2010-13

IPv4 reservations for IPv6 transition

Problems Being Addressed

- Tremendous uncertainty about runout.
- Last bits of IPv4 should leverage IPv6 deployment.
- Limited guidance to ARIN staff in original 4.10 (intentionally left to be improved later).

Cons to this Policy

- Complex.
- Lots of moving pieces.
- Many compromises.
- There is no ideal solution.

Pros to this Policy

- Ties last of IPv4 space to real IPv6 deployments.
- Provides a measure of fairness and certainty to allotments from last /8.
- Balances many tradeoffs as equitably as possible.

Pros to Policy (cont.)

- Provides for more granular address distributions post runout.
- Prevents large “land grabs” near the end.
- Is not a rationing system. Makes no effort to delay exhaustion.

This is a complex policy

- It is meant to address a complex problem
- We have simplified it as much as we can while maintaining fairness
- It strives to strike a balance of post-depletion difficulty across all stakeholders.
- Nobody will likely get enough IPv4 after IANA exhaustion regardless of policy

It started so simple

- This proposal started life as a simple attempt to provide clearer guidance to staff for the original intent of 4.10
- Several groups in the community expressed belief this was inadequate.
- As the number and types of requirements we tried to balance grew, so did the complexity of the policy

Why reservations?

- Help provide a small amount of predictability in the end.
- Make an attempt at providing a fair proportion of transition address space to as many needful organizations as possible.
- System staged to prevent strong first-mover advantages sought by some stakeholders.

Reservation stages

- Before Depletion
  - Vett reservation requests on a 3-year justified need basis
- At Depletion
  - Scale approved reservations to fit available space, if possible.
  - Otherwise, reservation holders receive minimum allotments on first-come, first-serve basis

Reservation Stages

- Post Depletion
  - A reservation queue is created.
  - Reservations move from 3 year to 3-month basis.
  - Any reservations not issued at depletion are first in queue.
  - Queue satisfied first-come first-serve from any space received through returns or other means.

Categories of Allotments

- Policy defines 4 basic categories of IP address consumption in 4.10.4
  - Access Service End Sites (a)
  - Content/Infrastructure Servers (b)
  - High-Ratio Transition Specific technologies (c)
  - Critical Infrastructure (d)

Why categories

- Each class has different utilization patterns and requirements.
- Organizations may request one reservation in each category at a time.
- Category (c) is guaranteed a /10 from the global policy /8.
- Categories (a) and (b) are limited to no more than a /9 from each /8 in the transition pool

Why Pool Size Variation?

- There will be addresses added to the pool after depletion.
- The size and extent is yet unknown.
- This policy attempts to provide a fair mechanism for utilizing those addresses.

Why pass this Policy

- This policy is far from perfect.
- Perfect policy is impossible here.
- It is fair and balanced.
- It is better than current policy.
- If we want to have a clear policy for transition space that is meaningful, it must happen at this meeting.

Timeline

- IANA will likely run out by 2/2011
- Once that happens, ARIN will likely begin allocating from the final /8 prior to 6/2011 which is the earliest policy from the next meeting could get implemented outside of emergency action by the board.

Team Effort

- The initial simple version of this policy was my solo effort.
- The current policy is the output of a much larger team of authors.
- I want to thank all of them for their efforts and contributions to the process.

Balancing Act

- A recurring theme as we debated and modified this policy was large vs. small advantages. This policy seeks to be as fair as possible across the board. Everyone feels the pain in relatively equal proportion.

Questions/Comments

?