



# SD-WAN 101: YOUR ULTIMATE GUIDE TO SD-WAN



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Increasingly, the world is online. It's awash in data from one end to the other, and so are we. Managing the flow of that data therefore becomes as vital as gathering the data in the first place. Whether you're gathering data for use in analytics projects, finding out what customers like and don't like, or incorporating data into customer relationship management (CRM) tools, there are a lot of end users who need that data—and plenty of customers who need that data secured.

Improving networking capabilities is part of the process of improving data flow, and for many, the software-defined wide area network (SD-WAN) is the place to start. In order to best use SD-WAN, however, it's important to know more about it.

## WHAT IS SD-WAN?

SD-WAN is essentially the same thing as a wide-area network (WAN), but with the critical addition of software-defined networking (SDN). SDN is often mentioned in the same breath as network functions virtualization (NFV) in that they work toward a similar end result—the automation and virtualization of the network—but use different goals to get there.

SDN takes a series of network objects like firewalls and switches and specifically deploys these using SDN controllers and other tools, ranging from open-source to commercially-available material to help drive automation. NFV, meanwhile, takes the various functions that the network would perform and, instead of relying on network components to carry them out, effectively subcontracts these functions to virtual operations.





So when SDN is introduced into a WAN, the end result is an SD-WAN, a wide-area network that uses software-defined networking to produce a greater whole.

## WHAT VALUE DOES SD-WAN HAVE IN A BUSINESS?

Like any other technological advantage in business, companies want to be sure there will be a return on investment before carrying it out.

### Reduced costs

Generally, using SD-WAN in operations allows for reduced costs, specifically in terms of operational expense (OPEX) and capital expense (CAPEX) for the WAN. On these points, return on investment can be both immediate and noticeable, which makes for a fairly easy justification of SD-WAN deployment. It's possible to lower WAN costs as much as 90 percent by either augmenting or outright replacing multiprotocol label switching (MPLS) that's already in place.

### Greater ease of use

Setting up a new branch, remote office or the like is much easier with SD-WAN operations, as it can be as simple as setting up an appliance.

### Better responsiveness

That aforementioned simplicity tends to save costs, both direct and opportunity. With the IT department less hung up establishing new branches, the business can pursue new opportunities. That makes the business more responsive to changing market conditions and more likely to survive in the long-term.







## WHO CAN BEST USE SD-WAN IN EVERYDAY NETWORK OPERATIONS?

If those benefits sound appealing, then you may be considering setting up SD-WAN in your own operation. SD-WAN, however, is not for everybody. There are some cases that are much more clear-cut than others in terms of the best places to put SD-WAN to use.

### Retailers

Since even small retailers often have multiple branches—whether in the same town, same county, or same state—retailers will find the ability to pass data rapidly between outlets, or back to a central hub, deeply useful. Retailers increasingly run on data, as customer data helps determine what goods are stocked, what hours are kept, and even which personnel work at which times of day. All that data needs to be not only gathered but processed, and SD-WAN helps improve that processing.

### Manufacturers

Manufacturing organizations are commonly spread out over large campuses, some taking up entire city blocks of acreage or more. They, like retailers, are also dependent on data, as raw materials are ordered and stored, finished goods are processed and sold, and the process repeats itself. The ability to move data rapidly and reliably from place to place, therefore, becomes vital, and SD-WAN delivers the ability to quickly connect and supply information where it's needed most.

### Healthcare

Healthcare operations are somewhat unique in that their handling of data is overseen by certain regulatory operations like the Health Insurance Portability and Accountability Act (HIPAA). Yet here, data must be





passed from point to point; doctors need to route records to specialists and hospitals, and those entities need to route back to doctors. Insurers also have a stake in the data filings. So a highly secure and effective data transfer system is needed, and SD-WAN can fill this step.

### **Financial services**

Financial services also fall prey to the demands of regulators—like the provisions of Sarbanes-Oxley, among others—and so must address the need for protection in data. Data needs to be transmitted back and forth, particularly among branch offices and central hubs, making SD-WAN a prime fit.

## **WHAT ARE SOME MISCONCEPTIONS TO CLEAR UP ABOUT SD-WAN?**

SD-WAN comes with certain myths attached to it that should be considered and overcome before planning a project involving it.

### **SD-WAN use automatically reduces costs**

While many SD-WAN deployments can help lower costs, there's a lot more to this picture. It's possible for businesses to roll out SD-WAN operations, but still keep MPLS going. For those who use both together in a hybrid environment, costs may not be saved, but new opportunities for growth can emerge.

### **SD-WAN means guaranteed quality of service (QoS)**

It's true, on a certain level, that SD-WAN can provide many useful tools to help keep things up and running. Means to measure packet loss, latency, network jitter, and the like are all part of the package. There's even a way to compensate for many of these common issues, and





knowing about them is the first step toward fixing them. While SD-WAN can select the best path available and use it accordingly, sometimes there isn't a path good enough to provide QoS according to terms.

### **SD-WANs complicate WAN operations**

This is actually just the opposite of reality. While networks in general are becoming increasingly complex, SD-WAN is eager to simplify the WAN, from its day-to-day management to its overall architecture. It would be easy to think that introducing an overlay network complicates network operations, but thanks to SD-WAN's improvements in network management, even the introduction of an overlay makes the whole network simpler to work with.

## **HOW DO I GET STARTED USING SD-WAN?**

Introducing SD-WAN into your operations may seem like a complex challenge. The pervasive myth that overlay networks are more complex to work with will be hard to break, and there will be those who doubt the overall cost-effectiveness of SD-WAN operations. With this information in hand, however, you may have all you need to break through the myths and illustrate the benefits SD-WAN can provide.

