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Cameron Byrne
T-Mobile US

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IPv4 Service Continuity Prefix
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Abstract

DS-Lite, defined in RFC 6333, directs IANA to reserve 192.0.0.0/29 for the B4 element. This memo directs IANA to generalize that reservation to include other cases where a non-routed IPv4 interface must be numbered as part of an IPv6 transition solution.

Status of this Memo

This Internet-Draft is submitted to IETF in full conformance with the provisions of BCP 78 and BCP 79.

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1. Introduction

DS-Lite [RFC6333] directs IANA to reserve 192.0.0.0/29 for the Basic Bridging BroadBand (B4) element. This memo generalizes that IANA reservation to include other cases where a non-routed IPv4 interface must be numbered in an IPv6 transition solution. IANA shall list the address block 192.0.0.0/29 reserved for IPv4 Service Continuity Prefix. The result is that 192.0.0.0/29 may be used in any system that requires IPv4 addresses for backward compatibility with IPv4 communications in an IPv6-only network, but does not emit IPv4 packets "on the wire".

This generalization does not impact the use of the IPv4 Service Continuity Prefix in a DS-Lite context.

2. Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

3. The Case of 464XLAT

464XLAT [RFC6877] describes an architecture for providing IPv4 communication over an IPv6-only access network. One of the methods described in [RFC6877] is for the client side translator (CLAT) to be embedded in the host, such as a smartphone or a CPE (Customer Premises Equipment). In such scenarios, the host must have an IPv4 address configured to present to the host network stack and for applications to bind IPv4 sockets.

4. Choosing 192.0.0.0/29

To avoid conflicts with any other network that may communicate with the CLAT or other IPv6 transition solution, a locally unique IPv4 address must be assigned.

IANA has defined a well-known range, 192.0.0.0/29, in [RFC6333], which is dedicated for DS-Lite. As defined in [RFC6333], this subnet is only present between the B4 and the AFTR and never emits packets from this prefix "on the wire". 464XLAT has the same need for a non-routed IPv4 prefix, and this same need may be common for other similar solutions. It is most prudent and effective to generalize 192.0.0.0/29 for the use of supporting IPv4 interfaces in IPv6 transition technologies rather than reserving a prefix for every possible solution.

With this memo, 192.0.0.0/29 is now generalized across multiple IPv4 continuity solutions such as 464XLAT and DS-lite. A host MUST NOT enable two active IPv4 continuity solutions simultaneously in a way that would cause a node to have overlapping 192.0.0.0/29 address space.

5. Security Considerations

No new security considerations beyond what is described [RFC6333] and [RFC6877].

6. IANA Considerations

This document requests IANA to update the IPv4 Special-Purpose Address Registry available at (http://www.iana.org/assignments/iana-ipv4-special-registry/iana-ipv4-special-registry) as follows:

OLD:

192.0.0.0/29 DS-Lite [RFC6333]

NEW:

192.0.0.0/29 IPv4 Service Continuity Prefix [RFC-to-be-xxx]

Attribute	Value
Address Block	192.0.0.0/29
Name	IPv4 Service Continuity Prefix
RFC	RFC TBD
Allocation Date	June 2014
Termination Date	N/A
Source	True
Destination	True
Forwardable	True
Global	False
Reserved-by-Protocol	False

7. Acknowledgements

This document has been substantially improved by specific feedback from Dave Thaler, Fred Baker, Wes George, Lorenzo Colitti, and Mohamed Boucadair.

8. References

8.1. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[RFC6333] Durand, A., Droms, R., Woodyatt, J., and Y. Lee, "Dual-Stack Lite Broadband Deployments Following IPv4 Exhaustion", RFC6333, August 2011.

[RFC6877] Mawatari, M., Kawashima, M., and C. Byrne, "464XLAT: Combination of Stateful and Stateless Translation", RFC6877, April 2013.

Authors' Addresses

Cameron Byrne
Bellevue, WA, USA
Email: Cameron.Byrne@T-Mobile.com