ROLL

Routing over Low-Power And Lossy Networks

Chairs:

Dominique Barthel

Ines Robles

Secretary:

Michael Richardson

ROLL WG intro

IPv6 routing for constrained devices and networks (IoT such a smart metering, smart cities, smart building, Industry 4.0)
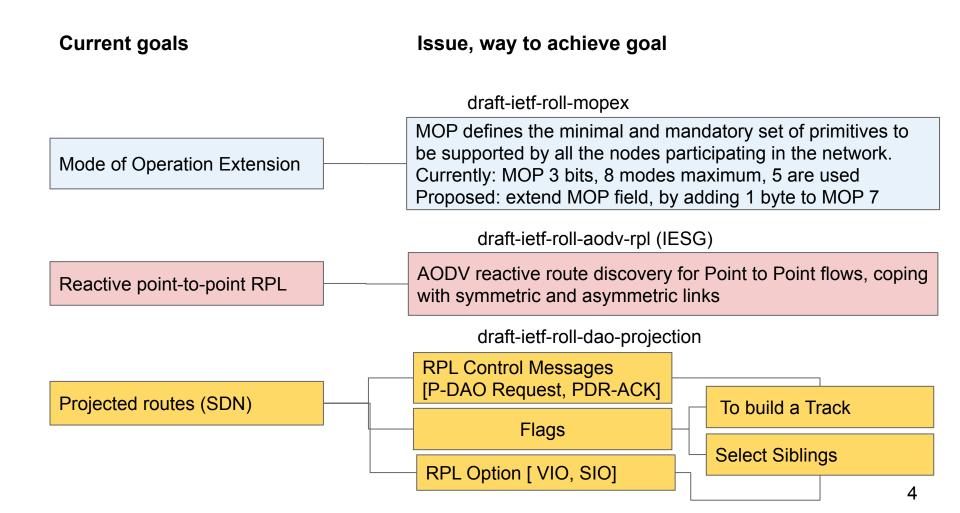
Specifies/maintains/improves the RPL routing protocol

Interacts with 6lo, LWIG, 6TiSCH, RAW, ANIMA

Some RPL milestones/background

(2012) Distributed proactive DV routing
 - DAG oriented (default up, SR or HbH down)
 - Minimum control traffic
(2016) Multicast
(2013-) Point to point routing across DODAG
(2017) Compression of RPL routing header

Current goals

Issue, way to achieve goal

draft-ietf-roll-mopex

Mode of Operation Extension

MOP defines the minimal and mandatory set of primitives to be supported by all the nodes participating in the network.
Currently: MOP 3 bits, 8 modes maximum, 5 are used
Proposed: extend MOP field, by adding 1 byte to MOP 7

draft-ietf-roll-aodv-rpl (IESG)

Reactive point-to-point RPL

AODV reactive route discovery for Point to Point flows, coping with symmetric and asymmetric links

draft-ietf-roll-dao-projection

Projected routes (SDN)

RPL Control Messages
[P-DAO Request, PDR-ACK]

Flags

RPL Option [VIO, SIO]

To build a Track

Select Siblings

4

Current goals (cont'd)

Issue, way to achieve goal

draft-ietf-roll-nsa-extension (submitted to IESG)

Parent selection for good upward packet replication/elimination	Metric that advertises the parent set and Objective Function to select parents based on their parent set (grand-parents).

draft-ietf-roll-capabilities

Advert./Discovery of capabilities of RPL Nodes	Control message/option for Discovery, Advertisement and Query of capabilities for RPL nodes

draft-iwanicki-roll-rnfd

Quick detection of crash of Border Router	Several sentinels track the status of the root, advertize opinion, distributed consensus algorithm (TBC)

draft-jadhav-roll-storing-rootack

Fix RPL storing mode DAO ACK	DAO ACK message from the Root (end ot end)

Thanks for your attention

Questions?