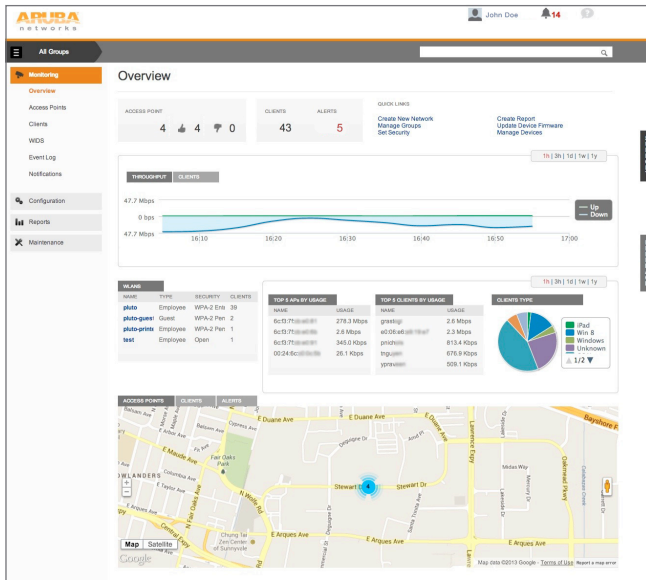


SOLUTION OVERVIEW

ARUBA WI-FI. NOW IN THE CLOUD.



THE NEED FOR BETTER CLOUD WI-FI

Centralized campuses are giving way to flexible working models and branch offices that are closer to the communities they serve. That's why organizations everywhere are now looking for ways to cost-effectively support enterprise networks in diverse locations.

Cloud-managed wireless LAN solutions have had the allure of simplicity and low up-front and infrastructure costs, but historically have had some serious limitations.

Early cloud Wi-Fi offerings sacrificed speed, reliability and flexibility associated with enterprise-class networks in favor of simplicity of the cloud. The result has been WLAN service disruptions, poor performance, dropped connections, fewer video sessions – and fewer happy users.

Plus, branch offices, home offices and other remote sites were stuck with a different solution than headquarters, making the network experience inconsistent for users traveling between locations – and for IT managers maintaining disparate WLANs across multiple offices.

SOLUTION BENEFITS

Fastest network

- Up to 10-times faster than competition at high density.
- True zero-touch WLAN setup.
- Airtime fairness allows more clients to move faster on the network.
- Always-on scanning avoids performance-slowness interference.
- Aruba Instant APs optimize Wi-Fi channel use and power to speed-up clients.

Most resilient network

- Multiple data center, multiple provider cloud service architecture for the highest availability.
- 100% functional WLAN without a WAN link.
- Integrated spectrum management without compromise to identify and self-heal around Wi-Fi and non-Wi-Fi interference.
- Redundant ISP uplink and 3G/4G uplink option.

Most flexible architecture

- Single architecture across headquarters, branch and home.
- Cloud and on-premises management options.
- AppRF technology performs deep packet inspection and web content filtering.
- Internal RADIUS server on Aruba Instant AP, plus flexible external AAA options.
- 100% investment protection to convert to controller-managed APs.

Additionally, today's #GenMobile workforce requires much more than a Wi-Fi signal. They demand a productive and dependable Wi-Fi experience 24x7. Due to limited IT resources and geographic distance, branch WLANs must operate reliably with little or no IT assistance.

REAL CLOUD WI-FI FOR REAL BUSINESS

Aruba Networks® provides the industry's only cloud-managed Wi-Fi solution that delivers enterprise-class performance and reliability. In keeping with over a decade of wireless innovations, Aruba cloud Wi-Fi eliminates up-front setup and management costs with Aruba Central™, a cloud-hosted multisite, multiservices management solution.

Aruba cloud Wi-Fi leverages **Aruba Instant™** controllerless access points (APs) for Wi-Fi coverage that delivers:

- 10-times faster than other cloud Wi-Fi solutions in environments with high densities of devices.
- Network survivability with wired and cellular uplink failover in the event of a WAN link failure.
- One architecture across all locations, with both cloud subscription and on-premises management options for branches.

With Aruba cloud Wi-Fi, IT no longer needs a separate Wi-Fi architecture for corporate, branch and home. Unlike competing options, any Aruba AP can be cloud-managed for branch locations or controller-managed in larger sites. Common management and policy infrastructure can be used for all installations.

THE ARUBA CLOUD WI-FI SOLUTION

Cloud Wi-Fi solutions from Aruba include Aruba Instant APs, Mobility Access Switches, software, and services that raise the bar for simplicity and performance.

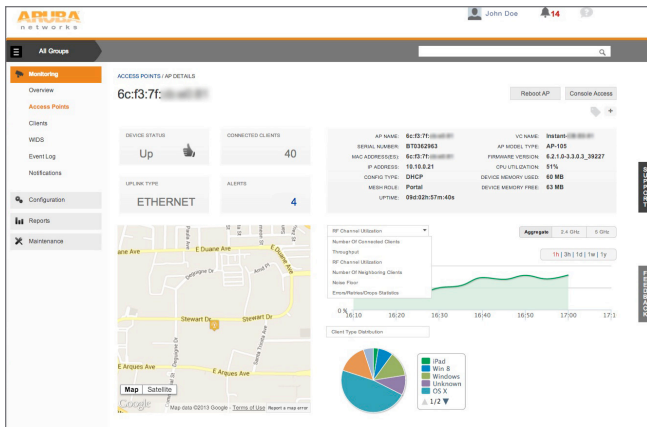
Aruba Central™

The **Aruba Central** services platform, hosted in the cloud, simplifies network operations by providing zero-touch setup, centralized management of multiple Aruba Instant networks and Mobility Access Switches, historical data reporting, PCI compliance monitoring, and troubleshooting for networks located around town or around the world.

Organizations also have a choice of acquiring the Aruba AirWave™ private cloud management system as well as the free Instant AP management interface that lets you manage individual AP clusters.

Aruba Central public cloud management services offer:

- Modern cloud architecture for always-on service
 - Web-scale database design for responsive performance
 - Clustered and distributed with multiple data center providers for redundancy
 - Global reach with data center locations around the world
- Single point of management for multiple sites and multiple Instant AP clusters in a single site
- Unified wired and wireless monitoring and management
- Remote monitoring and troubleshooting
 - Proactively find issues
 - Assisted problem isolation
 - Clear, actionable data with guidance
 - Detailed device information
 - Execute troubleshooting commands on APs and Mobility Access Switches from the cloud
- Central configuration and firmware management
 - Configure your entire network from a single point
 - Organize your network using groups
 - Share common configurations across multiple Aruba Instant AP clusters and Mobility Access Switches
 - Flexibility to override at any individual cluster level
 - Cloud-hosted firmware server
 - Flexible model to support organizational policy for upgrades
 - Schedule automated upgrades during off-peak windows across different time zones
- Compliance records and historical data
 - Network and security snapshots over a customizable period
 - Scheduled reports allows for low-effort monitoring
 - PCI-compliance reporting
- True zero-touch provisioning
 - Saves time in deploying remote, multisite networks
 - Connect point-of-sale data + AP MAC address + management service
 - Loads a preset configuration on new APs and Mobility Access Switches without intervention
 - Any person on site can plug in an Aruba Instant AP and power it on
 - No MAC address entry, no manual intervention



It also integrates patented **ClientMatch™** technology, which continuously gathers session performance metrics from mobile devices. These metrics are then used to intelligently steer individual clients to the best AP with the strongest Wi-Fi signal as they roam.

Deep packet inspection

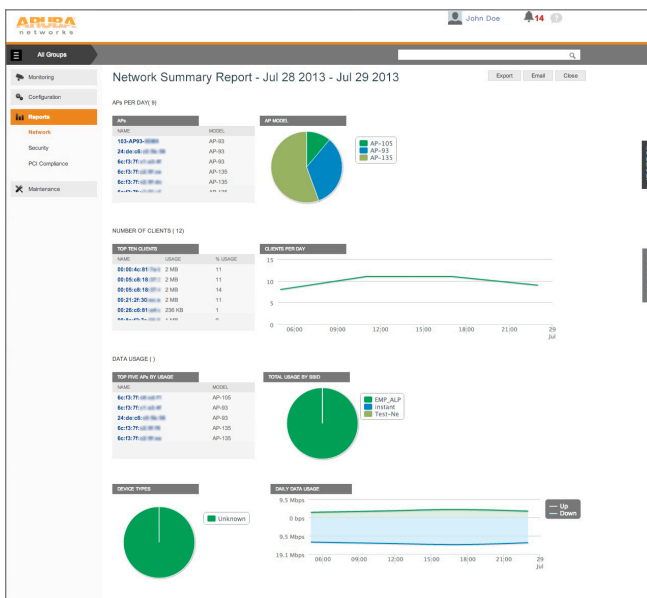
AppRF™ technology in Aruba InstantOS with deep packet inspection (DPI) monitors mobile app usage and performance while optimizing bandwidth, priority and network paths in real time – even for apps that are encrypted or appear as web traffic.

DPI is vital to understanding usage patterns that may require changes to network design and capacity. AppRF provides insight into over 1,500 apps, including apps like Lync, SharePoint, Box, GoToMeeting and Salesforce.com.

Web content filtering

AppRF technology also provides web content filtering, enabling IT to control what users can browse on the Internet. Integrated with Aruba InstantOS, AppRF redirects web URL requests to a cloud database that contains always-up-to-date content and reputation information about millions of web pages.

This information can be used to determine what types of web browsing and web apps are allowed on the network for different users or different times of day. You can even combine rules that allow Facebook traffic but block other social media or permit Netflix traffic only after business hours.



Full-featured operating system

Whether managed from the cloud or managed locally, controllerless Aruba Instant APs deliver enterprise-grade security, resiliency and scale to enable the highest performance WLANs in the industry. The key is its operating systems, Aruba InstantOS™.

With Aruba InstantOS, one dynamically-elected Instant AP automatically distributes the network configuration to other Instant APs in the WLAN. Simply power-up one Instant AP, configure it over the air or in the cloud, and plug in the other APs – the entire process takes about five minutes.

The Aruba InstantOS comes with integrated **Adaptive Radio Management™ (ARM)** technology, which optimizes Wi-Fi network behavior and automatically ensures that Instant APs stay clear of RF interference, resulting in a more reliable, higher-performing WLAN.

Whether users are local or remote, AppRF web content filtering is instrumental in protecting the network against viruses and malware and gives IT precise control over which web sites users can access.

The AppRF cloud database is updated in real-time with new information about malicious web addresses. Aruba AppRF will catch new types of web attacks before they cause damage. Clients can be configured to use the AppRF web content filter even when they're not connected to an Aruba Instant WLAN, which keeps clients safe no matter where they are.

Aruba InstantOS also features integrated device fingerprinting that supports a wide range and high densities of smartphones, tablets and laptops.

The Aruba Instant product family consists of a wide range of APs with a variety of wireless, wired and WAN connectivity options.

INDOOR WI-FI

Instant 224/225

The ultimate in 802.11ac Wi-Fi performance

- For extremely high-density client environments
- 3x3 MIMO, three spatial streams, up to 1.3 Gbps
- 2.4- and 5-GHz radios
- Internal and external antenna options
- Mounts on ceiling or wall



Instant 204/205

Most affordable 802.11ac

- Top performance in medium-density environments
- 2x2 MIMO, two spatial streams, up to 867 Mbps
- 2.4- and 5-GHz radios
- Internal and external antenna options
- Mounts on ceiling or wall



Instant 134/135

Highest performance 802.11n

- For high-density Wi-Fi environments
- 3x3 MIMO, three spatial streams, up to 450 Mbps
- 2.4- and 5-GHz radios
- Internal and external antenna options
- Mounts on ceiling or wall



Instant 114/115

Most popular 802.11n

- For medium-density Wi-Fi environments
- 3x3 MIMO, three spatial streams, up to 450 Mbps
- 2.4- and 5-GHz radios
- Internal and external antenna options
- Mounts on ceiling or wall



Instant 103

Most affordable 802.11n

- For low-density Wi-Fi environments
- 2x2 MIMO, two spatial streams, up to 300 Mbps
- 2.4- and 5-GHz radios
- Two internal antennas per radio
- Mounts on ceiling or wall



INDOOR WIRED AND WIRELESS

Instant 155

Fastest performance, highest density wired and wireless

- 2.4- and 5-GHz radios
- 3x3 MIMO, three spatial streams, up to 450 Mbps, 100 Mbps encrypted throughput
- Four ports to connect wired devices (optional power-over-Ethernet on two ports)
- Optional 3G/4G WAN connection
- Sits on your desk



Instant 108/109

High-performance, high-density wired and wireless

- 2.4- and 5-GHz radios
- 2x2 MIMO, up to 300 Mbps
- One port to connect wired devices
- Optional 3G/4G WAN connection
- Sits on your desk



Instant 3

Most compact and affordable wired and wireless

- One 2.4-GHz radio
- 2x2 MIMO, up to 300 Mbps
- Two ports to connect wired devices
- Optional 3G/4G WAN connection
- Sits on your desk



OUTDOOR WI-FI

Instant 274/275

Ruggedized Gigabit Wi-Fi for outdoor environments

- 2.4- and 5-GHz radios
- 3x3 MIMO, three spatial streams, up to 1.3 Gbps
- Internal and external antenna options
- Mounts on a pole or building



WIRED ACCESS

The [Aruba Mobility Access Switch™](#) portfolio unifies wired and Instant AP wireless access and can be provisioned and managed in the cloud by Aruba Central.

- Choose from 12, 24 or 48 10/100/1000BASE-T ports with power-over-Ethernet (PoE/PoE+).
- SFP/SFP+ fixed and modular Ethernet uplink ports.
- Link aggregation groups (LAGs): Physical ports may be bonded together to increase uplink bandwidth and eliminate backup links.
- Hot -standby link (HSL): Simplified link failover mechanism without spanning-tree protocol.
- 802.1af PoE and 802.3at PoE+ support.
- PoE priority: Aruba InstantOS PoE priority classifies attached PoE devices with a priority level, ensuring no loss of power.



ESSENTIAL RESILIENCY FEATURES

Advanced software features in Aruba InstantOS include enterprise-class resiliency capabilities that keep networks up and running, even if an Internet connection fails.

Highlights include:

- Cloud manageability to the last AP. The management functions of an individual Instant WLAN transition seamlessly from one AP to the next and communicate with Aruba Central the entire time. This ensures remote monitoring and troubleshooting to the last AP.
- Dual Ethernet uplinks leverage already-strong uplink resiliency options. Internet connections from two different ISPs can now plug into one Instant AP. This feature gives you the best-possible Internet availability.

- Supports a variety of 3G and 4G USB modems that slot into Aruba APs. Now you have the fastest available cellular uplink, either as a primary connection in hard-to-wire areas or as a backup for mission-critical applications.
- Flexible image upgrade features let you download firmware now and reboot later during off hours. This enables you to leave the office on time, and upgrade when no one is using the network.
- Spectrum load-balancing evens out the client load across channels in a dense deployment. Everyone gets faster access through more efficient use of the available wireless spectrum.

ONLINE SUPPORT COMMUNITY

The Aruba cloud Wi-Fi [eSupport](#) site gives free access to how-to videos, troubleshooting, knowledge bases and community support for fast and easy learning.

- Online case management
- Live chat based support
- Knowledge base articles
- Product documentation
- 24x7 phone support

LOTS OF WAYS TO SAVE

There's another side of the story – money. The architecture and the simplicity of Aruba Instant and Aruba Central make them cost-effective to acquire and maintain.

Low capex

With Aruba cloud Wi-Fi, you get enterprise-grade features and controller functions embedded in the AP. We eliminate the hardware expense of a separate controller, but keep all the performance and reliability advantages.

- No controller hardware to buy, enabling you to save thousands of dollars per site.
- Low up-front cost with affordable cloud management subscription.
- No appliance to install and maintain. With less hardware, less rack space and power are consumed and no time is spent maintaining a separate appliance.

Aruba has conducted exhaustive performance tests between the Instant 225 AP and other cloud-managed solutions, with the following results:

- 10-times faster smartphone connections when measuring TCP downstream aggregate throughput (Mbps) for 20 smartphones (iPhones 1x1:1) in the 2.4-GHz band.
- 69% faster laptop connections when measuring TCP bidirectional aggregate throughput (Mbps) for 20 laptops (3x3:3) in the 5-GHz band.
- Two-times more HD video clients when measuring multicast HD video at scale (5 Mbps video stream to see max laptops on the network before the video becomes unwatchable).

Low opex

Aruba cloud Wi-Fi integrates everything into the AP – controller functions, security, ARM™ RF management, ClientMatch client performance optimization, and AppRF to improve the use of bandwidth, priority and network paths. And cloud-based Aruba Central makes setup and management easy to use for non-experts.

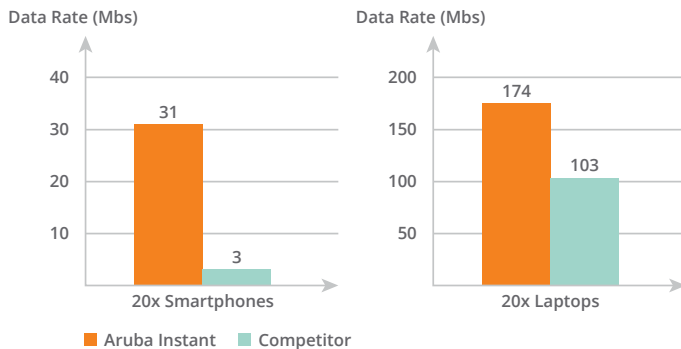
- Streamlined maintenance: The radically simplified cloud interface means you spend less time hassling with updates and configuration – and don't need a wired or wireless expert on staff to do it.
- Free firmware updates and online support community: It's easy to solve problems quickly and stay current because we provide always-available online tools.

Investment protection

Aruba cloud Wi-Fi has lots of advantages, but one really stands out – only Aruba offers both controllerless and controller-managed Wi-Fi with public cloud, private cloud or on-premises management. You can even mix and match between them. You're not locked into one architecture, so when your needs change – and they will – you keep 100% of your investment.

- No hardware changes. All Aruba Instant APs can utilize VPNs to access centralized resources like guest access or authentication services from corporate headquarters.
- At any time, Aruba Instant APs can easily convert to controller-managed mode, enabling you to mix and match the right solution for the right location – headquarters, branch or home. No matter what you decide, your existing AP investments are fully protected.

MOBILE DEVICE PERFORMANCE



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