IPv6 Operation and Transitional Issues
-- From NIR and ccTLD Operator

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IPv6 Allocation in China and CNNIC

China IPv6 allocation has a Big Increase in 2010

- 399 /32s ranks 13th globally
- China Telecom taking the lead in IPv6 allocation
- CNNIC’s effort in IPv6 Promotion

- As the NIR, CNNIC set up IP Address Allocation Confederation in China
  - Confederation Members: 276 (end of July)
  - IPv4 Allocation: 234622*/24s (25% in China), IPv6 Allocation: 102*/32s
  - ASNs: 274(2-byte), 10(4-byte)
IPv6 Services in CNNIC

• As NIR and ccTLD Operator, CNNIC provides IPv6 services to Internet community.
  – Resolution
    • .CN provides IPv6 resolution on Dec 23, 2004
      • a.dns.cn  AAAA IPv6 address = 2001:dc7::1
      • d.dns.cn  AAAA IPv6 address = 2001:dc7:1000::1
    • 10 global DNS nodes, 3 of them support dual-stack
      • Beijing, Hong Kong, California
  – Registration
    • Provided in 2008, only one IPv6 domain registered
  – Whois
    • Provided in 2008, less than 20 QPH.
  – Homepage
    • Provided in 2009, less than 50 QPH.
IPv6 DNS Resolution of .CN

- IPv6 queries for .CN is much less than IPv4 queries.
  - 1,627,295,068 IPv4 QPD, 5,686,447 IPv6 queries QPD (286 : 1)
- IPv6 queries curve is relatively flat, indicates that IPv4 queries is more often triggered by human beings.
**IPv6 Application Observed on .CN DNS**

- **Clients**
  - The portion of IPv6 DNS clients from America and Europe is larger than IPv4 one.
  - Compared to IPv4, smaller portion of Asia and Oceania IPv6 clients issues larger portion of queries.

- **Servers**
  - 17,564,315 IPv4 hosts, 41,377 IPv6 hosts (424:1)
  - The Europe and America takes advantage in IPv6 deployment
  - The IPv6 Service Types are limited.