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**IPv6 Multicast Address Scopes**  
**draft-droms-6man-multicast-scopes-02.txt**

Abstract

This document updates the definitions of IPv6 multicast scopes.

Status of This Memo

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**1. Definition of IPv6 Multicast Address Scopes**

[RFC 4291](#) [[RFC4291](#)] defines "scop is a 4-bit multicast scope value used to limit the scope of the multicast group." scop 3 is defined as "reserved" in [RFC 4291](#). The multicast protocol specification in [draft-ietf-roll-trickle-mcast](#) [[I-D.ietf-roll-trickle-mcast](#)] desires to use multicast scop 3 for transport of multicast traffic scoped to a RPL realm (or "domain") [[RFC6550](#)]. The use of this scop value is to accommodate a multicast scope that is greater than Link-Local but is also automatically determined by the network architecture; for example, all of the hosts and routers in a multi-link subnet RPL realm.

The following table updates the definitions in [RFC 4291](#):

- 0 reserved
- 1 Interface-Local scope
- 2 Link-Local scope
- 3 Realm-Local scope
- 4 Admin-Local scope
- 5 Site-Local scope
- 6 (unassigned)
- 7 (unassigned)
- 8 Organization-Local scope
- 9 (unassigned)
- A (unassigned)
- B (unassigned)
- C (unassigned)
- D (unassigned)
- E Global scope
- F reserved

The following paragraph is added as the third paragraph following the list of scop values in [RFC 4291](#):



Realm-Local scope is the largest scope that is automatically configured, i.e., automatically derived from physical connectivity or other, non-multicast-related configuration.

## **2. Definition of Realm-Local scopes**

The definition of any Realm-Local scope for a particular network technology should be published in an RFC. For example, such a scope definition would be appropriate for publication in an "IPv6-over-foo" RFC.

Any RFCs that include the definition of a Realm-Local scope will be listed in the IANA "IPv6 Multicast Address Scopes" registry.

## **3. IANA Considerations**

IANA is asked to establish a sub-registry titled "IPv6 Multicast Address Scopes" in the existing "Internet Protocol version 6 (IPv6) Multicast Address Allocations" registry. The "IPv6 Multicast Address Scopes" is to be populated with the scope values given in [section 1](#), with a note associated with scope 3 listing all RFCs that define Realm-Local scoping rules that use scope 3.

## **4. Security Considerations**

This document has no security considerations beyond those in [RFC 4291](#) [[RFC4291](#)].

## **5. References**

### **5.1. Normative References**

[RFC4291] Hinden, R. and S. Deering, "IP Version 6 Addressing Architecture", [RFC 4291](#), February 2006.

### **5.2. Informative References**

[I-D.ietf-roll-trickle-mcast]

Hui, J. and R. Kelsey, "Multicast Protocol for Low power and Lossy Networks (MPL)", [draft-ietf-roll-trickle-mcast-04](#) (work in progress), February 2013.

[RFC6550] Winter, T., Thubert, P., Brandt, A., Hui, J., Kelsey, R., Levis, P., Pister, K., Struik, R., Vasseur, JP., and R. Alexander, "RPL: IPv6 Routing Protocol for Low-Power and Lossy Networks", [RFC 6550](#), March 2012.

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