

IETF#88

Mobility API for DMM

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Background-RFC5014

- RFC 5014 defines socket API extension used for source address selection. Application can use this API to override the default source address selection mechanism for IPv6.
- Currently, RFC 5014 defines the following type of source address selection preference:
 - `IPV6_PREFER_SRC_HOME /* Prefer Home address as source */`
 - `IPV6_PREFER_SRC_COA /* Prefer Care-of address as source */`
 - `IPV6_PREFER_SRC_TMP /* Prefer Temporary address as source */`
 - `IPV6_PREFER_SRC_PUBLIC /* Prefer Public address as source */`
 - `IPV6_PREFER_SRC_CGA /* Prefer CGA address as source */`
 - `IPV6_PREFER_SRC_NONCGA /* Prefer a non-CGA address as source */`

Problem

- In DMM scenario, applications on the MN need to select the proper IP address based on the prefix type
- RFC5014 need to be extended to allow MN in DMM scenario select source address

New extensions of RFC5014

- IPV6_PREFER_SRC_LOCAL_HNP:
 - Prefer to use locally allocated home network prefix.
- IPV6_PREFER_SRC_REMOTE_HNP:
 - Prefer to use the home network prefix that allocated by other access router instead of the one that the MN currently attach.

Usage example

- In appropriate DMM scenarios, the application on the mobile node can always select the `IPV6_PREFER_SRC_LOCAL_HNP` as the most preferred source address.
- The mobile node's operating system must guarantee that the on-going session will not be interrupted even if a new prefix is available.

Implementation example

- [I-D.ietf-6man-rfc3484bis] document indicates possible implementation strategies for `getaddrinfo()`.
- The address selection hint flags for the `getaddrinfo()` specified in this document extend the 'int `ai_eflags`' field in the struct `addrinfo` [RFC5014].
- The IPV6 source address preference values (`IPV6_PREFER_SRC_HNP` and `IPV6_PREFER_SRC_HNP_TMP`) defined for the `IPV6_ADDR_PREFERENCES` socket option are also defined as address selection preference flags in `<netdb.h>` header for the "`ai_eflags`" extended flag-set field of the `addrinfo` data structure.
- **Corresponding extensions can be done for mobility address selection.**

- Q&A