NAT46 considerations
(http://www.ietf.org/id/draft-liu-behave-nat46-02.txt)

IETF #77
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NAT46 Scenario

- Server located in IPv6 Internet may have private IPv4 address, but only has AAAA record.
- Application class:
  1: Work through NAT without ALG
  2: Do name resolution
Function Modules of v4-v6 Translation

• DNS Handling
  – V4 application always sends type A DNS query; but IPv6 server does not have type A record
  – DNS handling function is needed

• Address Mapping
  – Use IPv4 address to represent IPv6 server’s address
  – Maintain IPv4<->IPv6 mapping

• Translation
  – IPv4<->IPv6 packets translation
  – Need the mapping information to perform translation
Different Approaches of DNS/Mapping Handling

• Translation box performs DNS Handling/Address Mapping
  – Send both A/AAAA DNS queries
  – When only AAAA records returns, creating mapping

• DNS46 performs DNS Handling/Address Mapping
  – DNS46 Server send both A/AAAA DNS queries
  – DNS46 create the IPv4<->IPv6 mapping
  – Need to synchronize with translation box

• Host performs DNS Handling/Address Mapping
  – Need to synchronize with translation box
Possible NAT46 Solution

- **ENR**: Extended Name Resolver
  - Performs DNS handling

- **Addr Mapping**
  - Maintain IPv4<->IPv6 address mapping
Work item in Behave?

- Behave re-charter to cover the scenario of IPv4 network to IPv6 Internet?