

SOLUTION OVERVIEW

Aruba Unified Infrastructure

Provide Operational Simplicity with a Cloud-native Platform

Network infrastructure and operations teams have never been more stretched. Hyper-distributed edge environments characterized by an increasingly remote workforce, the rapid growth of IoT connected devices, and a continuing need to provide secure connectivity to services hosted in the cloud and data centers are creating insurmountable levels of operational complexity.

Adding to this complexity is the independent management of WAN, wired, and wireless networks across campus, branch, remote worker, and data center locations—often orchestrated by standalone, domain-specific tools. Over 75% of organizations use 4 or more network management tools, with 25% using 11 or more.¹ Fragmentation of this magnitude creates an operational framework that is far too manual and inefficient. Network operators struggle to keep pace with evolving business requirements when provisioning and configuration tasks are done device-by-device using CLI. Increased risk is also a factor, as even routine changes can lead to unplanned downtime or security incidents due to operator error.

Monitoring, troubleshooting, and remediating network issues is equally cumbersome. In these distributed environments, performance problems can pop up anywhere, and there's often no on-site IT personnel to readily address them. Compounding this issue is that IT visibility continues to diminish as more infrastructure and users move beyond traditional office settings. The information that IT can gather via third-party network monitoring and reporting tools is often not actionable—either because data granularity is poor, or because operators must manually correlate information from multiple, disjointed tools.

KEY BENEFITS

- **Improve IT efficiency** with a cloud-native single pane of glass for WLAN, LAN, and SD-WAN operations across campus, branch, remote worker, and data center locations.
- **Optimize user experience** with AI-powered insights that find and fix issues before business is impacted.
- **Simplify and strengthen security** with policies that are easily deployed and enforced across all network domains.
- **Right-size costs** with flexible deployment models that supplement existing IT resources and preserve budgets.
- **Gain extensibility and accelerate innovation** by easily integrating with existing Aruba and third-party infrastructure.

BREAK DOWN SILOS WITH ARUBA UNIFIED INFRASTRUCTURE

The Aruba ESP (Edge Services Platform) was specifically designed to address fragmented network operations and simplify the network management lifecycle. One critical component of Aruba ESP 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 locations.

¹ Network Management Megatrends 2018: Exploring NetSecOps Convergence, Network Automation, and Cloud Networking, <https://www.enterprisemanagement.com/research/asset.php/3599/Network-Management-Megatrends-2018:-Exploring-NetSecOps-Convergence,-Network-Automation,-and-Cloud-Networking>



ARUBA ESP

ENABLING A UNIFIED INFRASTRUCTURE

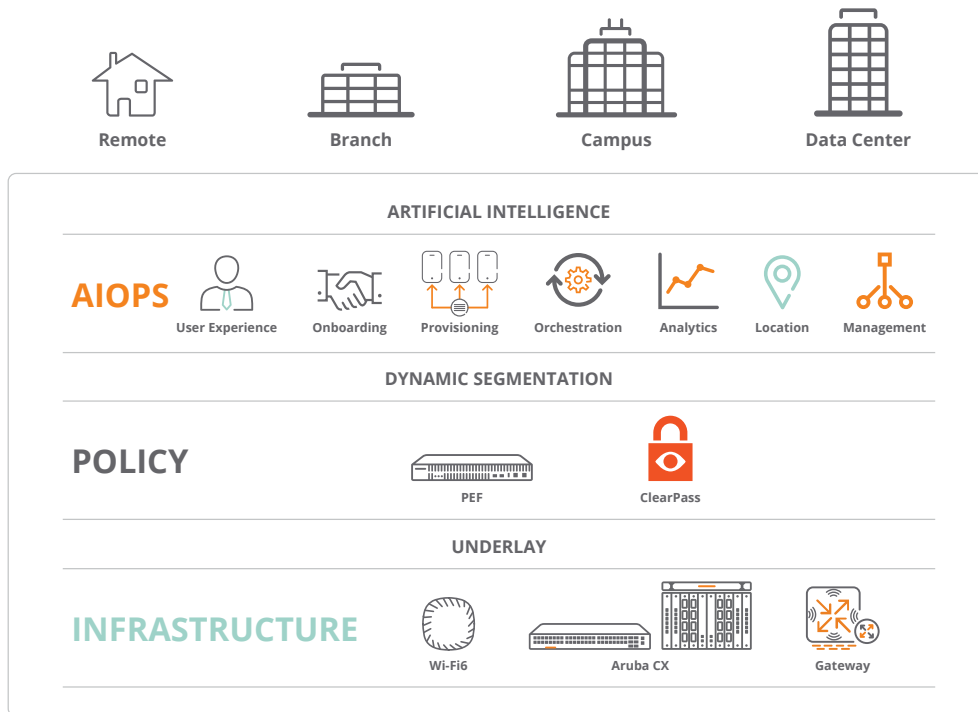


Figure 1: Aruba's Unified Infrastructure

Single pane of glass

Aruba's Unified Infrastructure is orchestrated through Aruba Central, a cloud-native, microservices-based platform that provides the scalability and resiliency needed for mission-critical environments across the distributed edge. As the command center for Aruba ESP, Aruba Central delivers management through a single-pane-of-glass, allowing IT to deliver a full range of Intelligent Edge services, including:

- AIOps to ensure the best possible experience at all times, irrespective of a user's location.
- Automation and orchestration to accelerate deployments and simplify ongoing change windows.
- Software-defined policies to simplify and strengthen security postures.

Aruba Unified Infrastructure is delivered through a variety of deployment and consumption models, bringing choice and flexibility to suit various technical and financial requirements.

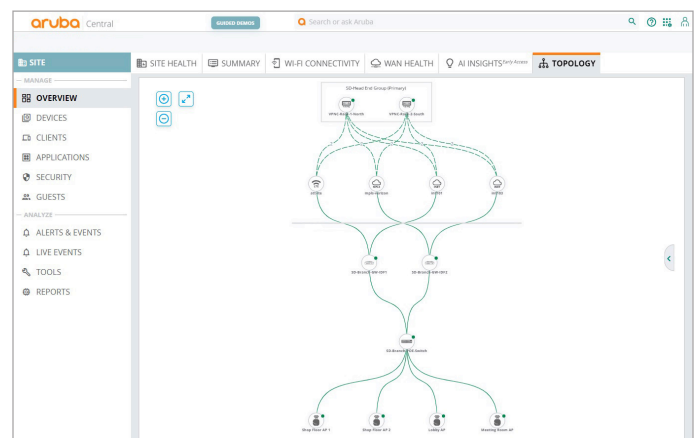


Figure 2: Aruba Central delivers management through a single pane of glass for WLAN, LAN, and SD-WAN operations across campus, branch, remote worker and data center locations.



OPTIMIZE USER EXPERIENCES

In today's digital economy, where every second of performance matters, preempting network issues is critical. Artificial Intelligence (AI) is needed to shift IT operations from being reactive to proactive, spotting problems before users are even aware of them. However, AI is only as good as the data that feeds the system. A fundamental requirement is having the volume and variety of data to train mathematical models that form the basis of the solution.

Aruba's AIOps solution uniquely blends user- and network-centric data, powered by machine learning. This provides network operators with a 360-degree view to accelerate troubleshooting by displaying information in context, with actionable insights they can trust.

AIOps for Smarter, More Efficient IT Operations

Aruba Central delivers AI-driven insights to automatically reveal and resolve issues before they impact users. Machine learning (ML) is used and trained daily with network performance data from thousands of Aruba customers across every vertical and size of organization. IT teams can use this data to surface potential issues or anomalies as network conditions change, with recommended actions and remediation steps fed automatically to quickly fix issues. The ability to anonymously benchmark against industry peers provides broader perspective around optimal performance levels.

Blend Network and User-Centric Data for Complete Visibility

Due to workforce mobility initiatives, the ability to remotely view and measure user experience is critical for IT. Aruba's User Experience Insight (UXI) can view application and network performance through the eyes of end users. By deploying sensors and reporting their experiences to Central, IT can quickly identify potential issues in any location before they impact one or more users.



Figure 3: The Aruba UXI Dashboard

Also, as DevOps and other agile development methodologies continue to gain traction, networking teams need immediate insights into whether new or updated applications are performing as expected. Aruba UXI delivers added levels of assurance. Alerts pinpoint which locations or groups of users are experiencing sub-optimal performance, so IT can prioritize fixes.

AUTOMATE NETWORK OPERATIONS TO MOVE AT THE SPEED OF BUSINESS

As business footprints continue to expand at the Edge, IT needs to reduce costly truck rolls and manual build-outs. Ongoing network updates to accommodate new users, devices, and applications should also be handled quickly, with built-in certainty that configurations comply with business requirements. Aruba's Unified Infrastructure helps IT automate provisioning of networks and ongoing configuration changes—all enabled via a cloud-native operational model for outstanding experiences for both IT and end users alike.

Zero-touch Provisioning for Installs

Aruba's infrastructure can be factory-shipped directly to a remote site by automatically matching orders to an Aruba customer account. A mobile Installer app designed for non-technical users is available for in-house IT personnel or for third-party systems integrators to bring infrastructure online in a simple and error-free manner. A configuration wizard automatically assigns site-specific policies and requirements to APs, switches, and gateways – enabling networks to be up and running in minutes, rather than hours or days.



Live Upgrades for 24x7 Connectivity

To mitigate outages and maintain SLAs, features such as in-service software upgrades and network virtualization ensure the highest degrees of availability and site survivability for Aruba access points, switches, and gateways.

- **Live Upgrades:** Software updates can now happen in the middle of the day while active user sessions are maintained. By intelligently upgrading the network on a per-unit basis, connectivity remains active.
- **Clustering and Stacking:** By virtualizing traffic termination onto AP groups, controller clusters and switch stacks, primary and backup appliances are not needed. Connections become hitless as sessions are moved to associated group devices.

Turnkey Extensibility with Third-party Automation Platforms

Understanding that IT organizations are at different stages of their network automation journeys, Aruba has committed to delivering more value to popular third-party platforms and tools that are already in use. All Aruba products support open-standard APIs, bringing extensibility and ease of integration with these external platforms.

An example is Aruba's partnership with Ansible, which bridges the gap between programmer and network engineer by making automation simple to integrate into existing environments. Certified modules are available to automate the provisioning, onboarding, and management of Aruba wired and wireless infrastructure. All Aruba modules for Ansible use REST APIs for communication, which makes the automation framework faster and more reliable.

Additional integration features include webhooks and SDKs, forming the basis for an ecosystem focused on device interoperability, faster application development, and tighter security to improve IT experiences. To learn more, [visit the Aruba Developer Community](#).

STRENGTHEN SECURITY POSTURES WITHOUT DISRUPTING PERFORMANCE

It's not enough to quickly implement network updates—security measures must remain intact. But manual configuration of VLANs, ACLs, and subnets at every network hop doesn't scale today, especially with the emergence of IoT.

Aruba gives network operators the ability to balance both security and access requirements for users, devices, and applications—no matter where or how connectivity is delivered. **Aruba Dynamic Segmentation** isolates traffic locally, by tunneling it to a controller or gateway, or by traversing only from switch to switch, as required.

A rich DPI engine within Aruba's industry-leading Policy Enforcement Firewall (PEF) delivers visibility into over 3,000 applications for better awareness. In this way, network policies are universally enforced with simplicity across branch, remote, and campus environments—bolstering network security while still ensuring users or devices have seamless access to the right resources.

KEY SOLUTION COMPONENTS

Aruba Central Cloud-based Management

Aruba Central is a unified network operations and assurance solution that simplifies remote, wireless, wired, SD-WAN, and security deployments, management, and orchestration. Embedded AIOps enables IT to continuously monitor and proactively resolve issues before end users are impacted.

Aruba Wireless Access Points

Ideal for both midsize and large enterprises, Aruba **Wi-Fi 6 and Wi-Fi 5 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 Aruba technology is guaranteed to deliver complete feature availability and device interoperability. Customers gain unmatched technical capabilities engineered for the most demanding environments.



Aruba CX Switches

From Edge to data center, **Aruba 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.

Aruba User Experience Insight (UXI)

A cloud-based assurance solution that validates network health and troubleshoots problems that affect everyday user experiences. As an extension of IT at corporate workplaces or remote offices, UXI assumes the role of an end-user, continuously evaluating connectivity and access to internal and external services by testing application availability and responsiveness.

Aruba SD-WAN

Extend application assurance from the wireless LAN to the WAN for optimized performance and health. Aruba SD-WAN optimizes network performance and simplifies route and tunnel management over hybrid WAN circuits – from existing MPLS to new broadband connections. Requires Aruba Branch Gateways for SD-WAN functionality.

Wi-Fi as a 5G On-ramp

Aruba and HPE have worked with Mobile Network Operators to improve user experiences – especially in retail, hospitality and other large public venues by using Aruba Wi-Fi as the on-ramp to 5G services. For example, Aruba Air Pass is a service delivered by Aruba Central, which uses carrier SIM credentials to deliver seamless roaming and onboarding of mobile devices between cellular and enterprise networks. This means that not only do mobile users gain the performance benefits of 5G, but they no longer need to go through captive portals or enter login information when connecting to Wi-Fi networks.

DEPLOY AND CONSUME YOUR WAY

Aruba is committed to helping you address your day-to-day business—now and into the future. To support a diverse range of network and security requirements, Aruba's Unified Infrastructure, a key pillar of **Aruba ESP**, is managed via Aruba's cloud-native SaaS platform (Aruba Central), which can be deployed on-premises or in the cloud.

Additionally, **HPE GreenLake for Aruba** 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. Customers gain:

- Flexible managed service options for Aruba hardware and software products
- The use of an Aruba Services Manager for comprehensive NOC visibility and ITSM-based workflows
- A designated Customer Success Manager who serves as an advocate in all aspects of the as-a-service lifecycle

To address your most pressing and immediate challenges, **HPE Financial Services (HPEFS)** offers a variety of financial and asset lifecycle solutions. Flexible financing solutions include traditional leasing and subscription programs, deferred payments during challenging economic times, help with releasing capital from existing infrastructures, and/or using pre-owned technology to relieve capacity strain.

RELATED SOLUTIONS AND SERVICES

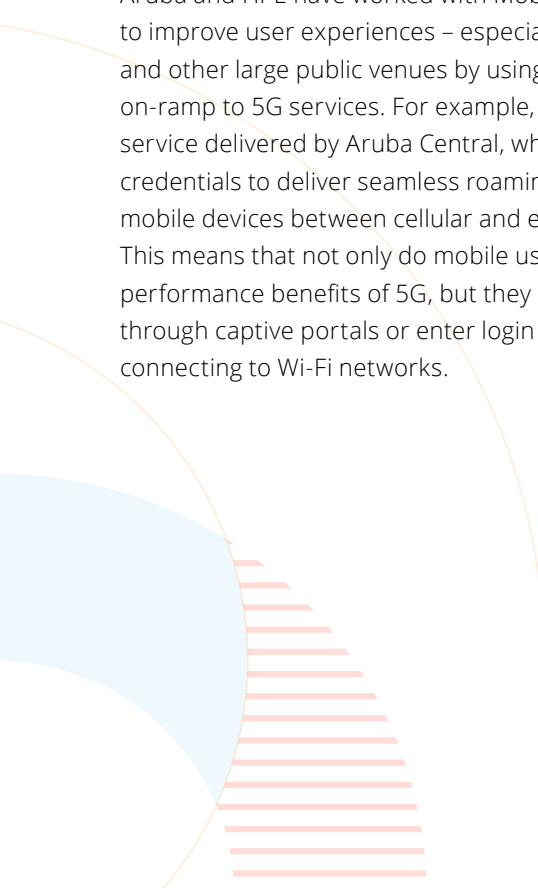
Business Continuity Solutions

Remote and teleworker solutions that satisfy a broad range of **business continuity needs**—from dedicated remote access points with built-in Ethernet ports to virtual VPN gateways.

Customer First, Customer Last Support

When your network is important to your business, then your business needs the backing of **Aruba Support Services**.

Partner with Aruba product experts to increase your team's productivity, keep pace with technology advances and software releases, and get break-fix support. Our Foundation Care for Aruba support services include priority access to Aruba Technical Assistance Center (TAC) engineers 24x7x365, flexible hardware and onsite support options, and total coverage for Aruba products.





Network Migration Services

Aruba offers industry-leading global high touch **Professional Network Services** for network design, installation, and enablement services. Work with our team of Aruba experts and partners for the in-depth technical knowledge that can accelerate and simplify your migration to Aruba ESP.

Become an Aruba Expert

Aruba Education Services offer comprehensive training and certification programs from basic to advanced levels to give you the skills to fully use the power of Aruba ESP.

UNIFIED INFRASTRUCTURE FOR THE INTELLIGENT EDGE

The unique benefits of Aruba ESP across wired, wireless, SD-WAN, and remote work environments help simplify IT operations and deliver the performance and security needed today. Aruba Central serves as the command center for the network, delivering intelligence and security while improving IT's ability to deliver the best user experience possible. For more information about Aruba ESP please visit Arubanetworks.com/ArubaESP.