



# Avaya W310 WLAN Gateway/Avaya W110 WLAN Access Point Wireless Mobility Solution

The Avaya wireless infrastructure solution for high quality voice (VoIP) over Wireless LAN

The Avaya W310 and Avaya W110 provide an 802.11 wireless network infrastructure that is optimized for VoWLAN and solve many of the issues associated with traditional WLANs — especially poor security, scalability and roaming across subnets. For potential customers considering deployment of wireless voice within their building or campus using Avaya 3616 and 3626 IP Wireless Telephones, the W310/W110 provides an outstanding foundation. The W310 / W110 supports 802.11a, b, and g networks and can serve as the wireless network foundation for future solutions that incorporate dual-mode (wireless LAN and cellular) business telephones.

## Architecture

The Avaya W310 supports a distributed wireless LAN topology. Historically, wireless LAN access points operated as stand alone, all in one devices — with each AP performing the following:

- Radio transmit and receive
- User authentication, access rights, privileges
- Security, encryption, network policy

While fine for limited coverage areas and data only implementations, standalone or “heavy access points” do not scale well to support the seamless coverage required by voice over wireless LAN implementations.

The Avaya W310 WLAN Gateway supports a next generation, distributed architecture — with an intelligent switch at the center (the W310) wired to up to sixteen access points (the W110)

throughout a building or coverage area. With this distributed architecture, all the wireless network intelligence is contained within the central W310, and the access points become basic antennas. This architecture was designed specifically to provide high quality voice over wireless LAN in large buildings and coverage areas.

## Voice over Wireless LAN

As we learned with early VoIP deployments in wired environments, voice is not just another IP packet on the Ethernet LAN. The same learnings apply when VoIP is deployed over the wireless LAN. First are quality of service issues required for voice communications:

- Latency issues
- Bandwidth availability
- Echo canceling
- Prioritized handling of voice packets
- Wireless frequency best suited for voice communications





Many customers have successfully deployed 802.11 wireless networks to support data traffic throughout a location. Voice over wireless introduces new challenges beyond data only installations. Laptop computers are mobile, but not in continuous motion like a WiFi phone handset. Graceful, transparent handoffs between access points and subnets/vlans are required during active calls. The handset user can't be forced to re-authenticate each time they walk into a new coverage area. With its distributed architecture with centralized network intelligence, the Avaya W310/W110 solution solves these voice over wireless challenges. In addition, the W310/W110 is one of the first wireless infrastructure solutions to adopt the WiFi WME standard, guarantying voice quality over wireless.

### 802.11A for voice

802.11A is the superior wireless network approach to support quality voice over WiFi implementations. 802.11b/g networks are designed primarily for coverage. While this is fine for traditional data access deployments, voice oriented wireless LANs must be designed for both coverage and capacity. 802.11a offers 12 separate channels per access point, compared to only 3 with 11b/g networks. 802.11a operates in the 5.0GHz frequency, thus avoiding interference with other devices operating in then 2.4GHz (802.11b) range. 802.11A provides for up to 54Mbps bandwidth, ideal for voice communications.

### Maintenance and Administration

The Avaya W310/W110 solution is much more cost effective to manage and administer than traditional heavy access points. With the W310, all administrative information is contained within the W310 itself — versus each individual access point. The W310 supports the CLI interface, as well as integration with all SNMP network management tools. By centralizing administration across multiple access points, the W310 dramatically reduces the overall complexity of managing wireless LAN deployments.

### Security

The Avaya W310/W110 solution provides wireless security capabilities demanded by large enterprises. The W310 provides rogue AP detection searches for unauthorized APs in both the 2.4 and 5 GHz bands. This eliminates the hassle of physical searches.

The W310 supports WiFi Protected Access (WPA) and will be upgradeable to 802.11i. The W310 provides mutual authentication between the client and the network, and offers dynamic per user, per session keys with rotation times configurable by the administrator.



## W310 / W110 Feature Overview

- Security and Authentication
  - 802.1x, EAP-TLS, PEAP, EAP-TTLS or MD5
  - MAC address for zero authentication (for devices that want to “plug in and go”)
  - RADIUS
  - Rogue Access Point Detection
- VLAN / SSiD Mapping
  - Permits unique security policy per SSiD
  - Ideal for guests or “privileged users”
  - 16 SSiD's per W310
  - 16 SSiD's per W110
  - 802.1q VLAN tagging
- QoS / CoS
  - Packet Prioritization based on DiffServ Marking
  - 4 priority queues per port
  - DSCP – 802.1p mapping
  - Marks diffserv / 802.1p based on rules
  - 802.1p Layer 2 QoS fields (allowed values: 0–7) and layer 3 DSCP (allowed values: 0–63)
- Firewall
  - Access Control List (ACL)
  - Permits / denies web traffic, email, etc
- Standards
  - IEEE 802.1Q, D, P support
- Call capacity
  - 802.11b handles 8 calls per AP
  - 802.11a/g handles 20 calls per AP
- Proxy ARP
  - To conserve battery life, the W310 can proxy ARP for IP endpoints
- User Groups include the following groups:
  - Specific groups defined within a RADIUS server
  - Default group used for successfully authenticated users not receiving return attributes from a RADIUS server
  - Default group for unauthenticated users. For example, you could block all users or permit web access for visitors.
- Switching
  - Port Mirroring
- Ethernet and WLAN Frames
  - Spanning Tree
- SMON
  - Device / VLAN / Port Level Monitoring
- Templates
  - Allows for rapid deployment of access points
  - Much easier compared to traditional access point deployments
- Accelerator Option
  - First release supports a field upgradeable accelerator option available in a future release
- Telnet
  - Into / out of the W310
- Automatic installation
  - Text files that can be imported to automatically configure the W310
- Device Monitoring
  - Temperature
  - Voltage
  - Fans

## W310 Gateway

- LAN switching features are provided by 16x10/100 Ethernet ports
  - 48V power is provided over the 10/100 ports, to power
- IP Phones,
- LAPs and
- Other PoE consumers (IEEE 802.3af)
- Uplink
  - 2 10/100/1000 uplinks with link aggregation / port redundancy
- RJ-45 Console Port
- Physical parameters
  - Height 1U (44 mm, 1.75”)
  - Width 482.6 mm (19”)
  - Depth 450 mm(17.7”)
  - Weight 6Kg
- Eight status lights
  - Link
  - Collision
  - Tx
  - Rx
  - Duplex
  - Speed
  - Lag
  - PoE LE

## W110 Light Access Point

- Dual-band, single mode Light Access Point
  - 802.11a/b/g World
- UNII 2,3 only w/ external antenna port
  - 802.11a/b/g FCC
  - Only one can be operational at any particular time
- Multiple SSIDs
  - Unique configuration per SSID
- Integrated antennas
- Plenum rated
- Mounting
  - Ceiling, wall, table, cubicle
  - Facilitates installation using existing Ethernet ports

### About Avaya

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Focused on enterprises large to small, Avaya is a world leader in secure and reliable IP telephony systems, communications software applications and full life-cycle services. Driving the convergence of voice and data communications with business applications – and distinguished by comprehensive worldwide services – Avaya helps customers leverage existing and new networks to unlock value and enhance business performance.



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