Large Space IPv4 Trial Usage Program for Future IPv6 Deployment
ACTIVITIES UPDATE Vol.4

15th APNIC Meeting / Policy SIG

Tsukasa Ogino, Yoshiyuki Ezura, Gaku Hashimoto, Kosuke Ito

IPv6 Promotion Council of Japan

IPv6普及・高度化推進協議会
IPv6 Promotion Council

Topic

- **Program Overview**
  - Objectives
  - Basic Scheme
- **Activities Update since the last meeting**
  - Results from Interviews
  - Some remarks
- **Considerations**

Program Overview

* **This program has started based on the consensus made at APNIC11**

Objectives

- Revitalizing the historically allocated address space
- Providing the challenge field for IPv6 age
  - Boosting up development of the "end-to-end" application
  - Exploring new services and business
  - Transferring trial to IPv6 infrastructure with the practical application and service
  - Forming IPv6 address administration scheme in JP

Activities Updates

- Last time, reported the new use of Internet

- Conducting interviews every 6 months
    - 2nd Interviews have done
        - end of Jan. – begin of Feb

- Current participants: No changes
    - Broadband "Always-On" connection service
    - Large VoIP/ADSL service
    - Contents Delivery service (contents with IP)
    - Public Space wireless access service

Results of Interviews

- **Effect of this program**
  - Contributing on the growth of internet market (increasing # of the internet users)
    - Make users aware the goodness of **global IP** address and its usefulness
    - Stimulate users' demands for **broadband**
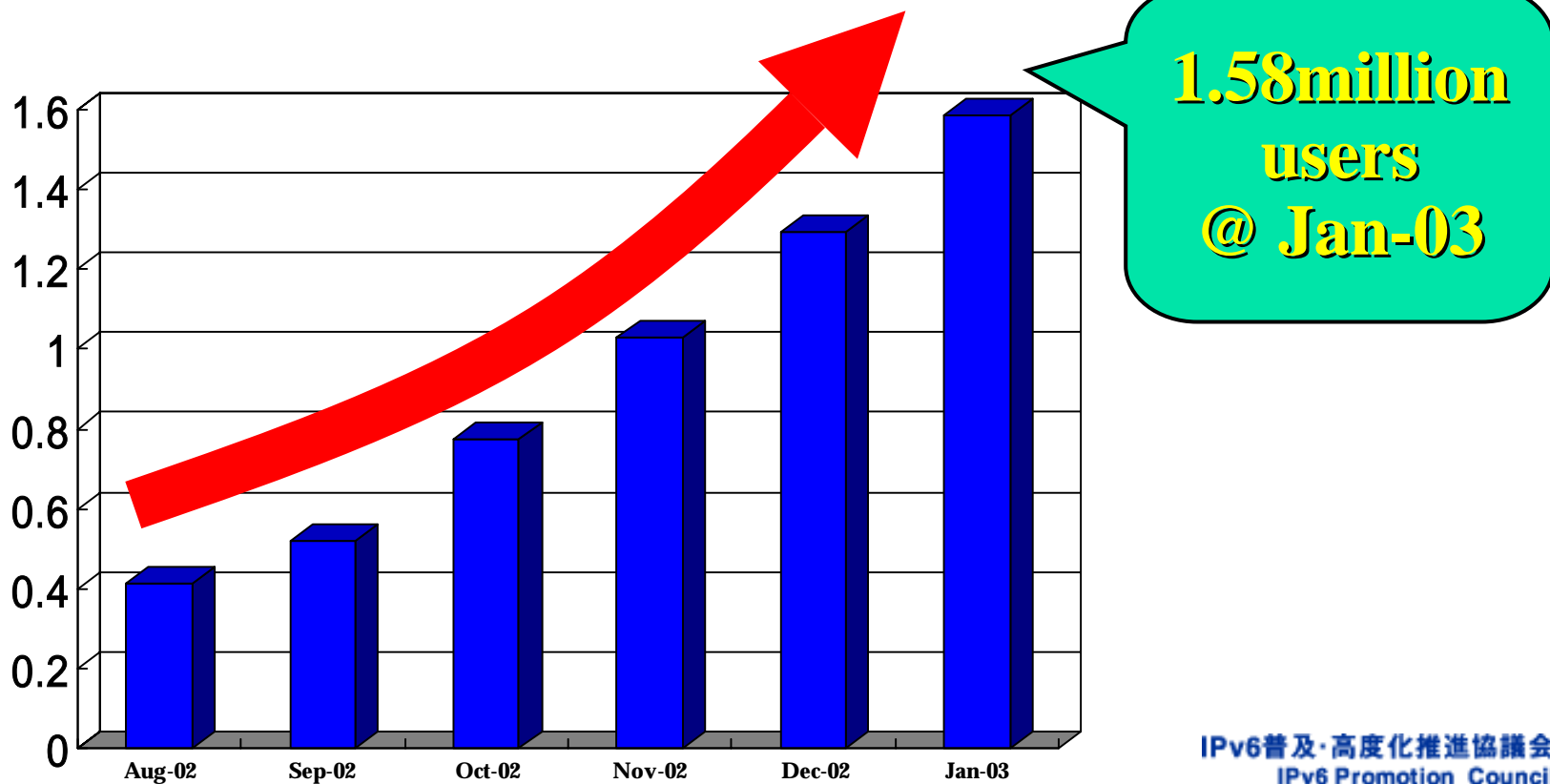   - Increase the opportunity of introducing new applications to users

Results of Interviews

- # of users in Fixed-IP service of ISP X

09/01/02 10/01/02 11/01/02 12/01/02 01/01/03
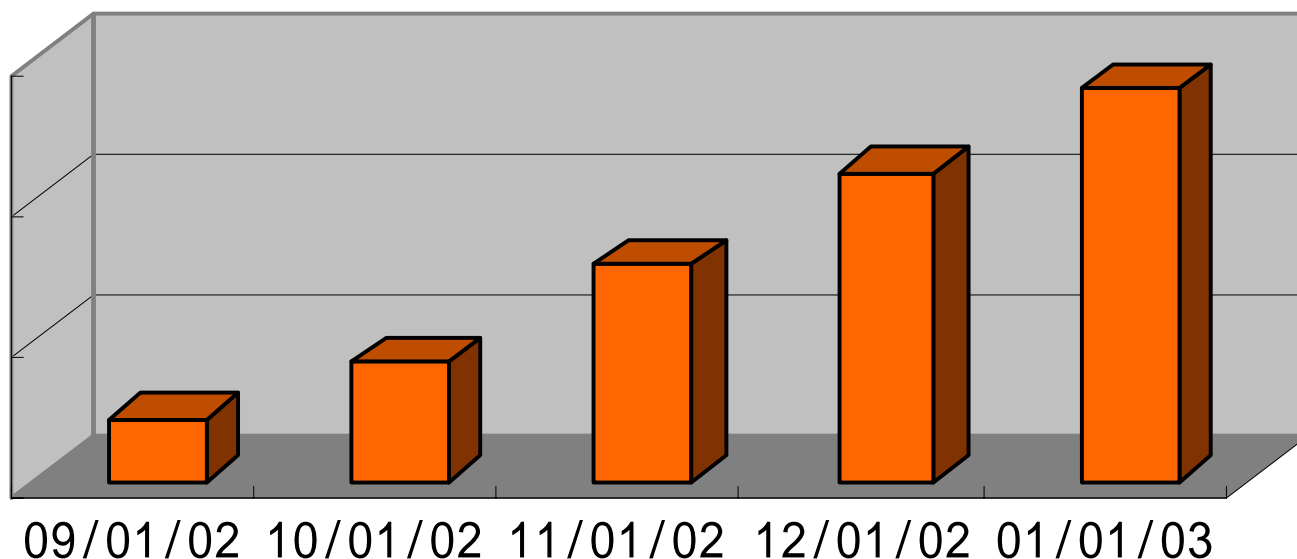
Results of Interviews

(cont.) Effect of this program

- Discovering the issues in starting the new services
  - Increase the attack to the contents delivery servers
  - Clarify the key elements in infrastructure to start IPv6 connectivity services
    - Load balancer, edge router, name server, etc.
  - Handle of privacy information
    - Especially in DB registration

Results of Interviews

- **Merit on User-side**
  - User needs become changed in quality: require more convenience in utilizing Internet
    - Able to setup the personal server because of fixed-IP address service
    - Able to start IP-phone and Net-gaming in low cost
    - Able to experience mobile internet access in a large scale
  - Able to start thinking of next generation services in near future with the advanced network environment

Results of Interviews

- **Merit on Provider-side**
  - **Able to make a quick-start of Fixed-IP service <u>in wide area</u>**
    - Ease of design the network because of simplifying internal routing table
  - **Able to propose new services with low financial risk, and able to provide a solution for user-needs**
    - Fixed-IP service as a solution to personal server
    - VoIP/IP-Phone service as a low-cost voice service
    - Contents delivery management with virtual IP
    - ISP-free mobile internet service

Remarks:

- Observation of ISP starting fixed-/29 assignment to home users as foreseeing future /48 assignment in IPv6:
  - 3-4 out of 8 IP addresses in use in average
    - Main PC (maybe + sub-PC)
    - IP-Phone
    - Accessories such as IP-camera, etc
      - IP-camera usage is increased a lot because of its low street price

Remarks:

- ISP providing a fixed-IP service for home users:
  - P2P protocol exceeds HTTP protocol
    - Out-bound traffic exceeds In-bound about 1.5 to 2 times
  - Becoming sensitive in latency (especially users doing a net-gaming)

Remarks:

(cont.) in fixed-IP service:

- Building the sense of ownership on IP numbers assigned to
  - "My number" "My global unique IP address" feeling likewise a phone number
  - Hard to explain the "lease" policy to end users
    - Resulting that some users perceive the 43/8 IP address space is not official/temporary because it is time-limited, and need to obtain a new address space from JPNIC for renumbering

Remarks:

(cont.) in fixed-IP service:

- Extremes of behaviors in response to the DB registration of assignment

  "concealing my name from public DB!"

      vs

  "disclosing my name in public DB!"

  - Some users like to show his/her presence in the public resource of Internet
  - There is user-side of desire to utilize as Advertisement

Remarks:

- **Hot-spot wireless mobile service:**
  - Will fail the service (increasing the users) with a proprietary driver for AAA on top of wireless card driver
  - Provide the gateway service for registered Home-address holder with ISP-free environment

Remarks:

- **Contents Delivery Service (CDS):**
  - In contents delivery management with virtual IP, **attacks** to the cache server has been increased
  - Solve this issue by expanding the capacity of cache server to distribute the loads by increasing the global IP assignment

Considerations:

- This program helps the users and ISPs to start imagine the next generation of Internet services
  - In "Broadband", "Always-on", "P2P applications"
- Even on IPv4, IPv6-like usage comes up
  - /29 assignment
  - Carrier/ISP-Free mobile internet

Consideration:

- **Regardless of IPv4/IPv6, the potential issues hidden in future services are clarified through this trial.**
    - Need to start finding the solutions in parallel
    - Need to clarify the issues in adopting IPv6 on the existing IPv4 infrastructure and find its solution
- **Experience on this program is valid for reviewing IPv6 address policy**

Thank you,
and We will update you next time as well.

Any question and comment?

Contact: info@v6nic.net
www.v6pc.jp