

Using PCP to trigger updating dynamic DNS records

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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

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]

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