

DNS Quality Check Task Force (DNSQC-TF)

- An approach for improving the quality of JP DNS -

March 16, 2003
IEPG meeting

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What is 'DNSQC-TF'?

- DNS Quality Check Task Force
 - Task Force for improving the 'quality' of JP DNS
- Joint work of JPNIC, JPRS, WIDE Project
- Objectives
 - Check DNS misconfigurations under .JP TLD
 - Correct misconfigurations
 - Report to the Internet community
 - Notify parties concerned to the domain

History

- May 2002 Task Force started
- Jun 2002 Preliminary check by WIDE
- Jul 2002 Preliminary report to IEPG meeting by Akira Kato (Yokohama IETF)
- Nov 2002 Start periodic check by JPRS
- Jan 2003 Report to JANOG
- 12-14 Mar 2003 Most recent check
- 16 Mar 2003 Report to IEPG

Check items and scope

- Items
 - Lame delegations
 - Inconsistency of NS RRs among parents and children
 - Bad SOA/NS/MX records
 - Including CNAMEs, bad characters, etc...
 - Using private IP address for NS/MX hosts
 - And so on...
- Scope
 - All domains delegated under .JP TLD
 - *dom.xx.jp* (co.jp, ne.jp, or.jp, ...)
 - *dom.jp* (ASCII.jp, 日本語.jp [IDN])
 - Checking the 'zone apex' only

Check program

- 2400 lines of Perl program
 - Using ‘dig’ command for sending DNS queries
 - Currently, DNS query sends serially
 - Checking all JP domains (about 400,000) take two days
 - Programs are carried out to 20 parallel on single machine
 - We plan to rewrite the program
 - Support asynchronous DNS queries
 - e.g. using Net::DNS, select()

Scan report of 19 Jan 2003

	Total	co.jp	or.jp	ne.jp	ad.jp	gr.jp	ac.jp	go.jp	Geo. domains	General Purpose ASCII	Purpose Japanese (IDN).jp
error%	37.9	30.2	30.9	43.4	37.0	37.4	41.7	40.1	39.5	50.2	88.4
badns%	24.6	21.6	25.4	30.8	30.1	26.9	35.7	31.3	32.0	29.9	10.3
LAMEns%	17.8	11.9	10.5	19.8	11.4	16.2	13.7	18.4	14.0	26.7	79.0
nsnone%	11.1	5.9	2.8	11.1	4.5	7.7	1.7	3.3	3.4	19.3	79.1
cnamens%	0.5	0.4	0.6	0.7	0.5	0.6	0.8	2.0	0.7	0.8	0.0
cnamemx%	3.6	3.8	3.6	3.5	2.2	4.4	3.2	2.9	3.8	3.5	0.2
badsoa%	0.3	0.3	0.2	0.3	0.0	0.3	0.3	0.8	0.2	0.3	0.0
private%	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.0	0.0

- error% Total percentage of domains which detected any errors.
- badns% Percentage of NS record among parents and children are inconsistent.
- LAMEns% Percentage of LAME delegations.
- nsnone% Percentage of irresolvable domains.
- cnamens% Percentage of containing CNAME on NS record.
- cnamemx% Percentage of containing CNAME on MX record.
- badsoa% Percentage of domains which SOA record contains any errors.
- private% Percentage of domains which NS or MX record(s) contains private addresses.

Pros and Cons

- Total error ratio: 37.9%
- Two major types of errors
 - Badns: 24.6%
 - Percentage of NS record among parents and children are inconsistent
 - LAMENs: 17.8%
 - Percentage of LAME delegations

Pros and Cons (cont.)

Japanese Domain Name

- Now, Japanese domain names have high error rate
 - Especially, all name servers are LAME
- Considerations
 - Some registrars specify name servers without setup
 - Historical reason
 - Formerly, the .JP domains which do not specify the name server(s) were deleted
 - Some gTLDs must be specified name server(s) when domain name registration
 - When Japanese domain name can be used smoothly, such cases will be decreased

Future works / Issues

- Notification
 - Who?, How?
 - Domain holders?, Registrars?
 - At least, we think we need to notify to the registrars
- Continuous checking
 - Monthly
- Providing Web I/F for checking
- Sweeping LAMEs and errors
 - On some RIRs announce ‘Sweeping LAMEs’
 - Tracking lame DNS registrations, and after suitable notice without repair, de-lists the DNS servers
 - Should we consider this?
 - It is necessary to update the contract in the case of domain name registration

Questions?

