

Static Allocation of Multicast Addresses in
the Internet Protocol Version 6 (IPv6)

<[draft-haberman-malloc-static-ipv6-alloc-00.txt](#)>

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Abstract

This document defines a mechanism for statically allocating IPv6 multicast addresses by network prefixes. This approach will integrate seamlessly with the Multicast Address Dynamic Client Allocation Protocol (MADCAP). It will also remove the need to support the Multicast Address Set Claim (MASC) Protocol for IPv6.

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8	4	4	112 bits

11111111	flgs	scop	group ID

+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+

The legal values for the flgs and scop field are defined in the IPv6 address architecture [\[ADDARCH\]](#).

4. Static Allocation

4.1. Globally routable prefixes

The mechanism for allocating IPv6 multicast addresses will be to imbed an IPv6 unicast network prefix in the multicast address starting at bit 16. The resulting multicast address will have the following format if

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the network prefix was taken from an address format that must contain an EUI-64 based interface identifier (Section 2.4 of [\[ADDARCH\]](#)).

8	4	4	64 bits	48 bits
+-----+-----+-----+-----+-----+-----+				
11111111	flgs	scop	IPv6 unicast network prefix	group ID
+-----+-----+-----+-----+-----+-----+				

This format will allow for 2⁴⁸ group IDs for each unique (scop, prefix) pair.

4.2. Site-local prefixes

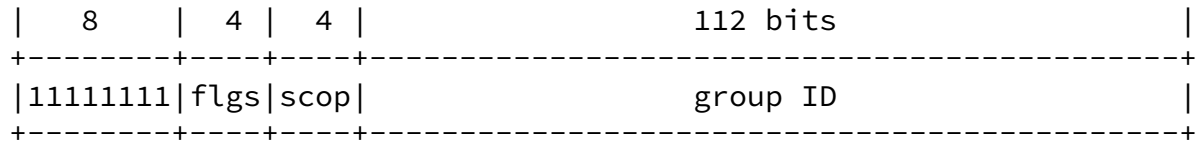
If a node attempting to obtain an IPv6 multicast address does not have a globally routable network prefix, it can use a site-local address prefix in the same manner. In this case, the multicast address format will be :

8	4	4	10 bits	38 bits	16 bits	48 bits
+-----+-----+-----+-----+-----+-----+						
11111111	flgs	scop	1111111011	0	subnet ID	group ID
+-----+-----+-----+-----+-----+-----+						

With this format, the scop field of the address can be no greater than site-local (5), defined in Section 2.7 of [\[ADDARCH\]](#).

4.3. Link-local prefixes

If a node only has a link-local address, section 2.5.8 of [ADDARCH], it can only use a multicast address with a scop field no greater than link-local (2). For this case, the multicast address format is as follows :



5. Security Considerations

6. References

- [RFC2119] S. Bradner, "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), [BCP14](#), March 1997.
- [ADDARCH] R. Hinden and S. Deering, "IP Version 6 Addressing Architecture", [RFC 2373](#), July 1998.
- [MADCAP] B. Patel, M. Shah, and S. Hanna, "Multicast Address Dynamic Client Allocation Protocol (MADCAP)", [draft-ietf-malloc-madcap-04.txt](#), February 1999.
- [MASC] D. Estrin, R. Govindan, M. Handley, S. Kumar, P. Radoslavov, and D. Thaler, "The Multicast Address-Set Claim (MASC) Protocol", [draft-ietf-malloc-masc-01.txt](#), August 1998.

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8. Full Copyright Statement

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