



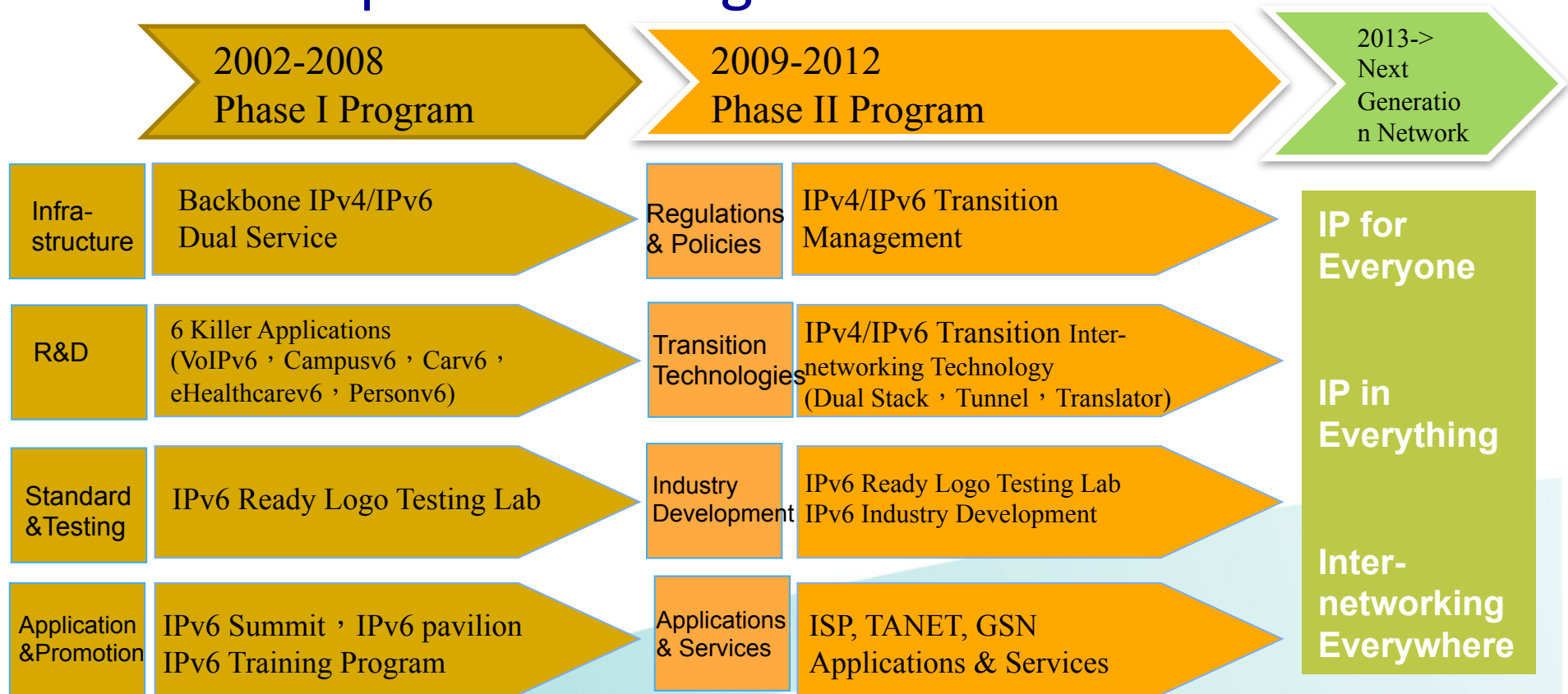
TWNIC Update

Sheng Wei Kuo, TWNIC
NIR SIG, APNIC 30

Outline

- Taiwan IPv6 Current Status
- Measurement of the IPv6 readiness in Taiwan
- The project of IPv6 Taiwan Directory
- Conclusion

Roadmap of IPv6 Program in Taiwan

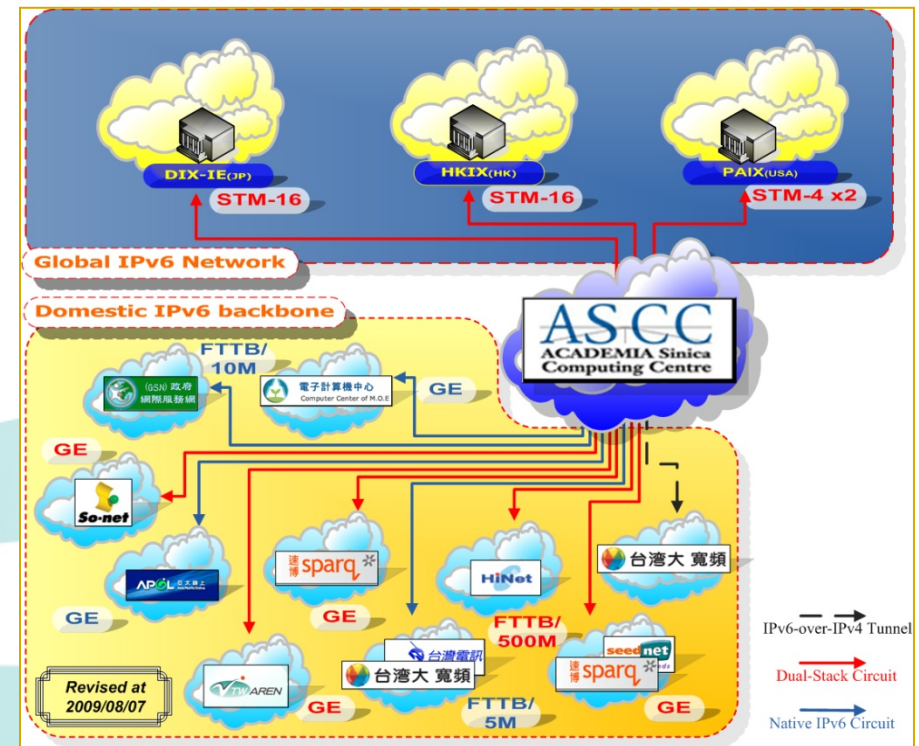


- Analyze IPv4/IPv6 policy
- Analyze IPv4/IPv6 interoperability among ISPs
- Test-bed on WiMAX, FTTx, PLC
- Access network on TANet and GSN

Taiwan IPv6 Current Status

● Infrastructure

- 10 ISPs had depolyed IPv6 backbone.
- IPv6 IX – **ASNet Internet eXchange v6 (ASIX6)**
 - To provide the mature IPv6 infrastructure for IPv6 development and implementation
 - To share the IPv4/v6 transfer experience with IX participants
 - To minimize the cost for IX participants in initial IPv6 construction
 - To improve the IPv6 traffic performance and network quality



Taiwan IPv6 Current Status

- Access
 - Taiwan Advanced Research, Education Network (TWAREN, TANET Backbone) provides IPv4 and IPv6 dual services
 - Chung-Hwa Telecom(HiNet) NGN (FTTX) will provide IPv4 and IPv6 dual services
 - IPv6 Tunnel Services are provided in most ISPs (HiNet, Sparq, SONET, APOL, TFN)

Measurement of the IPv6 readiness in Taiwan

- Measure the status of IPv6 deployment
 - Measure the IPv6 specific since the beginning of IPv6 deployment
 - It started at Sept. 2009.

- Contents of process
 - Define the IPv6 metrics set as the measure the IPv6 readiness
 - Establish the method of analyzing data using continuous measurement
 - Compile and publish the result of the measurement

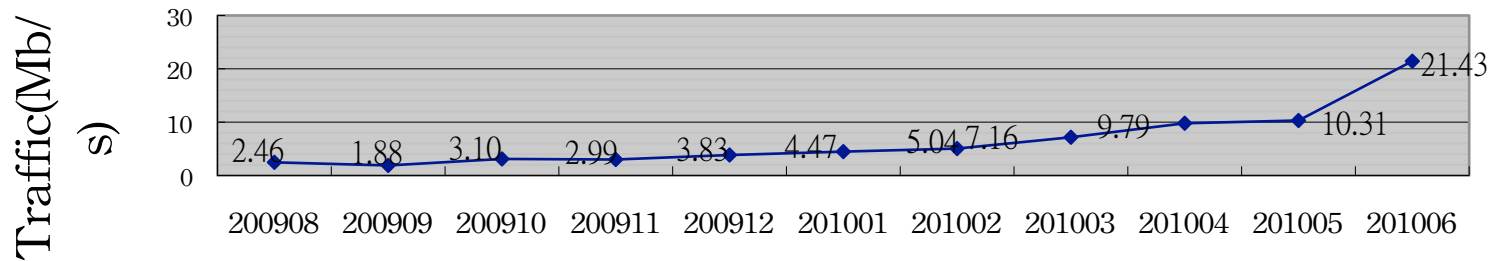
The measurement items correspond to stakeholders.

Users	<ul style="list-style-type: none">• Web query from IPv6• DNS query from IPv6	Vendors <ul style="list-style-type: none">• IPv6 Ready Logo Phase I & Phase II
Applications	<ul style="list-style-type: none">• IPv6 servers in Web, and DNS	
Access Network	<ul style="list-style-type: none">• Traffic in IPv6 Tunnel Broker	
Core Network	<ul style="list-style-type: none">• Number of ISPs within IPv6 allocations that are advertised in BGP• IPv6 traffic that in/out of Taiwan	

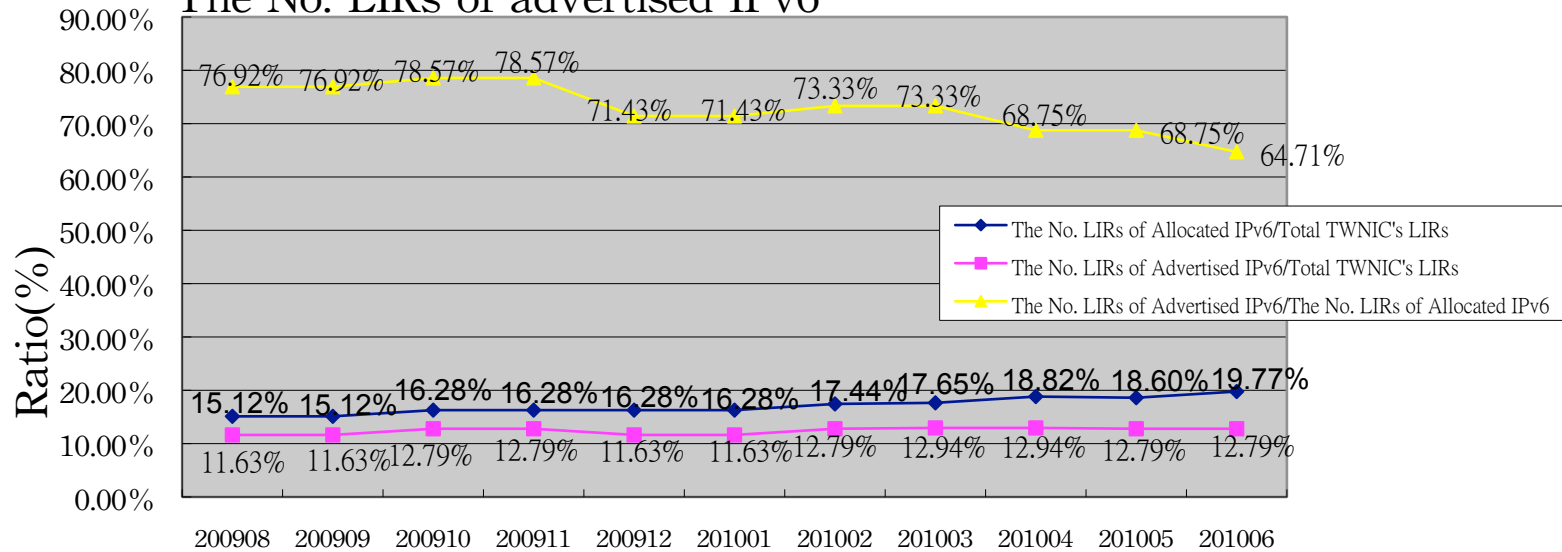
Core Network

Total amount of IPv6 traffic from/to the major IPv6 IX- ASIX

IPv6 traffic in/out of Taiwan

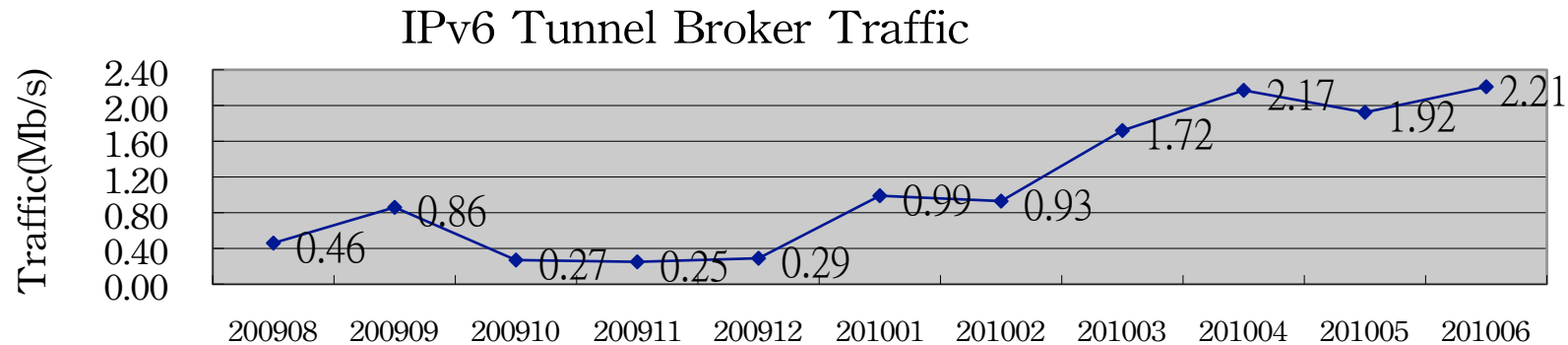


The No. LIRs of advertised IPv6



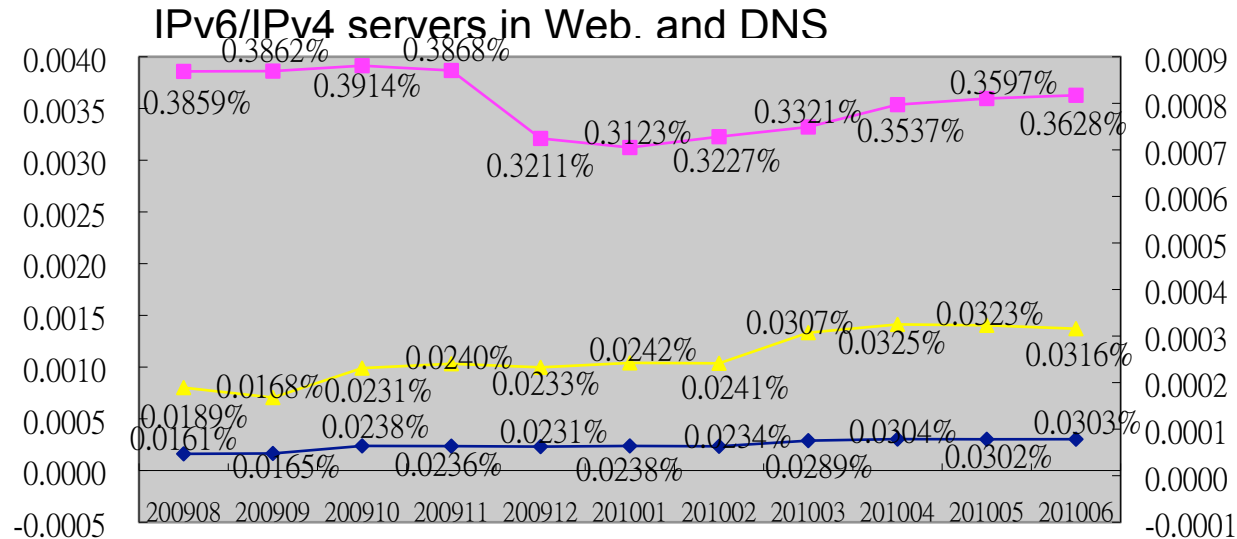
Access Network

Total amount of IPv6 tunnel broker traffic(5 major ISPs in Taiwan)



- TWNIC works with the 7 major ISPs to deploy IPv6 tunnel broker services and provide free IPv6 tunnel broker services in Taiwan since 2007.
- There are many types of IPv6 services. We choice IPv6 tunnel broker only to know the trend of IPv6 access services in Taiwan.

Applications

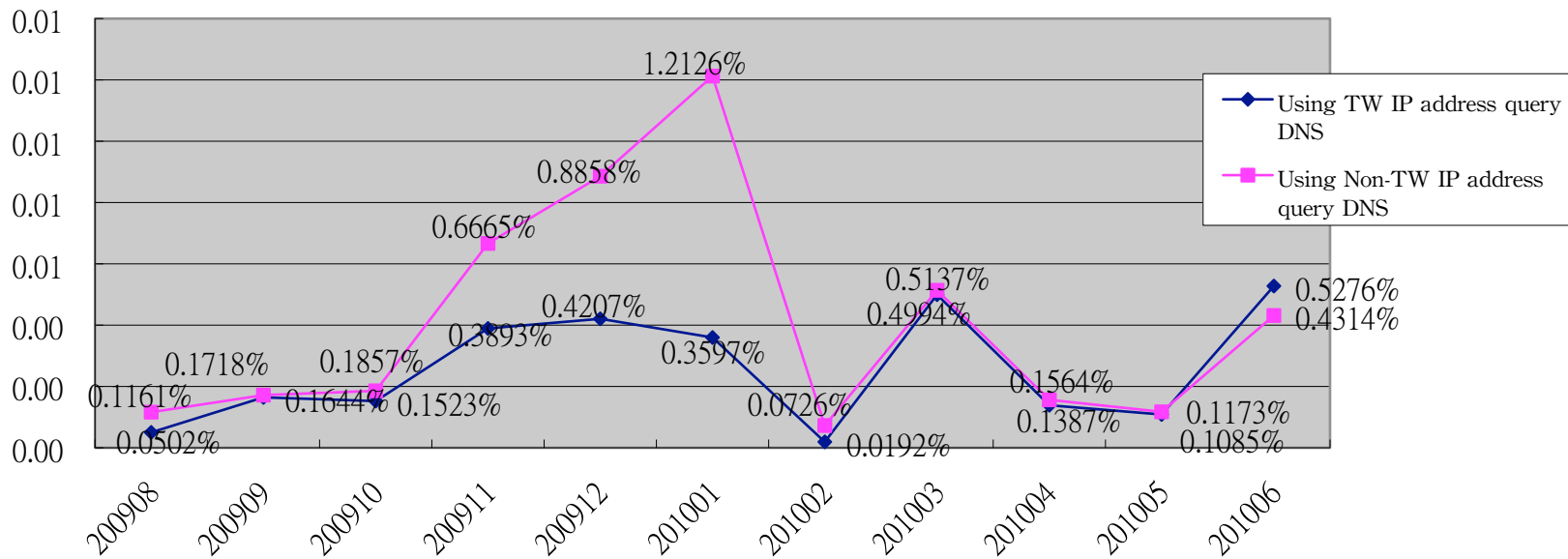


□ DNS Deployment

- 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

Users

IPv6/IPv4 DNS Query



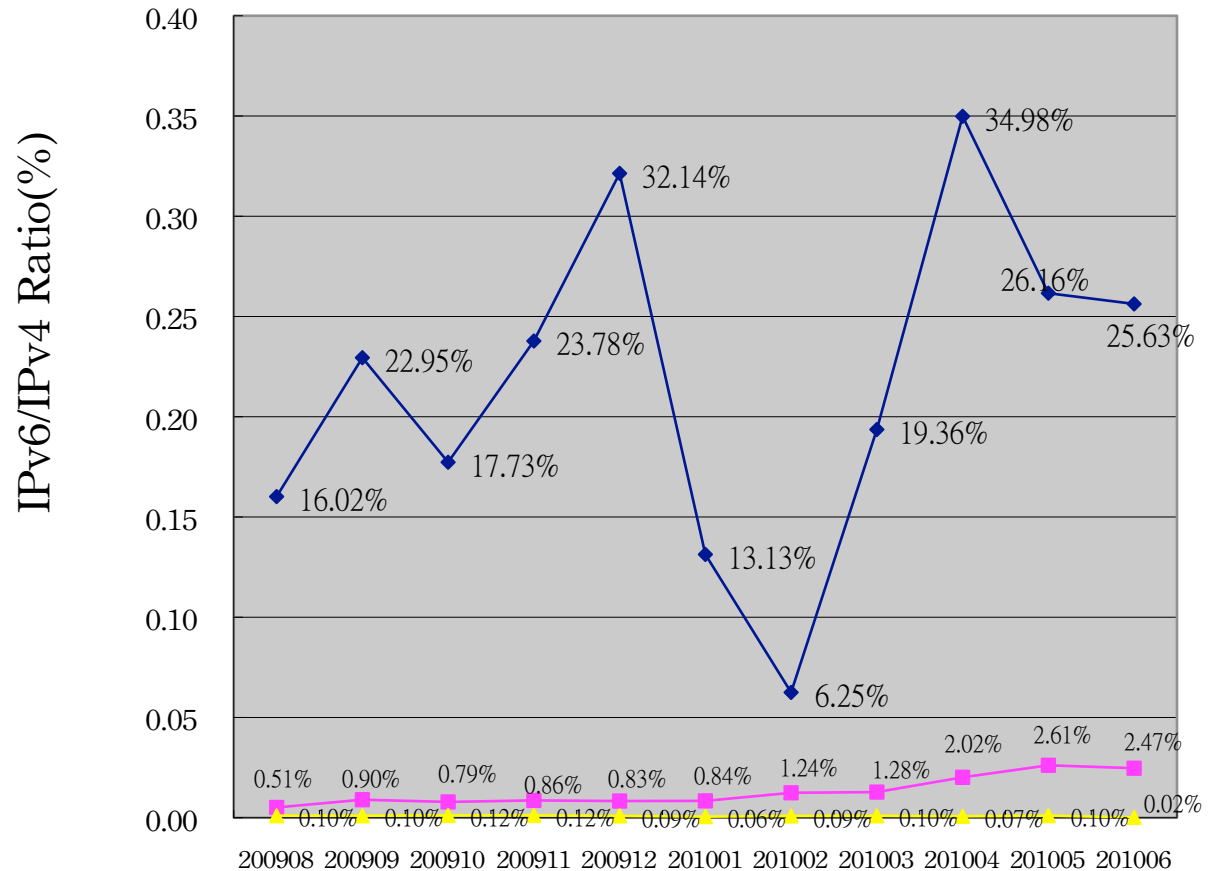
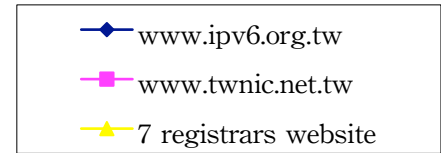
□ DNS Query Analysis

- Comparisons of IPv4 transport and IPv6 transport

Users

Website
www.ipv6.org.tw
www.twnic.net.tw
reg.tisnet.net.tw
rs.apol.com.tw
nweb.hinet.net
www.net-chinese.com.tw
myname.pchome.com.tw
rs.seed.net.tw
domains.tfn.net.tw
7 TWNIC Domain Name Registrar websites

IPv6/IPv4 Web Access



Total amount of IPv4/IPv6 traffic from/to Web server

The project of IPv6 Taiwan Directory

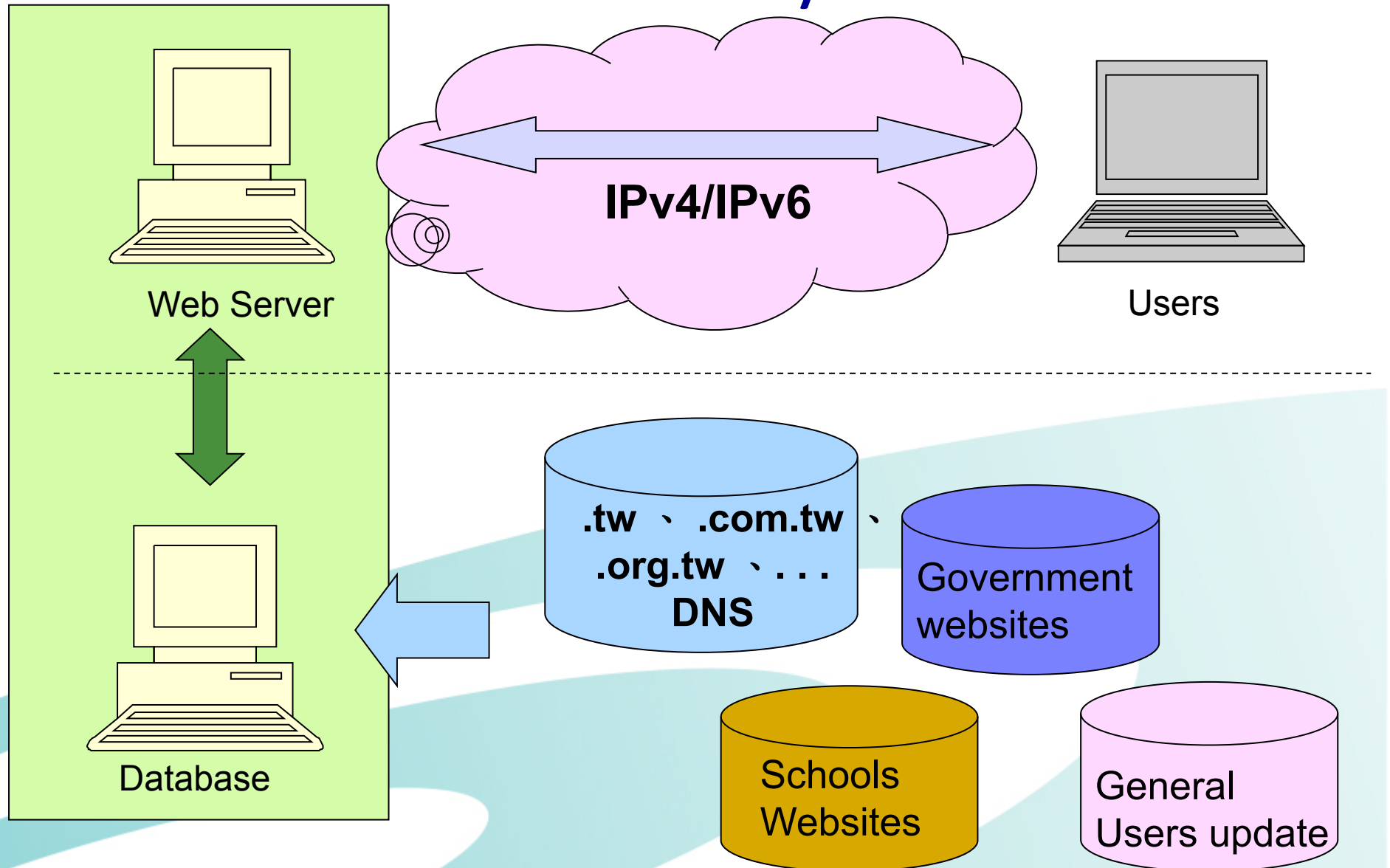
- Motivation

- As IPv4 addresses will soon run out, it is time that we take action on the deployment of IPv6 , many person ask us where can I find IPv6 enabled websites/products

- Purpose and Benefits

- This website provides IPv6 enabled websites directory in Taiwan
- General users may upload their IPv6 enabled website to our directory

IPv6 Taiwan Directory Architecture



IPv6 Taiwan Directory

IPv6 Taiwan Directory

您目前使用IPv4 位址 - 211.72.211.213
共有716 網站已登錄

IPv6網站名錄

序號	類別	所屬單位	網站名稱[點選可查詢網站]	IPv6位址	登錄時間	IPv6連線狀態
1	組織	中華電信研究所	http://interop6.ipv6.org.tw	2001:ca0:1:110::2	2010-07-27	正常運作
2	教育	台北市教育網路中心	http://web.tp.edu.tw	2001:288:1200::178	2010-07-12	正常運作
3	教育	樹德科技大學	http://ftp.stu.edu.tw	2001:e10:c41:eeee::1	2010-07-10	正常運作
4	教育	彰化縣教育網路中心	http://www.chc.edu.tw	2001:288:5600::103	2010-07-10	斷線狀態
5	教育	嘉義縣教育網路中心	http://www.cyc.edu.tw	2001:288:6600:70::31	2010-07-10	正常運作
6	教育	宜蘭縣教育網路中心	http://www.ilc.edu.tw	2001:288:a201::66:73	2010-07-10	正常運作
7	教育	高雄市教育網路中心	http://www.kh.edu.tw	2001:288:8201:2::11	2010-07-10	正常運作
8	教育	金門縣教育網路中心	http://www.km.edu.tw	2001:288:3400::4	2010-07-10	正常運作
9	教育	高雄縣教育網路中心	http://www.ks.edu.tw	2001:288:8401::163:16:1:21	2010-07-10	正常運作
10	教育	屏東縣教育網路中心	http://www.ptc.edu.tw	2001:288:9600:9::1001	2010-07-10	正常運作
11	教育	台南市教育網路中心	http://www.tn.edu.tw	2001:288:7200:1::2	2010-07-10	正常運作

IPv6 Taiwan Directory

您共

說明 IPv6網站名錄 新增IPv6網站 查詢IPv6網站 FAQ

輸入網址 http(s)://

所屬單位

請輸入驗證碼
F E E Q 3

新增

- URL

- <http://v6directory.twnic.net.tw/>

- 716 IPv6 enabled websites in Taiwan

- 1 government websites, 650 education websites, 65 company websites

Conclusion

- Taiwan Internet Industries begin to upgrade from IPv4 to IPv4/IPv6 co-existence, but there are only small deployment.
- The further issue is the IPv6 transition strategy
 - IPv4 address exhaustion will happen in next years, Co-ordination of ISPs/ICPs' deployment plan and vendor's developments is very critical.
 - TWNIC will conduct a strategy study of IPv6 transition and deployment for ISP/ICP in Taiwan in the end of this year.
 - The result of the strategy study will be the guideline for ISP/ICP.

Thank You

