



Leading software developer improves global collaboration and productivity with intelligent, business-driven SD-WAN

SolarWinds elevates VoIP quality and accelerates application performance for global development teams with the Unity EdgeConnect SD-WAN edge platform

If anyone understands IT infrastructure from end to end, it's SolarWinds. The company's monitoring and management software provides enterprises around the world with the digital eyes and ears to know exactly what's happening on everything from servers and storage to databases and applications to network and security systems.

Developing and enhancing industry-leading software is a continuous effort at SolarWinds, and

involves numerous global teams. IT plays a central role in the success of these teams by enabling them to communicate, collaborate, and access critical lab resources, development platforms and engineering systems. Altogether, this diverse and dynamic environment places heavy demand on the company's wide-area network.

Historically, SolarWinds relied on Dynamic Multipoint VPN (DMVPN) network routing and a mix of DIA and



98% TRAFFIC
REDUCTION



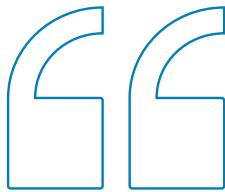
INCREASED VOIP
QUALITY



\$550K OPEX
SAVINGS

MPLS circuits to connect its global locations with applications and IT services at a central data center in the U.S. However, remote users often experienced slow file downloads, poor VoIP calls, and jittery video conferencing. The situation made it difficult for teams to collaborate and work efficiently.

"We worked to address the problem by upgrading circuits and building in network redundancy," Charles Pierce, SolarWinds IT manager says. "But we were still missing the network intelligence to utilize that great redundancy in the best way possible to optimize performance and service quality."



By using business intent overlays, we don't have all these different applications fighting each other for bandwidth. We can rely on the EdgeConnect appliance to sort and prioritize the traffic, and then send it down the best SD-WAN path to meet the business need."

— Charles Pierce, Manager of IT, SolarWinds

Leveraging SD-WAN intelligence to achieve high-quality VoIP

To fill in the missing network intelligence, Pierce and his team explored SD-WAN solutions, evaluating Riverbed, Cisco Viptela, Aryaka, and Silver Peak. Ultimately, the team chose the Silver Peak Unity EdgeConnect™ SD-WAN edge platform.

Pierce notes, "Compared to the other vendors, Silver Peak had more longevity in the market, and offered a solution that was easy to implement and

manage. Plus, EdgeConnect had WAN optimization available as part of a complete unified platform."

EdgeConnect also solved the IT team's biggest concern: VoIP quality. Michael Bishop, a senior network engineer with SolarWinds, explains, "Features like forward error correction and parity packets—those performance and stability capabilities baked into the secret sauce—showed how EdgeConnect could get us the high VoIP quality we needed."



To prove it, Pierce and his team tested VoIP with EdgeConnect, using the Mean Opinion Score (MOS) methodology to produce a quantified measure of quality. In testing only a few sites, MOS scores went up as much as 12 percent, with key measures such as jitter going from 50 milliseconds on the old DMVPN to zero on EdgeConnect, and packet loss being completely eliminated. The net result: much higher VoIP quality and happier end users.

Higher efficiency, lower cost

Today, SolarWinds has deployed the EdgeConnect SD-WAN edge platform in all 30 of its global sites. Each EdgeConnect appliance is now terminated with dual enterprise-grade dedicated internet access (DIA) circuits from two different service providers, replacing MPLS and DMVPN. Using tunnel bonding, the DIA circuits are configured so both circuits can be fully utilized together simultaneously.

The Unity Orchestrator™ centralized management interface streamlined deployment, enabling SolarWinds to roll out EdgeConnect to all but one site in just three months, completing the final site a month later, following customs clearance. Now, the team has a standardized process for bringing new

sites online quickly. Instead of waiting 90 days for an MPLS circuit and then spending hours manually configuring MPLS and DMVPN routers, they can have a DIA circuit provisioned in about 30 days and automate the rest. Bishop says, "Any time we bring on a new site, it's easy to plug a few cables into EdgeConnect and push out a standard configuration template from Orchestrator. A new site can be up and running within about 30 minutes."

SolarWinds also retired its branch routers, relying on the routing interoperability built into EdgeConnect to direct traffic optimally between offices and the central data center. As SolarWinds moves toward using more SaaS applications and PaaS environments, the company will be able to further leverage the routing interoperability and zone-base firewall capabilities within EdgeConnect to enable local internet breakout from each of its global locations.

Moving off MPLS and consolidating the edge infrastructure with Silver Peak not only improved efficiency, it also enabled SolarWinds to save nearly \$550,000 over three years in reduced operating expense.

Improves application performance and quality of experience

Advanced SD-WAN capabilities in EdgeConnect, such as path conditioning, quality of service (QoS), and dynamic path control, assure consistently high application performance and reliable network connectivity to deliver the highest quality of experience for end users. In addition, to accelerate applications and large file transfers across long distances, SolarWinds configured the EdgeConnect platform with optional Unity Boost™ WAN optimization. Boost had a major impact on remote development teams accessing Microsoft SQL Server data, thanks to data compression of up to 98 percent.

Bishop remarks, "Boost made a huge improvement on the speed of large file transfers between labs and engineering teams. File transfers went from taking a long time and a lot of bandwidth to just blazing fast."

Another key to improving application performance and end-user quality of experience at SolarWinds is the ability to configure business intent overlays for different classes of applications. For example, through Orchestrator the IT team defined a business intent overlay for VoIP and video calls as "real-time" so those applications receive top network priority, while other traffic such as SQL Server queries and file transfers are configured as "critical"—important but secondary to VoIP and video.

"By using business intent overlays, we don't have all these different applications fighting each other for bandwidth," says Pierce. "We can rely on the EdgeConnect appliance to sort and prioritize the traffic, and then send it down the best SD-WAN path to meet the business need."

An additional advantage the EdgeConnect platform brings to SolarWinds is assurance of network uptime even if one of the underlying links suffers a partial or full outage. With automatic sub-millisecond failover between the two links, business continues without disruption.

"We no longer have to manually intervene to fail over," Bishop affirms. "If there's a brownout on one of the links, or even if one of our service providers goes down completely, we know EdgeConnect is handling it."

Pierce concludes, "There's peace of mind knowing that EdgeConnect is keeping our application traffic flowing and prioritized."

For more information on Silver Peak and our solutions, please visit: silver-peak.com

Customer

SolarWinds is a leading provider of powerful and affordable IT management software. Its products give organizations worldwide the power to monitor and manage their IT services, infrastructures, and applications; whether on-premises, in the cloud, or in hybrid models. Through engagement with technology professionals, and leveraging those insights to drive continuous innovation, SolarWinds develops solutions to many well-understood IT management challenges. Its focus on the user, and commitment to excellence in end-to-end hybrid IT management, has established SolarWinds as a worldwide leader in solutions for network and IT service management, application performance, and managed services.

Challenge

SolarWinds' global development teams rely on access to centralized lab and development resources, as well as VoIP and video conferencing applications. The company's legacy router-centric WAN using MPLS and DMVPN tunnels resulted in unreliable failover, slow file downloads, poor VoIP calls, and jittery video conferencing, impairing team collaboration.

Solution

SolarWinds deployed the EdgeConnect SD-WAN edge platform at its 30 global sites, replacing expensive MPLS circuits and DMVPN with dual enterprise-grade DIA circuits. SolarWinds retired branch routers, leveraging EdgeConnect as the primary SD-WAN edge infrastructure, managed centrally with Orchestrator. The company also uses optional Boost WAN optimization to accelerate database queries and large file transfers.

Results

- > Increases VoIP and video quality dramatically, improving MOS scores up to 12 percent
- > Assures network uptime with automatic, sub-millisecond link failover
- > Prioritizes applications with optimal network resources aligned with business needs
- > Reduces certain network traffic by 98 percent, accelerating large file transfers
- > Improves development productivity and elevates end-user quality of experience
- > Enables rapid rollout of new branch locations, bringing up EdgeConnect in about 30 minutes
- > Delivers projected OpEx savings of nearly \$550,000 over three years



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