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                                                        Sprint E|Solutions
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GLOP Addressing in 233/8

1. Status of this Memo

2. Abstract

This describes a policy for use of the class D address space using 233/8 as the statically assigned subset of the class D address space. This space is generally to be utilized for many to many applications, such as non-broadcast applications. This allocation is in addition to those described on [IANA] (e.g. [RFC2365]). The IANA has allocated 223/8 as per RFC 2770 [RFC2770]. This document updates RFC 2770.

This memo is a product of the Multicast Deployment Working Group (MBONED) in the Operations and Management Area of the Internet Engineering Task Force. Submit comments to <mboned@ns.uoregon.edu> or the author.

3. Copyright Notice

4. Problem Statement

Multicast addresses have traditionally been allocated by a dynamic mechanism such as SDR [SAP]. However, many current multicast deployment models are not amenable to dynamic allocation. For example, many content aggregators require group addresses which are fixed on a time scale which is not amenable to allocation by a mechanism such as described in [SAP]. Perhaps more seriously, since there isn't general consensus by providers, content aggregators, or application writers as to the allocation mechanism, the Internet is left without a coherent multicast address allocation scheme.

The MALLOC working group has created a specific strategy for global multicast address allocation [RFC2730, RFC2909]. However, this approach has not been widely implemented or deployed. This document proposes a solution for a subset of the problem, namely, those cases not covered by Source Specific Multicast [SS].

5. Address Space

The IANA has allocated 223/8 as per RFC 2770 [RFC277]. RFC 2770 describes the administration of middle two octetes of 233/8 in a manner similar to that described in RFC1797:

```
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      233      |           16 bits AS          |  local bits   |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

5.1. Example

Consider, for example, AS 5662. Written in binary, left padded with 0s, we get 0001011000011110. Mapping the high order octet to the second octet of the address, and the low order octet to the third octet, we get 233.22.30/24.

6. Allocation

As mentioned above, the allocation proposed here follows the RFC1797 (case 1) allocation scheme, modified as follows: the high order octet has the value 233, and the next 16 bits are a previously assigned Autonomous System number (AS), as registered by a network registry and listed in the RWhois database system. This allows a single /24 per AS.

As was the case with RFC1797, using the AS number in this way allows automatic assignment of a single /24 to each service provider and does not require a registration step.

6.1. Private AS Space

The address space mapped to the private AS space [RFC1930] is assigned to the IRRs to assign as per their local policy [RFC3138].

7. Security Considerations

The approach described here may have the effect of reduced exposure to denial of space attacks based on dynamic allocation. Further, since dynamic assignment does not cross domain boundaries, well known intra-domain security techniques can be applied.

8. IANA Considerations

The IANA should assign 233/8 for this purpose.

9. Acknowledgments

This idea originated with Peter Lothberg's idea that we use the same allocation (AS based) as described in RFC 1797 in the class D address space. Randy Bush and Mark Handley contributed many insightful comments.

10. References

[IANA] http://www.iana.org/numbers.html

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[RFC2365] David Meyer, "Administratively Scoped IP Multicast", July, 1998.

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[RFC2730] B. Patel, et. al., "Multicast Address Dynamic Client Allocation Protocol (MADCAP)", RFC2730, December, 1999.

[RFC2770] D. Meyer and P. Lothberg, "GLOP Addressing in 233/8", RFC 2770, Feburary, 2000.

[RFC2909] D. Estrin, et. al., "The Multicast Address-Set Claim (MASC) Protocol", RFC2909, September 2000.

[RFC3138] D. Meyer "Extended Assignmentns in 233/8", RFC 3138, June 2001.

[SAP] Handley, Mark, "SAP: Session Announcement Protocol", draft-ietf-mmusic-sap-00.txt, November, 1996.

[SS] www.isi.edu/in-notes/iana/assignments/single-source-multicast

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