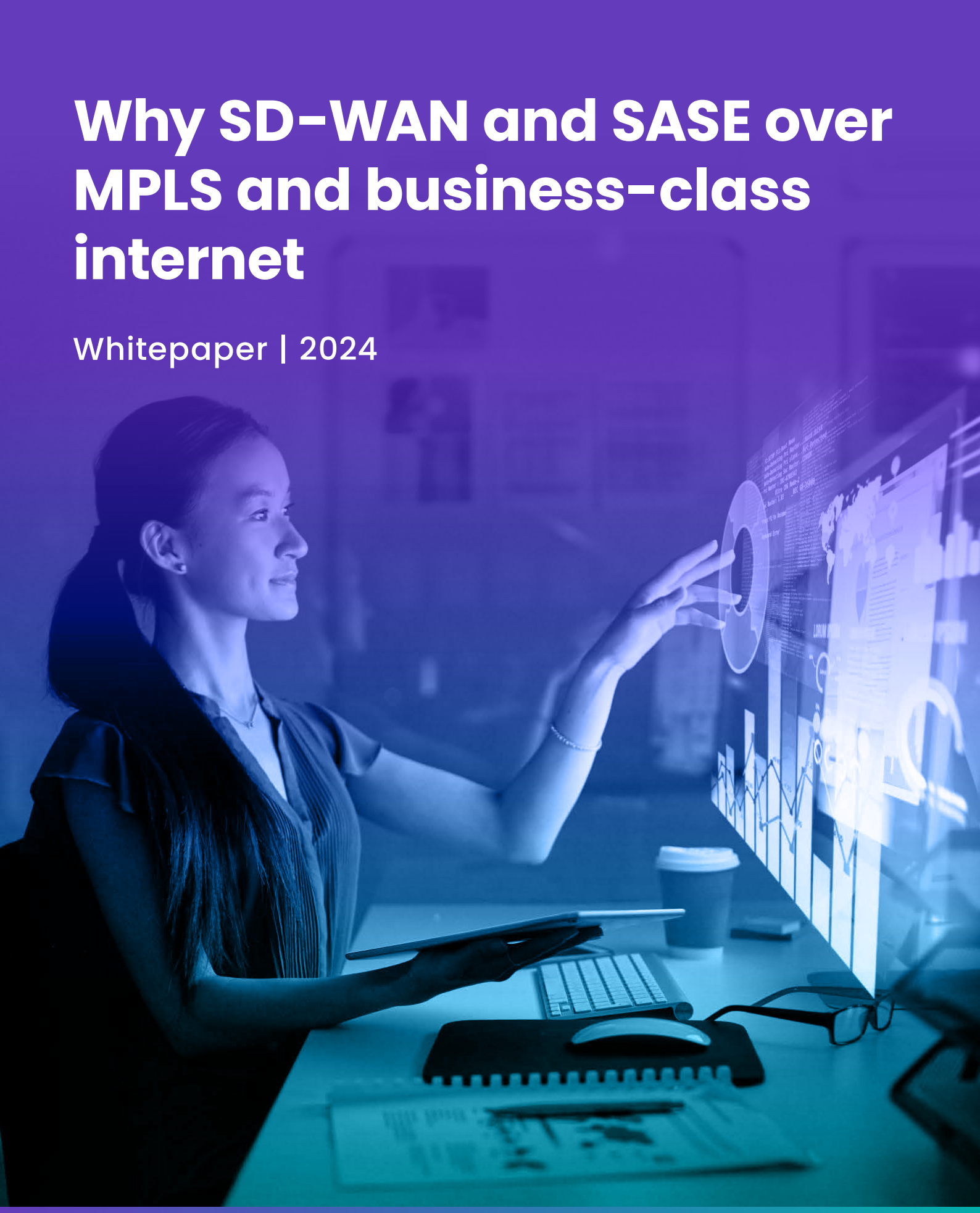
Why SD-WAN and SASE over MPLS and business-class internet

Whitepaper | 2024



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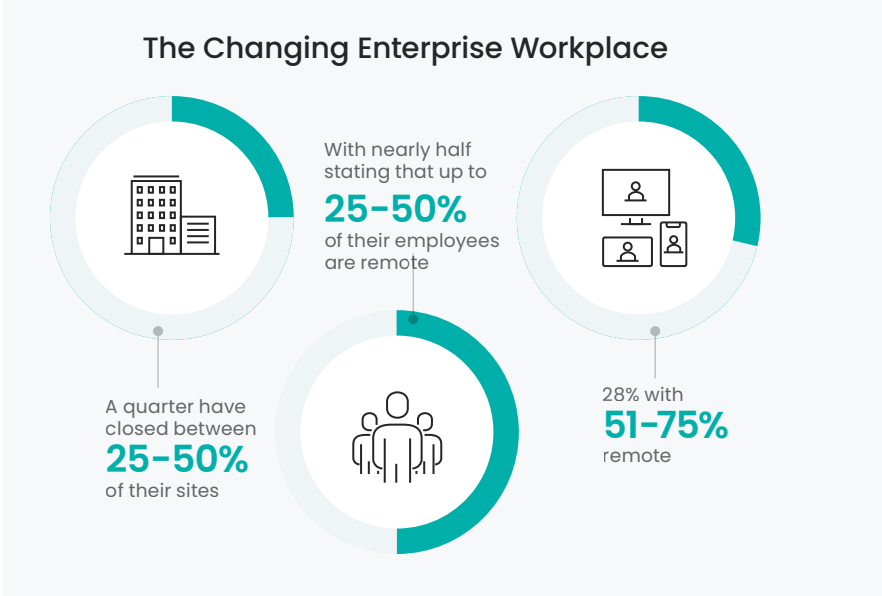
Introduction

Enterprises are dealing with unprecedented levels of complexity and change. Their operations are more globally distributed than ever before. Their workforce is no longer tied to discrete office locations. And their technology resources are increasingly delivered from and enabled by the cloud.

The changing workplace has placed a tremendous strain on the networks that bring together remote sites and users and provide access to applications that are no longer contained within a data center. While outdated MPLS networks and inconsistent business-class internet offerings aren't always up to the task, new Managed SD-WAN and SASE solutions provide the flexibility, predictability, and cost efficiency needed to support a diversity of locations, users, and workloads – no matter where they are.



Multiprotocol label switching (MPLS)

Multiprotocol label switching (MPLS) was introduced in 1997, helping improve the performance and control of telecommunications networks and forming the backbone of enterprise-wide area networks (WANs). MPLS was not only faster than the public internet, it was instrumental in helping secure data centers and branch offices in legacy (pre-cloud) IT infrastructures. While MPLS technologies have been a mainstay in traditional network security architectures for more than two decades, their limitations have become increasingly clear, and unmanageable, in an agile, cloud-first business world.

Slow to deploy. Because they are hardware-based, MPLS networks are slow to deploy, sometimes requiring months to establish circuits. With static connections that are manually configured, they are hard to adjust, scale, and pivot based on business needs.

Not optimized for cost. MPLS links are dedicated fabrics for the enterprise. As such, they are not cheap. Enterprises looking for more than local connectivity, for example regional or global companies, often must stitch together multiple MPLS networks from regional providers. Doing so typically requires investments in WAN Optimization Controllers and dedicated staff to monitor and maintain the patchwork network infrastructure. This not only increases costs but the operational complexity of the network.

MPLS Benefits

- ✓ Reduced network congestion
- ✓ Secure transport
- ✓ Reliable | Predictable

MPLS Challenges

- ✓ Slow to deploy / pivot
- ✓ Expensive
- ✓ Little visibility
- ✓ Operational complexity
- ✓ Lack of cloud alignment

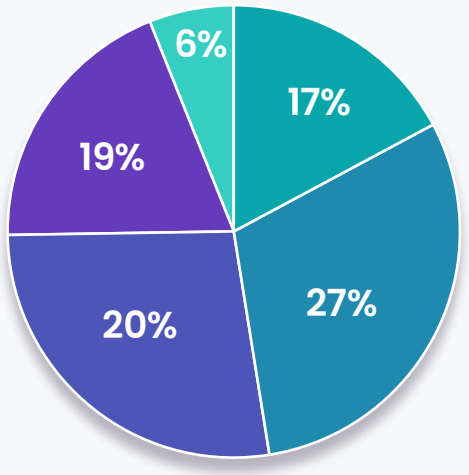
Lack of application visibility and control. As MPLS operates between Layer 2 and Layer 3, it does not provide application layer visibility. Monitoring network and application performance or troubleshooting is difficult at best requiring additional 3rd party tools.

No cloud alignment = degraded user experience. The biggest problem with MPLS networks is their lack of alignment with cloud services. In providing direct, dedicated connections between physical locations, they do not facilitate the handoffs to and from cloud environments that are necessary to support and access today's virtualized, distributed workloads. The result is a poor user experience, either for the employee leveraging the cloud application or the customer utilizing the service.

Plans for MPLS

46% of respondents reported no longer using or diminishing/eliminating MPLS in the next 12 months

Source:
Aryaka State of the WAN Survey, 2022



As a result of the many challenges, enterprises have either already eliminated or are making plans to terminate their MPLS contracts in the coming year, replacing them with more flexible, scalable, and cost- effective solutions.

Business-class internet

To overcome some of the challenges of MPLS, many enterprises have turned to the internet to meet their connectivity needs. Carriers began offering 'business-class' internet services which provided faster upload and download speeds when compared to residential internet service. While these offering helped eliminate the cost and rigidity of MPLS, they had their own unique set of challenges.

Shared connections. Business-class internet offerings are typically shared connections over the same internet protocol (IP) networks used by the public. This introduces as host of downstream issues in performance and security as businesses are now competing with Netflix, YouTube, TikTok and their millions of subscribers for a slice of the same pie.

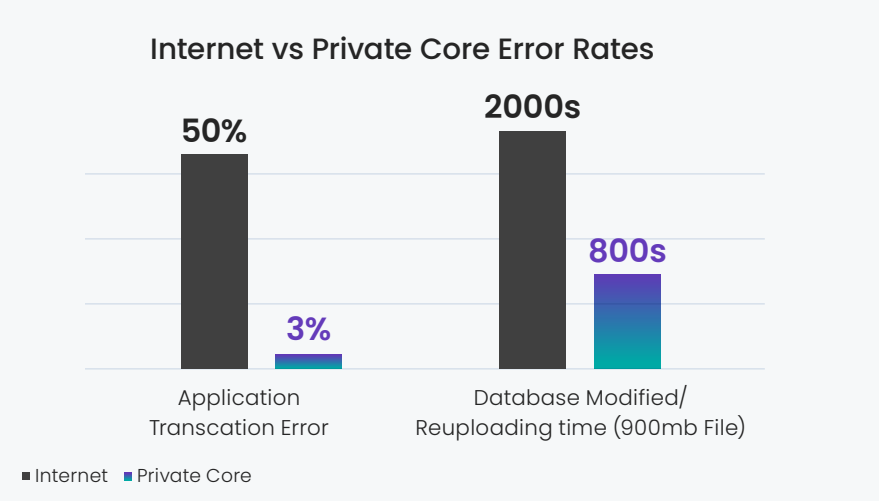
Business Internet Benefits

- ✓ Faster than retail internet
- ✓ Less expensive than MPLS

Business Internet Challenges

- ✓ Unpredictable performance
- ✓ Lack of security

Unpredictable performance. The congestion on shared links results in the loss of packets and latency far greater than dedicated lines. While SD-WAN was introduced in the early 2000s to help optimize performance over the internet, traffic is still routed over the public internet. Performance for the network is only as good as the weakest link along the path, and when that link is saturated with other traffic, the result is application errors, timeouts, and frustrated end users.



Lack of Security. Perhaps the biggest challenge for enterprises with business class internet is that it opens a pandora's box of security challenges. With MPLS, enterprise traffic was routed back to a central data center where it endured the watchful eye, and trusted security layers, of the IT team. With business internet, employees are connecting directly to cloud services, bypassing that security layer completely.

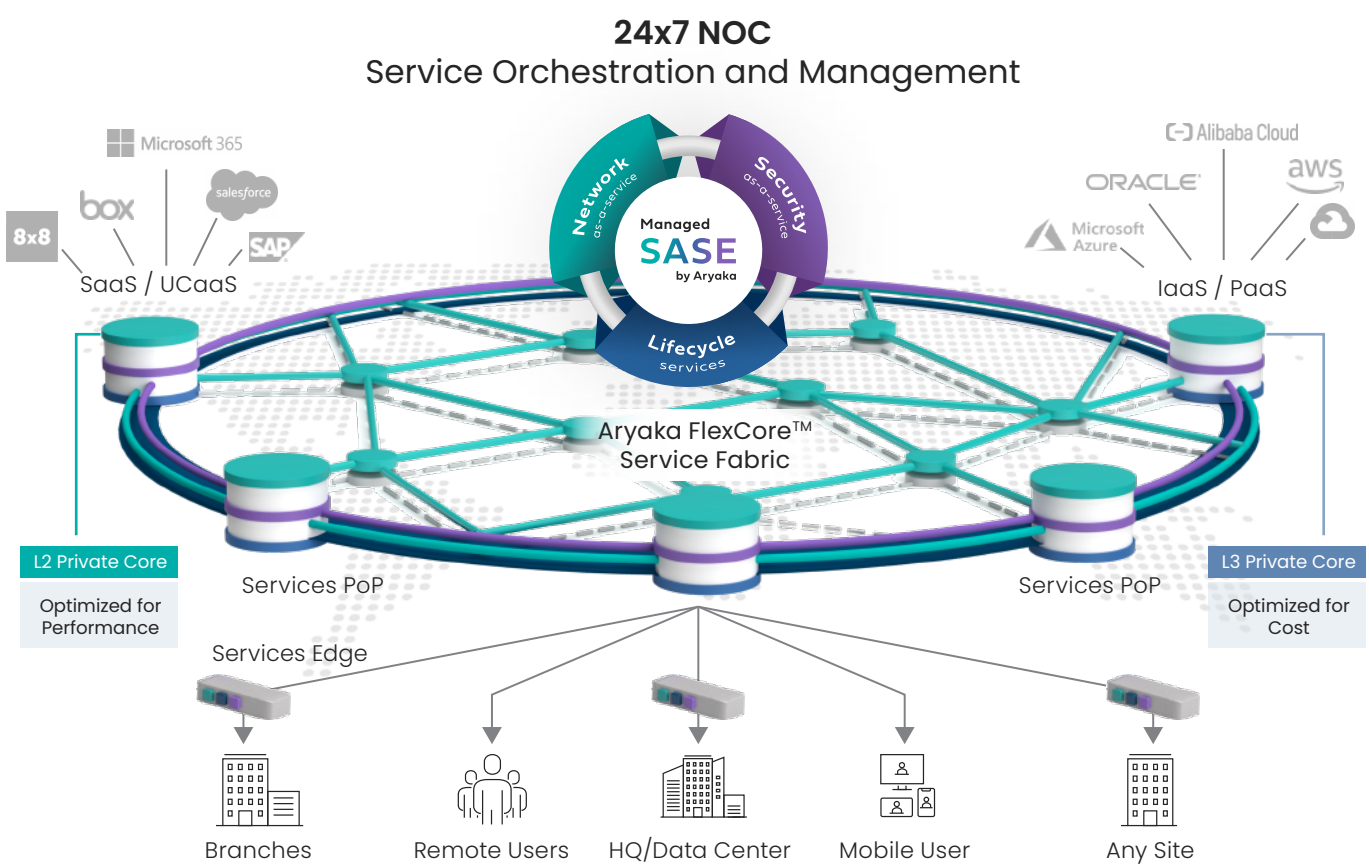
Best of Both Worlds?

To attain the best of both WAN worlds, some enterprises have established a mix of MPLS networks and business-class internet offerings. Unfortunately, this creates additional technology siloes that ultimately compound the problems associated with cost, complexity, visibility, and orchestration. It introduces both deployment and security risk since in many case as there is no common observability and control. The result is degraded application performance and an increase in security incidents.

There has never been a solution that provides the best of both connectivity options with the simplicity of managing it all through one provider … until Aryaka.

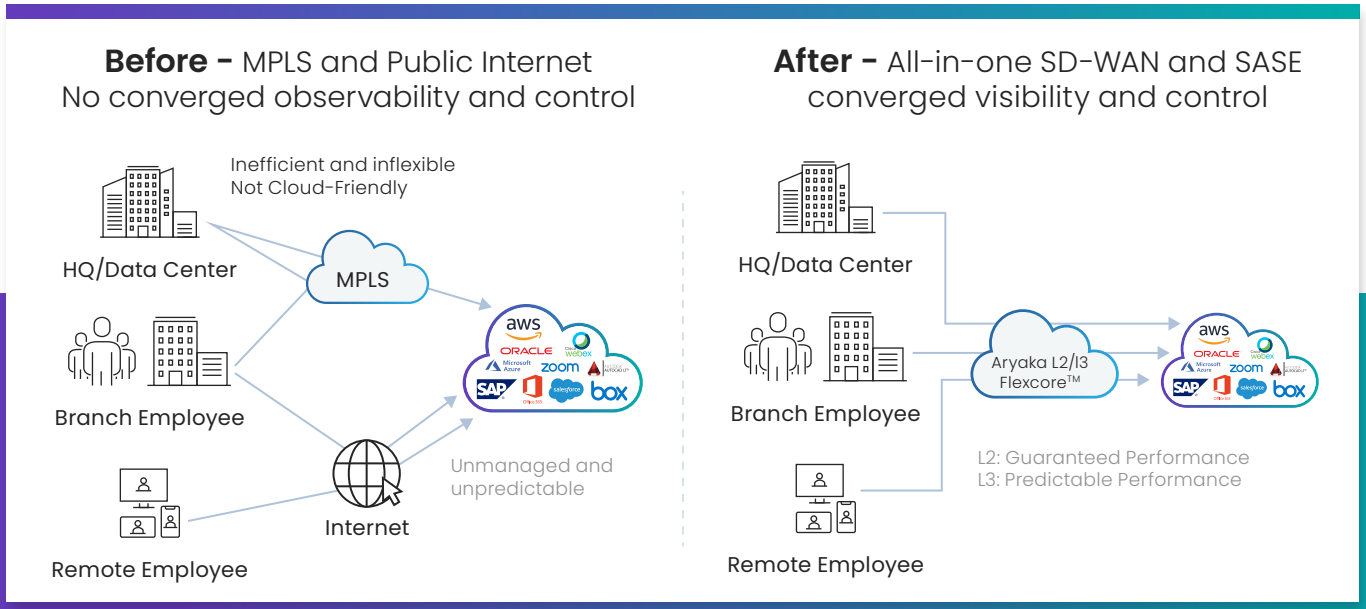
Aryaka managed SD-WAN and SASE

Aryaka managed SD-WAN and SASE with FlexCore™ provides the predictability, security, and performance of MPLS with the flexibility and cost efficiency of business class internet. Provided as a managed service but delivered with an as-a-service capability, it provides the visibility and flexibility that IT leaders want with the responsiveness and performance that they need.



Fully Meshed Layer 2 and Layer 3 Private Core. With a private backbone anchored on over 40 global Aryaka network service Points-of-Presence around the globe, Aryaka FlexCore™ helps enterprises to optimize for both performance and speed. Business critical applications that require a higher level of performance reliability can traverse Aryaka's private L2 backbone with better than MPLS-like performance. Other, less sensitive applications can leverage a Layer 3 network to significantly reduce cost. This optimizes the WAN for any location, any application, and any user.

Cloud Connected at Over 40 Global PoPs. FlexCore™ is anchored on over 40 Aryaka Services Points-of-Presence around the globe. These PoPs, colocated at major internet exchanges with AWS, Azure, GCP, and major SaaS providers, provide an easy-to-deploy on and off ramp for enterprise traffic. They aggregate multiple WAN connections and provide converged network services including routing, encryption, security and traffic management.



"Aryaka is demonstrating continued innovation across multiple dimensions, permitting enterprises to break free from traditional carrier business models and sub-par service experiences. The company's new managed SD-WAN and SASE offerings deliver tiers of flexibility and performance that I expect to be very well received by enterprise customers. These capabilities are based on Aryaka's new FlexCore™ middle-mile architecture that should deliver unprecedented flexibility in mapping the network architecture to application requirements. Finally, new, simplified consumption models should ease enterprise adoption and generate traction within the channel."

– Zeus Kerravala, Founder, ZK Research

DPI to Optimize Application Performance. The deep packet inspection (DPI) engine within Aryaka's managed SD-WAN service, AppAssure, can automatically identify over 3500 applications with additional application mapping methods for proprietary applications. Once an application is identified, it can be assigned to an appropriate group to manage it most effectively.

Co-Managed Service, Delivered As-a-Service. IT teams need robust co-management capabilities to monitor network performance, troubleshoot issues, and configure services, sites and users. Aryaka's managed SD-WAN service provides as-a-service functionality to IT teams, putting control back in their hands. At the same time, the service supported with a world-class, 24x7 NOC and support team consistently recognized by Gartner in the Peer Insights Customer Choice Survey.

Managed SD-WAN and SASE

vs MPLS

- Cloud-ready
- Deployed in days vs. months
- Choice of security
- Elastic consumption and scaling
- Full visibility and orchestration
- Lower TCO

vs Business Internet

- 40x faster application performance
- Predictable bandwidth
- Less congestion and fewer errors
- Choice of security
- Full visibility and orchestration
- Over-subscription control

Platform for the future: SASE. The Secure Access Service Edge (SASE) is the inevitable convergence of the enterprise network and security functions delivered through the cloud, as a service. Aryaka provides enterprises with the foundation for this convergence, allowing them to transition network and security functionality to the cloud at their pace. From secure web gateway to firewalls and zero trust, the hub-and-spoke network security architecture of the past is migrating to a SASE model. Aryaka provides enterprises a fast and reliable way to jumpstart the transition.

Service Packages Fit for Your Enterprise. Aryaka provides packages for every enterprise need:

Aryaka SmartConnect Pro: Managed SD-WAN offering over an L2 private core that is easy to consume and optimized for performance. Tailored for mid-to-large enterprises that require high performance networking and/or global application predictability.

Aryaka SmartConnect EZ: Managed SD-WAN offering over an L3 private core that is easy to consume and optimized for cost. Tailored for small-to-medium enterprises that want more predictability and visibility than traditional business-class internet offerings.

Aryaka Prime EZ: Managed SASE offering over an L3 private core. Tailored for small to medium enterprises that need secure web gateway, firewall as-a-service, and/or web filtering capabilities.

About Aryaka Networks

Aryaka is the leader in delivering Unified SASE as a Service, a fully integrated solution combining networking, security, and observability. Built for the demands of Generative AI as well as today's multi-cloud hybrid world, Aryaka enables enterprises to transform their secure networking to deliver uncompromised performance, agility, simplicity, and security. Aryaka's flexible delivery options empower businesses to choose their preferred approach for implementation and management. Hundreds of global enterprises, including several in the Fortune 100, depend on Aryaka for their secure networking solutions. For more on Aryaka, please visit www.aryaka.com.

Schedule a Free Network Consultation with an Aryaka Expert

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