

# Controlling address configuration

Ralph Droms

Alain Durand

# Problem Background

- IPv6 addresses can come from:
  - Routers in RA
  - DHCPv6 servers
  - Privacy extensions (RFC3041)
  - Local info
- Questions:
  - How to combine them on the host?
    - It is assumed that hosts can do any combination
  - How can an ISP/IT department **tell** hosts which source of information it wants them to use?
  - How can an ISP/IT department **enforce** which source of information it wants hosts to use?

# Enforcement Issues

- RA can advertise M/O bit not set and the host can try DHCP anyway
  - Easy to enforce, the DHCP server just does not answer
- RA can advertise a prefix with the A bit not set but the client can go ahead and do stateless address autoconf with that prefix anyway
  - Enforcement requires filtering
- If router wants to enforce DHCP, it has to know all the IPv6 address allocation and filter out everything else

# What does config information coming from the router means?

- Is it mandatory?
- Or indicative?
- If mandatory, you still need to 'trust but verify'
- Hosts do whatever they want anyway
  - Maybe they do not trust the router so much...
- Seems to imply that the bits can only be indicative...

# What does the “A” bit off mean?

- No stateless autoconf?
- No stateless autoconf including no RFC3041 type addresses (privacy extensions)?
- Router wants to enforce that devices do not come up with their own address but use either DHCP or centrally assigned addresses or centrally assigned IID + local prefix?

# Original Question

- Suppose the nodes on a link are to be restricted to the use of addresses assigned through DHCP, and precluded from the use of autonomous address-configuration.
- It seems there are two ways to accomplish this goal:
  - 1) Don't include any prefixes in router advertisements
  - 2) Include the prefixes assigned to the link in router advertisements, with the A (autonomous address-configuration) flag set to FALSE
- There may be a subtle problem with (2): the text in RFC 2462 does not include RFC 2119 words absolutely precluding the use of autonomous address-configuration:

“a) If the Autonomous flag is not set, silently ignore the Prefix Information option.”

Note the lack of "MUST" before "silently ignore".