



Module 13: WLAN Configuration

Switching, Routing, and
Wireless Essentials v7.0
(SRWE)



Module Objectives

Module Title: WLAN Configuration

Module Objective: Implement a WLAN using a wireless router and WLC.

Topic Title	Topic Objective
Remote Site WLAN Configuration	Configure a WLAN to support a remote site.
Configure a Basic WLAN on the WLC	Configure a WLC WLAN to use the management interface and WPA2 PSK authentication.
Configure a WPA2 Enterprise WLAN on the WLC	Configure a WLC WLAN to use a VLAN interface, a DHCP server, and WPA2 Enterprise authentication.
Troubleshoot WLAN Issues	Troubleshoot common wireless configuration issues.

13.1 Remote Site WLAN Configuration

Video – Configure a Wireless Network (See netacad)

This video will cover the following:

- Use the Wireless Router Web Page
- Change the Password
- Change the WAN and LAN settings
- Connect the Wireless Network

Packet Tracer – Configure a Wireless Network

In this Packet Tracer activity, you will complete the following objectives:

- Connect to a wireless router
- Configure the wireless router
- Connect a wired device to the wireless router
- Connect a wireless device to the wireless router
- Add an AP to the network to extend wireless coverage
- Update default router settings

13.2 Configure a Basic WLAN on the WLC

Configure a Basic WLAN on the WLC

Video – Configure a Basic WLAN on the WLC (See netacad)

This video will cover the following:

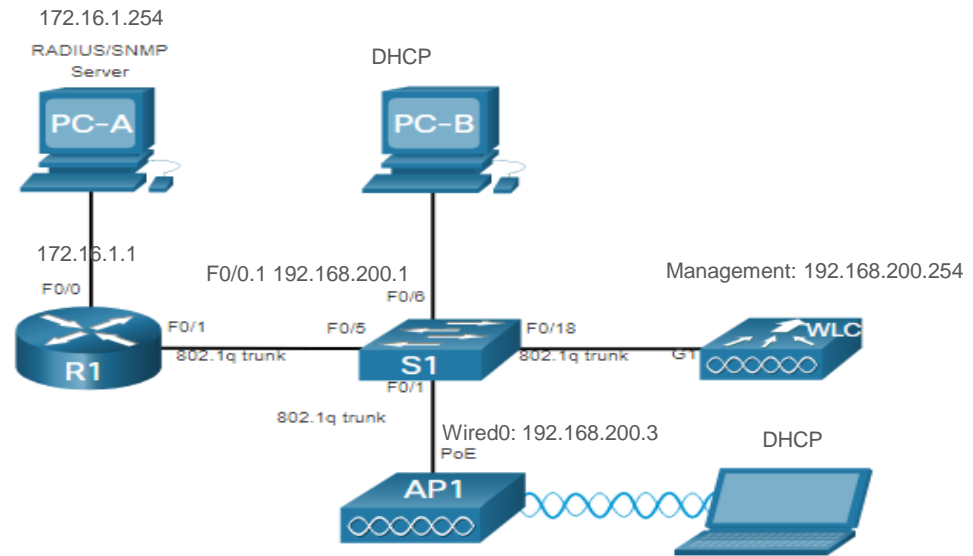
- Review the topology
- Access the GUI for the WLAN controller
- Information about the wireless network on the Network summary screen
- Configure a new WLAN
- Secure the new WLAN

Configure a Basic WLAN on the WLC

WLC Topology

The topology and addressing scheme used for this topic are shown in the figure and the table.

- The **access point (AP)** is a controller-based AP as opposed to an autonomous AP, so it requires no initial configuration and is often called lightweight APs (LAPs).
- LAPs use the Lightweight Access Point Protocol (LWAPP) to communicate with a **WLAN controller (WLC)**.
- Controller-based APs are useful in situations where many APs are required in the network.
- As more APs are added, each AP is automatically configured and managed by the WLC.



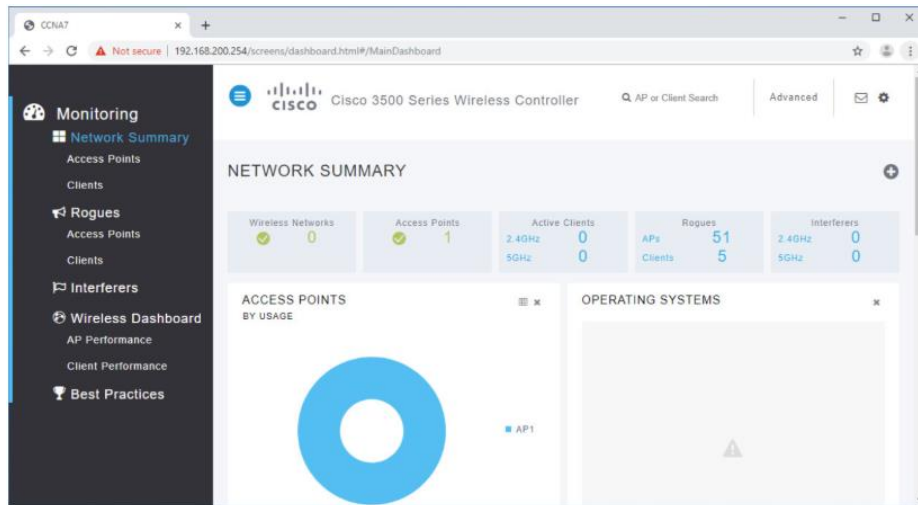
Device	Interface	IP Address	Subnet Mask
R1	F0/0	172.16.1.1	255.255.255.0
R1	F0/1.1	192.168.200.1	255.255.255.0
S1	VLAN 1	DHCP	
WLC	Management	192.168.200.254	255.255.255.0
AP1	Wired 0	192.168.200.3	255.255.255.0
PC-A	NIC	172.16.1.254	255.255.255.0
PC-B	NIC	DHCP	
Wireless Laptop	NIC	DHCP	

Configure a Basic WLAN on the WLC

Log in to the WLC

Configuring a **wireless LAN controller (WLC)** is not that much different from configuring a wireless router. The WLC controls APs and provides more services and management capabilities.

- The user logs into the WLC using credentials that were configured during initial setup.
- The **Network Summary** page is a dashboard that provides a quick overview of **configured wireless networks, associated access points (APs), and active clients.**
- You can also see the number of **rogue access points and clients.**



Configure a Basic WLAN on the WLC

View AP Information

Click **Access Points** from the left menu to view an overall picture of the AP's system information and performance.

- The AP is using IP address 192.168.200.3.
- Because **Cisco Discovery Protocol (CDP)** is active on this network, the WLC knows that the AP is connected to the FastEthernet 0/1 port on the switch.
- This AP in the topology is a Cisco Aironet 1815i which means you can use the command-line and a limited set of familiar IOS commands.

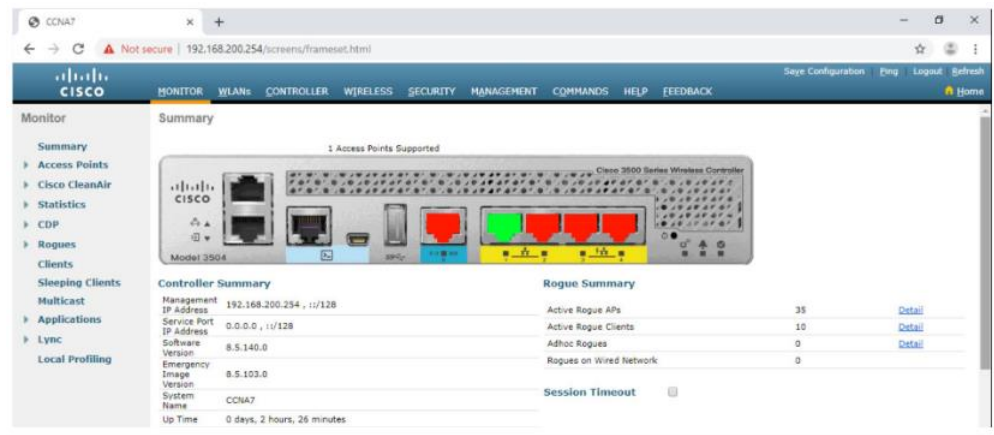
The screenshot displays the 'ACCESS POINT VIEW' for AP1. On the left is a dark sidebar menu with options: Monitoring, Network Summary, Access Points, Clients, Rogues, Interferers, Wireless Dashboard, AP Performance, Client Performance, and Best Practices. The main content area is titled 'ACCESS POINT VIEW' and 'GENERAL'. It features a green wireless icon and a list of attributes for AP1, including MAC Address (2c:4f:52:60:37:e8), IP Address (192.168.200.3), CDP / LLDP (Switch, FastEthernet0/1), Ethernet Speed (100 Mbps), Model / Domain (AIR-AP1815I-B-K9 / 802.11a-B), Power status (PoE/Full Power), Serial Number (FCW2320NGDH), Groups (AP Group: default-group, Flex Group: default-flex-group), Mode / Sub-mode (Local / Not Configured), Max Capabilities (802.11n 2.4GHz, 802.11ac 5GHz, Spatial Streams: 2 (2.4GHz), 2 (5.0GHz), Max. Data Rate: 144 Mbps (2.4GHz), 867 Mbps (5.0GHz)), and Fabric (Disabled). On the right, a 'PERFORMANCE SUMMARY' table compares 2.4GHz and 5GHz metrics. The table shows 1 client on 2.4GHz and 0 on 5GHz, 11 channels on 2.4GHz and (100, 104, 108, 112) on 5GHz, and various performance metrics like Configured Rate, Usage Traffic, Throughput, Transmit Power, Noise, Channel Utilization, Interference, Traffic, Air Quality, Admin Status, and Clean Air Status.

PERFORMANCE SUMMARY		
	2.4GHz	5GHz
Number of clients	1	0
Channels	11	(100, 104, 108, 112)
Configured Rate	Min: 1 Mbps, Max: 144 Mbps	Min: 6 Mbps, Max: 867 Mbps
Usage Traffic	709.4 MB	231.1 KB
Throughput	2.1 KB	0
Transmit Power	20 dBm	20 dBm
Noise	-90	-93 -95 -95 -95
Channel Utilization	9%	1%
Interference	7%	1%
Traffic	2%	0%
Air Quality	-	-
Admin Status	Enabled	Enabled
Clean Air Status	Not applicable	Not applicable

Configure a Basic WLAN on the WLC Advanced Settings

Most WLC will come with some basic settings and menus that users can quickly access to implement a variety of common configurations.

- However, as a network administrator, you will typically access the advanced settings.
- For the Cisco 3504 Wireless Controller, click **Advanced** in the upper right-hand corner to access the advanced **Summary** page.
- From here, you can access all the features of the WLC.

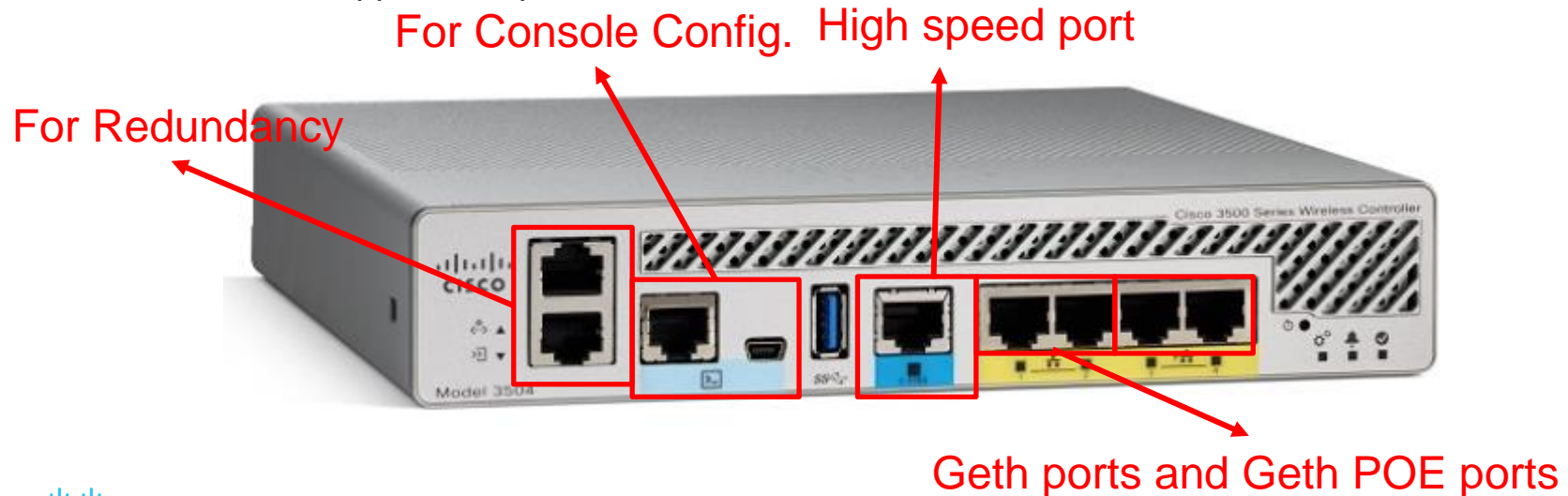


Configure a Basic WLAN on the WLC

Configure a WLAN

Wireless LAN Controllers have Layer 2 switch ports and virtual interfaces that are created in software and are very similar to VLAN interfaces.

- Each physical port can support many APs and WLANs.
- The ports on the WLC are essentially trunk ports that can carry traffic from multiple VLANs to a switch for distribution to multiple APs.
- Each AP can support multiple WLANs.



Configure a Basic WLAN on the WLC

Configure a WLAN (Cont.)

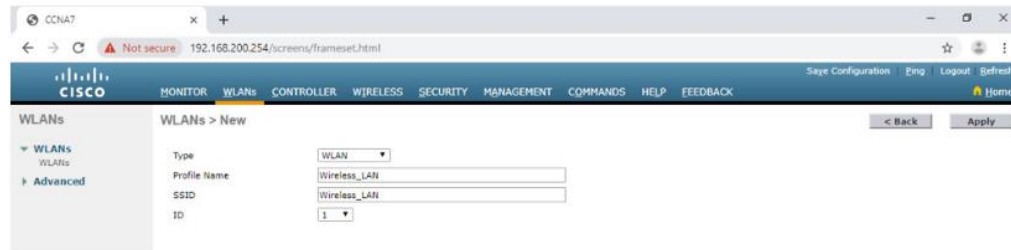
Basic WLAN configuration on the WLC includes the following steps:

1. Create the WLAN
2. Apply and Enable the WLAN
3. Select the Interface
4. Secure the WLAN
5. Verify the WLAN is Operational
6. Monitor the WLAN
7. View Wireless Client Information

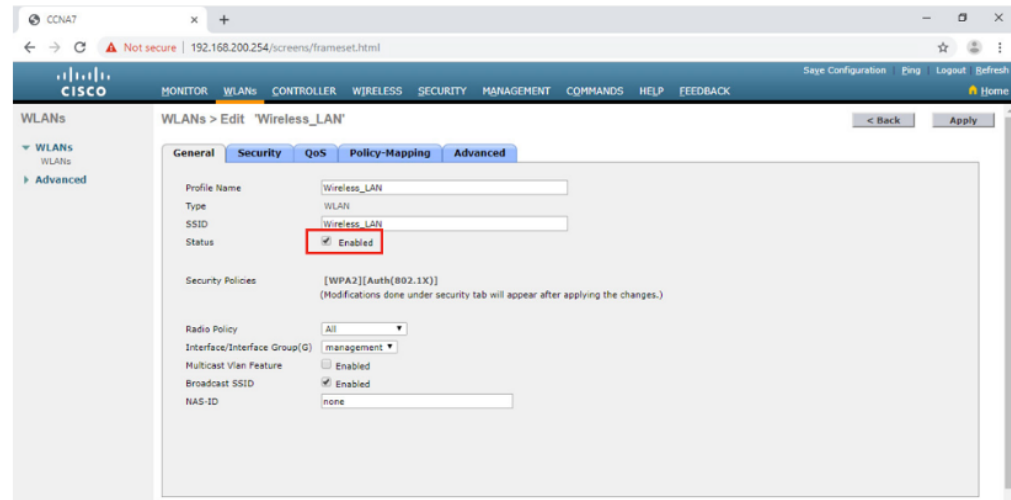
Configure a Basic WLAN on the WLC

Configure a WLAN (Cont.)

1. **Create the WLAN:** In the figure, a new WLAN with an SSID name **Wireless_LAN** is created.



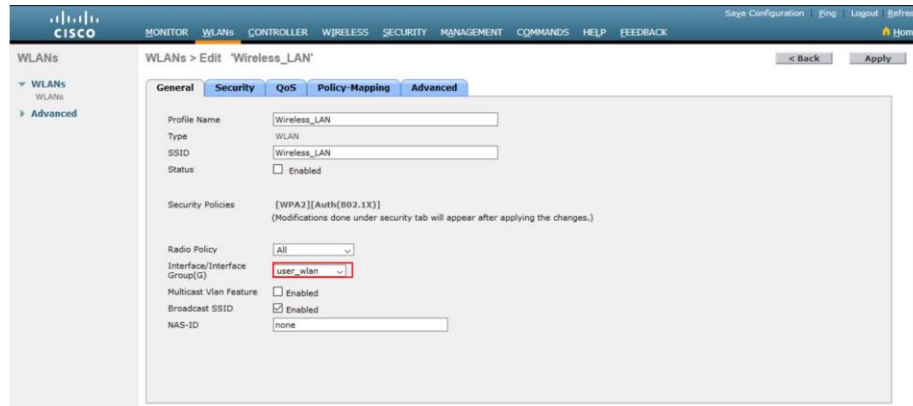
2. **Apply and Enable the WLAN:** Next the WLAN is enabled the WLAN settings are configured.



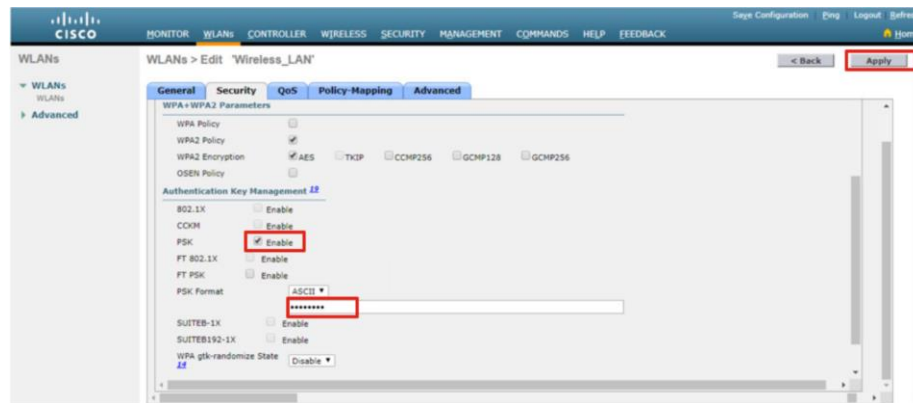
Configure a Basic WLAN on the WLC

Configure a WLAN (Cont.)

- 3. Select the Interface:** The interface that will carry the WLAN traffic must be selected.



- 4. Secure the WLAN:** The Security tab is used to access all the available options for securing the LAN.

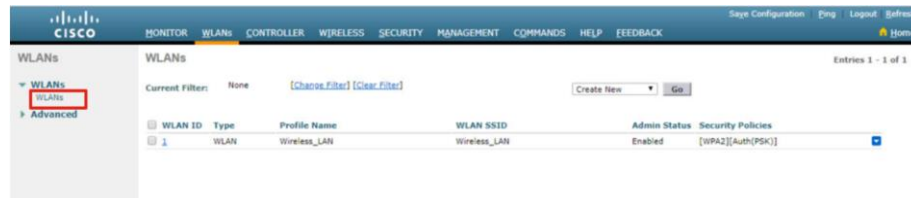


Configure a Basic WLAN on the WLC

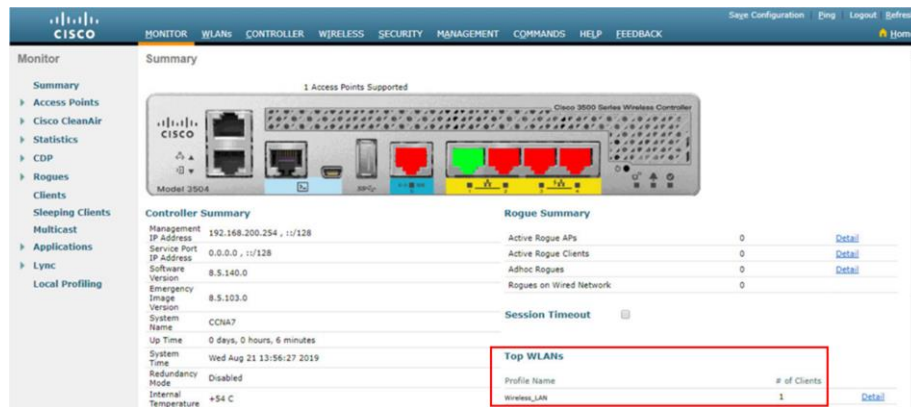
Configure a WLAN (Cont.)

5. Verify the WLAN is Operational:

The **WLANs** menu on the left is used to view the newly configured WLAN and its settings.



6. Monitor the WLAN: The Monitor tab is used to access the advanced Summary page and confirm that the **Wireless_LAN** now has one client using its services.



Configure a Basic WLAN on the WLC

Configure a WLAN (Cont.)

7. **View Wireless Client Details:**
Click **Clients** in the left menu to view more information about the clients connected to the WLAN.



The screenshot shows the Cisco WLC Monitor page with the 'Clients' tab selected. The left sidebar contains a 'Monitor' menu with options: Summary, Access Points, Cisco CleanAir, Statistics, CDP, Rogues, and Clients (highlighted with a red box). The main content area displays a table of connected clients. The table has columns for Client MAC Addr, IP Address (IPv4/IPv6), AP Name, WLAN Profile, and WLAN SSID. A single client is listed with MAC address 00:12:00:07:7c:87, IP address 192.168.5.2, AP name AP1, WLAN profile Wireless_LAN, and WLAN SSID Wireless_LAN. Above the table, there is a 'Current Filter' section set to 'None' with links for '[Change Filter]' and '[Clear Filter]'. The top right of the page shows navigation links like 'Save Configuration', 'Eng', 'Logout', and 'Refresh'.

Client MAC Addr	IP Address (IPv4/IPv6)	AP Name	WLAN Profile	WLAN SSID
00:12:00:07:7c:87	192.168.5.2	AP1	Wireless_LAN	Wireless_LAN

Packet Tracer – Configure a Basic WLAN on the WLC

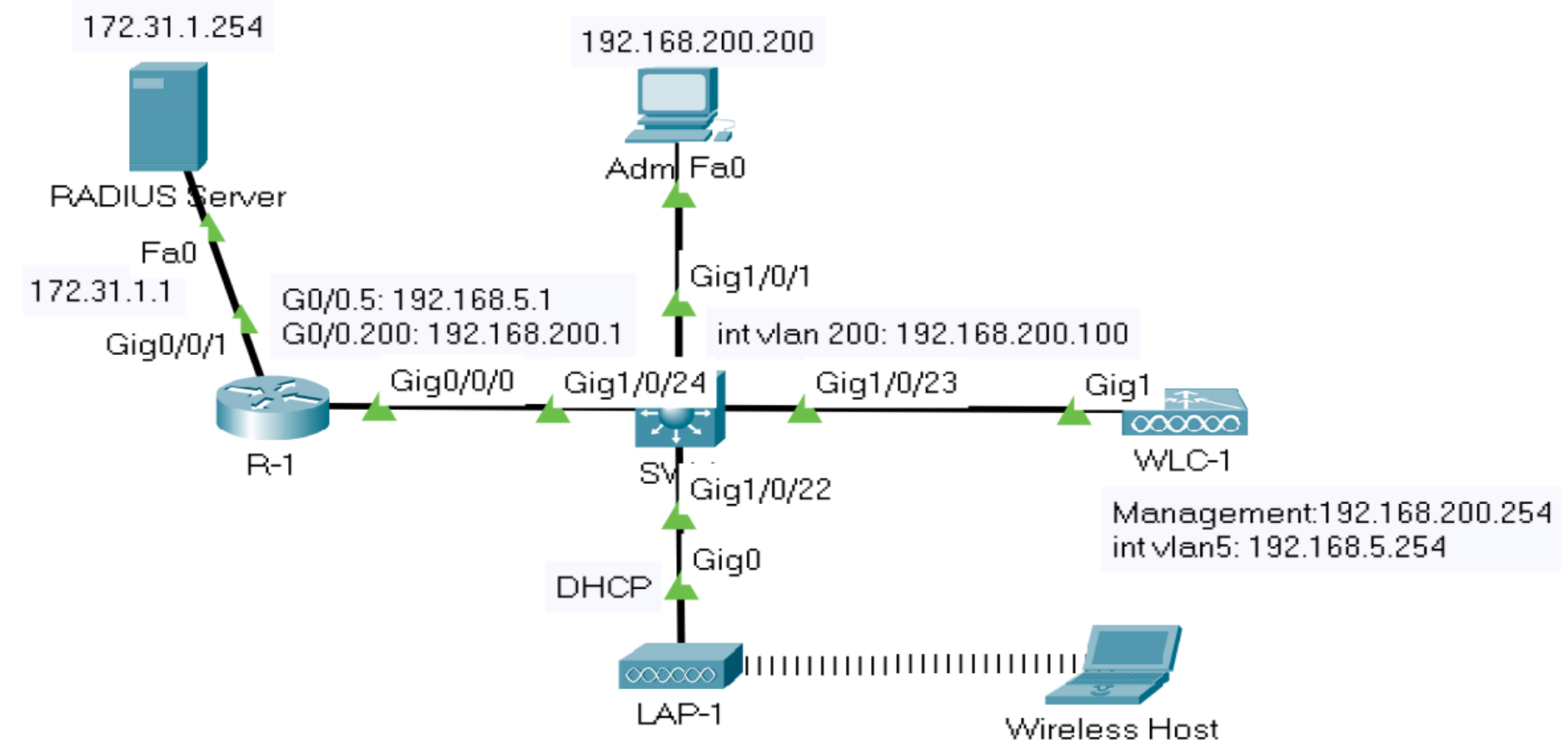
In this lab, you will explore some of the features of a wireless LAN controller.

- You will create a new WLAN on the controller and implement security on that LAN.
- Then you will configure a wireless host to connect to the new WLAN through an AP that is under the control of the WLC.
- Finally, you will verify connectivity.

13.3 Configure a WPA2 Enterprise WLAN on the WLC

Configure a WPA2 Enterprise WLAN on the WLC

Video – Define an SNMP and RADIUS Server on the WLC



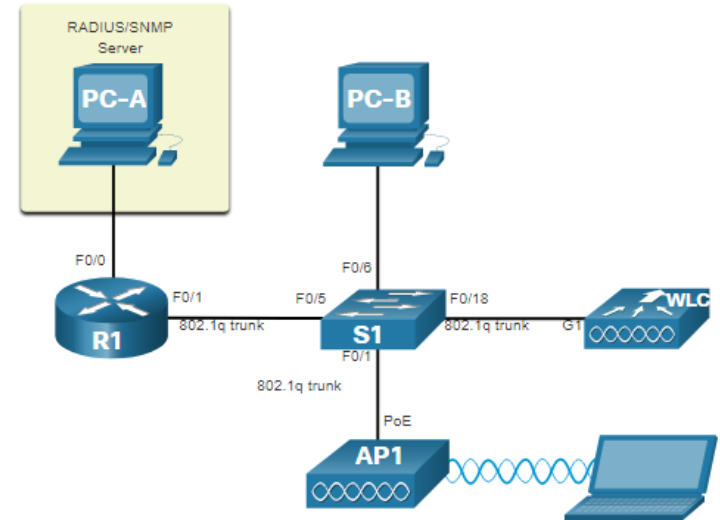
Configure a WPA2 Enterprise WLAN on the WLC

SNMP and RADIUS

PC-A is running Simple Network Management Protocol (SNMP) and Remote Authentication Dial-In User Service (RADIUS) server software.

- The network administrator wants the WLC to forward all SNMP log messages (i.e., traps) to the SNMP server.
- The network administrator wants to use a RADIUS server for authentication, authorization, and accounting (AAA) services.
- Users will enter their username and password credentials which will be verified by the RADIUS server.
- The RADIUS server is required for WLANs that are using WPA2 Enterprise authentication.

Note: SNMP server and RADIUS server configuration is beyond the scope of this module.

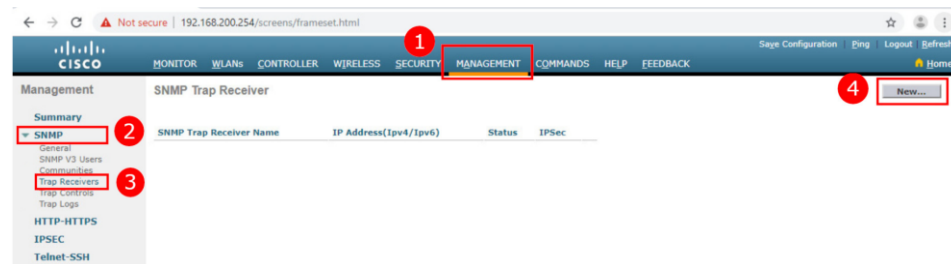


Configure a WPA2 Enterprise WLAN on the WLC

Configure SNMP Server Information

To enable SNMP and configure settings:

1. Click the **MANAGEMENT** tab to access a variety of management features.
 2. Click **SNMP** to expand the sub-menus.
 3. Click **Trap Receivers**.
 4. Click **New...** to configure a new SNMP trap receiver.
- Enter the SNMP Community name and the IP address (IPv4 or IPv6) for the SNMP server and then click **Apply**.
 - The WLC will now forward SNMP log messages to the SNMP server.



Configure a WPA2 Enterprise WLAN on the WLC

Configure RADIUS Server Information

To configure the WLC with the RADIUS server information:

1. Click **SECURITY**.
 2. Click **RADIUS**
 3. Click **Authentication**
 4. Click **New...** to add PC-A as the RADIUS server.
- Enter the IPv4 address for PC-A and the shared secret that will be used between the WLC and the RADIUS server and then click Apply.

The image displays two screenshots of the Cisco Wireless LAN Controller (WLC) configuration interface, illustrating the steps to configure RADIUS server information.

Top Screenshot: The "SECURITY" tab is selected in the top navigation bar. The left sidebar shows the "RADIUS" section expanded, with "Authentication" selected. The "New..." button in the top right corner is highlighted with a red box and a number 4. The "RADIUS Authentication Servers" section is visible, showing fields for "Auth Called Station ID Type" (set to "AP MAC Address:SSID"), "Use AES Key Wrap" (unchecked), "MAC Delimiter" (set to "Hyphen"), and "Framed MTU" (set to "1300").

Bottom Screenshot: The "New" form for adding a RADIUS server is displayed. The "Server Index (Priority)" is set to "1". The "Server IP Address(Ipv4/Ipv6)" is set to "172.16.1.254". The "Shared Secret Format" is set to "ASCII". The "Shared Secret" and "Confirm Shared Secret" fields are masked with asterisks. The "Apply Cisco ISE Default settings" checkbox is unchecked. The "Key Wrap" checkbox is unchecked. The "Port Number" is set to "1812". The "Server Status" is set to "Enabled". The "Support for CoA" is set to "Disabled". The "Server Timeout" is set to "5" seconds. The "Network User" and "Management" checkboxes are checked. The "Management Retransmit Timeout" is set to "5" seconds. The "Apply" button in the top right corner is highlighted with a red box.

Configure a WPA2 Enterprise WLAN on the WLC

Configure RADIUS Server Information (Cont.)

After clicking **Apply**, the list of configured **RADIUS Authentication Servers** refreshes with the new server listed.



The screenshot shows the Cisco WLC configuration interface for RADIUS Authentication Servers. The left sidebar contains a navigation tree with 'Security' expanded and 'RADIUS' selected. The main content area shows the 'RADIUS Authentication Servers' configuration page. The 'Auth Called Station ID Type' is set to 'AP MAC Address:SSID'. The 'Use AES Key Wrap' checkbox is unchecked. The 'MAC Delimiter' is set to 'Hyphen'. The 'Framed MTU' is set to '1300'. Below the configuration fields is a table listing the configured RADIUS servers. The table has columns for 'Network User', 'Management', 'Tunnel Proxy', 'Server Index', 'Server Address(Ipv4/Ipv6)', 'Port', 'IPSec', and 'Admin Status'. A single server is listed with index 1, address 172.16.1.254, port 1812, and admin status 'Enabled'.

Network User	Management	Tunnel Proxy	Server Index	Server Address(Ipv4/Ipv6)	Port	IPSec	Admin Status
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	172.16.1.254	1812	Disabled	Enabled

Configure a WPA2 Enterprise WLAN on the WLC

Video – Configure a VLAN for a New WLAN

This video will cover the following:

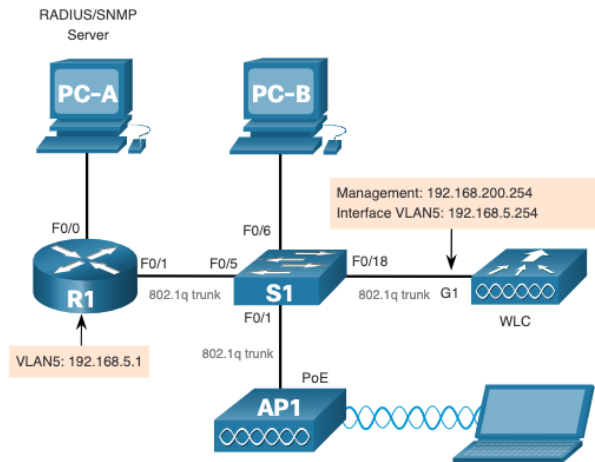
- Review the topology
- Deploy a new VLAN interface
- Associate the new VLAN interface with a WLAN

Configure a WPA2 Enterprise WLAN on the WLC

Topology with VLAN 5 Addressing

Each WLAN configured on the WLC needs its own virtual interface.

- The WLC has five physical data ports that can be configured to support multiple WLANs and virtual interface.
- The new WLAN will use interface VLAN 5 and network 192.168.5.0/24 and therefore R1 has been configured for VLAN 5 as shown in the topology and **show ip interface brief** output.



```
R1# show ip interface brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	172.16.1.1	YES	manual	up	up
FastEthernet0/1	unassigned	YES	unset	up	up
FastEthernet0/1.1	192.168.200.1	YES	manual	up	up
FastEthernet0/1.5	192.168.5.254	YES	manual	up	up

(output omitted)

```
R1#
```

Configure a WPA2 Enterprise WLAN on the WLC

Configure a New Interface

VLAN interface configuration on the WLC includes the following steps:

1. Create a new interface.
2. Configure the VLAN name and ID.
3. Configure the port and interface address.
4. Configure the DHCP server address.
5. Apply and Confirm.
6. Verify Interfaces.

Configure a WPA2 Enterprise WLAN on the WLC

Configure a New Interface (Cont.)

1. **Create a new interface:**
Click **CONTROLLER** >
Interfaces > **New...**



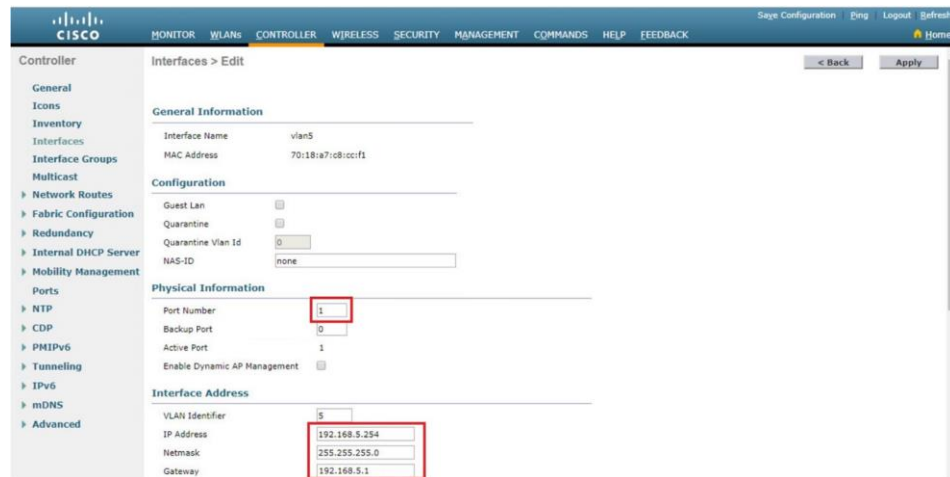
2. **Configure the VLAN name and ID:** In the example, the new interface is named **vlan5**, the VLAN ID is **5**, and applied.



Configure a WPA2 Enterprise WLAN on the WLC

Configure a New Interface (Cont.)

3. **Configure the port and interface address:** On the interface **Edit** page, configure the physical port number (i.e., the WLC G1 interface is Port Number 1 on the WLC), the VLAN 5 interface addressing (i.e., 192.168.5.254/24), and the default gateway (i.e., 192.168.5.1)



The screenshot shows the Cisco WLC configuration interface. The left sidebar contains a navigation menu with categories like General, Icons, Inventory, Interfaces, Interface Groups, Multicast, Network Routes, Fabric Configuration, Redundancy, Internal DHCP Server, Mobility Management, Ports, NTP, CDP, PHIPv6, Tunneling, IPv6, mDNS, and Advanced. The main content area is titled 'Interfaces > Edit' and contains several sections: General Information (Interface Name: vlan5, MAC Address: 70:18:a7:c8:cc:f1), Configuration (Guest Lan, Quarantine, Quarantine Vlan Id, NAS-ID), Physical Information (Port Number: 1, Backup Port: 0, Active Port: 1, Enable Dynamic AP Management), and Interface Address (VLAN Identifier: 5, IP Address: 192.168.5.254, Netmask: 255.255.255.0, Gateway: 192.168.5.1). Red boxes highlight the Port Number field, the IP Address, Netmask, and Gateway fields.

Section	Field	Value
General Information	Interface Name	vlan5
	MAC Address	70:18:a7:c8:cc:f1
Configuration	Guest Lan	<input type="checkbox"/>
	Quarantine	<input type="checkbox"/>
	Quarantine Vlan Id	0
	NAS-ID	none
Physical Information	Port Number	1
	Backup Port	0
	Active Port	1
	Enable Dynamic AP Management	<input type="checkbox"/>
Interface Address	VLAN Identifier	5
	IP Address	192.168.5.254
	Netmask	255.255.255.0
	Gateway	192.168.5.1

Configure a WPA2 Enterprise WLAN on the WLC

Configure a New Interface (Cont.)

4. **Configure the DHCP server address:** The example configures a primary DHCP server at IPv4 address 192.168.5.1 which is the default gateway router address which is enabled as a DHCP server.

The screenshot shows the Cisco WLC configuration page for a new interface. The left sidebar contains a navigation menu with options like General, Icons, Inventory, Interfaces, Interface Groups, Multicast, Network Routes, Fabric Configuration, Redundancy, Internal DHCP Server, Mobility Management, Ports, NTP, CDP, PMIPv6, Tunneling, and IPv6. The main content area is titled 'Controller' and shows the 'Interface Address' configuration. The 'Interface Address' section includes fields for VLAN Identifier (5), IP Address (192.168.5.254), Netmask (255.255.255.0), Gateway (192.168.5.1), IPv6 Address, Prefix Length (128), IPv6 Gateway, and Link Local IPv6 Address (fe80::7218:a7ff:fedb:cd05/64). The 'DHCP Information' section shows the Primary DHCP Server (192.168.5.1) and Secondary DHCP Server (empty). The DHCP Proxy Mode is set to Global. There are checkboxes for Enable DHCP Option 82 and Enable DHCP Option 6 OpenDNS.

5. **Apply and Confirm:** Scroll to the top and click **Apply** and then click **OK** for the warning message.

The screenshot shows the Cisco WLC configuration page for a new interface, specifically the 'Interfaces > Edit' page. A warning message is displayed in a dialog box, stating: '192.168.200.254 says: Changing the interface parameters causes the WLANs to be temporarily disabled and thus may result in loss of connectivity for some clients.' The dialog box has 'OK' and 'Cancel' buttons. The background shows the 'General Information' section of the interface configuration, with fields for Interface Name (vlan5) and MAC Address (70:18:a7:c8:cc:00). The 'Apply' button is visible at the bottom right of the configuration page.

Configure a WPA2 Enterprise WLAN on the WLC

Configure a New Interface (Cont.)

6. **Verify Interfaces:** Click **Interfaces** to verify that the new **vlan5** interface is shown in the list of interfaces with its IPv4 address.



The screenshot shows the Cisco WLC configuration page for the 'CONTROLLER' tab. The left sidebar contains a navigation menu with options like General, Icons, Inventory, Interfaces, Interface Groups, Multicast, Network Routes, Fabric Configuration, and Redundancy. The main area displays the 'Interfaces' table, which lists various interfaces and their configurations. The 'vlan5' interface is highlighted at the bottom of the list.

Interface Name	VLAN Identifier	IP Address	Interface Type	Dynamic AP Management	IPv6 Address
management	untagged	192.168.200.254	Static	Enabled	::/128
redundancy-management	untagged	0.0.0.0	Static	Not Supported	
redundancy-port	untagged	0.0.0.0	Static	Not Supported	
service-port	N/A	0.0.0.0	DHCP	Disabled	::/128
user_vlan	10	192.168.10.254	Dynamic	Disabled	::/128
virtual	N/A	1.1.1.1	Static	Not Supported	
vlan5	5	192.168.5.254	Dynamic	Disabled	::/128

Configure a WPA2 Enterprise WLAN on the WLC

Video – Configure a DHCP Scope

This video will cover the following:

- Review the topology
- Explain the role of the WLC DHCP server
- Create a new DHCP scope

Configure a WPA2 Enterprise WLAN on the WLC

Configure a DHCP Scope

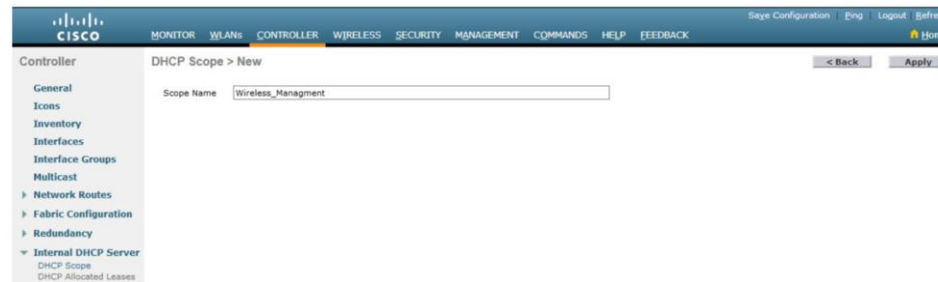
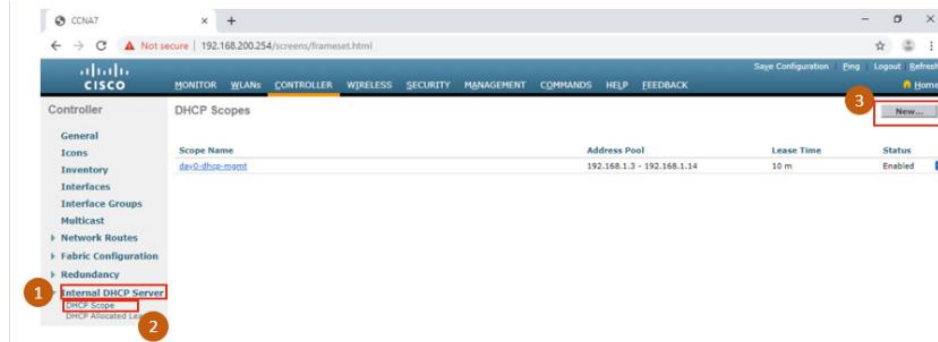
DHCP scope configuration includes the following steps:

1. Create a new DHCP scope.
2. Name the DHCP scope.
3. Verify the new DHCP scope.
4. Configure and enable the new DHCP scope.
5. Verify the enable DHCP scope

Configure a WPA2 Enterprise WLAN on the WLC

Configure a DHCP Scope (Cont.)

1. **Create a new DHCP scope:** To configure a new DHCP scope, click **Internal DHCP Server > DHCP Scope > New....**
2. **Name the DHCP scope:** The scope is named **Wireless_Management** and then applied.



Configure a WPA2 Enterprise WLAN on the WLC

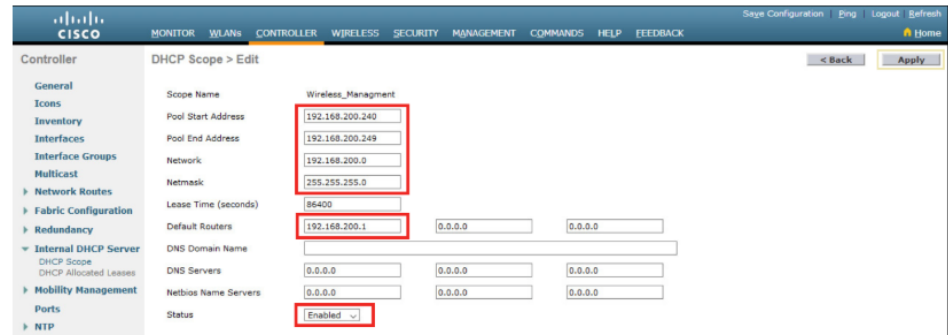
Configure a DHCP Scope (Cont.)

- Verify the new DHCP scope:** In the **DHCP Scopes** page click the new Scope Name to configure the DHCP scope.
- Configure and enable the new DHCP scope:** On the Edit screen for the **Wireless_Management** scope, configure a pool of addresses (i.e., 192.168.200.240/24 to .249), the default router IPv4 address (i.e., 192.168.200.1), then **Enabled** and **Apply**.



The screenshot shows the Cisco WLC interface with the 'CONTROLLER' tab selected. The 'DHCP Scopes' page is displayed, showing a table of configured scopes. The table has columns for Scope Name, Address Pool, Lease Time, and Status. The 'Wireless_Management' scope is highlighted in blue.

Scope Name	Address Pool	Lease Time	Status
Wireless_Management	0.0.0.0 - 0.0.0.0	1 d	Dis
day0-dhcp-mgmt	192.168.1.3 - 192.168.1.14	1 d	En



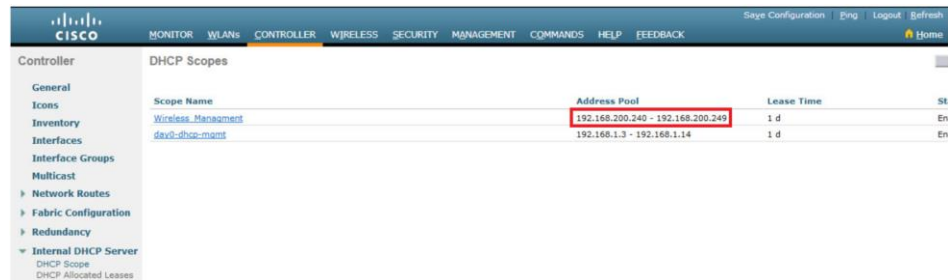
The screenshot shows the 'DHCP Scope > Edit' page for the 'Wireless_Management' scope. The page contains various configuration fields for the DHCP scope, including Pool Start Address, Pool End Address, Network, Netmask, Lease Time, Default Router, DNS Domain Name, DNS Servers, Netbios Name Servers, and Status. The 'Status' field is set to 'Enabled'.

Field	Value
Scope Name	Wireless_Management
Pool Start Address	192.168.200.240
Pool End Address	192.168.200.249
Network	192.168.200.0
Netmask	255.255.255.0
Lease Time (seconds)	86400
Default Router	192.168.200.1
DNS Domain Name	
DNS Servers	0.0.0.0, 0.0.0.0, 0.0.0.0
Netbios Name Servers	0.0.0.0, 0.0.0.0, 0.0.0.0
Status	Enabled

Configure a WPA2 Enterprise WLAN on the WLC

Configure a DHCP Scope (Cont.)

5. **Verify the enable DHCP scope:** The network administrator is returned to the **DHCP Scopes** page and can verify the scope is ready to be allocated to a new WLAN.



The screenshot shows the Cisco WLC Controller interface. The top navigation bar includes tabs for MONITOR, WLANs, CONTROLLER (selected), WIRELESS, SECURITY, MANAGEMENT, COMMANDS, HELP, and FEEDBACK. On the left, a sidebar menu lists various configuration options under the 'Controller' heading, including General, Icons, Inventory, Interfaces, Interface Groups, Multicast, Network Routes, Fabric Configuration, Redundancy, and Internal DHCP Server. The main content area is titled 'DHCP Scopes' and displays a table with the following data:

Scope Name	Address Pool	Lease Time	Status
Wireless_Management	192.168.200.240 - 192.168.200.249	1 d	Enabled
davi0-dhcc-mgmt	192.168.1.3 - 192.168.1.14	1 d	Enabled

Video – Configure a WPA2 Enterprise WLAN

This video will cover the following:

- Review the topology
- Create a WLAN
- Configure the WLC to use the RADIUS server
- Secure the new WLAN with WPA2-Enterprise
- Verify WPA2-Enterprise Security

Configure a WPA2 Enterprise WLAN on the WLC

Configure a WPA2 Enterprise WLAN

By default, all newly created WLANs on the WLC will use WPA2 with Advanced Encryption System (AES).

- 802.1X is the default key management protocol used to communicate with the RADIUS server.
- Next, create a new WLAN to use interface **vlan5**.

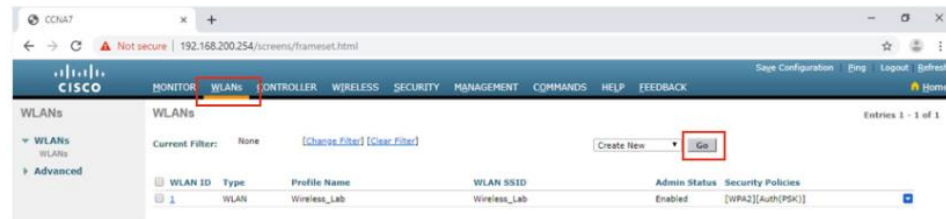
Configuring a new WLAN on the WLC includes the following steps:

1. Create a new WLAN.
2. Configure the WLAN name and SSID.
3. Enable the WLAN for VLAN 5.
4. Verify AES and 802.1X defaults.
5. Configure WLAN security to use the RADIUS server.
6. Verify the new WLAN is available.

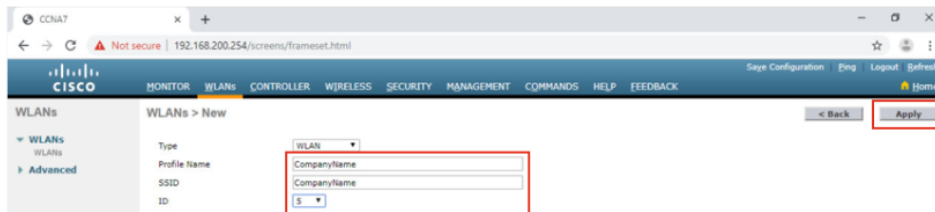
Configure a WPA2 Enterprise WLAN on the WLC

Configure a WPA2 Enterprise WLAN (Cont.)

1. **Create a new WLAN:** Click the **WLANs** tab and then **Go** to create a new WLAN.



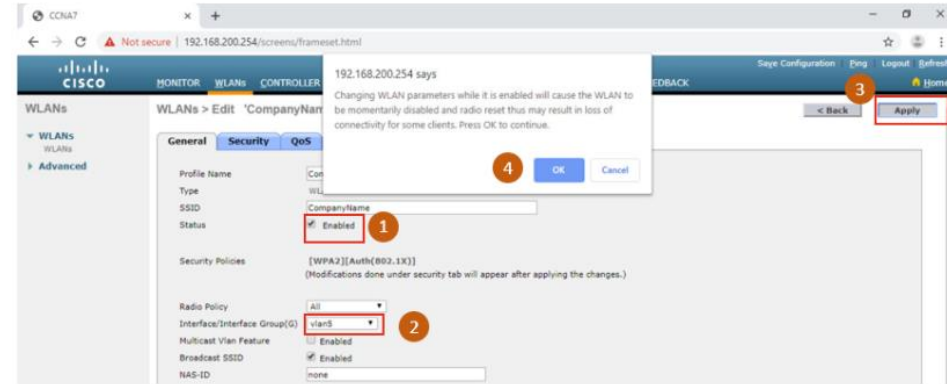
2. **Configure the WLAN name and SSID:** Enter the profile name and SSID, choose an ID of **5**, and then click **Apply** to create the new WLAN.



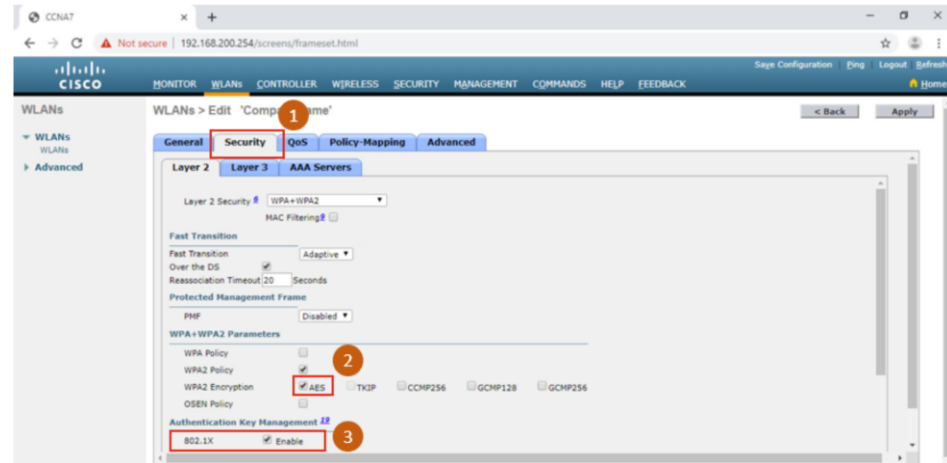
Configure a WPA2 Enterprise WLAN on the WLC

Configure a WPA2 Enterprise WLAN (Cont.)

- 3. Enable the WLAN for VLAN 5:** Once the WLAN, change the status to **Enabled**, choose **vlan5** from the Interface/Interface Group(G) dropdown list, and then click **Apply** and click **OK** to accept the popup message.



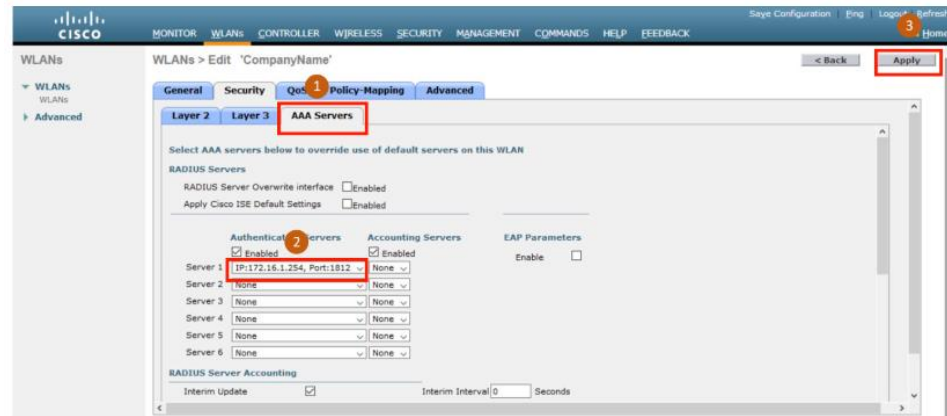
- 4. Verify AES and 802.1X defaults:** Click the **Security** tab to view the default security configuration for the new WLAN.



Configure a WPA2 Enterprise WLAN on the WLC

Configure a WPA2 Enterprise WLAN (Cont.)

5. **Configure the RADIUS server:** To select the RADIUS server that will be used to authenticate WLAN users, click the **AAA Servers** tab and in the dropdown box, select the RADIUS server that was configured on the WLC previously, and then **Apply** your changes.



6. **Verify that the new WLAN is available:** To verify that the new WLAN is listed and enabled click on the **WLANs** submenu.



Configure a WPA2 Enterprise WLAN on the WLC

Packet Tracer – Configure a WPA2 Enterprise WLAN on the WLC

In this Packet Tracer activity, you will configure a new WLAN on a wireless LAN controller (WLC), including the VLAN interface that it will use. You will configure the WLAN to use a RADIUS server and WPA2-Enterprise to authenticate users. You will also configure the WLC to use an SNMP server.

- Configure a new VLAN interface on a WLC.
- Configure a new WLAN on a WLC.
- Configure a new scope on the WLC internal DHCP server.
- Configure the WLC with SNMP settings.
- Configure the WLC to use a RADIUS server to authenticate WLAN users.
- Secure a WLAN with WPA2-Enterprise.
- Connect hosts to the new WLC.

13.5 Module Practice and Summary