Proposal of
"Time-Limited" IPv4 Address Allocation Policy

- **Project leader : Jun Murai <jun@wide.ad.jp>**
- **Project officiers:**
  - **Hiroshi Esaki <hiroshi@wide.ad.jp>**
  - **Akira Kato <kato@wide.ad.jp>**
  - **Osamu Nakamura <osamu@wide.ad.jp>**
  - **Masaki Minami <minami@sfc.wide.ad.jp>**
  - **Tsukasa Ogino <ogino@iri.co.jp>**
  - **Takashi Arano <arano@byd.ocn.ad.jp>**

Outline of the Proposal

- Background
- Objective and Outcome
- Relationship with RIR
- Work of Project's Registry
- Address Allocation Policy
    - From the project registry to ISP
    - From ISP to customer
- Period of the Project
- Project Officers

Background (1)

- Challenges of Internet
  - Preservation of end-to-end architecture
  - IP version 6 deployment
- Existing address allocation policy;

  conserve the IPv4 address space and route aggregation

  - RFC2050, RFC1519(CIDR), RFC2008
- Good for ISP providing dial-up connections

  - Emerging the ISP providing "always connected"
  - Restrictions by the NAT based connectivity (e.g., IPSec)

Background (2)

- RFC2050 allows allocation of minimum amount of IPv4 addresses

  - ➔ may introduce the technical difficulty for the emerging ISP providing always connected environment.

  - ➔Allocation is based on the number of committed customers, with the report of huge number of assignment record to the registry to request next address block

Background (3) and Proposal (1)

- No explicit due is defined in the current policy
  - RIR strictly justify the requirements
  - registry may want to conserve address space

- We propose "Time-Limited" leasing policy and it's practical implementation
  - Lease Term is defined on allocation

- Upon expiration
  - Address space must be returned to free block
  - Transition to IPv6
  - May renumber to other IPv4 address space which is allocated according to the effective policy.

Goal of the Project

- Encourage emerging ISPes
  - With the **time-limited address leasing policy**, very tight address allocation guideline is not necessary.
  - More relaxed policy can be defined so that those ISPs are able to **bootstrap without any technical difficulties**. Even if the address space allocated to the ISPs are too large, **the space will be returned back within a specified term**. ISP can design the IP version 4 network without as small as possible allocated IP address space.   Then, ISP can provide **global IP version 4 addresses** to the customer site to preserve the **end-to-end architecture.**

Project Outline

- New "IP version 4 address" lease policy
  - "Time-Limited Lease" policy
  - Return before December 31 of 2005
- Reuse of IP version 4 address
  - Global but used as private
- Practical IP version 6 transition
- Explore new business based on the end-to-end model
- IP version 6 address management

Relationship with RIR

- ***"registry"*** operated by IPv6 deployment and promotion committee, technically supported by WIDE Project and by JPNIC
- Report to APNIC (i.e., belonging to APNIC)
- Reporting and management structure
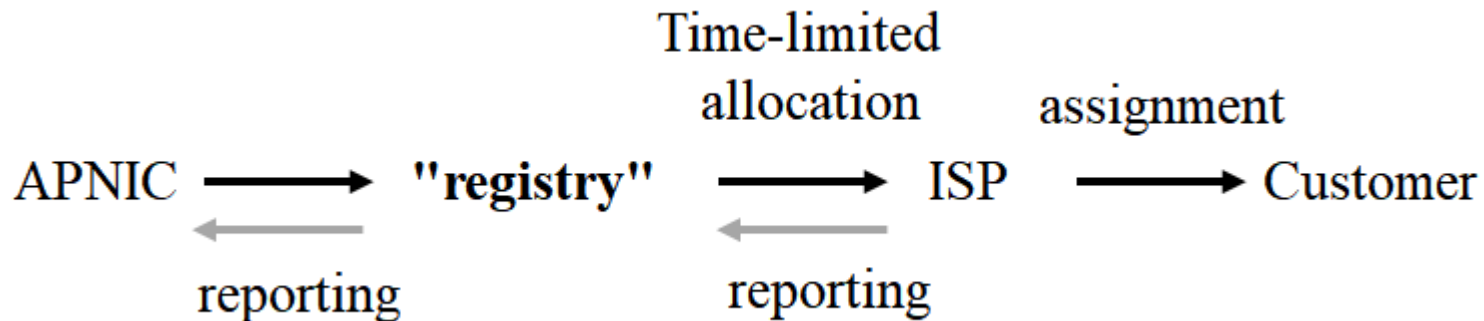
Work of Registry

- Relaxed address allocation (with time-limited lease agreement), with the estimation of required addresses at six month later.
- Development and operation of address registry, collaborating with JPNIC
- Examine the activity report issued by the ISPs, every three months
- The project registry examines the report from the ISP on address assignment and usage status, after one year from the first address allocation. If necessary, the project registry audit the ISP and/or may open the status to the public. Also, the project registry may request the return of IP address to the corresponding ISP.
- The examination result may effect to the future address leasing.

Address Leasing Guideline (Proposal)

- /0 - /24
  - ISP must ask this assignments to the *registry*
  - Request is examined by the *registry*
  - ISP registers to the registry database if allowed
- /25 - /28
  - ISP can decide assignments by itself
  - ISP registers to the *registry* database
- /29 - /32
  - ISP can decide assignments by itself
  - ISP manages the assignment
  - Need not to register to the *registry* database

Period of the Project

- First phase :
  - April 1, 2001 - December 31, 2001
  - Address space : part of 43/8

- Second phase :
  - January 1, 2002 -December 31, 2002
  - Address space : other IP version 4 address space

- The allocated IP version 4 address must return before December 31, 2005.

Proposal of
"Time-Limited" IPv4 Address Allocation Policy

- **Project leader : Jun Murai <jun@wide.ad.jp>**
- **Project officiers:**
  - **Hiroshi Esaki <hiroshi@wide.ad.jp>**
  - **Akira Kato <kato@wide.ad.jp>**
  - **Osamu Nakamura <osamu@wide.ad.jp>**
  - **Masaki Minami <minami@sfc.wide.ad.jp>**
  - **Tsukasa Ogino <ogino@iri.co.jp>**
  - **Takashi Arano <arano@byd.ocn.ad.jp>**