

# Avaya AP-6, AP-7, AP-8 Access Points Configuration and Deployment Guide

This document details the specifications for configuring the Avaya AP-6, AP-7, and AP-8 access points (APs) with wireless IP telephones.

## Product Summary

Manufacturer:	Avaya	
Approved product(s):	AP-6, AP-7, AP-8	
RF technology:	Direct-sequence spread spectrum (DS), 2.4 GHz	
AP software version:	Firmware version 2.4.11 or 2.52 †	
Handset models	3616/3620/3626	3641/3645
Radio mode	802.11b	802.11b
Maximum telephone calls per AP:	12	12*
Auto-learn function:	Yes *	No
Access point configuration parameters:	See <i>Access Point Configuration</i> below	
Indoor range (typical):	See vendor specifications for AP	
Required network topology:	Switched Ethernet	
Network constraints:	Dedicated segment for wireless, single subnet	
WEP capability:	Yes *	

† Earlier and later software versions have not been tested for the Avaya Voice Priority Processor compliance, except as noted. Refer to wireless IP telephone WLAN Compatibility List for field verified AP software versions.

\* Telephone calls per AP must be configured in the system per documentation provided by Avaya. WEP and Automatic Learn are programmed into each handset in addition to being configured in the AP.

## Wireless IP Telephones

Wireless IP telephones use voice over IP technology on IEEE 802.11b-compatible wireless local area networks (WLANs). Access points utilize radio frequencies to transmit signals to and from the wireless IP telephones.

## Access Point Capacity and Positioning

Each site is unique in its AP requirements. Please take the following points into account when determining how many APs are needed and where they should be placed in the facility.

### Handset range

There must be wireless LAN coverage wherever wireless IP telephones will be used. The typical range for a wireless IP telephone is comparable to that of a laptop computer utilizing a wireless LAN PC card. However, wireless IP telephones are likely to be used in areas where data devices are not typically used, such as stairwells and outdoor areas. wireless IP

telephones have a Site Survey mode that displays dBm levels to determine adequate WLAN coverage. Refer to the wireless IP telephone *Configuration and Administration* document for details about this feature.

### Number of handsets per access point

Estimate the number of wireless IP telephones and their anticipated call volume per AP area to ensure that the maximum number of calls per AP will not be exceeded. In this estimate, consider the data rates at which the handsets will operate. Higher data rates can only be sustained while well within the range of the AP. If the wireless IP telephones will be operating near the limits of the RF coverage from the AP, they will automatically drop to 1 Mb/s operation. Wireless IP telephones require approximately 15% of the available bandwidth per call for 1 Mb/s operation, approximately 10% of the available bandwidth per call for 2 Mb/s operation, approximately 7% of the available bandwidth per call for 5.5 Mb/s operation, and approximately 5% of the available bandwidth per call for 11Mb/s operation.

Note: the maximum number of telephone calls per AP quoted in the summary table above is based on 11 Mb/s operation, and will be reduced if some or all wireless IP telephones are operating at 1, 2, or 5.5 Mb/s.

### LAN bandwidth

Estimate anticipated peak call volume to ensure that the LAN has enough bandwidth available to handle the network traffic generated by all of the wireless devices. Network traffic can be monitored/analyzed using a network sniffer or a simple network management protocol (SNMP) workstation.

### Number of other wireless devices per AP

The wireless IP telephones share bandwidth with other wireless devices. To ensure adequate RF bandwidth availability, consider the number of wireless data devices in use per AP.

## VLAN Support

The Avaya AP-6, AP-7, and AP-8 access points have the ability to manage different VLANs, each with a unique ESSID. Many times customers will choose to place voice devices on a separate VLAN from data devices or they may choose to segment their network based on security policies.

When VLANs are enabled, the AP uses 802.1Q tags on traffic entering the wired network. These tags must be removed by a VLAN-capable switch before the packets reach the Avaya Call Server or Avaya Voice Priority Processor. On Cisco switches, the switch port to which the Avaya Call Server or Avaya Voice Priority Processor is connected must be configured as a non-trunked, or access port dedicated to the voice VLAN. If the port is set to trunked, the Avaya equipment will not recognize the packet.

If you are using a switch that is not capable of removing these 802.1Q tags, the wireless IP telephones must reside on the native (or management) VLAN.

## Notes on Configuration



The AP must support SpectraLink Voice Priority (SVP). Contact your AP vendor if you need to upgrade the AP software.

If you encounter difficulties or have questions regarding the configuration process, please contact Avaya Technical Support at 1 800 242-2121 (USA only) or your local authorized Avaya dealer.

## Access Point Configuration (Up to Version 2.4.11)

1. Connect to the AP via Netscape or Internet Explorer by navigating to the URL `http://<IP_Addr>` (where `<IP_Addr>` is the IP address of the AP).  
  
Note: these configuration steps can also be accomplished using the SNMP-based Avaya ScanTool program.
2. From the main page, click on the **Configure** link.
3. To configure WEP settings, obtain the key values from the local network administrator and use the Avaya AP-6, AP-7, or AP-8 *User Guide* for guidance in programming the encryption settings. The WEP configuration screen is reached from the main menu by clicking on **Configure**, followed by **Security**, followed by **Encryption & Auth**.  
  
Note that the handsets must each be configured manually with the identical WEP settings.
4. Click **Configure**, then click the **Interfaces** link and choose the appropriate radio (**Slot A** or **Slot B**) to configure.
5. From the **Interfaces** tab, confirm that the **RTS/CTS Medium Reservation Threshold** is greater than 600 or disabled.
6. Set the **Transmit Rate** field to **11Mb/s**.
7. From the **Filtering** tab, select the **Advanced** tab. Enable the **Proxy ARP** function and disable **IP/ARP Filtering**.
8. The Avaya Voice Priority Processor is disabled by default in the ORiNOCO AP-600/AP-4000 access point and must be enabled through the Command Line Interface (CLI). The CLI is available through both the serial port interface and over the Ethernet interface using a Telnet session.  
  
Once in the CLI, the following commands are used to enable SVP:
  9. To check to see if SVP is enabled:  
Type **show spectralink**, then press **Enter**; it will display **enabled** or **disabled**.  
  
To enable SVP:  
Type **set speclinkstatus enable**, then press **Enter**.  
  
Conditional: If you are not using a Avaya Voice Priority Processor and intend to use 802.11b/g mode, you must also enter the command:  
Type **set speclinklegacysupport**, then press **Enter**.
10. Restart the AP.  
  
The AP is now ready for use with wireless IP telephones.

## Access Point Configuration (Version 2.52)

1. Connect to the AP via Netscape or Internet Explorer by navigating to the URL `http://<IP_Addr>` (where `<IP_Addr>` is the IP address of the AP).
2. From the main page, click on the **Configure** link.
3. To configure WEP settings, obtain the key values from the local network administrator and use the Avaya AP-6, AP-7, or AP-8 *User Guide* for guidance in programming the encryption settings. The WEP configuration screen is reached from the main menu by clicking on **Configure**, followed by **SSID/VLAN/Security**, followed by **Security Profile**  
  
Note that the handsets must each be configured manually with the identical WEP settings.
4. Click **Configure**, then click the **Interfaces** link and choose the appropriate radio (**Slot A** or **Slot B**) to configure.
5. From the **Interfaces** tab, confirm that the **RTS/CTS Medium Reservation Threshold** is greater than 600 or disabled.
6. Set the **Transmit Rate** field to **11 Mb/s**.
7. From the **Filtering** tab, select the **Advanced** tab. Enable the **Proxy ARP** function and disable **IP/ARP Filtering**.
8. The Avaya Voice Priority Processor is disabled by default in the Avaya AP-6, AP-7, and AP-8 access points. To enable SVP, select the **QoS** tab. Check the box beside **Enable Quality of Service** to enable SVP.
9. Conditional: If you are not using a Avaya Voice Priority Processor and intend to use 802.11b/g mode, it is necessary to use the Command Line Interface (CLI). The CLI is available through both the serial port interface and over the Ethernet interface using a Telnet session.

Once in the CLI, enter:

**set speclinklegacysupport enable**

To ensure that SpectraLink legacy support is enabled, enter:

**show speclinklegacysupport**

A line should come back indicating:

**speclinklegacysupport  
enable**

10. Restart the AP.

The AP is now ready for use with Wireless IP Telephones.