The Aim of This Update

- To report back to the RIPE community:
  - The feedback that we receive from LIRs
  - Highlighting potential problem areas
- Asking for guidance on these topics
- Providing input to the community for policy discussions
Outline

• Update on action point from RIPE 71:
  - ALLOCATED PI / ALLOCATED UNSPECIFIED

• Legacy resource transfers after inter-RIR transfers

• Listing prefixes during ASN requests

• IPv4 IXP assignment use

• IPv6 /48 potential policy bug
ALLOCATED PI & ALLOCATED UNSPECIFIED
IPv4 blocks with status that cause issues

RIPE NCC
ALLOCATED PI

End User
ASSIGNED PI

LIR
ALLOCATED PI / UNSPECIFIED

End User
ASSIGNED PI/PA

- Stays with End User when changing LIR
- Contractual Requirement for End Users
- Returns to RIPE NCC when deregistered

- LIR remains in control off address space, even for ASSIGNED PI issued to customer
- No contractual requirement according to policy in place
- LIR and End User made agreements of which RIPE NCC is not aware
- New PI Assignments are made
- Returns to LIR unless otherwise agreed or remains abandoned in the RIPE DB
Historical Timeline

- **1992**: RIPE-62 Distribution from RIPE NCC
- **1994**: RIPE-112 last resort registries vs LIR
- **1995**: RIPE-116 Allocation and Assignment
- **1996**: RIPE-127 Allocation PI/unspecified / Assigned PI

RIPE-148 Closure of Last Resort Registries

RIPE NCC distributed Allocated PI for LIR with a lot of PI assignments.
Some numbers

- 30 LIRs holding 68 ALLOCATED UNSPECIFIED
  - 915 ASSIGNED PI
  - 34,922 ASSIGNED PA
  - 579 NOT-SET

- 8 LIRs holding 27 ALLOCATED PI
  - 2,687 ASSIGNED PI
  - 44 ASSIGNED PA
Actions and Results

• All LIRs contacted via email, phone, @RIPE72

• 15 LIRs, 37 ALLOCATED UNSPECIFIED requested to convert to ALLOCATED PA
## Actions and Results

<table>
<thead>
<tr>
<th>Action</th>
<th>YES</th>
<th>NO</th>
<th>Don’t know</th>
</tr>
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<tbody>
<tr>
<td>DB up to date?</td>
<td>70%</td>
<td>24%</td>
<td>6%</td>
</tr>
<tr>
<td>Convert Unspecified to PA</td>
<td>80%</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>In contact with PI holders?</td>
<td>29%</td>
<td>47%</td>
<td>24%</td>
</tr>
<tr>
<td>LIR mnt-by in PI?</td>
<td>50%</td>
<td>33%</td>
<td>17%</td>
</tr>
<tr>
<td>New “ASSIGNED PI”</td>
<td>28%</td>
<td>72%</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Result Conclusions

• There seems to be a status misunderstanding
  - LIRs believe ASSIGNED PI is necessary for End Users to have freedom to choose their upstream provider
  - LIRs however feel administratively responsible

• Many LIRs do not have contact with ASSIGNED PI customers anymore

• LIRs still make new PI ASSIGNMENTS
  - No provision in RIPE policy for making new PI assignments and End Users may believe they have ‘independent’ space
What Now?

• Maintain status quo

• Ask LIRs with ALLOCATED UNSPECIFIED/ PI to change status to PA in agreement with customer
  - A lot of work for LIR, and customers may be unreachable

• Split LIR’s ALLOCATED PI / UNSPECIFIED when customer with ASSIGNED PI asks to move to a different sponsoring LIR

• …
Legacy Resource Transfers
Inter-RIR Transfer Policy

“For transfers from RIR regions that require the receiving region to have needs-based policies, recipients must provide a plan to the RIPE NCC for the use of at least 50% of the transferred resources within 5 years” (ripe-644)

“With this policy, legacy resources can be transferred to or from the RIPE NCC service region, in spite of the fact there is no specific transfer policy for them” (ripe-644)
Inter-RIR Legacy Resources

• In spite of having a five-year plan, recipient can transfer legacy resources the next day
  - No legacy policy transfer limitations within the region
  - The RIPE NCC is not part of the transfer process

• This is policy compliant - but is it according to the spirit of the policy?
IP Prefixes and ASN Requests
Requesting an AS Number

• For the past 15 years, the RIPE NCC has asked for the prefixes that will be originated from a newly requested AS Number

  - “The enterprise will also have to provide information about which IP addresses they will be routing (originating) with this AS” (ripe-228, ASN request supporting notes, 2001)

  - “The address space must be a valid assignment to the organisation that will use the AS number” (ripe-355, ASN request supporting notes, 2005)
ASN Request Evaluation

“Why is the RIPE NCC asking for the prefix to be announced? The AS Number Assignment policy does not specifically mention it”

- To ensure that:
  - Assignments are properly registered
  - The ASN requester is authorised to announce the address space listed
  - ASNs are not stockpiled by organisations without need
  - ASNs are assigned directly to the End User (ripe-638)
IPv4 IXP Assignments
IPv4 IXP Assignment Status

- A /16 is reserved for exclusive use by IXP
- IP space returned by IXP will be added to the reserved pool for IXP use
  - 67 assignments made under this policy
  - 71% of the reserved /16 is still available
  - 13 /24s were returned to the IXP pool
IPv4 IXP Assignment Policy

“This space will be used to run an IXP peering LAN; other uses are forbidden” (ripe-649)

• ± 10% of IXP assignments issued are visible in global routing tables
  - Addresses partially used for other services

• Should the RIPE NCC be still monitoring this space and following up if an IXP assignment is globally routed?
IPv4 /48
Potential Policy Bug
IPv6 PA Assignment Policy

“When a single End Site requires an assignment shorter than a /48, it must request the assignment with documentation or materials that justify the request. Requests for multiple or additional prefixes exceeding a /48 assignment for a single End Site will be processed and reviewed at the RIR level” (ripe-655)
Policy Application Concern

“Can an End User receive receive a /48 PA Assignment from two different LIRs without the need for RIPE NCC evaluation and approval?”

- The RIPE NCC will not require that requests be evaluated when the End User receives up to a /48 from each LIR
Questions

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