

Global Policy for IPv4 Allocations by the IANA Post Exhaustion v1

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Introduction

- This policy proposal define the process for the allocation of IPv4 addresses post “Exhaustion Phase”
- In order to fulfill the requirements of this policy, the IANA must set up a reclamation pool to hold addresses in and distribute from in compliance with this policy
- This policy establishes the process by which IPv4 addresses can be returned to and re-issued from the IANA post Exhaustion Phase.

Intent of this policy

- Include all post exhaustion phase IPv4 address space returned to the IANA
- Allows allocations by the IANA from the reclamation pool once the exhaustion phase has been completed
- Defines “need” as the basis for further IPv4 allocations by the IANA
- Does not differentiate any class of IPv4 address unless otherwise defined by an RFC
- Encourage the return of IPv4 address space by making this allocation process available.
- Disallow transfers of addresses sourced from the Reclamation Pool in the absence of an IPv4 Global Transfer Policy to neutralize transfer process inequities across RIR regions
- Applies to legacy IPv4 Address Space to RIRs.
- Includes any length of fragments currently held by the IANA now or in the future

Current Problem

- With the depletion of the IANA free pool of IPv4 address space, the current policy regarding the allocation of IPv4 address space to the RIRs will become moot
- This policy provides a mechanism for the RIRs to retro allocate the recovered IPv4 address space to the IANA and provides the IANA the policy by which it can allocate it back to the RIRs on a needs basis.
- This policy creates a new global pool of IPv4 address space that can be allocated where it is needed on a global basis without a transfer of address space between the RIRs.

Reclamation Pool

- Upon adoption of this IPv4 address policy by the ICANN Board of Directors, the IANA shall establish a Reclamation Pool to be utilized post RIR IPv4 exhaustion as defined in Section 4. As soon as the first RIR exhausts its inventory of IP address space, this Reclamation Pool will be declared active.

Return Address Space to The IANA

- The IANA will accept into the Reclamation Pool all eligible IPv4 address space that are offered for return. Eligible address space includes addresses that are not designated as "special use" by an IETF RFC or addresses allocated to RIRs unless they are being returned by the RIR that they were originally allocated to. Legacy address holders may return address space directly to the IANA if they so choose.

Address Allocations from the Reclamation Pool by The IANA

- Allocations from the Reclamation Pool may begin once the pool is declared active. Aggregates in the Reclamation Pool may be divided on a CIDR boundary to the longest minimum allocation or assignment of any of the RIRs in order to complete these allocations.
- The Reclamation Pool will be divided on CIDR boundaries and distributed evenly to all eligible RIRs. Any remainder not evenly divisible by the number of eligible RIRs based on a CIDR boundary equal to or shorter than the longest minimum allocation of all RIR will remain in the Reclamation Pool
- Addresses that are left over will be held in the Reclamation Pool until additional IP addresses are returned, or a minimum allocation unit is achieved that allows continued allocations from the pool.

RIR Eligibility for Receiving Allocations from the Reclamation Pool

- Upon the exhaustion of an RIR's free space pool and after receiving their final /8 from IANA, an RIR will become eligible to request address space from the IANA Reclamation Pool when it publicly announces via its respective global announcements email list and by posting a notice on its website that it has exhausted its supply of IPv4 address space.
- Exhaustion is defined as an inventory of less than the equivalent of a single /8 and the inability to further assign address space to its customers in units equal to or shorter than the longest of the RIR's policy defined minimum allocation unit. Any RIR that is formed after this policy has been adopted by the ICANN Board of Directors is not eligible to utilize this policy to obtain IPv4 address space from the IANA.

Reporting Requirements

- The IANA shall publish on at least a weekly basis a report that is publicly available which at a minimum details all address space that has been received and that has been allocated. The IANA shall publish a Returned Address Space Report which indicates what resources were returned, by whom and when. The IANA shall publish an Allocations Report on at least a weekly basis which at a minimum indicates what IPv4 address space has been allocated, which RIR received the allocation and when. The IANA shall publish a public report confirming RIR eligibility subsequent to Section 5.4

No Transfer Rights

- Address space assigned from the Reclamation Pool is not subject to transfer outside of an ICANN Board adopted globally adopted transfer policy. The definition of Global Transfer Policy for the purpose of this policy is a global policy that has been processed and adopted by ICANN in compliance with the MoU [2] and attachments as agreed to in October 2004 between ICANN and the RIRs.

Discussion in the ML

- Q: Is this policy intended to create a framework to allow re-allocation mechanism by IANA to RIRs, rather than expecting the actual re-clamation and re-allocations to take place actively? (Izumi)
- A: Yes, this policy is primarily intended to create this framework
- Q:once an RIR makes a public announcement about the exhaustion of its free space pool, that RIR can constantly receive address space from IANA, everytime its Reclamation Pool gets filled up? (Izumi)
- A:An RIR would become eligible when it has exhausted its address space by the definition offered in this policy proposal.
- Q: Why are we trying to prolong the use of IPv4 even past the end? (Philip)
- A: It is our belief that it would be used to help facilitate transition and to be a small help in avoiding participating in costly address markets
- Q: what's the incentive for, the RIRs to return IPv4 address space to the IANA? (Philip)
- A:we have already seen address space returned to IANA for redistribution. We can imagine that this may happen again.

Discussion in the ML

- Q: New address pool can be allocated where it is needed on a global basis, but the proposal in 5.3 says that the reclamation pool is divided equally amongst RIRs - which contradicts the above para. (Philip)
- A: If an RIR is eligible, then the space will go there "where it is needed".
- Q: "Longest minimum allocation" doesn't parse very well. It would be clearer to say "smallest minimum allocation".(Philip)
- A: We will consider your alternate wording for clarity

Questions