HPE aruba networking

Top Networking and Security Trends for 2024

Security first, AI-powered networking for your business

HPE GreenLake

Following a year ripe with innovation, disruption, and challenging macro-level conditions, IT departments continue to be at the forefront of organizational ambitions to accelerate business transformation. Generative AI (GenAI), sustainability initiatives, and other strategic priorities are set to emerge from early adopter status to mainstream practical implementation. With enterprise architecture increasingly focused on hybrid data-centric requirements, edge-to-cloud security becomes a core tenet of enterprise networking.

"As more organizations choose programmatic, hybrid work strategies, buyers are more likely to select firewall vendors that offer cloud-based security services with credible cloud security strategies."

– Gartner®, Research Critical Capabilities for Network Firewalls, Hils, Kaur, and Lintemuth, May 2023.

Top trends for 2024

1. The death of the standalone firewall

The rise of the hybrid workforce and the extensive deployment of IoT devices have irreversibly eroded the network perimeter, and the standalone firewall is dying with it. No longer can a secure "inside" be protected from a bad "outside" by a ring of firewalls. Trying to plug security gaps by deploying more firewalls inside an organization adds complexity, creates room for errors, and slows down businesses that want to move rapidly.

Consequently, the next-gen firewall appliance is rapidly becoming the last-gen firewall appliance. On one side, Security Service Edge (SSE)—with its ability to manage security for users accessing applications from anywhere—is replacing firewalls and proxies with cloud-delivered secure web gateway, cloud access security broker and Zero Trust Network Access. On the other side, IoT security requires on-prem segmentation at the edge of the network, achieved by firewall services built directly into access points, switches and SD-WAN gateways. In the data center, top-of-rack switches with L4-7 security functionality are delivering east-west segmentation far more cost-effectively than traditional next-gen firewalls at end-of-aisle. In the next few years, the next-gen firewall market will continue to decline as these new cloud-based and built-in capabilities usher in a simpler way of managing secure connectivity.

How we help

- Implementation of security services for user-to-app interactions with HPE Aruba Networking SSE
- Integration of role-based policy and rich application recognition and control with HPE Aruba Networking Central
- Introduction of Security Services Edge (SSE) technology as an overlay to any vendors' network
- Ability to use existing HPE Aruba Networking products and services for investment protection

Learn more about SSE

"96% of customers stated that security and networking worked together to implement SASE"

– The Forrester Wave™ Zero Trust Edge Solutions Q3, 2023 (Holmes and Kindness, 2023)

2. Zero Trust principles accelerate alignment of security and networking objectives

Most—but not all—organizations have separate teams managing networking and security, and in many ways their goals can be at odds. In 2024, leading enterprises will use Zero Trust principles to align the two teams' interests and deliver better end user experiences and business outcomes.

In a typical organization, the networking team keeps people and services connected reliably and up and running with predictably good performance. Their jobs are to make it easy for people to connect to anything and to avoid complexity that can result in outages, latency, or slowdowns. On the other hand, the security organization is tasked with minimizing risk and maintaining compliance. Users can get caught in the middle, as an over-zealous security implementation might slow or block access to the apps and data they need, while a lax security or networking team that aims to please by bypassing security measures can open the door to infiltration and ransomware.

Leading enterprises will adopt Zero Trust architectures—where the network's job is defined not in terms of connecting anything to anything, but rather as an enforcement layer for security policy. For users accessing applications, security policy may be enforced in the cloud, but for many traffic flows (particularly for IoT devices and their associated services), it is more efficient to automatically implement security policy in access devices like access points, switches and routers. With the right level of shared visibility, automation, and clear delineation of policy and enforcement, networking and security teams will have aligned goals and deliver a better experience.

How we help

- Utilization of a single point of visibility and control with access customizable to both network and security teams
- Deployment of a unified network and security policy framework with HPE Aruba Networking Central
- Seamless integration of cloud security functionality with existing network management tools

Get started with a security first, AI-powered network

"By 2027, DEM deployment will rise from 60% to 90% as enterprises will use synthetic and real user monitoring to enhance the user journey and better understand user interactions of SaaS applications and services."

– Gartner®, Market Guide for Digital Experience Monitoring, Bangera, Siegfried and Byrne, November 2023.

3. Measuring end user experience becomes a must for driving operational excellence

Common end user metrics

- Location-based network health (site A vs site B)
- Services performance (Wi-Fi, DHCP, DNS)
- Internal application health (VoIP, Workday)
- External application health (Dropbox, Teams, WhatsApp)

To deliver what employees and customers expect, IT organizations will need to shift to service level objectives (SLOs) and service level agreements (SLAs) based on measured user experience. Ensuring a great user experience means applications must work well, and if they don't, problem resolution must be swift.

To address this, organizations will widely deploy digital experience management (DEM) tools that measure the actual experience of end users and make synthetic probes to ensure infrastructure readiness even when users are not present. Organizations are most likely to want a mix of measurements collected from endpoint agents (like an SSE agent) and measurements collected by dedicated hardware sensors, particularly when monitoring Wi-Fi performance. Ideally, these same measurements feed automated AIOps which are then able to learn and then implement best practices, rapidly triage problems, and automatically remediate issues.

How we help

- Automation and improvement of user and client experiences leveraging platforms and tools such as HPE Aruba Networking Central and User Experience Insight
- Customization of network access and security to those who need it most with role-based access and dynamic segmentation orchestrated through NetConductor
- Digital Experience Monitoring (DEM) for testing and troubleshooting application and network performance from end users' perspective with HPE Aruba Networking User Experience Insight

Learn how to upgrade user experience



"HPE Aruba Networking was a pioneer in the delivery of Wi-Fi 6E and leads the industry in total enterprise Wi-Fi 6E AP shipments."

– Siân Morgan, WLAN analyst
Dell'Oro Group,
December 2023

4. 6GHz Wi-Fi adoption skyrockets—and will continue to be the biggest feature of Wi-Fi 7

The barriers slowing Wi-Fi deployment in the 6GHz spectrum will be removed in most geographies, and adoption will start to skyrocket.

A couple of years ago, the Wi-Fi 6E standard introduced support for the 6GHz band, more than doubling Wi-Fi capacity, enabling more users and faster speeds. It's been rapidly adopted in some segments, but others have been more cautious. In 2024 the last remaining barriers to broad adoption will be resolved.

First, use of the 6GHz band—particularly outdoors—is subject to approval by government authorities. Although some countries like the US have been quick to open the spectrum for Wi-Fi, others have been slower. Fortunately, there has been much progress in this area, and in 2024 most enterprises will have 6GHz spectrum accessible in most parts of the world.

Second, some enterprises have been wary about adopting Wi-Fi 6E when Wi-Fi 7 is around the corner. Now with Wi-Fi 7 ratified, there is no doubt that Wi-Fi 6E and Wi-Fi 7 will be interoperable, so with 6E devices and access points shipping in volume, 6GHz Wi-Fi deployments can move ahead full steam.

Finally, adoption is gated by support on both access points and client devices. We are witnessing a slew of new devices that support Wi-Fi 6E, and the mainstreaming of 6E access points. On top of this, more Wi-Fi 7 devices are on the horizon that can utilize the 6GHz band to deliver better user experience with either Wi-Fi 6E or Wi-Fi 7 access points.

The combination of these developments forecast a big uptake of 6GHz spectrum in 2024, and with it, faster transfers and better user experience.

How we help

- Availability of an indoor and remote portfolio of HPE Aruba Networking Wi-Fi 6E access points to unlock access to the 6GHz spectrum
- Integration of a variety of popular IoT applications through an IoT operations dashboard to expand the role of AP infrastructure beyond internal connectivity to support IoT overlay deployments
- Development of an industry-first GPS receiver built in to Wi-Fi 6E access points to provide a location-ready network to support emerging use cases such as automatic AP mapping and turn-by-turn navigation

Discover the advantages of 6GHz and Wi-Fi 6E

"By 2026, generative artificial intelligence (GenAI) technology will account for 20% of initial network configuration, which is an increase from near zero in 2023."

– Gartner®, Research Strategic Roadmap for Enterprise Networking. Brown, Munch, Leibovitz, and Lerner, October 2023.

5. AI will liberate IT admins

It is sometimes quoted you that won't lose your job to AI, you'll lose your job to someone who is using AI effectively. This is becoming increasingly accurate for the IT admin.

The increasing burden of implementing new technology and maintaining cybersecurity with a fixed or shrinking headcount means that each admin must handle more. Fortunately, AI and automation are advancing rapidly, shifting the job from managing and configuring individual devices to defining policy across a whole estate and having that policy implemented automatically and consistently. AI is also able to comb through huge volumes of data to identify anomalies and recommend (and even implement) remedies. It's now well established that AI is only as good as its data set, and bigger, high quality data sets are key. Leading vendors will be drawing AI insights from data lakes representing millions of managed devices and hundreds of millions of endpoints. Finally, large language models (LLMs) are turbo charging existing natural language interfaces and providing a more convenient way for admins to get the information they need.

The bottom line is that organizations need to ensure that they are providing their IT teams with the AI capabilities admins need to remain competitive.

How we help

- Access to one of the largest networking data lakes to empower your network with unparalleled insights, recommendations, and actions that boost performance and stability
- Utilization of security first, AI-powered networking to simplify backend operations—from search, firmware upgrades, and other maintenance and support features
- Implementation of a unified framework for consistent network and security policy creation
- Seamless integration of cloud security functionality with your existing network management tools

Demystify AI-powered networking

What's needed is a security first, AI-powered approach to the network

No matter what strategy you have in place for 2024, security implications of the edge-to-cloud era are a common challenge for any IT organization. And whenever secure network implementations are considered, it's become increasingly apparent to organizations that user experience remains a critical factor. Is your network security first? Find out more about what's in store for 2024.

Learn more

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