



## SD-WAN INTRODUCES EFFICIENCY AND AUTOMATION TO LARGEST PRIVATELY HELD CORPORATE MERGER



### INDUSTRY

INFORMATION TECHNOLOGY

### COMPANY PROFILE

Dell Inc. is an American multinational corporation in the information technology industry. It is based in Round Rock, Texas. It was formed as a result of the September 2016 merger of Dell and EMC Corporation.

### CHALLENGES

- Multiple legacy networks with lack of uniformity
- Policy updates required time-intensive manual CLI configuration
- Increased dependency on cloud applications on a traditional network platform

### RESULTS

- Overhead and resource savings
- Bandwidth increase without having to invest in expensive lines
- Automated policy updates across entire network
- Native firewall capabilities eliminates need for additional security appliances
- Network visibility enables proactive management of bandwidth and users

When two companies seek to integrate their separate network and assure employee productivity during the merger, Dell turned to SD-WAN for business continuity and network simplification.

### Problem Situation

In 2016, Dell Technologies completed the acquisition of EMC Corporation for \$67B, forming the world's largest privately controlled technology company. To ensure that the two companies succeeded in its collective goals, many changes were required, and one of the most important was the network infrastructure.

Each company brought together decades separately created and maintained network systems, supporting hundreds of thousands of employees, and billions of dollars of revenue. This included 19 data centers, seven manufacturing sites, 20,000 managed network devices across the global network, and 6,000 applications traversing the network. In order to support the business long-term, the networks needed to be integrated in some way.

The common theme throughout both networks was that each were a traditional WAN deployment. All internet traffic was backhauled to the data center and through the technology stack. What made this highly significant is that both Dell or EMC had very lax internet usage requirements for the network, allowing their employees to leverage the network to access all applications (including personal ones and streaming applications) they want. With this policy, much more content was being accessed across the business network, including social media, emails, images, etc.

As with many networks built decades ago, Dell Technologies was using primarily MPLS connections, and with all internet traffic backhauling to the data center and the rise of cloud applications (SaaS, workloads moving to the public cloud, and business applications), this put a strain on the network. Additionally, Dell provided guest wifi access and had begun to support VMware's Airwatch solution that allowed employees with company mobile devices to use the on campus wifi to make phone calls, which saved the company in carrier fees.

The integration priority became to enable team members to get their work done following the acquisition. The first activity was to assess sites and any duplications to consolidate locations and then determine the best type of connectivity between sites.

“With VMware SD-WAN by VeloCloud, it is much simpler and easier to create or edit business policies and push them out across the entire network.”

JASON CHAN  
SR. DIRECTOR OF GLOBAL NETWORK SERVICES,  
DELL, INC.

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### Solution Selection and Implementation: VMware SD-WAN by VeloCloud

As Dell considered what strategy to use to unify the disparate networks and ensure its workforce continued to be productive, it knew that it needed a technology that would be adaptable and flexible enough to withstand changes that would likely occur during the on-going integration.

Software-defined WAN (SD-WAN) was chosen as the technology to unify the networks and deliver infrastructure modifications to simplify transport and increase the overall efficiency. After consideration of multiple vendors, Dell chose VMware SD-WAN by VeloCloud.

The first course of action was to consolidate the total 500 locations globally down to 270 locations, which would then all be managed actively with SD-WAN. To determine the type of transport and number of edges that would be utilized in each location, administrators classified each site according to tiers

Tier 2 locations were branch offices with 50 - 2,000 people in each. These are considered small and would rely primarily on internet lines (one or two) for connectivity.

Tier 3 are much larger campus locations, with an average of 14,000 employees in each. These are considered Centers of Excellence and would require one MPLS connection and several internet lines.

Tier 4 are contact centers and/or data center locations. They are high-value, require high resiliency, and are critical to business. Dual MPLS and dual internet were required at each of these locations.

### Cost and Resource Savings

MPLS was the primary transport used throughout Dell offices. With each location requiring secure connectivity and all traffic required to backhaul to the data centers, costs were high and bandwidth was low. To increase bandwidth across the entire organization would increase costs significantly.

Following the deployment of SD-WAN across the organization, Dell no longer had to rely on MPLS as its only method of transport, instead shifting traffic to broadband links at a much lower investment. The use of broadband coupled with management by SD-WAN enabled Dell to increase its available bandwidth, reduce overall costs attributed to transport and number of carriers used, and eliminate the need to backhaul all traffic to the data center, gaining efficiencies and faster delivery and response times.

### Automated Policy Updates Across Entire Network

Whereas other network devices and solutions need to be manually configured using traditional CLI, SD-WAN utilizes an intuitive user interface that automates policy changes. VMware SD-WAN provides single pane of glass network visibility, management, and control through its VMware SD-WAN Orchestrator, centralizing the ability to automatically configure all connected VMware SD-WAN Edges.

### Native Firewall Capabilities Eliminates Need for Additional Security Appliances

Most traditional network topologies utilize firewalls to ensure the network and traffic traversing it is secure. Dell, however, quickly found that the need for dedicated firewalls from third parties was not required. The VMware SD-WAN solution delivers native firewall capabilities at the edge for branch offices, ensuring that all traffic is secure.

### Network Visibility Enables Proactive Management of Bandwidth and Users

Dell deploys VMware SD-WAN Gateways as part of its overall SD-WAN platform, managing all sites on its network and eliminating any latency that may occur. Using VMware SD-WAN Dynamic Multi-Path Optimization (DMPO), Dell no longer has to manage traffic routes on the network or troubleshoot sub-par connections. Additionally, VMware SD-WAN captures data on users and traffic patterns so that Dell IT administrators can analyze it to determine what type of transport and bandwidth is necessary based on the branch location.