



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 enabled **2012-2013**
 - 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.
- Strategy 2: 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 on-line 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

1. Collection

Network
survey data
collection
and checking

2. Analysis

Analyze
and define
the upgrade
plan

3. Monitor and Verify

Monitor and
verify the
upgrade
program

填寫清查資料		提交清查資料		依年度選取		服務系統統計		設備資料統計		提交採購清單		
填寫清查資料		資料檢查		全部		升級清查統計		各服務設備類別		填寫採購清單		
下載空白表單		提交清查資料		2012年		各服務類別統計		各服務設備升級		提交採購清單		
上傳csv表格		重要說明		2013年		(下屬機關統計)		依升級方式統計		列印採購清單		
下載已填寫表單				2014年		各機關填報進度		各類別交叉統計		重寄驗證碼		
更改密碼				2015年		各機關升級年度		軟硬體設備列表		服務		行動服務應用
				2016年或以後		各機關服務類別		(下屬機關統計)		服務		
				已經升級		各機關主次服務		依設備類別統計		N		N
				提供本館		各年度服務類別		依升級年度統計		N		N
						提供本館對外官網。		依升級方式統計		du.tw		N
						提供本館圖書資訊供民		各類別交叉統計		hl.edu		N
						提供本館圖書自動化系		http://hylib.ksml.edu.tw/		Y		N

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%

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



	Course	Period	Times	Implement	Attendees
Introduction Program	IPv6 Basic Technology	Mar. to Aug. 1 day training	11	11	849
	IPv6 Advanced Technology	May. to Sep. 1 day training	8	6	682
Hands on Program	IPv6 Routing and Firewall Lab	Apr. to Nov. 1 day training	14	7	163
	Windows Server IPv6 Lab	Apr. to Nov. 1 day training	14	7	155
	Linux Server IPv6 Lab	Apr. to Nov. 1 day training	14	6	131
Special Program	By request	Jul. 2 day Training	2	4	172
Total			65	41	2,152

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 supported IPv6 Routing Workshop.

全球IPv6全面升級 | IPv6升級手冊 | 如何使用IPv6 | IPv6統計資料 | IPv6相關連結 | 相關系列活動 | IPv6教育訓練 | 最新消息

台灣IPv6全面升級

促使所有網際網路社群更深入瞭解IPv4位址枯竭所帶來的影響及因應之道，讓所有的相關網際網路應用服務業者能夠盡速升級並在IPv6網路上提供各項服務與應用，負責推廣我國IPv6網路的財團法人台灣網路資訊中心將邀請國內重量級的網路接取服務及網路內容服務業者，共同參與台灣IPv6全面升級活動。

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

