

AFRINIC
The Internet Numbers Registry for Africa



IPv6 in Africa CTO

2013 Cyber Security Forum
Yaoundé, Cameroon
25-26 April 2013

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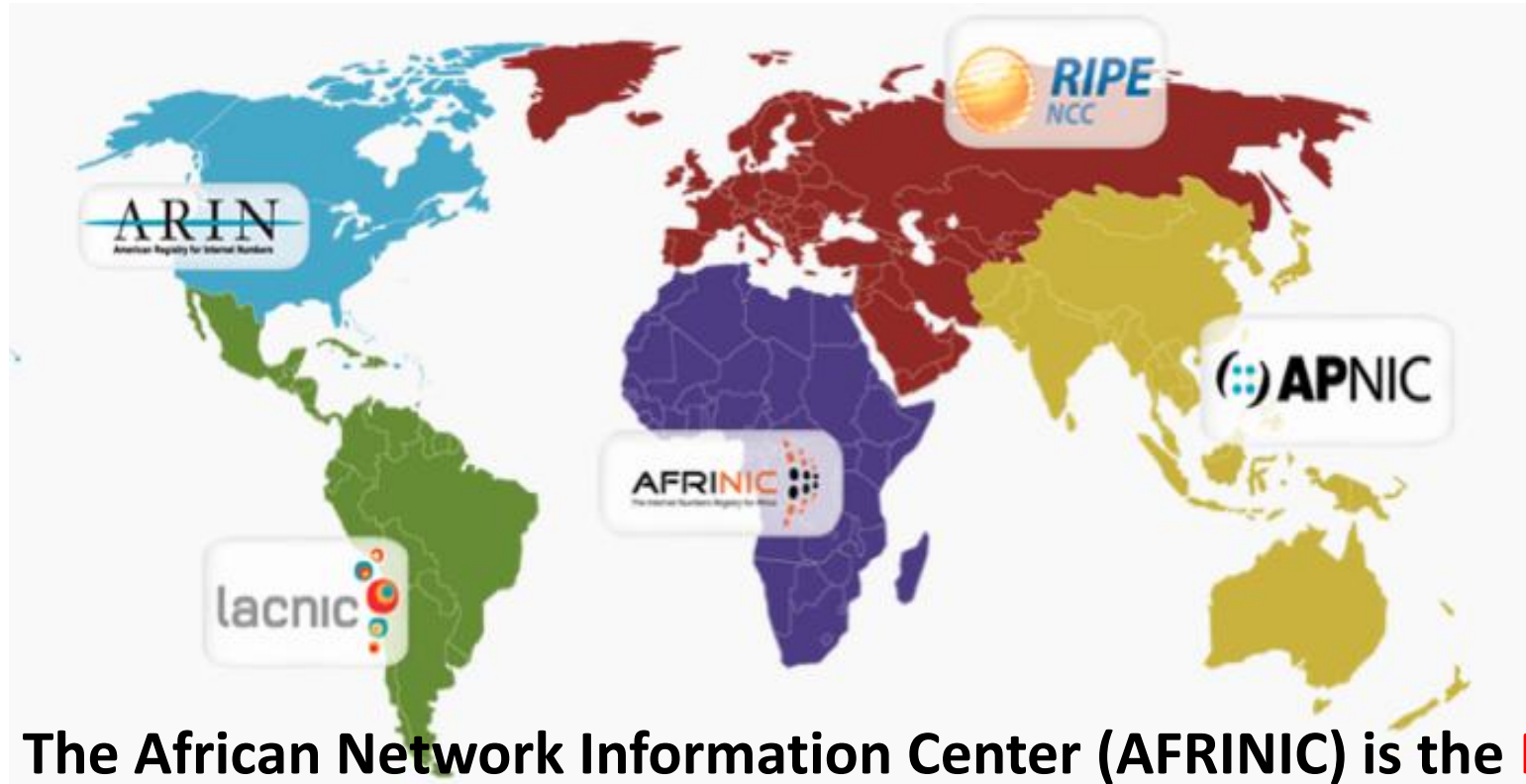
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- Internet number resources include **IP** addresses (**IPv4** & **IPv6**) and autonomous system (**AS**) numbers



- The African Network Information Center (AFRINIC) is the **RIR** that manages the allocation and registration of Internet number resources for our region.

- Internet Protocol (IP): address ensures delivery, and global reachability
- IP version 4 (IPv4): Original protocol upon which the Internet runs
- IP version 6 (IPv6): replacement for IPv4, latest revision of IP, provides identification and location system for computers on networks and routes traffic across the Internet
- Deploy IPv6: only way to ensure sustainable growth of Internet -- IPv4 pool at IANA exhausted



- **IP Mobility:**
 - Mobility is now fully part of the protocol. It allows devices to move from a physical infrastructure to another while continuing to communicate in a very transparent way using the same IP address.
- **Auto-configuration (Plug and Play):**
 - Another mechanism, other than DHCP is provided in IPv6 to allow auto-configuration of devices.
- **Communications security:**
 - True **Point-to-point** (NO NAT)
 - Authentication and Encryption
 - Header extensions (ESP and AH)
- **Packet differentiation:**
 - Header extension 'Destination options'.



WHY IS IPV6 IMPORTANT TODAY

Topics that can not be discussed without mentioning **IPv6**

1. Interconnection, infrastructure & rural areas
2. Cyber security
3. E-everything (for development)
4. Analog to digital TV
5. Convergence & mobile Internet networks
6. Content and domain name growth
7. Research and Innovation
8. Online applications / Cloud

Law Enforcement Agencies (LEA) have been raising some concern about IPv4 address exhaustion if IPv6 is not adopted:

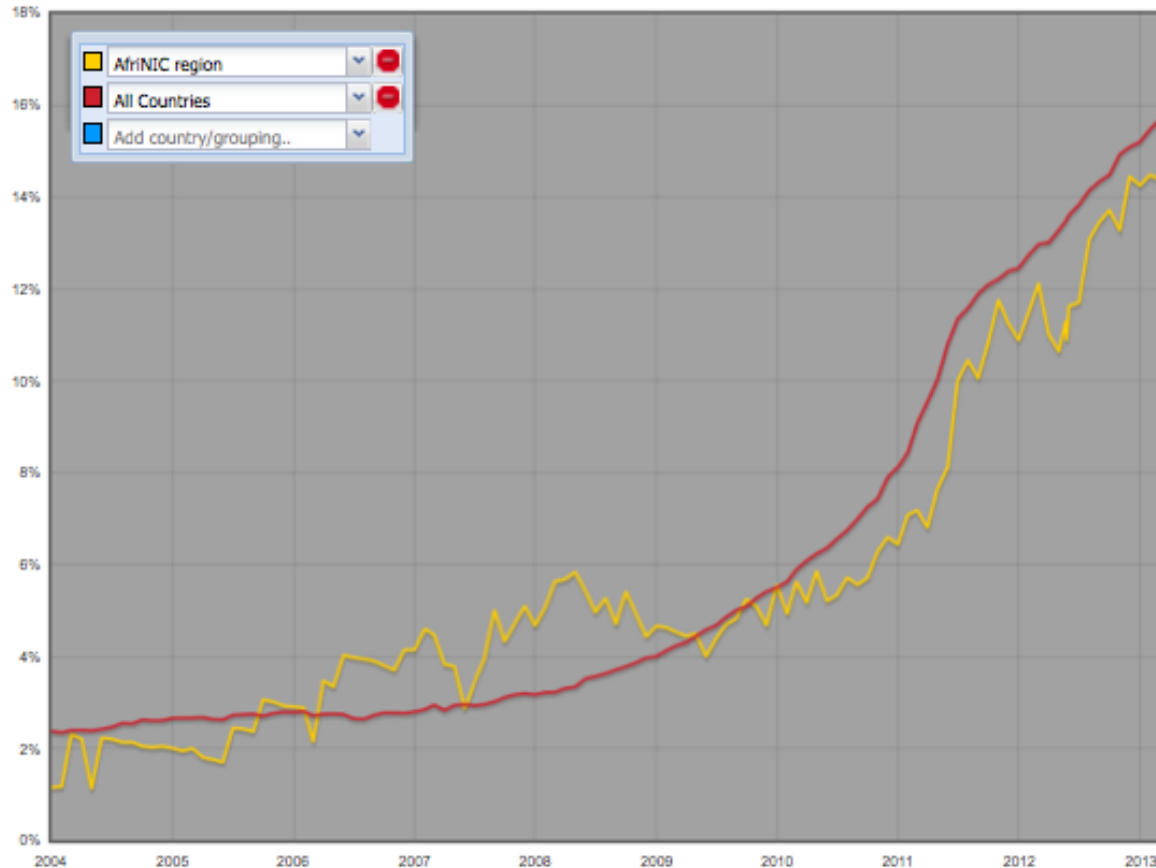
- *Increase use of carrier-grade Network Address Translation (CGN), which would entail that Internet providers will have to keep accurate records of every port number assigned to each user.*

- **Accurate IPv6 record-keeping does more than help law enforcement.**
 - ✓ It's useful for combating abuse
 - ✓ It's useful for anti-spam measure
 - ✓ It's useful for figuring out what's going on with distributed denial of service attacks
 - ✓ It's useful for civil litigants

Yesterday!

- Africa cannot be left behind
- Soon AFRINIC will no longer have IPv4 addresses, currently 2 of the 5 RIRs have reached their last /8 (APNIC & RIPE NCC)

African ASNs globally visible over IPv6: growing networks



All countries: 15.69% (6864 out of 43748 ASes)
 AFRINIC Region: 14.38% (90 out of 626 ASes)

Further to our Call for Local Hosts for 2013 AFRINIC training Workshops, we are pleased to announce the list of selected host countries:

Algeria
Benin
Cameroon (**July 16 – 19/2013**)
Ethiopia
Central African Republic
Gabon
Kenya

Lesotho
Malawi
Morocco
Nigeria
Senegal
South Africa
Tunisia
Zambia (AFRINIC-18)

[A] Internet Number Resources Management

- Objective: learn how to manage IP resources using the AFRINIC Whois database
- Date & Time: **15th June**
- Facilitators: Madhvi, Brice & Ernest
- Duration: **full day**

[B] IPv6 Strategy & Planning (aka IPv6 for Managers)

- Objective: learn and discuss what executives need to know to facilitate IPv6 deployment and how to sell IPv6 to executives.
- Date & Time: **15th June | morning**
- Facilitators: Mukom Akong T, Hisham Ibrahim, Owen Delong
- Duration: **half day**

[C] IPv6 Address Planning

- Objective: learn IPv6 subnetting and how to create an IPv6 addressing plan
- Date & Time: **16th June | morning**
- Facilitators: Mukom, Owen Delong
- Duration: **half day**

[D] IPv6 Transition Mechanisms

- Objective: learn how to choose the best transition technique to match various deployment scenarios
- Date & Time: **16th June | afternoon**
- Facilitators: Mukom Akong, T, Owen Delong
- Duration: **half day**

Webinars

- Aim to assist African operators with adoption plans through sharing best experiences and practices
- Each month: IPv6 related topic (technical or non-technical) addressed by a number of regional experts
- AFRINIC, France Telecom and Internet Society as sponsors

Next AFRINIC meeting



LUSAKA ZAMBIA
AFRINIC 18
15 - 21 JUNE 2013



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INTERNET
— SUMMIT '13 —

internetsummitafrica.org
meeting.afrinic.net/afrinic-18/

Questions

