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 homemnet
• 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