UNH-IOL CE Router Interoperability Event

Renumbering Lessons
Test Event

- CE Router event in February 2011 at the UNH-IOL.
- Purpose was to test, soon published RFC 6204.
- Participates include DOCSIS and Ethernet CE Routers.
- Full results of the test event can be read in the whitepaper (http://www.iol.unh.edu/services/testing/ipv6/)
- One test case purpose was to test the ability for a CE Router to renumber prefixes.
DHCPv6 Prefix Delegation

• During the event two methods for changing DHCPv6 Prefix Delegation were tested.
  
• DHCPv6 Reconfigure is the preferred method.
  – Reconfigure Accept Option support is required in RFC 6204.
  – Reconfigure Accept option is not required in RFC 3315.

• DHCPv6 Renew
  – When a Renew is transmitted, the DHCP Reply contains a new IA_PD.
DHCPv6 Reconfigure

• While it was required in the draft, several CE Routers didn’t include Reconfigure Accept Options, the DHCPv6 Server wouldn’t allow reconfigure.

• The CE Routers that did include DHCPv6 Reconfigure Accept, wouldn’t process the DHCPv6 Reconfigure message from the DHCPv6 Server.

• We were unable to see a renumbering using DHCPv6 reconfigure during the event.
DHCPv6 Renew/Reply

• Testing DHCPv6 Renew/Reply for renumbering
  – set the T1 value low (1 minute)
  – changed the delegated prefix after the first address is assigned.
• The DHCPv6 Reply contained two different IA_PDs. One with a lifetime of zero and one with a valid lifetime.
• All the CE Routers only processed the first IA_PD in the DHCPv6 Reply.
  – Timing out the current prefix but not learning the second one.
  – After a period the DHCP Server would only include one IA_PD and the address would be learned.
Recommendations

• When Renumbering and sending two IA_PDs the first should be the new prefix.
  – Removed IA_PD would timeout if they only process the first IA_PD.
  – Will keep IPv6 global connectivity up on the network.