Simplifying IPv6 MLD Snooping Switches

draft-pashby-magma-simplify-mld-snooping-00.txt

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Purpose

• Simplify the forwarding rules for Local Network Control and Dynamically Assigned Link-Local Scoped groups
  – Reduce cost of hardware
  – Reduce number of multicast group states
  – Provide additional network discovery
  – Provide detection of non-authorized network access and possible spoofing attacks
Justification

• A network with 1000 IPv6 node has at least 1000 multicast groups, just to support Neighbor Discovery (ND)

• Some current OS’ don’t implement MLD Joins for ND

• Providing Solicited-node Multicast Addresses (SMA) to be forwarded everywhere enhances the ability to discover nodes

• Providing SMA to be forwarded everywhere may allow for detection of spoofing attacks
New Forwarding Rules

• Forward Local Network Control Block multicast Ids to every port (includes All-hosts Multicast Address)
• Forward Dynamically Assigned Link-Local Scoped multicast Ids to every port (includes Solicited-node Multicast Addresses)
• Track MLD joins and leaves for forwarding all other multicast groups
Related Drafts

draft-pashby-mboned-mc-scoped-addr
  – “Multicast Scoped Address Assignment Guidance”
  – Defines Dynamically Assigned Link-Local Scoped multicast Id range (SMAs are included in this range)
  – Defines Local Network Control Block multicast Id range (All Hosts Multicast Address is included in this range)
draft-pashby-ipv6-detecting-spoofing
  – “Detection of IPv6 Neighbor Discovery and Host Redirection Spoofing”
  – Relies on Dynamically Assigned Link-Local Scoped to be sent to all ports
Recommendation

• Update draft-ietf-magma-snoop-12 to include these changes

Questions?