



Leading UK homeware retailer improves agility and efficiency to deliver a high-quality customer shopping experience

Dunelm ensures network uptime, performance, and security to build multichannel business with the EdgeConnect SD-WAN edge platform

When it comes to home furnishings and décor, people in the UK know where to shop: Dunelm. With more than 170 stores and a popular ecommerce website, Dunelm is continually working to make shopping easy and convenient for its customers. That's the motivation for its transformation from traditional retailing to a multichannel business, introducing innovations like mobile point-of-sale (POS) devices in stores. If a customer can't find an item in the store, a sales associate can now use the

mobile POS to help them find it at another store or order it online, allowing them to help the customer on the spot, and open up the extended online offering to everyone in-store.

To enable such a fluid shopping experience Dunelm is moving away from running applications in a physical data center to adopting serverless technologies in the AWS cloud. This move also meant ensuring a robust wide-area network (WAN).



SAVES £400,000
PER YEAR



REDUCES LATENCY
BY 70%



BOOSTS
THROUGHPUT 4X

However, Dunelm's traditional hub-and-spoke WAN architecture, connecting each store across a single MPLS circuit to a central data center, was not up to the task. Frequent circuit outages took stores offline. Pushing out price updates to the stores' POS systems took 10 – 15 minutes and brought all other traffic on the WAN to a crawl. And introducing new services to stores was a tedious, time-consuming process. For Tonino Greco, Dunelm's Head of Infrastructure and DevOps, the solution was to retire the old hub-and-spoke topology in favor of a full mesh network.



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— Tonino Greco, Head of Infrastructure and DevOps, Dunelm

This is a sweet spot for software-defined WAN (SD-WAN), and Greco knew it. A close follower of leading-edge technologies, he learned about SD-WAN when it first came on the scene, and had since been looking for an opportunity to apply the technology. Now he had one.

Finding the right SD-WAN solution

When researching SD-WAN vendors online against his specific requirements, Greco found one vendor kept coming up at the top: Silver Peak. After

meeting with a Silver Peak representative, Greco saw immediately that the [Unity EdgeConnect™](#) SD-WAN edge platform fit the bill.

“EdgeConnect hit all the right notes,” he says. “The ability to centrally manage the WAN and rollout changes across all of our stores was vital for us. Combine that with having routing, firewall, and WAN optimization all on a single unified platform, it was like a dream come true.”



Dunelm is now rolling out the EdgeConnect platform to all 170-plus stores, as well as warehouses, depots, business offices, manufacturing facilities, a call center, and a photo studio. In total, the SD-WAN will include 196 sites once fully deployed. At each store, the EdgeConnect platform is terminated with two Dedicated Internet Access (DIA) circuits, each from a separate provider, which link to a pair of virtual EdgeConnect appliances deployed in AWS. Dunelm then uses AWS Transit Gateway to service chain the EdgeConnect appliances with Palo Alto Networks next-generation firewalls, and connect with application services running in the AWS cloud.

Dunelm bonds the two DIA circuits and leverages the full range of SD-WAN capabilities in EdgeConnect, including [path conditioning](#), quality of service, and [dynamic path control](#). The company also uses the built-in routing interoperability and zone-based firewall within EdgeConnect to enable direct, secure access from the stores and other facilities to applications running in AWS.

Delivers improved performance, efficiency, and security

Using the [Unity Orchestrator™](#) management interface, Greco and his team created business intent overlays with classes of service for key applications, including point-of-sale, customer Wi-Fi, and voice over IP (VoIP) and video. Greco also uses the zone-based firewall in EdgeConnect to logically segment VLANs within the stores so, for example, customer Wi-Fi traffic is completely isolated from the POS or VoIP system. This provides the team with a level of control and security that simply didn't exist in the past.

"With our previous MPLS network, if someone decided to update a server in the middle of the day, it would use up all available bandwidth for services the stores depend on," recalls Greco. "Now, with EdgeConnect, we are able to specify that our point-of-sale application gets top priority, so no matter what other people are doing on the network, that traffic gets through."

By leveraging the optional [Unity Boost™](#) WAN optimization performance pack, unified within the EdgeConnect platform, Greco has seen a fourfold increase in network throughput. Pricing updates that previously took up to 15 minutes now finish in a matter of seconds. In fact, application performance has improved overall, with latency up to 70 percent lower for some applications like a cloud-based inventory management system.

"The other beautiful thing," says Greco, "is we now have two 10 Mbps DIA links, which provide more performance and resilience than we had with one 20 Mbps MPLS circuit at 40 percent lower cost. We

used to have 10 – 15 stores go offline per week due to circuit outages. That simply doesn't happen anymore."

In addition, by retiring traditional routers, firewalls, and carrier-specific networking devices at the stores, and eliminating the need for outsourced management of that equipment, Greco estimates Dunelm will save nearly £400,000 per year once the full rollout of the EdgeConnect SD-WAN is complete.

Agility to continue delivering customer-enhancing new services

One of Dunelm's main objectives in moving to the cloud and building the SD-WAN was to gain more agility to introduce new capabilities in stores and deliver a consistently high-quality customer experience. On the legacy network, planning and implementing a VLAN for a new service would take weeks. Through Orchestrator, Greco and his team can create a new VLAN and roll it out to the stores in 10 – 20 minutes.

Greco concludes, "Our network underpins everything we do at Dunelm. The improvements in performance, agility, and efficiency we've gained with the EdgeConnect SD-WAN edge platform are enabling Dunelm to transform into the multichannel business we envision. They allowed us to introduce new services like the mobile POS. That's just the tip of the iceberg. There is so much more to come."

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



Customer

Dunelm is the UK's leading homewares retailer offering customers products to enhance every room in their home. The company focuses on style, quality and value, and is committed to helping customers create a home they love. With 170+ stores across England, Wales, Scotland, and Northern Ireland, and 30,000 products in store plus extended product ranges online, more than 3.5 million customers visit Dunelm stores and websites each week. Dunelm has been honored in recent years with *House Beautiful* awards, Favourite Home Retailer and Favourite Online Retailer.

Challenge

Dunelm is transforming from a traditional retailer to a multi-channel business and required a robust, agile network to connect stores with applications running in AWS. Its old MPLS-based hub-and-spoke network architecture had frequent circuit outages, application performance was slow, and introducing new digital services to stores was tedious and error-prone.

Solution

Dunelm is rolling out the EdgeConnect platform to 196 sites, including all 170 stores, as well as its warehouses, depots, business offices, manufacturing facilities, call center, and photo studio. The EdgeConnect platform is terminated with two Dedicated Internet Access (DIA) circuits,

which link to a pair of virtual EdgeConnect appliances deployed in AWS. The EdgeConnect appliances are service chained with Palo Alto Networks next-generation firewalls via AWS Transit Gateway, which then connects traffic to application services running in the AWS cloud. Dunelm leverages Unity Boost WAN optimization for the store network and manages the SD-WAN centrally using Unity Orchestrator.

Results

- > Gained a fourfold increase in network throughput with Boost
- > Reduced the time to send pricing updates to stores from up to 15 minutes to just seconds
- > Improved application performance, reducing latency by up to 70 percent
- > Increased network resiliency with dual DIA links at 40 percent lower cost than single MPLS
- > Consolidated edge, retiring routers, firewalls, and carrier-specific networking devices, saving nearly £400,000 per year
- > Accelerated rollout of new store services from weeks to 20 minutes
- > Enabled store associates to focus on optimizing the customer experience instead of covering for network outages



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SP-ECS-DUNELM-050119