Root initiated routing state in RPL

draft-ietf-roll-dao-projection

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IETF 113

Presenter: Pascal Thubert, remote.
The RPL Track: A DODAG rooted at Ingress

Non-Storing mode
P-DAO for L1
Targets = \{Ti\}

P-DAO Ack

P-DAO Ack

Storing mode
P-DAO for S1
Targets = \{E\}

Ingress I

Root

P-DAO

Fwd node F

Fwd node G

Egress E

Relay A

Another Track

Relay B

Fwd node H

Target Tn

East

West

Packet flow

Targets

\{Tx\}

Legs

L1 = I->A->E to \{Ti\},  L2 = I->B->E to \{Ti\},  L3 = I->A->B->E to \{Ti\}

Segments

S1 = A->F->G to E,  S2 = I->H to B

SubTracks

Any Set \subset \{L1, L2, L3\} but \{\}
Some rules

- Track is set up by installing Legs and Segment
  - with the same Track ID
- Non-Storing Mode P-DAO signals a Leg
- Storing Mode P-DAO signals a Segment
- Storing Mode P-DAO enables loose hops
  - in Non-Storing main DODAG (typically TrackId is Global instance ID)
  - in Tracks (typically TrackId is Local instance ID to track Ingress)
- Track Egress is implicit Target in Non-Storing Mode
- Leg hop is either a Segment of this Track or another Track
Status of the draft

• Latest rev is draft-ietf-roll-dao-projection-24
• 21: Includes IOT-DIR review by Toerless (before IETF 112)
• 22: Michael’s review
  • Terminology (stretch, Tracks, ..)
  • Clarification (Building Tracks...)
  • Loose source routing benefits
  • New flag ‘D’ in DODAG conf option to signal "Projected Routes Support"
• Mapping to DetNet:
  • Relay Nodes as the hops of a Leg
  • Forwarding Nodes as the hops in a Segment that join the Relay nodes
Status of the draft (cont.)

-23: Li’s review, first round with questions left opened
  - Clarifications
  - Introducing P-DAO ACK
  - Introducing the bidirectional flag in Sibling Info Option (SIO)

-24: More of Li’s review, treated as GitHub issues
  - Allows more than one target options, will reach 1\textsuperscript{st} + undefined subset.
  - Use of the bidirectional flag in Sibling Info Option (SIO) / what if dup
  - Michael’s edits on Amends and Extends. Michael becomes co-author

Since: Rephrasing terminology on Legs and SubTracks
  - Legs are loose hop sequences from Track Ingress to Egress
  - SubTracks (of a Track) are collections of Legs of the Track
Next

• Remous-Aris’ Review
  • Items ...

• WGLC; please consider:
  • Need for new status codes
  • Missing flows, e.g., Error flows