

AfrinIC-5

Meeting Minutes

27 November – 01 December 2006

Balacava, Mauritius

Introduction

AfriNIC, the Regional Internet Registry for Africa, held its 5th public policy meeting in Mauritius from the 29th of November to the 1st of December 2006 . This meeting held along with the second African IPv6 conference exposed the latest works being carried out on the IPv6 as well as Internet Governance and IP number resources allocation policy in Africa . In his opening remarks, the Minister of IT and Telecommunications of Mauritius called for greater participation of all stakeholders in Africa with regards to Internet Governance.

The meeting was attended by 120 delegates from 35 countries including AfriNIC Board members, staff, representatives from AfNOG, APNIC, ARIN, ICANN, ISOC, LACNIC, RIPE NCC, officials from Governments and African Network Operators at large. The largest proportion of attendees were from telecom operators followed by ISPs, giving an indication of the importance that telecommunication operators are now giving to the role of AfriNIC and the Internet Number Resources.

The INET Africa Regional Conference of the Internet Society which was organised during the same event (on 30th of November 2006) allowed various issues relating to the role of IETF and AftLD to be discussed as well as the some best practices for ccTLD Management. African participants to the most recent IETF meeting also gave a report on their participation.

29th November 2006, AfriNIC Meeting day 1, Report

The meeting started on 29 th November 2006 Wednesday morning at 09:30 with Adiel Akplogan, AfriNIC CEO welcoming everyone and introducing the Agenda for the meeting.

Mr Philip Smith from Cisco then delivered a presentation on IPv6 in the global context.

The Opening speech was then delivered by Mr. Etienne Sinatambou, honourable Minister of IT and Telecommunications of Mauritius. The first day was dedicated to presentations on implementation of IPv6 in different parts of Africa , international perspective of IPv6.

Presenters from Sudan , Egypt , Senegal and Mauritius gave the audience an overview of what has been achieved in their respective countries and the research going on.

A global perspective of IPv6 was also given by [Martin Potts](#) (from the 6DISS Initiative) and [Yves Pope](#) (from Teleglobe). .

The workshops were also arranged during AfriNIC-5. The first one was on Spam. Vijay Mauree gave a presentation on what the NCB has achieved in Mauritius , especially with regards to creating more awareness towards spam in Mauritius .

Alain Aina also gave a technical presentation on spam and spam countering measures.

The second workshop was on the 6Mandela project which organisations like AfriNIC, The IPv6 TF in Egypt , TENET Project in SA, Jordi Martinez Palet and Global IPv6 Forum (Latif Ladid). This gave an opportunity to Jordi and Adiel to present the project to the audience; the aim of which is to increase awareness and usage of IPv6 in Africa.

2.0 1st December 2006 , AfriNIC Meeting day 2, Report

Pierre Dandjinou the chairman of the Board welcomed everyone and opened the second day of meeting before handing over to Adiel Akplogan, AfriNIC CEO. Adiel started with a brief on the updated agenda and talked about the attendance meeting with 120 people attending the meeting. He thanked the sponsors: Internet Society, Cisco and Telecom Plus for the Internet Connectivity.

Adiel proceeded the giving an update on AfriNIC. The following main points were briefly mentioned and will be elaborate in greater details by the relevant staff during the day:

- The increase in membership and IP resources allocation in 2006
- IPv6 training and the increase in the allocation of IPv6 (from 5 to 23).
- The financial status and the fact that AfriNIC will be taking on board all operational expenses as from 2007.

RIRs Updates

APNIC Update (Paul Wilson)

Paul Wilson provided an update on APNIC activities and the following were highlighted:

- The new structure at APNIC with services at the centre of everything that they do
- The services area with extended hours for the help desk
- ICONS as a support website for ISPs
- E-learning modules launched
- Policy Changes
 - HD ratio for IPv6 changed to 0.94
 - 4 byte ASN
- 4 th Member Survey launched
- Resource Certification
- APNIC future meetings. The next one is in Bali 27 Feb to 2 March.
- ecoAPNIC to reduce ecological footprint.

ARIN: (Ray Plzak)

Ray Plzak provided an update on ARIN activities and the following were highlighted:

- Registration Services Agreement Storage and Retrieval
- Database Validation Process and Database System Upgrade
- Training of US and Canadian personnel
- More outreach activities
 - Member Handbook
 - The ARIN Team Comic Book
- Senior Management Coaching
- Improved Credit Card System
- IPv6 Statistics were presented
- Policies

Residential Customer Privacy (Abandon)

Micro-Allocation for Internal Infrastructure (Adopt)

Capturing Origination in Template (Adopt)

Next ARIN Meetings: The next one is ARIN 19 is from 22-25 April 2005

LACNIC: (Ricardo Patara)

Ricardo Patara provided an update on LACNIC activities and the following were highlighted:

- Growth in membership and allocation of IPv4 due to outreach conducted
- Membership distribution - more in the small category
- Develop the internet society in the LACNIC region
- Last meeting - LACNIC 9 in May
 - 180 attendees
 - 20 countries
- Policies
 - Resource Recovery - IP & ASN not used
 - Allocation Period change - Projection Plan
 - ASN 32 bits - approved
 - HD ratio changed - approved
- New Offices
- Next Meeting in Venezuela in May 2007

RIPE NCC: (Axel Pawlik)

Axel Pawlik provided an update on RIPE NCC activities and the following were highlighted:

- Registration Services
- Training - 55LIR, 11 RR, 10 DNS for LIR courses
- E-learning modules which are available on line
- Legal Issues
- Membership and Liaison for enhanced cooperation
- Certification Task Force
- New RIPE NCC Structure

RIPE Meetings: Next Meeting in Tallinn 7-11 May 2007

NRO Report (Ray Plzak)

Ray Plzak as secretary of the NRO EC, of ARIN gave an update of the NRO. He provided a brief overview of the NRO, its role, organizational structure and how it works (more information can be found on the NRO website <http://www.nro.net>).

He said current topics the NRO was tackling included:

- ICANN Contract - The need to formalise the relationship between ICANN & NRO
- IGF Meetings - Adiel and Raul are members of the program committee to organise IGF meeting. Last meeting was in Athens , and will be participating in the next meeting in Rio de Janeiro
- ITU Relationship and Interactions
 - Liaison has been formalised
 - Plenipotentiary Meeting in Antalya , especially to resolution 102.
 - ITU World in HK
- Joint RIR Activities
 - Certification Issues
 - Harmonisation of IP allocation policies

ASO Report (Jean Robert Hountomey)

Jean Robert Hountomey gave an update of the NRO-NC. He provided a brief overview of the NRO-NC, its role, organizational structure and how it works (more information can be found on the NRO website <http://www.nro.net/about/number-council.html>).

Jean Robert mentioned the current topics the NRO was tackling or has tackled included:

- IPv6 Global allocation policy
- Internal procedures for elections

ICANN/IANA Report (David Conrad)

David Conrad gave an update of the ICANN/IANA. He provided a brief overview of the role of ICANN and IANA. The main topics discussed are as follows:

- Participation within the ICANN process and structures
- ICANN has 5 regional liaisons
 - Work with community within the region to gather input into ICANN
 - More participation

- New structuring of ICANN meetings
- IANA processes in general
- Next ICANN meeting in Lisbon and Puerto Rico
- IANA recent allocations - ASN and IP addresses
- SLA with IETF has been signed
- The need to clean up IPv4 registries -e.g. 196.x.x.x
- The new website being finalised
- Real time statistics (MRTG-type) which are being planned
- What to do when we run out of IPv4
- Transition of moving away from US govt
- Policy revisions which are required by IANA

Internet Resource Certification: why and how? Part 1: Concept and principle

Steven Kent gave a presentation on 'A PKI for IP Address Space and AS Numbers'. The presentation provides a brief on Public Key Infrastructure concept.

End Users fees schedule Analysis and new proposal

This presentation is about fees for end user assignment. Legacy end user has not been billed. An end-user is not a network operator and do not reassign the IP resources. Or run critical infrastructure like ccTLD and Internet Exchange Points which are not for profit.

To have a direct assignment from AfriNIC an End User should:

- AfriNIC member
- Show either an existing efficient usage of a /25
- Or an immediate need of 50% of the address size requested.
- For critical Infrastructure operators some additional (administrative) checks are performed.

For end users the current fees are as follows:

- End User membership Fee
 - ASN End User
 - Setup Fees: 300 USD
 - Annual service fees: 50 USD
 - IP End User
 - Minimum assignment fee: 2500 USD
 - Annual service fee: 100 USD

End users are not growing since 2004 with 25 ASN and 51 IP End User which represents 5% of the total membership fees. The main problem is it is not cost effective to collect that small amount.

The AfriNIC board has examined the situation and after considering the various proposals, the following proposal has been put forward:

- ASN End User:
 - No change in the assignment price: \$400
 - Membership/maintenance fee: \$300 (for 6 years)
- IP End Users:
 - No change for the minimum assignment: \$2,500
 - Membership/Maintenance fee: \$300 (for 3 years)

This is based on the fact that no invoice should be issued for an amount less than \$300. This will have an impact on the cash flow of AfrinIC, positively.

Mark Elkins suggested that credit card payment should be considered as it would be less costly for payment. Adiel commented that AfrinIC is currently working on online payment but mentioned that a lot of African countries and organisations do not have credit card facilities.

Discussion on Open Policy Proposals (Moderated by Alan P. Barrett)

Alan Barrett explained how policies are developed within the AfrinIC region. Anyone in the community can come forward with a proposal for a policy. The proposal has to be sent to the mailing list policy-wg@afrinic.net and discussed at least 30 days before being put forward for adoption at an AfrinIC meeting.

One Global policy has been approved recently and it was the IPv6 allocation by IANA to RIRs. IANA has already allocated /12 IPv6 to RIRs.

Policy on 4-Byte ASN has been approved a couple of days ago by the board. As from 1 st Jan 2007 , 4-byte ASN will be available for allocation.

4 proposals are currently under discussions. One policy has been posted for about a week and will not therefore be discussed during this meeting.

IPv6 assignments for End Users (Jordi Palet Martinez)

Jordi Palet Martinez provided an overview of the proposal. The main points are highlighted below:

- A solution for provider independent resources for usage due to multi-homing or any other technical or administrative reasons for that.
- The qualification criteria
- Assignment Size of /32. Could start with /44
- Subsequent assignments can be made if required.
- Can be wasteful so suggest having this policy for a temporary period of 3 years.

The objection is that /32 is too big and /48 could be considered.

Jordi proposed the following options:

- Assignment size

/32 or

Anywhere between /32 to /44 or

/44 & reserve /32

- Temporary or permanent

Alain Aina commented that he preferred assignment size of /44 and permanent allocation

Randy Bush commented that he did not like the proposal and asked to see what APNIC and ARIN has done with regards to this type of policy. With regards to whether temporary and permanent allocations, he mentioned that no temporary allocations have returned their allocations upon end of term.

Jordi says that if temporary is a problem, this can be removed and that all RIRs should have policies / procedures for recovering allocations.

Mark Elkins mentioned an example where a temporary allocation worked. He suggested that temporary allocation be done and the policy reviewed every year or six months. Prefers a /32 block.

Mark Kusters from ARIN and Verisign mentioned that Verisign has a lot of /48 used and that /48 can work.

Ray Plzak from ARIN mentioned that as at today ARIN has allocated 16 /44 address blocks under a similar policy and so far they have not received a single complaint.

Alan Barrett from AfriNIC mentioned that /32 is an enormous waste of address space and suggested that /48 be used as allocation size. He also mentioned a potential problem with BGP filtering of ISPs that currently run at /32.

Alain Aina mentioned that operators outside in Africa might not adjust their filter for micro allocation which is being proposed for Africa .

Mark Elkins asked how many allocations will be done for critical infrastructure so as to better assess whether there would be actually waste or not.

Alan Barrett mentioned that his laptop is multi-homed and under the proposed policy he could get a /32 allocation and if everybody does that, then there would actually be waste.

Philip Smith mentioned that temporary allocations do not work.

Adiel Akplogan talked about filtering of prefixes and mentioned that changing the filtering criteria by ISPs should not be of concern, of more concern should be the practicality.

Jordi summed up by saying that there seems to be consensus with regards to permanent allocation, but not to the allocation size.

Randy Bush commented that this proposal should be for multi-homing only.

Consensus was not reached during the meeting with regards to this policy.

IPv6 Address Allocation and Assignment Policy (Jordi Palet Martinez)

Jordi is suggesting changes to the existing IPv6 allocation policy. These are:

- Changes to allocation size from /48 to any size
- Not to be an end site removed
- The organisations requesting the allocation can also be end-sites.

No discussions have been seen on the mailing list so far and it was proposed to have some discussions before it being put forward at the next AfriNIC meeting.

IPv6 for critical infrastructure (Frank Habicht)

Alan Barrett presented this proposed policy on behalf of Frank Habicht.

Critical Infrastructures can be defined as:

- critical DNS services
- TLD
- "important" SLD (.co.za)
- . (root) unlikely, because 14 operators outside AfriNIC, likely remain at 14 (distinct IP addresses)
- Internet eXchange Points
- L2 switch fabric, interconnecting operators

The reasons for this proposal are:

- help operators in Africa establish infrastructure
- security in planning and investing
- independence from other providers of addresses and/or connectivity
- probably more

On request AfriNIC assigns IPv6 address resource to operators of critical infrastructure. Internet Exchange Points, DNS root server operations, DNS ccTLD operations, and popular SLD DNS operations upon justification are considered critical infrastructure.

The default assignment size for an Internet Exchange Point shall be a /48. Assignments can be larger blocks on request with justification.

For critical DNS server operations (root DNS, ccTLD DNS, and SLD DNS with justification) default assignment size is one /48 from a reserved /44.

Operators of critical infrastructure can obtain ASN assignments from AfriNIC. They must be multi-homed to do so.

Jordi pointed out the problem with this policy is that it is restricted to critical infrastructures which are multi-homed and that most critical infrastructures in Africa are not multi-homed.

Mark Elkins co.za mentioned that they need independent allocation so as not to be hijacked by any upstream provider.

Vincent Ngundi from KeNIC suggested that proposal be approved and if there is any amendment to be done, this can be proposed at the next AfriNIC meeting.

Alan Barrett has a policy for IPv4 Provider Independent and a similar policy could be approved with changes

Philip Smith mentioned that there seems to be a problem with definition of Critical Infrastructure. Critical Infrastructure is only applicable if multi-homed. Thoughts should be given to multi-homing policy.

Consensus was not reached during the meeting with regards to this policy.

Change allocation and assignment period to 12 months (Adiel Akplogan)

Adiel Akplogan, CEO of AfriNIC presented the proposal and stressed the need to adjust the practice to that of other RIR regions so that AfriNIC does not appear unfair compared to other RIRs.

- Currently, policy does not explicitly mention a time frame for planning addressing needs
- Practice is to consider 24 months
- Proposal is to change to 12 months
- Other RIRs are also considering changing to 12 months
- Currently: RIPE: 24; APNIC: 12; ARIN: 6; LACNIC: 3

Adiel also mentioned that all policies are temporary as they can always be amended at any time.

Alan Barrett mentioned that discussions should continue on this policy on the mailing list as it was posted only one week ago and it would be discussed at the next meeting.

Route aggregation recommendations (Philip Smith)

Philip Smith gave a presentation on route aggregation recommendations.

The issues covered in the presentation include the following:

- History of aggregation
- Causes of de-aggregation
 - Routing System Security
 - Reduction of DOS attacks & miscreant activities
 - Commercial Reasons
 - Leakage of iBGP outside of local AS
 - Traffic Engineering for Multihoming
 - Legacy Assignments
- Impacts on global routing system
 - Router memory
 - Router processing power
 - Routing System convergence
 - Network Performance
- Available Solutions
- Recommendations for ISPs

A document has been written on Route Aggregation Recommendations by a Working Group in the RIPE region and the document can be found at

<ftp://ftp-eng.cisco.com/pfs/aggregation-draft5.txt>

IPv6 Routing Best Practices

Mark Kusters discussed issues related to IPv6 Routing Best Practices, more specifically IPV6 Multihoming and Traffic Engineering .

The solutions being developed and work in progress on this issue were presented:

- CIDR boundary/ Filters open to a specific /? (/51, /40 what?)
- Aggregation plans that allow only a specific amount of slices to occur.
- Metro/ Regional assigning of IP Address space.
- Community Codes
- Published list of IPV6 blocks
- Policy
- Shim6 Protocol
- 8+8/ GSE
- Maximum Prefix

Internet Resource Certification: why and how? Part 2: How and impact on ISP business (Randy Bush)

Randy Bush gave a presentation on the impact of Internet Resource Certification on ISP Business. He mentioned that there is today no formal way of verifying whether an IP space is held by a particular customer. A way of verifying the ownership of resources that a customer is asking upstream providers to announce and the origin of announcement is required.

Randy Bush gave a brief overview on how public key authentication works and then described a standardized way to use PKI for verifying the right to announce prefixes, the origin of announcements, routing registration data, ability to verify BGP announcements dynamically.

Adiel Akplogan ended by asking the community, especially the LIR, whether AfriNIC should be proceeding with this certification.

Registration service Report and NRO statistics (Ernest Byaruhanga)

A report was given by Ernest Byaruhanga, AfriNIC Registration Services Manager covering the details, statistics and activity from the AfriNIC Registration Service. This report shows continued increase of resource allocations in the AfriNIC region of service since the last year. The largest share for IPV4 allocation is from the South Africa with around 73% of total allocation. There were 23 IPv6 - prefixes allocated so far in the AfriNIC service region, with 8 already visible.

Ernest also showed the number of requests which are handled by the hostmaster.

A brief overview of NRO statistics (IPv4, IPv6 and ASN allocations) was also given.

Internet Routing Statistic - Project Report (AIRRS - Alain P. Aina)

Alain Aina gave a presentation on the African Internet Resources and Routing Statistics.

This project provides reports, and tools for generating statistics on Internet resources allocation and routing in AfriNIC service region and globally. The following reports are available:

Allocations report

- Tool for AfriNIC allocations statistics (IPV4, IPV6, ASN)
- Data from <ftp://ftp.afrinic.net/pub/stats/afrinic/>

BGP and routing Report

- AfriNIC service Region Routing report
- Allocations vs resources in the routing table
- Data from:
 - <ftp.afrinic.net/pub/stats/afrinic>
 - Philip Smith daily BGP Routing Table Analysis Reports

BGP report for AfriNIC prefixes (41/8 and 196/8)

- BGP tool for prefix report
- Tool to generate bgp report for a prefix

AfriNIC Software and Engineering (Frank Nnebe)

Frank Nnebe the Engineering and Database Service Manager at AfriNIC presented the Software and Engineering Report. The following were mentioned:

- Reverse Zone Management
- WHOIS Statistics & Issues
- Resource Certification

Frank also gave an update of MyAfriNIC project and a roll-out is expected in Feb 2007.

Financial and Administration Report (Harish Gowrisunkur)

Harish Gowrisunkur, AfriNIC CFO gave an update about the various activities in the finance department. The highlights were

- Invoiced 239 LIR, 3 ASN and 12 EU members
 - Including new members: 50 LIR, 3 ASN and 12 EU members

- Paid so far, 219 LIR, 3 ASN and 11 EU
- Collection rate of 92%
- Fees received from members \$832,000

Some statistics in terms of membership distribution and revenue by members were commented upon. He also commented on the new membership process.

An interim audit (as at 31 st August 2006) report performed by Ernst & Young was submitted to the Audit Committee and the report was favourable.

The Financials for 2006 up to Oct 2006 was presented and compared to budget. It was also mentioned that 2007 will be the first year where AfriNIC will operate as a fully sustainable organisation and this will represent one of the largest challenge in 2007.

AfriNIC Activity for 2007 (Adiel Akplogan)

Adiel Akplogan provided an update on AfriNIC activities. Adiel presented the existing and new staff at AfriNIC. The team is growing and 2007 will be another challenging year.

Adiel mentioned the projects and activities for year 2007

- To improve services it provides to members
- To reinforce member-first goal
- To review our policy document
- To improve our communications
- To continue to participate in Internet Governance Forums
- To improve our network infrastructure
- To work on training and meeting programs.

We need to have a more complete membership process assessment. The statistics show that we have only 50% acceptance of requests and we need to assess the reason for that. WE will conduct survey to members very early next year and work on the outcome.

AfriNIC will also work on other category of members, like mobile operators and hosting providers.

AfriNIC will revise the website after the work of the internal working committee.

AfriNIC is also working on an IP platform to allow members to reach us easier as well as some special projects like the AIRRS and the Resource Certification.

AfriNIC is also considering the deployment of anycast server.

At the policy level, AfriNIC will look at the policy development process and planning to review the policy document.

AfriNIC wants to improve our communication and liaison with members and will come up with a communications plan soon, with more focus on AfriNIC news.

AfriNIC is planning to hold regional meetings with regional training so as to bring us closer to our members. The training material will be improved to allow

people to get the most of the training materials, with also more hands-on training. A training of trainers will be planned.

AfriNIC will collect feedback from our members so as to improve our services.

With regards to Internet governance, AfriNIC has been involved at the WSIS and IETF level.

AfriNIC is also working with organisations in Africa , AfNOG and AAU to maximise on its limited resources. AfriNIC is opened to collaborate with any organisation which has the same vision as AfriNIC.

Spam is another issue which is being looked at and AfriNIC will continue to assist with this issue.

The budget has been proposed to the financial committee. The membership fee will also be analysed.

The next AfriNIC meeting will be held in Abuja from 27 th April to 4 th May 2007 . The meeting should be interesting as Nigeria is one of the emerging countries in Africa in telecommunication

Conclusion and closing remarks

Pierre Dandjinou, the Chairman of AfriNIC, started by thanking everyone who came for the meeting. All board members presented themselves.

Pierre mentioned that the time now is to consolidate AfriNIC and AfriNIC is now one of the key actors on the continent.

Pierre thanked the other registries for the participation as it allows AfriNIC to learn and all other people involved in the meeting.

Pierre closed the meeting.

The next meeting, AfriNIC-6, will be held in Abuja from 27 th April to 4 th May 2007