

REVERSE DNS

Why and how

AFRINIC-II

Maputo, Mozambique

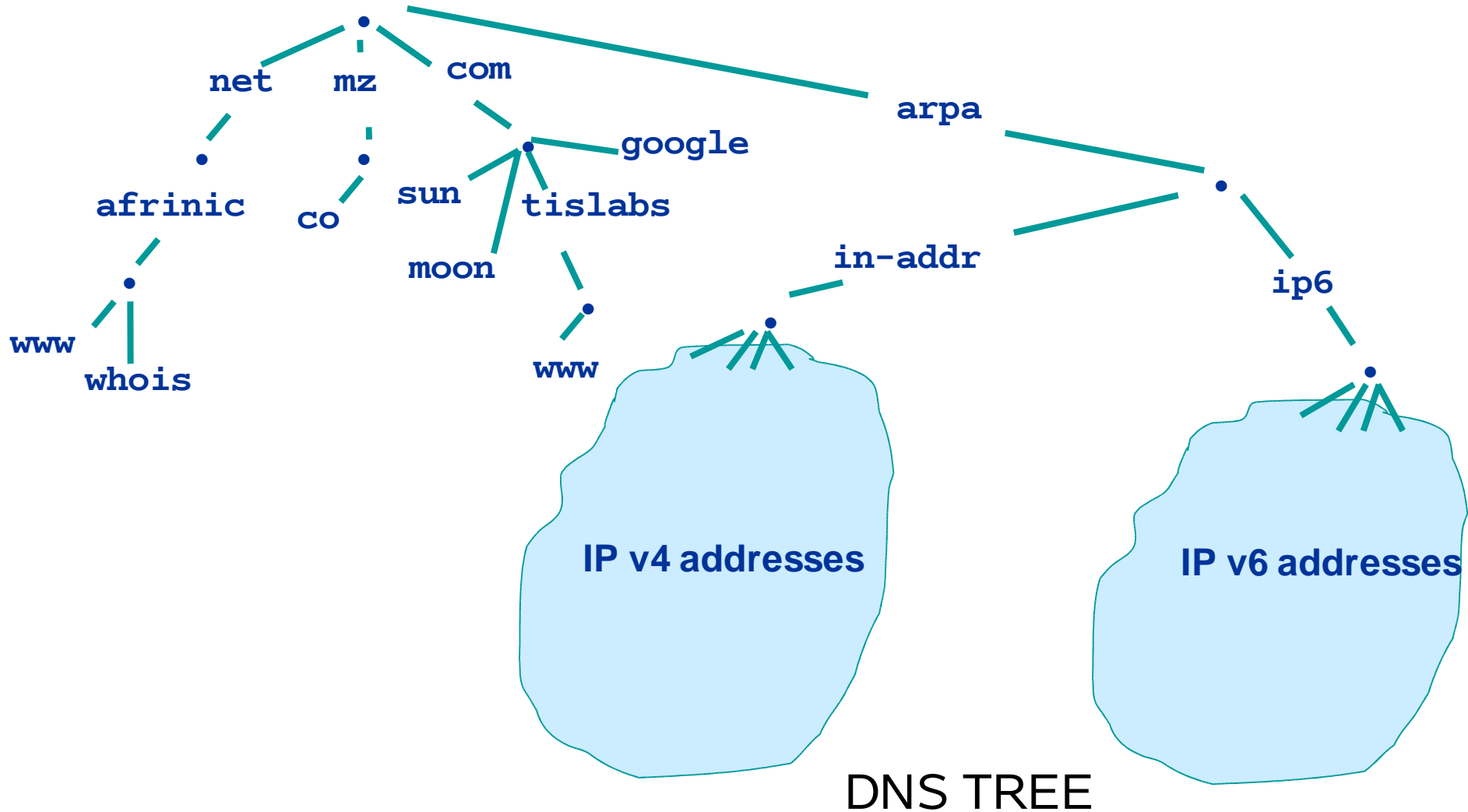
26 April 2005

Alain AINA<aalain@trstech.net>

WHY

- Who clients/users are ?
 - From IP address
- Every DNS entry name-IP (A record) must have a correspondence IP-name(PTR record)
- Otherwise:
 - Acces denied to certains services (ftp, mail, IRC,...)
 - Hard network debug (**traceroute**)
 - More undesirable network traffic

HOW



IPV4

Mapping IPv4 address in DNS

- Example 196.26.1.3
 - 192/8 is allocated to RIR
 - 192.26/16 is allocated by RIR to LIR/ISP
 - 192.26.1/24 is assigned by ISP to a company.
- Delegation in the DNS:
 - root delegates 192 domain to RIR
 - RIR delegates “26” sub-zone to ISP
 - ISP delegates “1” sub-zone to company.
- Name that makes this possible:
 - 1.26.192.in-addr.arpa.

Mapping IPv4 address to names

- In IPv4 the mapping is done on 8 bit boundaries(class full), address allocation is class less
 - /8, /16, /24
- Zone administration does not always overlap address administration
- If you have a /22 of address space: divide it in /24s and request a delegation for each one of them

LIR and end-users PI

- Configure your authoritative NS for the reverse zones
 - Follow DNS recommendations (RFC 2182,1912)
- Create the **domain** object in the RIR database
 - Only /16 and /24
- If authentication and dns check are OK, delegation is visible next time RIR push zone file

End-users

- Configure your authoritative NS for the reverse zones
 - Follow DNS recommendations (RFC 2182,1912)
- Contact your ISP
 - $\leq /24$
- For $< /24$
 - RFC 2317

domain object

- domain: 208.200.196.in-addr.arpa
- descr: AFNOG05 conference network, 9-30 april 2005
- admin-c: GJDG-AFRINIC
- tech-c: GJDG-AFRINIC
- zone-c: GJDG-AFRINIC
- nserver: ns196-200-208a.ws.afnog.org
- nserver: ns196-200-208b.ws.afnog.org
- mnt-by: AFNOG-MNT
- changed: afnog2005-c@ws.afnog.org 20050307
- source: AFRINIC

IPV6

Allocations policy

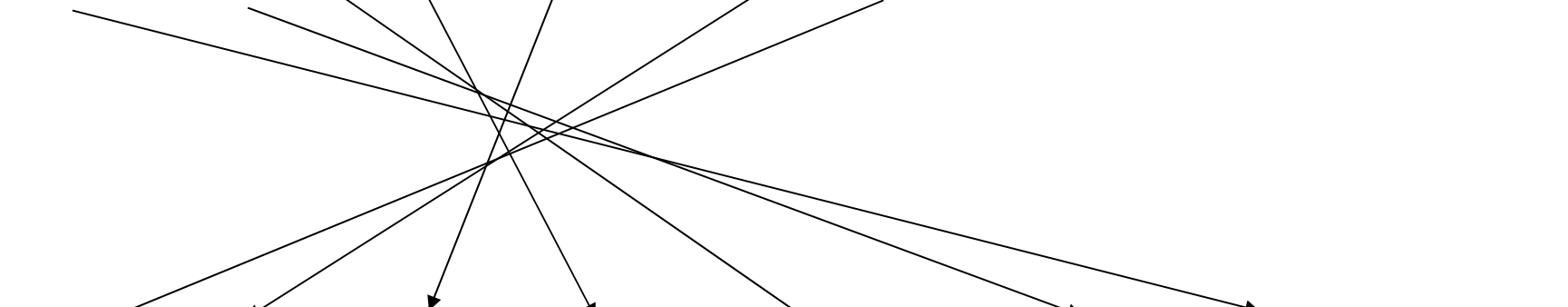
- Allocations policy
 - /23 allocated to RIR
 - /32 allocated to LIR/ISP
 - /48 assigned to end users in general
 - /64 assigned to end users when only one net is used
 - /128 assigned to end users when only one device is used
- Policy is moving

Mapping IPv6 address in DNS

- Number is translated into 4 bit nibbles under the ip6.arpa.

2001:0238::a00:46ff:fe06:1460

0.6.4.1.6.0.e.f.f.f.6.4.0.0.a.0.0.0.0.0.0.0.0.8.3.2.0.1.0.0.2.ip6.arpa.



If you have a /23, split into 2 /24s

If you have a /47, split into 2 /48s

LIR and end-users PI

- Configure your authoritative NS for the reverse zones
 - Follow DNS recommendations (RFC 2182,1912)
- Create the **domain** object in the RIR database
 - /32
- If authentication and dns check are OK, delegation is visible next time RIR pushes zone file

End-users

- Configure your authoritative NS for the reverse zones
 - Follow DNS recommendations (RFC 2182,1912)
- Contact your ISP
 - /48, /64, /128

domain object

- domain: 0.6.6.0.1.0.0.2.ip6.arpa
- descr: Reverse delegation for Renater sub-TLA
- admin-c: BT261-RIPE
- tech-c: BT261-RIPE
- tech-c: GR1378-RIPE
- zone-c: GR1378-RIPE
- nserver: sem2.renater.fr
- nserver: imag.imag.fr
- nserver: iode.ipv6.pps.jussieu.fr
- nserver: ns3.nic.fr
- mnt-by: RENATER-MNT
- changed: rensvp@renater.fr 20021112
- changed: rensvp@renater.fr 20030828
- source: RIPE

References

- http://www.ripe.net/reverse/reverse_howto.html
- <http://www.apnic.net/db/domain.html>
<http://www.afrinic.net/docs/supporting/afsup-rev200504.htm>