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RFC 9778
IANA Considerations for Internet Group Management Protocols

Abstract

This document specifies revised IANA considerations for the Internet Group Management Protocol (IGMP) and the Multicast Listener Discovery (MLD) protocol. This document specifies the guidance provided to IANA to manage values associated with various fields within the protocol headers of the group management protocols.

This document obsoletes RFC 3228 and unifies guidelines for IPv4 and IPv6 group management protocols.

Status of This Memo

This memo documents an Internet Best Current Practice.

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 BCPs 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/rfc9778.

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1. Introduction

The sections that follow describe the allocation guidelines associated with the specified fields within the Internet Group Management Protocol (IGMP) [RFC9776] and the Multicast Listener Discovery (MLD) [RFC9777] headers. Some of these registries were created previously, while others are created by this document.

This document obsoletes [RFC3228] and unifies guidelines for IPv4 and IPv6 group management protocols.

1.1. Conventions Used in This Document

The key words "**MUST**", "**MUST NOT**", "**REQUIRED**", "**SHALL**", "**SHALL NOT**", "**SHOULD**", "**SHOULD NOT**", "**RECOMMENDED**", "**NOT RECOMMENDED**", "**MAY**", and "**OPTIONAL**" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

2. IANA Considerations

The registration procedures used in this document are defined in [RFC8126].

2.1. Type and Code Fields

2.1.1. Internet Group Management Protocol

The IGMP header contains the following fields that carry values assigned from IANA-managed name spaces: Type and Code. Code field values are defined relative to a specific Type value.

[RFC3228] created the "IGMP Type Numbers" registry for the IGMP Type field. This document updates that registry in two ways:

- The registration procedure has been changed to Standards Action.
- The references to [RFC3228], including the reference for the registry, have been changed to this document.

[RFC3228] created the '"Code" Fields' registry for Code values for existing IGMP Type fields. This document updates that registry in two ways:

- The registration procedure has been changed to Standards Action.
- The reference for the registry has been changed to this document.

Note that the policy for assigning Code values for new IGMP Types **MUST** be defined in the document defining the new Type value.

2.1.2. Multicast Listener Discovery

As with IGMP, the MLD header also contains Type and Code fields. Assignment of those fields within the MLD header is defined in [RFC4443] with a registration policy of IETF Review.

2.2. IGMP/MLD Query Message Flags

IANA has created the "IGMP/MLD Query Message Flags" registry for the bits in the Flags field of the MLDv2 Query Message [RFC9777] and the IGMPv3 Query Message [RFC9776]. It has been populated as follows:

Flags Bit	Short Name	Description	Reference
0	E	Extension	[RFC9279]
1-3	Unassigned		

Table 1: IGMP/MLD Query Message Flags Registry

The Flags Bit value in the registry above corresponds to the column header in the packet format diagrams in [RFC9777] and [RFC9776].

The initial contents of this registry contain the E-bit defined in [RFC9279].

The assignment of new bit flags within the Flags field requires Standards Action.

2.3. IGMP/MLD Report Message Flags

IANA has created the "IGMP/MLD Report Message Flags" registry for the bits in the Flags field of the MLDv2 Report Message and the IGMPv3 Report Message. It has been populated as follows:

Flags Bit	Short Name	Description	Reference
0	E	Extension	[RFC9279]
1-15	Unassigned		

Table 2: IGMP/MLD Report Message Flags Registry

The Flags Bit value in the registry above corresponds to the column header in the packet format diagrams in [RFC9777] and [RFC9776].

The initial contents of this registry includes the E-bit defined in [RFC9279].

The assignment of new bit flags within the Flags field requires Standards Action.

3. Security Considerations

Security analyzers such as firewalls and network intrusion detection monitors often rely on unambiguous interpretations of the fields described in this memo. As new values for the fields are assigned, existing security analyzers that do not understand the new values may fail, resulting in either loss of connectivity if the analyzer declines to forward the unrecognized traffic or loss of security if it does forward the traffic and the new values are used as part of an attack. This vulnerability argues for high visibility (which the Standards Action process ensures) for the assignments whenever possible.

4. References

4.1. Normative References

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4.2. Informative References

[RFC3228] Fenner, B., "IANA Considerations for IPv4 Internet Group Management Protocol (IGMP)", BCP 57, RFC 3228, DOI 10.17487/RFC3228, February 2002, <https://www.rfc-editor.org/info/rfc3228>.

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[RFC9279] Sivakumar, M., Venaas, S., Zhang, Z., and H. Asaeda, "Internet Group Management Protocol Version 3 (IGMPv3) and Multicast Listener Discovery Version 2 (MLDv2) Message Extension", RFC 9279, DOI 10.17487/RFC9279, August 2022, <https://www.rfc-editor.org/info/rfc9279>.

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