution, so that mitigation services could be applied promptly. The teachers and administrators' experiences have been improved with quick isolation of bottlenecks.

With NETSCOUT, they are assuring that performance meets target goals and objectives. It also maximizes IT efficiencies by using a single-solution approach to truly pinpoint the source of disruptions and slowdowns, while reducing MTTR to return services to efficient operation by the appropriate IT team and/or third-party vendor. In fact, in some cases, they are able to stay ahead of issues using trended data for planning ahead of capacity bottlenecks and/or alerting IT when performance volumes, responsiveness, or errors may be changing and require attention, often even before students and faculty are aware that problems are emerging.

Furthermore, the flexibility of the nGeniusONE solution, to quickly and easily monitor the shift in traffic patterns during the sessions required for remote and hybrid learning has proven highly cost-effective for the district. The IT team is fully confident that as classroom-based learning returns in 2021, the solution will again provide visibility into traffic between the schools and the data center again to ensure seamless performance regardless of where the students and teachers are located.

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 challenging conditions.

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https://www.netscout.com/solutions/higher-education

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