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How SD-WAN Makes LTE/5G Simple, Resilient, and Secure

Executive Summary

SD-WAN brings big benefits to digital acceleration, including an improved stakeholder experience, simplified network operations, better network uptime, and significant IT cost savings. It allows enterprises to quit router-centric, hub-and-spoke network models reliant on expensive MPLS links. Instead, their branches can connect directly to the cloud via cable/DSL internet, enabling SD-WAN to segment traffic and select the best path.

But, what happens when there are no paths? SD-WAN can't prevent wired service provider outages. If the cable/DSL service goes down, then connectivity at that branch is lost. Or what if cable/DSL lines don't exist in a location that needs direct internet access? Enter LTE/5G.

Gartner estimates that by 2024, the SD-WAN market will reach $5.5 billion. At the same time, the LTE/5G router and gateway market will reach $3 billion.[1]

Understanding how two technologies work together

Enterprise IT leaders are aware that cellular technology can be used for wireless WAN. Their problem is that a wireless solution separated from SD-WAN makes deploying and managing branch connectivity more difficult. Also, companies that provide only wireless WAN capabilities may not be able to offer the security controls needed to protect traffic.

Using LTE/5G, branches have more high-quality internet links for their cloud access. This also gives SD-WAN more options to hit the performance benchmarks, ultimately delivering a better stakeholder experience. Additionally, enterprises can increase network reliability using LTE/5G for fast cellular failover, or active-active load balancing, and even out-of-band management to continue branch operations in case of a wired outage. In the event that cable/DSL is not available, branches that need cloud access can use LTE/5G. It is integrated into the SD-WAN fabric.

Management using one dashboard

The aforementioned benefits are enhanced further thanks to combining SD-WAN and LTE/5G management using the same dashboard and OS. When both technologies are integrated, the network administrator can set policies, metrics, and controls in SD-WAN, and have them applied to all LTE/5G connections without extra effort.

Considerations for an Integrated LTE/5G SD-WAN Solution

A cellular gateway that's separated from the SD-WAN device

When deploying an integrated LTE/5G SD-WAN solution, it's important not to place the cellular modem inside the SD-WAN device. If possible, utilize a separate cellular gateway placed near a window for optimal reception and connected to the SD-WAN device via Ethernet. The Ethernet cable is not costly and delivers optimal signal quality.

Out-of-band management

Service providers can experience outages that affect business, so it's important for your LTE/5G SD-WAN solution to offer out-of-band management for branches. This allows the network operator to continue managing the branch and all devices during a wired service provider outage.

A platform approach to security

When you open branches to the internet, security must be robust, multilayered, and integrated. A combined SD-WAN and LTE/5G solution must include a native and integrated set of multilayered security controls, resulting in a Secure SD-WAN solution. Controls like NGFW, IPS, SWG, DNS, and more must be integrated to automate protections for both wired and wireless local breakouts. You can drastically reduce the enterprise attack surface while providing immense benefits with SD-WAN and LTE/5G.

A single dashboard for network management

The same integration that applies robust security controls must also be applied for network management. Spinning up new branches, making network changes, and adjusting connectivity policies must be automated and applied to wired and wireless connections at once. Bifurcating the connectivity types between two vendors adds complexity and costs to enterprises looking for the opposite: to derive more value from IT through digital acceleration and simplifying operations.

End-to-end visibility and analytics

IT teams are building networks to harness the power of Secure SD-WAN, which operationalizes graphical dashboards with rich network analytics, bandwidth predictions, and consumption controls. SD-WAN can provide enormous visibility and control. LTE/5G links should be part of the equation.

Conclusion

An integrated SD-WAN solution with LTE/5G helps teams save time while doing more to unify the network edge and ultimately making the network simple, resilient, and secure.

> *"With IoT regaining momentum as the pandemic eases, we expect stronger-than-expected growth going forward in the LTE and 5G router space, as cellular technology overall gains traction as a primary link for branch environments, more mobile routers are deployed, and IoT projects recoup funding."[2]*
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> – Patrick Filkins, Research Manager, IoT and Telecom Network Infrastructure, IDC

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[1] Christian Canales, Joe Skorupa, and Naresh Singh, "Forecast: Enterprise Network Equipment by Market Segment, Worldwide, 2019-2025, 3Q21 Update," Gartner Research, September 27, 2021.

[2] Patrick Filkins and Rohit Mehra, "Worldwide 5G and LTE Router/Gateway Forecast, 2021–2025: Commercialization of 5G at the Edge Begins to Take Shape," August 2021.

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