

Citrix SD-WAN for Microsoft Azure

An automated approach
for reliable cloud
application delivery over
the WAN



The cloud on-ramp you've been waiting for

Many organizations want to migrate workloads to the cloud. But they struggle find a secure, application-aware solution that makes it easy to connect branches to the cloud while meeting performance needs and keeping costs under control.

To simplify your move to the cloud, we're collaborating with Microsoft to bring you a joint solution — Citrix SD-WAN for Microsoft Virtual WAN — to speed and automate network deployments of any size.

Microsoft Virtual WAN is a networking service that provides optimized and automated branch-to-branch connectivity through Azure. It allows you to easily connect office locations to Azure, even on a large scale. With the option to choose from 150 edge sites, or points of presence (PoP), serving 54 regions globally, latency to the cloud is minimized. When connected, your traffic will be sped up across Microsoft's private backbone network with intelligent routing for improved access to cloud resources across the world.

Traditional leased lines and MPLS can hold you back

As enterprises with geographically dispersed locations continue to migrate applications to the cloud, traditional WAN architectures using leased lines or MPLS are becoming less viable for traffic destined for the internet. Backhauling this traffic to data centers only exacerbates the latency issue. Existing technologies like MPLS VPNs are cumbersome, slow to implement, less flexible, and costly. IPSec from the branch to the cloud is a viable option, but that introduces configuration and management complexity.

Microsoft Azure ExpressRoute targets large enterprises connecting directly to Microsoft clouds, but it requires partnerships with telecommunications providers' networks to deliver MPLS. It lacks automated provisioning, and the cost makes it prohibitive in the branch.

A new approach

The Citrix SD-WAN for Microsoft Virtual WAN solution automates network deployments, removing the complexity of connecting branch offices (including retail outlets and warehouses) to local Azure PoPs. This is a shift from the traditional WAN provisioning definition, eliminating the dependency on the outdated telco model that strictly determines the location and premium cost.

This new model allows you to set up shop where you want, making a nomadic office possible with the LTE support on Citrix SD-WAN. The connection enables customers to enjoy optimized routing within Microsoft's global network, speeding up access to cloud resources across the globe. Cohesive policy configuration and deep analytics simplify network expansion and troubleshooting. For large-scale deployments, the available template-based cloning makes it easier to expand your network and enforce policies.

Available as a DIY solution or as a fully managed service by our partners, the joint solution also offers a new level of operational flexibility. Citrix SD-WAN uses Microsoft Azure Virtual WAN APIs to provide automation to speed and simplify network deployments of any size.

"Microsoft Azure and Citrix SD-WAN provide us with an environment that is scalable, dynamic, flexible, and resilient. This enables us to provide the care that we demand for our residents.

SD-WAN allows us to lower our MPLS cost, as we don't need as much high-speed bandwidth because traffic is automatically taking the best path. We can prioritize the high-grade traffic over the highest-grade circuit and put lower-grade traffic such as print on a lower-grade circuit. So, we don't have to pay for high-speed bandwidth we don't need and, in some places, may not be able to get."



Two ways to connect:

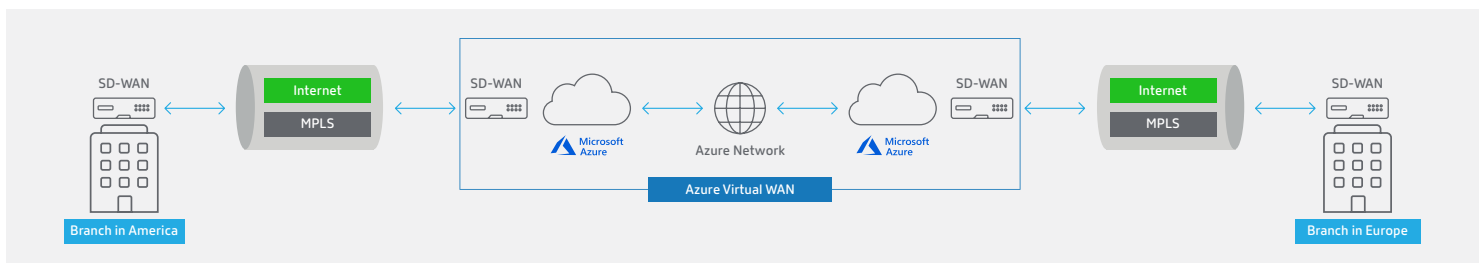
1. Standard based IPsec connection to Azure hub

In this scenario, there's no need to install anything in Azure. The Citrix SD-WAN appliance in the branch initiates standard-based IPsec tunnels, which will terminate at the head-end VPN gateway in Azure. Your virtual networks (VNETs) will be peered to other hubs and also to the inter-region Microsoft backbone. The Citrix SD-WAN management system (currently Citrix SD-WAN Center, soon to include Citrix SD-WAN Orchestrator) will use the Microsoft Virtual WAN API to indicate the branches in the network, understand which hub to connect to, and configure both ends of the tunnel endpoints for each branch. It also monitors the status of the connections and redirects traffic to alternate tunnels or hubs as needed.

2. Connecting a physical SD-WAN appliance in the branch to a virtual SD-WAN for Azure in your VNET, and peer it to the Azure hub

This “book-ended” scenario provides full SD-WAN benefits, including:

- The aggregation of multiple WAN links from the branch into a single logical path that responds quickly to changes and provides granular per-application QoS. This ensures that interactive applications, like real-time audio, perform well during a blackout or brownout on a particular WAN link. Link aggregation of all types of links (MPLS, DIA, LTE) results in higher capacity and an increase in overall performance.
- Packet duplication over two physical links ensures mission-critical and real-time traffic arrive at the endpoint, resulting in better application performance and user experience during brownouts.
- Support for the Citrix HDX protocol allows for prioritization and steering of each stream over a single port to achieve QoS objectives. A Quality of Experience (QoE) metric measures HDX sessions based on network conditions for visibility into the user experience.



Benefits of the joint solution:

Onboarding automation

Azure Virtual WAN API integration with Citrix SD-WAN Center reduces the time it takes to connect branches to Azure from hours to 15 minutes per site. Without this automation, a network administrator would need to manually connect each branch office into the Azure hubs — a time-consuming and tedious process that can drastically increase operational complexity and support costs. Citrix SD-WAN automates these functions:

- Identifying which branch connects to which Azure hub and automatic configuration of the tunnel endpoints

“The fact that Microsoft has chosen Citrix to provide an SD-WAN solution as the “on-ramp to Azure” comes as no surprise to us. The technology can be deployed as a complete SD-WAN service stack that provides our customers with the best user experience. Of the many SD-WAN vendors out there, we aligned with Citrix because their SD-WAN is a true, built-from-the-ground-up SD-WAN, not a bolt-on to an existing product line.”

**Rik Roberts, Cloud Architect,
Inde Technology Ltd.**



- Monitoring the connections and automatically steering the traffic to alternate tunnels/links depending on the link quality and the application requirements
- Express policies on branch-hub connectivity (available to/used by Citrix SD-WAN Center through Azure APIs)
- Scaling these operations for the entire fleet of branches
- Monitoring the state of the connections and inter-hub backbone connectivity

Template-based cloning

Simplify large-scale network expansions and save weeks of time on setup.

Enhanced brownout detection, seamless failover, and network resiliency

A virtual SD-WAN instance on Azure sends latency-sensitive applications, like software for video conferencing or online meetings, over the best path and prioritizes it over less-critical application traffic.

Support for the Citrix HDX protocol allows for prioritization and steering of each stream over a single port to achieve Quality-of-Service (QoS) objectives and a Quality-of-Experience metric measures HDX sessions based on network conditions for visibility into the user experience.

For more information or to get started today, visit:

Citrix.com/global-partners/microsoft/sd-wan-for-azure-virtual-wan



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