Ruckus Wireless™ SmartZone™ 100

Getting Started Guide for SmartZone 3.4.1.1

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Contents

About This Guide

Document Conventions 6
Related Documentation 6
Documentation Feedback 7

1 Preparing to Set Up the Controller

Unpacking the Controller 8
Verifying the Package Contents 8
Rack Mount Kit Contents 9
Before You Begin 10
Prepare the Required Hardware and Tools 10
Determine Which Controller SKU You Have 11
Get to Know the Physical Features of the Controller 12

2 Mounting and Powering the Controller

Before You Begin 16
What You Will Need 16
Mounting the Controller 17
Powering On the Controller 22

3 Preparing the Interface Settings and Administrative Computer

Preparing the Controller's Interface Settings to Use 24
Preparing the Administrative Computer 25

4 Running the Setup Wizard and Logging On to the Web Interface

Overview of the Setup Wizard 28
Step 1: Start the Setup Wizard 28
Step 2: Configure the Port Grouping 30
Step 3: Configure the IP Settings 31
If You Selected One Port Group 31
If You Selected Two Port Groups 33
Step 4: Configure the Cluster Settings 37
If This Controller Is Forming a New Cluster 38
If This Controller Is Joining an Existing Cluster 40

Step 5: Verify the Settings 41
Connecting the Controller to the Network 44
Logging On to the Web Interface 44

5 Ensuring That APs Can Discover the Controller on the Network
Is LWAPP2SCG Enabled on the Controller? 48
Obtaining the LWAPP2SCG Application 48
Enabling LWAPP2SCG 48
Method 1: Perform Auto Discovery of the Controller Using the SmartLicense Server 49
Method 2: Perform Auto Discovery on Same Subnet, then Transfer the AP to Intended Subnet 50
Method 3: Register the Controller with the DNS Server 50
Method 4: Configure DHCP Option 43 on the DHCP Server 53
Method 5: Manually Configure the Controller Address on the AP's Web Interface 56
What to Do Next 57

Index

About This Guide

This *SmartZone™ 100 Getting Started Guide for* SmartZone 3.4.1 provides information on how to set up the SmartZone 100 (SZ-100) appliance on the network. Topics covered in this guide include mounting, installation, and basic configuration.

This guide is intended for use by those responsible for installing and setting up network equipment. Consequently, it assumes a basic working knowledge of local area networking, wireless networking, and wireless devices.

NOTE If release notes are shipped with your product and the information there differs from the information in this guide, follow the instructions in the release notes.

Most user guides and release notes are available in Adobe Acrobat Reader Portable Document Format (PDF) or HTML on the Ruckus Wireless Support website at

https://support.ruckuswireless.com/documents.

Document Conventions

Table 1 and Table 2 list the text and notice conventions that are used throughout this guide.

Table 1. Text conventions

Convention	Description	Example
`monospace`	Represents information as it appears on screen	`[Device name]>`
`monospace bold`	Represents information that you enter	`[Device name]>` **`set ipaddr 10.0.0.12`**
default font bold	Keyboard keys, software buttons, and field names	On the **Start** menu, click **All Programs**.
italics	Screen or page names	Click **Advanced Settings**. The *Advanced Settings* page appears.

Table 2. Notice conventions

Notice Type	Description
NOTE	Information that describes important features or instructions
CAUTION!	Information that alerts you to potential loss of data or potential damage to an application, system, or device
WARNING!	Information that alerts you to potential personal injury

Related Documentation

In addition to this *Getting Started Guide*, each SmartZone 100 documentation set includes the following:

- *Administrator Guide*: Provides detailed information on how to configure the SZ. The Administrator Guide is available for download on the Ruckus Wireless Support website at http://support.ruckuswireless.com.
- *Online Help*: Provides instructions for performing tasks using the SZ web interface. The online help is accessible from the web interface and is searchable.
- *Release Notes*: Provide information about the current software release, including new features, enhancements, and known issues.

NOTE For a complete list of documents that accompany this release, refer to the *Release Notes*.

Documentation Feedback

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When contacting us, please include the following information:

- Document title
- Document part number (on the cover page)
- Page number (if appropriate)

For example:

- SmartZone 100 Getting Started Guide for SmartZone 3.4.1
- Part number: 800-71369-001
- Page 88

Preparing to Set Up the Controller

1

In this chapter:

- Unpacking the Controller
- Verifying the Package Contents
- Before You Begin

Unpacking the Controller

Follow these steps to unpack the controller.

1. Open the controller package, and then carefully remove the contents.
2. Return all packing materials into the shipping box, and then put the box away in a dry location.
3. Verify that all of the items listed in Verifying the Package Contents (below) are included in the package. Check each item for damage. If any item is damaged or missing, notify your authorized Ruckus Wireless sales representative immediately.

Verifying the Package Contents

A complete controller package contains all of the items listed below:

- One SmartZone 100 appliance
- One Category 6 (Cat 6) Ethernet cable (5 ft.)
- One rack mount kit (see Rack Mount Kit Contents below)
- Service Level Agreement/Limited Warranty Statement sheet
- Regulatory Statement sheet
- This *Getting Started Guide*

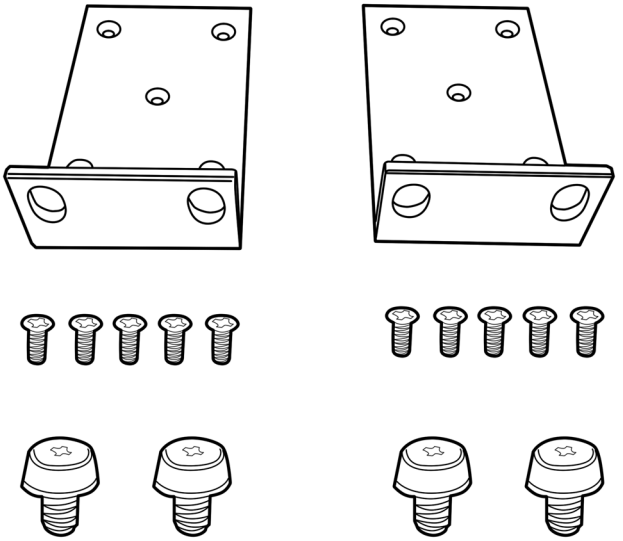
NOTE The AC power cable (part number 902-0174-XX00, where XX is the two-character country code) is not supplied with the SmartZone 100 appliance and may be ordered separately.

Rack Mount Kit Contents

The rack mount kit contains the following items:

- Mounting brackets x 2
- Rack cabinet mounting screws x 4
- Small screws x 10

Figure 1. Contents of the rack mount kit



Before You Begin

Before installing and setting up the controller, Ruckus Wireless recommends that you first complete the following pre-installation tasks.

Prepare the Required Hardware and Tools

You must supply the following tools and equipment:

- A switch or router for connecting the controller to the backbone network. If you purchased SKU P01-S124-WW10 (see Determine Which Controller SKU You Have), which has two (2) 10GBASE-X (SFP+) ports, Ruckus Wireless recommends using a switch or router that has 10GbE interfaces.
- A Phillips #1 screwdriver
- A flat head screwdriver
- An administrative computer (desktop or laptop) running Windows 8/7/Vista/XP or Mac OS X, containing a minimum RAM of 15G, with a web browser installed (Google Chrome recommended). Supported web browsers include:
  - Google Chrome 15 (and later)
  - Safari 5.1.1 (and later)
  - Mozilla Firefox 8 (and later)
  - Microsoft Internet Explorer 9.0
- A grounded electrical power strip or surge suppressor to protect from circuit overload
- A standard EIA 19-inch wide rack with an available 1RU space

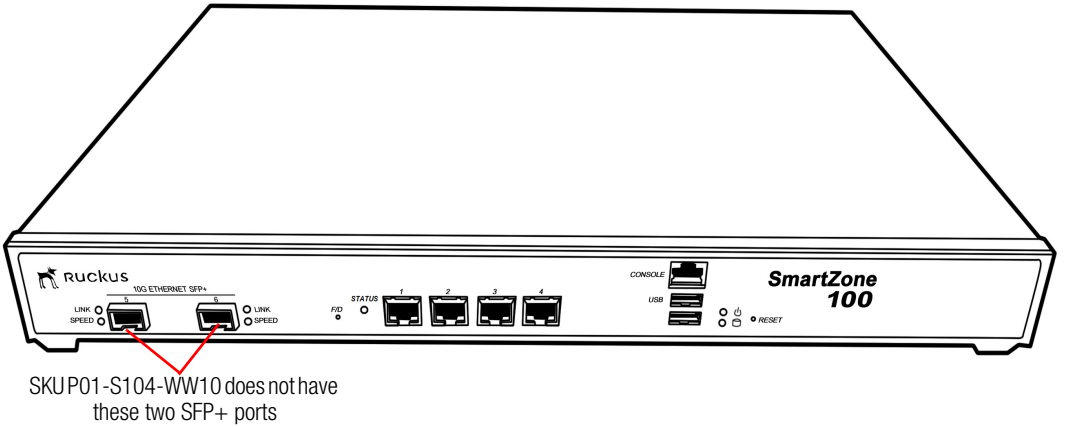
NOTE At the beginning of each procedure, this guide lists the specific tools, accessories, or equipment that you will need to complete that procedure.

Determine Which Controller SKU You Have

The SZ-100 has two stock keeping units (SKUs) available:

- SKU P01-S104-WW10 has four (4) 1000BASE-T (RJ-45) ports.
- SKU P01-S124-WW10 has four (4) 1000BASE-T (RJ-45) and two (2) 10GBASE-X (SFP+) ports

Figure 2. SKU P01-S124-WW10 has two 10GBASE-X (SFP+) ports, which SKU P01-S104-WW10 does not



SKU P01-S104-WW10 does not have these two SFP+ ports

Get to Know the Physical Features of the Controller

The following sections identify the physical features of the controller that are relevant to the installation and mounting instructions that this guide provides. Before you begin the installation process, Ruckus Wireless strongly recommends that you become familiar with these physical features.

Front Panel

Figure 3 shows the controller's front panel with the bezel installed. For descriptions of the numbered parts, refer to Table 1.

Figure 3. The front panel of the SmartZone 100 (SKU P01-S124-WW10)

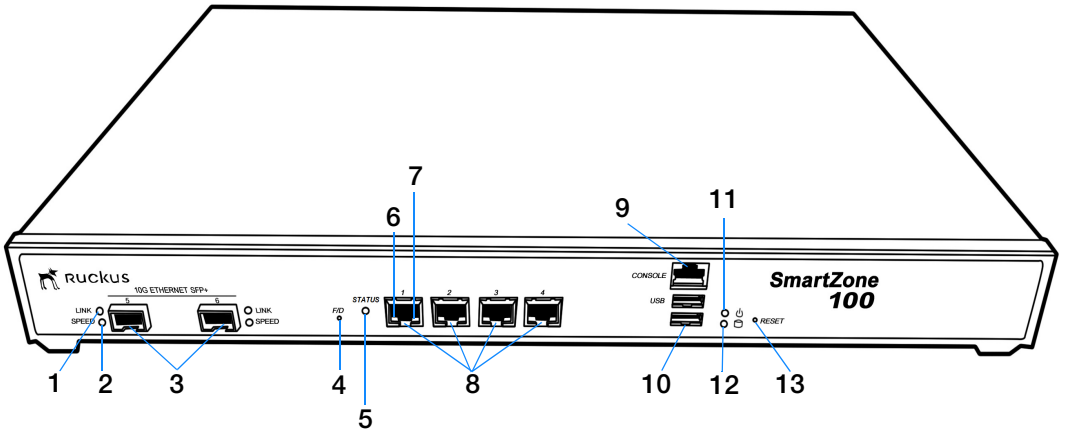


Table 1. Front panel parts

Number	Description
1	10G Ethernet link LED (see LEDs on the Front Panel)
2	10G Ethernet speed LED (see LEDs on the Front Panel)
3	Two 10GBASE-X (SFP+) ports (SKU P01-S124-WW10 only)
4	F/D (factory default) button. Press this button for at least 10 seconds to reset the controller to factory default settings.
5	Status LED (see LEDs on the Front Panel)
6	1000BASE-T link LED (see LEDs on the Front Panel)
7	1000BASE-T status LED (see LEDs on the Front Panel)
8	Four 1000BASE-T (RJ-45) ports
9	Console (RJ-45 serial) port. Use the supplied console cable (or any rollover cable, also known as Cisco™ serial RJ-45 cable) to connect this port to another device.
10	Two USB ports
11	Power LED (see LEDs on the Front Panel)
12	HDD LED (see LEDs on the Front Panel)
13	Reset button. Press for 5 seconds to restart the SZ-100.

LEDs on the Front Panel

Table 2 describes the behavior of the LEDs on the front panel.

Table 2. LED behavior

LED	Description
10G Ethernet link LED	• Green: Operational • Flashing: TX/RX data • Off: Not operational
10G Ethernet speed LED	• Blue: Operating at 10Gbps • Yellow/Orange: Operating 1Gbps • Off: Not operational
Status	• Green: System operational/no fault • Red: System fault • Blinking red: Starting up or shutting down • Slow flashing red: System shut down
1000BASE-T link LED	• Green: Operational • Flashing green: TX/RX data • Off: Not operational
1000BASE-T speed LED	• Green: 1000Mbps • Amber: 100Mbps • Off: 10Mbps
Power	• On: Power available • Off: No power
HDD	• On: Disk I/O (usually blinking) • Off: No disk I/O

Rear Panel

Figure 4 shows the rear panel of the SmartZone 100. For descriptions of the numbered parts, refer to Table 3.

Figure 4. Rear panel of the SmartZone 100

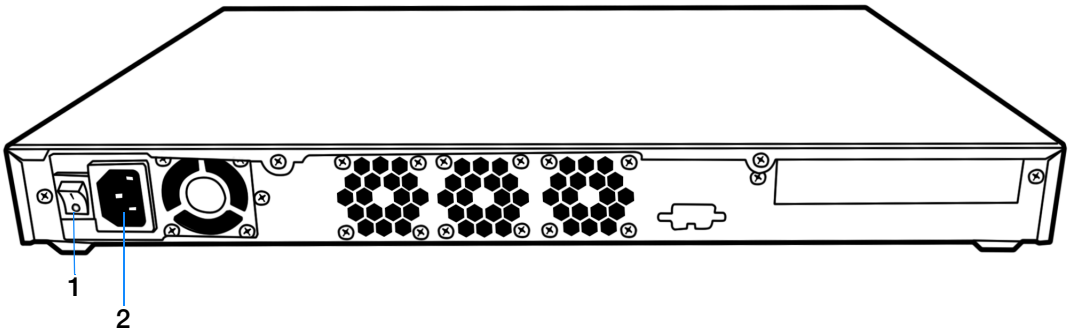


Table 3. SmartZone rear panel parts

Number	Description
1	Power switch
2	High efficiency (80+) power supply (110-220 VAC)

Mounting and Powering the Controller

2

In this chapter:

- Before You Begin
- What You Will Need
- Mounting the Controller
- Powering On the Controller

Before You Begin

Before installing the controller onto a server rack, verify that all package contents (see Unpacking the Controller) are included and ensure that you have prepared all the required hardware and tools.

What You Will Need

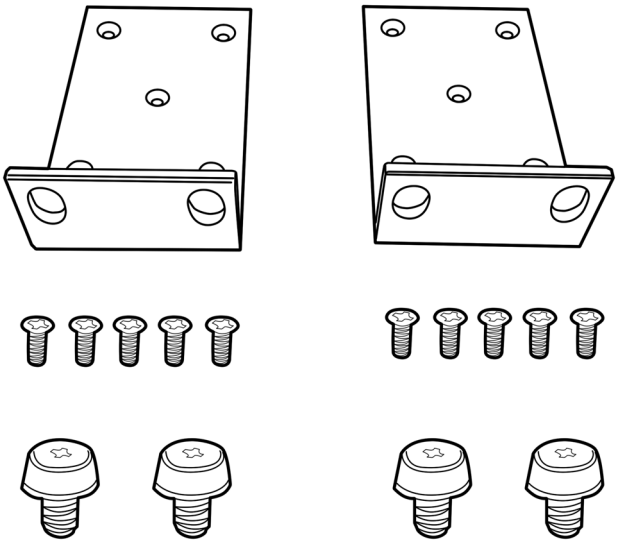
- 3/8-inch hex driver or wrench
- Phillips (crosshead) screwdriver, #1 and #2 bits
- Anti-static wrist strap and conductive foam pad (recommended)

Mounting the Controller

Follow these steps to mount the controller onto a server rack.

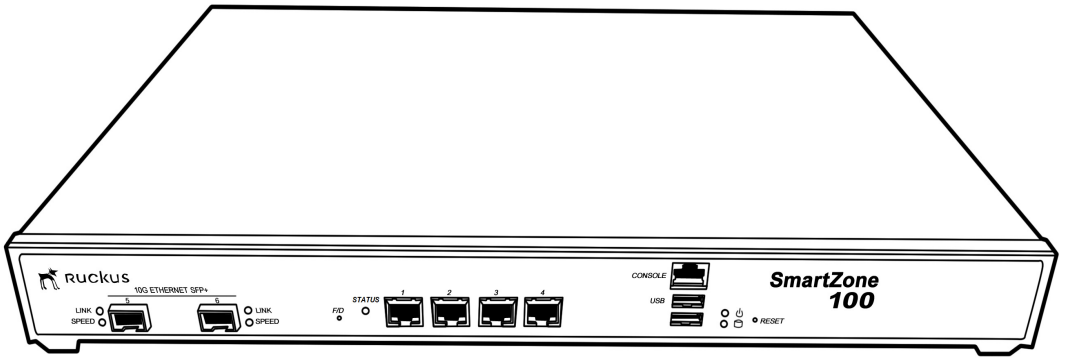
1 Unpack the rack mount kit that is included in the SZ100 package that you received. Refer to Rack Mount Kit Contents and verify that the rack mount kit contents are complete.

Figure 5. Rack mount kit contents



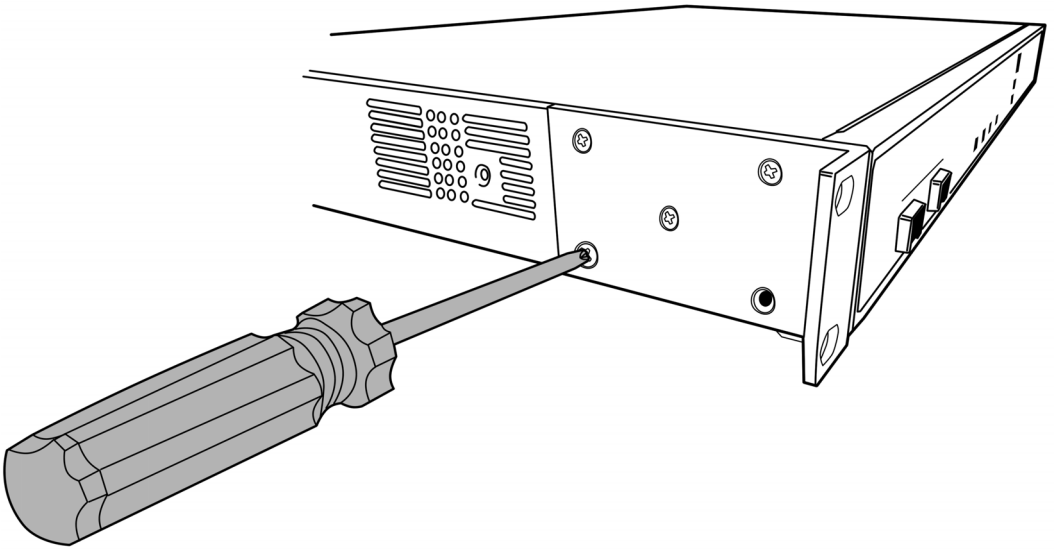
2 Find a flat and surface (such as a table) and place the SZ100 unit on top of it.

Figure 6. Place the SZ100 on a flat, dry surface



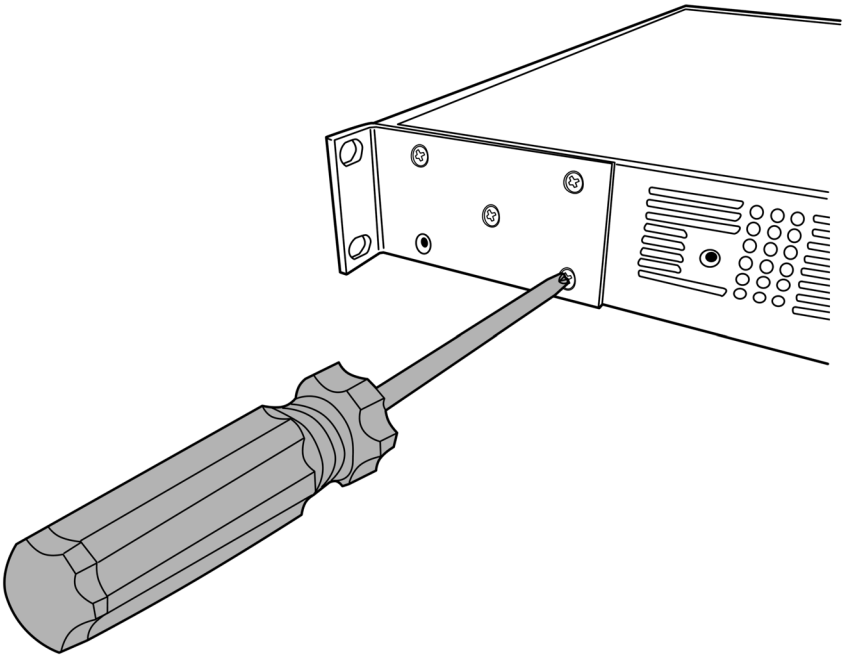
3 Take one mounting ear, and then use a Phillips to secure it to the right side of the chassis with the supplied mounting ear screws.

Figure 7. Secure the mounting ear to the right side of the chassis



4 Take the remaining mounting ear, and then repeat the above procedure on the left side of the chassis.

Figure 8. Secure the other mounting ear to the left side of the chassis



NOTE: One of the bottom screw holes on each side of the chassis is unusable – it is used to secure the chassis cover to the chassis. Therefore, you can only use up to four mounting ear screws on each side. Ten mounting ear screws are supplied. So you may have two or more mounting ear screws left (depending on how many you use) when you finish.

5 Using the supplied four rack mounting screws, secure the SZ-100 chassis to a the rack. Use two screws on each side of the chassis.

Figure 9. Use the supplied screws to secure the mounting ears to the rack

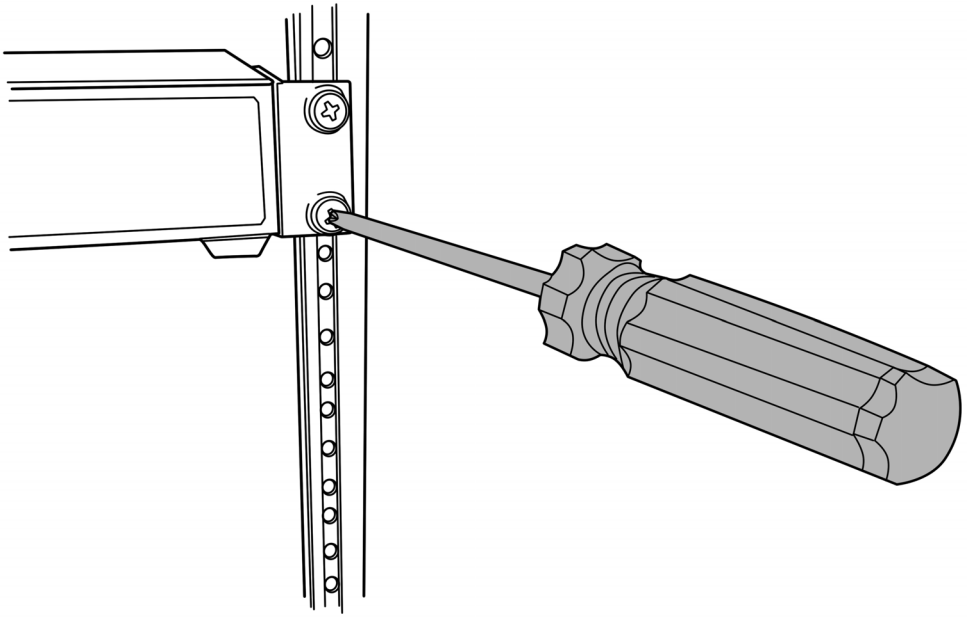
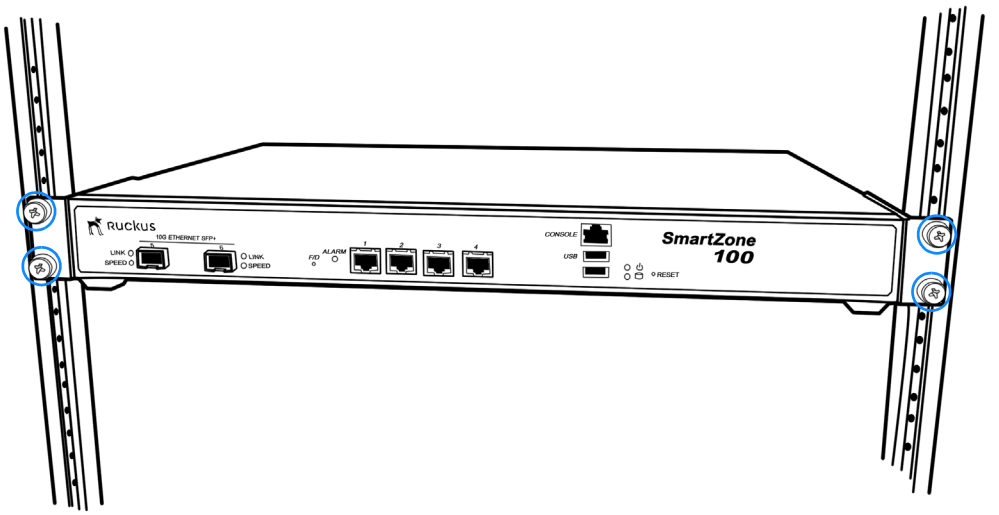


Figure 10. Use two mounting screws on each mounting ear



You have completed mounting the controller to a rack.

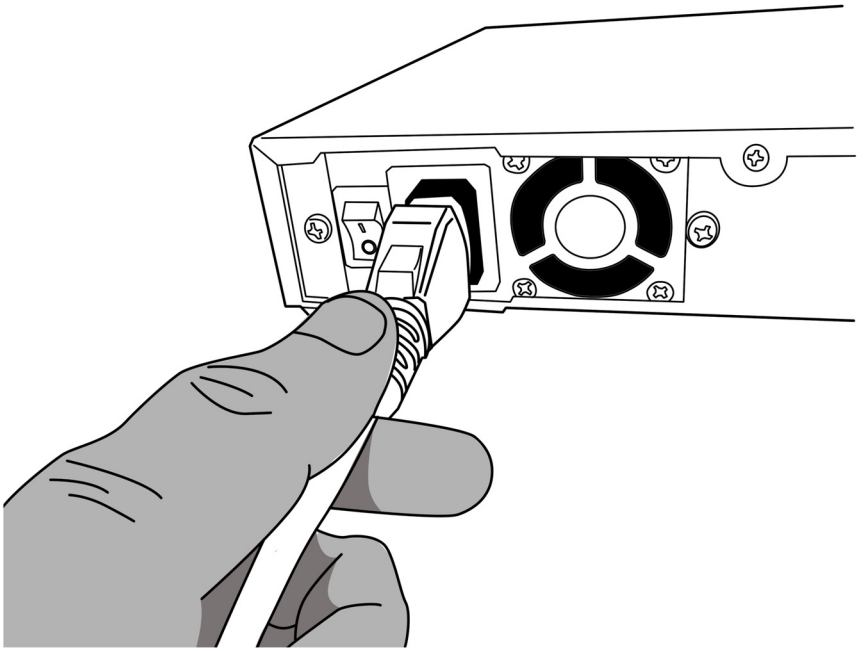
Powering On the Controller

NOTE The AC power cable (part number 902-0174-XX00, where XX is the two-character country code) is not supplied with the controller and may be ordered separately.

Follow these steps to use AC to supply power to the controller.

1 Connect the AC power cable to the power socket on the rear panel.

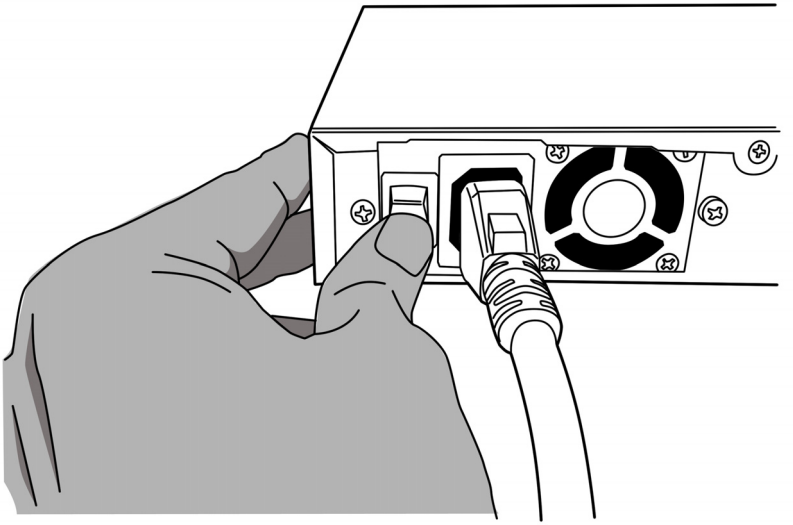
Figure 11. Connect the AC cable to the power socket



2 Connect the other end of the power cable to an electrical outlet.

3 Press the power switch on the rear panel to power on the SZ-100. The power LED on the front panel turns amber while the SZ-100 boots up, and turns off when the startup is complete.

Figure 12. Press the power switch to power on the SmartZone 100



You have completed powering on the controller.

Preparing the Interface Settings and Administrative Computer

3

In this chapter:

- Preparing the Controller's Interface Settings to Use
- Preparing the Administrative Computer

Preparing the Controller's Interface Settings to Use

The controller includes either one or two network interfaces (depending on the port group configuration that you will select – see Table 4) that need to be connected to the network for the appliance to work. If you select two-port configuration when you run the Setup Wizard later in this chapter, you will be required to assign each interface on the controller a separate set of network settings.

CAUTION! If you select the two-port configuration, you must configure these two controller interfaces to be on different subnets. Failure to do so may result in loss of access to the web interface or failure of system functions and services.

The following network settings are required:

- IP address
- Netmask
- Gateway
- Primary DNS server
- Secondary DNS server

Table 4. Controller interfaces

Interface	Description
AP/ Management (Web)	Used for AP configuration, client traffic, and management traffic. The IP address that you assign to this interface will be the IP address through which you can access the controller's web interface.
AP Tunnel	Used for tunnel traffic to and from the AP

Preparing the Administrative Computer

Follow these steps to prepare the administrative computer that you will use to run the Setup Wizard.

1 On the administrative computer, open the *Network Connections* (or *Network and Dial-up Connections*) control panel according to how your *Start* menu is set up:

- **Start** > **Settings** > **Network Connections**
- **Start** > **Control Panel** > **Network and Sharing Center** > **Change Adapter Settings**

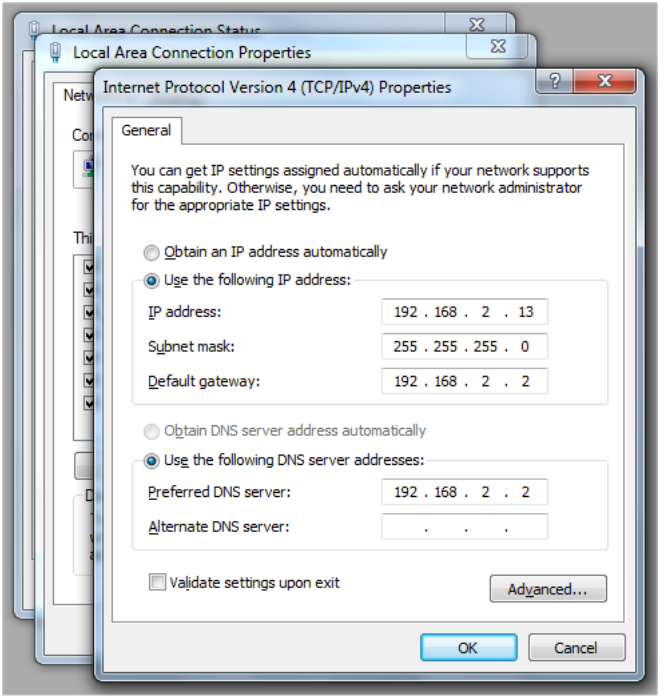
NOTE This procedure assumes Windows 7 as the operating system. Procedures for other operating systems are similar.

2 When the *Network Connections* windows appears, right click the icon for "Local Area Connection" and click **Properties**.

3 When the *Local Area Connection Properties* dialog box appears, click **Internet Protocol Version 4 (TCP/IPv4)** from the scrolling list, then and click **Properties**. The *TCP/IP Properties* dialog box appears.

NOTE Write down all of the currently active settings so you can restore your computer to its current configuration later (when this process is complete).

Figure 13. The Internet Protocol Version 4 (TCP/IP) properties dialog box



4 Select **Use the following IP address** (if it is not already active) and make the following entries:

- *IP address*: 192.168.2.13 (or any address on the 192.168.2.x network other than 192.168.2.2, which is in use by the controller)
- *Subnet mask*: 255.255.255.0
- *Default gateway*: 192.168.2.2
- *Preferred DNS server*: 192.168.2.2

5 Leave the *Alternate DNS Server* field empty.

6 Click **OK** to save your changes and exit first the *TCP/IP Properties* dialog box, then the *Local Area Connection Properties* dialog box. Your changes are put into effect immediately.

You have completed preparing the administrative computer.

Running the Setup Wizard and Logging On to the Web Interface

4

In this chapter:

- Overview of the Setup Wizard
- Step 1: Start the Setup Wizard
- Step 2: Configure the Port Grouping
- Step 3: Configure the IP Settings
- Step 4: Configure the Cluster Settings
- Step 5: Verify the Settings
- Connecting the Controller to the Network
- Logging On to the Web Interface

Overview of the Setup Wizard

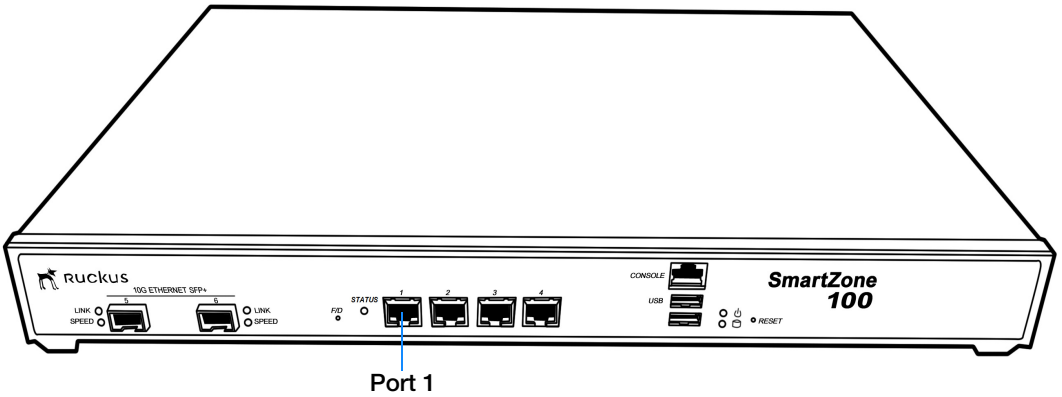
Follow these steps to run and complete the Setup Wizard.

Step 1: Start the Setup Wizard
Step 2: Configure the Port Grouping
Step 3: Configure the IP Settings
Step 4: Configure the Cluster Settings
Step 5: Verify the Settings

Step 1: Start the Setup Wizard

1 Connect one end of an Ethernet cable to Port 1 on the front panel of the controller, and then connect the other end to an Ethernet port on the administrative computer.

Figure 14. Location of Port 1 on the front panel

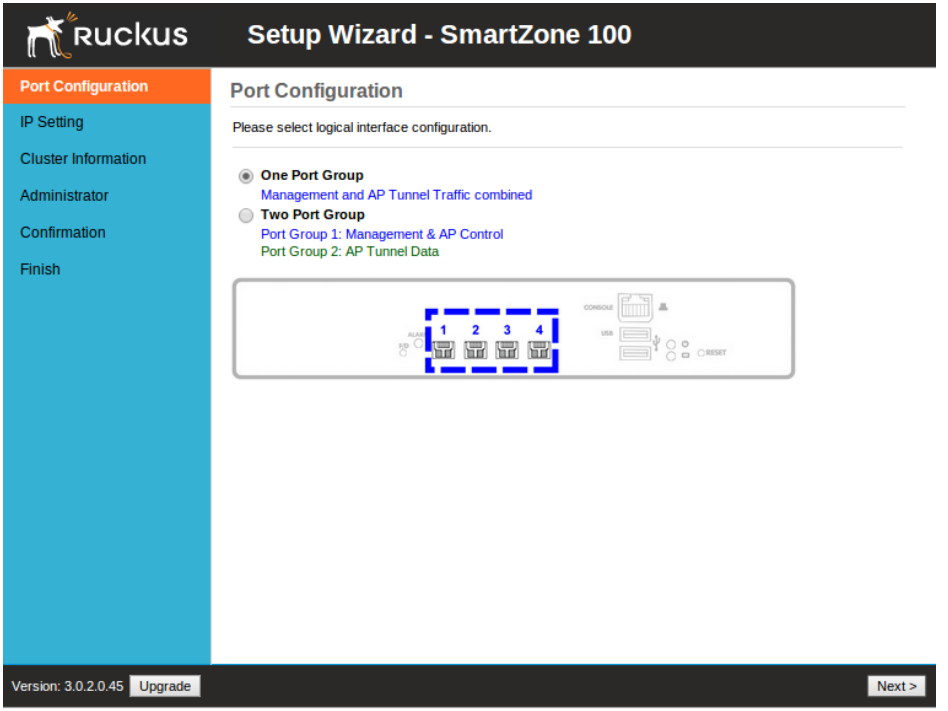


2 Start your web browser, and then enter the following in the address bar:

`http://192.168.2.2:8080`

The Setup Wizard appears, displaying the *Port Configuration* page.

Figure 15. The Port Configuration page with the One Port Group option selected

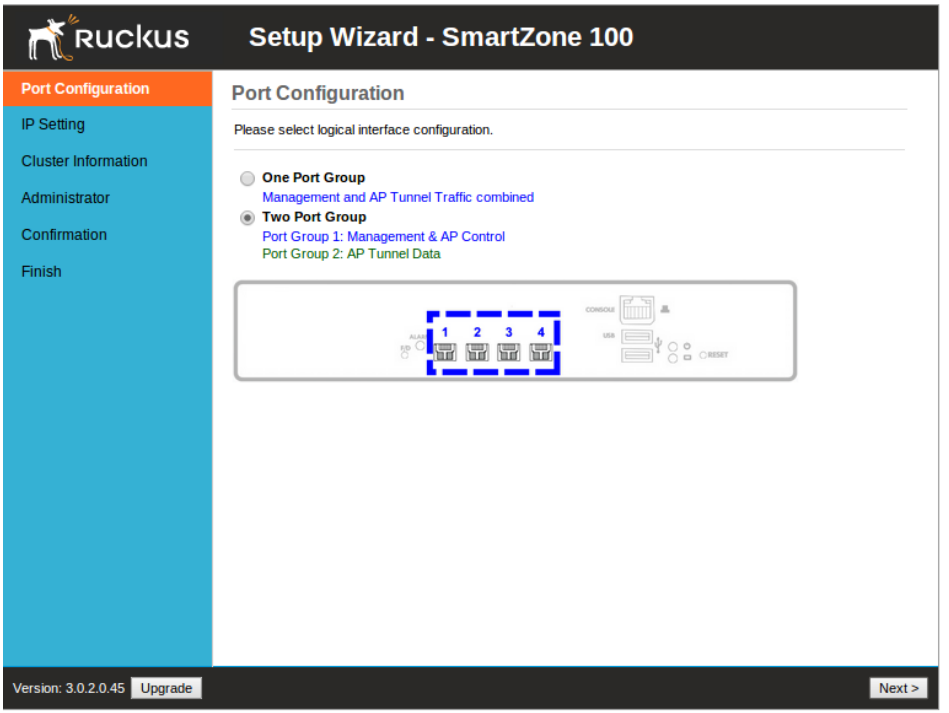


Step 2: Configure the Port Grouping

The controller offers two types of port configurations: one port group or two port groups. Select your preferred port configuration. Available options include:

- **One Port Group**: The management and AP tunnel traffic are combined on a single interface. Ruckus Wireless recommends selecting this option to simplify the setup process. If you select **One Port Group**, you will need to enter one set of IP address settings.
- **Two Port Group**: The management and AP control traffic and the AP tunnel data traffic are separated. If you select **Two Port Group**, you will need to enter two sets of IP address settings.

Figure 16. Two-port grouping separates the management and AP control traffic from AP tunnel traffic



3 Click **Next**. The next setup wizard page that appears depends on the port configuration option that you selected.

4 Go to the relevant section in Step 3: Configure the IP Settings.

Step 3: Configure the IP Settings

The steps that you will take in this procedure will depend on the port group configuration that you selected.

- If You Selected One Port Group
- If You Selected Two Port Groups

If You Selected One Port Group

1 In *IP Version Support*, select one of the following options:

- **IPv4 Only**: Click this option if you want the controller to obtain an IPv4 address from a DHCP server on the network.
- **IPv4 and IPv6**: Click this option if you want the controller to obtain both IPv4 and IPv6 addresses from DHCP and DHCPv6 servers on the network.

2 Configure the IP address settings of the *Management/AP Tunnel* interface.

a Under the *IPv4* section, click **Static**, and then enter the network settings that you want to assign to the interface.

NOTE: Although it is possible to use DHCP to assign IP address settings to the Control interface automatically, Ruckus Wireless strongly recommends assigning a static IP address to this interface.

The following network settings are required (others are optional):

- IP address
- Netmask
- Default gateway
- NAT IP

b If you clicked **IPv4 and IPv6** at the beginning of this procedure, under the *IPv6* section, click **Auto Configuration** if you want the controller to obtain its IP address from Router Advertisements (RAs) or from a DHCPv6 server on the network. If you want to manually assign the IPv6 network address, click **Static**, and then set the values for the following:

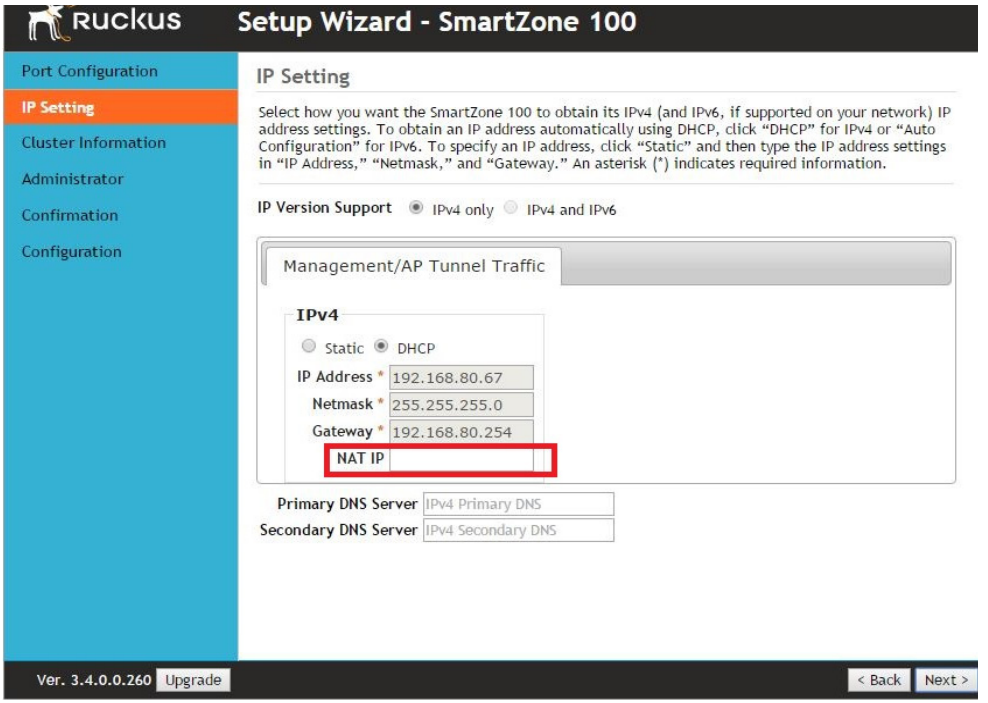
- *IP address* (IPv6): Enter an IPv6 address (global only) with a prefix length (for example, `1234::5678:0:C12/123`). Link-local addresses are unsupported.
- *Gateway*: Enter an IPv6 address (global or link-local) without a prefix length. Here are examples:
  - Global address without a prefix length: `1234::5678:0:C12`
  - Link-local address without a prefix length: `fe80::5678:0:C12`
- *NAT IP:* Enter a NAT IP address. SmartZone pushes both the private IP and the NAT IP to the AP.

c In *Primary DNS Server* and *Secondary DNS Server*, enter the DNS server address for the enabled interfaces.

3 Click **Next**. The *Cluster Information* page appears.

Go to Step 4: Configure the Cluster Settings to continue.

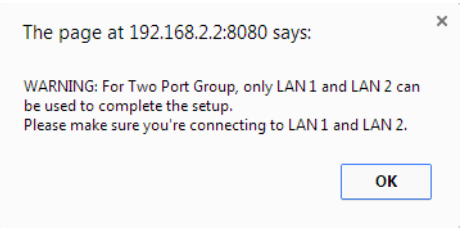
Figure 17. The IP Setting page, showing the options when IPv4 only is selected



If You Selected Two Port Groups

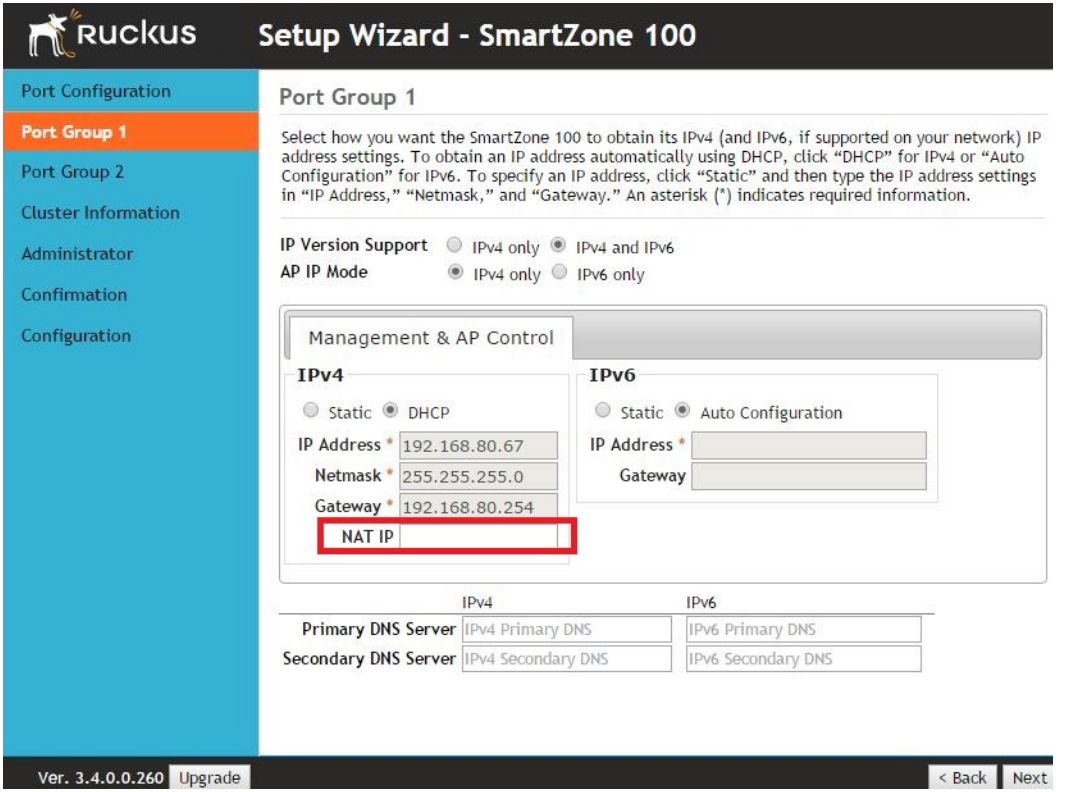
After you click **Next** on the previous setup wizard page, a warning message appears and informs you that the administrative computer must be connected to LAN 1 (Port 1) and LAN 2 (Port 2) to complete the setup process.

Figure 18. A warning message appears after you select the two port group option



1 Click **OK** on the warning message to close it. The *Port Group 1* configuration page appears.

Figure 19. The Management & AP Control tab on the Port Group 1 page



2 In *IP Version* Support, select one of the following options:

- **IPv4 Only**: Click this option if you want the controller to obtain an IPv4 address from a DHCP server on the network.
- **IPv4 and IPv6**: Click this option if you want the controller to obtain both IPv4 and IPv6 addresses from DHCP and DHCPv6 servers on the network.

3 In *Device IP Mode*, select one of the following options:

- **IPv4 Only**: Click this option if you want APs that will be managed by this controller to use IPv4 addressing mode.
- **IPv6 Only**: Click this option if you want APs that will be managed by this controller to use IPv6 addressing mode.

WARNING! You can only set the device IP mode once. After you complete the Setup Wizard, the device IP mode setting will not be configurable from either the web interface or command line interface.

4 Configure the IP address settings of the *Management & AP Control* interface.

a Under the *IPv4* section, click **Static**, and then enter the network settings that you want to assign to the interface.

NOTE: Although it is possible to use DHCP to assign IP address settings to the this interface automatically, Ruckus Wireless strongly recommends assigning a static IP address.

The following network settings are required (others are optional):

- IP address
- Netmask
- Default gateway
- NAT IP

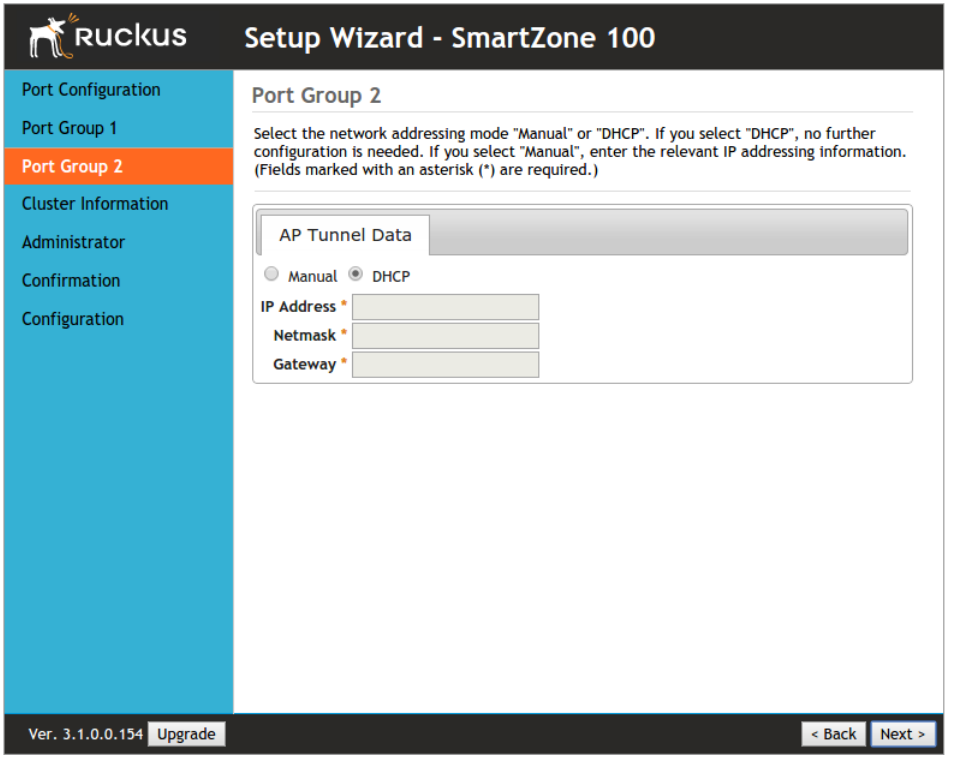
b If you clicked **IPv4 and IPv6** at the beginning of this procedure, under the *IPv6* section, click **Auto Configuration** if you want the controller to obtain its IP address from Router Advertisements (RAs) or from a DHCPv6 server on the network. If you want to manually assign the IPv6 network address, click **Static**, and then set the values for the following:

- *IP address* (IPv6): Enter an IPv6 address (global only) with a prefix length (for example, `1234::5678:0:C12/123`). Link-local addresses are unsupported.
- *Gateway*: Enter an IPv6 address (global or link-local) without a prefix length. Here are examples:
  - Global address without a prefix length: `1234::5678:0:C12`
  - Link-local address without a prefix length: `fe80::5678:0:C12`
- *NAT IP:* Enter a NAT IP address. SmartZone pushes both the private IP and the NAT IP to the AP.

c In *Primary DNS Server* and *Secondary DNS Server*, enter the DNS server address for the enabled interfaces.

5 Click **Next**. The *Port Group 2* page appears.

Figure 20. The AP Tunnel Data tab on the Port Group 2 page



6 On the *AP Tunnel Data* tab, click **Manual**, and then enter the network settings that you want to assign to the port group 2 interface, through which client traffic and configuration data will be sent and received.

The following network settings are required:

- IP address
- Netmask
- Default gateway

NOTE: Although it is possible to use DHCP to assign IP address settings to this interface automatically, Ruckus Wireless strongly recommends assigning a static IP address to this interface.

---

7 Click **Next**. The *Cluster Information* page appears.

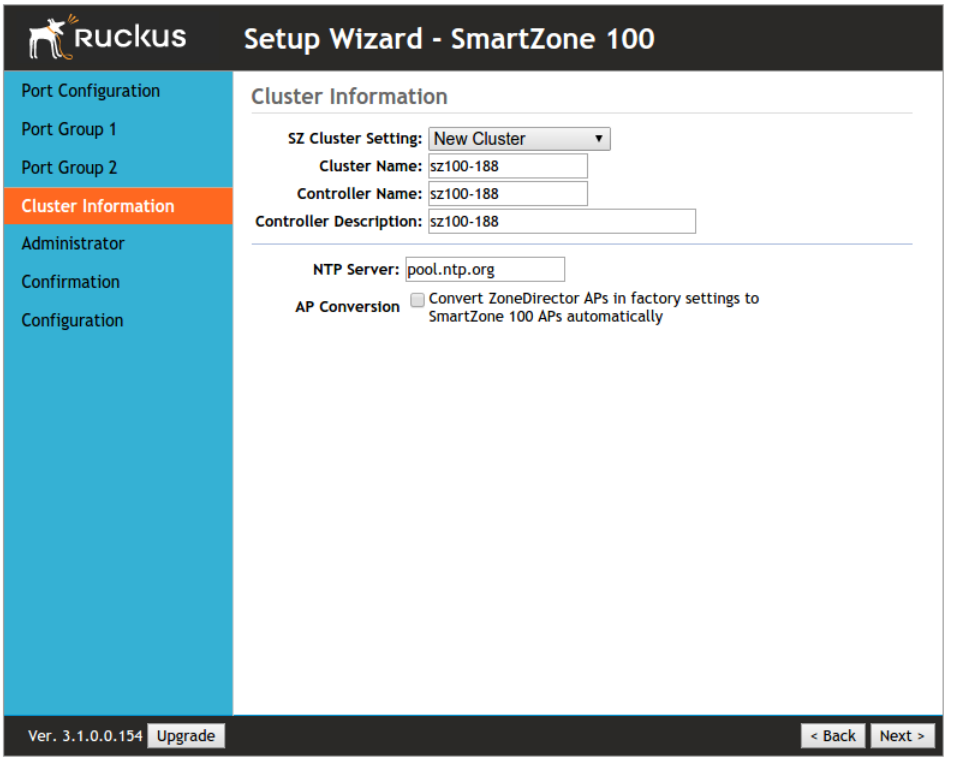
Step 4: Configure the Cluster Settings

The actions that you need to perform in this step depends on whether you are creating a new cluster (with this controller as the first node) or you are setting up this controller to join an existing cluster.

- If This Controller Is Forming a New Cluster
- If This Controller Is Joining an Existing Cluster

NOTE: A SmartZone (SZ) 100 unit can only form a cluster with other SmartZone 100 units. It cannot join a cluster of SmartCell Gateway (SCG) 200 units (and vice versa).

Figure 21. The Cluster Information page



If This Controller Is Forming a New Cluster

Follow these steps if you want to use this controller to create a new cluster.

1 On the *Cluster Information* page, configure the following settings:
   - *SZ Cluster Setting*: Select **New Cluster**.
   - *Cluster Name*: Type a name that you want to assign to this new cluster.
   - *Controller Name*: Type a name for this controller, which will become the controller in this new cluster.
   - *Controller Description*: Type a description for this controller.

2 In *NTP Server*, type the address of the NTP server from which members of the cluster will obtain and synchronize time. The default NTP server is pool.ntp.org.

3 In *AP Conversion*, select the check box if you want ZoneFlex APs that are in factory default settings to be converted to SmartZone APs automatically when they are connected to the same subnet as the controller.

CAUTION! Before continuing, verify that the cluster settings are correct. Once the cluster is created, you will be unable to edit its settings without rebuilding the cluster from scratch.

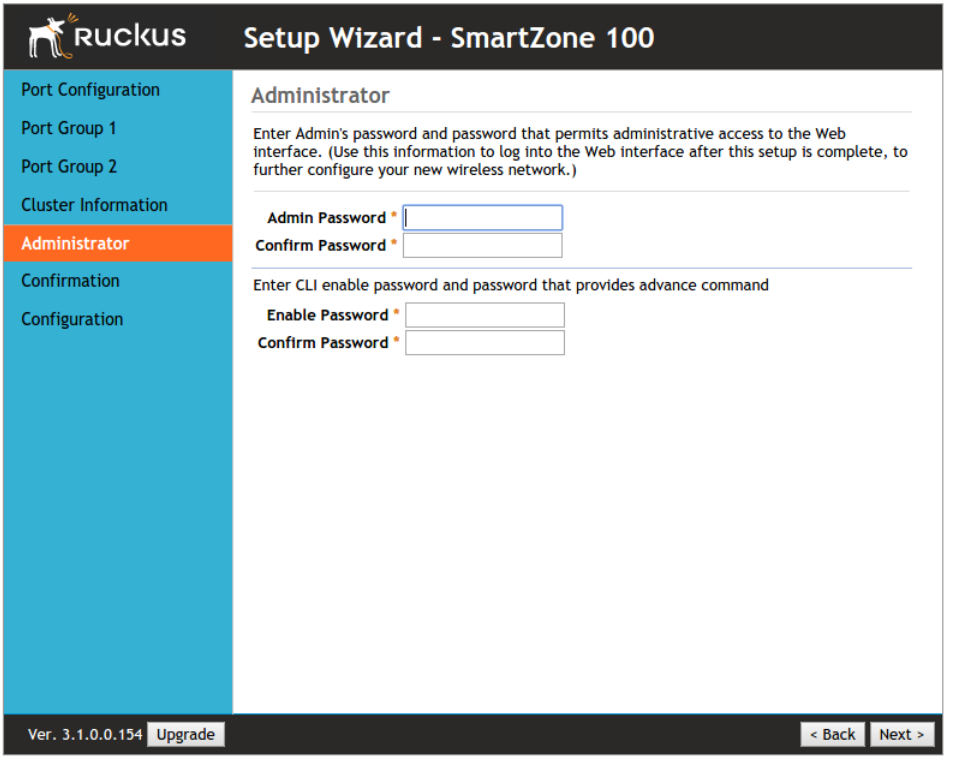
---

4 Click **Next** to continue to the next Setup Wizard page. The *Administrator* page appears.

5 On the *Administrator* page, configure the web interface and CLI passwords. All fields are required.
   - *Admin Password*: Type a password that you want to use to access the web interface.
   - *Confirm Password*: Retype the password above to confirm.
   - *Enable Password*: Type a password that you want to use to enable CLI access to the controller.
   - *Confirmation Password*: Retype the password above to confirm.

6 Click **Next** to continue. The *Confirmation* page appears and displays all the controller settings that you have configured using the Setup Wizard.

Figure 22. Set the administrator password for the web interface and command line interface



If This Controller Is Joining an Existing Cluster

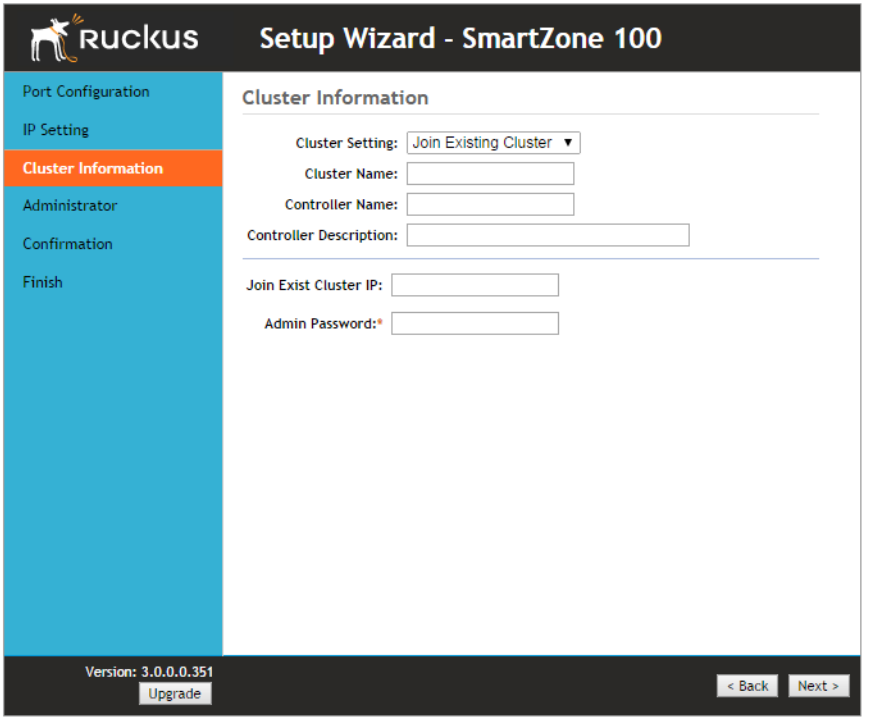
If this is not the first controller cluster on the network, you can set up this controller to join an existing cluster.

CAUTION! To add this controller to an existing cluster, the entire target cluster must be in a healthy state (no node must be in "out of service" state). If any member node is out of service, the join request will fail. You will need to remove any out-of-service node from the cluster before you can add a new node successfully.

Follow these steps to configure this controller to join an existing cluster.

1 In *Cluster Setting*, click **Join Existing Cluster**.

Figure 23. Select Join Existing Cluster in Cluster Setting



2 In *Cluster Name*, type the name of the existing cluster that you want this controller to join.

3 In *Controller Name*, type a name that you want to assign to this new controller.

4 In *Controller Description*, type a description for this new controller.

5 In *Join Exist Cluster IP*, type the IP address that has been assigned to the cluster.

6 In *Admin Password*, type the existing password for the cluster. This is the password that you use to log on to the controller's web interface.

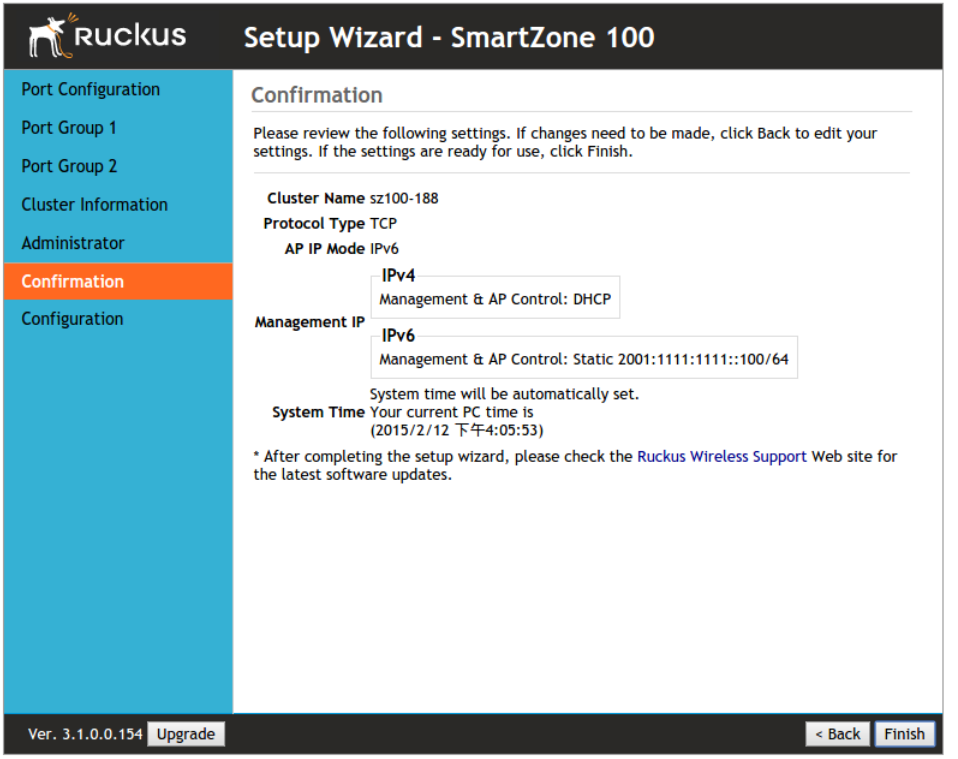
7 Click **Next** to continue to the next Setup Wizard page. The *Confirmation* page appears and displays a summary of the settings that you have configured.

NOTE If the firmware version on this controller (shown on the lower left area of the *Cluster Information* page) does not match the firmware version of the cluster, a message appears and prompts you to upgrade the controller's firmware. Click **Upgrade**, and then follow the prompts to perform the upgrade.

Step 5: Verify the Settings

Verify that all the settings displayed on the *Confirmation* page are correct. If they are all correct, click **Finish** to apply the settings and activate the controller on the network.

Figure 24. Review the settings you have configured

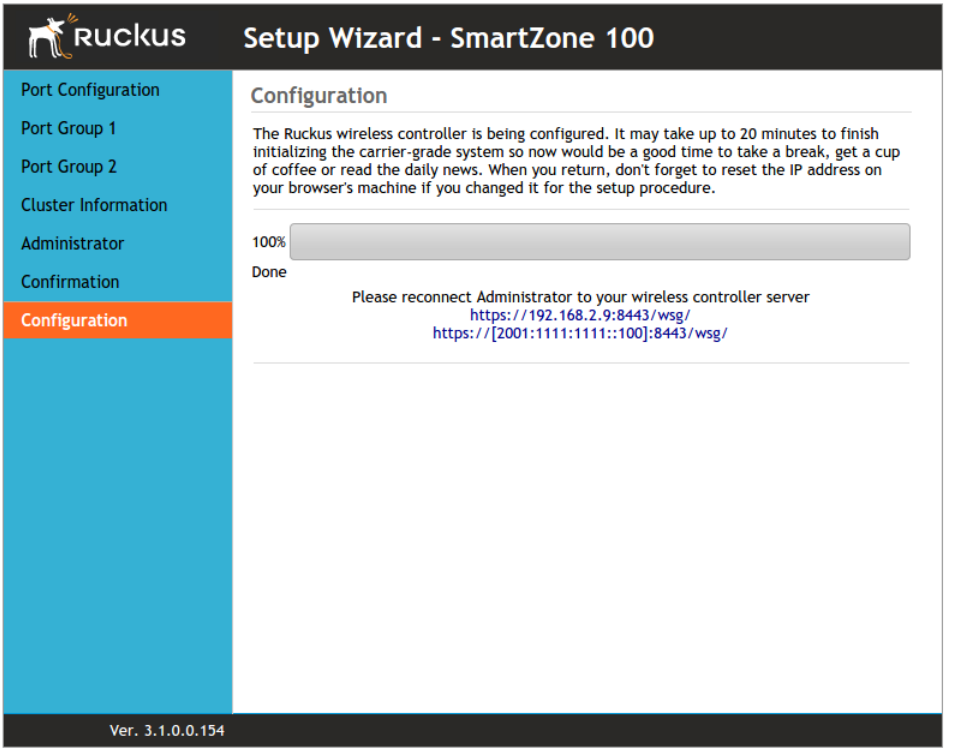


NOTE If you find an incorrect setting, click the **Back** button until you reach the related page, and then edit the settings. When you finish editing the settings, click the **Next** button until you reach the *Confirmation* page again.

A progress bar appears and displays the progress of applying the settings, starting the controller's services, and activating the controller on the network.

When the process is complete, the progress bar shows the message `100% Done`. The page also shows the IP address through which you can access the controller's web interface to manage the appliance.

Figure 25. This page indicates that you have completed the Setup Wizard



Congratulations! You have completed the Setup Wizard. You are now ready to log on to the controller's web interface.

Connecting the Controller to the Network

Follow these steps to connect the controller to the network.

1 Connect Port 1 to the router or switch.

2 Connect Port 2 to another router or switch to which other controllers (if present) are connected.

NOTE Depending on your network setup, you may also connect Port 2 to the same router or switch to which Port 1 is connected.

Logging On to the Web Interface

You can access the controller's web interface from any computer that is on the same subnet as the Management (Web) interface, which you configured in Step 3: Configure the IP Settings.

Follow these steps to log on to the controller's web interface.

1 On a computer that is on the same subnet as the Management (Web) interface, start a web browser.

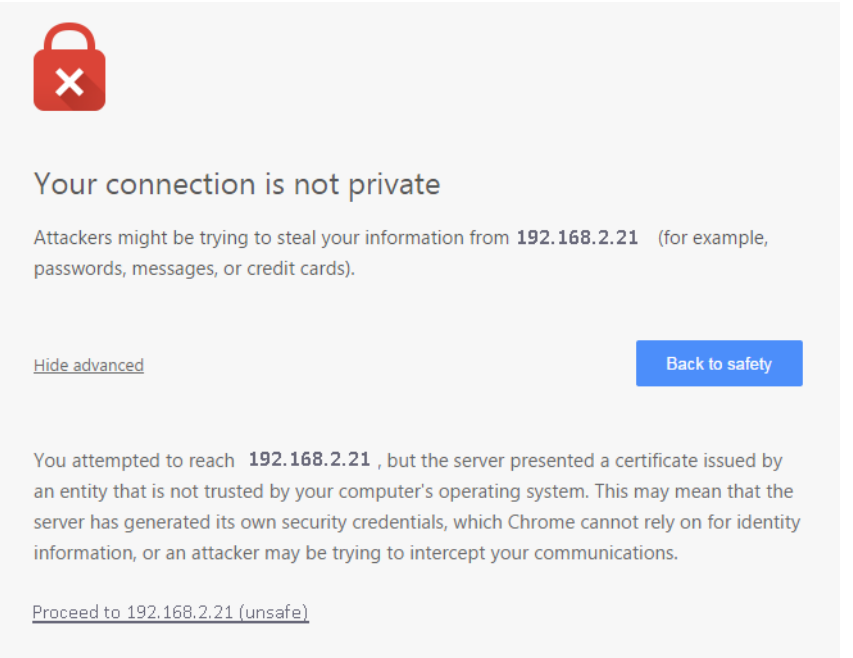
2 In the address bar, enter the IP address that you assigned to the Management (Web) interface and append a colon and `8443` (controller's management port number) at the end of the address.

For example, if the IP address that you assigned to the Management (Web) interface is 192.168.2.21, then you should enter:

```
https://192.168.2.21:8443
```

3 If a browser security warning appears, this is because the default SSL certificate (or security certificate) that the SZ is using for HTTPS communication is signed by Ruckus Wireless and is not recognized by most web browsers. Click continue or proceed (depending on the browser that you are using).

Figure 26. The browser warning that appears in Chrome version 37.0.2062.103

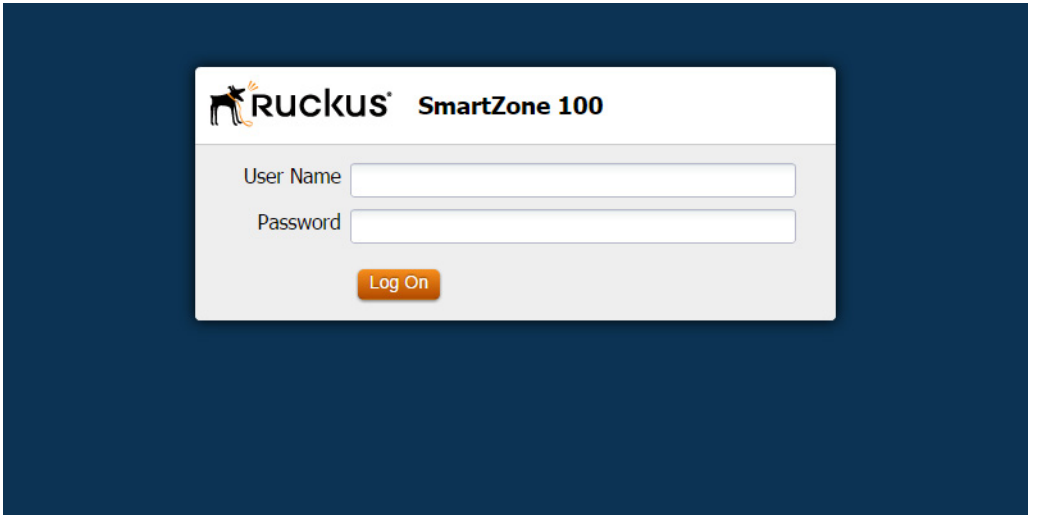


The controller's web interface logon page appears.

4 Log on to the controller's web interface using the following logon details:

- User Name: **admin**
- Password: **{the password that you set when you ran the Setup Wizard}**

Figure 27. The controller's web interface logon page



5 Click **Log On**.

The web interface refreshes, and then displays the Dashboard page, which indicates that you have logged on successfully.

You are now ready to configure the controller. Refer to the *SmartZone 100 Administrator Guide* for information on how to configure the controller and manage Ruckus Wireless APs and wireless clients.

Ensuring That APs Can Discover the Controller on the Network

5

Before the controller can start managing an AP, the AP must first be able to discover the controller on the network when it boots up. This chapter describes procedures that you can perform to ensure that APs can discover and register with the controller on the network.

In this chapter:

- Is LWAPP2SCG Enabled on the Controller?
- Method 1: Perform Auto Discovery of the Controller Using the SmartLicense Server
- Method 2: Perform Auto Discovery on Same Subnet, then Transfer the AP to Intended Subnet
- Method 3: Register the Controller with the DNS Server
- Method 4: Configure DHCP Option 43 on the DHCP Server
- Method 5: Manually Configure the Controller Address on the AP's Web Interface

Is LWAPP2SCG Enabled on the Controller?

All of the controller discovery methods described in this chapter require LWAPP2SCG (the application that enables APs to discover and be managed by a controller) to be installed and enabled on the controller. See Table 5 to check if your controller release includes the LWAPP2SCG application and whether it is enabled or disabled by default.

Table 5. LWAPP2SCG availability on each controller release

Controller Release	LWAPP Discovery	Default Setting	AP Compatibility
Release 3.0.x and later	Enabled by default. See Enabling LWAPP2SCG.	Enabled	• ZF-AP Release 9.7.x – 9.8.x • AP Release 100.0.x and later

Obtaining the LWAPP2SCG Application

If your controller release does not have the LWAPP2SCG application pre-installed, contact Ruckus Wireless Support to obtain a copy of the LWAPP2SCG application files and installation instructions.

Enabling LWAPP2SCG

If the LWAPP2SCG application is pre-installed but disabled in your controller release, do the following to enable it:

1 Log on to the controller's console.

2 Enter **`en`** to enable privileged mode.

3 Enter **`config`**.

4 Enter **`lwapp2scg`**.

5 Enter **`policy accept-all`**.

You have completed enabling the LWAPP2SCG application on the controller.

Method 1: Perform Auto Discovery of the Controller Using the SmartLicense Server

NOTE: This guide assumes that you have already activated the controller's licenses on the SmartLicense server. If you have not activated the controller's licenses, see the *SmartZone 100 Quick Setup Guide* for more information.

The Ruckus Wireless SmartLicense registration server is a cloud-based, HTTPS-enabled web server that allows an access point to query information about its parent controller by sending its serial number and base MAC address.

NOTE: If you do not want to (or cannot) use the cloud-based SmartLicense registration server, you can install a local version of the registration server (called the Local License Server). For more information, see the *Local License Server User Guide*.

After you ensure that the controller's licenses have been activated on the SmartLicense server, you only need to connect the AP to the network, ensure that it has Internet connectivity, and then reboot the AP. Upon reboot, the AP will automatically attempt to discover its parent controller by sending the following HTTPS query to ap-registrar.ruckuswireless.com (the SmartLicense server URL):

```
https://ap-registrar.ruckuswireless.com/
controller?ap_mac=APMAC&ap_serial=APSERIAL
```

where APMAC is the AP's MAC address (for example, APMAC: 74:91:1A:20:59:90) and APSERIAL (for example, APSERIAL: 311003001685) is the AP's serial number, both of which are printed on the AP's product label.

If the AP is unable to discover its parent controller after the first attempt, it will continue to do so:

- Once every 5 minutes for up to 60 minutes (12 queries)
- Once every hour for the remaining day (23 queries)
- Once every 24-hour for the remaining two weeks (12 queries)

If the AP is still unable to discover its parent controller after two weeks of uptime, this cloud-based controller discovery method will be disabled permanently. You will need to reset the AP to factory default settings to re-enable this controller discovery method.

Method 2: Perform Auto Discovery on Same Subnet, then Transfer the AP to Intended Subnet

If you are deploying the AP and the controller on different subnets, let the AP perform auto discovery on the same subnet as the controller before moving the AP to another subnet. To do this, connect the AP to the same network as the controller. When the AP starts up, it will discover and attempt to register with the controller. Approve the registration request if auto approval is disabled. After the AP registers with the controller successfully, transfer it to its intended subnet. It will be able to find and communicate with the controller once you reconnect it to the other subnet.

NOTE: If you use this method, make sure that you do not change the IP address of the controller after the AP discovers and registers with it. If you change the controller's IP address, the AP will no longer be able to communicate with it and will be unable to rediscover it.

Method 3: Register the Controller with the DNS Server

If you register the controller with your DNS server, supported APs that request IP addresses from your DHCP server will also obtain DNS related information that will enable them to discover controllers on the network. Using the DNS information they obtained during the DHCP request, APs will attempt to resolve the controller IP address using RuckusController.{DNS domain name} and zonedirector.{DNS domain name}.

To register the controller with the DNS server, do the following.

1 Open the DNS zone file, and then add two records with the following information:

- Record Key#1: RuckusController

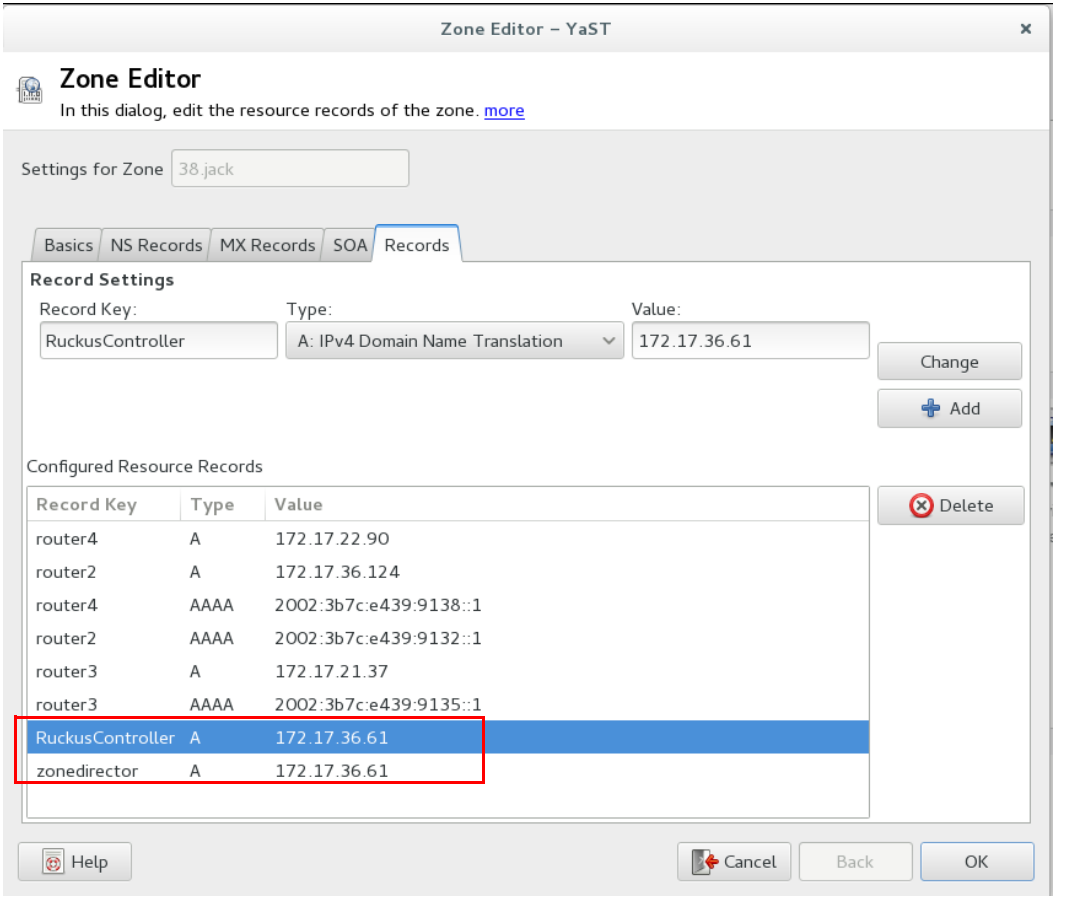
  Type: A (IPv4 Domain Name Translation)

  Value: (IP address of the controller)
- Record Key#2: zonedirector

  Type: A (IPv4 Domain Name Translation)

  Value: (IP address of the controller)

Figure 28. Add records for “RuckusController” and “zonedirector” to the DNS zone file

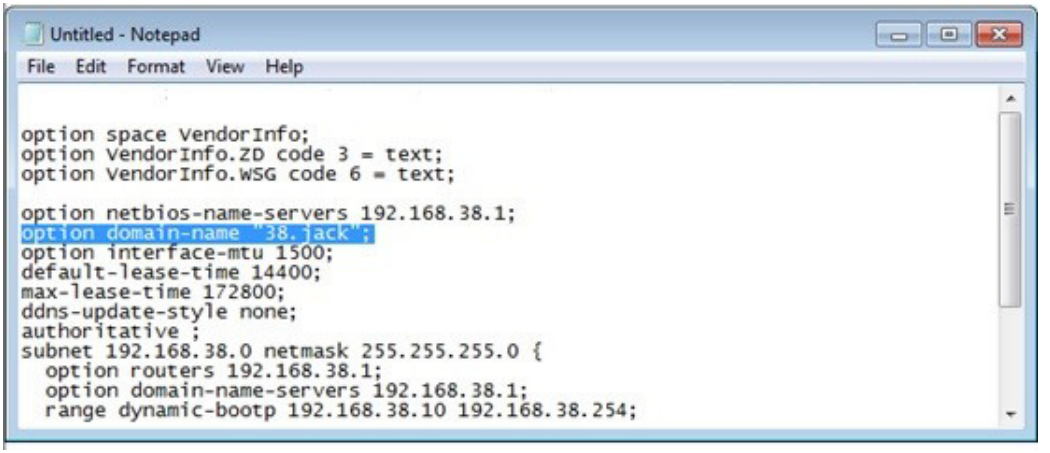


2 Save the zone file.

3 Open the DHCP configuration file, and then insert the DNS domain name in the DHCP configuration file. For example, if the DNS domain name is “38.jack”, insert the following line into the DHCP configuration file:

```
option domain-name “38.jack”
```

Figure 29. Insert option domain-name “38.jack”



4 Save the DHCP configuration file.

When the AP obtains the DNS domain name from the DHCP server (using “Domain Name option 15” in the DHCP-offer packet), it will resolve “RuckusController.{domain-name}” and “zonedirector.{domain-name}” through the DNS server, and then it will obtain the controller’s IP address from the DNS server’s response.

NOTE: If the AP uses a static IP address or it cannot obtain the DNS domain name from the DHCP server, the AP will attempt to resolve “RuckusController” and “zonedirector” without a domain name from the DNS server as the FQDN of controller's control interface.

You have completed registering the controller with the DNS server.

Method 4: Configure DHCP Option 43 on the DHCP Server

Another method for the AP to discover the controller on the network automatically is to configure the DHCP server on the network. To do this, you will need to configure DHCP Option 43 (043 Vendor Specific Info) with the IP address of the controller on the network. When an AP requests an IP address from the DHCP server, the DHCP server will send a list of controller IP addresses to the AP. If there are multiple controller devices on the network, the AP will automatically select a controller to register with from this list of IP addresses.

DHCP Option 43 enables the DHCP server on your network to provide the controller's server address – either IP address or FQDN– (specifically, the IP address assigned to the controller's control plane or cluster plane interface) to DHCP clients, including APs that are connected to the network.

The procedure for configuring DHCP option 43 varies, depending on the DHCP server that you are using. Refer to the documentation provided with your DHCP server software for information on how to configure DHCP option 43.

NOTE: The following procedure describes how to configure DHCP option 43 on a Linux server (Fedora). If your DHCP server is running on a different platform, refer to the DHCP server documentation for the relevant instructions.

CAUTION! If you have a ZoneDirector controller on the network and you do not want APs to be managed by this ZoneDirector controller, you must disable auto approval on the ZoneDirector web interface. Log on to the ZoneDirector web interface, and then go to *Configure* > *Access Points* > *Access Points Policies* page, and then clear the **Approval** check box.

Follow these steps to configure DHCP option 43 on a Linux server.

1. Log on to your DHCP server via a console terminal (for example, PuTTY).
2. Go to **`/etc`** directory.
3. Run **`vi dhcpd.conf`**. This command opens the DHCP configuration file for editing.

4 At the beginning of the DHCP configuration file, insert the following lines:

```
option VendorInfo.WSG_sub6 code 6=text;
option VendorInfo.WSG_sub3 code 3=text;

option VendorInfo.WSG_sub6 "<Controller IP>";
option VendorInfo.WSG_sub3 "<Controller IP>";
```

For example, if you only have one controller on the network and its IP address is 120.0.0.3, then these lines in the DHCP configuration file should look like in Figure 30.

Figure 30. Sample DHCP Option 43 configuration

```
option space VendorInfo;
option VendorInfo.WSG code 6 = text;
option VendorInfo.ZD code 3 = text;
option VendorInfo.WSGD code 7 = text;

Vendor-option-space VendorInfo;
option VendorInfo.WSG "120.0.0.3";
```

If you have a two-node controller cluster on the network, use a comma to separate the control interface IP addresses in option VendorInfo.WSG, for example:

```
option VendorInfo.WSG "120.0.0.3,120.0.0.4"
```

where 120.0.0.3 is the control interface IP address of the first controller and 120.0.0.4 is the control interface IP address of the second controller.

5 Save the DHCP configuration file.

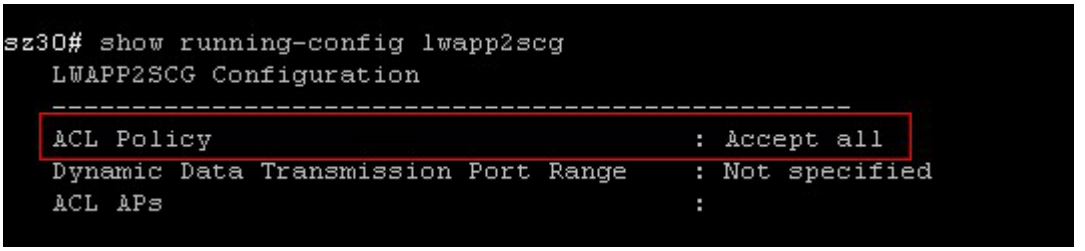
6 Restart the DHCP server to apply the new settings.

7 Verify that the LWAPP2SCG application is enabled on the controller. To verify, log on to the controller's CLI, and then enter the following command:

`show running-config lwapp2scg`

If LWAPP2SCG is enabled, the value for `ACL Policy` should show as `Accept all`.

Figure 31. “Accept all” indicates that LWAPP2SCG is enabled



If LWAPP2SCG is disabled, do the following to enable it:

a Enter **`config`**.

b Enter **`lwapp2scg`**.

c Enter **`policy`**.

d Enter one of the following commands:

- **`accept {MAC address}`**: Enter this command if you only want specific APs to be managed by the controller. See Figure 33.
- **`accept-all`**: Enter this command if you want all APs that discover the controller to be managed by it.

Figure 32. Options that appear after you enter the “policy” command

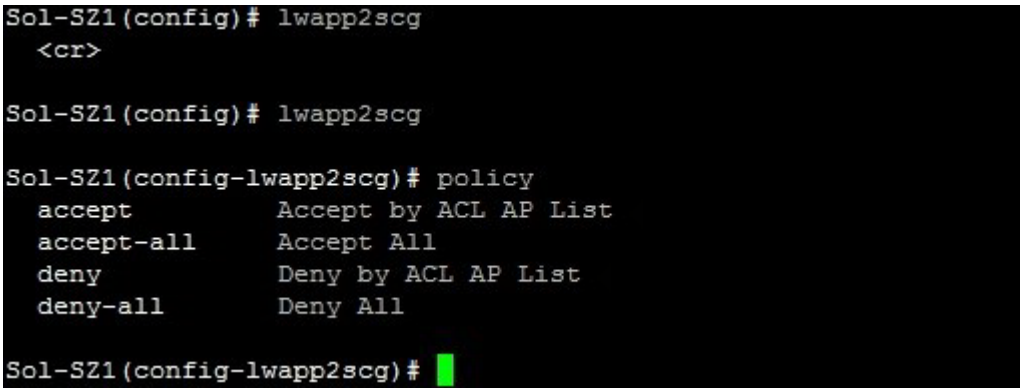
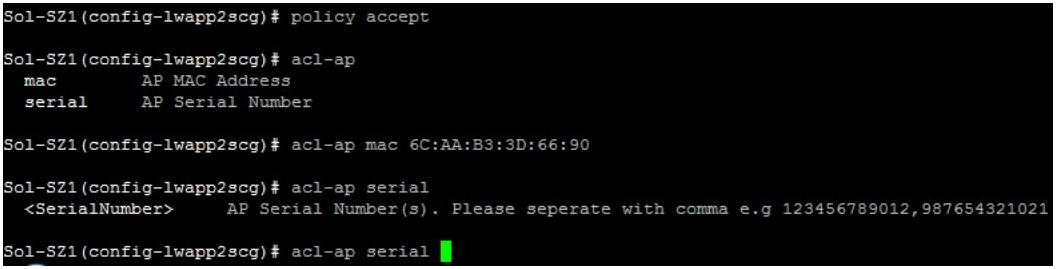


Figure 33. Enter accept {MAC address} if you only want specific APs to be managed by the controller



8 Reset the AP to factory default settings, and then connect it to a network subnet where it can communicate with the controller.

9 Reboot the AP.

After the AP reboots, it will obtain an IP address and the IP address of its parent controller from the DHCP server. Once the AP registers with the controller, it will download and install the latest SCG-AP firmware.

You have completed

Method 5: Manually Configure the Controller Address on the AP's Web Interface

1 Log on to the AP's web interface.

2 Go to the Administration > Management page.

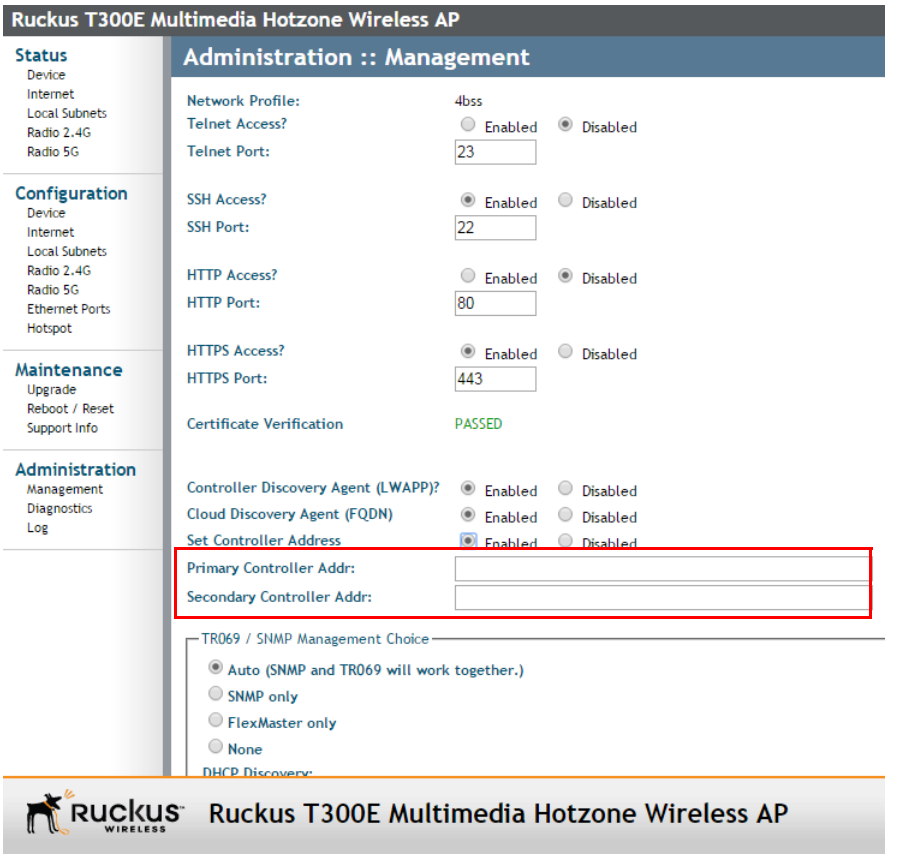
3 In *Primary Controller Address*, type the IP address of the controller that you want to manage the AP.

4 In Secondary Controller Address, type the IP address of a backup controller that you want to manage the AP if the primary controller is unavailable.

5 Click **Apply**.

You have completed manually configuring the controller's IP address on the AP's web interface.

Figure 34. Set the IP addresses of the primary and secondary controllers that you want to manage the AP



What to Do Next

For more information on configuring and managing the controller, refer to the *SmartZone 100 Administrator Guide for Release 3.4*, which is available for download on the Ruckus Wireless Support website at http://support.ruckuswireless.com.

NOTE: For a complete list of documentation that is available for this SZ release, refer to the *Release Notes*.

Index

A

administrative computer 10, 25

C

cluster name 38
cluster setting 38
control panel 14
controller name 38
creating a new cluster 38

E

ETH0 28, 44
ETH1 44

F

firmware version 41
front panel 12
  control panel 14

G

gateway 24

I

installation
  required hardware 10
  required tools 10
interface settings 24
IP address 24

J

joining a cluster 40

L

logging on 45

M

management interface 44

N

netmask 24
NTP server 38

P

package contents 8
physical features
  front panel 12
powering on 22
pre-installation tasks 10

R

rack mount kit 8, 9
rear panel 15
required hardware 10
router 10

S

server rack 10
setup wizard 28
software version 41
surge suppressor 10
switch 10

U

unpacking 8

W

Web browser 10
web browser 10
Web interface 44

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