Using PCP to trigger updating dynamic DNS records

draft-deng-pcp-ddns-03

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Context & Issue

- DDNS is a widely used service
  - Useful for Internet users who host services in the home network
  - Used by numerous providers over the world
  - Extensive list of DNS providers review on the internet
    - http://dnslookup.me/dynamic-dns/
    - http://www.dmoz.org/Computers/Internet/Protocols/DNS/Service_Providers/
    - http://noeld.com/services.htm
  - ddns service/ddns service provider/ddns service provider review/ ddns setting up, search on Google:
    - About 3,770,000 results
- Add-on feature on the majority of residential routers
  - Configurable on major OS (OpenWrt, DD-WRT): support hundreds of hardware
  - 3Com, TP-Link, Linksys, D-Link, Gateworks, Huawei, and so on.
- ***DDNS is broken in the IPv4 sharing context (e.g., DS-Lite, MAP, NAT64)***

Status of Current Practices

- DynDNS, GnuDIPDynamic DNS, opendyn, miniDNS, …

- Updates between Client and Server:
  - Privately defined protocol -not standardized-, varying from one provider to another
  - Updates mostly via HTTP
  - A few web-based ones have emerged over time

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Our solution: Rationale

- Sketch operational guidelines of how to provide DDNS when IP address sharing is in use
  - The DDNS service MUST be able to maintain an alternative port number instead of the default port number.
  - Appropriate means to instantiate port mapping (PCP is recommended) in the address sharing device MUST be supported.
  - DDNS client MUST be triggered by the change of the external IP address and the port number

- Provide one implementation example
  - To **prove feasibility and to quantify the amount of required engineering effort**
  - Example implementation is based on web-based implementation
  - Since current practices themselves are_not _standardized, it's up to DDNS providers to decide their own implementation

Summary

- The I-D requires no changes to current protocols

- The I-D is rather an operational document

- It focuses on addressing problems for the third party DDNS service providers who use web-based form to do dynamic DNS updates

- DNS based updates may refer to [I-D.cheshire-dnsext-dns-sd] and [RFC6281]

For DDNS Operators

- Does your implementation support client service port (e.g. http server listening port when it is dynamic, not 80)

- What do you think of the http redirect function in DDNS system, from the perspectives of complexity, cost, etc.

Next steps

- Presented in PCP, the feedback is that "*This is important work, but not PCP-specific*". The PCP WG suggested we socialize this work in dnsop

- Is it in the scope of DNSOP?

- More review and comments are appreciated