

# Simple Stub Networks

**draft-ietf-snac-simple**

Ted Lemon <[elemo@apple.com](mailto:elemo@apple.com)>  
Jonathan Hui <[jonhui@google.com](mailto:jonhui@google.com)>

# Document Status

- Updated today based on reviews, most recently Darren's.
  - Darren's changes were partly editorial
  - Also some issues with terminology, e.g. "beacon"
- Not much work has been done since -00
- Introduction is in pretty good shape, except
  - We decided that snac-simple should include DHCPv6 PD
  - This means it supports bidirectional global reachability
  - The introduction still reads as if it does not
  - I've done a wordsmithing pass over that, which is not in the -02 document

# By section:

## Managing addressability on AIL

- seems pretty complete
  - However, the section on “usable prefix” doesn’t mention the stub router flag
  - This is discussed instead in STATE-ADVERTISING-USABLE
  - This should probably be clarified
  - A recent review comment also asked for a definition of “usable prefix” and perhaps that means we need to do more work here.
  - There is a note in a later section on choosing the stub-router-provided AIL prefix that needs to be resolved, and this should be mentioned in this section rather than in the other section. This has been discussed on the mailing list, and it seems like we might have a solution

# By section:

## Managing addressability on the stub network

- This section is pretty hand-wavey. It refers back to *managing addressability on infrastructure*, but doesn't talk about any difference.
- It seems like the handling of the usable prefix is necessarily different, if nothing else—on the stub network, we expect all prefixes advertised to be stub network prefixes. At present we don't do anything to try to make the prefix on the stub network stable when the stub router advertising it restarts.
- This is complicated on networks that can partition; simple on networks that cannot.
- Bottom line is that this section definitely needs work

# By section:

## Maintenance across stub router restarts Generating a ULA to provide reachability

- As mentioned previously, these sections are a bit thin, and also perhaps should precede the previous two sections I've mentioned, since you have to generate a ULA prefix to advertise it.
- For Thread, the AIL is generated using the xpanid, so it's stable and doesn't need to be remembered (but this can be problematic if there are two stub networks on the same AIL)
- For non-thread, we have talked about using e.g. the WiFi SSID. But also for non-thread, is the multiple-stub-router setup going to be commonplace? If not, perhaps we don't need to solve this problem.
- Stable ULA on Thread—currently we don't specify a way to do this, and the text about remembering previous ULAs advertised is problematic. At present, when a Thread BR that is advertising the OSNR prefix reboots, the thread network is renumbered. Can we do better?

# By section:

## Using DHCPv6 Prefix Delegation to acquire a prefix to provide addressability

- Needs a state machine to be specified (we have two examples we can use)
- We don't talk about how to keep the OSNR prefix stable when using DHCPv6. Currently this is an unsolved problem —Thread BRs each use their own IAID to get the prefix, so if a stub router advertising the OSNR prefix via DHCPv6 goes down and another takes over, it will provide a different prefix.
- If we come up with a way to agree on prefixes on the stub network, perhaps we can use the same mechanism to agree on an IAID?

## By section:

Managing reachability on the adjacent infrastructure link

Managing reachability on the stub network

- These sections seem pretty good.
- One issue is that we don't have an explicit section on when to send RAs on infrastructure and stub network links
- If we are providing the ALL on-link prefix, this is no problem, but if we are not, we don't currently talk about what to do
- Similarly, only one stub router will be providing the OSNR prefix in the current spec, but we say that all stub routers will advertise routes to ALL and possibly to the internet.
- So I think we need a bit more detail about this

# By section:

## Providing discoverability between stub network links and infrastructure network links

- I think this section needs to be more prescriptive
- Currently we just mention some RFCs that have to be implemented but don't talk about what that looks like
- This should be mostly straightforward, except
  - How do we advertise the availability of a discovery proxy on the AIL (or do we?)
  - How do we advertise SRP on the stub network?
  - Exactly what does the DNS resolver do on the stub network?
- These aren't hard questions, but we must provide answers.

# By section:

## Providing reachability to IPv4 services to the stub network

- The first section here reads more like a problem statement than a specification
  - Can we tighten it up?
  - In particular, we need to decide if one, or more than one, stub router provides NAT64 when infrastructure does not
  - I think the answer is that only one does
  - We also don't specify how this is advertised. I think PREF64
  - We currently require DNS64. Thread made the opposite choice. Who is right?
  -

# By section:

## Handling partitioning events on a stub network

- This section is a bit redundant in the sense that our algorithm for maintaining the OSNR prefix on the stub network will do what is specified here already.
- We should remove the redundant text and point back to the relevant section on maintaining the OSNR prefix

# Next Steps

- Get feedback from WG on whether the work described in these slides is the right work to do
- Adjust the to-do list as necessary (these slides can be the initial to-do list)
- Do everything we agree needs done
- Last call?