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 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.