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.

   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 5741.

   Information about the current status of this document, any errata,
   and how to provide feedback on it may be obtained at
   http://www.rfc-editor.org/info/rfc6166.

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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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               RFC 1112, August 1989.

   [RFC3973]   Adams, A., Nicholas, J., and W. Siadak, "Protocol
               Independent Multicast - Dense Mode (PIM-DM): Protocol
               Specification (Revised)", RFC 3973, January 2005.

   [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,
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