

IANA global IPv6 allocation policy

Address Policy WG
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RIPE 49, Manchester

Background

- “IANA IPv4 resource request procedures”
 - Describes procedures for RIRs to obtain address space from IANA
 - Reached consensus in all RIR communities
 - Global policy pending ICANN policy process
- No equivalent IANA-RIR document exists yet for IPv6
 - Several documents and ideas circulated

Current IPv6 allocation system

- IANA-RIR allocations
 - Based on interpretation of RFC2928
 - Each RIR receives a single /23 block
 - Recent large LIR requests triggered special case allocations by IANA
- RIR-LIR allocations
 - Minimum allocation /32
 - Each LIR is reserved a /29
 - No contiguous allocation after allocated
 - 64 requests/allocations (/29) possible within IANA allocation (/23)

Current problems

- Based on IPv4 allocation process
- IANA-RIR allocations are small compared with reasonable allocation timeframe
 - Sacrificing aggregation
 - Creating an IPv6 “swamp”
- Observed long term effects of fragmentation with IPv4 address space
 - Desire to avoid ‘mistakes’ of the past
 - Maximise potential for aggregatable IPv6 blocks to LIRs

Background of proposal

- Oct 2002: ripe-261
 - “IPv6 Address Space Management”, proposed sparse allocations made from global pool
- Not accepted by RIR communities
 - Consensus on need to continue regional allocations
 - Perceived need to identify RIR blocks
 - For filtering and service needs

Background of proposal

- Jul 2003: Follow up to ripe-261
 - “Requesting larger IPv6 allocations from IANA and practicing sparse allocations”
- General consensus by RIR meetings
 - Regional allocations maintained
 - RIRs may choose sparse allocation or other methods
 - Consensus on larger allocation size from IANA between /8 and /12

Proposal - Allocation principles

- /12 initial and minimum allocation by IANA to each RIR
 - Based on background paper by Geoff Huston
- IANA will allocate sufficient address space for 36 months
 - Allowing greater aggregation than we are currently able to achieve with IPv4
- IANA will allow each RIR to apply its own allocation and reservation strategies

Proposal - Reservations by IANA

- Reserve /6 for each RIR
 - Easy to identify regional address space
 - Facilitate aggregation in long term
 - Proposal names specific /6 reservations for each RIR
- **Proponent now withdraws this provision of the proposal**
 - Due to feedback received on proposal

Proposal - Initial allocations

- Immediately this global policy becomes active, IANA will allocate each RIR a /12
- Any new RIR will be allocated a /12 immediately on approval by ICANN

Subsequent allocations - Eligibility

- An RIR is eligible when it has allocated or reserved at least 50% of its total IPv6 address pool
- Justification: increase opportunities for aggregation

Subsequent allocations - Size

- Original proposal: the size of an RIR's address pool will be one bit shorter with each additional allocation
 - Total address holding of the RIR will double
- Justification: Maintain 1 contiguous RIR address pool
 - However: larger than /12 arguably not needed
 - Also: this is only feasible if RIR reservation is available
- Therefore: **proponent now withdraws this provision of the proposal**

Subsequent allocations - Size

- The size of each subsequent allocation will be:
 - A multiple of the minimum allocation (/12)
 - Sufficient to ensure that the RIR address pool satisfies at least a 36 month address requirement

Proposal - Other provisions

- IANA announcements
 - IANA announces allocation to RIRs only
 - IANA to update its public records
 - RIR announces allocation to community, update public records
- Justification:
 - Consistency with approved IPv4 global policy
 - Consistency and timing of announcements

Status in other RIRs

- APNIC region:
 - “ Consensus reached for the revised proposal, with some flexibility of parameters. Flexibility is left for consensus of other regions.”
- ARIN region
 - /12 initial allocation size
 - Allocations for 18 month timeframe
 - Can request additional allocation when 50% utilisation of 18 month timeframe is reached
 - Or when it has less than 180 days of available address space
 - Reservations of a /6 per RIR
 - IANA to process requests according to NRO and IANA agreed procedures
 - Procedures to be enacted within 30 days

Status in other RIRs

- LACNIC
 - ARIN proposal forwarded to discussion list
 - LACNIC preparing their own text to send to the discussion list
- RIPE region
 - Proposal has been submitted which is identical to original APNIC proposal
 - Geoff Huston's background paper posted

Next steps – Global policy process

Discuss in RIR communities



RIR Consensus



RIRs (NRO) forward to ASO



ASO forward to ICANN for ratification



Implementation as global policy

Summary

- Defined allocation unit
 - Suggestion: /12
- All allocations in multiples of allocation unit
 - Suggestion: As a single CIDR block
- IANA allocations for at least x months
 - Suggestion: 36
- RIR qualifies for subsequent allocation when x% utilised (allocated or reserved)
 - Suggestion: 50%
- IANA to process requests according to NRO and IANA agreed procedures
- Communication by IANA to RIRs only

Questions?

- Thank you for listening