

Class A Subnet Experiment

Status of this Memo

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

Discussion

There appears to be some interest in experimenting with subnetting the class A addresses.

There is some evidence that not all the routing software in use will deal correctly with subnetted class A addresses. It also appears that actual use of subnetted class A addresses may be necessary in the not too distant future. It is suggested that conducting an experiment now to identify and fix any software that does not properly handle subnetted class A addresses would be useful and important.

To further this experiment the IANA will temporarily designate the class A network number 39 to be used in the following way:

The high order octet of the 4-octet IPv4 address is the class A network number 39. There are two cases for low order 24 bits.

Case 1:

In the first case, the high order bit of these 24 bits is zero and the next 15 bits are the low order 15 bits of a previously assigned Autonomous System number (AS), as registered by a network registry and listed in the RWhois database system.

Using the AS number in this way allows the experiment to get underway quickly in that it automatically allocates some addresses to each service provider and does not require a registration step.

One concern is that this might cause a run on AS numbers, since by getting an AS number you automatically get some address space. This concern should be offset by the fact that the amount of address space one gets under this plan is the same as one class C

network number (and it should be easier to get a single class C allocated than to get an AS number allocated), and that this is a limited time experiment so that these addresses will be temporary.

The low order octet of the 4-octet IPv4 address is for local use. It is expected that an address of this form will be used to identify a specific publicly accessible Internet host.

```
+-----+-----+-----+-----+
|  39   | 0 | low 15 bits AS | local  |
+-----+-----+-----+-----+
```

Case 2:

In the second case, the high order bit of these 24 bits is one, and the remaining 23 bits are assigned by the IANA (currently reserved for future use).

```
+-----+-----+-----+-----+
|  39   | 1 | variable prefix + local |
+-----+-----+-----+-----+
```

The general intent is to find a way to assign to experimenters prefixes of differing lengths so that a variety of experiments can be conducted with the prefix/local-address boundary at different points.

It is not intended that either of these address allocation schemes is the model for how subnetted class A addresses will be actually allocated in the future.

It is expected, to make the experiment interesting, that some providers will use these addresses for servers supplying popular material via the Web or FTP.

For example, if the service provider registered to use AS 690 wished to use this style of address to provide access to a server of popular information on local host 7, the address would be:

```
+-----+-----+-----+-----+
|  39   | 2 | 178 | 7 |
+-----+-----+-----+-----+
```

The support for DNS name and address resolution should be provided. For example, if Alternet wanted to put up a database of interesting information using the hostname "Interesting.Alter.Net" using the address 39.2.189.7, they would need to put the name to address mapping in their name server using the A record

Interesting.Alter.Net. IN A 39.2.189.7

Similarly, the address to name PTR record should be supported

7.189.2.39.IN-ADDR.ARPA. PTR Interesting.Alter.Net.

which means that the 189.2.39 branch of the IN-ADDR tree would be delegated to Alternet for the purposes of this experiment.

To support this, the 39.IN-ADDR.ARPA branch is delegated to the IANA to be managed at ISI. The nameserver for this branch is IN-ADDR.EP.NET (39.17.199.10). Participants in this experiment should contact the administrator of this nameserver to have their portion of the address space further delegated. The administrator for this server can be reached at <aexpreg@isi.edu>.

Another aspect of the testing that should be performed is to have providers interchange addresses to test the portability of subnetted class A addresses. It is not intended that this would be the model for actual use.

For example, if AS 690 and AS 1800 want to try out routing holes in each others' allocations within their AS, that should be encouraged. That is, suppose AS 690 handed some address of their addresses to AS 1800, and vice-versa. This type of testing will be necessary to see if the addresses can be made portable in larger sub-A allocations.

This is experiment will be of limited duration and these addresses may be reassigned to other uses when the experiment is over.

This experiment will begin on 1-May-95.

The current date for the termination of this experiment is 1-Dec-95.

Security Considerations

Security issues are not discussed in this memo.

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