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

Issue 6 March 2003

www.apnic.net

Apster

-ster *(suffix)* One that is associated with, participates in, makes, or does. For example: *songster.*
Source: ***www.dictionary.com***

APNIC 15 onsite information online!

For the first time at an APNIC meeting delegates will be able to access a new online information system - the APNIC 15 Onsite Notice Board. The system was developed to disseminate information more rapidly to delegates. Its contents include:

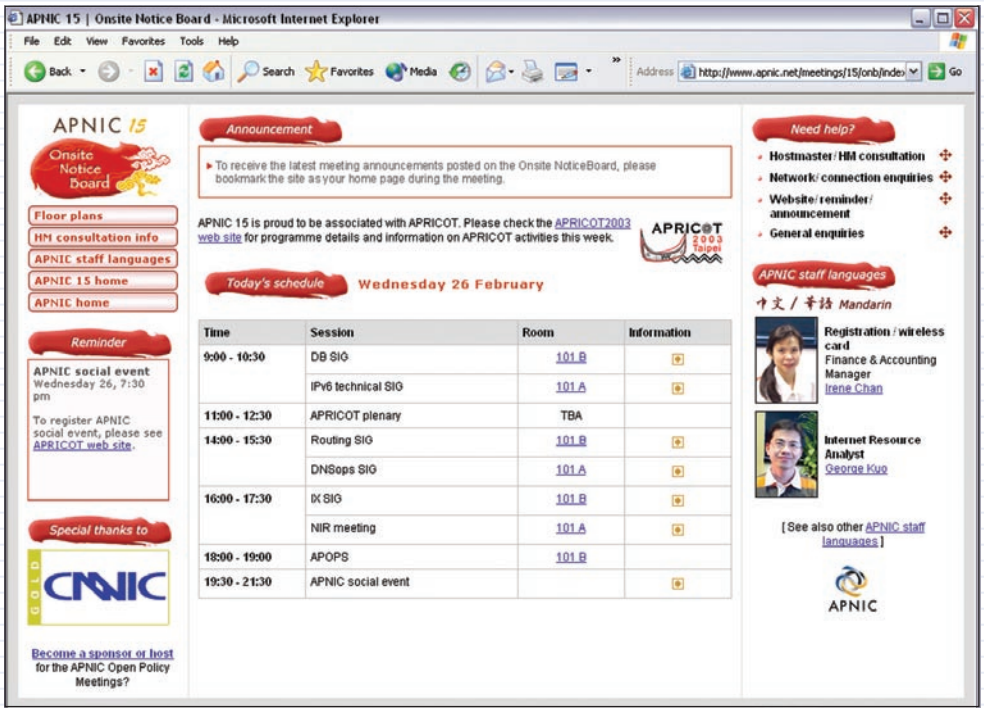
- A daily meeting agenda
- Important announcements and reminders
- Floor plans of the meeting venue
- Information about Hostmaster consultations
- APNIC staff and languages

The Onsite Notice Board also includes daily session summaries, added as the meeting progresses. There is also a "Have your say" section, which provides a simple interface for evaluating the sessions and making comments or suggestions about the meeting.

The APNIC 15 Onsite Notice Board is available at:

www.apnic.net/meetings/15/onb

▼ APNIC 15 Onsite Notice Board



ERX project continues

When ARIN was formed in December 1997, it inherited the InterNIC database of existing IP addresses and AS numbers. The records in this database became known as "early registrations" and discussions regarding their management have taken place among the RIRs and their communities for some time.

On ARIN's request, the RIRs agreed to transfer the management of the resources to the RIR for the region in which the resource holders reside. This has become know as the "Early Registration Transfer" (ERX) project.

On 1 August 2002, ARIN transferred all early registration ASNs to APNIC as the first stage of the ERX project. Subsequently, in December 2002, the first transfers of IPv4 address space took place. This transfer involved nine /16 address ranges from within 129.0.0.0/8. Transfers will continue progressively over the coming months, with work due to start on the following address blocks in March 2003:

141.0.0.0/8 150.0.0.0/8 151.0.0.0/8 163.0.0.0/8

The APNIC Secretariat will contact all organisations affected before the transfers commence, using contact details currently on record. Details of the ERX project are available at:

www.apnic.net/db/erx

15th APNIC Open Policy Meeting

24 - 28 February 2003 Taipei - Taiwan

APNIC's 15th Open Policy Meeting is being held in conjunction with APRICOT 2003. APNIC is very proud to be supporting APRICOT 2003, the eighth conference since its inception in 1996. APNIC has a long association with APRICOT, having initiated the APRICOT (Asia Pacific Rim Internet Conference on Operational Technologies) project and played a lead in organising the first three APRICOTs. APNIC has supported APRICOT over the years, helping it to grow into the premier regional Internet conference that it is today.

▲ Taipei International Convention Center (TICC)

Programme

APNIC's 15th Open Policy Meeting is fully integrated with the APRICOT programme. APNIC 15 includes a range of tutorials and Special Interest Groups (SIGs), during which delegates can discuss Internet address policies and participate in the open consensus-based policy formulation processes. APNIC's Director General, Mr Paul Wilson, will also present APNIC's budget and forward plan for 2003 at the Annual Member Meeting on Friday, 28 February 2003.

Policy proposals

APNIC's Open Policy Meetings are an opportunity for interested people in the Internet community to make policy proposals and have them debated and discussed in the open forum. Synopses of the policy proposals being made at APNIC 15 are provided below. Details of the proposals and other presentations are available on the meeting web site at:

www.apnic.net/meetings

Address Policy

- **Document review and policy processes**
  - Anne Lord, Gerard Ross, APNIC Secretariat

This proposal suggests modifications to the existing Document Review Policy to align it more closely to the processes and outcomes of consensus decisions that emerge from the APNIC Open Policy Meeting. The existing policy making processes have been evolving for some time to become more structured and organised. This agenda item is a review of those processes to see if they meet the needs of the Internet community in the Asia Pacific.

- **An interim scheme for signing the public DNS root**
  - Johan Ihren, Autonomica

This is a proposal for transitioning from an unsigned DNS root to a signed root, where the data will be signed by DNSSEC signatures. The underlying reason for signing the root is to be able to provide a more secure DNS hierarchy, where it is possible to distinguish false answers from correct answers. For the special case of the DNS root zone, an interim scheme is proposed. This scheme is mostly aimed at securing the root zone itself for technical and operational reasons and to provide operational experience in DNSSEC.

- **IPv6 address space management**
  - Paul Wilson, APNIC Secretariat

This proposal describes a scheme for managing IPv6 global unicast address space, whereby address allocations are made from a single global pool according to a "sparse allocation" algorithm. This allocation process will maximise aggregation of address space, ensuring that most ISPs retain a single prefix as they grow, and avoiding the address space fragmentation that results from the current IPv4 allocation technique.

- **Transfer of 6bone address management responsibilities to RIRs**
  - David Kessens, Nokia

This document proposes that the 6bone address management responsibilities be transferred to the RIRs. An abstract from the proposal document is provided. The 6bone was established in 1996 by the IETF as an IPv6 testbed network, to enable various IPv6 testing as well as to assist in the transitioning of IPv6 into the Internet. It operates under the IPv6 address allocation 3FFE::/16 from RFC 2471. As IPv6 is beginning its production deployment it is appropriate to plan for the phase out of the 6bone. This note establishes a plan for a multi-year phase out of the 6bone and its address allocation on the assumption that the IETF is the appropriate place to determine this.

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China Network Information Center (CNNIC)

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Taiwan Network Information Center (TWNIC)

The Directorate General of Telecommunications (DGT)

Ministry of Transportation and Communications

交通部電信總局

APRICOT 2003 Taipei

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Database SIG

Requirements for running a local 'whois'
- George Michaelson, APNIC Secretariat

The APNIC Secretariat is proposing technical and policy requirements for exchange of whois data with its membership. Very large members, such as the NIRs should be able to adopt local procedures to maintain whois data and use live update methods to mirror this with the APNIC systems, for wider public visibility. This proposal focuses on the adoption of RPSL as a format for data and use of compatible network protocols to exchange RPSL data. Policy requirements for the contents of the data are also clarified.

Proposal for data clean up in APNIC Whois *- Sanjaya, APNIC Secretariat*

The conversion of the APNIC Whois Database to RPSL required a large amount of historical data to be imported en masse. The APNIC Secretariat has undertaken a detailed analysis of the data and identified over 25,000 entries that are either no longer needed or have format problems. The APNIC Secretariat proposes a mechanism to identify and fix these problems, with membership review. This activity is of increasing importance as early registration transfers are undertaken, since some of the data currently in the APNIC Whois Database overlaps with records that need to be imported from ARIN. It also improves our ability to manage global routing processes, by removing records which conflict with other organisations' routing declarations.

DNS operations

Sweeping Lames, George Michaelson *- APNIC Secretariat*

All RIRs are aware of the impact of reverse DNS delegations on their membership and the Internet at large. Recently, increased interest in reverse DNS problems has highlighted the large rate of 'lame' (or dysfunctional) reverse DNS delegations. The APNIC Secretariat is proposing a model, based on work from the ARIN region, which tracks lame DNS registrations and, after suitable notice without repair, de-lists the DNS delegation. This has immediate benefits for the general Internet and especially 'root' DNS services that are subject to excess traffic from these registrations. The mechanism proposed leaves substantive control with the existing resource manager, so that reverse DNS delegations can be re-listed when working.

NIR meeting

NIR fee and voting structures *- Izumi Okutani, JPNIC*

This presentation will discuss possible fee and voting models for the NIRs. The current fee and voting structures for the NIRs are based on the APNIC membership model. The only difference is that in addition to the annual fee, NIRs are charged with a per address fee for IPv4 and IPv6 allocations. However, the nature of NIR operations is different from the LIRs. Unlike the LIRs, the NIRs do not receive address allocations for their own networks or commercial services. The responsibility for address management is shared in their economic region with APNIC. Therefore, the current fee and voting structures may not fully reflect the NIR's roles. In that case, alternative models that represent their functions should be considered. For example, it could be a model that subtracts the operational expenses of the NIRs from the annual fee, if NIR members are APNIC members, or a model that creates a structure totally independent from the existing annual fee. The purpose of this presentation is not to propose a particular model, but to introduce possible alternative models to start discussions in the community.

NIR Operated IRR *- Kuniaki Kondo, Intec Netcore, Inc*

This proposal explores a mechanism for NIRs to operate an Internet Routing Registry for their members, using near real time mirroring with the APNIC Routing Registry server. The operation of routing registry services by NIRs would allow the NIRs to collect National routing information that is then useful for statistical analysis. NIR members would also receive the benefit of being able to conduct searches of routing information smoothly and correctly.

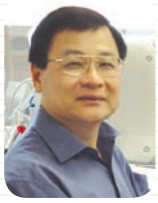
▲ Busy street in Taipei, near the Taipei International Convention Center (TICC)

MyAPNIC

MyAPNIC v1.1 is being launched at APNIC 15. A demonstration of the new functions available in version 1.1 will be conducted in the APNIC Member Meeting on Friday 28 February 2003, in Taipei.

New staff

Training Department



John H'ng

Training Manager

John joins APNIC from IBM where he was a Senior Advisory IT Specialist. He holds a B.Sc. in Applied Physics and Computer Science and a Postgraduate Diploma in Education from the University of Malaysia. John has extensive experience in training and IT consultancy within the Asia Pacific region having worked as an IBM Trainer and Consulting/Education Manager with MERANT, Platinum Technology, and NCR. He will be responsible for the development of APNIC's training programmes and aims to further expand the content and coverage of the training materials.

Technical Department

Robert Loomans

Programmer/ Analyst

Robert joins APNIC from OptusNet, Optus' retail ISP. He was based in Sydney, where his previous position was as an ISP Engineer. His responsibilities involved developing, deploying, and maintaining the ISP's services running on approximately 200 Linux servers. He has worked with Unix since 1990, Linux for 10 years, and has programmed with Perl since 1996. Robert will be working as a programmer in APNIC on web applications, including MyAPNIC.

Since MyAPNIC v1.0 was launched at APNIC 14 in Japan in September 2002, the secure members-only service has been undergoing further development. Version 1.1 of MyAPNIC, which is being launched at APNIC 15, has a variety of enhancements that will allow members to perform the following functions online:

- Update member contact details, such as address, telephone, fax and URL
- Manage contact persons
- Update records in the APNIC Whois Database
- Online voting and polling

APNIC members are invited to attend a demonstration of MyAPNIC v1.1 in the APNIC Member Meeting on Friday 28 February 2003, in Taipei.

APNIC Certification Authority

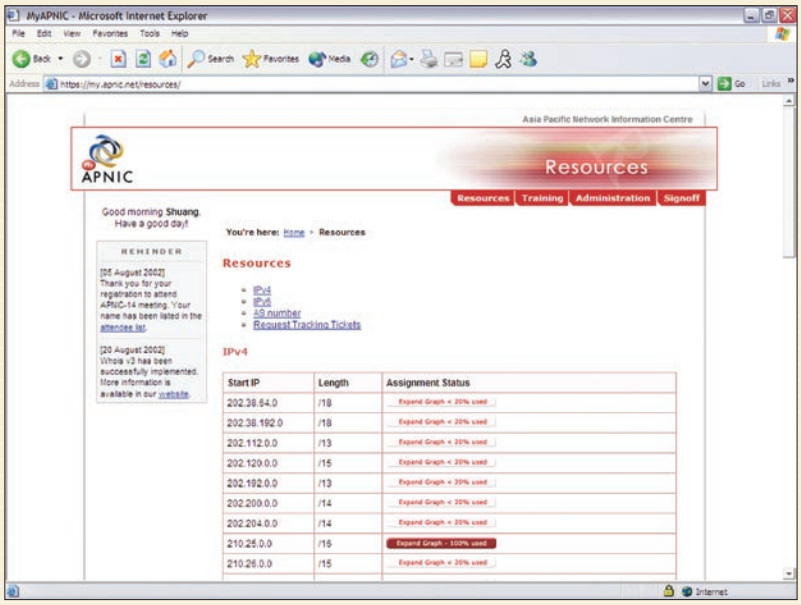
MyAPNIC is protected by SSL, which requires that users have client certificates installed in their browsers. The digital client certificates that APNIC Members need to access MyAPNIC services are issued under APNIC's Certification Authority, according to the X.509 standard. The certificates allow:

- Secure exchange of email between the member and APNIC
- Secure access to the APNIC website and database

All APNIC members are encouraged to use MyAPNIC to manage their resources and to communicate with APNIC. To apply for an APNIC client certificate go to:

https://www.apnic.net/ca

▼ Screen shot from MyAPNIC Resources page: my.apnic.net/resources



The Wireless Internet

Despite appearances to the contrary, many of the components of the Internet-inspired technology revolution are not exactly new inventions. It's now 100 years since Marconi undertook the first successful tests of trans-Atlantic radio transmission and perhaps, given this notable anniversary, it's appropriate that we look at what has been happening in the world of the wireless Internet.

Much of this activity is not recent. The Internet Protocol (IP) itself was developed just over 30 years ago and, using IP over various forms of packet switching radio systems, dates back almost as far. So, if IP and radio are no strangers, why all the recent fuss about the wireless Internet? There is no doubt that wireless Internet service is one of the most active areas of market interest at present. While various forms of online access, online commerce, and other ISP-related market segments have gone into a holding pattern during the current business phase, where caution has replaced euphoria, wireless Internet activities are still generating considerable interest. There is some feeling that the wireless Internet will transform the role of the Internet and the value of certain Internet-based services, in the same way that mobile telephony rapidly transformed the role of the telephone and the associated area of short messaging services.

So what are we after? Well, for a start I'd like to enjoy the same level of mobile service I get with my phone: to be able to take it wherever I go, have it work seamlessly, and not just at the other end of my trip, but even while I'm travelling, the phone should continue to work. No matter which country I'm in, my phone should still ring in response to the same phone number. It should not require large or heavy power systems and it should be small enough to fit in my pocket. (It would also be good if it still worked after being dropped from a great height or given an inadvertent coffee wash, but perhaps that's asking a bit much!) Why can't the mobile Internet be just like that?

Geoff Huston has recently been appointed as APNIC's Senior Internet Research Scientist. Geoff first published this article on The Wireless Internet in his ISP column in February 2002. In the article Geoff analyses the evolution of wireless technologies, their current uses, and the constraints on applying them to the goal of true mobile Internet service delivery. Geoff has kindly given APNIC permission to reproduce the article. More articles by Geoff are available on his web site at:

www.potaroo.net

APNIC appoints Research Scientist

Geoff Huston - Senior Internet Research Scientist

For many readers Geoff Huston hardly needs an introduction. He is well known world wide for his huge contributions to Internet development, authoring technical standards documents, textbooks and articles, and holding leadership positions in such bodies as IAB and ISOC. Geoff has contributed greatly to APNIC as well, as an active member of the community, and member of the APNIC Executive Council (EC) since 1996.

For 12 months from February 2003, Geoff will have the opportunity to serve APNIC further in the position of Senior Internet Research Scientist, under subcontract from his employer Telstra. He will continue to work from his Canberra base, but he will spend up to 75% of his time on APNIC specific research projects. Thanks go to Telstra for making Geoff available to APNIC on an "at cost" basis for this position.

Geoff will be working on research topics that relate to the interaction between the deployed network and the various RIR number resource allocation policies. Some of the initial work is on the impact of address allocation policies on the inter-domain routing table and the rate of consumption of 2-byte Autonomous System numbers and forward projections of this rate.

Geoff holds a B.Sc. and M.Sc. from the Australian National University. He has been closely involved with the development of the Internet for the past decade, particularly within Australia, where he was responsible for the initial build of the Internet within the Australian academic and research sector. He is an active member of the IETF and is currently a member of the Internet Architecture Board (IAB) and serves as the Executive Director of the IAB. He served as a Trustee of the Internet Society from 1992 until 2001, including a term as Chair of the Board in 1999. Geoff has also authored a number of books on Internet engineering: - Internet Performance Survival Guide; An ISP Survival Guide; and Quality of Service - Delivering QoS on the Internet and in Corporate Networks.

With a careful selection of business models and base technologies we probably can construct a seamless wireless Internet, but to see the industry consolidate within a single wireless technology model is a pretty ambitious assertion. At present, such a consolidation of approaches to wireless IP has not taken place, and we are seeing some jostling for market position between a number of wireless technologies. In this article I'll look at these technologies in a little more detail and see where each of them is heading.

One way of classifying radio systems is in their radius of coverage.

Bluetooth

Using this approach, the smallest radius is intended to be used by the Bluetooth system. Bluetooth, originally pioneered by Ericsson, is a so-called piconet architecture, intended to support a personal local network operating within a radius of a metre or so. It's intended to replace all those self-tangling wires and the collection of different connectors that are a feature of today's electronics. Bluetooth can connect your earpiece to your phone, or your phone to your Personal Digital Assistant, or your laptop to a video projector or printer. Bluetooth operates at speeds up to 1Mbps in the 2.4Ghz band and uses an approach of ad hoc network cells of up to eight Bluetooth devices per cell.

Bluetooth is not a technology intended for use within a carrier network or as an access technology for ISPs. Instead, Bluetooth is seen as a way of integrating the functions of a number of personal devices, creating a "clip-on" architecture that uses the Bluetooth radio function as the "clip". The major advantage of Bluetooth is its ability to create ad hoc personal area networks of diverse devices. Security folk may well argue that one of the major drawbacks of Bluetooth is its potential ability to create unintended ad hoc impersonal networks of diverse devices. More seriously, it's not clear that there is a need for one distinct wireless technology for highly local networks and a different wireless technology for longer distance applications.

WiFi

The next technology that is associated with the wireless Internet is that of WiFi, the name given to the family of IEEE 802.11 wireless LAN technologies. 802.11 networks are not explicitly IP networks, but instead are an instance of the 802 Ethernet family technologies. To be a little more precise here, 802.11 is a wireless Ethernet rather than wireless IP. With an effective circumference of up to a kilometre or so, and a speed of up to 54Mps, the most obvious application of WiFi is the home or office suite network. 802.11 operates at speeds up to 11Mbps in the 2.4Ghz band and 54Mbps in the 5Ghz band.

The most common applications for WiFi lie in wireless laptop and PDA networks. From its original application as a wire replacement office LAN technology, WiFi networks are entering the ISP world, appearing as public access systems in airport lounges, coffee houses, hotel lobbies, and as public open space networks.

The advantage of WiFi lies in its immediate availability - this is not a technology based on various forms of technology futures, but a technology that is already on a sharp uptake curve with a solid customer base in place. So it's fast, it's available today, it's already being deployed, and it's proving to be popular. The increasing volume of deployment is increasing the volumes of manufacture, which, in turn, is already turning WiFi into a relatively low priced consumer commodity technology. But it's not all good news. The disadvantage of WiFi is that it uses a common spread spectrum band, so that as the deployment of WiFi networks becomes more common, so is the amount of crosstalk and bandwidth impairment.

Further Reading

There is a wealth of further information on the Internet about each of these wireless technologies. If you want to read more about them, the home page of each is a useful starting point.

- **Bluetooth**

  www.bluetooth.com

- **WiFi**

  grouper.ieee.org/groups/802/11

  www.weca.net

- **3G - Universal Mobile Telecommunications System (UMTS) forum**

  www.umts-forum.org

For WiFi one of the largest risks is that of massive popularity, in that overuse of the common spread spectrum band will cause impaired service. Of course, there is always the possibility of shifting to ever higher frequencies to alleviate this, but the issue here is that higher frequencies tend to have more limited propagation properties and reduced penetration, so that direct line of sight between the base station and the wireless device becomes necessary.

3G

The third technology in this set is that of 3G. This is the third generation of mobile telephone technology, where the original analogue system is the first generation, and the use of a highly spectrum-efficient signal compression and digital encoding was the second generation. First and second generation systems use a fixed bandwidth allocation scheme for each mobile user. The 3G approach is to use adaptive bandwidth allocation, allowing all of the base station's capacity to be used if required. This implies a maximum speed of 2Mbps for a 3G device, although this capacity is reduced according to concurrent demands by other users as well as limitations if the device is moving across base stations.

3G is coming from a different background than the first two technologies, and the original service model is one of extending the functionality of the mobile handset or the personal digital assistant through the ability to access higher bandwidth data services.

So will we see all three technologies in widespread use in a mobile IP world? It's unlikely and, given the early adopter market moves in the 802.11 area, it's possible to see the 802.11 WiFi technology becoming the predominant wireless IP technology. But perhaps we are not talking about one wireless world, but two. If you are looking at wireless as a transport extension of the high speed wired network, with full transparency of the Internet service model, then 802.11 is the technology that does appear to have gained market acceptance. But this is not true mobility, and WiFi is not, in its current incarnations, a suitable technology for very large scale high density mobile service.

If we are talking about IP phones in your pocket, an IP connection to the electronics in your car, and a mobility model that seamlessly roams across continents, then the necessary tradeoffs in technology tend to point towards the 3G approach as having the greatest potential. The wider coverage comes at a cost of lower throughput, and this implies that such a mobile wireless Internet is one that is somewhat different from the wired network. Such a system will not be able to deliver large volume content at consistently high speeds. The initial efforts to map the Internet to such a constrained service environment, the Wireless Access Protocol, or WAP, was not wildly successful. If 3G is going to fulfill all the optimistic predictions about its potential as a mobile wireless IP service platform, then it's the service environment that requires the most attention.

Geoff Huston, Senior Internet Research Scientist, APNIC *<gil@telstra.net>*

Calendar

APRICOT 2003 / APNIC 15
24-28 February 2003
Taipei, Taiwan
www.apricot2003.net
www.apnic.net/meetings

56th IETF
16-21 March 2003
San Francisco, California
www.ietf.org

ICANN Meetings
23-27 March 2003
Rio de Janeiro, Brazil
www.icann.org

ARIN XI
6-9 April 2003
Memphis, U.S.A.
www.arin.net

LACNIC IV Meeting
23-25 April 2003
Santiago, Chile
lacnic.net/en/meetings.html

ASO GA, at LACNIC IV
24 April 2003
Santiago, Chile
lacnic.net/en/meetings.html

RIPE 45
12-16 May 2003
Barcelona, Spain
www.ripe.net/ripe/meetings

18th CENTR General Assembly
2-3 June 2003
Budapest, Hungary

ICANN Meetings
22-26 June 2003
Montreal, Canada
www.icann.org/meetings

57th IETF
13-18 July 2003
Vienna, Austria
www.ietf.org/meetings/meetings.html

58th IETF
November or December 2003
Location TBA
www.ietf.org/meetings/meetings.html

▲ Training in New Delhi, India, January 2003

Training schedule

2003

February

- **24 - 25th** Taipei, Taiwan (Conjunction with APNIC 15)

March

- **3rd** Vientianne, Laos (Conjunction with Lao ICT seminar)
- **24th** Sydney, Australia

April

- **17th** Hong Kong
- **29th** Cambodia

May

- **14 - 15th** China
- **19th** Mongolia

June

- **TBA** Jakarta, Indonesia

July

- **TBA** Pacific Islands
- **TBA** Singapore

August

- **TBA** India

September

- **TBA** Manila, Philippines

October

- **TBA** Pakistan
- **TBA** Malaysia

November

- **TBA** China

December

- **TBA** New Zealand
- **TBA** Vietnam

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

www.apnic.net/training

▲ Training in Kathmandu, Nepal, January 2003

How to contact APNIC

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Hostmaster (filtered)*	hostmaster@apnic.net
Helpdesk	helpdesk@apnic.net
Training	training@apnic.net
Webmaster	webmaster@apnic.net
Apster	apster@apnic.net

* To improve services to members, the Hostmaster mailbox is filtered. All email to the Hostmaster mailbox must include a valid account name in the subject line. The account name must be enclosed in brackets or parentheses in the subject field - [XXXXX-YY] or (XXXXX-YY), where XXXXX is based on the member name and YY is the country code. If you are unsure of your exact account name, contact <billing@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

Feedback

To ensure that *Apster* meets your needs, please provide us with feedback on the newsletter articles or provide suggestions for articles for future issues.

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- **Email: apster@apnic.net**

Name:

Position:

Organisation:

Member Account Name (If applicable)**:**

Phone:

Fax:

Email:

Comments/Suggestions: