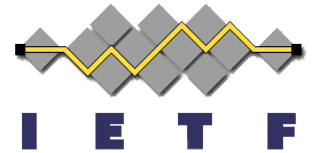


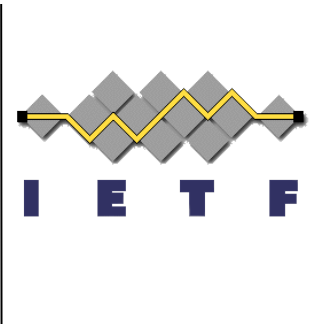
DHC WG

IETF 87

DHCPv6 options for Prefix Properties and Class

draft-bhandari-dhc-class-based-prefix-05

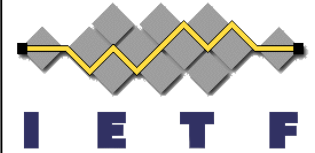




Intro

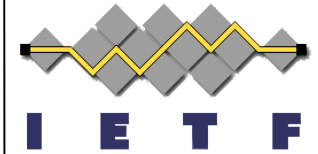
- Prefix properties, prefix class mean attaching additional meta-data to prefixes/addresses:
 - ..that can be used to aid applications to select a specific prefix/address for a certain use case.
 - ..that can be used by the (enhanced) source address selection algorithm to select a specific prefix/address 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



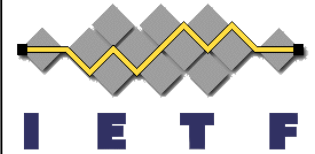
- draft-bhandari-dhc-class-based-prefix is a DHCPv6 solution for the meta-data delivery.
- draft-korhonen-6man-prefix-properties is an equivalent solution for meta-data delivery using SLAAC.
- The draft-lepape-6man-prefix-metadata discussed use case such as those for Homenet or mobile networks.
- The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

On the solution.. types of information



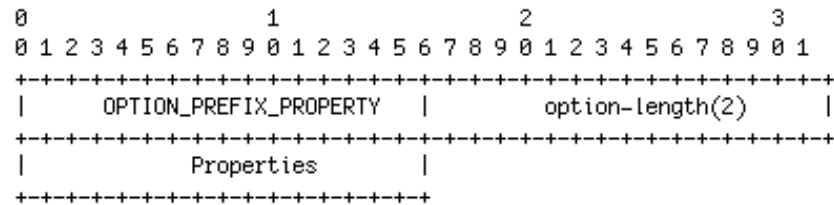
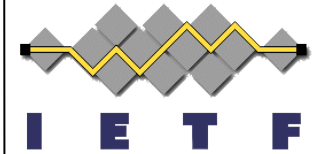
- Property:
 - Global namespace and hints about the properties the prefix has e.g. network provides mobility for this prefix/address or the prefix/address belongs to a walled garden.
- Class:
 - Local (application) scope namespace and describes the intended service or the use for the prefix/address e.g.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

On the solution.. DHCP options



- New DHCP options in IA_NA and IA_PD.
- The class metadata is offered if client explicitly requests for the same in ORO
- Property is defined as IANA registry

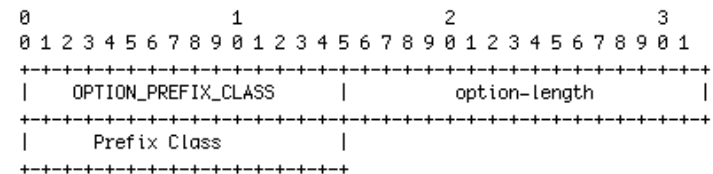
The new options in IA_PD and IA_NA



option-code: OPTION_PREFIX_PROPERTY (TBD1)
option-length: 2
Properties: 16 bits maintained as
OPTION_PREFIX_PROPERTY in
IANA registered namespace.
Each value in the registry represents a property.
Multiple properties can be represented by bitwise
ORing of the individual property values in this
field.

Added within:

- OPTION_IAPREFIX area in
IA_PD response
- IAaddr-options area in IA_NA
response



option-code: OPTION_PREFIX_CLASS (TBD2)
option-length: 2
Prefix Class: 16 bit integer with the integer value
of local significance.

Next steps

- Follow-up and align (better if needed) with:
 - 6man ND draft.
 - Mif WG MPVD work.
 - DMM WG work.
 - Homenet WG use cases.