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?