



Google Cloud VMware Engine with VMware VeloCloud SD-WAN

Accelerate workload migration

Slow networks affect cloud migration

Organizations are embracing the new reality of a distributed enterprise that extends from branch or campus to the home office. However, many remote employees rely on best-effort broadband connectivity to access applications, and productivity suffers when users can't reach their applications. The underlying network issues can not only impair user experience but can also slow enterprises' transformation to cloud apps.

Google Cloud VMware Engine helps customers migrate VMware workloads to Google Cloud. Enterprises can run native VMware software-defined data center (SDDC) environments that include VMware vSphere, VMware vCenter, VMware vSAN, VMware NSX-T, and VMware HCX without refactoring their applications. Google's high-performance infrastructure helps meet the needs of enterprise workloads. To achieve this, enterprises need a robust network to connect users with workloads in Google Cloud VMware Engine and legacy applications in the data center.

VMware VeloCloud SD-WAN with Google enables better cloud networking

VMware VeloCloud SD-WAN™ delivers secure, reliable, efficient, and agile access to users when they connect to Google Cloud VMware Engine. This helps enterprise IT accelerate migration of workloads from data center to cloud and offer a seamless experience to users no matter their location. The solution offers multiple choices when connecting end users and data centers to the cloud destination.

Google Cloud VMware Engine is built on Google Cloud's highly performant, scalable infrastructure with fully redundant and dedicated 100 Gbps networking, providing 99.99% availability to meet the needs of your most demanding enterprise workloads. Native virtual private cloud (VPC) networking gives customers private Layer 3 access between VMware environments and other Google Cloud services, allowing the use of standard access mechanisms such as Cloud VPN or Interconnect.

VeloCloud SD-WAN delivers operational simplicity and dynamic remediation capabilities when the network suffers from packet loss, latency, and jitter. The solution prioritizes real-time voice, video, VDI, and IoT application traffic, providing a rich user experience. VeloCloud SD-WAN provides connectivity to the nearest point of presence to the Google Cloud VMware Engine by leveraging Google Virtual Private Cloud (VPC). The goal is to provide low-latency optimal paths between end users and cloud instances, avoiding unwarranted traffic hairpinning.

Keep the tools you already use

Billing, identity, and access control are integrated to unify the experience with other Google Cloud services. Customers can continue to leverage IT management tools and third-party services consistent with their on-premises environment. Google is partnering closely with leading storage, backup, and disaster recovery providers such as NetApp, Actifio, Veeam, Zerto, Cohesity, and Dell Technologies to ensure support for third-party solutions, ease the migration journey, and enable business continuity.

Google VPC and Google Cloud VMware Engine

Enterprises can use Google Virtual Private Cloud to access their Google Cloud VMware Engine workloads. VeloCloud SD-WAN connects branch, campus and home office users on a low-latency optimal path to Google VPC. The solution builds an overlay of optimized tunnels to connect users to Google Cloud by simplifying operations of these tunnels, ensuring that business-critical applications get the right treatment no matter their location, and ensuring that traffic is on a low-latency path to applications in the cloud.

VMware VeloCloud SD-WAN solution components

Each component of VMware VeloCloud SD-WAN works towards implementing the best overlay for connectivity to Google Cloud:

- VMware VeloCloud SD-WAN Edge automatically joins the SD-WAN fabric once powered on and connected to the Internet. These devices are auto configured so they're quick and easy to install. The VMware VeloCloud SD-WAN Edge devices differentiate traffic (inbound and outbound) and apply customizable business policy to prioritize voice, video, VDI, and IoT applications, providing the right treatment to applications to remediate packet loss, latency, and jitter. The Edge devices and the VMware VeloCloud SD-WAN Gateways communicate with each other to deliver optimized connectivity to Google Cloud. The Edge expands WAN bandwidth at sites that have multiple WAN links by logically combining links to offer capacity that individual applications need.
- VMware Edge Cloud Orchestrator™ is a cloud-hosted or on-premises, secure and scalable web-based central management tool that provides simplified configuration, provisioning, monitoring, fault management, logging, and

reporting. The Orchestrator pushes business policies to the network Edges as soon as they connect to the fabric and seamlessly updates these policies to thousands of VeloCloud SD-WAN Edges with a single click. The Orchestrator also offers a single pane of glass for real-time insights into network and application performance.

- Unique to the VeloCloud SD-WAN cloud infrastructure, VMware edge points of presence (VMware Edge PoP™) are strategically deployed and highly available. They steer traffic on a per-packet basis over the optimal path utilizing the underlying WAN links. These onramp cloud devices offer the added benefit of Dynamic Multipath Optimization™ (DMPO) technology for real-time monitoring, dynamic traffic steering, and link remediation on the underlying single or multiple public WAN connections without inefficient network hairpinning.

DMPO tunnels are established between SD-WAN Edge devices at branch, campus and home office locations to VMware Edge PoPs, creating an overlay network that is easy to deploy and manage. The VeloCloud SD-WAN overlay network is built on transport-independent infrastructure which means enterprise customers don't have to rip and replace their WAN transport, whether it is MPLS, DSL, cable or LTE. The solution offers reliable, secure, and efficient delivery of traffic between users, Google Cloud and on-premises data centers.

Connecting the distributed work force to GCP

VeloCloud SD-WAN offers multiple options for enterprises connecting distributed workforces to workloads in Google Cloud VMware Engine. Each deployment option can benefit from the common advantages of simplifying configuration and operation of this solution. The option in Figure 1 helps enterprises take advantage of the network of VMware Edge PoPs that ensure the nearest point of entry for user traffic into Google Cloud. Enterprises can provision IPSec VPN tunnels from the VeloCloud SD-WAN Gateway to the cloud router with a few clicks in the VMware Edge Cloud Orchestrator. Leveraging VeloCloud SD-WAN Gateways, customers experience very low latency access to applications.

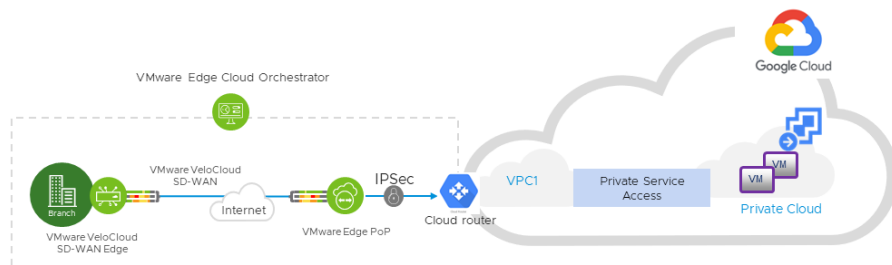


Figure 1: Google Cloud connectivity setup in VMware Edge Cloud Orchestrator

Get started

- Test drive the VMware VeloCloud SD-WAN solution with a [hands-on lab](#).
- For more information about Google Cloud VMware Engine, visit cloud.google.com/vmware-engine.

Get to Google Cloud faster, from anywhere

This combined solution from VMware and Google enables organizations—across all industries and around the globe—to gain simple-to-deploy, secure, high-performance connectivity from branch office locations to Google Cloud as an overlay without having to redesign their networks. The simple deployment method allows customers to scale across thousands of branches easily and reach their goals of migrating to the Google Cloud VMware Engine.

VeloCloud SD-WAN breaks down barriers to workload migration resulting from poor user experience pegged to WAN conditions.

The cloud-hosted VMware Edge Cloud Orchestrator allows easy configuration to connect branches, remote locations, and data centers to Google Cloud VMware Engine. It performs business policy-based application prioritization for traffic while ensuring traffic to the cloud instance does not go through unwanted backhaul via the data center. Customers can also take advantage of the globally distributed network of VMware Edge PoPs.