Connect to Microsoft Azure over vWAN with VMware SD-WAN by VeloCloud

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Organizations need turnkey networking solutions that are easy to deploy, use, and manage, and that offer high availability and automatically scale to maximize the value of moving to the cloud. Through this collaboration, Microsoft and VMware offer large-scale branch connectivity in a simple, secure, and unified manner to Microsoft customers.

Overview

As the migration to the cloud continues, and organizations use more software-as-a-service (SaaS) and infrastructure-as-a-service (IaaS) offerings from Microsoft on the Azure cloud, they need reliable, scalable, secure, and optimized access from their branch office locations to their cloud-hosted applications and services.

Legacy connectivity solutions are complex, time consuming to deploy and manage, and often lack enterprise-grade performance and security. Limited wide area network (WAN) bandwidth, poor network quality, and the high cost of private links impact productivity at branch office locations.

To provide optimized connections over the WAN to resources on Azure, Microsoft offers Virtual WAN (vWAN) globally. By connecting to vWAN, traffic from branch office and remote locations can be connected to resources on Azure with intelligent routing over the private WAN to provide the best network performance.

VMware and Microsoft offer a joint solution that improves connectivity to vWAN from branch office and remote locations. VMware SD-WAN™ by VeloCloud® enables customers to build networks for optimized cloud access by creating a virtual cloud network architecture that connects all their locations to Azure.

Joint customers leverage Microsoft's global vWAN, which spans 171 countries and more than 8,000 ISP peerings, together with VMware SD-WAN to greatly simplify configuration and last-mile Internet connectivity, and ensure application availability and performance.

This solution overview examines the various VMware SD-WAN use cases for connecting to Azure vWAN.

Ensuring network performance

VMware SD-WAN aggregates all types of WAN connections—including Internet broadband, MPLS private lines, and wireless LTE—from branch offices and remote locations. It performs dynamic application-aware per-packet link steering and path conditioning to deliver enterprise-class network quality and performance for the most demanding applications.

vmware®

Cloud is about agility, availability and speed. It's about making sure the right resources are delivered just in time without fail to drive the best possible business outcomes. VMware SD-WAN, as part of a virtual cloud network architecture, connects and protects applications, data, and users wherever they are.

VMware SD-WAN enables enterprises to rapidly and cost-effectively leverage world-class SD-WAN capabilities when connecting to Microsoft Azure over vWAN, including traffic optimization, link remediation, security, and simplified operations. This ensures higher application performance and an improved user experience.

The VMware SD-WAN Orchestrator by VeloCloud provides a management and monitoring portal that greatly simplifies deployment efforts. Instead of traditional methods that require typing lines of CLI box by box, the VMware SD-WAN Orchestrator requires just a few mouse clicks on the user interface of its central console. This then distributes configurations to all VMware SD-WAN Edge by VeloCloud devices at branch offices and remote sites.
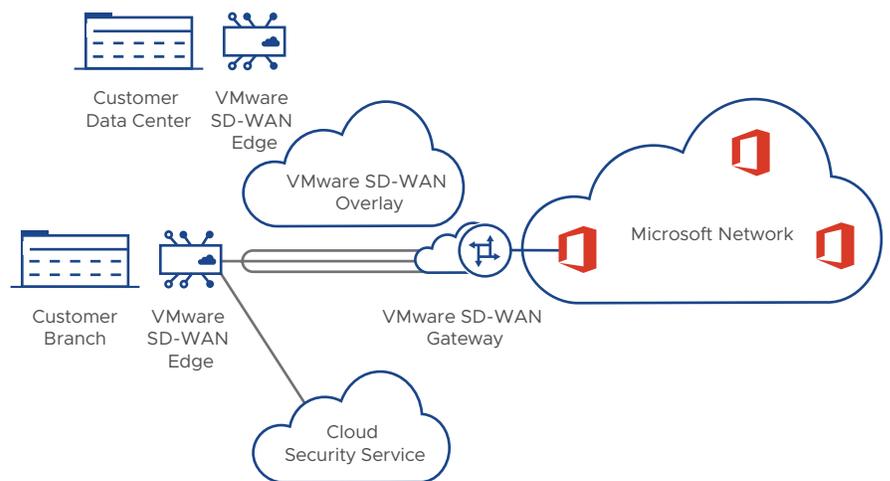

FIGURE 1: VMware SD-WAN Edge to Gateway to vWAN hub connecting to Office 365.

Extending VMware SD-WAN to Azure

Microsoft's vWAN service provides connectivity to cloud-hosted applications and services on Microsoft Azure.

Using vWAN, organizations can connect networking devices in their remote locations to communicate with resources on Azure over high-performance links on the Microsoft global private network.

Microsoft's vWAN accelerates content and application delivery though optimized routes within the Azure cloud, improving application performance and user experience.

Connectivity to vWAN over the last mile can be enhanced by using VMware SD-WAN to provide better control over and visibility into network connections and link remediation. This ensures reliable, high-performing access.

VMware SD-WAN Gateways by VeloCloud are deployed at interconnect points around the world to provide scalability, redundancy, and flexibility in traffic steering. VMware SD-WAN Gateways optimize connections to Azure from branch locations and enable delivery of services from the cloud.

VMware SD-WAN has been integrated with Microsoft vWAN to provide a choice of connection options to fit the requirements of organizations as they move to SaaS and IaaS offerings on the Azure cloud.

Through this combined solution with Microsoft, IT organizations can automate connectivity into Microsoft cloud environments as new branches get added through VMware SD-WAN—without having to go through manual complex routing. This fundamentally changes the economics and operating model for building global, highly available, and distributed networks.

Offering a simple design with a choice of deployment options

With the integration of VMware SD-WAN and Azure vWAN, organizations get a number of simple-to-deploy options that don't require changes to their networks. Customers benefit from the simplified network design and from reduced complexity by using custom configuration templates for their branch office devices.
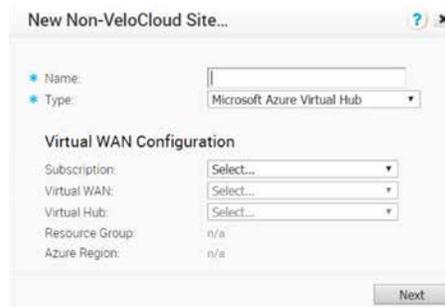

FIGURE 2: Creating a connection to a vNet hub via the VMware SD-WAN Orchestrator GUI.

Key benefits:

• VMware SD-WAN delivers last-mile secure, optimized, and reliable connectivity to vWAN from branch office locations.

• Customers with workloads in Azure get simple-to-deploy, automated, high-performance connectivity from their remote locations.

• Customers no longer have to redesign their network to access Azure workloads; they simply leverage the VMware SD-WAN overlay that automatically connects into Microsoft vWAN.

• Customers can choose from a selection of deployment options to connect to vWAN as they migrate to the Azure cloud:

 – Deploy a globally distributed network of VMware SD-WAN Gateways.

 – Deploy a VMware SD-WAN Edge virtual appliance on Azure.

 – Directly connect the branch to vWAN.

Enabling cloud migration with flexible deployment options

As customers plan their cloud strategy and migrate workloads to Azure, secure and reliable connectivity into Azure is necessary. VMware has partnered with Microsoft to optimize last-mile access to Azure.

Integration between VMware SD-WAN and Azure vWAN provides several deployment methods to support the immediate needs of today's enterprises. It also supports the ongoing evolution from legacy connectivity to a cloud-based data center model.

Organizations can connect directly to a vWAN hub, deploy VMware SD-WAN Edge virtual appliances on Azure, or deploy a globally distributed network of VMware SD-WAN Gateways.

Connecting via a VMware SD-WAN Gateway

VMware SD-WAN has a globally distributed network of managed gateways that interconnect with Microsoft vWAN. This network brings SD-WAN optimized branch office traffic to Azure over the Microsoft virtual network (vNet).

With this deployment method, traffic from a VMware SD-WAN Edge in a remote location is terminated on the VMware SD-WAN Gateway hosted in a network interconnect point, then routed to Microsoft vWAN and on to Azure.

The VMware SD-WAN Gateway provides optimized branch-office connectivity to the entire suite of Microsoft SaaS offerings, including Bing, Dynamics 365, Office 365, and Xbox on Azure.

Connecting via a VMware SD-WAN Edge virtual appliance

VMware SD-WAN Edge is available as a virtual appliance in the Azure Marketplace and can be automatically deployed to deliver connectivity to branch office locations globally.

Connecting to a VMware SD-WAN Edge on Azure from an edge in the branch office location is quick and simple, and provides a fully SD-WAN optimized connection over the Internet.

Using a virtual edge on Azure is ideal for terminating traffic directed to IaaS instances hosted on Azure. This provides high-performing, resilient connections to your virtual servers and hosted applications.

Connecting directly to a vNet hub

Connecting directly to a vNet hub using a VMware SD-WAN Edge appliance is the quickest way to get connected to Azure over vWAN. This method allows organizations to benefit from the ease of deployment and centralized management of VMware SD-WAN Edge appliances as their branch office link termination device.

Using direct connect, edge devices connect to the closest vNet hub over an IPsec tunnel. This deployment model offers a secure connection and a preferred path to Azure over vWAN, but it doesn't provide the SD-WAN optimization provided by the other connection methods.

Direct connect is suitable for locations that need to get connected to vWAN fast but won't be using SD-WAN optimization, or it can be a first step in the rollout of a full VMware SD-WAN implementation, especially if a router refresh is involved.

With direct connect, you get your connections up and running, use the edge appliance as a replacement for a more expensive and complex router, and then move to using the virtual edge on Azure. You can also move to using a VMware SD-WAN Gateway depending on your location's requirements, such as connecting to IaaS or SaaS on Azure.
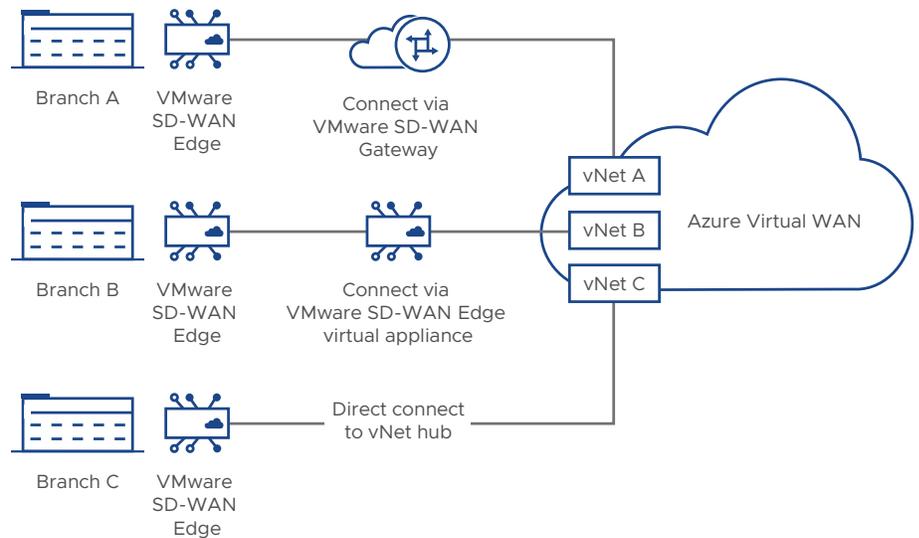

FIGURE 3: Flexible connection options.

Using VMware SD-WAN Orchestrators and Edges

For each of the deployment scenarios, orchestration, management, and monitoring are critical aspects. VMware SD-WAN Orchestrators provide users with simple configuration and management of their VMware SD-WAN Edge devices.

Summary

This combined solution from VMware and Microsoft enables organizations—across all industries and around the globe—to gain simple-to-deploy, secure, high-performance connectivity from branch office locations to Microsoft Azure without having to redesign their networks.

VMware SD-WAN enables enterprises to support the migration to Microsoft SaaS offerings, including Bing, Dynamics 365, Office 365, and Xbox, and to use IaaS infrastructure on Azure to host their own applications with high performance and reliability.

Organizations can automate connectivity through VMware SD-WAN to Microsoft Azure as new branches get added. They will benefit from custom configurations that reduce complexity and automate business policy and control to ensure the best user experience.

The cloud-hosted VMware SD-WAN Orchestrator allows for ease of configuration of the VMware SD-WAN Edge devices in branch locations to vWAN. It provides the capability to apply business policy-based application prioritization for traffic as well as the ability to directly break traffic out from the branch to Azure without backhauling through costly links through the enterprise data center.

No other SD-WAN vendor offers the range of flexibility and choice of connectivity options into Azure Virtual WAN. The simple, automated deployment methods allow customers to scale across thousands of branches easily and reach their goals of migrating to the Azure cloud.