New HNCP Work

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- HNRs publishing keys
- Link naming
- Elect HNR to do DNSSD Discovery Proxy per link
- Maintain the list of stateful authoritative servers (may be empty)
- Election of a stateful primary (if there are any stateful auth servers)
- Fix the IPv4 addressing fail (how?)

HNRs Publishing Keys

- Each HNR generates its own public/private key pair
- Publishes the public key using HNCP
- Now every HNR knows every other HNR's public key
- Can be used for mutual authentication
- Can be used for DNSSEC signing and validation

Link Naming

- Naming Architecture requires that each link have a name
- Links may be connected to multiple HNRs
- HNCP can be used to agree on link names, and also to change link names when the network topology changes
- Link names should be understandable in principle

Per-Link Discovery Proxy

- Each link has one or more HNRs connected to it
- Each link must have exactly one HNR providing Discovery Proxy service
- HNCP can do a per-link election when there is more than one router

List of Stateful Servers

- We need to be able to maintain a list of stateful authoritative servers
- HNRs are not required to implement stateful authority
- Therefore a list is required

Election of DNS Primary

- There Can Be Only One
- HNRs can come and go
- When the set of available stateful servers changes, elect a new primary
- Previous primary always wins if present
- New servers can never win unless there are no remaining secondaries

Fix IPv4 address fail

- Right now, internal IPv4 addressing goes away without warning if external IPv4 connectivity is lost

- This is very surprising behavior

- Possibly if service discovery and IPv6 routing is really stable, this is not an issue

- We need to decide how to address this, and then address it

- At the least, we need some hysteresis

Implementations

- There is nobody who both groks an HNCP implementation and has time to work on it
- We need either to get one or more of those people to spend time on it, or
- We need to put some effort into making an existing HNCP implementation more grokkable, or
- We need a new, grokkable HNCP implementation