Jackson Electric Cooperative, Inc.
Your Touchstone Energy® Partner

JACKSON ELECTRIC CO-OP EMPOWERS GULF COAST RESIDENTS TO WORK FROM HOME WITH A JUNIPER SMART COMMUNITY NETWORK

Summary

Company:
Jackson Electric Cooperative

Industry:
Utility

Business Challenges:
Respond to spiking Internet demand due to coronavirus and strategically address long-term issues of digital inequality.

Technology Solution:
- *MX480 and MX204 Universal Routing Platforms*
- *ACX5400 line of Universal Metro Routers*
- *Mist Platform*
- *Wireless assurance*
- *Wired assurance*
- *EX4600 line of Ethernet Switches*

Business Results:
- *Delivered exceptional Internet experience despite 30 percent traffic increase and a 130 percent subscriber increase*
- *Converged smart meter and Internet traffic with scalable, Layer 3 smart community network design*
- *Prepared to create Wi-Fi hotspot service to address issues of digital inequality*

When the coronavirus crisis forced the shutdown of America, Jackson Electric Cooperative turned it up. It had to. Broadband Internet became a lifeline for the people around Matagorda Bay, Texas, known for its miles of Gulf Coast beaches and fresh oysters, blue crab, and shrimp.

"In the rural areas of Southeast Texas, people are used to commuting to work, but with the stay-at-home order due to coronavirus, they had to suddenly live and work at home," says Bryton Herdes, network engineer at Jackson Electric.

"Residents called in, saying that they didn't think they needed Internet before, but now their kids were studying from home and they were working from home," Herdes says. "If they didn't have reliable Internet, they would struggle."

"We saw a huge increase in Internet service requests outside of our electric service area," Herdes says.

Apart but Together

Electric co-ops, which are member-owned, were established in the 1930s to provide electricity to rural America. In the last few years, co-ops have addressed a modern utilitarian need—fast, affordable Internet. Jackson Electric offers Internet under the brand MyJEC.net to members as well as to subscribers outside its electric coverage area.

"Our Internet hookups increased 130 percent and Internet traffic went up 30 percent with everyone working and learning from home," Herdes says. "Our Juniper network easily handled it."

Jackson Electric's network handled the traffic surge gracefully. Several years ago, the co-op built a new fiber network to support its electric and broadband businesses.

"Students using Wi-Fi in the parking lot would have the same protection as if they were in the classroom. We are excited to use our Juniper network in a unique way by marrying Wi-Fi hotspots with our business-class MPLS."

- Bryton Herdes, network engineer, Jackson Electric Cooperative

Smart Community Network

When modernizing their networks, electric co-ops and ISPs face a fork-in-the-road decision whether to build a flat Layer 2 network or a distributed Layer 3 network. A Layer 2 network offers the short-term appeal of ease, but as traffic grows, there are often scalability issues.

Jackson Electric built a smart community network. "Our network is designed to scale," says Herdes.

"We run converged services over our core Juniper network," Herdes says. "Having a routed network helps us extend services and add new premises equipment to connect customers."

A smart community network delivers significant advantages. At its foundation, a Layer 3 architecture simultaneously accommodates Jackson Electric's advanced metering infrastructure (AMI) to support its electric business as well as Internet traffic. With a Layer 3 architecture, member-to-member Internet traffic stays in the local domain, rather than being hauled to the core network and back to the member, as would be necessary in a flat network. This delivers a better user experience and reduces unnecessary traffic on the backbone.

"Having a Layer 3 network was a huge benefit as Internet traffic increased during the pandemic," Herdes says. "Students and families were able to access the Internet from the nearest router in our network, and then get directly into the school network. If we had a Layer 2 network, all that traffic would have been tromboned across our core."

Jackson Electric relies on Juniper solutions from the core to the metro edge. Juniper Networks® MX480 Universal Routing Platform and Juniper Networks MX204 Universal Routing Platform provide the core routing. The company uses Juniper Networks ACX5400 line of Universal Metro Routers for service aggregation at the edge.

Securing Remote Learning

"As a co-op, we work directly with the community we serve to get them the services they need," Herdes says. "The first thing we did after the stay-at-home order was to ask schools in our area how we could better serve students so they could do e-learning at home."

Schools want to ensure that they protect their students from offensive online content, especially from unauthorized participants on school-related video calls. When schools have a secure connection from Jackson Electric, they have this protection.

"By working with Jackson Electric, schools can leverage their existing content filtering and keep students safe from inappropriate content," Herdes says.

Addressing Digital Inequality

Coronavirus has exposed the digital divide like never before. Millions of kids across America don't have Internet access, and Jackson Electric has set out to help in its corner of the Gulf Coast, with plans to deploy outdoor Wi-Fi hotspots for students and their families.

"We are looking to work with communities and schools in our area to create a distributed WAN to support Wi-Fi hotspots in different areas so that students can have access to Wi-Fi," Herdes says.

"Students using Wi-Fi in the parking lot would have the same protection as if they were in the classroom," Herdes says. "We are excited to use our Juniper network in a unique way by marrying Wi-Fi hotspots with our business-class MPLS."

"Our Internet hookups increased 130 percent and Internet traffic went up 30 percent with everyone working and learning from home. Our Juniper network easily handled it."

- Bryton Herdes, network engineer, Jackson Electric Cooperative

At the heart of the new Wi-Fi service will be the Mist Platform. Mist, a Juniper company, offers an AI-driven WLAN platform that is built on a microservices cloud architecture. Mist delivers exceptional network user services by simplifying and automating network operations and troubleshooting.

Complementing the Mist platform, Jackson Electric is also using the Juniper Networks EX4600 line of Ethernet Switches in its Bay City, Texas district office, ensuring a superior wired and wireless network experience.

"Zero-touch provisioning with Mist is awesome," Herdes says. Mist is configured centrally, and wireless access points can be hung in minutes. Upgrades are easy, and Mist rolls out new features almost weekly.

Marvis Virtual Network Assistant is the AI engine built into the Mist platform. "Mist has the richest data I've ever seen on a network platform," Herdes says.

Marvis provides unique client-level insights, rapid wired and wireless troubleshooting, trending analysis, anomaly detection, and proactive problem remediation.

"Mist makes troubleshooting much easier," he says.

Jackson Electric can use Mist's wired and wireless assurance capabilities to set, monitor, and enforce service-level expectations for metrics such as throughput, capacity, roaming, and uptime.

"With Mist's automated reports, we can make sure that we're maintaining the quality of our Wi-Fi installation at schools and other sites," Herdes says.

"We can deliver any service over the next several years with our current Juniper network."

- Bryton Herdes, network engineer, Jackson Electric Cooperative

"Wired Assurance has pretty much eliminated the need for dedicated monitoring for our EX4600 switches in our offices," he says. "Plus, Mist gives us greater visibility into our wireless clients than we've ever had before."

Mist APs include BLE for indoor locations, which also has strong appeal as Jackson Electric looks ahead to help schools with contact tracing and proximity notifications to keep kids and teachers safe in the classroom.

Prepared for the New Normal

"We exist because of our members," Herdes says. "Being member-oriented enables us to make it through events like coronavirus or hurricanes."

With the foundation of a smart community network, Jackson Electric can continue to deliver affordable Internet and innovative services to the people who love the open stretches of the Gulf Coast.

"We can deliver any service over the next several years with our current Juniper network," Herdes says.

For More Information

To find out more about Juniper Networks products and solutions, please visit www.juniper.net.

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

Corporate and Sales Headquarters
Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER (888.586.4737)
or +1.408.745.2000
Fax: +1.408.745.2100
www.juniper.net

APAC and EMEA Headquarters
Juniper Networks International B.V.
Boeing Avenue 240
1119 PZ Schiphol-Rijk
Amsterdam, The Netherlands
Phone: +31.0.207.125.700
Fax: +31.0.207.125.701

JUNIPER NETWORKS | Engineering Simplicity