DHCPv6 Extension Discussion

IETF 75

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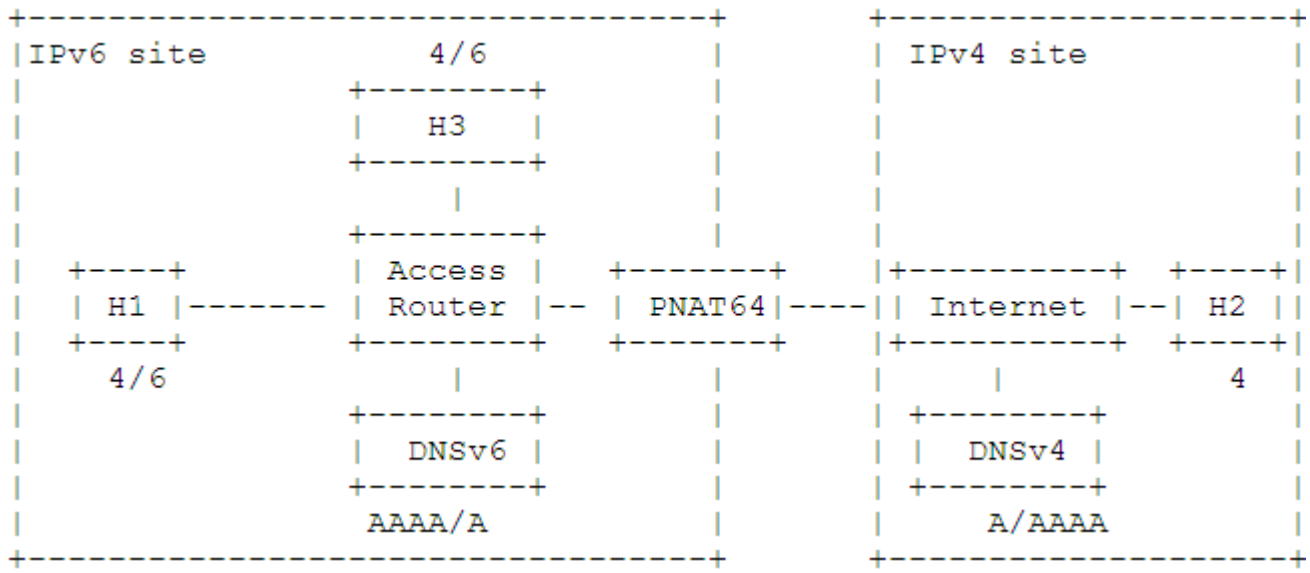
Outline

- PNAT Scenario Introduction
- PNAT's requirement for DHCPv6
- Discussion on DHCPv6 extension for PNAT

PNAT Scenario Introduction

- PNAT is a host based IPv4/v6 transition mechanism proposed in Behave WG
- PNAT host is in an IPv6 only network
  - PNAT host synthesizes IPv6 address using an IPv4 address and an IPv6 prefix
  - PNAT host need to be configured with both IPv4/v6 DNS



PNAT's requirement for DHCPv6

- PNAT host configuration requirement
  - PNAT hosts need an IPv4 address and an IPv6 prefix.
  - PNAT hosts need both IPv4/IPv6 DNS server's address be assigned.

- We propose to extend DHCPv6 to assign the IPv4 address, DNSv4 address and IPv6 prefix for PNAT, since:
  - If the PNAT hosts' IP address configuration could be done automatically by DHCP, it will ease PNAT deployment.
  - PNAT hosts are in an IPv6 only network, so it needs to use DHCPv6 for address configuration.
  - PNAT hosts also need IPv4 address and DNSv4 assignment, so the obvious way is extending DHCPv6 to support IPv4 address and DNSv4 assignment.

Discussion on DHCPv6 extension for PNAT

- IPv6 prefix assignment for PNAT hosts
  - Could RFC 3633 be used ?

- IPv4 address and DNSv4 assignment for PNAT hosts
  - There was a consensus that using DHCPv4/v6 separate approach during the time that DHCPv6 was developed. (RFC 4477)
  - The consensus is based on the assumption that the host is dual stack and has IPv4 connectivity.
  - In PNAT's scenario, the host does not have IPv4 connectivity but also need an IPv4 address and DNSv4 configuration.
  - DHCPv6 specification states that "If there is sufficient interest and demand, integration can be specified in a document that extends DHCPv6 to carry IPv4 addresses and configuration information ".

- What is the dhc WG's opinion on this?

Thanks