# Capabilities & MOPex

draft-ietf-roll-capabilities draft-ietf-roll-mopex

## **Updates**

- Splitup between Capabilities and MOPex
- Capabilities draft update
  - Recommendations for adding new caps
- Specific capability instances added
  - For 6LoRH
  - For PDAO (DAO projection)
- Security Considerations
  - Still needs more work
- Added Rabi as co-author (thanks to his contributions on defining new instances)
- References fixed

#### **MOPex**

- Problem statement and requirement was already discussed on WG
  - MOPs exhausted
  - Reserving MOP=7
- Minimal document with clear motivation/proposition
- Working group adopted

#### **RPL2: New Options and backward compatibility**

- Every time a new draft introduces a new option, we have backward compatibility issue
- Problem stems from the fact that legacy nodes will strip off this new unknown option
- This is true for: Enrollment-priority, Eliding-options, NSA extensions
- Solution
  - Handle this in MOPex
  - Option type with MSB set MUST be copied. Applicable to DIO/DAO.
  - 0 to 127 → Regular Options (strip off if not understood)
  - 127 to 255 → Options to copy forward if not understood.
    - Enrollment-priority could be Option Type 127
- Does not incur any new overhead

## **Capabilities Updates**

- How are capabilities different?
  - Compared to MOP, Configuration Option or Routing Metrics/Constraints
- Guidelines towards defining new capabilities
  - How to set Global/Info/Join-as-leaf flags?
  - How should a node handle the capability it does not support?
    - Before or After joining the instance
  - When to use and when not to use caps.

### Global vs Local Capabilities

- Global capabilities
  - Only root can set and applicable for the RPL Instance
  - Intermediate 6LRs MUST copy these caps in their DIOs
  - A node may join as 6LR or 6LN depending on 'J' bit of the capability
    - Even if the Global capability is not understood by the node
    - This allows a Global cap to be optional for the node to understand

#### **New Capability: Capability Indicators**

- Two types of capabilities
  - Feature, singular function either supported or not
    - Aim to group all such indicators into a single option
  - Feature with additional information
- Capability Indicators group together all singular functions
  - For e.g., 6LoRH (Note the 'T' flag in the below diagram)

#### **New capability: Routing Resource Capability**

Useful for P-DAO