IXP Support Initiatives & DNS Programmes at AfriNIC

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Internet Exchange Points are treated as **Critical Internet Infrastructure**.

Through our policy process, IP Number resources are available to these at no-cost.
An Internet Exchange Point is more than a simple Layer 2 switch.

Growth and sustainability are key success elements.

*We don’t do “box-drops”*
Offer technical and policy assistance, along with ISOC, as part of the AXIS Project.

Supported and facilitated workshops in 5 countries since Oct 2012 (ongoing)
Offer free expert technical assistance with sustainability rebuilds.

Currently working with an IXP in SADC to re-architect their environment to support this.
DNS Programmes at AfriNIC
As part of our mission to support Internet technology usage and development, AfriNIC operates three distinct and separate DNS programmes.

These are all for the benefit of the Internet community and are made available at zero cost.
• African Root Server Copy (AfRSCP)
  
• AfriNIC supported RFC5855 servers

• African DNS Support Programme (AfDSP)
The AfRSCP aims to support local Internet communities by facilitating Root Server Copies within local communities.

Historically limited to areas that had active IXPs
Root Name Instances in Africa

- I (Netnod)
- J (VeriSign)
- F (Internet Systems Consortium)
- L (ICANN)
- E (NASA Ames Research Center)

Legend:
- ▲ Active IXP
- ▼ E (NASA Ames Research Center)
- ○ F (Internet Systems Consortium)
- □ I (Netnod)
- ■ J (VeriSign)
- ★ L (ICANN)
October 2012 - agreement signed with ICANN to help expand L-root into Africa
• L-Root installed in Cote d’Ivoire
• Installations in progress (ie. *hardware on the ground* in 3 more countries)
• Advanced stages of completion in another 3.
• Accepting new applicants ;-

email: root-project (at) afrinic.net
• African Root Server Copy (AfRSCP)

• AfriNIC supported RFC5855 servers

• African DNS Support Programme (AfDSP)
RFC5855 describes stable naming scheme for the nameservers that serve the IN-ADDR.ARPA and IP6.ARPA zones.

AfriNIC supports the Internet community by managing the “c” servers for
ip6.arpa - Dec 1, 2010
in-addr.arpa - Feb 17, 2011
Through *localised anycast* programmes, we’re now able to distribute this service into the African region.
• African Root Server Copy (AfRSCP)

• AfriNIC supported RFC5855 servers

• African DNS Support Programme (AfDSP)
To support the ongoing projects that we’re running, AfriNIC is building its own mini-cloud environment.

As a natural architectural and design consequence, we have “spare capacity” available in this infrastructure...
The DNS Support program (AfDSP) is available to holders of Critical Internet Resources, and African ccTLDs, to help bolster their infrastructure.

We provide free secondary/slave DNS services across our infrastructure (or, if requested a subset of it)
Why AfDSP

This is an African solution - AfriNIC’s cloud is built by, lives, and is managed and maintained in Africa.

Currently supporting 17 African ccTLDs, and are in advanced stages of setup with another 4.

Signup page on website.
Why are there so many blanks?

Too many blanks spots!
Diverse, redundant nodes in JNB and CPT.

**Upcoming installations in 3 more regions**

Hybrid OS and Application Software.

Actively soliciting partners!
Typical Install

- Internet
- Host network for admin access
  - eth0: remote management
  - eth1: measurement probe
  - eth2: AfDSP (AS37177)
  - eth3: RFC5855 (AS37181)
- IX network
  - DNS Anycast announcements
- internal servers
- Drac: remote console
- DNS requests to the anycast node
- Internet
Puppet & VMware

Nagios & DSC

FreeBSD+NSD; Linux+BIND

Guided by RFC2870
(started as) 3 Stage project

• #1 Collect interested participants
  • Build critical mass of interested supporters

• #2 Deploy additional infrastructure
  • Working with existing local programme partners

• #3 DNS Portal
  • Automated interaction with participants (Q42013)
contact (at) afrinic.net