Neighbor Discovery Unicasting Lookup

draft-thubert-6lo-unicast-lookup

Pascal Thubert

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Virtual
6LoWPAN ND (IPv6 Stateful Address Autoconfiguration)

- **RFC 6775** (original 6LoWPAN ND)
  - Defines ARO for registration and DAD operations for stateful AAC
- **RFC 8505** (extended 6LoWPAN ND)
  - Extends ARO, updates the registration procedure
  - Allows registering to network services inc. proxy
- **RFC 8928** (Address Protection for ND)
  - Secures ownership and enables SAVI
- **RFC 8929** (Backbone Router – proxy ND)
  - Defines a proxy ND operation. Updates EDAR to transport ND options such as SLLAO.
- **draft-thubert-6lo-unicast-lookup** (Unicast Address lookup on backbone)
  - Allows the 6LBR to respond to lookups and saves broadcasts
- **draft-ietf-6lo-multicast-registration** (Anycast and Multicast Address Registration)
  - Registers anycast and multicast addresses (in addition to unicast per RFC 8505)
Changes in draft-thubert-6lo-unicast-lookup

• Draft published at 6lo in 2019
• Circulated at 6MAN
• Failed to raise interest
• Note that this is not maintenance but new feature
• Republished as 01 at 6lo
• Suggestion to work it out here since we did all the work so far.
Draft operation

• EDAR is extended by RFC 8929 to transport SLLA

• An abstract 6LBR is placed on backbone
  • Maintains registration for unicast and anycast IPv6@
  • Contains ROVR and LLA(s) associated with IPv6@
  • learns SLLA from NS(EARO) and EDAR
  • Answers DAD requests (EDAR/EDAC)
  • New: Provides unicast Address Mapping services

• New Address Mapping messages
  • can have scope > link for off-link query
  • Unicast link-scope NS/NA can also be used

![Diagram showing the placement of 6LBR on backbone and interaction with other nodes.]
Next steps

• Explain 6LBR is abstract
  • can be a distributed database
  • E.g., draft-thubert-bess-secure-evpn-mac-signaling

• Reference draft-ietf-6lo-multicast-registration
  • For anycast address registration