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D. Liu
H. Deng
China Mobile
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Address Selection for DMM
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Abstract

In DMM scenario, it is possible for the MN to have multiple mobility anchor points and corresponding prefixes. In that case, MN needs to know the type of the addresses then it can select the right one for application to use. This document describes a mechnism to extend RA message to carry a flag which can be used to identify the nature of the prefix.

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. Problem of address selection for DMM

As [draft-liu-dmm-dynamic-anchor-discussion-00](#) introduced, there is a address selection problem for DMM dynamic anchor solution. The difficulty of this problem is: the MN does not know the difference between the multiple prefixes. There is no way for the network to tell the MN the nature of the different prefixes and there is no standard mechnism for the MN to select the right prefix.

2. Extension to Router Advertisement

Mobile IPv6 [[RFC3775](#)] extend IPv6 router advertisement message for movement detection and home agent information broadcasting. This document proposes to further extend the IPv6 router advertisement message to carry a flag to identify the nature of the prefix that it is advertising.

```

+-----+-----+-----+
|  Type   |  Code   |  Checksum   |
+-----+-----+-----+
|Hop Limit|M|O|H|Re-|  Router Lifetime|
+-----+-----+-----+
|          Reachable Time          |
+-----+-----+-----+
|          Retrans Timer           |
+-----+-----+-----+
|          Options                 |
+-----+-----+-----+

```

The H bit is used for indentify that the router advertisment is sent by a home agent.

```

+-----+-----+-----+-----+-----+
|  Type   |  Length  |PrefixLength|L|R|T|R-|
+-----+-----+-----+-----+-----+
|          Valid Lifetime          |
+-----+-----+-----+-----+
|          Preferred Lifetime      |
+-----+-----+-----+-----+
|          Reserved                |
+-----+-----+-----+-----+
|          Prefix                  |
+-----+-----+-----+-----+

```


This document proposes to extend the prefix information option to add a 'T' flag, its definition is as follows:

T (Type):

Type flag. This is a 2 bits flag identifies the types of the advertising prefix. The value of this flag could be:

00: Local home network prefix. It means that this prefix is allocated and advertised by current router which the MN attaches to.

01 : Remote home network prefix. It means that this prefix is allocated by another router instead of the router that the MN currently attaches to.

10: Reserved.

11: Reserved.

The mechanism that used for the router to identify the types of the prefix is out the scope of this document. As an example, the router can query the policy server to know which router allocates a particular prefix.

3. Mobile Node Operation

The mobile node knows the types of the prefixes from the T flag of the router advertisement message. The applications on the mobile node can use this information to select the right IP address. For example, for on-going session, application always choose to use the prefix that it used before it handovers to a new location. For the newly initiate application, it will use the prefix that allocated by current router, e.g. local home network prefix. The mobile node can use advanced socket API to select the proper prefix, for example, extension to [RFC 5014](#).The detail mechnism is out the scope of this document.

4. IANA Considerations

This document makes no request of IANA.

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

5. Security Considerations

TBD

6. Acknowledgements

TBD

7. References

7.1. Normative References

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

7.2. Informative References

[I-D.[draft-seite-dmm-dma-00](#)]
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Authors' Addresses

Dapeng Liu
China Mobile
32 Xuanwumen West Street
Beijing, Xicheng District 100053
China

Phone: +86-13911788933
Email: liudapeng@chinamobile.com

Hui Deng
China Mobile
32 Xuanwumen West Street
Beijing, Xicheng District 100053
China

Phone:
Fax:
Email: denghui@chinamobile.com
URI:

