SIGMA
A PIVOT COMPANY

SOFTWARE DEFINED WAN

Reducing WAN Cost and Complexity with SD-WAN

SIGMA'S UNIFIED PORTFOLIO OFFERING

Through our Unified Portfolio, we deliver solutions across the full lifecycle of our customer's technology investments.

SERVICE CHANNELS

- Integration
- Professional
- Deployment
- Workforce
- Managed

SOLUTION DISCIPLINES

- Workplace Experience
- Application Modernization
- Network Optimization
- Security Fortification
- Cloud & Datacenter Transformation
- Customer Experience

SERVICES VALUE STREAM

Assess → Design → Implement → Manage → Optimize

The rise of cloud-based applications, mobile devices and the Internet of Things has dramatically increased bandwidth demands across the enterprise WAN. The problem is particularly acute for organizations that backhaul Internet traffic from branch locations to the central data center over multiprotocol label switching (MPLS) connections. As the WAN becomes the primary conduit for a growing array of Internet-based services, the cost and complexity of MPLS is making the traditional WAN model unsustainable.

Sigma Solutions offers a software-defined WAN (SD-WAN) solution that helps organizations reduce or even eliminate their dependence on MPLS. SD-WAN uses a hybrid WAN architecture that combines broadband Internet with MPLS, LTE wireless and other connectivity options. A centralized, software-based controller provides the visibility and intelligence to automatically route WAN traffic over the most appropriate connection based upon predefined policies and application requirements.

By shifting as much traffic as possible to broadband Internet links, organizations can reduce WAN costs substantially. SD-WAN also simplifies management, increases performance and resilience, and provides the security needed to protect sensitive data. And because SD-WAN solutions incorporate WAN optimization and other services, organizations can often reduce the number of network appliances deployed at branch locations.

Sigma is uniquely qualified to deliver SD-WAN technology to customers. Our networking experts have evaluated various vendor offerings and identified solutions that deliver the ideal mix of cost and state-of-the-art features. We can help organizations develop a sound strategy for rearchitecting their WANs while minimizing risk and business disruption.

Sigma's best practices managed service delivery model is the basis of our IT operations as a Service offering available to manage customers' SD WAN.

KEY BUSINESS BENEFITS

SD-WAN delivers the agility and cost-efficiency organizations need to support today's business and IT requirements.

• **Reduced costs.** By transferring traffic from MPLS connections to broadband Internet links, SD-WAN helps cut telecommunication costs substantially while gaining additional bandwidth. SD-WAN also reduces equipment and administration expenses.

• **Simplified configuration.** Complex, manual configurations are automated through the SD-WAN application. IT defines and prioritizes various types of traffic using routing policies instead of constantly reconfiguring devices.

• **Enhanced performance.** SD-WAN solutions provide dynamic load balancing of WAN traffic over multiple links using application-centric policies. Because routing is based upon the current state of the network, SD-WAN can adapt to changing network conditions.

• **Improved reliability.** Rather than having a single active network and a backup connection, SD-WAN provides automatic failover across multiple active links. The hybrid network can incorporate terrestrial broadband, wireless and even satellite services for highly reliable connectivity.

• **Streamlined operations.** SD-WAN also provides network functions virtualization (NFV), which delivers network services via software. Rather than managing multiple appliances at each location to provide WAN functions, IT can centrally manage one device and deploy network services on demand.

WHY SD-WAN?

While broadband Internet delivers more cost-effective bandwidth than MPLS, it is not well-suited for mission-critical applications and sensitive data. The Internet is a "best effort" medium — data packets can be delayed, delivered out of order or even dropped, causing garbled voice calls, jerky video and other quality problems. In addition, broadband Internet links aren't as reliable as an MPLS connection, and the transmission of data across the Internet brings a high risk of security breach.

The hybrid WAN concept became popular several years ago as a means to offload some application traffic from MPLS to broadband Internet. However, the manual configurations required to differentiate and segment traffic are complex and time-consuming, and must be updated regularly as application profiles and business needs change. Furthermore, traditional WAN routers lack the application awareness needed to make routing decisions in real time.

SD-WAN overcomes these challenges by bringing the software-defined concept to the WAN. SD-WAN software abstracts the underlying networks to create one fat "pipe" in which all connections are active. Network administrators define policies based upon classes of traffic, application characteristics, security requirements and other parameters. The SD-WAN controller automatically enforces traffic policies, ensuring that mission-critical and latency-sensitive traffic is prioritized and bandwidth usage is optimized.

ENHANCED SECURITY

SD-WAN solutions enhance cybersecurity in several ways. SDWAN simplifies the implementation of site-to-site virtual private networks (VPNs), replacing complex configurations with templated "profiles" that can be easily replicated across multiple sites. SD-WAN VPNs provide enterpriseclass performance and availability, overcoming two of the key limitations of traditional VPNs.

Secondly, SD-WAN makes it possible to segment the WAN to control access to specific systems and isolate sensitive data. If a security breach occurs, this prevents the attacker from moving freely across the network, thereby containing the potential damage to the smallest possible area. Finally, SD-WAN helps IT teams find and mitigate threats more quickly by providing greater visibility into network traffic. Some SD-WAN solutions also include advanced threat detection and prevention features.

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