                        IPv6 Testing Address Allocation

Status of this Memo

   This document specifies an Experimental protocol for the Internet
   community. This memo does not specify an Internet standard of any
   kind. Discussion and suggestions for improvement are requested.
   Distribution of this memo is unlimited.

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:

```
| 3 |  5 bits  |  16 bits | 8 |   24 bits  | 8 |     64 bits      |
+---+----------+----------+---+------------+---+----------------+
|010|RegistryID|ProviderID|RES|SubscriberID|RES|Intra-Subscriber|
+---+----------+----------+---+------------+---+----------------+
```

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

```
| 3 |  5 bits  |  16 bits | 8 |   24 bits  | 8 | 16 bits|48 bits|
+---+----------+----------+---+------------+---+--------+-------+
|   |          |Autonomous|   |    IPv4    |   | Subnet | Intf. |
|010|  11111   | System   |RES| Network    |RES|        |       |
|   |          | Number   |   | Address    |   | Address|  ID   |
+---+----------+----------+---+------------+---+--------+-------+
```

   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.

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