Case study

Automated car wash system puts shine on wireless LAN and WAN for edge connectivity

ERICSSON

In partnership with Extreme networks

Image courtesy of Motor City Wash Works

Motor City Wash Works depends on cellular, Wi-Fi, and zero trust security for machinery data, payment processing, and more

Customer:
Motor City Wash Works

Industry:
Car wash

Use Case:
IoT, remote monitoring

Success story highlights

Challenge — Motor City Wash Works knew its end-to-end, as-a-service car wash technology system could revolutionize how car wash businesses optimize operations, but first it would need to address connectivity. Everything from machinery data to PCI compliant point-of-sale information depends on secure 24x7 network access. Thus, any downtime is costly and manual, making in-person troubleshooting unrealistic and inefficient.

Solution — To make expansion of this car wash automation system as timely and cost effective as possible, Motor City operationalized its cutting-edge car wash infrastructure with end-to-end, cloud-controlled connectivity provided through Ericsson Enterprise Wireless Solutions and Extreme Networks.

Benefits — With the ability to easily monitor and control wireless connectivity on both the LAN and WAN from anywhere, Motor City can confidently provide car wash businesses with 24x7 access to the IoT and payment data that is essential to successful operations and customer service.

Background and challenges

Motor City Wash Works has been providing reliable car wash equipment, parts, and accessories since the early 2000s, led by founders who have firsthand, decades-long experience in the car wash industry. Spearheading digital transformation in the industry, the company also developed a technology division known as Motor City Express, LLC. to support unique needs for managed IT services.

Today Motor City Wash Works is one of the largest global manufacturers of automated car washes, offering a turn-key, as-a-service solution that includes everything from the car wash equipment to integrations with point-of-sale (POS) systems and security cameras. As part of this service, Motor City's CruzControl cloud-based maintenance management platform streamlines operations by bolstering data visibility, analytics, and automation.

Motor City acquires data from industrial automation devices such as sensors, drives, and PLCs. This data includes variables such as motor vibration speeds, brush penetration, chemical levels, and much more. Critical information from each site is sent to its data center and then translated and prescribed to each car wash management team via digestible, actionable online dashboards and workflows.

Image courtesy of Motor City Wash Works

"Our solution enables a very connected and data-driven approach to car washing," said Ian Beason, product development manager, Motor City Wash Works.

"In the car wash industry, the No. 1 key to success is uptime. Ericsson and Extreme Networks helped us address this challenge from end to end, enabling secure network technologies, including Wireless LAN and WAN. Their support for us as an emerging partner has been phenomenal and allows us to not only grow our car wash business, but also our business as a managed service provider in the industry."

Ian Beason, product development manager, Motor City Wash Works


Image courtesy of Motor City Wash Works

"Overall, from Wi-Fi and switching to cellular and edge computing, Ericsson and Extreme provided what we needed to keep this high-value system connected, available, and effective for our customers at all times."

Ian Beason, product development manager, Motor City Wash Works

This highly connected IoT system only works if several key technology challenges can be addressed, particularly related to network connectivity.

Opening day delays inhibit revenue

The longer these car wash installations take, the more money the owners lose. While Motor City's all-in-one infrastructure offerings save its customers tens of thousands of dollars on electrical work and other costs, they could lose at least that much due to opening day delays while waiting weeks for ISP connectivity to be set in place.

Network downtime halts business

From both a LAN and WAN perspective, network downtime causes problems for a data centric solution such as Motor City's CruzControl. The company needs all connections to be consistent, with the ability to keep some applications running independent of the cloud during an outage.

Limitations of in-person troubleshooting

Car wash businesses can lose multiple thousands of dollars waiting for technical support when on-site connected technologies stop working or data stops sending to the cloud. Sending a network administrator to each location every time a problem arises is unrealistic, both financially and logistically.

Keeping track of data from multiple sources

The downside of all that data? Trying to track it through one platform isn't always easy. Along with vast swaths of IoT data, Motor City and its customers needed easy access to information about Wi-Fi performance, cellular health, data usage, and more. Funneling all types of info through one management platform is important, but not easy. Without the right solutions in place, it could require an excessive amount of time.

Addressing the vulnerability of critical data

Because Motor City integrates with a number of industryspecific POS systems through the CruzControl platform, the company needed the ability to encrypt and protect customers' credit card data while meeting PCI DSS standards. As part of their managed services offering, Motor City is not only responsible for the security of customer payment information, but also for each location's network as a whole. They needed a solution to securely connect to each site in a way that could be easily duplicated as their footprint scaled.

Solutions

Needing an end-to-end network connectivity solution for its state-of-the-art car wash system, Motor City Wash Works deployed Extreme Networks and Ericsson solutions with seamless integration and ongoing cloud-based control.

"This solution is immensely beneficial for us because we're controlling, monitoring, and managing every IoT component of the wash. From point-of-sale and tablets for line busting, to customer Wi-Fi and equipment controls, Ericsson allows us to support our customers remotely, and more. It's been a phenomenal partnership for technology, support, and development," said Rob Peraino, sales manager at Motor City Wash Works.

At each car wash site, Extreme Networks connects all IPenabled devices via switches and access points — with cloud control provided through the ExtremeCloud IQ platform.

This car wash system also uses Ericsson's enterprise solutions, including Ericsson Cradlepoint cellular routers, for secure, reliable, and versatile Wireless WAN connectivity that integrates directly into CruzControl for centralized monitoring and management.

Key data from each car wash facility is pushed through the LAN and WAN to the CruzControl datacenter, where Extreme's headend equipment and Fabric Connect software expedite the rollout of flexible virtualized networks.

Cellular and Wi-Fi status data are integrated into Motor City's main data platform via APIs, fostering a single-pane-of-glass experience through which each car wash's administrative team can monitor and quickly respond to issues

"We closely evaluated several technology companies for end-to-end wireless connectivity. Extreme Networks and Ericsson clearly offered the best, most cohesive Wireless LAN and WAN solution — meeting our needs from a technical, budgetary, and management perspective."

Ian Beason, product development manager, Motor City Wash Works

with machinery, the network, employee and customer information, and more.

"The containers allow us to reduce the amount of hardware that we need to put on site. It makes our solution more cost effective for our customers and allows us to enable critical communications between systems and employees," Peraino said.

Motor City runs an edge computing application on the Ericsson Cradlepoint router via the NetCloud Container Orchestrator, a tool that supports containers created in Docker Hub. This enables them to keep critical processes running on-site so operations can continue even if total communication loss were to occur.

Benefits

Reliable end-to-end connectivity for essential car washing technologies

With seamless integration between networking solutions for both the LAN and WAN built right into Motor City's custom buildouts, everything that keeps these car wash companies running — from automated machinery and POS to remote monitoring — stays online without interruption.

Ericsson Cradlepoint hybrid WAN routers support multiple carriers that offer 4G and 5G, as well as wired options — providing the flexibility to run cellular as either the primary or failover connection at any site.

Faster time to service

At each location, the routers support immediate cellular connectivity on day 1. Instead of being at the mercy of somewhat lengthy wait times for wired WAN links, 5G and LTE enable operations and revenue as soon as everything else on site is all set up.

Simplified network management and data integration

Ericsson NetCloud and ExtremeCloud IQ made it easy for Motor City to pull data such as POS information directly into its cloud-based car wash management hub via APIs. This way, each car wash manager can monitor and troubleshoot network connectivity, as well as security issues, from a single view — and from anywhere.

Point-and-click setup of secure tunnels and networks

Cloud-based management enables Motor City to orchestrate secure tunnels that encrypt and encapsulate data. This ensures PCI DSS compliance and, most importantly, protects car wash users' credit card information. The simplified creation of a zero trust network — instead of traditional VPN tunnels — using Ericsson NetCloud Secure Connect allows the IT team to remain lean while still supporting third-party needs and bolstering network security.

"We're projecting hundreds if not thousands of new locations over the next couple of years, and Secure Connect makes it easier for our IT team to stay nimble while rapidly deploying multiple secure sites," said Peraino

Edge computing during outages

Edge computing — easier to implement through NetCloud — enables Motor City to run critical processes at the site level in the event of a total communications loss. The NetCloud Container Orchestrator tool enables simple implementation and deployment of containers, through Docker Hub, onto groups of routers at the distributed edge.

"The ability to easily deploy containers for edge computing is important because it saves us from having to run a dedicated server on site for such a small payload," Beason said.

Learn more at cradlepoint.com or www.extremenetworks.com