



32-bit ASN for DNS Services

Anand Buddhdev
DNS Services Manager, RIPE NCC



Background

- RIPE NCC managed zones
 - Forward zones (ripe.net, etc)
 - Reverse zones (IPv4 and IPv6)
 - ENUM (e164.arpa)
 - Secondary for ip6.arpa and many other zones
- Two servers
 - ns-pri.ripe.net
 - ns-sec.ripe.net
- Single servers
- Unicast



Upcoming Changes

- Multi-server architecture
- Anycast
 - 193.0.9.0/24
 - 2001:67c:e0::/48
- Serve in-addr.arpa
- Independent ASN



ASN

197000

Interoperability

- Older BGP speakers talk to AS 23456
- Transitive attribute AS4_PATH contains the 32-bit ASN
- 32-bit ASN speakers reconstruct the correct path
- All major vendors have 32-bit ASN support



Connection Details

- Connection at Amsterdam Internet Exchange
- 6 transit providers
 - All support 32-bit ASNs
- Peering with AMS-IX route servers
 - Recent OpenBGPD
 - Also supports 32-bit ASNs
 - 111 of 333 peers have 32-bit ASN support



View from Route Servers

SAIX Route Server (older Cisco IOS)

BGP routing table entry for 193.0.9.0/24, version 62729846

Paths: (4 available, best #4, table Default-IP-Routing-Table)

Not advertised to any peer

3491 6939 23456

196.25.9.45 from 196.43.9.254 (196.43.9.254)

Origin IGP, metric 2, localpref 100, valid, internal

Community: 5713:777

Originator: 196.43.9.245, Cluster list: 196.43.9.254



View from Route Servers

Opentransit Route Server (JunOS 9.3S7.2)

193.0.9.0/24 *[BGP/170] 2w6d 10:26:46, MED 100, localpref 85, from
193.251.245.11

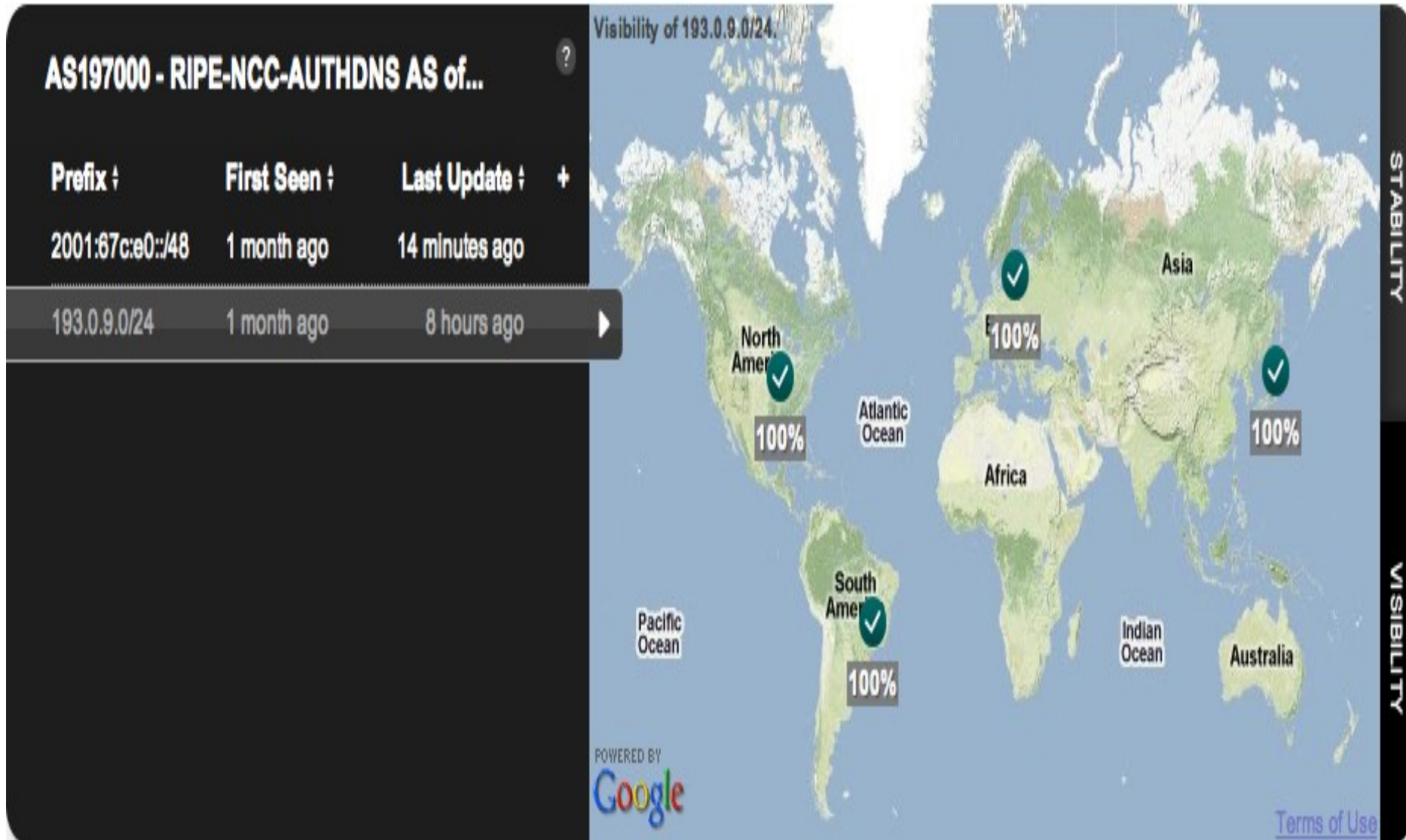
AS path: 1273 197000 I



Success Criteria

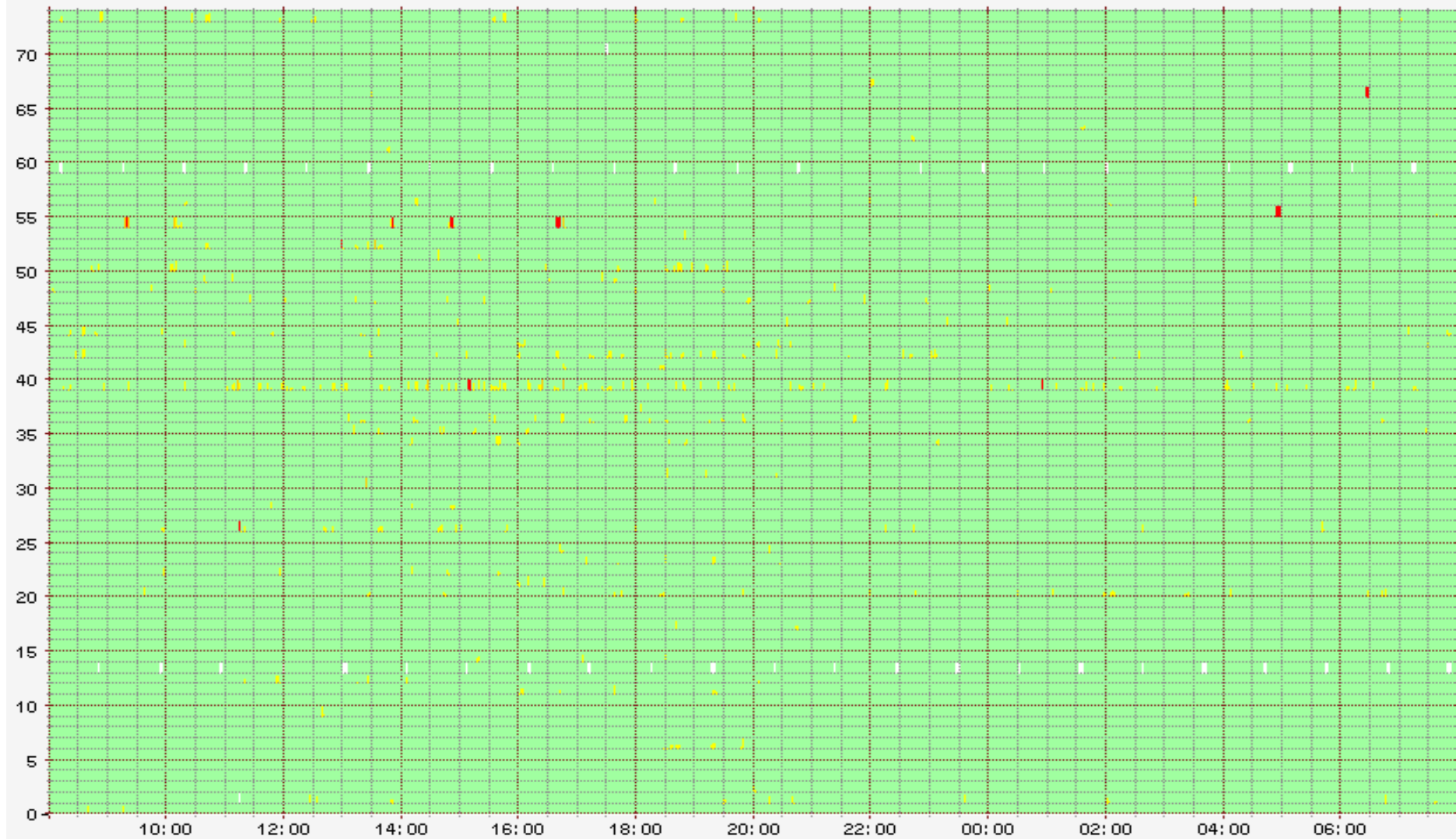
- Prefix visibility in NetSense
- Visibility in DNSMON
 - Will DNS clients be able to reach us?

100% Visibility in NetSense



100% Visibility in DNSMON (IPv4)

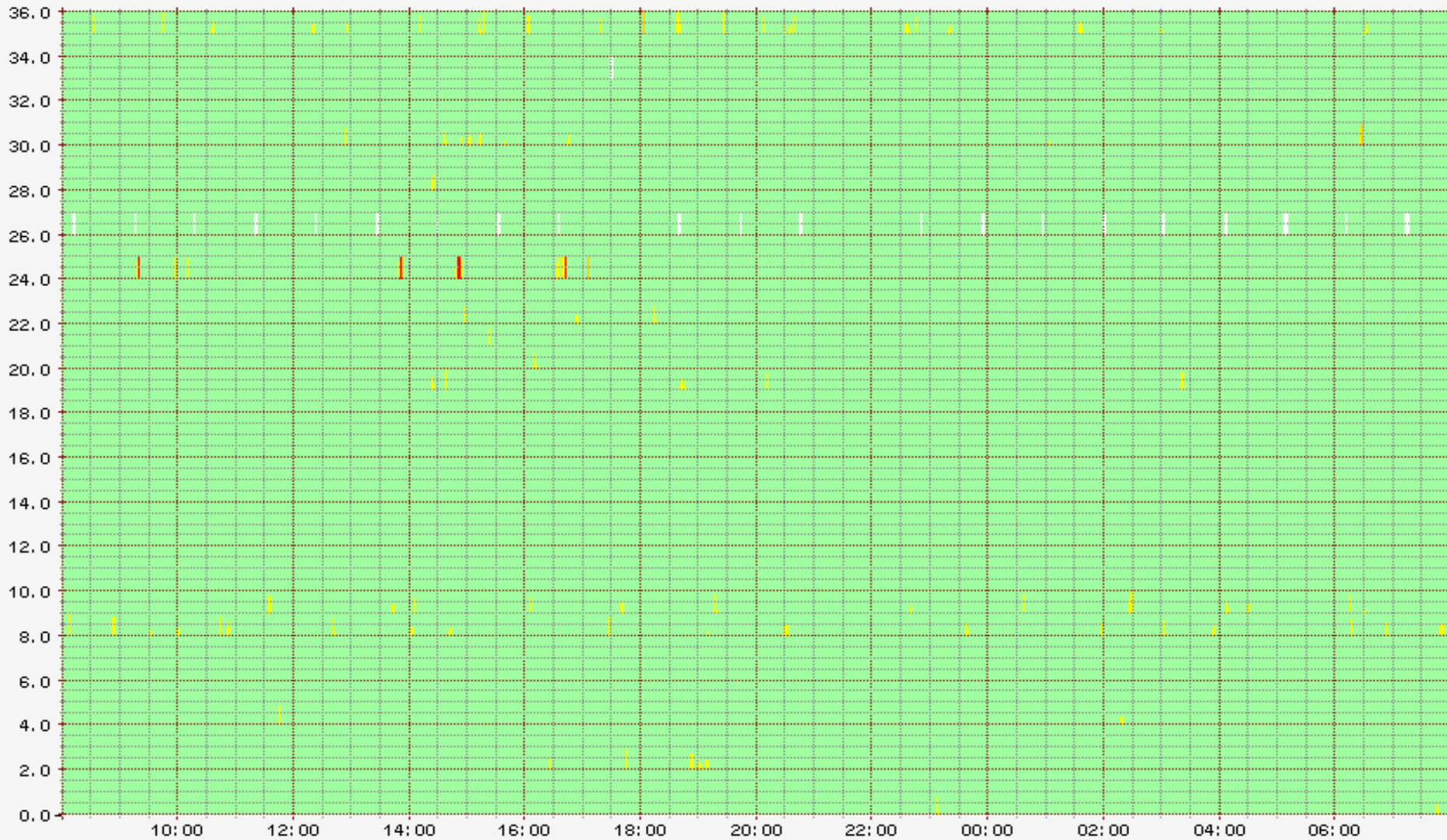
IPv4 Unanswered Queries (AVERAGE) for f.in-addr-servers.arpa [08:00 04.05.2010 - 07:59 05.05.2010 UTC]





100% Visibility in DNSMON (IPv6)

IPv6 Unanswered Queries (AVERAGE) for f.in-addr-servers.arpa [08:00 04.05.2010 - 07:59 05.05.2010 UTC]





“It Just Works!”

Questions?

