

Solution overview



HPE aruba
networking

Unified Infrastructure

Modernize your network and streamline network operations for business agility

HPE 
GreenLake



Key benefits

- **Prepare your network for the future** with next-generation, industry-leading 6GHz capable wireless access points and a modern portfolio of CX switches spanning from edge to data center.
- **Streamline operations and improve IT efficiency** with a unified, cloud-native single pane of glass for WLAN, LAN, and SD-WAN operations across campus, branch, remote worker, and data center locations.
- **Optimize network performance and user experience** with AI-powered insights that dynamically spot and fix issues before business is impacted.
- **Simplify and strengthen security** with built-in support for Zero Trust and SASE security frameworks.
- **Accelerate innovation and right-size costs** with flexible acquisition and deployment models that supplement existing IT resources and preserve budgets.

The edge-to-cloud era is here

As the hybrid workplace remains a reality, most organizations are reimagining the workplace experience to enable employees to move seamlessly back and forth between home and the office. According to a Remote Work Survey by PwC¹, less than one in five executives say they want to return to the office as it was pre-pandemic and over half of employees (55%) prefer to work remotely at least three days a week.

In addition to supporting the hybrid workplace, businesses are accelerating digital initiatives to deliver differentiated user experiences. With resource-constrained IT teams under constant pressure to drive efficiencies, leaders are revisiting network modernization plans that were put on hold due to the COVID-19 pandemic. According to Gartner, “Organizations are doing more to update and modernize their core infrastructures. This process helps minimize legacy drag, maximize efficiency, and ensure resiliency as legacy infrastructure experts retire.”²

Outdated infrastructure is inadequate to meet the performance requirements of today’s hyper-distributed edge environments. These environments are characterized by an increasingly remote workforce, the rapid growth of IoT devices, and a need to provide secure connectivity to services hosted in the cloud and data center. Increased security risk is also a factor due to ever-expanding cyberattack surfaces and poor IoT visibility, leading to unplanned downtime or security incidents.

Business agility implies the ability to react rapidly to ever-changing market, economic, and environmental factors. For this, organizations not only require modern network infrastructure and streamlined operations, but also a flexible, predictable way to scale and service infrastructure.

A critical component of the HPE Aruba Networking ESP (Edge Services Platform) is the ability to deliver a Unified Infrastructure that converges the management of wired, wireless, and WAN networks across campus, branch, remote worker, and data center environments. Unified Infrastructure is orchestrated through HPE Aruba Networking Central, an AI-powered, cloud-native network services application that simplifies IT operations, improves agility, and reduces costs by unifying management and orchestration of all network infrastructure.

¹ <https://www.pwc.com/us/en/library/covid-19/us-remote-work-survey.html>

² <https://www.gartner.com/smarterwithgartner/gartner-top-6-trends-impacting-infrastructure-operations-in-2021>





Modernized network infrastructure for business agility

With projected budget optimizations and delays in refreshes, next-generation digital experiences cannot be delivered on outdated, underperforming network infrastructure. Network operations and support teams are increasingly faced with a high volume of end-user complaints, sub-optimal performance, and an inherent risk of security vulnerabilities.

HPE Aruba Networking's next-generation 6GHz-capable IoT-ready access points and cloud-native CX switches enable a robust foundation for businesses to accelerate innovation, preparing the network for current and future initiatives.

High performance and resilience with 6GHz-capable, IoT-ready access points

HPE Aruba Networking offers a broad portfolio of indoor, outdoor, ruggedized, and remote access points to support campus, branch, and remote work locations. The access points are backed by limited lifetime warranty and Wi-Fi Alliance Certification to maximize client compatibility and protect your investment.

Next-generation Wi-Fi 7 and Wi-Fi 6E APs enable enterprises of all sizes to deliver seamless and secure connectivity to respond to the growth in bandwidth-hungry applications, client and IoT devices, and the cloud.

Wi-Fi 6E extends benefits to the 6 GHz band to deliver up to 3x greater capacity. Increased capacity in the 6 GHz band solves connection and congestion issues, offers wider channels up to 160 MHz — ideal for high-definition video and virtual reality — and avoids interference from legacy devices because only 6E-capable devices can use the band.

Indoor location ready

HPE Aruba Networking 6 GHz-capable APs use built-in GPS receivers, fine time measurements, and intelligent software to establish their locations accurately and automatically using universal latitude and longitude coordinates. Through the Open Locate initiative, HPE Aruba Networking is committed to establishing industry standards for sharing AP reference locations with client devices and network-based services in coordination with mobile OS vendors for improved visibility and accuracy.

By automating AP positioning and eliminating error-prone manual mapping, APs enable seamless user experiences for location-aware digital initiatives such as turn-by-turn wayfinding, high-value asset tracking, retail customer engagement, and smart office initiatives.

AP as an IoT platform

HPE Aruba Networking APs extend visibility, control, and connectivity to IoT devices and applications with built-in support for BLE, Zigbee and USB-port extensions. Multiple IoT radios and expanded USB port functionality address a broad range of IoT applications, transforming HPE Aruba Networking APs into secure, multi-purpose communication hubs that are both network access on ramps and full-fledged IoT platforms.

The APs also eliminate the need for gateways by communicating directly with IoT devices and bidirectionally tunneling the data to target applications. This reduces system complexity and cost, increases overall system reliability, and removes a typically vulnerable attack surface. Learn more about [APs as an IoT platform](#).





Powerful switching foundation

The HPE Aruba Networking CX switching portfolio, based on the powerful AOS-CX operating system, is purpose-built to meet the challenges of modern networks, satisfying the most demanding use cases from the access layer to the core to the data center. Ruggedized switches extend networking capabilities to non-carpeted environments.

Built on cloud-native principles, the CX switch portfolio gives IT the flexibility to deploy a single switch operating system from edge access to the data center — supporting intuitive management tools, smart automation, and distributed analytics and transforming the IT network operator experience.

Automation, embedded analytics, high availability, and secure segmentation are designed into CX switches and HPE Aruba Central delivers a unified, single view of the network that maximizes operational efficiency across enterprise networks. Learn more about the CX Switches portfolio.

Cloud-based network management for operational efficiency

The independent management of WAN, wired, and wireless networks with domain-specific tools across campus, branch, remote worker, and data center locations creates an inefficient, fragmented operational framework that is prone to operator error. As business footprints continue to expand at the edge, IT needs to address fragmented network operations and simplify the network management lifecycle.

With a console that can be accessed from anywhere, cloud-based management is being adopted at a rapid rate. But in order to address increasingly complex network and security concerns, HPE Aruba Network Central was designed on top of a microservices-based platform to enable rapid delivery of network and security services for wired, wireless, and SD-WAN, alongside unique AI-powered capabilities.

Central is available via software-as-a-service (SaaS), on-premises, and managed service models, giving customers the choice and flexibility required to suit a diverse set of technical, staffing, and financial requirements.

64% of surveyed HPE Aruba Networking Central customers estimate they have reduced the time it takes to deploy a new network or site by at least 50%.³

³ TechValidate Survey of HPE Aruba Networking Central customers, 2021



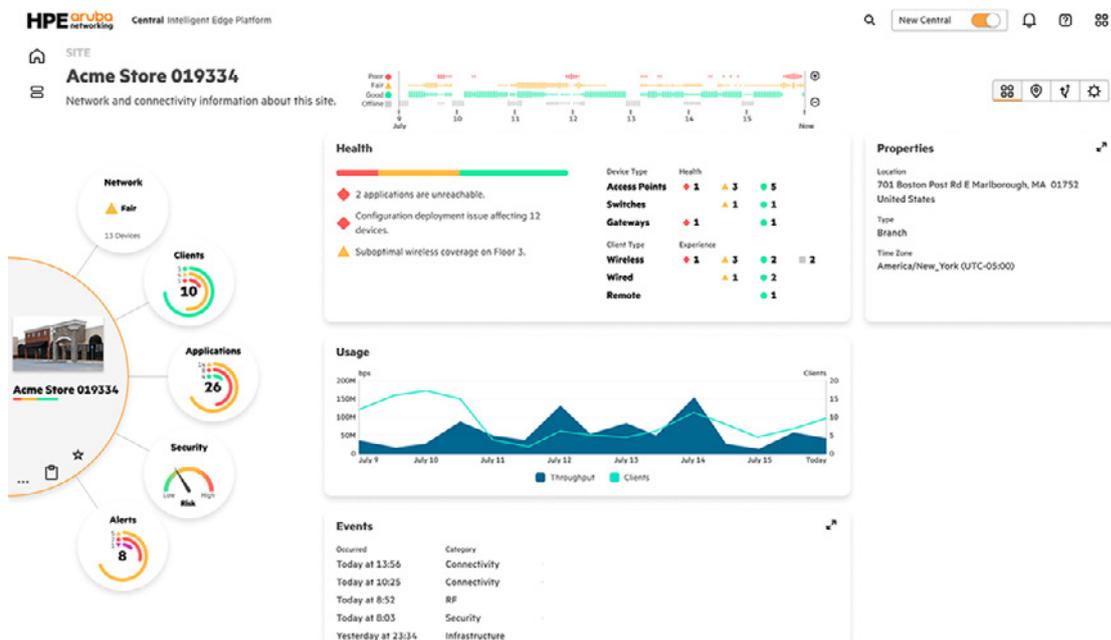


Figure 1. HPE Aruba Networking Central delivers cloud-based network services through a single point of visibility and control.

Single point of visibility and control

Built on a cloud-native, microservices-based architecture, Central oversees every aspect of wired and wireless LANs, WANs, and VPNs across campus, branch, remote, and data center locations. AI-powered insights, end-to-end orchestration, workflow automation, and advanced security features are built natively into the solution and managed from a single dashboard. From this single dashboard, IT operators can readily assess the state of the network with views into global and site level details.

Microservices capabilities are delivered on HPE GreenLake, providing a consistent operating model and single platform for IT executives to view and manage their compute, storage, and networking infrastructure for unmatched efficiency and improved cost controls.

Faster network deployments with zero touch provisioning

Ongoing network updates to accommodate new users, devices, and applications should also be handled with minimal manual intervention and with predefined configurations that comply with business requirements.

Central accelerates the process of onboarding, configuring, and provisioning network devices with a guided setup wizard, flexible configuration options, and zero touch provisioning, further aided by an intuitive mobile installer app. Zero touch provisioning provides a simple, intuitive workflow for setting up APs, switches, and gateways without onsite IT involvement. Configuration parameters can be centrally defined within Central based on network- or site-specific requirements.

High availability with live upgrades

HPE Aruba Networking Central offers a simple, GUI-based workflow to upgrade firmware on deployed network devices. This includes live upgrades that reduce maintenance windows and ensure continuous operations. Upgrades can be completed at the site level, and can also be scheduled during non-peak hours of operation.

IT organizations no longer have to rely on time-consuming CLI-based processes or plan for potential downtime and loss of service while upgrading firmware on network devices.



AIOps for smarter, efficient IT operations

Automated troubleshooting and AI-powered insights are indispensable for today's increasingly distributed, complex networks. According to EMA Research, manual administrative errors cause 27% of all network problems, and more than 78% of IT professionals at least somewhat agree that network automation tools can mitigate challenges associated with understaffed network teams.⁴

AIOps, driven by Central, boosts performance and capacity while eliminating manual troubleshooting tasks, and reduces average resolution time. AIOps leverages native infrastructure telemetry from Wi-Fi, wired switches, SD-WAN gateways, and client devices automatically streamed to the cloud without requiring additional appliances or host agents.

AI Insights on Central dynamically spots network anomalies and makes recommendations (such as configuration changes) that can deliver a 15% or greater improvement based on how the network is performing against similar sites. AI Assist can eliminate the time-consuming data collection process by automatically detecting failure events and collecting all necessary troubleshooting information and posting an alert to both the network administrator and technical support. Learn more about [AIOps for smarter, efficient IT operations](#).



Figure 2. AIOps powered Aruba UXI helps IT teams identify priority issues with incident detection capabilities.

Combining user-centric analytics for complete visibility

With an increasingly distributed workforce, the ability to remotely view and measure user experience is critical for IT. HPE Aruba Networking's User Experience Insight (UXI) provides IT with a simple way to continuously monitor, measure, and track the complete end-to-end digital user experience from any location.

It provides user and IoT device application assurance and rapid troubleshooting through easy-to-deploy, on-site sensors and a cloud-hosted, AI-powered dashboard. By simulating end-user activities with admin-defined frequency, UXI sensors continuously perform user-centric application testing and store captured analytics for up to 30 days. With the intuitive dashboard, administrators can quickly monitor the health of the overall experience, network services, and internal and cloud-based applications. Learn more about [combining user-centric analytics for complete visibility](#).

38% of surveyed HPE Aruba Networking Central customers estimate they have reduced the number of IT support tickets they must address in half (i.e., by at least 50%).⁵

⁴ EMA Network Management Megatrends, 2022

⁵ TechValidate Survey of HPE Aruba Networking Central customers, 2021



63% of surveyed HPE Aruba Networking Central customers estimate they have reduced Mean Time to Resolution (MTTR) by at least 50%. One-third (33%) estimate at least a 75% improvement.⁶

Built-in identity-based access control for Zero Trust and SASE security

Traditional approaches that use manual and static VLAN-based configurations to secure networks are not only error prone, but also inadequate for today's ever changing, modern deployments. Network operators must consistently define and globally enforce role-based policies across complex, geographically distributed networks.

Additionally, as IoT devices continue to grow at a staggering rate, traditional discovery and profiling techniques fail to accurately find, fingerprint, and assign appropriate privileges. This leads to a lack of visibility and increased security risk.

With a built-in foundation for Zero Trust and SASE, HPE Aruba Networking ESP offers edge-to-cloud security by applying rigorous security best practices and controls to previously trusted network resources.

AI-powered client visibility

For many purpose-built IoT devices, such as those found in hospitals or manufacturing plants, understanding the actual behavior of the device is the only way to accurately identify them. AI-powered Client Insights in Central leverages native infrastructure telemetry from access points, switches, and gateways, as well as clients, without requiring the installation of physical collectors or agents.

ML-based classification models are used to identify and accurately profile a wide variety of clients, including a diverse set of IoT devices across the entire wired and wireless infrastructure. Client Insights allows for continuous monitoring of clients, which when paired with Central NetConductor or ClearPass provides closed loop, end-to-end access control.

User and device authentication

Cloud Auth on Central enables frictionless onboarding of end users and client devices either through MAC address-based authentication or through integrations with common cloud identity stores such as Google Workspace or Azure Active Directory to automatically assign the right level of network access.

For organizations that require an on-premises Network Access Control (NAC) solution, industry-leading HPE Aruba Networking ClearPass provides authentication, authorization, and centralized policy definitions that follow the user throughout the network and are applied uniformly across wireless, wired, and VPN connections. ClearPass supports standards-based 802.1X enforcement and other techniques for secure authentication. It also supports the HPE Aruba Networking 360 Security Exchange Program with over 150 partner integrations for comprehensive integrated security coverage and response using firewalls, UEM, and other existing solutions.

Dynamic Segmentation

Dynamic Segmentation unifies role-based access and policy enforcement across wired, wireless, and WAN networks, ensuring that users and devices can only communicate with destinations consistent with their role — keeping traffic secure and separate. This is a fundamental concept of both Zero Trust and SASE frameworks where trust is based on identity and policies, and not on where and how a user or device connects.

With Central NetConductor, Dynamic Segmentation can be managed via the cloud with the ability to centrally define and enforce access policies at global scale. Two ways to perform Dynamic Segmentation are supported based on an organization's overall network architecture and choice of overlay: centralized and distributed.

Organizations currently using centralized policy enforcement approaches can continue and over time adopt distributed approach in which enforcement is done by access devices, without a rip and replace of existing infrastructure.

⁶ TechValidate Survey of HPE Aruba Networking Central customers, 2021





Automated network configuration and management

Central NetConductor is comprised of cloud-native network and security services that automate configuration, policy definition, and enforcement at global scale with the use of network fabric. A fabric is a logical overlay that “stitches” together disparate, globally dispersed network infrastructure (underlays). Central NetConductor policy manager centrally defines user groups and their associated enforcement rules.

The fabric wizard simplifies the creation of overlays using an intuitive, graphical user interface and push-button automation, eliminating the need for CLI-based programming, routing table spreadsheets, or manual configuration of ACLs. By decoupling business intent from physical network construction, organizations can dramatically reduce the time and resources required to operate the network for enhanced IT productivity.

Security and policy enforcement at scale

Central NetConductor uses widely adopted protocols, such as EVPN/VXLAN for the network overlay, that can be quickly deployed at massive scale, across heterogeneous networks. The policies defined by Central NetConductor policy manager are expressed in group policy identifiers (GPIDs), allowing the network to carry access control information via the traffic itself. Identifiers are embedded in the packet header and interpreted inline by CX switches and wireless gateways for policy enforcement, eliminating the need to send traffic outside its optimal path for security inspection.

Key solution components

HPE Aruba Networking Central

Central is a powerful microservices-based network services solution that delivers AI-powered analytics, end-to-end automation and orchestration, and advanced security so IT can deploy, optimize, and protect the network from a single point of control.

Central eliminates network siloes by providing a common management platform for wired and wireless LANs, WANs, and VPNs across campus, branch, remote, and data center locations. Built on a cloud-native, microservices architecture, Central delivers on enterprise requirements for scale and resiliency, but is also designed for ease of use, making it a perfect fit for mid-sized businesses with limited IT personnel.



Central is consumed via a simple, two-tier software subscription model comprised of Foundation and Advanced Licenses in 1-, 3-, 5-, 7-, and 10-year increments. Foundation subscriptions enable all primary enterprise features such as monitoring, reporting, Troubleshooting, onboarding, provisioning, orchestration, AI and analytics, content filtering, guest access, UXI integration, and 24x7 TAC (including software support for all hardware). Advanced subscriptions are available for access points and gateways and include all Foundation features while adding enhanced AIOps, security, and other premium features, such as end-to-end segmentation, expanded AI Insights, UCC visibility and reporting, and more.

Wireless access points and optional gateways

Ideal for small offices, mid-sized branches, large campus environments, and remote workers, [access points \(APs\)](#) are certified to deliver secure and reliable connectivity to mobile users, IoT devices, and latency-sensitive applications — even in crowded areas. Certification means that HPE Aruba Networking technology is guaranteed to deliver complete feature availability and device interoperability.

[Next-generation gateways](#) meet the needs of small, medium, and large campus and branch environments and are optimized for the cloud. Gateways are optional but can deliver enhanced security via IDS/IPS, Dynamic Segmentation, guest WANS and centralized encryption, offering greater manageability for large environments with tens of thousands of APs, and seamless roaming across subnets to improve user experience.

Wireless access points and gateways are managed and orchestrated using Central running ArubaOS 10 (AOS 10), providing greater scalability and accelerated innovation for wireless networks and SD-Branch networks with its cloud-native, microservices architecture. Working in tandem with Central, AOS 10 provides the WLAN management and control to deliver greater scalability, security, and AI-powered optimization. APs and gateways can also be managed using Central on-premises for organizations that prefer an on-site implementation.

HPE Aruba Networking CX switches

From edge to data center, CX switches use a cloud-native design to provide the performance, scale, and intelligence needed by modern enterprise networks. A distributed, non-blocking architecture delivers the performance and reliability needed to meet growing network demands that end users expect.

The [CX switch portfolio](#) provides IT the flexibility to deploy a single switch operating system from edge access to the data center that eliminates complexity with a consistent operator experience. This supports intuitive management tools, smart automation, and distributed analytics that transform the IT network operator experience.

The HPE Aruba Networking CX portfolio provides a choice of fixed ports or modular chassis with non-blocking speeds from 1GbE to 100GbE, providing the flexibility to start with a low port count and scale to full-density switches — with built-in automation and analytics — as your business requires. Features include high availability platforms with redundant management, fabric, power, and fans, and high-density industry-standard high power 60W Class 6 and HPE Smart Rate multi-gigabit ports.

Designed to handle extreme temperatures, the ruggedized switch series is ready to extend your enterprise network beyond the office to challenging, harsh environmental spaces.



HPE GreenLake for Networking is a comprehensive NaaS offering that allows you to consume advanced networking capabilities in a cloud-like manner and align network spend with usage, through a single monthly subscription payment and with options for flexible consumption.

HPE GreenLake for Networking

[HPE GreenLake for Networking](#) places network capacity, performance, and managed operations within reach for any organization with a network-as-a-service (NaaS) option that delivers a predictable way to scale and service infrastructure.

Standardized NaaS service packs are also available and are designed around popular networking use cases, which greatly simplifies the procurement and delivery process and accelerates time-to-value.

Summary

Modernize your network with market-leading Wi-Fi access points, CX switches, and cloud-based network management to effectively meet the performance and security demands of large campuses, midsize branches, remote workers, and data center network environments for current as well as future digital initiatives.

HPE Aruba Networking Central with built-in security and AIOps unifies wireless, wired, and WAN management and increases operational efficiency. Flexible consumption and operations options help you to reduce operating costs by up to 25%.⁷

Learn how modernizing your network with Unified Infrastructure provides the right blend of network solutions, consumption, and deployment choices.

**Make the right purchase decision.
Contact our presales specialists.**



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⁷ TechValidate Survey of HPE Aruba Networking Central customers, 2021