OSPFv3-Based Home Networking – Report
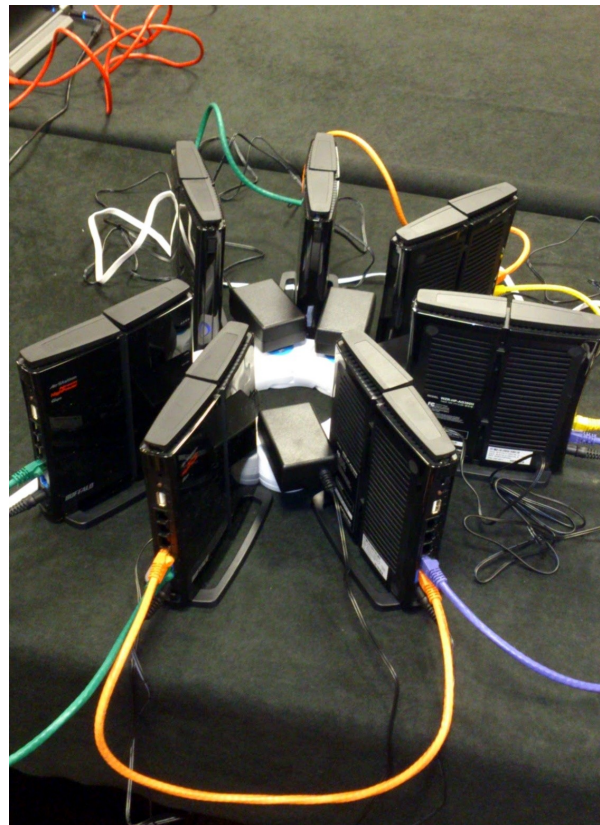
Jari Arkko, Ericsson

Markus Stenberg, TMS/Cisco

Based on draft-ietf-ospf-ospfv3-autoconfig-00.txt and draft-arkko-homenet-prefix-assignment-03.txt

(Arkko – Lindem - Paterson)

ERICSSON

Outline

- Draft updates
- Implementation & interop report
- Things to consider

Draft Updates

Draft-ietf-ospf-ospfv3-autoconfig-00

- WG draft
- Wait timer reduction from 40s to 11s

Draft-arkko-homenet-prefix-assignment-03

- Requirement for either discovering DNS servers or providing a default server
  - Ensures that all hosts can resolve DNS names
- Renamed the Usable Prefix TLV (will revert this)

Implementation Report

There are now three implementations!

    – Including advanced features, such as DNS discovery, ULA-generation, source-based routing, and so on

Interop Report

- We have been testing our implementations here this week
  - Much of this is still getting the implementations to do the right thing on their own
  - But on complex setups, such as with 8 routers, 2 exit routers, and a number of hosts
  - And running quite advanced functionality
- There was also some interoperability testing
- Testing space organized by IPSO Alliance – thank you IPSO and Geoff Mulligan!

Interop Observations

- The system works!
- The protocols overall seem to be OK
- Partial interoperability success so far, and hoping for more complete success by Friday
- Brittle timer defaults found to be problematic
- Many implementation issues, byte-order, etc.
- OSPF prefix compression rule from RFC 2328 found to be unclear
- Eager or lazy use of multiple available prefixes?

Interop Observations 2

- The routing daemon becomes connected to many other things – DHCP, RAs, DNS, …
  - Increases complexity
  - Implementation choices include being integrated, started via routing daemon, IPC interfaces, ...
- Many commonly available components are not so well suited to be included in the above (too integrated, too big, missing some functionality)
- Some issues in other components: RADVD defaults, RADNS option support in clients, ...

Things to Consider – Draft Details

- The autoconfig draft in OSPF WG is actually incorrect with respect to the statement about RouterDeadInterval – it **does** appear in hello packets

Things to Consider – Brittle Timer Defaults

- OSPF RFCs give sample values *(HI=10s, RDI=40)*
- The autoconfig draft says these MUST be used
  - Unfortunately, implementations have (a) widely varying default values *(9..20s, 40..120s)* and (b) are universally picky with deviation
  - As a result, autoconfiguration fails
- Wait for implementations to heed to the draft?
- Or support dynamically agreed values?
  - One implementation adjusts itself to slightly different values