



Building supply company simplifies national WAN, improving efficiency and quality of experience for end users

Builders FirstSource retires router-centric network, gains greater flexibility, control, and performance with EdgeConnect SD-WAN edge platform

Across the U.S., construction professionals know where to go for high-quality building products—Builders FirstSource. This national supplier of professional-grade building materials has 450 locations across the 48 contiguous states and Alaska, including business offices, distribution centers, and manufacturing facilities.

The company's remote sites all connect back to a principal data center in Texas for email, the

enterprise resource planning (ERP) application, and internet access, as well as to a second data center in California for point-of-sale (POS) processing. Traditionally, Builders FirstSource relied on MPLS (primarily T1 lines) for its wide-area network (WAN). However, the WAN had become complex and difficult to manage, comprising a patchwork of switches and aging Cisco routers with mismatched dynamic multipoint VPN (DMVPN) tunnels.



INCREASED
BANDWIDTH 100X



REDUCED
LATENCY BY 90%



SIMPLIFIED
ROUTING

The conventional Cisco routers were due for a refresh, and Greg Taylor, Senior Network Engineer with Builders FirstSource, took this as an opportunity to reduce complexity, and improve efficiency and performance in the process. He notes, "I had worked with Silver Peak WAN optimization at my previous company, and I knew they had an SD-WAN solution. To me, SD-WAN was the answer to our network issues."



I've been very happy with the EdgeConnect SD-WAN edge platform. It saves so much time and minimizes the likelihood of human error. With EdgeConnect we have much more granularity in how we route traffic, which gives us the flexibility we need to enable the business to grow and adapt to new opportunities."

— Greg Taylor, Senior Network Engineer,
Builders FirstSource

An SD-WAN edge platform that just works

Doing his due diligence, Taylor evaluated several SD-WAN vendors, including Silver Peak, Cisco Viptela, Cisco Meraki, Riverbed, Citrix, and CloudGenix. Most offerings came up short for a variety of reasons—too convoluted, lack of enterprise capabilities, only worked with one type of interface, disjointed platform. But the Silver Peak [Unity EdgeConnect™](#) SD-WAN edge platform stood out for its breadth of capabilities and ease-of-use.

Taylor explains, "We need an SD-WAN solution that delivers the highest levels of network and application performance, and simplifies operations with centralized orchestration and management. We don't have dedicated IT staff at most locations, so it has to be something a general manager can just plug in and power up. We can do that with EdgeConnect."

He adds that the [Unity Orchestrator™](#) management interface was a key factor in choosing Silver Peak. "We really liked the Orchestrator user interface because it's templated. Orchestrator makes it a lot easier to push out standardized configurations centrally using a common set of templates, and know it's going to work."

Taylor and his team are rolling out the EdgeConnect platform to all 450 Builders FirstSource sites, having completed approximately 250 deployments to date, and adding a dozen or more sites to the SD-WAN each week. Most sites are terminated with the existing MPLS circuit and a 100 x 10 Mbps broadband link. Where multiple internet service providers are available, Taylor is eliminating MPLS in favor of dual-broadband. Many sites also have a 4G LTE modem as backup.



By bonding two links at each site, enabling both links to be actively used simultaneously, and taking advantage of capabilities such as [path conditioning](#), quality of service (QoS), and [dynamic path control](#) on the EdgeConnect platform, network uptime has improved dramatically. "We've had some sites lose their MPLS but not experience any WAN downtime," says Taylor.

Delivering the highest quality of experience for end users

“One of our objectives with SD-WAN was to increase available bandwidth for our remote sites,” says Taylor. “We have some locations that went from 1.5 Mbps T1 lines to broadband links with 250 Mbps down and 100 Mbps up. Ridiculous speeds. Then applying QoS and traffic shaping, we’ve made our folks quite happy.”

The impact on quality of experience for end users is striking. For example, at one location downloading email took so long, people would walk away to get a cup of coffee. After deploying EdgeConnect, Taylor says he was on the phone with someone at that location and asked him to check email while on the phone. “He said, ‘wow, it just opened. That’s never happened before.’ So we know the SD-WAN is making a real difference in productivity.”

Taylor and his team also added the optional [Unity Boost™](#) WAN optimization performance pack to the unified EdgeConnect platform to address latency issues at one of the company’s remote locations in Alaska. Connecting to the ERP system in Texas to run a print job back in Alaska was taking an inordinate amount of time. Using Boost provided a 90 percent improvement in latency so employees can complete print runs faster and move on with other tasks.

Simplified traffic control with built-in routing interoperability

Taylor also appreciates the increased level of visibility and control over application traffic flows the EdgeConnect platform provides. Leveraging unified routing interoperability, and using Orchestrator to create business intent overlays with specific QoS policies, Taylor says “traffic is automatically routed in the most efficient manner.”

Taylor has since been able to retire the old Cisco routers at most remote sites, simplifying the job of network management. For example, Taylor had

some sites on the MPLS network connecting through the Texas data center to access the POS application running in California, which introduced latency.

“Through Orchestrator we could very easily change the routing to avoid that extra hop, mark that traffic with a QoS value, and everything just worked. That was fantastic in saving us time.”

In the near future, Taylor also sees opportunities for leveraging the unified zone-based firewall within EdgeConnect to enable local internet breakout for trusted applications, as well as simplify LAN routing, at the remote sites.

Streamlines bringing new sites online

As the current SD-WAN rollout approaches completion, Builders FirstSource is now positioned to continue growing with the ability to open new facilities more quickly and efficiently. Taylor points out that once circuits are provisioned, he can simply plug in the EdgeConnect appliance and have it configured and fully operational in about 20 minutes. Bringing up a conventional router in that same scenario would take one of his network engineers an entire day.

“I’ve been very happy with the EdgeConnect SD-WAN edge platform,” Taylor reports. “It saves so much time and minimizes the likelihood of human error. With EdgeConnect we have much more granularity in how we route traffic, which gives us the flexibility we need to enable the business to grow and adapt to new opportunities.”

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Customer

Builders FirstSource is the largest supplier in the U.S. of structural building products, value-added components, and services to the professional market for new residential construction and repair and remodeling. In addition to distributing a full line of professional grade building products, the company also manufactures roof and floor trusses, wall panels, stairs, vinyl windows, custom millwork and trim, and interior and exterior doors tailored to the specific needs of its customers. The company's construction-related services include design services, product installation, and turn-key framing.

Challenge

Builders FirstSource had a complex, router-centric WAN with a single MPLS circuit for each of its remote sites to connect with applications running in its centralized data center. Latency was a problem, and many router configurations were outdated and misdirected traffic. The company needed to simplify its WAN to improve performance, reliability, and efficiency.

Solution

Builders FirstSource is rolling out the EdgeConnect platform to all of its 450 sites, having completed approximately 250 deployments to date. Most sites are terminated with MPLS and broadband links,

bonded and enabled with path conditioning, QoS, and dynamic path control. The company also uses Boost WAN optimization to reduce latency at select remote sites and centrally manages the SD-WAN with Orchestrator.

Results

- Increased available bandwidth from 1.5 Mbps to as much as 250 Mbps at some sites
- Improved application performance, reducing latency by up to 90 percent
- Enhanced quality of experience for end users, improving productivity
- Retired traditional routers at most sites, simplifying network management
- Improved visibility with more granular control of application traffic flow
- Reduced time to bring a new site online from a full day to 20 minutes
- Gained flexibility to enable the business to grow and adapt to new opportunities
- Positioned the company to enable local internet breakout and to simplify LAN routing at remote sites



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