

# Multilink Subnets

draft-thaler-ipngwg-multilink-subnets-01.txt

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# Interim Meeting Summary

- Presented –00
- Agreed on concepts, motivations
  - A “multilink subnet” is when you have an address prefix which spans multiple links, but is routed between them at layer three.
- Two models for host view work without changing hosts
  - Onlink: hosts use NSs, routers send proxy NAs for offlink nodes
  - Offlink: hosts use default routers, routers send redirects for onlink nodes
- Presented several possibilities for router behavior, many open issues

# Router Scenarios Issues

- Simple scenarios are simple, complex scenarios are complex
  - Should the first spec limit itself to simple scenarios? (Complex behavior could take a long time)
  - Is it complex to tell the difference?
  - What's the best way to solve complex scenarios?

# Related questions

- How do you handle simultaneous DAD for the same address by nodes on different links?
- How do you tell the difference between a duplicate and a node moving to a different link?

# Main changes since -00

- Attempt to classify “simple” vs “complex” scenarios, to evaluate solutions
  - Class 1 = single multilink subnet router
  - Class 2 = tree topology
  - Class 3 = arbitrary topology
    - Better(?) classification shortly...
- Moved discussion of router-router coordination possibilities to appendix
- Various wording clarifications

# “Simple” Scenario (Part 1/2)

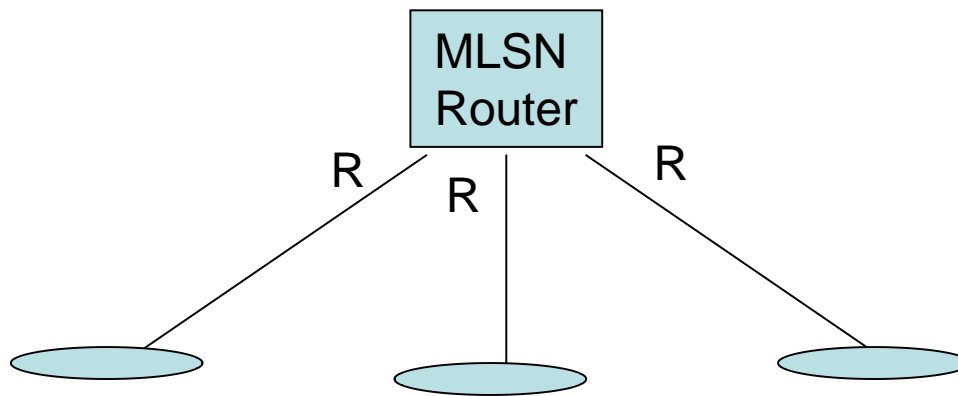
- MLSN router has 0 or 1 (or more?) “proxy” interfaces, and 1 or more “router” interfaces
  - Same scenario as a NAT
  - Same scenario as an IGMP/MLD Proxy
- Does not run any routing protocol
  - Does not support “transit”
  - But does act as an MLD Proxy
- Does simple NS/NA proxying

# “Simple” Scenario (Part 2/2)

- On proxy interfaces:
  - Acts like a host with lots of addresses
- On router interfaces:
  - Acts like the (only) default router
  - If it sees an RA from another router, something is broken so stop acting as router on this interface (either it’s not a simple scenario, or else it was the wrong interface type)
- MAY(?): auto-configure which interfaces are proxy vs router, based on hearing other RA’s?

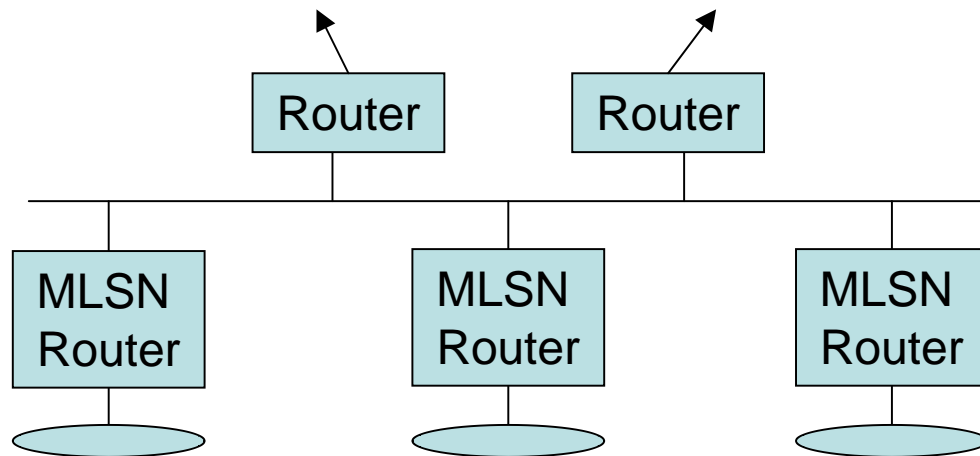
# Some “Simple” Scenarios (1/3)

- Single router connecting multiple links in an isolated network
  - All interfaces are router-mode interfaces



# Some “Simple” Scenarios (2/3)

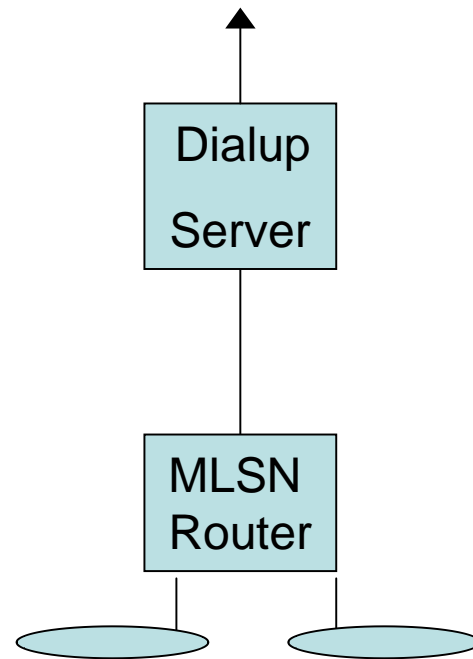
- Multiple MLSN routers on a shared LAN with uplink router(s), with each MLSN router having 1+ internal links
  - Proxy-mode on shared LAN
  - Router-mode in private links



(NOT TO SCALE)

# Some “Simple” Scenarios (3/3)

- Internal links sharing same prefix as a dialup link



# “Complex” Scenario

- MLSN router co-exists with others in an arbitrary topology
- Must use some router-router coordination mechanism
  - Routing protocols or complex proxying rules
- Can co-exist with “simple” MLSN routers
  - Complex box sees simple box as a normal host
  - Simple box sees complex box as a normal router

# Proposal

- Main draft should provide framework for both simple and complex, but only specify behavior of a simple box
  - Can hopefully get this done quickly
  - Ask that this be a WG document
- Continue work on complex behavior in a separate draft

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