The background of the slide features a blurred image of a woman with dark hair, smiling and looking at her smartphone. She is wearing a dark jacket. The image is overlaid with a semi-transparent purple and blue gradient that covers the entire slide.

Zero Trust Network Access Validation: Use cases for testing and CI/CD implementation

Owen O'Donnell

May 2024

Today's Presenter



Owen O'Donnell
TeraVM Marketing Manager

Responsible for marketing, strategy and new product introductions in VIAVI's Wireless Business Unit, with a particular emphasis on virtualized 5G radio access and core network testing (TeraVM platform). Owen is a principal contributor to the company's Security Test Solutions.

Owen has more than 30 years' experience in the industry with positions at Ericsson and Huawei and has lived and worked in Sweden and U.K. prior to settling in Ireland.

About VIAVI Solutions



VIAVI Solutions (NASDAQ: VIAV) is a global leader in communications test and measurement and optical technologies.

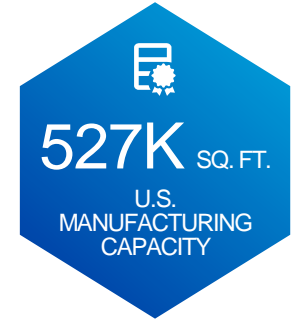
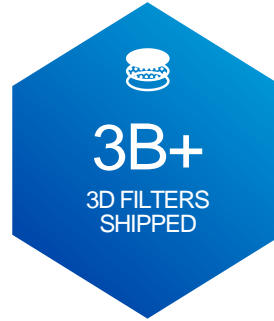
Network and Service Enablement

VIAVI tools and intelligence help Service Providers, NEMs, and IT organizations build, test, certify, monitor, maintain, optimize, and troubleshoot complex physical and virtual networks.

Optical Security & Performance Products (OSP)

A global leader in advanced thin film coatings, VIAVI enables precision optical products including security pigments, light shaping optics, and custom filter technology for commercial and government customers worldwide.

VIAVI Solutions by the Numbers



Security Trends

Factors driving up complexity and security challenges exponentially

HYBRID Working:

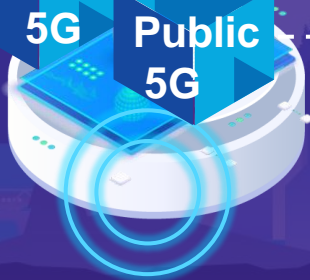
Demands capacity, coverage with secure access (SASE). Performance limits must be understood!



Continued evolution of 3GPP:

Critical Security Testing for Private and Public 5G RAN and CORE and beyond to keep pace with 3GPP developments.

Private 5G
Public 5G

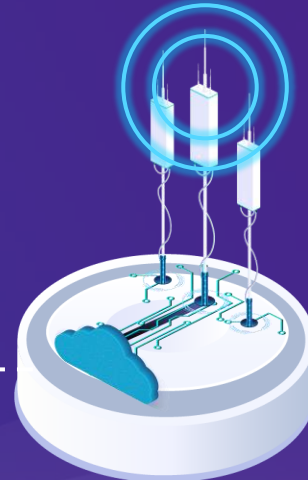


VIAVI solves customer RANtoCore Security performance problems, breaking price complexity curve.



Network disaggregation (O-RAN):

Drives complexity which drives test, including O-RAN security performance assessment.



Geopolitical pressures:

Driving local investment and security concerns in both RAN and CORE as attack surfaces expand.



Digital transformation and cloudification:

Drives demand for security in move from on prem to VM and Container based cloud deployments



VIAMI Security Solutions

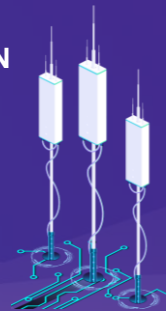
5G RANtoCore, Open RAN, SASE, VPN/PQC, Cloud and Virtual Environment



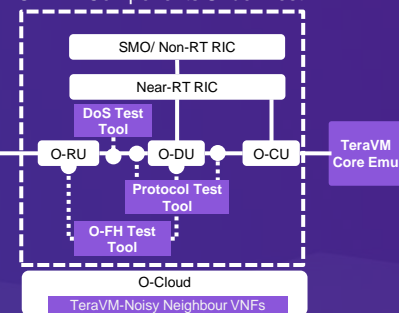
Quantum safe
VPN & SASE
Solutions.



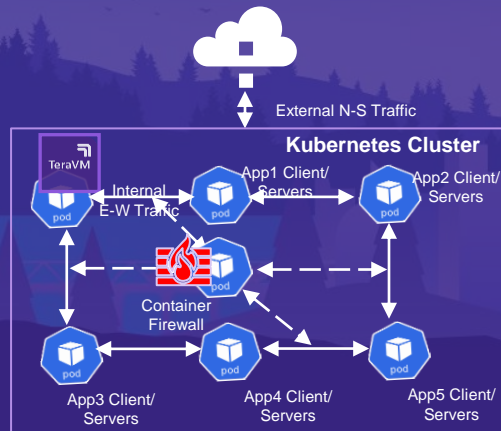
Open RAN
Security



O-RAN Components Under Test



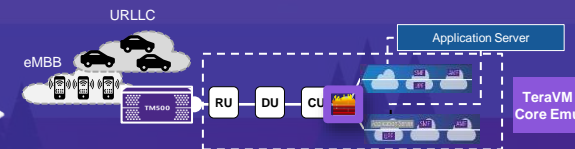
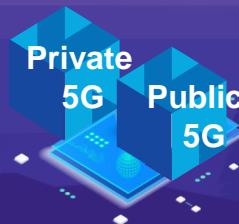
VIAMI Test Tools



Cloud and Virtual
Environment
Security



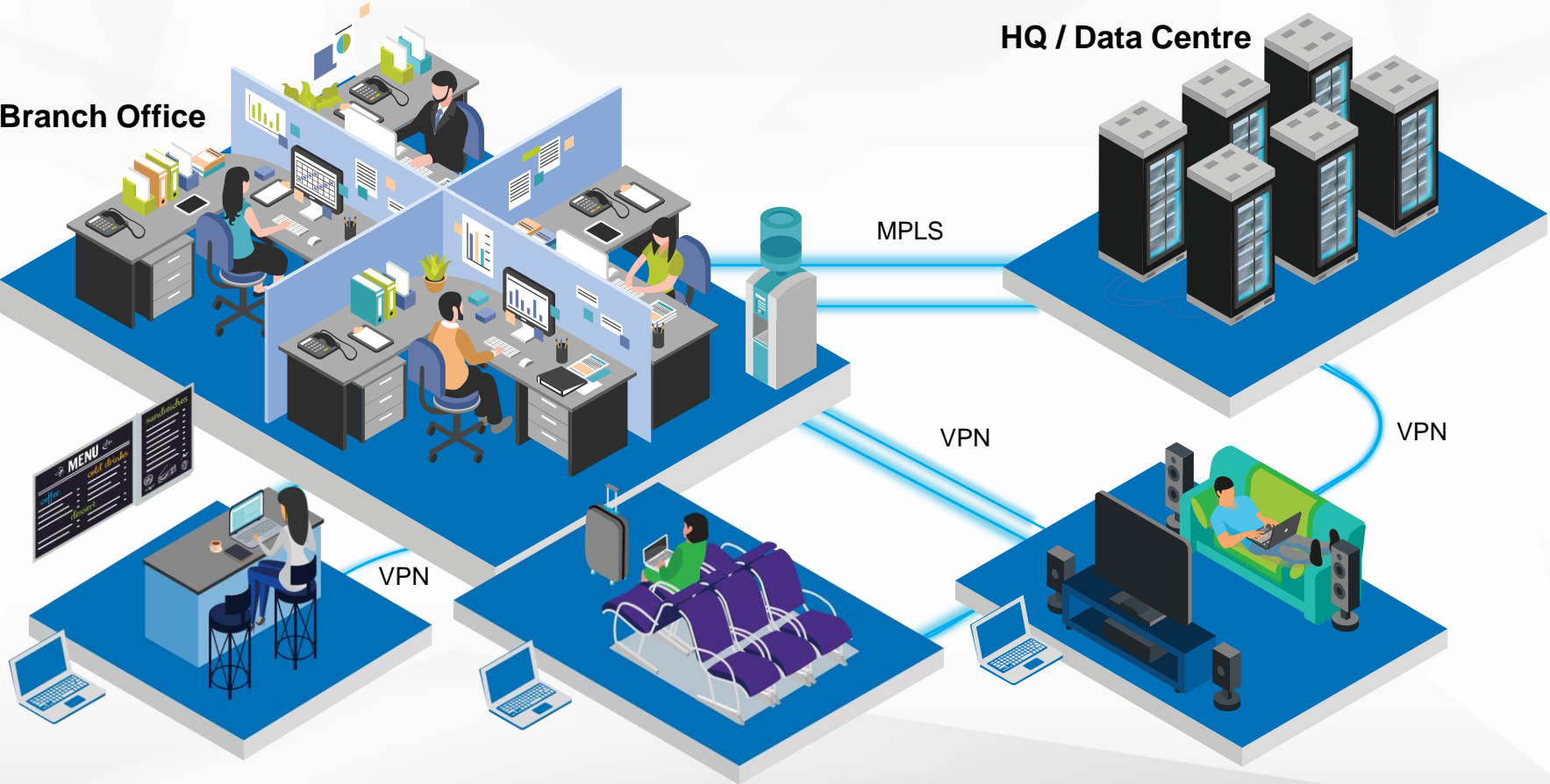
5G End-to-End
Security



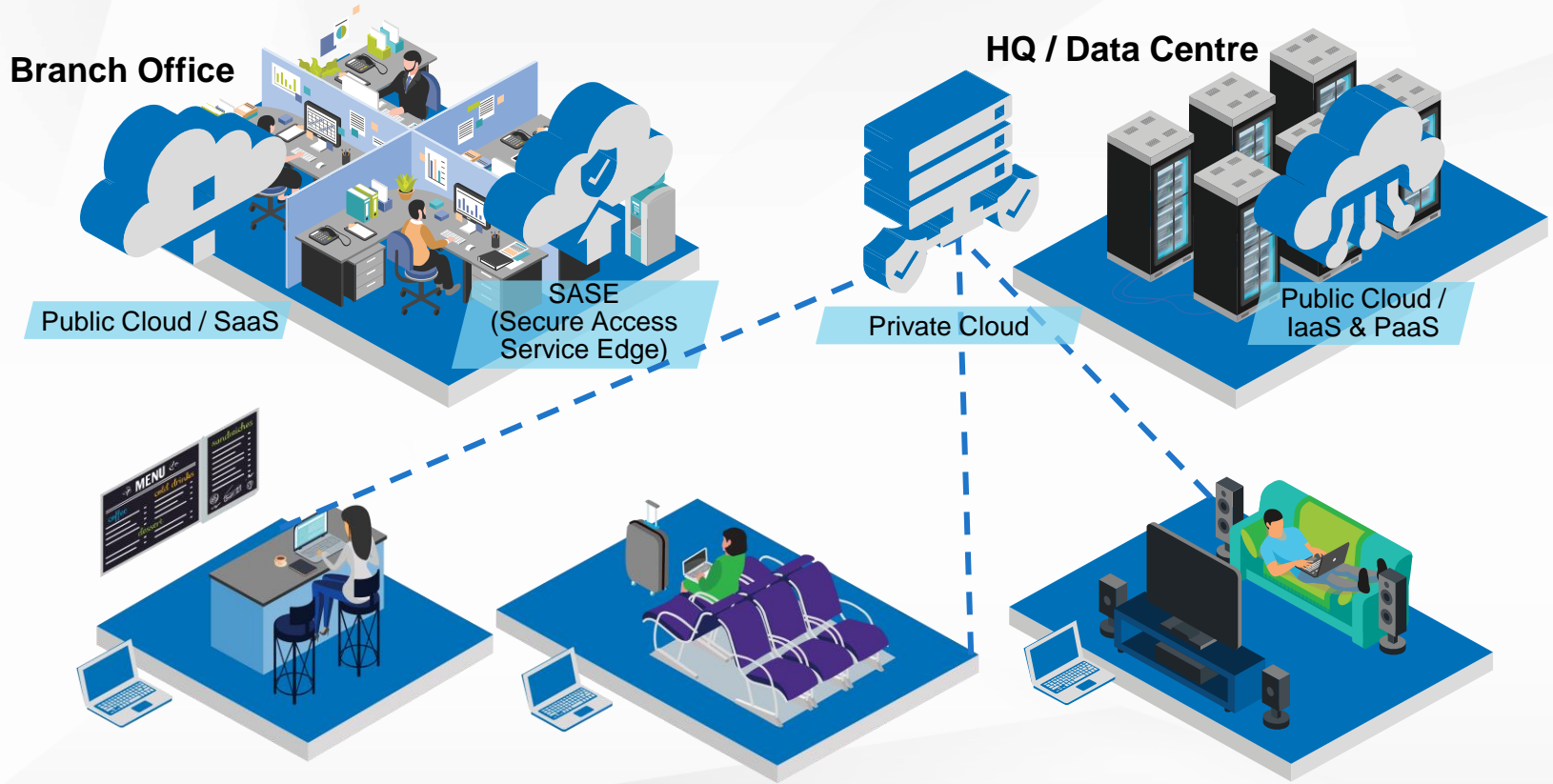
What is the Appeal of SASE?



Before SASE



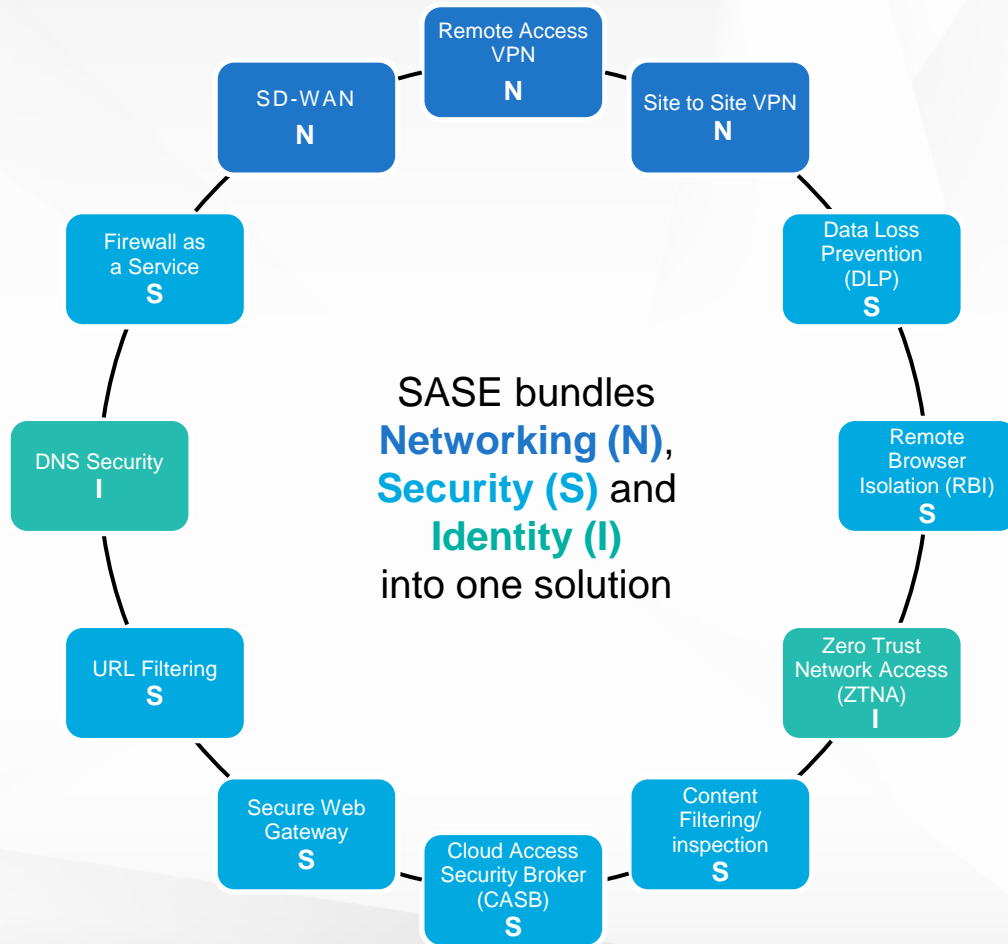
After SASE



Secure Access Service Edge










SASE combines networking, security functions and identity access together with principles of Software-Defined Wide Area Networks (SD-WAN) - delivered in the cloud as a service

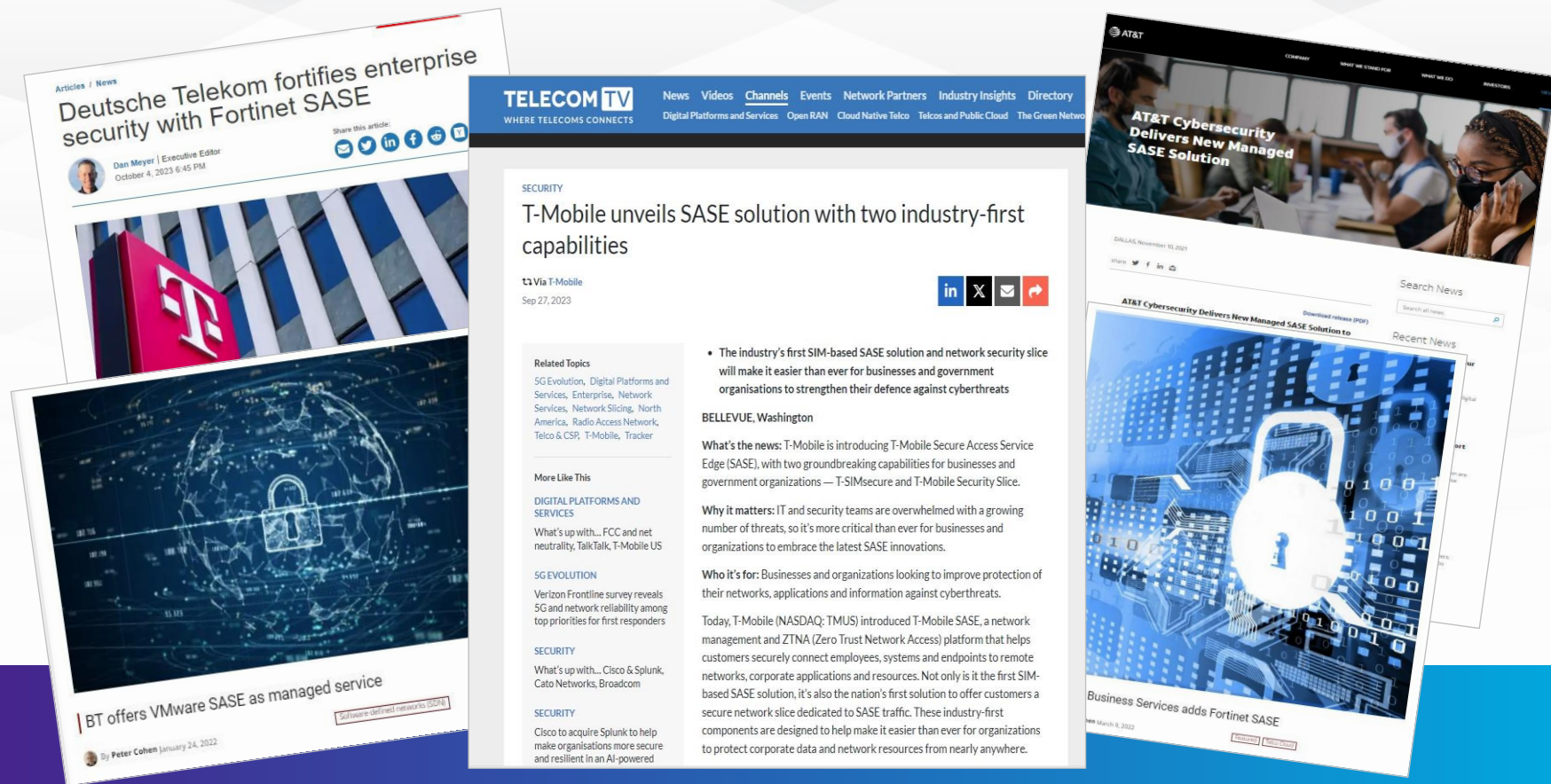


Industry Working Trends and Challenges

Challenges of Remote Working

Employee Flexibility	94% of organizations are allowing employees more flexibility as to where and when they work.	
Multi-cloud Environments	In-house applications are being moved from on-prem to highly distributed multi cloud environments and SaaS applications continue to grow	
Threats	Threats are growing with 38% of organizations stating the sophistication of these threats is their top challenge.	
Employee Performance	Ensuring employee performance levels is key to the whole SASE transformation	
Virtualized Test Tool	Having a test tool that is virtualized and containerized, able to run on multiple platforms – data centre, public cloud, private cloud, on Premises	
Metrics	Being able to measure and benchmark metrics such as bandwidth levels, QoS of traffic inside SD-WAN tunnels	
Latency-sensitive Applications	Collaboration, VoIP, media streaming, and video conferencing demand a high-performance, low-jitter network that is reliable and scalable. Performance and scalability are two very important tests – MoS scores for voice and video	

CSPs Offering a Range of SASE Solutions



User Experience and Adequate Bandwidth

Don't Overlook These



**Importance of
user experience**



Adequate Bandwidth



SASE Performance Quotes

“ When I talk to CIOs, their key considerations are delivering business outcomes, protecting against cyber threats and **ensuring optimal network and application performance.** ”

John Spearman - BT Global Customer CTO, lead for SD-WAN and SASE (Blog Jan '23)

“ Given the complex multifunctional environment that will characterize SASE the ability to **conduct testing to ensure the system is properly integrated and performing** at expected levels will be critical. ”

Verizon Whitepaper, The right approach to SASE

“ Another thing I thought about for my requirements list was making sure the ZTNA solution we chose within the platform was **resilient and redundant and offered the best user experience.** ”

Jaye Tillson, Director of Strategy, Axis

“ The quality of the connectivity sits at the heart of success for any SASE strategy. “It needs to be well-engineered and architected to make sure that it’s delivering **the best possible experience for users.** ”

Spark NZ, Press Release: Why SASE sits at the center of a hybrid workforce

SASE Deployment Challenges



How can you provide seamless connectivity and failover to alternative paths?



How do you ensure critical applications receive appropriate bandwidth and QoS?



How can you guarantee metrics such as throughput, latency, jitter, and packet loss meet the organization's performance requirements?



How do you identify potential security weaknesses and ensure compliance with regulatory requirements?



How do you ensure proper access controls and policies are enforced. Such as authentication mechanisms and single sign-on capabilities?



How to you ensure vendor can deliver the promised performance, availability, and response times (SLAs)?



How can you guarantee the performance and stability of the solution, when the network grows?



Productivity Example



CEO Approval

SASE with **Good** Performance



CEO efficiently access document online and can sign it



Productivity is not hampered by network

SASE with **Poor** Performance



Frustrated CEO cannot access important file

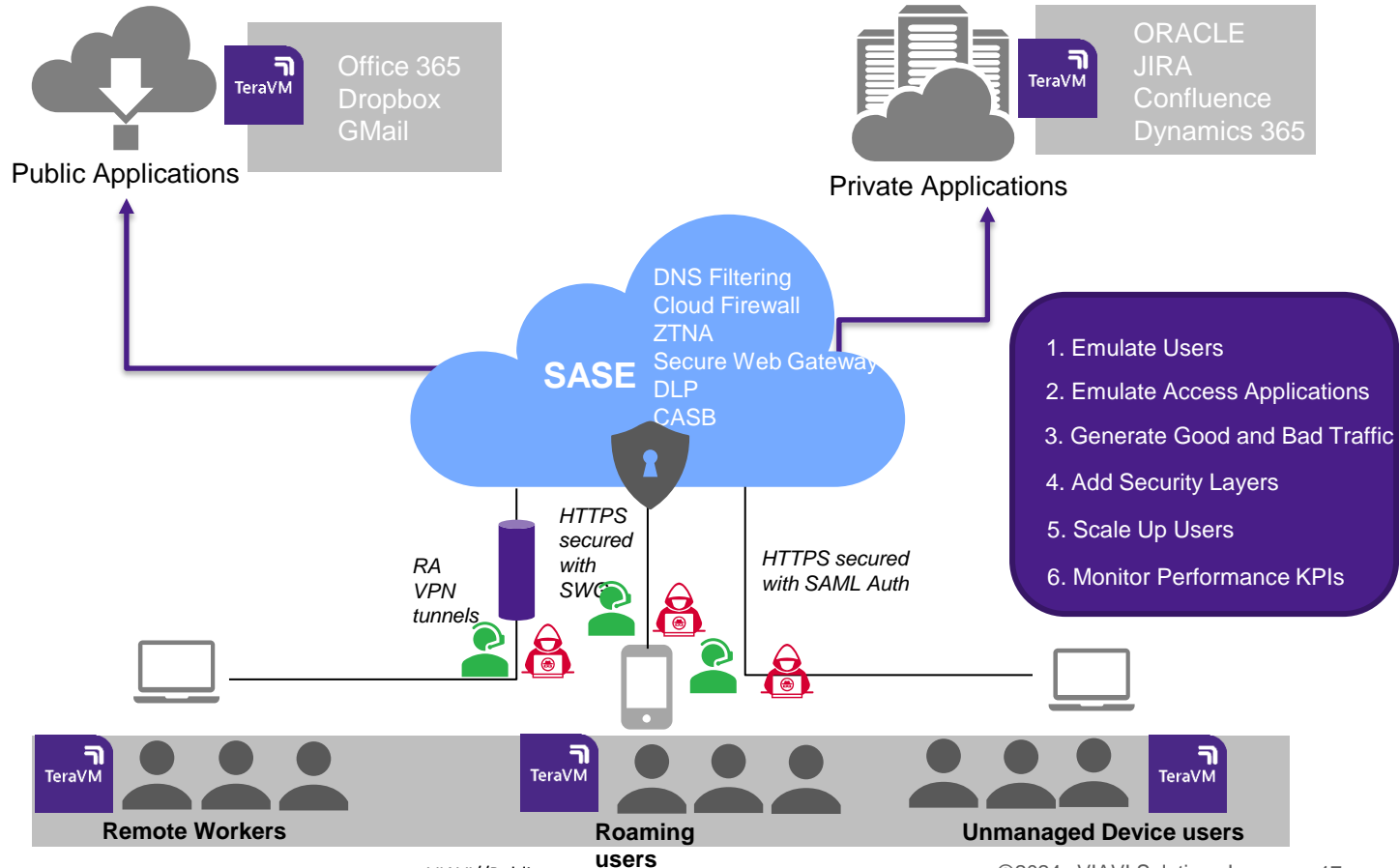


Their attention is diverted to other priorities



Significant delays are created due to network performance

TeraVM SASE Performance Test



SASE Test



By conducting comprehensive testing across these areas, organizations can gain confidence in the performance, security, and reliability of the SASE solution **prior to deployment**, mitigating potential issues and ensuring a successful implementation

7 Steps to a Confident Launch

Prior to deploying SASE, it is crucial to conduct thorough testing to ensure the solution functions as expected and meets the organization's requirements. Here are some key testing activities that can be performed:

- 1 Performance Testing
- 2 Scalability Testing
- 3 Security Testing
- 4 Traffic Routing and Optimization Testing
- 5 Service Level Agreement (SLA)
- 6 Failover and Redundancy Testing
- 7 Identity and Access Management Testing

AI in SASE



Network and User Experience



AI when used in a SASE environment optimizes network performance by applying ML and AI to manage network traffic more efficiently. ML can predict network demands based on historical data and user behavior, which enables it to allocate network resources proactively, reducing latency and enhancing the overall user experience.

Data



AI ability to process large amounts of data aggregating it whether it comes from security, networking or experience and apply algorithms to learn and improve a system applies equally to SASE

Scalability and Adaptability



The power of AI can quickly scale up and down access resources as and when the business needs it. It can also enable additional security mechanisms as concerning patterns are uncovered. Unlike traditional hardware-based architectures that can be challenging to scale, AI-powered SASE can easily adapt to changes such as business growth, acquisitions, or the addition of new office locations.



VIAVI Solutions

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