



Annual Report 2011

addressing the Internet in the Asia Pacific



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Executive Council



Maemura Akinori, Chair

General Manager, Internet Development Department, Japan Network Information Center (JPNIC).



Gaurab Raj Upadhaya

Network Architect, Limelight Networks (LLNW)



Ma Yan, Secretary

Executive Committee Member, China Education and Research Network (CERNET)



Che-Hoo Cheng

Associate Director (Infrastructure), Information Technology Services Center, The Chinese University of Hong Kong



James Spenceley, Treasurer

CEO, Vocus Group Ltd



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Director of International Business and Policy Development, China Network Information Center (CNNIC)



Kenny Huang

Board Director, Taiwan Network Information Center, (TWNIC)



Paul Wilson, Ex-officio

Director General, APNIC

Director General – Paul Wilson

2011 was an important year for the Asia Pacific Internet community. In April, APNIC became the first Regional Internet Registry (RIR) to reach its final /8 block of IPv4 addresses. For us, this means a major change to how IPv4 will be distributed. Although IPv4 is not completely “exhausted”, everyone is now limited to a small final allocation. This policy, which the community agreed upon, ensures that there will be IPv4 resources for anyone who needs them, throughout the IPv6 transition.

During 2011, IPv6 took centre stage as the most critical issue facing Internet-related organizations and the wider Internet community. It has become clear to all of us that the only way to maintain the health and scalable growth of the Internet is to deploy IPv6. Of course, this is a global challenge; however, as the Asia Pacific was the first to run out of IPv4 in principle, it is natural that we would take the lead in global transition.

However, we must remember that this is a collaborative effort, which will require a lot of work from all stakeholders. It is not up to any one group, be it the technical community, governments or the private sector, to determine the success of the global IPv6 transition.

In 2011, the APNIC R&D team (now known as Labs) has focussed on measuring global IPv6 client readiness and will continue to do so in 2012. According to their data, approximately 25% of host computers are ready to run IPv6 in native mode.

The operational activities mentioned in this report are driven by the findings from the 2010 Member and Stakeholder Survey. The survey cycle will be adjusted slightly in 2012, with the launch of the next survey occurring six months earlier than in previous years. Beginning the process sooner will enable us to incorporate Member feedback into our planning sooner.

As always, our objective is to serve the Asia Pacific Internet community by not only maintaining our core business activities of delegating resources and maintaining the Whois database, but also assisting regional Internet development wherever we can. This includes having a heavy focus on training and outreach, as well as acting as an information portal on resource delegation and IPv6 deployment.

I hope you enjoy the 2011 Annual Report.



Paul Wilson
Director General

“During 2011, IPv6 took centre stage as the most critical issue facing Internet-related organizations and the wider Internet community.”



EC Chair – Maemura Akinori

It is my great honour, as Chair of the Executive Council to deliver the EC letter for the 2011 APNIC Annual Report.

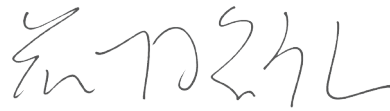
The year 2011 was a most memorable year for me. As an Internaut, especially in charge of IP address management, it is represented by the historic event of IPv4 address exhaustion. The Internet has evolved over the last thirty years, from a network that was connected only to big computers, to the infrastructure of the information society today that everyone in the world relies on. IPv4 addresses, which have been an indispensable element of the infrastructure, are finally exhausted. APNIC and the community had been preparing for this historic moment, and I think they have successfully implemented the needed changes in address policy and operations.

2011 was also memorable for the many natural disasters that occurred in our region. For example, the Brisbane floods in January, the Christchurch Earthquake in February, the Tohoku Earthquake and Tsunami in March, and floods in Myanmar and Bangkok that followed. I sincerely hope the affected people have had a good recovery. When these disasters occurred, I keenly recognized the importance of information infrastructure. In the Brisbane floods, APNIC's Business Continuity Plan worked beautifully without any major outage of services while the new office was closed. The Tohoku Earthquake brought Tokyo a tremendous outage of social infrastructure on March 11th, but the Internet just kept running. I was able to keep in touch with my family and kept receiving a lot of heartfelt words from colleagues all over the world. "Kizuna", meaning emotional ties in Japanese, is a key word that represents the importance of human relations and attention through difficult times. I am very proud that the Internet, which APNIC Members and the broader community operate, has been maintaining Kizuna among people all over the world.

2011 is noted for the big boom of smartphones. These will connect people everywhere to the Internet. The Internet will continue to grow, connecting everyone on the globe - or even everything, and I am sure IPv6 will help with that. It is obvious that APNIC will also need to grow and change to accommodate

this growth in the IPv6 era. The Executive Council is aware of this and is working on related strategic planning.

I am very happy to introduce the 2011 APNIC Annual Report. It demonstrates APNIC's healthy and steady business operations. I appreciate your continued support for APNIC, which enables it to operate successfully.



Maemura Akinori
EC Chair



“The Internet has evolved over the last thirty years, from a network that was connected only to big computers, to the infrastructure of the information society today that everyone in the world relies on.”





2011 Operational Plan

INTRODUCTION

The 2011 Annual Report discusses the four pillars of the Operational Plan. The four pillars are:

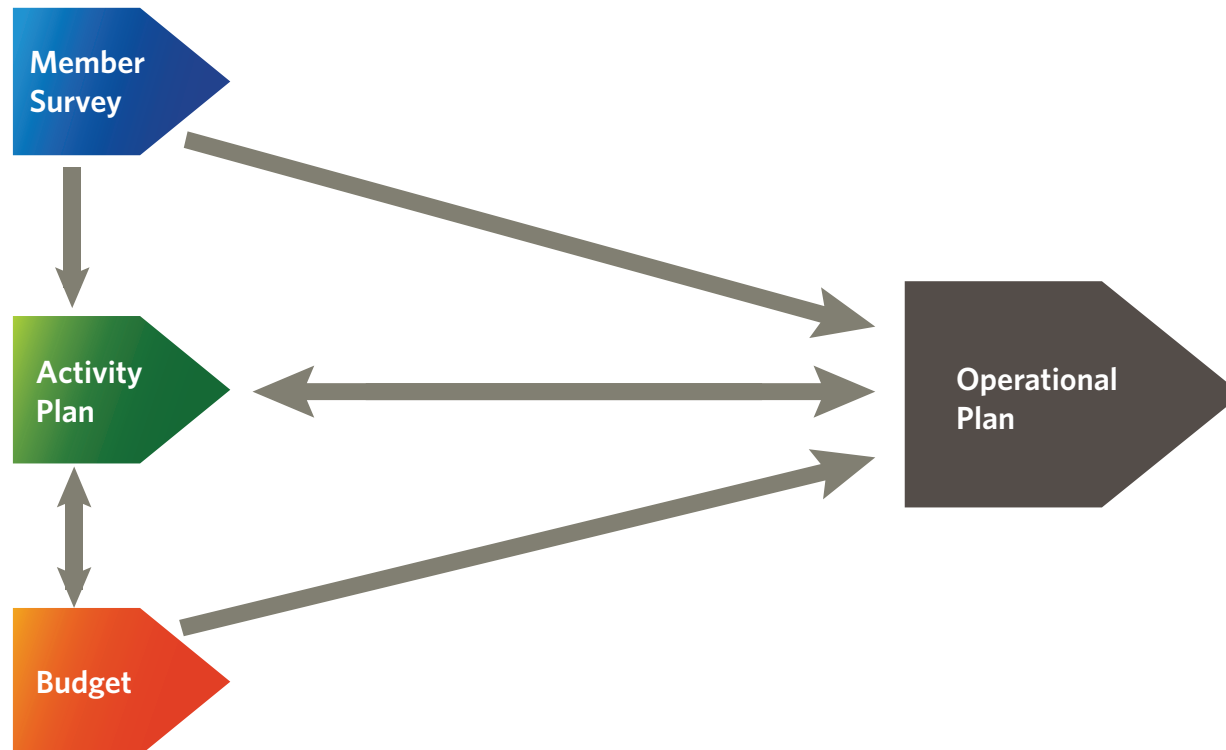
- Delivering Value
- Supporting Internet Development
- Collaborating and Communicating
- Corporate Support

The framework for the Operational Plan is based on the results of the most recent Member and Stakeholder Survey. Conducted every two years, the survey assesses

the Secretariat's performance to ensure the services and projects planned for the year are chosen and prioritized according to Members' needs.

APNIC uses these results to establish the annual budget, refine existing activities, and set organizational goals. The Operational Plan is reviewed twice a year and is adjusted to reflect changes in priority.

The 2011 Annual Report features the most important aspects of the 2011 Operational Plan and what was achieved during the year.



FOUR PILLARS OF APNIC ACTIVITIES

The four operational pillars each support a different aspect of APNIC's overall mission.

Delivering Value

The APNIC Secretariat is funded by its membership, and applies those funds in the mutual interest of all Members. The Delivering Value pillar focuses APNIC Secretariat activities on maximizing return on membership funds by continuously delivering valuable services for APNIC Members and the general stakeholders.

Supporting Internet Development

APNIC was founded on a mission to assist in development of the Asia Pacific Internet. Although the region is experiencing dramatic Internet growth, there are still many challenges. The Supporting Internet Development pillar consists of activities to help maintain the region's Internet availability, reliability, and performance during this period of growth.

Collaborating and Communicating

APNIC exists within a global community of Internet stakeholders whose openness and cooperation is critical to the success of the organization and of the Internet itself. The Collaborating and Communicating pillar focuses APNIC's efforts on outreach and representation to ensure our region's participation in various communications forums.

Corporate Support

APNIC's activities are implemented by the APNIC Secretariat. The Corporate Support pillar ensures that the Secretariat operates as an efficient and professional team with full accountability to APNIC's Members and stakeholders.



MEMBER AND STAKEHOLDER SURVEY

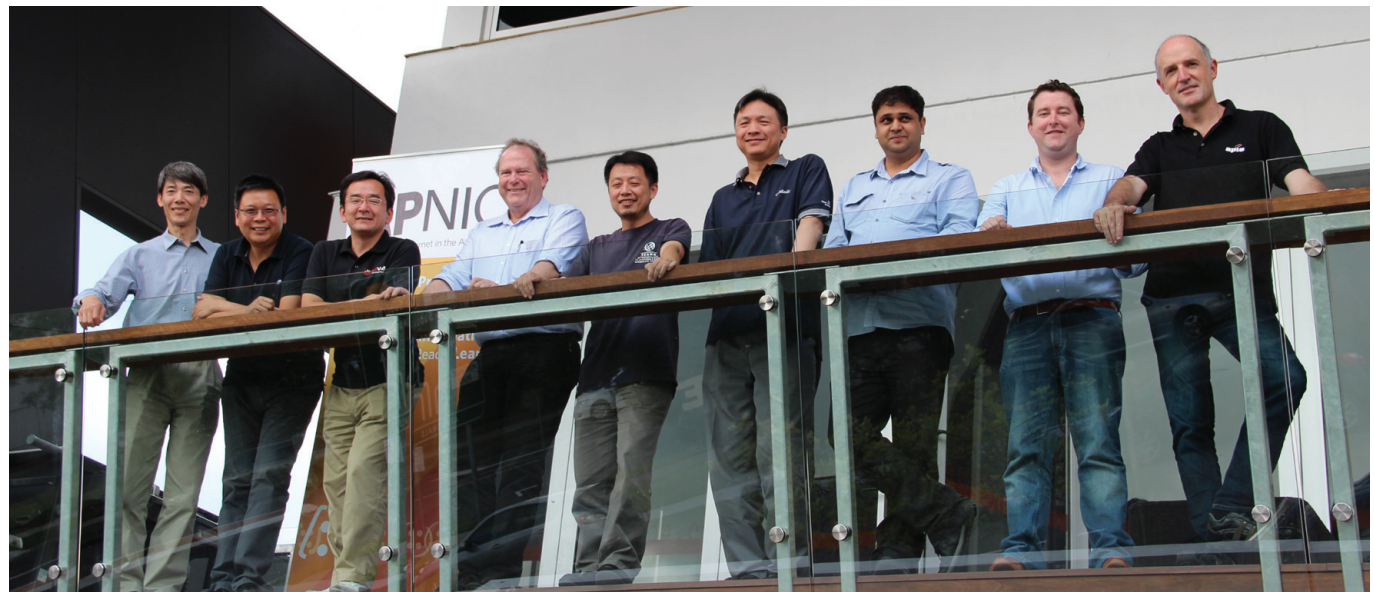
The 2011 Member and Stakeholder Survey ran from 2 to 21 November 2010.

Professor Ang Peng Hwa, of the Singapore Internet Research Centre, conducted the survey and analyzed the responses. The findings were presented at the Annual Member Meeting at APNIC 31 in Hong Kong.

The Executive Council provided the following feedback on the findings, which directly influences the 2012 operational planning of the organization:

- Strengthening Learning and Development efforts
- Continuing the focus on effective remote participation
- Additional community engagement regarding IPv4 transfers
- Focusing on APNIC's registry function
- Continuing engagement with government

"APNIC is a service organization, and provides value to a range of stakeholders according to their specific needs."



The APNIC EC, pictured with Craig Ng, General Counsel (second from left) and Geoff Huston, Chief Scientist, (fourth from left)



2011 Spotlight on IPv4

IPv4 EXHAUSTION

Stages of IPv4 Exhaustion

To ensure fairness and transparency, the APNIC Secretariat divided IPv4 Exhaustion into three distinct stages.

Stage 1: IPv4 addresses are available for delegation according to normal APNIC community policy.

Stage 2: After receiving the final /8, APNIC serializes all requests and increases the standard response time to five business days, allowing the Member Services team to cope with the increased workload.

Stage 3: The “last /8 policy” is activated, allowing each account holder to receive up to a /22 from APNIC’s last block of IPv4 addresses.

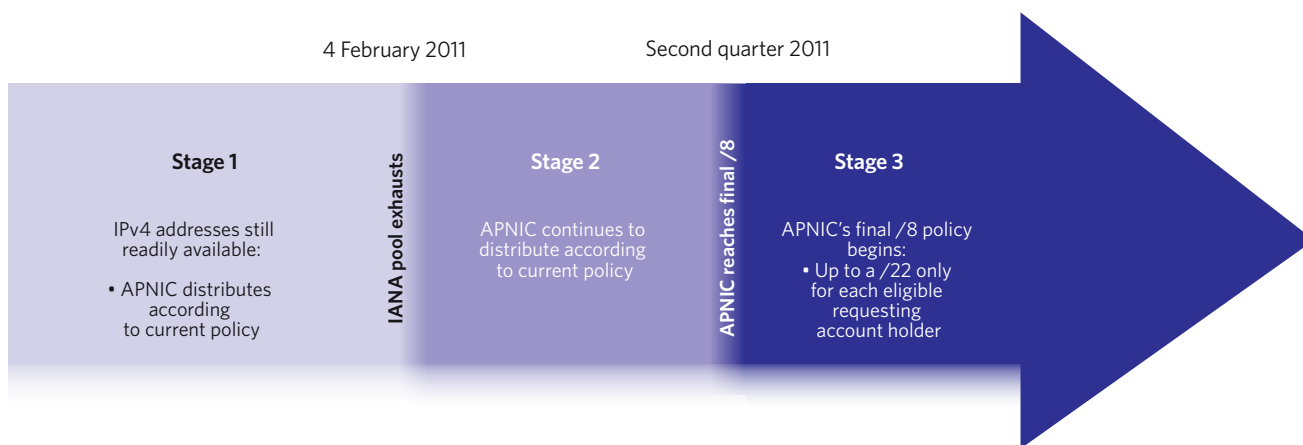
IANA and the Last Five Blocks of IPv4

In 2010, the RIR communities agreed upon a global policy to distribute IANA’s final five /8 IPv4 address blocks simultaneously among the five regions. On 4 February 2011, APNIC requested two /8 blocks of IPv4 space from IANA, as per normal procedure. This left five /8 blocks in the global IPv4 free pool, triggering the global policy to distribute the remaining IPv4 addresses from the central pool.

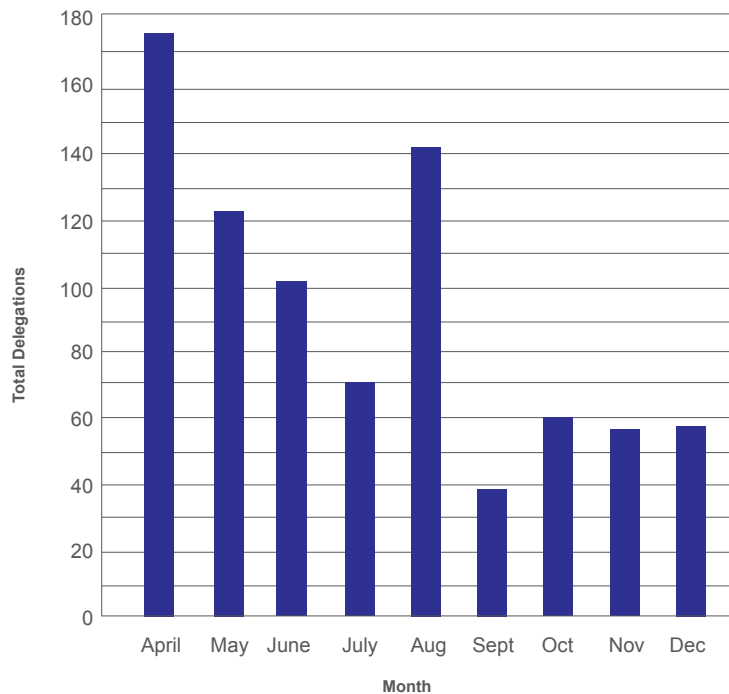
IPv4 Exhaustion Status

On 15 April 2011, APNIC made its last regular IPv4 allocation, triggering Stage 3 of IPv4 exhaustion. Regional IPv4 allocation policies have changed to extend the life of the IPv4 pool and allow new entrants to maintain a connection to legacy networks while deploying the new IPv6-based Internet.

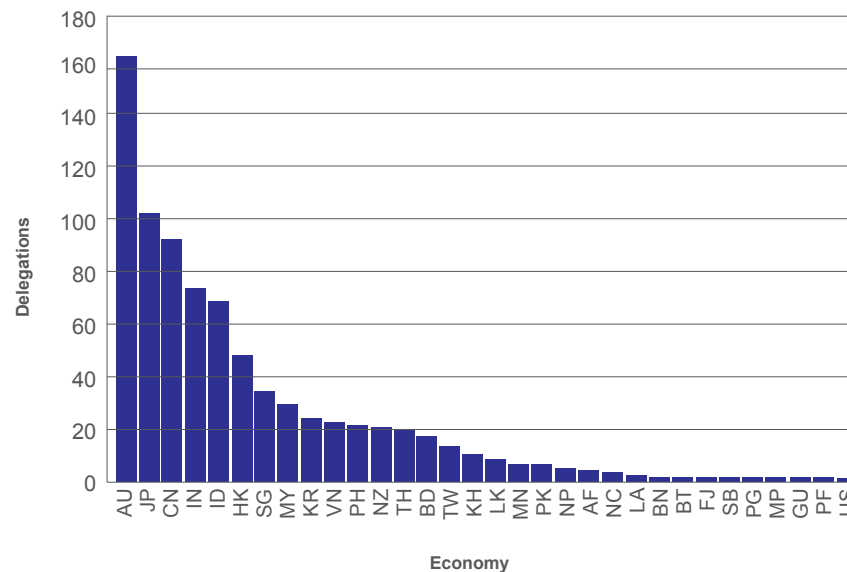
IPv4 Exhaustion Timeline



Last /8 Delegations



Last /8 Delegations by Economy (/22s)



Last /8 Delegations

After 15 April 2011, when APNIC started delegating from the last /8 block, there was an initial surge in requests, which again occurred in August. Since then, requests have been steady. These requests were predominantly from Australia, Japan, and China.

IPv6 Deployment in the Asia Pacific

APNIC IPv6 PROGRAM

A Global Vision

In 2011 the APNIC Executive Council reconfirmed APNIC's commitment to IPv6 as a critical priority. After IPv4 exhaustion, IPv6 provides the only means for the Internet to continue growing sustainably into the future, while maintaining its essential architecture as a global, neutral, end-end network.

Through the IPv6 Program, APNIC has been active in targeting IPv6 stakeholders including Members, the broader industry, Governments and others, with outreach and education activities such as:

- Sharing IPv6 deployment status information, including APNIC's efforts supporting this deployment
- Providing customized information on issues related to IPv6 deployment within local networks
- Addressing concerns and issues related to IPv6 deployment

APNIC currently hosts the Secretariat of the Asia Pacific IPv6 Task Force (APIIPv6TF), and has brought the IPv6 message to many major events and forums throughout the region.

www.apnic.net/ipv6

ORGANIZING MAJOR EVENTS

IPv6 Transition Conference: Final Countdown to IPv4 Exhaustion in 2011

APRICOT-APAN 2011, Hong Kong

A full-day of IPv6 implementation content was organized as part of APRICOT-APAN 2011, Hong Kong. The program featured experts such as Erik Kline (Google), Donn Lee (Facebook), and Jason Fesler (Yahoo!).

www.apricot.net/apricot2011/program/ipv6-trans-conf

IPv6 Transition Plenary: Lessons from the IPv6 Test Flight

APNIC 32, Busan, South Korea

During this session, APNIC Chief Scientist Geoff Huston covered the findings from World IPv6 Day, including other data APNIC Labs collected on global IPv6 client readiness.

meetings.apnic.net/32/program/ipv6

The Need for IPv6 Deployment in the Domain Business

ICANN 41, Singapore

This session was a collaboration with IANA and ICANN to put IPv6 transition into a business context. The presenters included Martin J Levy (Hurricane Electric), Hideo Ishii (PacNet), Joe Waldron (Verisign), and Mun-Yueon Leong (iDA of Singapore).

singapore41.icann.org/node/24605

Supporting Regional Activities

The APNIC IPv6 Program organized sessions at the following events. Speakers shared their deployment experiences and delivered updates on the progress of regional IPv6 deployment.

- **Pacific Telecommunications Council (PTC)**
Hawaii, January 2011
Round Table discussion: Transition to IPv6
- Expanding the Internet
- **Philippines IPv6 Conference**
Manila, 24 January 2011
- **China IPv6 Summit**
Beijing, April 2011
- **IPv6 Workshop**
Collaboration with ITU Asia-Pacific Centre of Excellence and TOT (Thailand),
July 2011
- **Asia Pacific Top Level Domain (APTLD)**
Busan, South Korea, September 2011
- **Australia IPv6 Summit**
Melbourne, October 2011
- **China Mobile MIRACLE 2011**
Beijing, November 2011
- **Singapore iDA IPv6 Executive Briefing**
Singapore, 17 November 2011
- **Taiwan IPv6 Summit**
Taipei, November 2011

Miwa Fujii at APEC TEL 43 Hangzhou, China



Joint Activities with Inter-Governmental Organizations

The IPv6 Program also participated in joint sessions with policymakers and regulators to build awareness and support the industry with IPv6 deployment.

- **11th APT Policy and Regulator Forum**
Hanoi, Vietnam
- **APEC TEL 43**
Hangzhou, China
- **APEC TEL 44**
Kuala Lumpur, Malaysia
- **Policy and Regulations Forum for the Pacific**
Nadi, Fiji
- **Pacific Telecommunications Council (PTC)**
Hawaii, USA
- **Pacific, Island ICT Ministerial Meeting**
Nouméa, New Caledonia

Engagement with Government Organizations

The IPv6 Program worked with other APNIC teams such as Liaison officers, Learning and Development, and Public Affairs to reach out to individual governments in the Asia Pacific region.

- **Hong Kong Office of the Government Chief Information Officer (OGICO)**
Hong Kong
- **China Ministry of Industry and Information Technology of the People's Republic of China (MIIT)**
China
- **Singapore iDA Government CIO Wing (GCIO) and Technology and Planning Group (TEPL)**
Singapore

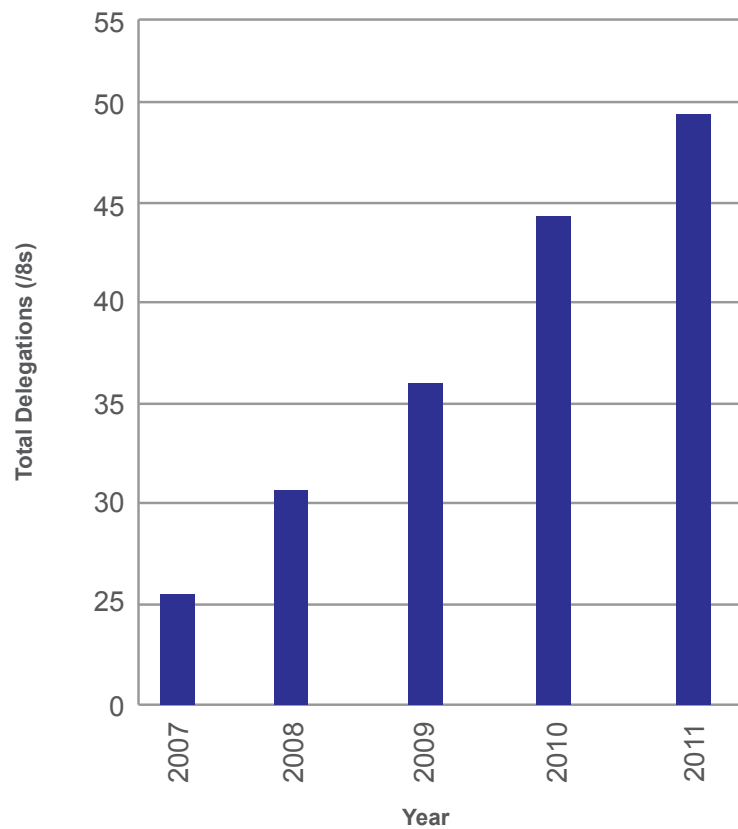
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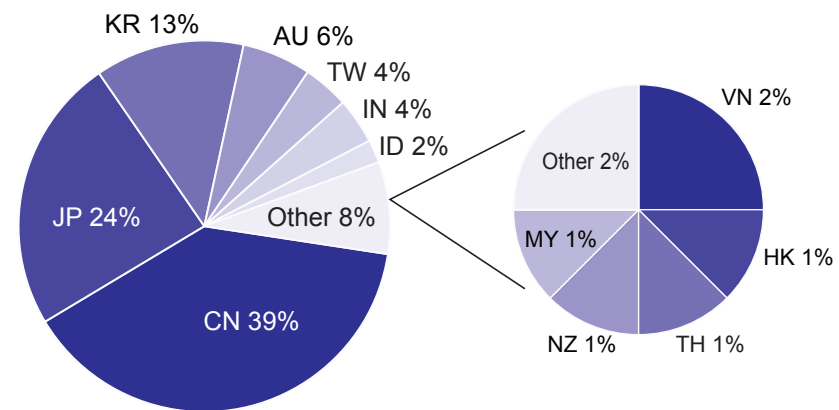
Statistics

IPv4

Total IPv4 Delegations
(Cumulative, Pre-exhaustion)



IPv4 Distribution by Economy

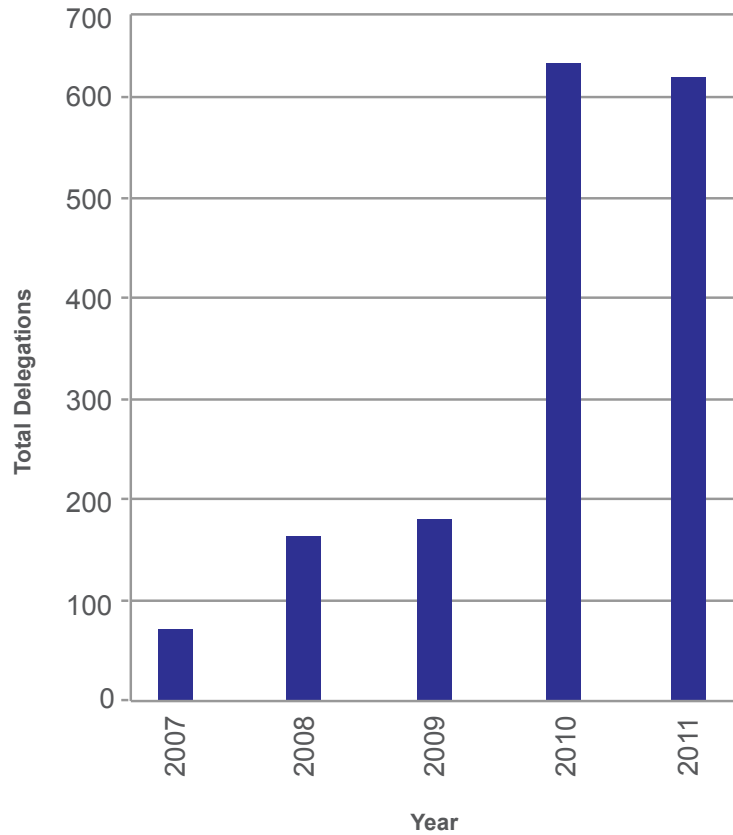


Before reaching the final /8 IPv4 address block on 15 April 2011, IPv4 delegations rose steadily from 2010 to 2011, from 44.27 to 49.25 /8s. China and Japan still dominated in terms of distribution by economy with 39% and 24% respectively.

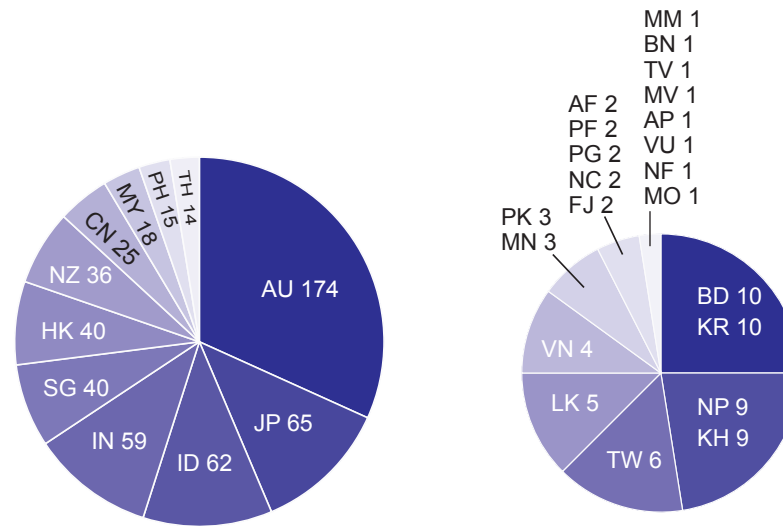
Statistics

IPv6

Total IPv6 Delegations by Year



Number of IPv6 Delegations by Economy

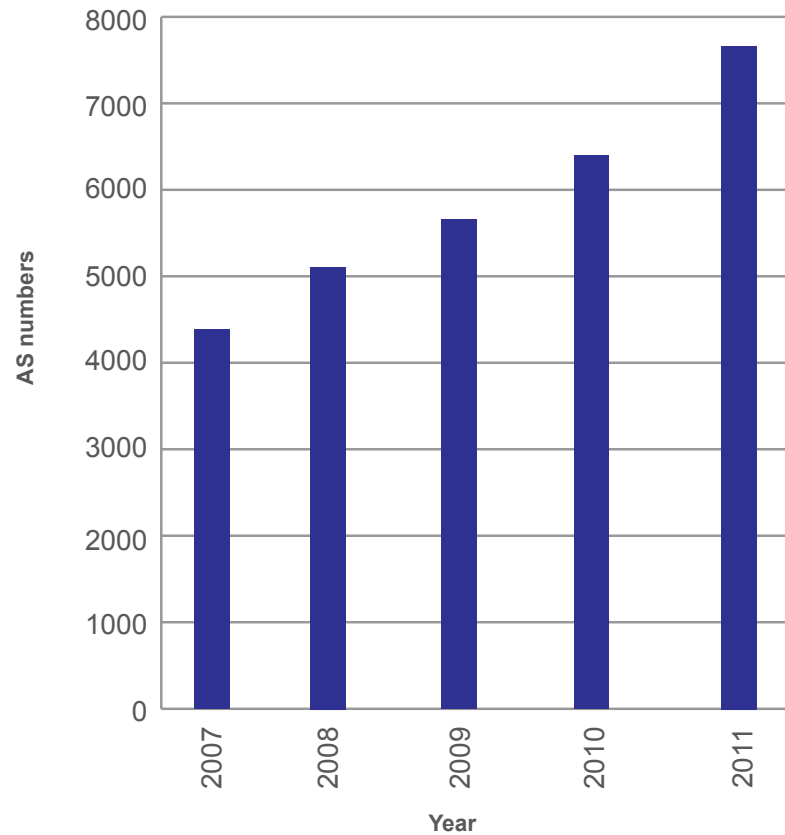


IPv6 delegations remained steady in 2011, fuelled by IPv4 exhaustion in the Asia Pacific and the continued strong response to APNIC's "Kickstart IPv6" campaign. IPv6 uptake is increasing in many economies, with several developing economies with low penetration rates, such as the Pacific Islands, taking steps to deploy IPv6.

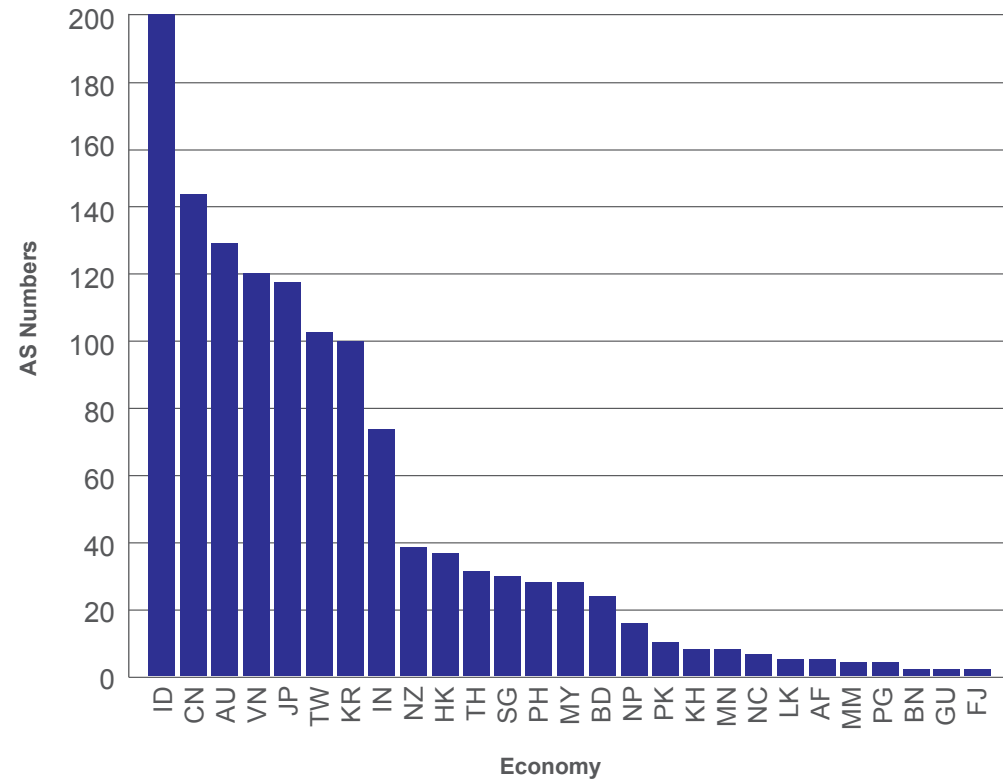
Statistics

ASNs

Total AS Numbers Assigned (Cumulative)



Total AS Numbers Assigned in 2011 (by Economy)

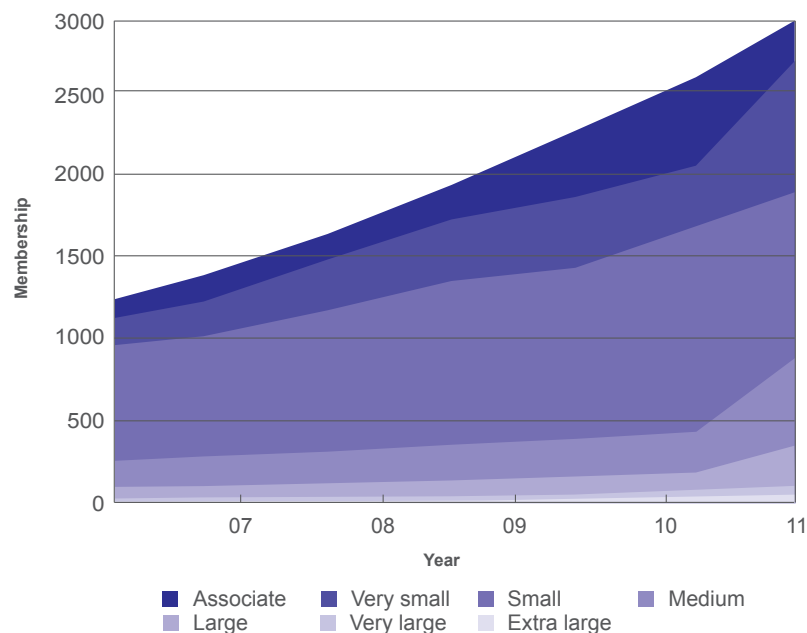


Autonomous System (AS) number growth has remained steady during the past year, with APNIC assigning 1,140 in 2011.

Global assignments of AS numbers also remain steady, at around 5,000 per year.

Statistics

MEMBERSHIP



APNIC Membership has grown steadily over the last five years with an increase of 4.29% from 2010 to 2011.

MyAPNIC

Registered visitors: 4698

Returned: 2468

New visitors: 2045

Member Services

Number of:

Helpdesk chat requests: 1770

Helpdesk tickets received: 12625

Administration tickets resolved: 3302

New member accounts established: 524

Member Statistics

2010

Extra Large: 11

Very Large: 33

Large: 136

Medium: 328

Small: 874

Very Small: 651

Associate: 485

TOTAL: 2518

Non-member accounts: 751

2011

Extra Large: 21

Very Large: 41

Large: 145

Medium: 378

Small: 970

Very Small: 817

Associate: 575

TOTAL: 2947

Non-member accounts: 741

CONFERENCES

APNIC 31 and APRICOT

Total delegates: 476

Delegates at APNIC Member Meeting: 208

Economies represented: 48

APNIC Member organizations represented: 160

APNIC 32

Total delegates: 244

Delegates at APNIC Member Meeting: 213

Economies represented: 35

APNIC Member organizations represented: 62

Remote Participation Events at APNIC 31 and 32

Port Moresby, PNG: 21

Jakarta, Indonesia: 11

Phnom Penh, Cambodia: 25

APNIC's two Conferences in 2011 were well attended and focussed on regional IPv6 deployment strategies. In particular, at APNIC 32 in Busan, South Korea, one full day was dedicated to IPv6 Transition, with industry experts providing real-world deployment information.



Delivering Value

REVERSE DNS TRANSITION

In early 2011, under an agreement with APNIC and the other RIRs, the Internet Corporation for Assigned Names and Numbers (ICANN) began technical management of the in-addr.arpa zone data. Immediately upon transfer, the zone was signed using Domain Name Security Extensions (DNSSEC), providing end-users with the ability to validate answers to reverse DNS queries. The in-addr.arpa zone was also migrated from 12 root servers to dedicated name servers operated by the RIRs and one operated by ICANN. APNIC operates the following nameservers in the region:

- e.in-addr-servers.arpa
- e.ip6-servers.arpa

in-addr-transition.icann.org

SUBMITTED DELEGATION SIGNER (DS) RECORDS TO IANA

On 3 May 2011, APNIC submitted regional delegation signer (DS) records to IANA, as part of the DNS Security (DNSSEC) Road Map. This extends DNSSEC validation chains down to APNIC's zones.

DNSSEC IMPLEMENTATION COMPLETE

The APNIC Secretariat has finalized the reverse DNS Security (DNSSEC) implementation, completing Phase 3 during 2011. APNIC Members can now digitally sign their DNS records, and by using Delegation Signer

(DS) records submitted through MyAPNIC, enable third parties to verify the records.

www.apnic.net/dnssec

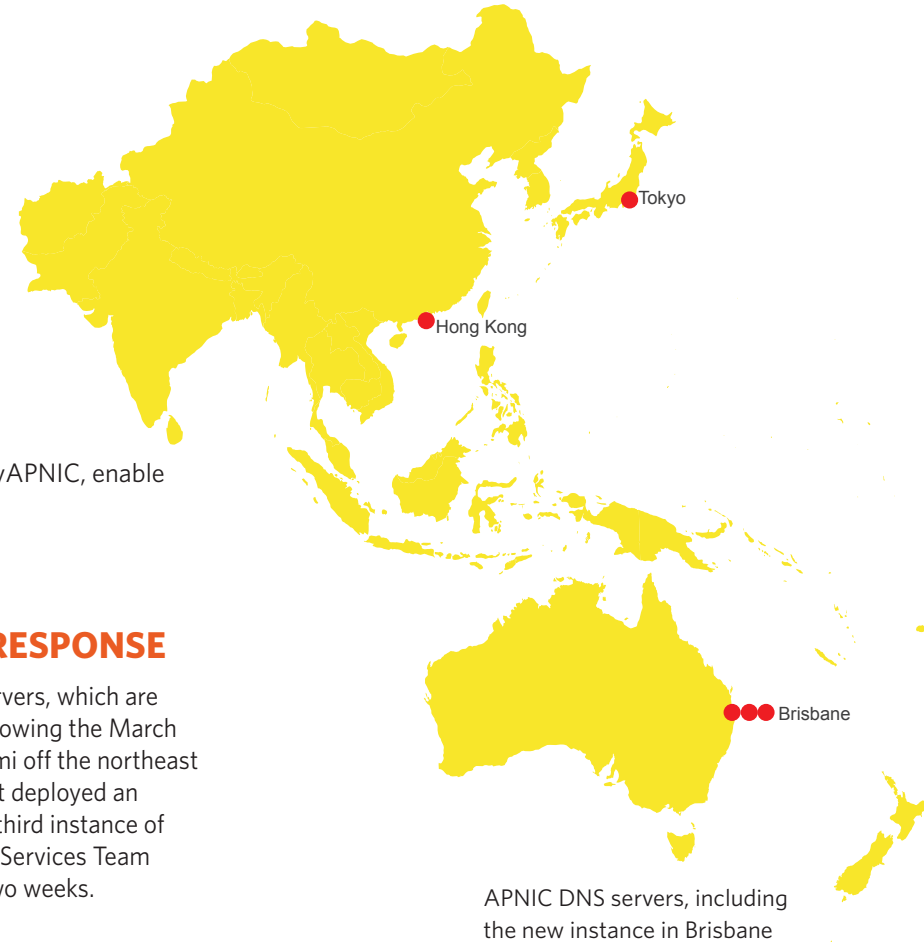
JAPAN EARTHQUAKE RESPONSE

APNIC operates two reverse DNS servers, which are located in Hong Kong and Tokyo. Following the March 2011 earthquake and resulting tsunami off the northeast coast of Japan, the APNIC Secretariat deployed an anycast node in Brisbane, creating a third instance of the server. The APNIC Infrastructure Services Team completed this project in less than two weeks.

HIGH AVAILABILITY AND REDUNDANCY

In 2010, the APNIC Secretariat acquired a third data co-location (co-lo) facility in Brisbane. The third co-lo kept all APNIC Services operational during the office relocation in late 2010.

In 2011, the APNIC Infrastructure Services Team deployed load balancers between the three Australian facilities to enable full effective use of the third co-lo facility, improving the reliability and redundancy of all APNIC Services.



APNIC DNS servers, including the new instance in Brisbane

RESOURCE QUALITY ASSURANCE

The APNIC Resource Quality Assurance (RQA) program was established to evaluate the usability of IPv4 addresses before being delegated from the APNIC free pool. Since 2010, RQA has focused on managing network abuse in the region and promoting responsible filtering. The RQA project conducts comprehensive reachability testing on address space before distribution.

To promote responsible address filtering, APNIC held two Birds of a Feather (BoF) sessions at APNIC 31 and APNIC 32. The discussions in these sessions focused on:

- Minimizing routability problems
- Reachability testing designed by R&D to identify problems
- Quarterly testing of all quarantined blocks
- Keeping ACLs and filters updated

www.apnic.net/rqa



Join the BoF to talk about
RQA

www.apnic.net/rqa

“Since 2010, the Resource Quality Assurance (RQA) program has worked with the Asia Pacific Internet Community to manage network abuse in the region.”

APNIC TRAINING

During 2011, APNIC established the new Learning and Development Area, and recruited Dr Philip Smith as its Director. The training team is now part of this Area and continues its focus on training activities, in particular, IPv6 deployment.

Training Courses Offered

APNIC provides training in a number of areas. Members can select face-to-face and eLearning courses. Face-to-Face courses include:

- Routing
- DNS
- Internet Resource Management (IRM)
- Internet Technologies
- Network Security

IPv6 Training

APNIC also offers specific IPv6 courses:

- IPv6 Workshop: A two-day course with hands-on exercises
- IPv6 Tutorial: A full-day APNIC Conference Tutorial

eLearning Interactive

APNIC eLearning delivers live Training sessions online through the WebEx platform. Three one-hour courses are delivered to three time zones fortnightly, targeting the South Asia, Southeast Asia, and Pacific/Oceania sub-regions.

APNIC conducts 14 courses, including the following IPv6 courses:

- IPv6 overview
- IPv6 addressing and subnetting
- IPv4 to IPv6 transition

Training Lab Infrastructure Upgraded

The IPv6 Lab gives participants hands-on experience building full IPv6 core, edge, and access networks. The sample topology allows for the configuration of an ISP with multiple operating regions across the economy.

The IPv6 Lab now supports 4-Byte AS Numbers and serves as an environment for other test scenarios.

Face-to-Face Training

Number of courses conducted: 67

Number of locations (cities): 36

Number of economies visited: 23

Total number of participants: 1813

eLearning

Number of courses: 76

Total number of participants: 786

IPv6 training

Number of locations: 27

Number of economies: 20

Total number of participants: 1147

Customized Training

APNIC now offers customized training for individual Members on a cost-recovery basis. This will enable Members to select training modules based on the regular content that APNIC provides.

Post-Training Member Support

APNIC also plans to offer post-training guidance to Members, on a cost-recovery basis, and following current best practices.

IPv6 Training Collaboration

APNIC Training continues to form partnerships with individuals and organizations to promote regional infrastructure development and provide mutual assistance. Partners include:

- Internet Education and Research Laboratory
- Team Cymru Research
- Australian Computer Emergency Response Team
- Universiti Sains Malaysia

6deploy assisted with the following IPv6 training courses:

- Vientiane, Laos, 25-26 August 2011
- Busan, South Korea, 28 August 2011

www.apnic.net/training





“Each APNIC Conference has remote locations, facilitated by the APNIC Training team, to encourage more participation in policy development and training sessions.”

ENCOURAGING OPEN PARTICIPATION

APNIC supports remote participation alternatives for events held across the region throughout the year, including APNIC Conferences.

Each APNIC Conference has remote locations, facilitated by the APNIC Training team, to encourage more participation in policy development and training sessions.

Remote Participation

APNIC 31, Hong Kong

Port Moresby, PNG: 21

Jakarta, Indonesia: 11

Total online remote participants: 353

APNIC 32, Busan

Phnom Penh, Cambodia: 25

Total online remote participants: 506

Remote Support

In September 2011, APNIC also sponsored a remote hub for the Internet Governance Forum (IGF) in Nairobi.

2011 IGF in Nairobi, Kenya

University of the South Pacific

Suva, Fiji

Total participants: 18



Supporting Internet Development

2011 POLICY OUTCOMES

APNIC implemented the following policy proposals in 2011, after they reached consensus under the Policy Development Process.

prop-096: Maintaining demonstrated needs requirement in transfer policy after the final /8 phase

This proposal maintains the requirement for recipients of IPv4 transfers to justify their need for address space beyond the current allocation phase and into the final /8 phase.

prop-095: Inter-RIR IPv4 address transfer proposal

This proposal allows and defines a mechanism for the transfer of IPv4 address space between APNIC account holders and organizations in other RIR region(s), providing that the counterpart RIR has a policy that allows transfers of address space with APNIC account holders.

prop-094: Removing renumbering requirement from final /8 policy

This proposal removes the criteria for the requirement that organizations receiving their initial allocation from APNIC renumber out of their previously deployed space when they are allocated addresses under the final /8 policy.

prop-093: Reducing the minimum delegation size for the final /8 policy

This proposal changes the minimum size of IPv4 delegations to a /24 when the final /8 policy was activated.

prop-088: Distribution of IPv4 addresses once the final /8 period starts

This proposal handles any IPv4 address space received by APNIC after the final /8 policy is implemented as being part of the final /8 pool and to redistribute these resources according to the final /8 policies.

prop-083: Alternative criteria for subsequent IPv6 allocations

This proposal enables current APNIC account holders with existing IPv6 allocations to receive subsequent IPv6 allocations from APNIC for use in networks that are not connected to the initial IPv6 allocation.

www.apnic.net/policy

Global Policy Outcomes

Pending the remaining steps in the Global Policy Process, the APNIC community adopted prop-097: Global policy for post exhaustion IPv4 allocation mechanisms by IANA. This proposal describes the process IANA will follow to allocate IPv4 resources to RIRs now that the central pool of addresses is exhausted.

In November 2011, APNIC abandoned prop-069: Allocation of IPv4 Blocks to Regional Internet Registries after it failed to reach global consensus.

www.apnic.net/policy

Proposals Under Discussion

prop-099: IPv6 Reservation for Large Networks

prop-098: Optimizing IPv6 allocation strategies (simplified)

prop-100: National IP Address Plan - Allocation of country-wide IP address blocks

Proposals Abandoned in 2011

prop-092: Distribution of additional APNIC IPv4 address ranges after IANA exhaustion

prop-091: Limiting of final /8 policy to specific /9

prop-090: Optimizing IPv6 Allocation Strategies

prop-089: Additional criterion for final /8 allocations (and assignments)

prop-087: IPv6 address allocation for deployment purposes

prop-086: Global Policy for IPv4 Allocations by the IANA Post Exhaustion

prop-085: Eligibility for critical infrastructure assignments from the final /8

prop-084: Frequent whois information update request



R&D: APNIC LABS

This year, the APNIC Research and Development team launched APNIC Labs, under the direction of APNIC Chief Scientist, Geoff Huston.

In 2011, APNIC Labs focused on taking the following global measurements:

- Border Gateway Protocol (BGP)
- IPv4 exhaustion
- Long-term IPv6 trends

The APNIC Technical Area supported these projects by providing software solutions which allow website operators to use Google Analytics to monitor their own client-based capabilities and track IPv6 and dual-stack capabilities. Website operators can also contribute measurement data from their respective audiences, thereby expanding the collection of data as an ongoing experiment.

labs.apnic.net

INDIA NATIONAL INTERNET REGISTRY

Plans for the establishment of an NIR in India, hosted by the National Internet Exchange of India (NIXI) continued during 2011, with a focus on preparing NIXI for the duties of managing a registry.

Two three-week training programs were held in the APNIC offices in Brisbane, and provided at no cost. The first session introduced NIXI staff members to the operations of an Internet Registry, and the second session was an in-depth training for NIXI Hostmasters.

In July, APNIC received a high-level delegation of NIXI members and senior officials from the Indian Ministry of Communications and Technology. During this visit, the APNIC Secretariat agreed to further support NIXI with training and provide some operational support for the NIR.

TECHNICAL FORUMS

APNIC regularly presents and contributes to technical forums such as the Internet Engineering Task Force (IETF), Global and Regional INET conferences, and Network Operator Group (NOG) meetings. As a result of this participation, outcomes and other relevant information from these meetings can then be shared with the Asia Pacific Internet Community.





ROOT SERVER DEPLOYMENT

During 2011, APNIC carried out hardware upgrades on existing I and F root nameservers throughout the region.

APNIC helped launch two additional instances in 2011:

- Bhutan
 - Operator: I-root
 - Local host: Bhutan Telecom (BT)
 - Location: Thimphu
 - Status: Operational since April 2011
- Mongolia
 - Operator: F-root
 - Local host: ICTPA & Mobinet
 - Location: Ulaanbaatar
 - Status: Operational since August 2011



INFORMATION SOCIETY INNOVATION FUND AWARD 2011

The ISIF Award 2011 was a celebration of the Internet as a social and economic development tool. The ISIF Secretariat received 47 nominations from across the region, and four winning projects were presented at the 2011 Internet Governance Forum (IGF) in Nairobi, Kenya.

The winners showcased innovative ICT solutions in the following categories:

- Rights and freedom (Cambodian Human Rights Portal)
- Localization and capacity building (Internet Niue)
- Innovation on access provision (Dili Village Telco)
- Mobile services and applications (Interactive Guidelines for quality rural health care)

www.isif.asia/award

Innovation Alliance

A new alliance for Internet development and digital Innovation, the Seed Alliance, has been established between APNIC, LACNIC, and AfriNIC, with a AUD 1.3 million grant from the International Development Research Centre (IDRC).

This collaborative effort will provide assistance to small grants and awards programs conducted by the three RIRs involved in the partnership, ISIF (APNIC), FRIDA (LACNIC), and FIRE (AfriNIC).





Collaborating and Communicating

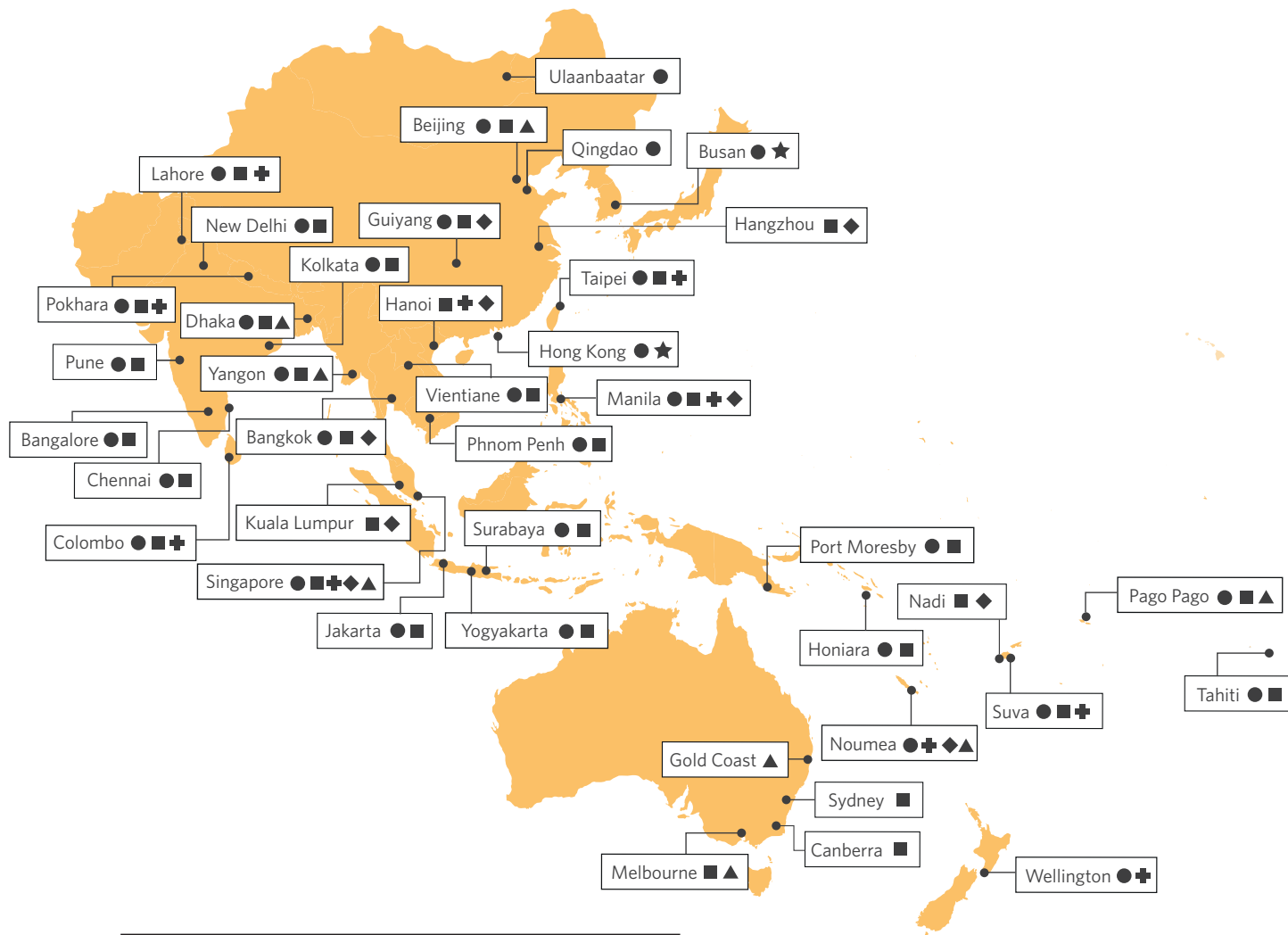
During 2011, APNIC continued engaging and expanding its presence within the Asia Pacific Internet community. Much of APNIC's outreach activity focussed on IPv6 deployment.

APNIC LIAISON NETWORK

A team of APNIC staff members has been selected for language skills and job roles to be especially active in specific areas of the region. Liaison Officers form strong relationships within their allocated communities by attending events and acting as a personal point of contact.

Liaison Officers regularly attend the following events to participate and represent APNIC:

- Network Operator Group (NOG) meetings
- IPv6 Summits in their sub-region
- National Internet Registry (NIR) meetings
- Intergovernmental forums



★	APNIC CONFERENCES
●	TRAINING FACE TO FACE
■	IPv6 CONFERENCES & WORKSHOPS
+	NOGs AND OPMs
◆	GOVERNMENTAL & INTERNET GOVERNANCE
▲	OTHER MEETINGS

Activities across the region

SUPPORTING THE INTERNET ECOSYSTEM

APNIC supports the functioning of the global Internet through its services in the Asia Pacific region, and also via participation in a global network of technical organizations. This ecosystem oversees the stability, interoperability, and growth of the global Internet.

APNIC coordinates with other influential groups, both as a single body and as part of the NRO. APNIC Representatives often participate in person, but also by actively engaging via frequent teleconferences and mailing lists.

Leading Internet Organizations

The I* group comprises key participants from bodies such as the Internet Society (ISOC), ICANN, World Wide Web Consortium (W3C), the IETF, the Internet Architecture Board (IAB) and the five RIRs.

During 2011, the I* group met twice in Miami, USA to discuss current topics related to the security and stability of the Internet, including:

- IPv6 deployment in 2012
- The value of the current multi-stakeholder model
- The importance of open standards as the basis of the Internet's global structure

Number Resource Organization

APNIC regularly collaborates with the other four RIRs as part of the Number Resource Organization (NRO) on joint technical projects, information sharing, and policy coordination. These joint efforts have played a key role in the evolution of the Internet.

An example of this joint collaboration was the coordination and communication of the last /8 of IPv4 address space allocation by IANA to the RIRs.

APNIC also contributed to an NRO correspondence with ICANN and the National Telecommunications and Information Infrastructure (NTIA) of the United States Government about the renewal of the IANA contract, currently assigned to ICANN.

In August 2011, the NRO created a Public Affairs Coordination Group (PACG) to coordinate NRO representation and participation in intergovernmental forums.

In 2012, APNIC will serve as the NRO Secretariat, and will contribute further to NRO joint activities.

OECD and ITAC

Through the NRO, APNIC is a founding member of the Internet Technical Advisory Committee (ITAC), which is a global coalition of organizations invited by the Organisation for Economic Co-Operation and Development (OECD) to provide input on Internet-related issues.

In June 2011, APNIC's Director General and Chief Scientist attended the OECD meeting in Paris, as part of the ITAC delegation. These discussions aimed to build upon a previous ministerial meeting held in Seoul in 2008. Major themes at this meeting included the success of multi-stakeholderism, the future of network infrastructure, security, and IPv6 deployment.



Paul Wilson with Dr Jimmie Rodgers, Director General, Secretariat of the Pacific Community (SPC)

Internet Governance Forum

As part of the NRO, APNIC has supported the continuation of the Internet Governance Forum (IGF). The IGF is a venue where the views of relevant stakeholders can be discussed in an open, transparent, and non-decision-making environment. In 2011, APNIC supported and participated in two regional IGF events in the region.

In April 2011, APNIC participated in the inaugural Pacific IGF (PaIGF) in Noumea, New Caledonia as a major sponsor. A Cooperation Agreement between APNIC and the Secretariat of the Pacific community (SPC) was later signed, and provides an opportunity to support Internet development activities in the Pacific Islands.

In June 2011, APNIC participated in the Asia Pacific Regional IGF (APrIGF) in Singapore, contributing to the following program sessions:

- **IPv6: How ready is Asia for this critical resource**
- **Review of the IANA function**
- **International Law Enforcement**



Meeting with ITU Secretary-General, Dr. Hamadoun Touré, in Singapore, June 2011

ITU COLLABORATION

APNIC became one of the first Internet organizations to join the International Telecommunications Union (ITU) as a Sector member in early 2003. Since then, APNIC has maintained ongoing dialogue with the ITU on issues ranging from the evolution of Internet governance to IPv6 deployment.

In particular, APNIC has collaborated with the ITU on IPv6 deployment issues, attending ITU IPv6 Group meetings as part of the NRO.

APNIC is optimistic about the increased collaboration between the ITU and the global Internet community, particularly following the ITU Plenipotentiary Conference in late 2010. This interaction opened a clear path for the ITU to collaborate with the global Internet community.

In June 2011, APNIC Director General Paul Wilson met with the Secretary-General of the ITU, Dr Hamadoun Touré and Dr Eun-Jun Kim, Director of the ITU Regional Office for Asia and the Pacific. This meeting reinforced goodwill and prospective joint activities on capacity building and IPv6 deployment.

Asia Pacific Telecommunity

The Asia Pacific Telecommunity (APT) is an ICT intergovernmental organization representing 38 economies in the region. As part of its activities, government officials meet to consolidate contributions from the Asia Pacific community on ITU World Conferences, such as the upcoming World Conference on International Telecommunications (WCIT).

APNIC was invited to participate as an expert in several APT workshops, including a meeting on e-Applications/e-Government and a Cybersecurity Forum. In these meetings, APNIC delivered presentations about how these topics relate to IPv6 deployment.

APNIC has also collaborated with the Policy and Regulatory Forum (PRF). The PRF is an APT event, attended by government ministries and regulatory authorities from the Asia Pacific to address key regulatory and policy issues.



“This year, APNIC updated its corporate identity to reflect the rapid growth of the Asia Pacific and its rich diversity.”

Corporate **Support**

NEW CORPORATE IDENTITY

This year APNIC updated its corporate identity to reflect the rapid growth of the Asia Pacific and its rich diversity. The suite of icons places an illustrative emphasis on the importance of IPv6 deployment.

www.apnic.net/logo

CONTENT MANAGEMENT SYSTEM

The APNIC Secretariat manages several public websites, including apnic.net and related event websites such as the APNIC and APRICOT conference sites. The Secretariat provides this service to other regional organizations as a contribution to Internet development events such as the Pacific IGF.

During 2011, the Publications Team has streamlined processes for updating APNIC's websites, via the APNIC CMS. These new workflow systems allow content specialists to update the website in accordance with APNIC editorial policy.

INSURANCE REVIEW

During 2011, the APNIC EC requested a routine review of APNIC's insurances. This review involved an assessment of APNIC's risk exposures and resulted in the development of a new risk register that will be reviewed annually. Key recommendations will be incorporated in the 2012 insurance renewal process.

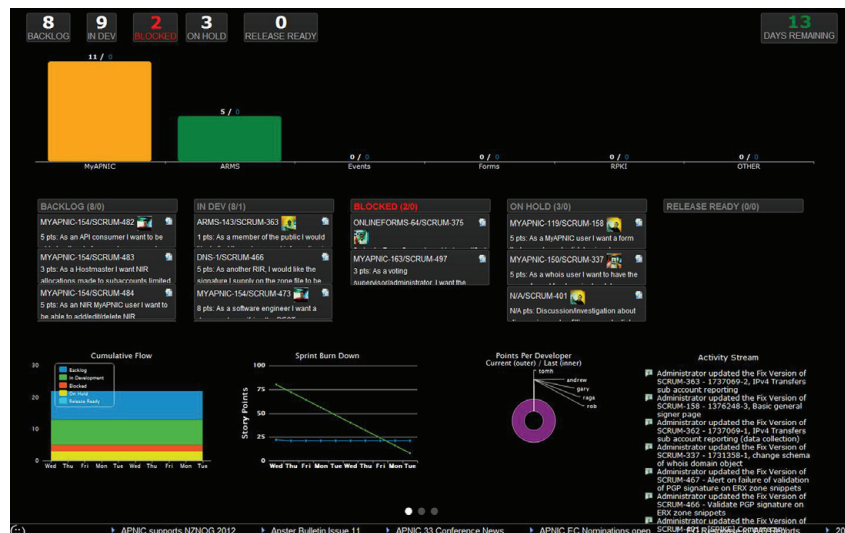
APNIC OFFICE

The APNIC Secretariat relocated to its new premises in December 2010, completing the final stages of refurbishment in early 2011. The new layout and facilities have proved very effective in improving collaboration across the organization.

The office refurbishment was completed within the project deadline and was within budget. As a result of this project, APNIC has a new facility that has the capacity to support the operation into the future while maintaining a stable cost base for its facilities.

AGILE METHODOLOGY ADOPTED

The APNIC Software Team has integrated Agile methodology into regular procedures, providing a collaborative and responsive process for taking software projects from inception to deployment. Agile development at APNIC focuses around two-week “sprints”, where work is broken up into increments called “stories”. It allows the software team to be more flexible and adaptable in their approach to projects, and consequently more productive.



Agile system status screen

“A key part of the Business Continuity Planning project was to provide redundancy for APNIC’s critical services, and continuity of staff duties.”

BUSINESS CONTINUITY PLANNING

In January 2011, Southeast Queensland experienced severe flooding that affected many local businesses. The APNIC Business Continuity Plan (BCP) was activated during this period, giving the BCP team an opportunity to test their procedures as a potential disaster unfolded.

The BCP response to the event proved to be robust and effective. It demonstrated the value of ongoing scenario testing and the importance of maintaining up-to-date documentation. A key part of this project was to provide redundancy for APNIC’s critical services, and continuity of staff duties. The successful management of this event ensured that the BCP approach will be considered in all future APNIC decisions.

ERM SYSTEM SEARCH

APNIC has undergone a rigorous process to select a new Enterprise Resource Management (ERM) solution to meet the financial and related administrative requirements of the Secretariat. Utilizing the Agile methodology framework, key staff guided the project from requirements analysis through to selection of the chosen “Netsuite” solution. This project will significantly reduce the amount of systems, integrate more effectively with APNIC’s core systems, and automate a large number of manual processes.

This new solution provides automated workflows, real-time reporting, and comprehensive audit trails enabling management to more effectively manage and control APNIC’s resources. It also enables APNIC to add more functionality as organizational requirements change.

The roadmap for this project initially includes the financial systems, with implementation for other APNIC systems scheduled for 2012.

PEOPLE AND CULTURE

During 2011 APNIC continued its focus on employing staff from within the Asia Pacific region wherever possible, to best represent our Members. APNIC Secretariat personnel represent 28 economies, predominantly within the Asia Pacific region. APNIC staff members speak a combined total of 30 languages.

Staff training and development continued to focus on customer service, particularly with the commencement of the last /8 project. APNIC provided a wide range of external and in-house courses ranging from communications and business skills to hands-on technical training and study support for relevant post-graduate education.



Financials

Balance sheet

	2011 (AU\$)	2010 (AU\$)	% change from 2010
Current assets			
Cash	9,048,267	5,886,958	54%
Restricted cash – ISIF grant program	0	66,891	-100%
Receivables	1,077,330	878,766	23%
Others	604,932	838,841	-28%
Others	838,841	819,017	2%
Total current assets	10,730,529	7,671,456	40%
Non-current assets			
Other financial assets	986,921	1,137,515	-13%
Property, plant and equipment	8,436,968	8,390,656	1%
Deferred tax assets	60,985	0	0%
Total non-current assets	9,484,874	9,528,171	0%
Total assets	20,215,403	17,199,627	18%
Liabilities			
Payables	445,677	416,262	7%
Provisions	975,599	1,219,123	-20%
Unearned revenue	7,171,080	6,074,216	18%
Total liabilities	8,592,356	7,709,601	11%
Non-current liabilities			
Deferred tax liabilities	0	13,089	-100%
Provisions	215,149	461,440	-53%
Total non-current liabilities	215,149	474,529	-55%
Equity			
Share capital	1	1.00	0%
Reserves	(43,085)	128,003	-134%
Retained earnings	11,450,982	8,887,493	29%
Total equity	11,407,898	9,015,497	27%
Total liabilities & equity	20,215,403	17,199,627	18%

Notes:

The balance sheet, income statement, and cash flow statement are the consolidation of APNIC Pty Ltd accounts being recorded in AU\$.

For a better understanding of APNIC Pty Ltd's financial position and performance, as represented by the results of its operations for the financial year ended 31 December 2011, the balance sheet, and income statement should be read in conjunction with the annual statutory financial report and the audit report contained therein.

Statement of Comprehensive Income

	2011 (AU\$)	2010 (AU\$)	% change from 2010
Revenue			
Interest income	395,591	397,689	-1%
IP resource application fees	1,530,500	1,373,986	11%
ISIF grant administration received	142,138	105,392	35%
Membership fees	12,968,291	10,199,249	27%
Non-member fees	207,425	155,382	33%
Per allocation fees	0	994,276	-100%
Reactivation fees	16,200	17,550	-8%
Sundry income	298,657	205,760	45%
Sub-total	15,558,802	13,449,284	16%
Exchange rate gain/(loss)	57	(18,471)	-100%
Total revenue	15,558,859	13,430,813	16%
Expenditure			
Communication expenses	385,819	339,964	13%
Depreciation expense	875,273	703,869	19%
Donation/ sponsorship	223,902	205,987	9%
ICANN contract fees	284,889	321,172	-11%
ISIF grant administration expense	142,138	105,392	35%
Meeting and training expenses	398,014	249,401	60%
Membership fees	54,261	53,663	1%
Other operating expenses	1,291,925	1,380,390	-4%
Professional fees	605,124	554,295	9%
Rent and outgoings	28,133	1,418,314	-98%
Salaries and personnel expenses	7,203,720	6,507,584	11%
Travel expenses	1,576,246	1,404,527	12%
Total expenditure	13,069,444	13,244,558	-1%
Operating surplus/ (deficit) before income tax	2,489,415	186,255	1237%
Income tax (expense)/ benefit	74,074	64,301	15%
Operating surplus/ (deficit) after income tax	2,563,489	250,556	923%

Cash Flow Statement

For the year ended 31 December

	2011 (AU\$)	2010 (AU\$)	% change from 2010
Cash flows from operating activities:			
Receipts from members and customers	16,282,229	14,859,277	10%
Payments to suppliers and employees	(12,738,321)	(12,227,309)	4%
	<u>3,543,908</u>	<u>2,631,968</u>	<u>35%</u>
Interest received	324,020	528,573	-39%
Income tax received (paid)	213,744	(76,925)	-378%
Net cash inflow from operating activities	<u>4,081,672</u>	<u>3,083,616</u>	<u>32%</u>
Cash flows from investing activities:			
Payments for property, plant and equipment	(921,439)	(7,829,216)	-88%
Proceeds from sale of property, plant and equipment	940	3,125	-70%
Net cash inflow/ (outflow) from investing activities	<u>(920,499)</u>	<u>(7,826,091)</u>	<u>-88%</u>
Net increase / (decrease) in cash held:	3,161,173	(4,742,475)	-167%
Cash at the beginning of the financial year	5,886,958	7,201,988	-18%
Decrease in term deposits maturing in the next three months	0	3,417,206	-100%
Effects of exchange rate changes on cash	136	10,239	-99%
Cash reserve at the end of the financial year	<u>9,048,267</u>	<u>5,886,958</u>	<u>54%</u>



APNIC Supporters

APNIC expresses its sincere thanks to the following organizations that have supported its operations and training activities in 2011.

TRAINING SPONSORS FOR 2011

APJII, Indonesia
China Mobile, China
Department of Telecommunication (DoT) India
IDA Singapore
IndosatM2, Indonesia
intERLab, Thailand
ISOC Bangalore Chapter, India
ISOC Bangladesh Chapter
ISOC Chennai Chapter, India
ISOC Kolkata Chapter, India
MekongNet, Cambodia
Mobicom, Mongolia
Mobinet, Mongolia
MPT, Myanmar
National Internet Exchange of India (NIXI)
National University of Laos
OPT, French Polynesia
Republic Polytechnic, Singapore
Tata Communications Ltd., India
Telikom PNG Limited, Papua New Guinea

TRAINING HOSTS FOR 2011

Advanced Science and Technology Institute (ASTI) Philippines
APJII, Indonesia
APRICOT
Asia Pacific Internet Leadership Project (APILP)
China Network Information Centre (CNNIC)
ISOC Philippines Chapter
ISOC Sri Lanka Chapter
New Zealand Network Operators Group (NZNOG)
Our Telekom, Solomon Islands
Pacific Islands Chapter of ISOC (PICISOC)
Pacific Island Telecommunication Association (PITA)
Pacific Network Operators Group (PACNOG)
PacINET
South Asia Network Operators Group (SANOG)
Taiwan Network Information Centre (TWNIC)

TECH SPONSORS FOR 2011

Hong Kong Internet Exchange (HKIX)
WIDE
KDDI Corporation
Internet Initiative Japan (IIJ)

MEETING SPONSORS

- Alcatel Lucent
- CNNIC
- Google
- Hurricane Electric (HE)
- INET
- IPv6 Thailand
- JPNIC
- KISA
- National University of Laos
- Next Byte
- On the Net
- PHCOLO
- Telstra
- TM
- TOT
- TWNIC
- VOCUS



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