AFPUB-2011-v4-004: Global Policy for post exhaustion IPv4 allocation mechanisms by the IANA

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Objective of the Proposal

- The Proposal describes the process that IANA will follow to allocate IPv4 resources to Regional Internet Registries (RIRs) after the central pool of addresses is exhausted

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Current Problem

- IANA has now exhausted its pool of /8 blocks
- However there is a possibility that IPv4 address will be returned to the IANA post exhaustion
- There is currently no policy for what IANA should do with these addresses
  - A previous proposal, AFPUB-2009-v4-002, passed in 4 RIR regions
  - AFPUB-2009-v4-002 failed in 1 RIR region and that region proposed AFPUB-2010-v4-003 as an alternative

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Problems with AFPUB-2010-v4-003

- The reclamation pool could be exhausted by RIR(s) with high allocation rates after the first (or first few) allocation period(s).
- Reasons:
  - Rate of growth of Internet in the region
  - Policies on how to manage the last part of their IPv4 address space
- RIRs with IPv4 “soft landing” policies in place are put at a disadvantage when compared with RIRs with no such policy

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Problems with AFPUB-2009-v4-002 and AFPUB-2010-v4-003

- AFPUB-2009-v4-002 mandated the return of IPv4 addresses to the IANA
- AFPUB-2010-v4-003 does not mandate the return, but an RIR which does NOT return addresses could claim the entire returned pool
- Both proposals attempted to define eligibility and exhaustion in ways to meet the needs of all five RIRs

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Details of the Proposal

- IANA will establish a Recovered IPv4 Pool
  - It will contain any fragments of IPv4 remaining in the IANA pool and any IPv4 addresses returned to IANA by any means
    - (Excluding special use IPv4 addresses)
- The Recovered IPv4 Pool stays inactive until the first RIR has less than a total of a /9 in its inventory
- Once the pool is active, each RIR will receive one fifth of the Recovered IPv4 Pool (rounded down to nearest CIDR boundary)
  - This will be done every 6 months
  - Smallest allocation to an RIR will be /24

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History of the Proposal

- APNIC:
  - Consensus, completed last call, and endorsed as policy by the APNIC EC
- RIPE NCC:
  - Consensus, completed last call, and now in the final stages of becoming policy
- LACNIC:
  - Consensus, now in last call
- ARIN:
  - Under discussion

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Reporting

- The IANA may make public announcements of IPv4 address transactions that occur under this policy
- The IANA will make appropriate modifications to the "Internet Protocol V4 Address Space" page of the IANA website and may make announcements to its own appropriate announcement lists.
- The IANA announcements will be limited to which address ranges, the time of allocation, and to which Registry they have been allocated.

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Advantages

- The problem areas of AFPUB-2009-v4-002 and AFPUB-2010-v4-003 are removed
  - Regional variation of IPv4 runout policy is permitted
  - Prevents the possibility of one RIR claiming the entire Recovered IPv4 Pool
  - Removes two areas of policy that failed to reach consensus in previous attempts
    - How to return addresses to Recovered IPv4 Pool
    - References to transfers and how they should or should not take place

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Disadvantages

- The proposal does not provide details of how address space may be returned to the IANA IPv4 Recovered Pool

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Discussion