DHCPv6 class based prefix
(draft-bhandari-dhc-class-based-prefix-01)

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Problem Statement

- DHCPv6 Server - can delegate longer prefixes and IA_NA assignments from shorter prefix learnt via DHCPv6 PD (RFC 3633)
  - Further delegation of a delegated prefix— DHCPv6 PD client assuming the role of DHCPv6 Server needs to delegate prefix or assign IA_NA based on prefix property.
- DHCPv6 PD Client – Can request for prefix with specific properties
- DHCPv6 IA_NA Client – Can request for IA_NA from a prefix range with specific properties
- Applications - can use prefix with specific properties/color

**DHCPv6 Prefix delegation – DHCPv6 PD provides no semantics to request and associate prefix with specific properties today**
Proposed Extension

• New DHCPv6 option to associate Prefix with its properties:

  The format of the DHCPv6 Prefix Class option is shown below.

  option-code:  OPTION_PREFIX_CLASS (TBD)
  option-length:  length of prefix-class
  prefix-class:  Prefix class (binary string).

• DHCPv6 PD client – To include OPTION_PREFIX_CLASS in DHCPv6 Solicit message

• DHCPv6 IA_NA client – To include OPTION_PREFIX_CLASS in DHCPv6 Solicit message

• DHCPv6 Server to include OPTION_PREFIX_CLASS in:
  – OPTION_IAPREFIX option in Advertise messages for Prefix delegation
  – OPTION_IA_NA option in Advertise message for IA_NA assignment
Motivation/Use cases

• Mobile Network
  – Mobile gateway as a DHCPv6 PD client and a DHCPv6 Server serving DHCPV6 clients attached to it
  – Prefix coloring - Prefix with different properties. Example:
    • Prefix is from local access network, non-mobile properties
      – This prefix does not support mobility
    • Global home agent assigned, chained mobility - This prefix is topologically anchored in the mobile node's home network. It has mobility properties.
    • Low latency - suitable for Voice applications
Example: Mobile network

- Prefix color in mobile network: To support offload function for certain traffic in chained mobility scenario, the UE needs to use the right source address for the right application flows.
Changes since -00

• Clean up of use-cases
Next Steps

• Authors appreciate feedback from the WG
• WG draft?