AVAYA

Engage The Power of We™

Avaya WLAN 9100 Series

Put your business-critical applications first

Enterprise wireless local area networks (WLANs) continue to grow at a rapid pace, driven by the explosion of Wi-Fi enabled devices and applications. It is imperative that wireless LAN networks handle this rapid growth and meet the requirements that the myriad of applications place on the infrastructure.

As a market-leader in collaborative UC and Video applications, Avaya understands the challenge that applications, especially real time applications, pose. We are also aware that at the end of the day, users care about one thing – the user experience.

The Avaya Wireless LAN 9100 Series delivers a wireless network that supports the way you really work. It delivers a network that allows you to take full advantage of the applications that matter to you, anywhere in your organization - while helping ensure a high quality user experience.

Avaya WLAN 9100 Series is an 'application-first' wireless offering. It not only delivers wired-like performance and predictability, essential for a high quality experience, but also supports application-level control to help ensure mission critical applications come first.

The Application Explosion

Millions of Wi-Fi enabled smartphones, tablets, and laptops are activated daily, many of which make their way onto corporate networks. This has led to a significant growth in user-driven, non-managed applications on these networks. Smartphone users on average have over 40 apps on their phones ranging from Facebook to email. These applications are increasingly reaching into the cloud for software updates, data backups, and software as a service (SaaS) usage models.

The result is increasingly congested networks with unpredictable usage patterns, headaches monitoring ever-growing Internet uplink usage, and security concerns from all the unknown data traversing the network. The challenge for IT is that the information they need to profile and manage network usage (i.e., the actual applications that users are running on the network) is typically invisible to them.

Avaya WLAN 9100 Application Control addresses this challenge by providing visibility and control over more than 1,300 of the most popular business and recreational applications. It allows IT administrators to control applications running over the wireless network by applying application-specific policies for managing performance and security. In addition, application control operates directly at the network edge, resulting in a scalable and resilient network that ultimately produces a better user experience.

Avaya Application Control provides assurance that business applications are not compromised by recreational applications

Benefits of Avaya WLAN Application Control

Improved user experience: Prioritize business-critical over best effort applications at the network edge for optimal performance throughout the network

Improved visibility: Identify bandwidth-hogging apps and analyze usage trends over time

Superior scalability: Distributed intelligence for limitless growth – DPI compute power added by wireless device, not in a stair step fashion with centralized appliance

Reduced network costs: Control Internet WAN uplink network traffic by dropping or throttling at the network edge

Reduced application risk: Block risky or out-of-policy applications from accessing the network

Superior resiliency: Distributed functionality in each AP means no single point of failure for applying application control policies

With Avaya Application Control, administrators can create granular policies based on application or application category, in addition to user, device and OS attributes, to block, restrict and/or prioritize specific applications. Specific application data flows can be routed to specific VLANs and/or physical ports designated for that type of traffic.

Next Generation Architecture

The unique architecture of the Avaya WLAN 9100 Series affords a number of key differences compared to traditional Wi-Fi solutions. Instead of central controllers, everything needed for a high performance wireless LAN that helps mitigate risk is built into each Avaya wireless product. All traffic processing and network services (application control, firewall, threat sensor, spectrum analyzer, etc.) are executed at the network edge on the built-in controller operating within each wireless access point. This integrated architecture reduces equipment and infrastructure requirements, simplifying nearly every aspect of the deployment. The table below highlights the broad portfolio of access points available to meet your wireless needs for indoor or outdoor uses.

AVAYA WLAN 9100 Portfolio

WLAN 9100 Series Access Points		
WAP9122 **Indoor 2x2 802.11n**	WLAN 9122 Indoor Access Point, 802.11n (Upgradable to 11ac), Dual Radio 2x2 MIMO, Omni-directional Antenna, Integrated Wireless Controller	
WAP9123 **Indoor 3x3 802.11n**	WLAN 9123 Indoor Access Point, 802.11n (Upgradable to 11ac), Dual Radio 3x3 MIMO, Omni-directional Antenna, Integrated Wireless Controller	
WAP9132 **Indoor 2x2 802.11ac**	WLAN 9132 Indoor Access Point, 802.11ac, Dual Radio 2x2 MIMO, Omni-directional Antenna, Integrated Wireless Controller	
WAP9133 **Indoor 3x3 802.11ac**	WLAN 9133 Indoor Access Point, 802.11ac, Dual Radio 3x3 MIMO, Omni-directional Antenna, Integrated Wireless Controller	
WAP9172 **4 radio** **Indoor 2x2 802.11ac**	WLAN 9172 Indoor Access Point, 802.11ac, Four Radio 2x2 MIMO, high gain directional antennas, Integrated Wireless Controller	
WAP9173 **4 radio** **Indoor 3x3 802.11ac**	WLAN 9173 Indoor Access Point, 802.11ac, Four Radio 3x3 MIMO, high gain directional antennas, Integrated Wireless Controller	
WA09122 **Outdoor AP**	WLAN 9122 Outdoor Access Point, 802.11n, Dual Radio 2x2 MIMO, external Antenna, Integrated Wireless Controller	
WLAN 9100 Orchestration System (WOS)		
WOS9100-E	WLAN Orchestration System for WLAN 9100 Series, Software Base Only. Requires AP Licenses (Note – Avaya Identity Engines included in WOS)	

Avaya WLAN 9100 Access Points

Avaya offers a broad portfolio of indoor and outdoor access points (APs) that cater to different deployment and client requirements. The portfolio includes 802.11n and 802.11ac APs (2x2 and 3x3 MIMO options), two and four radio APs, and an outdoor AP that can withstand harsh outdoor weather or industrial environmental conditions. Key capabilities include:

- **2.4GHz Optimization**
  - Extended radio power control range enables reduced 2.4GHz cell size coverage to optimize channel reuse in dense scenarios and improve user capacity. The Honeypot feature helps increase available wireless device density through management of spurious association traffic.
- **5GHz Optimization**
  - With its 2.4GHz and 5GHz radios (both software programmable to either band), the WLAN AP 9133 will help you easily make the transition to a 5GHz centric network, whenever you are ready.
- **Up to 70% more Wi-Fi bandwidth**
  - The 802.11ac Speed Optimization Technology leverages dual concurrent 5GHz radio operation to help ensure that 802.11ac clients communicate at 802.11ac speeds and are not affected by the slower speeds of legacy 802.11n clients. One 5GHz radio automatically services 802.11ac clients and the other 5GHz radio services 802.11n clients – thus helping ensure that 802.11ac/n clients are segregated to maximize throughput.
- **802.11n to 11ac Software Upgrade**
  - Future-proof your network with a technology upgrade path to 802.11ac and other wireless technologies—without replacing any equipment.
- **Bonjour Director Support**
  - Extend Apple Bonjour protocols across Layer 3 boundaries for simple setup and configuration of commonly used shared Apple services such as Airplay and Airprint.
- **Bring Your Own Device (BYOD)**
  - Integration with Avaya Identity Engines allows guests and employees alike to use personal wireless devices while the WLAN Access Points enforce appropriate access policies.
- **Automated Provisioning**
  - The holistic Avaya Unified Access solution provides automated identification and provisioning of APs by extending its innovative fabric technology to the wireless edge.
- **Application-level intelligence**
  - Help ensure that the applications you care about get the best possible services from the Wi-Fi network.

The unique architecture of the Avaya WLAN 9100 Series affords a number of key differences compared to traditional Wi-Fi solutions. Instead of central controllers, everything needed for for a high performance wireless LAN that helps mitigate risk is built into each Avaya wireless product.

A Simpler Network

As the Internet Of Things becomes more prevalent and more and more devices make their way onto wired and wireless networks, the need to simplify network provisioning and ongoing administration, as well as create a smarter, application-aware network, becomes critical.

Avaya's Fabric technology offers a completely new way to build networks. It delivers a simplified, agile and resilient infrastructure that makes implementation, provisioning, and ongoing changes fast, easy, and error proof. It extends from the data center all the way to the wired and wireless edge, delivering true plug and play capability for WLAN 9100 Access Points.

A standards-based network virtualization technology based on an enhanced implementation of IEEE 802.1aq Shortest Path Bridging and IETF RFC 6329, Avaya Fabric combines decades of experience with Ethernet and Intermediate System-to-Intermediate System (IS-IS) to deliver a next-generation technology that combines the best of Ethernet with the best of IP. Traffic always takes the shortest path from source to destination, increasing performance and efficiency.

Avaya Fabric allows new services or changes to services to be implemented at the edge of the network – eliminating error-prone and time-consuming network wide configuration practices.

Avaya WLAN Orchestration System (WOS)

Avaya WOS is a wireless network management platform that provides full monitoring and management of the Avaya WLAN 9100 Series network via a web based application with graphical map views. WOS scales from small to large networks and from one location to multiple locations, as well as large campus environments with thousands of wireless users. WOS provides help desk, as well as network operations and management capabilities for the Avaya WLAN 9100 Series network. WOS has a flexible license scheme based on the size of the wireless network, and is available as an application to run on legacy Microsoft Windows Server systems, as well as a virtualized server environment.

Simplified Deployment

The unique Avaya Fabric technology that powered the 2014 Sochi Olympics has now been extended to the wireless edge resulting in a simpler network that is easier to implement and administer. Offering zero touch provisioning for wireless access points, it accelerates time-to-service allowing new services or changes to services to be implemented quickly and error-free.

Network Security

Building a wireless infrastructure that not only meets connectivity and performance requirements but also addresses security concerns is attainable by taking a holistic approach that includes:

- Controlling user access
- Securing communication across the air
- Monitoring for wireless threats

User access control – More Secure BYOD and Guest Access

The first challenge of any wireless or wired network security policy is controlling access to the network. Because most Wi-Fi devices are mobile, they can connect to hundreds of networks in their lifetime. Avaya Identity Engines solution provides centralized authentication and authorization for wired, wireless and VPN network devices including:

- Authentication, Authorization and Accounting (AAA) identity-based network access control
- Easy-to-use standards- based policy engine
- Remote Authentication Dial-In User Server (RADIUS) integration with all enterprise network equipment
- Quick and deep integration with major directories

The Avaya WLAN 9100 and Identity Engines solution makes it easier and more cost effective for organizations to provide more secure, controlled BYOD access to employees and guests on wired and wireless networks.

- The Identity Engines Guest Manager provides enterprises with 24/7 guest network access without requiring the overhead of an IT helpdesk. The Guest Manager generates a unique user ID and password for each visitor, providing more secure, convenient network connectivity for guests and temporary users. User IDs come with specific security profiles that enable access only for specific resources and for a limited amount of time. Guest provisioning can be generated automatically, or customized by front desk or IT personnel. Once a user has been provisioned, they have seamless controlled access through either wired and/or wireless infrastructures.
- The Identity Engines Access Portal "finger prints" devices, providing detailed visibility into the type and profile of BYOD devices being used on the network. For example, it allows IT staff to recognize whether users are connecting with an Android phone, Apple iPad device or laptop, and to tailor the access level appropriately.
- The Identity Engines Client Access to the Secure Enterprise (CASE) wizard is a dissolvable client that configures user devices without revealing shared keys or certificates. The CASE client is particularly useful when guests arrive with unmanaged personal devices that need limited access to network resources. The client configures such devices within seconds then disappears without a trace.

Communications Security – Authentication and Encryption

High performance encryption/decryption in an enterprise Wi-Fi network is critical. The wireless network must support a high level of encryption (WPA2/AES) and do so, without degrading the overall performance of the network.

Avaya WLAN 9100 Series supports all standard encryption types, including WEP, WPA, and WPA2.

Encryption/decryption processing is processor intensive and if all traffic (as recommended) needs to be protected, a central processor is quickly oversubscribed. Avaya engineered hardware-based encryption/decryption into each AP, enabling an Avaya solution to deliver line-rate encryption no matter how many access devices or clients are connected. By distributing the security processing to the edge of the network, instead of at a centralized controller, higher performance and stronger security are achieved.

Delivering a complete solution with Avaya Unified Access

Avaya Unified Access offers a unique, innovative approach to wired and wireless integration. It enables enterprises to build a unified infrastructure that can extend across the entire enterprise environment, from the data center core to the campus edge. Avaya WLAN 9100 is a key component of the Avaya Unified Access solution. Key benefits of the Avaya Unified Access solution include:

- Avaya offers true unification through consistent policy enforcement, increased security, guest management and network management across wired and wireless
- Standards-based highly scalable, extensible and service-based infrastructure, the Avaya Fabric technology extends from the data center core to the campus edge (wired and wireless)
- Award winning Guest Management and BYOD with Avaya Unified Identity and Network Access Control solution (Avaya Identity Engines)
- Proactive Monitoring capabilities (Avaya Diagnostic Server) that allow organizations to simulate different traffic types and detect issues before any application degradation occurs

Avaya WLAN 9100 Series allows you to take full advantage of the applications that matter to you, anywhere in your organization — and allow you to create a more agile, responsive organization.

Wireless threat monitoring – Intrusion Detection

While wireless solutions improve access and productivity, their ubiquitous coverage also enables the potential for non-conforming or even malicious devices to be deployed within the network, having the potential to impact network operation. When wireless is deployed as a primary mode of network connection, interruptions to the service can have serious corporate implications. As a result enterprise-class monitoring is required, not ad hoc or other non-continuous solutions.

Avaya WLAN 9100 mitigates risks for wireless networks by integrating a dedicated 24/7 threat sensor. The threat sensor scans all channels (2.4GHz and 5GHz) for security threats and automatically mitigates them. This varies from the design of other solutions, where threat sensors time-slice between client services and security scan function, compromising both services. The Avaya AP also monitors for known wireless attack signatures, currently including over 20 types of DoS (denial of service) and impersonation threats.

High Density Environments

Providing high-density wireless coverage in large venues such as convention centers, sports stadiums, auditoriums and hotel meeting rooms poses a number of challenges in wireless network design due to the number of uncontrollable variables, including the total number of active wireless clients in the area, the total number online at any one time, the spacing between the clients, and the amount of client roaming throughout the venue. Avaya's four radio Access Points, the WLAN AP 9172 and WLAN AP 9173, are ideal for these environments. They deliver superior price and performance by integrating four software programmable (2.4GHz/5GHz) modular radios with high gain directional antennas, integrated wireless controller, multi-gigabit switch, firewall, threat sensor and spectrum analyzer into a single AP, ensuring high performance wireless for your high density environment.

A high quality user experience

Wireless done right can be a strategic IT advantage that enables your employees to do more than ever before. Avaya WLAN 9100 Series allows you to take full advantage of the applications that matter to you, anywhere in your organization — and allow you to create a more agile, responsive organization. Its integrated architecture reduces equipment requirements and costs, and it protects your investment against inevitable increases in capacity demands with an upgradeable wireless solution that is robust and simple to operate. For a wireless network that supports the way you really work, choose Avaya.

The Benefits of an Avaya Wireless Solution

Application Control

Avaya wireless solutions integrate next-generation application recognition and control directly at the network edge where it is needed most. Incorporating a complete Layer 7 deep packet inspection engine with associated policy control in every AP, business applications can be prioritized and recreational applications throttled or blocked to help provide the best user experience for your business's critical work.

Cost effective two-tier architecture

Integrated architecture (built-in controller in every AP) reduces equipment and infrastructure requirements and simplifies deployments

Software Programmable Radios

The Avaya WLAN 9100 software programmable radios can be switched from 2.4GHz to 5GHz when needed as the client base evolves to 5GHz.

Software Upgradable from 802.11n to 802.11ac

Future proof your network with a technology upgrade path to 802.11ac and other wireless technologies without replacing any equipment.

Increased security

Avaya implements multi-level security measures for wireless network protection risk mitigation. Each AP integrates a stateful firewall and dedicated threat sensor radio for enhanced, 24/7 RF security without compromising user servicing resources. Avaya Application Control enables application detection and application policy control on the network.

High reliability

Avaya distributes intelligence across the network into each AP, eliminating the single point of failure and performance bottleneck of centralized controllers in legacy wireless architectures. Redundant radio, uplink, and device features help ensure seamless wireless network operation.

Full Solution Provider

Avaya offers a true and proven end-to-end ecosystem, from critical unified communications applications through the access technologies, management and services.

Unified BYOD and Guest Access

The Avaya Unified Access solution seamlessly supports the massive proliferation of mobile devices with guest access and onboarding services to automate the process of bringing new devices and users onto the wireless network. Avaya helps ensure all of these devices can get onto the network and operate with a high quality end user experience.

Learn More

To learn more about the Avaya WLAN 9100 Series, contact your Avaya Account Manager, Avaya Authorized Partner, or visit us at **www.avaya.com**.

About Avaya

Avaya is a leading, global provider of customer and team engagement solutions and services available in a variety of flexible on-premise and cloud deployment options. Avaya's fabric-based networking solutions help simplify and accelerate the deployment of business critical applications and services. For more information, please visit **www.avaya.com**.

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