



Mobility Commands

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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.

The following example shows how to clear mobility manager statistics:

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

config mobility dscp

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

config mobility dscp *dscp_value*

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

The 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.
<i>wlan_id</i>		Wireless LAN identifier between 1 and 512 (inclusive).
guest-lan		Specifies the guest LAN anchor settings.
<i>guest_lan_id</i>		Guest LAN identifier between 1 and 5 (inclusive).
<i>anchor_ip</i>		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 *guest_lan_id* must exist and be disabled.

Auto-anchor mobility is enabled for the WLAN or wired guest LAN when you configure the first mobility anchor. Deleting the last anchor disables the auto-anchor mobility feature and resumes normal mobility for new associations.

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 example shows how to delete a mobility anchor with the IP address 193.13.1.15 from a wireless LAN:

```
(Cisco Controller) >config mobility group anchor delete wlan 5 193.13.1.15
```

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

domain_name

Domain name. The domain name can be up to 31 case-sensitive characters.

Command Default

None

Command History

Release

7.6

Modification

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

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	<i>count</i>	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 of 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.

The following example shows how to specify the number of times a ping request is sent to a mobility group member before the member 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	<i>interval</i>	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 interval 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.

The following example shows how to specify the amount of time between each ping request sent to a mobility group member to 10 seconds:

```
(Cisco Controller) >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-addr IP-addr [group_name] [encrypt{enable | disable}]
| [data-dtls mac-addr {enable | disable} | delete MAC-addr | hash IP-addr {key | none}}
```

Syntax Description		
add		Adds or changes a mobility group member to the list.
<i>MAC-addr</i>		Member switch MAC address.
<i>IP-addr</i>		Member switch IP address.
<i>group_name</i>		(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.
<i>key</i>		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.
	8.0	This command supports both IPv4 and IPv6 address formats.
	8.8.111.0	This command was updated by adding encrypt , data-dtls keywords to support IRCM functionality.

The following example shows how to add a mobility group member with an IPv4 address to the list:

```
(Cisco Controller) >config mobility group member add 11:11:11:11:11:11 209.165.200.225
```

The following example shows how to configure the hash key of a virtual controller in the same domain:

```
(Cisco Controller) >config mobility group member hash 209.165.201.1
a819d479dcfeb3e0974421b6e8335582263d9169
```

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	<i>group_name</i>	Member switch group name (if different from the default group name).
	<i>ip_address</i>	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.
	8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how to configure the multicast group IP address 10.10.10.1 for a group named test:

```
(Cisco Controller) >config 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.	
<i>local_group_multicast_address</i>	IP address for the local mobility group.	
Command Default	The mobility multicast mode is disabled.	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to enable the multicast mobility mode for the local mobility group IP address 157.168.20.0:

```
(Cisco Controller) >config mobility multicast-mode enable 157.168.20.0
```

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 | member { add | delete } IP_address [public_IP_address]
peer-group-name | multicast-address peer-group-name multicast_IP_address }
```

Syntax Description		
bridge-domain-id		Configures the bridge domain ID of the SPG.
<i>peer-group-name</i>		Name of the SPG.
<i>bridge domain id</i>		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.
<i>IP_address</i>		IP address of the member switch.
<i>public_IP_address</i>	(Optional)	Public IP address of the SPG member.
multicast-address		Configures the multicast address of the SPG.
<i>multicast_IP_address</i>		Multicast address of the SPG.

Command Default None

Command History	Release	Modification
	7.3.112.0	This command was introduced.
	8.0	This command supports only IPv4 address format.

The following example shows how to create an SPG.

```
(Cisco Controller) >config mobility switchPeerGroup create SPG1
```

Related Topics

- [debug mobility](#), on page 35
- [show mobility anchor](#), on page 43
- [show mobility summary](#), on page 48

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.

The following example shows how to enable the secure mode for mobility messages:

```
(Cisco Controller) >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	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

This 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	<i>domain_name</i> Name of the PMIPv6 domain. The domain name can be up to 127 case-sensitive, alphanumeric characters.				
Command Default	None				
Command History	<table><thead><tr><th>Release</th><th>Modification</th></tr></thead><tbody><tr><td>7.6</td><td>This command was introduced in a release earlier than Release 7.6.</td></tr></tbody></table>	Release	Modification	7.6	This command was introduced in a release earlier than Release 7.6.
Release	Modification				
7.6	This command was introduced in a release earlier than Release 7.6.				

The following example shows how to configure a domain name for a PMIPv6 WLAN:

```
(Cisco Controller) >config pmipv6 domain floor1
```

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*

Syntax Description

<i>profile_name</i>	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.
<i>user@realm</i>	Network Access Identifier of the client in the format <i>user@realm</i> . The NAI name is case sensitive and can be up to 127 alphanumeric characters.
<i>@realm</i>	Network Access Identifier of the client in the format <i>@realm</i> .
*	All Network Access Identifiers. You can have profiles based on an SSID for all users.
lma	Specifies the Local Mobility Anchor (LMA).
<i>lma_name</i>	Name of LMA. The LMA name is case sensitive and can be up to 127 alphanumeric characters.
apn	Specifies the access point.
<i>ap_name</i>	Name of the access point. The access point 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.

Usage Guidelines

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

The following example shows how to create a PMIPv6 profile:

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


config pmipv6 mag apn

To configure an Access Point Name (APN) for a mobile access gateway (MAG), use the **config pmipv6 mag apn** command.

config pmipv6 mag apn *apn-name*

Syntax Description	<i>apn-name</i> Access point name for the MAG.
---------------------------	--

Command Default	None
------------------------	------

Command History	Release	Modification
	8.0	This command was introduced.

Usage Guidelines By default, the MAG role is WLAN. However, for the lightweight access points, MAG role should be configured as 3GPP. If the MAG role is 3GPP, it is mandatory to specify an APN for the MAG.

To delete an APN for a MAG, use the **config pmipv6 delete mag apn** *apn-name* command.

The following example shows how to add an APN for a MAG:

```
(Cisco Controller) >config pmipv6 mag apn myCiscoAP
```

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	<i>units</i> Initial timeout between the PBUs when the MAG does not receive the PBAs. The range is from 100 to 65535 seconds.	
Command Default	The default initial timeout is 1000 seconds.	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

The following example shows how to configure the initial timeout between the PBUs when the MAG does not receive the PBAs:

```
(Cisco Controller) >config pmipv6 mag binding init-retx-time 500
```

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	<i>units</i> 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 lifetime of the binding entries is 65535 seconds.				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>7.6</td> <td>This command was introduced in a release earlier than Release 7.6.</td> </tr> </tbody> </table>	Release	Modification	7.6	This command was introduced in a release earlier than Release 7.6.
Release	Modification				
7.6	This command was introduced in a release earlier than Release 7.6.				
Usage Guidelines	<p>You must configure a Proxy Mobility IPv6 (PMIPv6) domain before you configure the lifetime of the binding entries in the controller.</p> <p>The following example shows how to configure the lifetime of the binding entries in the controller:</p> <pre>(Cisco Controller) >config pmipv6 mag binding lifetime 5000</pre>				

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	<i>units</i> 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 maximum timeout is 32000 seconds.				
Command History	<table border="1"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Release</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Modification</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">7.6</td> <td style="border-bottom: 1px solid black;">This command was introduced in a release earlier than Release 7.6.</td> </tr> </tbody> </table>	Release	Modification	7.6	This command was introduced in a release earlier than Release 7.6.
Release	Modification				
7.6	This command was introduced in a release earlier than Release 7.6.				

The following example shows how to configure the maximum timeout between the PBUs when the MAG does not receive the PBAs:

```
(Cisco Controller) >config pmipv6 mag binding max-retx-time 50
```

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	<i>units</i> 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 maximum number of binding entries in the MAG is 10000.				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>7.6</td> <td>This command was introduced in a release earlier than Release 7.6.</td> </tr> </tbody> </table>	Release	Modification	7.6	This command was introduced in a release earlier than Release 7.6.
Release	Modification				
7.6	This command was introduced in a release earlier than Release 7.6.				
Usage Guidelines	<p>You must configure a Proxy Mobility IPv6 (PMIPv6) domain before you configure the maximum number of binding entries in the MAG.</p> <p>The following example shows how to configure the maximum number of binding entries in the MAG:</p> <pre>(Cisco Controller) >config pmipv6 mag binding maximum 20000</pre>				

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

units 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.

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*

Syntax Description

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.
<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

The default value of the maximum amount of time that the MAG waits before retransmitting a BRI message is 2 seconds.

The default value of the minimum amount of time that the MAG waits before retransmitting a BRI message is 1 second.

Command History

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

The following example shows how to configure the minimum amount of time that the MAG waits before retransmitting a BRI message:

```
(Cisco Controller) >config pmipv6 mag bri delay min 500
```

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 retry.

The following example shows how to configure the maximum number of times that the MAG retries:

```
(Cisco Controller) >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		
<i>lma_name</i>	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.	
<i>address</i>	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 configure PMIPv6 parameters on the MAG.

The following example shows how to configure an LMA with the MAG:

```
(Cisco Controller) >config pmipv6 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.
<i>time</i>		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.
<i>sequence</i>		(Optional) Sequence number in the Proxy Binding Update message.
mobile_node_timestamp		(Optional) Specifies the time stamp of the mobile node.
<i>mobile_node_timestamp</i>		(Optional) Time stamp of the mobile node.

Command Default The default maximum time difference is 300 milliseconds.

Usage Guidelines Only the timestamp option is supported.

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_addr priority priority-number*

Syntax	Description
add	Enables MAC filtering on a wireless LAN.
delete	Disables MAC filtering on a wireless LAN.
<i>wlan_id</i>	Wireless LAN identifier between 1 and 512.
<i>ip_addr</i>	Member switch IPv4 address for anchoring the wireless LAN.
priority	Sets priority to the anchored wireless LAN IP address.
<i>priority-number</i>	Range between 1 to 3.

Command Default None

Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.
	8.0	This command supports only IPv4 address format.
	8.1	priority <i>priority number</i> parameter introduced.

The following example shows how to configure and set priority to the mobility wireless LAN anchor list with WLAN ID 4 and IPv4 address 192.168.0.14

```
(Cisco Controller) >config wlan mobility anchor add 4 192.168.0.14 priority 1
```

Related Commands **show wlan**

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.
<i>wlan_id</i>		Wireless LAN identifier from 1 to 512.
<i>foreign_mac_address</i>		Foreign switch MAC address on a WLAN.
<i>interface_name</i>		Interface name up to 32 alphanumeric characters.
<i>interface_group_name</i>		Interface group name up to 32 alphanumeric characters.

Command Default	None
-----------------	------

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

The following example shows how to add an interface group for foreign Cisco WLCs with WLAN ID 4 and a foreign switch MAC address 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.

The following example shows how to configure a default realm name on a PMIPv6 WLAN:

```
(Cisco Controller) >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 | mixed } { wlan_id | all }
```

Syntax Description

none	Configures a WLAN with Simple IP mobility.
pmipv6	Configures a WLAN with PMIPv6 mobility.
mixed	Configures a WLAN with Simple IP and PMIPv6 mobility.
all	Enables the specified type of mobility for all WLANs.
<i>wlan_id</i>	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 disable the WLAN when you configure the mobility type.

The following example shows how to configure the mobility type as PMIPv6 on a WLAN:

```
(Cisco Controller) >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

This command binds a profile name to the PMIPv6 WLAN or SSID. Each time that a mobile node associates with the controller, it uses the profile name and NAI in the trigger to the PMIPv6 module. The PMIPv6 module extracts all the profile specific parameters such as LMA IP, APN, and NAI and sends the PBU to the ASR5K.

The following example shows how to create a profile named ABC01 on a PMIPv6 WLAN:

```
(Cisco Controller) >config wlan pmipv6 profile_name ABC01 16
```

debug dot11

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

```
debug dot11 {all | load-balancing | management | mobile | nmosp | 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.
	nmosp	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.

The following example shows how to enable the debugging of 802.11 settings:

```
(Cisco Controller) > debug dot11 state enable
(Cisco Controller) > debug dot11 mobile enable
```


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

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.

Command Default

None

Command History

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

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 |
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.
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.
<i>IP-address</i>	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.
	8.0	This command supports both IPv4 and IPv6 address formats.

The following example shows how 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_address*

Syntax Description	<i>mobility_peer_IP_address</i>	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.
	8.0	This command supports only IPv4 address format.

Usage Guidelines

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.

The following example shows how to test EoIP data packets and to set the IP address of a controller that belongs to a mobility group to 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	<i>mobility_peer_IP_address</i>	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.
	8.0	This command supports both IPv4 and IPv6 address formats.

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.

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
```

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

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

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

```
(Cisco Controller) >show advanced client-handoff
Client auto handoff after retries..... 130
```

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.
	<i>ip_address</i>	IP address.
Command Default	None	
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

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

```
(Cisco Controller) > show l2tp 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	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

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

```
(Cisco Controller) >show logging

(Cisco Controller) > config logging syslog host 10.92.125.52
System logs will be sent to 10.92.125.52 from now on

(Cisco Controller) > config logging syslog host 2001:9:6:40::623
System logs will be sent to 2001:9:6:40::623 from now on

(Cisco Controller) > show logging
Logging to buffer :
- Logging of system messages to buffer :
  - Logging filter level..... errors
  - Number of system messages logged..... 1316
  - Number of system messages dropped..... 6892
- Logging of debug messages to buffer ..... Disabled
  - Number of debug messages logged..... 0
  - Number of debug messages dropped..... 0
- Cache of logging ..... Disabled
- Cache of logging time(mins) ..... 10080
- Number of over cache time log dropped ..... 0
Logging to console :
- Logging of system messages to console :
  - Logging filter level..... disabled
  - Number of system messages logged..... 0
  - Number of system messages dropped..... 8243
- Logging of debug messages to console ..... Enabled
  - Number of debug messages logged..... 0
  - Number of debug messages dropped..... 0
Logging to syslog :
- Syslog facility..... local0
- Logging of system messages to console :
  - Logging filter level..... disabled
  - Number of system messages logged..... 0
  - Number of system messages dropped..... 8208
- Logging of debug messages to console ..... Enabled
  - Number of debug messages logged..... 0
  - Number of debug messages dropped..... 0
- Logging of system messages to syslog :
  - Logging filter level..... errors
  - Number of system messages logged..... 1316
  - Number of system messages dropped..... 6892
```

```
- Logging of debug messages to syslog ..... Disabled
- Number of debug messages logged..... 0
- Number of debug messages dropped..... 0
- Number of remote syslog hosts..... 2
- syslog over tls..... Disabled
  - Host 0..... 10.92.125.52
  - Host 1..... 2001:9:6:40::623
  - Host 2.....
Logging of RFC 5424..... Disabled
Logging of Debug messages to file :
- Logging of Debug messages to file..... Disabled
- Number of debug messages logged..... 0
- Number of debug messages dropped..... 0
Logging of traceback..... Enabled
```

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	(Optional) Displays wireless LAN mobility group settings.	
<i>wlan_id</i>	Wireless LAN identifier from 1 to 512 (inclusive).	
guest-lan	(Optional) Displays guest LAN mobility group settings.	
<i>guest_lan_id</i>	Guest LAN 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

The status field display (see example) shows one of the following values:

- UP—The controller is reachable and able to pass data.
- CNTRL_PATH_DOWN—The mpings failed. The controller cannot be reached through the control path and is considered failed.
- DATA_PATH_DOWN—The epings failed. The controller cannot be reached and is considered failed.
- CNTRL_DATA_PATH_DOWN—Both the mpings and epings failed. The controller cannot be reached and is considered failed.

The following example shows how to display a mobility wireless LAN anchor list:

```
(Cisco Controller) >show mobility anchor
Mobility Anchor Export List
WLAN ID      IP Address      Status
-----      -
12           192.168.0.15   UP
GLAN ID      IP Address      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.

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



Note The AP name is displayed only with New Mobility. With Old Mobility, the AP name is displayed as Unknown.

```
(Cisco Controller) >show 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

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.
	<i>wlan_id</i>	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.

The following example shows how to get a mobility wireless LAN foreign map list:

```
(Cisco Controller) >show mobility foreign-map wlan 2
Mobility Foreign Map List
WLAN ID          Foreign MAC Address          Interface
-----          -
2                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	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>7.6</td> <td>This command was introduced in a release earlier than Release 7.6.</td> </tr> </tbody> </table>	Release	Modification	7.6	This command was introduced in a release earlier than Release 7.6.
Release	Modification				
7.6	This command was introduced in a release earlier than Release 7.6.				

The following example shows how to display the hash keys of the mobility group members:

```
(Cisco Controller) >show mobility group member hash
Default Mobility Domain..... new-mob

IP Address      Hash Key
-----
9.2.115.68      a819d479dcfeb3e0974421b6e8335582263d9169
9.6.99.10       0974421b6e8335582263d9169a819d479dcfeb3e
9.7.7.7         feb3e0974421b6e8335582263d9169a819d479dc
```

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.

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 Retransmitted..... 0
  Handoff Requests Received..... 0
  Handoff End Requests Received..... 0
  State Transitions Disallowed..... 0
  Resource Unavailable..... 0
Mobility Initiator Statistics
  Handoff Requests Sent..... 0
  Handoff Replies Received..... 0
  Handoff as Local Received..... 2
  Handoff as Foreign Received..... 0
  Handoff Denys Received..... 0
  Anchor Request Sent..... 0
  Anchor Deny Received..... 0
  Anchor Grant Received..... 0
  Anchor Transfer Received..... 0
Mobility Responder Statistics
  Handoff Requests Ignored..... 0
  Ping Pong Handoff Requests Dropped..... 0
  Handoff Requests Dropped..... 0
  Handoff Requests Denied..... 0
  Client Handoff as Local..... 0
  Client Handoff as Foreign..... 0
  Client Handoff Inter Group..... 0
  Anchor Requests Received..... 0
  Anchor Requests Denied..... 0
  Anchor Requests Granted..... 0
  Anchor Transferred..... 0
```

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.

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

```
(Cisco Controller) >show mobility summary
```

```
Symmetric Mobility Tunneling (current) ..... Disabled
Symmetric Mobility Tunneling (after reboot) .... Disabled
Mobility Protocol Port..... 16666
Mobility Security Mode..... Disabled
Default Mobility Domain..... snmp_gui
Multicast Mode ..... Disabled
Mobility Domain ID for 802.11r..... 0x66bd
Mobility Keepalive Interval..... 10
Mobility Keepalive Count..... 3
Mobility Group Members Configured..... 1
Mobility Control Message DSCP Value..... 0
Controllers configured in the Mobility Group
MAC Address      IP Address      Group Name      Multicast IP    Status
00:1b:d4:6b:87:20  1.100.163.70   snmp_gui        0.0.0.0         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		
	<i>domain_name</i>	Name of the PMIPv6 domain. The domain name can be up to 127 case-sensitive alphanumeric characters.
	profile	Specifies the PMIPv6 profile.
	<i>profile_name</i>	Name of the profile associated with the PMIPv6 domain. The profile name can be up to 127 case-sensitive alphanumeric characters.
Command History	Release	Modification
	7.6	This command was introduced in a release earlier than Release 7.6.

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: Examplelma

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).	
<i>lma_name</i>	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.	
<i>nai_string</i>	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.

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]: Interface: Management
[Binding][MN]: Hoa: 0xE0E0E02, att: 3, l1id: aabb.cc00.c800
[Binding][MN][LMA]: Id: LMA1
[Binding][MN][LMA]: lifetime: 3600
[Binding][MN][GREKEY]: Upstream: 102, Downstream: 1
```

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.

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:
    LMA Name: AN-LMA        LMA IP: 209.165.201.4
Peer#3:
    LMA Name: AN-LMA        LMA IP: 209.165.201.4
```

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	Parameter	Description
	domain	(Optional) Displays the MAG statistics for a Local Mobility Anchor (LMA) in the domain.
	<i>domain_name</i>	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.
	<i>lma_name</i>	Name of the LMA. The LMA name is case sensitive and can be up to 127 alphanumeric characters.

Command History	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.
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.

The following example shows how to display the LMA statistics:

```
(Cisco Controller) >show pmipv6 mag stats
[M1]: Total Bindings      : 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 handoff      : 0
```

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.

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
```