

# **.JP technical update**

## **- IP Anycast in .JP -**

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## **Today's topics**

- **.JP activities in 2003**
- **IP Anycast for .JP DNS distribution**
  - **Technical Details**
    - A.dns.jp
    - D.dns.jp
- **Future plans**
- **Acknowledgements and related links**

## .JP DNS activities in 2003

### Jun-Aug: Unification of hostnames

- A.dns.jp ~ F.dns.jp

### Aug: Change of physical location, IP address and AS number of E.dns.jp

- Osaka area (outside of Tokyo)
- Provider independent (PI) address and AS number for DNS infrastructures

Reported  
in  
RIPE 46  
Meeting

### Sept: Assignment of PI address block and AS number to A.dns.jp

- This assignment is based on 'critical infrastructure'
  - <http://www.apnic.net/info/faq/critical-infrastructure-faq.html>

New!

### Dec: RIPE NCC has kindly started monitoring .JP nameservers

- dnsmon
  - <http://dnsmon.ripe.net/>

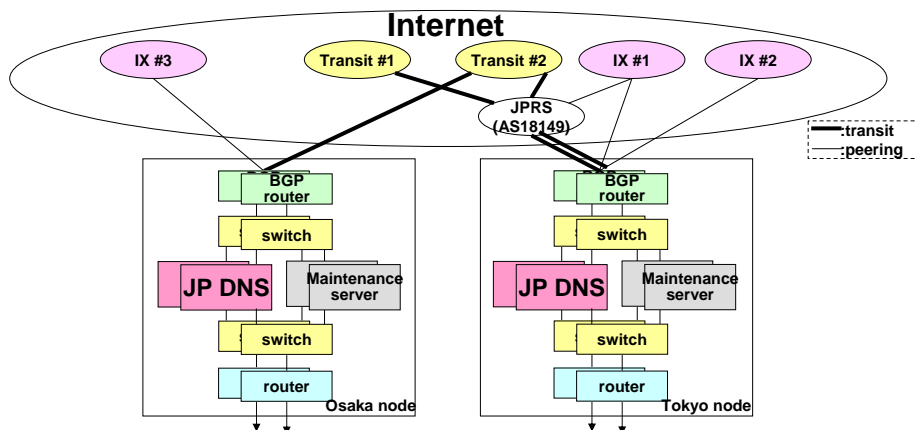
## IP Anycast for .JP DNS distribution

- **A.dns.jp and D.dns.jp are now in IP Anycast mesh**
  - A.dns.jp, by BGP anycast
  - D.dns.jp, by IGP anycast
  - Details are described later
- **We completed system buildup, and applied for the change of nameservers information (IP address) to IANA**
- **Schedule**
  - Jan 19: zone data of jp and dns.jp were changed and 'ccTLD modification form' was sent to IANA
  - Jan 22: receipt of the "change request" came from IANA
  - Jan 23: JPRS confirmed the change request
    - Some further operations are needed to be done by IANA
      - For example, communication with DoC (US government)
    - The change is expected to be effective on the rootserver in a few days

## A.dns.jp

- Operated by JPRS
- BGP Anycast (IPv4 only)
  - 203.119.1.1 (IPv4 address)
  - 23774 (AS number)
- Located in Tokyo and Osaka

## Technical details of A.dns.jp



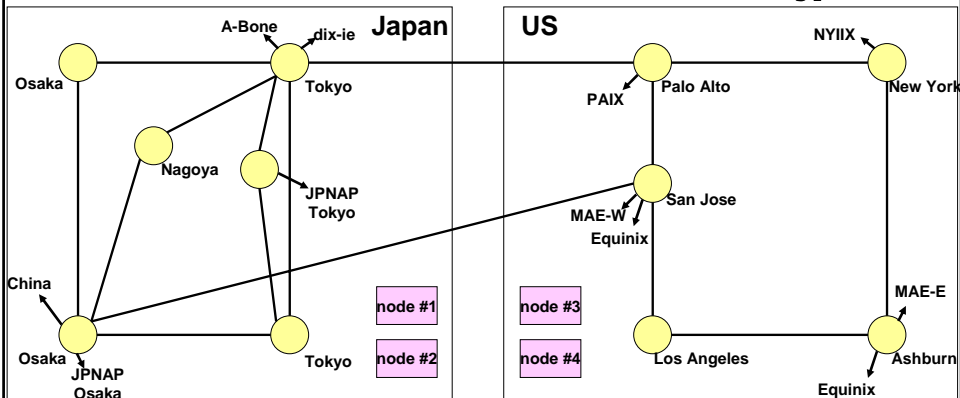
## Technical details of A.dns.jp (cont.)

- **Node**
  - **Fully-duplicated system**
    - DNS servers
    - BGP routers
    - Switches
    - Maintenance servers
    - Local routers
    - Remote console servers
  - **All servers are active and load-shared**
  - **Automatically switched upon system failure**

## D.dns.jp

- **Operated by IJ (Internet Initiative Japan)**
- **IGP Anycast**
  - **210.138.175.244 (IPv4 address)**
  - **2497 (AS number)**
- **Two nodes in Japan, two nodes in US (East and West)**

## Technical details of D.dns.jp



- All nameserver nodes are connected to IJ backbone network
- IJ has its own global IP backbone and external connection points in Japan and US

## Future plans

- Worldwide distribution ?
  - In Europe, Asia, .... ?
- IP Anycast of other .JP nameservers for JP DNS distribution ?
  - RFC 3258 says, "... organizations implementing these practices should always provide at least one authoritative server which is not a participant in any shared unicast mesh."
  - At least one nameserver should remain 'not anycasted'

## Acknowledgements and related links

- **Special thanks to**
  - **JP DNS operators group**
    - Engineering team for .JP nameserver operation
  - **Mr. Yoshinobu Matsuzaki, the IJ J D.dns.jp operator and his colleagues**
- **Related links**
  - **Press release**
    - <http://jprs.jp/en/press/>
  - **JP DNS Web Page**
    - <http://www.dns.jp/>
      - Coming soon ☺

## Questions?



<http://jprs.jp/>  
<http://www.dns.jp/>