ROLL Interim September 2019

Discussion Topics

- MOPex syntax
- Capabilities (CAP)
  - CAP handshake
  - handling CAP-unaware RPL nodes
- CAP Use-cases
  - Turnon-8138
  - P-DAO
- Eliding CAP/MOPex/CfgOption

MOPex syntax

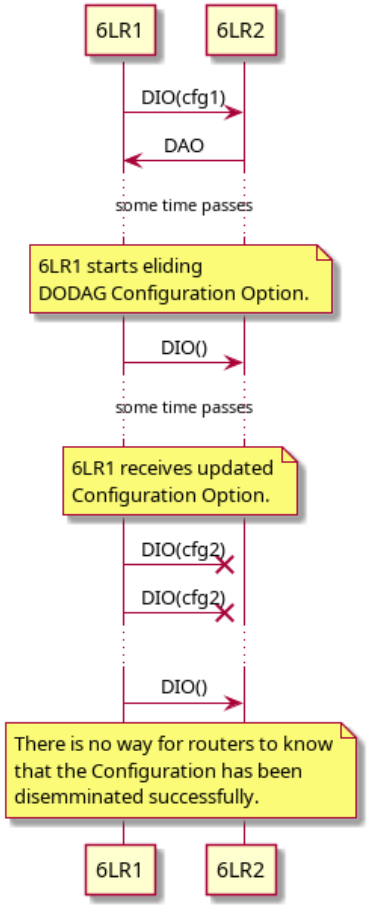
- Final MOP calculation
  - Keep base MOP as is
  - If MOP=7, then use MOPex value as is
    - If MOP=7 and MOPex < 7 ... we allow it?
  - Simple to implement and easy to understand

MOPex, where to keep?

- Opt1: Using Config Option
  - 8 bits extn possible (8b resv field available)
  - Eliding MOPex with Config Option possible
  - MOP is instance config and not DODAG config. Thus not logical place.
- Opt2: New RPL Control Option
  - Allows extending beyond 8 bits
  - Eliding criteria can be same a Config Option

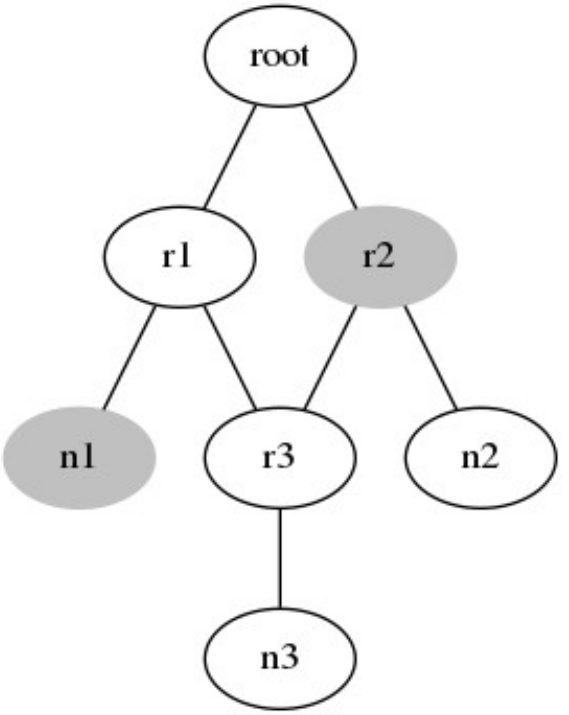
Problem eliding Options

- Scenario where eliding may result in inconsistent config



Capabilities (CAP)

- Carrying CAP in DIO/DAO
- CAP-unaware 6LR
- Eliding CAP
- Reference Network -->



Gray nodes are CAP-unaware.
n2 is CAP-aware but connected to CAP-unaware 6LR.

Defining CAP

- Shall we use same bits for both direction?
  - Certain CAPs are only indicated from nodes to root
  - Certain CAPs may be bidirectional
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CAP use-case (turnon-8138)

- Root signals enable-8138 using ‘T’ flag in DIO Config Option
- But before doing that, Root needs to know if all the devices are 8137 capable
  - Thus the need for nodes to advertise capability
- Only need to be sent in DAO

CAP use-case (P-DAO)

- Pascal’s list of requirements
  - Express support for exposing siblings
  - Signal supported OFs
  - Express support for storing P-DAO
  - Express route capacity
    - Approx num of routes that can be installed
    - Current utilization
    - Expected target utilization
    - Overload bit that means do not use me for now
  - Same for non-storing P-DAO
    - Avg num of hops per route e.g., 5.
    - Plus: Max num of hops in route

That’s all!