



Configuring LISP Multicast

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LISP Multicast

This chapter describes how to configure the Multicast functionality in Locator/ID Separation Protocol (LISP) architecture where the Multicast source and Multicast receivers can reside in separate LISP sites.

LISP introduced a mapping function from a site's Endpoint ID (EID) prefix to its associated Routing Locator (RLOC). Unicast packets require the mapping of both the source and destination address. Multicast only requires the source address to be mapped as the destination group address is not topology-dependent.

The implementation of Multicast LISP includes the following features:

- Building the multicast distribution tree across LISP sites.
- Forwarding multicast data packets from sources to receivers across LISP sites.
- Supporting different service models, including ASM (Any Source Multicast), and SSM (Source Specific Multicast).
- Supporting different combinations of LISP and non-LISP capable source and receiver sites.

When the Multicast LISP feature is enabled, a new tunnel interface type called GLT (Generic Lisp Tunnel) is created. The GLT is supported by Oracle Identity Manager APIs and only one GLT per Virtual Device Context (VDC) is created.



Attention

The LISP Multicast feature is not supported on the F3 series module.

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.

Restrictions for LISP Multicast

The following restrictions apply to the LISP Multicast feature:

- Only IPv4 Multicast LISP is supported over the Unicast core.
- Only Any Source Multicast (ASM) and Single Source Multicast (SSM) modes are supported.
- Only static Rendezvous Point (RP) is supported.

Configuring LISP Multicast

Perform this task to configure a device to support Locator/ID Separation Protocol (LISP) Multicast functionality.

In this task, a LISP site an edge router configured as an xTR (performs as both an ITR and an ETR) and includes a single IPv4 connection to an upstream provider. Both the RLOC and the EID are IPv4. Additionally, this LISP site registers to one map resolver/map server (MR/MS) device in the network core.

- **Mapping system:**
 - One map resolver/map server (MR/MS) system is assumed to be available for the LISP xTR to configure. The MR/MS have IPv4 RLOC 11.0.0.2.
 - Mapping services are assumed to be provided as part of this LISP solution via a private mapping system or as a public LISP mapping system. From the perspective of the configuration of these LISP site xTRs, there is no difference.

The steps in this task enable and configure LISP Multicast ITR and ETR (xTR) functionality when using a LISP map server and map resolver for mapping services.

Procedure

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

	Command or Action	Purpose
Step 2	vrf context <i>name</i> Example: Device(config)# vrf context management	Creates a virtual routing and forwarding instance (VRF) and enters VRF configuration mode.
Step 3	ip pim rp-address <i>rp-address access-list</i> Example: Device(config-vrf)# ip pim rp-address 10.0.0.1 group-list 224.0.0.0/8	Configures the address of a Protocol Independent Multicast (PIM) rendezvous point (RP) for a particular group.
Step 4	ip pim ssm range <i>access-list</i> Example: Device(config-vrf)# ip pim ssm range 232.0.0.0/8	Defines the Source Specific Multicast (SSM) range of IP multicast addresses.
Step 5	ip lisp itr-etr Example: Device(config-vrf)# ip lisp itr-etr	Configures the Cisco NX-OS device to act as both an IPv4 LISP Ingress Tunnel Router (ITR) and Egress Tunnel Router (ETR).
Step 6	ip lisp database-mapping <i>EID-prefix/prefix-length locator priority</i> <i>priority weight weight</i> Example: Device(config-vrf)# ip lisp database-mapping 10.0.0.0/24 10.0.0.1 priority 1 weight 100	Configures an IPv4 endpoint identifier to Routing Locator (EID-to-RLOC) mapping relationship and its associated traffic policy.
Step 7	lisp instance-id <i>id</i> Example: Device(config-vrf)# lisp instance-id 1	Configures an instance ID to be associated with endpoint identifier (EID)-prefixes for a Locator/ID Separation Protocol (LISP) xTR .
Step 8	ip lisp locator-vrf default Example: Device(config-vrf)# ip lisp locator-vrf default	Configures a nondefault virtual routing and forwarding (VRF) table to be referenced by any IPv4 locators.
Step 9	ip lisp itr map-resolver <i>map-resolver-address</i>	Configures the IPv4 locator address of the Locator/ID Separation Protocol (LISP) Map-Resolver to be used by the ingress tunnel router (ITR) ITR or Proxy ITR

	Command or Action	Purpose
	<p>Example:</p> <pre>Device(config-vrf)# ip lisp itr map-resolver 10.0.0.2</pre>	<p>(PITR) when sending Map-Requests for IPv4 EID-to-RLOC mapping resolution.</p> <p>Note Up to two map resolvers may be configured if multiple map resolvers are available. (See the <i>LISP Command Reference</i> for more details.)</p>
Step 10	<p>ip lisp etr map-server map-server-address key key-type authentication-key</p> <p>Example:</p> <pre>Device(config-vrf)# ip lisp etr map-server 10.0.0.2 key 3 5b0f2bd760fe4ce3</pre>	<p>Configures the IPv4 locator address of the Locator/ID Separation Protocol (LISP) Map-Server to be used by the egress tunnel router (ETR) when registering for IPv4 EIDs.</p> <p>Note Up to two map servers may be configured if multiple map servers are available. (See the <i>LISP Command Reference</i> for more details.)</p>
Step 11	<p>ip lisp multicast</p> <p>Example:</p> <pre>Device(config-vrf)# ip lisp multicast</pre>	<p>Configures the device to support Locator/ID Separation Protocol (LISP) Multicast functionality.</p>
Step 12	<p>exit</p> <p>Example:</p> <pre>Device(config-vrf)# exit</pre>	<p>Exits vrf configuration mode.</p>
Step 13	<p>show ipmroutedetail</p> <p>Example:</p> <pre>Device# show ip mroute detail</pre>	<p>(Optional) Displays information about the LISP multicast encapsulation for the IPv4 multicast routes.</p>
Step 14	<p>show ippimlisp encap</p> <p>Example:</p> <pre>Router# show ip pim lisp encap</pre>	<p>(Optional) Displays information about the LISP encapsulation indices stored by PIM.</p>
Step 15	<p>show forwardingdistributionmulticast route group-addr</p> <p>Example:</p> <pre>Router# show forwarding distribution multicast route group 226.1.1.1</pre>	<p>(Optional) Displays information about the multicast Forwarding Information Base (FIB) distribution routes.</p>

Configuration Example for LISP Multicast

Example: Configuring LISP Multicast

The following example shows how to configure Locator/ID Separation Protocol (LISP) Multicast on either the Egress Tunnel Router (ETR) or the Ingress Tunnel Router (ITR):

```
vrf context vrf1
 ip pim rp-address 35.0.0.1 group-list 224.0.0.0/4
 ip pim ssm range 232.0.0.0/8
 ip lisp itr-etr <<< this router acts as a Lisp xTR gateway
 ip lisp database-mapping 20.0.0.0/24 11.0.0.1 priority 1 weight 100
 lisp instance-id 1
 ip lisp locator-vrf default
 ip lisp itr map-resolver 11.0.0.2
 ip lisp etr map-server 11.0.0.2 key 3 5b0f2bd760fe4ce3
 ip lisp multicast <<< this router supports Lisp Multicast
```

Feature History for LISP Multicast

Table 1: Feature History for LISP Multicast

Feature Name	Releases	Feature Information
Locator/ID Separation Protocol (LISP) Multicast	6.2(2) Note The LISP Multicast feature is not supported on the F3 series module.	This feature is introduced.

