                 Updates to the Special-Purpose IP Address Registries

Abstract

   This memo updates the IANA IPv4 and IPv6 Special-Purpose Address
   Registries to address issues raised by the definition of a "global"
   prefix. It also corrects several errors in registry entries to
   ensure the integrity of the IANA Special-Purpose Address Registries.

   This memo updates RFC 6890.

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
   http://www.rfc-editor.org/info/rfc8190.

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1. Introduction

   In order to support new protocols and practices, the IETF
   occasionally reserves an address block for a special purpose. For
   example, [RFC1122] reserves an IPv4 address block (0.0.0.0/8) to
   represent the local (i.e., "this") network. Likewise, [RFC4291]
   reserves an IPv6 address block (fe80::/10) for link-local unicast
   addresses.

   Several issues have been raised with the documentation of some of the
   special-purpose address blocks in [RFC6890]. Specifically, the
   definition of "global" provided in [RFC6890] was misleading as it
   slightly differed from the generally accepted definition of "global
   scope" (i.e., the ability to forward beyond the boundaries of an
   administrative domain, described as "global unicast" in the IPv6
   addressing architecture [RFC4291]).

   This memo updates the definition of "global" from [RFC6890] for the
   IPv4 and IPv6 Special-Purpose Address Registries, augments the fields
   contained within the registries in order to address the confusion
   raised by the definition of "global", and corrects some errors in
   some of the entries in the Special-Purpose Address Registries.

   This memo updates [RFC6890].

2. IANA Considerations

2.1. Definition of Globally Reachable

   [RFC6890] defined the term "global" without taking into consideration
   the multiple uses of the term. Specifically, IP addresses can be
   global in terms of allocation scope as well as global in terms of
   routing/reachability. To address this ambiguity, the use of the term
   "global" defined in [RFC6890] is replaced with "globally reachable".
   The following definition replaces the definition of "global" in the
   IANA Special-Purpose Address Registries:

   o Globally Reachable - A boolean value indicating whether an IP
      datagram whose destination address is drawn from the allocated
      special-purpose address block is forwardable beyond a specified
      administrative domain.

   The same relationship between the value of "Destination" and the
   values of "Forwardable" and "Global" described in [RFC6890] holds for
   "Globally Reachable". If the value of "Destination" is FALSE, the
   values of "Forwardable" and "Globally Reachable" must also be FALSE.

The "Global" columns in the IPv4 Special-Purpose Address Registry
(https://www.iana.org/assignments/iana-ipv4-special-registry) and the
IPv6 Special-Purpose Address Registry
(https://www.iana.org/assignments/iana-ipv6-special-registry) have
been renamed to "Globally Reachable".

2.2. Updates to the IPv4 Special-Purpose Address Registry

o Limited Broadcast prefix (255.255.255.255/32) - The Reserved-by-
   Protocol value has changed from False to True. This change was
   made to align the registry with reservation of the limited
   broadcast address with Section 7 of [RFC919].

2.3. Updates to the IPv6 Special-Purpose Address Registry

The following changes to the "IPv6 Special-Purpose Address Registry"
involved the insertion of two new footnotes. These additions
required that the footnotes be renumbered.

o TEREDO prefix (2001::/32) - The Globally Reachable value has
   changed from False to "N/A [2]". The [2] footnote now states:

   * See Section 5 of [RFC4380] for details.

o EID Space for LISP (2001:5::/32) - All footnotes have been
   incremented by 1.

o 6to4 (2002::/16) - All footnotes have been incremented by 1.

o Unique-Local (fc00::/7) - The Globally Reachable value has changed
   from False to "False [7]". The [7] footnote now states:

   * See [RFC4193] for more details on the routability of Unique-
      Local addresses. The Unique-Local prefix is drawn from the
      IPv6 Global Unicast Address range but is specified as not
      globally routed.

3. Security Considerations

This document does not raise any security issues beyond those
discussed in [RFC6890].

4. References

4.1. Normative References

   [RFC6890] Cotton, M., Vegoda, L., Bonica, R., Ed., and B. Haberman,
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4.2. Informative References

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   [RFC1122] Braden, R., Ed., "Requirements for Internet Hosts -
              Communication Layers", STD 3, RFC 1122,
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   [RFC4193] Hinden, R. and B. Haberman, "Unique Local IPv6 Unicast
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   [RFC4291] Hinden, R. and S. Deering, "IP Version 6 Addressing
              Architecture", RFC 4291, DOI 10.17487/RFC4291, February
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   [RFC4380] Huitema, C., "Teredo: Tunneling IPv6 over UDP through
              Network Address Translations (NATs)", RFC 4380,
              DOI 10.17487/RFC4380, February 2006,
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