



AFRINIC insights

MADHVI GOKOOL
Member Services Team
Angola Peering Forum | 29 Nov 2019

Agenda

1. AFRINIC
2. Changes within the AFRINIC landscape (IPv4 Exhaustion)
3. Steps for membership and resource applications
4. RPKI & IRR

AFRINIC

- Regional Internet Registry
- Service region - AFRICAN continent & Indian Ocean Islands
- Manage IP Number Resources(INRs) that are critical to the growth of the Internet

Internet Number Resource Management

Internet Number Resources



196.1.0.87
2001:db8:c001::face



ISP

AS 15964



Address Management Objectives

Registration

Aggregation

Conservation

Changes within AFRINIC's Resource Management landscape

Phase 1 of IPv4 exhaustion

601,856 /32s IPv4 left until Phase 2

Prefix size that can be issued /24 to /13

Changes within AFRINIC's Resource Management landscape

Phase 2 of IPv4 exhaustion

Available IPv4 Pool starts with a /11 IPv4 prefix

Prefix size that can be issued /24 to /22

- **Needs**

8 months

- **Eligibility for Additional resources**

90 % usage of all resources held

AFRINIC is preparing to step in Phase 2 imminently

Can Operator Networks still grow?

IPv4 – YES

- Getting /22s of IPv4 from AFRINIC in Phase 2 any number of times (\$\$)
- Buying IPv4 space(\$\$) from the IPv4 market

OR

- Greater use of Carrier Grade Network Translation (trade-off)

IPv6 – YES

It provides the amount of unique public identifiers required to grow the Internet Free for members that have IPv4 at the moment

What should operators do?

1. Evaluate if they require (future 8 months growth) and are eligible for additional IPv4 (90% usage of current allocations/assignments)
2. Request for additional space (via myafrinic portal (<https://my.afrinic.net>))
3. Request for and deploy IPv6 (<https://learn.afrinic.net>)
4. Work with their customers to encourage them to get their own public IP Resources from AFRINIC (<https://apps.afrinic.net/nmrp/>)

Getting IP Number Resources

Easy Steps for New Membership:

- Send your request at <https://nmp.afrinic.net>

Provide:

- Organisation and points of contact details
- Certificate of incorporation (incorporation within AFRINIC region)
- Detailed IP addressing plan
- Service regulators license (where applicable)
- Contract with upstream ISP
- Sign RSA
- Other available documentation justifying your IP needs
- May be required to provide evidence of infrastructure in the region

Getting IP Number Resources

Requirements for Additional IPv4 space:

- Must be compliant with the contractual obligations.
 - Must be in good financial standing (All pending fees are paid)
 - Registration Service Agreement on file
 - Updated contact details
- Must have used at least 90% of current IPv4 allocation/assignment
- Usage registered on AFRINIC whois database
- Provide Details on how the current IPs allocation/assignment are being used
- Provide a detailed IP addressing plan showing your needs
- May require a remote session for demonstration of utilisation statistics

Getting IP Number Resources

Requirements for IPv6

- Must be compliant with the contractual obligations.
 - Must be in good financial standing (All pending fees are paid)
 - Registration Service Agreement on file
 - Updated contact details
- IPv6 addressing plan
- Submit the request via myafrinic portal

Getting IP Number Resources

Requirements for ASN

- Multihomed or planning to be multihomed
- Unique Routing Policy
- Submit the request via (<https://my.afrinic.net>)

Internet Number Resource Management

Easy Steps for existing Resource Members:

- Login to **<https://my.afrinic.net>**
- Resources Tab
- Select Resource Type (IPv4/IPv6/ASN)
- Request New <resources>
- Fill and Submit

Internet Number Resource Transfers

Policy Based Transfer

- Applicable to IPv4 resource only
- Applicable to Companies incorporated in the AFRINIC's Service region
- Must meet policy conditions
- Policy ratified by AFRINIC Board on 26th April 2017
- Went live on 22nd February 2018

Internet Number Resource Transfers

Mergers & Acquisition based Transfer

- Applicable to IPv4, IPv6 & ASN
- Applicable to Companies incorporated in the AFRINIC's Service region
- Evidence of a merger/acquisition must be available

Details published:

ftp://ftp.afrinic.net/stats/afrinic/transfers/transfers_latest.json

Getting IP Number Resources

Evaluation of Internet Number Resource Requests:

- As per ratified policies
- <https://www.afrinic.net/policy/manual>

Getting IP Number Resources

Applicable fees

Resource Type	Allocation/Assignment	When
IPv4	Allocation or Assignment	After approval of resources
IPv6	NIL (if member with IPv4)	-
IPv6	Allocation or Assignment	After approval of resources
ASN	ASN Assignment fee	After approval of resources

<https://www.afrinic.net/membership/cost#resource>

Getting IP Number Resources

Applicable fees

Annual Membership fees <https://www.afrinic.net/membership/cost#resource>

Billing Timeline <https://www.afrinic.net/membership/cost#timeline>

Choice of Currency : USD & Euro

Payment Method

- Credit Card (part payments possible)
- Bank Transfer

Getting IP Number Resources

Applicable fees

- 2020 Annual invoices have been issued in Oct 2019
- Fees review is in progress

<https://www.afrinic.net/membership/cost#calculator>

- Watch our Mailing Lists for the announcements of the new fees calculation mechanism
- Adjust your budgets , if applicable

Internet Number Resource Management

Point of contacts - **Person & Role**

Why are Contact details important in Resource Manage?

- Point-of-Contact can:
 - Login to myafrinic portal and manage account details and resources
 - Receive important communication from AFRINIC
 - Receive network problem/troubleshooting related notification

Why Maintain Contact Details Update??

- Effectively manage your number resources
- Avoid service interruption due to missed communication
- Avoid membership account closures

Internet Number Resource Management

Making use of the ROLE object:

- Can be referenced everywhere a PERSON object can
- While people performing a role may change jobs; the role itself remains.
- Change only effected on role object but all other references remain intact.
- Ease of maintenance than a person object

Internet Number Resource Management

The Maintainer objects - Why do I need this??

Secure the WHOIS database objects

- Protect Database Objects from unauthorised updates.
 - Reference a **mntner** in other objects.
 - Use **MNT-BY** attribute
- Control creation of IP resources' child objects
 - Authenticate by using **password** of **MNT-LOWER/MNT-ROUTES/MNT-DOMAINS** value from parent object
 - Same **mntner** referenced as **MNT-BY** in child objects

Management Your IP Number Resource

I have received IP Number Resources from AFRINIC. What Next??

1. New members ensure you received an email with login credentials to **MyAFRINIC** portal and the **mntner object** and its **password**.
 - Check that logins work and keep the **mntner** details **safe but available**
1. Create **route objects** in the IRR database
2. Create **Route Origin Authorization (ROA)** using **RPKI** interface
3. Register your **IP usage** in the WHOIS database.
4. Register your **Reverse DNS delegation**
5. Update the **contact details**

Management Your IP Number Resource

How do I do these??

Managing your IP resources can be done through the following interfaces:

1. <https://my.afrinic.net>

- Need a person object (NIC-HDL) and password to login

1. <https://whois.afrinic.net>

- Must have the plain-text password for **mntner** object(s)

1. E-mail to auto-dbm@afrinic.net

- Must have the plain-text password for **mntner** object(s)

Policy Development Process

The set of steps by which the **Internet community**, proposes, deliberates and adopts the policies that guide the use of number resources in the AFRINIC service region.

- This audience is part of **AFRINIC Internet community**
- Minimal engagement in policy discussion so far
- It is important to get engaged in the policy development process
- The policies affect all network operators
- Very important to read and understand the policies before requesting IP resources and related services
- Subscribe to the **resource policy discussion** mailing list - rpd@afinic.net

Recommendations

- Read and Understand policies
 - Visit the FAQ pages on our websites
 - Read member support documentation on our websites
 - Subscribe here <https://lists.afrinic.net/> and get engaged on mailing lists
- Contribute your ideas on the **database working group**
- Contribute to the **resource policy discussions**
- Contact: **hostmaster@afrinic.net**

irr@afrinic.net

AFRINIC Internet Routing Registry(IRR)

- Database of Internet route objects used for determining and sharing route information

Network operators publish their routing policies and routing announcements in the IRR

- Linked with AFRINIC whois database

RPKI

BPKI Certificate is required first

Send the following asap to service-support@afnic.net

- Organisation Name
- NIC-HANDLE
- Any government-issued proof of identity

Expiry of the BPKI certificate does not remove the ROAs .

Use same steps above to renew the certificate.

AFRINIC Internet Routing Registry(IRR)

BENEFITS

- Restricted to AFRINIC members
- Less chance of Resource hijacking
- Members can autonomously maintain their routing policies and routing registry objects
- Free to Resource Holders in AFRINIC service region
- AFRINIC routing registry is mirrored by other routing registries: RIPE, NTTCOM, APNIC, RADB etc

Internet Routing Registry(IRR)

1. Locate the IRR you are currently using <http://irrexplorer.nlnog.net/>
 2. If Present in RIPE_NONAUTH only?
- AFRINIC strongly recommends that you migrate your route object.
 - AFRINIC provides tools and assistance to migrate the existing route objects safely on the AFRINIC Routing registry.
 - Use whois web-update portal <http://whois.afrinic.net>
 - Note: You will need your organisation's maintainer password!
 - **Contact us at irr@afrinic.net for assistance**

AFRINIC-31 Meeting

2 -6 Dec 2019

HCTA

- Resource Members Workshop on 2 Dec 2019

Contact : Madhvi@afinic.net

