



RIPE NCC DNS Update

Anand Buddhdev
DNS Service Manager, RIPE NCC

The DNS Services Team



Sjoerd Oostdijck, Anand Buddhdev, Wolfgang Nagele



Our Services

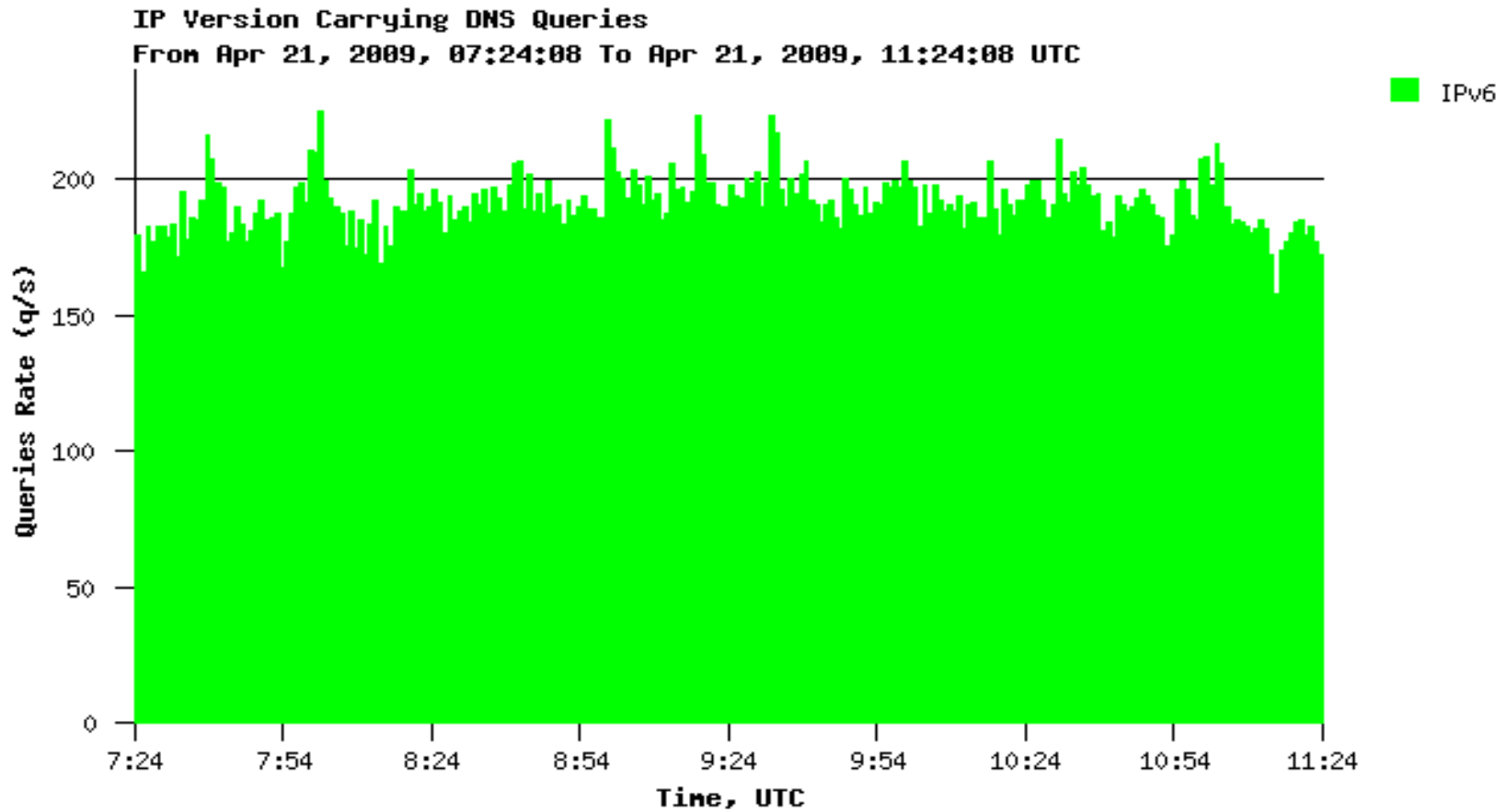
- K-root
- Reverse DNS for IPv4 and IPv6 allocations
- Secondary services for some ccTLDs
- Operations of the ENUM (e164.arpa) zone
- An AS112 node
- DNS Security (signed reverse and forward zones)
- RIPE NCC internal services (management of ripe.net and related zones)



K-root

- Operations are stable with 17 instances
- Peaks of up to 25,000 q/s
- IPv6 prefix available from 9 instances (London and Reykjavik added since RIPE 57)
- IPv6 query rate: ~200 q/s

K-root IPv6 (2001:7FD::1)





K-root Upcoming Improvements

- Hardware replacement at several instances
- IPv6 in Tokyo and Poznan
- Promotion of Frankfurt instance to global status
- Server OS updates
- Upgrade to NSD 3.x



K-root Expansion

- New instances in Africa in co-operation with AfriNIC
- Memorandum of Understanding (MoU) to hopefully be signed at the upcoming AfriNIC meeting in Cairo
- Initial deployments likely in Tanzania and Mozambique
- Lower cost set-up – “K-root Lite”



Reverse DNS

- Total query rate: ~50,000 q/s
- ns.ripe.net is now a cluster – load-balancing and resiliency
- New back-end provisioning system



Child Zone Delegation in Reverse DNS

- RIPE Database allows creation of /24 domain object even when parent /16 object exists
- Provisioning system ignores the /24 object because RIPE NCC cannot delegate below zone cut
- Example:
 - 192.94.in-addr.arpa exists in the RIPE Database
 - 119.192.94.in-addr.arpa, which also exists, is ignored, because RIPE NCC has already delegated 192.94.in-addr.arpa



Problems

- DNS-operator confusion: “Why is my delegation not working?”
- End-user confusion: “RIPE Database information doesn't agree with DNS.”
- Stale information in the RIPE Database – poor data quality

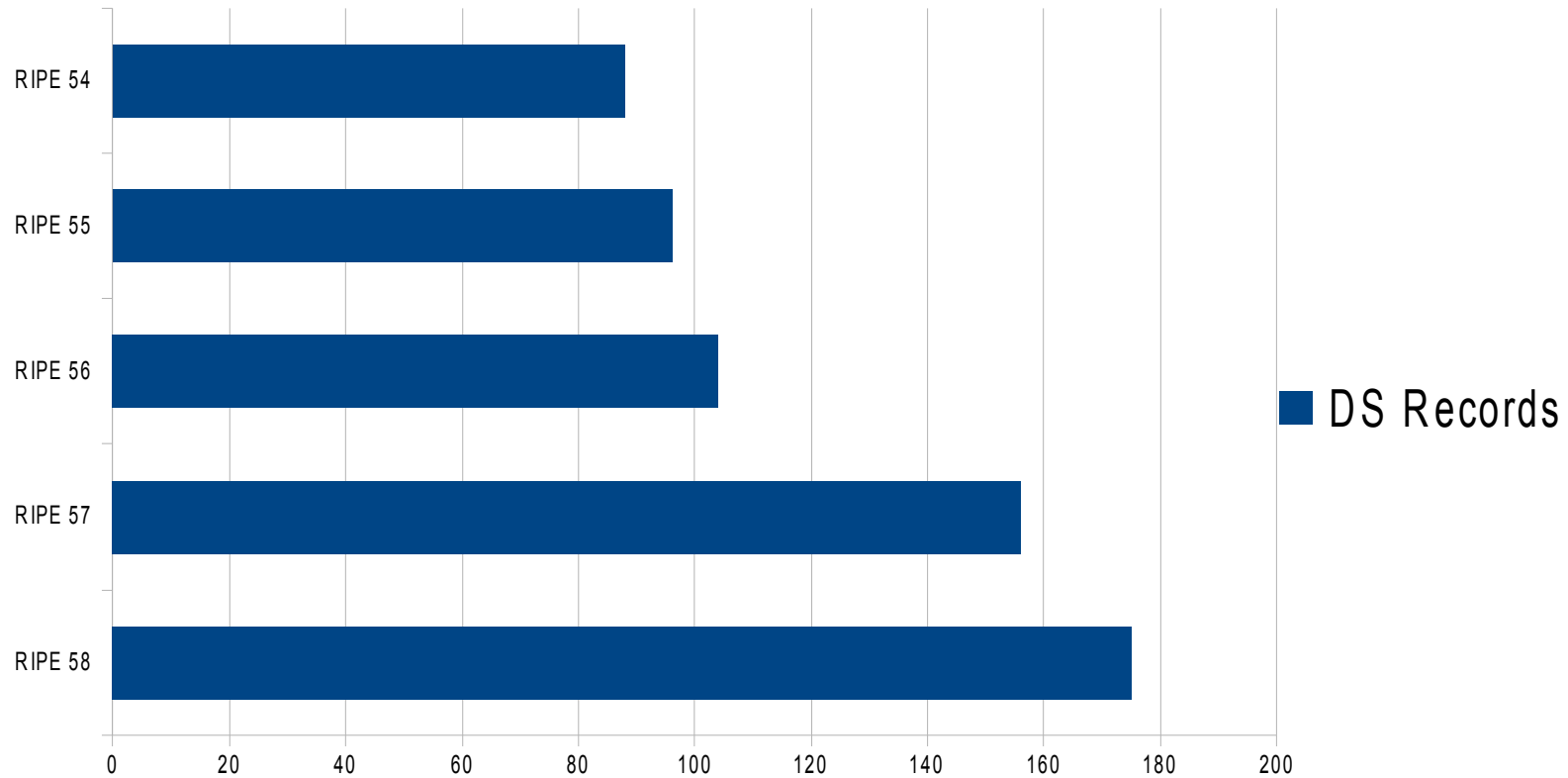


Proposed Solution

- Tighten RIPE Database syntax to disallow creation of child objects when parent exists
- Inform maintainers of existing child objects of impending deletion, and then delete them
- Deletion will have no operational impact
- 431 (out of 5419) parent domain objects have unnecessary child objects
- 15433 child domain objects in total



DNSSEC Growth in Reverse DNS





DNSSEC Future Plans

- A review of our policies and procedures
- Signer replacement
 - Hardware lifecycle
 - Software-based signer to be replaced with a modern, HSM-based setup



ENUM

- Operations are stable
- 1 new delegation since RIPE 57: +886 (Taiwan)
- Zone signed since November 2007
- Two zones have secure delegations



Secondary Service for ccTLDs

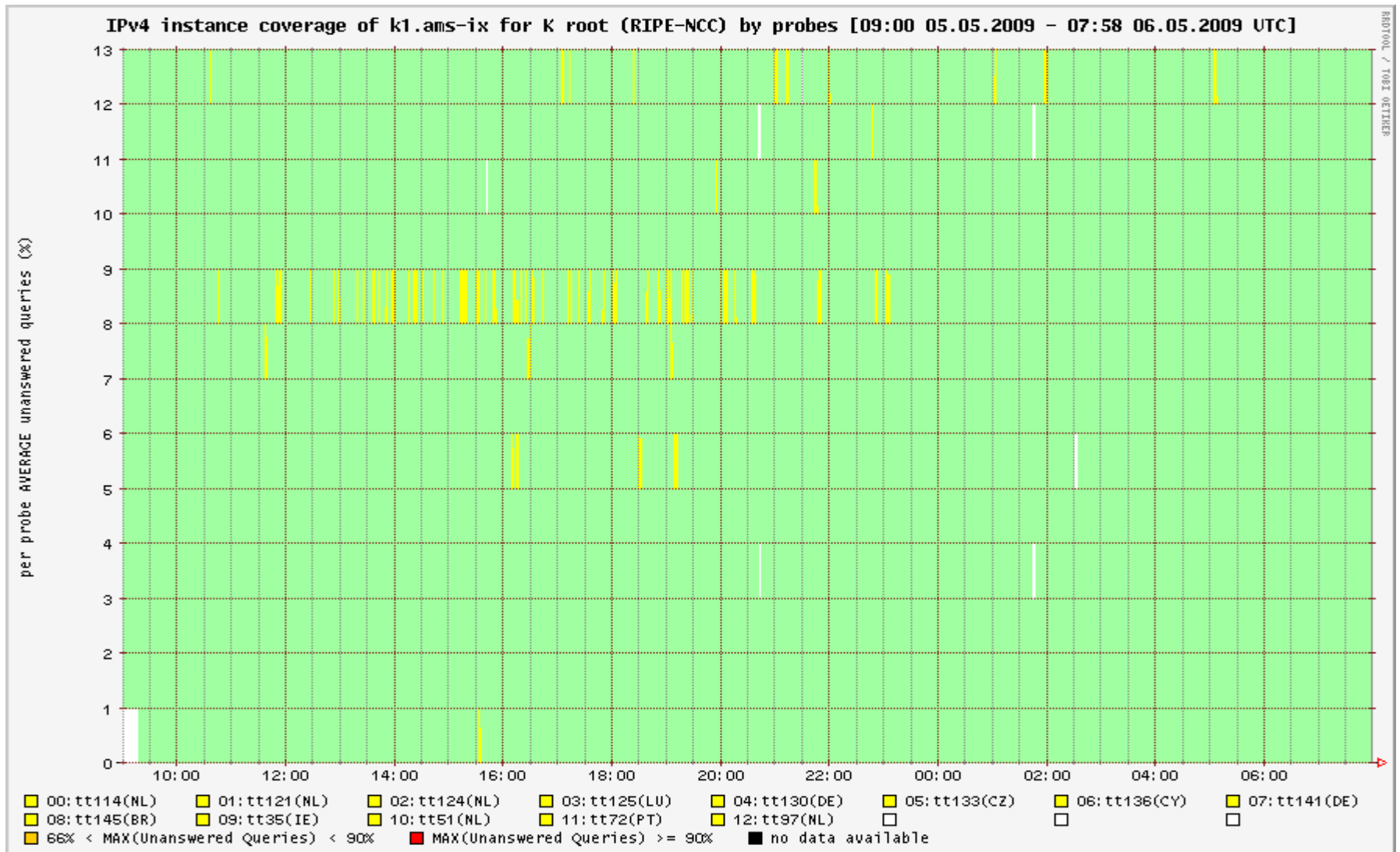
- RIPE NCC provides this for several ccTLDs on a best-effort basis, at no charge
- Potential of competition with RIPE NCC members
- Several large and developed ccTLDs phased out over 3 iterations
- No more iterations – remaining ccTLDs will be phased out as they mature



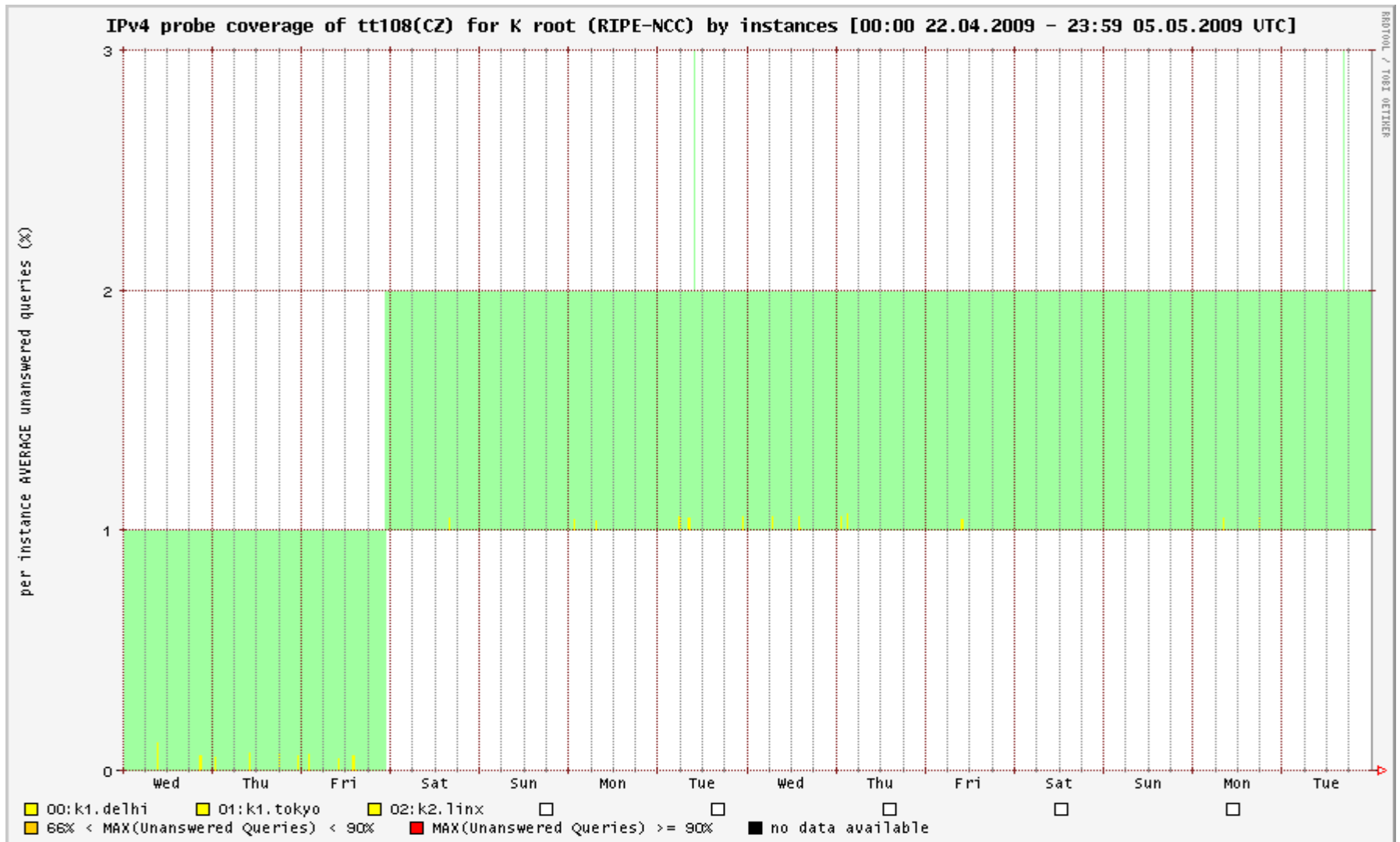
DNSSMON Enhancements

- Anycast reporting
- Currently enabled only for root servers
- Two types of reports available:
 - By root-server instance
 - By TTM probe

Per-Instance Reports



Per-Probe Reports



Questions?

