LISP Interface Configuration Commands

ip lisp source-locator

To configure a source locator to be used for IPv4 Locator/ID Separation Protocol (LISP) encapsulated packets, use the **ip lisp source-locator** command in interface configuration mode. To remove the configured source locator, use the **no** form of this command.

ip lisp source-locator *interface*

no ip lisp source-locator *interface*

Syntax Description

interface	The name of the interface whose IPv4 address should be used as the source locator address for outbound LISP encapsulated packets.

Command Default

The IPv4 address of the outbound interface is used by default as the source locator address for outbound LISP encapsulated packets.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
15.1(1)XB	This command was introduced.
Cisco IOS XE Release 2.5.1XA	This command was integrated into Cisco IOS XE Release 2.5.1XA
Cisco IOS XE Release 3.3.0S	This command was integrated into Cisco IOS XE Release 3.3.0S.
15.1(4)M	This command was integrated into Cisco IOS Release 15.1(4)M.

Usage Guidelines

When you send a LISP-encapsulated packet (data or control message), a destination lookup is done to determine the appropriate outgoing interface. By default, the IPv4 address of this outgoing interface is used as the source locator for the outbound LISP encapsulated packet.

It might be necessary to use the IPv4 address of a different interface as the source locator for the outbound LISP-encapsulated packets rather than that of the outgoing interface. For example, when an Ingress Tunnel Router (ITR) has multiple egress interfaces, you can configure a loopback interface for stability purposes and instruct the ITR to use the address of this loopback interface as the source locator for the outbound LISP-encapsulated packets rather than one or both of the physical interface addresses. The use of this command is also important for maintaining locator consistency between the two xTRs when rloc-probing is used.

Examples

The following example shows how to configure the ITR to use the IPv4 address of interface Loopback0 as the source-locator when LISP encapsulated packets are sent out interfaces FastEthernet0/0 and FastEthernet1/0:

```
Router(config)# interface FastEthernet0/0
Router(config-if)# ip lisp source-locator Loopback0
Router(config-if)# interface FastEthernet1/0
Router(config-if)# ip lisp source-locator Loopback0
```

Note In Cisco IOS XE Releases, the FastEthernet interfaces require three values to define the interface (for example, FastEthernet 1/0/1).

Related Commands

Command	Description
ipv4 itr	Configures the router to act as an IPv4 LISP ITR.

ipv6 lisp source-locator

To configure a source locator to be used for IPv6 Locator/ID Separation Protocol (LISP)-encapsulated packets, use the **ipv6 lisp source-locator** command in interface configuration mode. To remove the configured source locator, use the **no** form of this command.

ipv6 lisp source-locator *interface*

no ipv6 lisp source-locator *interface*

Syntax Description

interface	The name of the interface whose IPv6 address should be used as the source locator address for outbound LISP-encapsulated packets.

Command Default

The IPv6 address of the outbound interface is used by default as the source locator address for outbound LISP encapsulated packets.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
15.1(1)XB1	This command was introduced.
Cisco IOS XE2.5.1XA	This command was integrated into Cisco IOS XE Release 2.5.1XA.
Cisco IOS XE Release 3.3.0S	This command was integrated into Cisco IOS XE Release 3.3.0S.
15.1(4)M	This command was integrated into Cisco IOS Release 15.1(4)M.

Usage Guidelines

When a LISP-encapsulated packet (data or control message) is sent, a destination lookup is done to determine the appropriate outgoing interface. By default, the IPv6 address of this outgoing interface is used as the source locator for the outbound LISP encapsulated packet.

It might be necessary to use the IPv6 address of a different interface as the source locator for the outbound LISP-encapsulated packets rather than that of the outgoing interface. For example, when an Ingress Tunnel Router (ITR) has multiple egress interfaces you may configure a loopback interface for stability purposes and instruct the ITR to use the address of this loopback interface as the source locator for the outbound LISP-encapsulated packets rather than one or both of the physical interface addresses. The use of this command is also important for maintaining locator consistency between the two xTRs when rloc-probing is used.

Examples

The following example shows how to configure the ITR to use the IPv6 address of interface Loopback0 as the source-locator when sending LISP-encapsulated packets out interfaces FastEthernet0/0 and FastEthernet1/0.

```
Router(config)# interface FastEthernet0/0
Router(config-if)# ipv6 lisp source-locator Loopback0
Router(config-if)# interface FastEthernet1/0
Router(config-if)# ipv6 lisp source-locator Loopback0
```

Note In Cisco IOS XE Releases, the FastEthernet interfaces require three values to define the interface (for example, FastEthernet 1/0/1).

Related Commands

Command	Description
ipv6 itr	Configures the router to act as an IPv6 LISP ITR.

lisp extended-subnet-mode

To configure an interface to create a dynamic EID state for hosts attached on their own subnet in order to track the movement of endpoint identifiers (EIDs) from one part of its subnet to another part of the same subnet, use the **lisp extended-subnet-mode** command in interface configuration mode. To remove the configuration, use the **no** form of this command.

lisp extended-subnet-mode

no lisp extended-subnet-mode

Syntax Description

This command has no arguments or keywords.

Command Default

By default, this command is disabled.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Release 3.9S	This command was introduced.

Usage Guidelines

This command is used when a subnet is extended across a layer-3 cloud where layer-2 connectivity is maintained by a mechanism other than Locator/ID Separation Protocol (LISP), for example, overlay transport virtualization (OTV) or virtual private LAN services (VPLS). This command enables a dynamic EID state to be created for hosts attached on their own subnet so that remote Ingress Tunnel Routers (ITRs)/Proxy Ingress Tunnel Routers (PITRs) can track the movement of EIDs from one part of its subnet to another part of the same subnet (by LISP encapsulating to the current locator-set for the roaming dynamic EID). The default setting for this command is disabled.

Note When the **lisp extended-subnet-mode** command is configured on an interface, any dynamic-EID prefixes configured using the **lisp mobility** command on the same interface must be more specific prefixes than any overlapping subnet prefixes. For example, if the **lisp extended-subnet-mode** command is configured on an interface that has a base subnet of /24, then when the **lisp mobility** *dynamic-eid-name* command is configured, the EID-prefix for dynamic EID *dynamic-eid-name* must be /25 or greater.

Examples

The following example configures the Ethernet2/0 interface to use the **lisp extended-subnet-mode** command.

```
Device(config)# interface Ethernet2/0
Device(config-if)# lisp extended-subnet-mode
```

Related Commands

Command	Description
dynamic-eid	Configures a LISP VM-mobility (dynamic-EID roaming) policy.
lisp mobility	Configures an interface on an ITR to participate in LISP VM-mobility (dynamic-EID roaming) for the referenced dynamic-EID policy.

lisp mobility

To configure an interface on an Ingress Tunnel Router (ITR) to participate in Locator/ID Separation Protocol (LISP) virtual machine (VM)-mobility (dynamic-EID roaming) for a referenced dynamic-EID policy, use the **lisp mobility** command in interface configuration mode. To remove the configuration, use the **no** form of this command.

lisp mobility {*dynamic-eid-name* | [**nbr-proxy-reply requests** *number*]| **discover arp | liveness** | {**test** | **ttl** *value*}}

no lisp mobility {*dynamic-eid-name* | [**nbr-proxy-reply requests** *number*]| **discover arp | liveness** | {**test** | **ttl**}}

Syntax Description

dynamic-eid-name	Name of the LISP dynamic-EID policy to apply to this interface.
nbr-proxy-reply	The neighbor proxy reply behavior for the dynamic-EID group.
requests *number*	Sends neighbor proxy reply after reaching the request threshold and the number of the requests threshold. The range is from 0 to 5. The default is 1.
discover	Configures the mobility dynamic-EID discover settings.
arp	Dynamic-EID discover through ARP events on this interface.
liveness	Configures mobility liveness settings.
test	Performs liveness test on dynamic EID discovered on this interface.
ttl *value*	Configures the Time to Live (TTL) in the liveness test packet. The value range is from 2 to 255.

Command Default

By default, the interface does not participate in LISP VM-mobility (dynamic-EID roaming).

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
15.3(1)T	This command was introduced.
Cisco IOS XE Release 3.8S	This command was integrated into Cisco IOS XE Release 3.8S.

Usage Guidelines

In order for an interface on a LISP ITR/ETR (xTR) to participate in LISP VM-mobility (dynamic-EID roaming), it must be associated by name with a specific LISP dynamic-EID roaming policy. A LISP dynamic-EID roaming policy is configured using the **dynamic-eid** command. This policy is then associated with an interface using the **lisp mobility** command, where the *dynamic-eid-name* argument provides the association.

When a packet is received on an interface configured for LISP VM-mobility, the packet is considered a candidate for LISP VM-mobility (dynamic-EID roaming) and its source address is compared against the EID prefix in the database-mapping entry included in the dynamic-eid roaming policy. If there is a match, the detected dynamic-EID roaming policy is registered with the mapping system and the packet is LISP encapsulated if the destination is an EID or it is forwarded natively.

Multiple **lisp mobility** commands referring to different LISP dynamic-EID policies can be applied to the same interface.

Note The following caveats apply to LISP VM-mobility:

- When a dynamic EID will be roaming across subnets, the dynamic-EID prefix must be "more-specific" than the subnet configured on the interface.
- All LISP VM-router interfaces (the interface the dynamic EID will roam to) must have the same MAC address. Interfaces can be configured with the following command: **mac-address 0000.0e1d.010c**
- Note that any MAC address can be used; the MAC address in the example above, which approximates "EID" (0e1d) and "LOC" (010c), is an example.

Note This feature is available for only IPv4 at this time. Support for IPv6, including necessary changes for IPv6 neighbor discovery (ND) has not yet been implemented.

Note Any dynamic-EID prefixes configured using **lisp mobility** commands on the same interface must be equal or more specific prefixes than any subnet prefixes. For example, if an interface has a base subnet of /24, then the dynamic-EID prefix must be /24 or greater.

Note When **lisp mobility** *dynamic-eid-name* is configured:

- Dynamic-EID discovery from arp packets is enabled by default in across subnet mode (ASM). Use the **no** form of the command to disable dynamic-EID discovery from arp packets.

  (The **discover arp** option is not applicable when the **lisp extended-subnet-mode** command is configured on the interface.)

- **liveness test** is enabled by default in ASM mode. The liveness test sends a ping every 60 seconds to the dynamic EIDs to check if the dynamic EID is attached to the subnet. Use the **no** form of the command to disable the liveness test on the interface for dynamic EIDs.

  (The **liveness test** option is not applicable when the **lisp extended-subnet-mode** command is configured on the interface.)

Examples

The following example configures the Ethernet2/0 interface to use the **Site-1** policy defined under the LISP dynamic-EID configuration.

```
Device(config)# interface Ethernet2/0
Device(config-if)# lisp mobility site-1
```

The following example shows output for interface Ethernet2/0:

```
!
interface Ethernet2/0
 mac-address 0000.0d0e.010c
 ip address 22.1.0.2 255.255.255.0
 lisp mobility site-1
!
```

Related Commands

Command	Description
dynamic-eid	Configures a LISP VM-mobility (dynamic-EID roaming) policy.
lisp extended-subnet-mode	Configures an interface to create a dynamic-EID state for hosts attached on their own subnet to track EID movement from one part of the subnet to another part of the same subnet.