APNIC

Apster

Apster is the quarterly newsletter for APNIC members and the Internet community.

www.apnic.net

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APNIC - Addressing the challenge of responsible Internet resource distribution in the Asia Pacific region

A history of the Internet in Vietnam

The Internet has a relatively brief history in Vietnam, stretching back little more than a decade, but the growth of Internet technologies within the country over that time has been impressive. In this country of roughly 80 million people, the Internet and other communications industries have faced, and continue to face, many challenges, both technical and political.

Early years

The home to the Internet's early development in Vietnam was the Hanoi Institute of Information Technology (IOIT), part of the National Center of Natural Sciences. Some of IOIT's earliest attempts at launching the Internet in Vietnam included discussions with a German university in 1991 about the possibility of exchanging email. It was not until late 1992, however, that the first international connection was established. Again, this was made possible through collaboration with an overseas university, this time the Australian National University (ANU) and its Coombs Computing Unit.

The link established with ANU initially allowed the limited exchange of emails via dial-up connections. Assistance from the Australian telecommunications company, Telstra, in 1993 saw the service automated using UUCP protocols and, in 1994, a grant from the Australian Department of Employment Education and Training expanded the service to provide email to the then Hanoi University. This network soon grew into the first internal Vietnamese network, VARENet (Vietnam Academic Research and Educational Network). By 1996, there were approximately 300 nodes on this network, ranged across the country from Ho Chi Minh City to Nhatrang, Hue, and Haiphong. By mid-1998 there were an estimated 1,500 customers, or approximately 4,000 individual users.

Established in parallel to VARENet was NetNam, a network also established by IOIT, though in this case with the assistance of Canada's International Development Research Center (IDRC) and its Pan Asia Networking (PAN) project. NetNam was launched in 1994, and in its early years used a

UUCP connection through ANU in Australia (the same route used by VARENet). By 1996 NetNam had attracted several hundred users, including 60 of the 75 NGOs operating in Vietnam at the time.

It is also worth noting that in the late 1990s, a number of other small networks appeared around Vietnam, including Toolnet, Vinanet, Vinet, and Tri Tue Vietnam (TTVN).

Connecting to the world

With these limited internal networks operational, Vietnam was positioned in early 1996 to establish a full-time, unlimited connection to the global Internet. It would take nearly two years of debate and regulatory activity, however, before government approval was obtained and the first ISPs could begin providing commercial services.

As an interesting aside, the consultant to IDRC on the initial investigations into full Internet connectivity in Vietnam, through NetNam and VARENet, was Paul Wilson, now Director General of APNIC.

The first ISP and licensed Internet Access Provider (IAP) was VDC, a state-owned subsidiary of Vietnam Post & Telecom (VNPT).

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The 20th APNIC Open Policy Meeting (APNIC 20) takes place at Melia Hanoi Hotel, Hanoi, Vietnam from 6-9 September 2005, hosted by VNNIC.

APNIC 20 policy proposals

The following policy proposals will be discussed at APNIC 20.

prop-005-v005	**Internet Assigned Numbers Authority (IANA) policy for allocation of IPv6 blocks to Regional Internet Registries** This is a proposal for policies governing the allocation of IPv6 address space from the IANA to the Regional Internet Registries (RIRs). prop-005-v004 was approved and endorsed by the APNIC EC in November 2004. As the proposal required global consensus, the proposal has now been updated to be aligned with the proposal that has reached consensus in the ARIN, RIPE, and LACNIC communities. AfriNIC will be discussing this same proposal at the upcoming AfriNIC meeting.
prop-31-v001	**Proposal to amend APNIC IPv6 assignment and utilisation requirement** This is a proposal to amend the end site assignment points with the addition of a further assignment size and amendments to the description of the applicability of the assignment sizes, the evaluation threshold value, and the method of calculating end-site assignment efficiency.
prop-029-v001	**Proposal for discrete networks and national peering** This is a proposal to permit large ISPs to manage multiple country accounts under a single APNIC membership using the concept of discrete networks.
prop-30-v001	**Deprecation of ip6.int reverse DNS service in APNIC** This is a proposal for APNIC to cease devoting resources to support the operation of the ip6.int domain.
prop-028-v001	**Abolishing IPv6 per address fee for NIRs** This is a proposal to revise the NIR fee structure by setting a per allocation fee charged to NIRs (indirectly to NIR members) at a reasonable level including when NIRs make a large allocation to their members, by setting an upper limit to the fee.

For more information on each of these proposals, see:

http://www.apnic.net/docs/policy/proposals

NRO Number Council election

A seat for an Asia Pacific representative on the NRO Number Council will become vacant on 31 December 2005. An open call for nominations was made for individuals from the Asia Pacific region to fill the position for the next two years. The nomination period closed on 10 August 2005.

An election will be held on Friday 9 September at 12 midday to select a new Asia Pacific representative to the NRO Number Council from the following candidates:

- Toshiyuki Hosaka
- Kenny Huang
- Xiangjian (Eugene) Li

Onsite Notice Board and remote participation

During the course of APNIC 20, attendees can find last-minute updates, venue and schedule details, and other meeting information on the Onsite Notice Board, at:

http://www.apnic.net/meetings/20/onb

Those unable to attend the meeting in person can still take part in proceedings via the APNIC 20 Jabber chat rooms. These facilities are also available as an alternative channel of discussion for attendees in Hanoi. See the APNIC 20 web site for more information, at:

http://www.apnic.net/meetings/20/programme/jabber-chat.html

Gold sponsors

Cisco Systems Vietnam
Tuesday 6 September

Nominum
Wednesday 7 September

Social event

VNPT
Friday 9 September

Silver sponsors

CNNIC 中国互联网络信息中心
Thursday 8 September

JPNIC

NIDA KRNIC
Korea Network Information Center
of
National Internet Development Agency of Korea
Friday 9 September

TWNIC
Friday 9 September

APNIC launches ICONS

As part of its commitment to serving the Asia Pacific Internet community at large, APNIC has launched ICONS, the Internet Community of Operational Networking Specialists. Built on the open source Mambo software, ICONS is a dynamic web resource which will allow the community to share information about networking topics that are affecting ISPs and network operators. The site boasts a range of features to promote this exchange of information, including a discussion forum, documents, presentations, and relevant links.

The APNIC Secretariat has seeded the site with links, articles, and presentations. It is now up to the community to get involved in growing this into a live resource. APNIC encourages all users with an interest in networking to contribute to the site. In this way, the range of information available to everyone will grow based on the collective needs and knowledge of the community.

You can contribute by becoming a registered user, which will allow you to participate in the discussion forum, post articles, upload documents such as training materials, or simply add to the collection of useful links. You do not have to register to view the site or download the available material. Over time, ICONS will grow into a valuable source of information for the Asia Pacific Internet community.

Visit the site and make your contribution to the project at:

http://icons.apnic.net

There will also be a BoF session at APNIC 20 to seek community feedback on the ICONS project:

http://www.apnic.net/meetings/20/programme/apops-bofs.html#icons

Pan Asia ICT R&D Grants Programme - next round now open

The next round of funding in the Pan Asia ICT R&D Grants Programme is now open.

The Information Communication Technology Research and Development (ICT R&D) Grants are for projects that find innovative ways to use ICT applications for sustainable development in Asia-Pacific countries or at the regional level. Practical and replicable solutions are emphasised.

The following types of grants are available:

- Grants up to a maximum budget of US$9,000 over a 12 month term.
- Grants up to a maximum budget of US$30,000 over a 24 month term.

The deadline for applications for this funding round is 15 October 2005.

APNIC is a partner in the Pan Asia ICT R&D Grants Programme.

▲ The Pan Asia ICT R&D Grants Programme funds practical ICT research into solutions for specific problems of the developing world.

More information, including links to application forms, is available at:

http://www.apdip.net/news/ictrndoct2005

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Access to the Internet backbone was initially provided via a gateway in Hanoi, with a cable connection to Hong Kong and a satellite connection to Australia. A second gateway was established in Ho Chi Minh City connecting to the US via cable and satellite.

At the end of the 1990s there were five ISPs in operation: VNPT/VDC, FPT, NetNam, Saigon Postel, and VietTel. Currently there are seven ISPs in operation, with the addition of Hanoi Telecom and OCI. Despite the increasing number of ISPs, however, the state-owned VNPT/VDC currently accounts for more than 90% of the Vietnamese Internet market.

Internet regulation in Vietnam

An important activity for the Vietnamese government and Internet industry has been the development of regulations appropriate to local circumstances. As improved Internet access has opened up Vietnamese society to information and marketplaces around the world, there has been an ongoing process of negotiation between industry and government to develop regulatory structures that meet the needs of all stakeholders.

VNNIC

VNNIC is the Vietnam Network Information Center, and is responsible for both ".vn" domain registrations and the registration of numeric Internet resources (IP addresses, AS numbers, and reverse zone delegations) in Vietnam. The organisation was founded on 28 February, 2000 by the Vietnamese government as a non-profit body, affiliated with the Department General of Post and Telecommunications (now the Ministry of Posts and Telecommunications).

At the time of VNNIC's inception, APNIC was no longer accepting new National Internet Registries. VNNIC operated initially under VNPT's APNIC membership, moving into the operational areas that it would eventually fill as a fully-fledged NIR, and assisting VNPT members to meet the obligations of APNIC membership.

The importance of VNNIC's role was formally recognised by the APNIC community at APNIC 15 in February 2003, when VNNIC was welcomed as the Vietnamese National Internet Registry. By hosting APNIC 20 in Hanoi, VNNIC marks a new stage in its growth.

- Chris Buckridge

Vietnam Internet statistics

(From VNNIC web site, as of July 2004):

- Number of Internet subscribers: 1,436,417
- Number of Internet users: 5,341,943
- Percentage of Internet users in the population: 6.55%
- Total international bandwidth: 1,038 Mbps

Sources

1. Much of the early history related in this article is drawn from Dang Hong-Giang's 1999 article, 'Internet in Vietnam: From a Laborious Birth into an Uncertain Future'. This article is strongly recommended for anyone with an interest in this field, and can be read in full at:

   http://www.interasia.org/vietnam/dang-hoang-giang.html

2. Vietnam Internet Case Study, ITU, March 2002
3. 'Request for NIR Re-Activation & VNNIC's Entry to NIR Community', presentation by Vu Xuan Bach at APNIC 14, September 2002
4. 'Internet governance for socio-economic development: Case study from Vietnam', presentation by Thu Hue Nguyen at the WGIG Workshop on Internet Governance at the national level, July 2005
5. http://www.vnnic.net.vn/english
6. http://www.vnnic.net.vn/english/statistics

Further reading

Readers are also encouraged to refer to *Digital Review of Asia Pacific*, available from:

http://www.digital-review.org/

Professor Jun Murai honoured with ISOC Postel Award

▲ Professor Jun Murai, recipient of ISOC's Jonathan B. Postel award for 2005, pictured here at the APNIC 14 meeting in Japan.

The Internet Society's (ISOC's) Jonathan B. Postel Award for 2005 has been awarded to Professor Jun Murai, one of the pioneers of Internet development in the Asia Pacific region.

Jun Murai is currently Vice-President, Keio University in Japan, where he is a Professor in the Faculty of Environmental Information. In 1984, he developed the Japan University UNIX Network (JUNET), and in 1988 established the WIDE Project (a Japanese Internet research consortium) of which he continues to serve as the General Chairperson. He is President of the Japan Network Information Center (JPNIC), a former member of the Board of Trustees of the Internet Society, and a former member of ICANN's Board of Directors.

ISOC made the award to Professor Murai to recognise his "vision and pioneering work that helped countless others to spread the Internet across the Asia Pacific region." The award was presented by Daniel Karrenberg – himself a former Postel Award winner – and Lynn St Amour at the recent IETF meeting in Paris.

In a joint statement, Akinori Maemura (APNIC Executive Council Chair) and Paul Wilson (APNIC Director General) note that among Professor Murai's contributions to the Internet in this region was a "critical contribution to the establishment of APNIC, through the support provided by JPNIC and through his service as the founding Chair of the APNIC Executive Council."

ISOC established the Postel Award in 1999 to honor those who have made outstanding contributions in service to the data communications community. The award is focused on sustained and substantial technical contributions, service to the community, and leadership.

The award is named after Dr. Jonathan B. Postel, who served as the editor of the RFC series of notes from 1969 until 1998, was a founding member of the Internet Architecture Board, a trustee of the Internet Society, and founded IANA.

Consumption of 2-byte AS numbers

Of the 64,510 available AS numbers, about 39,000 – well over half of the number pool – have already been assigned. This raises two immediate questions: how long before the number pool is completely exhausted? and what are the options for an expanded number pool able to encompass a larger inter-domain routing environment? In this article, **Geoff Huston** investigates the answers.

Note: a more detailed examination of the data, including some additional material, is available at http://potaroo.net/ispcol/2005-08/as.html

Drivers for AS number consumption

Before turning to the two key questions raised by AS number consumption, it is useful to first understand the driving factors behind that consumption.

From one perspective, it is counter-intuitive to assume that the Internet will evolve from tens of thousands of distinct routing domains to one of hundreds of thousands, or even millions, of distinct routing domains. Individual routing domains are essentially equivalent to individual Internet Service Providers (ISPs) and in the first instance there may seem to be a reasonable level of correlation between the number of active ISPs in the Internet and the number of advertised AS numbers. If forecasting a future demand for millions of AS numbers, it appears that we are forecasting continued fragmentation of the service provider industry with very large numbers of small enterprises who collectively compose the Internet. This does not seem likely.

The ISP industry has had a continuing feature of relatively intense competition between providers and, in many, if not all, market segments there has been an underlying factor of economies of scale. Larger ISPs have access to more efficient use of their resources and are more capable of sustaining a market share at competitive prices with reasonable operating margins. Smaller providers tend to service niche markets and, in general, are highly susceptible to pricing pressures in the competitive supply market. The overall result is strong pressure for continued aggregation in the service provider market, tending to aggregate to a smaller number of larger providers.

From this perspective, if the number of ASs in use is roughly commensurate to the number of service providers, then one may form a view that the service provider population is either in a state of equilibrium (where the entrance of new niche-oriented players is roughly the same as the rate at which smaller players are aggregated into larger providers) or one of relatively small growth based on the larger dynamics of continued expansion of the Internet on a global basis. In practice, this has not been the case and we see a continuous rate of consumption of new AS numbers. This rate appears to be some 3,500 AS numbers per year, or an average of 9.8 AS numbers per day. This rate appears to have been relatively steady since early 2003. Does this signify a continuous rate of new entrants into the ISP industry at a global level, or are other factors at play?

There appear to be some additional factors that have some bearing on AS number consumption rates.

One of these factors is the practice of multihoming at the edge of the network. Many end site networks have business-critical needs for assured Internet connectivity. A common way to achieve this is by using the services of two or more upstream providers. In such situations, the end site may want to express different routing policies to each upstream provider, which it can do by using its own AS number and expressing these routing policies using BGP to each of its upstreams.

AS numbers are also used in other contexts. In MPLS L3 networks, one form of generating the Route Distinguisher value for a VPN client network is through the use a VPN host AS number concatenated with a serial number (RFC 2547). To what extent this semi-private use of AS numbers in a VPN context contributes to the consumption rate of AS numbers is difficult to assess, simply because these numbers may not appear in the public Internet.

With the public Internet there are other contributing factors to AS number consumption. ISPs with diverse product portfolios may wish to express different routing policies for various product families. Again this can be achieved through the use of distinct AS numbers of each routing policy set.

Also there is little incentive for AS number return and recycling. With the current framework there is no cost to maintain an AS number allocation and the overall characteristic of AS number allocation appears to be a “once and forever” allocation model. In general, once AS numbers are no longer required, they do not return to the unallocated pool for subsequent recycling.

Taken together, these factors lead to the conclusion that continued AS number consumption is based on a larger set of considerations than the dynamics of the service provider industry. Accordingly we can be a little more confident in making the assumption that the drivers for AS number consumption in the recent past will continue to be drivers in the near term future. This leads to some further confidence in a predictive technique that uses recent consumption data to generate trends that can make predictions of future demands.

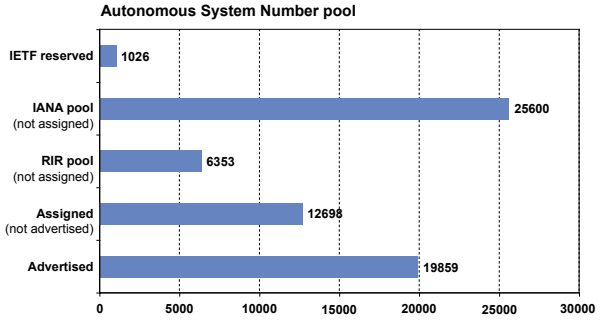
We’ll apply this technique to AS number consumption data to make some forecasts of the time by which the current AS number pool will be exhausted.

AS number pool status

There are 65,536 AS numbers in total. Of these, 1,026 are reserved, leaving 64,510 for use in the public Internet. The pool of AS numbers is administered by the Internet Assigned Numbers Authority (IANA), and blocks of 1,024 numbers are allocated to the Regional Internet Registries (RIRs) periodically, when the RIR’s pool drops below a threshold level.

As of July 2005, IANA held 25,600 numbers, with 38,910 numbers already allocated to the RIRs. That pool is further divided up to each of the RIRs. The large number of ASs listed under the ARIN registry includes a component of historical assignments made before the establishment of the RIR system, so should not be considered an accurate account of the distribution of AS numbers across the various global regions.

A working pool of AS numbers is held by the RIRs for subsequent assignment to ISPs. Of the assigned AS numbers, some are visibly used in the inter-domain routing table of the public Internet, while others are not visible in the Internet. The breakdown of AS numbers into the RIR pool, assigned but not advertised, and assigned and advertised, as of July 2005, is shown in the following chart. Of the 32,557 assigned AS numbers, 19,859 are advertised, while 12,698 have been assigned in the past, but are not currently advertised in the BGP routing table.



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The ratio of unadvertised to advertised ASs varies across the RIR system. The highest ratio is in the ARIN region, which also coincides with the earliest allocations. There appears to be some relationship between the probability of an AS being visible in the routing system and the allocation lifetime of an AS.

IANA AS allocations

It is also possible to construct a number of time series of the AS allocation data, showing the growth in the use of AS numbers over the past decade or so. This is not a smooth series as IANA makes periodic allocations of blocks of 1024 AS numbers to each RIR. When this data is broken down by RIR, it becomes evident that the rate of AS assignment was highest in the ARIN region across the Internet boom of 1999-2002, while more recent AS assignment activity is evident in the RIPE region.

RIR AS assignments

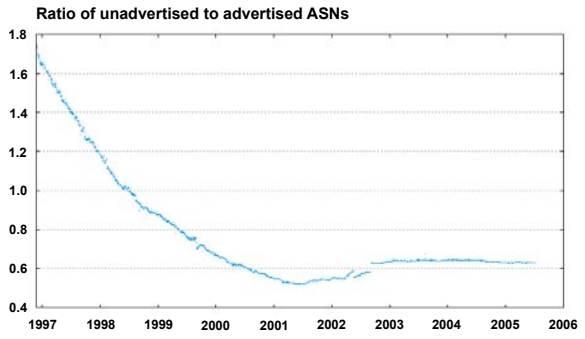
These allocated ASs are then assigned by RIRs to LIRs. The rate of this AS assignment also correlates to the Internet boom from 1999 through to late 2001 and the subsequent market correction by early 2002. Overall the picture corresponds to the IANA data, where the rate of assignments in the ARIN region appears to be slowing down, while the trend in Europe in the RIPE NCC-serviced regions shows rising levels of activity in recent years.

BGP AS advertisements

Apart from allocation rates, a further source of AS number data is the inter-domain routing table. The number of distinct Autonomous Systems advertised in the inter-domain routing space of the public Internet has been measured on a regular basis since 1997.

The current count of advertised AS numbers is approximately 20,000 (as of July 2005). These measurements correlate to the recent Internet business cycles, with a sharp upward trend across the Internet boom period of 1999-2001, and a marked change in the trend in early 2002. Since that date, the rate of increase of AS numbers has been far slower.

There are also around 12,600 AS numbers that have been assigned, but are not advertised in the BGP table. In terms of generating projections of AS number consumption it is necessary to factor in the trends in this unadvertised AS number pool, which are clearly rising over time. The consequent question is whether this rate of increase is greater or less than the number of advertised ASs. One way to test this is to consider the ratio of unadvertised to advertised ASs over time, as shown in the following chart.



This figure indicates that since 2003 the rate of growth of unadvertised ASs is slightly lower than the growth rate of advertised ASs.

AS disposition by AS number block

Another way to look at the AS number space is to consider the AS numbers in blocks of 256 AS numbers. The AS number pool has, to a large extent, been consumed in numerical sequence. Smaller AS numbers were allocated first, and larger AS numbers were allocated more recently.

Interestingly, the older AS number blocks show a much higher amount of unadvertised ASs than more recent AS number blocks.

When one examines the age distribution of unadvertised ASs, it emerges that the probability of an AS not being visible in the routing table appears to be directly related to the period that has elapsed since allocation. The exception is that for very recent assignments, there is a delay of up to three months between allocation and the appearance of the AS in the BGP routing tables.

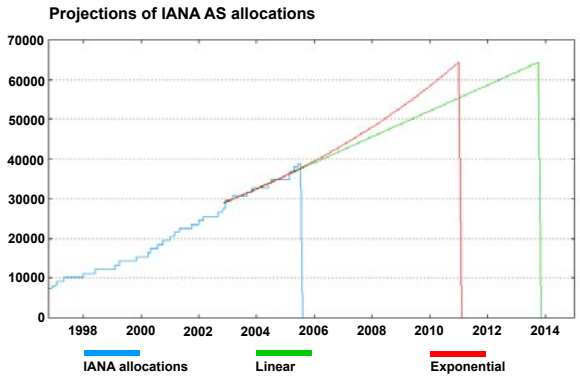
This reveals that there is a constant rate of change in the Internet environment. Without any major reclamation of unused AS numbers, once an AS number is no longer required, it does not get handed back to the unassigned pool for reuse, but is placed into a dormant state where the AS is considered to be assigned, but is unadvertised.

AS consumption projections

At this point is now possible to make some projections on AS number consumption. The technique here is to use the available data, starting from 2003, and applying a “least squares best fit” to generate trend data. This trend data is then projected forward in time to forecast the point when the resource reaches a certain threshold. Here the IANA allocation data is used as the base data series and two projection models are used.

The first model is to apply a linear best fit to the data. A linear model assumes that the underlying drivers for resource use are constant and the rate of growth over time remains a constant.

The second model is an exponential growth model, where the underlying drivers increase over time. The model used here is an exponential model, where the growth rate doubles over a certain time interval. The definition of the doubling time interval is based on a least squares best fit of an exponential growth curve to the available data.



This projection shows that a best fit to a linear (constant growth) model of AS number allocation from the IANA pool would see the final AS block being allocated in the final quarter of 2013. An exponential (increasing growth) model of AS number allocation from the IANA pool would see the final AS block being allocated in early 2011.

Do the other data series provide comparable outcomes?

The next place to look is in the RIR allocation data. The true point of AS number exhaustion is not when there are no further ASs for IANA to allocate to the RIRs, but the point at which the RIRs have no further AS numbers to assign. A similar technique applied to the RIR allocation data produces a similar result. A linear model projects exhaustion of the RIR AS number pool in mid 2014, while an exponential growth model predicts exhaustion by the final quarter of 2010. This is certainly reasonably aligned to the IANA data.

So which model is the best reflection of the underlying drivers of AS number consumption – linear or exponential?

One way to delve a little deeper into the data is to look at the first order differential of allocation rates, to see if there is a discernable trend in that data series.

Further analysis indicates that the daily rate of AS allocation has increased over time. Between mid 2003 and the recent past, the daily allocation rate appears to have increased from a mean of 9 to a mean of 12 ASs per day. This would indicate that a linear model appears to be an overly conservative predictive model, and does not accurately reflect the recent history of AS assignments.

The other sanity check of the most appropriate projection model is to look at the first order differential of the logarithm of the allocation rate. If this is a constant value overtime then the exponential growth model would be a best fit to the data.

In this analysis, the time series appears to be relatively constant since mid-2003, with a mean value of 0.0035.

So, it would appear that we are looking at a best fit model of accelerating consumption of AS numbers, and a projected exhaustion date of late 2010 of available AS numbers to allocate to ISPs, or some 5 years from the time of writing this article.

What does an AS pool exhaustion date of 2010 actually mean?

The implication of these projections is that by late 2010 the Internet should be using a new protocol for inter-domain routing that does not rely on Autonomous Systems numbers, or, more likely, that the Internet should be using a version of BGP that supports larger AS numbers drawn from a number pool significantly larger than 16 bits.

The first option appears to be somewhat unrealistic, to say the least.

And the second option, although simpler and very much the preferred path, is still going to take some years to deploy, particularly given the growing size of the Internet's inter-domain space and the diversity of these component domains.

When contemplating a transition to a larger AS number pool, it should be remembered that every day there are more networks that will need to undertake a transition to a longer AS number field in their deployed instances of the BGP protocol.

The steps in this transition path appear to include:

- completion of the relevant protocol standards for a larger AS number field in BGP
- production of code in available implementations of BGP that support this protocol standard
- various forms of testing of this code, both in terms of its correct operation and interoperability, and in terms of the correctness and viability of the relevant transition steps,
- developing the necessary infrastructural support system to manage distribution of this new number pool, and
- a process of deployment of this protocol so that the deployment of larger AS numbers can commence well before the point at which the existing AS number pool is exhausted.

Even an aggressive schedule of transition across a network as large and diverse as the Internet will take a number of years to reach the final step. It also appears that a prudent course of action would see us reach that position not by 2010, but by 2008 at the latest, allowing us a margin of some two years (and some 10,000 remaining AS numbers) to complete the task.

The implication is that we have reached the end of the period when the agenda for transition can be further deferred without undue risk. We now have about three years to undertake these tasks if we want to avoid an uncomfortable phase of potential disruption in the Internet's inter-domain routing space.

In the next issue of Apster, Geoff Huston will explore the various aspects of the proposed 4-byte AS number space and how this transition may be achieved.

This article is an edited extract of a longer article which originally appeared at:

http://potaroo.net/ispcol/2005-08/as.html

Grey power enlisted in the fight against spam

Like all other Internet users, APNIC has been subjected to an ever-increasing amount of spam. Despite efforts to filter incoming mail, the sheer volume of spam was affecting APNIC's ability to efficiently process legitimate emails.

In response, APNIC implemented a greylisting system in August. Greylisting works by sending a temporary SMTP error the first time an email is received from an unknown sender. Legitimate mail servers that receive the error will wait, then resend the email successfully. Bulk mailers used by spammers, however, usually do not try to resend email. Therefore, greylisting will block the spam on the first and only attempt at delivery.

"Since greylisting began, the amount of spam received by the APNIC Secretariat has been reduced by up to 90 percent," said APNIC's Senior Systems Administrator, Terry Manderson, also noting that this reduction "creates obvious benefits for the administration of APNIC email and mailing lists."

In conjunction with greylisting, APNIC also maintains a whitelist of known legitimate senders, whose emails are immediately accepted at the APNIC server. Entries in the whitelist may be automatically removed if no email is received from them within a defined period.

Those sending legitimate email to APNIC should not be affected by the greylisting system. However, anyone who does notice that their email is not being accepted by APNIC should contact the APNIC Helpdesk immediately.

More information is on the APNIC web site and the "Spam" topic section on the new "ICONS" web site at:

http://icons.apnic.net

http://www.apnic.net/info/contact/greylisting.html

Report of the Working Group on Internet Governance

The Working Group on Internet Governance has now provided its long awaited report to the World Summit on the Information Society. **Samantha Dickinson** reviews what was (and was not) included in the report and summarises government and community reactions.

Introduction

The Working Group on Internet Governance (WGIG) was chartered at the Geneva phase of the World Summit on the Information Society (WSIS) after Internet governance emerged as a significant issue in 2003. WGIG was chartered to develop a report to focus Internet governance discussions in the WSIS second phase in Tunis, November 2005. The 40 members of the working group were announced in November 2004, representing governments, private sector, and civil society, from around the world. Between November 2004 and July 2005, the WGIG published draft discussion papers, held four face-to-face meetings soliciting input from the Internet community, and conducted many email and phone conference discussions that ultimately led to the creation of the Report of the Working Group on Internet Governance. This final report was officially presented at a meeting in the UN Geneva office on 18 July 2005.

Report summary

The WGIG report does not represent the end point of Internet governance discussions but reflects broad concepts within Internet governance on which WGIG's members reached consensus. Other Internet governance issues, where no consensus was reached, were presented in a separate 78-page background report.

Three broad principles were adopted by the group to guide the contents of the report: 1) that international Internet governance should not be dominated by any single government; 2) that Internet governance policy and activities should involve a wide range of stakeholders from government, civil society, private industry, and international institutions; and, 3) that participants from developing economies must be included in Internet governance dialogues. It is interesting to note that the first two principles were also guiding principles during the formation of ICANN, which was the first internationally focused Internet governance body to be developed. The WGIG principles and ICANN's formation principles differ, however, because of the scope of what is now considered Internet governance; ICANN's creation was limited to policy about technical Internet governance matters, whereas, today, issues such as Internet-based crime, e-commerce, and multilingual participation have gained importance. Additionally, since ICANN's formation, the Internet has spread well beyond first world economies. There is now a greater emphasis on the inclusion of developing economies in Internet governance discussions because of the Internet's potential role in achieving the UN's Millennium Development Goals.

During the first phase of WSIS, there was much debate about exactly what Internet governance was. At that time, from some quarters, there was an emphasis on the technical governance issues related to DNS and IP addresses. There was debate on whether the current DNS and IP addressing administration systems would need to be changed for there to be growth of the Internet in developing economies. This debate meant that other issues, such as spam control and legal jurisdictions, received less prominence. To create more informed discussion in WSIS phase two, the WGIG report includes a working definition of Internet governance (see sidebar) and lists the highest priority Internet-related public policy issues.

The report contains recommendations on a number of issues. Of most interest to the Asia Pacific Internet resource community are the recommendations related to policy development, root servers, IP addressing, and multilingualism.

The report makes a number of recommendations related to policy development:

1. Creation of a multi-stakeholder Internet governance forum where the contributions of all stakeholders, whether from developing or developed economies, are equally valid.
2. A framework for global public policy and oversight in which no single government has a dominant role in Internet governance, and where there is a transparent and democratic collaboration between stakeholders from governments, private sector, civil society, and international organisations.
3. Improved institutional coordination between intergovernmental and other types of institutions involved in Internet governance.

Working definition of Internet governance

Internet governance is the development and application by governments, the private sector, and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet.

WGIG comments on IP address management

IP addresses fall into a category that the WGIG background report calls "critical Internet resources" – a category that also includes domain names, and the root DNS zone file. Interestingly, AS numbers have not been included in discussions on critical Internet resources.

Most discussion on IP addressing was documented in the WGIG background report. This background report commended the RIR system and praised the way African and Latin American addressing functions were transferred to AfriNIC and LACNIC without interrupting Internet services and end user experiences. The addition of the two recently established RIRs was also put forward as an example of creating greater opportunities for regional Internet communities.

The background report noted that some parties argue the continuing expansion of the Internet could lead to the depletion of IPv6 addresses in the future, where early adopters in the developed world have most IP addresses at the expense of the developing world. This argument seems to be the basis of the official WGIG report's recommendation that "transition to IPv6 should ensure that allocation policies for IP addresses provide equitable access to resources," (WGIG report, page 13).

The background report also noted that, largely, civil society and governments are not actively involved in IP address management or policy development, but that RIRs do encourage these groups to participate.

4. Development of multi-stakeholder, democratic, and transparent regional and national coordination of Internet governance, forming a solid foundation of Internet governance based on the same ideals.

The report then presents four models that may fulfil the function of global multi-stakeholder forum. The changes proposed in the four models range from making no substantial changes to current Internet governance arrangements, to creating a new international policy body to oversee ICANN functions.

While there has been a lot of debate on the issue over the past two years, the report's IP addressing recommendation does not suggest any change to the current addressing model. Instead, it emphasises the need for IPv6 allocation policies that "provide equitable access to resources" (see sidebar p. 8 for details).

The report recommends that the administration of the root DNS server system may need to be modified, but that the stability and security of the root server system must remain paramount during any administrative changes.

The WGIG report identified two public policy issues related to multilingualism: Internationalized Domain Names (IDNs) and Internet content in local languages. The report recommends strengthening the relationship between the IETF and IDN registries for greater development and wider deployment of IDNs. To develop more local language Internet content, the report recommends work on content development tools to allow easier creation of multilingual content (as part of broader ICT development rather than an Internet governance-specific solution, this recommendation may fit into wider WSIS goals).

Reactions to the report

One significant response to the WGIG process was actually made before WGIG released its report, when the US government issued the statement, "U.S. Principles on the Internet's Domain Name and Addressing System". In this, the US government outlined its intention to continue its current role of authorising changes to the authoritative root zone file and its continued support for ICANN's management of the DNS and other technical operations. But in line with WGIG's recommendation of wide stakeholder consultation, the US government also recognised the legitimate role of governments in managing ccTLDs and the need to include a diverse range of stakeholders in Internet governance decision-making processes. Since the US government made this statement, there has been a lot of discussion in the media and Internet governance circles about the statement's impact on the WGIG recommendations. The US government's subsequent direct response to the WGIG report emphasised that the majority of root DNS servers are now located outside the US and that the US does not have the largest percentage of either IPv4 or IPv6 allocated addresses. The response reiterated the US government's continued support of private sector-led DNS and addressing coordination through ICANN with international government input through the ICANN GAC (Government Advisory Committee).

Reactions from the AP region

At the open forum on the morning of the report presentation, all stakeholders present had the opportunity to comment on the report. Written responses to the report have also been solicited by the WSIS Secretariat.

From the Asia Pacific region, public comments have been made by the governments of Australia, India, Japan, and South Korea, as well as from IGTF-J (Internet Governance Task Force of Japan), InternetNZ, PICISOC (Pacific Islands Chapter of the Internet Society), and South Centre (an intergovernmental organisation of developing economies in Africa, the Asia Pacific, and South America). The four government submissions praised the recommendation of multi-stakeholder participation in an Internet governance forum, but have also expressed reservations. India expressed a view that currently civil society and technical experts are disproportionately represented in Internet governance at the expense of government involvement. India emphasised that governments, which are the chosen representatives of their citizens, should play a larger role in Internet governance than is currently the case. Australia expressed concern that the need for broad consensus among widely differing stakeholders in such a forum could detract from the day-to-day governance of the Internet. Japan stated its concern about how to cover the costs of maintaining a forum, while Korea suggested holding virtual forum meetings to help developing countries contribute more meaningfully in global policy development. This sentiment was echoed by PICISOC, which noted virtual participation in ICANN, IETF, and APNIC meetings as examples of what the forum should be trying to achieve. Among the non-government submissions, IGTF-J noted reservations about the prominence of government involvement in the WGIG forum models.

Regarding other aspects of the report's contents, Japan noted that any Internet governance mechanisms should not reduce the capacity to rapidly deploy new Internet technologies. Australia suggested that there was also a need to define whether issues related to capacity building in developing economies were specifically Internet governance issues, or were better placed within the larger ICT context of WSIS. Both Japan and Australia also highlighted the need to explore in depth how the proposed forum would interact with existing organisations involved in Internet governance. From the non-government submissions, PICISOC noted the lack of Pacific Island involvement in the WSIS process while South Centre criticised the lack of participation of developing nations in the WGIG process itself but praised the report's recommendation that developing and other nations have a greater involvement in ICANN-related functions.

Internet governance at WSIS in Tunis

WGIG has now completed its mandate, and the group has been disbanded. Further Internet discussions will take place within the larger context of WSIS. The contents of the report, as well as stakeholder submissions, will be discussed at the third meeting of the Preparatory Committee (PrepCom-3 of the Tunis phase of WSIS) in September in Geneva. Following that, recommendations on Internet governance may be included in the report of PrepCom-3 and presented at the final meeting in the WSIS second phase in Tunis in November 2005.

Further reading

Responses to the WGIG report and transcripts of WGIG meeting discussions are linked from:

http://www.apnic.net/news/hot-topics/internet-gov/wgig.html

The "Report of the Working Group on Internet Governance" and the WGIG background report are available at:

http://www.wgig.org

Information on Internet governance activities at the upcoming PrepCom-3 meeting is at:

http://www.itu.int/wsis/preparatory2/pc3/index.html#ig

The statement "U.S. Principles on the Internet's Domain Name and Addressing System" is at:

http://www.ntia.doc.gov/ntiahome/domainname/USDNSprinciples_06302005.htm

The Open Regional Dialogue on Internet Governance at:

http://igov.apdip.net

The keys to captioning

▲ Stenocaptioners at work during APNIC 20. The stenocaptioning machine interfaces with a laptop, which processes the coded information using translation software and outputs text to projector, a Jabber server, and the APNIC web site.

Live transcripts – projected on a screen alongside a presentation, or scrolling across a web page – have become a familiar part of APNIC meetings. Yet, for many, the process that makes this happen remains a mystery.

"It's very common for people to come up to us during meeting breaks to find out how we can possibly type so quickly," says Lorraine Butler, Manager of Stenocaptioning Operations at the Australian Caption Centre, the company providing this service to the APNIC meetings.

"Of course, we don't type in the normal sense," explains Ms Butler, "and our keyboard is not at all similar to what people are used to on their own computers."

Stenocaptioning technology is an extension of the shorthand typing techniques common in court rooms. It revolves around stenograph machines, consisting of 22 keys that the user combines to phonetically represent syllables in human speech. The keyboard splits into three basic parts, corresponding to the beginning, middle, and end of a sound. Rather than typing words letter by letter, stenocaptioners write phonetically, syllable by syllable, hitting the keys as a reflex reaction to the spoken word, at speeds of up to 230 words per minute.

Software then does the job of converting the phonetic codes to written words. Every stenocaptioner has a unique writing style, and, therefore, their own personal dictionaries. As they write, the translation software (Winner XP in AusCap's case) compares their output to the entries in each of their dictionaries and translates it accordingly. If the system fails to find an entry (because the word is not defined or has not been stroked correctly), it will make a best approximation by breaking the stroke down into its three component parts and comparing those against a phonetic table listing the key combinations that stenocaptioner uses for various letter clusters.

Text data is streamed from the stenocaptioner's laptop to a LexNet server. Data from the LexNet server is then streamed to a text file, which is projected onto a screen at the venue, sent to a Jabber server for viewing in a chat client, and processed by Javascript into a HTML document, allowing remote participants to follow the live text feed on a normal web page.

"The key to successful stenocaptioning is preparation," says Ms Butler, "and we aim to build an extensive dictionary for APNIC meetings containing thousands of names and phrases, punctuation marks, and sound effect entries, so that the keystrokes we make are recognised by the computer."

In advance of an APNIC meeting, APNIC provides lists of new topics and terminology to the stenocaptioners to help them prepare for the content of each session. The stenocaptioners also create speaker designation entries, so that they can flag speakers in the transcript for web and Jabber users who are not attending the conference. They combine these lists with the words and phrases they pick up during the sessions to build a glossary that can be carried forward to the next APNIC meeting.

If you want to know more, the stenocaptioners welcome any questions during session breaks. For those not present at the meetings, more information about stenocaptioning is available on AusCap's web site at:

http://www.auscap.com.au

In stenocaptioning code, "APNIC" is written as:

	A	EU	
P	AO		
	TPH	EU	BG

Each line is written in one stroke:

AEU	(a long 'a' sound)
P + AOE	(a long 'e' sound)
TPH	(an 'n' sound)
EU	(a short 'i' sound)
BG	(a 'k' sound)

APRICOT 2006 in Perth, Australia

APRICOT is again gearing up for action, this time working with local hosts the Western Australian Internet Association (WAIA) in preparation for APRICOT 2006, which will be held at the Perth Convention and Exhibition Centre, in Perth, Australia from 22 February to 3 March 2006.

The APRICOT Programme Committee has issued calls for track chairs and content. Initial programme details have now been published on the APRICOT web site.

APRICOT's goal is to spread and share the knowledge required to operate the Internet in the Asia Pacific region. As a sign of its successful pursuit of this goal, 2006 marks the tenth anniversary of APRICOT meetings.

The APRICOT 2006 web site is at:

http://www.2006.apricot.net

APRICOT calls for hosts in 2008

The APRICOT committee recently called for prospective hosts for the 2008 conference. Any organisation interested in hosting APRICOT 2008 should refer to the "Request for Proposals" document, available at:

http://www.apricot.net

PacNOG 1 benefits Pacific Islanders

Twenty-seven ISP operations engineers and systems administrators from 13 Pacific Island economies attended PacNOG 1 meeting and educational workshop in Fiji from 19-25 June. Participants from as far west as Palau and as far east as French Polynesia were amongst those that attended.

"At times we wondered if we could pull it off, but thanks to joint collaborations among the key supporters, sponsors, and the availability of the participants, PacNOG 1 became a reality," remarked Save Vocea, APNIC's Policy Development Manager.

Among those supporters were Steven G Huter and Hervey Allen from the Network Startup Resource Center (NSRC), Joel Jaeggli of the University of Oregon, Philip Smith from Cisco, and Fred Christopher from PITA.

PacNOG was first established as a mailing list for ISP operations engineers in the Pacific region following the APNIC 18 Routing workshop in Fiji in 2004.

The Network Startup Resource Center (NSRC), Cisco, and APNIC provided the technical resources for the workshop at PacNOG 1. The MoU existing between APNIC and the Pacific Islands Telecommunication Association (or PITA) ensured logistics and arrangements for the workshop in Fiji were effectively accommodated by PITA.

It is clear from the experience of PacNOG 1 and from the comments of various attendees that there is a need for future PacNOG events. The needs of the Internet community in the Pacific region are unique, and apart from the workshop, PacNOG 1 also offered an opportunity to build new peer relationships among the islanders and the resource people.

▲ The inaugral PacNOG 1 meeting participants included engineers and systems administrators from 13 Pacific Island economies.

The response from PacNOG 1 attendees was enthusiastic, with many commenting that the courses provided them with new knowledge that was directly relevant to their work.

"The presenters were good, kept the subject to the matter," said one participant, "In my role the contents of what they presented will greatly assist me." Participants also noted the importance of ensuring that events like these are held regularly, as well as the need for advanced courses. "Six days is not enough," commented another participant, "there is a need for an advanced level [course] and it should be for two weeks or more."

For more information on PacNOG, see:

http://www.pacnog.org

SANOG VI

SANOG VI, the South Asia Network Operators Group meeting, was held from 16-23 July in Thimphu, Bhutan, and was the first major event to have been hosted by Bhutan Telecom in Thimphu.

The SANOG VI programme included a keynote address on "Internet architecture" by John Crain of IANA, as well as eight tutorials in multiple tracks and three workshops (on routing, IP services, and IP security). As with previous SANOG meetings, a number of fellowships were awarded to encourage participation from across the South Asian region.

The event was attended by four APNIC staff members, Arth Paulite, Kapil Chawla, Amante Alvaran, and Champika Wijayatunga. These staff presented two five-day workshops to SANOG attendees: an IP services workshop and a routing workshop.

The IP services workshop was led by Mr Wijayatunga and attracted an audience of 32, many from Bhutan, and proved to be a lively event. The Routing workshop, which ran concurrently, was led by Mr Alvaran and attracted 24 participants.

APNIC staff were also able to present a one-day DNS/DNSSec tutorial, as well as providing a live helpdesk for APNIC members, and an APNIC BoF session (including the very popular APNIC webhunt activity).

▲ Thimphu, captial of the Himalayan mountain kingdom of Bhutan, provided a spectacular setting for SANOG VI. Photo courtesy of Hervey Allen, Network Startup Resource Center ©2005.

APNIC is an official endorser of SANOG and meetings such as the gathering in Thimphu provide a way for APNIC staff to reach out to members and peers throughout the region.

For more information on SANOG, see:

http://www.sanog.org

Root server update

Official launch of three new root server deployments in India

APNIC's commitment to regional Internet infrastructure continues with the announcement of three new Internet root nameservers in India.

These are the first root nameservers to be deployed in India and South Asia and will bring significant improvements in speed and reliability to Internet users in India and the surrounding region.

▲ The three new root servers – F-root in Chennai, I-root in Mumbai, and K-root near Dehli – were officially launched in a special ceremony on 25 August 2005. These deployments are already bringing significant improvements in speed and reliability to Internet users in India and the surrounding region.

APNIC has coordinated these deployments with the Department of Information Technology (DIT) and the respective root server operators.

F-root, operated by Internet Software Consortium (ISC) has been installed in Chennai; I-root, operated by Autonomica, has been installed in Mumbai; and K-root, operated by RIPE NCC, has been installed in Noida, near Delhi.

The installation of the root servers in India has been made possible by DIT, the National Internet Exchange of India (NIXI), and the Internet Service Provider Association of India (ISPAI), with financial and logistical support from APNIC.

The three deployments in India bring the total number of root DNS servers in the Asia Pacific region to 24, 16 of which have been made possible with APNIC's support.

"We are pleased that India is able to contribute to the deployment of the first root nameservers in South Asia," said Mr Pankaj Agrawala, Joint Secretary of DIT. "These three root servers will not only benefit the Indian Internet community, but also Internet communities in the surrounding region."

Paul Wilson, Director General of APNIC, added, "The deployment of these three root nameservers in India is a positive example of Internet community coordination. The installation has involved the private sector, not-for-profit organisations, and government bodies working together to improve DNS stability and Internet response times for developing countries in South Asia."

Amitabh Singhal, Acting CEO of NIXI, said, "India is among the top ten countries in Internet usage, with over 35 million current subscribers and a five year target for 40 million, translating into more than 200 million total users by 2010. Sustainable infrastructure capacity building is imperative. As a budding intellectual capital of the world, with conducive socio-economic and political environments, India is justifiably proud of hosting three root servers, visibly putting our country, as well as the South Asian region, firmly on the world Internet route map."

Root server deployments around the region

APNIC has continued to support the deployment of root server mirrors around the region over recent months. As well as the three root servers recently launched in India, a new local node instance of the K-root Internet root nameserver was installed in June in Brisbane, Australia. K-root is operated by the RIPE NCC, and this marks the second instance to be deployed in the Asia Pacific region. It supplements the F-root mirror already in operation at the Brisbane site.

Further deployments expected over the coming months include an instance of I-root, currently planned for installation in Beijing. Two new F-root deployments are also currently being negotiated for Bangladesh and Pakistan.

▲ Location and identity of root servers deployed in the Asia Pacific region.

AINTEC to address issues facing Asian Internet

Researchers and engineers interested in practical and theoretical problems of Internet technologies in the Asian region will come together in Bangkok in December for the Asian Internet Engineering Conference (AINTEC).

AINTEC'05 aims to address issues pertinent to the Asian region – with its vast diversities of socio-economic and networking conditions – while inviting high quality, recent research results from the global international research community to be presented.

AINTEC'05, sponsored by AIT, APAN-TH, French Regional Cooperation, and the WIDE Project, will be held from 13-15 December in Bangkok, Thailand. A number of travel and participation grants are available for eligible applicants. Full conference details are available at:

http://www.interlab.ait.ac.th/aintec

News from LACNIC

This update on recent activities was provided by **LACNIC**.

LACNIC VIII was held in Lima, Peru from 27-30 June. The scope of this meeting was highly ambitious, as it not only included the Public Policy Forum, but also LACNIC's Annual Member Assembly, the Fourth Annual Latin American NAPs Regional Meeting (NAPLA), the third Latin American IPv6 Forum (FLIP-6), and the Latin America and the Caribbean IPv6 Task Force Meeting (LAC TF IPv6).

This latest NAPLA meeting concluded with an agreement between its operators on the importance of an interconnection backbone among the region's NAPs. This agreement establishes the guidelines for the development of this regional project.

During the Public Policy Forum the global policy proposal on IPv6 Address Space Allocations from IANA to RIRs was discussed and approved. This proposal is currently in the period of last call for comments (45 days). After this period the proposal will be sent to LACNIC's Board for ratification. In addition, proposals were received on recovering non-utilised Internet resources and evaluating additional IPv4 address allocations to ISPs with presence in multiple countries within the LACNIC region. Finally, the issue of prefix size in IPv6 reassignment was discussed. No decision was made regarding the latter proposals and discussion will continue on the lists.

FLIP-6 is a forum used for exchanging information regarding IPv6 implementation and deployment in the region covered by LACNIC. Significant advances in the deployment of this protocol were observed in relation to prior editions. On this occasion 12 different presentations from six Latin American countries were made. LAC TF IPv6 welcomed a new National IPv6 Working Group. Now Peru has joined Brazil, Cuba, and Mexico with the creation of the fourth National Working Group in Latin America. Finally, efforts to promote IPv6 were furthered through a tutorial on the basic elements for IPv6 implementation.

The Annual Member Assembly authorised new modifications to LACNIC's fee structure, reducing the cost of LACNIC's minimum size allocations (set as a /21), and cancelling the IPv6 space fee for members with IPv4 allocations from LACNIC. These changes aim at improving the accessibility of Internet resources in Latin America and the Caribbean. The Assembly also approved the 2004 annual report, which includes the activities carried out by LACNIC staff and budget execution.

The LACNIC IPv6 Tour was also officially announced, continuing LACNIC's promotion of IPv6 adoption in the region. Over a five month period, the tour will visit eight cities in eight different Latin American countries with the purpose of providing information and promoting the IPv6 protocol.

LACNIC IX will be held on the week between May 22 and May 26, 2006, at a location yet to be decided.

More information about the LACNIC meeting or the IPv6 Tour is available at:

http://lacnic.net/pt/eventos/lacnicviii

http://ipv6tour.lacnic.net

ARIN update: Government involvement adds depth to directory services discussion

This update on recent activities was provided by **ARIN**.

During open discussion at the ARIN XV Public Policy Meeting in April, the ARIN community experienced for the first time participation by government representatives in a policy debate. Several individuals presented interesting perspectives on the use of currently public data from ARIN's whois service. Their contributions to the discussion helped provide added depth to the debate. Speakers included representatives from the US Federal Trade Commission, the US Department of Justice, the US Federal Bureau of Investigation on behalf of the Department of Homeland Security, and remote participation by an official with the Royal Canadian Mounted Police.

In March 2005, Policy Proposal 2005-2, Directory Services Overhaul, was introduced on the ARIN public policy mailing list. After two years of policy proposal discussions regarding the purpose and scope of ARIN's whois database, this new initiative caught the attention of several US government entities and expanded the discussion into an exchange of ideas between the public and private sectors in the ARIN region. This exchange demonstrated the need to study directory services from a broader, requirement-based perspective to determine what data ARIN should collect and how ARIN should maintain and use that data.

The general sentiments expressed by the government representatives were very similar in nature. They stressed the importance of fast access to the data in ARIN's whois to aid Federal, state, and local law enforcement and consumer protection agencies in combating illegal activity, while recognising the concern for privacy issues surrounding this data.

This public/private sector dialogue has continued between several of these government agencies and ARIN. Members of the ARIN staff have provided and have planned future tutorial presentations to the staffs of these agencies. Topics have included the Regional Internet Registry (RIR) system and the purpose and use of the whois database. Distributing copies of the "Querying ARIN's WHOIS" computer-based training module has proven quite useful.

Similar discussions have started in other RIR regions and on the global stage. At the recent ICANN meeting in Luxembourg, the ICANN Government Advisory Committee (GAC) sponsored a workshop that focused on the importance of whois data to law enforcement agencies. Throughout many of the presentations and during the question and answer period, the discussion turned to IP addresses and data held in RIR directory services. During its meeting in Vancouver, the GAC pledged to continue its efforts to broaden understanding of other important public policy aspects of whois data, such as the protection of consumers, privacy, and intellectual property.

It is anticipated that this open public/private sector dialogue will continue at the ARIN XVI Public Policy Meeting in October where Policy Proposal 2005-2 will be further discussed.

New and visiting staff

Events Department

Miwa Fujii
Acting Events Manager

With APNIC's Events Manager, Vivian Yang, on extended maternity leave, the position has been filled by APNIC staff member Miwa Fuji. Miwa has been part of the APNIC training team for the past three years, and will fill the Events Manager position for approximately 18 months.

In this role, Miwa will manage internal and external events, including member meetings and APNIC Open Policy Meetings.

Finance Department

Cynthia Siu
Accounts Officer

Cynthia Siu joined the APNIC Finance department as an Accounts Officer in July 2005. She is a recent graduate of the University of Queensland, having obtained a Bachelor of Commerce, and her past experience includes volunteer work with the Australian Taxation Office. In her role as Accounts Officer, Cynthia will assist with general accounts keeping, billing related queries, and other administrative tasks in the Finance Department.

Technical Services Department

Andrew Gray
Systems Administrator

Andrew Gray comes to the APNIC Technical Services department with a wealth of industry experience. As well as holding a Bachelor of Engineering (Electrical), he has worked for the past 12 years as a network administrator, including seven years as administrator with a large ISP.

Since joining APNIC in June 2005, Andrew has been responsible for work relating to all APNIC technical operations, and system and network administration.

Member Services Department

Siamak Hadinia
Internet Resource Analyst

Siamak Hadinia has been appointed to the role of Internet Resource Analyst with APNIC. Siamak previously ran his own ISP business in Tehran, Iran and originally joined the APNIC Technical Department as an intern in December 2004. In this role he was responsible for a number of projects at APNIC, including studies of the Secretariat's network cable plan, UPS power budget, and heating, ventilation, and air conditioning systems.

As an Internet Resource Analyst, or Hostmaster, Siamak will process requests for IP address space and AS number allocations within the Asia Pacific region.

Visiting staff

Dong Yan and Shen Zhi
CNNIC

The APNIC Secretariat has hosted two visiting staff members from the China Network Information Center (CNNIC) over the past two months.

▲ Dong Yan

▲ Shen Zhi

Dong Yan and Shen Zhi each spent several weeks with APNIC hostmasters, gaining insight into the policies and procedures which APNIC uses to distribute Internet resources.

The visits also provide a valuable opportunity for APNIC to build a better understanding of CNNIC's operations.

During their stay with the APNIC Secretariat, the visiting staff join in-house training courses, hold meetings with various members of APNIC staff to discuss operational issues, and work alongside the APNIC Internet Resource Analysts.

To participate in the visiting staff programme please contact your manager and email a request to <dg@apnic.net>, including your contact details, job role, and a short description of your areas of interest.

APNIC Helpdesk chat service goes live

On Monday 1 August, the Secretariat launched the APNIC Helpdesk chat. This service is now in its operational trial phase, and allows members of the public to chat online with APNIC Hostmasters in realtime.

Hostmasters can offer assistance in completing resource request forms, help members to update the APNIC Whois Database, or resolve any other issues concerning APNIC services and procedures.

The service can be accessed via the APNIC web site, by simply selecting the APNIC Helpdesk chat logo on the homepage. This will launch a chat window, connecting you directly to an APNIC Hostmaster. When you have finished chatting, you can print or email the transcript of your session.

APNIC Helpdesk chat is open:

Monday - Friday	9:00 - 17:00 (UTC +10) except Wednesdays 14:30 - 15:30, and special events.

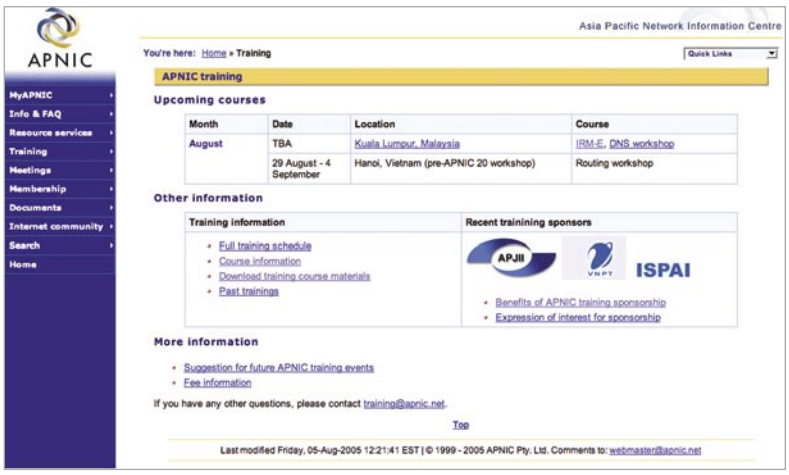
For more information see:

http://www.apnic.net/helpdesk

Training report

APNIC training web site upgrade

The APNIC training web site has recently undergone an upgrade and redesign. Launched to coincide with the APNIC 20 meeting in Hanoi, Vietnam, the training section of the APNIC web site now reflects a range of new developments in the APNIC training department, as well as providing more comprehensive information for APNIC training recipients, and offering an overview of APNIC's training services.



Course information

The range of courses offered by the APNIC training team has grown over recent years. As well as the standard Internet Resource Management courses (I, II, and Essentials), the APNIC training team now present tutorials on network security, spam, and the IRR, as well as the DNS workshop, the Advanced DNS workshop, and soon, the Routing Essentials workshop. The training site contains full information on each of these courses, including a course description, topics covered, and the target audience.

For many of the courses it is also possible to download training materials in PDF form, either as individual modules (for those with slower connections) or bundled together in a larger ZIP file. Over time, materials for all APNIC training courses will become available for free download, along with information on any new courses developed by the training team.

Online learning resources

The training page has also been expanded with links to online learning resources, both within the APNIC site and beyond. Currently this includes links to video footage of APNIC training presentations, hosted by SOI Asia, as well as the new Asia Pacific community-based web resource, ICONS. The site will also provide a link to the E-learning facilities currently being developed by the training team.

Training sponsorship

Those people seeking information on the benefits of becoming an APNIC training sponsor or the different tiers of sponsorship packages will find a range of information within the new site design. This includes an online Expression of Interest form for those wishing to assist in arranging an APNIC training event. The site now also features the corporate logos of past training sponsors, in recognition of their contributions.

The APNIC training web site can be viewed now at:

http://www.apnic.net/training

And for those who have attended an APNIC training event in the past, watch out for your face in the past training photo gallery!

Training schedule

2005

September

- **6 - 9** Hanoi, Vietnam (In conjunction with APNIC 20)
- **15** Mongolia (In conjunction with NiDA event)
- **24 - 25** Hangzhou, China
- **27 - 28** Lanzhou, China

October

- **18 - 21** Hong Kong
- **TBA** Manila, Philippines

November

- **TBA** Taipei, Taiwan (In conjunction with TWNIC OPM)
- **TBA** Beijing, China (In conjunction with CNNIC OPM)
- **TBA** Sydney, Australia

December

- **TBA** Bangkok, Thailand
- **6 - 9** Singapore

The APNIC training schedule is provisional and subject to change. Please check the web site for regular updates at:

www.apnic.net/training

If your organisation is interested in sponsoring APNIC training sessions, please contact us at:

training@apnic.net

Calendar

APNIC 20
6-9 September 2005
Hanoi, Vietnam
http://www.apnic.net/meetings/20

WSIS PrepCom 3
19-30 September 2005
Geneva, Switzerland
http://www.itu.int/wsis/preparatory2

RIPE 51
8-14 October 2005
Amsterdam, Netherlands
http://ripe.net/ripe/meetings

NANOG 35
23-25 October 2005
Los Angeles, USA
http://www.nanog.org/future.html

ARIN XVI
26-28 October 2005
Los Angeles, USA
http://arin.net/membership/meetings

64th IETF
6-11 November 2005
Vancouver, Canada
http://www.ietf.org/meetings/meetings.html

WSIS - Tunis Phase
16-18 November 2005
Tunis, Tunisia
http://www.itu.int/wsis/tunis/

ICANN Meeting
30 November - 4 December 2005
Vancouver, Canada
http://www.icann.org/meetings

Asian Internet Engineering Conference (AINTEC)
13-15 December 2005
Bangkok, Thailand
http://www.interlab.ait.ac.th/aintec

SANOG 7
16-24 January 2006
Mumbai, India
http://www.sanog.org

APNIC 21 / APRICOT 2006
22 February - 3 March 2006
Perth, Australia
http://www.apnic.net/meetings

65th IETF
19-24 March 2006
Venue TBD
http://www.ietf.org/meetings/meetings.html

NZNOG 06
22-24 March 2006
Wellington, New Zealand
http://www.nznog.org

ICANN Meeting
27-31 March 2006
Wellington, New Zealand
http://www.icann.org/meetings/

ARIN XVII
9-12 April 2006
Venue TBD
http://arin.net/meetings/

RIPE 52
24-28 April 2006
Istanbul, Turkey
http://ripe.net/ripe/meetings/current.html

How to contact APNIC

Street address	Level 1, 33 Park Road, Milton, Brisbane, QLD 4064, Australia
Postal address	PO Box 2131, Milton QLD 4064, Australia
Phone	+61-7-3858-3100
Fax	+61-7-3858-3199
Web site	www.apnic.net
General enquiries	info@apnic.net
Hostmaster (filtered)	hostmaster@apnic.net
Helpdesk	helpdesk@apnic.net
Training	training@apnic.net
Webmaster	webmaster@apnic.net
Apster	apster@apnic.net

▶ The Member Services Helpdesk provides APNIC members and clients with direct access to APNIC Hostmasters.

Helpdesk Hours
9:00 am to 7:00 pm
(UTC + 10 hours)
Monday - Friday

Member Services Helpdesk

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www.apnic.net/helpdesk

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Communicate with APNIC via MyAPNIC

APNIC members can use MyAPNIC to:

- view APNIC resources held by their organisation
- monitor the amount of address space assigned to customers
- view current and past membership payments
- view current tickets open in the APNIC email ticketing system
- view staff attendance at APNIC training and meetings
- vote online

For more information on MyAPNIC's features, see:

www.apnic.net/services/myapnic