財團法人台灣網路資訊中心因公出國人員報告書

99 年 3 月 12 日

報告人 姓　名	顧靜恆 郭晟偉	服務單位及職稱	IP 組組長 IP 組工程師
出國期間	99 年 2 月 28 日 至 99 年 3 月 6 日	出國地點	馬來西亞吉隆坡
出國事由	報告書內容應包含： 一、出國目的 二、考察、訪問過程 三、考察、訪問心得 四、建議意見 五、其他相關事項或資料 （內容超出一頁時，可由下頁寫起）		
授　權 聲　明　欄	本出國報告書同意貴中心有權重製發行供相關研發目的之公開利用。 　　　　　　授權人：　　　　　　　　　　（簽章）		

附一、請以「A4」大小紙張，橫式編排。出國人員有數人者，依會議類別或考察項目，彙整提出
　　　報告。

註二、請於授權聲明欄簽章，授權本中心重製發行公開利用。

一、出國目的

APNIC(Asia Pacific Network Information Centre)為掌管亞太地區 IP 位址與 AS 號碼
發放的機構，為能廣納會員對於 IP 位址及 AS 號碼相關政策之意見，APNIC 每半
年召開 Open Policy 會議，以供各界對於其 IP 位址及 AS 號碼資源之政策作一個公
開的討論，藉此由下而上(bottom up)的方式的再依照會議結果制訂成相關政
策。

第 29 次 APNIC 會議於本年度 3 月 1 日至 3 月 5 日，假馬來西亞吉隆坡舉辦，參
加此次 APNIC 之會議主要之目的為參與相關議題並報告，且瞭解目前亞太地區
各國之網際網路發展狀況與網路運作之政策。

二、參與議程與議題
3 月 1 日至 3 月 5 日 APNIC 29 次 OPM 的議程如下：

09:00 - 10:30	IPv6 Multicast for carrier/ISP Tutorial
09:00 -12:30	BGP Techniques Tutorial
	DNSSec Tutorial
	IRME Tutorial
	APCAUCE
09:00 - 17:30	APTLD
11:00 - 12:30	Tutorial: Porting IPv4 applications to dual stack, with examples
14:00 - 15:30	Opening Plenary
16:00 - 17:30	APOPS Plenary 1
17:30 - 19:00	Web of Trust BoF
19:00 - Late	APRICOT 2010 Opening Social Event

2 March 2010 (Tuesday)	
09:00 -10:30	APOPS Plenary 2
09:00 - 17:30	APTLD Meeting
11:00 - 12:30	International Fibre Developments
	When ISPs run out of IPv4
	Net Design & Mgmt
12:30 - 14:00	APIA AGM
13:00 - 16:30	IPv6 Economics Workshop
14:00 - 15:30	APRICOT Peering Forum 1
	Network Core Infrastructure Security Tutorial - Best Practices
14:00 - 17:30	MPLS-based Metro Ethernet Networks Tutorial
	Internet Routing Registry Tutorial
16:00 - 17:30	APRICOT Peering Forum 2
	Layer 2 Attacks and Mitigation Techniques Tutorial
17:30 - 19:00	APNIC PDP BoF
	ISOC Chapter Meeting BoF
	Asia Pacific IPv6 Task Force (APv6TF) Meeting

	Peering Forum Reception

3 March 2010 (Wednesday)	
09:00 -10:30	Routing Session
	IXPs Session
	State of IPv6 Session
11:00 -12:30	Routing Security Session
	Lightning Talks
	IPv6 Deployment Session
	APNIC NIR SIG
14:00 -15:30	APNIC Community Consultation - IPv6 and ITU
	Operations Session
	Best Practices in Network Planning Tutorial
14:00 -17:30	Packet Based (IP) Radio Access Network Tutorial
16:00 -17:30	APNIC Policy SIG 1 - Setting the Scene
	DNS Session
	Tutorial - Which routing protocol?
17:30 -	APNIC Resource Certification BoF

19:00	
19:00 - Late	APNIC Social Event

4 March 2010 (Thursday)	
09:00 -10:30	APNIC Plenary
11:00 -12:30	APNIC Policy SIG 2
	Security Session
	Ethernet OAM Tutorial
14:00 -15:30	APNIC Policy SIG 3
	New Technology Session
	Tutorial - The New Internationalized Domain Names (IDN) Standard - What is it, and how to use it
16:00 -17:30	Closing Plenary
17:30 -18:30	ICANN Nominating Committee KL Outreach Event
19:00 - Late	APRICOT Closing Social Event

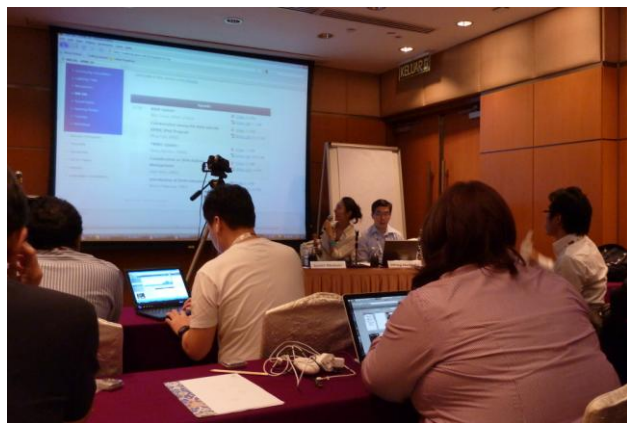|	
5 March 2010 (Friday)	
09:00- 15:30	APNIC Member Meeting

本次會議參加各個 Session 如下：

議程名稱	說明

NIR SIG	該 SIG 討論 NIRs 關心的議題及 NIR 社群舉辦之活動報告。
Policy SIG	該 SIG 是對於現行網路資源管理政策提出修正意見之提案。
NIR Hostmaster & Technical Workshop	與會對象為各 NIR 之 Hostmater，目的是提供 APNIC 與 NIRs 的 Hostmaster 交流溝通管道，以檢討 IP 審理發放作業及增進彼此的 IP 管理技術。
APNIC Community Consultation - IPv6 and ITU	該會議主要是討論是否在目前 RIR 核發 IPv6 位址的架構下再新增由 ITU 核發的架構
AP IPv6 TF	該會議主要為亞太地區各國對 IPv6 發展狀況的討論。
APNIC Member Meeting	與會對象為全體 APNIC 會員，目的是向會員報告 APNIC 近半年的狀況及其他區域 RIRs 之簡報，同時總結各 SIG 所討論之提案，並尋求參與會員之共識。

三、參加心得

(一) APNIC 29 參加心得

1. NIR SIG

本次 NIR SIG 共有 CNNIC、APNIC、TWNIC、KISA 及 JPNIC 報告目前 NIR 狀況。本次會議中，各 NIR 主要報告在面對 IPv4 位址枯竭時的一些經驗分享，而 TWNIC 報告目前台灣在 IPv6 準備度製作及 ISP IPv4 位址枯竭因應問卷調查現況與各 NIR 及 APNIC 進行交流，受到各與會者熱烈討論。

2. Policy SIG

本次 Policy SIG 共有 6 個提案，說明如下：

Policy Proposal 名稱	Proposal 摘要	Proposal 原文內容	表決結果
Prop-078 IPv6 deployment criteria for IPv4 final /8 delegations	此 Proposal 將提供規範 APNIC 會員在最後一個/8 時每個 LIR 申請 1 個/22 的政策中附加必須要提出 IPv6 轉移的規劃才能申請。	It is proposed that to receive IPv4 addresses under the final /8 policy,account holders must meet the following additional criteria: 1.The account holder must demonstrate either: (1).an IPv6 transition plan, OR (2).IPv6 deployment needs, especially the needs for IPv6 to IPv4 internetworking. 2.The account holder must have either: (1).existing IPv6 addresses, OR (2). a valid application for IPv6	未達成共識

		addresses.	
Prop-079 Abuse contact information (abuse-c)	此 Proposal 提出在 whois 資料欄位 inetnum, inet6num, autnum 加上 abuse-c 的資料，並且在新核發時及更新 whois 資料時需要寫入該 abuse-c。	Institute a mandatory reference to an IRT object in inetnum, inet6num and aut-num objects. In terms of implementing a mandatory IRT reference, it is suggested that this be part of two established actions: (1).The next time an organization attempts to update an existing inetnum, inet6num or aut-num object (2).When new inetnum, inet6num or aut-num objects are added to the database	達成共識
prop-080: Removal of IPv4 prefix exchange policy	此 Proposal 鑑於 IPv4 位址枯竭，建議將原本 APNIC Policy 中可以把多段未連續之 IPv4 位址更換為一段連續之 IPv4 位址這項服務拿掉。	It is proposed that APNIC remove the policy that enables networks to exchange noncontiguous address blocks in exchange for a single, aggregated range	達成共識
prop-081: Eligibility for assignments from the final /8	此 Proposal 提出當進入最後一個/8 的階段時，每個符合 apnic assignment 資格(包含 Small multihoming assignments, Internet Exchange Points 及 Critical infrastructure) 可以再申請一段/24	1.Each assignment will consist of the minimum 2.IPv4 assignment size. The account holder must meet the criteria for receiving an IPv4 portable assignment (1).Small multihoming assignments (2).Internet Exchange Points (3).Critical infrastructure 3.All APNIC account holders are eligible to receive only one allocation OR assignment from the final /8 worth of address	未達成共識

		space	
prop-082: Removing aggregation criteria for IPv6 initial allocations	本提案提議移除原本 APNIC Policy 中，首次核發之 IPv6 網段需要進行聚集之規範，以與目前各 RIR 的 IPv6 policy 同步。	1.Remove the requirement under the initial IPv6 allocation criteria to aggregate an initial IPv6 allocation as a single prefix 2.Include a stronger recommendation about the importance of aggregation to the IPv6 policy document	達成共識
prop-083: Alternative criteria for subsequent IPv6 allocations	本提案提出再次申請 IPv6 位址時，除以現行使用率的計算方式外，建議再新增一個以技術觀點的考量來進行申請。	1.It is proposed that alternative criteria be added to the subsequent IPv6 allocation policy [2] to allow current APNIC account holders with networks in multiple locations but without a connecting infrastructure to obtain IPv6 resources for each location. 2.To qualify for subsequent IPv6 allocations under the proposed alternative criteria, account holders must: (1). Be a current APNIC account holder with an existing IPv6 allocation (2).Be announcing its existing IPv6 allocation (3).Demonstrate that the LIR has additional networks that are not connected to the network announcing its existing IPv6 allocation	未達成共識

3. APNIC Member Meeting

此次 APNIC Member Meeting 主要是 APNIC 秘書處報告目前各項工作推動狀況、各 RIR 最新狀況報告、APNIC EC 選舉結果報告等等。本次 APNIC EC 選舉，共有 6 人競選，3 位當選人為

- Akinori Maemura(日本)
- Che-Hoo Cheng(香港)
- Ma Yan(大陸)

4. NIR Hostmaster & Technical Workshop

本次會議中，主要討論如下

(1). 討論 2010 年 1 月 1 日起，NIR 向 APNIC 申請 AS 號碼 Pool 方式。

(2). 討論 APNIC 目前的 IP 位址 Debogon 方式。

(3). 討論 APNIC IPv4 位址 Transfer 的 Policy 現行狀況。

(4). 介紹 APNIC 的簡化 IPv6 申請方式。

(5). 介紹 APNIC 在 DNSSEC 及 RPKI 目前的建置狀況。

5. APNIC Community Consultation - IPv6 and ITU

本次會議中，ITU 提出希望成為 IPv6 位址核發體系的一員，並提出直接配發給每個國家一段 IPv6 位址的架構(CIR Model)，此次會議為 APNIC 社群意見交流會議，並將會將此會議結論帶至 3 月 15-16 ITU IPv6 Group 會議討論。會議結論如下：

(1). ITU 需釐清配發給每個國家一段 IPv6 位址的架構是否實際可行。

(2). 建議 ITU 的 IPv6 Group 公開的來進行此議題討論，並邀請更多相關的 Stakeholder 參與 。

會議後並以聲明稿的方式來提出 APNIC 社群對 ITU 提案成為 IPv6 位址核發體系的建議，聲明稿內容請參考附件 1。

6. AP IPv6 TF(Asia Pacific IPv6 Task Force)

本次秘書處任期屆滿，重新改選，由 APNIC 獲選新任秘書處，為期二年。

四、建議事項

(一) APNIC 秘書處此次在 NIR Hostmaster Workshop 討論 IPv4 位址的移轉政策，目前各 NIR 中已著手制訂相關政策的為 JPNIC。由於移轉政策與目前 IPv4 位址核發政策有所差異，對各會員的衝擊頗大。建議將進行 IPv4 位址移轉政策研究，來進行相關影響評估報告。

(二)此次 AMM 會議發生印度想派代表參與監票人資格爭議事件，經會員表決後結論如下:
- 此次會議建議維持 APNIC 相關 stakeholder 不得參與監票工作
- 將在下次 APNIC 會議進行選務程序討論

此議題於後續在 mailing list 中將持續討論選務程序，建議持續追蹤在 mailing list 的相關討論。

(三)為了維護 IPv4 位址、IPv6 位址及 AS 號碼正確使用，避免 IP 位址/AS 號碼在全球路由中被盜用，國際網際網路標準制訂單位 IETF 已制訂出 RPKI (Resource Public Key Infrastructure)，目前各 RIR 已經開始著手建置，建議 TWNIC 針對該功能進行評估規劃，與 APNIC 一同合作來建置此項功能。

(四) APNIC 目前已經對 IPv6 位址首次申請提出簡化申請方式，建議將此方式通知 TWNIC IP 代理發放單位，以促進推廣 IPv6 位址申請與使用。

附件 1　APNIC 社群對 ITU IPv6 的建議

Introduction

IP address management is fundamental to ongoing Internet stability. Over the past decade the Internet has become fundamental to the world's economy. The Internet is truly global. What happens in one part of the world affects the rest of the world. So changes in IP address management could affect billions of devices globally, irrespective of the country where they are located.

The importance of an open environment

The Internet has become what it is today because of the open, transparent, bottom-up process used to develop the Internet's protocols and management policies. Everyone is encouraged to participate.

RIR decision making has no barriers to participation. Anyone, including government, can have their say. This is made transparent by public archives of the decision making process, including mailing lists, video, and meeting transcripts.

Risks of introducing a parallel address management system

The operational stability, security, and efficiency of the Internet relies on a single consistent address management framework. The introduction of "competing" address management systems is not desired by network operators, and carries the strong risk of fragmenting address management policies, of fragmenting the Internet itself, and of compromising the Internet's security and stability.

Equitable Distribution

We note the equitable distribution of addresses is already in place in the current IPv6 management system and addresses are being deployed actively and effectively throughout the world at this time. Each RIR already has the same sized block to distribute to networks within their region.

Actions

1.　　　The proposal for a parallel address management system involves significant risks and therefore requires a clear problem statement, complete explanation of its details, and a thorough risk analysis of its consequence.　The NAv6 paper satisfies

none of these requirements. Therefore, the NAv6 proposal, the paper itself cannot be considered as a substantial basis for discussion at the ITU IPv6 Group's work.

2.   Since concern about potential IPv6 exhaustion appears to be one of the fundamental concerns behind the ITU's studies into IPv6, we suggest that the ITU conduct a study on this.

3.   We ask the ITU's IPv6 Group follow the example of the Internet community and the IGF process and make its documents and records available publicly, so that all Internet stakeholders can participate in deliberations which could have global ramifications. We ask ITU Member States and Sector Members to recall the Tunis Agenda's call for a multi-stakeholder approach to Internet governance and call on the ITU to support the current multi-stakeholder system of address management.