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Charting a Course To 5G-Optimized SASE

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The Opportunity for 5G-Optimized SASE

Understanding SASE

Hybrid multi-cloud architectures, hybrid work, the Internet of Things (IoT), and other digital disruptors introduced complexity to networks that created the need for a converged approach to networking and security. Secure access service edge (SASE) is a class of solutions that unifies software-defined WAN, cloud-delivered network security (e.g., cloud access security broker, secure web gateway, firewall as a service), and secure remote access (e.g., zero trust network access) onto one platform.

A SASE solution creates a network overlay across heterogeneous networks, ensuring that all traffic passes through cloud points of presence (PoPs) where security services inspect and enforce security policy before traffic is forwarded to its destination. SASE centralizes management and control of networking and security and enables a consistent approach to policy management. With the right processes in place, SASE can also improve collaboration between network and security operations teams.

A typical enterprise starts with an SD-WAN solution. When they move to SASE, they will either add the SASE security features of their incumbent SD-WAN vendor or they will integrate their SD-WAN solution with a third-party secure service edge (SSE) provider.

The Rise of 5G WAN Connectivity

Wireless WAN (WWAN), such as mobile 4G/5G connectivity, is increasingly a strategic component of enterprise WANs. In the past, WWAN was a backup technology. When the primary wired network service failed, a site would fail over to a cellular backup connection to ensure no loss of connectivity for that site.

With 5G becoming ubiquitous, wireless performance is now reaching a level of parity with the wired connectivity typically required for branch and retail sites and the industrial edge. This led to an explosion of WWAN use in corporate networks. Enterprise Management Associates (EMA) research found that 86% of companies now use WWAN services to connect at least some of these sites and 87% of WWAN users are using those wireless services as primary network connections in at least some of their sites, rather than as strictly a backup.[1]

[1] All data cited in this paper was originally published by EMA in April 2023 in the research report "WAN Transformation with SD-WAN: Establishing a Mature Foundation for SASE Success."

EMA believes 5G is an important component of a hybrid WAN strategy because it addresses many shortcomings of wireline services are lacking. For instance, IT organizations can deploy 5G routers to the homes of business-critical remote workers whose options for wired internet services are limited. It can also connect corporate sites located in regions underserved by business-grade connectivity services. 5G can also provide rugged edge connectivity in places where no wired network services are possible, such as oil fields, transportation, and public safety. 5G WAN also provides added agility and acceleration. An enterprise can usually connect a site with 5G within hours rather than the days it takes to add broadband connectivity and the weeks it takes to light up an MPLS circuit.

Given all these factors, EMA anticipates a future in which enterprises establish a hybrid WAN that features a healthy mix of MPLS, wired broadband, and WWAN services. These hybrid WANs will form the underlay network for SD-WAN and SASE network overlays.

Emerging Demand for 5G-Optimized SASE

If enterprises are adding 5G services to their overall networks, EMA recommends that they consider the value of a fully integrated 5G SASE stack. In fact, 88% of organizations that use or plan to use WWAN told EMA that they require it to be integrated with their SD-WAN solution. This enables a unified approach to hybrid WAN architecture, operations, and security. A fully integrated solution will allow IT organizations to manage network security, network access policies, and observability in a uniform manner across wireless and wired connectivity in the hybrid WAN. For instance, SD-WAN solutions can apply traffic steering policies over both wired and wireless connections based on quality of service requirements, cellular parameters, and network conditions. Many SD-WAN vendors are unable to do this today because they either offer no support for wireless connectivity or they deliver it via a wireless dongle plugged into their edge devices. Their software architecture is unable to recognize this dongle and incorporate it completely into the overlay.

Strong integration of wireless connectivity and SD-WAN provides a foundation for 5G-optimized SASE. This integration ensures that 5G and other wireless services are first-class technologies in the WAN underlay that forms the foundation of SASE. Such a SASE solution is optimized to run efficiently and cost-effectively over cellular connections. For example, the SASE platform considers cellular-centric attributes, such as available bandwidth and data plan usage, when steering traffic. It can also avoid double encryption over cellular connections wherever possible and leverage SIM authentication more broadly in the security policy framework. It can also provide strong visibility and analytics into the cellular network environment.

With this type of integrated architecture, enterprises can apply split tunnel routing to wireless at the WAN edge. Traffic associated with applications hosted in the corporate data center will traverse a VPN or ZTNA service. SaaS application traffic will be routed through a SASE PoP, where a CASB service will impose security, and internet traffic will be routed through a SASE PoP, where a secure web gateway will apply the security policy.

The Journey From SD-WAN to SASE is Difficult

EMA research found that a SASE solution must have a mature SD-WAN foundation. Unfortunately, only 38% of IT professionals believe they have been fully successful with SD-WAN. This sets them up for SASE failure. In fact, EMA discovered that only 11% of organizations believe that the transition from SD-WAN to SASE is very easy, and 31% say it is genuinely difficult.

To ensure a successful transition, enterprises will have to overcome several technical challenges with their SD-WAN technology. EMA's research identified several significant pain points. First, 26% of IT organizations say that SD-WAN implementation complexity is particularly problematic. One way to overcome this complexity is to look for a solution that simplifies policy management. Another way is to work with a managed service provider rather than rely solely on an internal network engineering team. Secondly, 24% are struggling significantly with the integration of SD-WAN with their existing security architecture. EMA recommends that network teams collaborate closely with their security counterparts from the beginning of an SD-WAN project. This will be critical as SD-WAN evolves into SASE because the security team may want to own many of the security services a SASE solution offers.

Furthermore, 22% say bringing new sites online is a major source of pain. An SD-WAN solution that leverages WWAN can speed up and simplify this process, since cellular connectivity is generally quicker to provision and activate than wired connections. Automated workflows within an SD-WAN solution are also important. Finally, 21% told EMA that product stability is a major problem. Thus, IT organizations must rigorously test SD-WAN technology before committing to a particular vendor.

Setting Yourself Up for SASE Success

In its research, EMA identified several factors that influence whether a transition from SD-WAN to SASE is easy or painful.

Observability

Although many enterprises consume SD-WAN and SASE as managed services, the most successful ones maintain a hybrid operating model in which they share responsibility for Day 2 operations with the managed service provider. Hybrid operations correlate with SD-WAN success and a less painful SASE transition.

Tooling will be essential. Organizations that reported satisfaction with the native monitoring capabilities of their SD-WAN vendor had better success with SD-WAN and SASE. Also, organizations that could establish end-to-end visibility into their WAN underlay from a single console also did better with this technology.

Single-Vendor Solutions

Today, 43% of enterprises have multi-vendor SD-WAN environments for a variety of reasons, from site diversity to mergers and acquisitions. IT organizations that use a single vendor for SD-WAN reported an easier transition to SASE.

EMA also found that organizations report less pain with a SASE transition if they use one vendor for both the SD-WAN and SSE components of a solution. In other words, organizations struggle more when they try to integrate an SD-WAN vendor with a third-party cloud security vendor to establish a SASE solution.

Strong WWAN Integration

Only 38% of organizations that integrate WWAN with their SD-WAN and SASE technology are fully satisfied with that integration. EMA found that this satisfaction has a strong correlation with the level of pain involved in a transition from SD-WAN to SASE. Weak WWAN integration generally led to SASE pain. This integration will be essential because the cloud-delivered security PoPs of a SASE solution can introduce latency to a network. Wireless connections must be integrated properly with SD-WAN capabilities, like traffic steering, WAN remediation, and observability, to ensure that a wireless connection into a SASE PoP is optimal.

Next Steps

The market for 5G-optimized SASE is still in its early stages. In fact, SASE alone is still an emerging market. Enterprises will need to navigate 5G and SASE carefully in the coming years. One vendor that specializes in 5G-optimized SD-WAN is Cradlepoint. To learn more about their technology and how they are building a 5G-optimized SASE solution, visit **https://cradlepoint.com/products/netcloud-exchange/**

About Cradlepoint

Cradlepoint enables the freedom to connect people, places, and things that drive more experiences, more ways to work, and better business results – anywhere. The company is a pioneer in wireless WAN, offering advanced 4G and 5G routers and adapters controlled through Cradlepoint NetCloudTM. Enterprise businesses and public sector agencies rely on Cradlepoint and its Cellular Intelligence to build a reliable, secure network wherever they need it, connecting fixed and temporary sites, vehicles, IoT devices, and remote employees. Headquartered in Boise, Idaho, Cradlepoint is a wholly owned subsidiary of Ericsson (NASDAQ: ERIC) and part of their Business Area Enterprise Wireless Solutions. It has international offices in Asia Pacific, Canada, Europe, India, and Latin America.

About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at **www.enterprisemanagement.com**. You can also follow EMA on **Twitter** or **LinkedIn**.

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