homenet
name service design principles

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Name service design

- Trying to finalise the homenet architecture text; most sections are considered complete
  - draft-ietf-homenet-arch-04
- Thus need to establish consensus in the WG on the name service design principles
  - A lot of discussion on the mail list
  - A reasonable amount of agreement
  - But some aspects open/unresolved

Fundamentals

- Naming and service discovery must be supported throughout the homenet
- Homenet name service must not interfere with the Internet name service; must co-exist
- Must support unmanaged operation
- Must be considerate of bandwidth usage
- Strong bias for existing protocols/running code

Name space

- User perspective: I just want to (re)name devices presented to me by some GUI/search/view
  - May imply relative name resolution
  - Local name space may be hidden
  - Internet name space may come from/be delegated by ISP or 3rd party
- A device may have a name within the homenet name space and within the Internet name space
  - Issue is how names are presented to user
  - Or can they be the same name space?
  - What do users "bookmark" and use?

Independent operation

- Must consider independent operation of naming and service discovery
- So name resolution and service discovery for reachable devices must continue to function if the homenet is disconnected from its ISP
- Or if the homenet is restarted while external Internet connectivity is down
  - e.g. should still be able to view local media on TV
- Or if the homenet is being built
  - e.g. configuration testing during a new home build

Some security-related issues

- The "drive-by" .local problem
  - Do we need a ULA-like solution for .local?
    - .<UniqueString> rather than .<WellKnownString>?
    - Problematic given new ICANN TLD policy?
- Independent (secure) local trust anchor?
  - To be able to operate when disconnected
  - How does this fit with the self-configuring goal?
- Segmentation of the homenet name space?
  - For classes of devices, or between borders
- Split views of name space internally/externally?

Service discovery issues

- Devices will have a range of services available
  - Need to be able to register these or respond to requests from other devices in the homenet
- May have constrained devices
  - Can we expect them to use the same protocols?
  - Are proxies needed for sleeping devices?
- Remote service discovery
  - Querying homenet services externally from home domain, e.g. while user at work or travelling
  - Needs to be intuitive for the user

Other topics

- Devices should be able to generate unique names in the homenet
  - Including constrained devices
  - May be opaque if users don't use them directly
- Do we need to consider reverse lookups?
  - Are these required?
- Considering home devices that may use external "cloud" services/hosting
  - Will affect independent operation
  - Users may not be aware where services are hosted