

Homenet Architecture Discussion

March 28, 2012

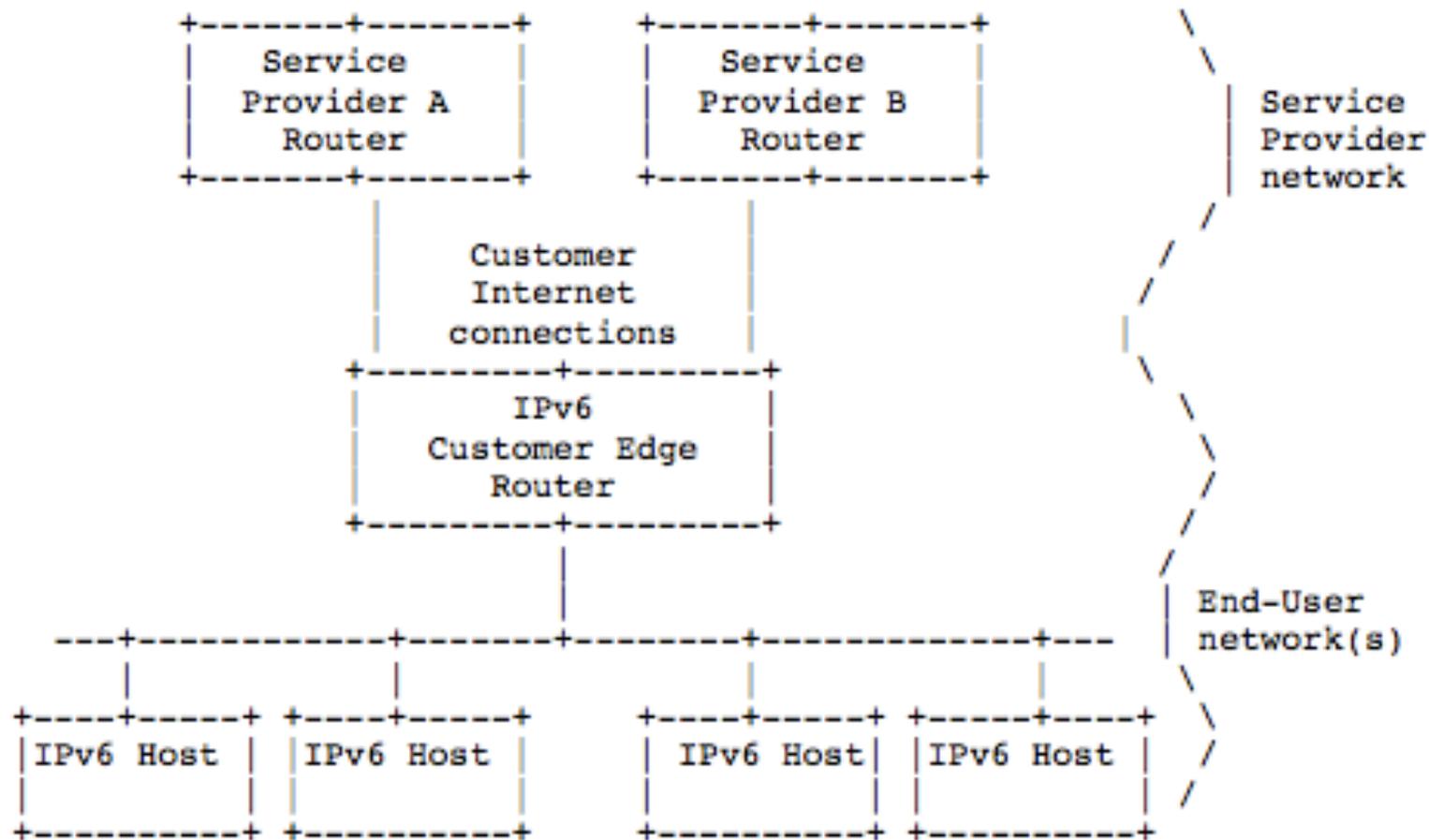
Issue Tracker #1: Multihoming Support

Current:

MH2) “Single CER Network Model C is in scope, and may be solved by source routing at the CER.”

- Single CER single or multi-homed
- Tree Topology – Loop-free
- Eliminates immediate need for Advanced host address selection functionality

Issue Tracker #1: Multihoming Support



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Current:

MH1) “The Homenet WG should not try to make another attempt at solving complex multihoming; we should prefer to support scenarios for which solutions exist today.”

Also:

MH7 – Source address selection with ingress filtering

MH8 – Baker-fun-multi-router – currently out of scope

RT11 – Source Routing in Single CER Model – current focus

RT12 – Routing support for source and destination in scope

Issue Tracker #1: Multihoming Support

Comments on List:

2 comments for Multiple CER with Single Uplinks in addition to Model C.

Discussion:

Is the single CER model ok to begin or should we proceed with multi CER in parallel?

Topic #4: Prefix Delegation

Current:

PD3) Delegation should be autonomous, and not assume a flat or hierarchical model.

PD9-12) Persistent Prefix should be maintained across reboots

Discussion Topics:

Option 1: Hierarchical

Option 2: Non-Hierarchical

Option 3: Extended Routing Protocol

Issue Tracker #6: Support for Arbitrary Topologies

Current:

Support for Arbitrary Topologies

Comments on List:

Yes but within pragmatic limits

“...focus first and foremost on topologies that have redeeming value.” – Barbara Stark

Issue Tracker #7: Defining Home, Guest and Internet Borders

How do we discover the Homenet borders?

A solution is imperative to moving ahead in multiple areas

Many solutions proposed including:

- DHC
- Link-type
- RA

Issue Tracker #4: ULA Functionality

Current:

CN1) The Homenet should utilize ULAs to provide stable addressing in the event of there being no global prefix available or changes in the global prefix.

Support (not enablement) required in 6204/6204bis

Source/Destination address selection being updated in RFC3484bis

Issue Tracker #5: Support for “Flash” Renumbering

PD13) “flash” renumbering using delegated ULA prefix for persistency through a renumbering event

AD3) “flash” renumbering application and service resiliency

List Comment:

Similar to an power loss of the home – all devices reboot that are not battery powered – B. Carpenter

Issue Tracker #4: ULA Functionality

LLN Use case for Multiple ULA Prefixes:

- Discrete LLN ULAs configured by LLN BRs
- LLN BRs prefer to distribute LLN ULAs into the Homenet routing domain for reachability
- LLN ULAs do not overlap the Homenet ULA, just require reachability across the Homenet Routing domain

Issue Tracker #4: ULA Functionality

Current:

PD8) Where ULAs are used, most likely but not necessarily in parallel with global prefixes, one router will need to be elected to offer ULA prefixes for the homenet. The router should generate a /48 ULA for the site, and then delegate /64's from that ULA prefix to subnets.

Challenges:

Source address selection (RFC3484/3484bis)

RFC6296 – NPTv6 – Prefix Limitations

Issue Tracker #4: ULA Functionality

Topics for Discussion:

1. Should a single ULA /48 prefix represent the entire Homenet or should we incorporate multiple overlapping and/or discreet ULA /48s?
2. Does stability imply a NO for RFC4941 Privacy Extensions or another options (draft-gont-6man-stable-privacy-addresses) for ULA space?