APNIC Update

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PacNOG 24 24-06-2019
Outline

- About APNIC
- IPv4 delegation policy change
- New IPv4 listing service
- Future validation of IRT objects
Where is the APNIC Region?
Internet Number Registry Structure

- IANA
  - AfriNIC
  - ARIN
  - APNIC
  - LACNIC
  - RIPE NCC
    - NIR
      - LIR
        - ISP
          - EU
        - ISP
          - EU
      - LIR
        - ISP
          - EU
        - ISP
          - EU
  - Local Internet Registries
  - Internet Service Providers
  - End Users
Continued global depletion

Available IPv4 /8s in each RIR

December 2018
IPv4 delegations

As at 31 May
Recent IPv4 Delegation Policy change

• prop-127: Change maximum delegation size of 103/8 IPv4 address pool to a /23
  – Each member can only get up to 512 addresses (/23)
  – Allows new members to get a little bit of IPv4 before it completely runs out

• prop-129: Abolish Waiting list for unmet IPv4 requests
  – Recovered address space treated under the same policy as last /8 (103/8)
  – Encourage the implementation of IPv6
IPv4 transfers

As at 30 Apr
IPv4 address transfer

• Transfer is allowed through:
  – Merger & Acquisition
  – Needs based market transfer

• Way to source additional IPv4 addresses
  – Implement new process and mechanism of IPv4 listing service for members who want to list their unused IPv4 address space
Motivation for IPv4 listing service

• Motivation
  – Response to the 2018 APNIC survey
  – Additional supply of IPv4 addresses
  – Effective stewardship of IPv4 address space
MyAPNIC resources page

Resources

Internet Resources
Summary
View all of your resource holdings.
IPv4
View your IPv4 resource holdings.
IPv6
View your IPv6 resource holdings.
AS Numbers
View your ASN resource holdings.

Reverse DNS Delegations
Add Reverse Delegations
Add new reverse delegations.
Reverse Delegation Summary
View and manage reverse delegations.

Resource Request Forms
IPv4 Addresses
Apply for an IPv4 address delegation.
IPv6 Addresses
Apply for an IPv6 address delegation.
AS Numbers
Apply for an ASN delegation.

Whois Updates
Whois Updates
Add, update, and delete individual Whois objects.
Bulk Whois Updates
Add, update, and delete multiple Whois objects.
Contact Details Update
Update contact details of the internet resources associated with your account.
Maintainers
View your registered maintainers, and register new maintainers.
IRTs
View your registered IRT objects, and register new IRT objects.

Resource certification
RPKI
Set up your RPKI engine, and manage your Route Origin Authorization (ROA) objects.

Route management
Routes
Add, update, delete and view routes. Create Route Origin Authorisation (ROA) for routes.

Resource Transfer/Return
Transfer Resources Into Another Account
Initiate a transfer of resources from your account to another account.
Receive Resources Into My Account
Receive resources transferred from another account to your account.
Request Transfer Pre-approval
Pre-approval streamlines the transfer process by allowing justification to be provided before a transfer is initiated.
Return IPv4 Resources
Return IPv4 resources to APNIC.
IPv4 listing services (addition)

**Resource Transfer/Return**

**Transfer Resources Into Another Account**
Initiate a transfer of resources from your account to another account.

**Receive Resources Into My Account**
Receive resources transferred from another account to your account.

**Request Transfer Pre-approval**
Pre-approval streamlines the transfer process by allowing justification to be provided before a transfer is initiated.

**Return IPv4 Resources**
Return IPv4 resources to APNIC.

**IPv4 Listing Service**
List your unused IPv4 address space for other organizations to contact you or view the list of available/unused IPv4 address space ready to be transferred.
What next?

• We welcome feedback from the community
• Future change is planned by end of the year
Incident Response Team (IRT) object in Whois

• Object in the APNIC whois containing contact information of network administrators responsible for receiving network abuse reports

• As a result of prop-079 at APNIC 29, APNIC implemented mandatory IRT references on 8 November 2010

• Aimed to provide a more accurate and efficient way for abuse reports to reach the correct contact
prop-125 Validation of “abuse-mailbox” and other IRT emails

- Two consecutive emails sent to IRT contacts every six months
- No results – limited access to MyAPNIC
  - Lack of compliance will result in follow-up procedures according to existing policy
Prop-125 validation process

- Two consecutive emails sent to IRTs associated with resources, every 6 months
  - First email will contain validation URL (with confirmation to policy and procedures)
  - Second email will contain unique code
- Validate in a way that proves you are a human. Captcha code to avoid automatic processing
## Prop-125 validation emails

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>irt</td>
<td>IRT-APNIC-AP</td>
</tr>
<tr>
<td>address</td>
<td>Brisbane, Australia</td>
</tr>
<tr>
<td>e-mail</td>
<td><a href="mailto:helpdesk@apnic.net">helpdesk@apnic.net</a></td>
</tr>
<tr>
<td>abuse-mailbox</td>
<td><a href="mailto:helpdesk@apnic.net">helpdesk@apnic.net</a></td>
</tr>
<tr>
<td>admin-c</td>
<td>HM20-AP</td>
</tr>
<tr>
<td>tech-c</td>
<td>NO4-AP</td>
</tr>
<tr>
<td>auth</td>
<td># Filtered</td>
</tr>
<tr>
<td>remarks</td>
<td>APNIC is a Regional Internet Registry.</td>
</tr>
<tr>
<td>remarks</td>
<td>We do not operate the referring network and</td>
</tr>
<tr>
<td>remarks</td>
<td>are unable to investigate complaints of network abuse.</td>
</tr>
<tr>
<td>remarks</td>
<td>For information about IRT, see <a href="http://www.apnic.net/irt">www.apnic.net/irt</a></td>
</tr>
<tr>
<td>mnt-by</td>
<td>APNIC-HM</td>
</tr>
<tr>
<td>last-modified</td>
<td>2019-02-14T05:37:22Z</td>
</tr>
<tr>
<td>source</td>
<td>APNIC</td>
</tr>
</tbody>
</table>
Prop-125 validation process (cont’d)

• If no action after 15 days, MyAPNIC will display reminder alert warning
• If no action after 30 days, MyAPNIC access will be limited
• IRTs will be marked invalid in APNIC whois by adding to 'remarks' attribute
• Lack of compliance will result in follow-up according to existing policy and procedures
## Prop-125 marking IRTs as valid

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>irt:</td>
<td>IRT–APNIC–AP</td>
</tr>
<tr>
<td>address:</td>
<td>Brisbane, Australia</td>
</tr>
<tr>
<td>e-mail:</td>
<td><a href="mailto:helpdesk@apnic.net">helpdesk@apnic.net</a></td>
</tr>
<tr>
<td>abuse-mailbox:</td>
<td><a href="mailto:helpdesk@apnic.net">helpdesk@apnic.net</a></td>
</tr>
<tr>
<td>admin-c:</td>
<td>HM20–AP</td>
</tr>
<tr>
<td>tech-c:</td>
<td>NO4–AP</td>
</tr>
<tr>
<td>auth:</td>
<td># Filtered</td>
</tr>
<tr>
<td>remarks:</td>
<td><a href="mailto:helpdesk@apnic.net">helpdesk@apnic.net</a> was validated on 2019-06-03</td>
</tr>
<tr>
<td>mnt-by:</td>
<td>APNIC–HM</td>
</tr>
<tr>
<td>last-modified:</td>
<td>2019-02-14T05:37:22Z</td>
</tr>
<tr>
<td>source:</td>
<td>APNIC</td>
</tr>
</tbody>
</table>
Prop-125 escalation process

- Separate process for reporting incorrect or lack of response to cases of network abuse
- A new escalation mailbox to be monitored by APNIC
- Once escalation is received, APNIC will investigate and trigger manual validation request
Prop-125 marking IRTs as invalid

irt: IRT-APNIC-AP
address: Brisbane, Australia
e-mail: helpdesk@apnic.net
abuse-mailbox: helpdesk@apnic.net
admin-c: HM20-AP
tech-c: NO4-AP
auth: # Filtered
remarks: helpdesk@apnic.net is invalid
mnt-by: APNIC-HM
last-modified: 2019-02-14T05:37:22Z
source: APNIC
Prop-125 new ‘abuse-c’ attribute in parent records

| inetnum: | 203.176.189.0 - 203.176.189.255 |
| netname: | APNIC-SERVICES-V4 |
| descr: | APNIC (Asia Pacific Network Information Centre) |
| descr: | Regional Internet Registry |
| descr: | 6 Cordelia St. South Brisbane, QLD |
| country: | AU |
| admin-c: | AMS345–AP |
| tech-c: | AHD543–AP |
| abuse-c: | TEST-AP |
| status: | ALLOCATED PORTABLE |
| mnt-by: | MAINT–MYAPNIC–AP |
| mnt-irt: | IRT–MYAPNIC–TEST–AP |
| mnt-routes: | MAINT–MYAPNIC–AP |
| remarks: | To report network abuse, please contact mnt-irt |
| remarks: | For troubleshooting, please contact tech-c and admin-c |
| remarks: | Report invalid contact via www.apnic.net/invalidcontact |
| last-modified: | 2018-05-16T01:54:27Z |
| source: | APNIC |
Prop-125 implementation timeline

- Phase one – estimated completion **June 2019**
  - Includes validation of IRTs associated with parent resource records
  - New escalation mailbox

- Phase two – estimated completion **December 2019**
  - Include non-portable assignments
  - Resolve any issues encountered during phase one
RPKI

‘Validation Reconsidered’
- Reduce sensitivity to isolated or transient errors
- Adopted as RFC 8360

‘Anysign’ Function
- RTA = Resource Tagged Attestation
  - In deployment as hosted service in MyAPNIC
- Proof-of-concept to enable RPKI signing of any document or object, for example, LOA for service provisioning
- OID request submitted to IANA

![Ready to ROA](image)

<table>
<thead>
<tr>
<th>Measure</th>
<th>31/12/2018</th>
<th>31/5/19</th>
<th>Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members with certs</td>
<td>21.9%</td>
<td>23.8%</td>
<td>8%</td>
</tr>
<tr>
<td>Members with ROAs</td>
<td>11.3%</td>
<td>15%</td>
<td>24%</td>
</tr>
<tr>
<td>IPv4 under ROAs</td>
<td>6.1%</td>
<td>7.3%</td>
<td>16%</td>
</tr>
<tr>
<td>IPv6 under ROAs</td>
<td>5.6%</td>
<td>8.6%</td>
<td>35%</td>
</tr>
</tbody>
</table>

[apnic.net/rpki](http://apnic.net/rpki)
Upcoming conference

• Registration open now
• PC is now accepting CFP submissions. **Deadline is mid-July 2019.**
  
  https://conference.apnic.net/48/
Thanks!