Software-Defined Wide Area Network (SD-WAN)

Solution Brief

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Product Name

Software-Defined Wide Area Network (SD-WAN)

Product Overview

Software-Defined Wide Area Network (SD-WAN) is an innovative networking technology that abstracts the network hardware and application transport characteristics to simplify management and enhance performance. It allows companies to replace expensive private WAN connections such as MPLS by building higher-performance WANs using low-cost Internet access.

Built upon VeloCloud technology, SD-WAN from CBTS enables enterprises and service providers to use wired or wireless broadband Internet with or without traditional MPLS and to create world-class unified wide area networks.

SD-WAN allows business to experience:

- 100x easier installs.
- 3x less money.
- 10x faster speed.

CBTS has a Right to Win

Through a rigorous testing lab, CBTS selected VeloCloud for its SD-WAN partner in providing solutions for business customers who rely heavily on cloud delivered high-performance applications to deliver cutting-edge branch office networking for future-forward application performance. We are backed by world-class certified engineers accelerating the speed of innovation and paired with the ability to build a customized technology blueprint for each customer's journey to confront next generation business demands.

Changing Landscape: SD-WAN Trends

- Delivers up to 85% network cost reduction while improving branch deployment times.

- From 30-50% of large enterprise traffic is shifting to the Cloud, changing traffic flows and making traditional WAN suboptimal (Gartner).
- Approximately 80% of new applications will be deployed in the Cloud by 2030 (IDC).
- Approximately 89% of enterprises list bandwidth and OpEx costs as the biggest branch office challenge (SDX Central).
- Enterprise-scale SD-WAN should provide transport independence, any link technology (MPLS, Internet, 4G), and any combination of suppliers (Doyle research).
- Security remains the top network challenge for large enterprises (ZK Research).
- Approximately 71% of large enterprises list network security as the largest network challenge (ZK Research).

Monitored and Managed

Backed up by superior engineering, SD-WAN from CBTS adopts a transformational approach to simplify branch office networking and assure optimal application performance. Built upon VeloCloud's cutting-edge technology, our purpose-built enterprise solution allows businesses to:

- Leverage world-class technology from Cisco Meraki supported by certified engineers 24x7x365.
- Pay a monthly fee that covers equipment, management, support, and extended warranty upgrades.
- Eliminates capital investment into expensive network equipment.
- Ends technology obsolescence by building hardware refresh in the solution lifecycle.

Value Proposition

SD-WAN is really the continuation of moving applications into the cloud. Most businesses are familiar with Software as a Service applications like Office365. Businesses are also increasingly embracing cloud computing services such as Amazon Web Services and Microsoft Azure, and they often manage Disaster Recovery and Backup services through the cloud.

Businesses are used to managing their networks at a local level. By moving to the cloud, we can control and manage the network; provide visibility and analytics to the network; and provide insights that these businesses never had before over any connection.

SD-WAN ultimately drives business outcomes by giving customers a better experience when accessing these applications.

How we empower business solutions for next-generation technology demands:

- Address performance issues where latency; distributed data sources and applications; and broad access to systems across locations, devices, and geographies may all come into play.
- Deliver high performance for the next-generation of business applications.
- Innovate and transform business outcomes with enhanced real-time operations and business agility.
- Eliminate the traditional capital investment in IT infrastructure.
- Leave behind the complexity and high costs associated with building, sourcing, and supporting high performance and leading-edge technology.
- Reduce costs for an agile, high-performance network.

Features

SD-WAN uses intelligent control to manage public and private network connectivity into secure, reliable WANs. It automatically deploys and maintains the WAN using VPN and other technologies, connecting sites over any connectivity, and supporting multiple redundant and 4G failover links. Additional features include:

- SD-WAN technology delivered through the cloud.
- Superior connection remediation with packet-duplication over single Internet links.
- Connectivity-agnostic including public, private, and hybrid (public/private) networks and applications with automatic site-to-site VPN.

- Centralized, policy-based management portal with Graphical User Interface (GUI).
- Application enhancement and high quality experience of use.
- Dynamic link selection by aggregating multiple Internet connections and choosing the best path for traffic.
- Multi-site stateful firewalls.

Go-to-Market Strategy

The go-to-market strategy for SD-WAN is to leverage the universal awareness of this new and on-trend technology to break in to the conversation. Given the product name is the technology, we have immediately positioned ourselves to lead the conversation with the benefits that set us apart.

- Riding tailwind from NaaS in market awareness will be a significant factor in driving consideration among targeted and qualified leads.
- Fostering a position as an industry thought-leader for SD-WAN will be critical to furthering our credibility nationally.

Strategy Approach

- **Thought Leadership:** Generate and curate content that addresses enterprise customers' biggest challenges with meaningful solutions.
- **Influencer Marketing:** Pair our Managed Cloud product with leading influencers in the tech/software/SaaS space to create authentic, compelling content about CBTS as a provider.
- **SEO Marketing:** Pair with content management and analytics experts to digitally target and capture warm leads.

Goal: Transform our growing customer base into our most valuable customers through a continued digital dialogue to increase retention and build advocacy.

Target Audience

Commercial Businesses:

- 101-1000 employees.

- Multi-site locations.
- LAN, WAN, MPLS.
- Medium complexity of deployment/management.
- Small to medium IT staff.
- Prefers management and support outsourced to a trusted partner.

Enterprise Businesses:

- 1001+ employees.
- Multiple sites, multiple regions.
- LAN/WAN, MPLS/IP-VPN.
- High complexity, can vary depending on business type.
- Medium to large IT staff.
- Prefers focus on enterprise apps and user support.

Customer Challenges, Insights, and Attitudes

Challenges:

- New applications inhibited by bandwidth, cost, and time to deploy.
- Cloud migration not supported by traditional hub and spoke branch network architecture.
- Branch network deployments delayed due to IT complexity.
- Outdated, disparate networking equipment that is providing low or insufficient bandwidth to employees, and a poor Wi-Fi experience to customers.
- Limited internal IT resources to manage current IT infrastructure, and planning to add additional locations.
- IT staff required to log in to multiple applications to manage the network, while battling the reality of only partial visibility.

- An outage at any one of their locations can affect every location and shut down mission-critical applications that cost them revenue and customers.
- Dealing with expensive MPLS equipment, aging technology, and different pieces of equipment that are in different refresh cycles.
- Struggling to manage growth of connectivity demands with expansion to multiple locations.
- "Gets by" managing IT situations as needed and tends to be reactionary vs. proactively solving for upcoming IT demands (seeking help, assistance, and solutions when the "house is on fire").

Attitudinal Desire:

- A network that allows them to easily add new locations as necessary through advanced equipment and technology using cutting-edge SD-WAN, which is also lowering costs.
- Increased bandwidth – and efficient bandwidth distribution – across multiple locations to facilitate better connectivity for employees, and support amenities such as guest Wi-Fi.
- Managed telephony service that scales with the business, reduces cost, and provides flexibility to mobile workforces.
- Increased flexibility among internal IT staffs who can now work with CBTS' top Cisco engineering talent instead of having to manage multiple vendors.

Customer Benefits

- **No Large Capital Outlay:** Delivered as a cloud service, the solution does not require capital investment in equipment.
- **Significant Cost Savings:** Reduce the total cost of ownership (TCO) by removing maintenance and professional services costs.
- **Higher Performance:** Combine enhanced applications with increased efficiency.
- **Simplified Management:** Centralized control and policy deployment through a Graphical User Interface (GUI) web portal.
- **Superior QoE (Quality of Experience):** Improve performance of critical applications such as voice and video with multiple levels of redundancy.

- **Lower Operational Costs:** Pay a predictable monthly fee for hardware, support, and top-notch engineer resources.

Service Availability

- This service has no geographical restraints.
- There is a natural product tie to bring in EHCS with NaaS during the sales process.

Solution Details

- **Performance and Reliability:** Deliver hybrid WAN with high performance, reliability, and transport, as well as provider flexibility, to assure optimal performance even for demanding applications, such as voice and video.
- **Cloud Network:** Eliminate datacenter backhaul penalties with a cloud-ready network to provide an optimized direct path to public and private enterprise clouds.
- **Virtual Services:** Reduce the branch office footprint with a single click with seamless insertion and chaining of virtualized services on-premises and in the cloud.
- **Automation and Orchestration:** Enable zero-touch branch network deployment with automation and business policy-based orchestration.

Technology Standards

SD-WAN is built using the following standards:

- Infrastructure built on VeloCloud.
- Dual uplink support, cellular failover, and datacenter high availability ensures access to mission-critical assets anytime, anywhere.
- Integrated SD-WAN connecting all of your remote branch locations over bring-your-own-bandwidth connections (allows you to connect over any Internet connectivity including broadband).
- Software capabilities to create a virtual private wide area network (WAN) over any connection.

- Sites configured before they get to your location for rapid deployment.
- 24x7 monitoring and analysis available from our team of experts.
- Centralized Cloud Management - single pane of glass cloud dashboard for entire network management leveraging real-time data and network analytics.

Utility Service (OpEx vs. CapEx)

SD-WAN is sold as a utility service. The utility model is structured such that customers pay a monthly recurring fee for all services and support relating to SD-WAN. All necessary equipment is drop shipped from the vendor, and installation and configuration are managed by professional engineering resources.

Solution Architecture

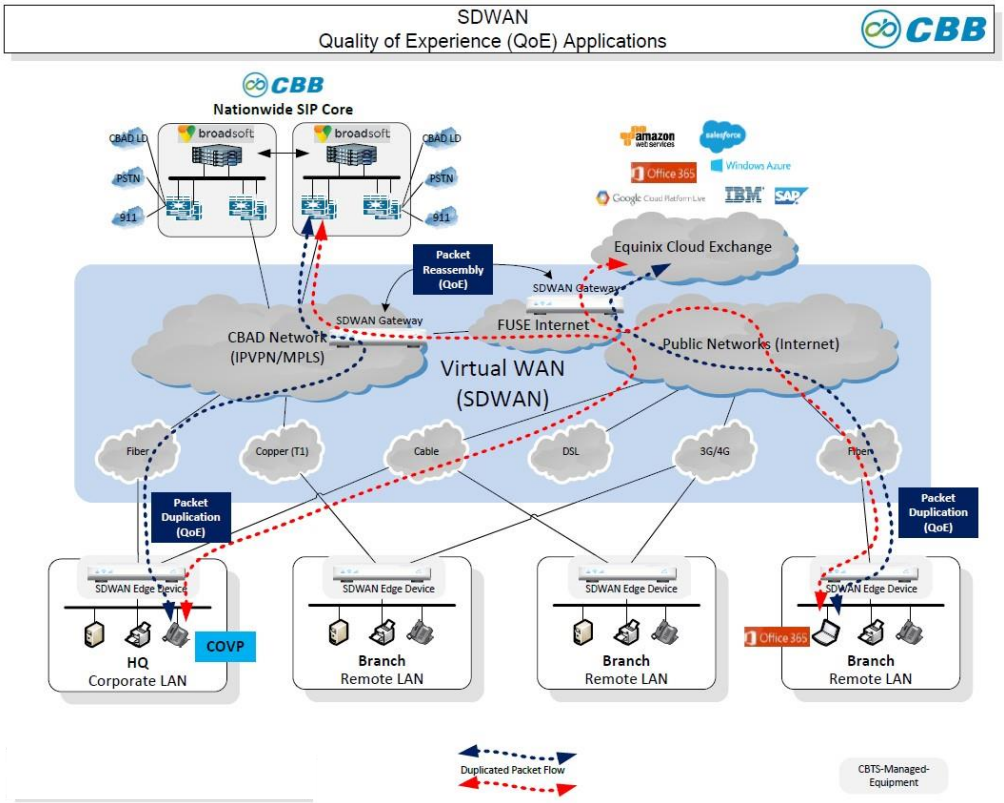
There are three main components to the VeloCloud Solution:

- VeloCloud Edge - A thin "Edge" that is zero IT touch provisioned from the cloud for secured, optimized connectivity to your apps and virtualized services. The VeloCloud Edges are zero-touch, enterprise-class devices or virtual software that provide secure and optimized connectivity to private, public and hybrid applications; compute; and virtualized services. VeloCloud Edges perform deep application recognition, application and per-packet steering, on-demand remediation performance metrics, and end-to-end quality of service (QoS), in addition to hosting Virtual Network Function (VNF) services.

- VeloCloud Gateway - VeloCloud's network consists of gateways deployed at top tier network points-of-presence and cloud data centers around the world, providing SD-WAN services to the doorstep of SaaS, IaaS, and cloud network services, as well as access to private backbones. Multi-tenant, virtual Gateways are deployed both by VeloCloud transit and by Cincinnati Bell to enhance the quality of real-time applications like COV. The gateways provide the advantage of an on-demand, scalable and redundant cloud network for optimized paths to cloud destinations as well as zero-installation applications.

- VeloCloud Orchestrator - The VeloCloud Orchestrator provides centralized enterprise-wide configuration and real-time monitoring, as well as orchestrates the data flow into and through the SD-WAN overlay network. Additionally, it provides the one-click provisioning of virtual services across Edges, in centralized and regional enterprise service hubs, and in the cloud.

FPO



Technology Partner – VeloCloud

CBTS leads by partnering closely with VeloCloud, the market leader in SD-WAN Coupled with the Cincinnati Bell and CBTS brand equity based on quality and performance, this ensures our customers security, stability, and quality of experience which are second to none.

VeloCloud is the first to provide all three elements needed to achieve a Cloud-Delivered SD-WAN:

1) A cloud network for enterprise-grade connection to cloud and enterprise applications.

2) Software-defined control and automation.

3) Virtual services delivery.

VeloCloud is the only SD-WAN solution supporting data plane services in the cloud, in addition to on-premises deployments, enabling policy-based access to cloud and data center applications. VeloCloud's SD-WAN leverages the economics of the cloud to offer a SaaS like subscription price model to ease adoption and pay as you grow.

Reporting and Analysis

Reporting and Analysis is managed in the VeloCloud Orchestrator. The VeloCloud Orchestrator provides centralized enterprise-wide configuration and real-time monitoring, as well as orchestrates the data flow into and through the SD-WAN overlay network. Additionally, it provides the one-click provisioning of virtual services across Edges, in centralized and regional enterprise service hubs and in the cloud.

SD-WAN Roles and Responsibilities

SD-WAN and Responsibilities	CBTS	Customer
Administer logical Move-Add-Change (MAC) work	X	
Provisioning of Business Policies	X	
Site-to-Site VPN Tunnel (SD-WAN Network) Provisioning		X
All configuration management, configuration backups, device OS patching, hardware upgrades, and software upgrades management	X	
Provide maintenance software push updates VeloCloud Edge	X	
Facilitate Hardware Maintenance (RMAs)	X	
Define Firewall Rules	X	X
Establish Security Policies, Processes, and Procedures		X
Assist with Support for Customer Reported Trouble	X	

Pricing and Billing

Aggregate WAN Throughput MRC

10Mbps	30Mbps	50Mbps	100Mbps	200Mbps	400Mbps	1,000Mbps	2,000Mbps
$65/mo	$150/mo	$175/mo	$250/mo	$450/mo	$1,000/mo	$1,300/mo	$1,500/mo

High Availability MRC (Add-on)

10Mbps	30Mbps	50Mbps	100Mbps	200Mbps	400Mbps	1,000Mbps	2,000Mbps
$32.50/mo	$75/mo	$87.50/mo	$125/mo	$225/mo	$500/mo	$650/mo	$750/mo

Billing

Customers will be billed for SD-WAN from the CRM or CRIS Billing Systems. Existing services billed from Great Plains will be supported from Great Plains.