IPv4 -> IPv6 ?

Overview

- The End is Nigh!
- Yesterday's Future
- Meanwhile, around the Globe
- Be Prepared!

The end is not the end…

- There is a life after IPv4 “runs out”
- The Internet will continue to function

- IPv6 needed to sustain growth

Yesterday's Future

- Transition to IPv6 through "dual stack"
  - Deploying IPv6 while IPv4 is "easy to get"
  - To be done after IPv6 is ready
- Oops!
  - Should have done that years ago
  - We were distracted…
    - … making money, losing money
    - … finding more customers & keeping them
    - … inventing new services
    - … keeping the network running
    - …
- Apparently IPv6 deployment could be done "next year"

Yesterday's Future is Dead

- Facts:
  - No widespread IPv6 Deployment today
  - Remaining IPv4 address pool cannot sustain "full dual-stack" anymore

- Change of Plans…
  - IPv4 needed for longer than anticipated
  - Vis-à-vis diminishing availability a need for *Transfers* will emerge
    - Substitute your favourite FUD Term: "Trading", "Market", "Monetisation"

"I have addresses I don't use. Do you want them?"

Total IPv4 Exhaustion?

- Nah, unlikely…
  … as a discrete event
- Likely at IANA level
- Possible on RIR level
- Intra-Community swapping of addresses will happen

Paradigm Shift

- Allocation -> Lifecycle Management
- Address Lifecycle Management, including…
  - Transfers
  - Reclamation
- Priority: Maintaining Registry Data

The Specter of Monetisation

- Mantra since 1992: Addresses have no value!
- Discussion has started already
- How to mitigate?

- Open “Trade Route” to address blocks
- Facilitate policy based trading now
- Keeping “market prices” in check

A Look at Policies in the Making

- Proposed policies dealing with IPv4 exhaustion
  - Globally discussed
  - No real consensus emerging, yet
- First regional proposals for policies supporting trading
  - Regional scope?
  - Minimum size of blocks?
  - Eligibility for IPv4 blocks after transferring away?
- Watch this space
  -- and take part in the discussions

Final Messages…

- IPv4 will remain relevant -- for a long time
  - Continued IPv4 support is mandatory for RIRs
- IPv6 still needs to be deployed
  - Chicken and egg problem
  - Lack of business case
  - Act before it becomes a truly expensive engineering problem
    - Enable v6 infrastructure
    - Enable v6 access
    - Offer content over v6
  - Don’t procrastinate!

Further Reading

- Geoff Huston's Statistics: http://www.potaroo.net/tools/ipv4/

- Policy Proposals http://www.ripe.net/ripe/policies/proposals/index.html

Questions?