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THE NETWORK LEADERS' GUIDE TO SECURE SD-WAN

HOW FORTIOS 6.0 ENABLES ADVANCED SD-WAN ON-PREMISES AND IN THE CLOUD

CONTENTS

EXECUTIVE SUMMARY

If you're dealing with the high cost and complexities of delivering reliable wide area connectivity over traditional carrier-based networks, you're probably considering some form of software-defined wide area networking (SD-WAN). With the variety of constraints that you face, selecting the right SD-WAN solution for your enterprise may require a few compromises. Security, however, should not be one of them.

There are various models for combining SD-WAN and network security, but only one that can truly be called "secure SD-WAN." Fortinet, the most trusted name in network security, has leveraged its industry-leading FortiGate Next Generation Firewall (NGFW) to deliver integrated best-of-breed SD-WAN capabilities. Powered by the new FortiOS 6.0 operating system, SD-WAN-enabled FortiGate solutions provide the right level of service for every application, while ensuring effective protection from advanced evolving threats across your distributed enterprise.

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01 WHICH WAY TO SD-WAN?

IT leaders are no longer questioning whether SD-WAN can support their enterprise's digital transformation. As SD-WAN uses all available WAN services more effectively and economically, it gives users across the distributed enterprise the freedom to better engage customers, empower employees, optimize business processes, and innovate. It makes WAN management more cost-effective, too.

Still, the challenge remains: how to get there. There are many SD-WAN solutions on the market. IDC predicts that worldwide SD-WAN infrastructure and services revenues will see a compound annual growth rate (CAGR) of 69.6%, reaching $8.05 billion in 2021.[1] Unfortunately, the diversity of SD-WAN offerings makes them difficult to compare. Ongoing vendor consolidation adds to the confusion.

SD-WAN experts and industry analysts say that the optimal SD-WAN for an enterprise depends on its application performance requirements, security priorities, and IT skill sets. They also recommend that organizations use an NGFW to address the high-security needs of SD-WAN as branches are directly exposed to the Internet.

So, if you need a truly secure SD-WAN—rather than just an SD-WAN with basic security capabilities—the prudent path goes through Fortinet.

[1] "IDC Forecasts SD-WAN Market to Reach $8 Billion in 2021 As Enterprise Branch Network Requirements Accelerate," IDC, July 27, 2017.

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02 FORTINET DELIVERS BEST-OF-BREED SD-WAN

6.0

Based on the industry-leading FortiGate NGFW with the new FortiOS 6.0 operating system, Fortinet's secure SD-WAN replaces separate WAN routers, WAN optimization, and security devices with a single solution that is application-aware, offers automatic multi-pathing and multi-broadband support, and is easy to deploy and monitor.

3,000+ applications

Automatically recognized and optimally routed

Multiple WAN Links
One SD-WAN Interface

- Ethernet
- Broadband
- 3G/4G Failover
- VPNs

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BROAD AND DEEP APPLICATION AWARENESS FOR IMPROVED SERVICE LEVELS

Technically, SD-WAN works by routing applications over the most efficient WAN connection at any point in time. To ensure optimal application performance, SD-WAN solutions must be able to identify a broad range of applications and apply routing policies at a very granular level of each application.

FortiGate SD-WAN-enabled products incorporate an application control database with the signatures of more than 3,000 applications. The database stays current through ongoing updates from FortiGuard threat intelligence services.
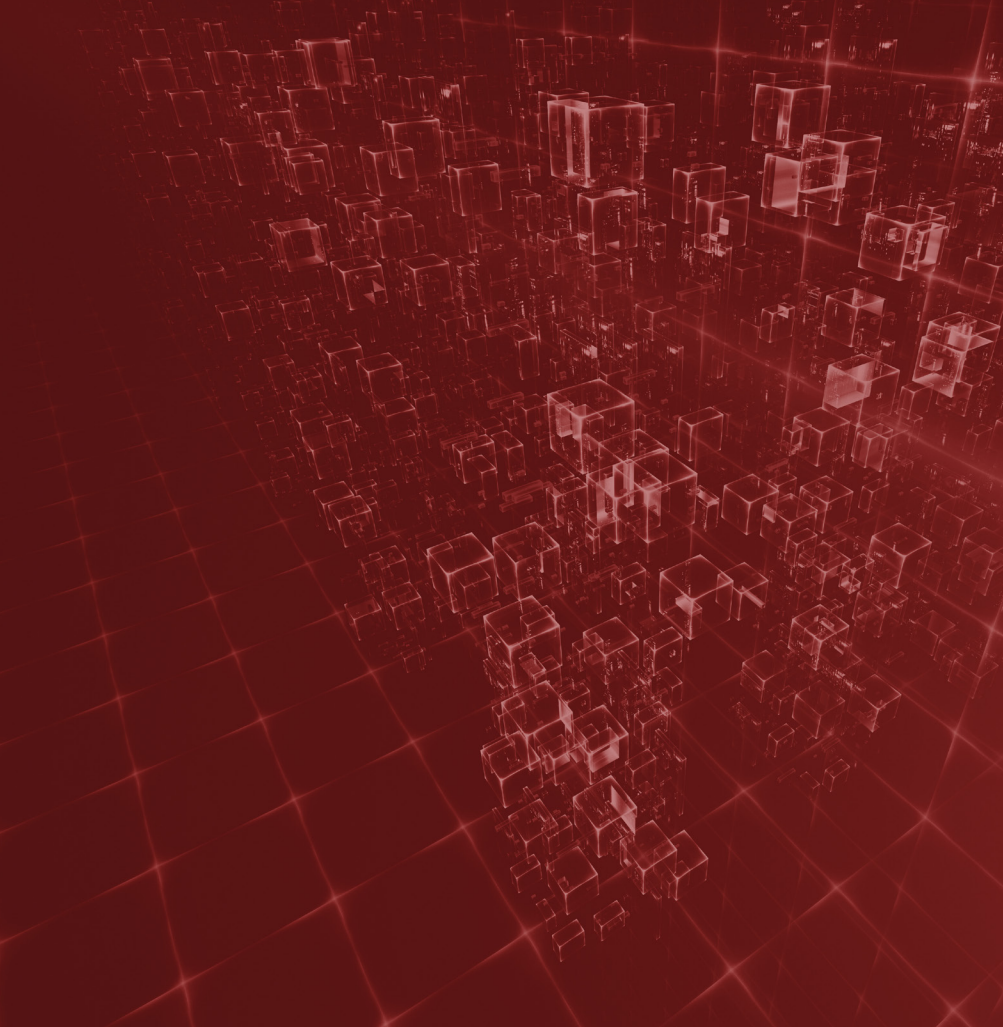
Leveraging the database, the SD-WAN-enabled FortiGate identifies and classifies new applications—even encrypted cloud application traffic—from the first packet. It then dynamically updates all relevant IP addresses, enabling more efficient routing for subsequent sessions.

With FortiOS 6.0, you can set the FortiGate to recognize applications by business criticality. Business-critical applications such as SAP, general productivity applications such as Dropbox, and social media such as Twitter would be given different routing priorities. You can also go deeper
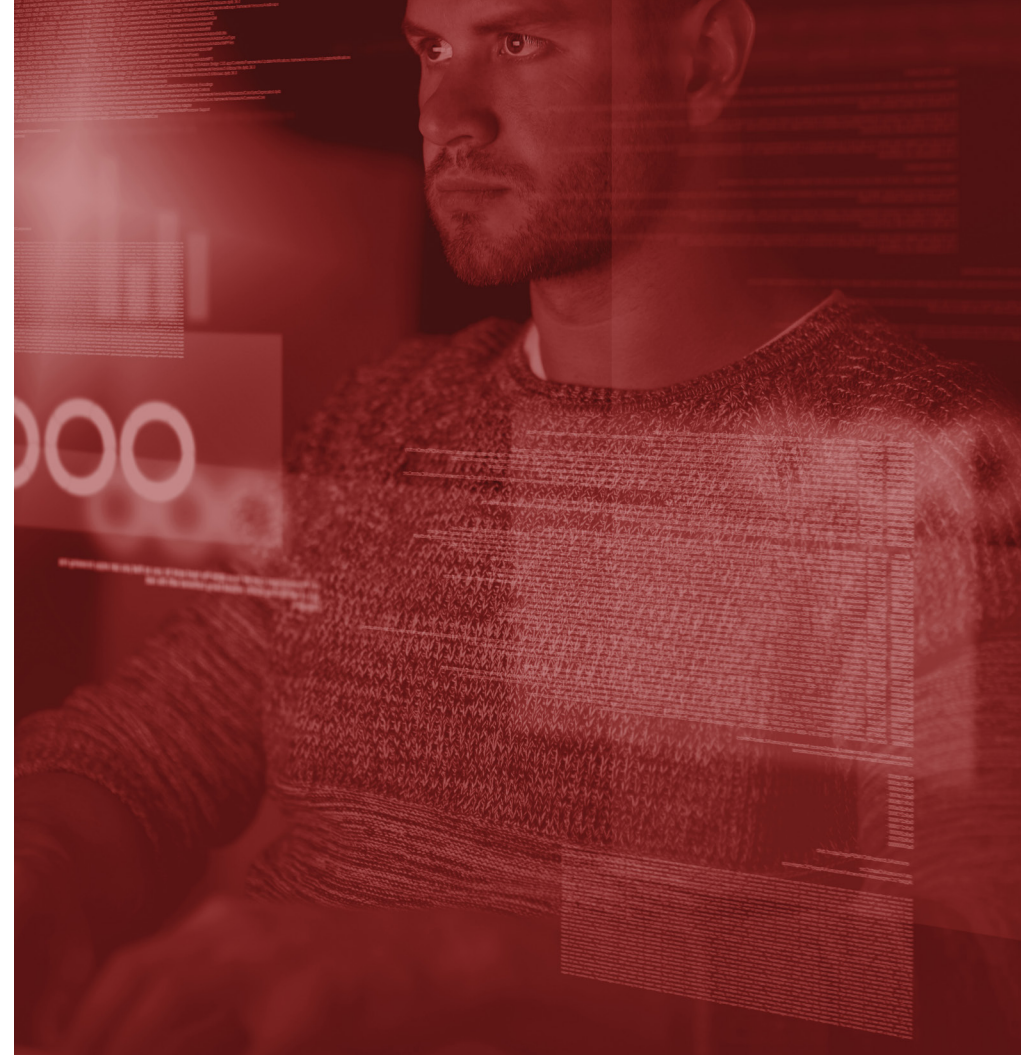
into individual applications, setting different policies for sub-applications such as Word and OneNote in Office 365.

Once you have this deep and broad application-level visibility into traffic patterns and utilization, you are in a better position to allocate WAN resources according to business needs.

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Automated Multi-Path Intelligence. Collecting granular WAN path information, such as latency, jitter, and packet loss, FortiGate's integrated WAN Path Controller elects the most efficient route for SaaS, voice over IP (VoIP), and other business-critical traffic. If the primary WAN path degrades below your policy-based thresholds, the FortiGate quickly and automatically fails over to the best available link. Further, this transition does not affect users, who continue to experience seamless application performance. Once the primary link stabilizes, the FortiGate automatically fails back to the primary link.

FortiGate devices with FortiOS 6.0 makes it easier to define SD-WAN service-level agreements (SLAs). For low- to medium-priority applications, you can specify the quality criteria, and the FortiGate will select the best link for the application. For high-priority and business-critical applications, you can define strict SLAs, based on a combination of jitter, packet loss, and latency metrics.

Multi-Broadband Support. Further boosting resiliency and cost-efficiency, Fortinet's SD-WAN solution is transport-agnostic, supporting Ethernet, broadband, 3G or 4G failover, and virtual private networks (VPNs). Enterprises can utilize all available bandwidth by using two of these connections in active-active mode, load balancing traffic across both circuits at the same time.

EFFORTLESS WAN EFFICIENCY

As you may not have the resources to continually optimize your SD-WAN, the FortiGate greatly simplifies the process. Once you set WAN policies based on application criticality, performance requirements, security policies, and other considerations, the FortiGate takes it from there.

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LOWER TCO AND BETTER STAFF UTILIZATION

WAN managers are often in a quandary when it comes to deploying SD-WAN edge devices to their numerous remote sites and branch offices. Truck rolls are expensive, and technical staff is often limited. On the other hand, shipping fully configured devices is not secure. Also, once edge devices are deployed, staff must manage both the WAN optimization functions and security functions, often from two different interfaces. Fortinet's SD-WAN-enabled FortiGate solution solves both the deployment and the management problems, reducing your SD-WAN cost of ownership.

Zero-Touch Deployment. With the SD-WAN-enabled FortiGate, enterprises can ship unconfigured appliances to each site. When plugged in, the FortiGate automatically connects to the FortiDeploy service in the FortiCloud. Within seconds, FortiDeploy authenticates the remote device and connects it to your central FortiManager system.

To easily extend your secure SD-WAN to small distributed network components, such as retail points of sale (POS) or remote kiosks, you can leverage the compact FortiExtender. It provides immediate primary or backup WAN connectivity and can be placed as far as 100 meters from a FortiGate device.

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Single-Pane-of-Glass Management. Using FortiManager, either on-premises or in the cloud, you can see your deployed SD-WAN-enabled FortiGate devices, anywhere in the world. Highly intuitive visualizations make it easy to monitor both the physical and logical network topologies at a high level and drill down when needed to investigate any issues. You can update and disseminate corporate WAN policies to all locations or can reconfigure individual devices. And for users who need secure communications over the public Internet links, you can set up IPsec VPNs with just one click. All this saves time and simplifies SD-WAN administration, alleviating pressure on lean network teams.

FortiManager is unique among NGFW-plus-SD-WAN solutions in that it provides single-pane-of-glass management for both WAN and security functions. As such, it offers a useful tool to explore the consolidation of network operations center (NOC) functions with those of a planned or existing security operations center (SOC). As you do so, you can assess the benefits of other Fortinet Security Fabric components in reducing complexity and increasing the efficiency of secure IT operations.

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03 FORTINET MEANS SECURITY

As the traditional enterprise network perimeter dissolves, Fortinet SD-WAN solutions help you protect your data and applications from the full range of threats, along every attack vector. And by delivering best-of-breed SD-WAN functionality within the broad, integrated, and automated Fortinet Security Fabric, you can block advanced threats at any stage, while improving WAN performance and cost-efficiency.

THE MOST-TRUSTED NETWORK SECURITY

As the only SD-WAN vendor with an NSS Labs NGFW "Recommended" designation, Fortinet's security-first SD-WAN solution delivers the most robust threat protection in the industry, including Layer 3 through Layer 7 security controls not commonly found in other SD-WAN-plus-firewall solutions:

- Complete threat protection, including firewall, antivirus, intrusion prevention system (IPS), and application control

- High-throughput SSL inspection, so you don't have to sacrifice throughput for complete threat protection

- Web filtering to enforce Internet security without requiring a separate secure web gateway (SWG)

- Highly scalable and high-throughput IPsec VPN tunnels to ensure that traffic is always encrypted and stays confidential

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Fortinet delivers enhanced SD-WAN performance by leveraging its proprietary Security Processing Unit to accelerate security and networking-specific tasks. This optimized architecture delivers deep security analysis and inspection capabilities that meet and exceed the enterprise-class, general-purpose CPUs that power competing products.

The SD-WAN-enabled FortiGate also monitors firewall rules and policies and highlights best practices to improve overall security posture. This facilitates compliance with security standards as well as industry and government regulations, saving numerous staff hours and reducing the risk of omissions and errors in the event of audits.

PART OF AN END-TO-END SECURITY FABRIC

The Fortinet Security Fabric is a broad, integrated, and automated security architecture that addresses all facets of network security and is managed from a single FortiManager console. As part of the Fortinet Security Fabric, all Fortinet SD-WAN-enabled FortiGate devices— in the data center, at the enterprise edge, and at remote branches—interact in real-time with each other and with other Fabric components. The result is highly effective threat prevention, detection, and impact mitigation, which is nearly impossible to achieve with point products or even security platform solutions.

For example, FortiGate devices can send suspicious files to FortiSandbox, which quarantines them while it validates potential threats. SD-WAN-enabled FortiGate devices are also automatically informed by threat intelligence from FortiGuard Labs through FortiGuard security services. With more than 200 expert researchers and analysts around the world, FortiGuard Labs uses world-class, in-house developed tools and technology to discover, study, and disseminate information on breaking threats.

04 IN A VOLATILE SD-WAN MARKET, FORTINET IS THE SAFE BET

As you work to improve user experience on your distributed network while keeping costs in check, consider that an investment in Fortinet SD-WAN delivers much more than a short-term fix. Once you have the SD-WAN-enabled FortiGate NGFWs and FortiManager in place, you have the core of an enterprise-wide secure environment. With it, you can confidently support more remote sites, more bandwidth-sensitive business-critical applications, more cloud services, and whatever else your network requires to drive your company's digital transformation.

FortiGate Secure SD-WAN solutions with the new FortiOS 6.0 have been adopted worldwide in industries as diverse as finance, retail, manufacturing, and customer service. Whether they need to support a few hundred mobile endpoints or tens of thousands of branch offices, Fortinet SD-WAN customers are each achieving their own optimal mix of best-of-breed security and SD-WAN functionality.

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