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IANA Considerations for IPv6 Neighbor Discovery Prefix Information Option Flags

Abstract

The Prefix Information Option (PIO) in the IPv6 Neighbor Discovery Router Advertisement message defines an 8-bit flag field; this field has two flags defined, and the remaining 6 bits are reserved (Reserved1). RFC 6275 defines a flag from this field without creating an IANA registry or updating RFC 4861. The purpose of this document is to create an IANA registry for the PIO flags. This document updates RFC 4861.

Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in Section 2 of RFC 7841.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at <https://www.rfc-editor.org/info/rfc8425>.

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1. Introduction

The Prefix Information Option (PIO) in the IPv6 Neighbor Discovery Router Advertisement message defines an 8-bit flag field; this field has two flags defined and the remaining 6 bits are reserved (Reserved1). RFC 6275 defines a flag from this field without creating an IANA registry or updating RFC 4861. The purpose of this document is to create a new registry for the PIO flags.

2. Current Prefix Information Option Flags

Currently, the Neighbor Discovery Protocol Prefix Information Option [RFC4861] contains the following one-bit flags defined in published RFCs:

```

      0 1 2 3 4 5 6 7
      +---+---+---+---+
      |L|A|R|Reserved1|
      +---+---+---+---+

```

Figure 1: PIO Flags

L - On-link Flag [RFC4861]

A - Autonomous Address Configuration Flag [RFC4861]

R - Router Address Flag [RFC6275]

Reserved1 - Reserved

3. Updates to RFC 4861

This document updates Section 4.6.2 "Prefix Information" of [RFC4861] to point to the IANA registry that is created in this document (see Section 4).

Specifically, the current list of flags in the Prefix Information Option can be found in the "IPv6 Neighbor Discovery Prefix Information Option Flags" registry.

4. IANA Considerations

IANA has created a new registry for IPv6 Neighbor Discovery Prefix Information Option flags. This registry includes the current flags in the PIO. The initial contents of the registry are as follows:

PIO Option Bit	Description	Reference
0	L - On-link Flag	[RFC4861]
1	A - Autonomous Address Configuration Flag	[RFC4861]
2	R - Router Address Flag	[RFC6275]
3-7	Reserved	

Figure 2: IPv6 Neighbor Discovery Prefix Information Option Flags

The assignment of new flags in the PIO option header requires Standards Action [RFC8126].

The registry for these flags is available at <http://www.iana.org/assignments/icmpv6-parameters>.

5. Security Considerations

This document has no security considerations.

6. Normative References

- [RFC4861] Narten, T., Nordmark, E., Simpson, W., and H. Soliman, "Neighbor Discovery for IP version 6 (IPv6)", RFC 4861, DOI 10.17487/RFC4861, September 2007, <<https://www.rfc-editor.org/info/rfc4861>>.
- [RFC6275] Perkins, C., Ed., Johnson, D., and J. Arkko, "Mobility Support in IPv6", RFC 6275, DOI 10.17487/RFC6275, July 2011, <<https://www.rfc-editor.org/info/rfc6275>>.
- [RFC8126] Cotton, M., Leiba, B., and T. Narten, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 8126, DOI 10.17487/RFC8126, June 2017, <<https://www.rfc-editor.org/info/rfc8126>>.

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