Multiple IPv4 - IPv6 mapped IPv6 address (M46A)

Abstract

This document specifies Multiple IPv4 - IPv6 mapped IPv6 address(M46A) spefification. M46A is IPv4 mapped IPv6 address with plane ID. Unique allocation of plane id value enable IPv4 private address unique in IPv6 address space. This address may use IPv4 over IPv6 encapsulation and IPv4 - IPv6 translation.

Requirements Language

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].

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on 6 October 2023.

Table of Contents

1. Introduction

This document specifies Multiple IPv4 - IPv6 mapped IPv6
address(M46A) spefification. M46A is IPv4 mapped IPv6 address with
plane ID. Unique allocation of plane ID value enable IPv4 private
address unique in IPv6 address space.

This address may use IPv4 over IPv6 encapsulation such as Multiple
IPv4 - IPv6 mapping encapsulation - fixed prefix (M46E-FP) M46E-FP
[I-D.draft-matsuhira-m46e-fp], Multiple IPv4 - IPv6 mapping
encapsulation - prefix resolution (M46E-PR)M46E-PR
[I-D.draft-matsuhira-m46e-pr], Multiple IPv4 - IPv6 mapping
encapsuration - prefix translator (M46E-PT)M46E-PT
[I-D.draft-matsuhira-m46e-pt] and IPv4 - IPv6 translation such as
Multiple IPv4 - IPv6 mapping translator (M46T)M46T
[I-D.draft-matsuhira-m46t].

2. M46A architecture

Figure 1 shows M46A architecture.

```
|     96 - m bits     |           m bits          |   32 bits  |
 +---------------------+---------------------------+------------+
|      M46A prefix     |   IPv4 network plane ID   | IPv4 address |
 +---------------------+---------------------------+------------+
```
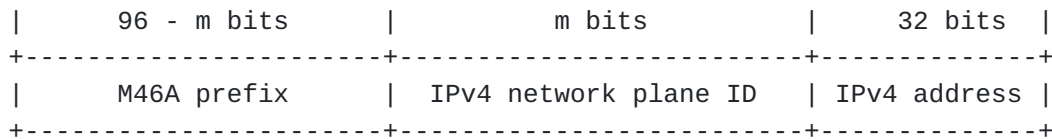
                          Figure 1

M46A consists of three parts as follows.

M46A prefix
   M46A prefix. This value is fixed value with M46E-FP, and non
   fixed value with M46E-PR.

IPv4 network plane ID
   IPv4 network plane ID is network identification of IPv4 network
   plane.

IPv4 address
   IPv4 address

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

5. Normative References

[I-D.draft-matsuhira-m46e-fp] Matsuhira, N., "Multiple IPv4 - IPv6
           mapping encapsulation - fixed prefix", 1 June 2019.

[I-D.draft-matsuhira-m46e-pr] Matsuhira, N., "Multiple IPv4 - IPv6
           address mapping encapsulation - prefix resolution", 1
           June 2019.

[I-D.draft-matsuhira-m46e-pt] Matsuhira, N., "Multiple IPv4 - IPv6
           mapping encapsulation - prefix translator", 1 June 2019.

[I-D.draft-matsuhira-m46t] Matsuhira, N., "Multiple IPv4 - IPv6
           maping translator", 1 June 2019.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate
           Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/
           RFC2119, March 1997, <https://www.rfc-editor.org/info/
           rfc2119>.

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