

# Managed SD-WAN

Today's businesses are digitally transforming, and they need a network that can provide increased scalability, enhanced security and greater performance visibility to efficiently meet complex business needs. As new applications and technologies emerge and cyber security threats continue to grow, your organization needs the right resources and tools to optimize your network.

Our Managed SD-WAN solution helps evolve your network by providing a virtual overlay network with application-aware routing—enabling you to connect your branches and multiple remote locations. It's a turnkey solution that offers software-based control to provide a highly secure, scalable and reliable virtual network uniquely designed for you. The result: a fully managed, white glove solution that gives you the visibility and the flexibility you need, without having to sacrifice the network performance you expect.

## Key Benefits

### Increased flexibility and scalability

Scale your network based on application needs, with a more efficient location provisioning process and quicker changes to your sites. Our turnkey solution gives you the flexibility to meet the bandwidth and security requirements you need and the ability to add network diversity for extra peace of mind. Managed SD-WAN supports multiple underlay transport options including IP, MPLS or bring-your-own-transport.

### Lower operational cost

Reduce your operational expenses and administrative fees with faster deployments that give you increased operational efficiency and free up key IT resources. Our service includes installation, service provisioning and site activation.

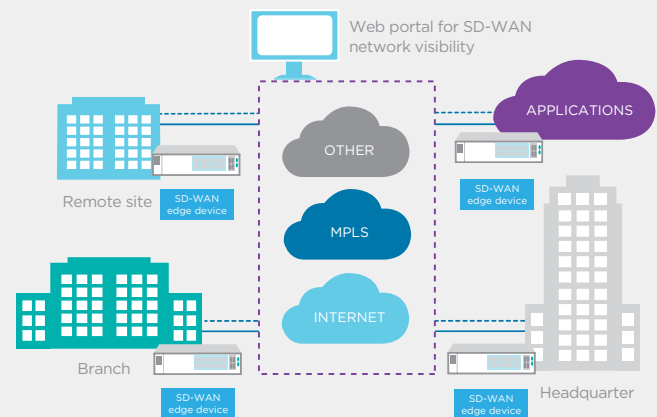
### Enhanced network security

Highly secure access to your applications designed to work with encrypted connectivity and the option to add additional security features like high availability and next-generation firewall.

### Dedicated support and monitoring

Our integrated portal gives you higher levels of visibility into your network—allowing you to monitor your connections in real-time, conduct utilization reporting and analyze historical data. This service includes around-the-clock access to our Network Operations Center for your support needs.

### Our managed SD-WAN network



Managed SD-WAN	Standard Features	Value-Added Features		
		High Availability	NGFW	UTM
<b>Network Features</b>				
Flexible bandwidth up to 100gbps	✓			
Monitoring, reporting, analytics	✓			
Application visibility and control	✓			
Application QoS (quality of service) and SLA	✓			
Dynamic path selection	✓			
Multiple WAN links (2+)	✓			
Site to site VPN	✓			
CGNAT (carrier grade network address translation), VLAN	✓			
DNS (domain name system), DHCP (dynamic host configuration protocol), LAG (link aggregation group) on LAN	✓			
Topology (any)	✓			
Routing and load balancing (advanced)	✓			
Throughput (10Gbps)	✓			
Service chaining and gateway	✓			
High availability	✓			
FEC (forward error correction), cloning, striping	✓			
Dual equipment for high reliability (VRRP - virtual router redundancy protocol)		✓		
<b>Security Features</b>				
L4 stateful firewall	✓		✓	✓
IP Filtering			✓	✓
URL/Content Filtering			✓	✓
SSL (secure sockets layer) Inspection			✓	✓
Anti-virus				✓
IDS/IPS (intrusion detection and prevention, systems)				✓
File Filtering				✓

## Why Crown Castle?

### Our unique, nationwide portfolio

With approximately 90,000 route miles of fiber, we own and operate one of the largest and densest fiber networks in the country with a presence in 23 of the top 25 US markets.

### Our proven track record

In our 30 years of experience owning and operating network assets we've seen it all and we're always ready to adapt to changing network trends.

### Our deep expertise

We've worked with nearly every industry so we understand your unique opportunities and challenges and can tailor solutions to meet your goals.

### Our solutions

We have your networking and security needs covered. Visit our [infrastructure solutions](#) page to learn more about our suite of solutions and how they can solve your toughest challenges.



Crown Castle owns, operates and leases more than 40,000 cell towers and approximately 90,000 route miles of fiber supporting small cells and fiber solutions across every major US market. This nationwide portfolio of communications infrastructure connects cities and communities to essential data, technology and wireless service—bringing information, ideas and innovations to the people and businesses that need them.