

Configuring WLANs

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Configuring WLANs Through the CLI

Creating and Enabling WLANs (CLI)

SUMMARY STEPS

- 1. enable
- 2. configure terminal
- **3.** wlan profile-name wlan-id [ssid]
- 4. no shutdown
- 5. end

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode.
	Example:	• Enter your password if prompted.
	Device> enable	
Step 2	configure terminal	Enters the global configuration mode.
	Example:	
	Device# configure terminal	
Step 3	wlan profile-name wlan-id [ssid]	Specifies the WLAN name and ID:
	Example:	• For the <i>profile-name</i> argument, enter the profile name.
	Device(config)# wlan mywlan 34 mywlan-ssid	The range is from 1 to 32 alphanumeric characters.
		• For the <i>wlan-id</i> argument, enter the WLAN ID. The range is from 1 to 512.

	Command or Action	Purpose
		 For the <i>ssid</i>argument, enter the Service Set Identifier (SSID) for this WLAN. If the SSID is not specified, the WLAN profile name is set as the SSID. Note You can create an SSID using the GUI or CLI. However, we recommend that you use CLI to create SSID. The configured WLAN is disabled by default.
Step 4	no shutdown	Enables the WLAN.
	Example: Device(config-wlan)# no shutdown	
Step 5	end Example: Device(config)# end	Exits global configuration mode and returns to privileged EXEC mode.

Disabling and Deleting WLANs (CLI)

SUMMARY STEPS

- 1. enable
- 2. configure terminal
- **3.** wlan profile-name
- 4. shutdown
- 5. exit
- 6. no wlan wlan-name wlan-id ssid
- 7. show wlan summary

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode.
	Example:	• Enter your password if prompted.
	Device> enable	
Step 2	configure terminal	Enters global configuration mode.
	Example:	
	Device# configure terminal	
Step 3	wlan profile-name	Enters WLAN configuration mode.
	Example:	• The <i>profile-name</i> argument is the profile name of the
	<pre>Device(config)# wlan mywlan-ssid</pre>	configured WLAN.

	Command or Action	Purpose
Step 4	shutdown	Disables the WLAN.
	Example:	
	Device(config-wlan)# shutdown	
Step 5	exit	Exits WLAN configuration mode and returns to global
	Example:	configuration mode.
	Device(config-wlan)# exit	
Step 6	no wlan wlan-name wlan-id ssid	Deletes the WLAN.
	Example:	
	Device(config)# no wlan mywlan-ssid	
Step 7	show wlan summary	Displays the list of all WLANs configured on the device.
	Example:	
	Device# show wlan summary	

Configuring General WLAN Properties (CLI)

SUMMARY STEPS

- 1. enable
- 2. configure terminal
- **3**. **wlan** *profile-name*
- 4. shutdown
- 5. broadcast-ssid
- **6**. radio {dot11a | dot11ag | dot11bg | dot11ag}
- 7. media-stream multicast-direct
- 8. assisted-roaming {dual-list | neighbor-list | prediction}
- 9. band-select
- 10. bss-transition
- **11.** bssmaxidle [protected-mode]
- **12**. device-analytics [export]
- **13**. dms
- **14**. dot11ax
- **15.** dtim dot11 {24ghs | 5ghz } DTIM-period
- 16. ignore-rsn-ie-len
- **17.** ipv6 traffic-filter web *ipv6-acl-name*
- 18. load-balance
- **19.** local-auth *EAP-profile*
- 20. no shutdown
- **21**. end

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode.
	Example:	• Enter your password if prompted.
	Device> enable	
Step 2	configure terminal	Enters global configuration mode.
	Example:	
	Device# configure terminal	
Step 3	wlan profile-name	Enters WLAN configuration mode. The profile-name is
	Example:	the profile name of the configured WLAN.
	Device(config)# wlan test4	
Step 4	shutdown	Disables the WLAN.
	Example:	
	Device(config-wlan)# shutdown	
Step 5	broadcast-ssid	Broadcasts the SSID for this WLAN.
	Example:	
	<pre>Device(config-wlan)# broadcast-ssid</pre>	
Step 6	radio {dot11a dot11ag dot11bg dot11ag}	Configures the WLAN on all radio bands.
	Example:	• dot11a: Configures the WLAN on only 802.11a radio
	<pre>Device(config-wlan)# radio dot11g</pre>	bands.
		• dot11g : Configures the WLAN on 802.11ag radio bands.
		• dot11bg : Configures the WLAN on only 802.11b/g radio bands (only 802.11b if 802.11g is disabled).
		• dot11ag : Configures the wireless LAN on 802.11g radio bands only.
Step 7	media-stream multicast-direct	Enables multicast VLANs on the WLAN.
-	Example:	
	Device(config-wlan)# media-stream multicast-direct	
Step 8	assisted-roaming {dual-list neighbor-list prediction}	Configures the 802.11k neighbor-list support on the
	Example:	WLAN.
	<pre>Device(config-wlan)# assisted-roaming neighbor-list</pre>	
Step 9	band-select	Allows band selection on the WLAN.
	Example:	
	<pre>Device(config-wlan) # band-select</pre>	

	Command or Action	Purpose
Step 10	bss-transition	Configures 802.11v Basic Service Set (BSS) transition per
	Example:	WLAN.
	<pre>Device(config-wlan)# bss-transition</pre>	
Step 11	bssmaxidle [protected-mode]	Configures protected mode for BSS maximum idle
	Example:	processing per WLAN.
	<pre>Device(config-wlan)# bssmaxidle protected-mode</pre>	
Step 12	device-analytics [export]	Configures device-analytics export on the WLAN.
	Example:	
	<pre>Device(config-wlan)# device-analytics export</pre>	
Step 13	dms	Configures Directed Multicast Service (DMS) processing
	Example:	per WLAN.
	Device(config-wlan)# dms	
Step 14	dot11ax	Configures 802.11ax on the WLAN.
·	Example:	
	Device(config-wlan)# dotllax	
Step 15	dtim dot11 {24ghs 5ghz } DTIM-period	Sets the Delivery Traffic Indication Map (DTIM) period
	Example:	for the 802.11a radio for the WLAN.
	<pre>Device(config-wlan)# bssmaxidle protected-mode</pre>	
Step 16	ignore-rsn-ie-len	Skips the Robust Security Network (RSN) Information
	Example:	Element (IE) length validation during key exchange.
	<pre>Device(config-wlan)# ignore-rsn-ie-len</pre>	
Step 17	ipv6 traffic-filter web ipv6-acl-name	Specifies the IPv6 WLAN web access list.
	Example:	
	<pre>Device(config-wlan)# ipv6 traffic-filter web inv6 col 1</pre>	
Step 18	load-balance	Allows load balancing on the WLAN.
	Example:	
	bevice (coniig=wian) # load=balance	
Step 19	local-auth EAP-profile	Sets the Extensible Authentication Protocol (EAP) profile on the WLAN
	Example:	
	<pre>vevice(config=wlan)# local-auth eap-profile1</pre>	
Step 20	no shutdown	Enables the WLAN.
	Example:	
	Device(config-wlan) # no shutdown	

	Command or Action	Purpose
Step 21	end	Exits WLAN configuration mode and returns to privileged
	Example:	EXEC mode.
	Device(config-wlan)# end	

Configuring Advanced WLAN Properties (CLI)

SUMMARY STEPS

- 1. configure terminal
- **2.** wlan profile-name
- 3. chd
- 4. ccx aironet-iesupport
- **5. client association limit** {*clients-per-wlan* | **ap** *clients-per-ap-per-wlan* | **radio***clients-per-ap-radio--per-wlan* }
- 6. ip access-group web acl-name
- 7. peer-blocking [allow-private-groupdrop | forward-upstream]
- 8. channel-scan {defer-priority 0-7 | defer-time 0 6000}
- 9. mac-filtering [authorization-list authorization-override]
- 10. mbo
- **11.** mdns-sd-interface {drop | gateway}
- 12. mu-mimo
- **13.** multicast buffer multicast-buffers
- 14. roamed-voice-client re-anchor
- **15.** scan-report {association | roam}
- 16. scheduler asr
- **17.** static-ip tunneling
- **18**. tfs
- **19.** uapsd compliant-client
- 20. universal-ap-admin
- **21.** wifi-direct policy {allow | not-allow | xconnect-not-allow}
- 22. wifi-to-cellular
- **23.** wmm {allowed | require}
- 24. wnm-sleep-mode
- 25. end

DETAILED STEPS

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

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	Command or Action	Purpose
Step 2	wlan profile-name	Enters WLAN configuration submode. The profile-name
	Example:	is the profile name of the configured WLAN.
	Device(config)# wlan test4	
Step 3	chd	Enables coverage hole detection for this WLAN.
	Example:	
	Device(config-wlan)# chd	
Step 4	ccx aironet-iesupport	Enables support for Aironet IEs for this WLAN.
	Example:	
	<pre>Device(config-wlan) # ccx aironet-iesupport</pre>	
Step 5	client association limit { clients-per-wlan ap	Sets the maximum number of clients, clients per AP, or
	radio clients-per-ap-radioper-wlan }	clients per AP radio that can be configured on a wLAN.
	Example:	
	Device(config-wlan)# client association limit ap 400	
Step 6	ip access-group web acl-name	Configures the IPv4 WLAN web ACL. The variable
	Example:	acl-name specifies the user-defined IPv4 ACL name.
	<pre>Device(config-wlan)# ip access-group web test-acl-name</pre>	
Step 7	peer-blocking [allow-private-groupdrop forward-upstream]	Configures peer to peer blocking parameters. The keywords are as follows:
	Example: Device(config-wlan)# peer-blocking drop	• allow-private-group : Enables peer-to-peer blocking on the Allow Private Group action.
		• drop : Enables peer-to-peer blocking on the drop action.
		• forward-upstream : No action is taken and forwards packets to the upstream.
		Note The forward-upstream option is not supported for Flex local switching. Traffic is dropped even if this option is configured. Also, peer to peer blocking for local switching SSIDs are available only for the clients on the same AP.
Step 8	channel-scan {defer-priority 0-7 defer-time 0 - 6000}	Sets the channel scan defer priority and defer time.
	Example:	• defer-priority: Specifies the priority markings for
	Device(config-wlan)# channel-scan defer-priority 6	packets that can defer off-channel scanning. The range is from 0 to 7. The default is 3.

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	Command or Action	Purpose
		• defer-time : Deferral time in milliseconds. The range is from 0 to 6000. The default is 100.
Step 9	<pre>mac-filtering [authorization-list authorization-override] Example: Device(config-wlan)# mac-flitering mac-list1 authorization-override</pre>	Sets the override-authorization list for MAC filtering.
Step 10	<pre>mbo Example: Device(config-wlan)# mbo</pre>	Configures Wi-Fi Alliance Agile Multiband (MBO) support on the WLAN.
Step 11	<pre>mdns-sd-interface {drop gateway} Example: Device(config-wlan)# mdns-sd-interface gateway</pre>	Enables multicast Domain Name System (mDNS) gateway for the WLAN.
Step 12	<pre>mu-mimo Example: Device(config-wlan)# mu-mimo</pre>	Configures 802.11ac Multi-User Multiple Input Multiple Output (MU-MIMO) on the WLAN.
Step 13	<pre>multicast buffer multicast-buffers Example: Device(config-wlan)# multicast buffer 56</pre>	Configures multicast buffer tuning for 802.11a radio for the WLAN.
Step 14	<pre>roamed-voice-client re-anchor Example: Device(config-wlan)# multicast buffer 56</pre>	Configures the re-anchor policy for roaming voice clients.
Step 15	<pre>scan-report {association roam} Example: Device(config-wlan)# scan-report association</pre>	Enables scan report (beacon measurement) requests when clients get associated.
Step 16	<pre>scheduler asr Example: Device(config-wlan)# scheduler asr</pre>	Configures advanced scheduling-request handling on the WLAN.
Step 17	<pre>static-ip tunneling Example: Device(config-wlan)# static-ip tunneling</pre>	Configures static IP client-tunneling support on the WLAN.
Step 18	tfs Example: Device(config-wlan)# tfs	Configure TFS processing on the WLAN.

	Command or Action	Purpose
Step 19	<pre>uapsd compliant-client Example: Device(config-wlan)# uapsd compliant-client</pre>	Configures Wi-Fi MultiMedia (WMM) Unscheduled automatic power save delivery (U-APSD) compliant-client support for the WLAN.
Step 20	universal-ap-admin	Enables universal AP on the WLAN.
	<pre>Example: Device(config-wlan)# universal-ap-admin</pre>	
Step 21	wifi-direct policy {allow not-allow xconnect-not-allow}	Allows Wi-Fi direct clients to associate unconditionally with the WLAN.
	<pre>Example: Device(config-wlan)# wifi-direct policy allow</pre>	
Step 22	wifi-to-cellular	Configures Wi-Fi-to-cellular steering on the WLAN.
	<pre>Example: Device(config-wlan)# wifi-to-cellular</pre>	
Step 23	wmm {allowed require}	Allows WMM on the WLAN.
	<pre>Example: Device(config-wlan)# wmm allowed</pre>	
Step 24	wnm-sleep-mode	Configures Wireless Network Management (WNM) slee
	Example:	mode on the WLAN.
	<pre>Device(config-wlan)# wnm-sleep-mode</pre>	
Step 25	end	Exits WLAN configuration mode and returns to privileged
	Example:	EXEC mode.
	Device(config-wlan)# end	

Verifying WLAN Properties (CLI)

To verify the WLAN properties based on the WLAN ID, use the following show command:

Device# show wlan id wlan-id

To verify the WLAN properties based on the WLAN name, use the following show command:

Device# show wlan name wlan-name

To verify the WLAN properties of all the configured WLANs, use the following show command:

Device# show wlan all

To verify the summary of all WLANs, use the following show command:

Device# show wlan summary

To verify the running configuration of a WLAN based on the WLAN name, use the following show command: Device# show running-config wlan wlan-name

To verify the running configuration of all WLANs, use the following show command:

Device# show running-config wlan

Configuring WLANs Through the GUI

Creating WLANs (GUI)

Step 1	In the Configuration > Tags & Profiles > WLANs page, click Add.
	The Add WLAN window is displayed.
Step 2	Under the General tab and Profile Name field, enter the name of the WLAN. The name can be ASCII characters from 32 to 126, without leading and trailing spaces.
Step 3	Click Save & Apply to Device.

Deleting WLANs (GUI)

 Step 1
 In the Configuration > Tags & Profiles > WLANs page, check the checkbox adjacent to the WLAN you want to delete.

 To delete multiple WLANs, select multiple WLANs checkboxes.

- Step 2 Click Delete.
- **Step 3** Click **Yes** on the confirmation window to delete the WLAN.

Disabling WLANs (GUI)

Step 1 Choose Configuration > Tags & Profiles > WLA	Ns.
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- **Step 2** In the **WLANs** window, click the WLAN name.
- Step 3 In the Edit WLAN window, set the Status toggle button as DISABLED.
- Step 4 Click Update & Apply to Device.

Configuring Advanced WLAN Properties (GUI)

Before you begin

Ensure that you have configured an AP Join Profile prior to configuring the primary and backup controllers.

- Step 1 Choose Configuration > Wireless > WLANs > Wireless Networks.
- **Step 2** In the **Wireless Networks** window, click **Add**.
- **Step 3** Under the **Advanced** tab, check the **Coverage Hole Detection** check box.
- **Step 4** Check the **Aironet IE** check box to enable Aironet IE on the WLAN.
- **Step 5** Check the **Diagnostic Channel** check box to enable diagnostic channel on the WLAN.
- **Step 6** From the **P2P Blocking Action** drop-down list, choose the required value.
- **Step 7** Set the **Multicast Buffer** toggle button as enabled or diabled.
- Step 8 Check the Media Stream Multicast-Direct check box to enable the feature.
- **Step 9** In the **Max Client Connections** section, specify the maximum number of client connections for the following:
 - In the Per WLAN field, enter a value. The valid range is between 0 and 10000.
 - In the Per AP Per WLAN field, enter a value. The valid range is between 0 and 400.
 - In the Per AP Radio Per WLAN field, enter a value. The valid range is between 0 and 200.

Step 10 In the **11v BSS Transition Support** section, perform the following configuration tasks:

- a) Check the BSS Transition check box to enable 802.11v BSS Transition support.
- b) In the **Disassociation Imminent** field, enter a value. The valid range is between 0 and 3000.
- c) In the **Optimized Roaming Disassociation Timer** field, enter a value. The valid range is between 0 and 40.
- d) Select the check box to enable the following:
 - BSS Max Idle Service
 - BSS Max Idle Protected
 - Disassociation Imminent Service
 - Directed Multicast Service
 - Universal Admin
 - Load Balance
 - Band Select
 - IP Source Guard
- **Step 11** From the **WMM Policy** drop-down list, choose the policy as Allowed, Disabled, or Required. By default, the WMM policy is Allowed.
- **Step 12** In the **Off Channel Scanning Defer** section, choose the appropriate **Defer Priority** values and then specify the required Scan Defer Time value in milliseconds.
- **Step 13** In the **Assisted Roaming (11k)** section, choose the appropriate status for the following:
 - Prediction Optimization
 - Neighbor List
 - Dual-Band Neighbor List

- **Step 14** In the **DTIM Period (in beacon intervals)** section, specify a value for 802.11a/n and 802.11b/g/n radios. The valid range is from 1 to 255.
- Step 15 Click Save & Apply to Device.