Operational Experience in IPv6 Network Renumbering

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Jerome Durand, Renater

Bartek Gajda, PSNC

Ralph Droms, Cisco

A Little History…

- **IPv6 design goals include (RFC 1726):**

  Scale – including size of core routing tables

  Ease of changing the topology of the network within a particular routing domain

  Ease of changing network provider

- **Corollaries include:**

  Provider-based addressing

  Network renumbering to change network provider, merge networks, change network topology

IPv6 and network renumbering

- **Design features accommodate renumbering:**

    Autonomous address autoconfiguration (RFC 2462)

    Router renumbering protocol (RFC 2894)

    A6 RRs (deprecated)

- **Baker, Droms and Lear have documented renumbering procedure (RFC <TBD>)**

- **What happens in practice?**

Project sponsorship and goal

- **Project jointly sponsored by Cisco and 6NET to conduct experiments in IPv6 network renumbering**

- **Goals:**

✓ *Gain practical experience with IPv6 network renumbering*

✓ *Verify and revisit the procedures specified by Baker, Lear and Droms*

✓ *Identify potential requirements of additional mechanisms and protocols*

✓ *Build knowledge base for Cisco and 6NET in IPv6 network renumbering*

✓ *Suggest tools and technologies that aid in the renumbering process*

✓ *Identify links to other IPv6 networking fields and apply results*

Project Output

- **Documents:**

    D.A1 - "Results from and Documentation of Experiments"

    D.A2 - "Recommendations"

    D.A3 - "Problems with Two Prefixes on a Single Link"

    D.B1 - "Scoping of Problem and Previous Experiences"

    D.B2 - "Results and Recommendations for Future Work"

- `draft-chown-v6ops-renumber-thinkabout-03`

Project summary and agenda

- **JOIN/Univ. Muenster, Thorsten Kuefer – prior art and tools, backbone renumbering and BGP issues, SOHO renumbering**

- **Univ. Southampton , Tim Chown – enterprise experiments and recommendations**

- **Renater , Jerome Durand – router renumbering protocol**

- **PSNC, Bartek Gajda– impact of renumbering on management tools**

- **INRIA-LORIA, Frederic Beck (Gajda, Durand) – maintaining management plane during renumbering, monitoring renumbering**

- **Ralph Droms – next steps, WG discussion**