

# SIMPLE HOMENET NAMING ARCHITECTURE STATUS/DISCUSSION

---

*Ted Lemon  
Stuart Cheshire  
Daniel Migault*

# STATUS

---

- Stuart and I have been doing a lot of foundational work
- We've made a lot of progress
- The SHNA document has not been the scene of much of that progress
- The foundational work seems to have added clarity

## OVERALL ARCHITECTURE

---

- Document currently calls for an "advanced" architecture to be worked on
- The goal here was to address some of the omissions in the simple architecture
- I don't think that this is necessary anymore
- Why?
  - Current document is wishy-washy about a stateful authoritative server
  - I think we can clarify it in the direction of stateful in a way that doesn't require that all HNRs implement a stateful authoritative server
  - That scratches the itch I wanted to scratch with the advanced naming architecture

## WORK LEFT TO BE DONE: NAME AND AUTHORITY

---

- We say that configuring the "global name" is out of scope
- But later in the document we say homenets must support setting the "global name."
- I propose to resolve this by saying that the stateful authoritative function can be managed either by a homenet router or an off-network service
- Either service would be updated using DNSSD SRP
- Homenets that don't either provide or subscribe to this service just do DNSSD Discovery Proxy/Discovery Broker
- The only hard things here are specifying how this is socialized to the homenet using HNCP, which is a TODO

## MULTIPLE PROVISIONING DOMAINS

---

- We had a big discussion about this back when I was at my previous employer, and it was never captured in the document
- The issue was, how do we allow hosts that don't do MPvD to be effective on a homenet
- I think we had a solution, we need to reconstruct it
- Separately, we need to specify how MPvD is done for hosts that do it.
- We now have a draft, by Vyncke & co, which provides us with a way to advertise MPvDs
- We just need to write up how that is done; this will involve some HNCP fu and some per-link RA fu

## REVERSE MAPPINGS

---

- Do we care?
- Do we care about global?
- If we care about global, we need to specify how they are delegated
- Mark Andrews has a draft that specifies how this is done
- For local, we need to specify how it's done with Discovery Proxy and how it's done if we have stateful authority
- Or we can punt
- Thotz?

## LINK NAMING

---

- Discovery Proxy requires link names
- I'd previously thought we couldn't do anything understandable
- Now I think maybe we can: use the brand name of the router (with numbers, if there's more than one of the same type) plus the name of the port on the router (or WiFi).
- Which reminds me, we need to specify how WiFi SSIDs are selected
- So we should really think about how this works and just write something down. I don't think it's very hard.

## STATEFUL VERSUS STATELESS SERVICE DISCOVERY

---

- We now have a solid DNSSD Service Registration Protocol doc
- That means we know how to advertise SRP
- This just involves setting up some records in the local zone and saying that the local zone is "home.arpa" or whatever it is when it's not that.
- One slightly controversial point: I'm claiming that we use the domain search list in DHCPv4 or RA to specify this. This means only one domain name in the search list. What does the WG think about that?
- If we have no stateful service discovery, we just don't advertise it, and services fall back to using mDNS only.



## NAME RESOLUTION

---

- Names need to be resolved locally if they are in the local zone; otherwise they need to be sent off network
- We can't rely on standard DNS delegations to make this work, particularly with home.arpa
- So the local HNR resolver needs to bypass for local zones, and forward for others.
- We just need to specify in detail how to implement this—there's nothing hard about it.

## DNSSEC

---

- The current document both says that the authoritative service needs to sign using DNSSEC, and also punts on how to sign home.arpa
- I don't think we need to address this in this document, but we could, and someone on the list (Toke?) suggested it.
- I have a pretty good idea of how to do it (publish a well known name under home.arpa with a randomly generated ID for the homenet, and use that to disambiguate homenets; use ToFU for authority, and by the way the ID is the public key that would go in the DS record.
- Should we do this?

## NEXT STEPS

---

- Stephen proposed that we do a series of biweekly online meetings and just work through this work list
- I'm game. Are you?
- Did I miss anything? (You can answer on the mailing list if you're not sure)