SNAC-simple: Selection of DHCPv6-PD prefix

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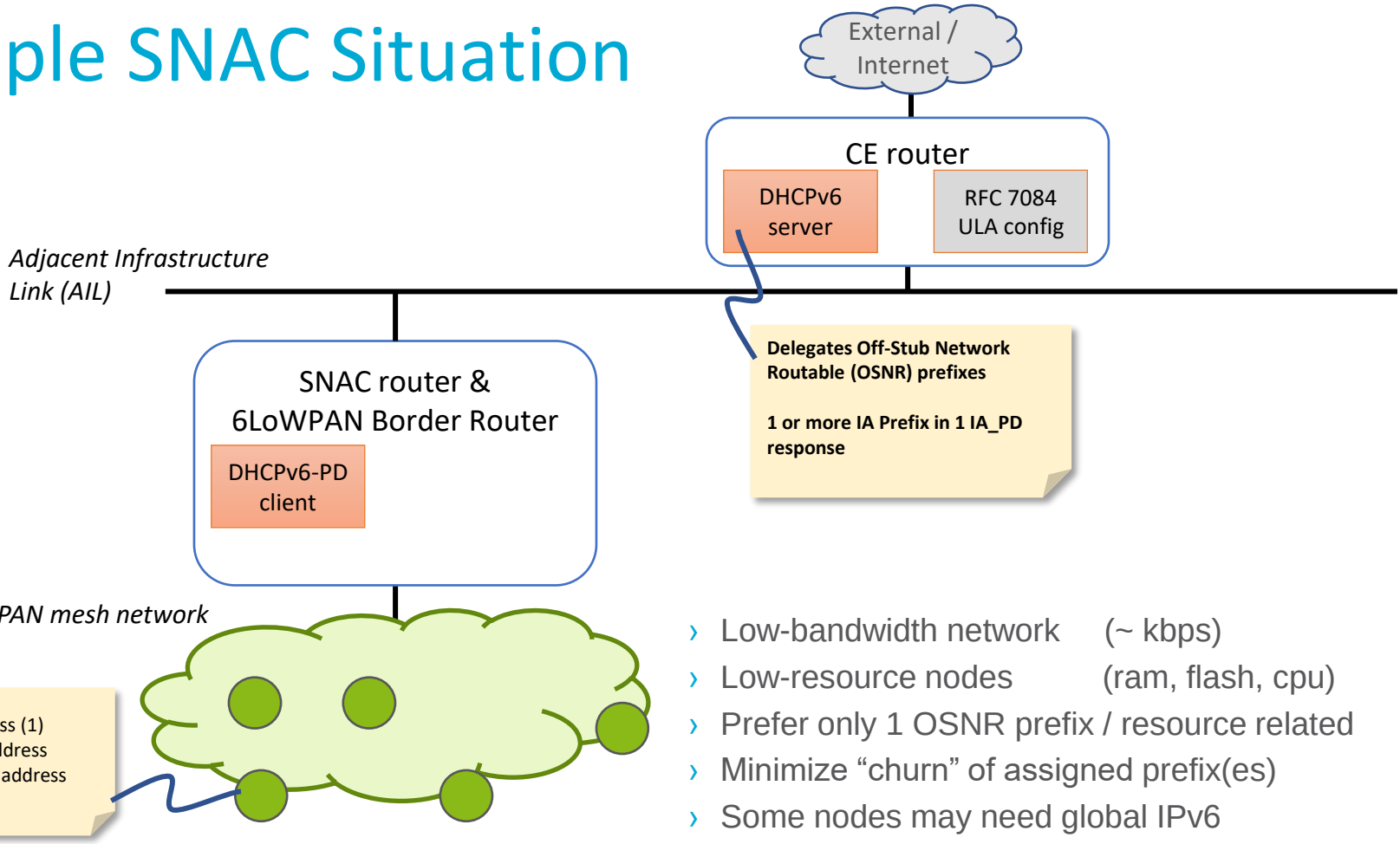
GitHub

Example SNAC Situation



- Low-bandwidth network (~ kbps)
- Low-resource nodes (ram, flash, cpu)
- Prefer only 1 OSNR prefix / resource related
- Minimize “churn” of assigned prefix(es)
- Some nodes may need global IPv6

Different kinds of delegated prefixes

- Global IPv6 prefix
  - Allows global connectivity (for nodes that need it)
  - May change over time, e.g. ISP change, broken upstream link, renumbering

- ULA IPv6 prefix
  - Only local connectivity (sufficient for some nodes)
  - Provided by CE router per RFC 7084
  - Stable over time

Both kinds may be delegated by a DHCPv6 server.

Different kinds of stub networks

In a simple binary view we may have 4 cases:

- Low-bandwidth vs High-bandwidth network
- Low-resource vs High-resource nodes

Stub technology choice can lead to different preferences for a stub router, what to configure on-stub:

- ≤ 1 OSNR prefix
- ≤ 2 OSNR prefixes
- …
- “all available” OSNR prefixes

This suggests a SNAC router “profile” depending on the link technology of the stub. We may also leave selection to the profile?

What to specify?

- “If DHCPv6 prefix delegation and IPv6 service are both available on the infrastructure link, then the SNAC router MUST attempt to acquire **a prefix** using DHCPv6 prefix delegation.”

- Do we require at least 1 prefix?

- Specify selection criteria for prefix(es) from IA Prefix Option?
  - ULA vs Global
  - Prefix length (/64 vs shorter. Longer than /64 are ignored?)
  - Preferred / Valid Lifetimes (more is better?)
  - Status Code Option in IA Prefix Option ? Other options?

- Related GitHub issue: #99

Thank You!

Comments or Questions?

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