Golden West brings 10G fiber internet from the mountains to the prairies

Golden West Telecommunications has been serving South Dakota's rural communications needs since 1916. The member-owned co-op provides homes, businesses, and tribal lands with first-class internet, voice, and video services at a fair price.

Golden West is building an innovative fiber-to-the-home (FTTH) network to deliver 10Gbps internet to its subscribers. The company chose Juniper solutions for its next-generation core, edge, and last-mile networks.

OVERVIEW

Company	Golden West Telecommunications
Industry	Service Provider
Products Used	ACX7024 and ACX7024X, ACX7100, QFX Series, Wired Assurance, Juniper Paragon Automation
Region	Americas

CUSTOMER SUCCESS AT-A-GLANCE

24,000

Square-mile service area spanning across South Dakota

2,000

More rural homes will have fiber internet by early 2024

Automate

Network provisioning and service assurance

10Gbps

Dedicated bandwidth for each FTTH subscriber using an active Ethernet design

CHALLENGE

10gig fiber in hard-to-reach places

Golden West covers 24,000 miles, spanning from tiny communities across the state like Trent, population 210, outside of Sioux Falls, to Hot Springs, population 3,485. About half of its subscribers have 1Gbps fiber-to-the-home, and Golden West isn't stopping there. Golden West is bringing 10Gbps internet to more rural communities.

"Golden West wants to bring the most advanced technology to our customers through out the state," says Andrew Boyd, Network Delivery Supervisor at Golden West Telecommunications. "Delivering a 10-gig loop to customer homes is unheard of in a rural area."

Golden West uses an innovative, home-run active Ethernet design, in which a dedicated fiber connects each home and gives the customer the exclusive use of the 10Gbps. This is in contrast to the more common approach in which many homes share the 10Gbps bandwidth. Golden West's design is also vendor-agnostic, allowing for greater choice and flexibility.

Golden West needed a higher performance, more scalable network to serve more residential customers.

SOLUTION

Innovative FTTH design

"We did our due diligence, and Juniper proved itself," says Boyd. "We are pushing hard to move to software-defined networking and using APIs to provision services remotely. Juniper stood out for its openness and ability to automate infrastructure."

Golden West is building a 400G-ready network with Juniper ACX7100 Cloud Metro Routers for the core and edge. ACX7100 routers deliver 4.8 Tbps throughput in an energy-efficient 1 U footprint and 100GbE-to-400GbE port flexibility. Juniper QFX Switches are used to aggregate residential customer traffic and for mobile backhaul from its cell towers. It uses Juniper Mist Wired Assurance to configure and manage the QFX switches.

"Using the QFX platform for aggregation of the subscriber loop is a new use case," he says. QFX switches support the active Ethernet design and deliver industry leading throughput, scalability, and an extensive routing stack.

The open, programmable Juniper Junos OS® and Juniper Paragon Automation portfolio support Golden West's move to software-defined, automated infrastructure.

OUTCOME

Eliminate the digital divide from farms to cities

"Our intent is to deploy in seven more locations and support 2000 subscribers by Q1 2024," says Boyd. "We do hundreds of miles of construction a year, which equates to thousands of customers."

The network expansion also serves Golden West's other businesses, including enterprise-grade network services, hosted applications, and data center colocation for business customers, mobile backhaul for carriers.

Boyd is excited about using Juniper Mist Wired Assurance to gain visibility into the quality of experience for its internet customers. "We will be able to see if there's a problem with the internet in a subscriber's home, even if it's five miles from our building," he says.

Golden West also plans to use the Juniper Paragon Automation suite to deploy configurations and monitor network services. "We're just getting started," he says.

"Golden West specializes in bringing high-speed broadband to hard-to-reach communities. With a new Juniper network, we can accelerate delivery of 10-gig fiber to homes in rural communities."

Andrew Boyd
Network Delivery Supervisor, Golden West Telecommunications