

IPv4 Inter-RIR Resource Transfers (Comprehensive Scope)

AFPUB-2019-IPv4-002-DRAFT04



@JordiPalet

(jordi.palet@theipv6company.com)

Summary of the problem

- This proposal allows establishing the mechanism to allow transfers of IPv4 resources to/from other regions and to align AFRINIC with a market that already exists and in which we are lagging behind, which is negative for the region.

Addressing the problem

- All the other 4 regions have solved this problem: APNIC, ARIN, LACNIC & RIPE. **This allows to facilitate a dynamic in the market and by increasing the offer, reducing prices.**
- This **avoids new businesses can be established in the region.**
- The fact that there is no inter-RIR policy **does not prevent transfers "under the table"** and, therefore, assumes that there are resources from which the history of their **registration is lost**, which is one of the main functions of AFRINIC.
- The **deployment of IPv6 requires small blocks of IPv4 for transition mechanisms**, or significantly increase the costs thereof, and many AFRINIC entities could, therefore, be in serious disadvantage if they do not have access to a global market, as it is currently the case.
- **This proposal would allow bidirectional transfers with all the other RIRs.**
 - ***RECIPROCITY is the key*, otherwise the proposal doesn't make sense!**

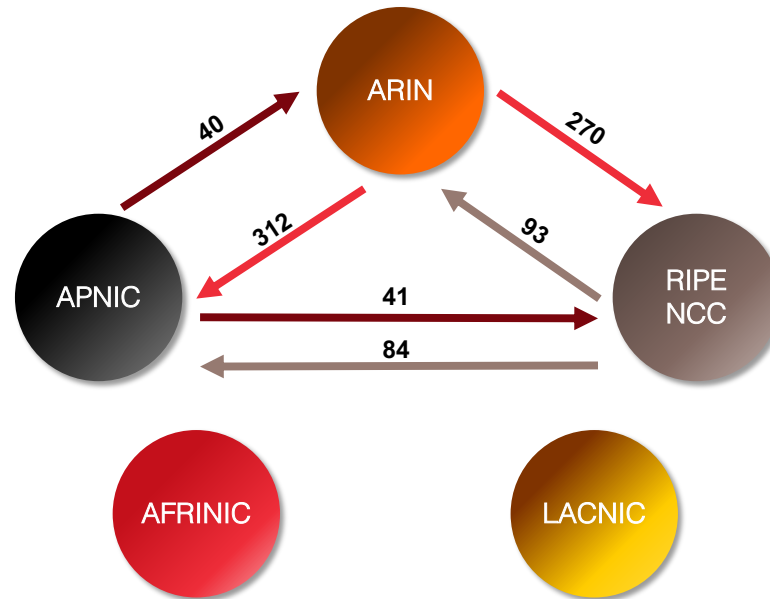
Actual Stats (1)

Internet number resource status report

9

Inter-RIR IPv4 Transfers

Total number of IPv4 transfers between RIRs



NRO, 30/6/2020

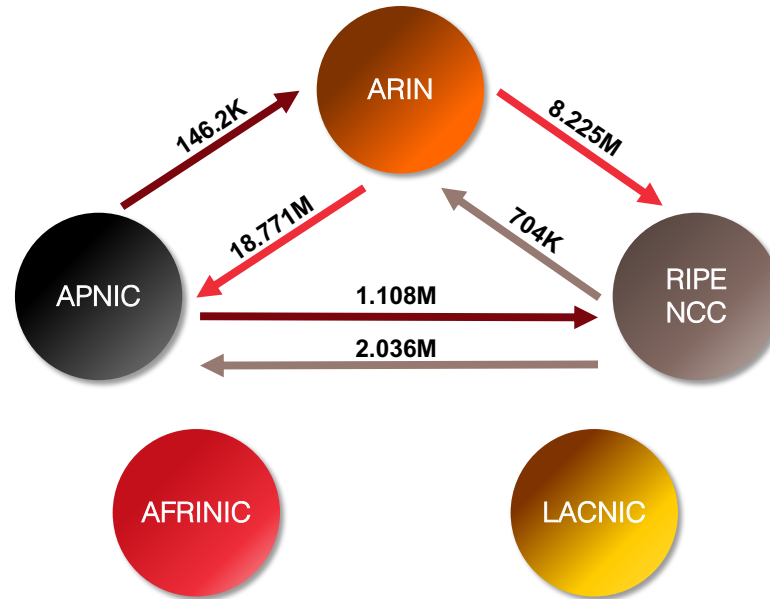
Actual Stats (2)

Internet number resource status report

10

Inter-RIR IPv4 Transfers

Total number of IPv4 addresses transferred between RIRs



NRO, 30/6/2020

Proposed Text (1)

5.7 IPv4 Resources transfer within the AFRINIC Region

Like the other Regional Internet Registries, AFRINIC will soon exhaust its IPv4 pool. In order to meet the needs of late resource requestors, a transfer policy for IPv4 resources within the region is needed. The goal of this policy is to define conditions under which transfers must occur. The policy solves the issue of an African organization needing IPv4 number resources after the exhaustion of the AFRINIC IPv4 pool or when AFRINIC can no longer satisfy the needs of such an organization.

5.7.1 Summary of the policy

This policy applies to an organization with justified need for IPv4 resources that cannot be satisfied by AFRINIC.

5.7.2 IPv4 resources to be transferred - must be from an existing AFRINIC member's account or from a Legacy Resource Holder in the AFRINIC service region.

5.7 IPv4 Resources transfers

This policy applies to an organization with a justified need for IPv4 resources (recipients) and organizations with IPv4 resources which no longer need (sources).

5.7.1 Recognized transfer types

Two types of transfers are recognized:

- a) Intra-RIR. Both parties are within the AFRINIC service region.
- b) Inter-RIR. One of the parties is within the AFRINIC service region, while the other is in another RIR service region.

Proposed Text (2)

5.7.3. Conditions on the source of the transfer

5.7.3.1 The source must be the current rightful holder of the IPv4 address resources recognized by AFRINIC, and not be involved in any dispute as to the status of those resources.

5.7.3.2 Source entities will not be eligible to receive any further IPv4 address allocations or assignments from AFRINIC for a period of 12 months after a transfer approval.

5.7.3.3 Source entities must not have received a transfer, allocation, or assignment of IPv4 number resources from AFRINIC for the 12 months prior to the approval of transfer request. This restriction excludes mergers and acquisitions transfers.

5.7.2 Conditions on the source of the transfer

5.7.2.1 A source must be validated by the applicable source RIR according to their policies and procedures. A source within AFRINIC must be in good standing, be the rightful registrant of the resources to be transferred and there must be no disputes as to the status of said resources.

5.7.2.2 Source entities will not be eligible to receive any further IPv4 address allocations or assignments from AFRINIC. Source entities may, if they can show justified need, receive resources via transfer after a period of not less than 16 months (twice the window defined by 5.4.5) has elapsed from their last outbound transfer.

5.7.2.3 An organization which has received IPv4 resources from AFRINIC within preceding 16 months will not be approved as a transfer source.

Proposed Text (3)

5.7.4. Conditions on the recipient of the transfer

5.7.4.1 AFRINIC must approve the recipient's need for the IPv4 number resources. In order for an organization to qualify for receiving a transfer, it must first go through the process of justifying its IPv4 resource needs before AFRINIC. That is to say, the organization must justify and demonstrate before AFRINIC its initial/additional allocation/assignment usage, as applicable, according to the policies in force.

5.7.4.2 The recipient must be an AFRINIC member, subject to current AFRINIC policies and must sign the Registration Services Agreement for resources being received.

5.7.3 Conditions on the recipient of the transfer

5.7.3.1 Recipient organizations within the AFRINIC service region must be approved with the same policies and procedures as if the request were being satisfied from the AFRINIC pool.

5.7.3.2 Recipients in other RIRs must be approved according to that RIR's policies and procedures.

Proposed Text (4)

5.7.4.3 Transferred IPv4 legacy resources will no longer be regarded as legacy resources.

5.7.3.3 IPv4 legacy resources will no longer be regarded as legacy resources:

- In the case of intra-RIR transfers.
- In the case of incoming inter-RIR.

In the case of outgoing inter-RIR, the resulting status will depend on the policies in the receiving RIR.

5.7.4 Transfer of ASN with IPv4 Resources

In the case where the majority of the IPv4 resources are being transferred, any relevant ASN(s) may also be transferred at the same time, if the relevant policies are fulfilled.

Proposed Text (5)

5.7.5 Required Disclosure for Transfers

Each time a transfer is completed, AFRINIC will publish all related information permitted by the source or recipient, including at least:

- Date of the transfer.
- Transferred resources.
- Source RIR and organization
- Recipient RIR and organization.

This doesn't exclude the publication of the same or other information as a result of the operational agreement among the RIRs.

5.7.6 Provisions for Suspensions of Transfers

5.7.6.1 The inter-RIR transfers will be suspended in case the number of outgoing IPv4 addresses exceeds the incoming ones for 6 consecutive months.

5.7.6.2 Staff may request additional information from parties for any transfer deemed suspicious by staff. Afterwards, all available information shall be escalated to the board for a decision to approve the transfer or not.

Comparison to Other Transfer Proposals

- None of them has a provision for suspensions as requested by the community in the discussions
- AFPUB-2019-GEN-002-DRAFT02 “AFRINIC Number Resources Transfer Policy”
 - In the previous meeting I’ve indicated that the authors should verify the reciprocity of this policy, specially with ARIN. My understanding is that allowing only “outgoing-legacy” (as per “Only Legacy resources and resources transferred in from other regions will be transferable out of the AFRINIC service region”), defeats the full purpose of the proposal.
- AFPUB-2019-V4-003-DRAFT02 “Resource Transfer Policy”
 - No provisions for disputes – could create abuses, we know in AFRINIC
 - No waiting period to receive more resources – you transfer and then you ask back to AFRINIC for more? -- abuses
 - “5.7.4.3 Transferred IPv4 legacy resources will no longer be regarded as legacy resources.” This makes the policy incompatible with ARIN reciprocity. Have the authors checked it? Defeats the full purpose ...
 - No support for AS transfers, as requested by the staff PIER.

References

- There are Inter-RIR policies in APNIC, ARIN, LACNIC and RIPE, which have widely demonstrated their effectiveness and have not presented problems to the respective communities, quite the contrary.
- According to **evidence**, ARIN is the origin of the transfer of the **largest** number of addresses to the other regions.
 - <https://www.nro.net/wp-content/uploads/NRO-Statistics-2020-Q2-FINAL.pdf>
 - <https://www.lacnic.net/innovaportal/file/3277/1/2-john-sweeting-arin.pdf>

Responses to Impact Analysis (1)

1. Staff Understanding of the policy proposal

Staff Need more clarification from Authors

- “1. Since the policy text does not explicitly mention that resources can be transferred as a result of mergers and acquisitions, staff assume that this policy proposal excludes transfers of IPv4 addresses due to mergers and acquisitions. Author's input is required in this case.”
 - Right, there is another proposal for that, so keep using guidelines at the moment.

Responses to Impact Analysis (2)

- “2. Once the decision to suspend the inter-RIR policy is taken by the AFRINIC Board, in accordance with the bylaws, how shall AFRINIC implement the Board's decision in the CPM? To be noted that the policy proposal covers both intra and inter RIR transfers. Author's input is required in this case.”
 - The board should follow PDP and bylaws. I expect that following that, they make a new policy and send it to the PDP, or ask the community to work on it.
- “3. Recommend that Section 5.7.4 is updated to remove " "At the AFRINIC discretion" and a section depicting in detail the conditions of an ASN transfer included. In addition, the scope of the proposal to allow both IPv4 and ASN transfers to be amended.”
 - Editorial input that can be resolved now or in the last call. If nothing said, conditions are the same as the AS conditions for the receiving RIR, we shouldn't amend it, the same way we keep conditions for the receiving IPv4 RIR.

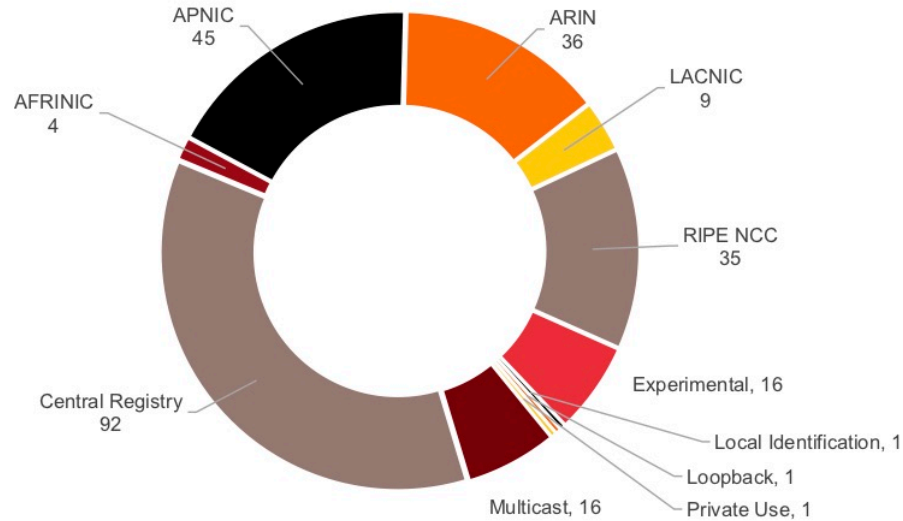
Actual Stats (I)

Internet number resource status report

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All IPv4 Address Space

Distribution of the 256 /8s



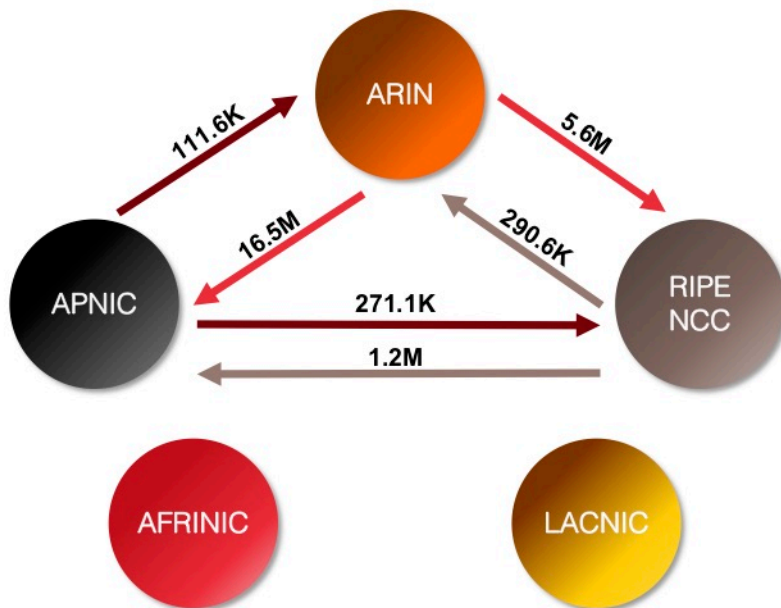
Actual Stats (II)

Internet number resource status report

9

Inter-RIR IPv4 Transfers

Total number of IPv4 addresses transferred between RIRs



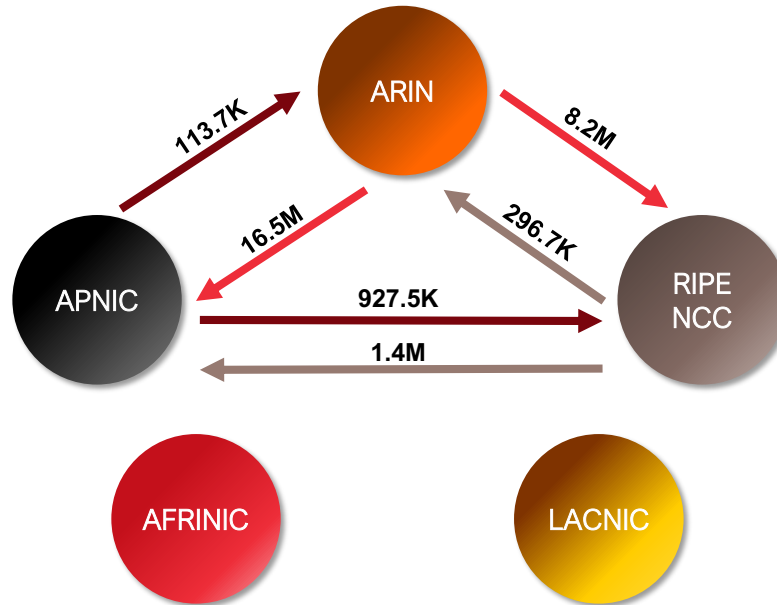
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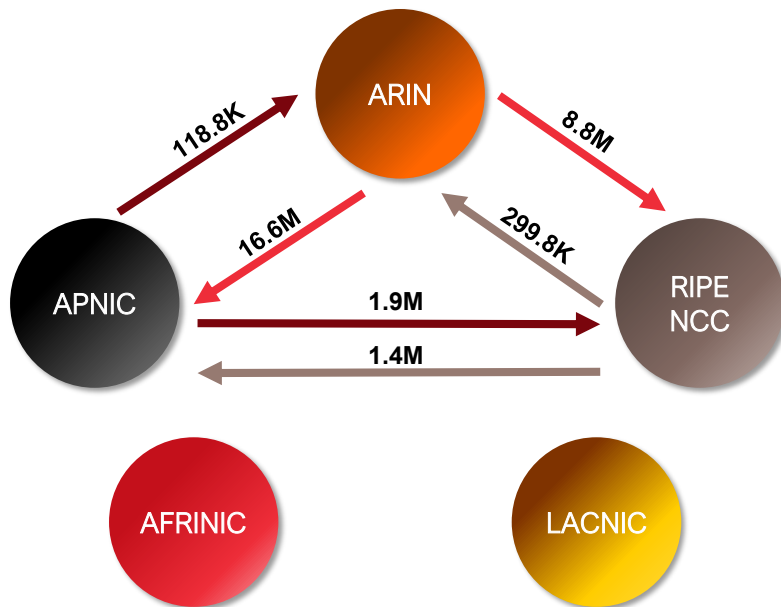
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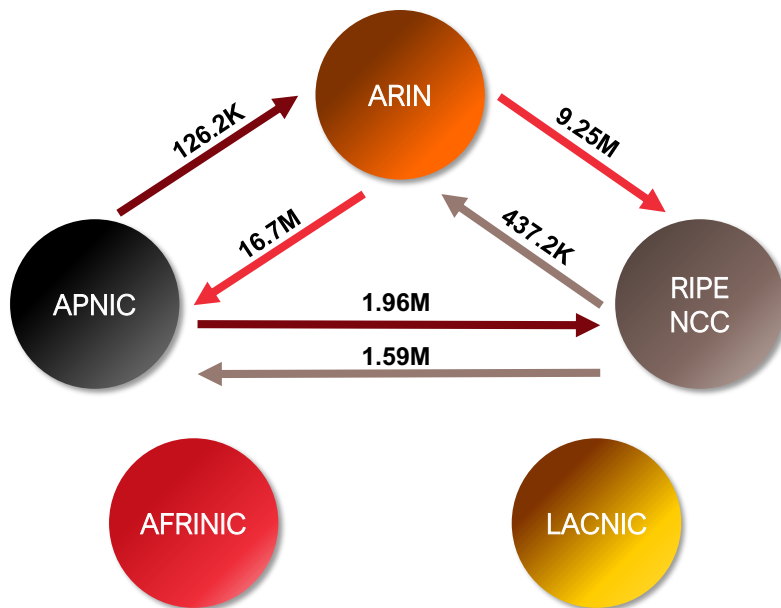
Actual Stats (II)

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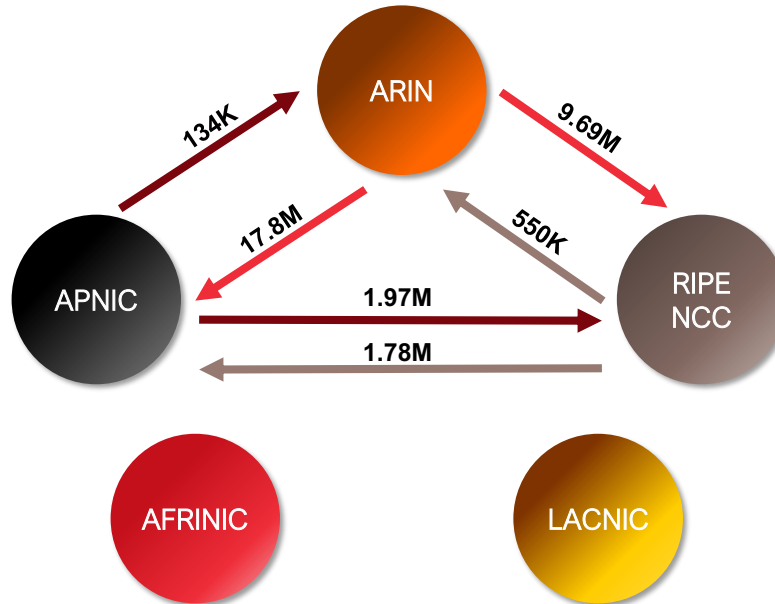
Actual Stats (II)

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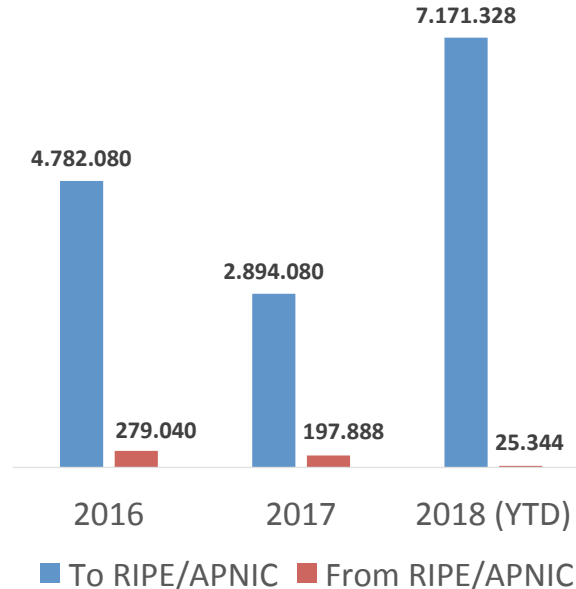
Inter-RIR IPv4 Transfers

Total number of IPv4 addresses transferred between RIRs



Actual Stats (III)

Inter-RIR Transfer Volume



- From ARIN: 14,847,488
- To ARIN: 502,272
- ~30 times more space transferred from ARIN
- Expectation is that this will continue since ARIN has the majority of legacy space

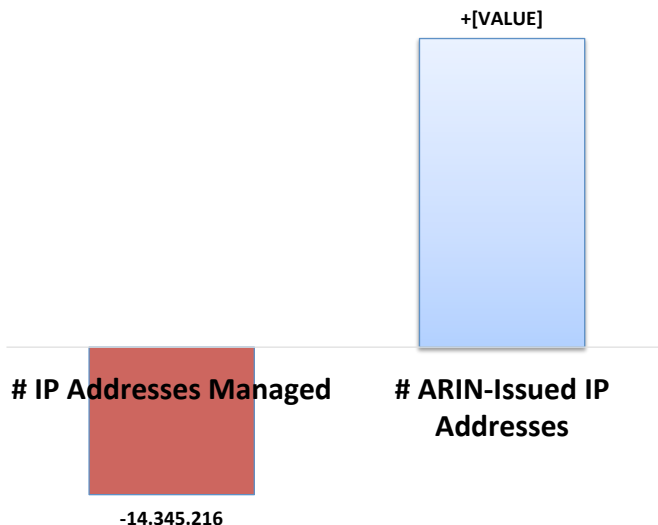
Actual Stats (IV)



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Transfers Benefit Everyone

Net Change 2016-2018 (IP Addresses)



- Overall space managed by ARIN **decreased by ~14 million IPv4 addresses** from 2016 to present due to inter-RIR transfers
- Overall ARIN issued space **increased by ~30 million IPv4 addresses** due primarily to conversion of legacy space via in-region transfers
- Win-win!