Colorado Telehealth Network Cuts Costs, Improves Service Across State with CenturyLink

At a Glance
CenturyLink Colocation and CenturyLink IQ MPLS Network Solution reduce costs, improve care for Colorado healthcare providers.

Customer:
Colorado Telehealth Network

Industry:
Healthcare

Opportunity:
Improve healthcare across Colorado by linking clinics in rural communities with specialists in cities over a high-speed, secure network.

Solution:
CenturyLink Colocation hub and CenturyLink IQ MPLS Network Solution providing a hub and spoke configuration connecting the Colorado Telehealth Network of healthcare providers.

Colorado Telehealth Network is a 205-site non-profit broadband network that connects physical and behavioral healthcare providers, hospitals, emergency medical systems, and community clinics across the state of Colorado. Many of these participants are in rural communities where commercial broadband might be expensive or inconsistent in coverage and performance. The lack of low cost, high quality broadband has historically made it hard for the Colorado Telehealth Network's members to provide healthcare services that are contingent upon broadband connectivity.

Colorado Telehealth Network was conceived as a response to address the notable lack of broadband capacity in rural communities. By implementing data center infrastructure and network connections, the Colorado Telehealth Network could connect healthcare providers across the state and across the healthcare continuum on a secure, encrypted, healthcare-dedicated broadband network

"The idea was that we could leverage broadband infrastructure in all four corners of the state to start exchanging healthcare information," said Rob Jenkins, program manager at Colorado Telehealth. "We could get rural facilities connected with urban facilities and clinics and create a robust healthcare system in the state of Colorado."

The network facilitates the exchange of patient data including MRI scans and other image data. Colorado Telehealth Network provides ways for rural communities with few medical resources to access specialists that are more likely located in urban areas through its secure broadband infrastructure.

Challenge

Navigating Different Terrain, Population Densities

Colorado is a large state with different regions that are broken up by the Rocky Mountains. Tying all these local communities together with a single, consistent network required some vision because it is not easy to accomplish.

"In a state like this, it's often difficult to reach all four corners of the state, so topography and size were definitely barriers," Jenkins said. "For these frontier and rural communities, getting the type of broadband infrastructure and bandwidth that they needed was quite difficult and quite cost-prohibitive."

Cost was a major factor in the vendor selection process. But, Jenkins is quick to point out that it was not the only criterion. He needed a partner that could help him build this network, one that would care about the details of a system that had to serve a wide spectrum of people.

"We wanted to look at everything from the vendor — even down to the simplicity and readability of bills, the ability to change levels of service on the fly, to add extra bandwidth, to add extra sites--all those kinds of things," Jenkins said. "So on top of cost, we really needed to use the word 'partner'— somebody who would come in and help us usher in this vision for the Colorado Telehealth Network."

Security is also an important consideration in all aspects of healthcare delivery due to regulations such as the Healthcare Information Portability and Accountability Act (HIPAA). So, the Colorado Telehealth Network needed to ensure that data security and data center integrity were foundational considerations for building a healthcare-dedicated broadband network.

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Rob Jenkins Program Manager, Colorado Telehealth Network

Solution

Hub and Spoke MPLS

Colorado Telehealth Network worked with CenturyLink to establish dual hub and spoke network configurations to reach all participants. At the center of each hub was a colocation data center site, one to serve sites located in the southern part of the state and one to serve sites located in northern Colorado.

The dual colocation data center locations provide redundancy and business continuity as well as coordination for their respective spokes. The spokes are composed of Metro Ethernet solutions that tie the data centers to the clinics in each end of the state.

Results

Costs Halved, Data Throughput Vastly Improved

The telecommunication costs that Colorado Telehealth Network can provide to member sites represent a significant cost reduction due to the consolidation of Colorado Telehealth Network sites onto a single MPLS network with CenturyLink.

According to Jenkins, that cost savings allows those communities to move money from expenses to investments in local healthcare.

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Data transfer speeds have improved dramatically since the hub and spoke configuration was installed. Jenkins tells the story of a rural healthcare facility hampered by inadequate data transmission speeds. Historically, this facility was faced with long data transmission times that could reach into hours. That situation often forced the facility to transfer patients. After the CenturyLink network solution was in place, staff from the same facility replicated a worst-case scenario for training purposes. Data transfer — including images — from a staged accident site took 20 minutes — approximately a 90 percent improvement.

Care has improved in other transformative ways. One community wanted an MRI machine. The funding was available; however, the previous data transfer rates could not sufficiently support the image transfers to specialists who would analyze those images elsewhere. So, the purchase of this critical piece of lifesaving equipment was put on hold. The improved network speeds the CenturyLink network solution provided the Colorado Telehealth Network's member sites improved the situation to the point that the clinic was able to justify the purchase of an MRI machine.

Jenkins has also seen intangible benefits from the CenturyLink solution, such as CenturyLink team members stepping up to work on HIPAA compliance across the network. Jenkins also uses CenturyLink's customer portal Control Center to prepare reports, monitor inventory across the healthcare providers on the network and to assess performance.

"The Control Center is always accessible," Jenkins said. "I have the app on my phone. I can monitor anything anytime and or make changes on the fly."

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Rob Jenkins Program Manager, Colorado Telehealth Network

Future Plans

More Sites, More Services

Colorado Telehealth Network is always examining the potential for expanding its reach across Colorado. As individual and system members might create or acquire new clinics, the Colorado Telehealth Network must have the expansion flexibility to meet those providers' needs. As a result, new services can be added to the Colorado Telehealth Network taking into account healthcare providers' special information needs.

Jenkins believes that his CenturyLink team is up to the task.

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