

AfrinIC has become the fifth Regional Internet Registry, serving Africa and the Indian Ocean Region. This full accreditation was given by the ICANN board during its meeting on 8 April 2005, in Mar del Plata, Argentina, under resolution 05.

“Resolved (05), the Board proclaims AfrinIC to be a fully approved and recognized Regional Internet Registry, to provide IP address registration and other services for the Africa service region.”

- Extract from ICANN Board Resolutions

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Board Corner

Welcome to AfrinICnews!



It is a pleasure for me to introduce to you the new **AfrinICnews**. Throughout our setup and transition process, we have been trying to keep our community informed on our progress and changes. We

have done this mostly by e-mail and presentations during different meetings. We are now taking one step ahead to introduce a regular news publication, **AfrinICnews**. As stated in our mission, in addition to our core activity, which is the registration of Internet number resources, we “*Support Internet technology usage and development across the continent and strengthen self Internet governance in Africa by encouraging a participative policy development.*” By informing our community on what is new in this area and how other communities are working for efficient technical coordination of the Internet, we believe we can contribute to that goal.

In this new edition of **AfrinICnews**, we cover broad subjects including IPv4 address space usage, the registration process in our service region and more. We expect to continually improve the content of this publication and include a questions and answers section where we can publish some frequently asked questions. AfrinIC is **our** registry and **our** participation in it is the only way to make it sustainable. *We now have our registry - we now need to show that, on our continent, we can achieve things and make them last!*

Enjoy reading and feel free to address your comments and remarks to our publication team at <afrinICnews@afrinIC.net>.

Adiel A. Akplogan (CEO, AfrinIC)

AfrinIC Office Address

Address: 03B3, 3rd Floor, Ebène Cyber Tower
Cyber City, Ebène
Mauritius

Phone: +230 466 6616

Fax: +230 466 6758

E-mail contacts

General: contact@afrinIC.net

Ressources Allocations (IP Analysts):
hostmaster@afrinIC.net

Billing: billing@afrinIC.net

Database Help: afrinIC-dm@afrinIC.net

Training: training@afrinIC.net

AfriNIC - Our Story

By Pierre Dandjinou

Chairman, AfriNIC board of Directors

With only four African countries connected to the Internet by 1995, the internal working of this technology was hardly known to the African community. Yet, a small group of Africans, the so called 'pioneers', used the opportunity provided by the technical workshops of the ISOC, which were organised within the framework of their annual conferences (the INET series), to discuss African issues. This was the origin of the African Networking Symposium (ANS) - a meeting place for all of the various organisations to discuss issues, test ideas, present results, and obtain feedback from the nascent community. In fact, the first official meeting of the ANS took place as part of the ISOC annual conference at INET '97.

At INET '98, the success of the ANS was recognised and the program was expanded to become the Developing Countries Networking Symposium. Nevertheless, the concept of ANS lived on as a forum for African Internet networking exchange. Issues around managing Internet resources on the continent came to the forefront. There were discussions around the creation of a local entity to be called the African Regional Network Information Center (AfriNIC), which would act as the Internet numbering authority for the region.

A casual meeting in Cotonou in December 1998, dubbed 'the Africa Internet Governance Conference', under the umbrella of what was then called the Africa Internet Group (AIG), with the sponsorship of the United Nations Development Programme and the Francophonie, sought to debate African takes on Internet Governance. While the initial objective was to expose African professionals to some of the technical issues ranging from management of national information centres, the ccTLDs, and the complexities of the discussions about the US White Paper that was published as starter to the opening up of the management of the Internet by the business community, participants to the Cotonou meeting decided to specifically deal with AfriNIC.

The Cotonou meeting was a landmark to consensus building on what it took to build AfriNIC. Issues such as language barriers were dealt with, alongside regional representation. A review of by-laws and a board of trustees with regional representation were the most important outcomes of the meeting. Subsequent meetings that were conducted alternatively with the African Network Operators group (AFNOG) as well as AfriNIC's own general assemblies in places such as Cape

Town in South Africa, Accra in Ghana, Cairo in Egypt, Lome in Togo and Dakar in Senegal proved useful. These consolidated a common understanding of the issues surrounding AfriNIC. Because of the final screening of the applications for hosting, AfriNIC decided that four countries should host different AfriNIC operations. Mauritius was used for incorporation and administration; South Africa for technical operations; Egypt for Disaster Recovery and backstopping; and Ghana for training activities. Training was to be conducted from other places such as Uganda and Senegal along with Ghana.

With the final recognition of AfriNIC by ICANN at its meeting in Argentina this month, the first steps towards creating an African Internet authority have been made. The years to come will see us consolidate the user community, provide quality services and engage in capacity building activities such as training, research and development and contribution to the overall business and industry environment of the Internet on the continent.

AfriNIC is a non-governmental and not-for-profit membership based organisation. Its main role is to be the Regional Internet Registry for the African Region.

AfriNIC Open Policy Meeting

by Adiel A. Akplogan
CEO, AfriNIC

AfriNIC, like all RIRs, allocates and assigns number resources through policies defined by the community. Based on what we call a bottom-up process, policies are commonly proposed or amended by the community and the Registries apply them. To make this process formal, AfriNIC has defined a Policy Development Process (PDP) in six steps:

1. A policy is proposed (by anyone).
2. It is posted to the AfriNIC policy-wg mailing list for discussion. (The policy-wg list is open to anyone from the community, and anyone can join the list for discussions).
3. After (at least) 30 days of discussion and comments on the mailing list, the policy is brought to the open public policy (face to face) meeting for the community and members' discussion and endorsement through consensus.

** Consensus is defined as general agreement of the group and is not measured by a majority vote.*

4. If there is consensus at the open policy meeting, go to step five as itemised below. If there is no consensus, step three will be repeated until consensus is reached or the policy proposal is abandoned (or withdrawn).
5. A last call for comments on the policy will be announced on the Policy Working Group mailing list. A period of 15 days will be given for the community to suggest any final changes and amendments.
6. The Board of Trustees will then ratify and adopt the policy for use.

This process requires that, after discussions are held on the open mailing list, the proposed policy is discussed during a face to face meeting called a **public policy meeting**. During such meetings, discussions on the policies proposed take place. This stage of the policy development process is very important, as this is where people can share their views and/or concerns on allocation practices.

AfriNIC had its first public policy meeting in May 2004 in Dakar (Senegal) where IPv4, IPv6 and ASN allocation policies were discussed. The proposed policies were adopted. They became valid in July 2004, after the board ratified them. The second public policy meeting will held in Maputo (Mozambique) from 25 to 27 April 2005. Your participation in such a meeting is one of the key contributions to the success of our self-governance, bottom-up process.



AfriNIC-1 meeting: Dakar, 21 and 22 May 2004

AfriNIC Registration Service

By Ernest Byaruhanga
Registration Services Manager, AfrinIC

As an RIR, AfrinIC provides to the community a service of managing, distributing and registering Internet resources according to the policies and

guidelines stipulated by the community. These are mainly IPv4 and IPv6 addresses, AS numbers and DNS reverse delegation. The Registration Services Department acts as an interface between AfrinIC and its members who are requesting Internet resources. It is therefore the most sensitive department at AfrinIC, and is composed of the IP Resource Analyst Team, who receive ticketised requests from members, evaluate these requests and decide on the final approval of the requests. Now, the only way of reaching the AfrinIC Registration Services Department is through the hostmaster@afriNIC.net e-mail address.

As you can imagine, a lot of correspondence - including spam complaints, abuse, help/clarification and much more - is received on the hostmaster e-mail account! It can therefore take up to 48 hours to get a response from an IP Resource Analyst. If you think your request has waited more than 48 hours without any response, please report this to <afriNIC-service@afriNIC.net>.

The AfrinIC Registration Services Department does not deal with spam or abuse related matters. Sending such complaints to hostmaster@afriNIC.net will go unanswered. Instead, it is advisable to query the AfrinIC whois database for the contacts of the IP addresses in question. Spam/abuse matters can then be sent to these contacts.

LIR Training

AfriNIC has developed a training program to help its members better understand the RIR system, the registration of IP numbers and IP number resource management. The very first AfrinIC LIR training event was held in November 2004 in Burkina Faso. This course, in French, brought together 20 participants (already established LIRs and ISPs) from French speaking countries around the continent.

AfriNIC's objective is to deliver its training program across the continent. You can read more about AfrinIC training on www.afriNIC.net/training/. The second training event is happening on April 23 in Maputo, before the public policy meeting. Another training event is planned in June in Pretoria South Africa. AfrinIC is also working on other means of training such multimedia material and online support.

The success of our organisation depends on how well our community understands our process and their readiness to take part. We will put significant effort into this aspect of activity to ensure broader participation by the African Internet community.



AfriNIC training in Ouagadougou

AfriNIC and the International Community

During its transition process, AfriNIC has taken an active part in many international aspects of Internet technical coordination. Two observers represented our service region in the ASO (the ICANN Address Supporting Organisation): Alain Patrick Aina and Gregory Massel. Our CEO represented AfriNIC in the Number Resource Organization (NRO) Executive Council. With its final accreditation as an RIR, the African region will now need to officially appoint representatives to this organisation following a set procedure

ASO AC (Now the NRO NC): According to the ASO MoU with ICANN, each RIR region must appoint three representatives to the NRO Number Council. One is appointed directly by each RIR board. The other two are elected by the community. The election process must be open and transparent. To allow this openness and transparency, we have defined an NRO NC representative election process in the AfriNIC region that you can read at:

<http://www.afrinic.net/nro/afnro-elp200502.htm>

For this very first election, we have received five nominations. We opened a comment period on March 27 2005. Elections will take place on March 26 during the AfriNIC second public policy meeting in Maputo. The two elected candidates will have respectively a mandate of two and three years. The third representative, appointed by the Board, will have a first mandate of one year. Doing this allows a rotation of the representatives.

Participation within the international community gives us the opportunity to express our voice in the global Internet management arena.

Brief News:

- **AfriNIC settled in its new office in Mauritius:** In January 2005, AfriNIC moved in to its new offices located in the newly built Cyber Tower (located in the Cyber City). This gave the organisation the necessary space to set up its administrative office.



- **New staff @ AfriNIC:** Since the last AfriNICNews, two staff members have joined us:

Nooriah Woozeer joined us in July 2004 as Business and Administrative Assistant. She holds a B.A. in Humanities from the University of Mauritius.

Harish Gowrisunkur joined us in March 2005 as CFO. He is a fellow of the chartered association of certified accountants and holds an MSc in Systems analysis from the City University, London. Harish has worked in the UK, the US and consulted in five African countries.

Franck Nnebe will join us soon as Senior Software Engineer.

Upcoming Events

RIPE 50	Stockholm, Sweden	2-6/05/05
WSIS MEA Prep COM	Cairo, Egypt	8-10/05/05
WGIG	Geneva, Switzerland	18-20/05/05
ARIN- XV	Orlando, USA	17-21/05/05
LACNIC VIII	Lima, Peru	27-30/06/05
ICANN	Luxemburg	11-15/07/05
IETF 62	Paris, France	31-5/08/08
APNIC 20:	Hanoi, Vietnam	6-9/09/05

IPv4 Address Space Utilisation

By Geoff Huston
APNIC

When the Internet Protocol was first designed, some thirty years ago, one of the more innovative aspects of its design was the choice of an address field in the packet head that was 32 bits in length. At that time, contemporary network protocols were using 8, or 16 bit address fields, embracing networks of between 256 and 65,356 separate hosts. The choice of a 32 bit field, embracing over 4.4 billion hosts was truly revolutionary, and at the time the address field appeared limitless.

However, in 2005 this is no longer that case, and while we will not run out of IPv4 addresses this month, and probably not in this year, it is time to look at how long we have to go, and what our options are when we exhaust the remaining available IPv4 address pools.

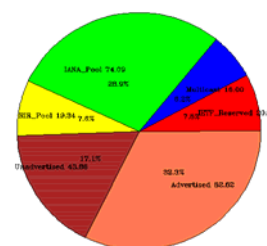
While the IPv4 space encompasses some 4.4 billion unique 32 bit values not every value can be used in the Internet. The IETF has reserved some 8% of the address space (or the equivalent of 20.09 of the 256 /8 network blocks). A further 6% (or 16 /8 blocks) are reserved for use in multicast contexts, leaving a little under 220 /8 blocks, or 86% of the total IPv4 address space available for general use.

The allocations of this space up until today now encompass some 66% of this useable space, or the equivalent of 146 /8 address blocks, leaving the equivalent of 74 /8 blocks in the unallocated address pool managed by the Internet Assigned Numbers Authority (IANA). So it looks like we're 2/3 of our way through the available address space, and asking the question of how long we have to go before we completely exhaust the address resource is a timely question.

There are some further aspects to consider here. The first is the procedure of address allocation. IPv4 address blocks are allocated from the IANA to the Regional Internet Registries (RIRs), who, in turn, allocate smaller blocks to ISPs and local Internet Registries, who in turn perform end user allocations. At this stage the address blocks are announced in the Internet's routing table. At any stage, there are a certain number of addresses held in the RIR-managed address pools, and a certain number of addresses held in the ISP and LIR pools before they appear in the routing table. Some 37% of the useable addresses are actually announced in the routing table, 9% are held in the RIR address pools and 20% of the useable address space is held in ISP and LIR address pools and is not announced in the Internet. Over one half of the RIR address pool space, and the majority of the ISP and

LIR space reflects address space that was allocated prior to the adoption of the current RIR system in the late 1990's. Since 1997 over 95% of all RIR allocated address space is advertised into the routing system.

By analysing the growth of the routing system we can derive a model of demand for address space across the global Internet, and, hence make some tentative predictions as to the longevity of the IPv4 address space.



IETF Reserved	20.09 /8s
Multicast	16.00 /8s
IANA Pool	74.09 /8s
RIR Pool	19.19 /8s
Unadvertised	43.82 /8s
Advertised	82.82 /8s

Figure 1 – Ipv4 Address Space Snapshot - March 2005

The current address consumption rate has lifted from a long-term average of 4 /8 address blocks per year in 2002 to some 6 /8 address blocks per year in 2005. This implies that the remaining 74 /8 address blocks would provide a further 12 years supply at this rate, or until 2017 (Figure 2). Another form of the predictive model is where the growth of the Internet continues to increase over time, and the rate of increase of address consumption is 1.5 /8 address blocks per year. This model of continual increase in consumption will exhaust the available address space within some 7 years, or by 2012.

These are approximate predictions, or course, and many technological, social and economic factors are at play when looking at the basis for actual address consumption rates.

The prospect of imminent exhaustion of the remaining unallocated address pools could fuel a run on the remaining space, dramatically increasing its consumption rates for the final few address blocks.

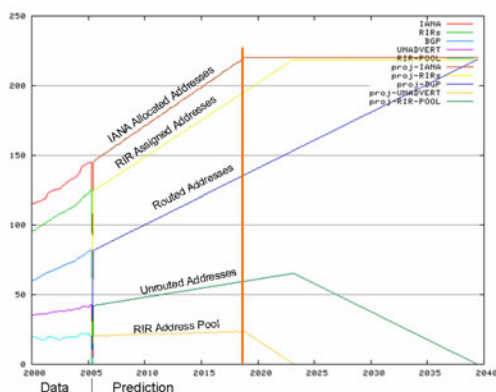


Figure 2 – IPv4 Address Consumption – constant rate model

On the other hand, the emergence of an address trading market could release a significant proportion of those unrouted address blocks that were allocated prior to 1995 into play, creating a new pool of address blocks that could fuel further Internet growth for up to a further two to three decades. Rather than relying on the emergence of a new market in address resources, or running the risk of a chaotic run on remaining unallocated address resources, it may be better to assist the Internet industry react to such preliminary signals of address shortage by undertaking an orderly transition to IPv6. Within such a transitional scenario the consumption rates of IPv4 addresses would slow down, with a corresponding increase in IPv6 allocation rates, as the Internet undertook such a protocol transition.

The basic message from this analysis is “Don’t Panic”. The Internet is not running out of available address space in the near future, and there is still quite some time available to work through the available options. The RIR system has been successful in ensuring that address space is used responsibly, and there is no imminent exhaustion or shortage of IPv4 address space that would threaten the further orderly growth of the Internet at this point.

Of course this is a constantly evolving situation, and the policies used by each RIR to manage address resources is guided by an open, transparent bottom-up process that considers the perspectives of all interested parties when reaching consensus outcomes. In a realm where the finite nature of the resource demands careful and considered address management, the RIR system has proved not only to be an outstandingly successful approach so far, but also being easily up to the task of managing the demands of address distribution mechanisms in the coming years.

Board Corner

The AfriNIC structure puts its members at the very top. They elect representatives to sit on the panel of the Board of Directors. The panel is composed of representatives of the six African sub-regions in addition to the CEO of the company. Members in good standing elect board members during the Annual General Members’ meeting. They are elected for three years, renewable only once.

Primary 2004

Name	Region	Terms	
		Start	End
Kamal Okba	Northern Africa	05/2004	04/2007
Pierre Dandjinou	Western Africa (chair)	05/2004	04/2007
Didier R. Kasole	Central Africa	05/2004	04/2005
Brian Longwe	East Africa	05/2004	04/2006
Alan Barrett	Southern Africa	05/2004	04/2006
Viv Padayatchy	Indian Ocean	05/2004	04/2005
Adiel Akplogan	CEO	Appointed	

Alternate 2004

Name	Region	Terms	
		Start	End
Mokthar Hamidi	Northern Africa	05/2004	04/2007
Sunday Folyan	Western Africa (chair)	05/2004	04/2007
Pierre Moutumbe	Central Africa	05/2004	04/2005
Charles Musisi	East Africa	05/2004	04/2006
Alan Levin	Southern Africa	05/2004	04/2006
Kenneth Yiptong	Indian Ocean	05/2004	04/2005

During the AfriNIC-2 meeting, there will be a Board election for seats five and six. These are for Central Africa and the Indian Ocean. You can find details of nominations received at:

<http://www.afrinic.net/bot/nominees2005.htm>

Next, we will hold elections for seats three and four, which are East Africa and Southern Africa.

Board committee:

Financial committee:

Adiel Akplogan
 Alan Barrett
 Alan Levin
 Kenneth Yiptong

Board Election Committee 2005:

Yaovi Atohoun (Chair)
 Sunday Folyan
 Mark Tinka
 Adiel Akplogan