SOLUTION BRIEF

Boost Your SD-WAN Architecture Versa-Networks & Megaport

Introduction

Over the last decade, the shift of workloads from on-premises to SaaS applications has created significant challenges for SD-WAN architectures, especially when it comes to traffic going to private workload with cloud providers like Azure, GCP, and AWS. As more and more applications are being hosted in the cloud, traffic is increasingly traversing suboptimal paths, resulting in performance degradation and latency issues.

In addition, with no central aggregation point for traffic going to CSPs, customers often rely on DIY solutions. Those solutions provide users with access to their workloads via different Cloud Provider building blocks resulting in very complexes architecture leading to a fragmented and unmanageable network, as well as security risks.

The Versa SD-WAN/Megaport solution provides a unified architecture that simplifies and automates deployment, management, and security for SaaS applications. It does so by using Megaport's high-bandwidth, low-latency global network to deliver performance and scalability, while also leveraging Versa SD-WAN's advanced security features to protect sensitive data.

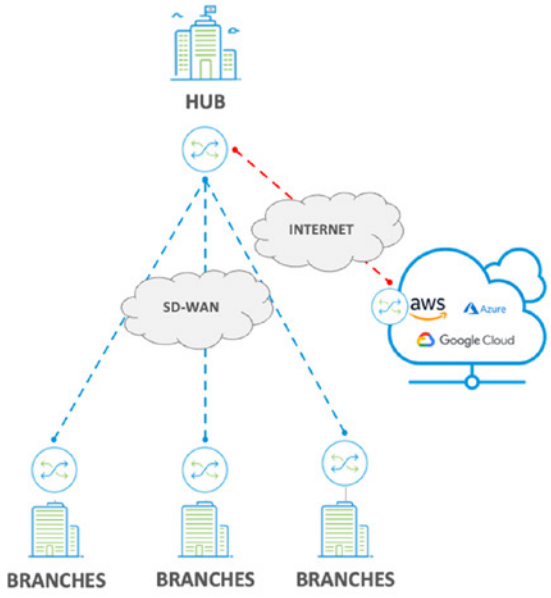
This document will cover the following topics:

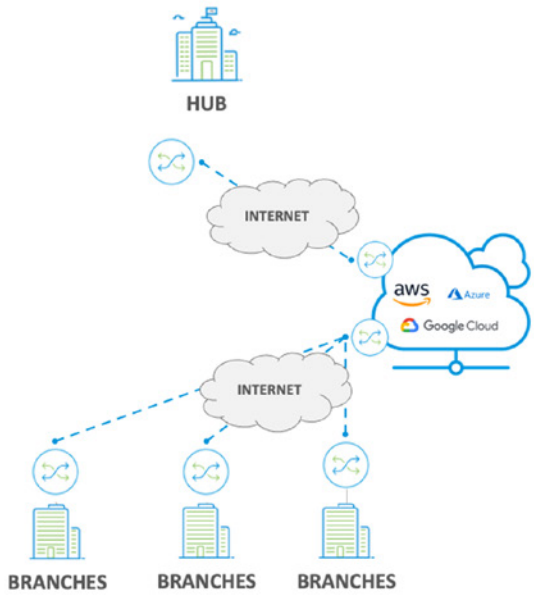
- Challenges & Risks associated with SD-WAN and Cloud Resources
- What is Megaport VME and what problem does it solve?
- The Benefits of the Versa / Megaport Integration
- Examples of Versa Networks & Megaport Architecture

Challenges & Risks associated with SD-WAN and Cloud Resources

Suboptimal Path & Complexity to Reach Private Cloud Resources

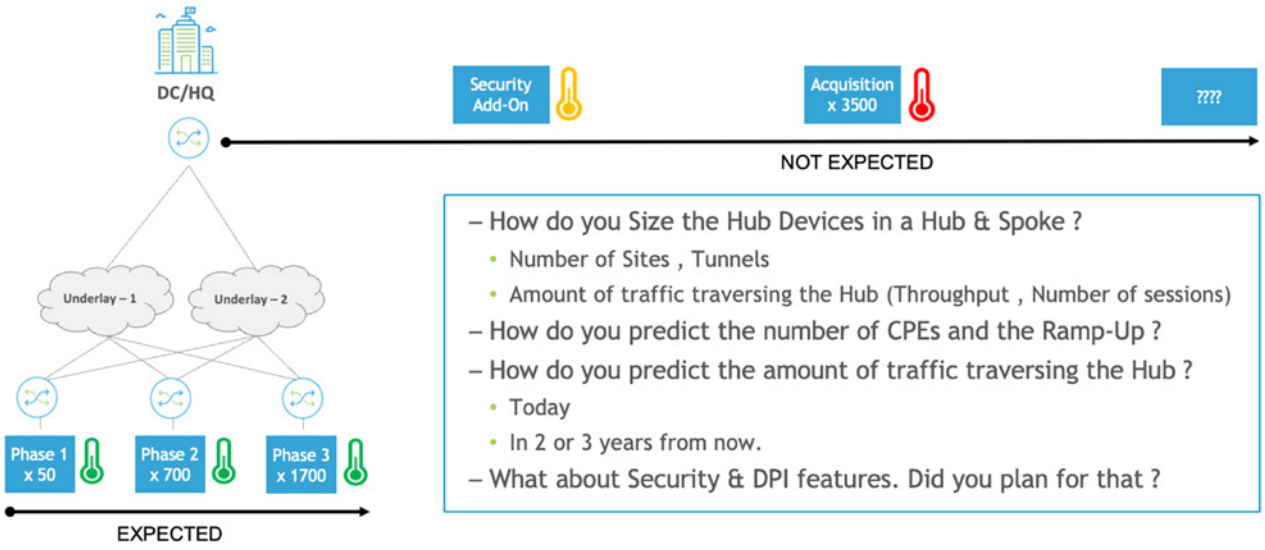
In some cases, SD-WAN may route traffic to private cloud resources through suboptimal paths using a Hub and resulting in performance degradation and latency issues. This can happen if the SD-WAN hub (left diagram) is located far from the private cloud resources or if the network infrastructure is congested. An alternative to this design is to create a full mesh of tunnels between each site (right diagram) and each CSPs. Although this design solves suboptimal paths it creates a lot of administrative overhead and it is very costly to maintain.





Scalability Issues When Building a Hub for an SD-WAN Environment

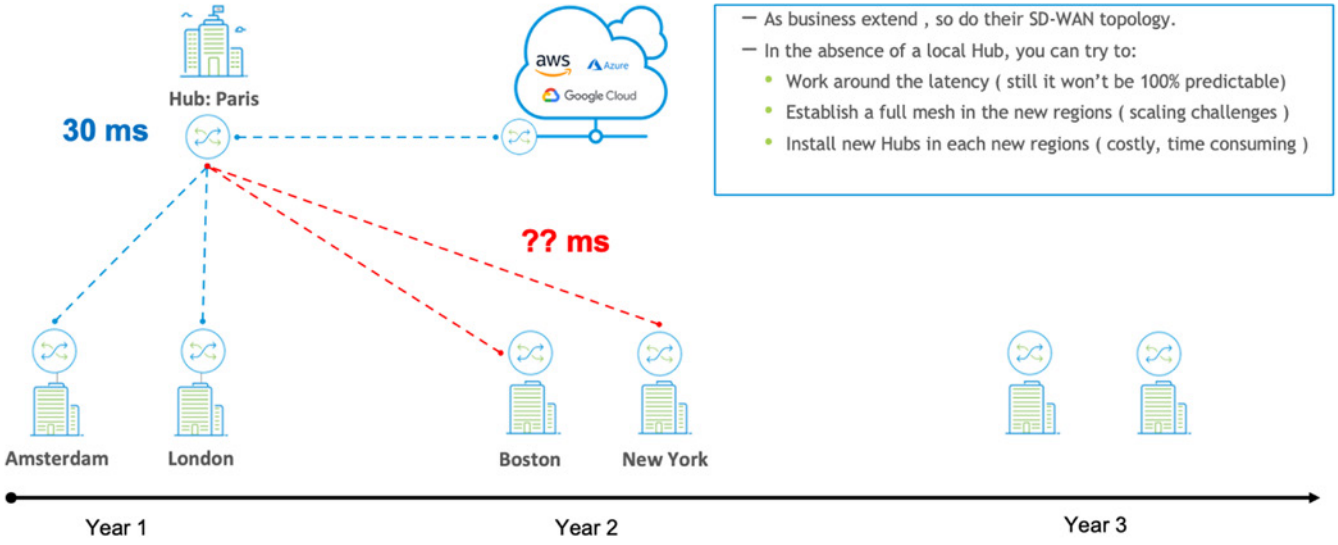
Insufficiently scaling SD-WAN hubs during project initiation introduces a potential risk, resulting in network bottlenecks. This challenge arises notably when there is a significant surge in users, devices, or traffic transiting through the hub. Predicting traffic growth proves challenging for organizations, often leading to an underestimation of the impacts associated with reorganization or acquisitions. Consequently, the existing SD-WAN hardware may swiftly become obsolete, precipitating performance degradation that affects all users within a compressed timeframe, typically weeks or months. Additionally, augmenting products with supplementary security features will also impact the overall system performance.



Physical Installation of the Hub

Deploying SD-WAN Hubs may face logistical challenges, especially when considering installation in remote or underserved regions. The intricacies of placement can lead to deployment delays with Cloud resources and an increased overall cost of ownership. Addressing these logistical considerations is essential for ensuring a streamlined deployment process and optimizing the cost-effectiveness of SD-WAN implementations.

In instances where a local hub proves impractical, the physical distance between branches and private cloud resources can introduce latency and impact application performance. This is particularly significant for organizations with a distributed workforce or private cloud resources spanning different regions. Branch offices connecting to the hub may face obstacles, as deploying a local SD-WAN hub might be infeasible due to cost constraints or limited physical space for equipment placement.

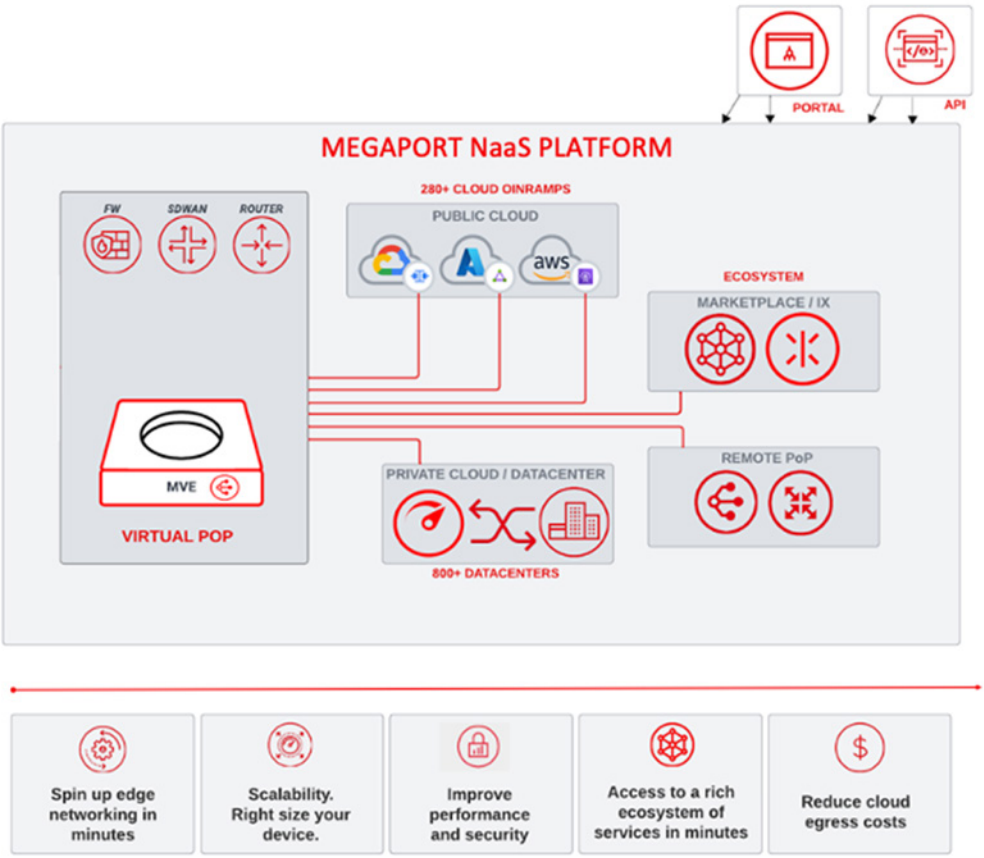


By conscientiously addressing these challenges, organizations can make informed decisions regarding their SD-WAN deployment, taking proactive measures to mitigate scalability risks, manage complexity, and optimize the paths to reach private cloud workloads. In light of these considerations, this document will delve into a comprehensive strategy that leverages a synergistic combination of Megaport and Versa Networks.

What is Megaport VME and what problem does it solve?

Megaport Virtual Edge (MVE) is a software-defined cloud-native platform that enables organizations to deploy and manage network functions virtualization (NFV) services on Megaport's global network quickly and easily. MVE offers several benefits over traditional NFV deployments, including:

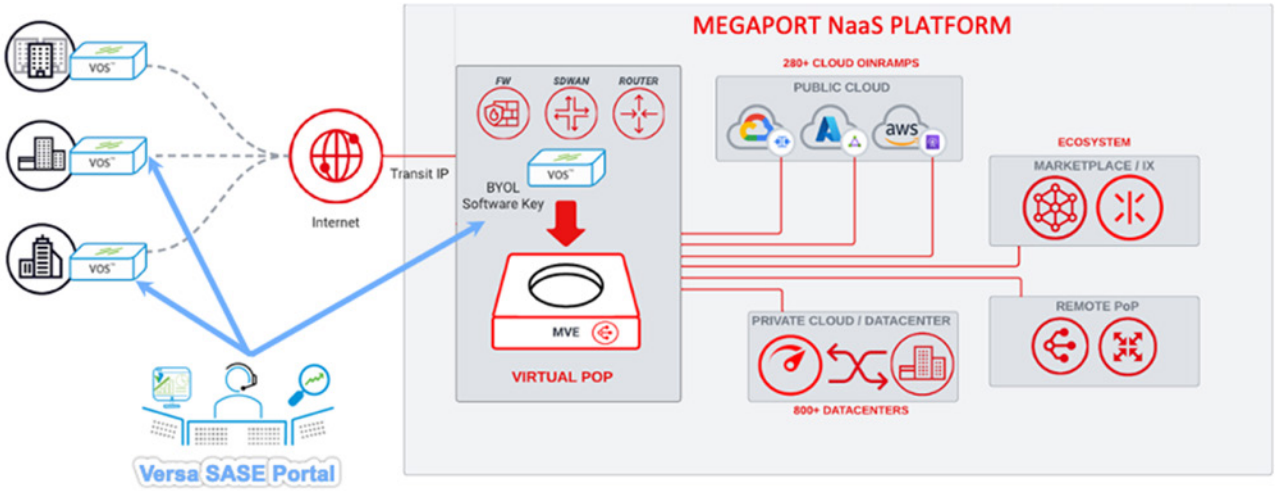
- **Simplicity:** MVE eliminates the need for manual configuration and management of NFV appliances, making it easier to deploy and manage NFV services.
- **Scalability:** MVE can be scaled up or down quickly and easily to meet changing demands. This scalability is also true for bandwidth available at the MVE. Megaport allows its customers to adjust the network capacity based on-demand. This scalability ensures that MVEs can handle increased traffic demands efficiently, providing the agility required in dynamic cloud environments.
- **Direct Cloud On-Ramps:** Megaport provides direct and dedicated private connections to major cloud providers like AWS, Azure and GCP. By setting up an MVE at the edge, the closest possible from the remote sites, you minimise the use of Internet, reduce the number of network hops on the way to the CSP and get a better and more predictable latency. With these direct and private connections reachable from the MVE, the result is a faster and more reliable connectivity to cloud resources.
- **Cost-effectiveness:** MVE is a pay-as-you-go service, so organizations only pay for the resources they use. Another cost reduction is related to the DTO (Data Transfer Outbound of the CSP, also know as egress cost) that is reduced by 66% when connected through private connectivity.
- **Global reach:** MVE provides access to Megaport's network, which spans over 850+ Datacenters globally.
- **Marketplace:** Megaport MVE benefits from a large marketplace where Versa is present to provide all the capabilities required by modern SD-WAN networks. There are 360+ other service providers available through private connectivity that will provide a complete WAN architecture to the customer.



The Benefits of the Versa / Megaport Integration

Versa Networks SD-WAN and Megaport are two powerful networking solutions that can be combined to create a highly effective and efficient WAN architecture. The integration of these two solutions provides several benefits:

- **Simplified Deployment and Management:** The Versa management portal can provision and manage virtual appliances on Megaport Virtual Edge (MVE), eliminating the need for manual and physical configuration. This streamlined process reduces the time and effort required to get SD-WAN Hubs & Spoke topologies up and running.
- **Enhanced Performance and Scalability:** Megaport's high-bandwidth, low-latency network provides Versa SD-WAN with the foundation for delivering optimal application performance and scalability. This means that users can experience fast, reliable access to private cloud applications, and the network can handle growing traffic demands without performance issues.
- **Comprehensive Security and Compliance:** Megaport's secure network (via DDOS Protection) and Versa SD-WAN's advanced security features (via UTM) ensure that enterprises can meet compliance requirements and protect sensitive data. This layered security approach helps to safeguard the network against cyberattacks and data breaches.
- **Reduced Costs and Increased Agility:** By combining Versa SD-WAN and Megaport, organizations can reduce costs associated with traditional SD-WAN deployments. This is due to the pay-as-you-go pricing model of Megaport, which means that organizations only pay for the resources they use. Additionally, the integration of these two solutions can increase agility by simplifying network operations and providing a more flexible architecture.

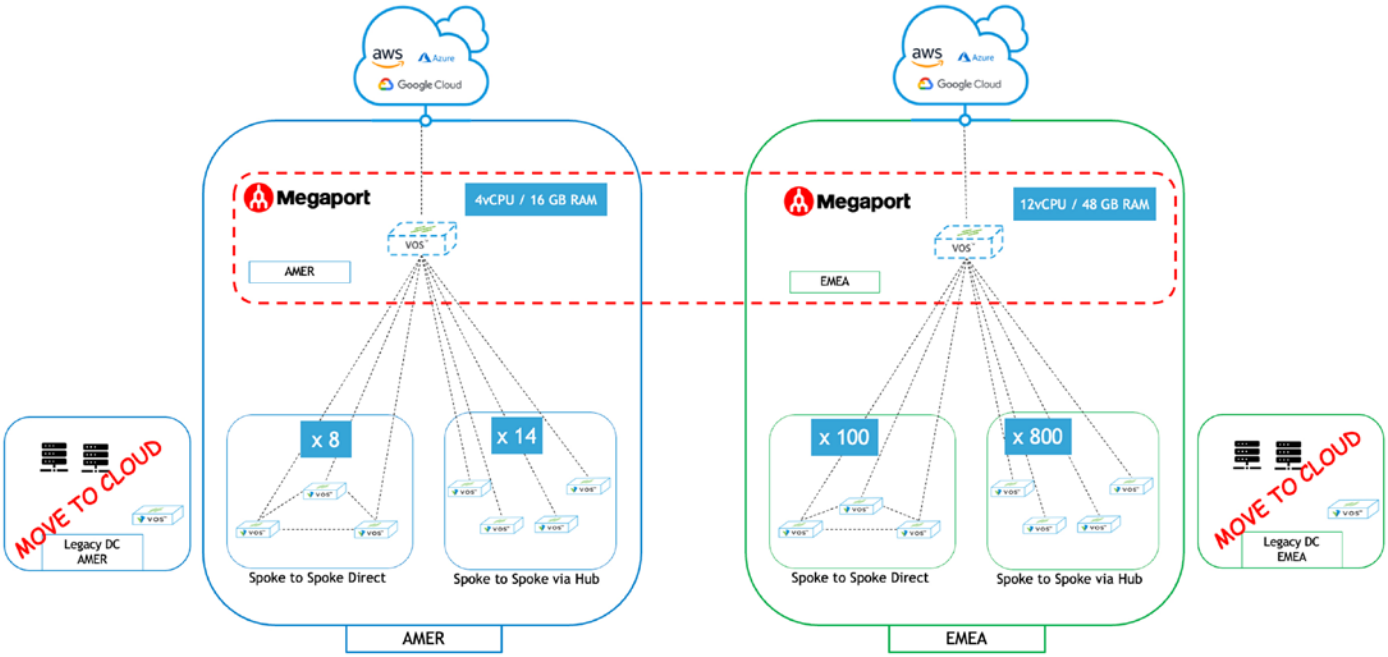


The collaboration between Versa Networks and Megaport offers a robust solution for contemporary SD-WAN architectures. This strategic integration harnesses the strengths of both platforms, enabling organizations to establish a highly scalable, secure, and cost-effective SD-WAN infrastructure. This unified approach ensures businesses have predictable access to their cloud workloads, effectively meeting the evolving demands of their growing operations.

Examples of Versa Networks & Megaport Architecture

A Company's Journey to Resource Migration and Path Optimization

The illustration provided below describes the architecture of a company, wherein the operational load has shifted from conventional data centers to the utilization of cloud service providers (CSPs) located in various regions. Within this framework, branch offices remain integral components. They establish communication with each other either directly or through a hub, access the internet for public resources via an internet breakout, and connect to the Megaport HUB to access private cloud resources.



The advantage of the solutions are multiples.

- The Hub scales with precision, adapting to the number of spokes in the region. The Hub's CPU and Memory capacity can be selected and adjusted over time, ensuring it can dynamically handle the region's demands as they arise.
- The Hub gains direct access to CSPs through services such as Direct Connect (AWS) or ExpressRoute (Azure). This eliminates the tromboning effect, ensuring that spokes achieve low-latency access to their private Cloud resources upon reaching the Hub. Furthermore, the cost of outbound Gigabit from these CSPs may decrease, occasionally exhibiting a 3 to 1 ratio.
- Due to the Megaport backbone, inter-region traffic between two spokes in different regions is efficiently transported over Megaport low-latency network. The Megaport backbone ensures robust physical security and employs traffic engineering to dynamically adjust networking paths based on load. This guarantees that the Versa SD-WAN overlay avoids traversing the unpredictable performance of the internet. Megaport has a strong presence in over 150 cities across 25 countries in North America, Europe, Asia, and Australia.

Conclusion

Combining the capabilities of Versa Networks, which specializes in secure SD-WAN solutions, with Megaport's cloud connectivity services, offers a powerful synergy for businesses. This collaboration results in enhanced and flexible connectivity options, improved network performance, and strengthened security measures. Businesses can benefit from a seamless and efficient network infrastructure, enabling them to adapt to evolving technology trends and meet the increasing demands of a digitalized world. The joint efforts of Versa Networks and Megaport contributes to a more robust and scalable networking environment, ultimately empowering organizations to optimize their operations and deliver enhanced services to their users.

For more information on Versa Networks, please visit https://versa-networks.com, contact us at https://versa-networks/contact or follow Versa Networks on X (Twitter) @versanetworks

For more information on Megaport, please visit https://www.megaport.com.

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