TWNIC Update

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Outline

- **The Status of 4 byte ASN in Taiwan**
- **IPv4 address exhaustion and IPv6 adoption**
  - Measure the IPv6 readiness in Taiwan
  - IPv4 address exhaustion solutions survey

The Status of 4 byte ASN in Taiwan

APNIC Policies for Autonomous System number management in the Asia Pacific region

- Timetable for moving from two-byte only AS numbers to four-byte AS numbers
  - 1 July 2009 APNIC assigns four-byte AS numbers by default. APNIC assigns two-byte AS numbers if a four-byte AS number is demonstrated to be unsuitable
  - 1 January 2010 APNIC ceases to make any distinction between two-and four-byte AS numbers. APNIC assigns from an undifferentiated four-byte AS number pool

The Status of 4 byte ASN in Taiwan

- **TWNIC's 4 byte AS number Pool**
  - ❑ TWNIC had requested a block of 4 byte ASN in 2008
  - ❑ Assigned 1 4 byte ASN

- **Promotion**
  - ❑ We also announced former letter to ISPs about AS number Policy adjustment
  - ❑ Since 2006, ISPs discussed 4 byte ASN on 6th, 8th, 11th ,12 th TWNIC IP OPM

The Status of 4 byte ASN in Taiwan

- In TWNIC's 11th OPM(Nov. 2008)
  - TWNOG provided "4-Byte AS Number Migration Suggestion" report
  - http://opm.twnic.net.tw/11th/

- In TWNIC's 12th OPM(Aug. 2009)
  - APOL shared experience of ISP migration 4 byte AS number

- In TWNIC's ISP and Router Vendors meeting(Aug. 2009)
  - TWNIC invited major ISPs, CISCO, JUNIPER and extreme to discuss the migration issue of 4 byte AS Number

Future work

- 4 byte AS Number Workshop
  - TWNIC, TWNOG, Cisco, Juniper will hold 4 byte AS Number Workshop in October, 2009
  - It is a hands-on workshop, Cisco and juniper will provide lab to support this workshop.
  - We expect that this workshop will help ISPs migrate to 4 byte ASN.

IPv4 address exhaustion and IPv6 adoption

Measure the IPv6 readiness in Taiwan

- **Measure the status of IPv6 deployment**
  - Measure the IPv6 specific since the beginning of IPv6 deployment

- **Contents of process**
  - Define the IPv6 metrics set as the measurement of the IPv6 readiness
  - Establish the method of analyzing data using measurement
  - Publish the result of the measurement

Measure the IPv6 readiness in Taiwan

- **Classification**
  - **Address Allocation**
    - Check IPv4/IPv6 address advertisement in BGP routing table
  - **DNS Query Analysis**
    - Comparison of amounts of IPv4/IPv6 connections
    - Distribution of DNS query by resource record type
  - **DNS Deployment**
    - Deployment rate of DNS server on the base of whole .tw domain name
    - Deployment rate of Mail server on the base of whole .tw domain name
    - Deployment rate of Web server on the base of whole .tw domain name

Measure the IPv6 readiness in Taiwan

- ❑ **Web Server Access**
  - ▪ Total amount of IPv4/IPv6 traffic from/to Web server (www.ipv6.org.tw)
- ❑ **IPv6 Traffic**
  - ▪ Total amount of IPv6 traffic from/to ASIX
  - ▪ Total amount of IPv6 tunnel broker traffic(5 major ISPs in Taiwan)
- ❑ **IPv6 Ready Products**
  - ▪ Number of products certified by IPv6 Ready Logo Program Phase1 and Phase2 a certification program operated by IPv6 Forum

- **Deployment Schedule**
- ❑ We will finish the measurement in Dec. 2009.

IPv4 address exhaustion solutions survey

- To understand the level of awareness about IPv4 address exhaustion and measures TWNIC's Members are considering

- Survey Period: 24th Aug. -15th Sept. 2009

Survey Questions

- There are 11 survey questions
  - The requirement of IPv4 address before IPv4 address exhaustion.
  - Facing IPv4 address exhaustion, what are their plans, strategies?
  - If ISP adopts IPv6
    - How much expense?
    - What are the bottlenecks of the IPv6 deployment?