



SD-WAN: Coming Soon to US Signal!

SD-WAN will soon be part of US Signal's service portfolio. But what's SD-WAN, why is it important and what can it do for you? Here's what you need to know.



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What is SD-WAN?



SD-WAN is short for “software-defined wide area network.”

It’s a type of networking technology for managing and optimizing the performance of wide area networks (WANs).

Based on software instead of hardware, SD-WAN can be configured to handle different kinds of traffic and conditions in real-time. It leverages the benefits of the cloud, the bandwidth of broadband and existing wide-area network infrastructure to route all traffic — data, video, voice and more — between headquarters, data centers and branch and remote offices in the most efficient way.

SD-WAN enables organizations to securely connect users, applications and data across multiple locations while providing improved performance, reliability and scalability. It also simplifies the management of WANs by providing centralized control and visibility over the entire network. Because it adapts quickly to changing situations, it offers better security and reliability than traditional WANs.

How SD-WAN Differs from WAN

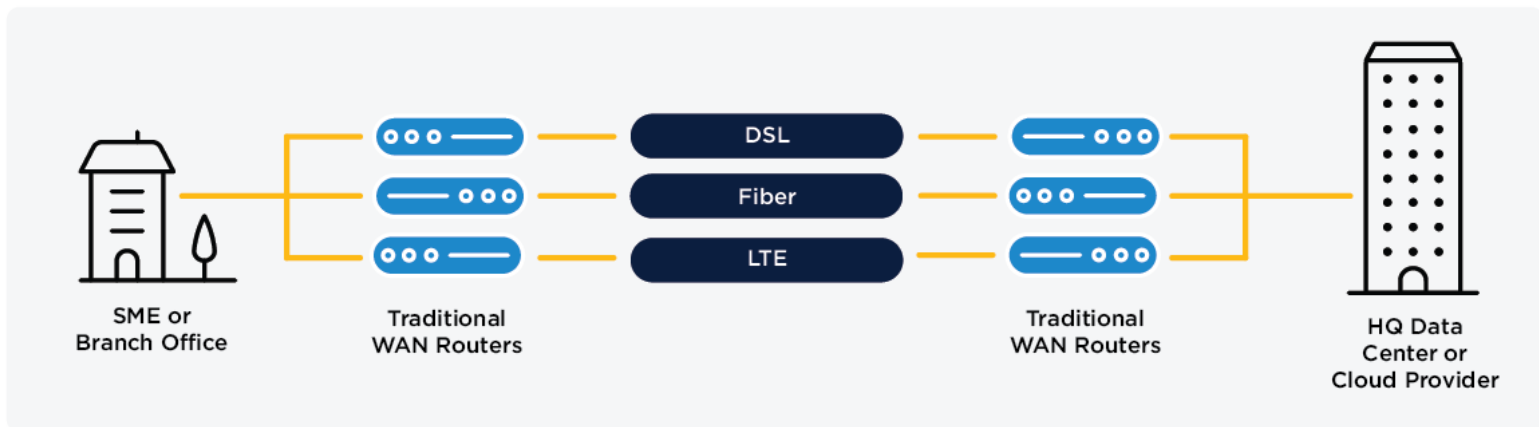
A traditional WAN is a network of physical routers that transmit data to and from devices within multiple local area networks (LANs) such as ethernet or Wi-Fi networks. It can use one of several protocols to transmit data, such as multiprotocol label switching (MPLS).

A WAN can include multiple LANs that are in the same office as well as different buildings miles apart. However, they're restricted to their region's telecommunications circuit and the service-level agreement (SLA) of an internet provider's transport service.

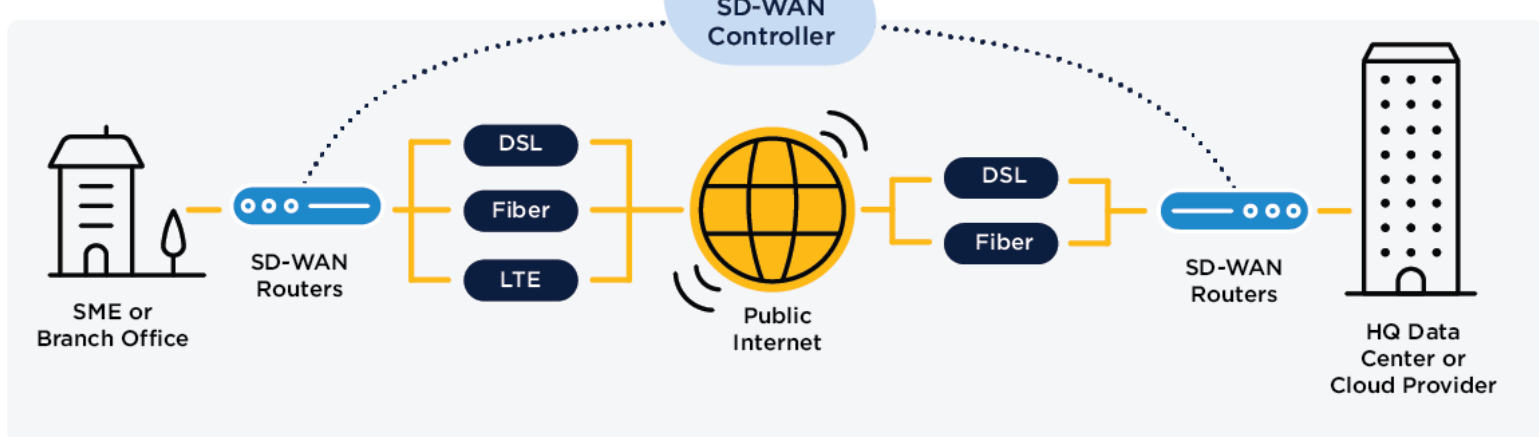
An SD-WAN extends beyond a WAN's physical limitations by serving as the software layer that lives on top of a series of router-based WANs. It allows all network traffic spanning various regions, infrastructure types, and transport services providers to be monitored, controlled, and optimized from a single application accessible to any authorized user from anywhere. Without an SD-WAN above a series of WAN networks, the control and configuration of each individual WAN is restricted to the hardware level.

TRADITIONAL WAN VERSUS SD-WAN

TRADITIONAL WAN



SD-WAN

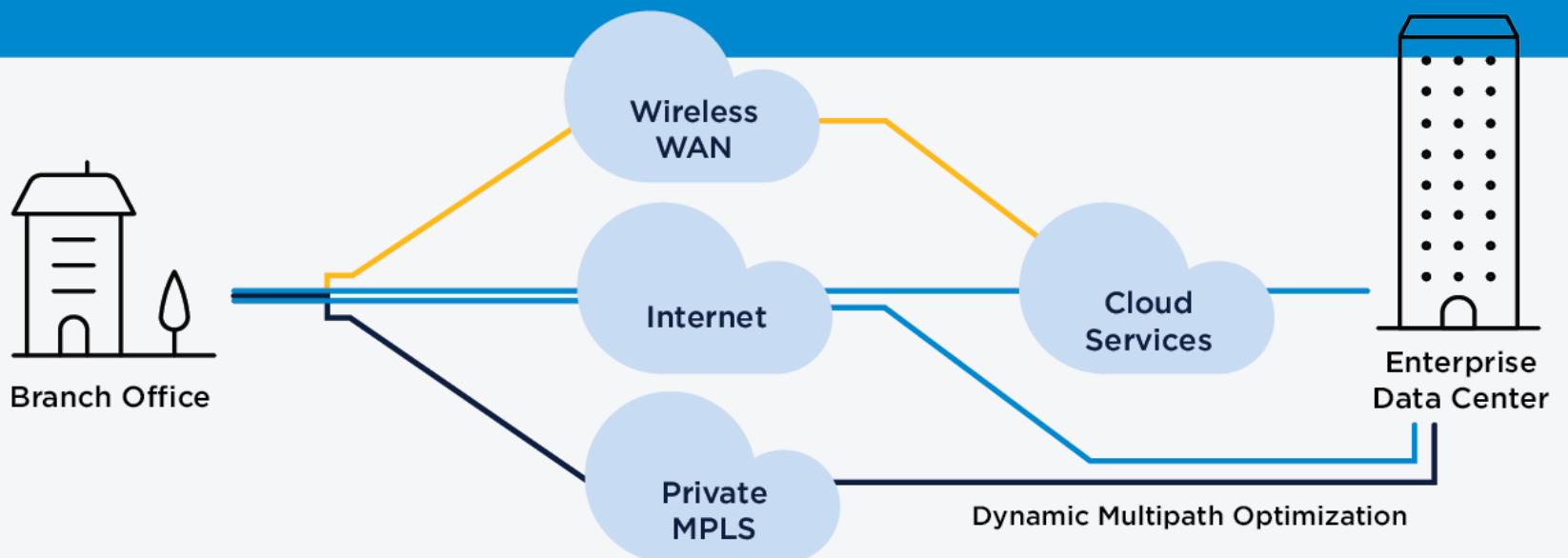


How Does SD-WAN Work?

The SD-WAN's architecture establishes a software-based controller that consolidates and centralizes each underlying WAN network's unique configuration settings. This enables data provisioning, network security protocols, and policy settings to be orchestrated to multiple WAN endpoints and edge devices at the same time.

The centralized software layer is formed by establishing encrypted tunnels, known as the overlay, between it and the WAN networks it manages using an SD-WAN device. Each WAN location is equipped with an SD-WAN device that serves as a communication hub between the physical WAN network and the SD-WAN software layer.

This device receives and enforces customized configuration and traffic policies from the centralized SD-WAN layer above it. SD-WAN devices enable the SD-WAN layer to operate beyond a WAN's physical boundary, and can be managed remotely.



SD-WAN offers a wide range of benefits. While some are based on the type of service and provider, they usually include:

Improved Reliability. SD-WAN helps ensure that all of your data stays connected regardless of internet connectivity or physical location. Your employees will always have access to their data regardless of what happens with their internet connection or cellular service.

+ Better Performance. SD-WAN intelligently steers traffic, ensuring application performance is maintained while continuously measuring WAN performance. This enables SD-WAN to remediate performance degradation by failing over to better-performing WAN links.

+ Simplified Operations. Each device is centrally managed, with routing based on application policies. Network administrators can create and update security rules in real time as network requirements change. Zero-touch provisioning also helps automate deployment and configuration processes.

+ Carrier-Independent. You can use multiple internet service providers (ISPs), depending on your location or the best price available. You can also choose which ISP you want to use in each location, so if one goes down or has problems connecting, your network won't be affected.

Why is SD-WAN Important?

+ Cost Savings. Less configuration is required than for traditional networks, so maintenance and support costs are lower. The need for overprovisioning is reduced. Unused capacity can be cut any time. Low priority data can be sent over cheaper public internet connections instead of expensive MPLS circuits.

+ Enhanced Connectivity. SD-WAN's dynamic routes adapt to changing network conditions in real time, so there's no lag between the source and destination when sending files over long distances. Efficient access to cloud-based resources without backhauling traffic facilitates better user experience.

+ Built-in Security. All SD-WAN solutions include some form of security functionality. Most include built-in security features that provide foundational network security, including Internet Protocol Security (IPsec) virtual private networks (VPN), stateful firewalls and threat detection and response.



Most SD-WAN options fall into one of three categories:

+ **Internet-based SD-WANs** use appliances at each company location, either behind routers or replacing them as the branch connection to the enterprise network and to the internet. Network traffic is forwarded over MPLS links or the internet, depending on performance considerations and policies.

+ **Managed service SD-WANs** entail paying a service provider to install and deliver connectivity, as well as any required appliances. It's typically deployed using some of the same hardware to support internet-based SD-WANs and relies on the public internet for access to cloud/SaaS applications.

+ **SD-WAN as-a-Service** uses a consumption model similar to cloud services. It combines the security and reliability of a private network with the flexibility, low cost, and quick deployment of the internet.



Types of SD-WAN

Stay Tuned!

US Signal's SD-WAN solution will be arriving soon. Armed with the foundational information provide in this eBook, you'll be better prepared to evaluate it and determine if it can benefit your organization.

For more information or assistance in evaluating your overall network or IT infrastructure needs, contact us.



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