IPv6 Enterprise Network Renumbering Scenarios and Guidelines

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Sheng Jiang(speaker), Bing Liu, Brian.E.Carpenter

IETF 83@Paris

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Progress

Adopted as a WG item

- *WG Chair initialed the Call in Dec 2011*
- *Submitted as a WG draft in Feb 2012*

Content updated

- *Got some valuable comments, mainly from* Lee Howard, *many thanks!*

Main revisions

- Reconfirm the scope of not including IPv4/IPv6 co-existence scenarios
- Modified some scenario description
- Security considerations update
- Editorial revision

- Scope Issue

To explain why we exclude IPv4/IPv6 transition scenarios:

➢ *The IPv4 and IPv6 are logically separated from the perspective of renumbering, regardless of overlapping of the IPv4/IPv6 networks or devices. For IPv4/IPv6 addresses are configured respectively by different protocols, as while as the DNS/Filters records.*

[Open Question] In some transition mechanisms, IPv4/IPv6 may be mixed in one DHCP configuration, shall we consider this?

- Scenario description modification

➢ Deleted these:

- *DHCPv6 server in the ISP delegates a new prefix to the enterprise network.*
- *If the administrators only want part of the network to have multiple prefixes, the renumbering process should be carefully managed*

➢ It should be noted that multicast DNS is link-local only, so the effort is limited.

- Security considerations

- Any automatic renumbering scheme has a potential exposure to hijacking.
- For malicious entity in the network can forge prefixes to renumber the hosts, either through ND or DHCP.

Open Questions

- DHCPv6 PD options may be used between the enterprise routers and their upstream ISPs, is it reasonable?
- Use of FQDN for services should imply use (or at least consideration) of DNSSEC, what about the real deployment situation?
- Need more reasonable cases where FQDN is better than IP address.
- RA guard [RFC6105] is a light-weight alternative of SEND?

Open Questions

- Is this figure sufficient?

For some argued it is too simple that just like a single hub. But we only considered it as an illustration of an enterprise network, which can reflect the main architecture and contains most types of elements relevant to renumbering.

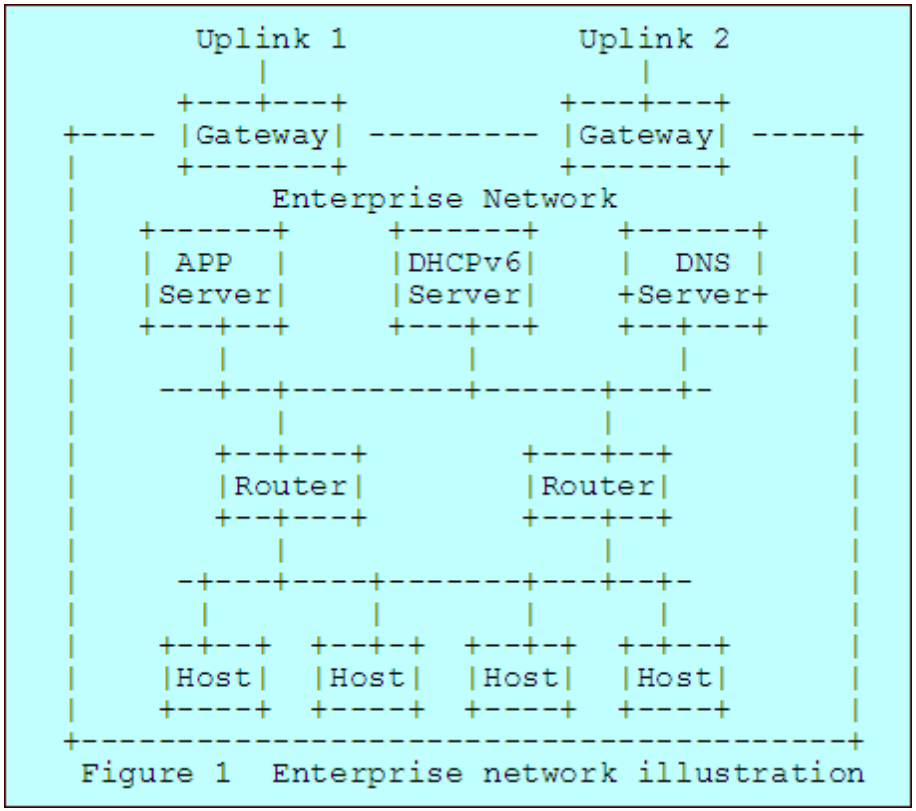

Figure 1 Enterprise network illustration

Comments?

Thank you

jiangsheng@huawei.com
leo.liubing@huawei.com
brian.e.carpenter@gmail.com

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