



# LISP Reliable Registration

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The LISP Reliable Registration feature supports establishment of TCP based reliable map registration between Egress Tunnel Router (ETR) and Map Server (MS).

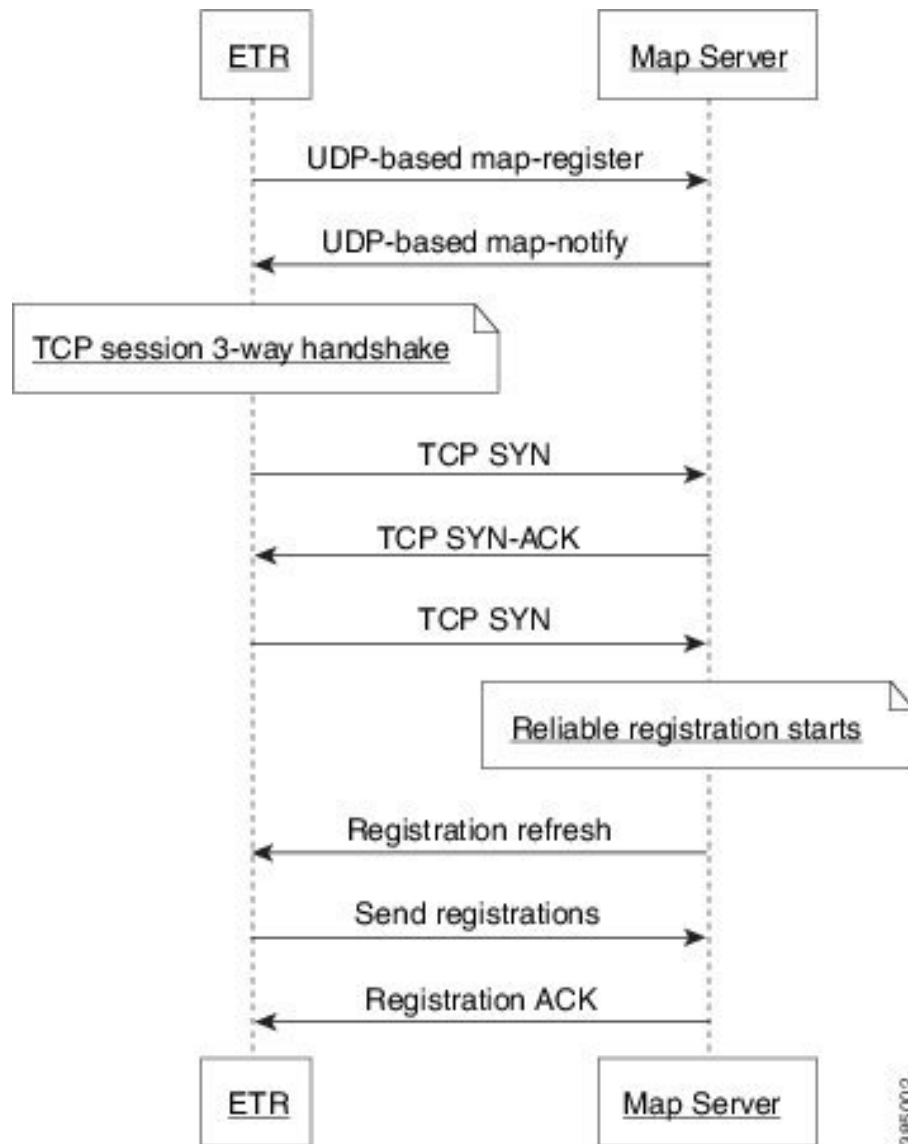
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# Information About LISP Reliable Registration

## LISP Reliable Map Registration

LISP ETR periodically sends UDP based map registration message to map server. This results in control traffic and scalability problems. TCP based reliable map registration or LISP reliable map registration mechanism is developed as an enhancement and replacement to the UDP based map registration mechanism.

**Figure 1: LISP Reliable Map Registration Mechanism**



The LISP reliable map registration mechanism as shown in the figure is described below:

- ETR sends UDP based map registration message to map server.
- Map server processes map registration and sends map-notify to ETR. This message serves as acknowledgment.
- ETR initiates a TCP session with map-server using three-way handshake.



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**Note** When TCP based map registration is not supported by map server then ETR uses UDP based map registration to establish a session with the map server.

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- Once the TCP session is established, map-server sends a registration refresh message to the ETR.
- ETR sends map registrations to the map server through the TCP connection.
- Map server acknowledges for the map registrations.



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**Note** There are no configuration commands for this feature. This feature is turned on automatically.

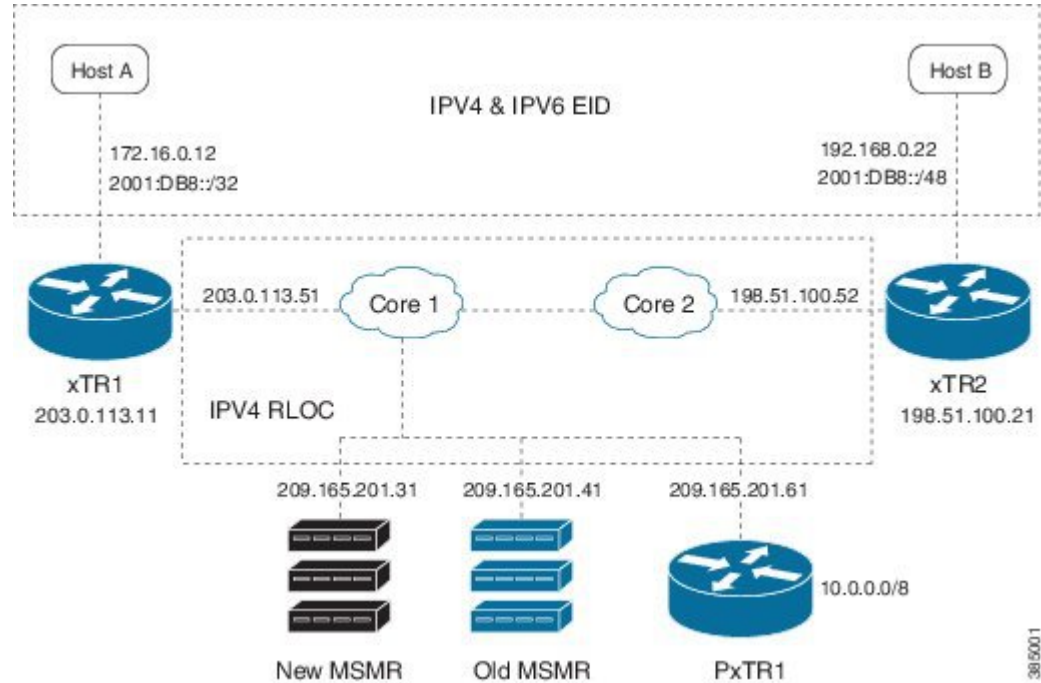
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## Verifying the LISP Reliable Registration

Perform this task to verify the LISP Reliable Registration feature which is enabled automatically in the LISP network. In this example, a LISP site uses a single edge router that functions as both ITR and ETR (known as an xTR). Routing Locators (RLOCs) are in IPv4. EID prefixes are in both IPv4 and IPv6. The LISP site

registers to two map server/map resolver (MSMR) devices in the network core. The topology used in verifying LISP Reliable Registration is as shown in the figure below.

**Figure 2: LISP Reliable Registration Topology**



The components as shown in the topology are described below:

- xTR1 and xTR2 are xTRs for 2 LISP sites.
- Core1 and Core 2 are routing locators (RLOCs) core routers with no LISP configuration.
- New MSMR is a map-server and map-resolver with reliable map-registration support, whereas Old MSMR does not support reliable map-registration.
- PxTR1 works as a Proxy Ingress Tunnel Router (PITR) and Proxy Egress Tunnel Router (PETR) between the network with 10.0.0.0/8 prefix and the LISP sites.
- Only static routing protocols are used in this setup to reduce control traffic.

In the following output, a '#' sign in the 'Up' column indicates reliable map registration session.

```
Device# show lisp site
```

```
LISP Site Registration Information
```

```
* = Some locators are down or unreachable
```

```
# = Some registrations are sourced by reliable transport
```

Site Name	Last Register	Up	Who Last Registered	Inst ID	EID Prefix
A	never	no	--		0.0.0.0/0
	01:59:44	yes#	203.0.113.11		10.10.10.0/24
	01:59:44	yes#	203.0.113.11		10.20.20.0/24
	01:59:44	yes#	203.0.113.11		172.16.0.0/24
B	01:59:44	yes#	203.0.113.11		2001:DB8::/32
	never	no	--		0.0.0.0/0
	never	no	--		10.0.0.0/8

```

01:59:43    yes#    198.51.100.21    10.30.30.0/24
01:59:43    yes#    198.51.100.21    10.40.40.0/24
never       no      --              21.0.0.0/8
01:59:43    yes#    198.51.100.21    21.21.21.0/24
01:59:43    yes#    198.51.100.21    2001:DB8::/48

```

In the following output, no '#' sign in the 'Up' column indicates that the Old MSMR does not support reliable map registration.

```
Device# show lisp site
```

```
LISP Site Registration Information
* = Some locators are down or unreachable
```

Site Name	Last Register	Up	Who Last Registered	Inst ID	EID Prefix
A	never	no	--		0.0.0.0/0
	00:00:00	yes	203.0.113.11		172.16.0.0/24
	00:00:55	yes	198.51.100.21		21.21.21.0/24
	00:00:03	yes	203.0.113.11		2001:DB8::/32
B	never	no	--		10.0.0.0/8
	00:00:00	yes	203.0.113.11		10.10.10.0/24
	00:00:00	yes	203.0.113.11		10.20.20.0/24
	00:00:55	yes	198.51.100.21		10.30.30.0/24
	00:00:55	yes	198.51.100.21		10.40.40.0/24
	00:00:52	yes	198.51.100.21		2001:DB8::/48

The following output is from xTR1 that uses 2 map servers. Reliable map-registration session is established with 209.165.201.31 (New MSMR), but not with 209.165.201.41 (Old MSMR).

```
Device# show lisp session
```

```
Sessions for VRF default, total: 2, established: 1
Peer                State      Up/Down      In/Out  Users
209.165.201.31     Up         05:05:40     6/3     2
209.165.201.41     Down       never         0/0     1
```

The following output is from New MSMR. It has established reliable map-registration sessions with two ETRs.

```
Device# show lisp session
```

```
Sessions for VRF default, total: 2, established: 2
Peer                State      Up/Down      In/Out  Users
203.0.113.11       Up         05:19:53     3/6     1
198.51.100.21      Up         05:18:28     2/5     1
```

## Additional References for LISP Reliable Registration

### Related Documents

Document Title	Location
Cisco IOS commands	<a href="#">Cisco IOS Master Command List, All Releases</a>
LISP commands	<a href="#">Cisco IOS IP Routing: LISP Command Reference</a>

**Standards and RFCs**

Standard/RFC	Title
RFC 6830	<i>The Locator/ID Separation Protocol (LISP)</i>

**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.	<a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a>

## Feature Information for LISP Reliable Registration

*Table 1: Feature Information for LISP Reliable Registration*

Feature Name	Releases	Feature Information
LISP Reliable Registration	Cisco IOS XE Denali 16.2	<p>The LISP Reliable Registration feature supports establishment of TCP based reliable map-registration between Egress Tunnel Router (ETR) and Map Server (MS).</p> <p>The following commands were modified: <b>show lisp site</b>.</p>