

Independent Submission
Internet-Draft
Expires: September 1, 2015

E. Lewis
ICANN
Date: March 1, 2015

Loopback Prefix for IPv6
draft-ipversion6-loopback-prefix-00

Abstract

The IPv6 address range of 0::/64 is reserved for loopback addresses. This expands from the single loopback address already defined for IPv6, ::1, to allow for a set of addresses to be used when packets are intended to stay within a host system. Multiple loopback addresses allow for simultaneous varied uses of the loopback addresses as has proven, albeit in limited ways, in IPv4. An exception is made to accommodate the ::0/128, already defined as The Unspecified Address.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on September 1, 2015

Copyright Notice

Copyright (c) 2015 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

0.	NOTE TO RFC EDITOR AND REVIEWERS	1
1.	Introduction	1
2.	Use of ::0/64 Addresses	2
3.	IANA Considerations	1
4.	Security Considerations	1
5.	Acknowledgements	1
6.	References	1
6.1.	Normative References	1
	Authors' Addresses	1

0. NOTE TO RFC EDITOR AND REVIEWERS

This section should be removed prior to publication.

[1. Introduction](#)

The "IP Version 6 Addressing Architecture" [[RFC 4291](#)] defines a single IPv6 loopback address as ::1/128. In "Special-Purpose IP Address Registries" [[RFC6890](#)], 127.0.0.0/8 is assigned for loopback addresses, with usually just 127.0.0.1/32 implemented by default.

Ordinarily, just one address (whether IPv4 or IPv6) is sufficient for loopback addressing on a node but there have been a few use cases showing that it is desireable to have more than 1 (but less than the over 16 million that are in an IPv4 /8).

One use case is testing or prototyping, desiring to mimic a small network of processes on one node. To demonstrate a particular protocol's server running on a well-known port, having multiple addresses where packets can "travel" within the host is useful.

Another use case has arisen from ICANN's Controlled Interruption approach [need reference] which directs errant traffic to a loopback address with two distinct goals in mind. One is to prevent the leakage of packets that are known to be erroneously sent and two is to leave "bread crumbs" in log files for operators to use to help track why the erroneous packets are being sent.

The use of ::0/64 is (proposed) to represent an address range (or block) encompassing The Unspecified Address and loopback addresses.

[2. Use of ::0/64 Addresses](#)

The Unspecified Address, or ::0/128, remains as defined in [RFC 4291](#)'s section **[2.5.2](#)**. **That definition is included by reference here so as to prevent any unintentional changes to the original text.**

For all other addresses within ::0/64, the rules for using are the same as the rules in [RFC 4291](#)'s [section 2.5.3](#), again included by reference so as not to introduce any unintentional changes.

[3. IANA Considerations](#)

Registration in the IANA IPv6 Special-Purpose Address Registry

The IANA is directed to add ::0/64 to the "IANA IPv6 Special-Purpose Address Registry" specified in [[RFC6890](#)] as follows:

Address Block: ::0/64

Name: Loopback and Unspecified Addresses

RFC: [THIS DOCUMENT]

Allocation Date: [APPROVAL DATE]

Termination Date: N/A

Source: True [[1](#)]

Destination: False

Forwardable: False

Global: False

Reserved-by-Protocol: True

[1] True for ::0/128, False for all other addresses in ::0/64

The IANA is directed to remove Table 17 and Table 18 a defined in [RFC 6890, section 2.2.3](#).

[4.](#) Security Considerations

Security is not (yet) a consideration

[5.](#) Acknowledgements

We all this all to David Conrad.

[6.](#) References

[6.1.](#) Normative References

- [RFC 4291] "IP Version 6 Addressing Architecture", Hinden & Deering, Feb 2006
- [[RFC 6890](#)] "Special-Purpose IP Address Registries:", Cotton, Vegoda, Bonica & Haberman, Apr 2013

Authors' Addresses

Edward Lewis
edward.lewis@icann.org
[801](#) 17th Street NW

Suite 400
Washington, DC, 20006
US

Lewis

Expires September 1, 2015

[Page 1]