

VMware SD-WAN Enables Modern Digital Government

vmware®

SD-WAN™

Key benefits

- Modernize critical infrastructure for government and enable a comprehensive, integrated, efficient, automated, and flexible solution for greater user security and resiliency.
- Digitally transform your government agency and improve communications and collaboration, share mission-critical information across organizations, and deliver efficient citizen-centric services.
- Deliver comprehensive cybersecurity and compliance to secure government and proprietary information and prevent attacks through proactive zero-trust policy enforcement.

The government market is becoming increasingly competitive, providing agencies with choices. In a time of tight budgetary resources, the focus is on increasing operational efficiencies and institutional resilience through accelerating digital transformation. Most government agencies are experiencing a large growth in digital innovations, such as cloud-based applications and the Internet of Things (IoT), that are overwhelming their respective networks.

Almost all federal, state, and local government agencies are increasing their use of public cloud and adopting one or more public cloud Software-as-a-Service (SaaS) offerings. The number of software applications is also continually increasing, which adds demand to networks and bandwidth.

Government IT departments are challenged with the complexity of managing the performance of an increasing number of workloads and cloud-based applications, all while maintaining security. As public cloud adoption and the number of applications continues to grow, so do the number of security threats.

WAN architectures are changing and need to shift towards a cost-effective, application-aware, and operationally simple infrastructure. With the increasing use of public cloud and SaaS application offerings, customer applications are more distributed than ever across multiple geographic locations. This places even more challenges on WAN networks to deliver applications with service level guarantees and ensure an optimal user experience.

To address increased usage and improve performance, IT departments need a software-defined WAN (SD-WAN) solution that is built on automation and that simplifies management.

Delivering an application-aware and high-performance SD-WAN

VMware SD-WAN™ provides an application-aware solution that meets customers' defined application service level agreements (SLAs) while delivering the best user experience and ensuring user productivity. VMware SD-WAN provides customers the flexible choice to use the most optimal and available transport (i.e., MPLS, broadband Internet, 4G/LTE, 5G).

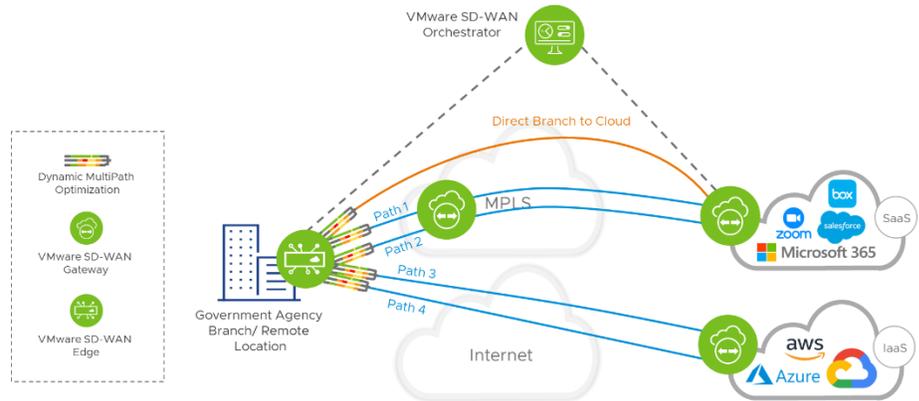


Figure 1: WAN transport flexibility

Unique to the VMware SD-WAN solution is the built-in Dynamic Multipath Optimization™ (DMPO) feature. DMPO provides real-time monitoring, link remediation, and packet steering over multiple WAN links connecting multiple sites together or different sites to VMware SD-WAN Gateways. Customers can set unique policies on a per-application basis, align them to specific SLAs associated with those applications, and transmit traffic on the most optimal paths based on real-time analysis.

In the example shown in Figure 1 above, a branch location has two WAN transport options (MPLS and Internet) to connect to different cloud services. Using the real-time analysis provided by DMPO, the government agency branch can choose the most appropriate path for the respective application (e.g., Microsoft 365, Zoom) using the VMware SD-WAN Edge. Based on the assigned/configured policy, the Edge steers the application over the path that will meet the application’s service levels.

In addition to application awareness, VMware SD-WAN can inject intelligence in the path selection based on applications according to their location, using “cloud on-ramp” intelligence, for both SaaS and IaaS applications.

Finally, as shown in Figure 1 above, the VMware SD-WAN Edge can establish a direct internet access (DIA) connection to route traffic directly and access applications hosted in the cloud such as SaaS apps. This bypasses the need to traverse the corporate WAN and regional data center, which adds delay and latency that affect quality of experience and limit user productivity.

SD-WAN and Trusted Internet Connections

Trusted Internet Connections (TIC) is a mandate from the U.S. Office of Management and Budget (OMB) to reduce the number of Internet gateways on the federal government network and ensure that all external connections are routed through a government agency that has been designated as an approved TIC Access Provider. As shown in Figure 2, as more customer applications are hosted in the cloud and more services are consumed from the cloud in the form

of SaaS, all traffic destined for the public Internet and cloud must pass through a TIC location before it leaves the boundary of the federal agency.

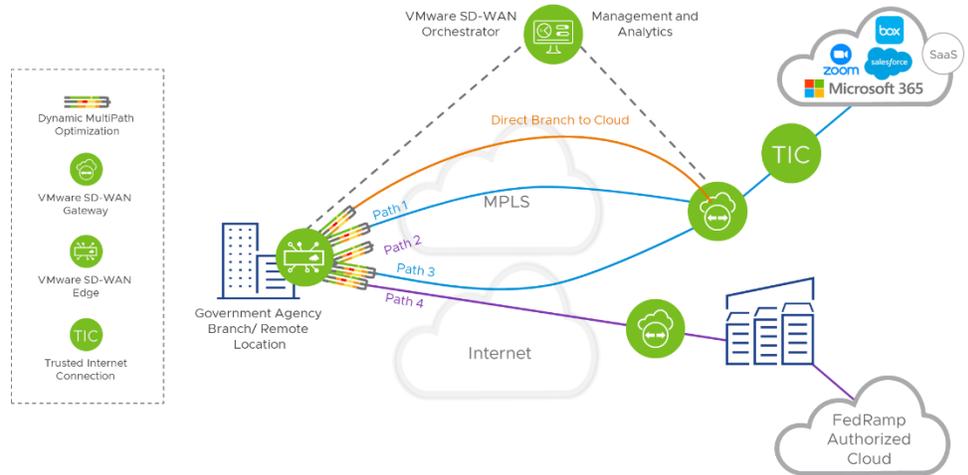


Figure 2: SD-WAN and Trusted Internet Connections

The VMware SD-WAN Edges and VMware SD-WAN Gateways ensure federal and government agencies can leverage multiple benefits of SD-WAN as their applications continue to shift to SaaS, assuring that SaaS applications hosted in the public cloud meet requirements for TIC transit. By using SD-WAN, federal agencies gain several benefits:

- Multiple WAN transport paths, including cost-effective Internet, to the regional data center.
- Intelligent application routing for cloud applications and SaaS ensuring the best most optimal connectivity is achieved for those applications. Federal customers can ensure quality of experience to improve overall end-user experience.
- Real-time application performance including the TIC locations and connectivity to the cloud.

Government use cases

VMware SD-WAN supports many federal, state, and local government use cases, including:

- **Virtual judicial services:** Delivering highly reliable and secure remote video and information-sharing solution for online judicial services
- **Secure automation of water treatment plants:** Securely automating and integrating water and wastewater systems to mitigate leakage, ensure water quality, enable proactive maintenance, and extend the life of assets

- **Online education and collaboration:** Connecting and enabling unified communications and video collaboration between educators, students, and administrative staff from any location using any device
- **Public health and virtual patient care:** Assisting public health organizations, clinicians, care teams, patients, and families to securely expand care access with telehealth, virtual triage, and mobile connectivity while enabling the safe transition to digital service delivery for human/social services.

VMware SD-WAN for agile government infrastructure

SD-WAN delivers the connectivity, security, and modern infrastructure that government agencies at all levels require. It enables a federally compliant multi-cloud environment that provides constituents and the workforce with modern digital services from any device.

With VMware SD-WAN, government can:

- Enable future infrastructure (mass-scale infrastructure, IoT, security, etc.) and the push toward powering an inclusive future for all
- Help agencies modernize application performance and security as they move to cloud first via integrated infrastructure solutions
- Seamlessly integrate workflows, data, and shared services for increased administrative productivity, operational excellence, and collaboration across organizations
- Implement comprehensive security against known and emerging threats, discovering new vulnerabilities and interdicting threats