MIF DHCPv6 Route Options Post WGLC Summary
draft-ietf-mif-dhcpv6-route-option-03

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-03 changes

- IA_RD option removed (was just a container)
- Route lifetime added
  - Does not govern renewal, this is done in the usual DHCPv6 way (info-refresh time option)

    info-refresh time option < route lifetime
  - Up to 2^{32}-2 seconds, 0xffffffff means infinity
- Clarified about default route configuration
  - NEXT_HOP (addr) + RTOPTION (prefix, len, route lifetime, metric)
  - NEXT_HOP (addr) – this is for bandwidth limited networks only
- SHOULD NOT be used in dynamic routing environment
  - Resolves Routing Directorate concerns

WGLC in MIF

- WGLC in MIF completed
- Also requested for review in 6MAN and DHC
- Questions/comments received:
  - Separate option for default route?
  - Source routing?
  - Implementations?
  - Prefix format
  - RA vs DHCP preference
    - Proposed conflict resolution raised major concerns

Questions/Comments

- Why not provide source routing information?
  - That's a different problem. May define option for that later if needed.
- Separate option for default route?
  - No, one option type for all routes is enough.
  - Please don't ask again.
- MAC/link-layer address info?
  - No, not needed (redundant with ND), even harmful (operational concerns).
- Prefix format changed:
  - Fixed length (16) => variable length

Implementations

- "rough consensus and working code"
- Two independent implementations available
- ISC DHCP 4.2.3 (open source, BSD)
  http://www.isc.org/community/blog/201111/routing-configuration-over-dhcpv6
- Dibbler 0.8.1RC1 (open source, GPL)
  http://klub.com.pl/dhcpv6/
- Nominum
  - Ted Lemon confirmed that custom options can be configured
- ISC and Dibbler tested and are *interoperable*.

DHCPv6 vs RA: Conflict resolution (old)

- Proposal mentioned during WGLC:
  - In case of conflict (i.e. the same prefix reachable via different router) what should node choose?
- choose DHCPv6 over RA, choose secure

DHCP	RA	DHCP
DHCP	RA(SEND)	RA
Secure DHCP	RA	DHCP
Secure DHCP	RA(SEND)	DHCP

Reasons:

- RA specify info for all hosts, DHCP is per host basis
- "Default" configuration (RA) can be overridden (DHCPv6) for selected hosts (or a class of hosts)
- DHCPv6 offers security
- Similar to DNS servers problem, adopting the same approach (but favor secure DHCP)

Post MIF comments

- Route options duplicate RA, so it more than doubles testing.
  - No obligation to support this.
- Syntax and semantics are different to RA. Keep it similar.
  - Agree. Will update option format.
- Conflict resolution: DHCPv6 route option should merge in with other data.
  - Agree. Will merge other routing info. We will get equal treating and the ability to override with DHCP using preference
- Who actually needs this and why?
  - Roberta:http://www.ietf.org/mail-archive/web/mif/current/msg01412.html
  - Ralph, Thomas:http://www.ietf.org/proceedings/74/slides/intarea-4.pdf
  - Involved folks from Cisco, Nokia, Huawei, ISC and many more
  - TODO: expand section with use cases and motivations.

ISC

Next steps (1)

- WGLC seems to be concluded, except:
  - RA vs DHCP conflict resolution: merge not override
  - Syntax similar to RA
  - Expand motivation and use cases sections
- Presenting results in MIF and DHC WGs
- Will publish -04 with ~~small~~ significant changes
- Authors believe -04 draft will be ready for ~~IESG~~ Homenet review.
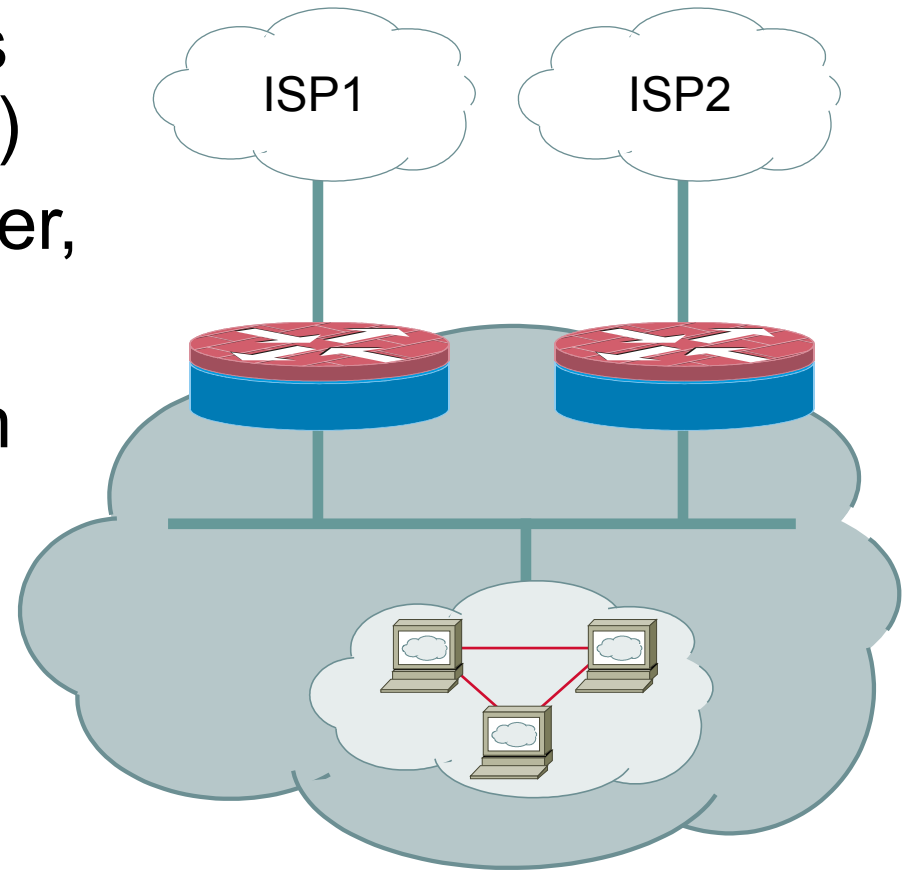- Talk with Homenet revealed bigger problem...

Next steps (2)

Solve this:

- 2 DHCP servers with separate parameter sets (addrs, prefixes, options)
- Client chooses one server, gets parameters
- Chosen CPE goes down
- …

Solution:

Introduce mode where client gets uses *all* advertises. Big change for clients.

ISP1

ISP2

Thank you

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