Managing Router Identifiers during IPv4 Sunset

draft-fan-sunset4-router-id-00

Peng Fan (China Mobile)

Background

Router ID

- Specified in many IETF protocols

- Traditionally designed to be a 32-bit number

- Unique, but actual value not relevant

What do we do in an IPv4 network

- Tie the router ID with an IPv4 address on the router

- Benefits include:

  – Human-readable

  – Auto-configured, no manual planning

  – Help with troubleshooting

Problems in an IPv6 Only Network

- No IPv4 address to number a router ID

- No direct way to get the router IDs

- No convenience of tying router ID with IP address

Possible Solutions

Generation of router ID

- Manually planned, with some hierarchy or design rule

- Automatically created

  – pseudo-random numbers

    - Use another source of data to provide additional entropy

  – Hash from IPv6 address

Association of router ID and IPv6 address

- Natural association if router ID is created from IPv6 address

- Use IPv6 address with router ID embedded

  – E.g. 2001:db8::192:168:1:1

- External record keeping, e.g. text file, DNS, NMS, etc.

Next Steps

- Please review
- Add to existing gap analysis?