

# **Central Web Authentication**

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# **Information About Central Web Authentication**

Central web authentication offers the possibility to have a central device that acts as a web portal (in this example, the ISE). The major difference compared to the usual local web authentication is that it is shifted to Layer 2 along with MAC filtering or dot1x authentication. The concept also differs in that the radius server (ISE in this example) returns special attributes that indicate to the switch that a web redirection must occur. This solution eliminates any delay to start the web authentication.

The following are the different types of web authentication methods:

- Local Web Authentication (LWA): Configured as Layer 3 security on the controller, the web authentication page and the pre-authentication ACL are locally configured on the controller. The controller intercepts http(s) traffic and redirects the client to the internal web page for authentication. The credentials entered by the client on the login page is authenticated by the controller locally or through a RADIUS or LDAP server.
- External Web Authentication (EWA): Configured as Layer 3 security on the controller, the controller intercepts http(s) traffic and redirects the client to the login page hosted on the external web server. The credentials entered by the client on the login page is authenticated by the controller locally or through a RADIUS or LDAP server. The pre-authentication ACL is configured statically on the controller.
- Central Web Authentication (CWA): Configured mostly as Layer 2 security on the controller, the redirection URL and the pre-authentication ACL reside on ISE and are pushed during layer 2 authentication to the controller. The controller redirects all web traffic from the client to the ISE login page. ISE validates the credentials entered by the client through HTTPS and authenticates the user.

Globally, if the MAC address of the client station is not known by the radius server (but other criteria can also be used), the server returns the redirection attributes, and the controller authorizes the station (using the MAC filtering) but places an access list to redirect the web traffic to the portal.

Once the user logs into the guest portal, it is possible to re-authenticate the client so that a new Layer 2 MAC filtering occurs using the Change of Authorization (CoA). This way, the ISE remembers that it was a webauth user and pushes the necessary authorization attributes to the controller for accessing the network.



In Central Web Authentication (CWA) with dual VLAN posture scenario, Cisco AireOS and IOS-XE controller performs 2 and 3 EAPOL handshakes respectively. If a client is stuck in a quarantine VLAN because of any break in EAPOL handshake due to client or network issue, you need to analyze the client or network issue.

However, you can manually disconnect or reconnect the client to come out of the quarantine loop (or) click the Scan Again on AnyConnect (Or) enable posture lease (Or) use the ISE posture sync feature.

### **Prerequisites for Central Web Authentication**

• Cisco Identity Services Engine (ISE)

# **How to Configure ISE**

To configure ISE, proceed as follows:

- **1.** Create an authorization profile.
- 2. Create an authentication rule.
- 3. Create an authorization rule.

### **Creating an Authorization Profile**

Step 1	Click Policy, and click Policy Elements.	
Step 2	Click <b>Results</b> .	
Step 3	Expand Authorization, and click Authorization Profiles.	
Step 4	Click Add to create a new authorization profile for central webauth.	
Step 5	In the Name field, enter a name for the profile. For example, CentralWebauth.	
Step 6	Choose ACCESS_ACCEPT from the Access Type drop-down list.	
Step 7	Check the Web Redirection (CWA, MDM, NSP, CPP) check box, and choose Centralized Web Auth from the drop-down list.	
Step 8	In the <b>ACL</b> field, enter the name of the ACL that defines the traffic to be redirected. For example, redirect.	
Step 9	In the Value field, choose the default or customized values.	
	The Value attribute defines whether the ISE sees the default or a custom web portal that the ISE admin created	

Step 10 Click Save.

### **Creating an Authentication Rule**

Follow the procedure given below to use the authentication profile and create the authentication rule:

#### Procedure

Step 1	In the <b>Policy</b> > <b>Authentication</b> page, click <b>Authentication</b> .	
Step 2	Enter a name for your authentication rule. For example, MAB.	
Step 3	In the If condition field, select the plus (+) icon.	
Step 4	Choose Compound condition, and choose Wireless_MAB.	
Step 5	Click the arrow located next to and in order to expand the rule further.	
Step 6	Click the + icon in the Identity Source field, and choose Internal endpoints.	
Step 7	Choose Continue from the 'If user not found' drop-down list.	
	This option allows a device to be authenticated even if its MAC address is not known.	
Step 8	Click Save.	

### **Creating an Authorization Rule**

You can configure many rules in the authorization policy. The *MAC not known* rule is configured in this section:

Step 1	Click <b>Policy</b> > <b>Authorization</b> .		
Step 2	In the Rule Name field, enter a name. For example: Mac not known.		
Step 3	In the Conditions field, click the plus (+) icon.		
Step 4	Choose Compound Conditions, and choose Wireless_MAB.		
Step 5	From the settings icon, select Add Attribute/Value from the options.		
Step 6	In the Description field, choose <b>Network Access</b> > <b>AuthenticationStatus</b> as the attribute from the drop-down list.		
Step 7	Choose the <b>Equals</b> operator.		
Step 8	From the right-hand field, choose UnknownUser.		
<b>Step 9</b> In the Permissions field, choose the authorization profile name that you had created earlier.			
	The ISE continues even though the user (or MAC) is not known.		
	Unknown users are now presented with the Login page. However, once they enter their credentials, they are presented again with an authentication request on the ISE; therefore, another rule must be configured with a		

condition that is met if the user is a guest user. For example, if UseridentityGroup Equals Guest is used then it is assumed that all guests belong to this group.

- **Step 10** In the Conditions field, click the plus (+) icon.
- Step 11 Choose Compound Conditions, and choose to create a new condition.

The new rule must come before the MAC not known rule.

- **Step 12** From the settings icon, select **Add Attribute/Value** from the options.
- Step 13 In the Description field, choose Network Access > UseCase as the attribute from the drop-down list.
- **Step 14** Choose the **Equals** operator.
- **Step 15** From the right-hand field, choose **GuestFlow**.
- **Step 16** In the Permissions field, click the plus (+) icon to select a result for your rule.

You can choose **Standard** > **PermitAccess** option or create a custom profile to return the attributes that you like.

When the user is authorized on the login page, the ISE triggers a COA that results in the restart of Layer 2 authentication. When the user is identified as a guest user, the user is authorized.

# How to Configure Central Web Authentication on the Controller

To configure central web authentication on the controller, proceed as follows:

- 1. Configure WLAN.
- 2. Configure policy profile.
- 3. Configure redirect ACL.
- 4. Configure AAA for central web authentication.
- 5. Configure redirect ACL in Flex profile.

### **Configuring WLAN (GUI)**

#### Before you begin

You need to enable MAC filtering for Layer 2 authentication to download the redirect URL and ACL.

#### Procedure

Step 1	Choose Configuration > Tags & Profiles > WLANs.	
Step 2	In the WLANs window, click the name of the WLAN or click Add to create a new one.	
Step 3	In the Add/Edit WLAN window that is displayed, click the General tab to configure the following parameters.	

• In the **Profile Name** field, enter or edit the name of the profile.

• In the SSID field, enter or edit the SSID name.

The SSID name can be alphanumeric, and up to 32 characters in length.

- In the WLAN ID field, enter or edit the ID number. The valid range is between 1 and 512.
- From the Radio Policy drop-down list, choose the 802.11 radio band.
- Using the Broadcast SSID toggle button, change the status to either Enabled or Disabled .
- Using the Status toggle button, change the status to either Enabled or Disabled .
- **Step 4** Click the **Security** tab, and then **Layer 2** tab to configure the following parameters:
  - From the Layer 2 Security Mode drop-down list, choose None. This setting disables Layer 2 security.
  - Enter the **Reassociation Timeout** value, in seconds. This is the time after which a fast transition reassociation times out.
  - Check the Over the DS check box to enable Fast Transition over a distributed system.
  - Choose OWE, Opportunistic Wireless Encryption (OWE) provides data confidentiality with encryption over the air between an AP radio and a wireless client. OWE Transition Mode is meant to provide a sort of backwards compatibility.
  - Choose Fast Transition, 802.11r which is the IEEE standard for fast roaming, introduces a new concept of roaming where the initial handshake with a new AP is done even before the corresponding client roams to the target access point. This concept is called Fast Transition.
  - Check the check box to enable MAC filtering in the WLAN.
  - Check the Lobby Admin Access check box to enable Lobby Admin access.
- Step 5 Click Save & Apply to Device.

### **Configuring WLAN (CLI)**

Configure WLAN using commands.



Note You need to enable MAC filtering for Layer 2 authentication to download the redirect URL and ACL.

After completing the WLAN configuration, if the changes are not pushed to all the APs, the following syslog message appears:

2021/01/06 16:20:00.597927186 {wncd\_x\_R0-4}{1}: [wlanmgr-db] [20583]: UUID: 0, ra: 0, TID: 0 (note): Unable to push WLAN config changes to all APs, cleanup required for WlanId: 2, profile: wlan1 state: Delete pending

If the above mentioned syslog message appears for more than six minutes, reload the controller.

If the controller does not reload and still the syslog message appears, then collect the archive logs, wncd core file, and raise a case by clicking the following link: Support Case Manager.

	Command or Action	Purpose	
Step 1	configure terminal	Enters glob	al configuration mode.
	Example:		
	Device# configure terminal		
Step 2	wlan wlan-name wlan-id SSID-name	Enters the	WLAN configuration sub-mode.
	<pre>Example: Device(config)# wlan wlanProfileName 1</pre>	<b>wlan-nam</b> WLAN.	e is the name of the configured
	ngwcSSID	wlan-id is range is 1 t	the wireless LAN identifier. The o 512.
		<b>SSID-nam</b> contain 32	e is the SSID name which can alphanumeric characters.
		Note	If you have already configured this command, enter <b>wlan</b> <b>wlan-name</b> command.
Step 3	mac-filtering [name]	Enables M	AC filtering on a WLAN.
	<pre>Example: Device(config-wlan)# mac-filtering name</pre>	Note	While configuring mac-filtering the default authentication list is considered, if the authentication list is not configured earlier.
Step 4	no security wpa	Disable WI	PA security.
-	Example:		
	Device(config-wlan)# no security wpa		
Step 5	no shutdown	Enables the	e WLAN.
	Example:		
	Device(config-wlan)# no shutdown		
Step 6	end	Returns to	privileged EXEC mode.
	Example:		
	Device(config-wlan)# end		

#### Procedure

#### Example

```
Device# config terminal
Device(config)# wlan wlanProfileName 1 ngwcSSID
Device(config-wlan)# mac-filtering default
Device(config-wlan)# no security wpa
Device(config-wlan)# no shutdown
Device(config-wlan)# end
```

### **Configuring Policy Profile (CLI)**

Configure Policy Profile using commands.

# Note

You need a AAA override to apply policies coming from the AAA or ISE servers. When a redirect URL and redirect ACL is received from the ISE server, NAC is used to trigger the Central Web Authentication (CWA).

Both NAC and AAA override must be available in the policy profile to which the client is being associated.

The default policy profile is associated to an AP, if the AP is not associated to any other policy profiles.

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example:	
	Device# configure terminal	
Step 2	wireless profile policy default-policy-profile	Sets the policy profile.
	Example:	
	Device(config)# wireless profile policy default-policy-profile	
Step 3	vlan vlan-id	Maps the VLAN to a policy profile. If vlan-id
	Example:	is not specified, the default native vlan 1 is applied The valid range for vlan-id is 1 to 4096
	<pre>Device(config-wireless-policy)# vlan 41</pre>	Management VLAN is applied if no VLAN is configured on the policy profile.
Step 4	aaa-override	Configures AAA override to apply policies
	Example:	coming from the AAA or ISE servers.
	Device(config-wireless-policy)# aaa-override	
Step 5	nac	Configures Network Access Control in the
	Example:	policy profile. NAC is used to trigger the Central Web Authentication (CWA)
	<pre>Device(config-wireless-policy) # nac</pre>	
Step 6	no shutdown	Enables the WLAN.
	Example:	
	<pre>Device(config-wireless-policy) # no shutdown</pre>	
Step 7	end	Returns to privileged EXEC mode.
	Example:	
	Device(config-wireless-policy)# end	

#### Example

```
Device# configure terminal
Device(config)# wireless profile policy default-policy-profile
Device(config-wireless-policy)# vlan 41
Device(config-wireless-policy)# aaa-override
Device(config-wireless-policy)# nac
Device(config-wireless-policy)# no shutdown
Device(config-wireless-policy)# end
```

### Configuring a Policy Profile (GUI)

#### Procedure

Choose Configuration > Tags & Profiles > Policy.		
On the <b>Policy Profile</b> page, click <b>Add</b> .		
n the Add Policy Profile window, in General Tab, enter a name and description for the policy profile.		
To enable the policy profile, set <b>Status</b> as Enabled.		
Use the slider to enable or disable Passive Client and Encrypted Traffic Analytics.		
(Optional) In the <b>CTS Policy</b> section, choose the appropriate status for the following:		
• Inline Tagging—a transport mechanism using which a controller embedded wireless controller or access point understands the source SGT.		
SGACL Enforcement		
Specify a default <b>SGT</b> . The valid range is from 2 to 65519.		
In the WLAN Switching Policy section, choose the following, as required:		
Central Switching		
Central Authentication		
Central DHCP		
Central Association Enable		
• Flex NAT/PAT		
Click Save & Apply to Device.		

### **Creating Redirect ACL**

The redirect ACL is a punt ACL that needs to be predefined on the controller (or the AP in case of FlexConnect local switching): the AAA server returns the name of the ACL and not its definition. The redirect ACL defines traffic (matching "deny"statements, as it denies redirection for it) that will be allowed through on the data plane and traffic (matching "permit" statements) that will be sent to the control plane towards the CPU for further processing (that is, the web interception and redirection in this case). The ACL has implicit (that is,

the invisible) statements allowing DHCP and DNS traffic towards all IPs, just like it is the case with LWA. It also ends with a statement that a security ACL implicit deny.

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example:	
	Device# configure terminal	
Step 2	<pre>ip access-list extended redirect Example: Device(config)# ip access-list extended redirect</pre>	The HTTP and HTTPS browsing does not work without authentication (per the other ACL) as ISE is configured to use a redirect ACL (named <b>redirect</b> ).
Step 3	<pre>deny ip any host ISE-IP-add Example: Device(config)# deny ip any host 123.123.134.112</pre>	Allows traffic to ISE and all other traffic is blocked.
Step 4	<pre>deny ip host ISE-IP-add any Example: Device(config)# deny ip host 123.123.134.112 any</pre>	Allows traffic to ISE and all other traffic is blocked. Note This ACL is applicable for both local and flex mode.
Step 5	<pre>permit TCP any any eq web address/port-number Example: In case of HTTP: Device (config) # permit TCP any any eq www Device (config) # permit TCP any any eq 80 Example: In case of HTTPS: Device (config) # permit TCP any any eq 443</pre>	Redirects all HTTP or HTTPS access to the ISE login page. port-number 80 is used for HTTP and port-number 443 is used for HTTPS. For the ACE to allow traffic to ISE, ISE should be configured above the HTTP/HTTPS ACE.
Step 6	end Example: Device(config)# end	Returns to privileged EXEC mode.

### **Configuring AAA for Central Web Authentication**

#### Procedure

	Command or Action	Purpose
Step 1	<pre>aaa server radius dynamic-author Example: Device(config)# aaa server radius dynamic-author</pre>	Configures the Change of Authorization (CoA) on the controller.
Step 2	<pre>client ISE-IP-add server-key radius-shared-secret Example: Device(config-locsvr-da-radius)# client 123.123.134.112 server-key 0 SECRET </pre>	<ul> <li>Specifies a RADIUS client and the RADIUS key to be shared between a device and a RADIUS client.</li> <li>ISE-IP-add is the IP address of the RADIUS client.</li> <li>server-key is the radius client server-key.</li> <li>radius-shared-secret covers the following: <ul> <li>0—Specifies unencrypted key.</li> <li>6—Specifies encrypted key.</li> <li>7—Specifies HIDDEN key.</li> <li>Word—Unencrypted (cleartext) server key.</li> </ul> </li> <li>The RADIUS shared secret should not exceed 240 characters while configuring WSMA data in GUI.</li> <li>Note All these steps work only if the AAA configuration is in place. See the <i>Configuring AAA Authentication</i> for details.</li> </ul>

#### Example

```
Device# config terminal
Device(config)# aaa server radius dynamic-author
Device(config-locsvr-da-radius)# client 123.123.134.112 server-key 0 SECRET
Device(config-locsvr-da-radius)# end
```

### **Configuring Redirect ACL in Flex Profile (GUI)**

The redirect ACL definition must be sent to the access point in the FlexConnect profile. For this, the redirect ACL associated with an AP must be configured in the FlexConnect profile where the client is hosted. If an

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access point is not configured with any of the FlexConnect profiles, the default FlexConnect profile is associated with it.

#### Procedure

Step 1	Choose Configuration > Tags & Profiles > Flex.
Step 2	On the <b>Flex Profile</b> page, click the name of the FlexConnect profile or click <b>Add</b> to create a new FlexConnect profile.
Step 3	In the Add/Edit Flex Profile window that is displayed, click the Policy ACL tab.
Step 4	Click Add to map an ACL to the FlexConnect profile.
Step 5	Choose the ACL name, enable central web authentication, and specify the preauthentication URL filter.
Step 6	Click Save.
Step 7	Click Update & Apply to Device.

### **Configuring Redirect ACL in Flex Profile (CLI)**

The redirect ACL definition must be sent to the access point in the Flex profile. For this, the redirect ACL associated to an AP must be configured in the Flex profile where the client is being hosted. If an access point is not configured with any of the Flex profiles, the default Flex profile is associated with it.



When the ACL is pushed down to the APs, the permission must change from **deny** to **permit** or vice-versa. This change does not occur if the ACL contains an object group, causing the ACL not to be fully translated, which may cause the redirection to fail.

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example:	
	Device# configure terminal	
Step 2	wireless profile flex default-flex-profile	Creates a new flex policy. The default flex
	Example:	profile name is <b>default-flex-profile</b> .
	Device(config)# wireless profile flex default-flex-profile	
Step 3	acl-policy acl policy name	Configures ACL policy.
	Example:	
	<pre>Device(config-wireless-flex-profile)# acl-policy acl1</pre>	

	Command or Action	Purpose
Step 4	central-webauth	Configures central web authentication.
	Example:	
	<pre>Device(config-wireless-flex-profile-acl)#     central-webauth</pre>	
Step 5	end	Returns to privileged EXEC mode.
	Example:	
	<pre>Device(config-wireless-flex-profile-acl)#    end</pre>	

### **Troubleshooting Central Web Authentication**

Init-State timer running out

**Problem Issue**: The client devices are deauthenticated by the controller if users fail to enter their credentials in a limited time interval. The clients are deauthenticated after three times the time configured for the init-state timeout in the controller.

**Problem Explanation**: This is the expected functionality as the init-state timeout is not directly applicable for central web authentication; instead, it is the reap timer's value which is three times the init-state time plus five seconds (3\*init-state timeout + 5) that determines the time interval in seconds for client deauthentication. For example, if you have configured the init-state timeout as 10 seconds, then the client devices are deuathenticated if users fail to enter their credentials after 35 seconds; that is (3\*10+5) = 35 seconds.

# **Authentication for Sleeping Clients**

### Information About Authenticating Sleeping Clients

Clients with guest access that have had successful web authentication are allowed to sleep and wake up without having to go through another authentication process through the login page. You can configure the duration for which sleeping clients should be remembered for before reauthentication becomes necessary. The valid range is 10 minutes to 43200 minutes, with the default being 720 minutes. You can also configure this duration on WebAuth parameter map that is mapped to a WLAN. Note that the sleeping client timer comes into effect due to instances such as idle timeout, session timeout, disabling of the WLAN, and the AP being nonoperational.

This feature is supported in the following FlexConnect scenario: local switching and central authentication.

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**Caution** If the MAC address of a client that goes to sleep mode is spoofed, the fake device such as a laptop can be authenticated.

#### **Mobility Scenarios**

Following are some guidelines in a mobility scenario:

• L2 roaming in the same subnet is supported.

- Anchor sleeping timer is applicable.
- The sleeping client information is shared between multiple autoanchors when a sleeping client moves from one anchor to another.

A sleeping client does not require reauthentication in the following scenarios:

- Suppose there are two controller s in a mobility group. A client that is associated with one controller goes to sleep and then wakes up and gets associated with the other controller .
- Suppose there are three controller s in a mobility group. A client that is associated with the second controller that is anchored to the first controller goes to sleep, wakes up, and gets associated with the third controller.
- A client sleeps, wakes up and gets associated with the same or different export foreign controller that is anchored to the export anchor.

### **Restrictions on Authenticating Sleeping Clients**

- The sleep client feature works only for WLAN configured with WebAuth security.
- You can configure the sleeping clients only on a per WebAuth parameter-map basis.
- The authentication of sleeping clients feature is supported only on WLANs that have Layer 3 security enabled.
- With Layer 3 security, the Authentication, Passthrough, and On MAC Filter failure web policies are supported. The Conditional Web Redirect and Splash Page Web Redirect web policies are not supported.
- The central web authentication of sleeping clients is not supported.
- The authentication of sleeping clients feature is not supported on guest LANs and remote LANs.
- A guest access sleeping client that has a local user policy is not supported. In this case, the WLAN-specific timer is applied.

### **Configuring Authentication for Sleeping Clients (GUI)**

Step 1	Choose Configuration > Security > Web Auth.
Step 2	In the <b>Webauth Parameter Map</b> tab, click the parameter map name. The <b>Edit WebAuth Parameter</b> window is displayed.
Step 3	Select Sleeping Client Status check box.
Step 4	Click Update & Apply to Device.

### **Configuring Authentication for Sleeping Clients (CLI)**

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	Command or Action	Purpose
Step 1	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 2	<pre>[no] parameter-map type webauth {parameter-map-name   global} Example: Device(config)# parameter-map type webauth global</pre>	Creates a parameter map and enters parameter-map webauth configuration mode.
Step 3	<pre>sleeping-client [timeout time] Example: Device(config-params-parameter-map)# sleeping-client timeout 100</pre>	Configures the sleeping client timeout to 100minutes. Valid range is between 10 minutes and43200 minutes.NoteIf you do not use the timeout keyword, the sleeping client is configured with the default timeout value of 720 minutes.
Step 4	end	Exits parameter-map webauth configuration mode and returns to privileged EXEC mode.
Step 5	(Optional) show wireless client sleeping-client Example: Device# show wireless client sleeping-client	Shows the MAC address of the clients and the time remaining in their respective sessions.
Step 6	(Optional) clear wireless client sleeping-client [mac-address mac-addr] Example: Device# clear wireless client sleeping-client mac-address 00e1.ele1.0001	<ul> <li>clear wireless client sleeping-client—Deletes all sleeping client entries from the sleeping client cache.</li> <li>clear wireless client sleeping-client mac-address mac-addr—Deletes the specific MAC entry from the sleeping client cache.</li> </ul>

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# **Sleeping Clients with Multiple Authentications**

### **Mobility Support for Sleeping Clients**

From Release 17.1.1 onwards, mobility support for guest and nonguest sleeping clients.

### **Supported Combinations of Multiple Authentications**

Multiple authentication feature supports sleeping clients configured in the WLAN profile.

The following table outlines the supported combination of multiple authentications:

#### Table 1: Supported Combinations of Multiple Authentications

Layer 2	Layer 3	Supported
MAB	LWA	Yes
MAB Failure	LWA	Yes
Dot1x	LWA	Yes
PSK	LWA	Yes

### **Configuring Sleeping Clients with Multiple Authentications**

### **Configuring WLAN for Dot1x and Local Web Authentication**

	Command or Action	Purpose
Step 1	<pre>configure terminal Example: Device# configure terminal</pre>	Enters global configuration mode.
Step 2	<pre>wlan profile-name wlan-id SSID_name Example: Device(config)# wlan wlan-test 3 ssid-test</pre>	<ul> <li>Enters WLAN configuration submode.</li> <li><i>profile-name</i> - Profile name of the configured WLAN.</li> <li><i>wlan-id</i> - Wireless LAN identifier. Range is from 1 to 512.</li> <li><i>SSID_Name</i> - SSID, which can contain up to 32 alphanumeric characters.</li> </ul>
Step 3	<pre>security dot1x authentication-list auth-list-name Example: Device(config-wlan)# security dot1x authentication-list default</pre>	Enables security authentication list for dot1x security. The configuration is similar for all dot1x security WLANs.

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	Command or Action	Purpose
Step 4	security web-auth	Configures web authentication.
	Example: Device(config-wlan)# security web-auth	
Step 5	security web-auth authentication-list authenticate-list-name	Enables authentication list for dot1x security.
	Example: Device(config-wlan)# security web-auth authentication-list default	
Step 6	<pre>security web-auth parameter-map parameter-map-name Example: Device(config-wlan)# security web-auth parameter-map global</pre>	Maps the parameter map. <b>Note</b> : If the parameter map is not associated with a WLAN, the configuration is considered from the global parameter map.
Step 7	no shutdown Example: Device(config-wlan)# no shutdown	Enables WLAN.

## **Configuring a WLAN for MAC Authentication Bypass and Local Web Authentication**

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	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	<b>Example:</b> Device# configure terminal	
Step 2	wlan profile-name wlan-id SSID_name	Enters WLAN configuration submode.
	Example: Device(config)# wlan wlan-test 3 ssid-test	<ul> <li><i>profile-name</i> - Profile name of the configured WLAN.</li> <li><i>wlan-id</i> - Wireless LAN identifier. Range is from 1 to 512.</li> <li><i>SSID_Name</i> - SSID, which can contain up to 32 alphanumeric characters.</li> </ul>
Step 3	mac-filtering list-name	Sets the MAC filtering parameters.
	Example:	
	<pre>Device(config-wlan)# mac-filtering cat-radius</pre>	

	Command or Action	Purpose
Step 4	no security wpa akm dot1x	Disables security AKM for dot1x.
	Example:	
	Device(config-wlan)# no security wpa akm dot1x	
Step 5	no security wpa wpa2 ciphers aes	Disables the WPA2 cipher.
	Example:	<b>aes</b> —Excryption type that specifies WPA/AES
	Device(config-wlan)# no security wpa wpa2 ciphers aes	support.
Step 6	security web-auth parameter-map	Maps the parameter map.
	parameter-map-name	<b>Note</b> : If parameter map is not associated with
	Example:	a WLAN, the configuration is considered from
	Device(config-wlan)# security web-auth parameter-map global	the global parameter map.
Step 7	no shutdown	Enables WLAN.
	Example:	
	Device(config-wlan)# <b>no shutdown</b>	
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# Configuring a WLAN for Local Web Authentication and MAC Filtering

	Command or Action	Purpose
Step 1	configure terminal Example:	Enters global configuration mode.
	Device# configure terminal	
Step 2	<pre>wlan profile-name wlan-id SSID_name Example: Device(config)# wlan wlan-test 3 ssid-test</pre>	<ul> <li>Enters WLAN configuration submode.</li> <li><i>profile-name</i> - Profile name of the configured WLAN.</li> <li><i>wlan-id</i> - Wireless LAN identifier. Range is from 1 to 512.</li> <li><i>SSID_Name</i> - SSID, which can contain up to 32 alphanumeric characters.</li> </ul>
Step 3	<pre>mac-filtering list-name Example: Device(config-wlan)# mac-filtering cat-radius</pre>	Sets the MAC filtering parameters.

#### Procedure

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	Command or Action	Purpose
Step 4	<pre>no security wpa akm dot1x Example: Device(config-wlan)# no security wpa akm dot1x</pre>	Disables security Authenticated Key Management (AKM) for dot1x.
Step 5	no security wpa wpa2 ciphers aes Example: Device(config-wlan)# no security wpa wpa2 ciphers aes	Disables the WPA2 cipher. <b>aes</b> : Excryption type that specifies WPA/AES support.
Step 6	<pre>security web-auth on-macfilter-failure Example: Device(config-wlan)# security web-auth on-macfilter-failure wlan-id</pre>	Configures the fallback policy with MAC filtering and web authentication.
Step 7	<pre>security web-auth parameter-map parameter-map-name Example: Device(config-wlan)# security web-auth parameter-map global</pre>	Maps the parameter map. <b>Note</b> : If the parameter map is not associated with a WLAN, the configuration is considered from the global parameter map.
Step 8	<pre>no shutdown Example: Device(config-wlan)# no shutdown</pre>	Enables WLAN.

# Configuring a PSK + LWA in a WLAN

### Procedure

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example:	
	Device# configure terminal	
Step 2	wlan profile-name wlan-id SSID_name	Enters WLAN configuration submode.
	Example:	• profile-name - Profile name of the
	Device(config)# wlan wlan-test 3 ssid-test	configured WLAN.
		• <i>wlan-id</i> - Wireless LAN identifier. Range is from 1 to 512.
		• <i>SSID_Name</i> - SSID, which can contain up to 32 alphanumeric characters.

	Command or Action	Purpose
Step 3	no security wpa akm dot1x	Disables security AKM for dot1x.
	Example:	
	Device(config-wlan)# no security wpa akm dot1x	
Step 4	security web-auth	Enables web authentication for a WLAN.
	Example:	
	Device(config-wlan) # security web-auth	
Step 5	no security wpa wpa2 ciphers aes	Disables the WPA2 cipher.
	Example:	<b>aes</b> : Excryption type that specifies WPA/AES
	Device(config-wlan)# no security wpa wpa2 ciphers aes	support.
Step 6	security wpa psk set-key ascii ascii/hex key	Configures the preshared key on a WLAN.
	Example:	
	Device(config-wlan)# security wpa psk set-key ascii 0 1234567	
Step 7	security wpa akm psk	Configures PSK support.
	Example:	
	Device(config-wlan)# security wpa akm psk	
Step 8	security web-auth authentication-list	Enables the authentication list for dot1x
	authenticate-list-name	security.
	Example:	
	<pre>Device(config-wlan)# security web-auth    authentication-list default</pre>	
Step 9	security web-auth parameter-map	Maps the parameter map.
	parameter-map-name	Note: If the parameter map is not associated
	Example:	with a WLAN, the configuration is considered
	<pre>Device(config-wlan)# security web-auth parameter-map global</pre>	from the global parameter map.

# **Configuring a Sleeping Client**

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example:	

	Command or Action	Purpose
	Device# configure terminal	
Step 2	<pre>parameter-map type webauth {parameter-map-name   global} Example: Device(config)# parameter-map type webauth MAP-2</pre>	Creates a parameter map and enters <i>parameter-map-name</i> configuration mode. The specific configuration commands supported for a <b>global</b> parameter map defined with the global keyword differ from the commands supported for a named parameter map defined with the <i>parameter-map-name</i> argument.
Step 3	<pre>sleeping client [timeout time] Example: Device (config-params-parameter-map) # sleeping-client timeout 60</pre>	Configures the sleeping client timeout, in minutes. The available range for the <i>time</i> argument is from 10 to 43200. <b>Note</b> : If you do not use the <b>timeout</b> keyword, the sleeping client is configured with the default timeout value of 720 minutes.

# **Verifying a Sleeping Client Configuration**

To verify a sleeping client configuration, use the following command:

Device# show wireless client sleeping-client Total number of sleeping-client entries: 1