This document describes the initial setup of an Alcatel-Lucent user-centric network that consists of an Alcatel-Lucent switch and Alcatel-Lucent Access Points (APs). The installation consists of the following steps:

1. Launch the WebUI or Console Setup Wizard to configure the switch.
2. Connect the switch to the wired network.
3. Configure the switch to allow APs, when installed and powered on, to be able to locate and connect to the switch. If you are configuring mesh, define the mesh cluster profile, mesh radio profile, before installing APs in a mesh networking environment.
4. Install and connect your APs to the network.

Before you begin, review the contents of your switch shipment to ensure that you have received the following items, then read the *Alcatel-Lucent Software License Agreement.*

- The Alcatel-Lucent switch with appropriate power cord and accessories
- The *AOS-W 6.4 Quick Start Guide*
- The *AOS-W Software License Agreement*

Install the Switch

The WebUI Startup Wizard allows you to configure access to the switch, install software licenses, and configure wireless local area networks (WLANs) for internal or guest users. The Startup Wizard is available the first time you connect to and log into the switch or whenever the switch is reset to its factory default configuration. The serial console setup dialog allows you to configure basic switch settings through a serial port connection to the switch. After you complete the Startup Wizard or serial console setup procedure, the switch reboots using the new configuration information you entered.

Do not connect the switch to your network when running the Setup Wizard or serial console setup dialog. The factory-default switch boots up with a default IP address and both DHCP server and spanning tree functions enabled. Once you have completed setup and rebooted the switch, you can use the switch CLI or WebUI to complete its configuration before connecting the switch to your network.

Initial Setup Using the WebUI Setup Wizard

The following browsers are officially supported for use with the AOS-W 6.4 Setup wizard and WebUI:

- Microsoft Internet Explorer
- Mozilla Firefox on Windows XP, Windows Vista, Windows 7, and MacOS
- Apple Safari on MacOS

You can launch the setup wizard using any PC or workstation that can run a supported Web browser. The PC or workstation must either be configured to obtain its IP address using DHCP, or configured to have a static IP address on the 172.16.0.0/24 subnetwork. The default IP address of the switch is 172.16.0.254. Connect a PC or workstation to a line port on the switch, then enter this IP address into a supported Web browser to launch the Setup Wizard.

To run the Setup Wizard:

1. Determine values for the required configuration settings described in Table 1.

2. Make sure that the switch is not connected to any device on your network.

3. Boot up the switch.

4. Connect your PC or workstation to a line port on the switch.

5. On your PC or workstation, open a Web browser and connect to https://172.16.0.254.

6. The switch contains a default server certificate to validate the device on the network. At the Security Alert, click **Yes** to proceed with the Setup Wizard.

NOTE

The default certificate installed in the switch does not guarantee security in production networks. Alcatel-Lucent strongly recommends that you replace the default certificate with a custom certificate issued for your site or domain by a trusted Certificate Authority. See the *AOS-W User Guide* for more information about certificates.

7. The initial window of the Mobility Switch Setup Wizard asks you to select one of the following deployment modes. Select **Standalone, Master** or **Local**, then click **Continue**.
   - **Standalone**: This is the only switch on the network.
   - **Master**: This switch will manage other switches on the network.
   - **Local**: This switch will be managed by a master switch.

8. If you selected **Standalone** or **Master** in the step above, you will be prompted to select the **Campus WLAN** deployment mode. The **Remote Access Points** deployment mode allows you to configure additional settings specific to remote APs.

9. Enter the information described in Table 1, and, if desired, the optional configuration information described in "Optional Information" on page 3.

Table 1 *Required Information for the Setup Wizard*

Requirement	Description
System Name	A user-defined name by which the switch will be referenced. You can specify a name of up to 63 characters.
Country Code	The country in which the switch will operate. The country code determines the 802.11 wireless transmission spectrum. You cannot change the country code for switches designated for certain countries, such as the U.S. or Israel. Improper country code assignment can disrupt wireless transmissions. Most countries impose penalties and sanctions for operators of wireless networks with devices set to improper country codes.
Admin Password	Password of up to 32 characters for the **admin** user to log in to the switch.
Enable Mode Password	Password of up to 15 characters for the **admin** user to access the Enable mode in the CLI.
Date and Time	You can either manually set the date, time, and GMT time zone or specify the IP address of an NTP server from which the switch will obtain its date and time settings.
Connectivity Settings	Enter the IPv4 or IPv6 switch IP address and default gateway.The gateway is usually the IP address of the interface on the upstream switch or router to which you will connect the switch. The default gateway and the VLAN 1 IP address need to be in the same network.
Authentication Settings	- If you are configuring a master or local switch that uses pre-shared key authentication, enter the pre-shared key. - If you are configuring a master switch to use certificate authentication, enter the MAC addresses of the local switches. - If you are configuring a local switch to use certificate authentication, enter the MAC address of the master switch.

Optional Information

The Setup Wizard to also allows you to:

- Create virtual local area networks (VLANs) into which wireless users are placed after authentication.
- Modify default port settings.
- Enable the Uplink firewall, and configure the following Management and Alcatel-Lucent interface types.
  - Management Interfaces: SSH, HTTPS, SNMP and DHCP.
  - Alcatel-Lucent Interfaces: RAP, VIA, VIA Mac and Site-to-Site VPN
- Install licenses for AOS-W software modules.
- Configure internal and guest WLANs.
- Specify IP address pools to define the inner IP addresses assigned to VPN clients and access points connecting to a local switch, or to a standalone or master switch with remote APs.

If you plan on adding switch licenses or configuring additional VLANs, WLANs, or port settings on your switch, make a note of the desired licenses or settings before you launch the Setup wizard.

N O T E

The optional configuration settings described in the section above cannot be configured when running initial setup on a serial port connection.

Initial Setup on a Serial Port Connection

The serial port is located on the front panel of the switch. You can start the Initial Setup dialog when you connect a terminal, PC or workstation running a terminal emulation program to the serial port on the switch.

The serial port connection only allows you to configure the basic configuration required to connect the switch to the network. The recommended browser-based Setup Wizard allows you to also install software licenses and configure internal and guest WLANs (see ""Initial Setup Using the WebUI Setup Wizard" on page 1). If you use the Initial Setup dialog to configure the switch, the browser-based Setup Wizard will not be available unless you reset the switch to its factory default configuration.

To run the Initial Setup dialog from a serial connection:

1. Configure your terminal or terminal emulation program to use the following communication settings:

Table 2 *Terminal Communication Settings*

Baud Rate	Data Bits	Parity	Stop Bits	Flow Control
9600	8	None	1	None

2. Connect your terminal or PC/workstation to the serial port on the switch using an RS-232 serial cable. All accessory kits shipped with Alcatel-Lucent switches contain an RJ-45 cable and DB-9 to RJ-45 adapter. You may need to provide a USB adapter to connect the serial cable to your PC.

3. Boot up the Alcatel-Lucent switch. After the switch has booted up, you should see a screen similar to the following:

Figure 1 *Initial Setup for Serial Port Connection*

```
****************** Welcome to the Alcatel-Lucent 7210 setup dialog ******************
This dialog will help you to set the basic configuration for the switch.
These settings, except for the Country Code, can later be changed from the
Command Line Interface or Graphical User Interface.

Commands: <Enter> Submit input or use [default value], <ctrl-I> Help
<ctrl-B> Back, <ctrl-F> Forward, <ctrl-A> Line begin, <ctrl-E> Line end
<ctrl-D> Delete, <BackSpace> Delete back, <ctrl-K> Delete to end of line
<ctrl-P> Previous question <ctrl-X> Restart beginning
```

4. The Serial Port Configuration Dialog displays the configuration prompts described in Table 3. The prompts may vary, depending upon the switch role you choose. Enter the required information at each prompt, then press **Enter** to continue to the next question.

Table 3 *Serial Console Configuration Dialog*

Console Prompt	Description
Enter System Name	Enter a name for the switch, or press **Enter** to use the default system name. You can specify a name of up to 63 characters.
Enter Switch Role, (master|local|standalone)	Specify one of the following switch roles: • **Master**: This switch manages other switches on the network. You are prompted to specify the type of authentication to be used by the master switch. If you are configuring a master switch that uses pre-shared key authentication to communicate with local switches, enter the pre-shared key. If you are configuring a master switch to use certificate authentication, specify the MAC addresses of the local switches. • **Local**: This switch will be managed by a master switch.You are prompted to specify the type of authentication to be used by the switch. If you are configuring a local switch to use pre-shared key authentication to communicate with the master switch, enter the IP address of the master switch and the pre-shared key. If you are configuring a local switch to use certificate authentication, specify the MAC addresses of the master switch. • **Standalone**: This is the only switch on your network.
Enter VLAN 1 interface IP address	The switch takes its IP address from VLAN 1 and uses this IP address to communicate with other switches and with APs. Enter an IPv4 VLAN 1 interface IP address, or press **Enter** without specifying an IP address to use the default address 172.16.0.254.
Enter VLAN 1 interface subnet mask	Enter an IPv4 VLAN 1 interface IP subnet mask, or press **Enter** without specifying an IP address to use the default address 255.255.255.0.
Enter IP Default gateway	This is usually the IP address of the interface on the upstream switch or router to which you will connect the switch. The default gateway and the VLAN 1 IP address need to be in the same network. Enter an IPv4 gateway IP address, or press Enter to continue without specifying an IP gateway.
Do you wish to configure an IPv6 address on vlan 1 (yes|no) [yes]:	Enter **yes** to configure an IPv6 address on the VLAN 1 interface. If you enter **no**, you will not be able to configure an IPv6 address on VLAN 1.
Enter the VLAN 1 interface IPv6 address [2000::1]:	The switch takes its IP address from VLAN 1 and uses this IP address to communicate with other switches and with APs. Supported subnets are: Global Unicast: 2000::/3, Unique local unicast: fc00::/7 Enter an IPv6 VLAN 1 interface IP address, or press **Enter** without specifying an IP address to use the default address 2000::1.

Table 3 *Serial Console Configuration Dialog (Continued)*

Console Prompt	Description
Enter VLAN 1 interface IPv6 prefix length [64]:	Enter a value from 0 to 128 to define an IPv6 VLAN 1 interface IP prefix length, or press **Enter** without specifying a prefix length to use the default value of 64.
Enter IPv6 default gateway [none]:	This optional value is usually the IP address of the interface on the upstream switch or router to which you will connect the switch. The default gateway and the VLAN 1 IP address need to be in the same network. Enter an IPv6 gateway IP address to configure this setting, or press **Enter** to continue without specifying an IP gateway.
(For US switches only) This switch is restricted to Country code US for United States, please confirm (yes|no)	If your switch has a country code that restricts its usage, enter **yes** to confirm this code.
Enter Time Zone	Enter the time zone for the switch, or press **Enter** to select the default time zone.
Enter Time in UTC	Enter the current time in UTC format, or press **Enter** to select the default time.
Enter Date (MM/DD/YYYY)	Enter the current date, or press **Enter** to select the default date.
Enter Password for admin login (up to 32 chars)	Enter a password to allow the admin user to login to the switch WebUI, CLI and console interfaces. This password can be up to 32 alphanumeric characters long.
Enter Password for enable mode (up to 15 chars	Enter a password for the admin user to access Enable mode in the switch WebUI, CLI and console interfaces. This password can be up to 15 alphanumeric characters.
Do you wish to shutdown all the ports (yes|no)? [no]	Enter yes to shut down all ethernet ports on the switch, or press Enter to allow all ports to remain active.

5. At the end of the Initial Setup, you are asked to review and confirm your configuration changes. Enter **y** to accept the changes. The switch reboots.

> **NOTE**
> If you want to complete optional configuration options (e.g. disabling spanning tree or installing software licenses) before connecting the switch to the network, refer to the *AOS-W User Guide* for additional information on switch configuration.

Connect the Switch to the Wired Network

Once switch setup is complete, connect a port on the switch to the appropriately-configured port on a Layer-2 switch or router. Make sure that you have the correct cables and that the port LEDs indicate proper connections. Refer to the *Installation Guide* for your Alcatel-Lucent switch for port LED and cable descriptions.

Configure the Switch to Support APs

Before you install APs in a network environment, you must ensure that the APs will be able to locate and connect to the switch when powered on. Specifically, you need to ensure the following:

- When connected to the network, each AP is assigned a valid IP address
- APs are able to locate the switch

Each Alcatel-Lucent AP requires a unique IP address on a subnetwork that has connectivity to a switch. Alcatel-Lucent recommends using the Dynamic Host Configuration Protocol (DHCP) to provide IP addresses for APs; the DHCP server can be an existing network server or an Alcatel-Lucent switch configured as a DHCP server.

If an AP is on the same subnetwork as the master switch, you can configure the switch as a DHCP server to assign an IP address to the AP. The switch must be the only DHCP server for this subnetwork.

Enable DHCP Server Capability

Use the following procedure to use the switch WebUI to enable DHCP server capability.

1. Enter the IP address of the switch in the URL of a browser window to access the switch WebUI.
2. At the WebUI login page, enter the **admin** user name and the password you entered during the Initial Setup.
3. Navigate to the **Configuration > Network > IP > DHCP Server** page.
4. Select the **Enable DHCP Server** checkbox.
5. In the **Pool Configuration** section, click **Add**.
6. Enter information about the subnetwork for which IP addresses are to be assigned. Click **Done**.
7. If there are addresses that should not be assigned in the subnetwork:
   a. Click **Add** in the **Excluded Address Range** section.
   b. Enter the address range in the **Add Excluded Address** section.
   c. Click **Done**.
8. Click **Save Configuration** at the top of the page to save the configuration to the switch's flash memory.

Switch Discovery

An Alcatel-Lucent AP can discover the IP address of the switch in one of several ways. The Alcatel-Lucent Discovery Protocol (ADP) is enabled by default on all Alcatel-Lucent APs and switchs. If all APs and switches are connected to the same Layer-2 network, APs will use ADP to discover their switches. If the devices are on different networks, you must configure the AP to use a Layer-3 compatible discovery mechanism such as DNS, DHCP, or IGMP forwarding after installing the AP on the network. For details, refer to the *AOS-W 6.4 User Guide*.

With ADP, APs send out periodic multicast and broadcast queries to locate the master switch. If the APs are in the same broadcast domain as the master switch, the switch automatically responds to the APs' queries with its IP address. If the APs are not in the same broadcast domain as the master switch, you need to enable multicast on the network. If multicast is not an option, then the APs can be configured to use DNS or DHCP based provisioning to contact the switch.

Plan for a Mesh Network Environment

NOTE

The information in this section applies only if you are configuring and deploying APs in a mesh networking environment. If you are not, proceed to "Install the APs" on page 7.

Before you install APs in a mesh networking environment, you must do the following:

- Define and configure the mesh cluster profile and mesh radio profile before configuring an AP to operate as a mesh node. An AP configured for mesh is also known as a mesh node.
- Provision one of the following mesh roles on the AP:
  - Mesh portal: The gateway between the wireless mesh network and the enterprise wired LAN.

- Mesh point: APs that can provide traditional Alcatel-Lucent WLAN services (such as client connectivity, intrusion detection system (IDS) capabilities, user roles association, LAN-to-LAN bridging, and Quality of Service (QoS) for LAN-to-mesh communication) to clients on one radio and perform mesh backhaul/network connectivity on the other radio. Mesh points provides LAN-to-LAN bridging through their Ethernet interfaces. It can now provide backhaul and access BSSIDs on the same radio.

For detailed provisioning guidelines, caveats, and instructions, see the "Secure Enterprise Mesh" chapter in the *AOS-W 6.4 User Guide*.

Install the APs

Refer to the AP placement map generated by RF Plan to identify the locations in which to physically install your APs. You can either connect the AP directly to a port on the switch, or connect the AP to another switch or router that has Layer-2 or Layer-3 connectivity to the switch. If the Ethernet port on the switch is an 802.3af Power over Ethernet (PoE) port, the AP automatically uses it to power up. If a PoE port is not available, contact your Alcatel-Lucent vendor to obtain an AC adapter for the AP.

Once an AP is connected to the network and powered up, it will automatically attempt to locate the switch. You can view a list of all APs connected to the switch by accessing the **Configuration > Wireless > AP Installation** page in the switch WebUI. An AP installed on the network advertises its default SSID. Wireless users can connect to this SSID, but will not have access to the network until you configure authentication policies and user roles for your wireless users. For complete details on authentication policies and user roles, refer to the *AOS-W 6.4 User Guide*.

Contacting Support

Contact Center Online	
● Main Site	http://www.alcatel-lucent.com/enterprise
● Support Site	https://service.esd.alcatel-lucent.com
● Email	esd.support@alcatel-lucent.com
Service & Support Contact Center Telephone	
● North America	1-800-995-2696
● Latin America	1-877-919-9526
● Europe	+800 00200100 (Toll Free) or 1-650-385-2193
● Asia Pacific	+65 6240 8484
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