

CLI Commands

The Cisco Wireless LAN solution command-line interface (CLI) enables operators to connect an ASCII console to the Cisco Wireless LAN Controller and configure the controller and its associated access points.

- show Commands, page 1
- config Commands, page 20
- clear, debug and ping Commands, page 51

show Commands

This section lists the show commands to display information about your mobility configuration settings.

show advanced client-handoff

To display the number of automatic client handoffs after retries, use the **show advanced client-handoff** command.

show advanced client-handoff

Syntax Description This command has no arguments or keywords.

Command History

ReleaseModification7.6This command was introduced in a release earlier than
Release 7.6.

Examples The following example shows how to display the client auto handoff mode after excessive retries:

show l2tp

To display Layer 2 Tunneling Protocol (L2TP) sessions, use the show l2tp command.

show l2tp {summary | ip_address}

Syntax Description	summary	Displays all L2TP sessions.
	ip_address	IP address.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

Examples

The following example shows how to display a summary of all L2TP sessions:

(Cisco Controller) > **show 12tp summary** LAC_IPaddr LTid LSid RTid RSid ATid ASid State

show logging

To display the syslog facility logging parameters and buffer contents, use the show logging command.

 show logging

 Syntax Description
 This command has no arguments or keywords.

 Command Default
 None

 Command History
 Release

 7.6
 This command was introduced in a release earlier than

Examples

The following example shows how to display the current settings and buffer content details:

Release 7.6.

<pre>(Cisco Controller) >show logging Logging to buffer : Logging of system messages to buffer : Logging filter level Number of system messages logged Logging of debug messages dropped Number of debug messages to buffer Number of debug messages logged Number of debug messages dropped Logging to console :</pre>	67227 21136 Disabled 0
 Logging of system messages to console : Logging filter level Number of system messages logged Logging of debug messages to console Number of debug messages logged Number of debug messages dropped Logging to syslog : 	0 88363 Enabled 0
 Syslog facility. Logging of system messages to syslog : Logging filter level. Number of system messages logged. Number of debug messages dropped. Number of debug messages logged. Number of debug messages logged. Number of debug messages dropped. Number of remote syslog hosts. Host 0. Host 1. Host 2. Logging of traceback. Logging of source file informational. 	errors 67227 21136 Disabled 0 0 Not Configured Not Configured Not Configured Disabled Disabled
<pre>Timestamping of messages - Timestamping of system messages - Timestamp format - Timestamping of debug messages - Timestamp format Logging buffer (67227 logged, 21136 dropped) *Apr 03 09:48:01.728: %MM-3-INVALID_PKT_RECVD: mm</pre>	Date and Time Enabled Date and Time

packet from 1.100.163.51. Source member:0.0.0.0. source member unknown. *Apr 03 09:47:34.194: %LWAPP-3-DECODE_ERR: spam_lrad.c:1271 Error decoding discovery request from AP 00:13:5f:0e:d4:20 *Apr 03 09:47:34.194: %LWAPP-3-DISC_OTAP_ERR: spam_lrad.c:5554 Ignoring OTAP discovery request from AP 00:13:5f:0e:d4:20, OTAP is disabled Previous message occurred 2 times.

show mobility anchor

To display the wireless LAN anchor export list for the Cisco wireless LAN controller mobility groups or to display a list and status of controllers configured as mobility anchors for a specific WLAN or wired guest LAN, use the **show mobility anchor** command.

show mobility anchor [wlan *wlan_id* | guest-lan guest_lan_id]

Syntax Description	wlan	(Ontional	Diaplaya wireless I AN mability group gattings
	wian	(Optional	Displays wireless LAN mobility group settings.
	wlan_id	Wireless I	LAN identifier from 1 to 512 (inclusive).
	guest-lan	(Optional)	Displays guest LAN mobility group settings.
	guest_lan_i	d Guest LA	N identifier from 1 to 5 (inclusive).
Command Default	None		
Command History	Release		Modification
	7.6		This command was introduced in a release earlier than Release 7.6.
Usage Guidelines	• UP—T • CNTR and is o • DATA • CNTR	he controller is reachable L_PATH_DOWN—The n considered failed. _PATH_DOWN—The ep L_DATA_PATH_DOWN	shows one of the following values: and able to pass data. npings failed. The controller cannot be reached through the control path ings failed. The controller cannot be reached and is considered failed. —Both the mpings and epings failed. The controller cannot be reached
Examples		considered failed.	display a mobility wireless LAN anchor list:
·		troller) > show mobilit Achor Export List	y anchor
	WLAN ID	IP Address	Status
	12 GLAN ID	192.168.0.15 IP Address	UP Status
	1	192.168.0.9	CNTRL_DATA_PATH_DOWN

show mobility ap-list

To display the mobility AP list, use the show mobility ap-list command.

show mobility ap-list

Syntax Description This command has no arguments or keywords.

Command Default None

Command History	Release Modification	
	7.6	This command was introduced in a release earlier than Release 7.6.

Examples

The following example shows how to display the mobility AP list:

(Cisco Controller) > sho	w mobility ap-list		
AP Name	AP Radio MAC address	Controller	Learnt From
AP30e4.dbc5.38ab	b8:62:1f:e5:33:10	9.7.104.10	Self

show mobility foreign-map

2

To display a mobility wireless LAN foreign map list, use the show mobility foreign-map command.

show mobility foreign-map wlan wlan_id

Syntax Description	wlan	Displays the mobility WLAN foreign-map list.		
	wlan_id	Wireless LAN identifier between 1	and 512.	
Command Default	None			
Command History	Release	Modifica	ition	
	7.6	This com Release	nmand was introduced in a release earlier than 7.6.	
Examples	• •	shows how to get a mobility wireless L show mobility foreign-map wlan 2 List Foreign MAC Address	AN foreign map list:	

00:1b:d4:6b:87:20

dynamic-105

show mobility group member

To display the details of the mobility group members in the same domain, use the **show mobility group member** command.

show mobility group member hash

Syntax Description	hash Displays the hash keys of the mobility group members in the same domain.			
Command Default	None			
Command History	Release		Modification	
	7.6		This command was introduced in a release earlier than Release 7.6.	
Examples	(Cisco Control Default Mobili	ler) > show mobility group membe		
	IP Address	Hash Key		
	9.2.115.68	a819d479dcfeb3e0974421b6e833	5582263d9169	
	9.6.99.10	0974421b6e8335582263d9169a81	9d479dcfeb3e	
	9.7.7.7	feb3e0974421b6e8335582263d91	69a819d479dc	

show mobility oracle

To display the status of the mobility controllers known to the Mobility Oracle (MO) or display the details of the MO client database, use the **show mobility oracle** command.

show mobility oracle {client {detail | summary} | summary}

ntax Description	client	Displays	the MO client databa	Se
	detail	Displays	details pertaining to a	a client in MO client database.
	summary	Displays	the summary of the M	MO database.
mmand Default	None			
mmand History	Release		Modification	
	7.3.112.0		This command was in	ntroduced.
	9.71.104.10 9.71.104.250	MAC Address 88:43:e1:7d:fe:00 e8:b7:48:a2:16:e0 sample output of the sho	Control Path Down Up	
	(Cisco Controlle	r) > show mobility or	acle client summar	Y
		s		
	MAC Address	Anchor MC		AssocTime
	00:18:de:b0:5c:9 00:1e:e5:f9:c9:e		-	0 0
	The following is a sample output of the show mobility oracle client detail command:			
	(Cisco Controlle	r) > show mobility or	acle client detail	00:1e:e5:f9:c9:e2
	Client IP addres Anchor MC IP add Anchor MC NAT IP	ss : s : ress : address : dress :		0.0 .104.250

Foreign MC NAT IP address : -Client Association Time : 0 Client Entry update timestamp : 1278543135.0

show mobility statistics

To display the statistics information for the Cisco wireless LAN controller mobility groups, use the **show mobility statistics** command.

show mobility statistics

Syntax Description This command has no arguments or keywords.

Command Default None

 Command History
 Release
 Modification

 7.6
 This command was introduced in a release earlier than Release 7.6.

Examples

The following example shows how to display statistics of the mobility manager:

(Cisco Controller) > show mobility statistics
Global Mobility Statistics
Rx Errors 0
Tx Errors 0
Responses Retransmitted0
Handoff Requests Received 0
Handoff End Requests Received0
State Transitions Disallowed0
Resource Unavailable0
Mobility Initiator Statistics
Handoff Requests Sent0
Handoff Replies Received0
Handoff as Local Received 2
Handoff as Foreign Received
Handoff Denys Received0
Anchor Request Sent 0
Anchor Deny Received0
Anchor Grant Received0
Anchor Transfer Received0
Mobility Responder Statistics
Handoff Requests Ignored0
Ping Pong Handoff Requests Dropped0
Handoff Requests Dropped0
Handoff Requests Denied 0
Client Handoff as Local 0
Client Handoff as Foreign0
Client Handoff Inter Group 0
Anchor Requests Received 0
Anchor Requests Denied 0
Anchor Requests Granted 0
Anchor Transferred0

show mobility summary

To display the summary information for the Cisco WLC mobility groups, use the **show mobility summary** command.

show mobility summary

Syntax Description This command has no arguments or keywords.

Command Default None

Command History	Release	Modification	
	7.6	This command was introduced in a release earlier than Release 7.6.	

Usage Guidelines Some WLAN controllers may list no mobility security mode.

Examples The following is a sample output of the show mobility summary command. (Cisco Controller) >show mobility summary

Symmetric Mobility Tunnel: Symmetric Mobility Tunnel: Mobility Protocol Port Mobility Security Mode Default Mobility Domain Multicast Mode Mobility Domain ID for 803 Mobility Keepalive Interva Mobility Keepalive Count. Mobility Group Members Con Mobility Control Message I Controllers configured in	ing (after reboot) 2.11r. al. nfigured. DSCP Value.	Disabled 16666 Disabled snmp_gui Disabled 0x66bd 10 3 1	
MAC Address IP Add: 00:1b:d4:6b:87:20 1.100	-		

The following is a sample output of the **show mobility summary** command with new mobility architecture.

(Cisco Controller) >show mobility summary

Mobility Protocol Port..... 16666 Default Mobility Domain..... Mobility Multicast Mode Disabled Mobility Domain ID for 802.11r..... 0xb348 Mobility Keepalive Interval..... 10 Mobility Keepalive Count...... 3 Mobility Group Members Configured...... 3 Mobility Control Message DSCP Value..... 0 Controllers configured in the Mobility Group IP Address Public IP Address Group Name Multicast IP MAC Address Status 9.71.106.2 9.72.106.2 00:00:00:00:00:00 Control and Mobility 0.0.0.0 Data Path Down

9.71.106.3 9.72.106.3	Mobility	0.0.0.0	00:00:00:00:00:00	Control an	d
Data Path Down 9.71.106.69 9.72.106.69	Mobility	0.0.0.0	68:ef:bd:8e:5f:20	Up	

show pmipv6 domain

To display the summary information of a PMIPv6 domain, use the show pmipv6 domain command.

show pmipv6 domain domain_name profile profile_name

Syntax Description	domain_name	Name of the PMIPv6 domain. The domain name can be up to 127 case-sensitive alphanumeric characters.
	profile	Specifies the PMIPv6 profile.
	profile_name	Name of the profile associated with the PMIPv6 domain. The profile name can be up to 127 case-sensitive alphanumeric characters.
		1

Command History

ry	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

Examples

The following example shows how to display the summary information of a PMIPv6 domain:

```
(Cisco Controller) >show pmipv6 domain floor1 profile profile1
NAI: @example.com
APN: Example
LMA: ExampleIma
NAI: *
APN: ciscoapn
LMA: ciscolma
```

show pmipv6 mag bindings

To display the binding information of a Mobile Access Gateway (MAG), use the **show pmipv6 mag binding** command.

show pmipv6 mag bindings [lma lma_name | nai nai_string]

Syntax Description	lma	(Optional) Displays the binding details of the MAG to an Local Mobility Anchor (LMA).	
	lma_name	Name of the LMA. The LMA name is case-sensitive and can be up to 127 alphanumeric characters.	
	nai	(Optional) Displays the binding details of the MAG to a client.	
	nai_string	Network Access Identifier (NAI) of the client. The NAI is case-sensitive and can be up to 127 alphanumeric characters. You can use all special characters except a colon.	
Command History	Release	Modification	
	7.6	This command was introduced in a release earlier than Release 7.6.	
Examples	The following example shows how to display the MAG bindings: (Cisco Controller) > show pmipv6 mag binding [Binding][MN]: Domain: D1, Nai: MN1@cisco.com [Binding][MN]: State: ACTIVE		
	[Binding][MN]: Ho [Binding][MN][LMA [Binding][MN][LMA	<pre>ing[[MN]: Interface: Management ing][MN]: Interface: Management ing][MN]: Hoa: 0xE0E0E02, att: 3, llid: aabb.cc00.c800 ing][MN][LMA]: Id: LMA1 ing][MN][LMA]: lifetime: 3600 ing][MN][GREKEY]: Upstream: 102, Downstream: 1</pre>	

show pmipv6 mag globals

To display the global PMIPv6 parameters of the Mobile Access Gateway (MAG), use the **show pmipv6 mag globals** command.

show pmipv6 mag globals

Syntax Description

This command has no arguments or keywords.

Command History

Release	Modification	
7.6	This command was introduced in a release earlier than Release 7.6.	

Examples

The following example shows how to display the global PMIPv6 parameters of a MAG:

(Cisco Controller) >**show pmipv6 mag globals** Domain : D1

MAG Identifier : M1	
MAG Interface	: Management
Max Bindings	: 10000
Registration Lifetime	: 3600 (sec)
BRI Init-delay time	: 1000 (msec)
BRI Max-delay time	: 2000 (msec)
BRI Max retries	: 1
Refresh time	: 300 (sec)
Refresh RetxInit time	: 1000 (msec)
Refresh RetxMax time	: 32000 (msec)
Timestamp option	: Enabled
Validity Window	: 7
Peer#1:	
LMA Name: AN-LMA-5K	LMA IP: 209.165.201.10
Peer#2:	TWD TD 000 1CE 001 4
LMA Name: AN-LMA Peer#3:	LMA IP: 209.165.201.4
Peer#3: IMA Name: AN-IMA	LMA TP: 209.165.201.4
LMA NAME: AN-LMA	LMA IF. 209.105.201.4

show pmipv6 mag stats

To display the statistics of the Mobile Access Gateway (MAG), use the show pmipv6 mag stats command.

show pmipv6 mag stats [domain domain_name peer lma_name]

Syntax Description	domain	(Optional) Displays the MAG statistics for a Local Mobility Anchor (LMA) in the domain.
	domain_name	Name of the PMIPv6 domain. The domain name is case-sensitive and can be up to 127 alphanumeric characters.
	peer	(Optional) Displays the MAG statistics for an LMA.
	lma_name	Name of the LMA. The LMA name is case sensitive and can be up to 127 alphanumeric characters.

<u> </u>	II. 1
Command	History
oomnunu	

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

Usage Guidelines

This table lists the descriptions of the LMA statistics.

Table 1: Descriptions of the LMA Statistics:

LMA Statistics	Description
PBU Sent	Total number of Proxy Binding Updates (PBUs) sent to the LMA by the MAG.
	PBU is a request message sent by the MAG to a mobile node's LMA for establishing a binding between the mobile node's interface and its current care-of address (Proxy-CoA).
PBA Received	Total number of Proxy Binding Acknowledgements (PBAs) received by the MAG from the LMA. PBA is a reply message sent by an LMA in response
	to a PBU message that it receives from a MAG.
PBRI Sent	Total number of Proxy Binding Revocation Indications (PBRIs) sent by the MAG to the LMA.

LMA Statistics	Description
PBRI Received	Total number of PBRIs received from the LMA by the MAG.
PBRA Sent	Total number of Proxy Binding Revocation Acknowledgements (PBRAs) sent by the MAG to the LMA.
PBRA Received	Total number of PBRAs that the MAG receives from the LMA.
Number of Handoff	Number of handoffs between the MAG and the LMA.

Examples

The following example shows how to display the LMA statistics:

(Cisco Controller)	>show pmipv6 mag stats
[M1]: Total Binding	gs :1
[M1]: PBU Sent	: 7
[M1]: PBA Rcvd	: 4
[M1]: PBRI Sent	: 0
[M1]: PBRI Rcvd	: 0
[M1]: PBRA Sent	: 0
[M1]: PBRA Rcvd	: 0
[M1]: No Of handof:	E : O

show pmipv6 profile summary

To display the summary of the PMIPv6 profiles, use the show pmipv6 profile summary command.

show pmipv6 profile summary

Syntax Description This command has no arguments or keywords.

Command Default None

Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

Examples

The following example shows how to display the summary of the PMIPv6 profiles:

```
(Cisco Controller) >show pmipv6 profile summary

Profile Name WLAN IDS (Mapped)

------

Group1 6
```

config Commands

This section lists the config commands to configure mobility.

config mobility dscp

To configure the mobility intercontroller DSCP value, use the config mobility dscp command.

config mobility dscp dscp_value

<i>dscp_value</i> DSCP value rangin	Syntax Description dscp_value	ue ranging from 0 to 63.
None	Command Default None	
Release	Command History Release	Modification
7.6	7.6	This command was introduced in a release earlier than Release 7.6.
		This command was introduced in a rele

ExamplesThe following example shows how to configure the mobility intercontroller DSCP value to 40:
(Cisco Controller) >config mobility dscp 40

config mobility group anchor

To create a new mobility anchor for the WLAN or wired guest LAN, enter, use the **config mobility group anchor** command.

config mobility group anchor {**add** | **delete**} {**wlan** *wlan_id* | **guest-lan** *guest_lan_id*} *anchor_ip*

Syntax Description	add	Adds or changes a mobility anchor to a wireless LAN.
	delete	Deletes a mobility anchor from a wireless LAN.
	wlan	Specifies the wireless LAN anchor settings.
	wlan_id	Wireless LAN identifier between 1 and 512 (inclusive).
	guest-lan	Specifies the guest LAN anchor settings.
	guest_lan_id	Guest LAN identifier between 1 and 5 (inclusive).
	anchor_ip	IP address of the anchor controller.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Usage Guidelines	The wlan id or gues	t lan id must exist and be disabled.
	Auto-anchor mobilit	y is enabled for the WLAN or wired guest LAN when you configure the first mobility last anchor disables the auto-anchor mobility feature and resumes normal mobility for
Examples	The following example shows how to add a mobility anchor with the IP address 192.12.1.5 to a wireless LAN ID 2:	
	(Cisco Controller) >config mobility group anchor add wlan 2 192.12.1.5
	The following examp LAN:	ple shows how to delete a mobility anchor with the IP address 193.13.1.15 from a wireless
) >config mobility group anchor delete wlan 5 193.13.1.5

config mobility group domain

To configure the mobility domain name, use the config mobility group domain command.

config mobility group domain *domain_name*

Syntax Description	<i>domain_name</i> Domain name. The domain name can be up to 31 case-sensitive characters.	
Command Default	None	
Command History	Release	Modification

Examples

The following example shows how to configure a mobility domain name lab1: (Cisco Controller) >config mobility group domain lab1

config mobility group keepalive count

To configure the Cisco WLC to detect failed mobility group members (including anchor Cisco WLCs), use the **config mobility group keepalive count** command.

config mobility group keepalive count count

Syntax Description	count	Number of times that a ping request is sent to a mobility group member before the member is considered unreachable. The range is from 3 to 20. The default is 3.
Command Default	The default number o	f times that a ping request is sent to a mobility group member is 3.
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples		le shows how to specify the number of times a ping request is sent to a mobility group ember is considered unreachable to three counts:
	(Cisco Controller)	>config mobility group keepalive count 3

config mobility group keepalive interval

To configure the controller to detect failed mobility group members (including anchor controllers), use the **config mobility group keepalive** command.

config mobility group keepalive interval

Syntax Description	interval	Interval of time between each ping request sent to a mobility group member. The range is from 1 to 30 seconds. The default value is 10 seconds.
Command Default	The default interva	l of time between each ping request is 10 seconds.
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	The following exar group member to 1	nple shows how to specify the amount of time between each ping request sent to a mobility 0 seconds:
	(Cisco Controlle	r) >config mobility group keepalive 10

config mobility group member

To add or delete users from the mobility group member list, use the config mobility group member command.

config mobility group member {add *MAC IP_address* [group_name] | **delete** *MAC IP_address* | **hash** *IP*__address {key | **none**}}

Syntax Description	add	Adds or changes a mobility group member to the list.
	МАС	Member switch MAC address.
	IP_address	Member switch IP address.
	group_name	(Optional) Member switch group name (if different from the default group name).
	delete	(Optional) Deletes a mobility group member from the list.
	hash	Configures the hash key for authorization. You can configure the hash key only if the member is a virtual controller in the same domain.
	key	Hash key of the virtual controller. For example, a819d479dcfeb3e0974421b6e8335582263d9169
	none	Clears the previous hash key of the virtual controller.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	(Cisco Controller) >config mobil	add a mobility group member to the list: Lity group member add 11:11:11:11:11 192.12.1.2 configure the hash key of a virtual controller in the same domain: Lity group member hash 9.2.115.68 2263d9169

config mobility group multicast-address

To configure the multicast group IP address for nonlocal groups within the mobility list, use the **config mobility** group multicast-address command.

config mobility group multicast-address group_name IP_address

Syntax Description	group_name	Member switch group name (if different from the default group name).
	IP_address	Member switch IP address.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	The following example shows test:	s how to configure the multicast group IP address 10.10.10.1 for a group named
		g mobility group multicast-address test 10.10.10.1

config mobility multicast-mode

To enable or disable mobility multicast mode, use the config mobility multicast-mode command.

config mobility multicast-mode {**enable** | **disable**} *local_group_multicast_address*

Syntax Description	enable	Enables the multicast mode; the controller uses multicast mode to send Mobile Announce messages to the local group.
	disable	Disables the multicast mode; the controller uses unicast mode to send the Mobile Announce messages to the local group.
	local_group_multicast_address	IP address for the local mobility group.
Command Default Command History	The mobility multicast mode is disabled.	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	The following example shows how to enable address 157.168.20.0: (Cisco Controller) >config mobility m	e the multicast mobility mode for the local mobility group IP multicast-mode enable 157.168.20.0

config mobility new-architecture

To enable new mobility on the Cisco Wireless LAN Controller (WLC), use the **config mobility new-architecture** command.

config mobility new-architecture {enable| disable}

Syntax Description	enable	Configures the Cisco WLC to switch to the new mobility architecture.
	disable	Configures the Cisco WLC to switch to the old flat mobility architecture.
Command Default	By default, new mo	bility is disabled.
Command History	Release	Modification
	7.3.112.0	This command was introduced.
Usage Guidelines	New mobility is supported only on Cisco WiSM2, Cisco 2500 Series Wireless Controllers, Cisco 5500 Series Wireless Controllers, and Cisco 8500 Series Wireless Controllers. New mobility enables the Cisco WLC to be compatible with Converged Access controllers with Wireless Control Module (WCM), such as Cisco Catalyst 3850 Series and the Cisco 5760 Wireless LAN Controllers.	
Examples	The following example shows how to enable new mobility on the Cisco WLC: (Cisco Controller) >config mobility new-architecture enable	

config mobility oracle

To configure the Mobility Oracle (MO), use the **config mobility oracle** command.

config mobility oracle {**enable** | **disable** | **ip** *ip_address*}

Syntax Description	enable	Enables the MO on startup.
	disable	Disables the MO on startup.
	ip	Specifies the IP address of the MO.
	ip_address	IP address of the MO.
Command Default	None	
Command History	Release	Modification
	7.3.112.0	This command was introduced.
Usage Guidelines	The MO maintains the client database under one complete mobility domain. It consists of a station database, an interface to the mobility Cisco WLC, and an NTP server. There can be only one MO in the entire mobility domain.	
Examples	The following example shows how to configure the MO IP address: (Cisco Controller) >config mobility oracle ip 27.0.0.1	

config mobility switchPeerGroup

To configure a switch peer group (SPG) on the controller, use the config mobility switchPeerGroup command.

config mobility switchPeerGroup {**bridge-domain-id** *peer-group-name bridge domain id* | **create** *peer-group-name* | **delete** *peer-group-name* | **delete** *peer-group-name* | **delete** *peer-group-name* | **delete** *peer-group-name* | **multicast-address** *peer-group-name multicast_IP_address*}

Syntax Description b

bridge-domain-id	Configures the bridge domain ID of the SPG.
peer-group-name	Name of the SPG.
bridge domain id	Bridge domain ID of the SPG.
create	Creates an SPG.
delete	Deletes an SPG.
member	Configures a member switch for an SPG.
add	Adds a member switch into an SPG.
IP_address	IP address of the member switch.
public_IP_address	(Optional) Public IP address of the SPG member.
multicast-address	Configures the multicast address of the SPG.
multicast_IP_address	Multicast address of the SPG.

Command Default None

Command History Release Modification 7.3.112.0 This command was introduced.

Examples

The following example shows how to create an SPG. (Cisco Controller) >config mobility switchPeerGroup create SPG1

config mobility secure-mode

To configure the secure mode for mobility messages between Cisco WLCs, use the **config mobility secure-mode** command.

config mobility secure-mode {enable | disable}

Syntax Description	enable	Enables the mobility group message security.
	disable	Disables mobility group message security.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	The following exa	mple shows how to enable the secure mode for mobility messages:
	(Cisco Controll	er) >config mobility secure-mode enable

config mobility statistics reset

To reset the mobility statistics, use the config mobility statistics reset command. config mobility statistics reset

Syntax Description
This command has no arguments or keywords.

Command Default
None

Command History
Release
7.6
Release
7.6
This command was introduced in a release earlier than
Release 7.6.

ExamplesThis example shows how to reset the mobility group statistics:
(Cisco Controller) >config mobility statistics reset

config pmipv6 domain

To configure PMIPv6 and to enable Mobile Access Gateway (MAG) functionality on Cisco WLC, use the **config pmipv6 domain** command.

config pmipv6 domain domain_name

Syntax Description	domain_name	Name of the PMIPv6 domain. The domain name can be up to 127 case-sensitive, alphanumeric characters.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples		shows how to configure a domain name for a PMIPv6 WLAN:

config pmipv6 add profile

To create a Proxy Mobility IPv6 (PMIPv6) profile for the WLAN, use the **config pmipv6 add profile** command. You can configure PMIPv6 profiles based on a realm or a service set identifier (SSID).

config pmipv6 add profile *profile_name* nai {user@realm | @realm | *} lma lma_name apn apn_name

profile name	Name of the profile. The profile name is case sensitive and can be up to 127
	alphanumeric characters.
nai	Specifies the Network Access Identifier of the client.
user@realm	Network Access Identifier of the client in the format <i>user@</i> realm. The NAI name is case sensitive and can be up to 127 alphanumeric characters.
@realm	Network Access Identifier of the client in the format @realm.
*	All Network Access Identifiers. You can have profiles based on an SSID for all users.
lma	Specifies the Local Mobility Anchor (LMA).
lma_name	Name of LMA. The LMA name is case sensitive and can be up to 127 alphanumeric characters.
apn	Specifies the access point.
ap_name	Name of the access point. The access point name is case sensitive and can be up to 127 alphanumeric characters.
None	
	user@realm @realm * Ima Ima_name apn ap_name

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

Usage Guidelines

S This command is a prerequisite for using PMIPv6 configuration commands if the controller uses open authentication.

Examples

The following example shows how to create a PMIPv6 profile:

(Cisco Controller) >config pmipv6 add profile profile1 nai @vodfone.com lma vodfonelma apn vodafoneapn
config pmipv6 delete

To delete a Proxy Mobility IPv6 (PMIPv6) profile, domain, or Local Mobility Anchor (LMA), use the **config pmipv6 delete** command.

config pmipv6 delete {**profile** *name* **nai** { *nai_id* | **all** } | **domain** *domain_name* | **Ima** *lma_name*}

Syntax Description	profile	Specifies the PMIPv6 profile.
	profile_name	Name of the PMIPv6 profile. The profile name is case sensitive and can be up to 127 alphanumeric characters.
	nai	Specifies the Network Access Identifier (NAI) of a mobile client.
	nai_id	Network Access Identifier of a mobile client. The NAI is case sensitive and can be up to 127 alphanumeric characters.
	all	Specifies all NAIs. When you delete all NAIs, the profile is deleted.
	domain	Specifies the PMIPv6 domain.
	domain_name	Name of the PMIPv6 domain. The domain name is case sensitive and can be up to 127 alphanumeric characters.
	lma	Specifies the LMA.
	lma_name	Name of the LMA. The LMA name is case sensitive and can be up to 127 alphanumeric characters.

Command Default

None

Command History

Release	Modification
7.6	This command was introduced in a release earlier than Release 7.6.

Examples

The following example shows how to delete a domain: (Cisco Controller) >config pmipv6 delete lab1

config pmipv6 mag binding init-retx-time

To configure the initial timeout between the proxy binding updates (PBUs) when the Mobile Access Gateway (MAG) does not receive the proxy binding acknowledgements (PBAs), use the **config pmipv6 mag binding init-retx-time** command.

config pmipv6 mag binding init-retx-time units

Syntax Description	units Initial timeout between the is from 100 to 65535 second The default initial timeout is 1000 seconds.	e PBUs when the MAG does not receive the PBAs. The range onds.
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	The following example shows how to configure not receive the PBAs: (Cisco Controller) >config pmipv6 mag bi	the initial timeout between the PBUs when the MAG does

config pmipv6 mag binding lifetime

To configure the lifetime of the binding entries in the Mobile Access Gateway (MAG), use the **config pmipv6 mag binding lifetime** command.

config pmipv6 mag binding lifetime units

Syntax Description	units	Lifetime of the binding entries in the MAG. The binding lifetime must be a multiple of 4 seconds. The range is from 10 to 65535 seconds.	
Command Default	The default lifetim	e of the binding entries is 65535 seconds.	
Command History	Release	Modification	
	7.6	This command was introduced in a release earlier than Release 7.6.	
Usage Guidelines	You must configure a Proxy Mobility IPv6 (PMIPv6) domain before you configure the lifetime of the binding entries in the controller.		
Examples	The following exa	mple shows how to configure the lifetime of the binding entries in the controller:	
	(Cisco Controll	er) >config pmipv6 mag binding lifetime 5000	

config pmipv6 mag binding max-retx-time

To configure the maximum timeout between the proxy binding updates (PBUs) when the Mobility Access Gateway (MAG) does not receive the proxy binding acknowledgments (PBAs), use the **config pmipv6 mag binding max-retx-time** command.

config pmipv6 mag binding max-retx-time units

Syntax Description	units	Maximum timeout between the PBUs when the MAG does not receive the PBAs. The range is from 100 to 65535 seconds.
Command Default	The default max	timum timeout is 32000 seconds.
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	The following example shows how to configure the maximum timeout between the PBUs when the MAG does not receive the PBAs:	

config pmipv6 mag binding maximum

To configure the maximum number of binding entries in the Mobile Access Gateway (MAG), use the **config pmipv6 mag binding maximum** command.

config pmipv6 mag binding maximum units

Syntax Description	units	Maximum number of binding entries in the MAG. This number indicates the maximum number of users connected to the MAG. The range is from 0 to 40000.
Command Default	The default maxim	mum number of binding entries in the MAG is 10000.
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Usage Guidelines	You must configu binding entries in	are a Proxy Mobility IPv6 (PMIPv6) domain before you configure the maximum number of the MAG.
Examples	The following ex	ample shows how to configure the maximum number of binding entries in the MAG:
	(Cisco Control)	ler) >config pmipv6 mag binding maximum 20000

config pmipv6 mag binding refresh-time

To configure the refresh time of the binding entries in the MAG, use the **config pmipv6 mag binding refresh-time** command.

config pmipv6 mag binding refresh-time units

Syntax Description	<i>units</i> Refresh time of the binding entries in the MAG. The binding refresh time must be a multiple of 4. The range is from 4 to 65535 seconds.
Command Default	The default refresh time of the binding entries in the MAG is 300 seconds.
Usage Guidelines	You must configure a PMIPv6 domain before you configure the refresh time of the binding entries in the MAG.
Examples	The following example shows how to configure the refresh time of the binding entries in the MAG: (Cisco Controller) >config pmipv6 mag binding refresh-time 500

config pmipv6 mag bri delay

To configure the maximum or minimum amount of time that the MAG waits before retransmitting a Binding Revocation Indication (BRI) message, use the **config pmipv6 mag bri delay** command.

config pmipv6 mag bri delay {min | max} time

	min	Specifies the minimum amount of time that the MAG waits before retransmitting a BRI message.	
	max	Specifies the maximum amount of time that the MAG waits before retransmitting a BRI message.	
	time	<i>time</i> Maximum or minimum amount of time that the Cisco WLC waits before retransmitting a BRI message. The range is from 500 to 65535 milliseconds.	
Command Default	is 2 seconds. The default va	lue of the maximum amount of time that the MAG waits before retransmitting a BRI message lue of the minimum amount of time that the MAG waits before retransmitting a BRI message	
	is 1 second.		
Command History	Release	Modification	
Command History		Modification This command was introduced in a release earlier than Release 7.6.	

config pmipv6 mag bri retries

To configure the maximum number of times that the MAG retransmits the Binding Revocation Indication (BRI) message before receiving the Binding Revocation Acknowledgment (BRA) message, use the **config pmipv6 mag bri retries** command.

config pmipv6 mag bri retries retries

Syntax Description	retries	Maximum number of times that the MAG retransmits the BRI message before receiving the BRA message. The range is from 1 to 10 retries.
Command Default	The default is 1 retr	ту.
Examples	e	nple shows how to configure the maximum number of times that the MAG retries: r) >config pmipv6 mag bri retries 5

config pmipv6 mag lma

To configure a local mobility anchor (LMA) with the mobile access gateway (MAG), use the **config pmipv6 mag lma** command.

config pmipv6 mag lma lma_name ipv4-address address

Syntax Description	lma_name	Name of the LMA. The LMA name can be a NAI or a string that uniquely identifies the LMA.
	ipv4-address	Specifies the IP address of the LMA.
	address	IP address of the LMA.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Usage Guidelines	This command is a prerequisite to cont	figure PMIPv6 parameters on the MAG.
Examples	The following example shows how to (Cisco Controller) >config pmipv	configure an LMA with the MAG: 6 mag lma vodafonelma ipv4-address 209.165.200.254

config pmipv6 mag replay-protection

To configure the maximum amount of time difference between the timestamp in the received proxy binding acknowledgment (PBA) and the current time of the day for replay protection, use the **config pmipv6 mag replay-protection** command.

config pmipv6 mag replay-protection { timestamp window time | sequence-no sequence |
mobile-node-timestamp mobile_node_timestamp }

Syntax Description	timestamp	Specifies the time stamp of the PBA message.
	window	Specifies the maximum time difference between the time stamp in the received PBA message and the current time of day.
	time	Maximum time difference between the time stamp in the received PBA message and the current time of day. The range is from 1 to 300 milliseconds.
	sequence-no	(Optional) Specifies the sequence number in a Proxy Binding Update message.
	sequence	(Optional) Sequence number in the Proxy Binding Update message.
	mobile_node_timestamp	(Optional) Specifies the time stamp of the mobile node.
	mobile_node_timestamp	(Optional) Time stamp of the mobile node.
Command Default	The default maximum time differe	ence is 300 milliseconds

Usage Guidelines Only the timestamp option is supported.

 Examples
 The following example shows how to configure the maximum amount of time difference in milliseconds between the time stamp in the received PBA message and the current time of day:

 (Cisco Controller) >config pmipv6 mag replay-protection timestamp window 200

config wlan mobility anchor

To change the state of MAC filtering on a wireless LAN, use the config wlan mobility anchor command.

config wlan mobility anchor {**add** | **delete**} *wlan_id ip_address*

Syntax Description	add	Enables MAC filtering on a wireless LAN.	
	delete	Disables MAC filtering on a wireless LAN.	
	wlan_id	Wireless LAN identifier between 1 and 512.	
	ip_address	Member switch IP address for anchoring the wireless LAN.	

Command Default None

Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

Examples The following example shows how to configure the mobility wireless LAN anchor list with WLAN ID 4 and IP address 192.168.0.14:6:

(Cisco Controller) >config wlan mobility anchor add 4 192.168.0.14

config wlan mobility foreign-map

To configure interfaces or interface groups for foreign Cisco WLCs, use the **config wlan mobility foreign-map** command.

config wlan mobility foreign-map {**add** | **delete**} *wlan_id foreign_mac_address* {*interface_name* | *interface_group_name*}

Syntax Description	add	Adds an interface or interface group to the map of foreign controllers.
	delete	Deletes an interface or interface group from the map of foreign controllers.
	wlan_id	Wireless LAN identifier from 1 to 512.
	foreign_mac_address	Foreign switch MAC address on a WLAN.
	interface_name	Interface name up to 32 alphanumeric characters.
	interface_group_name	Interface group name up to 32 alphanumeric characters.
Command Default	None	
Command History	Release Mo	odification
	7.6 Th	is command was introduced in a release earlier than Release 7.6.
Examples		hows how to add an interface group for foreign Cisco WLCs with WLAN ID 4 and dress on WLAN 00:21:1b:ea:36:60:

(Cisco Controller) >config wlan mobility foreign-map add 4 00:21:1b:ea:36:60 mygroup1

config wlan pmipv6 default-realm

To configure a default realm for a PMIPv6 WLAN, use the config wlan pmipv6 default-realm command.

config wlan pmipv6 default-realm { *default-realm-name* | **none** } *wlan_id*

Syntax Description	default-realm-name	Default realm name for the WLAN.
	none	Clears the realm name for the WLAN.
	wlan_id	Wireless LAN identifier between 1 and 512.
Command Default	None.	
Command History	Release	Modification
·····,		
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	The following exar	nple shows how to configure a default realm name on a PMIPv6 WLAN:
-	(Cisco Controlle	r) >config wlan pmipv6 default-realm XYZ 6

config wlan pmipv6 mobility-type

To configure the mobility type on a WLAN, use the config wlan pmipv6 mobility-type command.

config wlan pmipv6 mobility-type {none | pmipv6 } { wlan_id | all }

Syntax Description	none	Configures a WLAN with Simple IP mobility.
	pmipv6	Configures a WLAN with PMIPv6 mobility.
	all	Enables the specified type of mobility for all WLANs.
	wlan_id	WLAN identifier between 1 and 512.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Usage Guidelines	You must disab	ble the WLAN when you configure the mobility type.
Examples	The following	example shows how to configure the mobility type as PMIPv6 on a WLAN:
		oller) >config wlan pmipv6 mobility-type pmipv6 16

config wlan pmipv6 profile_name

To configure a profile name for the PMIPv6 WLAN, use the config wlan pmipv6 profile_name command.

config wlan pmipv6 profile_name profile_name wlan_id

Syntax Description	profile_name	Profile name for the PMIPv6 WLAN.
	wlan_id	Wireless LAN identifier from 1 to 512.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Usage Guidelines	with the controller	nds a profile name to the PMIPv6 WLAN or SSID. Each time that a mobile node associates r, it uses the profile name and NAI in the trigger to the PMIPV6 module. The PMIPV6 l the profile specific parameters such as LMA IP, APN, and NAI and sends the PBU to the
Examples	-	mple shows how to create a profile named ABC01 on a PMIPv6 WLAN: er) >config wlan pmipv6 profile_name ABC01 16

clear, debug and ping Commands

This section lists the config, debug, ping commands for mobility.

clear stats mobility

To clear mobility manager statistics, use the clear stats mobility command.

clear stats mobility

Syntax Description This command has no arguments or keywords.

Command Default None

Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

Examples The following example shows how to clear mobility manager statistics:

(Cisco Controller) >**clear stats mobility** Mobility stats cleared.

cping

	To test mobility data traffic using the new mobility a	rchitecture, use the cping command.
	cping <i>mobility_peer_IP_address</i>	
Syntax Description	mobility_peer_IP_address	IP address of a peer mobility controller.
Command Default	None	
Command History	Release	Modification
	7.5	This command was introduced in the controller 7.5 Release.
Usage Guidelines	This command tests the mobility data traffic using the	ne new mobility architecture.
Examples	The following example shows how to test the data tr 172.12.35.31:	affic of a controller with peer mobility IP address as
	(Cisco Controller) >cping 172.12.35.31	

debug dot11

To configure the debugging of 802.11 events, use the debug dot11 command.

debug dot11 {all | load-balancing | management | mobile | nmsp | probe | rldp | rogue | state} {enable | disable}

Syntax Description	all	Configures the debugging of all 802.11 messages.
	load-balancing	Configures the debugging of 802.11 load balancing events.
	management	Configures the debugging of 802.11 MAC management messages.
	mobile	Configures the debugging of 802.11 mobile events.
	nmsp	Configures the debugging of the 802.11 NMSP interface events.
	probe	Configures the debugging of probe.
	rldp	Configures the debugging of 802.11 Rogue Location Discovery.
	rogue	Configures the debugging of 802.11 rogue events.
	state	Configures the debugging of 802.11 mobile state transitions.
	enable	Enables the 802.11 debugging.
	disable	Disables the 802.11 debugging.
Command Default	None	
Command History	Release	Modification

7.6

This command was introduced in a release earlier than

Release 7.6.

Examples	The following example shows how to enable the debugging of 802.11 settings:
	<pre>(Cisco Controller) > debug dot11 state enable (Cisco Controller) > debug dot11 mobile enable</pre>
Related Commands	debug disable-all
	debug dot11 mgmt interface
	debug dot11 mgmt msg
	debug dot11 mgmt ssid
	debug dot11 mgmt state-machine

debug dot11 mgmt station

debug client

To configure the debugging of a passive client that is associated correctly with the access point, use the **debug client** command.

debug client *mac_address*

Syntax Description	mac_address MAC address of the client.
Command Default	None
Examples	The following example shows how to debug a passive client with MAC address 00:0d:28:f4:c0:45:
	(Cisco Controller) >debug client 00:0d:28:f4:c0:45

debug fmchs

To configure debugging of Fixed Mobile Convergence Handover Service (FMCHS) of the controller, use the **debug fmchs**command.

debug fmchs {all | error | event | nmsp | packet} {enable | disable}

Syntax Description	all	Configures debugging of all FMCHS messages.
	error	Configures debugging of the FMCHS errors.
	event	Configures debugging of the FMCHS events.
	nmsp	Configures debugging of the FMCHS NMSP events.
	packet	Configures debugging of the FMCHS packets.
	enable	Enables debugging of the FMCHS options.
	disable	Disables debugging of the FMCHS options.

History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

Examples

The following example shows how to enable FMCHS event debugging: (Cisco Controller) >debug fmchs event enable

debug mobility

To configure the debugging of wireless mobility, use the debug mobility command.

debug mobility {ap-list | config | directory | dtls | handoff | keep-alive | multicast | oracle | packet | peer-ip IP-address | pmk | pmtu-discovery | redha} {enable | disable}

Syntax Description	ap-list	Configures the debugging of wireless mobility access point list.
	config	Configures the debugging of wireless mobility configuration.
	directory	Configures the debugging of wireless mobility error messages.
	dtls	Configures the debugging of wireless mobility Datagram Transport Layer Security (DTLS) options.
	handoff	Configures the debugging of wireless mobility handoff messages.
	keep-alive	Configures the debugging of wireless mobility CAPWAP data DTLS keep-alive packets.
	multicast	Configures the debugging of multicast mobility packets.
	oracle	Starts the debugging of wireless mobility oracle options.
	packet	Configures the debugging of wireless mobility packets.
	peer-ip	Configures IP address of the mobility peer for which incoming and outgoing mobility messages should be displayed.
	IP-address	IP address of the mobility peer for which incoming and outgoing mobility messages should be displayed.
	pmk	Configures the debugging of wireless mobility pairwise master key (PMK).
	pmtu-discovery	Configures the debugging of the wireless mobility path MTU discovery.

	redha	Configures the debugging of the multicast mobility high availability.
	enable	Enables the debugging of the wireless mobility feature.
	disable	Disables the debugging of the wireless mobility feature.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
Examples	The following example shows h	now to enable the debugging of wireless mobility packets.

(Cisco Controller) >debug mobility handoff enable

eping

		To test the mobility Ethernet over IP (EoIP) data packet communication between two Cisco WLCs, use the eping command.		
		eping mobility_peer_IP_addr	ress	
Syntax Descri	iption	mobility_peer_IP_address	IP address of a controller that belongs to a mobility group.	
Command Def	fault	None		
Command His	tory	Release	Modification	
		7.6	This command was introduced in a release earlier than Release 7.6.	
Usage Guidel	ines	This command tests the mobility data traffic over the management interface.		
	Note	This ping test is not Internet Control Message Protocol (ICMP) based. The term "ping" is used to indicate an echo request and an echo reply message.		
Examples		The following example shows belongs to a mobility group to	s how to test EoIP data packets and to set the IP address of a controller that 0 172.12.35.31:	

(Cisco Controller) >eping 172.12.35.31

mping

	To test mobility UDP control packet communication between two Cisco WLCs, use the mping command.			
	mping mobility_peer_IP_address			
Syntax Description	mobility_peer_IP_address	IP address of a controller that belongs to a mobility group.		
Command Default	None			
Command History	Release	Modification		
	7.6	This command was introduced in a release earlier than Release 7.6.		
Usage Guidelines	This test runs over mobility UDP port 16666. It tests whether the mobility control packet can be reached over the management interface.			
 Note	This ping test is not Internet Control Message Protocol (ICMP) based. The term "ping" is used to indicate an echo request and an echo reply message.			
Examples	The following example shows how to test mobility UDP control packet communications and to set the IP address of a Cisco WLC that belongs to a mobility group to 172.12.35.31:			
	(Cisco Controller) >mping 172.12.35.31			

I