

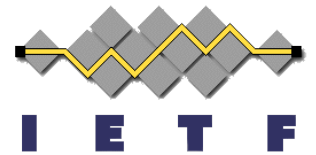
6MAN WG

IETF 87

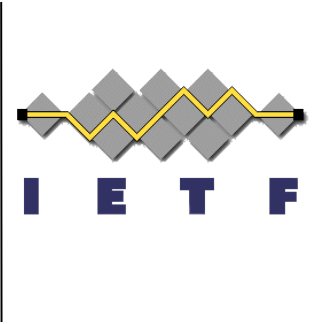
IPv6 Prefix Properties

draft-korhonen-6man-prefix-properties-02

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Gundavelli, P. Seite, D. Liu

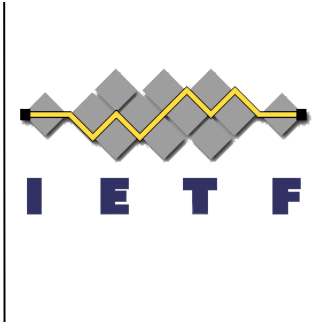


Intro



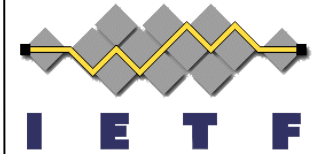
- Prefix properties or “prefix coloring” mean attaching additional meta-data to prefixes/addresses:
 - ..that can be used to aid applications to select a specific prefix/address for a certain use case.
 - ..that can be used by the (enhanced) source address selection algorithm to select a specific prefix/address for a certain use case.
 - ..that is delivered as part of the address configuration procedure without encoding the meta-data into the prefix/address itself.
- Intended specifically for use cases:
 - ..where end hosts are configured with multiple prefixes/addresses.
 - ..where possibly multiple provisioning domains and/or upstream ISPs are present.
 - ..where prefixes/addresses may have different routing or anchoring requirements (e.g. the Homenet source routing use cases, mobile networks, ..).

Related and supportive work in other WGs



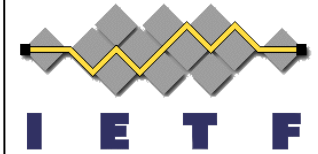
- As a reminder the draft-korhonen-6man-prefix-properties is just a solution proposal for the meta-data delivery using SLAAC.
- The draft-bhandari-dhc-class-based-prefix is a DHCPv6 equivalent solution for the meta-data delivery.
- The draft-lepape-6man-prefix-metadata discussed use case such as those for Homenet or mobile networks.
- The draft-anipko-mif-mpvd-arch in Mif WG deals with multiple provisioning domains which is both needed but not addressed (yet) in the draft-korhonen-6man-prefix-properties. (Our work precedes Mif work, though)
- DMM WG has identified interest for some of their use cases.

On the solution.. Two types of information



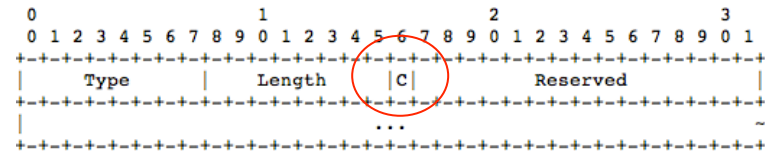
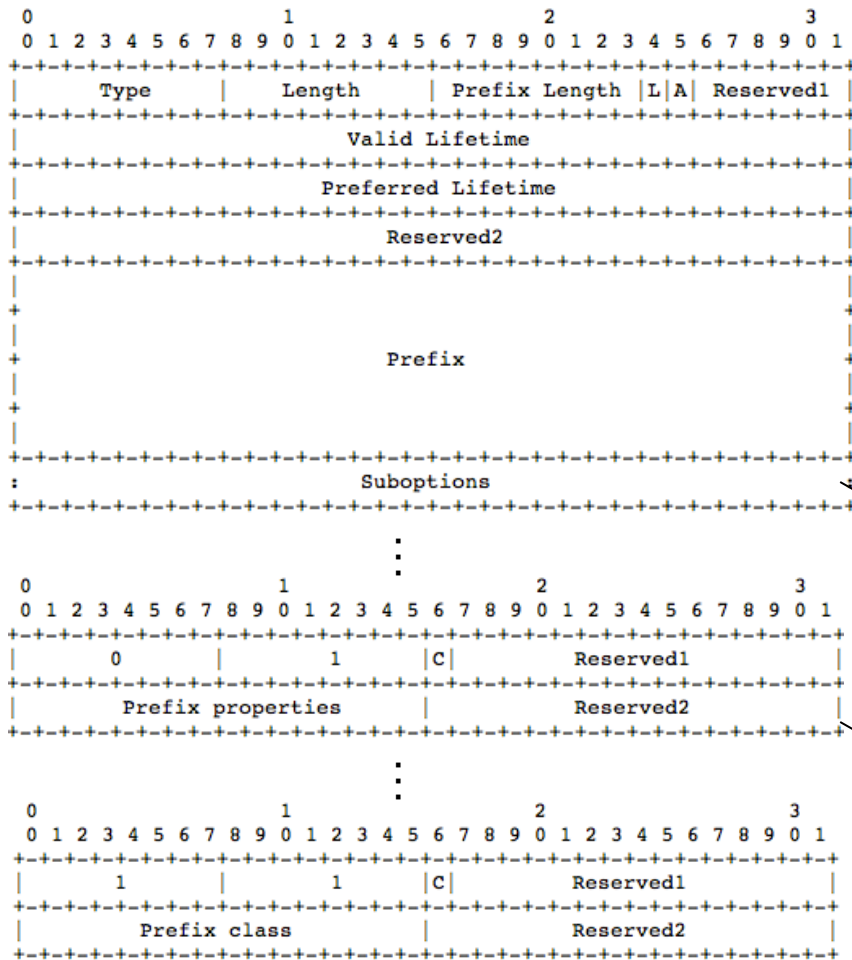
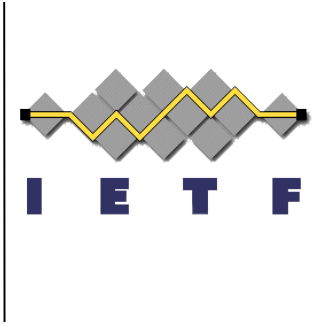
- Prefix property:
 - Global namespace and hints about the properties the prefix has e.g. network provides mobility for this prefix/address or the prefix/address belongs to a walled garden.
- Prefix class:
 - Local (application) scope namespace and describes the intended service or the use case for the prefix/address e.g. tagging a specific prefix for VoIP usage.

On the solution.. New Meta-data enabled PIO for SLAAC

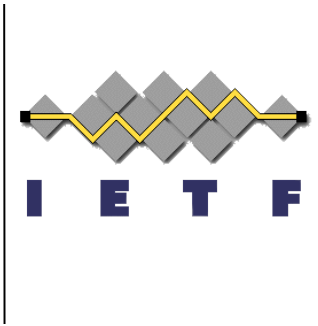


- New NDP option for RAs: a PIOMT.
- The PIOMT is a RFC4861 PIO equivalent except that it may carry arbitrary meta-data (e.g., properties and/or class, provisioning domain) along with the prefix. Two sub-options initially defined; see next slide.
- May co-exist with RFC4861 PIOs for the backward compatibility with legacy hosts.
- The PIOMT has a well-defined processing for unknown meta-data sub-option types.
- The prefix property and class registries are shared with draft-bhandari-dhc-class-based-prefix.

The PIOMT option and suboptions in more detail



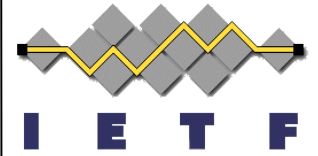
- The PIOMT behaves like a PIO except that it carries meta-data (zero or more suboptions).
- The 'C' flag determines whether the suboption is mandatory to understand. A single unknown suboption to the receiver causes the entire PIOMT discarded.
- Multiple instances of the same suboption are possible (handling to be yet clarified...)



Next steps

- Follow-up and align (better if needed) with:
 - DHC draft.
 - Mif WG MPVD work.
 - DMM WG work.
 - Homenet WG use cases.

Comments?!



Picture origin <http://www.flamewarriorsguide.com/warriorshtm/target.htm>