# Aruba ESP Unified Infrastructure

## Flexibility and Scalability for IT Operations

With higher priorities placed on mobile, cloud, and IoT initiatives that are accelerating digital transformation, enterprise networking capabilities have become increasingly important in supporting the line of business. According to a recent industry analyst report[1], 80% of enterprises have connected non-IT assets to IT-owned services, meaning that network requirements need to combine day-to-day expectations of bandwidth and performance with the use cases and expected service levels of each new application.

### WHAT IS UNIFIED INFRASTRUCTURE?

As part of Aruba ESP (Edge Services Platform), Unified Infrastructure is a cloud-native approach to network architecture that empowers IT with end-to-end orchestration and network analytics for campus and distributed environments – all from a single pane of glass. This means that wired LAN, wireless LAN, SD-WAN and non-IT infrastructure like IoT or workplace services, gain higher degrees of flexibility, scalability and resiliency than ever before.

### Scalability, Flexibility, and Resiliency

With the network now serving as the center of convergence, new expectations of performance, density, and reliability leave enterprises with the need to optimize infrastructure for the cloud. Configuration changes on a per port basis, hardware sizing, and even day-to-day maintenance can be completely automated and delivered as a service with minimal overhead or disruption for both IT and end-users alike.

### User Experience

Aruba ESP Unified Infrastructure delivers networks that know how to adapt to evolving business demands – and to keep users happy. With a context-aware framework that delivers user role-based access, device identity, application DPI, and location awareness, enterprise IT leaders gain insights into user experience from the user or device perspective in addition to rich intelligence from the network perspective.

### KEY BENEFITS

- Unified cloud-native management for WLAN, LAN and SD WAN operations
- Extend network intelligence into user experience
- Integrate 5G initiatives with existing enterprise investments
- Deploy common policies securely across campus, branch and data center
- Flexible management and consumption models
- Third-party and multivendor integration options

### SINGLE PANE OF GLASS

Using Aruba Central as the centralized command center for Aruba ESP operations, IT now has a common dashboard for orchestration. This includes unified management, AI and security for wired LAN, wireless LAN, and SD-WAN across campus, branch, and data center network environments.

### Service Assurance

With Aruba User Experience Insight (UXI), IT can assume the role of typical end-users by deploying sensors and report their experiences with unique insights back to the network. This also enables IT to test new applications and identify potential issues before they impact the business.

## ON DEMAND NETWORK OPERATIONS

Enterprises with cloud initiatives need flexible infrastructure. By using Aruba Central, the following capabilities are unlocked:

### Simplicity with Zero-touch Provisioning

Aruba ESP Unified Infrastructure can be factory-shipped directly to a remote site by automatically matching orders to an Aruba customer account – and a mobile Installer app is also available for third-party systems integrators. Combined with configuration hierarchy, which automatically assigns APs, switches and gateways to site-specific configurations, networks can be up and running hours ahead of schedule.

### Flexible Cloud-Native Management Options

Using a cloud-native approach to network management, enterprises gain options that support 100% cloud management or a hybrid on-premises version that accommodates a diverse range of enterprise network and security requirements.

### Unified Policy Management

For Aruba and third-party network infrastructure, Aruba ClearPass delivers a common policy framework for multivendor wired and wireless networks. This software-defined approach to policy makes it easy for IT to make and distribute changes quickly based on corporate risk and compliance requirements. ClearPass Device Insight (CPDI) adds AI-powered device profiling to help automate discovery of the latest mobile and IoT endpoints.

### Dynamic Segmentation

To simplify policy enforcement, Aruba Dynamic Segmentation automatically enforces policies for wired and wireless traffic to ensure consistent experiences and keep users and devices secure. Traffic can be isolated locally, tunneled to a controller or gateway, and then travel from switch-to-switch. A rich DPI engine within the industry-leading Policy Enforcement Firewall (PEF) delivers visibility into over 3,000 applications for better awareness.
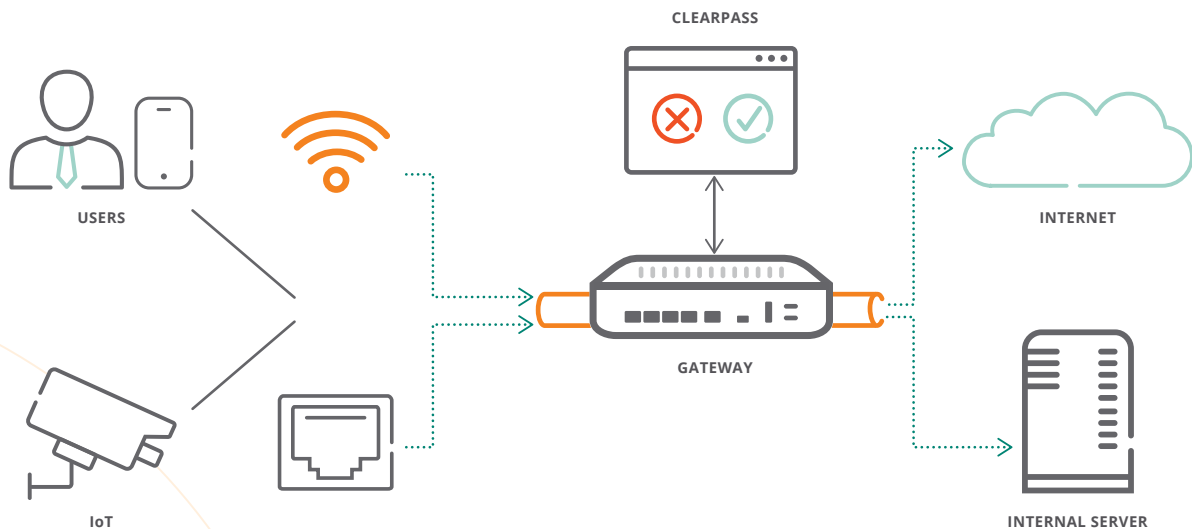


**Figure 1: Dynamic Segmentation architecture**

### Predictive Analytics and Assurance

Aruba Central capabilities like AI Insights use AI, machine learning (ML), and automation to identify issues and notify IT of network issues and recommended changes. By shifting to a cloud-hosted model, data is collected and crowdsourced from Aruba's large installed base while taking advantage of Aruba's data science expertise.



Figure 2: UXI Dashboard

### 24/7 Network Connectivity

In order 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 both wired and wireless infrastructure. Through the following features, APs, switches and gateways maintain constant connections for every user and device:

- **Live Upgrades:** Software updates can now happen in the middle of the day alongside multiple active user sessions. By intelligently upgrading the network on a per unit basis, connectivity remains always active.
- **Clustering and Stacking:** By virtualizing traffic termination onto AP groups, controller clusters and switch stacks, the notion of primary and backup appliances go away. Now, single appliance failures no longer trigger a failover to a backup – instead, connections become hitless.

### Elastic, Consumption-based Service

In addition to cloud and on-premises deployment models, a Network-as-a-Service (NaaS) option delivers a predictable way to service and scale infrastructure. HPE GreenLake for Aruba places network capacity, performance, and managed operations within reach for more organizations, offering:

- Flexible as-a-service options for Aruba hardware and software products
- Connectivity services with comprehensive remote management and automated alerting
- Managed services for security, network insights, and end-user experience.
- A designated Customer Success Manager who serves as the customer advocate in all aspects of the as-a-service lifecycle.

GreenLake for Aruba includes experts and partners who will help provide professional network design, installation and enablement services such as onboarding, guided operations, and change management, along with expansion and renewal services.

## SEAMLESS ROAMING FROM CELLULAR TO WI-FI

With the rising popularity of 5G connectivity and the increasing use of low-emission glass, energy-efficient construction materials and evolving building codes, indoor cellular coverage is becoming increasingly unreliable for mobile users. Enterprises that wish to deliver the promise of 5G on campus can now look to Aruba Air Pass as a service that helps directly integrate cellular networks.

### Aruba Air Pass roaming service

To improve the user experience – especially in retail, hospitality or other large public venues, Aruba Air Pass, a service delivered by Aruba Central, utilizes carrier SIM credentials to enable 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.

## KEY SOLUTION COMPONENTS

### Aruba Central Cloud-based Management

Aruba Central is a unified network operations, assurance and security platform that simplifies the deployment, management, and orchestration of wireless, wired, SD-WAN, and connectivity with cloud-hosted environments. Using AI-based analytics and insights, IT is able to continuously monitor and proactively resolve issues before end-users are impacted.

### Aruba Wireless Access Points

Ideal for medium and large enterprises alike, Aruba Wi-Fi 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 Wi-Fi 6 feature availability and device interoperability. These APs are in a class of their own with a purpose-built design and unmatched technical capabilities engineered for the most demanding environments.

### Aruba CX Switches

From campus access, core, to data center, Aruba CX switches utilize a cloud-native design to provide the performance, scale, and intelligence needed by modern enterprise networks today. A distributed, non-blocking architecture delivers the power and future-proofing needed for growing network demands so IT can ensure that end-users have reliable, uninterrupted network access.

### Aruba User Experience Insight (UXI)

Aruba UXI is a cloud-based service assurance solution that validates network health and troubleshoots problems that affect day-to-day user experience. As an extension of IT in the corporate workplace or remote office, UXI assumes the role of an end-user, continuously evaluating connectivity and access to internal services and external cloud services.

### Aruba SD-WAN

Extend application assurance from the wireless LAN to the WAN to optimize performance and health from end-to-end. Managed and orchestrated by Aruba Central, Aruba SD-WAN optimizes network performance and simplifies route and tunnel management over hybrid WAN circuits – from existing MPLS to new broadband connections. Aruba SD-WAN runs on Aruba Branch Gateways or Aruba SD-WAN Gateways.

### Aruba ClearPass

Aruba ClearPass provides end-to-end device visibility, control and attack response for wired and wireless network infrastructure. As the unified policy management system, ClearPass serves as the common orchestration plane to secure your network infrastructure and maintain consistent policies for both Aruba and multi-vendor infrastructure.

### Third Party Ecosystem

Utilizing flexible integrations, including APIs, Webhooks, and SDKs, Aruba has developed technology partnerships with leading vendors to deliver a platform that scales operations and adds new value to existing services. As part of Aruba technology partner programs, a focus on device interoperability, application development, and security are designed to improve user experiences. Learn more at the Aruba Developer Portal.

### HPE GreenLake for Aruba

HPE GreenLake for Aruba is a Network-as-a-Service (NaaS) solution that is offered with pay-as-you-go flexibility and assured service delivery. The service delivers an on-demand service and support experience through a monthly subscription that covers all options needed for the network, including evergreen refreshes upon renewal.

### 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 productivity, keep pace with technology advances and software releases and obtaining 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 that have in-depth technical know-how to accelerate and simplify your migration to Aruba.

### Become an Expert on Aruba

Aruba Education Services offers comprehensive training and certification programs from fundamental to advanced levels to give you the skills to fully utilize the power of Aruba ESP.

### UNIFIED INFRASTRUCTURE FOR YOUR EDGE

With Aruba Unified Infrastructure, enterprises can deliver the unique benefits of Aruba ESP across the wired LAN, wireless LAN, and WAN. Aruba Central serves as the brains of the network, delivering intelligence and security while improving IT's ability to deliver the best user experience possible. For more information about Aruba ESP, AIOps, and Zero Trust Security, please visit Arubanetworks.com/ArubaESP.

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