ISP Shared Address
draft-shirasaki-isp-shared-addr-06

Abstract

This document defines IPv4 ISP Shared Address to be jointly used among Internet Service Providers (ISPs). This space is intended to be used in NAT444 model which is used during the transition period to IPv6.

Status of this Memo

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This Internet-Draft will expire on January 12, 2012.

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1. Introduction

The only permanent solution of the IPv4 address exhaustion is to deploy IPv6. Now, just before the exhaustion, it's time to make a transition to IPv6.
NAT444 model *[I-D.shirasaki-nat444]* is one of the solutions for transition to IPv6.
This document defines ISP Shared Address to be used in NAT444 model *[I-D.shirasaki-nat444-isp-shared-addr]*. It is supposed to be used between Customer Premises Equipment (CPE) and Carrier Grade NAT (CGN) *[I-D.nishitani-cgn]*.
ISP Shared Address is needed until the IPv4 Internet fades out.

2. ISP Shared Address

2.1. Definition

ISP Shared Address is intended to be assigned between CPE and CGN in a NAT444.

2.2. Details

- Each ISP can use ISP Shared Address without any coordination with IANA or Internet registries.

- ISP Shared Address can be used by many ISPs.
- ISP has to install CGN to use ISP Shared Address.
- ISP Shared Address must not be used at customers' site or Internet Exchanges.
- Routing information of ISP Shared Address must not be advertised to the Internet.
- Reverse DNS queries for this address space must not be sent to root DNS servers.
- Packets with this space as source address and/or destination address must be filtered out at the border of each ISP.
- Addresses within this address space should be unique within the ISP, or the set of ISPs which choose to cooperate over this space so they may directly communicate with each other in their networks.

3. Size of Address Space

Because the aggregation size of Tokyo area POP is around /10 in Japan, /10 should be the hard limit of minimum size ISP Shared Address. We understand this can be determined by further discussions.

4. Acknowledgements

Thanks for the input and review by Shirou Niinobe, Takeshi Tomochika, Tomohiro Fujisaki, Dai Nishino, JP address community members, AP address community members and JPNIC members.

5. IANA Considerations

IANA is to record the allocation of the IPv4 global unicast address as ISP Shared Address in the IPv4 address registry.

6. Security Considerations

ISP Shared Address is supposed to be used with CGN. The Global IPv4 address that is assigned outside CGN may be used as source address of 'Denial of Service' attack.

7. References

7.1. Normative References

[I-D.nishitani-cgn]	Yamagata, I, Miyakawa, S, Nakagawa, A and H Ashida, "Common requirements for IP address sharing schemes", Internet-Draft draft-nishitani-cgn-05, July 2010.
[I-D.shirasaki-nat444-isp-shared-addr]	Yamaguchi, J, Shirasaki, Y, Miyakawa, S, Nakagawa, A and H Ashida, "NAT444 addressing models", Internet-Draft draft-shirasaki-nat444-isp-shared-addr-06, July 2011.

[I-D.shirasaki-nat444]	Yamagata, I, Shirasaki, Y, Nakagawa, A, Yamaguchi, J and H Ashida, "NAT444", Internet-Draft draft-shirasaki-nat444-04, July 2011.

7.2. Informative References

[PROP58]	Niinobe, S., Tomochika, T., Yamaguchi, J., Nishino, D., Ashida, H., Nakagawa, A. and T. Hosaka, "Proposal to create IPv4 shared use address space among LIRs", 2008.

Authors' Addresses

Ikuhei Yamagata Yamagata NTT Communications Corporation Gran Park Tower 17F, 3-4-1 Shibaura, Minato-ku Tokyo, 108-8118 Japan Phone: +81 3 6700 8530 EMail: ikuhei@nttv6.jp

Shin Miyakawa Miyakawa NTT Communications Corporation Gran Park Tower 17F, 3-4-1 Shibaura, Minato-ku Tokyo, 108-8118 Japan Phone: +81 50 3812 4695 EMail: miyakawa@nttv6.jp

Akira Nakagawa Nakagawa Japan Internet Exchange Co., Ltd. (JPIX) Otemachi Building 21F, 1-8-1 Otemachi, Chiyoda-ku Tokyo, 100-0004 Japan Phone: +81 90 9242 2717 EMail: a-nakagawa@jpix.ad.jp

Jiro Yamaguchi Yamaguchi Internet Initiative Japan Inc. Kakyoin Square Bldg., 15F, 1-1-20 Kakyoin, Aoba-ku Sendai, 980-0013 Japan Phone: +81 22 216 5650 EMail: jiro-y@iij.ad.jp

Hiroyuki Ashida Ashida its communications Inc. 541-1 Ichigao-cho Aoba-ku Yokohama, 225-0024 Japan EMail: ashida@itscom.ad.jp