Retrieving the Capabilities of a PCP-controlled Device

draft-boucadair-pcp-capability
IETF 85-Atlanta, November 2012

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Problem 1 - PCP Servers with different Capabilities

- PCP Request format is different for NPTv6, Firewall
- PCP Request sent only once to NPTv6
- Similar scenario for ILNP Translator
Problem 2 - PCP Servers with different Capabilities – Example 2

- PCP Request format is different for NAT64, Firewall
- PCP client needs to send PCP Request only once to NAT64 to learn Prefix 64(s)
Proposed Solution

• Define a new Option called CAPABILITY
  – “A” bit indicates whether authentication is supported or not
  – Each bit in the Capability bit mask is used to represent the PCP-controlled device capability:
    1: NAT44
    2: Stateless NAT64 [RFC6145].
    4: Stateful NAT64 [RFC6146].
    8: A+P Port Range Router [RFC6346].
    16: IPv4 firewall Section 5
    32: IPv6 Firewall [RFC6092].
    64: NPTv6 [RFC6296].
    128: ILNP Translator [I-D.irtf-rrg-ilnp-arch]
  – Several bits can be set if several functions are co-located in the same device
Proposed Solution

1. Once the PCP Client is configured with its PCP Server(s), it may issue an ANNOUNCE OpCode which enclose a CAPABILITY Option
   - The PCP Client may decide to tune its requests and decide whether all PCP Servers need to be contacted in parallel or only a subset of them should be contacted

2. Upon receipt of a PCP request from a PCP Client requiring the PCP Server to enforce an operation beyond its capabilities, the PCP Server may return an error code together with the CAPABILITY option

3. When a new PCP Server joins the network, it may send an ANNOUNCE OpCode with its capabilities
Next Steps

• Is this a valid problem?
• Does the proposed solution make sense?
• Is the WG interested in working in this item?