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**Welcome  
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LISP**



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## LISP:

- **LISP Stand for Locator ID Separation Protocol.**
- Cisco Locator ID Separation (LISP) is a **mapping and encapsulation protocol.**
- Originally developed to address the routing scalability (Capacity) issues on the Internet.
- As Internet Routing tables have grown exponentially, putting a load on BGP Routers.
- Routing on the Internet is meant to be hierarchical, but because of disaggregation, a full internet routing table nowadays contain over more than 800.000 Prefixes.
- We need more **powerful routers with enough RAM and TCAM to store all prefixes** in the Internet routing tables.
- And we need routers with powerful CPUs to process changes in the routing tables.
- With traditional IP routing, an IP address have two functions.
  1. Identity: To Identify the device.
  2. Location: The location of the device in the network; we use this for routing.
- LISP separates these two functions of an IP address into two separate functions:
  1. Endpoint Identifier (EID): Assigned to hosts like computers, laptops, printers etc.
  2. Routing Locators (RLOC): Assigned to routers. (we use the RLOC address to reach EIDs).
- CISCO Created LISP, but its not a proprietary solution, it's an open standard, defined in RFC 6830.
- Originally it was designed for the Internet, but nowadays, you also see LISP in other environments like data Centers, WAN and the campus.

## LISP Overview:

- LISP is a map and encapsulation protocol.
- There are three essential environments in a LISP environment.
- LISP sites: This is the EID namespace, where EIDs are.
- non-LISP sites: This is the RLOC namespace where we find RLOCs. For example, the Internet.
- LISP mapping service: This is the infrastructure that takes care of EID-to-RLOC mappings.

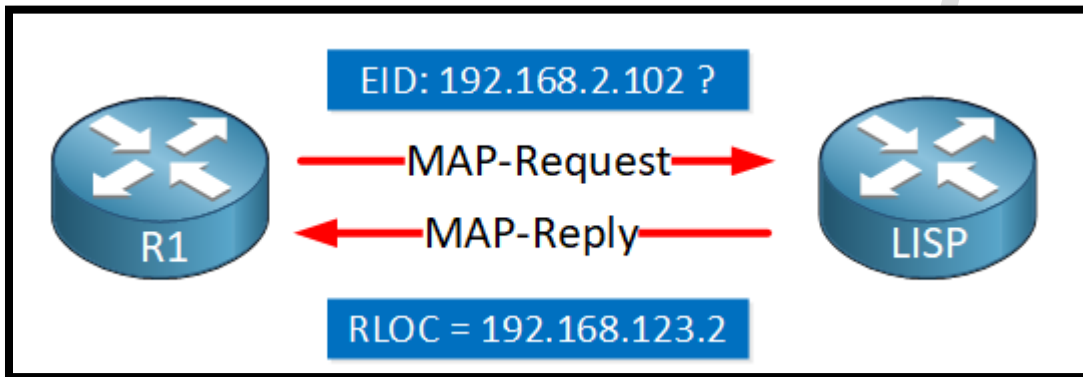
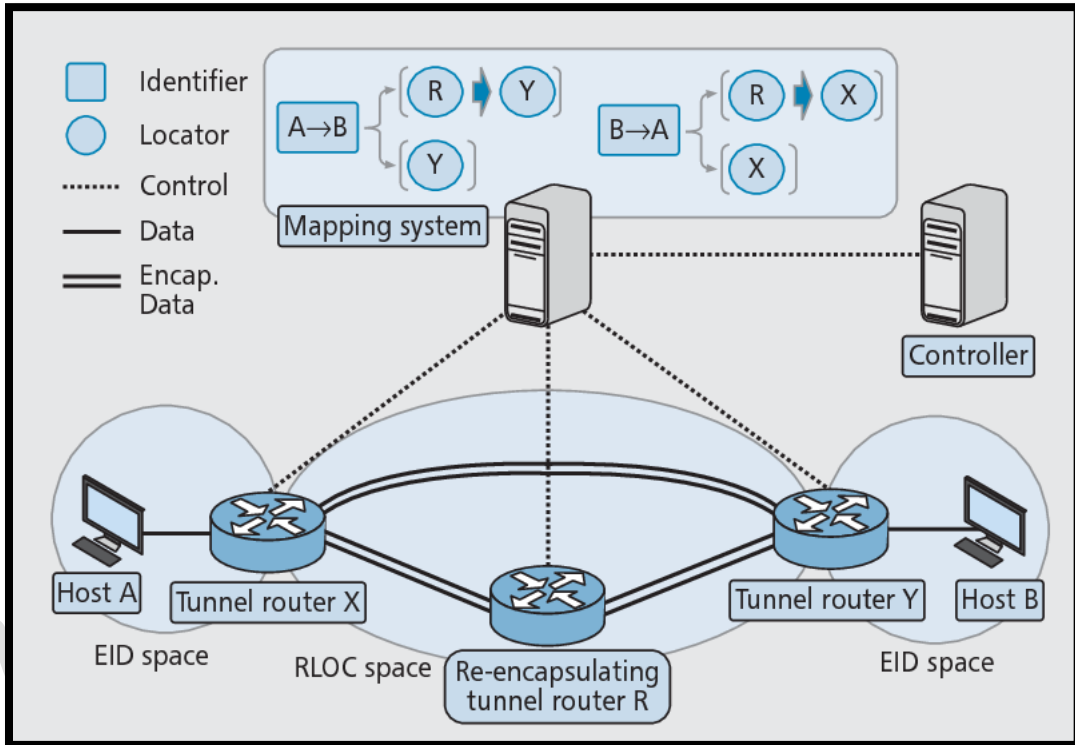
Here is a high-level simplified overview of how LISP works:

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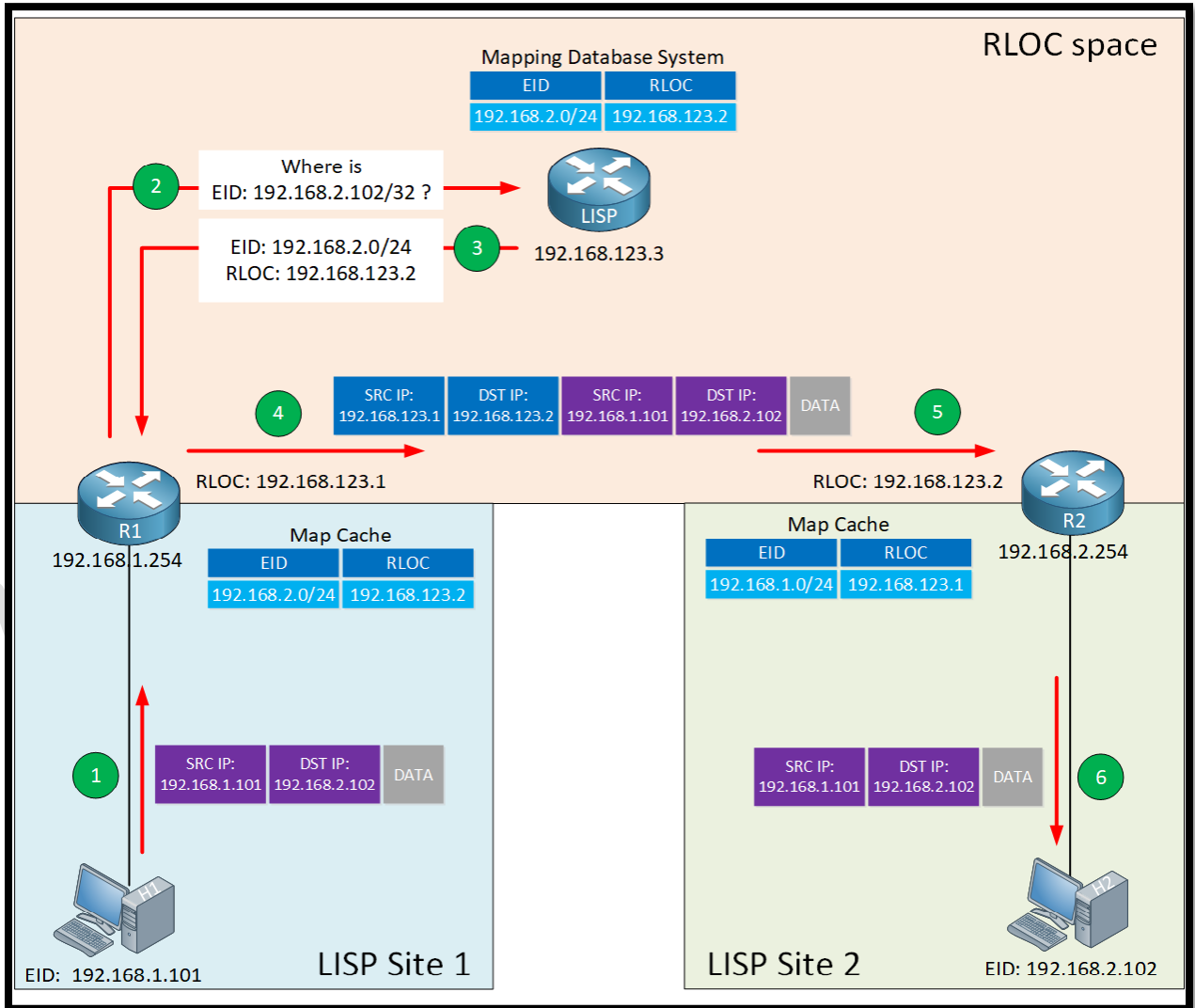


### LISP Control Plane:

- It is similar to DNS
- DNS resolves a Hostname to an IP address
- LISP resolves an EID to an RLOC

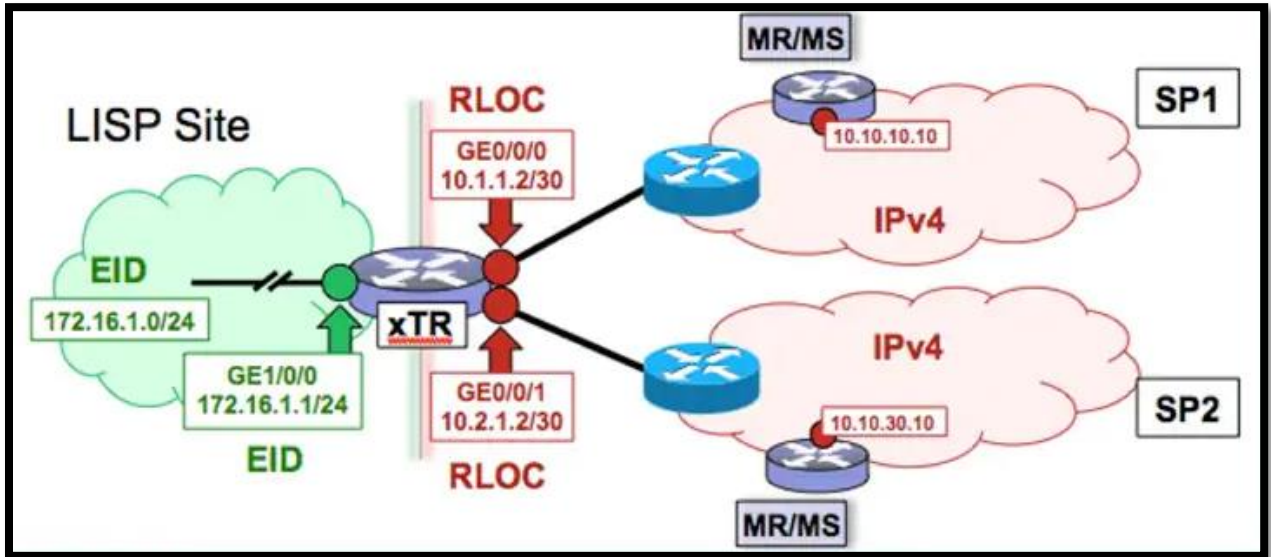
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