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SD-WAN: As Simple or as Complex as Needed

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Biography

Duane Henigin is a Senior Systems Engineer at Silver Peak (<https://www.silver-peak.com>). Duane works on the North Central region team and is based out of Indiana. He has more than 25 years supporting and designing enterprise WANs.

Prior to joining Silver Peak, Duane was a lead systems engineer and security subject matter expert for CenturyLink.

Duane also served in the United States Air Force and worked as a contractor for multiple departments of defense agencies. He then switched to working as a systems engineer helping customers architect complex network solutions.

Growing up near Pittsburgh, PA Duane is a graduate of the Community College of the Air Force. He is also a current certified information systems security professional (CISSP).

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Abstract

More cost-effective and flexible than legacy router-centric multiprotocol label switching (MPLS) WANs, software-defined wide-area network (SD-WAN) offers superior responsiveness, enhanced application performance, more robust security, and improved visibility that gives greater reliability and consistency to enable organizations to advance their cloud and digital transformation initiatives. But despite all this, says the author of this article, too many organizations are still failing to take full advantage of the new generation of SD-WAN technology.

Introduction

For many enterprises today, it is likely that their wide area network (WAN) has grown in complexity over time, or the company has inherited a network with its own challenges. Indeed, mergers, acquisitions, consolidations, closures, new applications and new business needs make designing and managing an enterprise WAN a never ending and complicated task – a task that some say requires the ability to read minds and predict the future.

Add to that the reality that most businesses are constantly faced with finding a balance between dependability and performance with cost, and they have just scratched the surface of architecting and managing a modern enterprise WAN.



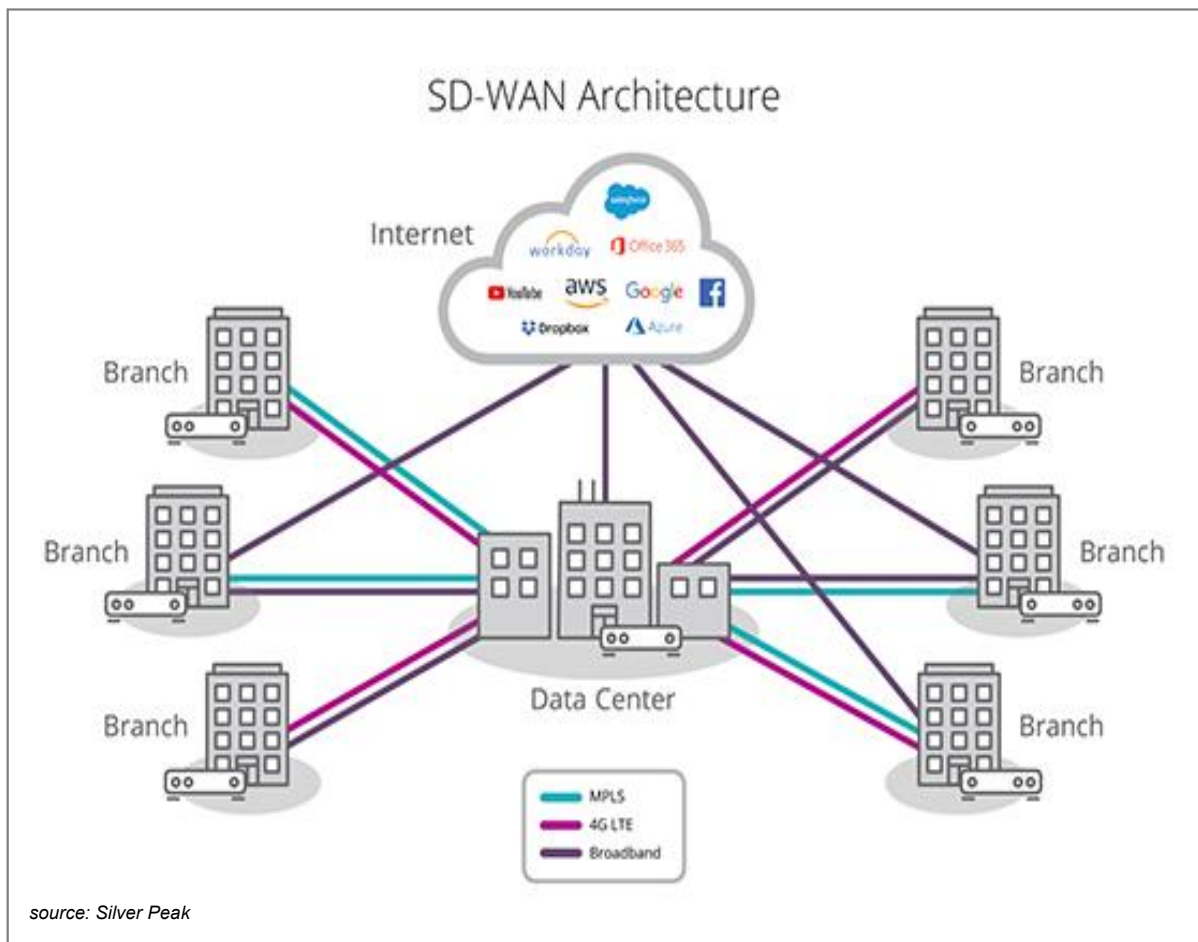
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Businesses must find a new way to look at their WAN architecture – one that focuses on the desired business outcome and not just how the ‘ones and zeros’ get from point A to point B. This often points to networking architecture, such as software-defined WAN (SD-WAN) technology.

However, when building an enterprise WAN, it is critical to keep it as simple as possible. In fact, there are a number of valid reasons for a network to grow in complexity without over engineering it from the start.

While SD-WAN may seem daunting, it can provide an enormous opportunity to build a modern network with a solid foundation that will grow with the changing needs of a business.

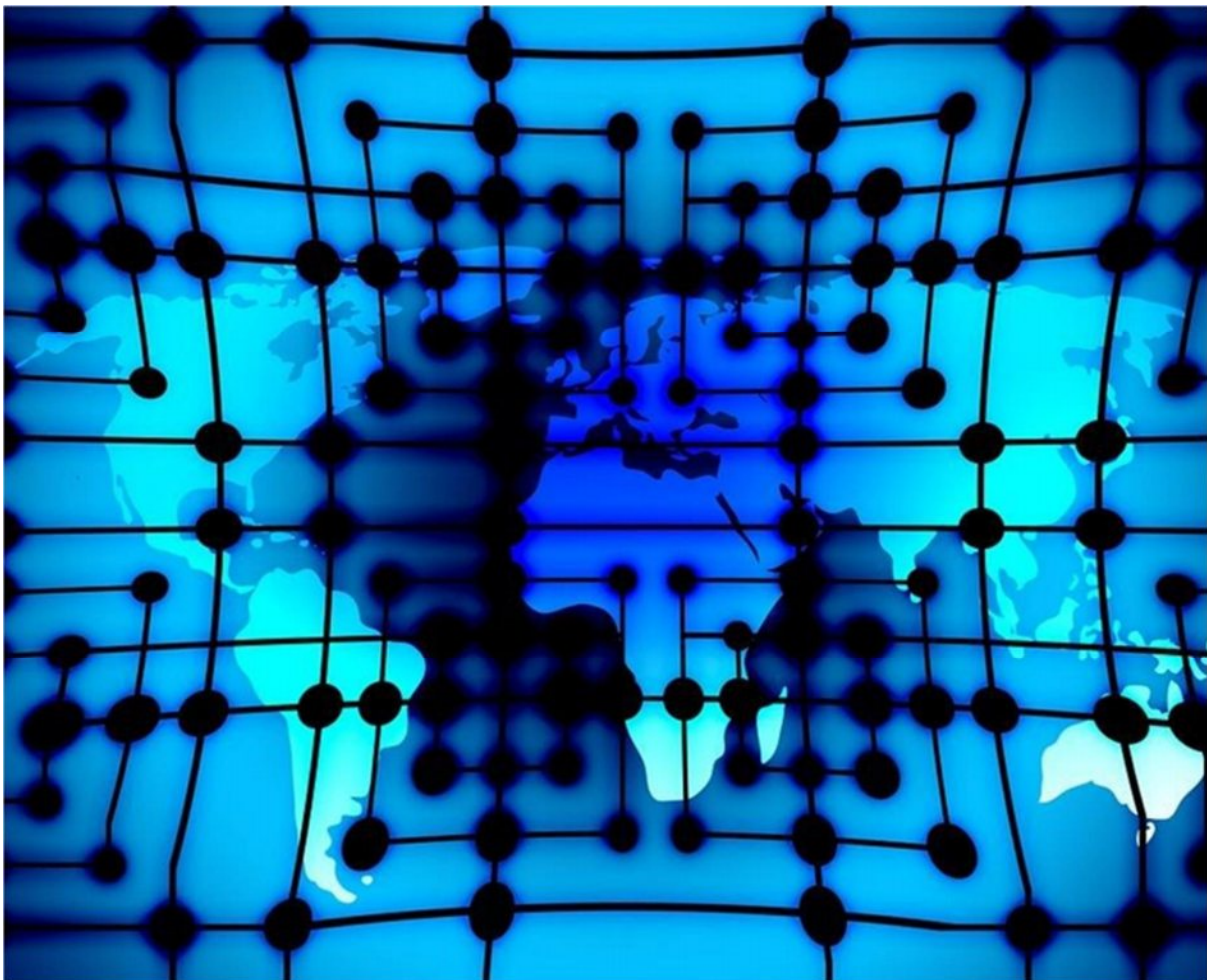
For a product to be both simple to deploy yet address complex requirements, businesses must choose a vendor that has both maturity and focus. However, as well as the vendor having a solid foundation in enterprise WANs, the technology itself needs to be ready to hit the ground running. It must be simple to configure and deploy, but also advanced enough to handle the complexity and scale of an enterprise network – and there are only a handful of solutions that are capable of this.





So, what should businesses look out for when it comes to SD-WAN?

An SD-WAN should have a solid foundation based on application acceleration and steering traffic over any combination of WAN transport reliably using virtual private networks (VPNs). In addition, with capabilities such as zero touch provisioning (ZTP) and zero touch configuration (ZTC), companies can deploy hundreds or thousands of sites or more in just a few days or weeks. This capability has been particularly critical during the COVID-19 pandemic, where companies have had to adapt to supporting the workforce as employees transitioned to working remotely.



Many enterprises will also need an SD-WAN that is capable of protecting their voice over internet protocol (VoIP) traffic. For example, a company might have two or three critical applications that have to be up at all times, they might need to prioritize certain traffic, as well as have the ability to securely segment traffic from the rest of the network. While some businesses believe that there is no way of doing this over the internet, once they start making VoIP phone calls across an SD-WAN fabric and start disconnecting circuits without negatively impacting the call in any way, they will realise that this is the reality of enterprise WANs today.



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While being able to protect VoIP traffic with multiple circuits has become a standard feature of most SD-WANs, it is important that businesses look at more advanced capabilities. It should be able to protect VoIP traffic, as well as protect all other application traffic without using up available bandwidth. As such, the SD-WAN technology must be customisable and be able to adapt as business and application requirements change.

In addition to this, it must also be able to address complex configurations, such as dynamic routing, load balancing and failover criteria, security segmentation, application prioritisation, local internet breakout, application performance and high availability.

In conclusion

To navigate the complexities of enterprise networks today, particularly amid the COVID-19 pandemic, it is important that their networking architecture provides them with freedom of choice. It should be up to the business to decide how simple or complex their SD-WAN deployment should be – they should be able to choose what best-of-breed wireless, switching, security and solutions they use. Here, interoperability is key.

In addition to this, businesses should also be able to choose to stay with local applications or hosted applications, as well as keep their data centres or migrate to the cloud. This will enable businesses to correct all those annoying little “snowflakes” that exist in their network that continue to make network engineers lives hard.

Whether they chose to keep multiprotocol label switching (MPLS), move to all internet, or even run both, an SD-WAN should provide businesses with the choice. While it can be as simple or as complex as needed, the journey to SD-WAN can be made simple.