open systems

4 SMART WAYS
TO MAXIMIZE APPLICATION PERFORMANCE & AVAILABILITY

INTRODUCTION

The digital world has a problem. People know it's fast. And that's why users really notice slow applications and network glitches. High customer satisfaction in the digital world boils down to smooth operations, which users often experience as the speed and availability of the apps they utilize most. However, for businesses to achieve top-tier performance and minimized downtime, their approach needs some strategic thought from different angles.

This guide explores four essential strategies to optimize application performance and availability that help position your business for sustained success.
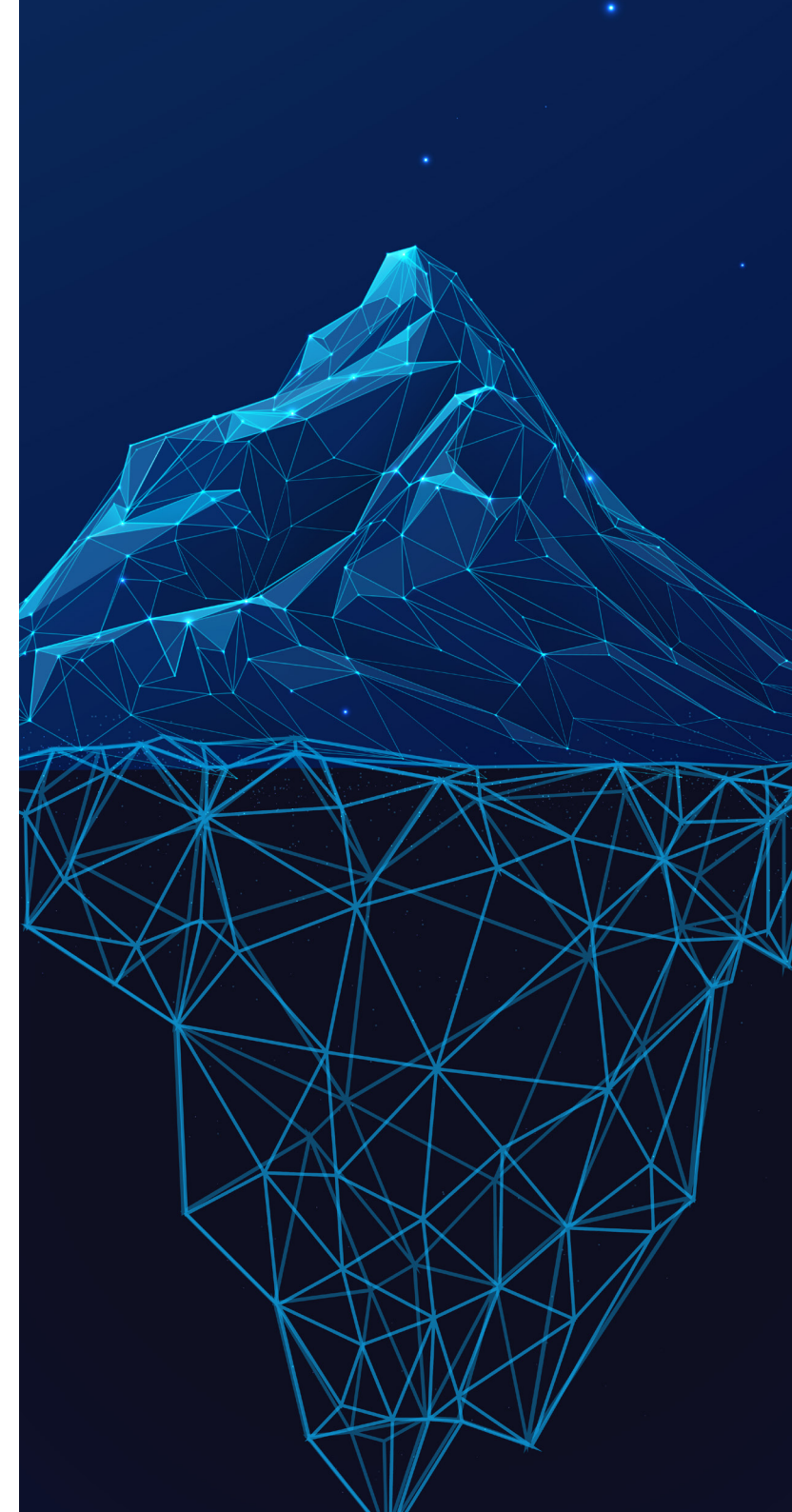
1 THE FOUNDATION

A Robust Network Underlay

Robust physical infrastructure is regarded as the backbone of an enterprise's digital operations. Without a strong foundation to run on, applications without it are likely to suffer from performance issues, leading to disruptions, frustration, and lost productivity.
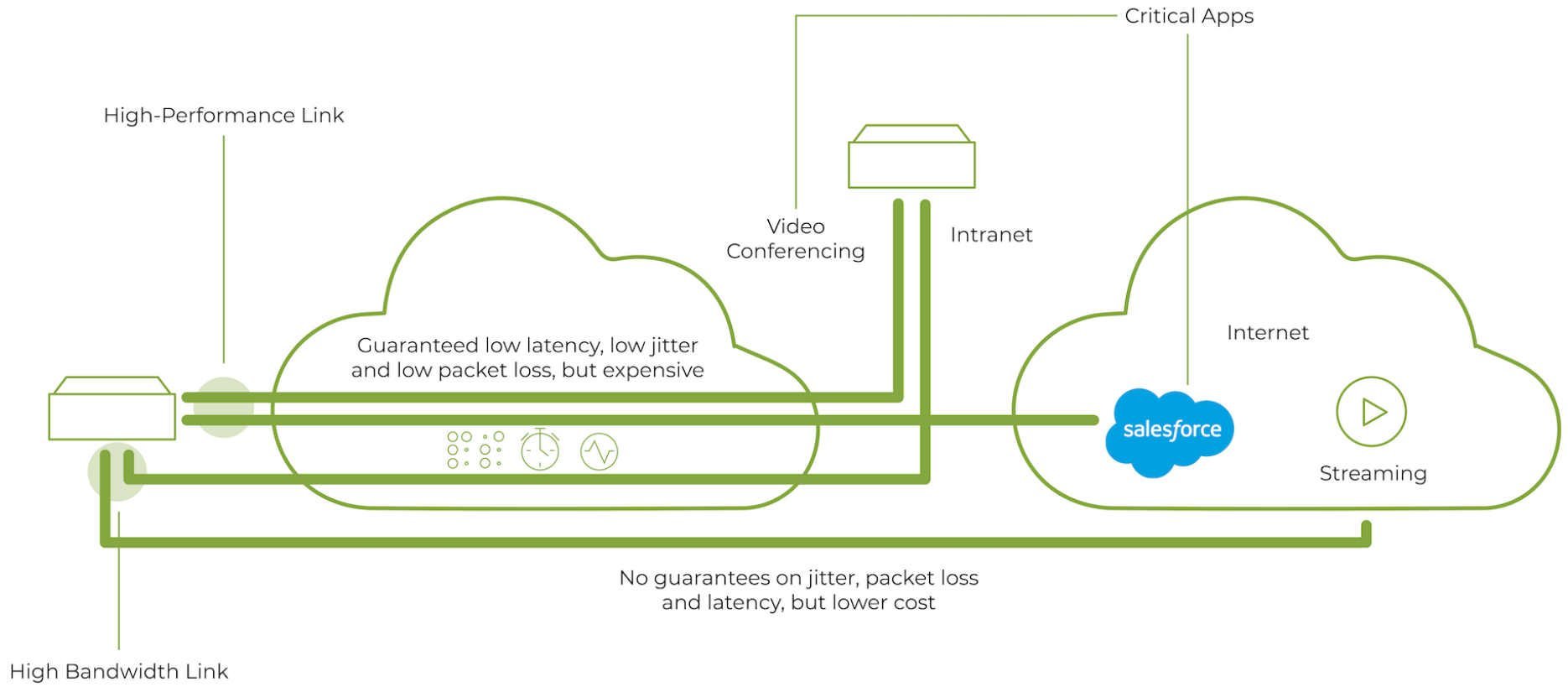
HIGH-PERFORMANCE LINKS FOR CRITICAL APPS

Whenever applications drive customer transactions or support vital business functions, they are critical and need high-performance connectivity. Private backbones, high-end internet, or MPLS should be leveraged to ensure these apps have the necessary speed and availability to perform optimally. And although most organizations are moving away from MPLS, in certain scenarios, it is still the best option to meet requirements.

Why not just use cheap internet lines with SD-WAN on top?

Because the SD part of SD-WAN stands for "software-defined" which means that – as software – it can contribute to mitigating some sporadic network issues, but it won't be effective against chronic packet loss, jitter, or delays.

HIGH-BANDWIDTH LINKS FOR NON-CRITICAL APPS

Assuming top performance is reserved for critical apps, what about the remaining ones? Ignoring them would be uncomfortable for users and ultimately bad for business. Hence, non-critical apps require adequate bandwidth whenever possible. High-bandwidth links – though potentially less performant – are a practical measure to ensure all applications function smoothly without overloading the network.

THE FOUNDATION

High-Performance Link

Critical Apps

Video Conferencing

Intranet

Guaranteed low latency, low jitter and low packet loss, but expensive

Internet

salesforce

Streaming

No guarantees on jitter, packet loss and latency, but lower cost

High Bandwidth Link

REDUNDANCY: A SAFETY NET

Network issues can, and will, arise even in well-designed networks. Redundant links are essential for providing alternative data pathways in case of a primary link failure. Continuous operations can be maintained through this redundancy, minimizing downtime.
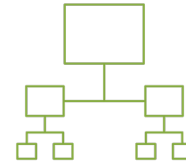
2 ACCURATE CLASSIFICATION

of Business Applications

Just because you initially have fantastic performance doesn't necessarily mean it is guaranteed to stay that way. Maintenance of performance and availability is key. To be effective, it needs accurate discovery and monitoring of all your business applications. After all, how can you optimize something you're not aware of? Ongoing discovery and monitoring prevent service degradation in the long run.

ACCURATE CLASSIFICATION

TOP
Real-time

Skype for Business
Mission-critical real-time applications

HIGH
High priority

Mission-critical business applications

MEDIUM
Medium priority

Other business applications and protocols
e.g. CIFS, Printing, AD, DNS, Kerberos, VoIP, etc.

Business applications category

LOW
Low priority

Web Traffic   Streaming   Other

Base traffic categories

Identify, prioritize and monitor the business-critical applications in your network.
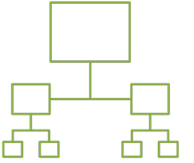
NO BANDWIDTH CONTROL
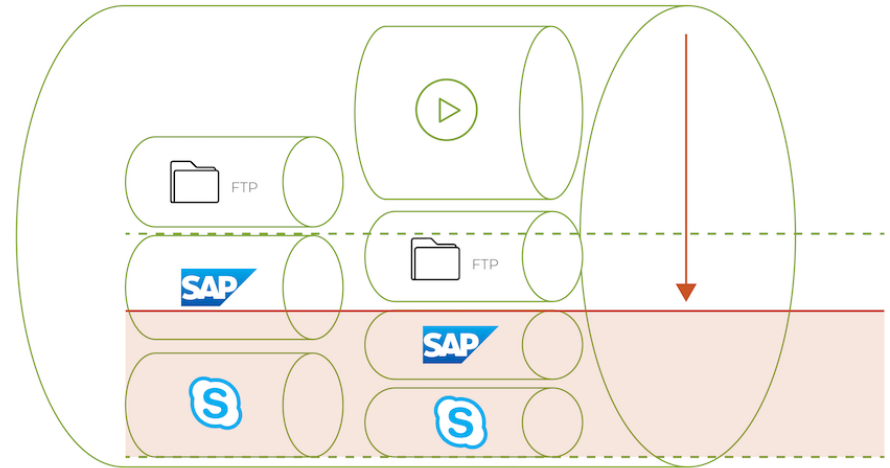
When there is no bandwidth control, business applications can become slower due to insufficient bandwidth.

WITH BANDWIDTH CONTROL

With bandwidth control, the network reacts faster to business needs and "greedy" applications don't monopolize the bandwidth.

DEEP PACKET INSPECTION (DPI) & CUSTOM APPLICATION DEFINITIONS

Deep Packet Inspection (DPI) is used to recognize most known applications that are running on the network by examining the transmitted data. This technology makes it possible to identify and categorize applications, so their usage can be monitored and controlled.

But DPI engines may not be able to recognize all relevant applications, particularly those unique to an organization. Application definitions should be able to include customer-specific parameters, ensuring that all relevant traffic is accounted for and optimized. If all business applications are not accurately covered, some traffic may go unnoticed, leading to suboptimal performance or even service interruptions. This can severely impact operations and customer satisfaction.

GRANULAR APPLICATION STEERING

Not all applications are alike. Depending on the tasks they support, they will have different sensitivity to issues – some cope fine with a bit of packet loss, jitter and/or more latency, but others simply cannot. So it's important to have a traffic steering engine that is capable of recognizing even the most subtle changes in network performance, to cater to the variance in application sensitivity.
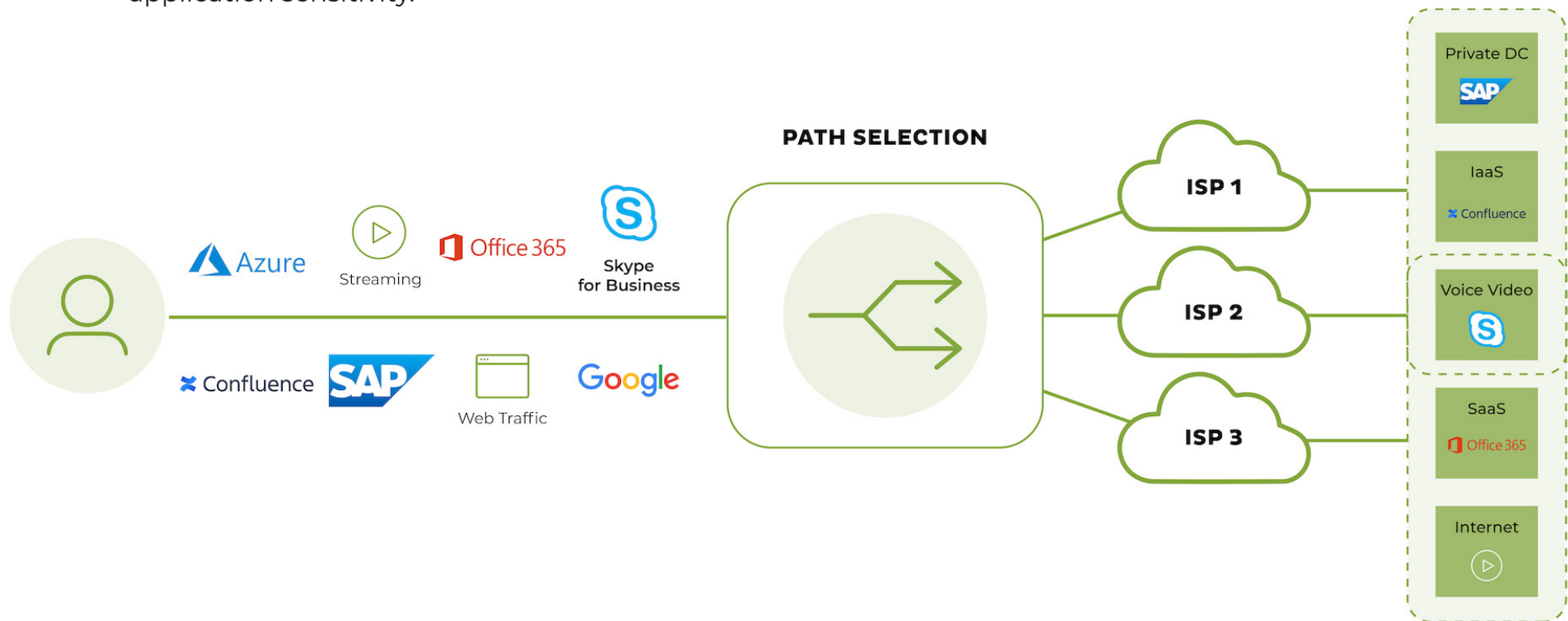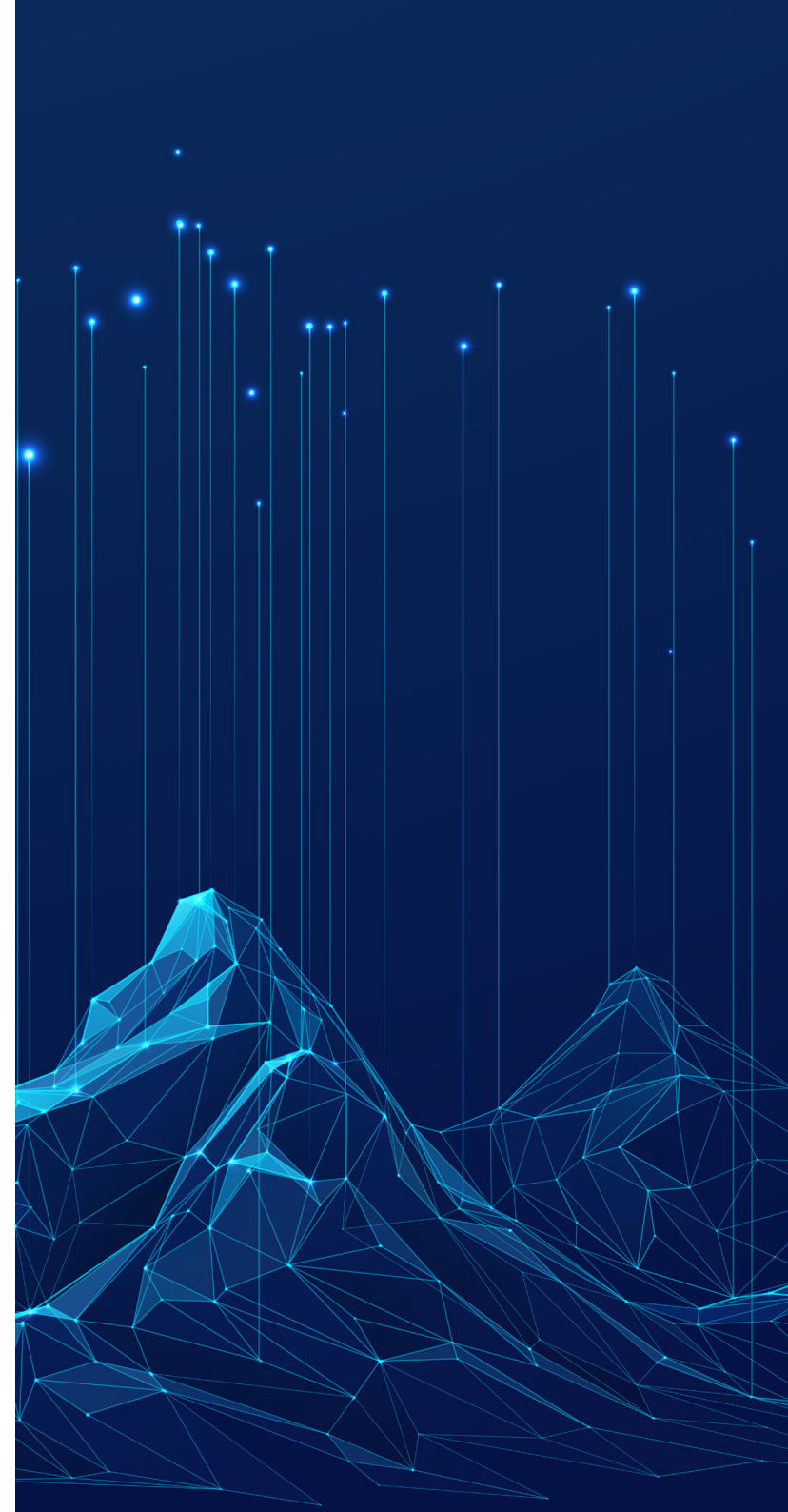
3 UNIFIED PLATFORM

Managing network components through a fragmented approach is likely to create inefficiencies, increase the risk of errors, and widen security gaps. A unified platform addresses such challenges by providing a holistic view and consistent management across all network components.
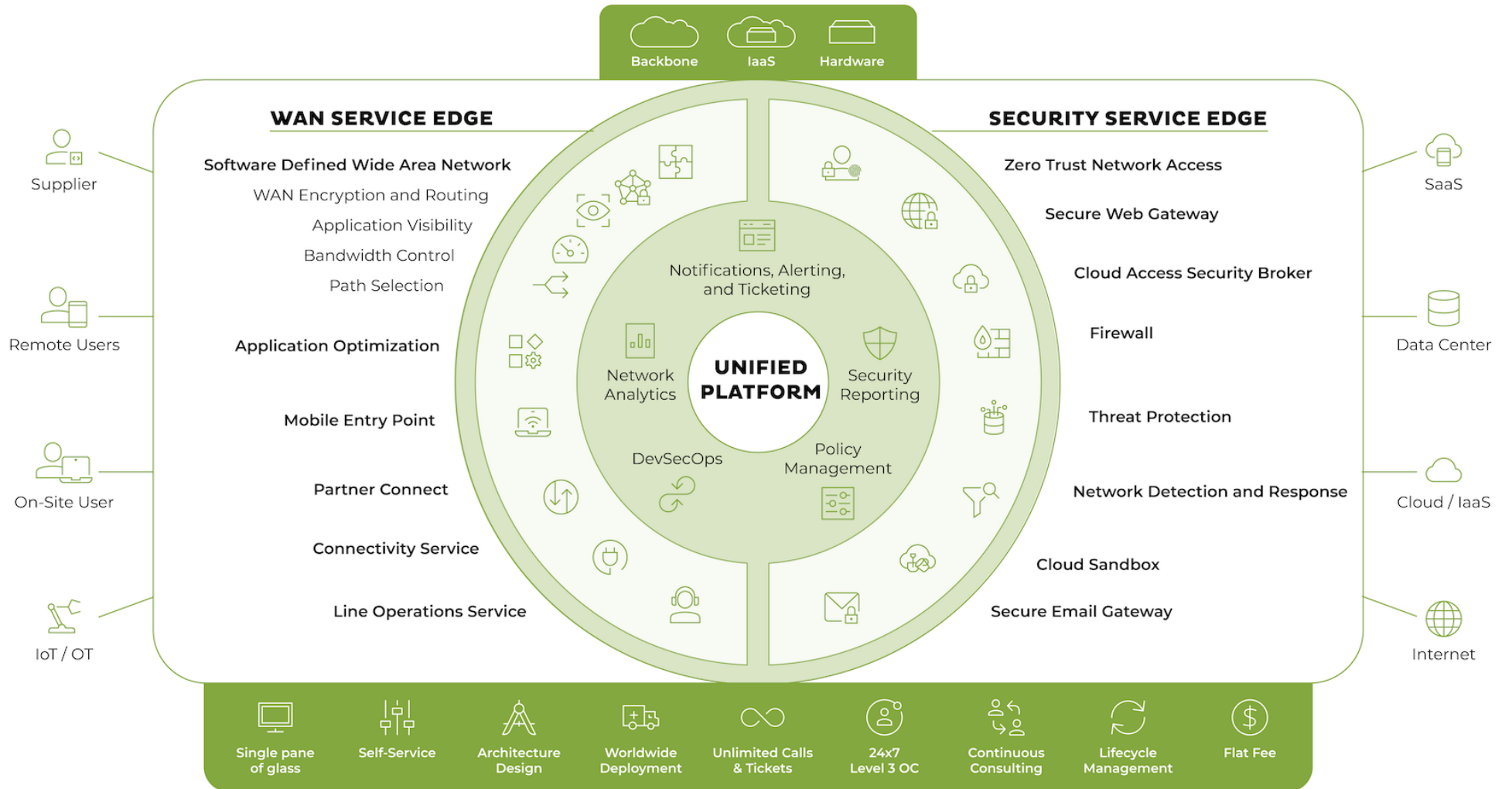
UNIFIED PLATFORM

END-TO-END VIEW AND POLICY ENFORCEMENT

A unified platform offers end-to-end view of the network, allowing consistent policy enforcement across all systems. Security and performance policies can be uniformly applied, reducing the risk of vulnerabilities and inefficiencies.

CONSISTENT APPLICATION DEFINITIONS ACROSS ALL COMPONENTS

The same application definitions should be used across SD-WAN, Firewall, Secure Web Gateway (SWG), and other components to avoid the pitfalls of inconsistent management.

- It is important to ensure that a change in one product does not negatively impact others.
- Changes to application definitions should be automatically reflected across all platforms, reducing the potential for human error by eliminating the need for manual copy-pasting.

UNIFIED PLATFORM

WAN SERVICE EDGE

Software Defined Wide Area Network
WAN Encryption and Routing
Application Visibility
Bandwidth Control
Path Selection

Application Optimization

Mobile Entry Point

Partner Connect

Connectivity Service

Line Operations Service

SECURITY SERVICE EDGE

Zero Trust Network Access

Secure Web Gateway

Cloud Access Security Broker

Firewall

Threat Protection

Network Detection and Response

Cloud Sandbox

Secure Email Gateway

Backbone   IaaS   Hardware

Notifications, Alerting, and Ticketing

Network Analytics

UNIFIED PLATFORM

Security Reporting

DevSecOps

Policy Management

Supplier
Remote Users
On-Site User
IoT / OT

SaaS
Data Center
Cloud / IaaS
Internet

Single pane of glass
Self-Service
Architecture Design
Worldwide Deployment
Unlimited Calls & Tickets
24x7 Level 3 OC
Continuous Consulting
Lifecycle Management
Flat Fee

MINIMIZE SERVICE INTERRUPTIONS AND SECURITY GAPS

IT teams typically have enough to manage as it is. The precious time they spend on manual updates and troubleshooting is well worth minimizing by using a unified platform. Such streamlined management will also enhance overall efficiency and availability.

24x7 OPERATIONS SUPPORT

4

The Human Factor

Even with the best infrastructure and management tools, issues are likely to arise at any time. For this reason, having a dedicated, 24x7 operations support team is essential.

RAPID RESPONSE TO ISSUES

A capable operations team is expected to act fast when issues occur, not just escalate them. When problems arise, experts are needed to diagnose and fix them rapidly, minimizing downtime and keeping business operations running smoothly.

PROACTIVE MONITORING & MAINTENANCE

What does proactive even mean in the context of IT and networks?

Essentially it is around-the-clock monitoring to ensure that potential issues are identified before they get a chance to become critical. Timely intervention when the issues are still small reduces the likelihood of disruptions.

SUMMARY

Smooth business operations are so much more satisfying for the overall user experience. Application performance and availability is not just about technology – it's about implementing it optimally for your business. By ensuring a robust underlay, accurately classifying all business applications and leveraging a unified platform, with a responsive 24x7 operations team, businesses can achieve the performance and availability needed to thrive in today's competitive digital landscape.

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Open Systems simply connects and secures hybrid environments so companies can focus on meeting their business goals. The Open Systems SASE Experience helps reduce risk, improve efficiency, and accelerate innovation with a comprehensive, easy-to-implement and use combination of SD-WAN and Security Service Edge delivered as a service with a superior user experience. That's our Service Experience Promise.