



PMIP — Dynamic CoA Support

The PMIP — Dynamic CoA feature enables the Local Mobility Anchor (LMA) to identify a Mobile Access Gateway (MAG) based on a dynamic IP address. The MAG gets its IP address from one of the roaming interfaces based on the priority and status of the interface.

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see [Bug Search Tool](#) and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Information About Proxy Mobile IPv6 Support for MAG Functionality

Proxy Mobile IPv6 Overview

Proxy Mobile IPv6 (PMIPv6) provides network-based IP Mobility management to a mobile node (MN), without requiring the participation of the MN in any IP mobility-related signaling. The mobility entities in the network track the movements of the MN, initiate the mobility signaling, and set up the required routing state.

The major functional entities of PMIPv6 are Mobile Access Gateways (MAGs), Local Mobility Anchors (LMAs), and MNs.

Mobile Access Gateways

Mobile Access Gateway (MAG) performs mobility-related signaling on behalf of the mobile nodes (MN) attached to its access links. MAG is the access router for the MN; that is, MAG is the first-hop router in the localized mobility management infrastructure.

MAG performs the following functions:

- Obtains an IP address from Local Mobility Anchor (LMA) and assigns it to MN.
- Retains the IP address of an MN when the MN roams across MAGs.
- Tunnels traffic from MN to LMA.

Local Mobility Anchor

Local Mobility Anchor (LMA) is the home agent for a mobile node (MN) in a Proxy Mobile IPv6 (PMIPv6) domain. It is the topological anchor point for MN home network prefixes and manages the binding state of an MN. An LMA has the functional capabilities of a home agent as defined in the Mobile IPv6 base specification (RFC 3775) along with the capabilities required for supporting the PMIPv6 protocol.

**Note**

Use the **dynamic mag learning** command to enable LMA to accept Proxy Mobile IPv6 (PMIPv6) signaling messages from any Mobile Access Gateway (MAG) that is not configured locally.

Mobile Node

Mobile node (MN) is an IP host and the mobility of the MN is managed by a network. MN can be an IPv4-only node, an IPv6-only node, or a dual-stack node, which is a node with IPv4 and IPv6 protocol stacks. MN is not required to participate in any IP mobility-related signaling for achieving mobility for an IP address or a prefix that is obtained in the Proxy Mobile IPv6 (PMIPv6) domain.

Mobile Map

Mobile map configuration facilitates application-based routing. More than one mobile map can be configured under the Proxy Mobile IPv6 (PMIPv6) domain, however, at a given point of time, only one mobile map is active at Mobile Access Gateway (MAG) and Local Mobility Anchor (LMA). The mobile map and its entries are configured or modified when no bindings are available.

Multipath Support

At any given time, many network paths exist between Local Mobility Anchor (LMA) and Mobile Access Gateway (MAG). The PMIP: Multipath Support on MAG and LMA feature enables MAG to select any one of the paths on a priority basis or select all the existing network paths simultaneously to create tunnels to reach LMA. All paths have the same priority when multiple paths are selected.

Logical Mobile Node

Logical Mobile Node (LMN) is a logical entity that represents a mobile node (MN) that is hosted on one of the interfaces of Mobile Access Gateway (MAG) device. LMN has Network Access Indicator (NAI) similar to MN. One or more networks can be associated with each LMN through the interfaces designated as mobile network interfaces. LMN on mobile network receives an IP address from a DHCP server that runs on MAG, unlike a mobile node whose address is assigned by Local Mobility Anchor (LMA).

How to Configure PMIP - Dynamic CoA Support

Configuring PMIP - Dynamic CoA Support

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ipv6 mobile pmipv6-mag *mag-id* domain *domain-name***
4. **address *dynamic***
5. **roaming interface *name type* priority *priority* egress-att *access-tech-type* label *egress-label***
6. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable	Enables privileged EXEC mode.

	Command or Action	Purpose
	Example: Device> enable	<ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	ipv6 mobile pmipv6-mag mag-id domain domain-name Example: Device(config)# ipv6 mobile pmipv6-mag mag1 domain dn1	Enables the MAG service on the device, configures the PMIP domain for the LMA, and enters MAG configuration mode.
Step 4	address dynamic Example: Device(config-ipv6-pmipv6-mag)# address dynamic	Configures dynamic address for a MAG.
Step 5	roaming interface name type priority priority egress-att access-tech-type label egress-label Example: Device(config-ipv6-pmipv6-mag-addr-dyn)# roaming interface Ethernet 0/0 priority 2 egress-att ATT label egress1	Specifies an interface as a roaming interface for MAG.
Step 6	end Example: Device(config-ipv6-pmipv6-mag-addr-dyn)# end	Exits MAG configuration mode and enters privileged EXEC mode.

Configuration Examples for PMIP - Dynamic CoA Support

Example: Configuring PMIP - Dynamic CoA Support

```

Device> enable
Device# configuration terminal
Device(config) ipv6 mobile pmipv6-mag mag1 domain dn1
Device(config-ipv6-pmipv6-mag)# address dynamic
Device(config-ipv6-pmipv6-mag-addr-dyn)# roaming interface Ethernet 0/0 priority 2 egress-att
ATT label egress1
Device(config-ipv6-pmipv6-mag-addr-dyn)# end

```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Command List, All Releases
IP mobility commands	Cisco IOS IP Mobility Command Reference

Standards and RFCs

Standard/RFC	Title
RFC 3775	<i>Mobility Support in IPv6</i>
RFC 5213	<i>Proxy Mobile IPv6</i>
RFC 5844	<i>IPv4 Support for Proxy Mobile IPv6</i>
RFC 5845	<i>Generic Routing Encapsulation (GRE) Key Option for Proxy Mobile IPv6</i>
RFC 5846	<i>Binding Revocation for IPv6 Mobility</i>

MIBs

MIB	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for PMIP - Dynamic CoA Support

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

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Table 1: Feature Information for PMIP - Dynamic CoA Support

Feature Name	Releases	Feature Information
PMIP - Dynamic CoA Support	15.4(1)T	The PMIP - Dynamic CoA feature enables the Local Mobility Anchor (LMA) to identify a Mobile Access Gateway (MAG) based on a dynamic IP address. The MAG gets its IP address from one of the roaming interfaces based on the priority and status of the interface.