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## Introduction to SD-WAN Design

 For supported software information, click [here](#).

The Versa Networks SD-WAN solution is a highly robust and flexible platform that offers capabilities to address various SD-WAN use cases.

This series of SD-WAN design articles addresses the most common SD-WAN use cases, and they describe the Versa Networks recommendations and best practices for SD-WAN deployments. The objective is to help achieve a standardized approach to designing Versa Networks SD-WAN solutions. Note that these articles are not meant to cover detailed operational best practices nor to act as a service management manual.

These articles are targeted at network architects, engineers, administrators, and other technical audiences interested in designing, implementing, and deploying Versa Networks SD-WAN solutions. These articles assume that you are familiar with the basics of Versa Networks products and that you have a working knowledge of the Versa Network SD-WAN architecture as well as the wider Versa Networks ecosystem.

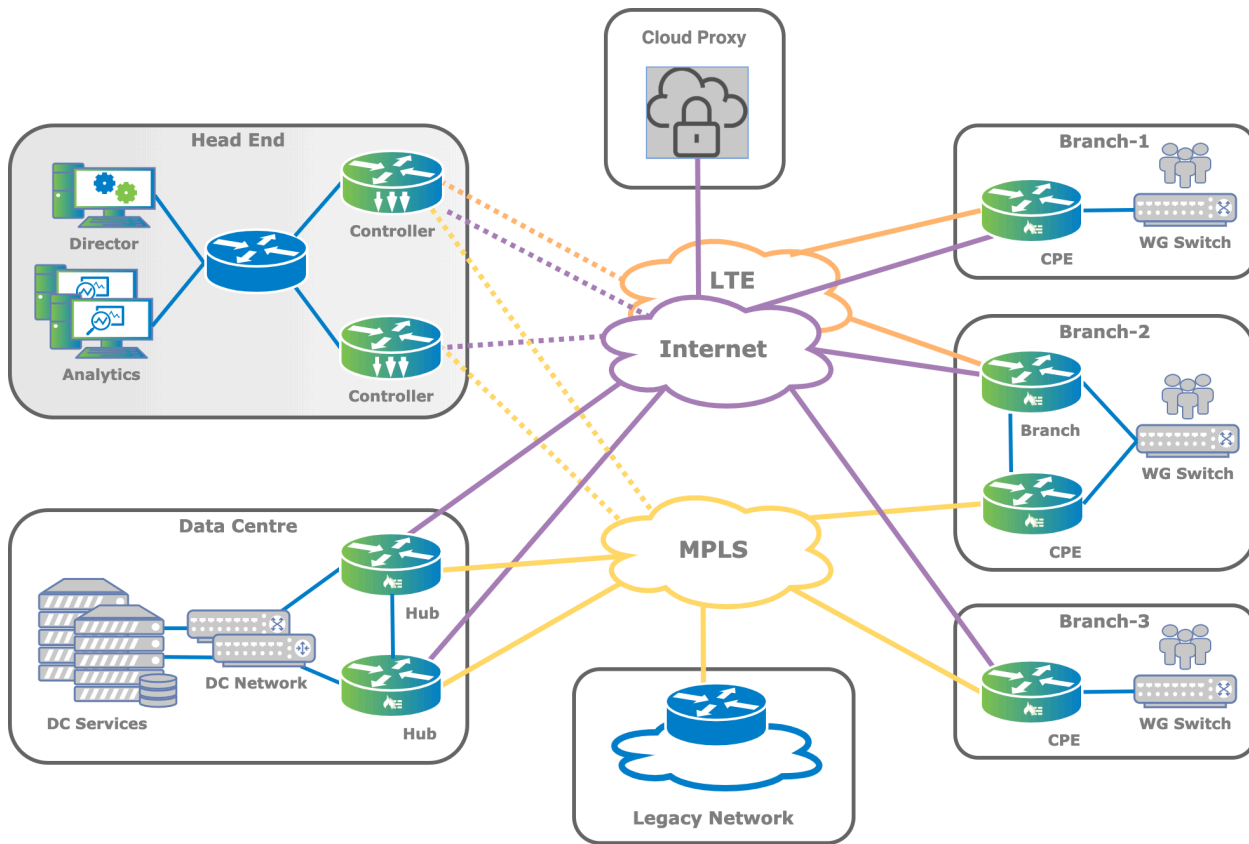
These articles are intended to be only a generic guide so that you can use them to explore use cases for your specific deployment. The articles do not cover every use case that the Versa Networks secure SD-WAN solution supports.

The designs and best practices described in these articles are based on the Release 20.2.2 software. While you can use these designs in networks running Release 16.1R2 software, not all features are available in the earlier software release.

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## Reference Network Architecture

The designs in these SD-WAN articles are based on the reference network architecture shown in the following figure. The figure shows a high-level blueprint of a typical network topology built using the Versa Networks SD-WAN solution. This topology has one headend, one data center, and three remote branches. The headend consists of a Versa Analytics cluster, a Versa Director, and two Versa Controller nodes. Other components of the topology are a legacy network and a cloud proxy. There are three transport networks in the figure, MPLS, Internet, and LTE, and they are provided by one or more service providers. The network orchestration provided by the headend is reachable through Versa Networks Controller nodes, which are connected to all transport networks. Versa Director and Versa Analytics are hosted in the headend.



## SD-WAN Design Guide Articles

This SD-WAN design guide includes the following articles:

- [SD-WAN Headend Design Guidelines](#)—Provides architectural and deployment guidelines for the Versa Networks Versa Analytics cluster, a Versa Director, and a Versa Controller headend components.
- [Branch Deployment Options](#)—Describes the most common transport-based branch deployment scenarios.
- [LTE Transport Modes](#)—In many scenarios, LTE is deployed as a backup path because its data costs are higher. This article discusses the LTE hot standby and cold standby mode.
- [SD-WAN Overlay Networks](#)—Discusses the IP addressing scheme for the overlay network and whether to have data traffic to follow the encrypted overlay,
- [SD-WAN Topologies](#)—Discusses the SD-WAN overlay topologies, which are full mesh, hub and spoke, regional mesh, and multi-VRF (also called multitenancy).
- [VOS Edge Device Direct Internet Access](#)—Describes the breaking out of traffic to the internet at the branch, which is called direct internet access, or DIA.
- [SD-WAN Gateway Use Cases](#)—Describes the three main use cases for VOS edge devices that act as SD-WAN gateways, which are connecting to sites on an MPS Layer 2 VPN network, connecting to sites over disjointed underlay networks, and acting as a gateway for internet-bound traffic.
- [SD-WAN Traffic Optimization](#)—Discusses how to use traffic steering, traffic conditioning, and SD-WAN path policies to optimize SD-WAN traffic flow.
- [VOS Edge Routing Protocols](#)—Describes common use cases for static and dynamic routing protocols.

[https://docs.versa-networks.com/Solutions/SD-WAN\\_Design/01\\_Introduction\\_to\\_SD-WAN\\_Design](https://docs.versa-networks.com/Solutions/SD-WAN_Design/01_Introduction_to_SD-WAN_Design)

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- [QoS](#)—Discusses how to configure quality of service (QoS), also known as class of service, or CoS, to ensure that the network prioritizes business critical traffic over less important traffic and treat this traffic with higher priority. You can also use QoS for other tasks, such as policing, shaping, and remarking the QoS bits in the IPv4/IPv6 and VLAN headers.

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## Supported Software Information

Releases 20.2 and later support all content described in this article.

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## Additional Information

[Branch Deployment Options](#)

[LTE Transport Modes](#)

[QoS](#)

[SD-WAN Gateway Use Cases](#)

[SD-WAN Headend Design Guidelines](#)

[SD-WAN Overlay Networks](#)

[SD-WAN Topologies](#)

[SD-WAN Traffic Optimization](#)

[VOS Edge Device Direct Internet Access](#)

[VOS Edge Routing Protocols](#)