

# Improving the Reaction of IPv6 SLAAC to Flash Renumbering Events

(draft-gont-6man-slaac-renum)

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# Protocol-based Mitigations

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- Signaling
  - Router continues operation
    - aware of stale information vs.
    - unaware of stale information
  - Router disappears
- Implementation – what needs to be updated?
  - Host side vs.
  - Router side
- We pursue improvements in all areas
- But it is key that hosts can recover from common scenarios even with “legacy” routers → **host smarts are good!**

# More Appropriate Lifetimes

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- **Current PIO lifetimes**
  - Preferred Lifetime: **7 days (!)**
  - Valid Lifetime: **1 month (!)**
- **Proposal: Reduce default Lifetimes at routers:**
  - Default PIO Preferred Lifetime: Router Lifetime
  - Default PIO Valid Lifetime:  $N * \text{Router Lifetime}$
- **Proposal: cap received Lifetimes at hosts:**
  - Preferred Lifetime: Router Lifetime
  - Valid Lifetime:  $N * \text{Router Lifetime}$
- **Even if router disappears, hosts recover in a timelier manner**

# Honor Small PIO Valid Lifetimes

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- RFC4861 (Sec. 5.5.3, item e) **prevents** reducing Valid Lifetime < 2 hs
  - Considered an attack vector?
- **Attackers have a zillion other vectors!**
  - Spoof RA with Lifetime == 0 (disable router)
  - etc., etc., etc.
- You do first hop security, or you don't
  - RA-Guard, ND Inspection, etc.
- **Proposal: honor all PIO Valid Lifetime values**
  - If router is aware of situation, it can signal it and avoid the problem

# Infer Stale Information

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- Router ceases advertising a previous prefix, and starts advertising a new one → **stale information!**
  - Two possible algorithms (implementation details)
- If RA contains GUA PIOs, but not the previous GUA PIO:
  - Reduce PL= ~5 seconds, VL: 100's seconds **for missing GUA prefix**
- If RA contains ULA PIOs, but not previous ULA PIO:
  - Reduce PL= ~5 seconds, VL: 100's seconds **for missing ULA prefix**
- If multiple routers announced prefix → just disassociate with router
- **Addresses only deprecated if there's another prefix of same type**

# Your input is welcome

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- Join the IETF 6man wg
  - <https://datatracker.ietf.org/wg/6man/about/>
- e-mail us at:
  - [draft-gont-6man-slaac-renum@ietf.org](mailto:draft-gont-6man-slaac-renum@ietf.org)

# Questions?