



Healthcare services provider ramps up telehealth to deliver patient care remotely across SD-WAN

Universal Health Services transforms its WAN with Unity EdgeConnect SD-WAN edge platform, achieving new levels of network performance, reliability, and agility

From California to New York, Washington to Florida, and nearly every state in between you are never far from a healthcare facility managed by Universal Health Services (UHS). Established more than four decades ago, UHS is a national leader in hospital and healthcare management, recognized for its high level of care serving patients, employees, and communities.

One of the shining pillars in the UHS service portfolio is its behavioral health hospitals. With more than

250 of these facilities across the U.S., UHS is on the front lines of the opioid crisis, treating addiction to drugs and alcohol, working to heal veterans suffering from PTSD, and helping people cope with depression, anxiety, bipolar and countless other behavioral disorders.

Critical to this effort is providing clinicians and administrators at each facility with reliable, high-quality access to vital electronic medical record (EMR) systems and pharmacy applications like



ASSURES TELEHEALTH
RELIABILITY

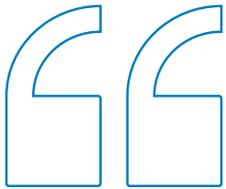


INCREASES WAN
UPTIME



REDUCES DATA
UP TO 85%

McKesson, general business applications such as Kronos human resource management, and a growing number of cloud applications like Microsoft Office 365 productivity tools and, at some smaller facilities, the TalkDesk voice system. In light of the COVID-19 pandemic, with onsite visitation greatly limited, UHS also dramatically increased use of telehealth using Zoom video conferencing.



With the increased need for telehealth, the number of concurrent Zoom sessions at each location went from one or two a day to ten or more. We've been able to bump up the bandwidth on our local ISP networks and easily configure EdgeConnect to take advantage of it. It allows the facility to still function and provide the care patients need."

— Kevin Fitzpatrick, IS Manager, Universal Health Services

UHS had been a Silver Peak customer for several years, using WAN optimization to accelerate application performance for remote hospitals experiencing high latency due to limited connectivity options. As the company continued to expand with new facilities, traffic volume was pushing the limits of its MPLS WAN circuits. This drove the need for more WAN agility, which has proven especially important as the number of Zoom sessions with patients has recently surged.

Transforming the network architecture with SD-WAN

Kevin Fitzpatrick, IS manager at UHS, says his team decided to transform its WAN architecture to improve network utilization, increase performance for accessing cloud-based applications like Zoom, and enable IT to respond more quickly and agilely when the business opens new locations. The Silver Peak [Unity EdgeConnect™](#) SD-WAN edge platform played a central part in this network transformation.



"We adopted a new standard configuration, using MPLS as our preferred link for traffic headed to applications running in the corporate data center, and locally available broadband at each location for local breakout to trusted cloud applications," Fitzpatrick says.

Fitzpatrick and his team have deployed the EdgeConnect platform and implemented this standard network configuration at approximately 200 UHS behavioral health facilities in the U.S., with about 50 sites remaining. The team used EdgeConnect to build bonded tunnels across both MPLS and broadband to optimally use both links together simultaneously, leveraging [path conditioning](#), quality of service, and [dynamic path control](#) to optimize utilization of all available bandwidth.

Using the [Unity Orchestrator™](#) management interface, the team also configured business intent overlays, using the routing interoperability and zone-based stateful firewall capabilities within EdgeConnect to breakout cloud application traffic locally, and to prioritize application traffic heading to the corporate data center.

For example, one business intent overlay specifies that real-time applications like Zoom, TalkDesk, and Concord faxing traffic use local broadband as the preferred link for efficient local breakout to the cloud, with the MPLS circuit available as backup to backhaul through the data center. Similarly, another overlay steers data center applications such as Kronos and McKesson across MPLS as the preferred link, prioritized as “critical” to ensure they have the network resources needed for optimal performance, while having broadband continuously available as backup. In the event of packet loss or brownouts/ outages on one circuit, EdgeConnect automatically fails over the affected traffic to the other circuit in less than a millisecond to ensure uninterrupted connectivity.

“If we didn’t break out Zoom and other cloud traffic locally with EdgeConnect, we would completely flood our MPLS network,” Fitzpatrick notes.

In addition, UHS implemented the optional [Unity Boost™](#) WAN optimization performance pack for applications such as Office 365, Veeam, and CIFS at remote locations prone to latency. The deduplication and compression provided by Boost achieves data reduction for Office 365 of approximately 85 percent, with Veeam and CIFS data reduced by 45 percent and 40 percent respectively.

Delivers higher performance, uptime, and agility

With a reliable, high-performing, and agile SD-WAN in place, Fitzpatrick and his team have been able to respond quickly and keep pace with the recent surge in telehealth sessions and business employees working remotely. “With the increased need for telehealth, the number of concurrent Zoom sessions at each location went from one or two a day to ten or more,” Fitzpatrick says. “We’ve been able to bump up the bandwidth on our local ISP networks and easily configure EdgeConnect to take advantage of it. It allows the facility to still function and provide the care patients need.”

Fitzpatrick also points out that breaking out locally improved performance instantly for all cloud applications, resulting in a much higher quality of end-user experience. Prioritizing applications on the MPLS network also improves the end-user experience by guaranteeing network resources for accessing critical data center applications. As a result, clinicians and business staff can work productively and consistently to deliver the exceptional level of behavioral health services for which UHS is known.

Another important benefit from the SD-WAN is improved network uptime. Fitzpatrick reports, “Network stability is much better at the hospitals. We’ve had a number of situations where EdgeConnect has failed over traffic when a circuit failed and prevented network downtime for the facility. It has drastically cut down our urgent after-hours support calls, and people in the hospitals are able to serve patients without being held up by network problems.”

As UHS continues to expand by opening new locations, the SD-WAN provides Fitzpatrick and his team with greater agility to respond to those business demands as they arise. “The Silver Peak SD-WAN opens new opportunities for us,” he says. “If UHS has an outpatient site opening in three weeks, we can establish connectivity using local broadband to get them up and running until an MPLS circuit can be installed. It just gives us a lot more flexibility in supporting the business, and ultimately patients.”

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Customer

Universal Health Services (UHS), one of the largest and most respected providers of hospital and healthcare services in the U.S., has 400 locations across the U.S., Puerto Rico and the U.K., including acute care hospitals, behavioral health facilities, ambulatory centers, and business offices. While continuing to grow, UHS is focused on making healthcare a positive and local experience for patients in all the communities it serves.

Challenge

A long-time Silver Peak WAN optimization customer, UHS was expanding the number of locations, and growing volumes of application traffic to the corporate data center was pushing the limits of its MPLS network. To alleviate this pressure and improve network agility to handle a diverse range of business needs, including surging demand for telehealth, UHS decided to transform its WAN architecture with SD-WAN.

Solution

UHS deployed the Unity EdgeConnect SD-WAN edge platform at approximately 200 of its 250-plus behavioral health facilities in the U.S., with the remaining sites scheduled to be deployed as quickly as possible. With EdgeConnect at the core, UHS established a new standard SD-WAN architecture,

using MPLS as the primary connectivity to data center applications, and locally available broadband as the primary link for sites to break out locally to trusted cloud applications. UHS also implemented the optional Unity Boost WAN optimization performance pack to accelerate application traffic at remote sites prone to latency. The company uses Unity Orchestrator to build business intent overlays to guarantee each class of application the network resources it needs and to centrally manage the nationwide SD-WAN.

Results

- Meets growing demand for telehealth sessions with assured network performance and reliability
- Increases network uptime, enabling staff to work productively and respond to patient needs without disruption due to network problems
- Improves quality of experience for clinicians and business staff accessing cloud and data center applications
- Reduces application data on the network by up to 85 percent for remote locations, improving business performance and efficiency
- Supports ongoing expansion, providing greater network agility for IS to respond to new business demands as they arise



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