IETF#83
Mobility API for DMM

draft-liu-dmm-mobility-api-00
draft-korhonen-dmm-prefix-properties-01.txt

Dapeng Liu,Hui Deng, J. Korhonen, B. Patil, S. Gundavelli

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 DMM scenario, the application on the mobile node can always select the IPV6_PREFER_SRC_LOCAL_HNP as the most preferred soured address.
- The mobile node's operating system need to guarantee that for the on-going session, it will not interrupt the on-going session even there is a new prefix available.

Implementation example

- [I-D.ietf-6man-rfc3484bis] document indicates possible implementation strategies for getaddrinfo().
- The address selection hint flags for the getaddrinfo() specificed 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