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TECH BRIEF: SECURE SD-WAN FROM SONICWALL

High-performance WANs using Low-Cost Internet Access with Enterprise-Grade Security

Abstract

Today's distributed enterprise organizations, regardless of size, need to ensure that their geographically-dispersed users have rapid, secure access to applications running in the cloud and the data center, with easy, centralized management of multiple locations and branch offices: all at an affordable cost, and without sacrificing application availability and performance. SonicWall offers an integrated solution that satisfies these often-conflicting requirements.

Introduction

Organizations everywhere need high-speed, reliable bandwidth for their voice, video, data and SaaS-based applications, as well as unified communications. One reason for the tremendous growth in bandwidth demand (according to industry analysts, averaging 20-25% per year) is the proliferation of mobile and IoT devices. We see this especially in branch offices, where the increasing number of devices, users and cloud-based applications is putting pressure on already-stretched wide area network (WAN) connectivity. Until now, ensuring reliable communications meant signing exorbitant carrier contracts for hard-to-manage WAN technologies like multiprotocol label switching (MPLS), putting IT staff on site and enduring long lead times to deploy hardware. All the while, bandwidth costs skyrocketed, and backhauled traffic introduced latency for cloud-based and mobile access.

Fortunately, today there's a better way to satisfy the demand for bandwidth while meeting the quality of service and security provided by MPLS, at a fraction of the cost and with full centralized manageability. It's called Software-Defined Networking in a Wide Area Network, or SD-WAN: companies can achieve high-performance WAN connectivity using low-cost Internet access, replacing expensive technologies like MPLS. The advantages of SD-WAN are many: lower costs, high application availability, greater agility and predictable application performance. This paper explores how SonicWall delivers the advantages of SD-WAN—lower TCO, enterprise security, performance, agility, stability and reliability—as well as enterprise-grade security, through capabilities built into SonicWall next-generation firewalls (NGFWs) and cloud-based Capture Security Center to orchestrate and manage branch office deployments.

SD-WAN Defined

SD-WAN is an implementation of software-defined networking over a Wide Area Network that dynamically orchestrates branch office configuration and connectivity. With SD-WAN, traditional branch routers are replaced with centrally-managed appliances that keep locations connected intelligently. Much of the traffic is dynamically routed over low-cost Internet transport technologies (broadband, cable, 3G/4G), based on network status/conditions, configured application policies and security rules. SD-WAN finds the best path dynamically for each application while retaining

central network connections, security and traditional levels of visibility and control.

SD-WAN has become a topic of interest to distributed enterprises around the world, and adoption has been rapid. As of July 2017, according to Gartner there were more than 6,000 paying customers with more than 4,000 production implementations in 100,000 branches across the US and EMEA. But security has become a sticking point. Most pure-play SD-WAN vendors offer basic security but cannot offer comprehensive protection across all layers of the OSI stack. And today, most Internet traffic is encrypted, so the SD-WAN solution must be able to do high-performance deep packet inspection (DPI) of TLS/SSL-encrypted traffic if it is to secure the network.

SonicWall Secure SD-WAN

SonicWall looks at SD-WAN as part of an overall technology for branch office connectivity, security, application performance predictability, visibility and analytics. SD-WAN capabilities are provided as part of the SonicWall NGFW, built into SonicOS firmware with centralized cloud-based Zero-Touch Deployment functionality and management. This integrated approach ensures consistent performance and availability of business-critical and SaaS applications, and comprehensive security across all layers without compromising performance. SonicWall Secure SD-WAN is easy and cost-effective to deploy and manage, providing centralized administration along with full application visibility. The SonicWall approach brings organizations the benefits of lower TCO, higher application performance, availability, and an important advantage over pure-play SD-WAN approaches: stronger enterprise security.

Advantage 1: Much Lower Total Cost of Ownership

SonicWall Secure SD-WAN brings down the total cost of ownership by reducing bandwidth, hardware and OpEx expenditures. In terms of bandwidth, with SonicWall organizations can replace high-priced MPLS (20-30x more expensive than Internet) connections with cost-effective Internet and broadband connections such as DSL, cable and 3G/4G. They avoid the long lead times and expensive contracts associated with MPLS, achieving the same performance at a fraction of the outlay.
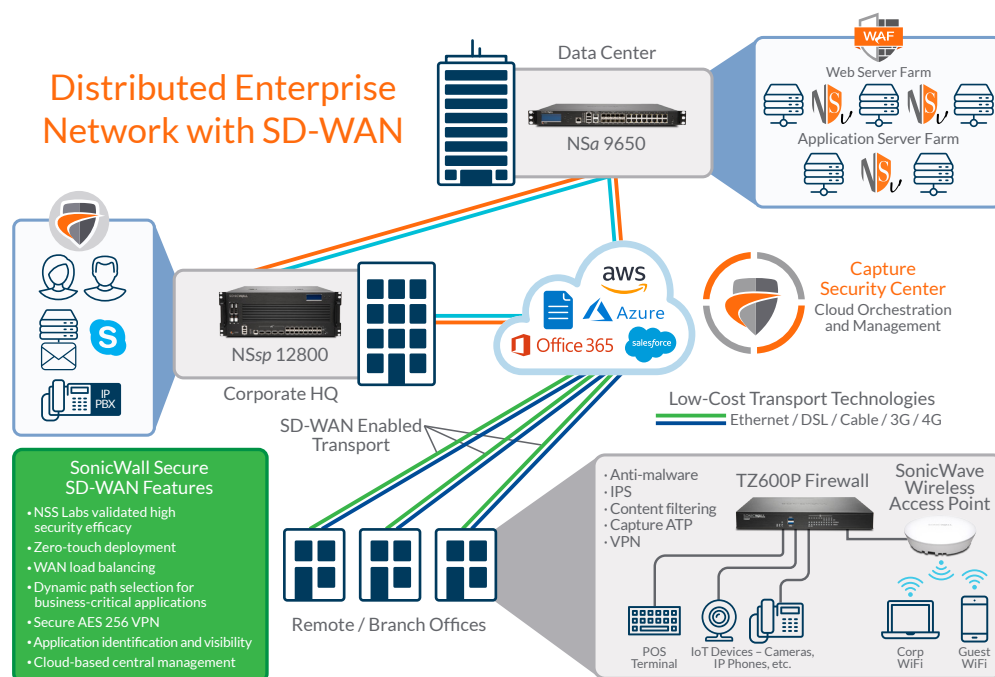
SonicWall provides additional savings by eliminating the need for expensive SD-WAN appliances and licensing. The SonicWall NGFW provides all required connectivity via the cloud, and Zero-Touch Deployment means there is no need for on-site personnel to install or maintain the solution.

OpEx costs related to both installation and operations are significantly reduced with SonicWall's complete Secure SD-WAN solution. Enterprise administrators prefer to manage all their critical infrastructure at the branch office using single-pane-of-glass (SPOG) management. The SonicWall Capture Security Center helps deliver SPOG cloud management for firewalls, switches, Wi-Fi and SD-WAN through its cloud-based orchestration and centralized management. This leads to reduced installation costs for mass deployment of branch offices, as well as more secure ongoing operations. Central analytics makes it easier to identify threats in real time, and rapidly push out security policies.

Advantage 2: Ensuring Enterprise-grade Network Security

Lack of security has been an inhibiting factor in Internet broadband for corporate networking. SD-WAN vendors must protect against advanced threats

Distributed Enterprise Network with SD-WAN

Data Center

WAF

Web Server Farm

NSa 9650

Application Server Farm

NSsp 12800

Corporate HQ

IP PBX

aws

Azure

Office 365

salesforce

Capture Security Center
Cloud Orchestration and Management

Low-Cost Transport Technologies
Ethernet / DSL / Cable / 3G / 4G

SD-WAN Enabled Transport

SonicWall Secure SD-WAN Features
- NSS Labs validated high security efficacy
- Zero-touch deployment
- WAN load balancing
- Dynamic path selection for business-critical applications
- Secure AES 256 VPN
- Application identification and visibility
- Cloud-based central management

Remote / Branch Offices

· Anti-malware
· IPS
· Content filtering
· Capture ATP
· VPN

TZ600P Firewall

SonicWave Wireless Access Point

POS Terminal

IoT Devices – Cameras, IP Phones, etc.

Corp WiFi

Guest WiFi

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such as malware, ransomware, breaches and intrusions, without sacrificing network performance, even in encrypted TLS/SSL and SSH traffic.

At SonicWall, security has been built in from the very start. All network traffic—including encrypted traffic—is inspected by the SonicWall firewall where it is scanned for threats using high-performance deep packet inspection for SSL (DPI-SSL). SonicWall's Secure SD-WAN capability leverages all the SonicWall security capabilities: IPS, anti-malware, AES-256 IPSec VPN, multi-engine sandboxing and more. The unique capabilities of the Capture Security Center (SonicWall's cloud-based management and analytics platform), patent-pending Real-Time Deep Memory Inspection (RTDMI™), and on-box scanning with Reassembly-Free Deep Packet Inspection (RFDPI®) provide maximum threat detection and prevention. These technologies are augmented by up-to-the-minute threat intelligence from the SonicWall Capture Labs Threat Research Team. In fact, SonicWall has been certified by NSS Labs for both high security efficacy and low TCO, receiving a "Recommended" distinction five times.

Advantage 3: High Availability and Predictable, Optimized Application Performance

Reliability and stability concerns have also inhibited business use of Internet bandwidth. With SonicWall, these concerns can be put to rest thanks to several features that increase performance. Among them is high availability, which performs WAN load balancing, and dynamic multi-path selection with application-based routing. SonicWall also provides deterministic application performance to steer business-critical SaaS and cloud applications over less-congested links overcoming unfavorable conditions like latency, jitter, and packet loss while optimizing link usage.

Real-time visibility is important not just for security. It's also crucial for achieving a deeper level of understanding of application performance. SonicWall Analytics, in the Capture Security Center, brings organizations this visibility, providing real-time traffic analytics on application performance. SonicWall Analytics transforms data into information, information into knowledge, knowledge into decisions, and decisions into actions that solve problems and prevent them from recurring.

Advantage 4: Greater Agility

WANs can be complex to install, configure and update, and the last thing a branch office wants is more headcount to manage IT issues. SonicWall Secure SD-WAN greatly reduces the complexity of configuring branch office devices, routing schemes and network addresses. As a complete cloud-based orchestration and centralized management solution with a single-pane-of-glass interface, it enables most of these functions to be managed centrally.

Through Zero-Touch Deployment, it's easy to spin up new branch offices without on-site personnel. Data center IT administrators can manage the entire network at scale through a single pane of glass using Capture Security Center, significantly reducing the installation time. They have complete visibility into applications, users and threats, to see overall traffic patterns and troubleshoot business-critical apps. SonicWall provides a more agile platform that can respond to business needs quickly, scaling up or bursting connectivity during times of peak demand. The organization can easily add new applications and technologies when needed, responding with agility to changing requirements.

SonicWall Secure SD-WAN Delivers

SonicWall delivers a full SD-WAN solution, fully integrated into its suite of world-class security capabilities. It dramatically lowers TCO by enabling organizations to replace high-cost private WAN circuits with inexpensive, high-bandwidth public Internet circuits while delivering high performance and maintaining high reliability. SonicWall brings industry-validated

security through its proven set of next-generation firewall capabilities including intrusion prevention systems, anti-malware, deep packet inspection and deep memory inspection, TLS/SSL decryption, and enterprise VPN. Application performance is ensured through high availability and resilience, as business-critical applications are prioritized, and bandwidth is dynamically scaled based on needs and conditions. With SonicWall, locations can be turned up quickly without long lead times or costly contracts using cloud-managed Capture Security Center policies. Security rules can be centrally managed and orchestrated across dynamically-changing branch and cloud locations and distributed devices, augmented by deep insight into application performance and visibility through SonicWall Analytics. SonicWall Secure SD-WAN reduces complexity and TCO while bringing the organization enterprise-grade security, performance, reliability and flexibility.

Learn more. Visit our [Secure SD-WAN](#) page.

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About SonicWall

SonicWall has been fighting the cybercriminal industry for over 27 years defending small and medium businesses, enterprises and government agencies worldwide. Backed by research from SonicWall Capture Labs, our award-winning, real-time breach detection and prevention solutions secure more than a million networks, and their emails, applications and data, in over 215 countries and territories. These organizations run more effectively and fear less about security. For more information, visit www.sonicwall.com or follow us on Twitter, LinkedIn, Facebook and Instagram.

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