



## Industry

Cloud Computing and Enterprise  
Networking

## Location

Palo Alto, California

## Goal

Move to a modern SD-WAN  
architecture to meet the demanding  
network management needs of a  
large enterprise—all while reducing  
operational costs.

## Key challenges

- Traditional landlines are expensive and cumbersome to manage.
- Multiprotocol label switching (MPLS) as a next step in the WAN evolution brought complicated management.
- Cloud services and applications require distributed and optimized connectivity.
- Large-scale deployments of various sites and network paths are challenging to configure and monitor.

# How VMware IT Transformed WAN with VMware SD-WAN

VMware IT implemented VMware SD-WAN™ to simplify network management and reduce operational costs

VMware IT supports a large-scale network that is highly distributed, connecting more than 39,000 employees. Apart from connecting to applications hosted on-premises in data centers and across sites, there needs to be connectivity to cloud-hosted apps as well.

The VMware IT division sought to transform the legacy WAN into a software-defined one that provides optimized connectivity, centralized management and reduced operational workload for staff.

## Why WANs require a new architecture

As a major enterprise, VMware has global offices that must be interconnected to deliver support for unified communications, disaster preparedness, and operational efficiencies. While state of the art when deployed, the traditional router-based wide area networks (WANs) and virtual private networks (VPNs) currently used as the connection backbone between offices (and headquarters) are prohibitively expensive relative to other operations due to the labor-intensive nature of updating configurations.

Software-defined WAN (SD-WAN)—an improved approach to traditional WAN—is the right solution to the challenge. Traditional WAN routers and their architectures were designed for another era, one where mass adoption of cloud applications, services, and similar resources was not an issue. VMware SD-WAN was designed specifically to operate in, and support the cloud, enabling VMware offices to easily meet unceasing end-user demands while offering unprecedented flexibility and connectivity.

## Solution

VMware SD-WAN:

- Enables optimized connectivity performance.
- Reduces cost outlays substantially, shifting the business from CapEx to OpEx.
- Enables remote office employees to share the same network as those in primary business offices.
- Allows for efficient connectivity of cloud services to the distributed workforce.

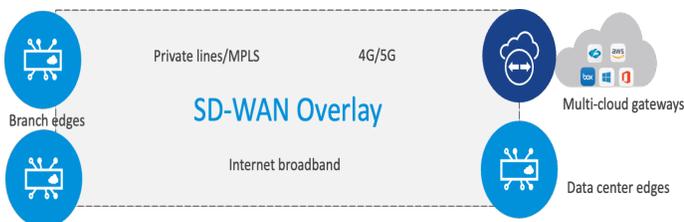


Figure 1. VMware SD-WAN architecture.

## Top three use cases

1. **SD-WAN Implementation for Data Center Branch Office Connectivity**—To reduce costs, legacy-based connectivity, such as leased lines and MPLS circuits were decommissioned and consolidated for more than 60 sites. Secure Internet connections were used as primary transport to eliminate single points of failure to the data center, allowing many branches to connect to data centers and also to other sites. This allowed for significant operational expenditures savings related to the MPLS and legacy networking hardware.
2. **Centralize and automate management of all sites**—Manually configuring and managing 65+ remote sites is not practical or scalable. Instead, with SD-WAN, the IT team can define and create network policies to configure many, or all, sites at a time. This single view of the WAN also helps with troubleshooting and provides intelligent insight into potential problems.
3. **Improve Internet connectivity performance to business critical apps for a distributed workforce**—VMware SD-WAN allows IT to create business policies to provide a fast on-ramp to business-critical applications (O365, Zoom, Horizon), increasing overall performance for end users with the proprietary VMware SD-WAN Dynamic Multipath Optimization (DMPO). The solution also permits IT team members to simplify overly complex QoS policies and resolve previous quality of service (QoS) router issues. This also allows for protected access to the internal VMware network, while maintaining performance and secure access requirements.

## Beneficial results

This SD-WAN approach solved challenges posed by the legacy architecture, resulting in the elimination of an MPLS single point of failure for multiple sites. Other improvements include:

- Legacy hardware consolidation resulting in 79 percent reduction in costs for applicable sites

- Shorter time to deployment and issue resolution regarding managing all 65 sites and adding sites on demand
- Use of advanced technologies to prevent outages and allow faster and improved application performance.
- Increased upload and download speeds by sharing capacity on backup links.

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