

HIPnet, an Incremental Approach

draft-grundemann-hipnet-00
draft-jvkjjmb-home-networking-incremental-00

IETF 87

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draft-gundemann-hipnet

Overview (1/2)

- Provide view of interim steps to achieve advanced home networking support
- Rationale includes:
 - Requirement to provide interim solutions to meet market needs
 - Allow operators to meet time critical deployment of multi-segment homes
- Incremental to current basic 6204/6204bis operation

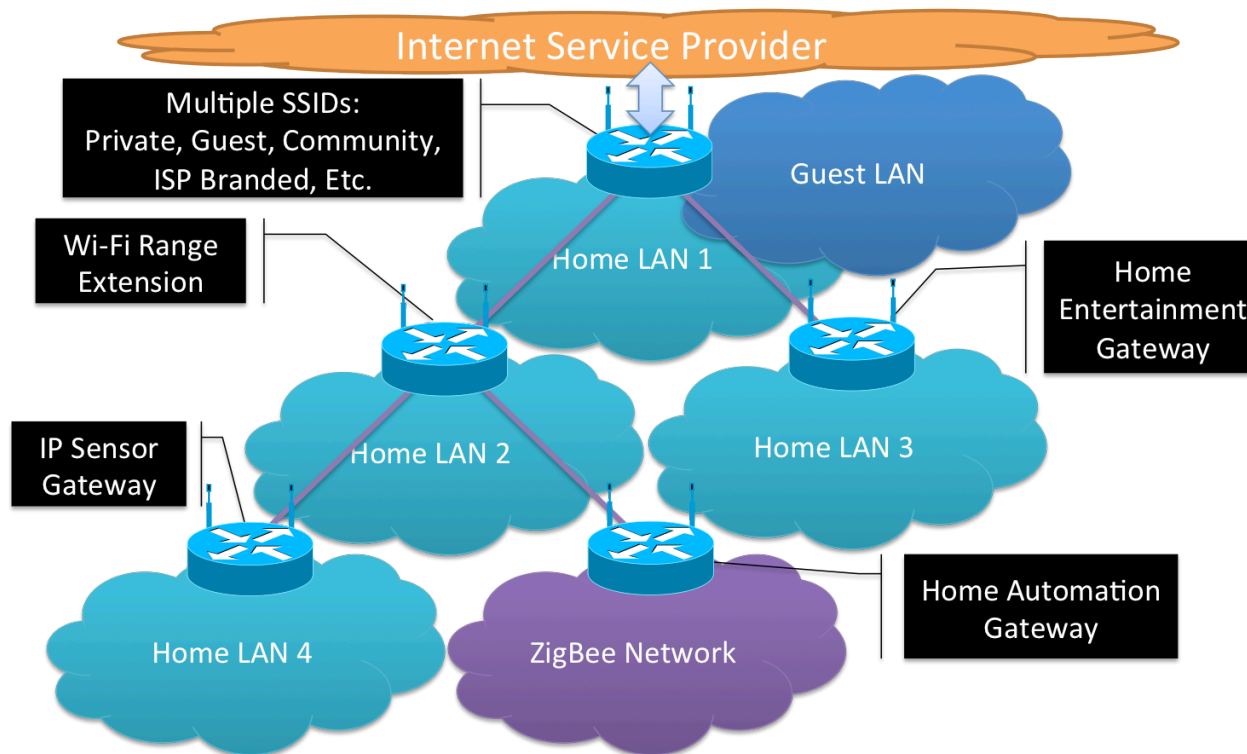
Overview (2/2)

- Self-Organizing: Directionless Routers
- Addressing: Recursive Prefix Delegation
- Routing: Hierarchical Routing
- Bonus: Multiple Address Family Support

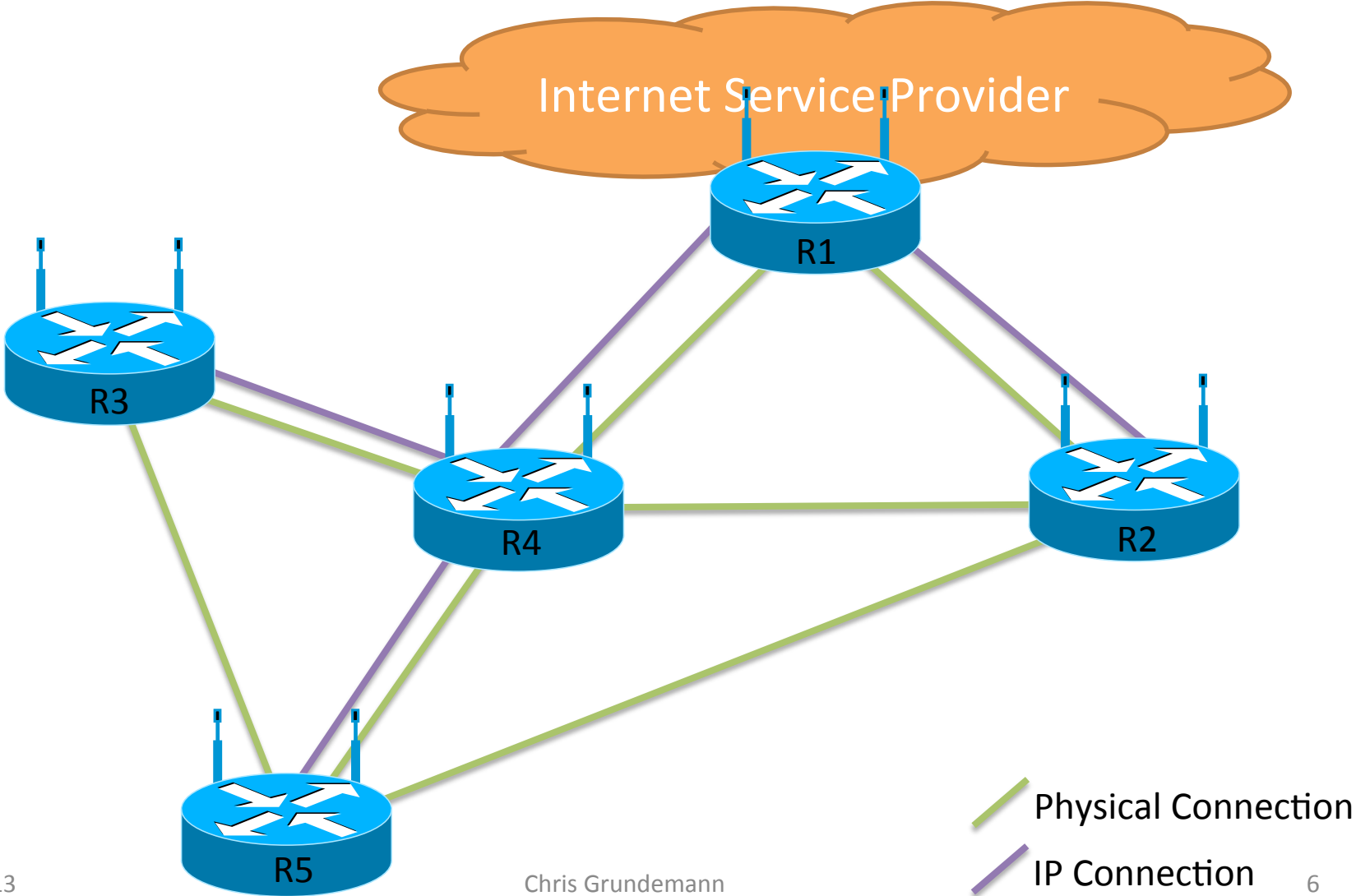
- Prototype demonstrated at IETF 86!

Future Home Network Structure

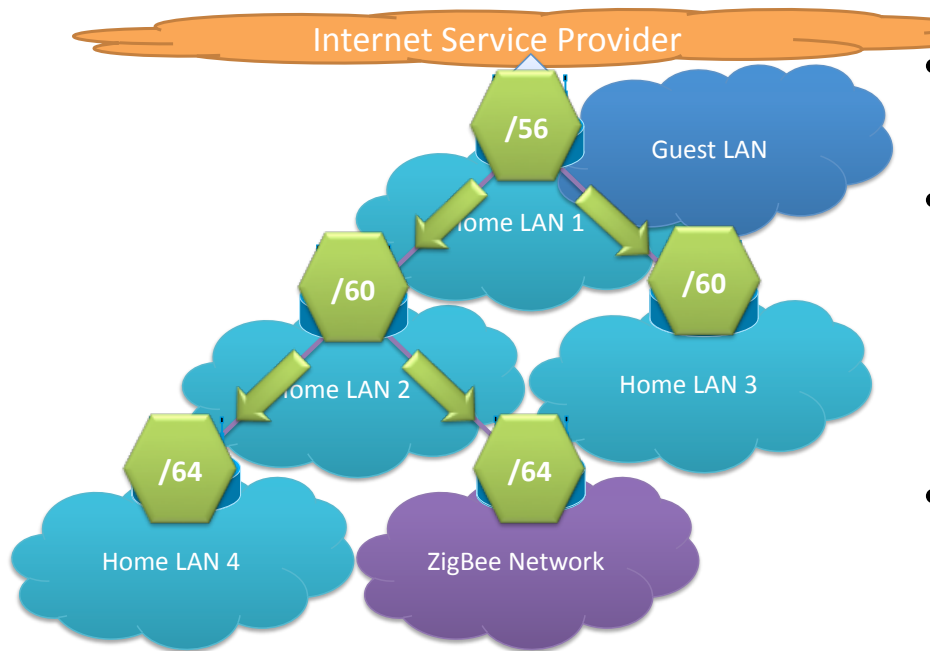
- Many drivers for increased complexity in home networks
- Implications for operators include increased service calls and lower predictability



HIPnet Creates a Logical Hierarchy from a Physically Arbitrary Network

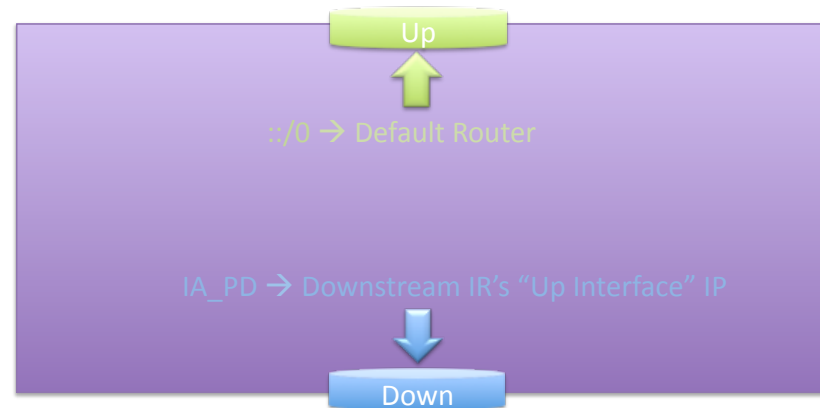


Recursive PD & Hierarchical Routing

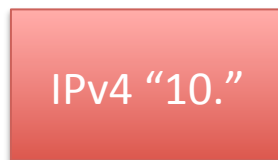
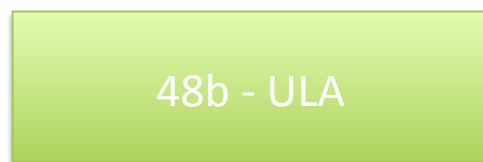


- Based on DHCPv6 prefix delegation
 - [RFC3633](#)
- Inspired by a “Simple Approach to Prefix Distribution in Basic Home Networks”
 - [draft-chakrabarti-homenet-prefix-alloc](#)
- HIPnet router receives prefix in IA_PD, breaks it up, and hands it out
 - lowest block for interfaces
 - hand out highest block first

- Fit PD to width and depth of network
 - Provide greatest flexibility
- Algorithmically selected bit-boundary
 - Physical port count as width proxy



Multiple Address Family Support: Link ID



Basic Multi-homing

- Special purpose IP connection
 - IP video, etc.
- Backup connection
 - active/standby
- “True” multi-homing
 - active/active (limited)

draft-jvkjjmb-home-networking- incremental

Overview

- Document a phased approach to full HOMENET functionality
- Rationale includes:
 - requirement to provide interim solutions to meet market needs
 - Path to allow appropriate time to develop and mature HOMENET functions
- Objective is to document steps, not transition components (that is for other documents)

Structure

- Background on home network evolution (past, present and future)
- Document Network Phases including:
 - Elementary Network (6204/6204bis) now
 - Medius Network (HIPnet/HIPnet like) near
 - Provectus Network (Routing protocols) future
 - Posterus Network (prefix assignment via RP) future
- Process has begun (by virtue of 6204/6204bis)

Feedback and comments

- Feedback covered in HOMENET review
 - Design team chartered to focus on transition
- High level points as comments
 - Identify progressive steps
 - Allow for progression of technological capabilities
 - Functionality before efficiency
 - Meet more immediate needs of operators and allow for future progress

Discussion