Renumbering using an Operational Support System

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Once upon a time, Brian and Tim wanted to look at IPv6 renumbering once again.
- RFC 5887
- “Let’s have a BOF!”

My comment was
- “Re-numbering a network seems like special case of numbering a network”
- Why would you not have your OSS do that?

I asked Juergen Schoenwalder and Mehmet Ersue
- Who know more about OSS’s than I do
- They didn’t see much point in IETF effort on what was usually custom software written for an administration
From the Internet Protocol MIB (RFC 4293)

- ipAdEntAddr
  - Deprecated, IPv4-only - don’t depend on that

- ipAddressAddr
  - An IPv{4|6} address on an interface
  - Yes, MIF, you have a problem

- ipAddressPrefixEntry
  - Assigns an IPv{4|6} prefix to an interface
  - Allows one to display a prefix on an interface
  - (except it’s read-only, not read-create)
Gee, Whiz...

- If only the things were read-create, and I had an SNMP Set or a Yang Module (Netconf) that I could manipulate them with...
RFC 4192: Renumbering a network

- Two distinct actions:
  - Add a prefix to a network
  - Delete a prefix from a Network
  - NOT: “change an address or prefix”

- What are the big issues?
  - Any programmatic solution will work, if…
  - Humans don’t do something stupid

- Stupid?
  - Know or remember the address of a peer
  - Configure an address instead of a name
  - Ignore the lifetime of an address
  - …
What’s an OSS?

- Usually based on a database
- Usually has objects representing:
  - subscribers, employees, billing history, service history, equipment, interconnections, contracts, configurations...
- Usually has methods:
  - Add a subscriber to a {router, interface}
  - Add a prefix to a subscriber
  - Derive a more specific prefix from a less specific
  - …
Expect OSS Methods to trigger protocol actions

For example:

- “Remove a macro-prefix from an area”
  - Remove each more specific prefix
  - ASBR: Remove macro-prefix advertisement out of area
- “Remove a micro-prefix”
  - Remove the prefix from each dependent host or subscriber
  - Router: Remove from interface, RA, and routing
- “Remove a prefix from {interface|subscriber}”
  - Remove DNS and DHCP entries
  - Change on relevant host or gateway
A little light reading

- draft-baker-happier-eyeballs
- draft-baker-6renum-oss-renumbering