Reaction of Stateless Address Autoconfiguration (SLAAC) to Flash-Renumbering Events

draft-gont-v6ops-slaac-renum

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Problem statement

- A number of real-world scenarios make hosts face flash-renumbering events

  - i.e., suddenly, an existing prefix becomes invalid, and a new valid prefix is introduced

- Result:

  - Hosts end up with stale network configuration information (addresses, routes)

  - Connectivity with new owner of prefix is not possible

  - IPv6 connectivity will likely fail

  - In dual-stack scenarios, it may mean more IPv4 traffic

    - Due to Happy Eyeballs

Some troublesome scenarios

- A switch-port is moved to a different VLAN

  - e.g. manual reconfiguration or 802.1x re-authentication

- During planned renumbering, RAs that would invalidate a prefix are lost

  - e.g., network was partitioned and RAs got lost

- Flash renumbering caused by manual reconfiguration of the network

  - e.g. just change daemon configuration and restart

- CPE router gets different prefix upon crash & reboot

  - 37% of surveyed ISPs employ dynamic prefixes [UK-NOF]

  - Many (most?) CPE routers don't record delegated prefixes on stable storage

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- **Analyzes and documents the problem**

- **Describes operational mitigations**

  - Stable prefixes (applies to **some** scenarios)

  - Employ more sensible PIO lifetimes

- Points to possible future work

  - Recommendations for CPE routers

  - Improvements to SLAAC (Standards Track work)

Moving forward

- Adopt document as v6ops wg item?