Executive Summary

Industry

- Transportation and Logistics

Environment

- 157-Mile Indiana Toll Road
- 22 Toll Plazas, 1 Admin Building and Disaster recovery site
- 250+ Employees
- 120 End Users
- 1,000+ Network Endpoints

Technology Needs

- Secure network to protect customer and business data
- Simple, single pane of glass for network monitoring
- End-to-End, centralized network management
- Robust, reliable network infrastructure for continuous connectivity and 24x7x365 uptime

Extreme Solution Components

- ExtremeSwitching™
- ExtremeAnalytics™
- Extreme Management Center™
- ExtremeWireless™

Results

- Traffic incidents reduced 30%
- 24x7x365 network uptime
- Support of Real-Time Traffic Management Center and Intelligent Transportation System
- Improved operational efficiency and productivity
- Enhanced IT backbone to easily acquire new network services

Indiana Toll Road Reduces Traffic Incidents by 30% and Enhances Roadway Safety

ITR Concession Company (ITRCC) is responsible for the construction, maintenance, repair and operation of the Indiana Toll Road. ITRCC is committed to delivering a safe travel experience for its customers, employees, and community, and has provided over 300 million dollars of improvements along the Northern Indiana corridor since 2016.

As part of these improvements, the ITRCC sought to revamp its IT networking solution too, to better meet today's critical business needs and position them strategically in the future. Currently, ITRCC's large network infrastructure focuses primarily on powering tolling lanes and various connected devices designed to protect drivers and keep the roads safe. This network infrastructure supports the Indiana Toll Road's 24/7 operation.

In addition to ensuring continuous operational uptime, Juan Ignacio Gómez-Lobo, CIO at Indiana Toll Road, and his IT team, required a solution that enabled them to pursue more innovative initiatives and technologies moving forward.

Mission-Critical Toll Road: More Reliability, Less Risk

The geographic footprint of the ITRCC spans 157 miles of roadway, 153 of which are connected to the network. Physical buildings include 22 toll plazas, five maintenance barns, and an administration building as well as a Disaster Recovery site. Though the user base is relatively small, the infrastructure footprint itself is massive, supporting a diverse array of connected devices totaling in the thousands – all paramount to the day-to-

day operations of the Toll Road. The solution also powers essential in-house applications and software management systems.

> *"We want the motorists to have a heads up of icy road conditions, disabled vehicles, high winds; any safety messaging we need to push out to our customers."*
>
> **Juan Ignacio Gómez-Lobo, CIO, Indiana Toll Road**

Including the administrative building and Toll Road itself, the network is designed to power the lane system governed by over 160 tolling lanes which operate over 1000 lane devices. The solution also enables over 500 IP phones, 300 security cameras, 150 video message boards, and at least 75 IoT devices like building access controls and card swipe machines. With this myriad of mission-critical devices all rely upon the reliability of the network in order to maintain operations, guide motorists, and keep the roadways safe.

The network bolsters key software systems as well, like the Intelligent Transportation System, a platform that delivers greater visibility into traffic patterns to allow for better, more informed decisions related to the Toll Road. Their Real-Time Traffic Management Center is an incident detection and prevention tool, which automatically extracts real-time data from various endpoints into a central processer to improve safety, increase efficiency, and create better customer outcomes. Lastly, one of the underlying objectives of ITRCC's business is to collect tolls, which means documenting and organizing hundreds of thousands of transactions on a weekly basis while keeping the personal credit card information of their customers safe, a monumental task that the network enables.

Ease of Management to Increase Roadway Safety

When ITRCC set out to optimize their network infrastructure, given the nature of their business it was important the solution they deployed was robust, secure, easy to manage, and provided their team a consistent technology experience.

Given their strong commitment to delivering a safe travel experience for its customers, employees and community, achieving reliability and security was a key challenge. "We're a 24/7 operation," explained Bill McCall, Indiana Toll Road Communications Manager. "It's extremely important for us to make sure that the architecture that we have in the system supporting our communications is robust.'

As ITRCC was already transitioning and updating their supporting technologies, continuity was key. CEO Ryan Seaburg of Qubit Networks, a long-time strategic partner and service provider for the Toll Road, aligned with this approach as well. "With our future plans for the network already in the making, we knew it would be important to have standardization of equipment and integration into a single pane of glass from a management perspective," Their network backbone was half fiber, and they'd embarked on an 18-month project to replace it with fiber entirely, as well as convert all network gear to new, quality equipment.

Given the criticality of the network, ITRCC needed to achieve a certain level of management and security capabilities. With all the previously-mentioned assets and systems on the network, rules and policies had to be in place in order to identify potential issues effectively. The management platform also needed to be intuitive and easy to use; the Toll Road could not afford to spend valuable resources operating in disparate interfaces, using antiquated command line methodology to maintain their systems.

Lastly, security of the solution would be an essential component. "We needed a proactive approach in terms of addressing potential threats. Data security isn't negotiable," McCall said.

Network Implementation Protects Motorists, Augments Staff, and Enhances Security

After vetting a number of network providers, the Indiana Toll Road ultimately decided on Extreme Networks. Their technologies delivered a simple, but powerful automation and management solution at a cost-effective price, meeting the unique needs and future goals of the business. ITRCC partnered with Extreme Networks and Qubit Networks to make the network upgrades that would bridge the organization to the next leg of their planned infrastructure refresh.

The Toll Road selected Extreme Management Center to reign in management complexity, saving substantial time on day-to-day administration and enabling the network to grow with the business. "We're a staff of 10 people that keep this operation running. Yet, we have connected video message boards that alert drivers of road conditions, IP cameras, building access control technology, and more. That's a lot of mission critical devices. We have to be able to

see what's going on at all times," explained Dan Kompare, Information Technology Manager at ITRCC. In addition to guaranteeing device and operational uptime, the network is now configured to easily expand to new facilities, seamlessly integrate more connected devices, and free up time to explore more innovative 'smart' solutions.

Next, there was the matter of security. The ITRCC team was fortunate to enlist the help of Qubit Networks to augment their small staff. Extreme worked with Qubit to develop the necessary integrations for protecting customer databases and ensuring disparate systems would operate smoothly. "Extreme and Qubit strengthen our security. They make sure we're proactive, not reactive. Cybersecurity is an incredibly important aspect of what we do here," Juan Ignacio said.

"Our groups trust each other," commented Seaburg. "There's a good team relationship built on trust, and Extreme stays in touch with everyone across the board. We've had professional services come out for implementation support and the experiences have been great."

Successful Implementation and Cutting-Edge Automation

After a smooth, swift implementation, the ITRCC was able to establish consistent reliability across the network. "The way that we grow and add more devices is more simplistic than I've seen in environments using other switch gear," Bill said. The team has since made multiple minor upgrades internally and were able to install a new virtual environment, with no impacts to the network or the user experience.

It soon became clear that Extreme's networking solutions would save the Toll Road a great deal of time versus opting for the command line. The team reports their environment is significantly easier to manage, with remarkable increases in efficiency and productivity.

Not to mention, the upgraded solution has met the top concern of the business: ensuring that customers and shareholders feel comfortable the Indiana Toll Road is dealing with their information in a secure environment. The Extreme solution has enabled the ability to build rule sets and security within the network environment and protect credit card information with notably favorable results, and in compliance with PCI.

As a result of the Extreme solution and Qubit's dedicated, knowledge services, the Indiana Toll Road has been able to operate their intelligent transportation system, drastically improving the experience of our users. "In the safety across the corridor, we've seen a 30% reduction in traffic incidents because we can talk to our users and warn them about accidents, lane closures, and work areas. We've prevented a significant amount of accidents that couldn't have been prevented without this system," Gómez-Lobo, CIO, Indiana Toll Road concluded.

> *"We've seen a 30% reduction in traffic incidents because we can talk to our users and warn them about accidents, lane closures, and work areas. We've prevented a significant amount of accidents that couldn't have been presented without this system,"* **– Juan Ignacio Gomez-Logo, CIO with the Indiana Toll Road**

Intelligent Transportation Systems

Many benefits have resulted with Indiana Toll upgrading their network to Extreme Networks. One of the biggest benefits has been increased security and efficiency, which is a necessity for both their customers and the work-force. Currently, the network fabric backbone helps the Toll Road detect wrong-way driver detection, vary speed limit signs depending on weather activity, and automatically script responses to action that is occurring in real-time on the roadway. These are just a few examples of the innovative use cases the Toll Road are capable of accomplishing. Moving forward, Indiana Toll believes there are no limitations to their network infrastructure, and plans to enhance their intelligent transportation systems to increase driver security and ease of management to deliver a smart, efficient experience for both their business and their customers.

"Due to our partnership with Extreme and the equipment that is already in place, we can start to potentially discuss connected vehicle technology and other state of the art solutions just because we now have the infrastructure in-place to do so," said Gomez-Lobo.

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