             Mobility API Extension for Distributed Mobility Management
                       draft-liu-dmm-mobility-api-01

Abstract

   [RFC5014] specifies extension to socket API to allow application to
   specify the preference among multiple source addresses.
   [I-D.draft-korhonen-6man-prfix-properties] and
   [I-D.draft-bhandari-dhc-class-based-prefix-04] propose to extend
   router advertisement to carry the prefix property and class
   information. The mobile node can learn the prefix property and class
   information from the router advertisment message. This document
   proposes an extension to [RFC5014] to enable the application to
   select the distributed mobility management related prefixes.

   The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
   "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this
   document are to be interpreted as described in RFC 2119 [RFC2119].

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1. Proposed Extension of RFC 5014

   [RFC5014]defines socket API extension used for IPv6 source address
   selection. Application can use this API to override the default
   source address selection mechanism for IPv6. Currently, [RFC5014]
   defines the following types 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 */

   This document proposes to extend the above definition to add two new
   flags:

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.

2. Usage Example

This section gives usage example for this API extension.

[I-D.draft-ietf-dmm-best-practices-gap-analysis-01] and
[I-D.draft-seite-dmm-dma-06] discuss the distributed mobility
management practice. It introduces dynamic anchoring concept: the
mobile node can have multiple mobility anchor points and the mobile
node select the locally allocated IP address for the newly started
application for optimized routing. The mobile node can continue to
use the IP address allocated by previous anchor point for the on
going session. When the on going session terminate, the mobile node
will release the previous anchor point allocated IP address.

In the dynamic anchoring scenario, for the newly started application,
it should use the IP address allocated by the local mobility anchor.
The application can use IPV6_PREFER_SRC_LOCAL_HNP flag to select the
local allocated IP address. For the on going session, the
application can use IPV6_PREFER_SRC_REMOTE_HNP flag to select the
previous mobility anchor allocated home address to gurantee the
session continuity.

3. IANA Considerations

This document makes no request of IANA.

Note to RFC Editor: this section may be removed on publication as an
RFC.

4. Security Considerations

TBD

5. Acknowledgements

TBD

6. References

6.1. Normative References

   [RFC2119]   Bradner, S., "Key words for use in RFCs to Indicate
               Requirement Levels", BCP 14, RFC 2119, March 1997.

   [RFC5014]   Nordmark, E., Chakrabarti, S., and J. Laganier, "IPv6
               Socket API for Source Address Selection", RFC 5014,
               September 2007.

6.2. Informative References

   [I-D.draft-bhandari-dhc-class-based-prefix-04]
               , "DHCPv6 class based prefix ", draft-bhandari-dhc-class-
               based-prefix-04 (work in progress), February 2013.

   [I-D.draft-ietf-dmm-best-practices-gap-analysis-01]
               , "Distributed Mobility Management: Current practices and
               gap analysis ", draft-ietf-dmm-best-practices-gap-
               analysis-01 (work in progress), June 2013.

   [I-D.draft-korhonen-6man-prfix-properties]
               , "IPv6 Prefix Properties", draft-korhonen-6man-prfix-
               properties (work in progress), February 2013.

   [I-D.draft-seite-dmm-dma-06]
               , "Distributed Mobility Anchoring", draft-seite-dmm-dma-06
               (work in progress), January 2013.

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