LISP Site External Connectivity

draft-jain-lisp-site-external-connectivity

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Dynamic External Connectivity for LISP Site

• When EID is ‘unknown’ or ‘known but not registered’ to LISP site

• Suggests LISP mechanisms to
  • register pETR as a distinguished name
  • dynamically update pETR at ITR through standard procedures
  • request for pETR
  • specify pETR RLOC-set in map-reply
pETR Registration

Same Map-Register procedures and record format as in [I-D.ietf-lisp-rfc6833bis] with the following contents:

• An "EID-Prefix" as an agreed upon or configurable "Distinguished Name" according to [I-D.ietf-lisp-name-encoding].

• RLOC-set for pETR information. Each locator in the RLOC-set MAY be encoded as per [I-D.ietf-lisp-vpn] for VPN environments.

• Additional information MAY be encoded in vendor specific LCAF type [I-D.ietf-lisp-vendor-lcaf] about the registering pETR such as,
  • performance matrix,
  • location,
  • resource availability,
  • local ETR information for the Mapping System to make preference decision
pETR Notification

Same Map-Notify procedures and record format as in \[I-D.ietf-lisp-rfc6833bis\] with the following contents:

- An "EID-Prefix" as an agreed upon or configurable "Distinguished Name" according to \[I-D.ietf-lisp-name-encoding\].

- RLOC-set for pETR information. Each locator in the RLOC-set MAY be encoded as per \[I-D.ietf-lisp-vpn\] for VPN environments.

- Additional information MAY be encoded in vendor specific LCAF type \[I-D.ietf-lisp-vendor-lcaf\] about the pETR RLOCs such as,
  - performance matrix,
  - location,
  - resource availability,
  - preferred RLOC(s) information to communicate preference
pETR Request

Same Map-Request procedures and record format as in [I-D.ietf-lisp-rfc6833bis] with the following contents:

• Additional information MAY be encoded in vendor specific LCAF type [I-D.ietf-lisp-vendor-lcaf] about the requesting ITR such as,
  • performance matrix,
  • location
  • Source/ITR information to help make preference decision.
pETR Resolution

• When the Map-Server (or ETR) determines that the destination is external or unknown to the mapping system, it sends a Map-Reply containing the pETR information.

• Same Map-Reply procedures and record format as described in [I-D.ietf-lisp-rfc6833bis] for regular map-reply and negative-map-reply.

• This Map-Reply (for pETR) has the following contents:
  • An EID-Prefix calculated as non-LISP "hole" per the procedures in [I-D.ietf-lisp-rfc6833bis] for negative map-reply
  • RLOC count MUST be non-zero.
  • Each locator in the RLOC-set MAY be encoded as per [I-D.ietf-lisp-vpn] for VPN environments.
  • TTL MAY be shorter than regular map-reply.
  • Additional information MAY be encoded in vendor specific LCAF type [I-D.ietf-lisp-vendor-lcaf] about the mapping.
Example Use Case: Default-pETR

- Map-register/map-notify for 'default-pETR' (default path)
  - An "EID-Prefix" as an agreed upon or configurable "Distinguished Name" according to [I-D.ietf-lisp-name-encoding].
  - pETR RLOCs can be redundant (primary-backup) or load balancing (active-active) based on priority & weight as in regular RLOCs

- Map-request for 'default-pETR' (default path) at boot up before traffic hits OR map-request for destination when traffic hits at ITR
  - An "EID-Prefix" MAY be as an agreed upon or configurable "Distinguished Name" according to [I-D.ietf-lisp-name-encoding] OR destination EID
  - Additional information MAY be encoded in vendor specific LCAF type [I-D.ietf-lisp-vendor-lcaf] about the source

- Map-Reply containing the pETR information
  - EID-Prefix MAY be same as Distinguished Name in map-request OR calculated as non-LISP "hole" per the procedures in [I-D.ietf-lisp-rfc6833bis] for negative map-reply (with non-zero RLOC)
  - Additional information MAY be encoded in vendor specific LCAF type [I-D.ietf-lisp-vendor-lcaf] about the mapping
Next Steps

• Request for WG adoption
Comments, Questions?