

Short report on zone scanning

Sebastian Castro
.nz Registry Services



.nz Zone Scanning

- Announced on June 2013
- Governed by policy
 - <http://nzrs.net.nz/dns/zone-and-host-scanning>
- Objective: Discover the state of .nz DNS health, and adoption of new technology
- Originated from **zonescan.nzrs.net.nz** (202.46.183.40)



.nz Zone Scanning

- Uses dnscheck (<http://dnscheck.iis.se/>) to gather various DNS bits from .nz domains and nameservres
 - Plus a few local additions
- A few complains about zone transfer attempts and <chaos, txt> queries



Zone Scan Tests

- For every domain under .nz, execute health checks and operational data gathering:
 - All nameservers answer?
 - All nameservers are authoritative?
 - Do they support UDP/TCP?
 - Is the domain signed?
 - Do the nameservers have v4 addresses? v6 addresses?
 - Do domains have MX records, website?
 - What's the TTL distribution?

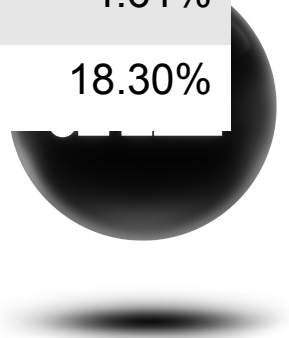


Zone Scan results

Metric (Domains)	Aug/2013	Sep/2013	Oct/2013	Nov/2013	Dec/2013
Total	536255	544668	545706	546426	546148
Broken	9.21%	9.56%	8.98%	9.03%	8.89%
Lame	1.53%	1.36%	1.37%	1.25%	1.27%
Poor redundancy	43.89%	43.11%	43.23%	43.61%	43.88%
Open Recursion	2.33%	2.05%	2.09%	1.97%	1.98%
Open Zone Transfer	6.88%	6.49%	6.37%	5.94%	5.72%
Signed	97	105	115	118	141
With DS	77	83	94	96	95

Zone Scan results

Metrics (Nameservers)	Aug 2013	Sep 2013	Oct 2013	Nov 2013	Dec 2013
Unique nameservers	35811	35898	36166	36171	36129
Open recursion	3.43%	3.35%	3.22%	3.18%	3.00%
Open zone transfer	10.96%	10.73%	10.52%	10.31%	10.18%
Not answering TCP	10.87%	10.70%	10.53%	10.14%	10.35%
Not answering UDP	4.66%	4.57%	4.62%	4.33%	4.46%
With v4 address	96.45%	96.47%	96.55%	96.50%	96.63%
With v6 address	4.21%	4.35%	4.37%	4.48%	4.61%
Supporting NSID	18.06%	18.05%	18.08%	18.06%	18.30%



Zone Scan results (v4/v6)

Metrics (Domains having)	Aug 2013	Sep 2013	Oct 2013	Nov 2013	Dec 2013
IPv4 web server	86.42%	86.09%	86.58%	86.60%	86.66%
IPv6 web server	1.07%	1.01%	1.04%	1.12%	1.25%
IPv4 mail server	87.21%	86.93%	87.42%	87.34%	87.55%
IPv6 mail server	6.56%	6.61%	6.64%	6.82%	6.87%



Questions for the future

- Presence of SPF, DKIM, TLSA records
- Geography of nameservers, mailservers, webservers
- Detection of anycast
- Distribution of TTL values per record type

- Your suggestions..

