

# Managed SD-WAN

Today's businesses are digitally transforming, and they need a network that can keep up: greater flexibility, network agility, faster delivery of services. As new applications and technologies emerge—from the internet of things and smart cities to 5G and cloud computing—they're changing the way you rely on your network.

Our Managed SD-WAN solution helps evolve your network to support your digital transformation. It creates 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. 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

### Network agility

Scale your network based on applications needs and make changes to a site or provision a new location—quickly and nimbly.

### Cost efficient

Reduce your operational expenses and administrative fees with faster deployments that give you increased operational efficiency and free up key IT resources.

### Our network

With approximately 80,000 route miles of fiber and 900+ connected data centers, PoPs, and COs, we own and operate one of the largest and densest networks in the country—giving you access to more diverse paths and unique routes.

### Flexibility

A turnkey solution that gives you the visibility and flexibility to meet the bandwidth and security requirements you need and the ability to add network diversity for extra peace of mind.

### Security

Highly secure access to your applications designed to work with encrypted connectivity and the option to add additional security features.

### Monitoring

Our integrated portal gives you higher levels of visibility into your network—allowing you to monitor your connections real-time with our locally based service teams and our around-the-clock Network Operations Center.

More than  
**25 Years**  
of Expertise

**NYSE**  
**S&P 500**

## Infrastructure Solutions

- › Dark Fiber
- › Ethernet
- › Wavelength
- › Private Networks
- › **Managed SD-WAN**
- › Internet Access
- › Colocation

## Managed SD-WAN features

- › Monitoring, reporting, analytics
- › Automated template provisioning
- › Same IP address failover
- › Application visibility and control
- › Application QoS and SLA
- › Dynamic path selection
- › Multiple WAN links (2+)
- › Virtual wire
- › Site to site VPN
- › CGNAT, VLAN, VXLAN tagging
- › DNS, DHCP, aggregate ethernet
- › Denial of service
- › L4 stateful firewall
- › Topology (any)
- › Routing and load balancing (advanced)
- › Throughput (10Gbps)
- › Service chaining and gateway
- › High availability
- › FEC, cloning, striping

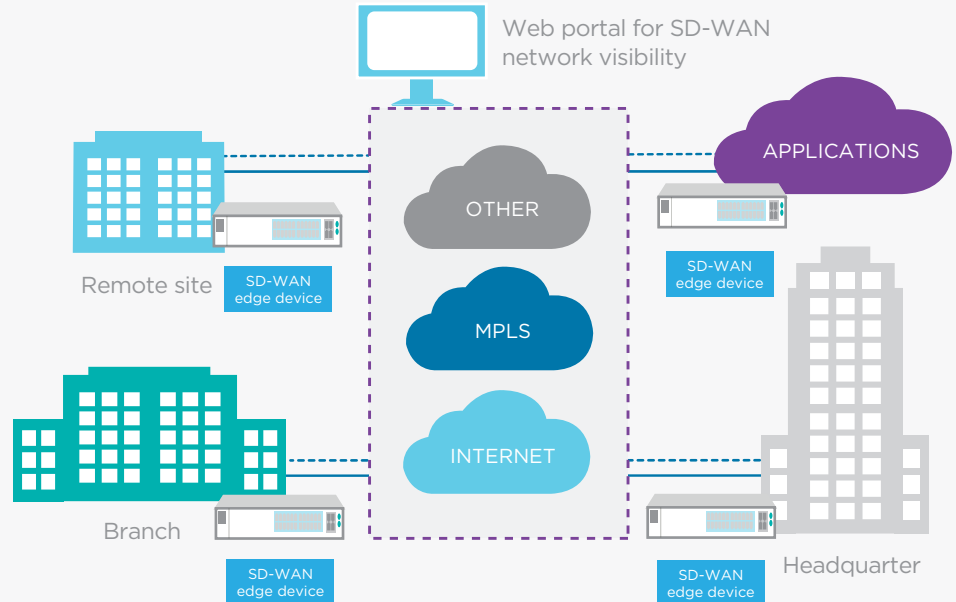
## Security features

- › SSL inspection
- › URL reputation and filtering
- › L7 application control
- › IP reputation and filtering

## Our solution

- A fully managed SD-WAN turnkey solution that includes:
- › Flexible bandwidth, up to 10Gbps
  - › Unique network design built for you
  - › Edge devices and software licenses, supporting up to 10Gbps
  - › Installation, fast service provisioning, site activation, maintenance and support
  - › Unified view of your network with portal access for performance monitoring, utilization reporting, analytics, historical data, and near real-time tools
  - › Support for multiple underlay options including IP, MPLS, or bring-your-own-transport
  - › Add on features for increased reliability:
    - High availability configurations with redundant paths
    - Next generation firewall

## Our managed SD-WAN network



Crown Castle owns, operates, and leases more than 40,000 cell towers and approximately 80,000 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.