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IPv6 Testing Address Allocation

Status of this Memo

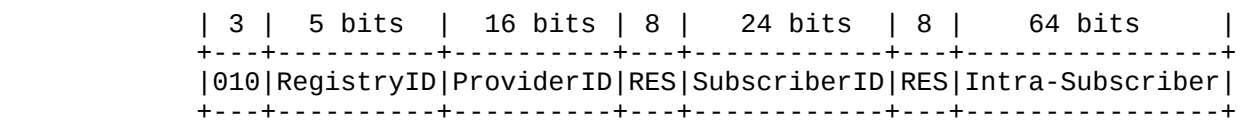
1.0 Introduction

This document describes an allocation plan for IPv6 addresses to be used in testing IPv6 prototype software. These addresses are temporary and will be reclaimed in the future. Any IPv6 system using these addresses will have to renumber at some time in the future. These addresses will not to be routable in the Internet other than for IPv6 testing.

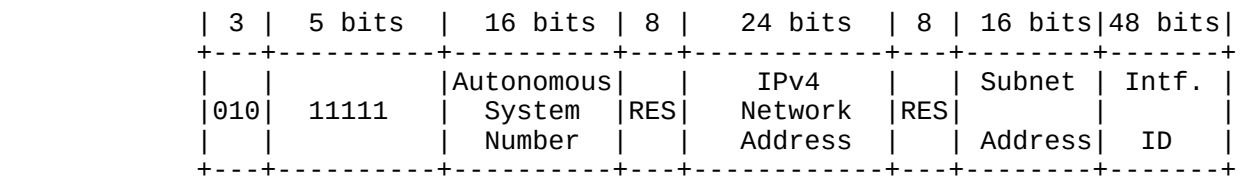
The addresses described in this document are consistent with the IPv6 Addressing Architecture [ARCH]. They may be assigned to nodes manually, with IPv6 Auto Address Allocation [AUTO], or with DHCP for IPv6 [DHCPv6].

2.0 Address Format

The address format for the IPv6 test address is consistent with the provider-based unicast address allocation [PRVD] which is as follows:



The specific allocation of each field of the test address format is as follows:



where:

010

This is the Format Prefix used to identify provider-based unicast addresses.

11111

This is a Registry ID reserved by the IANA. The initial use of addresses in this Registry ID for IPv6 testing is temporary. All users of these addresses will be required to renumber at some time in the future.

Autonomous System Number

This is the current autonomous system number assigned to the provider providing internet service to the an IPv6 testers organization. For example for IPv6 testers receiving internet service from BBN Barrnet would use autonomous system number 189. This would be coded in the autonomous system field of the address as follows:

0000 0000 1011 1101 (binary)

The values for the autonomous system number of an organization's provider can be obtained from that provider, or can be looked up in the "whois" database maintained by the internic.net.

RES

This field is reserved and must be set to zero.

IPv4 Network Address

This is based on the current IPv4 routable address for the subscriber which the interface is connected. It is formed by taking the high order 24 bits of the IPv4 address. For example for an IPv4 address (in IPv4 syntax):

IPv4 Address
39.11.22.1

the value to put in this field of IPv6 address is:

IPv4 Format	Hex
39.11.22	270B16

This technique for generating values for this field only works for subscribers which have IPv4 subscriber prefixes less than equal to 24 bits long. There may be subscribers using IPv4 addresses with longer subscriber prefixes, but this conflict is expected to be very rare. Subscribers with subscriber prefixes larger than 24 bits should use the remaining bits in the IPv4 prefix as the high order bits in the Subnet Address field.

RES

This field is reserved and must be set to zero.

Subnet Address

The Subnet ID identifies a specific physical link on which the interface is located. There can be multiple subnets on the same physical link. A specific subnet can not span multiple physical links. The assignment of values for this field is left to an individual subscriber. One possible algorithm to generate values for this field is to use the bits in the IPv4 address which identify the IPv4 subnet.

Interface ID

This is the unique identifier of the interface on the link, usually the 48-bit IEEE 802 MAC address of the interface if available.

4.0 References

[ARCH] Hinden, R., and S. Deering, Editors, "IP Version 6 Addressing Architecture", RFC 1884, Ipsilon Networks, Xerox PARC, December 1995.

[AUTO] Thomson, S., "IPv6 Stateless Address Autoconfiguration", Work in Progress.

[DHCP6] Bound, J., "Host Configuration Protocol for IPv6", Work in Progress.

[PROV] Rekhter, Y., and P. Lothberg, "An IPv6 Provider-Based Unicast Address Format", Work in Progress.

5.0 Security Considerations

Security issues are not discussed in this memo.

6.0 Authors' Addresses

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