

# DNS Survey

Akira Kato (JPNIC DNSQC-TF)



**WIDE Project**  
kato@wide.ad.jp

# Motivation

- ☆ **When I analyze DNS packets....**
  - Lot of unanswered queries
  - Bogus packets
    - 8.2.3 bug for Lame Delegation
- ☆ **Question: Is DNS operated correctly?**
  - or How good DNS is operated?

# JPNIC DNSQC TF

---

- ☆ **A joint effort at JPNIC**
  - WIDE, JPRS, JPNIC
- ☆ **Two approaches are considered:**
  - Active diagnose (sending queries)
  - Passive diagnose (diagnose web pages)
- ☆ **Publication in Japanese for feedback**
  - News Letters
  - Articles in commercial magazines

# JP domains

- ☆ **Send queries for JP domains**
  - no regional JP subtree considered
  - no in-addr.arpa/ip6.arpa tree considered
- ☆ **Total 370k delegations, 800k NS records**
  - 2.16 NS record per delegation
- ☆ **Scattered over 72k different DNS servers**
  - ISP DNS servers serves for many delegations
  - Geometric/Topological distribution is yet analyzed

# Initial Survey

## ☆ June 14-18, 2002

- A simple perl script which invokes "dig"
- Check items:
  - DNS server version
  - Name delegation
  - Consistency on NS record set

## ☆ Among 72k DNS servers

- 5.0% were not unknown
  - DNS server address unresolvable
- 12.3% were not accessible
  - weekend, midnight

# Initial Survey

## ☆ Among 800k NS record

- 16.1% were Lame
- 33.3% of JP were Lame
  - newly established (May 2001)
- old domains (ac.jp, co.jp, ...)
  - less than 10%

## ☆ Among 800k NS records

- only 65.5% had consistent NS set

# Initial Survey

## ☆ Among 72k DNS servers

- 31.3% did not tell the versions
- 22.7% were 8.2.3
- 12.4% were 4.9.x
- 7.6% were 9.1.x
- 5.1% were 8.2.2

## ☆ Good Server Ratio

- good / (good + bad) = 54.3%

# Tentative conclusion

## ☆ Extensive testing is required/planned

- SOA values
- NS points a CNAME record
- MX points a CNAME record
- 

## ☆ Active feedback is the key for improvement

- Many people appreciate feedback
- Magazine articles with broader circulation



# **Discussions**

---

**☆ Any comments/suggestions are appreciated**