Commuter Railroad Building a Foundation Based on Growth

Rio Grande Pacific Corporation

Size: 300 employees

Industry: Transportation

Location: Texas, United States

Solutions

- Implementing a self-healing Cisco network to prevent service disruption
- Building a foundation for Railroad Internet of Things with reliable industrial switches, routers, and dedicated network devices
- Protecting equipment, data, and applications with Cisco firewalls

Results

- Improving physical and cyber safety and security
- Self-healing network prevents service disruptions and improves on-time performance
- More data collection to steer real-time operational decisions
- Streamlined deployment of new and evolving technologies
- Time-to-market for new network applications and services accelerated by 50 percent

Digital Trends Take to the Tracks

Transportation companies around the world are transforming themselves by using new digital technology to communicate and collaborate, while extracting data on critical infrastructure elements—where it counts and in real time. Rewards include improved safety, less expense and service disruption, as well as happier customers.

A leader in that digital trend is Rio Grande Pacific Corporation (RGPC). Managing four short line railroads across six states, the Texas-based company runs passenger and freight operations, while providing ancillary services such as signaling systems and third-party dispatching.

When Denton County Transportation Authority (DCTA) awarded its operation and maintenance contract in June 2016, RGPC was tapped to provide maintenance of way, dispatching, and signalling and communications systems services for the A-train, it's commuter rail line. In addition, RGPC was tasked with updating their network infrastructure.

"The legacy DCTA IT infrastructure had become hard to scale," says Jason Brown, CIO at RGPC. "Each railroad function required its own dedicated hardware and fiber optic connection. Cisco's solution allowed us to use a single IE switch for multiple railroad applications and services."

Riding the Internet of Things

RGPC chose a solution built on Cisco Industrial Ethernet Switches and Integrated Services Routers. Now, from each mile post right along the track's 22-mile length, Cisco equipment relays real-time data back to the control room.

"With Cisco, today's railroad can run on complex analytics. It's a major breakthrough that's unlocked insights into what's happening on a second-by-second basis," says Brown.

Similarly, the rail infrastructure's status is remotely checked for traffic loads, wear and tear, and temperature-anything that could lead to equipment failure. That's the way RGPC keeps everything on track with predictive and proactive maintenance, which enables passengers to see the difference in more reliable rail services.

"Cisco industrial switches gave us deep insight to improve operational efficiencies and better the customer on-time experience," adds Brown.

The Cisco IoT network solution is:

Driving enhanced customer service

Improving emergency response processes

Monitoring the rail infrastructure to drive compliance

Effecting Even Safer Rail Operations

The 2008 Rail Safety Improvement Act, a federal mandate that requires commuter rail systems have a Positive Train Control (PTC) system fitted by December 31, 2018, is an ongoing effort to improve the safety of the traveling public.

"We want this safety-sensitive, federally mandated system to run on an unquestionably reliable network. With Cisco, we've been able to create a network that's airtight," says Ray Suarez, chief operating officer for DCTA.

Now, in the unlikely event an engineer fails to spot a red signal, PTC gets real-time data to kick-in and automatically halt the train. With this automated complex-data processing, safety and operations decision-making is streamlined.

With Internet of Things (IoT) network-enabled intelligence, management of emergency response situations is more fact-based and forensic. Data is collected, merged from multiple points, and then analyzed for keen understanding. RGPC is able to roll back operational data to uncover an audit trail and correlate events before, during, and after an incident. That not only helps understand why something happened, but analysis of the data predicts when it might happen again and how it can be prevented from recurring.

Making the Right Connection, Time After Time

Service disruption is a major challenge for all rail operators. Directly impacting travelers' lives, it negatively affects public image while cancellations can cause significant revenue losses.

With the new Cisco network, the on-time arrival figure is heading above the 99 percent mark. "It's a win-win. With the new network insight, our travelers and clients can rely on travel timeliness," says Brown. "At the same time, it's increasing our own business operations efficiency."

Raising IT Performance and Productivity

Brown continues: "Cisco switches and routers have centralized IT management and improved asset tracking. So we don't have to send engineers to site as much. And we don't have to provide extra devices and fiber every time we introduce a new service. That's a significant cost and time saving."

The Cisco platform has eliminated network latency and capacity problems. Port density has increased by 50 percent, helping RGPC accelerate new services–for example, IP video surveillance cameras to deter vandalism and curb dangerous behavior at rail yards, terminals, facilities, and on-duty locations.

That focus on physical security is mirrored in the cyber environment with business applications and data protected by Cisco ASA next-generation firewalls. Their inherent advanced intrusion detection and threat-monitoring capabilities offer insulation against malware between different railroad zones.

"With Cisco, today's railroad can run on complex analytics. It's a major breakthrough that's unlocked insights into what's happening on a second-by-second basis."

Jason Brown
CIO
Rio Grande Pacific Corporation

Products and Services

Routing and Switching

· Cisco Industrial Ethernet 4000 and 5000 Series Switches

· Cisco 4321 Integrated Services Router

· Cisco 829 Industrial Integrated Services Router

Security

· Cisco ASA 5505 and 5510 Adaptive Security Appliances

For More Information

To learn more about the Cisco solutions featured in this case study, visit:

www.cisco.com/go/customerstories

www.cisco.com/go/ie

www.cisco.com/go/routers

www.cisco.com/go/security

www.cisco.com/go/collaboration

CISCO™

ES/0517