



Applying to AfriNIC for ASN and IP Address Space

Objective of this Note

This Note is an information and procedure note targeted at those NRENs that have developed their numbering plans and are ready to apply to AfriNIC. Some of the procedures, especially those relating to the fund for Fostering Research and Education Networking in Africa (FRENIA) and its support for the acquisition of the ASN and the IP address space, are time-limited. The Note covers NRENs applying for resources for their direct use as well as those that additionally want to act as Local Internet Registries (LIRs) supporting their member institutions.

The Note is part of a set of tools that has been developed by the UbuntuNet Alliance for Research and Education Networking to support the growth of REN activity in the continent with the intent of empowering and creating global equity for Africa-based educationists and researchers.¹

1. ICANN and the Regional Internet Registries

The Internet Corporation for Assigned Names and Numbers (ICANN) is a private, non-profit public benefit organisation that coordinates the distribution around the world of the unique identifiers, including IP addresses that are critical to the working of the Internet. For the distribution of number resources (IP addresses and Autonomous System Numbers), ICANN works through five so-called Regional Internet Registries (RIRs). RIR's apply to ICANN for fresh supplies of these resources, and would-be user organisations, including ISPs and end-user organisations, apply to the RIR that serves their geographic region.

2. AfriNIC

The African Network Information Centre, commonly known as AfriNIC, is the RIR that serves Africa and the Indian Ocean region. For African organisations, AfriNIC is the sole source of new, as yet unallocated IP numbering resources. Information about AfriNIC can be found at <http://www.afrinic.net>.

3. Local Internet Registries

AfriNIC distinguishes between End-User Organisations, to which it may make “end-user allocations” of IP number resources, and Local Internet Registries (LIRs), to which AfriNIC may make “LIR allocations” of IP number resources. The difference is that an end-user organisation may request resources only for use within its own networks, and may not re-assign these resources to third parties. By contrast, ISPs join AfriNIC as LIRs, and may assign sub-prefixes of the resources allocated to them for use by their customers. Such assignments are done on condition that if the customer should move to another ISP, that customer would have to cease using the assigned IP addresses and would have to renumber

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their network using addresses provided by its new ISP. This hierarchical mode of distribution of IP addresses enables the aggregation of assigned address blocks within the networks of ISPs.

Some NRENs function as LIRs and assign IP address space to their member institutions. An example is TENET (South Africa), which, for historical reasons, acts as a LIR. While many of TENET's older member institutions have their own end-user allocations, many of the more recently established institutions use address blocks assigned to them by TENET.

Today's paradigm allows NRENs to take on the role of a LIR, but also encourages universities and research institutions to secure their own end-user allocations from AfriNIC. It is however inevitable that many NRENs will have to act as LIRs in order to enable their smaller research and education institutions that would not qualify for the minimum allocation AfriNIC gives, or where member institutions that are technically disadvantaged need to be supported.

AfriNIC has a generous discount scheme that was agreed between it and the Association of African Universities for research and education institutions and also for NRENs that need to act as LIRs. Tables 1 and 2 below shows the normal rates payable (as at June 2009) to AfriNIC for various resources. Bona fide education and research institutions and NRENs pay only 50% of these normal rates.

Table 1: End-User Rates payable to AfriNIC for various resources

Category	Allocation Size	Initial Setup fee	Membership (Annual)
Small	/24 to /20	USD 2,500	USD 100
Medium	> /20 to /19	USD 5,000	USD 100
Large	> /19 to /16	USD 7,500	USD 100
Extra Large	> /16 to /14	USD 10,000	USD 200
ASN		USD 400	

Table 2: LIR Rates payable to AfriNIC for various resources

Category	Allocation Size	Initial Setup fee	Membership (Annual)
Very Small	/22 to /21	USD 1,750	USD 1,750
Small	> /21 to /19	USD 2,000	USD 2,250
Medium	> /19 to /16	USD 3,000	USD 6,500
Large	> /16 to /14	USD 5,000	USD 13,000
ASN		USD 400	

4. Applying for ASNs and IP Address Space with FRENIA Funding Support

The Andrew K Mellon Foundation has made a grant, managed by the South Africa NREN TENET, for Fostering Research and Education Networking in Africa (FRENIA). Using this, TENET has made available funds, through the Research and Education Networking Unit of the Association of African Universities, to pay start up charges and the initial membership fees for ASN and IP address allocations to eligible universities, research institutions and NRENS. The essential idea is for AfriNIC to appoint the NRENS as its agents for the limited purpose of administering the provision of **initial** End-User allocations to member institutions. The agreed procedure is as follows:

- (a) An NREN or an institution applies to AfriNIC for recognition as an NREN in its country. AfriNIC can check the veracity of this claim with the AAU REN Unit.
- (b) AfriNIC appoints the NREN as an "AfriNIC REN Agent" in the country concerned. At no charge, AfriNIC assigns a /16 or other suitable IPv4 prefix and a /32 IPv6 prefix (the assigned NREN prefixes) to be administered by the NREN.
- (c) The NREN assists its member institutions to prepare a numbering plan and to plan the renumbering exercise.
- (d) When so authorised by a member Institution, the NREN applies to AfriNIC for the Institution's admission as an End-User Member. The NREN informs AfriNIC as to the prefixes (from its assigned NREN prefixes) that it intends to allocate to the Institution. These allocations are End-User Allocations - not LIR assignments. The NREN is not a LIR but acts as AfriNIC's agent for this limited purpose only.
- (e) AfriNIC responds by registering the Institution involved as a Member; registers the End-User Allocations, and issues an invoice to the AAU REN Unit at the discounted rate and for the Institution. AAU makes the payment and the NREN makes the allocated prefixes available to the Institution. This ends the NREN's obligations in respect of that institution.
- (f) As a duly registered End-User Member of AfriNIC, the Institution is responsible for all further payments, in respect of which AfriNIC will invoice the Institution directly.

It should be noted that FRENIA has chosen to work through a single entity, the AAU, because this offer is open to all NRENS in sub-Saharan Africa.