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Magic Quadrant for SD-WAN

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The software-defined WAN market is mature, but there is still differentiation between vendors. Infrastructure and operations leaders responsible for networking should use this research to identify SD-WAN vendors most aligned with their branch connectivity and security requirements.

Strategic Planning Assumptions

By 2027, 65% of new SD-WAN purchases will be part of a single-vendor secure access service edge (SASE) offering, an increase from 20% in 2024.

By 2027, 70% of network operations personnel will rely on generative AI for Day 2 SD-WAN management, up from less than 5% in early 2024.

Market Definition/Description

This document was republished on 3 October 2024. The document you are viewing is the corrected version. For more information, see the **Corrections** page on gartner.com.

Gartner defines SD-WAN as functionality primarily used to connect branch locations to other enterprise and cloud locations. SD-WAN products provide dynamic path selection based on business or application policy, routing, centralized orchestration of policy and management of appliances, virtual private network (VPN), and zero-touch configuration. SD-WAN products are WAN transport/carrier-agnostic and create secure paths across physical WAN connections.

SD-WAN products replace traditional branch routers and enable connectivity between enterprise branch locations as well as the cloud. They facilitate WAN connectivity's evolution

from Multiprotocol Label Switching (MPLS)-centric to public internet-centric in support of enterprise traffic shifts from private data centers to public cloud and SaaS.

Mandatory Features

The mandatory features for SD-WAN offerings include:

- Functionality:
  - Ability to replace a branch router (e.g., support for Border Gateway Protocol [BGP])
  - Application-aware dynamic path selection (e.g., Layer 7 traffic steering) across multiple physical interfaces
  - Virtual private network (VPN)
  - Orchestrator (on-premises or in the cloud) that provides a centralized mechanism for:
    - Configuration (zero-touch configuration)
    - Management
    - Visibility/analytics/troubleshooting
    - Reporting
- Form factor for branch, data center and cloud locations:
  - Software that can be deployed on a branded hardware appliance or third-party hardware at a branch, data center or other enterprise location
  - Software deployed in the public cloud as a virtual instance

Common Features

The common features for SD-WAN offerings include:

- Integrated Layer 4 firewall, intrusion detection system (IDS)/intrusion prevention system (IPS), URL/content filtering and anti-malware
- Software delivered as a virtual network function (VNF), virtual machine (VM) or container
- Branded turnkey hardware appliance
- API support

- Service chaining capabilities (including the ability to integrate with third-party SSE vendors)
- Application performance optimization capabilities (e.g., forward error correction [FEC], packet duplication and SaaS optimization)
- Orchestration and integration with cloud service providers to simplify cloud onramp
- Advanced on-premises security (e.g., Layer 7 firewalls and data loss prevention [DLP])
- Native cloud gateways for service insertion and simplified cloud onramp connectivity
- WAN backbone/enhanced internet functionality
- WAN optimization (e.g., TCP optimization, caching and deduplication)
- Extended orchestration beyond SD-WAN to include wireless LAN (WLAN)/LAN/security to form SD-Branch
- AI/GenAI networking support for configuration management, incident management and documentation access
- Software-only solution deployable on an end-user device for remote users

Magic Quadrant

Figure 1: Magic Quadrant for SD-WAN

Vendor Strengths and Cautions

Barracuda

Barracuda is a Niche Player in this Magic Quadrant. It offers two SD-WAN products, CloudGen Firewall and SecureEdge, both with hardware appliances and software with orchestration and management. CloudGen Firewall is the vendor's traditional offering, and SecureEdge focuses on the transition to single-vendor SASE. Gartner estimates that Barracuda has 4,500 enterprise SD-WAN customers and operates mainly in North America, Europe, and the Middle East and Africa (EMEA). Its customers tend to be smaller enterprises and small and midsize businesses (SMBs) in selected verticals.

Over the next 18 months, we expect Barracuda will invest in its dedicated cloud-based analytics and reporting service, edge compute capabilities, and App connector to extend visibility and control over application and Internet of Things (IoT) traffic.

Strengths

- **SMB focus:** Barracuda focuses on providing operational simplicity for SMB customers.
- **Pricing:** Barracuda's pricing is competitive when compared with other vendors in this research, which should appeal to price-sensitive organizations.
- **On-premises security:** Barracuda's SD-WAN offering includes strong integrated on-premises security that is appealing to security-sensitive organizations.

Cautions

- **Innovation:** Barracuda's planned SD-WAN innovations are unlikely to deliver game-changing capabilities to the market, as the vendor is more focused on delivering incremental enhancements.
- **Market visibility:** Barracuda has low SD-WAN market visibility for end users, based on end-user Gartner interactions, gartner.com searches and social media conversations.
- **Product:** Barracuda's breadth and depth of SD-WAN features have limited appeal for organizations with larger, more complex networks, compared with other vendors in this research. This includes limitations with cloud onramp, partner-integrated cloud security, small platform flexibility, and routing and application steering when compared with other vendors in this research.

Broadcom (VMware)

Broadcom (VMware) is a Leader in this Magic Quadrant. Broadcom is a new entrant into the market via its acquisition of VMware. The VMware VeloCloud SD-WAN product includes edge appliances, optional gateway points of presence (POPs), software licenses and a cloud-based orchestrator. Gartner estimates that Broadcom has 21,000 SD-WAN enterprise customers and operates globally, serving clients of all sizes and in all vertical industries, with a go-to-market focused primarily on service providers.

Over the next 18 months, we expect Broadcom will invest in transport intelligence for fixed wireless access, comprehensive edge analytics, and the integration of VeloCloud edge appliances and management with Symantec cloud security as part of its SASE offering.

Strengths

- **Product:** Broadcom has broad and deep SD-WAN product capabilities that address most current enterprise use cases.
- **Sales execution/pricing**: Broadcom has strong SD-WAN market share, and its pricing is competitive when compared with other vendors in this research.
- **Market understanding:** The vendor has strong SD-WAN market understanding based on its enterprise experience and market focus.

Cautions

- **Market investment:** The vendor's expected investment growth in the SD-WAN market is lower than other vendors in this research, which may limit the vendor's ability to keep up with market developments.
- **Customer experience:** The vendor's customer experience is below average when compared with other vendors in this research, based primarily on end-user Gartner client interactions. Gartner clients also express concerns about potential impacts from Broadcom's acquisition of VMware.
- **Product strategy:** Broadcom's SD-WAN product roadmap includes more narrow and catch-up capabilities, such as fixed wireless access and cloud-based security, when compared with other vendors in this research.

Cisco

Cisco is a Leader in this Magic Quadrant. Its offerings include Cisco Catalyst SD-WAN and Cisco Meraki SD-WAN that provide SD-WAN appliances with additional advanced integrated security, licensed software, and the requisite management and orchestration. Catalyst SD-WAN typically is marketed to customers with more advanced requirements, whereas Meraki is typically marketed to customers that prioritize ease of use. Gartner estimates that Cisco has 55,000 SD-WAN enterprise customers. The vendor operates globally, serving clients of all sizes and verticals.

Over the next 18 months, we expect Cisco will invest in its AI assistant, integrate its SD-WAN offerings with Cisco XDR and deliver distributed security policy enforcement, regardless of the appliance deployed. Furthermore, we expect the vendor to integrate Splunk with Cisco SD-WAN and extend segment-based routing to the enterprise.

Strengths

- **Sales execution:** Cisco has robust global sales channels with a strong market share.
- **Product strategy:** Cisco's SD-WAN product roadmap is aligned with end-user organization needs, focusing on its AI assistant as well as security and networking integration.
- **Marketing execution:** Cisco has high SD-WAN market visibility for end users and overall strong marketing execution.

Cautions

- **Customer experience:** Cisco has below-average customer experience compared with other vendors in this research, based primarily on end-user Gartner client interactions.
- **Marketing strategy:** Cisco's go-forward marketing strategy is less specific to the SD-WAN market and unlikely to change buyer behavior.
- **Vertical/industry strategy:** Cisco has more of a horizontal strategy than a vertical/industry strategy, which may result in overlooking some specific customer needs.

Ericsson (Cradlepoint)

Ericsson (Cradlepoint) is a Niche Player in this Magic Quadrant. Ericsson's offerings under its Cradlepoint division (Ericsson Enterprise Wireless Solutions as of 12 September 2024) are the Ericsson NetCloud service, Ericsson Cradlepoint E Series SD-WAN routers and Ericsson NetCloud Exchange Service Gateways, and licensed software focusing on cellular wireless WAN use cases. Gartner estimates that Ericsson has 7,500 enterprise SD-WAN customers, with operations primarily in North America, Europe and the Asia/Pacific region, focusing on cellular wireless WAN use cases in specific verticals such as retail, transportation and public safety.

Over the next 18 months, we expect Ericsson (Cradlepoint) will invest in microtunnel integration into SD-WAN to improve performance, integration of user attributes via SIM into SD-WAN and enhanced AIOps capabilities.

Strengths

- **Cellular wireless focus:** Ericsson (Cradlepoint) has a primary focus of developing and selling cellular wireless WAN solutions to end users.

- **Vertical/industry strategy:** Ericsson (Cradlepoint) has a strong vertical/industry focus on use cases specific in retail, transportation and public safety.
- **Sales strategy:** Ericsson (Cradlepoint) has a focused sales strategy to reach organizations that are consistent with its target market, which will improve its chances to grow.

Cautions

- **Innovation:** Ericsson (Cradlepoint) has a narrow cellular-centric innovation roadmap, focused on microtunnel integration into SD-WAN to improve performance and integration of user attributes via SIM into SD-WAN, which has limited chance to change buyer behavior.
- **Pricing:** Based on Gartner analysis and Gartner Peer Insights, Ericsson (Cradlepoint), compared with other vendors in this research, has higher pricing, which is less appealing to price-sensitive organizations.
- **Marketing execution:** Ericsson (Cradlepoint) has below-average marketing execution, compared with other vendors in this research, resulting in low SD-WAN market visibility for end users.

Fortinet

Fortinet is a Leader in this Magic Quadrant. The Fortinet Secure SD-WAN product includes FortiGate physical and virtual appliances with on-premises security software licenses managed via the FortiManager orchestrator. Gartner estimates that Fortinet has 40,000 SD-WAN enterprise customers and operates globally, addressing customers across most verticals and company sizes.

Over the next 18 months, we expect the vendor will invest in digital experience monitoring (DEM) for deeper end-user experience and application performance visibility, machine learning with adaptive network performance thresholds, and its generative AI (GenAI) assistant.

Strengths

- **Sales execution/pricing:** Fortinet has strong SD-WAN market share, robust channels and competitive pricing, which is appealing to many organizations.
- **Product strategy:** Fortinet's SD-WAN product roadmap is aligned with end-user organization needs, focusing on GenAI, machine learning and DEM enhancements.

- **Customer experience:** Fortinet has strong customer experience, compared with other vendors in this research, based on Gartner end-user client interactions and Gartner Peer Insights' customer feedback.

Cautions

- **Networking capabilities:** Some large global clients question Fortinet's ability to meet the requirements of large complex enterprise WAN configurations, topologies and architectures.
- **Security service edge (SSE) integrations:** Fortinet has limited integrations with third-party SSE vendors, which reduces enterprise choice when deploying a dual-vendor SASE architecture.
- **Sales strategy:** Fortinet's sales strategy is limited and more tactical, focusing more on internal efficiencies rather than enhancing how it reaches enterprise customers.

HPE

Hewlett Packard Enterprise (HPE) is a Leader in this Magic Quadrant. Its SD-WAN offerings include HPE Aruba Networking EdgeConnect SD-WAN (with optional WAN optimization) and HPE Aruba Networking EdgeConnect SD-Branch, both of which include physical and virtual appliances, as well as software licenses with management and orchestration. Both products are managed through the HPE Aruba Networking Central platform. Gartner estimates that HPE has 6,000 SD-WAN enterprise customers across both products, with global operations addressing clients of all sizes and verticals.

Over the next 18 months, we expect the vendor will invest in a lighter-weight SD-WAN offering and LocalEdge to deliver policy enforcement at the edge as part of its SASE offering. Other likely investments include AI-powered insights routing and policy decisions.

HPE announced its intention to acquire Juniper Networks on 9 January 2024. At the time of this evaluation, however, HPE and Juniper operate as separate entities. Gartner will provide further insight as more details become available.

Strengths

- **Product:** HPE has strong performance optimization, cloud onramp, partner-integrated security and operational capabilities that are aligned with current SD-WAN market needs.

- **Marketing execution:** Compared with other vendors in this research, HPE demonstrates above-average marketing execution, based on its marketing message and value proposition, resulting in solid SD-WAN market visibility for end users.
- **Sales strategy:** HPE has above-average expected future sales investment and plans to simplify its pricing model.

Cautions

- **Customer experience:** Based primarily on Gartner end-user interactions, HPE has below-average customer experience compared with other vendors in this research.
- **Multiple SD-WAN products:** HPE has multiple SD-WAN products that address different use cases. This may result in customer or prospect confusion and introduce the risk of selecting the wrong offering.
- **Vertical/industry strategy:** HPE employs more of a horizontal strategy than a vertical/industry strategy, which may result in overlooking some specific customer needs.

Huawei

Huawei is a Challenger in this Magic Quadrant. Huawei's SD-WAN solution includes the NetEngine AR Series physical and virtual routers and software licenses, as well as the iMaster NCE-Campus controller. Huawei also has the USG firewall offering that addresses security-specific use cases. Gartner estimates that Huawei has 38,000 SD-WAN enterprise customers. Huawei focuses on China and select countries in the Asia/Pacific region, EMEA and Latin American regions, serving customers of all sizes and verticals.

Over the next 18 months, we expect Huawei will invest in its AI assistant, multiservice converged customer premises equipment (CPE) for 5G and Wi-Fi 7, and optimization for asymmetrical deployments with CPE on only one side of the connection.

Strengths

- **Sales execution/pricing:** When compared with other vendors in this research, Huawei's sales execution is driven by a robust channel and lower pricing, which is attractive for price-sensitive organizations.
- **Viability:** Huawei has strong viability, based on its financial metrics and expected future investment.

- **SD-branch capabilities:** Huawei's focus on integrated wireless LAN (WLAN), LAN, SD-WAN and security offers customers a simplified, unified end-user experience.

Cautions

- **Market presence:** Due to geopolitical issues, Huawei does not serve organizations in the U.S., Canada, the U.K., Australia and India. The vendor has limited market awareness outside the Asia/Pacific, Latin America, Middle East and Africa regions, which limits its ability to grow.
- **Product strategy:** Huawei's SD-WAN product roadmap is not as future-looking, with focus on converged CPE for 5G and Wi-Fi 7, as well as optimization for asymmetrical CPE deployments, which are not as aligned with future expected broad end-user needs.
- **Marketing execution:** Huawei's SD-WAN marketing message and ability to market its capabilities are below average when compared with other vendors in this research.

Juniper Networks

Juniper Networks is a Visionary in this Magic Quadrant. It offers Juniper AI-driven SD-WAN, which includes the Juniper Session Smart Router, Session Smart Networking Software, Juniper Mist WAN Assurance and Marvis Virtual Network Assistant. It also offers the SRX Series Firewall for specific security use cases. Its full-stack offering integrates SD-WAN, LAN, WLAN and security into a common orchestration. Gartner estimates Juniper has 4,000 SD-WAN enterprise customers and focuses its operations in the North American, EMEA and Asia/Pacific regions. The vendor addresses companies of all sizes in most verticals.

Over the next 18 months, we expect Juniper Networks will invest in automated policy management, WAN autotuning and new hardware models with increased port density.

HPE announced its intention to acquire Juniper Networks on 9 January 2024. At the time of this evaluation, however, HPE and Juniper operate as separate entities. Gartner will provide further insight as more details become available.

Strengths

- **Innovation:** Juniper Networks' recent and planned innovations in AI networking have started to change SD-WAN buyer behavior.
- **SD-branch functionality:** Juniper Networks' focus on integrated WLAN, LAN, SD-WAN and security offers customers a simplified, unified end-user experience.

- **Customer experience:** Juniper Networks has above-average customer experience, based on Gartner SD-WAN end-user client interactions and evidence from Gartner Peer Insights respondents.

Cautions

- **Sales execution:** Juniper Networks has narrow SD-WAN sales channels, which has limited its SD-WAN market share.
- **Marketing execution:** Juniper Networks has below-average SD-WAN market visibility and awareness, compared with other vendors in this research, in part based on Gartner end-user clients rarely asking about the vendor.
- **Geographic strategy:** Juniper Networks' geographic strategy is more narrow, when compared with other vendors in this research, limiting how it reaches regional end-user buyers.

Palo Alto Networks

Palo Alto Networks is a Leader in this Magic Quadrant. Its leading offering is Prisma SD-WAN, which includes Instant-On Network (ION) edge appliances and is managed via Strata Cloud Manager. It also offers the PAN-OS branch firewall with limited SD-WAN capabilities as an upgrade option for existing next-generation firewall (NGFW) customers, although it is a separate product from Prisma SD-WAN. Gartner estimates the vendor has 4,000 SD-WAN enterprise customers and operates globally, focusing on enterprises in all vertical industries and sizes.

Over the next 18 months, we expect Palo Alto Networks will invest in application acceleration, Prisma SD-WAN on-premises security, and management integration between PAN-OS and Prisma SD-WAN.

Strengths

- **Sales strategy:** Compared with other vendors in this research, Palo Alto Networks has an above-average sales strategy as part of its broader go-to-market to expand its reach and more effectively target end-user customers.
- **Market understanding:** Palo Alto Networks has demonstrated a strong understanding of current and future customer requirements, such as single-vendor SASE, when compared with other vendors in this research.

- **Market responsiveness:** Palo Alto Networks has a history of solid market response, such as the transition to SASE, to address market needs in the context of the broader competitive environment.

Cautions

- **Pricing:** Based on end-user Gartner client interactions, Palo Alto Networks has high SD-WAN pricing, which limits its market adoption and impacts infrastructure and operations (I&O) budgets.
- **Customer experience:** Palo Alto Networks has below-average customer experience, compared with other vendors in this research, based on Gartner end-user client interactions and evidence from Gartner Peer Insights respondents.
- **Multiple SD-WAN products:** Palo Alto Networks offers two SD-WAN products, which creates market confusion. Customers must choose between a strong on-premises security offering with limited SD-WAN functionality and a strong SD-WAN offering with limited on-premises security functionality.

Peplink

Peplink is a Niche Player in this Magic Quadrant. It has two product families in this market: Balance for enterprise branch SD-WAN and MAX for industry and mobility SD-WAN requirements. Both offerings include SpeedFusion software technology and InControl 2 orchestration for management. Gartner estimates that Peplink has 7,000 SD-WAN enterprise customers across both products and operates globally, focusing on midmarket organizations, with specific verticals targeting cellular wireless WAN use cases.

Over the next 18 months, we expect the vendor will invest in its Peplink connectivity controller to improve application performance and manage third-party devices, FIPS 140-2 certification and encryption, and AI to provide advanced predictive performance tuning.

Strengths

- **Viability:** Peplink has strong viability, based on strong company financials as well as above-average expected investment growth going forward, which increases its chance for future expansion.
- **Geographic strategy:** Peplink scored above-average for its geographic strategy due to its focus on expanding its presence in Asia/Pacific and Japan.

- **Pricing:** Compared with other vendors in this research, Peplink's pricing is competitive, which appeals to cost-conscious organizations with more basic requirements.

Cautions

- **Innovation:** Peplink has a narrow innovation roadmap, focused on managing third-party network devices and performance tuning of cellular links, which has limited chance to change buyer behavior.
- **Product:** Peplink's product is not well-aligned with broader current and future enterprise SD-WAN buyer requirements when compared with other vendors in this research.
- **Market visibility:** Peplink has low SD-WAN market visibility and is viewed primarily as a vendor providing cellular wireless WAN solutions, which has limited appeal to the broader market.

Versa Networks

Versa Networks is a Leader in this Magic Quadrant. It has two offerings: the primary one is Versa Secure SD-WAN that addresses the broadest set of use cases. The second offering is Versa Titan, which is built on the same platform as Versa Secure SD-WAN and is delivered as a cloud-based offering for more simplified use cases. Both include Versa's Cloud Services Gateway appliances or virtual appliances, software licenses and orchestration. Gartner estimates that Versa Networks has 20,000 SD-WAN enterprise customers across both products and operates globally, addressing clients of all sizes and in all vertical industries, primarily through service providers.

Over the next 18 months, we expect the vendor will invest in multicloud connectivity, Versa AIEdge to support local GenAI inference models, and sovereign SASE to enhance its visibility and observability analytics and deliver its self-protecting network built on VersaAI.

Strengths

- **Product:** Versa Networks provides a fully capable SD-WAN offering with strong routing and application steering, on-premises security, and deployment flexibility functions.
- **Product strategy:** Compared with other vendors in this research, Versa Networks has an above-average SD-WAN product strategy with a focus on multicloud connectivity and AI networking that is aligned with current and future end-user needs.

- **Customer experience:** Versa Networks has above-average customer experience compared with other vendors in this research, based primarily on Gartner end-user client interactions.

Cautions

- **Pricing:** Versa Networks has higher-than-average pricing for Secure SD-WAN, based on Gartner analyst assessment and Gartner Peer Insights data. The higher pricing makes the offering less appealing to cost-conscious buyers who have basic requirements.
- **Vertical/industry strategy:** Versa Networks employs more of a horizontal strategy than a vertical/industry strategy, which may result in overlooking some specific customer needs.
- **Multiple SD-WAN products:** The vendor offers two SD-WAN products with different capabilities, so there is a risk of selecting the wrong product for a specific customer need, especially if the need changes over time.

Vendors Added and Dropped

We review and adjust our inclusion criteria for Magic Quadrants as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant may change over time. A vendor's appearance in a Magic Quadrant one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. It may be a reflection of a change in the market and, therefore, changed evaluation criteria, or of a change of focus by that vendor.

Added

- Broadcom was added as a result of its acquisition of VMware.

Dropped

- Forcepoint was dropped because it focuses mainly on the single-vendor SASE market.
- Nuage Networks was dropped because it announced its intention to exit the market in late 2023.
- Sophos was dropped because it focuses mainly on the firewall market.
- VMware was dropped due to being acquired by Broadcom.

Inclusion and Exclusion Criteria

For Gartner clients, Magic Quadrant research identifies and then analyzes the most relevant providers and their products in a market. Gartner uses, by default, an upper limit of 20 providers to support the identification of the most relevant providers in a market. The inclusion criteria represent the specific attributes that analysts believe are necessary for inclusion in this research.

To qualify for inclusion, providers need to show relevance to Gartner clients by:

- Providing products/services that address the enterprise SD-WAN requirements outlined in the Market Definition/Description section.
- Producing and releasing enterprise SD-WAN products for general availability as of 14 June 2024. All components must be publicly available, be shipping and be included on the vendors' published price list as of this date. Products shipping after this date, and any publicly available marketing information, may only have an influence on the Completeness of Vision axis.
- Providing commercial support and maintenance for their enterprise SD-WAN products (24/7) to support deployments on multiple continents. This includes hardware/software support, access to software upgrades, security patches, and troubleshooting and technical assistance.
- Actively investing in the SD-WAN market.
- Actively promoting and marketing their SD-WAN solution to enterprises.
- Exposing full granular management and administration capabilities directly to customers to support a DIY model.
- Commonly selling their solutions as stand-alone SD-WAN offerings.

Product Capabilities

- Vendors must have generally available products that support all of the following capabilities:

- The ability to operate as the branch office router (including eBGP, OSPF, support hub and spoke, full mesh, and partial mesh topologies with automation for a minimum of a 250-site network) with traffic shaping and/or quality of service (QoS)
- Centralized management/orchestration and automation for devices (with GUI), including reporting, troubleshooting, configuration changes and software upgrades
- Zero-touch configuration
- IPsec VPN (Advanced Encryption Standard [AES] 256-bit encryption) with integrated firewall
- Application-aware path selection based on business or application policy (not limited to only DiffServ Code Point [DSCP]/ports, IP addresses/circuits or 5-tuple) that responds to network conditions (e.g., changes in packet loss, latency or jitter) in an active/active configuration
- Autodiscover at least 200 well-known application profiles
- Visibility of application performance data of traffic delivered across the WAN (e.g., packet loss, latency or jitter)
- Demonstrated integration with at least one third-party cloud security solution (third-party SSE vendor)
- Ability to completely support a do-it-yourself (DIY) customer by exposing full granular management and administration capabilities
- Software that can be deployed in at least two cloud providers (such as Amazon Web Services [AWS] and Microsoft Azure)

Business/Financial Performance

Vendors must show relevance to Gartner's enterprise clients by meeting the following with their SD-WAN solution(s) that meet the product capabilities inclusion criteria (from above):

- Must have a product assessed in at least three of the five use cases identified in **Critical Capabilities for SD-WAN**.
- Meet either of the following criteria:

    - At least 60,000 SD-WAN enterprise* sites** deployed and under active support contracts
    - At least 1,200 SD-WAN enterprise* customers*** deployed and under active support contracts
- Demonstrate baseline scalability and customer adoption by servicing at least 60 enterprise* customers*** with active support contracts that have at least 100 sites each.
- Show relevance to Gartner's enterprise* clients on a global basis with at least 150 SD-WAN enterprise* customers*** under active support contracts and headquartered in three or more of the following geographic regions: North America, South America, EMEA or Asia/Pacific. This means 150 enterprise* customers*** with headquarters in one region and another 150 enterprise* customers*** each with headquarters in two other different region for a total of at least 450 enterprise* customers*** between the three regions.
- Rank among the top 20 vendors in the Customer Interest Indicator (CII) defined by Gartner for this Magic Quadrant. Data inputs used to calculate SD-WAN CII included a balanced set of measures:
    - Gartner end-user inquiry volume
    - Vendor mentions in Peer Insights as competitor
    - Social media followers
    - Gartner search
    - Google Trends: search interest
    - Web traffic analytics

* **Enterprise** is defined as an organization with at least $50 million in revenue and/or 100 employees. It can be a private for-profit organization or not-for-profit entities such as charitable organizations, government and education institutions.

** **Sites** are defined as organization locations of customers.

*** **Customers** are entities paying for an SD-WAN solution under active support contracts with features defined in the product inclusion criteria section. This excludes trials, proofs of concept (POCs), paid pilots, "try and buys," lab trials, etc.

Honorable Mentions

Aryaka has relevant technology and is investing in the SD-WAN market, but it did not meet the inclusion criteria as of the research cutoff date. The vendor goes to market primarily as a managed network service provider.

Cato Networks has relevant technology and is investing in this market, but it did not meet the inclusion criteria as of the research cutoff date. The vendor goes to market primarily as a single-vendor SASE vendor.

Check Point Software Technologies has relevant technology and is investing in this market, but it did not meet the inclusion criteria as of the research cutoff date. The vendor goes to market primarily as a security vendor.

Cloudflare has relevant technology and is investing in this market, but it did not meet the inclusion criteria as of the research cutoff date. The vendor goes to market primarily as a single-vendor SASE vendor.

Forcepoint has relevant technology and is investing in this market, but it did not meet the inclusion criteria as of the research cutoff date. The vendor goes to market primarily as a single-vendor SASE vendor.

Netskope has relevant technology and is investing in this market, but it did not meet the inclusion criteria as of the research cutoff date. The vendor goes to market primarily as a single-vendor SASE vendor.

Sophos has relevant technology and is investing in this market, but it did not meet the inclusion criteria as of the research cutoff date. The vendor goes to market primarily as an NGFW vendor.

Zscaler has relevant technology and is investing in this market, but it did not meet the inclusion criteria as of the research cutoff date. The vendor goes to market primarily as a single-vendor SASE vendor.

Evaluation Criteria

Ability to Execute

Product or Service: This evaluates vendors by looking at their overall SD-WAN networking portfolios across the following capabilities:

- Routing and application steering
- On-premises security (local)
- Partner-integrated cloud security
- Performance optimization
- Operational capabilities
- Deployment flexibility
- Small platform flexibility
- Scalability
- Cloud onramp

We also evaluate the completeness of the vendor's product roadmap(s) in addressing common enterprise use cases.

Overall Viability: We evaluate various financial metrics reflecting the organization's financial health. We also assess the vendor's intention and ability to invest in various business unit functions.

Sales Execution/Pricing: The first aspect evaluates sales effectiveness and go-to-market activities, along with depth and breadth of sales channels. The second aspect includes our evaluation of the cost-effectiveness of the solutions for purchase and support over their useful life, and the ability to recognize and position the most appropriate solution in specific sales situations. We weight these aspects roughly the same in our analysis.

Market Responsiveness/Record: This assesses the vendor's track record in delivering new capabilities when the market needs them on time with the right scope. It also considers the vendor's history of responsiveness in terms of changing market demands and addressing limitations. This evaluation is not limited to products as it also involves pricing, operating models, go-to-market and overall competitive dynamics.

Marketing Execution: This focuses on how the vendor is perceived in the market, and how well its marketing programs are recognized. The evaluation focuses on how well the vendor

is able to influence and shape perception in the market through marketing activities and thought leadership that drives awareness. An additional indicator for this criterion is how often Gartner clients inquire about a specific vendor in terms of capabilities/reputation or in a shortlist evaluation process.

Customer Experience: This looks at all aspects of the customer experience inclusive of pricing, presales, postsales support and product features that meet customer expectations. This criterion includes the customer's experience with the vendor's SD-WAN products and services used in their production environments. It also includes the ability to upgrade software and work with technical support to solve problems. Hardware and software quality and how existing customers describe their experience with the vendor's products are also evaluated. Additionally, we assess customer satisfaction, customer loyalty/retention, brand reputation and advocacy, operational quality, and employee engagement.

Ability to Execute Evaluation Criteria

Evaluation Criteria	*Weighting*
Product or Service	High
Overall Viability	Low
Sales Execution/Pricing	High
Market Responsiveness/Record	Low
Marketing Execution	Medium
Customer Experience	High
Operations	NotRated

Source: Gartner (September 2024)

Completeness of Vision

Market Understanding: This assesses the vendor's ability to look into the future to drive new ideas into product roadmaps and offerings, taking into account market needs, competitor strengths/weaknesses, and identifying new competitors and vendor core competencies. It also involves vendor self-reflection to determine gaps as well as strengths and weaknesses in addressing its target markets. This may include, but isn't limited to, specific functionality required such as simplifying operations, enhancing application performance, providing robust security, enhancing connectivity to the cloud, reaching and attracting end customers, and introducing new pricing models.

Marketing Strategy: This evaluates the ability of the vendor to influence the market through its messaging and marketing campaigns. It includes the extent to which the vendor articulates a forward-looking marketing message that is clear, consistent, relevant and differentiated, as well as aligned with future end-user needs. We look for new and effective ways vendors reach customers and evolving customer buyer personas, and how they plan to communicate their message to drive market demand.

Sales Strategy: This evaluates the vendor's current and proposed use of direct and indirect sales to extend the scope and depth of its market reach. Further, this includes the extent to which the vendor articulates a clear, consistent, relevant and differentiated sales strategy that engages with defined customer profiles and buyer personas. It includes development of effective go-to-market strategies, alliances and partnerships, leveraging value-added resellers (VARs), systems integrators (SIs), ISP aggregators, master agents, network service providers (NSPs), managed network service providers and OEM resellers, as appropriate. In addition, it includes how the vendor leverages new pricing, consumption and business models that are emerging due to market and technology transitions.

Offering (Product) Strategy: This evaluates the vendor's product roadmap around existing and future SD-WAN functions. This also includes not just the raw features and capabilities, but also the vendor's overall architecture across the portfolio, the uniqueness of the capabilities and the value to the end customer. We evaluate product strategy in terms of various capabilities, including (but not limited to) simplicity, automation, cloud connectivity/cloud onramp, visibility, AI networking, application performance, security and adjacent product integrations. This also includes multiple products that may exist within a vendor's portfolio.

Vertical/Industry Strategy: This measures the vendor's strategy and go-forward plans to address the unique requirements of particular verticals/industries and employ the associated sales channels, messaging and product features to build a sustainable business advantage.

Innovation: This evaluates the plans to bring future differentiated capabilities to market that will enhance the vendor's ability to attract customers and drive business. We assess the vendor's ability to add value to customers in new, unique ways and/or to solve existing challenges more effectively. Innovation is not simply a list of new features/functionality or product improvements. Instead, it is the ability to bring capabilities to the market that dramatically alter or shift the conversation among buyers. True innovation often changes the "tenor" of a market in terms of customer interest in a vendor. Innovation can be created across multiple areas, including product, packaging, pricing, sales, marketing, models and use cases supported.

Geographic Strategy: This measures the vendor's ability to address any unique requirements of particular geographies and employ the associated messaging, partnerships and product features, as well as sales channels to build a sustainable business advantage.

Completeness of Vision Evaluation Criteria

Evaluation Criteria	*Weighting*
Market Understanding	Low
Marketing Strategy	Low
Sales Strategy	Medium
Offering (Product) Strategy	High
Business Model	NotRated
Vertical/Industry Strategy	Low

Evaluation Criteria	*Weighting*
Innovation	High

Source: Gartner (September 2024)

Quadrant Descriptions

Leaders

A Leader has demonstrated a sustained ability to address changing end-user requirements in the SD-WAN market as well as long-term viability. A Leader can drive, shape and transfor the market in areas such as AI networking or security as well as maintain strong relationshi with its channels and customers. Leaders typically have solid products that address most use cases across various verticals globally, maintain high visibility among Gartner clients a demonstrate success while at the same time innovating to drive the market forward.

Challengers

A Challenger has demonstrated sustained execution in the SD-WAN market and has clear, long-term viability in the market. Typically, Challengers have solid products that address most use cases across multiple verticals in various geographies. However, a Challenger has not shown the ability to lead and innovate, and Gartner doesn't expect the vendor to be able to drive, shape and transform the market going forward.

Visionaries

A Visionary has strong potential to drive and shape the market going forward in some key areas of SD-WAN, such as AI networking, security or pricing. Visionaries often help transform the market — from driving new ideas/innovations, including new business models, to solving enterprise challenges. Although Visionaries often transform the market, they typically lack market share, viability, global coverage and/or complete product capabilities to address most use cases.

Niche Players

A Niche Player has a complete or near-complete SD-WAN product offering, but is more focused, such as on geographic reach or vertical market concentration, typically resulting in

limited market share or limited addressable use cases. Niche Players have a viable product offering, but they have not shown the ability to transform the market or sustain execution.

Context

The SD-WAN market is mature. The supply side remains a crowded, fragmented vendor landscape, with large established vendors and smaller providers from multiple segments competing for market share. Some vendors have exited this market (Citrix, Oracle, Nuage Networks and Riverbed) over the last few years. Gartner expects significant aspects of the SD-WAN market to evolve into the single-vendor SASE market (see **Magic Quadrant for Single-Vendor SASE**), with integrated network security (SSE) delivered from the cloud.

Convergence of Networking and Security

Today, we primarily see SD-WAN and SSE offerings being integrated and deployed as dual-vendor SASE. This is largely driven by the move to distribute internet access to support cloud applications and change the security perimeter. This trend is further aligned with the deployment of SD-WAN at branch locations to manage the internet transport. As part of a desire to minimize branch sprawl and support access to the cloud, more organizations are looking for integrated cloud-delivered security and thin branch SD-WAN solutions (see **2024 Strategic Roadmap for SASE Convergence**). Dual-vendor SASE is more popular in the near term since there is a significant deployment of either existing SD-WAN or SSE. Oftentimes, a different vendor is chosen from the original deployment to complete the solution (adding SD-WAN or SSE when the other is already deployed), since few vendors currently offer complete single-vendor SASE solutions.

Single-Vendor SASE

As the single-vendor SASE market matures, the capabilities gap will likely close with best-of-breed dual-vendor SASE architectures (one vendor for SD-WAN and another vendor for SSE). We also expect organizations to consolidate networking and network security roles, which will drive the purchase of a single offering. Furthermore, we envision new pricing models as SD-WAN and network security offerings converge to more of a per-user model. It will simplify sourcing and offer a tighter technical integration, ultimately offering a better user experience.

Beyond single-vendor SASE, there are other technologies/markets converging.

Convergence of Adjacent Technologies

Applications were primarily hosted in the data center, and the organization had control over the data center. As more applications move to the cloud (SaaS, infrastructure as a service [IaaS] and platform as a service [PaaS]), organizations have less control. To drive more control, we have identified five adjacent capabilities that we envision converging with SD-WAN to achieve end-to-end client-to-workload security, performance, visibility and manageability:

- SSE (see **Magic Quadrant for Security Service Edge**).
- Enhanced internet/integrated WAN backbone (see **Include Enhanced Internet as a Viable Option for the Global SD-WAN Backbone**).
- Cloud onramp: A set of technologies to simplify connecting to cloud workloads.
- Multicloud networking software (see **Market Guide for Multicloud Networking Software**).
- Campus networking/SD-branch: It offers simplicity in managing LAN, WLAN, WAN and network security policies and profiles with a single orchestrated solution.

AI Networking

AI and more specifically, GenAI, is increasingly being included in SD-WAN operational capabilities across Day 0, Day 1 and Day 2 life cycle management (see **Prepare for Generative AI in Network Operations**). We also see AI assistants to help simplify interaction with the network and provide a more dynamic management environment. The objective is to reduce operating expenditures (opex), increase speed/agility and improve uptime/end-user performance. This may result in accelerated time from design to configuration, less trouble tickets, less time to resolve trouble tickets, etc. Although it is still early in many vendors' product development, we are seeing this functionality incorporated into an increasing number of vendor solutions offering differentiation. We expect these capabilities to improve over the next 18 months. The longer-term challenge will be defining the business case and ensuring customer trust in using such solutions.

Coffee Shop Networking

Hybrid work in a post-COVID-19-pandemic world has distributed users in a "work from anywhere" model. Organizations are interested in a "hoteling model," where users are in the office only part time, leveraging coffee shop networking (see Note 1) and accessing applications that are primarily in the cloud. With less people working in the office full time

and an increase in the number of remote and branch-of-one users, there is less need for full-featured SD-WAN functionality. We estimate that approximately 10% to 20% of enterprise sites are interested in this type of solution. In this scenario, no SD-WAN or, more likely, lighter-weight SD-WAN functionality, is often the desired choice (see **Is SD-WAN Dead?**).

Digital Experience Monitoring (DEM) Integration

Gartner observes more SD-WAN vendors integrating native DEM solutions with their SD-WAN offerings to provide visibility to the end-user level to ensure application performance. In many cases, the current solutions offer more passive visibility. We do envision that they will increasingly be part of a closed-loop system to offer recommendations to fix problems proactively for end users.

Market Overview

There is increasing separation from the top vendors in this space, as we estimate that the top seven vendors make up approximately two-thirds of the market (see **Market Share: Enterprise Network Equipment by Market Segment, Worldwide, 2Q24**). The SD-WAN market is forecast to generate a compound annual growth rate (CAGR) of 16% in end-user spending from 2023 through 2028 (see **Forecast: Enterprise Network Equipment by Market Segment, Worldwide 2022-2028, 3Q24 Update**). This is based on a current SD-WAN market penetration of approximately 65% in 2024.

Market Drivers

The SD-WAN market is driven primarily by the following factors:

- Refresh of existing branch-office router equipment (or first-generation SD-WAN equipment) that is at the end of support or lacks the desired capabilities.
- Renewal of NSP or managed service contracts, where a new service provider also means new equipment. This can drive the move off of Multiprotocol Label Switching (MPLS) in favor of internet access to the branch, with security perimeter changes that typically drive new solutions.
- Application rollouts with changing traffic patterns resulting from increased use of cloud and multicloud resources that render the traditional hub-and-spoke from remote branch to on-premises data center WAN architecture obsolete.

- The desire to increase scalability, agility and automation to address the needs of digital business transformation and reduce opex.
- The desire to consolidate more than one branch function, such as SD-WAN and security (e.g., SASE, zero trust) or SD-WAN and WLAN/LAN (e.g., SD-branch).
- Lightweight SD-WAN solutions with less simultaneous users in the office and applications mainly in the cloud.

Vendor Differentiation

Differentiation is mostly based on:

- Feature-based — This includes, for example, AI networking, cloud onramp, ease of use, security, scale or performance optimization.
- Go to market — Vendors can focus by selling through a small number of large service providers, or focus on a large number of channel partners. Some focus more on DIY and others more on managed network services, while others are more balanced between the two. Still others are focused more on network as a service (NaaS)-based opex options over traditional capital expenditure (capex) pricing models.
- Vertical focus — These are vendors that focus on specific verticals, such as retail, financial, and state and local government, based on specific use cases and product focus.
- Geographical focus — These vendors focus on specific geographies where they can compete most effectively based on where they have resources, channels and unique product capabilities to meet the requirements of end users.

Vendor Landscape Changes

The SD-WAN market has dozens of suppliers, but few pure-play vendors remain. Most vendors deliver their solution as part of an NGFW and/or are moving toward a single-vendor SASE solution. Multiple SSE vendors have added SD-WAN to their product portfolio within the last 12 months to compete for single-vendor SASE or differentiate among SSE competitors. As a result, we view the opportunity for stand-alone SD-WAN solutions is limited going forward (see **Is SD-WAN Dead?**).

Acquisitions are likely to continue primarily around SD-WAN and network security vendors consolidating to form single-vendor SASE. We also have observed some vendors exiting this market over the last few years (Nuage Networks, Oracle, Riverbed and Citrix). For SD-WAN

vendors to have long-term market relevancy, they need to have a SASE strategy as SD-WAN evolves to more of a feature.

Recent activity in the last year in this market includes Broadcom buying VMware and HPE announcing its intention to buy Juniper Networks, as well as Zscaler and Cloudflare adding SD-WAN functionality to their solutions.

Market Recommendations

I&O leaders responsible for building and managing WANs should:

- Build a WAN architecture that aligns with end users, branches and applications. This may mean a hybrid WAN with MPLS and internet, or internet only with dual internet. The architecture choice depends on how many on-premises workloads versus cloud workloads exist, the types of applications, the number of users at a site and the locations of end users.
- Determine — especially if you're a cloud-first organization that heavily uses public cloud and SaaS services — the SD-WAN offering suitability by validating depth and/or breadth of cloud provider and cloud onramp integrations.
- Lean toward SD-WAN/SSE combinations with deep explicit integration when implementing a dual-vendor SASE architecture by performing a POC and focusing on the GUI integration as well as automatic traffic redirection.
- Evaluate SD-WAN vendors by analyzing network automation and AI networking capabilities as a core requirement to improve support efficiency if your organization is operationally focused.
- Choose SD-WAN vendors to optimize application performance by evaluating performance optimization capabilities for real-time and non-real-time traffic and SaaS optimization for applications in the cloud.
- Focus on lightweight SD-WAN solutions when there are distributed hybrid work users and applications primarily in the cloud.
- Quantify the total cost of hardware, software and maintenance for an SD-WAN deployment. SD-WAN solutions more commonly have opex-friendly business models, with a strong shift from upfront capex to annual license subscriptions. To perform a proper

evaluation and comparison, quotes should include all platform, license and support costs over a three-year baseline.

- Prefer SD-branch solutions to simplify the management of LAN, WLAN, SD-WAN and security for small branch offices.

⊕ Evidence

Note 1: Coffee Shop Networking

“Coffee shop networking” is a combination of technologies that enables a simplified and consistent employee experience regardless of the employee’s location. The user experience is: grab a seat, connect, work from anywhere. The same experience applies whether the employee is in the office, at a coffee shop or working from home. Enterprises typically refer to “coffee shop networking” in the context of simplifying their branch-office networks.

⊕ Evaluation Criteria Definitions

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