draft-ietf-homenet-hybrid-proxy-zeroconf-02

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History

- Jun 2013: personal hybrid-proxy-ospf-00
  - Documented first implementation which used OSPFv3 AC TLVs
  - 3 defined TLVs date back to this document, and fundamentally behave the same way
- Feb 2014: personal hybrid-proxy-zeroconf-00
  - Generalized to describe algorithm and desired TLV features, but removed concrete TLV definitions
- Jun 2014: personal hybrid-proxy-zeroconf-01
  - Refer to HNCP as an alternative to using a routing protocol, minor review fixes
  - HNCP document contains concrete TLV definitions at this point
- Jan 2015: personal hybrid-proxy-zeroconf-02
  - Added legacy browse bit to DDZ TLV, minor review fixes
- Mar 2015: WG item hybrid-proxy-zeroconf-00
- Oct 2015: WG item hybrid-proxy-zeroconf-02
  - Added limited zone stitching
Zone stitching
problem statement

• Current HNCP host naming scheme:
  
  • Client provides hostname via DHCP(v6) or mDNS
  
  • Router makes the hostname accessible via DNS as
    \(<\text{hostname}>.\langle\text{routerlink}\rangle.\langle\text{router}\rangle.\langle\text{domain}\rangle\>
  
  • Problems:
    
    • the \(\langle\text{routerlink}\rangle.\langle\text{router}\rangle.\langle\text{domain}\rangle\) is not 'friendly'
    
    • User may want to type just \(<\text{hostname}>.\langle\text{domain}\rangle\>
    
    • A number of people would argue having to type hostname=failure in service discovery.
Zone stitching (1/2)

1. AAAA printer.home?
2. A printer.l.r.home?
3. A printer.local?
Zone stitching (2/2)

6. AAAA printer.home=2001:db8::42

4. AAAA printer.local=2001:db8::42

5. AAAA printer.l.r.home=2001:db8::42
Zone stitching disclaimers

• As 1 DNS request multiplies to N to address the covered links, it will not scale to large networks
  • Correct solution there is to DNS update the records that matter to a single zone

• How to handle multiple results is unclear
  • Answer with first one?
  • Answer with all? (with some of the addresses pointing at different hosts..)

• Currently aimed at only A/AAAA records; the hybrid proxy draft aims to be more generic

• Still solves a real problem (mine): ssh <hostname>.home :)
Implementation status

- The draft is implemented and available as open source code
  - http://github.com/sbyx/hnetd/ for the HNCP TLV bits
  - https://github.com/sbyx/ohybridproxy
    - hybrid proxy binary 'ohybridproxy'
    - new 'zonestitcher' binary introduced in -02; integrated also with hnetd trunk version
  - OpenWrt instructions http://www.homewrt.org/
Questions?