

VMware SD-WAN for Zoom

Enhancing user experience at the speed of communication



Software Partner

HEALTHCARE USE CASES

- Telehealth consultations to connect physicians, patients, and specialists for regular or urgent care
- Telesurgery to conduct live surgeries, seek medical expertise, and train surgeons
- Connecting pathology labs and surgical suites to enable surgeons to converse real time with pathologists
- Hospital administrators and staff interaction from remote sites

EDUCATION USE CASES

- Synchronous online classes
- Student-to-teacher office hours
- Group projects
- Faculty workgroups and staff meetings

FINANCE USE CASES

- Consumer digitization and personalization
- Collaboration with partners and external advisors
- Executive updates and investor meetings

GOVERNMENT USE CASES

- Collaboration across agencies
- Community outreach and education

Cloud-based communication and collaboration solutions have become the key components driving productivity in organizations of any shape or size by connecting their remote and distributed workforce and customer base. Healthcare and educational institutions are two of the major verticals to fully embrace the benefits of cloud delivered communications for connecting professionals to their patients and students, respectively, without using cost-prohibitive and fixed private lines. Zoom Video Communications, a leading provider of modern enterprise communications, offers a platform to serve such organizations as they strive to enrich healthcare, learning, customer engagement, and professional development through real time communications. Zoom provides an easy, reliable, and innovative video-first unified communications platform for video meetings, voice, webinars, chat and collaboration tools such as screen sharing, co-annotation, and remote control. These services are delivered on a single, unified platform to deliver a consistent user-experience across all devices and use cases.

Cloud application providers such as Zoom generally optimize the localization and delivery of their services for desired performance by distributing service tenants scaled out across locations worldwide. However, the application performance and quality of user experience predominantly depends on the efficiency of the network connecting users to these cloud-based applications. The Internet, which is often the medium of choice for these self-service applications, comes with its own set of challenges as compared to the legacy wide area network (WAN) infrastructure.

On one hand, Internet broadband offers agility, accessibility, and cost effectiveness; on the other hand, it introduces more events of packet loss, jitter, and latency when compared to traditional architectures. The result is slow uploads/downloads or missing frames in real time voice and video calls, along with a poor user experience. These effects can become tangible with latency-sensitive, real time applications. In addition, multiple applications vying for access and bandwidth across the same network can further degrade the performance and experience for mission-critical applications.

VMware SD-WAN™ by VeloCloud® is a software-defined wide area network (SD-WAN) overlay for network operators and application owners who want to ensure high quality application performance and availability for their end users while lowering networking costs. It is a cloud delivered, transport-agnostic architecture supporting and optimizing any WAN link or combination of links. VMware SD-WAN includes a distributed network of Cloud VMware SD-WAN Gateways, a cloud-based VMware SD-WAN Orchestrator and a branch platform, the VMware SD-WAN Edge.

“VMware SD-WAN by VeloCloud helps our customers enjoy mission critical video optimized on any type of WAN link while working from the home or office. In heavy packet loss scenarios, VMware SD-WAN provided an improvement, mitigating up to 20% packet loss that might occur over the last mile and doubled the overall received video quality up to 720p HD.”

PAT JENSEN
DISTINGUISHED ARCHITECT, ZOOM

Optimizing connectivity for Zoom

VMware SD-WAN employs a two-pronged approach to deliver the best performance for latency sensitive Zoom traffic:

- Identification and prioritization of Zoom applications
- Optimized and secure on-ramp access to closest Zoom tenant location

VMware SD-WAN can identify each Zoom Meeting, Zoom Phone call, and Zoom Room or Conference Room Connector among the 3000+ different workloads egressing off of a user’s network, separate them from generic Internet traffic, and route these packets to the closest network of cloud gateways, which then hands them off to the best peering Zoom tenant location. It minimizes the distance/latency between the user and the application, delivering consistent quality of experience (QoE) without compromising the security of the payload.

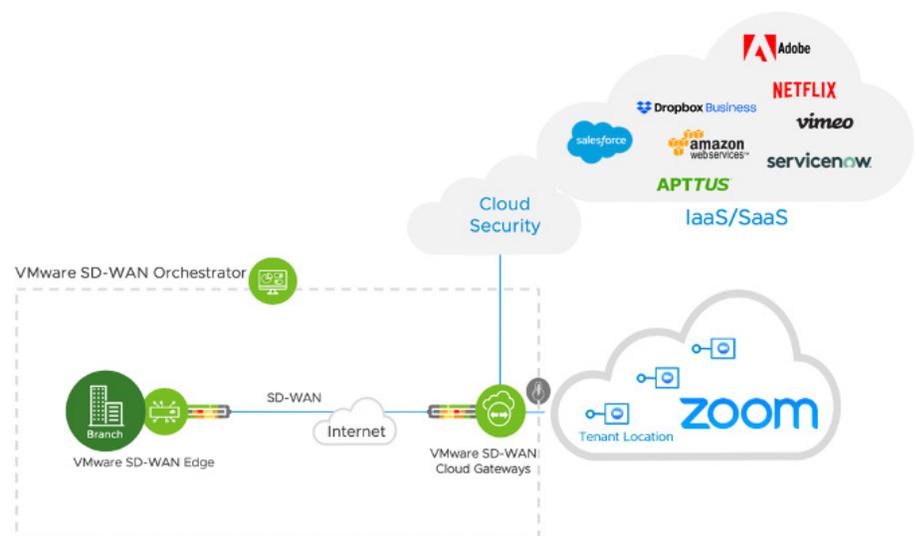


FIGURE 1: VMware SD-WAN for Zoom, the Video-first Unified Communications Platform

Each component of VMware SD-WAN works towards implementing the best overlay for real time Zoom voice and video traffic:

VMware SD-WAN Edge – Virtual or physical, they expand the WAN bandwidth by logically combining the WAN links to offer capacity that individual applications need. A VMware SD-WAN Edge automatically joins the SD-WAN fabric once powered on and connected to the Internet. These edge devices differentiate traffic (inbound and outbound) and apply customizable business policy to prioritize Zoom’s real time voice and video traffic, providing the desired bandwidth. The VMware SD-WAN Edge devices and the VMware SD-WAN Gateways communicate with each other to deliver optimization between them. These devices are auto configured so they’re quick and easy to install.

VMware SD-WAN Orchestrator – Cloud-hosted or on-premises, it pushes the business policies on the VMware SD-WAN Edges as soon as they connect to the fabric and seamlessly updates the application recognition engine on thousands of VMware SD-WAN Edges with a single click. The VMware SD-WAN Orchestrator is a secure and scalable web-based central management tool that provides simplified configuration, provisioning, monitoring, fault management, logging, and reporting. The VMware SD-WAN Orchestrator also offers a single pane of glass for real time insights into network and application performance.

With VMware SD-WAN deployed, 85% loss mitigation and better resolution achieved for Zoom Video Communications even with 20% WAN loss.¹

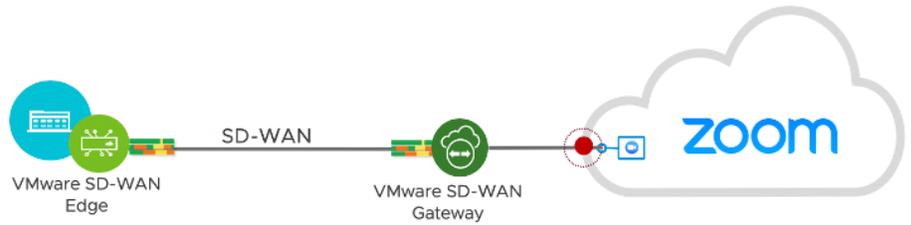


FIGURE 2: Delivering closest connectivity to Zoom

ABOUT ZOOM VIDEO COMMUNICATIONS

Zoom Video Communications, Inc. (NASDAQ: ZM) brings teams together to get more done in a frictionless video environment. The easy, reliable, and innovative video-first unified communications platform provides video meetings, voice, webinars, and chat across desktops, phones, mobile devices, and conference room systems. Zoom helps enterprises create elevated experiences with leading business app integrations and developer tools to create customized workflows. Founded in 2011, Zoom is headquartered in San Jose, California, with offices around the world. For more information, visit www.zoom.us

ABOUT VELOCLOUD, NOW PART OF VMWARE

VeloCloud, now part of VMware simplifies branch WAN networking by automating deployment and improving performance over private, broadband Internet and LTE links for today’s increasingly distributed enterprises. VMware SD-WAN by VeloCloud includes: a choice of public, private or hybrid cloud network for enterprise-grade connection to cloud and enterprise applications; branch office enterprise appliances and optional data center appliances; software-defined control and automation; and virtual services delivery. For more information, visit www.velocloud.com

VMware SD-WAN Gateways – Unique to the VMware SD-WAN cloud infrastructure are the strategically deployed and highly available VMware SD-WAN Gateways that steer traffic on a per packet basis to the optimal path with underlying WAN links. These on-ramp cloud devices offer the added benefit of VMware Dynamic Multipath Optimization™ (DMPO) technology for real-time monitoring, dynamic steering of traffic, and link remediation on the underlying single or multiple public WAN connections without adding inefficiency of the network hairpin effect. For Zoom traffic, these horizontally scalable gateways are peered to the closest Zoom tenant locations for handoff. VMware SD-WAN improves the resolution of a Zoom call, while mitigating underlying WAN loss for the highest quality user experience.



FIGURE 3: VMware SD-WAN: loss mitigation for better resolution for Zoom video communications¹

In the joint testing performed, VMware SD-WAN continued to provide a high-quality user experience by remediating loss significantly and delivering 720p HD video with a steady bit rate to the client machine. The client without SD-WAN couldn’t cope with the packet loss and had to drop its resolution to 360p video with unstable bit rate, leading to a degraded user experience. By leveraging the VMware SD-WAN cloud ready architecture and DMPO technology, customers can continue to experience HD quality Zoom sessions even on degraded WAN links.

VMware SD-WAN simplifies WAN deployment with a cloud delivery model for easy deployment and management. Delivered as a service for a subscription with the main components hosted by VMware in the cloud, VMware SD-WAN was designed as a transport independent overlay that can work across any combination of circuits used to connect your locations to applications.

For more information about VMware SD-WAN, visit www.velocloud.com.

1. The results are from joint testing performed by VMware and Zoom teams.