Abstract – WACREN meeting

The purpose of this presentation is manyfold :-

a) Give a brief overview of Internet Number Resources(INR) and AFRINIC's role in its management

b) status of resource pool -IPv4

c) Is there a need for IPv6 and why

d) NRENs - AFRINIC resource members?

e) Describe membership process for NRENs

f) Discounts offered by AFRINIC

g) Overview of some AFRINIC services

Internet Number Resources uptake and deployment in AFRICA

RENs – Are you on-board?

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INTRODUCTION

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Internet Number Resources – What are they?

- IPv4
- IPv6
- Autonomous System Numbers

- Characteristics
- Public
- Unique
- Finite (IPv4)

Internet Number Resources – Importance

- Independence from ISP
- Ability to scale operations
- Registration on whois database (identity)
- Move away from the limitations of NAT

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AFRINIC's role

Manage the IP Number Resources for its service region

- Implement number resource policies
- Registration Service Agreement
- AFRINIC bylaws

AFRINIC Number Resource Policy Objectives

- Conservation
- Aggregation
- Uniqueness
- Registration

AFRINIC IPv4 Resource Inventory

- Available IPv4 - 29,2 Million As /8s 1.74
- Record of > 1 /8 worth of IPv4 addresses issued in 2015
- Issued Jan-Feb 2016 – 4.4 Million
- IP addresses under evaluation@March 2016 -

IPv4 status – other RIRs

ARIN , LACNIC have run out

APNIC & RIPE NCC issue a minimum prefix to facilitate Ipv6 deployment

- Result
- **Increasing number of organisations seek AFRINIC Resource membership**

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IPv4 problem

- Designed in 1981 to provide theoretical number of 4.3 billion IPv4 addresses
- Actual usable IPs - ~>2 billion
- Scale of Internet growth could not be envisioned at that time
- @2016 , number of internet users = 3 billion

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IPv6

Successor to IPv4.

Designed to provide 2^{128} IP addresses.

"An IP address for each grain of sand" ☺

It is not directly and backwards compatible with IPv4.

Runs on the same physical infrastructure.

The same applications.

The ONLY sustainable answer to IPv4 address exhaustion

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IPv6

- Allows you to continue to grow your network – even after IPv4 has been depleted
- Be the leading innovator in the education sector
- Your universities train thousands of engineers every year. Give them that extra punch to face the realities of the real world – IPv6 networks are becoming a reality worldwide

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RENs -AFRICA

Where does this situation leave you – RENs in the AFRINIC service region?

Are public internet resources not important for your deployment?

Can virtualisation happen using NAT ?

- **Do you see yourself interconnecting without IPv6?**

Overview of NRENs in West Africa

Based on information on the WACREN website, I tabled the orgs that are AFRINIC Resource Members.

- Ghana: GARNET – membership approved
- Côte d'Ivoire : RITER – Not member
- Togo: TogoRER - Not member
- Niger : NigerREN -Not member
- Nigeria: NgREN - member
- Cameroun: RIC - Not member
- Nigeria: Eko-Konnect
- Mali: MaliREN
- Ongoing Initiatives
- Senegal: snRER – not member
- Gabon: GabonREN – Not member
- Benin: RerBenin – Not member

Why is IPv6 Important for us in Africa?

Why should you care about IPv6 when there's still 29m IPv4 addresses un-deployed?

It is important to bear in mind that the Internet works on a point to point peering agreement basis:

* You have to announce your prefixes to run a network! And at some point in the future, the default will be set to IPv6 for the major players …

* If you are not testing IPv6 already, you may find yourself in a situation where you would not be able to announce IPv4 (at a reasonable cost) as service levels for v4 will gradually erode over time!

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What type of organisation are you ?

- Local Internet Registry , Service provider, Network Operator , NREN?
- Banks, Corporate entities, Education Institutions
- Internet Exchange Points
- Critical infrastructure Providers/Operators

NRENs/Educational institutions

- Of all NRENs/educational institutions present at this event -
- If you have a legal presence in the AFRINIC region,

Q1 Do you have resources from AFRINIC?

Q2 -Did you know that you get 50% discount on initial setup and annual membership fees if you satisfy the conditions below :-

NREN/Educational Institutions in West Africa - Statistics

- Show the number of nrens and Educational Institutions that are AFRINIC members and resources held

Not an AFRINIC member?

- Membership request overview
- Resource Request overview
- How the requests shall be formulated
- Supporting documentation required
- Reference documentation

Billing Categories/Fees/discounts

- Instances when billing categories will change
- - When additional IPv4 requests have been approved
- IPv6 is free at the moment
- How AFRINIC invoices its members
- - Yearly . Invoices are issued in November and due as from 1st January of new Year.

Contact Update

- Importance of maintaining accurate and valid information on the AFRINIC whois database

Routing Registry

- AFRINIC Internet Routing Registry

AFRINIC members using RIPE routing registry

– Openly secured

– AFRINIC resources not in RIPE DB

– RIPE inclined in restricting access to their RR

- No RR for African operators

Routing Registry

Re-enforcing our role as registry

Reduced cost: Free service

- Ease of maintenance:

– All information in one place

– Same set of maintainers with WHOIS DB

- Security:

– Objects protected by your own maintainers – Reduced risk of ‘hijacking’

- One-stop shop for support at AFRINIC

Benefits of AFRINIC Resource Membership

- Elect Board Members
- *Get your BPKI certificate now!!*
- *Update the contacts of your organisation, if invalid*

Word of caution!!

To ease the infrastructure deployments, you need to ensure that :-

- Any equipment purchased support IPv6
- Routers support “32-bit” ASNs

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Thank YOU for your attention.

I will take questions in English and French

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