

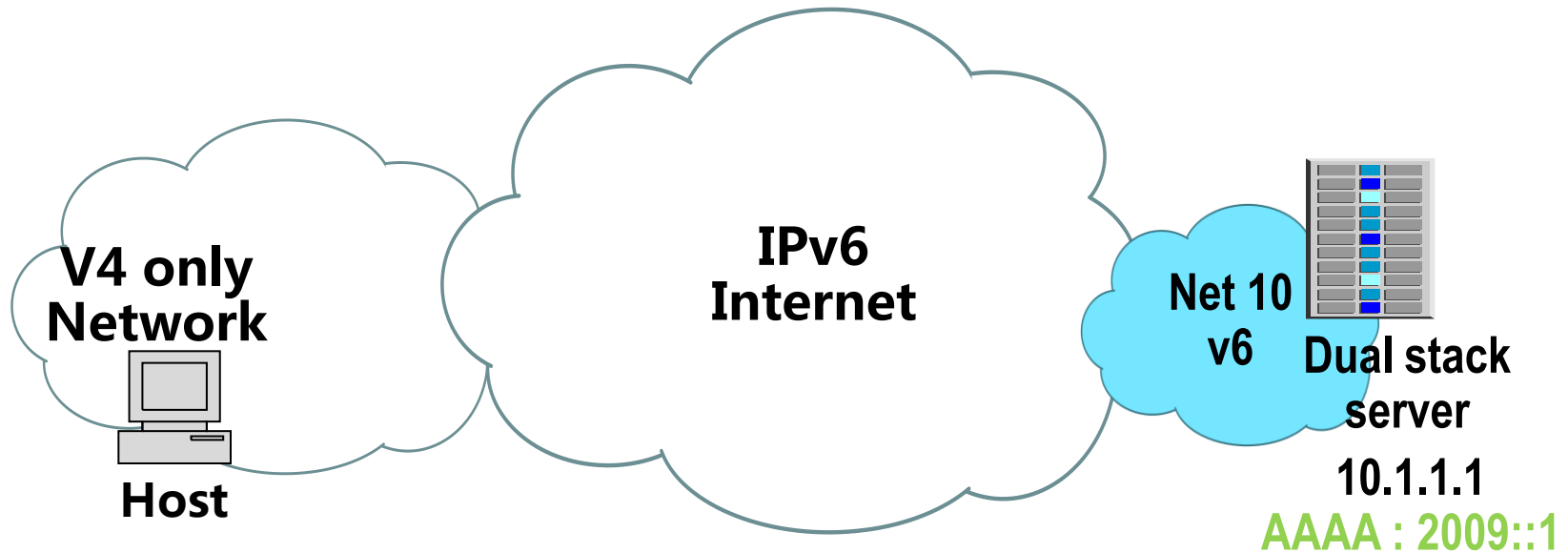
# NAT46 considerations

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

IETF #77

Dapeng Liu

# 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

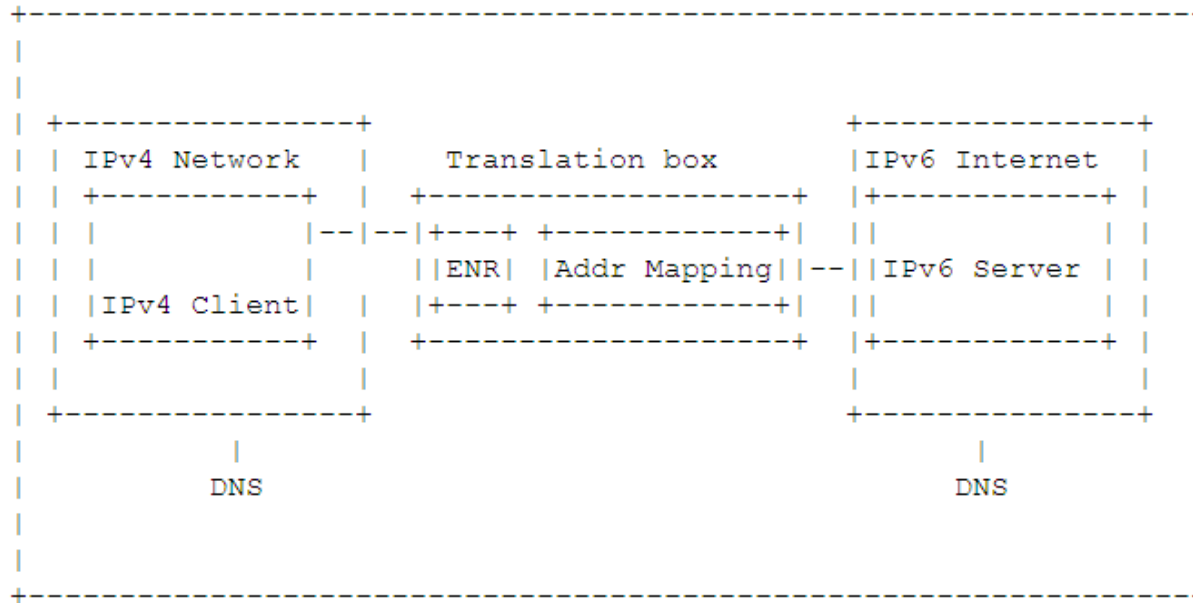
# Function Modules of v4-v6 Translation

- 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?