Natively Integrating SD-WAN and SSE

Creating a Unified SASE architecture through native integration of SD-WAN and SSE

Introduction

Unified SASE natively integrates the components of SD-WAN and SSE services into a single architectural framework. Such an approach provides Network Administrators with a single pane of glass for management and control. It also delivers single Control and Data planes, leveraging the advantages of SDWAN services, and secure connectivity with SSE services.

A multi-vendor and even some single-vendor SASE solutions aren't truly Unified. Disaggregated architectures introduce challenges and complexities that are avoided by adopting a Unified SASE solution.

This solution brief educates the reader what SASE is and then compares Unified versus Disaggregated SASE solutions.

What is SASE?

When defining 'SASE', there are two key terms that need to be understood.

Firstly, what is a Software Defined Wide Area Network (SD-WAN)? According to Gartner[1]:

> *"SD-WAN solutions provide a replacement for traditional WAN routers and are agnostic to WAN transport technologies. SD-WAN provides dynamic, policy-based, application path selection across multiple WAN connections and supports service chaining for additional services such as WAN optimization and firewalls".*

Secondly, what is Security Services Edge (SSE)? Also, according to Gartner[2]:

> *"Security Services Edge (SSE) secures access to the web, cloud services and private applications. Capabilities include access control, threat protection, data security, security monitoring, and acceptable-use control enforced by network-based and API-based integration."*

SASE can simply be viewed as the convergence of network (as defined by SD-WAN) and security (as defined by SSE) into a single coherent architectural framework that is delivered as a cloud native service. Such a framework can be used by an Enterprise independent of its footprint – such as public cloud; private cloud; branch office; and remote worker.

Disaggregated SASE vs. Unified SASE

If SASE is the convergence of SD-WAN and SSE, what is Unified SASE?

According to the Dell'Oro Group[3]:

> *"Unified SASE' is the term used to describe networking and security services integrated in a single platform with all SASE components coming from the same vendor; and implementing a single policy repository that spans network and security policy."*

There are multiple criteria to identify if the SASE architecture is unified. For example, is management and control of SDWAN and SSE from the single pane of glass? Is there a single policy definition and repository spanning network and security? If the answer to any of these questions (and others) is 'no', then the architecture may be SASE but not truly Unified SASE. In this respect, the architecture is Disaggregated.

But does it matter if SASE isn't Unified?

Let's look at a couple of examples.

Example 1

Although Versa Networks can support both Disaggregated and Unified SASE, in the Unified SASE use-case, the SSE Service is a native extension of the SD-WAN service:
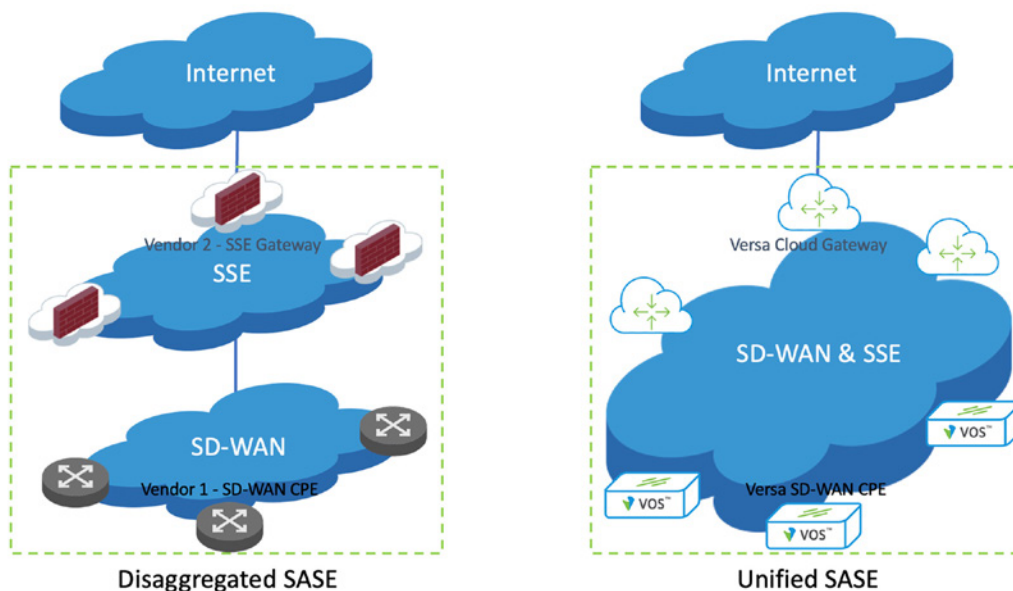
As such, SD-WAN features can be leveraged as end users access the SSE Service. For example, probes can be used to determine the performance of the underlay between the SD-WAN branch and the Cloud Gateways. SD-WAN Traffic Steering policy can then be used to optimise the end user experience when accessing SSE services. Paths experiencing high packet loss or latency can be avoided based on policy.

Additionally, the traffic to the SSE service can be easily load balanced across all available WAN links from the SD-WAN branch, thus avoiding complex routing policy and tuning.

Quality of Service may also be leveraged between the SD-WAN Branch and Cloud Gateway. For example, voice related applications may be prioritised between Branch and Gateway. In the event the WAN becomes congested, these higher priority applications may receive preferential treatment by the network over other, lower priority applications.

TCP Optimisations may also be leveraged across a Unified SASE architecture. For example, for SMB based application streams, traffic from remote workers could be optimized between Cloud Gateway and SD-WAN branch hosting the SMB server.

With a Disaggregated SASE architecture, simple packet loss probes could be used, but the more complex latency and jitter calculations are not available. Therefore, more sophisticated traffic steering rules can't be readily or easily deployed. This can have a direct impact on the end user experience. This is also the same for QOS or TCP optimisations.

Example 2

In a Disaggregated SASE architecture, to connect a fictious SD-WAN service composed of 200 CPE and 2 WAN links per CPE to the SSE service, 400 S2S IPSEC tunnels will need to be built across the SD-WAN service. Additionally, the same number will also need to be built across the SSE service. If each tunnel takes 15 minutes to create; apply; verify; a total of 100 hours is required to roll out connectivity between services. Consideration should also be given to Moves Adds and Changes (MACs). These require the network to be updated by the Network Administrator. For example, if the SSE IP address of the end point were to change, all SD-WAN devices need to be updated with the new IP address. This will require additional time and resource to complete.

With a Unified SASE solution from Versa Networks, the S2S IPSEC tunnels are automatically built between all end points in the network. The Network Administrator doesn't need to create any manual configuration. In addition, if the IP address of an end point were to change, the Network Administrator doesn't need to update the network either. Instead, the network will automatically learn and adapt. When the address is changed, the end point sends an update into the network. All other endpoints use this update to amend their S2S IPSec information:
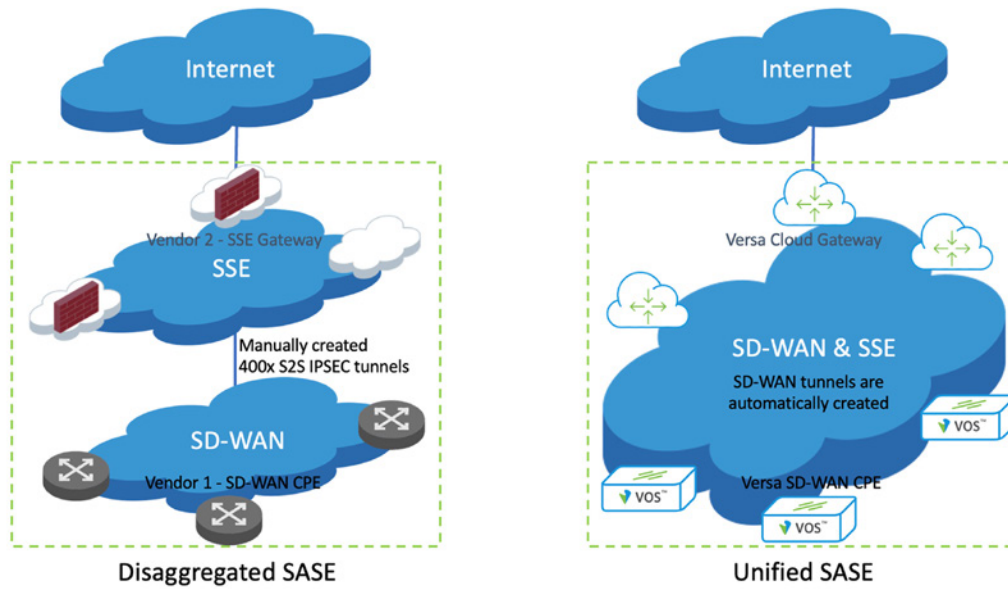
Example 3

With a Unified SASE Architecture, Network Administrators have a single pane of glass to manage and control the network:
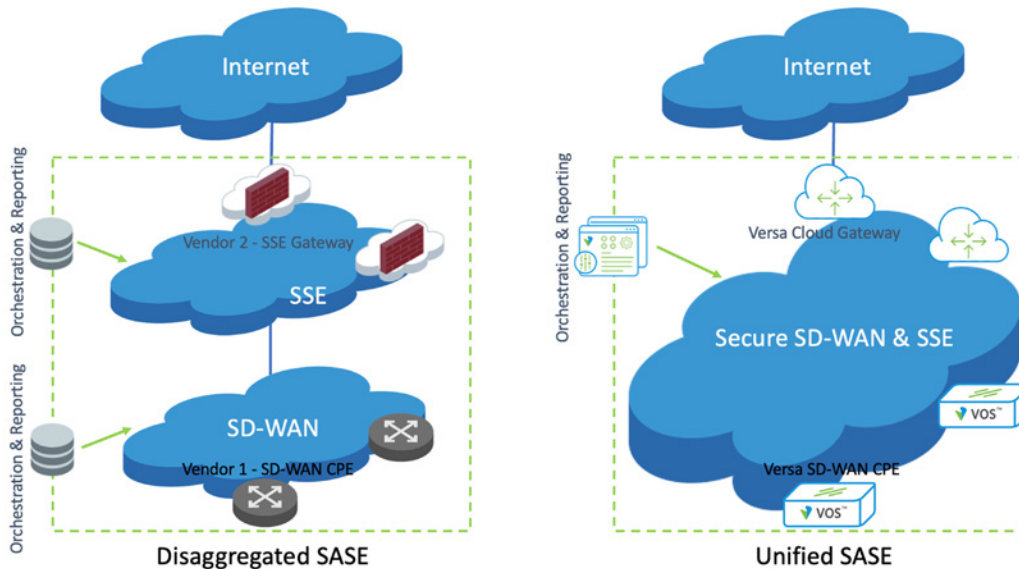
This affords multiple advantages over a Disaggregated approach:

1. A single User Interface (UI) reduces activation and operational complexity as Network Administrators need only operate a single orchestration and management tool.

2. A single policy repository is created spanning network and security functions.

3. Automation reduces deployment times and configuration errors. For example, automatic instantiation of S2S IPSec tunnels between SD-WAN and Cloud Gateways reduces network administration and on-going support.

4. The automatic collation of reporting information simplifies management for functions such as Operational Support and Capacity Planning

Therefore, a Unified SASE architecture has additional advantages over a Disaggregated architecture. The table below provides a summary of some of the key differentiators:

Design Feature	Unified SASE	Disaggregated SASE
Ability to support SD-WAN and SSE architecture frameworks when creating a SASE solution	√	√
Ability to support integrated networking and security services from within a single platform	√	X
Ability to support a single policy definition and repository rather than separate networking and security policy repositories	√	X
Supports a single pane of glass for network control and management	√	X
Supports a Single Control and Data plane	√	X
Delivers Activation and Operational simplification for connecting and routing between SD-WAN and SSE services	√	X
Ability to leverage SD-WAN features such as traffic steering; load balancing; QOS; TCP optimizations when accessing SSE services	√	X

Conclusion

In conclusion, Versa Networks Unified SASE takes the components of SD-WAN and SSE services and natively integrates them into a single architectural framework. Such an approach has multiple advantages over a Disaggregated approach. For example, Network Administrators can control and manage the network from a single pane of glass using a single policy repository. Such an approach also delivers single Control and Data planes, whilst leveraging the advantages of SDWAN, including simple yet secure connectivity.

A multi-vendor and even some single-vendor SASE solutions aren't truly Unified. These are Disaggregated solutions. Such architectures introduce challenges and complexities that are avoided by selecting and leveraging a Unified SASE solution.

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

Reference and Resources

[1] https://www.gartner.com/en/information-technology/glossary/software-defined-wan-sd-wan

[2] https://www.gartner.com/en/information-technology/glossary/security-service-edge-sse

[3] https://www.businesswire.com/news/home/20220324005201/en/Dell%E2%80%99Oro-Group-Report-Shows-Versa-Networks-is-the-Unified-SASE-Market-Share-Leader-for-2021-with-84-Percent-Market-Share

Why Versa Unified SASE is best suited for Enterprises - https://versa-networks.com/blog/why-versa-unified-sase-is-best-suited-for-enterprises/

Making the Right Selection: Single Vendor SASE or Unified SASE - https://versa-networks.com/blog/making-the-right-selection-single-vendor-sase-or-unified-sase/