THE COMPLETE FIELD GUIDE TO THE WAN

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OneConnect

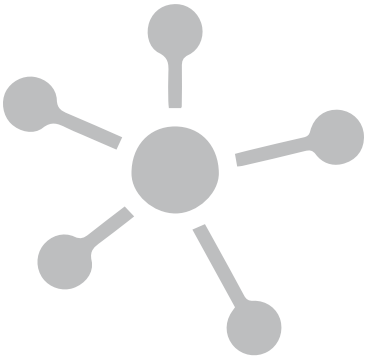
People interested in setting up a wide-area network (WAN) often have very specific reasons for wanting to do so. WANs are specialized technological tools that deliver distinct advantages to their users. Being specialized, however, also means that WANs are often poorly explained or incompletely understood. And considering that WANs set the stage for major technological developments, it's imperative that they're understood as comprehensively as possible. To assist on that front, here's a wide-ranging solution to help round out your awareness and knowledge of WAN technology.

WHAT IS A WAN?

A WAN, in simplest terms, is a wide-area network. Built upon internet protocol (IP) technology, WANs connect two or more physical locations and are geared toward providing a complete set of solutions for users. There are two distinct types of WANs.

P2P

A peer-to-peer (P2P) network is commonly geared toward short-range operations, generally when the businesses using the technology are within 28 miles of each other. This makes P2P WANs great for businesses in the same town or with locations in nearby rural areas. A P2P network doesn't utilize bandwidth sharing, which improves the connection strength and allows the network to run on machines with slower speeds.



VPN

A virtual private network (VPN), meanwhile, is geared toward wider geographic dispersal. A VPN is a lot like a regular internet connection, but with the advantage of heavy encryption. This can slow down

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speeds substantially, but it also protects the data in the transmission stage. That's good news for widely dispersed businesses that need to protect their information.

WHO USES A WAN?

Because there are multiple types of WANs, it's easy to say there are a wide variety of potential use cases for them.

Businesses with multiple locations

Countywide real estate offices, a retail shop with multiple locations in the same city, and even just a business with several buildings on a sprawling campus can all use WANs to stay connected and safely share data.

Businesses that need privacy

Whether it's a need, a want, or a mandated regulation, WANs provide extra privacy for users by transmitting data along secure and encrypted connections. This makes the data much harder to intercept and access.

Businesses that need connectivity, all the time

When it comes to uptime, many businesses require five-nines reliability—which translates to 99.999% of the time. This figure is commonly regarded as maximum uptime—and it can be achieved. Many WAN providers include guaranteed uptime as part of a service-level agreement (SLA).

Businesses that want greater speed

A WAN commonly runs on leased lines rather than via a broadband connection. This improves the speed of data transfer, as well as overall connectivity, which can dramatically increase efficiency.

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WHAT CAN A WAN BE USED FOR?

Companies interested in putting a WAN to work often discover such networks have many benefits, several of which might be unexpected.

Centralizing IT infrastructure

Some say you shouldn't put all of your eggs in one basket. Some say you should, because it's easier to watch that one basket. Those who have a WAN are putting their eggs in one basket, centralizing their infrastructure and precluding the need to buy servers for each location. This not only centralizes your IT infrastructure, but also simplifies it overall.

Making and receiving phone calls

For those who want to use voice over internet protocol (VoIP) services for calls, a WAN is a great way to bring such systems into play. With WANs, there's no longer a need for integrated services digital network (ISDN) circuits, which can be quite costly. Instead, much of this traffic can be routed over a WAN, which provides much the same effect.

Finding cost savings

Everyone wants to save money, especially if it can be done without diminishing quality of life. We've already seen a couple of ways businesses can save money by setting up WANs, but the benefits don't stop there. Simplifying and centralizing a network certainly translates to fewer hardware purchases, but it also means less time spent managing your network. Time saved is money earned, especially when network operators can focus their attention elsewhere.

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WHAT DO I NEED TO USE A WAN?

Despite the amount of value they offer to end users, WANs aren't all perks and benefits. A WAN needs several specific elements in order to run to its fullest.

Security measures

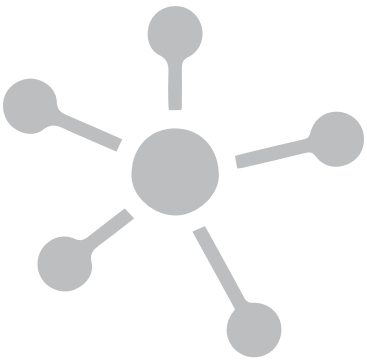
A WAN does improve security on some fronts, however, it also can also pose some security risks itself. Centralizing does facilitate monitoring, but it also makes WANs an easier target. Skilled hackers know where to attack a centralized network. Additionally, branch security is just as important, but protocols aren't always followed as closely as they should be. Most companies focus security on the data center, without knowing that an easily breached branch is a clear path to the data center. WAN use also requires improved security to achieve the maximum benefits.

Bandwidth

At the end of the day, a WAN is only as good as the strength of its connection. Without sufficient bandwidth, and bandwidth of sufficiently low latency, the network will become congested just as any other network would be. While a WAN can do the things we've discussed previously, if it tries to tackle them all at once without the proper bandwidth, it's not going to do any better than a conventional network that's overloaded.

Visibility

The primary reason to put all your eggs in one basket, as noted previously, is to be able to better watch that basket. Centralizing a network calls for clear visibility into overall network performance, and not just for security reasons. Being able to spot when a problem is about to happen



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means you'll have a better chance of fixing it before the end user even notices the issue. And, perhaps more important, before it results in conditions that impact an SLA and trigger remedies accordingly.

WHAT SHOULD BUSINESSES THAT USE A WAN CONSIDER?

Those who use a WAN also need to keep a few other points in mind.

Maintenance

Yes, a WAN needs care and feeding like any other vital system. This is especially true for a WAN that's connected to an overall system that runs constantly. The use of a backup system is strongly advised in order to prevent downtime, a very real threat to a centralized system.

Scalability

It's great to have a WAN that meets today's needs, but what about tomorrow's? Setting up a WAN that only meets today's needs is a sure path to failure as soon as technology changes. Accommodating scalability allows for the ability to change the system as your needs change. Not just up, either, but also down. Why run more a more powerful system than your current needs call for? And why pay for the excess? Being able to scale down can save money as much as scaling up allows the pursuit of new opportunities.

WHAT DO I NEED IF MY WAN IS WIDELY SPREAD OUT?

A WAN that's widely spread out has more specific needs than a WAN that connects machines that are relatively close together.

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VPN architecture

As mentioned previously, the VPN is the weapon of choice when it comes to a wide-ranging network. Yet it's often not the only choice.

SD-WAN

Those who want to get more out of a current WAN, particularly a VPN-based WAN, sometimes augment the system with specific software, which creates software-defined wide-area networking, or SD-WAN. With SD-WAN, many of the points we've already addressed become much easier to put in practice. SD-WAN systems allow for remote diagnostics—perfect for added visibility and centralization—and are suitable as a replacement for a VPN system.

Branch office equipment

It's easy to forget the hardware amidst all the software, but having the right equipment at the branch level is important. A geographically dispersed network may be more vulnerable to outside threats, so be sure to have the proper workstations and network equipment (e.g. routers, switches, etc.) to ensure your network is not only safe, but also running smoothly.

Access requirements

This is important for both local and remote users. Remember, the path from the branch office to the main data center is likely to be the clearest around, so protect your local- and remote-access to ensure the best in security. This is particularly true if you're accommodating remote access beyond the branch. Anyone working from a coffee shop or their home office will need remote-access credentials that are secure enough to protect the wider system.

Traffic utilization analysis systems

The most important part of a WAN is that it be ready to

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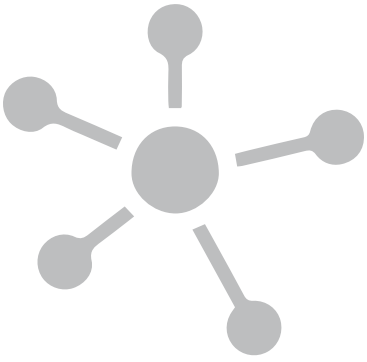
meet users' needs and provide vital visibility into overall performance with traffic-utilization analysis systems. With these in place, you'll be better able to determine if you need more bandwidth, or if you just need to make better use of what's currently available. You'll also be able to spot one potential source of problems and either eliminate it or modify it accordingly to meet the need.



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