



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring the Avaya 3631 Wireless Telephone with Avaya Distributed Office using the Aruba Networks Wireless Network - Issue 1.0

Abstract

These Application Notes detail the steps for configuring interoperability between Avaya 3631 Wireless Telephones and Avaya Distributed Office. Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

As new products are delivered to industry, proving interoperability between both existing and new platforms is important to customers who plan on deploying new platforms. Avaya Distributed Office extends telephony features to the Avaya 3631 Wireless Telephone.

These Application Notes demonstrate the configuration process that enables interoperability between the Avaya 3631 Wireless Telephone with Avaya Distributed Office. The Avaya 3631 Wireless Telephone is an 802.11b/g wireless H.323 telephone capable of registering with Avaya Distributed Office.

1.1. Network Diagram

The network diagram shown in **Figure 1** illustrates the testing environment used for compliance testing. The network is comprised of an Avaya Distributed Office, an Aruba 6000 Mobility Controller, an Aruba AP-65 wireless access point and two Avaya 3631 Wireless Telephones. In the sample network the Avaya Distributed Office was providing DHCP services. When configured in this fashion the Avaya Distributed Office will auto-populate the necessary DHCP options to provision the Avaya 3631 Wireless Telephone.

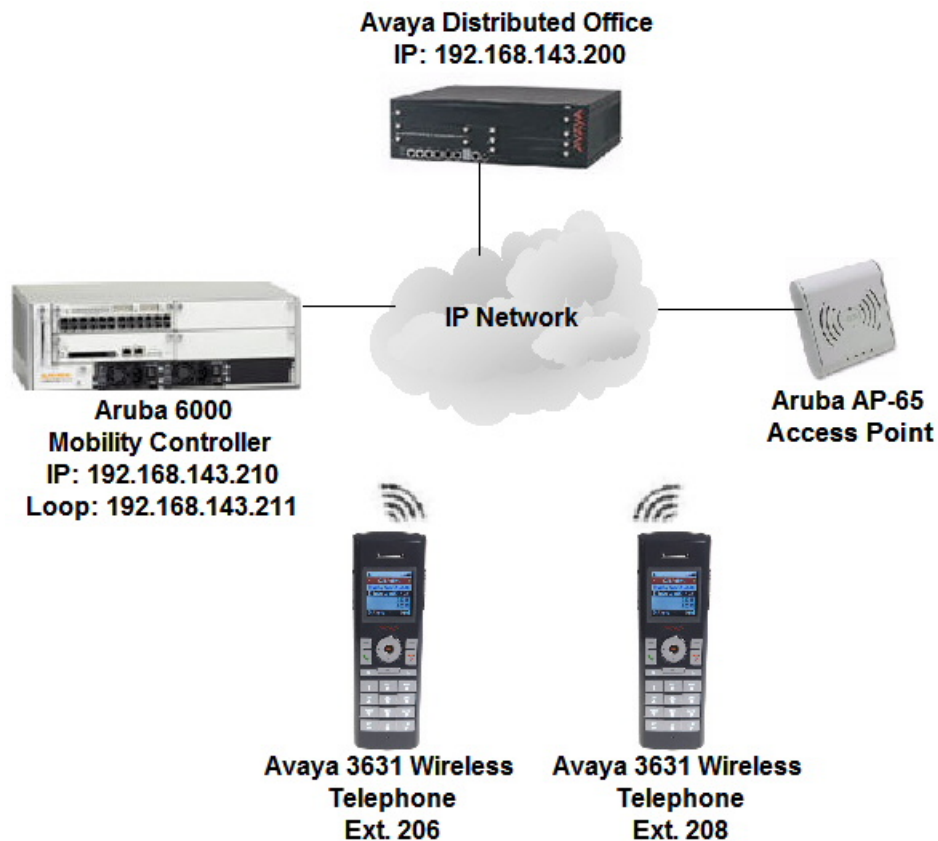


Figure 1: Sample Network Diagram

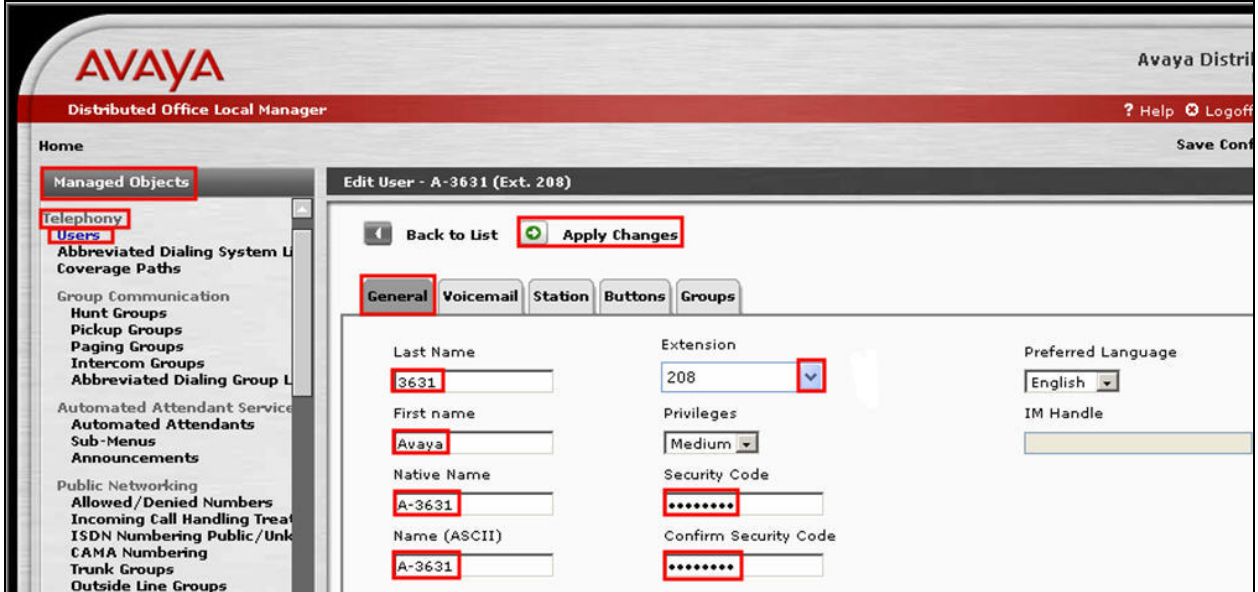
2. Equipment and Software Validated

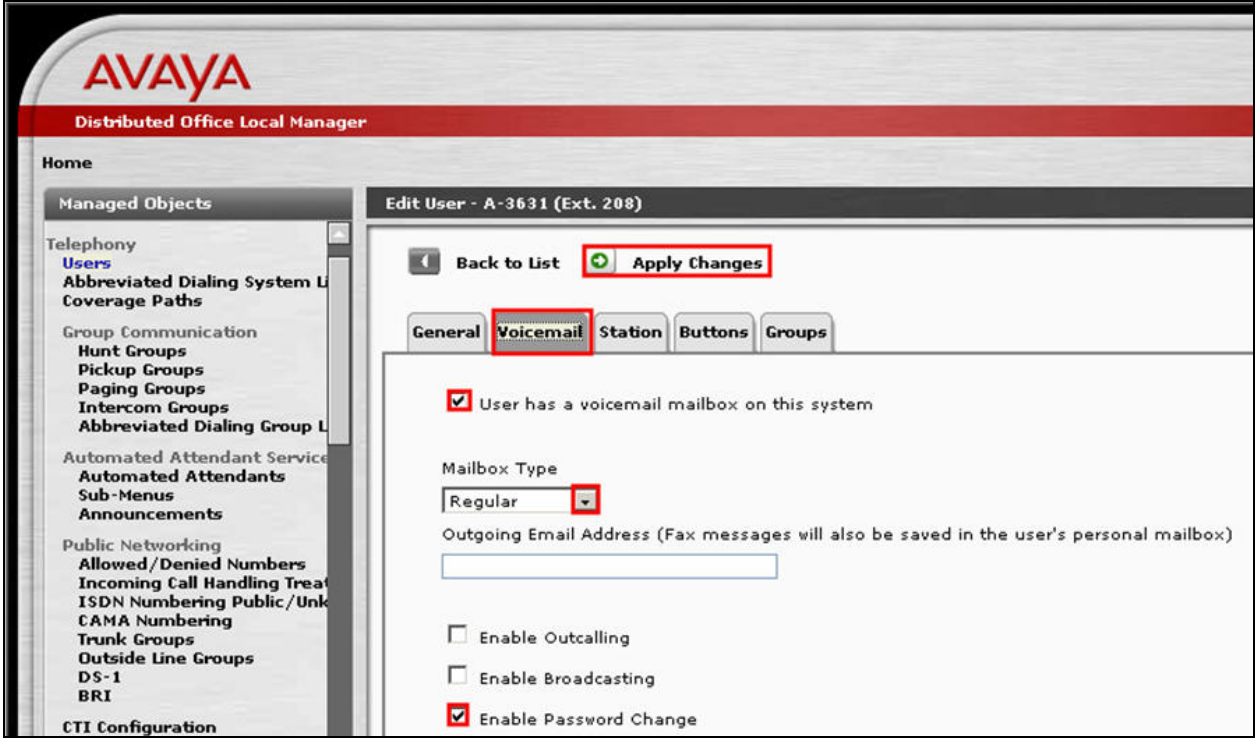
The following equipment and software were used for the sample configuration provided:

Equipment	Software
Avaya Distributed Office i120	1.1.0 (33.02) Service Pack 3.0.0
Avaya 3631 Wireless Telephones	1.3.1
Aruba 6000 Mobility Controller	3.1.0.7
Aruba AP-65 Access Point	3.1.0.7

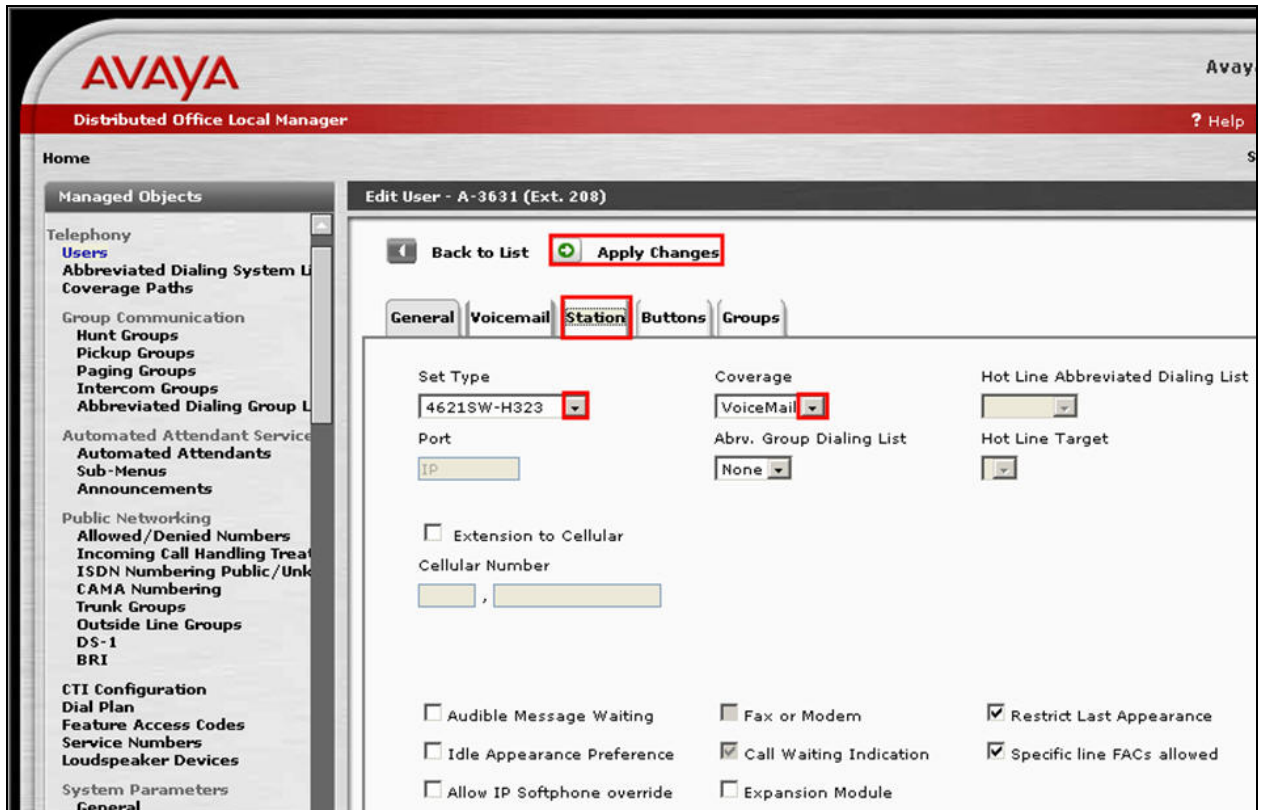
3. Avaya Distributed Office Configuration

Avaya Distributed Office is administered via a web interface. In the sample network the Avaya Distributed Office was assigned the IP address 192.168.143.200 and the URL <http://192.168.143.200> was used to access the administration interface. For information on how to setup a factory default system, refer to **Section 10 [1]**.

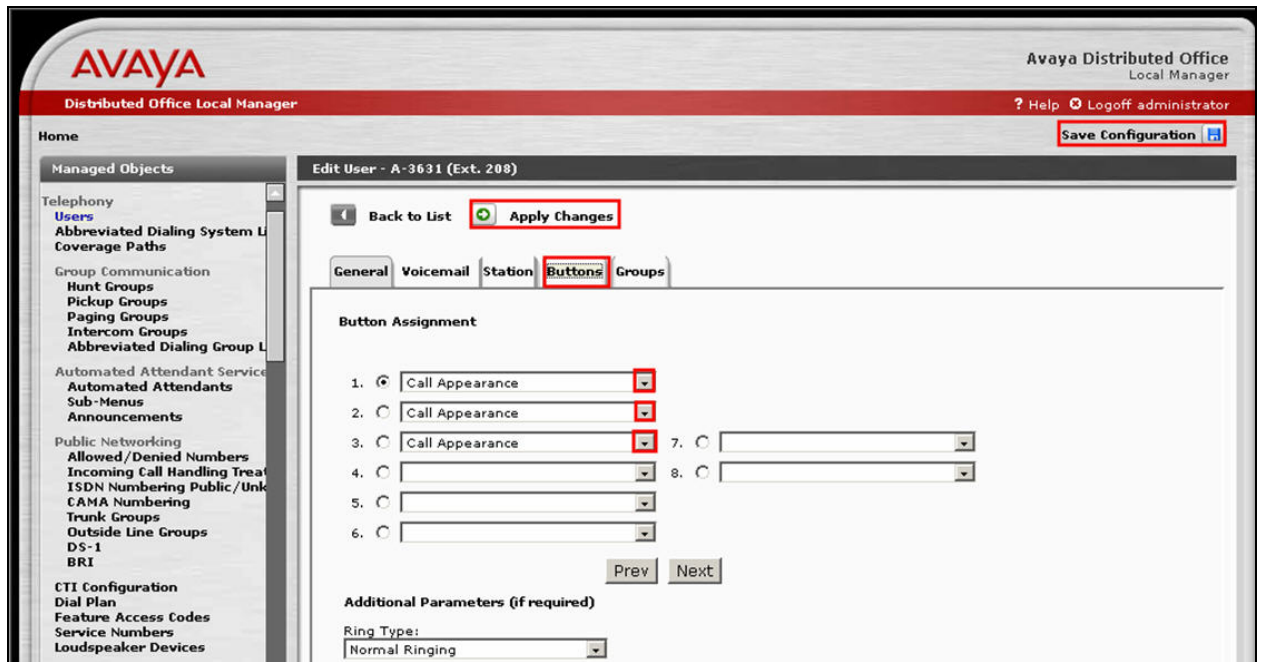
Step	Description
1.	<p>Navigate to the Edit User frame by clicking Managed Object→Telephony→Users. Enter the values displayed below and then click Apply Changes. Last Name, First name and Native Name can be any descriptive text that identifies this user. Name (ASCII) may be populated with the same information that is entered in Native Name. Security Code and Confirm Security code are numeric codes that must match. Use the drop-down list for Extension and select any available extension. The remaining parameters were left to default values.</p> 

Step	Description
2.	<p>Navigate to the Voicemail tab by clicking Voicemail. Check the User has a voice mailbox on this system and Enable Password Change check boxes. Use the drop-down list for Mailbox Type to select "Regular". Click Apply Changes.</p>  <p>The screenshot shows the Avaya Distributed Office Local Manager interface. The left sidebar contains a 'Managed Objects' tree with categories like 'Telephony', 'Group Communication', 'Automated Attendant Service', 'Public Networking', and 'CTI Configuration'. The main content area is titled 'Edit User - A-3631 (Ext. 208)'. At the top of this area are 'Back to List' and 'Apply Changes' buttons. Below are tabs for 'General', 'Voicemail', 'Station', 'Buttons', and 'Groups'. The 'Voicemail' tab is active. It contains a checked checkbox for 'User has a voicemail mailbox on this system', a 'Mailbox Type' dropdown menu set to 'Regular', an empty text field for 'Outgoing Email Address', and three checkboxes: 'Enable Outcalling' (unchecked), 'Enable Broadcasting' (unchecked), and 'Enable Password Change' (checked). The 'Apply Changes' button is highlighted with a red box.</p>

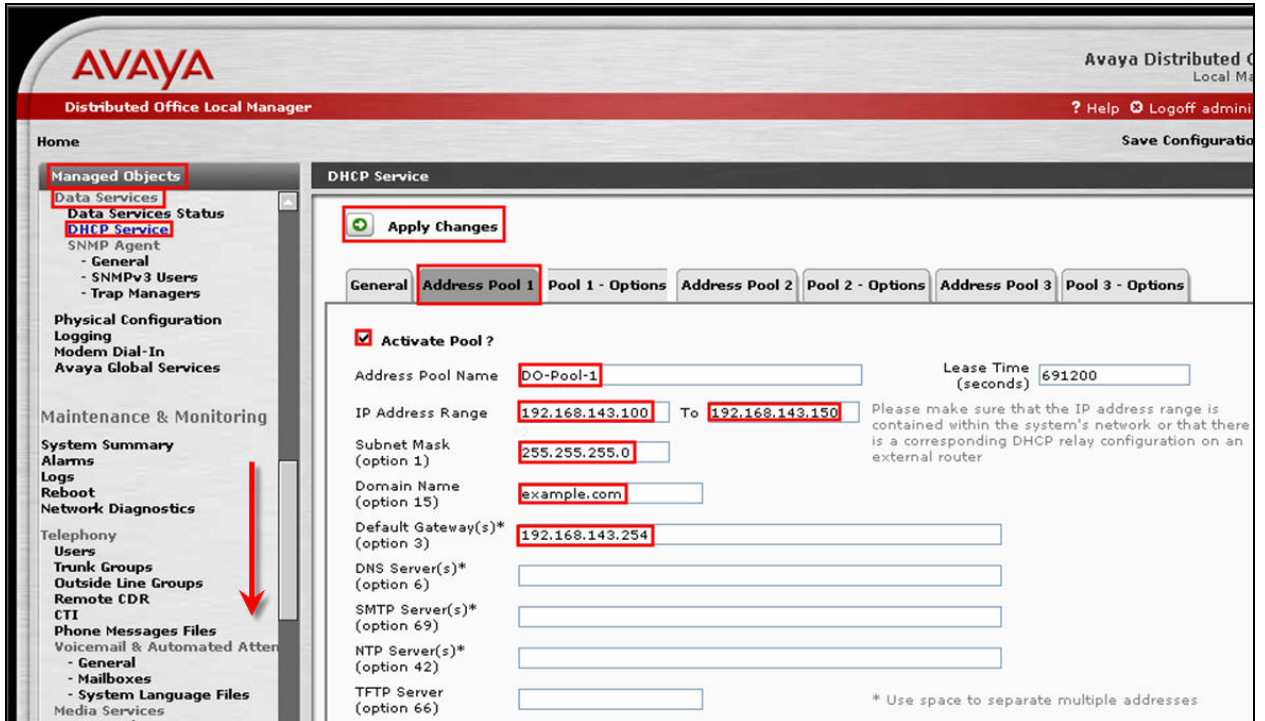
Step	Description
3.	Navigate to the Station tab by clicking Station . Use the drop-down list for Set Type to select “4621SW-H323” and use the drop-down list for Coverage to select “VoiceMail”. The remaining parameters were left to default values. Click Apply Changes .



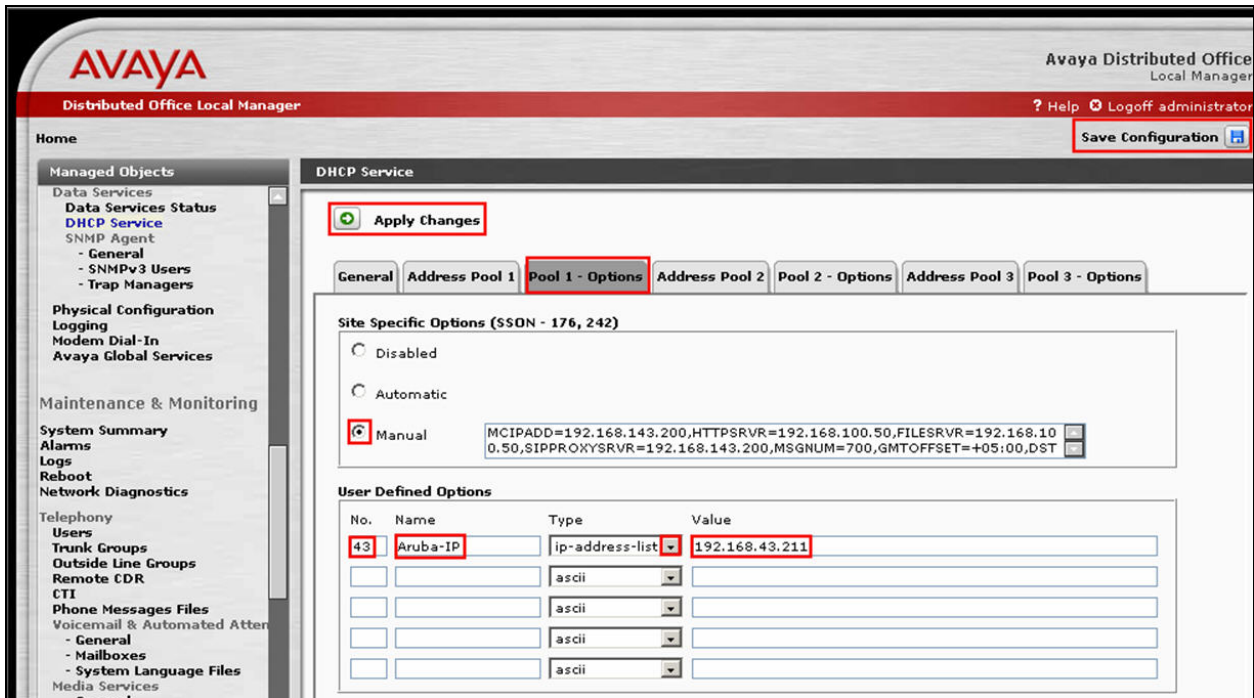
Step	Description
4.	<p>Navigate to the Buttons tab by clicking Buttons. Use the drop list for Button Assignment 1 – 3 and select “Call Appearance”. The remaining parameters were left to default values. Click Apply Changes and then click Save Configuration. Note the user may receive a message indicating the system is busy if Save Configuration is clicked immediately after Apply Changes. If that occurs, simply click Save Configuration after one or two minutes. Repeat this process for each Avaya 3631 Wireless Telephone.</p>



Step	Description
5.	<p>Navigate to the DHCP Service frame by clicking Managed Objects→Data Services→ DHCP Service. The user will need to use the scroll bar to navigate to this option. Then click the Address Pool 1 tab. Enter the information displayed below and then click Apply Changes. Check the Activate Pool? check box. Address Pool Name can be any descriptive text. IP Address Range and To were configured to support a DHCP range from “192.168.143.100” through “192.168.143.150”. Domain Name was configured to “example.com”. Default Gateways(s)* was set to “192.168.143.254”. Note the values used here are only applicable to the sample configuration.</p>



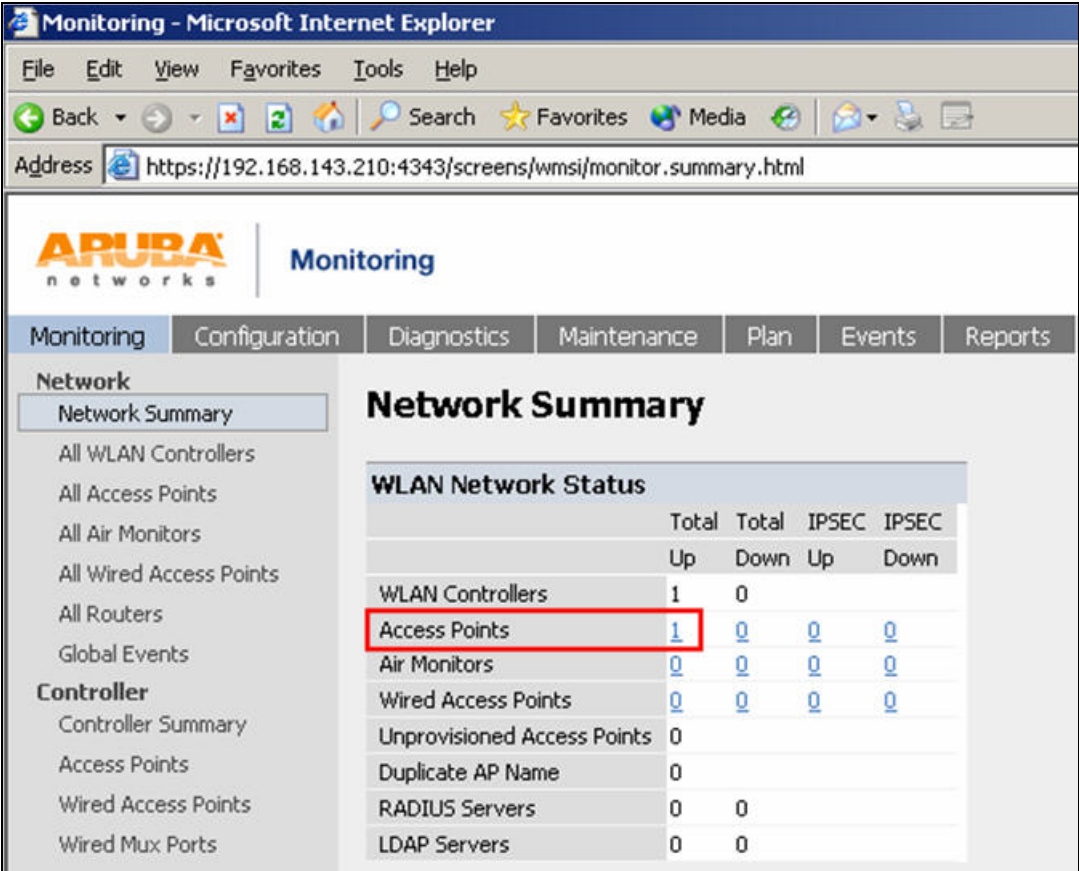
Step	Description
6.	<p>Navigate to the Pool 1 – Options tab by clicking Pool 1 – Options. In order for the Aruba access points to dynamically learn the Aruba 6000 Mobility Controller loopback IP address, DHCP option 43 needs to be configured. Click the Manual button and enter the information displayed below under User Defined Options. Click Apply Changes and then click Save Configuration. No. must be set to “43”, this is the DHCP option the Aruba access points use to obtain the IP address of the Aruba Mobility Controller. Name can be any descriptive text. Use the drop-down list for Type to select “ip-address-list”. Value is the IP address assigned to the Aruba 6000 Mobility Controller loopback interface, see Figure 1.</p>

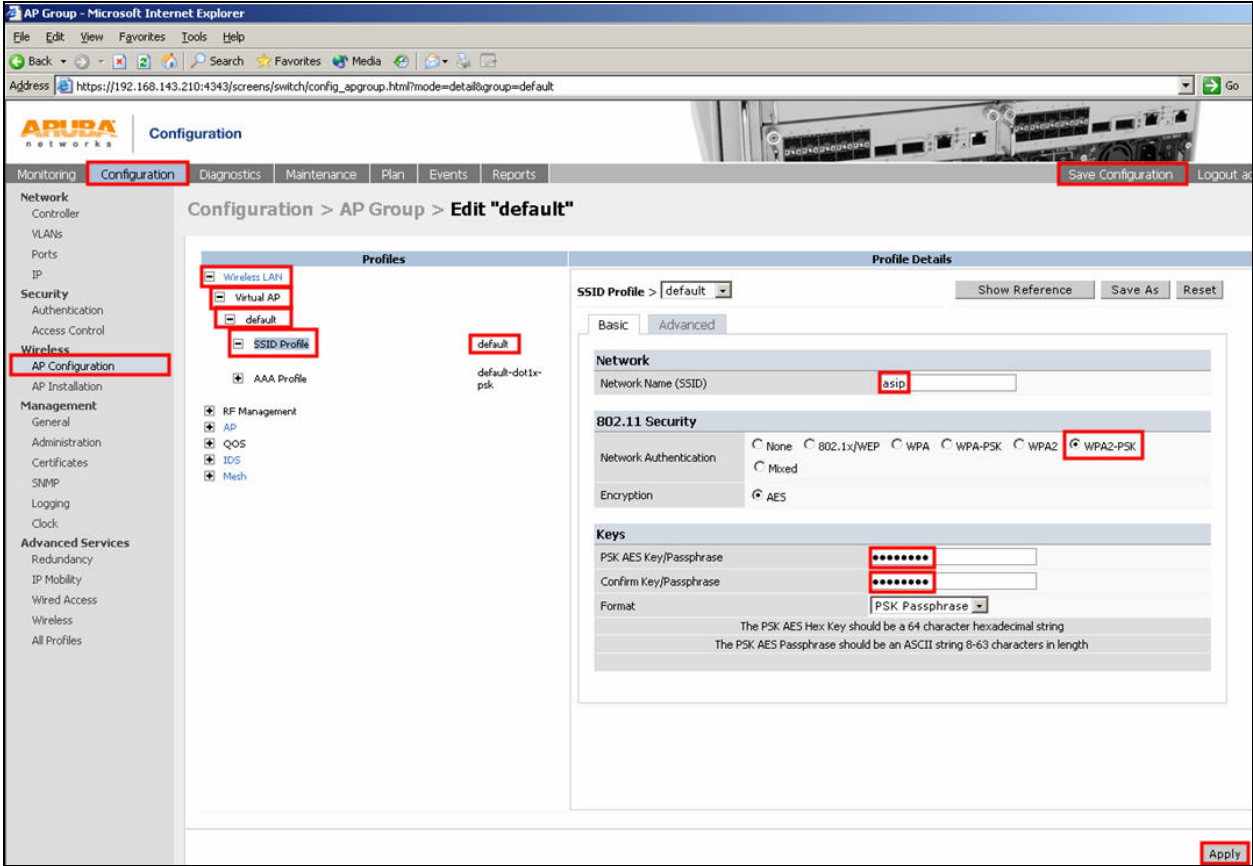


4. Aruba 6000 Mobility Controller Configuration

Step	Description
1.	<p>To perform the initial configuration on the Aruba 6000 Mobility Controller, setup a serial connection from a PC or laptop. Setup a terminal session with the following parameters:</p> <ul style="list-style-type: none">• 9600 baud• 8 bits• no parity• 1 stop bit• No flow control <p>Log into the Aruba 6000 Mobility Controller using default credentials which can be obtained from the Aruba Networks documentation, see Section 10 [3]. Provision System name, VLAN 1 interface IP address, VLAN 1 interface subnet mask, IP Default gateway, Switch Role and confirm the US country code on the Aruba 6000 Mobility Controller. Once all the information has been configured, the system confirms the acceptance of these changes and requires a reboot.</p> <pre>Enter System name [Aruba6000]:Aruba6000 Enter VLAN 1 interface IP address [172.16.0.254]: 192.168.143.210 Enter VLAN 1 interface subnet mask [255.255.255.0]: 255.255.255.0 Enter IP Default gateway [none]: 192.168.143.254 Enter Switch Role, (master local) [master]: master This controller is restricted to Country code US for United States, please confirm (yes no)?: yes Do you wish to shutdown all the ports (yes no)? [no]: no If you accept the changes the switch will restart! Type <ctrl-P> to go back and change answer for any question Do you wish to accept the changes (yes no) yes System will now restart!</pre>

Step	Description
2.	<p>After the Aruba 6000 Mobility Controller has rebooted, the switch port and loopback can be configured as shown below.</p> <pre>(Aruba6000) #configure t Enter Configuration commands, one per line. End with CNTL/Z (Aruba6000) (config) #interface loopback (Aruba6000) (config-loop)#ip address 192.168.143.211 Switch IP Address is Modified. Switch should be rebooted now (Aruba6000) (config) #interface fastethernet 3/0 (Aruba6000) (config-if)#switchport mode access (Aruba6000) (config-if)#switchport access vlan 1 (Aruba6000) (config-if)#end (Aruba6000) #write mem Saving Configuration... Configuration Saved. (Aruba6000) #reload Do you really want to reset the system(y/n): y System will now restart!</pre>

Step	Description																																																		
3.	<p>Once the Aruba 6000 Mobility Controller has rebooted, open a web browser connection to any IP of the IP addresses assigned to the Aruba 6000 Mobility Controller. In the sample network, http://192.168.143.210 was used to access the Aruba 6000 Mobility Controller web interface. Appropriate login credentials are required in order to access the web interface, refer to Section 10 [3]. Once logged on, the user is presented with the Monitoring web page. This page can be used to quickly ascertain the state of Aruba access points.</p>  <p>The screenshot shows the Aruba Monitoring web interface in Microsoft Internet Explorer. The address bar shows the URL: https://192.168.143.210:4343/screens/wmsi/monitor.summary.html. The page title is "Monitoring - Microsoft Internet Explorer". The main content area displays the "Network Summary" page. On the left, there is a navigation menu with categories "Network" and "Controller". Under "Network", "Network Summary" is selected. The main content area shows a "WLAN Network Status" table with the following data:</p> <table border="1" data-bbox="727 947 1323 1344"> <thead> <tr> <th></th> <th>Total</th> <th>Total</th> <th>IPSEC</th> <th>IPSEC</th> </tr> <tr> <th></th> <th>Up</th> <th>Down</th> <th>Up</th> <th>Down</th> </tr> </thead> <tbody> <tr> <td>WLAN Controllers</td> <td>1</td> <td>0</td> <td></td> <td></td> </tr> <tr> <td>Access Points</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Air Monitors</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Wired Access Points</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Unprovisioned Access Points</td> <td>0</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Duplicate AP Name</td> <td>0</td> <td></td> <td></td> <td></td> </tr> <tr> <td>RADIUS Servers</td> <td>0</td> <td>0</td> <td></td> <td></td> </tr> <tr> <td>LDAP Servers</td> <td>0</td> <td>0</td> <td></td> <td></td> </tr> </tbody> </table>		Total	Total	IPSEC	IPSEC		Up	Down	Up	Down	WLAN Controllers	1	0			Access Points	1	0	0	0	Air Monitors	0	0	0	0	Wired Access Points	0	0	0	0	Unprovisioned Access Points	0				Duplicate AP Name	0				RADIUS Servers	0	0			LDAP Servers	0	0		
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Step	Description
4.	<p>Navigate to the AP Group web page by clicking Configuration→AP Configuration→Wireless LAN→Virtual AP→default→SSID Profile→default. Enter the information displayed below, click Apply, and then click Save Configuration. Network Name (SSID) can be any alphanumeric string, in the sample network “asip” was used. Click the “WPA2-PSK” button, which automatically selects “AES” as the Encryption. PSK AES Key/Passphrase and Confirm Key/Passphrase must match. For complete information on all of the encryption schemas supported by the Aruba 6000 Mobility Controller and their configurations refer to Section 10 [3].</p> 

5. Avaya 3631 Wireless Telephone Configuration

The Avaya 3631 Wireless Telephone was configured using the keypad present on the telephone. For complete information on how to administer the Avaya 3631 Wireless Telephone, refer to **Section 10 [2]**.

6. Interoperability Compliance Testing

The interoperability compliance testing focused on verifying the capability of the Avaya 3631 Wireless Telephone to interoperate with Avaya Distributed Office when configured as a “4621SW-H323” set type.

Avaya’s formal testing and Declaration of Conformity is provided only on the headsets/handsets that carry the Avaya brand or logo. Avaya may conduct testing of non-Avaya headset/handset to determine interoperability with Avaya phones. However, Avaya does not conduct the testing of non-Avaya headsets/handsets for: Acoustic Pressure, Safety, Hearing Aid Compliance, EMC regulations, or any other tests to ensure conformity with safety, audio quality, long-term reliability or any regulation requirements. As a result, Avaya makes no representations whether a particular non-Avaya headset will work with Avaya’s telephones or with a different generation of the same Avaya telephone.

Since there is no industry standard for handset interfaces, different manufacturers utilize different handset/headset interfaces with their telephones. Therefore, any claim made by a headset vendor that its product is compatible with Avaya telephones does not equate to a guarantee that the headset will provide adequate safety protection or audio quality.

6.1. General Test Approach

The general test approach was to register the Avaya 3631 Wireless Telephone with Avaya Distributed Office. Calls were made between telephones and basic calling features were tested and verified to operate properly.

6.2. Test Results

The Avaya 3631 Wireless Telephone passed all test cases. The Avaya 3631 Wireless Telephone was verified to successfully register with Avaya Distributed Office as a “4621SW-H323” set type. The Avaya 3631 Wireless Telephone was verified to be capable of placing/receiving calls with proper caller ID information. Basic calling features such as hold/return from hold, transfer (attended/unattended), conference, call forwarding (on busy/unconditional/clear), multiple call appearances, voicemail and MWI were verified to operate correctly. Calls were maintained for durations lasting longer than one minute.

7. Verification Steps

The following steps can be used to ascertain the functional state of the Avaya 3631 Wireless Telephone.

- Place calls to other telephones within the network and verify two-way audio between endpoints.

- Dial into the Avaya Distributed Office Auto Attendant or voicemail and verify audio is heard, digits are properly interpreted and the Avaya 3631 Wireless Telephone can navigate the menus using the keypad present on the telephone.
- Exercise and verify proper operation of calling features such as hold/return from hold, transfer and call forwarding.

8. Support

Technical support for the Avaya 3631 Wireless Telephone and Avaya Distributed Office can be obtained from the following:

- **Phone:** 1-866-GO-AVAYA
- **Email:** support@avaya.com

9. Conclusion

These Application Notes detail the configuration process that enables interoperability between the Avaya 3631 Wireless Telephone and Avaya Distributed. These Application Notes also demonstrate the configuration that enables multiple call appearances and a voicemail box for the extension associated with the Avaya 3631 Wireless Telephone.

10. Additional References

- [1] *Avaya Distributed Office i20 Installation Quick Start*, May 2007 Issue 1, Document Number 03-602289
- [2] *Avaya 3631 Wireless Telephone Administrator Guide*, March 2007 Issue 2, Document Number 16-602203
- [3] *ArubaOS 3.2 User Guide*, September 2007, Document Number 0510339

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