Dell PowerConnect ArubaOS 6.0 Quick Start Guide

This document describes the initial setup of a user-centric network that consists of Dell PowerConnect controllers and Dell PowerConnect Access Points (APs). The installation consists of the following steps:

1. Use the Setup Wizard to configure the controller, install software licenses, and configure an internal and a guest WLAN—"Run the Startup Wizard" on page 1
2. Connect the controller to the wired network—"Connect the Controller to the Wired Network" on page 3
3. Verify that your APs can locate and connect to your controllers—"Verify APs are Connected to your Controller" on page 3
4. If you are configuring mesh, define the mesh cluster profile, mesh radio profile, and provision the APs as a mesh portal or mesh point when deploying APs in a mesh networking environment—"Provisioning APs for Mesh" on page 4

Note: You must provision and configure the mesh portals on your network *before* you add any mesh points.

5. Connect your APs to the network—"Installing your APs" on page 5

Run the Startup Wizard

The WebUI Startup Wizard allows you to configure access to the controller, 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 controller or whenever the controller is reset to its factory default configuration. After you complete the wizard, the controller reboots using the new configuration information you entered.

Note: Do *not* connect the controller to your network when running the Setup Wizard. The factory-default controller boots up with a default IP address and both DHCP server and spanning tree functions are enabled. Once you have completed the Setup Wizard and rebooted the controller, you can use either the CLI or WebUI for further configuration before connecting the controller to your network.

Required Information

Table 1 lists the basic information that is *required* for the Setup Wizard

Table 1 *Setup Wizard Definitions.*

Requirement	Description
System Name	A user-defined name by which the Controller will be referenced. You can specify a name of up to 63 characters.
Country Code	The country in which the controller will operate. The country code determines the 802.11 wireless transmission spectrum. **NOTE:** You cannot change the country code for controllers 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 controller.

Requirement	Description
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 controller will obtain its date and time settings.
Controller Mode	• Standalone: If this is the only controller on the network. • Master: If this controller will manage other controllers on the network. You are prompted for a key that will be used by all controllers on the network. • Local: If this controller will be managed by a master controller. You are prompted for a key that will be used by all controllers on the network. (You need to provide the IP address of the master controller.)
VLAN 1	The controller takes its IP address from VLAN 1. The controller uses the configured IP address to communicate with other controllers and with APs.
Default Gateway	This is usually the IP address of the interface on the upstream switch or router to which you will connect the controller. The default gateway and the VLAN 1 IP address need to be in the same network.

Note: These configurations are not available if you use a serial port connection to the controller to run an initial setup. See "Serial Port Connection" on page 3.

Optional Information

The Setup Wizard also allows you to:

- Create virtual local area networks (VLANs) into which wireless users are placed after authentication
- Modify default port settings
- Install licenses for ArubaOS software modules
- Configure internal and guest WLANs

Running the Setup Wizard

The default IP address of the controller is 172.16.0.254. When you connect a PC or workstation to a line port on the controller, you can connect to this IP address through a Web browser to run the Setup Wizard.

You can use any PC or workstation on which you can run a Web browser. The system 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.

To run the Setup Wizard:

1. Make sure that the controller is not connected to any device on your network.
2. Boot up the Dell controller.
3. Connect your PC or workstation to a line port on the controller.
4. On your PC or workstation, open a Web browser and connect to https://172.16.0.254.
5. The controller contains a default server certificate. At the Security Alert, click **Yes** to proceed with the Setup Wizard.

Note: A digital certificate is a way to validate a device on the network. The default certificate installed in the controller does not guarantee security in production networks. Dell 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 *Dell PowerConnect ArubaOS 6.0 User Guide* for more information about certificates.

6. Enter the information described in Table 1.
7. Click **Continue** to install the software licenses on the controller.

Serial Port Connection

The serial port is located on the front panel of the controller. When you connect a terminal or PC/workstation running a terminal emulation program to the serial port on the controller, you enter the Initial Setup dialog.

Note: The serial port connection allows you to make the basic configurations required to connect the controller to the network. The browser-based Setup Wizard allows you to also install software licenses and configure internal and guest WLANs (see "Run the Startup Wizard" on page 1). If you use the Initial Setup dialog to configure the controller, the Setup Wizard will not be available unless you reset the controller 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:

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 controller using an RS-232 serial cable.

   All accessory kits shipped with controllers contain an RJ-45 cable and DB-9 to RJ-45 adapters. You may need to provide a USB adapter to connect the serial cable to your PC.

3. Power on the controller. The Welcome screen echos the controller's self-test and prompts you for initial setup information (see Table 1).
4. At the end of the Initial Setup, review and confirm your configuration changes. Enter **y** to accept the changes and reboot the controller.

Note: There are optional configurations you may want to complete before you connect the controller to your network, for example, disabling spanning tree. In addition, you should set the system clock and install software licenses before connecting to the network. For more information, see "Deploying a Basic User-Centric Network" in the *Dell PowerConnect ArubaOS 6.0 User Guide*.

Connect the Controller to the Wired Network

Connect a port on the controller 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 controller for port LED and cable descriptions.

Verify APs are Connected to your Controller

Before you install APs in a network environment, you must ensure that the APs are able to locate and connect to the controller after power on. Specifically, you need to ensure that:

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

IP Addresses for APs

Each AP requires a unique IP address on a subnetwork that has connectivity to a controller. Dell 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 controller configured as a DHCP server.

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

Enable DHCP from the WebUI

1. Enter the IP address of the controller in the URL of a browser window.
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 this configuration to the controller's flash memory.

Controller Discovery

An AP can discover the IP address of the controller in one of several ways. The Discovery Protocol (DP)is enabled by default on all APs and controllers. To use the Discovery Protocol, all APs and controllers must be connected to the same Layer-2 network.

Note: If the devices are on different networks, a Layer-3 compatible discovery mechanism, such as DNS, DHCP, or IGMP forwarding, must be used instead. See "Deploying a Basic User-Centric Network" in the *Dell PowerConnect ArubaOS 6.0 User Guide* for information.

With DP, APs send out periodic multicast and broadcast queries to locate the master controller. If the APs are in the same broadcast domain as the master controller, the controller automatically responds to the APs' queries with its IP address. If the APs are not in the same broadcast domain as the master controller, you need to enable multicast on the network — see "Deploying a Basic User-Centric Network" in the *Dell PowerConnect ArubaOS 6.0 User Guide* for information. If multicast is not an option, then the APs can be configured to use DNS or DHCP based provisioning to contact the controller.

Provisioning APs for Mesh

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 "Installing your APs" on page 5.

Before you install your APs in a mesh networking environment, 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 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, refer to the "Secure Enterprise Mesh" chapter in the *Dell PowerConnect ArubaOS 6.0 User Guide*.

Installing your APs

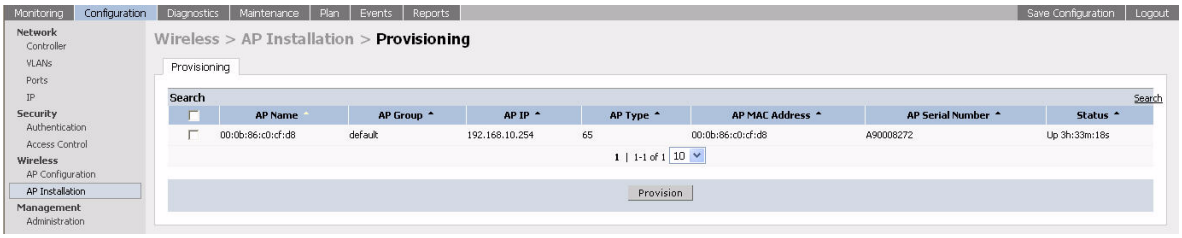
Use the AP placement map generated by RF Plan to install APs. You can either connect the AP directly to a port on the controller, or connect the AP to another switch or router that has Layer-2 or Layer-3 connectivity to the controller.

If the Ethernet port on the controller is an 802.3af Power over Ethernet (PoE) port, the AP automatically uses it to power up. If a PoE port is not available, you need to obtain an AC adapter for your AP . For more information, see the *Installation Guide* for the specific AP.

Once an AP is connected to the network and powered up, it attempts to locate the controller using the Discovery Protocol.

On the controller, you can view the APs that have connected to the controller in the WebUI. Navigate to the **Configuration > Wireless > AP Installation** page.

Figure 1 *APs Connected to Controller*



After you have installed your basic network, the APs by default advertises **aruba-ap** SSID. Wireless users can connect to this SSID but because you have not yet configured authentication. The default policies and user roles do not allow wireless users to have access to network.

Chapter 5, "Configuring Access Points" in the *Dell PowerConnect ArubaOS 6.0 User Guide* describes how to configure APs. See the other section and chapters in the *Dell PowerConnect ArubaOS 6.0 User Guide* for more information on configuring and using features of the Dell user-centric network.

Contacting Support

Web Site Support	
Main Site	http://www.dell.com
Support Site	http://www.support.dell.com
Documentation Site	http://www.support.dell.com/manuals

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