

# TWNIC Update

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## **Outline**

- Taiwan Government's Initiative to Deploy IPv6
  - Motivation, goals, and strategies
  - Survey of government network service systems
  - Data analysis
- TWNIC IPv6 Promotion and Activities
  - TWNIC's IPv6 Training Program in 2012
  - IPv6 event
  - IPv6 Publications
- Conclusion & future work



# Taiwan Government's Initiative to Deploy IPv6



## Motivation of Taiwan IPv6 Initiative

- Why did we take the IPv6 initiative this Jan.?
  - Facing the IPv4 address exhaustion.
  - Face the rapid growth of IPv6 services.
  - Let government be the driving wheel of IPv6 upgrade.
- We made a proposal of IP Network Development Strategies to government last Dec. And then the government launched "IPv6 UP Program" subsequently.
- Challenge: Based upon our past experience, how to find cost-effective Strategies to have a seamless transition



# The Goal of IPv6 UP Program

- Smoothly upgrade Government Service Network (GSN) to IPv6
  - Upgrade the first half of public network services (Web, DNS, Email) to be dual stack enabled2012-2013
  - Upgrade the second half of public network services to be dual stack 2014-2015
- Encourage the research and development of IPv6 enabled appliances and services
- Encourage and stimulate the creation of intelligent IPv6 applications



## Strategies of IPv6 Initiative

- **Strategy 1**: **Make a survey** to find the problems and difficulties.
  - From small scale to large scale.
- <u>Strategy 2</u>: Define the standard operating procedure (SOP) of the IPv6 upgrade for major Internet services.
- Strategy 3: Encourage ISPs to provide dual-stack or tunneling for the IPv6 network connection.
- Strategy 4: Technical training courses for IPv6 professional cultivation.



# The Public Network Services Survey

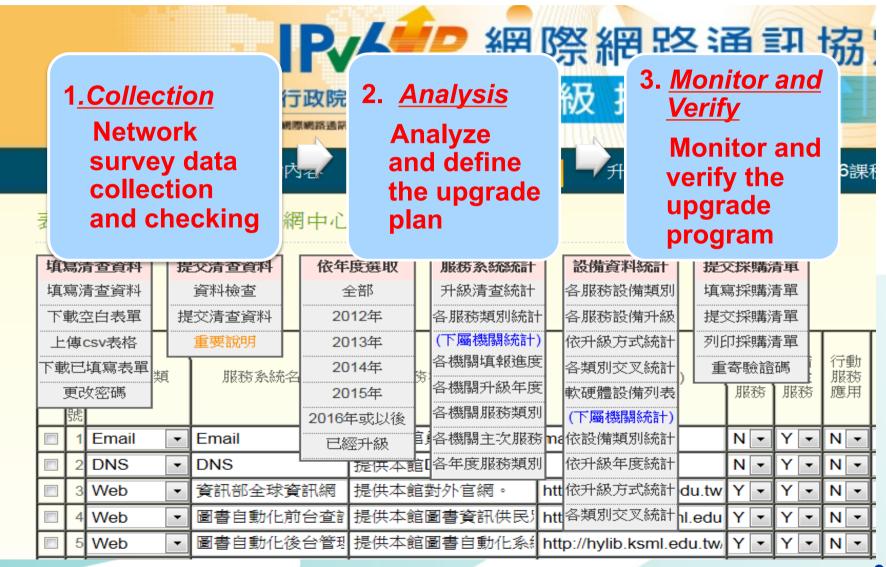
- *Principle*: Make a survey of public network service systems and their related hardware/software.
- **Stage 1**( Preparation): Establish 7 standard operating procedures (SOP) of IPv6 upgrade for DNS, WEB, Email, FTP, Network services and survey data management system including the data acquisition authoring and online help tools.
  - technical trial to verify these SOPs.
- **Stage 2**(Launch): Make a proposal of IPv6 deployment survey plan for government agencies.

# The Public Network Services Survey (cont.)

- **Stage 3**: Pre-survey trial (a small scale survey) for 6 voluntary government agencies
- Stage 4(Checking):
  - Revise the plan according to the feedback
  - technical training
- Stage 5: Full scale survey
  - Data analysis.
- Stage 6: Make a summarized upgrade proposal.
- Till now, there are about 5,339 network services in the government agencies survey.



# IPv6 Upgrade Management System





Current status – participated org.

	# of organs	# of units involved in survey	# of units complete the survey	% of completion
Office of the President	1	1	1	100%
The Legislative Yuan	1	1	1	100%
The Examination Yuan	1	7	7	100%
The Control Yuan	1	2	2	100%
The Executive Yuan	1	1	1	100%
Ministries of the Executive Yuan	9	186	186	100%
Commissions of the Executive Yuan	27	115	115	100%
Local Governments	22	512	466	91%
Subtotal	64	826	780	94%

Date: 2012/8/17

# **Expected IPv6 ready for Service Systems**

Totally 5,339 services. Upgrade before 2013 is 66%, before 2015 is 94%

Type of Service	Web	Email	DNS	FTP	Other	Total	Upgrade percentage by year					
							Web	Email	DNS	FTP	Other	Total
Already Ready	11		4		5	20	0.3%		0.7%		0.9%	0.4%
Year 2012	286	50	53	1	. 29	419	8%	8%	11%	3%	6%	8%
Year 2013	1,864	467	396	21	. 327	3,075	61%	81%	84%	59%	63%	66%
Year 2014	327	43	35	1	. 42	448	70%	88%	91%	62%	71%	74%
Year 2015	845	41	26	13	122	1,047	94%	94%	96%	97%	92%	94%
Year 2016	172	31	15	1	. 46	265	99%	99%	98%	100%	100%	99%
TBD	52	4	9			65	100%	100%	100%	100%	100%	100%
Total	3,557	636	538	37	571	5,339	67%	12%	10%	1%	11%	

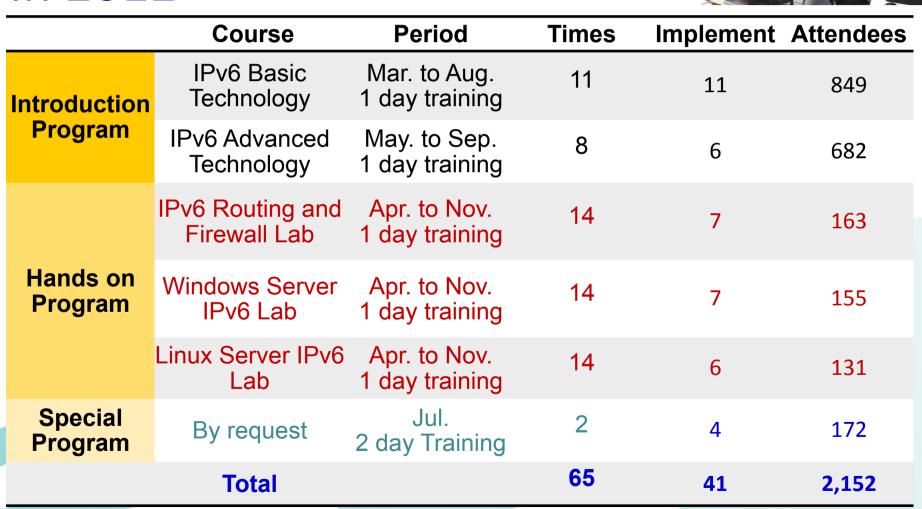
Date:2012/8/17



# IPv6 Promotion and Activities



# TWNIC's IPv6 Training Program in 2012



https://www.gsnv6.tw/ipv6\_101

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## IPv6 event

- IPv6 launch
  - More than 20 organizations join Taiwan IPv6 launch.
  - http://ipv6launch.tw







#### 18th TWNIC IP OPM

- The topics focus on IPv6 routing, IPv6 security,
   Windows/Linux server upgrade to IPv6
- The speakers come from Cisco, Juniper, Microsoft...etc.
- Many thanks APNIC supportedIPv6 Routing Workshop. 14



## **IPv6** Publications

- IPv6 Tips
  - Introducing IPv6 easily and simple.
  - http://ipv6tips.ipv6.org.tw/foreword.html



- Upgrade IPv6 services Hands-on materials
  - Network device(Router/Switch), Windows Server 2003(DNS/WEB), Windows Server 2008(DNS/WEB), Linux Server(DNS/WEB), FTP Server, Email Server, Home gateway
  - URL
    - https://www.gsnv6.tw/download.html



## Conclusion

- Finding from Network Services Survey
  - Most of government IT staffs are willing to have the IPv6 UP Program. The progress of network services survey is doing smooth.
  - Most of IT staffs are lack of IPv6 skill. About 20% data of survey are defective.
  - Start from IPv6 test bed is a good approach to get IPv6 experience with addressing, routing and server configuration.
  - Most concerned issues are security and budget.



## **Further Work**

- IPv6 Hands-on Assessment
  - We will hold the IPv6 hands-on assessment on Nov.
  - □ The scope of exam will cover to upgrade IPv6 on Windows server, Linux server and IPv6 routing.
  - Because the scope of IPv6 UP Program are huge, we hope more and more IPv6 experts to join it.
  - We expect the assessment will find more IPv6 experts and they will be helpful to IPv6 UP Program.



# Q&A



