Deployment with Dual-Stack Lite (DS-Lite) and lesson learned about CPEs on IPv6 network

Takeshi MOTOHASHI
Internet Multifeed Co.
motohashi@mfeed.ad.jp
March 2015 at APRICOT-APAN2015
The Services of Internet Multifeed
• IPv6 IPoE (IP over Ethernet) on NTT East & West Flet’s Hikari Next
• VNE (Virtual Network Enabler)
• IPv4 over IPv6 service started since October 2014
Dual-Stack Lite (DS-Lite)

• The IPv4 over IPv6 service is based on DS-Lite
• AFTR is ready on transix network
• End users (or ISPs) need to prepare B4 CPE for using DS-Lite

RFC 6333, “Dual-Stack Lite Broadband Deployments Following IPv4 Exhaustion”

NAPT (Network Address Port Translation)
B4 (Basic Bridging BroadBand)   AFTR (Address Family Translation Router)
Requirement for CPEs

- We need to take care of both:
  - DHCPv6/PD (Prefix Delegation)
  - RA (Router Advertisement)

- How CPEs in Japan work with IPv6 and DS-Lite?
  - Buffalo WXR-1900DHP
  - IIJ SEIL
  - Huawei WS325
  - YAMAHA NVR500
  - Cisco 1812J

* Based on investigation as of February 2015
Lesson Learned

• For DHCPv6/PD (Prefix Delegation)
  • IPv6 and DS-Lite: both work well with the CPEs

• For RA (Router Advertisement)
  • DS-Lite works well with the CPEs
  • Variety of configuration for IPv6
    • IPv6 path through / ND proxy
    • Custom configuration necessary for filtering

• AFTR address setting: Hostname / IP address
Research on DS-Lite deployment

* All information based on Web news and manuals online

- ISPs with DS-Lite
  - Greece: Forthnet (2014/6)
  - Poland: Orange Polska (2015/1)
  - Germany

- CPEs with DS-Lite
  - D-Link, Huawei, TP-Link, Sitecom, AVM, NEC
  - OpenWrt

We are happy to share and exchange information for deployment with DS-Lite
Deployment with Dual-Stack Lite (DS-Lite) and lesson learned about CPEs on IPv6 network

Takeshi MOTOHASHI
Internet Multifeed Co.
motohashi@mfeed.ad.jp
March 2015 at APRICOT-APAN2015