

Internet Engineering Task Force (IETF)
Request for Comments: 6166
Category: Standards Track
ISSN: 2070-1721

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April 2011

A Registry for PIM Message Types

Abstract

This document provides instructions to IANA for the creation of a registry for PIM message types. It specifies the initial content of the registry, based on existing RFCs specifying PIM message types. It also specifies a procedure for registering new types.

In addition to this, one message type is reserved, and may be used for a future extension of the message type space.

Status of This Memo

This is an Internet Standards Track document.

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1. Introduction

Apart from this document, there is no existing document specifying a registry for PIM message types. PIM version 1 made use of IGMP [RFC1112], and there is an IGMP registry [IGMPREG] listing the message types used by PIM version 1. PIM version 2, however, is not based on IGMP, and a separate PIM message type registry is needed. There are currently several RFCs specifying new PIM version 2 message types that should be in this new registry. They are the RFCs for PIM Dense Mode [RFC3973], PIM Sparse Mode [RFC4601], and Bidirectional PIM [RFC5015].

This document specifies the initial content of the new PIM message type registry, based on those existing RFCs. This document also specifies a procedure for registering new PIM message types.

In addition to this, this document reserves one message type. This type may be used for a future extension of the message type space. The current message type space is only 4 bits, so it is not unlikely that this will be needed. How exactly the extension should be done is left to a future document.

2. Security Considerations

This document only creates an IANA registry. There may be a security benefit in a well-known place for finding information on which PIM message types are valid and how they are used. Apart from that, there are no security considerations.

3. IANA Considerations

IANA has created a PIM message type registry. It has been placed in the "Protocol Independent Multicast (PIM)" branch of the tree. Each entry in the registry consists of a message type, a message name, and references to the documents defining the type. The message type is a 4-bit integer with possible values from 0 to 15.

3.1. Initial Registry

The initial content of the registry should be as follows.

| Type | Name | Reference |
|-------|--|---------------------|
| 0 | Hello | [RFC3973] [RFC4601] |
| 1 | Register | [RFC4601] |
| 2 | Register Stop | [RFC4601] |
| 3 | Join/Prune | [RFC3973] [RFC4601] |
| 4 | Bootstrap | [RFC4601] |
| 5 | Assert | [RFC3973] [RFC4601] |
| 6 | Graft | [RFC3973] |
| 7 | Graft-Ack | [RFC3973] |
| 8 | Candidate RP Advertisement | [RFC4601] |
| 9 | State Refresh | [RFC3973] |
| 10 | DF Election | [RFC5015] |
| 11-14 | Unassigned | |
| 15 | Reserved (for extension of type space) | this document |

3.2. Assignment of New Message Types

Assignment of new message types is done according to the "IETF Review" model; see [RFC5226].

4. Acknowledgements

Thanks to Toerless Eckert for his suggestion to reserve a type for future extension of the message type space. Also thanks to Mykyta Yevstifeyev for reviewing the document and proposing improvements to the text.

5. Informative References

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- [RFC4601] Fenner, B., Handley, M., Holbrook, H., and I. Kouvelas, "Protocol Independent Multicast - Sparse Mode (PIM-SM): Protocol Specification (Revised)", RFC 4601, August 2006.

- [RFC5015] Handley, M., Kouvelas, I., Speakman, T., and L. Vicisano, "Bidirectional Protocol Independent Multicast (BIDIR-PIM)", RFC 5015, October 2007.
- [RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 5226, May 2008.

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