CASE STUDY: NJ TRANSIT

NJ TRANSIT Deploys Robust Network Solution to Ensure Critical Uptime and Security

Environment

- Bus, rail, and light rail transit provider
- 5,325 square service miles
- 2,221 buses, 1,231 trains, 93 light rail vehicles
- 270 million annual passenger trips

Challenges

- Network connectivity for extensive transit authority
- Support of 11,000 users and 270 sites
- Ensure 24x7x365 business and network uptime
- Bandwidth for IP multicast video and CCTV surveillance solution
- Enable future, forward-thinking technology and business initiatives

Extreme Solutions

- Extreme Fabric Connect™
- ExtremeSwitching™
- Extreme Management Center™

NJ TRANSIT is a state-owned public transportation system whose mission is to provide safe, reliable, and cost-effective transit service, supporting the State of New Jersey in addition to acting as a central link to areas of New York and Philadelphia. It is the third largest provider of bus, rail, and light rail transit in the country. NJ TRANSIT is a critical channel that connects New Jersey residents with employment.

Similar to the way customers heavily depend on NJ TRANSIT's services every day, NJ TRANSIT needed a purpose-built IT network solution that aligned with the central goals of the organization:

- Deliver a consistent and quality customer experience
- Ensure the safety of customers and supporting staff
- Deploy resilient technologies to support immediate needs and future goals

NJ TRANSIT's technology leadership team, which includes Chief Information and Digital Officer Lookman Fazal, Chief Technology and Security Officer Bilal Khan and Sr. Director, Head of Unified Communications Asif Chatta, were tasked with this critical business initiative. The team's vision was to deploy a network solution that would not only support and maintain all of NJ TRANSIT's business functions, assets, and systems, it would also act as a strong platform to advance the organization's digital transformation initiatives moving forward.

A Challenging Business Environment

NJ TRANSIT's technology leadership faced a demanding task: the need to ensure continuous operational uptime, the size and scope of the environment, as well as the volume and diversity of connected users and devices.

As the third largest public transportation system provider in the country, NJ TRANSIT employs nearly 11,000 staff and covers a service area of 5,325 miles across 252 bus routes and 12 rail lines; this includes 166 rail stations, 62 light rail stations, and more than 19,000 bus stops. To sufficiently cover this area and support its significant ridership, totaling 270 million passenger trips, NJ TRANSIT operates an active fleet of 2,221 buses, 1,231 trains, and 93 light rail vehicles. In addition to providing transportation services , NJ TRANSIT's broader organization also includes the New Jersey Transit Police Department.

The sheer magnitude of NJ TRANSIT's business environment poses substantial network challenges for their IT team. Add in the number of diverse users, devices, and functioning groups that depend on the network for delivery of unique services on a day-to- day basis, and the challenge is compounded. Finally, NJ TRANSIT is a 24-hours a day, seven days a week, 365 days a year environment, supporting over 11,000 users and 270 sites, which means it's incredibly difficult to find maintenance

windows to perform upgrades and make changes to the operation systems - all with an IT staff of 25 members. NJ TRANSIT required a network solution that took all these challenges into account with a network that featured built-in security, resiliency and redundancy in an economical manner. Only then could their IT Team integrate new equipment, minimize downtown, and reduce the impact on NJ TRANSIT's services and potential disruption to the customer experience.

As such, NJ TRANSIT's aforementioned technology leadership team began the process of evaluating options to upgrade their existing network, understanding a resilient, secure, and efficient solution was required to better support its day-to-day operations, related organizational functions, and short-term critical initiatives.

Robust, Network-Enabled Security

While all of NJ TRANSIT's unique business requirements were viewed as overarching benefits of an enhanced network, one of NJ TRANSIT's initiatives - the task of supporting the growing need for IP-based cameras - acted as the primary catalyst for the network upgrade. Physical security is of paramount importance to NJ TRANSIT's staff and customers, and IP multicast video and an integrated CCTV surveillance solution ensures this happens.

Within a few months, the new network was ready to support NJ TRANSIT's specific security needs, providing the CCTV services that the New Jersey Transit Police Department, State and Federal Law Enforcement and Public Safety teams depended on to maintain staff and customer safety.

Improving Operations and Customer Outcomes

Taking the positive experience and strong outcomes from the initial deployment, NJ TRANSIT explored further methods to utilize their enhanced network infrastructure, applying and expanding the capabilities of the Extreme Fabric solution in other impactful ways in the environment.

With the Fabric Connect network, NJ TRANSIT deployed Extreme's Fabric solution to all the rail and bus stations, optimizing the performance and reliability of their enterprise network while removing some of the complexity. NJ TRANSIT also expanded the network to other applications that required secure transport; specifically, NJ TRANSIT sought to increase their network beyond the initial deployment boundaries to provide resilient and secure network support to all their locations. "We have a large and diverse network. The ability to automate certain functions while keeping the secure segmentation intact is something that offers us a great deal of operational simplicity and control," said Asif Chatta, Sr. Director, Head of Unified Communications.

"With 24/7 services, our extensive transportation system serves as the lifeblood of the state and there is no room for network downtime – even minutes of disruption would upend customer's daily lives. That's why we invested in Extreme's solutions to increase uptime and network resiliency, giving our staff and communities peace of mind," said Bilal Khan, Chief Technology and Security Officer.

A Reliable and Comprehensive Solution

NJ TRANSIT utilized Extreme's shortest path bridging, which allowed them to simplify their network configurations, add more customer facing services such as ticket vending machines and signage and maintain a resilient, secure infrastructure which ultimately results in greater uptime and customer satisfaction. The ability to add customer facing services without impacting any operational services has advanced NJ TRANSIT's capabilities even further. NJ TRANSIT is moving in the direction of automating part of their network operations utilizing the Extreme Fabric. NJ TRANSIT currently has 170 sites that are running Extreme Fabric.

The fabric allows sites to be managed by the Extreme Management Center (XMC), a single pane of glass solution for network and device management, configuration, visibility, troubleshooting, etc. This solution further cuts down on time-consuming and maintenance level tasks; this application also supports third party devices and systems.

"Our business relies on being functional at all times. Any downtime means lost revenue and customer dissatisfaction. Partnering with Extreme allows us to be fiscally compliant and, most of all, to focus on the customer," said William Viqueira, Chief Financial Officer and Treasurer.

Supporting the Challenges of Today and Building for Tomorrow

Between the forward-thinking vision of NJ TRANSIT's executive team and Extreme's technologies to execute on this vision, NJ TRANSIT has enhanced reliability and network security that supports their goals for quality customer experience, public safety, and technology resiliency.

NJ TRANSIT's vision for digital transformation which includes introducing additional customer facing services is being supplemented by Extreme's partnership in the infrastructure space. Moving forward, NJ TRANSIT will be able to support IoT technologies, a higher level of wireless coverage at its locations and a whole slew of data analytic services that will allow better customer-centric decisions to be made. Both Extreme Networks and NJ TRANSIT are committed to this partnership since it's creating an immense amount of consumer benefits and ensuring an even brighter future for travel across the state.

"Our approach is customer-centric. Our ability to add services without operational impact allows us to be agile and ensures that the customers always come first."

Lookman Fazal, Chief Information and Digital Officer, NJ Transit

Results

Purpose-Built Network Solution

- Build solution to meet critical business/digital needs
- Hyper-segmented, secure network infrastructure to maintain operational uptime

Exceptional User Experience

- Ability to add new service and devices during normal operating hours
- Robust network solution to support and enable digital transformation efforts

Extreme networks

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