

Apster

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

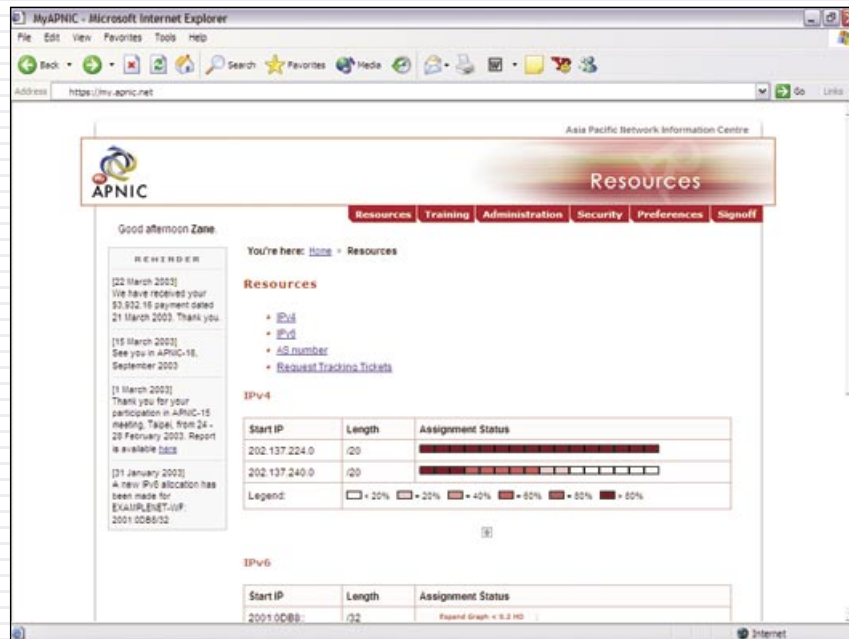
Source: www.dictionary.com

New - Whois updates via MyAPNIC!

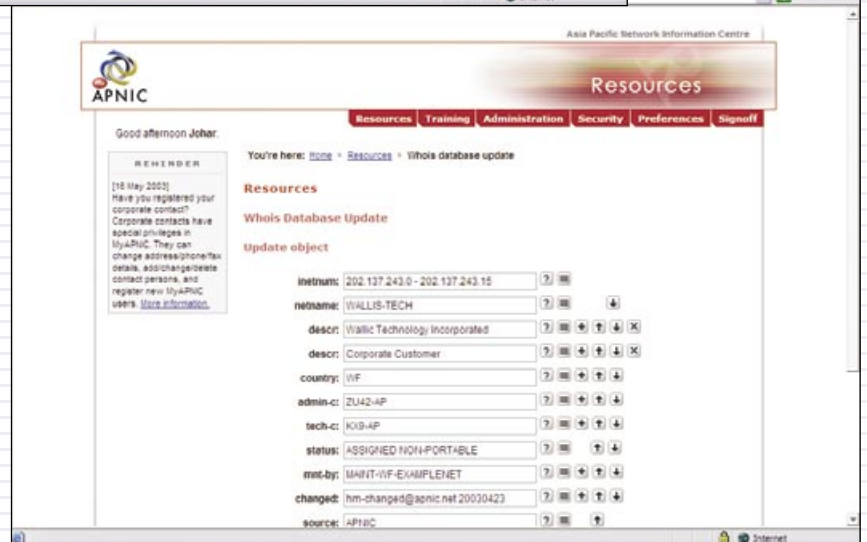
Version 1.2 of the member service, MyAPNIC, is being launched at APNIC 16 in Seoul, Korea. The new version allows members to update APNIC Whois Database records directly, saving considerable time. No longer will it be necessary to submit email templates to update the database. To see the new version in action please visit the APNIC Helpdesk at APNIC 16.

As well as streamlining Whois updates, MyAPNIC allows members to:

- View all APNIC resources held by their organisation
- Monitor the percentage of address space assigned to customers
- View current and past membership payments
- View the organisation's current tickets open in the APNIC email ticketing system
- View staff attendance at APNIC training and meetings



Instructions to register for MyAPNIC





16th

APNIC Open Policy Meeting

19 - 22 August 2003 Seoul - Korea

incorporating KIOW 2003

APNIC's 16th Open Policy Meeting, being held in Seoul Korea from 19 to 22 August 2003, is being hosted by the Korea Network Information Center (KRNIC). APNIC 16 also incorporates the Korea Internet Operation Workshop (KIOW) 2003, on Tuesday 19 August 2003, in parallel with the APNIC 16 tutorials. KIOW is a forum at which Internet specialists from both within and outside Korea come together to discuss Internet operations, technologies, and policies. KIOW 2003 includes sessions on Internet security, wireless Internet operations, IPv6, and DNS operations.



▲ APNIC 16 is being held at the Lotte Hotel, Seoul Jamsil

■ Open Policy meeting, 20 – 21 August

The Open Policy Meeting includes Special Interest Group (SIG) discussions and, for the first time, an opening plenary, at which presentations will be made by Paul Twomey (ICANN), Phillip Harris (Cisco) and Geoff Huston (Telstra).

■ Programme highlights - Tutorials

Tutorials, 19 August

Delegates to APNIC 16 have a wide choice of tutorials from two tracks on Tuesday 19 August.

| Topic | Presenter | Topic | Presenter |
|--------------------------------|----------------------|-------------------------------|----------------|
| DNS concepts | Champika Wijayatunga | BGP multihoming techniques I | Philip Smith |
| DNS troubleshooting BIND | Joe Abley | BGP multihoming techniques II | Philip Smith |
| DNSSEC | Bill Manning | Database | Miwa Fujii |
| Internet Exchange construction | Bill Woodcock | IRR | Nurani Nimpuno |

■ Policy proposals

APNIC members are encouraged to participate in the open policy development process by discussing proposals on the SIG mailing lists prior to meetings. All proposals being presented at APNIC 16 have been announced to the relevant mailing lists with calls for comments. Details of all proposals are available at:

www.apnic.net/meetings/16/programme/sigs

Address policy SIG

- APNIC document editorial policy
- Policy process modification
- Supporting historical resource transfers
- IXP assignments

Database SIG

- Policy for mirroring on IRR
- Privacy of customer assignment records
- Protecting resource records in APNIC Whois Database

DNS operations SIG

- Lame Delegation cleanup revised
- Delegation of 2.0.0.2.ip6.arpa

Routing SIG

- Improving reliability of IRR database

New at APNIC 16:

- Stenocaptioning

Also available:

- Simultaneous translation
- Multicasting

Meeting hosts

Korean Network Information Center (KRNIC)



Fellowships

For the first time, a fellowship programme has been offered to allow members of the Internet community in the developing economies of the Asia Pacific region to attend the meeting. The fellowship programme targets key staff from organisations developing or providing Internet services within the developing economies, in particular, those responsible for managing Internet resources (such as IP addresses, autonomous system numbers, and routing registry data).

APNIC welcomes the APNIC 16 fellows to the Open Policy Meeting.

The World Bank Information for Development (infoDev) Program provided funding support of US\$15,000 for the APNIC 16 fellowship programme. InfoDev promotes the use of information and communication technologies for social and economic development.



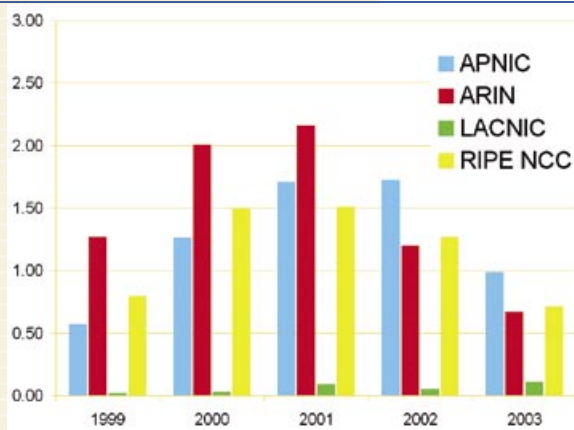
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| | | Plantynet Co.,Ltd. |
| | | Network & Security Consulting Inc. |
| | Korea Information Engineering Services | |

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IP address shortage – a myth?

For most of us the question of the remaining supply of IPv4 addresses is of more than passing interest. Media reports appear regularly claiming that IPv4 addresses are about to run out. Such reports often claim that the Asia Pacific region is disadvantaged in obtaining IP addresses, which is not the case. This view misinterprets the historical growth of the Internet, which initially took place in North America and Europe. The Asian economies are undergoing very rapid network expansion and IP addresses are being allocated more rapidly in this region than any other (see chart 1).



> Chart 1
RIR IPv4 allocations per year

Needless to say these reports concern many of us in the Internet community. The ongoing growth and evolution of the Internet depends on a stable IPv4 address supply and an efficient mechanism of address allocation. Therefore, alarmist reports of looming address shortages cause confusion and, I believe, unwarranted fears.

Some predict that IP addresses will run out in as little as two years, due to insufficient remaining supply. Certainly the early years of the Internet saw IP addresses given out without much regard to conservation. Under the class-based network architecture IP address allocations were not as efficient as they are now. The usage patterns established under current policies should see this resource last much longer than the pessimistic scenarios would have us believe.

APNIC and the other RIRs obtain their address blocks from the Internet Assigned Numbers Authority (IANA), which administers the global IP address pool. APNIC then allocates addresses to ISPs and other network operators in the Asia Pacific according to policy principles developed by consensus within the Internet community. APNIC, along with the other RIRs, has allocation policies designed to conserve address space and use it efficiently. At current allocation rates it will take up to two decades before the IPv4 address pool is exhausted.

Annual worldwide address consumption is around five /8 address blocks, each of which provides 16 million addresses. There are 90 /8 blocks still available in the global IPv4 address pool held by IANA, which could quite conceivably last another 20 years, depending on future consumption patterns. Even if new technology devices, such as 3G (third-generation) phones, result in more rapid address consumption, IPv4 addresses will last well beyond the two years predicted by the pessimists.

I'm concerned that fears of IPv4 address shortages could panic companies into spending large sums on networking hardware to suit the next generation IP - IPv6. There are many good reasons to adopt IPv6 and some of the Asian economies, such as China, Japan and Korea have been at the forefront in testing IPv6 and planning the next generation networks. However, IPv6 adoption in Asia is being driven by innovation, not out of fear of a shortage of IPv4 addresses.

Paul Wilson, Director General, APNIC <dg@apnic.net>

IPv4 – How long have we got?

Geoff Huston, APNIC's Senior Internet Resource Scientist, has conducted a comprehensive analysis of the lifespan of IPv4, examining address consumption patterns and forecasting how long the IPv4 address pool will last. Geoff presented a paper on this work to the July 2003 meeting of the Internet Engineering and Planning Group (IEPG) in Vienna.

I've summarised some of the main points from Geoff's article. I recommend the full article as a most informative historical treatise that presents a well-argued case for a more optimistic lifespan for IPv4.

IP address pool

The total address pool managed by the Internet Assigned Numbers Authority, IANA, is equivalent to 221 /8s or Class A address “blocks” in the old class-based language. IANA allocates /8 blocks to the Regional Internet Registries (RIRs) who in turn allocate smaller blocks to Local Internet Registries (LIRs) or ISPs. A further 16 /8s are reserved for Multicast use, 16 /8s are held in reserve, and 3 /8s are designated as not for use in the public Internet (see chart 1). Of the available 221 /8 blocks, 90 have yet to be allocated by IANA. The remaining 131 have been allocated in various ways (see chart 2).

History

When IPv4 was designed in the late 1970s it took some vision to imagine a global network that might need to use almost 4.5 billion IP addresses (2^{32}), which is what the 32 bit architecture allowed for. The network architecture consisted of two fields - a network identifier and a host identifier within that network. It evolved into the Class-based address architecture which, in fact, provided for an inefficient use of IP addresses.

Within only a decade a problem emerged – address space was running out. Class B networks were being assigned to networks at an exponentially increasing rate and projections forecast exhaustion of Class B space by the mid-1990s.

To come to the rescue the IETF altered the concept of a network identifier so that it could be any length at all. The boundary between the network and host could change across the network. This became known as “classless” address architecture (or CIDR). Address allocation efficiencies improved dramatically.

IPv4 futures

In his paper Geoff uses three different sources of data to examine consumption and usage patterns and to predict IPv4 address futures:

- IANA allocations of address blocks to the RIRs
- RIR allocations of address blocks to LIRs and ISPs
- Usage of address space in the global Internet, based on the BGP routing table

| Data source | Predicted IPv4 run-out |
|-------------------|------------------------|
| IANA | 2019 |
| RIRs | 2026 |
| BGP routing table | 2029 |

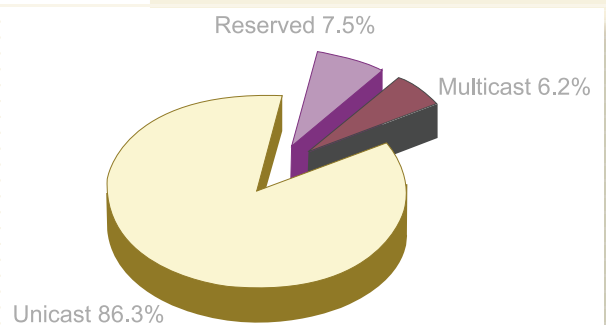
Using a modeling technique that combines the three basic forecasts and also accounts for address space that is held pending allocation or assignment, Geoff has found that IPv4 will be effectively exhausted in 2022.

Clearly these figures are at odds with the pessimists but what uncertainties could affect the accuracy of this prediction?

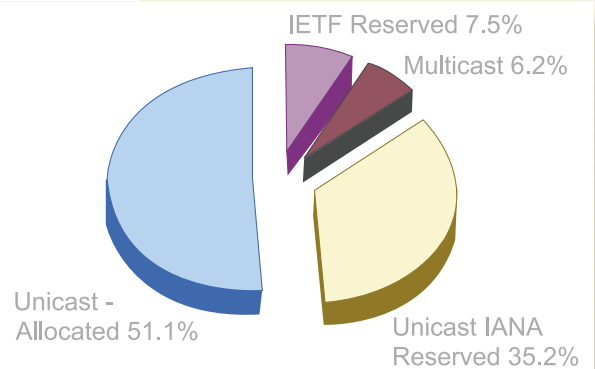
- Any increase in address rate consumption, caused by personal mobile IP devices or by an inability of NATs to support emerging popular applications
- Disruptions with a social origin, such as boom and bust cycles already seen in the late 1990s
- Changes to the way in which IP addresses are distributed

Such uncertainties certainly make any reliable predictions over two decades difficult. Nevertheless, Geoff concludes that if we restrict our view to the next decade “there is really no visible evidence of IPv4 exhausting its address pool within this timeframe.”

Robert Winkler, *Apster* Editor, APNIC <apster@apnic.net>



> Chart 1
The IPv4 address pool



> Chart 2
Current division of the IANA IPv4 address pool

Useful links

● APNIC hot topics

www.apnic.net/hot

● Geoff Huston's ISP Column

www.potaroo.net/ispcolumn

● IPv4 - How long have we got ?

www.potaroo.net/ispcolumn/2003-07-v4-address-lifetime/ale.html

● University of Oregon Route Views Project

www.routeviews.org

Funding opportunities for Internet R&D projects

In 2002, Apster reported that APNIC had joined the Pan Asia Networking (PAN) programme to fund regional Research and Development projects. In this issue we revisit the programme to encourage APNIC members and others in our community to consider applying for R&D grants.

Selection of grants previously awarded

Here is a selection of the projects which have been funded by the PAN R&D grants programme during the past 5 years. APNIC joined the programme in 2003.

■ Building a Philippine IPv6 Research Network

This project has initiated IPv6 usage and research in the Philippines, by establishing test beds in universities supported by the existing PREGINET academic network infrastructure.

■ Wireless Internet Post Office

This project is producing a tested design for a "Wireless Internet Post Office" capable of delivering text-based messaging services to remote villages in India through a mesh network of wireless repeater stations and low-cost PDAs.

■ Establishment of Nepal Internet Exchange

The project is developing a public non-profit IXP, allowing local traffic routing within Nepal, where there are 16 ISPs in operation but few local peering connections.

■ Internationalised Domain Names System (iDNS) for Asian countries

This one-year project developed an early multilingual-enabled DNS server, to act as a relaying agent for conventional DNS servers. The main purpose of this is to transform all multilingual DNS queries into a form understood by conventional DNS servers.

■ Nafees Nastalique - Character-Based Nastalique Font for Urdu

With 60 million speakers in more than 20 countries, Urdu is written using the Nastalique script, which is complex and highly context-sensitive. This project will develop a quantitative analysis of Nastalique rules, and then implement the script using the Open Type Font (OTF) specification.

For more information see:

www.pan.org.sg/grants/awards



PAN is an initiative of the Canadian-funded International Development Research Centre (IDRC). The IDRC exists to help researchers and communities in the developing world find solutions to their social, economic, and environmental problems. Since 1997, through the PAN programme, the IDRC has assisted Information Communication Technology (ICT) research projects which progress the broader aims of the IDRC.

Last year APNIC became a partner in funding the PAN grants to stimulate R&D projects relevant to Internet infrastructure development and management, technical and administrative policy, and Internet resource management.

APNIC now hopes to raise more awareness among the APNIC community of the funding available. In particular, APNIC urges members, NIRs, academic institutions, and others to consider the benefits that funding could bring to development in their communities.

■ Who can apply?

Applicants must be either legally incorporated entities or government bodies. PAN encourages applications from developing countries, but also from consortiums of developed and developing countries.

Project proposals that will receive co-funding from other agencies are favourably considered.

■ What sorts of projects are eligible for funding?

To be eligible for PAN funding, your project must involve research and development into innovative ICT applications, with a clear focus on practical and replicable approaches and techniques. PAN also funds programmes which aim to develop practical solutions using existing technologies, or which research the social impacts of specific ICT policies and Internet technologies.

In particular, APNIC wishes to encourage projects which emphasise research into Internet infrastructure design, performance, resource management, and related policy development issues.

■ What level of funding is available?

The PAN program makes grants to fund research projects only (core or recurrent funding is not available).

Two levels of funding are available:

- Large grants, up to US\$30,000 for a period of up to 24 months
- Small grants, up to US\$9,000 for a period of up to 12 months

■ When can I apply?

PAN holds two grant rounds each year. Applications for the October 2003 grant round are now open and must be submitted by 15 September 2003 (see details below).

■ Where can I find out more?

Detailed information about the grants, including full eligibility details, application forms, selection processes, and case histories of successful applications is available on the PAN web site at:

www.pan.org.sg/grants

APNIC also encourages anyone with specific questions about the programme to contact APNIC Director General, Paul Wilson, at <dg@apnic.net>.

Gerard Ross, Documentation Manager, APNIC, <gerard@apnic.net>



▲ Young monks and students studying at the new telecentre in Luang Prabang, Laos, which was established with PAN funding in 2002 and officially opened in March 2003.

Fourth competition round open

The Pan Asia ICT R&D Grants Programme has announced the October 2003 competition round for ICT R&D grant applications from the Asia Pacific region. This round welcomes proposals that address themes pertaining to the World Summit on Information Society (WSIS). Apart from the WSIS themes, the competition round will also consider proposals that look at the following themes:

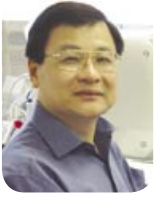
- Broadband connectivity for the developing world
- Increasing the capacity or efficiency of existing infrastructures
- Internet access technology for remote areas

Proposals which specifically address the WSIS themes, relating to access to ICTs for all, and ICTs as tools for economic and social development, will be considered for review by the Grants committee. Details of the WSIS themes are available at:

www.itu.int/wsisis

For future rounds, APNIC is interested in encouraging projects which specifically deal with Internet infrastructure development and management, technical and administrative policy impacts on developing countries, and research into addressing or routing issues.

The deadline for submission for this competition round will be **15 September 2003**. Late applications will not be considered for the competition. The results will be announced by the Grants committee by November 2003.



New training courses from APNIC

John H'ng / Training Manager

APNIC's Training Department has embarked on a major review of the training courses offered to APNIC members. Many members have participated in basic Internet resource management training offered by APNIC but the Secretariat recognised the need to provide more advanced courses. This has resulted in a complete revamp of the training courses, details of which are listed below. Course development will continue over the coming months and other specialised courses will be announced soon.

If you would like any information on the new courses or scheduling of training in your locality, please email me at [<training@apnic.net>](mailto:training@apnic.net).

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■ Internet Resource Management I (1-day)

Internet Resource Management I (IRM I) is a foundation course designed specifically for professionals responsible for requesting and managing Internet resources e.g. IP managers, hostmasters, and network engineers. The course discusses Internet resource policies and procedures and teaches course participants how to competently request and manage IP addresses, AS numbers, and reverse delegations.

■ Internet Resource Management II (1-day)

Internet Resource Management II (IRM II) is a follow-up from IRM I and therefore, course participants are assumed to be familiar with current APNIC policies and procedures. It is aimed at senior personnel of Local Internet Registries (LIRs), such as senior IP managers, hostmasters, and network engineers who have a good understanding of networking fundamentals. The course covers advanced aspects of Internet resource management such as the Internet Routing Registry, IPv6, reverse DNS and best practices in IP address management.

Note: IRM I & II are designed to familiarise members with resource registration procedures and the processes by which members interact with APNIC. The courses are not designed to teach participants how to run an ISP as a business.

■ Internet Resource Management Essentials (1-day)

Internet Resource Management Essentials is designed for professionals responsible for administering and managing Internet resources e.g. IP managers, senior hostmasters, and network engineers. Some understanding of networking fundamentals is assumed. The course covers aspects of IP allocation management (IP addresses, AS numbers), IPv6, reverse DNS, the Internet Routing Registry, and the APNIC Whois Database.

■ Future Courses

The following courses are being developed and will be announced in the near future:

- Internet Routing Registry (IRR)
- DNS concepts and operations
- IPv6 technical

Training in 2003

APNIC has held eleven training sessions since January 2003. Valuable support was provided by hosts and sponsors, allowing APNIC to offer training at the lowest possible fee.

January

Dhaka, Bangladesh

Sponsored by: United Nations Development Program (UNDP), Sustainable Development Networking Program (SDNP)



Coordinated by: SingTel, Advanced Technology Computers



Kathmandu, Nepal

Hosted by: South Asian Network Operators Group (SANOG)



New Delhi, India

Bangkok, Thailand

Hosted by: Asian Institute of Technology



February

Taipei, Taiwan

Hosted by: Taiwan Network Information Center (TWNIC) and the Directorate General of Telecommunications (DGT), in conjunction with APRICOT 2003



March

Vientiane, Laos

Hosted by: Pan Asia Networking



Sydney, Australia

June

Jakarta, Indonesia

Sponsored and hosted by: Asosiasi Penyelenggara Jasa Internet Indonesia (APJII)



July

Auckland, New Zealand

Hosted by: New Zealand Network Operators' Group (NZNOG), in conjunction with UniForum NZ



Navi Mumbai, India

Sponsored by Reliance InfoComm



Colombo, Sri Lanka

Hosted by: Networking South Asia 2003



2003 Training schedule

● August

6 ~ 7 Hong Kong
19 ~ 20 Seoul, Korea

● September

2 ~ 3 Manila, Philippines

● October

3 Tonga, Pacific Islands
13 TBA, Bangladesh
15 TBA, Pakistan
17 Singapore
20 TBA, Malaysia

● November

3 ~ 4 Chengdu, China
6 ~ 7 Wuxi, China
10 ~ 11 Hangzhou, China
13 ~ 14 Beijing, China
17 Ulan Bator, Mongolia
25 TBA, Vietnam
27 ~ 28 TBA, Cambodia

● December

2 ~ 3 TBA, Taiwan

The APNIC training schedule is provisional and subject to change.

Please check the website for regular updates at:

www.apnic.net/training

Training schedule changes

APNIC's Training schedule for the first six months of 2003 was disrupted by the outbreak of SARS (Severe Acute Respiratory Syndrome). A number of training events had to be rescheduled because of travel advisories issued by the World Health Organization. Therefore, the schedule for the second half of the year has been revamped to catch up with as many training events as possible.

If your location is not on the schedule but you would like to attend an APNIC training event, please submit an expression of interest to the Training Department online at:

www.apnic.net/training/eoi

New staff

A number of new faces have recently joined the APNIC Secretariat, bringing a wealth of talent to the office and further strengthening the diversity of language skills available for member services.

APNIC 16

(19 ~ 22 August 2003)
Seoul, Korea
www.apnic.net/meetings

16th APAN Meetings / Advanced Network Conference

(24 ~ 30 August 2003)
Busan, Korea
<http://apan.net>

RIPE 46

(1 ~ 5 September 2003)
Amsterdam, Netherlands
www.ripe.net/ripe/meetings

NANOG 29

(19 ~ 21 October 2003)
Chicago, Illinois
www.nanog.org

ARIN XII

(22 ~ 24 October 2003)
Chicago, Illinois
www.arin.net

ICANN meetings

(27 ~ 31 October 2003)
Carthage, Tunisia
www.icann.org/carthage

58th IETF

(9 ~ 14 November 2003)
Minneapolis, Minnesota
www.ietf.org

LACNIC V

(19 ~ 20 November 2003)
Havana, Cuba
<http://lacnic.net/en/meetings.html>

RIPE 47

(26 ~ 30 January 2004)
Amsterdam, Netherlands
www.ripe.net/ripe/meetings

17th APAN Meetings

(25 ~ 30 January 2004)
Honolulu, Hawaii
<http://apan.net>

LACNIC VI

(29 January ~ 1 February 2004)
Montevideo, Uruguay
<http://lacnic.net/en/meetings.html>

NANOG 30

(8 ~ 10 February 2004)
Miami, Florida
www.nanog.org

APRICOT2004

(18 ~ 27 February 2004)
Kuala Lumpur, Malaysia
www.apricot2004.net

APNIC 17

(23 ~ 27 February 2004)
Kuala Lumpur, Malaysia
www.apnic.net/meetings/upcoming

Member Services Department



Tim Jones / Internet Resource Analyst

Tim has been with APNIC for several months and has completed his training as an Internet Resource Analyst. Tim holds a degree in IT (Data Communications) from Queensland University of Technology. He deals with member enquiries about address space and other Internet resource-related queries. He has also worked as a network administrator and webmaster.

Administration Department



Vani Chamala / Billing Administration Officer

Vani performs duties as a billing administration officer at APNIC. Before joining APNIC, Vani worked as a customer service officer for one of the major Australian banks. She has also worked as an accounts receivable officer. Vani holds a Bachelor of Commerce from Osmania University, India. Vani's main duties include invoicing, receipting, dealing with membership acquisitions and mergers and answering member queries. She speaks both Hindi and Telugu.



Helen Chan / Assistant Accountant

As an assistant accountant at APNIC, Helen helps with finance issues and membership billing activities. Helen grew up in Fiji but completed her high school studies and an advanced diploma in Business Studies (Accounting) in Sydney. She worked in Fiji as a project and funds administrator for several years before moving to Australia.



Lauren Huang / Billing & Accounts Officer

Lauren works as a billing and accounts officer at APNIC. After completing her Bachelor of Business degree, majoring in accounting and management, at Queensland University of Technology in 2000, Lauren worked as a finance administration officer at a financial planning group. She has travelled to Europe and taught English in China. Lauren recently completed her honours degree in management at the University of Queensland. Her main duties at APNIC include invoicing and liaising with members from Bangladesh and India. Lauren speaks Mandarin.

Visiting staff

Human Resources Department



Helen Welsh / Human Resources & Office Manager

Helen recently joined APNIC as the Human Resources and Office Manager. Helen works closely with all staff at the APNIC Secretariat to assist them with their human resource and office needs, and to generally help to make the environment at APNIC enjoyable and pleasant for everyone. Helen has more than five years experience working in human resources within information technology companies. Helen has also completed a Master of Commerce - Employment Relations degree with a major in International Human Resource Management. Helen has also worked in training and teaching roles.

Technical Services Department



Andrew McIntyre / Junior Programmer

Andrew studied Software Engineering and Japanese Language at the University of Queensland. He participated in an exchange programme with Shimonoseki Shiritsu Daigaku in Yamaguchi prefecture in Japan between September 2000 and August 2001. Andrew started work at APNIC while studying but is now employed as a full-time programmer doing code maintenance and application development using PERL.



Are you registered to use MyAPNIC?

To gain access to the advanced member services available in MyAPNIC, you need to:

1. Register your corporate contact(s)

- Complete an APNIC corporate contact form, available at:
www.apnic.net/member/corp-contacts
- Fax the completed form to APNIC:
[+61-7-3858-3199](tel:+61738583199)

2. Obtain an APNIC digital certificate

- Submit a certificate request form online at:
www.apnic.net/ca

Once you have completed these steps APNIC will email confirmation to you. You will then be able to load your digital certificate into your web browser and access MyAPNIC at:

<https://my.apnic.net>

APNIC regularly hosts visitors from the other Regional Internet Registries (RIRs) – ARIN, LACNIC, and RIPE NCC – and from the National Internet Registries (NIRs) – APJII, CNNIC, JPNIC, KRNIC, TWNIC, and VNNIC.

Visiting staff undergo training and learn about APNIC's procedures and systems. Since March 2003 APNIC has had visitors from APJII, JPNIC, and VNNIC.



JPNIC / Toshiyuki Hosaka

- Hostmaster training



VNNIC / Kien Tran

- Hostmaster training



APJII / Adi Kusuma

- Technical infrastructure training
- Modification of APNIC systems for APJII use

If you would like to participate in the visiting staff programme, please contact me with an expression of interest.

Helen Welsh

Human Resources and Office Manager, APNIC
<helen@apnic.net>

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 |
| ● <i>Apster</i> | 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.

- Fax: +61-7-3858-3199
- Email: apster@apnic.net

Name:

Position:

Organisation:

Member Account Name (if applicable):

Phone:

Fax:

Email:

Comments/Suggestions:

