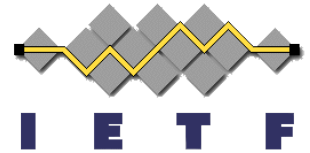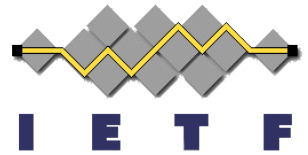# Renumbering using an Operational Support System

Fred Baker

I E T F

Background

- 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)
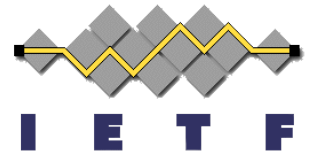
- ipAdEntAddr
  - Deprecated, IPv4-only - don't depend on that
- ipAddressAddr
  - An IPv{4|6} address on an interface
  - Yes, MIF, you have a problem
- ipAddressPrefixEntry
  - Assigns an IPv{4|6} prefix to an interface
  - Allows one to display a prefix on an interface
  - (except it's read-only, not read-create)

Gee, Whiz…
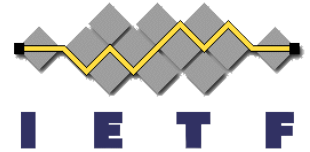
- If only the things were read-create, and I had an SNMP Set or a Yang Module (Netconf) that I could manipulate them with…

RFC 4192: Renumbering a network
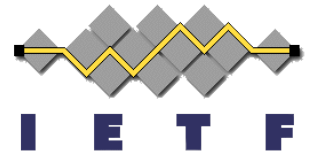
- Two distinct actions:
  - Add a prefix to a network
  - Delete a prefix from a Network
  - NOT: "change an address or prefix"
- What are the big issues?
  - Any programmatic solution will work, if…
  - Humans don't do something stupid
- Stupid?
  - Know or remember the address of a peer
  - Configure an address instead of a name
 - Ignore the lifetime of an address
  - …
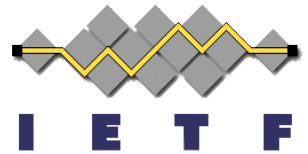
What's an OSS?

- 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
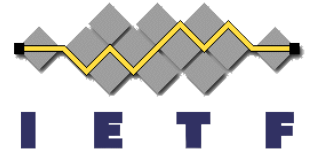
For example:

- "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
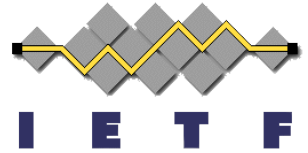
A little light reading

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