

Enterprise



**Aruba Instant: Combining Enterprise-class Wireless with the Simplicity and Affordability of Entry-level Wi-Fi**

**ARUBA**<sup>®</sup>  
networks

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## **Aruba Instant: Combining enterprise-class wireless with the simplicity and affordability of entry-level Wi-Fi**

For enterprise organizations with distributed locations, such as retail chains and K-12 school districts, providing wireless connectivity at remote sites has been a challenge.

Faced with a choice between cheap, consumer-grade Wi-Fi gear and feature-rich but costly high-end wireless LAN (WLAN) equipment, many lean-running enterprises have had to trade off between affordability, ease of use, and functionality – or do without wireless altogether.

But continued growth in use of mobile devices is driving the need for enterprise-class WLANs, and there's no stopping it. Nearly half a billion Wi-Fi-enabled smartphones, tablets and laptops shipped in 2010 alone.

Employees are eager to use their personal mobile devices at work for both data and voice applications. Smartphones, iPads, and other wireless mobile devices also offer new ways for enterprise organizations to interact with and deliver content to customers and other constituents.

For example, hospitality providers and retailers can use their WLANs to push sales information to onsite customers, while school districts can distribute lunch menus, activity schedules, and other information to students and parents.

The challenge for enterprises with remote locations is to find a robust enterprise-class WLAN solution they can afford, both in terms of the capital expense and the operational overhead. And while many enterprises have savvy IT staffs at headquarters, they have limited resources and RF expertise at their remote locations.

Consequently, enterprise organizations need a mobility solution that's simple to set up, highly reliable, and can be managed centrally.

But they also need enterprise-grade WLAN functionality.

For example, hotel operators, restaurant owners, and retailers must comply with data privacy regulations such as the Payment Card Industry (PCI) Data Security Standard. These and other distributed organizations need a feature-rich WLAN solution meets a variety of challenges:

- Provides sophisticated security that protects internal assets, blocks malware, supports guest access, and isolates sensitive traffic from the rest of the network
- Offers high performance to accommodate a range of device and traffic types, including data, voice, and video.
- Scales easily, both within a given site and across sites.

- Allows users to roam without having to log in each time they move from one access point (AP) to another.

Drawing on its expertise as a global leader in enterprise networks, Aruba Networks® developed Aruba Instant™ to address the unique requirements of distributed enterprises.

Aruba Instant uses innovative Virtual Controller technology to deliver enterprise-grade WLAN capabilities, including robust security, performance, and scalability, at a small business price-point.

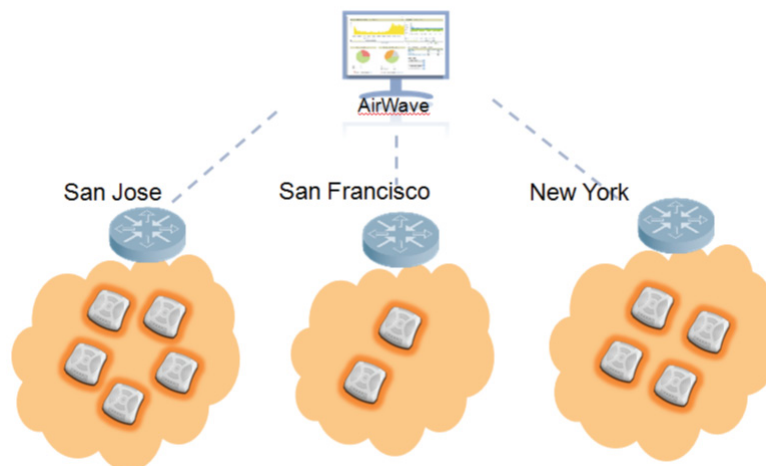
Designed for ease of use, Aruba Instant can be set up in minutes with minimal IT assistance and managed centrally through Aruba AirWave. With Aruba Instant, enterprises organizations can deploy autonomous WLANs at numerous sites without any trade-off between feature richness, affordability and ease of use.

What makes the Aruba mobility solution different from anything else is that it unifies wired and wireless into one cohesive network access solution – for traveling business professionals, remote workers, corporate headquarters employees and guests.

With Aruba, access privileges are linked to a user’s identity. That means the enterprise workforce has consistent, secure access to network resources based on who they are – no matter where they are, what devices they use or how they connect.

## The Aruba Instant Overview

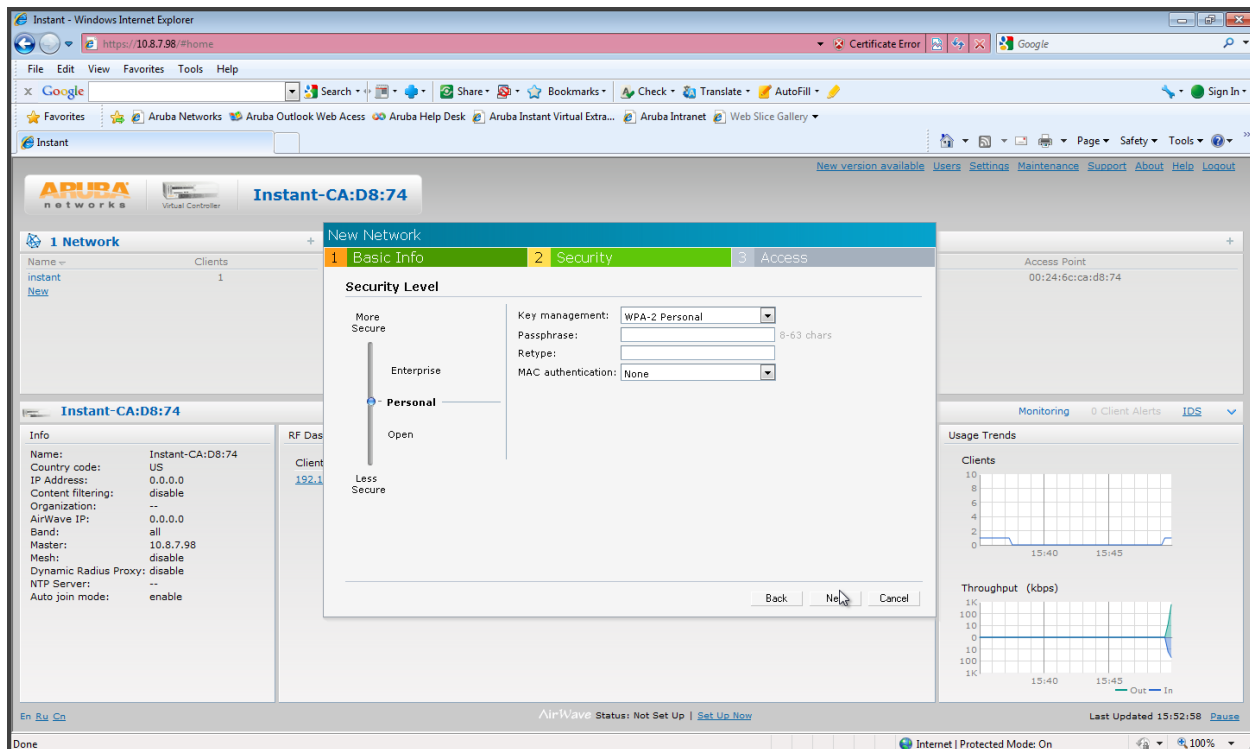
The Aruba Instant WLAN is comprised of multiple 802.11n APs – which offer greater speed, coverage and reliability than legacy Wi-Fi – plus Virtual Controller technology, supplemented by AirWave for centralized management. It is easily deployed as an overlay to an existing wired LAN in just a few minutes, eliminating the need for IT to redesign or modify the wired infrastructure.



## Aruba Instant APs

Aruba Instant's SmartSetup eliminates the need for IT expertise at distributed locations. All it takes to get an Aruba Instant WLAN up and running is to configure one Aruba Instant AP over the air using a simple wizard-driven process.

Offering over-the-air provisioning, there's no need to modify an IP address to configure Aruba Instant. Just power up and connect an Aruba Instant AP to the LAN, and open a PC browser to automatically access the Aruba Instant user interface login page.



From this web-based interface, the user can assign SSIDs, and select authentication mechanisms. The entire set up takes less than five minutes.

To configure additional Aruba Instant APs, simply connect and power them up. The first configured AP automatically becomes a primary Aruba Instant Virtual Controller and configures all the other APs.

In the event of primary Virtual Controller failure, another Aruba Instant AP automatically takes on the role with no disruption. The primary Virtual Controller functions like any other Aruba Instant with full RF scalability.

Aruba Instant includes the IAP-92, IAP-93 and IAP-105. The IAP-92 and IAP-93 provide low-density WLAN access in offices, hospitals, schools and retail stores. The IAP-92 features a single

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2x2 MIMO dual-band 2.4- or 5-GHz radio with external antennas while the IAP-93 offers the same features with internal antennas.

The IAP-105 provides affordable, high-density WLAN access server and device deployments in offices, hospitals, schools and retail stores. The IAP-105 features two 2x2 MIMO dual-band 2.4- or 5-GHz radios with two internal omni-directional antennas.

Up to 16 Aruba Instant APs can be configured per Layer 2 subnet, or Virtual Controller group, and enterprises can have as many subnets or Virtual Controller systems as needed on a campus or in a building.

### **Adaptive Radio Management**

Aruba's signature Adaptive Radio Management (ARM) automatically manages the WLAN's 2.4-GHz and 5-GHz radio bands to optimize Wi-Fi client performance and mitigate RF interference.

ARM ensures that each Aruba Instant AP uses the optimal channel and transmit power for its RF environment. Working in conjunction with ARM, Aruba Instant also provides built-in spectrum analysis capabilities. With the RFProtect™ Spectrum Analyzer, Aruba Instant APs scan the 2.4-GHz and 5-GHz radio bands to identify sources of non-802.11 RF interference and provide visibility into their affect on channel quality.

In addition, ARM provides priority traffic handling, channel load-balancing, band steering, airtime fairness and other quality-of-service (QoS) controls to ensure that the available Wi-Fi bandwidth is fairly distributed to all mobile devices on the WLAN.

Too often, newer 5-GHz-capable devices, such as notebook PCs, connect at 2.4 GHz to a dual-band network, even though it is the most crowded, interference-prone band.

To rectify this, the ARM feature in Aruba Instant steers 5-GHz-capable clients to that band, giving them clear conditions, while clients limited to 2.4 GHz – such as bar code readers, Wi-Fi phones and older PCs – gain capacity as that band becomes less crowded.

ARM also offers automatic application-detection capabilities, which enable it to distinguish voice and video from data traffic so that appropriate QoS mechanisms can be applied to ensure that latency-sensitive applications have sufficient network resources at all times.

### **Virtual Controller Technology**

The Aruba Instant Virtual Controller technology provides security, consistently high performance, scalability, and other enterprise-class network access services without requiring a separate controller at each remote site.

Utilizing an adaptive, self-organizing wireless clustering, the Virtual Controller technology can support up to 16 Aruba Instant APs, enabling the WLAN to scale effortlessly.

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As with Mobility Controllers, Aruba Virtual Controller technology centralizes the functionality needed to configure and manage the Aruba Instant network. Aruba Virtual Controller technology delivers a wide range of enterprise-class WLAN capabilities required by enterprises that have multiple remote locations:

- *Reliability:* Aruba Instant is resilient to failure. If an Aruba Instant AP functioning as the primary Virtual Controller fails, another Aruba Instant AP automatically inherits the primary Virtual Controller functionality with no service disruption.
- *Mobility:* Users on an Aruba Instant network can roam effortlessly within the same Layer 2 domain. This is enabled by firewall and authentication-state synchronization across all Aruba Instant APs, as well as coordination of DHCP address allocation for NAT clients.
- *Guest access:* Aruba Instant provides automatic security classification for guests, eliminating the need to set up a guest VLAN. It automatically sets up a subnetwork to act as a DMZ that isolates the internal network from external networks and the Internet.
- *Scalability:* Offering self-organization and auto-configuration, adding Aruba Instant APs is easy. At the same time, AirWave management lets IT centrally control thousands Aruba Instant networks across multiple locations.
- *Built-in migration path:* Aruba Instant offers a built-in migration path for growing organizations that want to transition to a controller-based architecture. Aruba Instant APs easily convert to high-performance campus APs that are managed by a central Aruba Mobility Controller.

## Aruba Instant Security

### Authentication and Encryption

Aruba Instant supports over-the-air authentication using pre-shared keys or 802.1X, which uses WPA2 authorization and an internal or external RADIUS server.

Each Aruba Instant AP has an instance of a free RADIUS server that maintains a distributed database of up to 256 users. When using internal RADIUS for 802.1X authentication, customers can load certificates and terminate EAP-PEAP, EAP-TTLS and LEAP.

Organizations that use external RADIUS can use Aruba's OneRADIUS, a dynamic RADIUS proxy that leverages Virtual Controller technology to present the entire Aruba Instant network to the authentication back end. OneRADIUS ensures that the RADIUS client identity remains the same if a Virtual Controller fails, eliminating the need to modify the authentication back end.

Alternately, enterprise organizations with remote sites can configure each Aruba Instant AP as a RADIUS client so they can perform distributed RADIUS authentication without going through the Virtual Controller.

For authentication on a guest network, Aruba Instant provides a captive portal, which can authenticate guests against an internal database or an external authentication engine. In

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addition to authentication, Aruba Instant supports standard WEP, TKIP and AES as methods of encryption for wireless traffic.

### **Integrated Firewall**

The Aruba Instant integrated firewall inspects traffic from each user session and allows or denies that traffic before it traverses the wired and wireless network. The firewall monitors all data entering or leaving the network, blocks data that does not satisfy specified security policies, and prevents unauthorized users from accessing the enterprise network.

Administrators use a simple firewall policy language to define access rules, which can be applied to an SSID or WLAN, such as the guest or employee network. Users are subject to access rules defined for the SSID to which they connect. The firewall also limits packets and controls bandwidth for different classes of users, such as students and guests.

### **Traffic Separation**

Aruba Instant supports up to six SSIDs per Virtual Controller, which gives enterprise organizations the flexibility to separate WLAN traffic based on user role and traffic type. For example, school district employees can be assigned to one SSID, students to another, and guests to a third.

Similarly, voice and video traffic can be assigned to a specific SSID and given high-priority handling. Setting up multiple SSIDs is easy, requiring only three or four wizard-driven steps in the Aruba Instant user interface.

To further simplify configurations, Aruba Instant includes a special setting to create a voice SSID. This voice SSID automatically establishes the proper SIP application-layer gateways (ALGs) in the firewall policy and sets the highest QoS parameter.

In traditional wireless environments, an SSID is associated with a VLAN. However, Aruba Instant gives operators the option to associate an SSID with a user group, traffic type, or a VLAN. Specifying VLANs on the WLAN automatically enables the required trunking and tagging for the wired network.

### **Intrusion Detection**

Aruba Instant includes a wireless intrusion protection system that safeguards the network from unauthorized or rogue APs and clients, and other devices that can potentially harm network operations.

The wireless intrusion protection capability also logs information about unauthorized APs and clients, and generates reports, making Aruba Instant fully PCI compliant. To prevent malicious APs from associating with network, administrators can disable the auto-join function, which ensures that only specific Aruba Instant APs are allowed to connect.

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## **Content Filtering**

Aruba Instant uses OpenDNS, a domain name system resolution service, to implement the content filtering. This feature provides misspelling correction, phishing protection and integrated web content filtering.

With content filtering, administrators can create Internet access policies that allow or deny user access to web sites based on categories and security ratings. Content filtering also prevents known malware hosts from accessing the WLAN, reduces bandwidth consumption and improves employee productivity by limiting access to certain web sites.

For optimum performance, Aruba Instant APs store responses from the OpenDNS servers, and search cache memory when they receive an access request. If a suitable record is found, the Aruba Instant AP responds accordingly, accelerating the response by eliminating the need to contact the DNS server again.

## **Operating System (OS) Fingerprinting**

The OS fingerprinting feature gathers information about each client connected to an Aruba Instant network to determine what OS the client is running. This information enables IT to identify rogue clients, including clients running an OS not allowed on the company network, as well as clients with an outdated OS.

OS fingerprinting also helps IT locate and patch clients with specific OS versions that have known vulnerabilities to fortify enterprise network security.

## **AirWave Management**

The lack of IT resources at remote locations creates a management challenge for many organizations that wish to deploy WLANs. Aruba AirWave addresses this challenge by allowing enterprise organizations to easily manage multiple sites from a central location.

AirWave is the only multivendor solution on the market that manages the wireless *and* wired infrastructure as well as mobile devices, supporting multiple generations of networking products.

With AirWave, enterprise organizations have a single view of their entire wireless and wired infrastructure and manage it centrally, which saves money, streamlines operations and improves service quality for users.

Connecting to AirWave from an Aruba Instant WLAN is easy. From the Aruba Instant user interface, a system administrator simply clicks a link and enters the required parameters, which sets up a secure connection between the Virtual Controller and the central AirWave server.

Unlike other WLAN management solutions, Aruba Instant eliminates the need to configure and troubleshoot individual APs or dispatch IT personnel onsite. From a remote location, IT can

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centrally configure, monitor, and troubleshoot Aruba Instant WLANs, upload new software images, track devices, generate reports, and perform other vital management tasks.

AirWave also features an easy-to-use web interface that provides customized views of data for the entire IT team, including the service desk, network operations center and network engineering staff. Centralized management and operations capabilities include:

- Device configuration and firmware distribution.
- Network monitoring that automatically tracks every wireless user and device.
- Troubleshooting, including root-cause analysis and event correlation across APs, controllers, and switches.
- Automated compliance reporting and auditing.
- Historical trend reporting with up to one years of data, including network and performance data, configuration changes, device inventories, rogue devices, user session histories and roaming patterns.

AirWave provides IT staff with granular views, ranging from the overall health of a network down to device-level application use. Consequently, the IT staff can monitor a user's laptop that might be experiencing connectivity issues. Similarly, IT can see the breakdown of desktop and laptop computers, smartphones, MP3 players, and other devices on an Aruba Instant WLAN.

In addition, the AirWave VisualRF™ feature automatically generates a map of each site's RF environment and the underlying wired topology, showing in real time who is on the network, where they are and how the network is performing.

VisualRF builds this map using RF measurements gathered from active Aruba Instant APs and the primary Virtual Controller, eliminating the need for costly, separate location appliances. This comprehensive RF coverage and location data enables IT to solve problems faster, improve service quality and make well-informed planning decisions.

## **Get Instant Wireless with Aruba Instant**

Aruba Instant is the only networking solution to combine high-end enterprise WLAN capabilities with the affordability and simplicity of standalone entry-level Wi-Fi equipment.

Using an intuitive user interface and simple over-the-air provisioning, IT organizations can deploy an Aruba Instant network with as many as 16 APs in matter of minutes without giving up enterprise-grade security or ease of use.

Offering impressive scalability, Aruba Instant can be installed at a single site or at multiple remote locations. And as mobility requirements grow, a built-in migration path allows Aruba Instant to become part of an extended controller-based architecture.

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Combined with AirWave, Aruba Instant makes it easy for enterprise organizations to centrally manage Aruba Instant WLANs as well as multivendor wired network infrastructures across multiple locations, while ensuring PCI compliance and support for other regulatory standards.

Aruba Instant eliminates the tradeoffs between usability, affordability and enterprise-grade WLAN capabilities.

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## About Aruba Networks

Aruba is the global leader in distributed enterprise networks. Its award-winning portfolio of campus, branch/teleworker, and mobile solutions simplify operations and secure access to all corporate applications and services - regardless of the user's device, location, or network. This dramatically improves productivity and lowers capital and operational costs.

Listed on the NASDAQ and Russell 2000® Index, Aruba is based in Sunnyvale, California, and has operations throughout the Americas, Europe, Middle East, and Asia Pacific regions. To learn more, visit Aruba at <http://www.arubanetworks.com>. For real-time news updates follow Aruba on [Twitter](#), [Facebook](#), or the [Green Island News Blog](#).

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