

# Managed SD-WAN



At Spectrum Enterprise, we know you need improved control and network insight while simultaneously reducing WAN complexity and management effort. After all, important business applications require increasing levels of intelligence in order to keep up with the speed of business.

Managed SD-WAN from Spectrum Enterprise is a MEF 3.0 certified, complete, virtualized wide area network that gives your organization visibility and control while reducing complexity, costs and management effort. MEF 3.0 certification assures we provide best-in-class solutions and services based on industry-accepted standards.

## Overview

Spectrum Enterprise Managed SD-WAN service provides secure networking between customer LANs at multiple sites and will support multiple uplink connections.

Connection options:

- Spectrum Enterprise Fiber Internet Access
- Spectrum Enterprise Broadband Internet
- Client-provided Internet

VPN security on the SD-WAN tunnel includes IPsec traffic encryption AES-256.

## Service options

- Hybrid SD-WAN with Ethernet service:  
Extend your existing native Ethernet WAN using SD-WAN service to quickly integrate new sites and off-net locations into a single Ethernet WAN based upon traffic requirements for each location
- Over-the-top SD-WAN:  
Create a complete SD-WAN solution by leveraging readily-available Internet connectivity and virtual network functions at all locations to create either a Layer 3-or Layer 2-based network.

## Application-aware routing

Application-aware routing (AAR) adds a layer of intelligence to SD-WAN by forwarding traffic based on network performance. AAR offers greater control of where and under what circumstances an application leverages the best performing connection without the need for client intervention.

AAR consists of:

- Application Discovery (AD) - identification and classification of network traffic on a per-application basis. AD uses Deep Packet Inspection (DPI) to locate, identify and classify applications. DPI is an advanced form of filtering that operates at Layer 7 (Application Layer)
- Application Groups and Prioritization - applications with similar network characteristics are grouped together and prioritized so that high priority traffic will be given preferential treatment in times of congestion
- Dynamic Traffic Steering (DTS) - enables application traffic flows to dynamically switch from the primary circuit to a secondary circuit should the application performance degrade below service thresholds that are defined on a Priority Class basis (Layer 3) or based on primary circuit availability (all service options)

## Application performance

An Application Performance Management (APM) group denotes a class of applications that have similar network characteristics, such as video, voice or data. The APM group is associated with a Performance Monitor which specifies the characteristics of the traffic that is generated for measuring uplink performance. Traffic is evaluated for each APM group, allowing the traffic to be utilized more efficiently while accurately diagnosing performance.

APM group prioritization is ranked by client-determined importance: Voice, Productivity, Collaboration and Best-Effort.

**Virtual Security**

Virtual Security provides Managed SD-WAN clients with next generation firewall and the option to add Unified Threat Management (UTM) functionality, supporting a full range of traditional firewall and advanced security features. Virtual Security delivers a secure Internet connection that supports, or enhances requirements within the confines of the three fundamentals of security: confidentiality, integrity, and availability.

- Twelve (12) nationally deployed, network-based firewalls
- Choice of security offering at each location:
  - Firewall network policies
  - UTM scanning profiles
  - Client-provided, perimeter-based firewall

**Virtual Security packages**

Feature	Standard	Advanced
Rule Based Access Control (ACLs)	•	•
Zone Base Firewall Security (ZBF)	•	•
Stateful Packet Inspection (SPI)	•	•
Network Address Translation (NAT)	•	•
Port Forwarding	•	•
Anti-Malware/Anti-Virus Protection	•	•
Intrusion Prevention System (IPS) (global / no customization)	•	•
Basic User Identity	•	•
IPsec VPN (site-to-site)	•	•
Event Logging (Remote & limited Local)	•	•
Advanced Debugging Capability	•	•
IP-based Geolocation (GeoIP)	•	•
SSL/TLS Deep Packet Inspection (Decryption) *		•
Intrusion Prevention System (IPS) (rules-based / customization)		•
DNS Protection (filtering, sink holing, spoofing)		•
Advanced Botnet Command and Control (C&C) Protection / Mitigation of downstream compromised devices		•
Web/URL Filtering Categories & Block listing		•
Application Awareness & Control		•

\*Installation of certificates required

**About Spectrum Enterprise**

Spectrum Enterprise, a part of Charter Communications, Inc., is a national provider of scalable, fiber technology solutions serving America's largest businesses and communications service providers. The broad Spectrum Enterprise portfolio includes networking and managed services solutions: Internet access, Ethernet access and networks, Voice and TV solutions. Spectrum Enterprise's industry-leading team of experts works closely with clients to achieve greater business success by providing solutions designed to meet their evolving needs. More information about Spectrum Enterprise can be found at [enterprise.spectrum.com](http://enterprise.spectrum.com).