ENUM at the RIPE NCC

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Overview

• RIPE NCC and ENUM
• Request Process
• Delegations made recently
• Query Statistics
• DNS Improvements
• Working Groups
• Questions
RIPE NCC and ENUM

• Tasked by IAB to operate the e164.arpa domain
• Receive delegation requests
• Review technical dns quality of request
• Announce request to public and ITU
• When no objections received perform delegation
• e164.arpa operated at no charge to all
• [link](http://www.ripe.net/enum/instructions.html)
RIPE NCC ENUM Team

• Technical contact
  - Andrei Robachevsky
  - Brett Carr

• External Relations
  - Axel Pawlik
  - Paul Rendek

• Registration Services
  - 3 ‘ENUMsters’

• DNS Provisioning System
DNS Provisioning System

- Domain object submitted
- Checks made on dns validity
- Domain object updated
- dnsadmin notices change
- e164.arpa zone updated
- Queries referred to new delegation point(s)
Request Process

• ENUM request form updated in August

  - Simpler format
  - Clearer wording
  - [http://www.ripe.net/ripe/docs/enum-request.html](http://www.ripe.net/ripe/docs/enum-request.html)
  - Supporting notes document
  - [http://www.ripe.net/ripe/docs/enumrequest-support.html](http://www.ripe.net/ripe/docs/enumrequest-support.html)
New Delegations Made in last 12 months.

- +39 – Italy (November 2005)
- +81 – Japan (November 2005)
- +1 – NANP (February 2006)
- +30 – Greece (February 2006)
- +359 – Bulgaria (April 2006)
- +86 – China (June 2006) (Extension)
- +84 – Vietnam (June 2006)
- +590 – Guadeloupe (July 2006)
- +594 – Guyana (July 2006)
- +596 – Martinique (July 2006)
- +262 – France de l'océan indien (July 2006)
- +508 – Saint Pierre and Miquelon (July 2006)
Objected Requests

• +379 – Vatican City (October 2005)
Queries per e164.arpa Nameserver

- **August 2006**

  - ns-pri.ripe.net 391084
  - ns0.verio.net 387080
  - tinnie.arin.net 382847
  - cnnic.net.cn 324755
  - sec3.apnic.net 255726
  - sunic.sunet.se 152300

  Total 1893792

  42 queries per minute

  The figures represent a subset of enum queries due to normal dns caching.
Queries per Delegation – Top 10
(received at ns-pri.ripe.net in August 2006)

• Average 8.76 queries per minute
• 9.4.e164.arpa averages 0.74 queries per minute

These numbers are averages for a subset of ENUM DNS queries
Queries for Undelegated Zones - Top 10

Enum queries for undelegated s164.arpa Zones seen at no-p11.ripe.net
August 2006

- Russia 3.96%
- Belgium 3.82%
- Ukraine 0.67%
- Saudi-Arabia 0.61%
- Denmark 0.73%
- Luxemburg 0.95%
- Spain 0.99%
- Israel 1.06%
- Turkey 1.20%
- New Zealand 1.59%
Invalid Queries

- Total invalid queries 25922 (6.6%)
- Queries prefixed with 0 8918
- Queries prefixed with 0.0 4966
- Rest:
  - Missing separator 3100.e164.arpa
  - Strange prefixes 4.4.+e164.arpa
  - Incorrect prefixes 1.8.8.e164.arpa
- Probably misconfigured equipment
DNS Improvements

• DNS delegation checks
  - Made with web checker
  - [http://www.ripe.net/cgi-bin/delcheck/delcheck2.cgi](http://www.ripe.net/cgi-bin/delcheck/delcheck2.cgi)

• Ongoing DNS quality checks
  - Under development

• IPv6 DNS glue
  - DOMAIN class changed
  - Glue works - see 1.8.e164.arpa
IPv6 Glue Example – 1.8.e164.arpa

% Information related to '1.8.e164.arpa'

domain:  1.8.e164.arpa
descr:  Ministry of Internal Affairs and Communications
admin-c:  JP11
tech-c:  JP3
zone-c:  JP5
nservers:  a.ns.1.8.e164.arpa 202.11.16.56
nservers:  b.ns.1.8.e164.arpa 61.200.83.228
notify:  enum@soumu.go.jp
mnt-by:  JPENUM-MNT
mnt-lower:  JPENUM-MNT
changed:  enum@soumu.go.jp 20051128
changed:  hostmaster@ripe.net 20060809
source:  RIPE
RIPE Working Groups

- Enum working group
- DNS working group
- RIPE meeting, Amsterdam 2-6 October
Questions?