iNetCore

IPv4 Address Exhaustion Issue

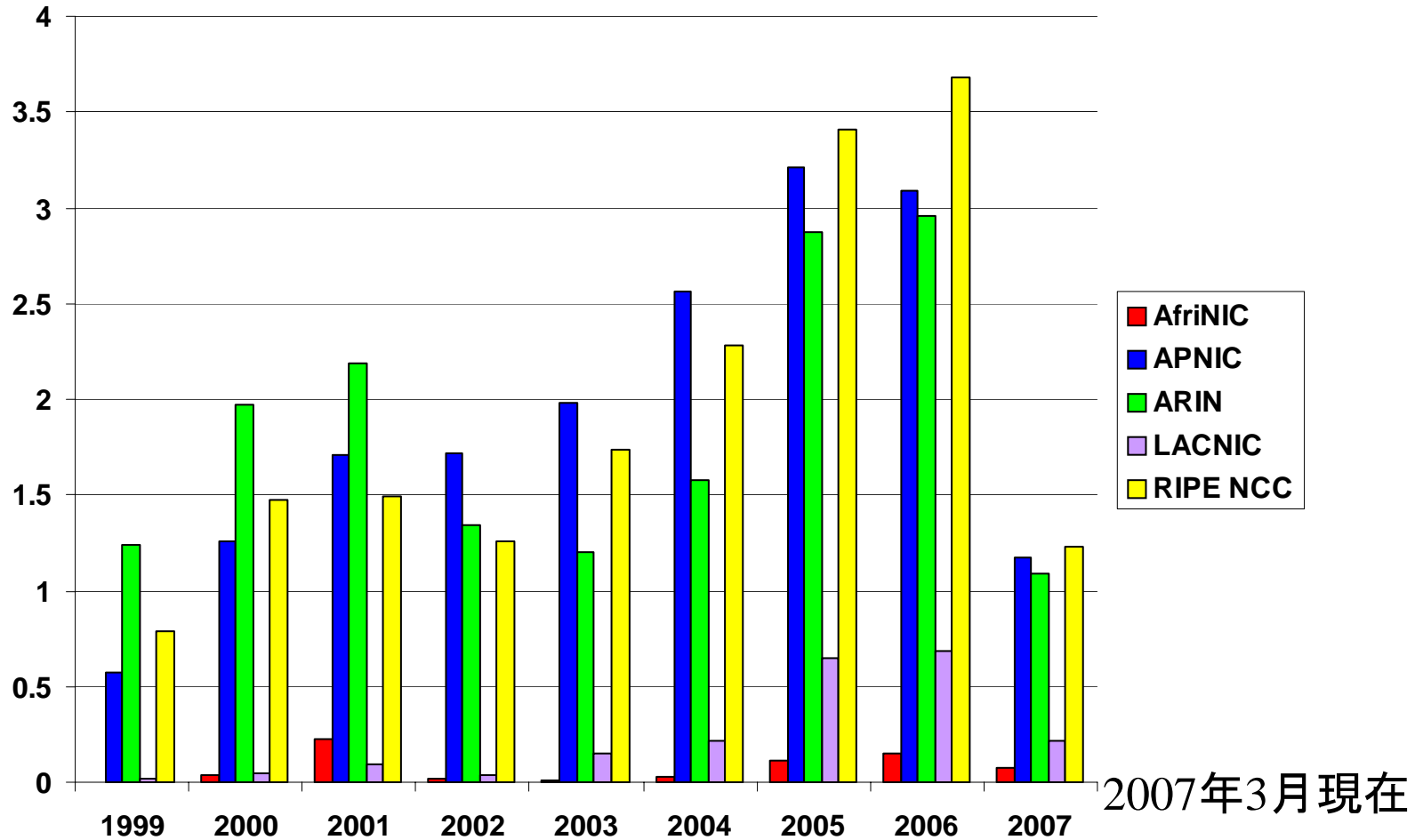2007.6.21

Intec NetCore, Inc.

Takashi Arano

IPv4 IANA Pool

- Available for allocation **47** x /8
  - 001-002, 005, 023, 027, 031, 036-037, 039, 042, 046, 049-050, 094-95, 100-115, 173-187, 197, 223
  - 000, 127, 240-255 cannot be used as global unicast addresses.
- Recent Allocation   more than **10** x /8 / year
  - 2004   **9** x /8
    - 058-059(APNIC), 070-072(ARIN), 085-088(RIPE),
  - 2005   **13** x /8
    - 041(Afrinic), 073-076(ARIN), 089-091(RIPE), 124-126(APNIC), 189-190(LACNIC)
  - 2006   **10** x /8
    - 077-079(RIPE), 096-099(ARIN), 121-123(APNIC)
  - 2007   Already **7** x /8
    - 92-93(RIPE), 116-120(APNIC)

IPv4 Assignment from RIRs to LIRs

2007年3月現在

Geoff Huston's forecast

年間/8 x 10 個 ペースで 消費

2007.6現在 の残り **47 x /8**

IANA在庫は**2010年** に枯渇(予想)
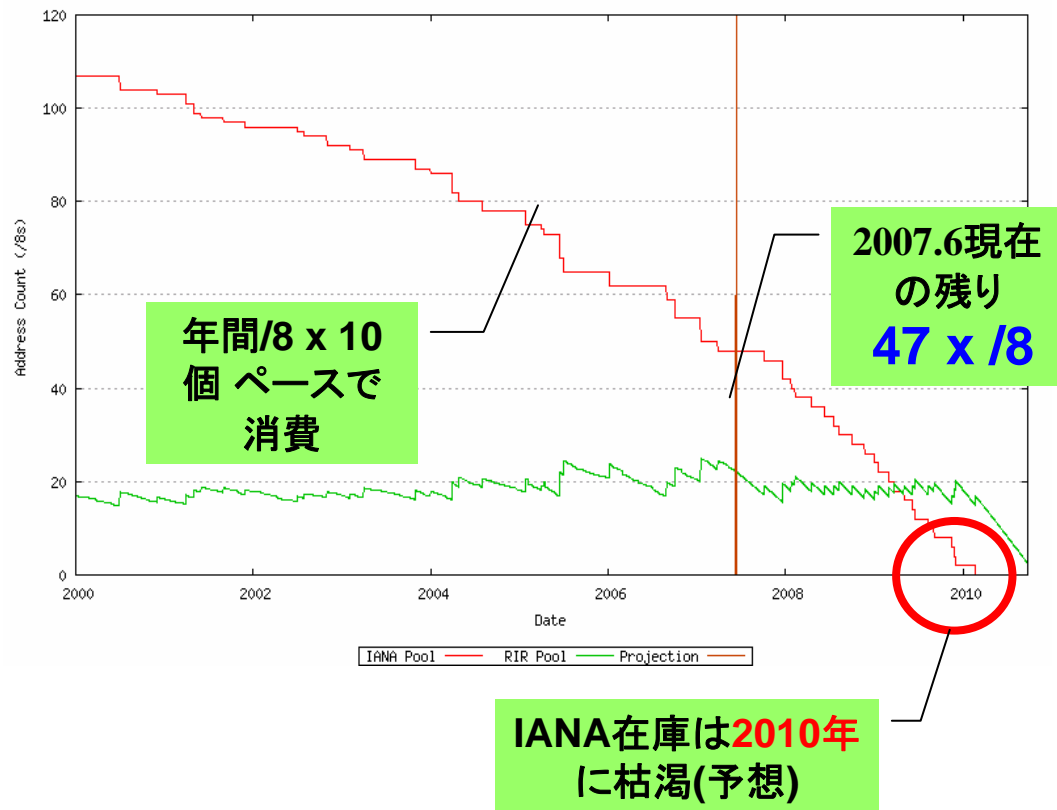
Exhaustion in IAIA and RIR pools will

occur in the year 2010

Who will be affected first?

- After IPv4 address exhaustion, ISPs would not be able to
    - Get new customers,
    - Develop new services, nor
    - Expand their existing services to wider area.

- It is not an issue of getting more revenue, but an issue of business continuity.
- We have to let ISP executives understand this.

How to Tackle with Exhaustion

- Anyway we need to manage risks for address exhaustion.
- How?

1. Utilizing More Private Addresses and NATs ??
   - We have already fully utilized private addresses and NATs.
   - Probably no more room to conserve addresses by NATs
2. Establishing Address Transfer Market ??
   - Possible. It can prolong IPv4 life by some years
   - However, it is controversial. Why do developing countries have to buy addresses from America to expand their infrastructure?
3. <u>Deploying IPv6</u>   only one reasonable solution for long term
   - most promising solution for exhaustion problem.
   - IPv6 will be deployed not because of more customers/revenues but because of risk management and business continuity.

Registry's statements

- ARIN
  - http://www.arin.net/announcements/20070521.html
  - Suggests the Internet community to deploy IPv6

- JPNIC
  - http://www.nic.ad.jp/

Softlanding Address Policy

- So far, there are three kinds of drafts in order to distribute the rest of IPv4 address more smoothly. It needs more and more discussion.

- JPNIC draft
- LACNIC draft
- David Conrad draft