MEMBER
GUIDEBOOK

AFRINIC
The Internet Numbers Registry for Africa

CONTENT

Welcome Message

Welcome to AFRINIC

We are pleased to welcome you to the community and to tell you about ourselves and what we offer. As your partner, AFRINIC promises to provide you Internet Number Resources and the support necessary to successfully manage the resources. In addition, we promise to provide the support you need to deploy IPv6.

This Guidebook outlines AFRINIC services and commitment to our members. It provides information on the tools and services we offer in the management of your IP resources. It is a demonstration of our engagement with you, and the community as we strive to build a better working, efficient and mutually beneficial relationship.

The AFRINIC Team, especially the Customer Service Unit, is always at your service and delighted to offer you any support, advice and answer any questions you may have.

Best Regards,
Customer Service Unit
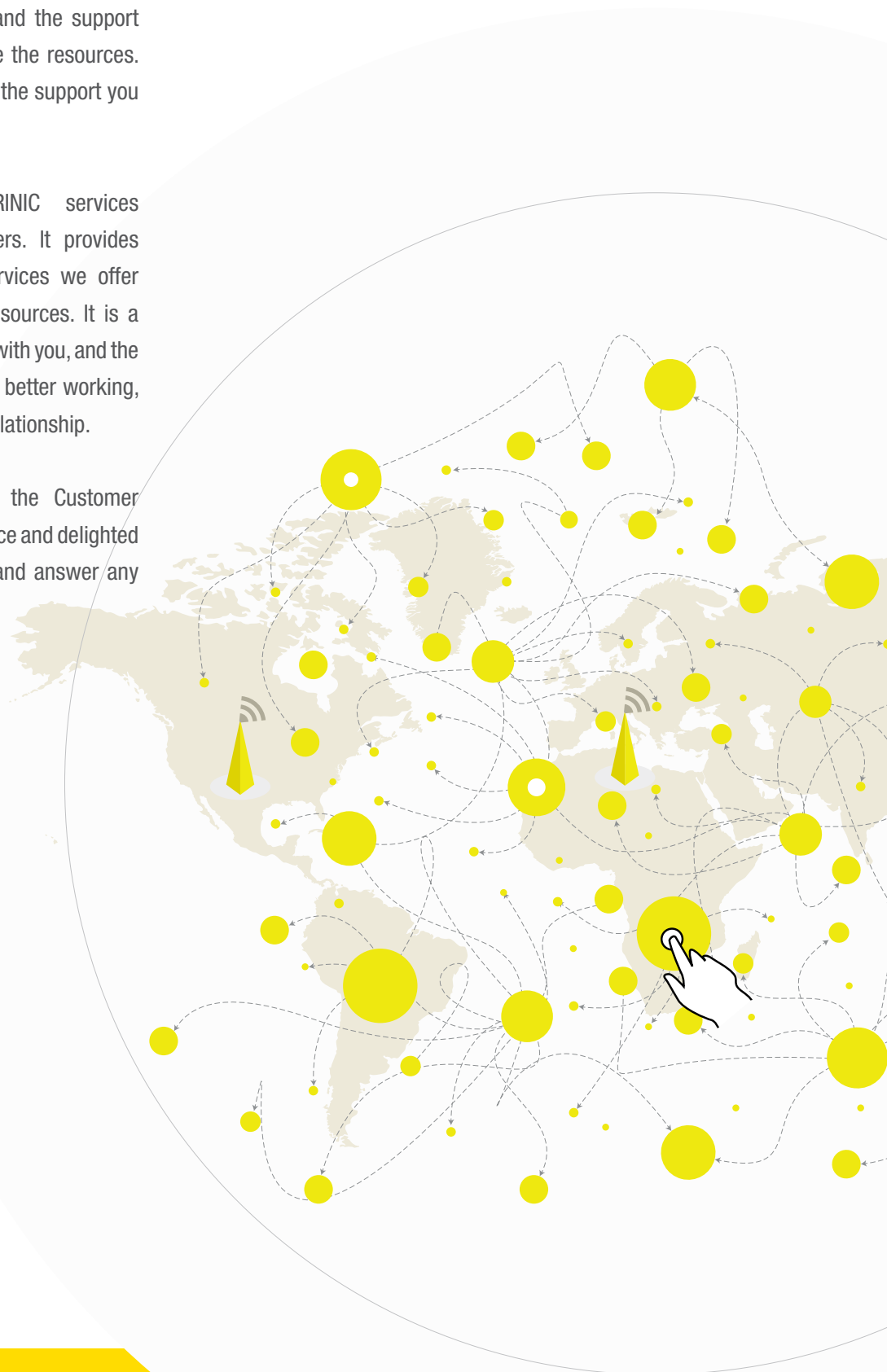
AFRINIC in Brief

The African Network Information Centre (AFRINIC) is the Regional Internet Registry (RIR) for Africa and Indian Ocean, responsible for the distribution and management of Internet number resources such as IP addresses and ASN (Autonomous System Numbers) for the African and Indian Ocean regions.

Our Vision

Spearheading Internet technology and policy development in the African region.

Our Mission

To serve the African Community by providing professional and efficient management of Internet number technology usage and development, and promoting Internet self-governance.

Our Core Values

- Community driven
- Operational excellence
- Passion
- Innovation & Creativity

Internet Number Resources

IPv4

Internet Protocol version 4 (IPv4) is a system of addresses used to identify devices on a network. IPv4 addresses are 32-bit numbers. This means that there are just over four billion unique possible addresses. Over time, and with the rapid growth of the Internet, it has become clear that more addresses would be required to ensure ongoing growth and scalability of the Internet. IPv4 is still used to route most traffic across the Internet.

IPv6

Internet Protocol version 6 (IPv6) is the Internet's next generation protocol. The Internet Engineering Task Force (IETF) developed IPv6 as the long-term solution to forecast IPv4 depletion. IPv6 addresses have 128 bit addresses. This means that there are over 340 trillion trillion trillion unique possible addresses. IPv4 addresses and IPv6 addresses however are not compatible with each other and will continue to be used together.

ASN

An Autonomous System is a connected group of IP networks that follow to a single unique routing policy. An ASN is a globally unique number used to identify an Autonomous System.

What does IPv4 depletion mean?

It means that the central pool of available IPv4 addresses managed by the Internet Assigned Numbers Authority (IANA) is empty. By February 2011, most of the four billion IPv4 addresses available had been allocated for use or reserved for a specific technical purpose.

The five RIRs (AFRINIC, APNIC, ARIN, LACNIC and the RIPE NCC) continue to allocate IPv4 address space to their members in accordance with their community-based regional policies until their pools of available IPv4 addresses are depleted.

Will the Internet still work when there are no IPv4 addresses left?

Yes. The Internet will continue to work and the IPv4 addresses already in use will continue to function.

Is it possible to have an IPv4 and IPv6 addresses simultaneously?

Yes. This is referred to as (dual stack). All of the new operative systems and devices that currently support IPv6 allow the simultaneous use of both protocols. This way, the communication with IPv4 only networks as well as IPv6 only networks is possible. We encourage our members to get their IPv6 prefix now, so that they can start experimenting with it. This will in turn mean they start acquiring the knowledge and developing the skills they need to run an IPv6 network. There will be no extra cost for IPv6 address space if your organisation already has IPv4 address space.

What can you do with your ASN?

If your IP addresses have been assigned by your upstream provider, when you change to another ISP, you will have to return these IP addresses to your old ISP and receive a new range from your new upstream provider. If you have a large network, renumbering to the new addresses will be a very time consuming, labour intensive and operationallycostly exercise. There will be downtime incurred while your core network is reconfigured.

Even if these last seconds, they still pose an operational risk to your organisation. If you have address space directly allocated from AFRINIC, changing upstream ISPs is an issue of informing your new upstream about your existing allocation. Such allocation would be independent of any provider and can be announced by any operator without risks of renumbering when changing upstreams.

AFRINIC membership is required to be able to receive Internet number resources. Even if you have autonomous address space, you'll need an Autonomous System Number (ASN), which, for the African region, you can only receive from AFRINIC if you plan on multihoming.

WHY SHOULD YOU BECOME A MEMBER?

Becoming a resource member of AFRINIC has numerous Benefits:

- Obtaining your number resources directly from AFRINIC
- Being part of the largest Internet Community in Africa
- Sharing experiences with other members of the community
- Accessing the support and expertise of AFRINIC dedicated Staff for your Internet development strategies
- Getting preferential admission to training workshops, free of charge
- Accessing a web portal for managing your resources
- Participating effectively in decision-making processes on Internet Governance in Africa
- Getting preferential access to AFRINIC's Public Policy meeting
- Vote in Board Elections and elect AFRINIC's Board Members

AFRINIC SERVICES

AFRINIC offers a wide range of professional services to its members. We work on constantly improving our services to meet member needs in a fast-changing environment.

- Numbers Resources (IPv4, IPv6, ASN, reverse DNS)
- **Training (in English and French)**
- **Statistics**
- **WHOIS**
- Security Tools (DNSSEC, RPKI)

Please click **here** for more details on the services listed above.

Members must always satisfy the policy requirements regarding the resources allocated to them by AFRINIC. It is therefore very important for an AFRINIC member to manage their actual Internet Number Resources, and be able to request additional resources in the future as per the current policies and established procedures.

MyAFRINICis a web-based portal designed for AFRINIC members to manage their contact information, resources, billing and support requests through a simple, user-friendly interface. All AFRINIC members are registered on the member portal as well as the AFRINIC WHOIS Database.

The registered contact persons of each AFRINIC member are given login credentials to access the MyAFRINIC portal. The registered contact persons should ensure that the organisation's information is valid at all times.

Please consult the FAQs - Frequently Asked Questions - which details the steps you need to manage your resources. (**FAQ**).

1. Manage Organisation's information

AFRINIC encourages its members to keep their organisation's contact information up-to-date at all times. Our members can maintain their details (physical address, contact telephone numbers and email addresses) by logging in on the MyAFRINIC portal and editing the information.

Any changes made to the organisation's details will subsequently be reflected on the AFRINIC WHOIS database.

It is possible for each organisation's contact to manage his information by simply logging in on the portal and editing the information. Currently, a member cannot update his registered contacts (should they change). Such requests must be forwarded to service-support@afrinic.net.

Valid organisation/resource information on the MyAFRINIC portal will ensure that the publicly available AFRINIC WHOIS database is also updated with valid information.

2. Manage registered contact information

There are three types of contacts in general - Administrative, Technical and Billing. The rights of each type of contact differs on MyAFRINIC:

Administrative Contact - The administrative contact will have the overview of the member's account on MyAFRINIC.

Technical Contact - The technical contact will be able to register assignments, reverse delegations and request for additional resources on behalf of the organisation.

Billing Contact - The billing contact will be able to view the billing summary of the organisation, download an invoice as well as pay by credit card using the on-line payment system available on the portal.

Each registered contact is able to maintain and update a member's details (address, e-mail address & telephone number).

3. Resource Management

Management of the IP resources allocated to each member usually entails the following tasks (registration of the IPv4/IPv6 IPs being assigned to the customers on the AFRINIC WHOIS database, registering reverse delegations, and protecting resources on the AFRINIC WHOIS database.

3.1 IPv4 Assignments

The LIR members must register the usage of their allocations on the AFRINIC WHOIS database. Each of the addresses ranges falling in the category below must be registered separately:
An end-site or customer with 4 or more IP addresses
A subnet for your own network infrastructure
Any range from which IPs are dynamically assigned

In addition, Registration of specific assignments in the AFRINIC WHOIS database will prevent the member's allocation from being blacklisted in case of the member's customers generating spam.

3.2. Reverse delegations

Reverse DNS delegations allow applications to map to a domain name from an IP address. Each organisation should properly manage its reverse lookup zone. You may consult the information available **here** to learn more about setting up reverse DNS.

3.3. Maintainer object

A maintainer was created for you using the MD5-PW algorithm and the password communicated to you in the ticket response by the AFRINIC hostmaster. We recommend that you implement the PGP auth for your maintainer. AFRINIC has documented the steps which will help its members to create/update your maintainer object.

3.4. Route objects

Route objects and other routing information can only be created in an Internet Routing Registry (IRR). The AFRINIC IRR acts as part of the global IRR system that consists of several other databases where network operators publish their routing policies and announcements in order for other interested network operators to use that data, for ease of interconnecting and working together. There are other IRRs, including ARIN, APNIC, RIPE, RADB and many others.

For more details, please see
http://afrinic.net/en/services/afrinic-irr

3.5. How to request for an additional prefix allocation

Any request for new allocation or assignments of IP addresses must adhere to the following:

Your account must be in good standing. Verify at **https://my.afrinic.net** (Billing -> Summary Statement). An account in good standing has zero balance. If in doubt, check with billing at billing@afrinic.net

1. Ensure that your request originates from a registered contact in MyAFRINIC (https://my.afrinic.net under My Organisation)
2. Your total IPv4 address utilisation must account for at least 80% of the entire allocation.
3. Ensure that the allocated or assigned prefixes are well registered in AFRINIC WHOIS database.
4. Request for the additional prefix from the MyAFRINIC

4. Update/change in registered contacts (MyAFRINIC/WHOIS)

In case of the current contacts leaving your organisation or moving on to new responsibilities within your organisation, AFRINIC recommends that its hostmasters are notified about this change and details of the new contacts be given so that the contacts for the organisation/resources are updated on the AFRINIC databases.

5. Need help

For any queries related to your account, you may contact the Customer Services Team at service-support@afrinic[dot]net
For resources requests or management, you may contact the AFRINIC hostmasters at hostmaster@afrinic[dot]net.
For WHOIS database related queries, you may contact afrinic-dbm@afrinic[dot]net.

Billing

1. Membership Renewal:

AFRINIC Membership renewal takes place once a year and the period covered is a calendar year.

2. Billing

Invoices for Members are issued at the beginning of December preceding the membership period. Invoices are sent by email to all members and at the same time a copy is posted on the members account on our portal http://my.afrinic.net
Members may access their account using the login and password provided by AFRINIC and may download a copy of their invoice.

3. Payment

Payment of membership fees must be effected in US dollars and in full as reflected on the invoice. All local taxes and any local bank charges are the responsibility of the member. Members are strongly advised to quote the invoice reference on their payments as this information will help us match your payment against your invoice.

AFRINIC accepts payment made either through:
Wire Transfer directly into AFRINIC bank account as per details on the invoice; or Credit Card via our members portal My.afrinic.net.

AFRINIC offers a 5% discount to all LIR members' payments received before the date of the invoice. At the same time a late payment penalty shall be levied on all payments received after the due date of 31st January.

At the same time, a late payment penalty is levied on all invoices which are unpaid after the due date of 31st January. Up to three (3) Reminders are sent to unpaid members. Should fees still remain unsettled 3 months after the due date, AFRINIC initiate the Resources Reclaim Process, at which point the Registration Service Agreement is nullified and all services are withdrawn from members.

AFRINIC's special Fee Schedule

For Academic and Research Institutions
AFRINIC gives a 50% discount to all organisations which can show that they are official academic or research institutions in their countries and demonstrate the exclusive use of assigned/ allocated resources for not-for profit academic or research activities.

For Critical Infrastructure

Any Critical Infrastructure applying for membership with AFRINIC, will receive an ASN, a /24 IPv4 address space and a /48 IPv6 address space free of charge unless there is evidence of commercial activity.

4. CONTACTS

For further references, please consult the following:
- The signed Registration Services Agreement (RSA)
- AFRINIC website
- AFRINIC Billing policy
- AFRINIC Membership fees

Capacity Building & Community Engagement

Our Training Workshops

Since our setup in 2004 we have been engaged in a wide-scale programme to raise awareness and build capacity in IPv6 in AFRICA. With the support of various stakeholders in the community, AFRINIC provides on-site training on Internet Number Resources Management and Foundational IPv6 for Engineers in various countries each year.

Since its inception, AFRINIC has conducted 109 workshops in 41 countries and trained over 3,424 engineers and decision-makers on Internet resources.

AFRINIC gives priority to its members (subject to them meeting course pre-requisites) to attend these extensive training sessions and as an AFRINIC member, we encourage you to send the registered technical contact for training on INRM /IPv6 training.

For more details on countries we will be training this year, please visit our dedicated training portal at
http://learn.afrinic.net

IPv6 for Decision Makers

AFRINIC conducts high level non technical IPv6 trainings for governmental officials, CEOs and decision makers on IPv4 depletion and the need for IPv6 deployment.

Advanced IPv6 In-house Training

For a 4-day course, we certainly provide the best foundational IPv6 course you can find anywhere. However, if an organization wants a targeted detailed training for it's engineers where we go deeper and contextualize the training to their network. We can arrange such a training program on a cost recovery basis. Get in touch with us for details.

Our Meetings

Each year, AFRINIC holds two critical meetings during which stakeholders from around Africa and the Indian Ocean, its service region, and from other parts of the world congregate to deliberate on issues relating to Internet access, use and impact.

AFRINIC meetings offer an important platform and channel through which people can share experiences, best practices, and discuss issues that affect not only the Internet community in Africa but around the world.

So far, AFRINIC has held 24 meetings in different parts of Africa, covering regions from West to East to North to South to the Indian Ocean. For example, in the last three years alone, AFRINIC has held its meetings in Cote D'Ivoire, Djibouti, Mauritius, Tunisia, Congo and Botswana.

Beginning 2012, the joint AfNOG/AFRINIC Meeting became known as the Africa Internet Summit (AIS). The first Africa Internet Summit was held in Serrekunda, The Gambia, in May 2012.

The brainchild of AFRINIC, the Regional Internet Registry for Africa, and the African Network Operators' Group (AfNOG), the Africa Internet Summit is the premier multi-stakeholder event combining conference, training and networking for the Internet industry.

The AIS is focused on popular and emerging ICT industries such as mobile telephony and its impact around the world. The AIS addresses the current and future needs of operators from the ICT industry.

While the Internet remains at the centre of the discussions, workshops and various meetings, the event also deals with other important matters relating to emerging technologies, particularly mobile telephony, their use, and how they can contribute to both social and economic development in Africa. It goes beyond core IP engineering to integrate the real world use and impact of IP technologies.

The AIS includes sessions that cover business and technical aspects of the Internet: Policy, Content and Names, Internet Numbers, Research, Infrastructure, Capacity building, and Security.

The AIS hosts training workshops and tutorials, parallel sessions, and multistakeholder roundtables focusing on numerous technology and related issues.

The annual summit is open to members and entrepreneurs in ICT, the business community and civil society. It attracts internationally renowned speakers to share knowledge and experiences on technology developments, changes, uses and effects.

The meeting will also bring together experts from different sectors, both public and private, ICT Industry leaders and technical experts including Internet Service Providers (ISP), government, regulators, academia, business, civil society, and interested groups, among others together in what is a key event in the ICT field. It is a great opportunity for networking among peers and businesses.

For more information about Africa Internet Summit, **click here.**

For more information about AFRINIC public policy meeting, **click here.**

Community Support

The Fund for Internet Research and Education is an awards and grants programme designed to encourage and support the development of solutions to information and communication needs in the African Region. It specifically emphasises the role of the Internet in the social and economic development for the benefit of the African community. This comes at a¬ critical time when the Internet and related technologies are playing an increasingly important role in the way people communicate, work, do business and live their lives.

The programme aims at encouraging and promoting the development and application of innovative ideas that can contribute not only to the solution of challenges in Africa and the Indian Ocean region but also enhance Internet and technological deployment, uptake and utility for the benefit of society.

The FIRE programme is specifically aimed at:

- Supporting the development of affordable and efficient Internet infrastructure
- Developing and promoting the adoption of innovative applications and services
- Supporting individual rights awareness and strength trust between organizations and individuals in the region

Launched in May 2012, the FIRE programme is a member of the Seed Alliance, a global initiative bringing together partners in Africa (AFRINIC), Asia Pacific (ISIF.aisa) and Latin America (FRIDA).

Call for applications for submissions of projects are made through our **FIRE website.**

INVESTING IN THE FUTURE

The Fellowship Programme

AFRINIC offers fellowships to our meetings. The fellowship is reserved for individuals, from small organisations, universities and media, who are actively involved in Internet operations and development or ICT policy in their countries and respective communities.

Fellows are expected to positively and actively contribute to IP address management awareness in the AFRINIC service region.

The fellowship includes:

- Assistance with round-trip airfare to the meeting venue
- Hotel accommodation for the AFRINIC Plenary event

For more information about the fellowship programme please visit our **website**.

Policy Development Process (PDP)

The operations of AFRINIC are governed by a range of policies developed by the community. The management and distribution of the Internet resources are done as per well-defined policies. Policies provide the guidelines determining the allocation, usage and management of the critical Internet number resources.

WHY DO WE NEED POLICIES?

Internet number resources such as IP addresses and Autonomous System Numbers (ASN) are important public resources which are vital for the continued growth and stability of the Internet.

These resources are neither owned by address users, nor are they a commodity that can be bought, sold or traded. It is thus important that they are managed and distributed in a responsible and fair manner, and the policies are the vehicles through which these objectives are delivered.

WHO DEVELOPS THESE POLICIES?

Policies can be proposed by anyone from the community, not necessarily an AFRINIC member. The Internet community develops and agrees on all AFRINIC policies. However, just as the Internet develops, policies must evolve to suit changes in the industry. A key role of AFRINIC as well as other RIRs is to provide a forum at which members of the Internet community can discuss changes in the Internet and create policies to drive the developments.

GET INVOLVED IN THE PDP

The Internet needs to be managed responsibly through the bottom-up policy development approach. It is your duty to get involved and make decisions that suit your needs, to ensure that each organisation and African region in general have a chance to voice their opinions, and learn and share experiences from others in the industry.

PRINCIPLES OF PDP

AFRINIC's Policy Development Process is consensus based and is:

Open

Anyone interested can get involved, propose and discuss policies. No accreditation is needed. It is inclusive, accessible and participatory.

Transparent

Meeting notes, presentations and discussions are publicly accessible. Everything is documented and published.

Bottom-up

The Internet Community drives policy development i.e. proposes, discusses and approves policy.

HOW TO GET INVOLVED IN PDP

- Subscribe to and participate in the policy development mailing list discussions. (rpd@afrinic.net). Please click here to join the rpd mailing list. https://lists.afrinic.net/mailman/listinfo.cgi/rpd

- Attend the bi-annual AFRINIC public policy meetings, either in person or through remote participation.

OPEN

DISCUSS

TRANSPARENT

CONSENSUS

IMPLEMENT

BOTTOM UP

EVALUATE
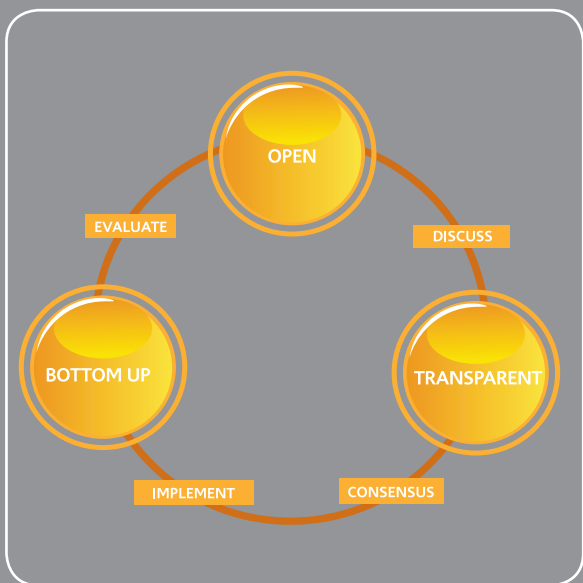
Keeping in touch

AFRINIC manages several mailing lists that are open to anybody who has an interest to the activities of AFRINIC working groups. Below is a listing of all the public mailing lists on lists. afrinic.net. Click on a list name to get more information about the list, or to subscribe, unsubscribe, and change the preferences on your subscription.

How to subscribe to the mailing list?
There are two ways:
1. Filling the online form which can be obtained by clicking the different lists below.
2. By email: you can send request to list_name-request@afrinic.net, with the word subscribe in the subject field. For example, to subscribe to the announce mailing list, send email to announce-request@afrinic.net

Please note that the e-mail addresses in the Mailing List field on the RSA will be automatically subscribed to the Members' Mailing List.

- Internet community in Africa and more precisely those involved or willing to be involved in the ICANN processes. [AfrICANN] [AfrICANN Archives]
- AFRINIC Announce
  [announce] [announce Archives]
- IPv6 in Africa
  [afripv6-discuss] [afripv6-discuss Archives]
- Resource Policy Discussion List
  [rpd] [rpd Archives]
- AFRINIC Training Feedback
  [training-discuss] [training-discuss Archives]
- Discussion on spamming issues in Africa
  [anti-spam] [anti-spam archives]
- Comments about AFRINIC Services
  [services] [services archives]
- Spam in Africa
  [Afrispam-wg] [Afrispam-wg archives]
- Telcom working Group
  [afritelco-wg] [afritelco-wg archives]
- AFRINIC RPKI discussion
  [rpki-discuss] [rpki-discussions]
- Members Discuss
  [Members-discuss] [Members-discuss archives]

Key Contact details

Issue	Email contact	Type of Query
General	contact@afrinic.net	Any general inquiry
Billing	billing@afrinic.net	Any queries related to invoice and payment
New Member	new-member@afrinic.net	Queries /clarifications regarding how to become an AFRINIC member
Training	training@afrinic.net	Any queries related to AFRINIC trainings
WHOIS DB	afrinic-dbm@afrinic.net	Queries related to WHOIS adatabase, errors concerning WHOIS objects creation/update
Hostmaster	hostmaster@afrinic.net	Additional resources, any general queries related to resources management
Account Information	service-support@afrinic.net	Any queries related to your account information, MyAFRINIC or BPKI

Members may report any issue to AFRINIC using the above mentioned e-mail addresses. The preferred and most efficient method of reporting a problem is through e-mails. Once contacted, AFRINIC staff will respond by email.

Opening hours: Our office is opened from 09:00 am to 5:30 pm (UTC + 4, summer time), Monday to Friday, except on public holidays (and during instances of extreme weather conditions like cyclones).