DHCPv6 Options for Discovery
NAT64 Prefixes

draft-li-intarea-nat64-prefix-dhcp-option-01

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Motivation

• Several transition mechanism (SIIT, 464XLAT, SIIT-EAM, ...) use NAT64
  • stateless or stateful
• Using Well-Known Prefix (WKP) and/or 1+ additional Network Specific Prefixes (NSPs)
• Multiple NAT64 Scenario:
  • Different NAT64 have different IPv6/IPv4 prefixes
  • Attract traffic to the correct NAT64
  • Support for destination-based IPv4 routing
• Several NAT64 may have different prefixes (IPv6/IPv4)
• This ID proposes a DHCPv6-based method to inform DHCPv6 clients
Proposed Solution (I)

- Client and DHCPv6 Server Interaction
  - Client requests **OPTION_NAT64_PREFIX_LIST** in DHCPv6 requests
  - DHCPv6 server provisions the NAT64-side translation IPv6 prefix(es) list by **OPTION_NAT64_PREFIX_LIST**
  - NAT64-side translation IPv6 prefix List contains the NAT64-prefix, NAT64-suffix and one or more IPv4 prefixes it servers
  - DHCPv6 Client records the NAT64-side translation IPv6/IPv4 prefix(es)
  - DHCPv6 Client selects the correct NAT64
    - When translating dest IPv4 addr to dest IPv6 addr, selects the IPv6 prefix by longest-match-first rule
Proposed Solution (II)

- **OPTION_NAT64_PREFIX_LIST**
  - A container option carrying one or more NAT64_PREFIX options
  - Compatible with single and multiple NAT64:
    - One or several OPTION_NAT64_PREFIX in OPTION_NAT64_PREFIX_LIST

- **OPTION_NAT64_PREFIX**
  - Encapsulated into OPTION_NAT64_PREFIX_LIST
  - Each NAT64-prefix comes in its own option
  - List the NAT64, Type, IPv6 prefix (optional suffix) and the corresponding IPv4 prefix(es)
Next Steps

• Any inputs?
• Move forward in int-area WG?