



March 2<sup>nd</sup>, 2006  
DNS Operations SIG  
APNIC 21@Perth, Australia

# Reverse DNS lookup failure and lessons learned

Toshiyuki Hosaka <hosaka@nic.ad.jp>  
Japan Network Information Center (JPNIC)



# Overview

- Trouble overview
- Impact of reverse DNS failure
- Response from JP community
- Issues
- Improvements



# Trouble Overview

Duration	2005/10/23 3:30~22:00 (JST) 18h30min
Details	Reverse DNS lookups failure to part of JP/KR networks + ERX ranges from the APNIC region maintained in ARIN reverse DNS zones
Affected zone	216 x class B (JPNIC) + part of KRNIC zone + APNIC ERX range
Cause of failure	The security update on Saturday (Oct.22 by APNIC) caused some errors in APNIC's shared zone reverse delegation data. This resulted in some reverse DNS records accidentally being undelegated.(*)

(\*) <http://www.apnic.net/mailling-lists/apnic-announce/archive/2005/10/msg00003.html>

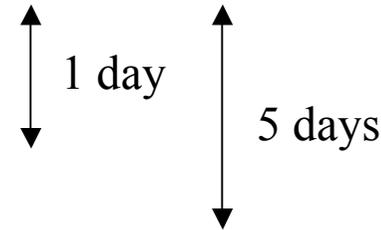


# Impact of reverse DNS lookup failure

- Denial of connection
  - There was a report: network access control (tcp\_wrapper) specified by a domain rejected valid connections. Example of the setting would be:
    - ALL: .example.jp
  - Some e-mails messages could not be relayed
- Impact varies depending on the application settings (by server manager)
- Reverse DNS lookup is still critical as forward DNS lookup for ISPs, because it could cause their service interruption

# JPNIC Response from JP community

- Initial trouble report was too late
  - ISPs need immediate report as soon as the problem was detected, in order to point it for their customers as an “official information”
    - 10/23 13:24 : a NW operator e-mailed to JANOG ML for this trouble
    - 10/23 22:00 : Problem fixed
    - 10/24 13:00 : 1<sup>st</sup> report by JPNIC
    - 10/28 14:30 : 1<sup>st</sup> report by APNIC
    - 10/28 14:58 : 2<sup>nd</sup> report by JPNIC
- Tel/Fax contact may be more appropriate than web/e-mails
  - When DNS and/or RIR/NIR infrastructure fails
  - 24 x 7 emergency contact?





# Issues

- Should re-recognize that RIR/NIR is responsible for reverse DNS zone management which is important service to the community
- How to detect the problem
- How to notify the problem to the communities
- RIR-NIR cooperation
- Escalation procedure



# Improvements

- Automated alert script implemented both APNIC and JPNIC
- Escalation procedure (APNIC-JPNIC) was defined
- Increase visibility of service status (APNIC)
- Change the scheduled maintenance window to weekdays, avoiding weekend (APNIC)

# Comments?

