



aruba

a Hewlett Packard
Enterprise company

SOLUTION OVERVIEW

Aruba ESP (Edge Services Platform)

HARNESSING THE POWER OF THE EDGE

Every decade or so, we've seen the technology market undergo major shifts. Over the past few decades, those shifts have been driven by mobility and the cloud. Now we're entering the next big shift: the era of data—but we're not talking about data that's generated in a cloud or a data center. We're talking about data that is available where business is done—where users, devices, and things all come together.

We call that the Edge.



But where exactly is the Edge? It could be a workplace, a hospital, a large sports stadium, a school, or a remote worker's home. In these environments, massive amounts of data is generated by users, devices, and things. Organizations that successfully harness that data—harness it by analyzing and acting on it in real time—can reveal valuable insights and deliver new services. More than that, they can delight their customers or produce better outcomes. They can win. And those that can't, will lose.

So, the stakes are high. And the question becomes—do you have the right foundation in place to successfully win at the Edge? The network is critical in making use of all this data and will be what separates business leaders from the laggards.

CHALLENGES AT THE INTELLIGENT EDGE

Like every technology transition that has happened in the past, shifting to a data driven Edge changes the role of your infrastructure and introduces new challenges. Corporate networks play a pivotal role in moving data and connecting people to their apps and services—just as they always have. However, with the Edge, the network is even more mission-critical and network requirements go far beyond standard connectivity and access technologies of the past.

Consider the sheer quantity of things now connecting to corporate networks. According to IDC, 55 billion devices will be connected within the next two years and are expected to generate 79.4ZB of data by 2025. When you combine that with the irreversible shifts to a remote and distributed workforce, you can see that the network and IT need the right tools to keep pace. Yet today's networks are bound by human capacity and experience—they are only as agile and secure as the operators that manage them. With this huge volume of data at the Edge, today's networks, and the teams that manage them, are struggling to keep up.

BUSINESS OUTCOMES AT THE EDGE	
Outcome	Example
New revenue streams	Retailers can create personalized experiences that make shoppers feel welcome and their unique tastes understood. By using data in innovative ways, new products, solutions, and offers can be made available.
Improved customer experiences via personalization	Imagine people at a large public venue like a sports stadium or a museum. Their mobile experience can be improved with turn-by-turn navigation or augmented reality.
Business agility	Businesses that are able to harness real-time data are able to adapt and respond quickly to market changes. The data is key because it can analyze and predict shifting customer needs and preferences. Rapid deployment of additional technology allows the organization to capitalize on new opportunities.
Operational efficiency	In manufacturing, sensors detect potential malfunctions before workers or production are endangered. This can also reduce equipment downtime and maintenance costs.
Employee productivity	Whether in an office environment or working from home, connected conferences and collaboration tools allow for seamless employee teamwork via voice and video—regardless of where everyone is located.





IT leaders need to carefully assess their infrastructure and operational models to ensure the network, tools, and operator experience are poised to support business success in this new era, while also boosting business continuity and resiliency. They need to consider the following challenges:

Siloed management

Independent management of WAN, wired, and wireless networks across campus, branch, data center, and remote worker locations create communications delays, and silos of provisioning, monitoring, reporting and troubleshooting tools. According to Enterprise Management Associates, nearly half of organizations use 11 or more tools, which translates to a greater likelihood of service problems or outages.

Lack of visibility and insights

In today's hyper-distributed environments, performance issues can pop up anywhere. Unfortunately, IT's visibility into existing or potential problems diminishes as more infrastructure and users move beyond the walls of a traditional office or data center. The information that IT can gather from the network via third-party monitoring and reporting tools is often not actionable—either because data granularity is poor or because operators must manually correlate events across multiple domains and tools to diagnose root cause. This is particularly problematic at the Edge, where there's often no on-site IT personnel to troubleshoot issues.

Highly manual processes

IT must tackle day-to-day network operations and attempt to ward off performance issues using personal experience, outdated tools, and tedious workflows. According to Gartner, more than 65% of network operations activities in enterprises are manual, leading to human errors and downtime. And, in the data era, with an explosion of devices, things, and locations connecting to the network, manual operations make it hard for IT to keep up with it all. Gartner also found that “automation reduces manual errors by more than 75% while increasing operational efficiencies.”

Security threats are everywhere

New and advanced security threats are emerging every day. In 2019, security breaches increased over 11% from 2018 resulting in 33B records being stolen, which is expected to cost businesses \$6T annually by 2021.¹ IoT devices aren't equipped with stringent security measures and are easy for hackers to exploit. Meanwhile, workforce mobility and work from home scenarios continue to expand the IT perimeter, as employees often access corporate resources on personal devices and from public Wi-Fi networks that aren't secure. Lastly, with more applications moving to the cloud – whether sanctioned by IT or not – protecting an organization's data has become even more challenging.

Economic and resource headwinds

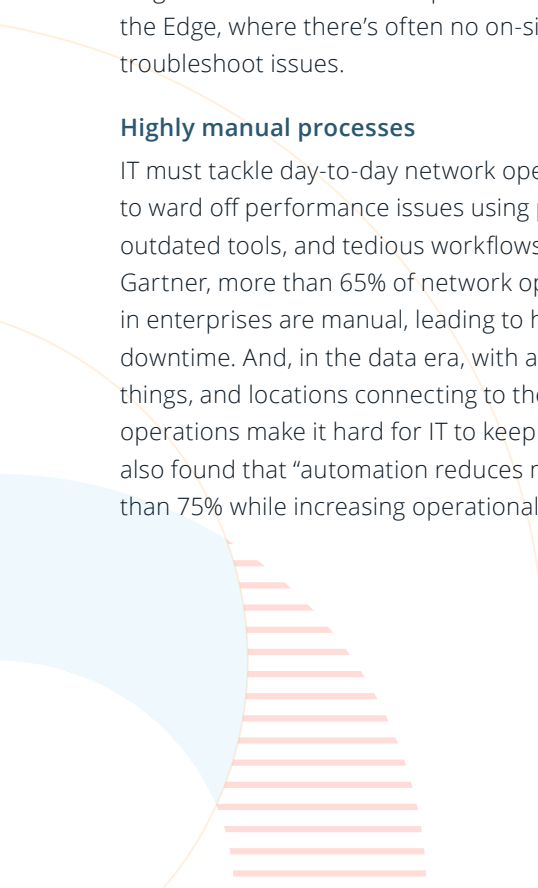
Adapting to new business requirements is always a challenge for any size organization. There's often a need for new equipment purchases, new processes, and sometimes more resources. These challenges are even greater in uncertain economic times where investment capital is scarce and IT resources are stretched.

ARUBA ESP: YOUR EDGE FOUNDATION

Given the importance of capitalizing on the opportunities at the Edge, it's critical for businesses to ensure that they have the right network foundation. They need to prepare their IT infrastructure for the next big technology transition while ensuring they can quickly respond to the need for business continuity and resiliency in the face of unplanned events.

That's where Aruba ESP (Edge Services Platform) comes in. It's the industry's first AI-powered platform designed to unify, automate, and secure the Edge. Aruba ESP combines AIOps, Zero Trust Security, and a Unified Infrastructure, with financial and consumption flexibility to help IT:

- Identify and resolve issues quickly, preempting problems before they impact the business.
- Protect against advanced threats from a vanishing security perimeter.
- Monitor and manage thousands of wired, wireless and WAN devices across campus, branch, data center, or remote worker locations.
- Quickly deploy network services at scale to support changing business needs.
- Allow continued infrastructure investment in the face of uncertain financial challenges.





Aruba ESP offers services at the Edge that include onboarding, provisioning, orchestration, analytics, location, and management, which can all be accessed using Aruba Central—the cloud-native single-pane-of-glass for Aruba ESP. Central's SaaS consumption model enables rapid deployment and provides unified management, AIOps, and security for wired, wireless, and SD-WAN operations across campus, branch, data center, and remote locations. Through Central, network admins can use AI Insights to help quickly troubleshoot, identify, and resolve issues before users complain or the business suffers.

Aruba ESP focuses on three areas to build your network foundation while flexible consumption and financing models give the business choices.

1. AIOps

Aruba ESP uses AI and machine learning (ML), combined with 360° network and user-centric telemetry data capabilities that focus on revealing network issues before users notice them. This helps IT to move faster and ensures that service level expectations of users and devices on the network are met. For example, in a single glance, network operators can see a list of all the users, devices, and APs experiencing DHCP issues that will prevent users from connecting. These insights will reveal root causes and, in many cases, will also recommend or automatically take prescriptive action.

By making all of these capabilities available via APIs, Aruba ESP also allows for extensibility to 3rd party solutions, which means organizations can further their automation goals within other business processes.

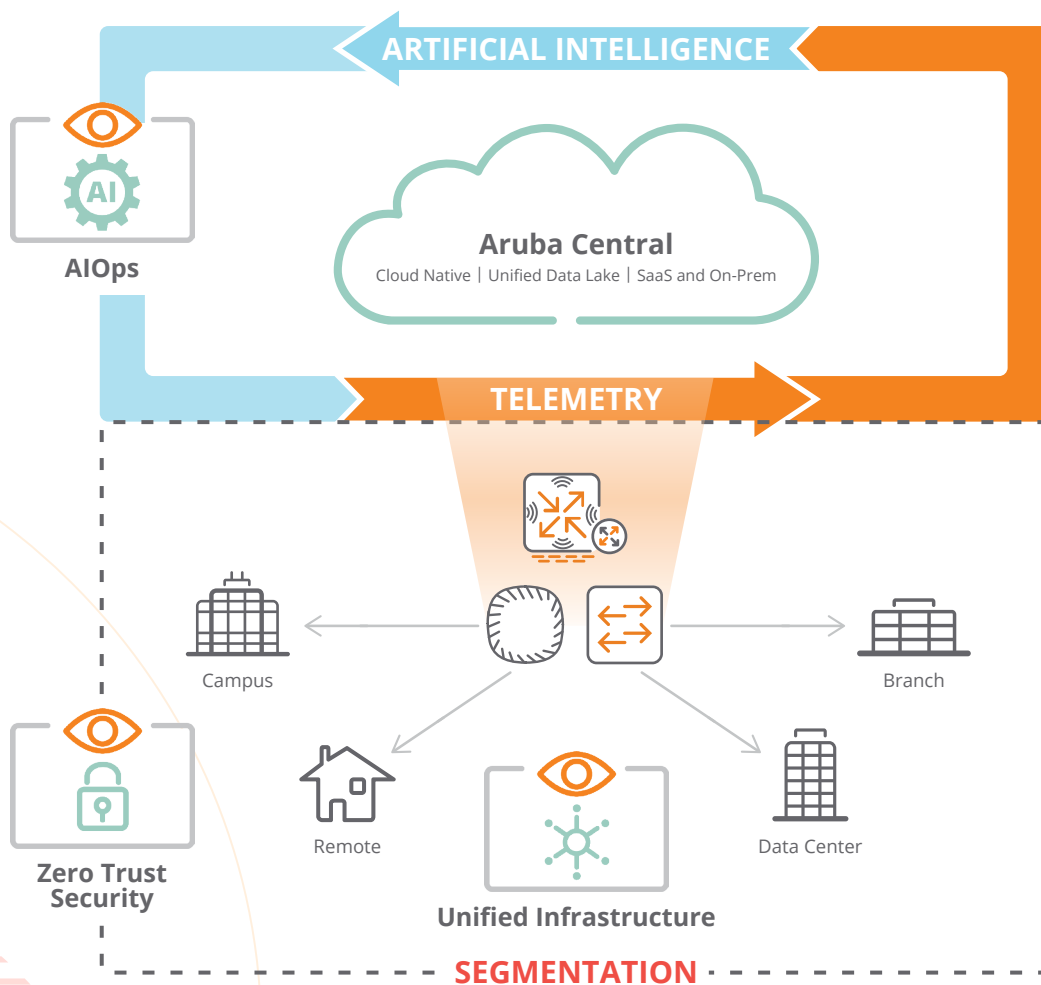


Figure 1: Aruba ESP (Edge Services Platform)



2. Zero Trust Security

Zero Trust is a broad industry term that describes a security framework based on the concept that organizations should not trust any entity inside or outside of their network perimeter. Aruba ESP embraces the principles of Zero Trust using Aruba Dynamic Segmentation. This ensures the identity of an endpoint, enforcing the policies applied to those endpoints with an application aware firewall. It can also adapt to new threats by sharing information with other security platforms and dynamically adjusts policies to endpoints on the network. Built-in VPN support for employees working from home extends the corporate network to the remote Edge; and by using “role-based access control,” centralized corporate policies will follow users and devices no matter how or where they connect.

3. Unified Infrastructure

Aruba ESP was designed from the ground up to deliver edge-to-cloud secure connectivity. It is managed using Aruba Central, a cloud-native, microservices-based platform that provides the scalability and resiliency needed for mission-critical environments across the distributed edge. Compared to competitors’ solutions that require up to five different platforms and interfaces, Aruba Central and Aruba ESP unify all network operations across wired, wireless, and WAN; branch, campus, data center, and remote worker locations—all under a single pane-of-glass and platform. This capability allows administrators to eliminate the time-consuming and manual process of moving information from place to place or trying to correlate information across multiple views.

To allow flexible deployment options, Aruba ESP infrastructure can be implemented in both physical and virtual form factors. By supporting a variety of clouds, customers can connect and secure physical locations, private clouds, or public clouds in a consistent manner. This capability also allows organizations to easily deploy secure remote-work solutions without the need for on-site staff.

And by using a common data lake in the Aruba ESP platform, Aruba Central correlates and displays multiple dimensions of information in context, unlocks powerful capabilities around automated root cause analysis, predicts issues before they impact the business, and provides more robust analytics. By automating mundane tasks across the entire network lifecycle, network operators can focus on driving innovation and using the network to create business value at the Edge, versus just keeping the lights on.

Flexible finance and consumption models

Aruba offers multiple financial and consumption options to help organizations accelerate their digital transformation and capitalize on opportunities at the Edge—even during these uncertain times. HPE Financial Services offers flexible financing programs that assist with equipment acquisition, including payment deferral, equipment recycling, and other forms of financial support.

Aruba also allows customers to consume Aruba ESP as a cloud-based or an on-premise Software-as-a-Service (SaaS) or as a Network-as-a-Service (NaaS). With GreenLake for Aruba, IT can get a “hands-free” NaaS experience combining Aruba ESP with a fully managed service that is billed monthly, freeing up funds and resources for other business priorities.

CONCLUSION

In this era of data at the Edge, it’s clear that today’s network architecture needs to be AI-powered and predictive—to cope with the massive amounts of data and decisions required in near real-time. Aruba ESP combines the technology principles of AIOps, Zero Trust Security, and a Unified Infrastructure to help you capitalize on opportunities at the Edge—improving business agility, building new revenue streams, and creating compelling experiences that delight customers and employees.

To learn more, visit arubanetworks.com/ArubaESP.