

APNIC 36  
CONFERENCE



XI'AN, CHINA  
20 - 30 August 2013

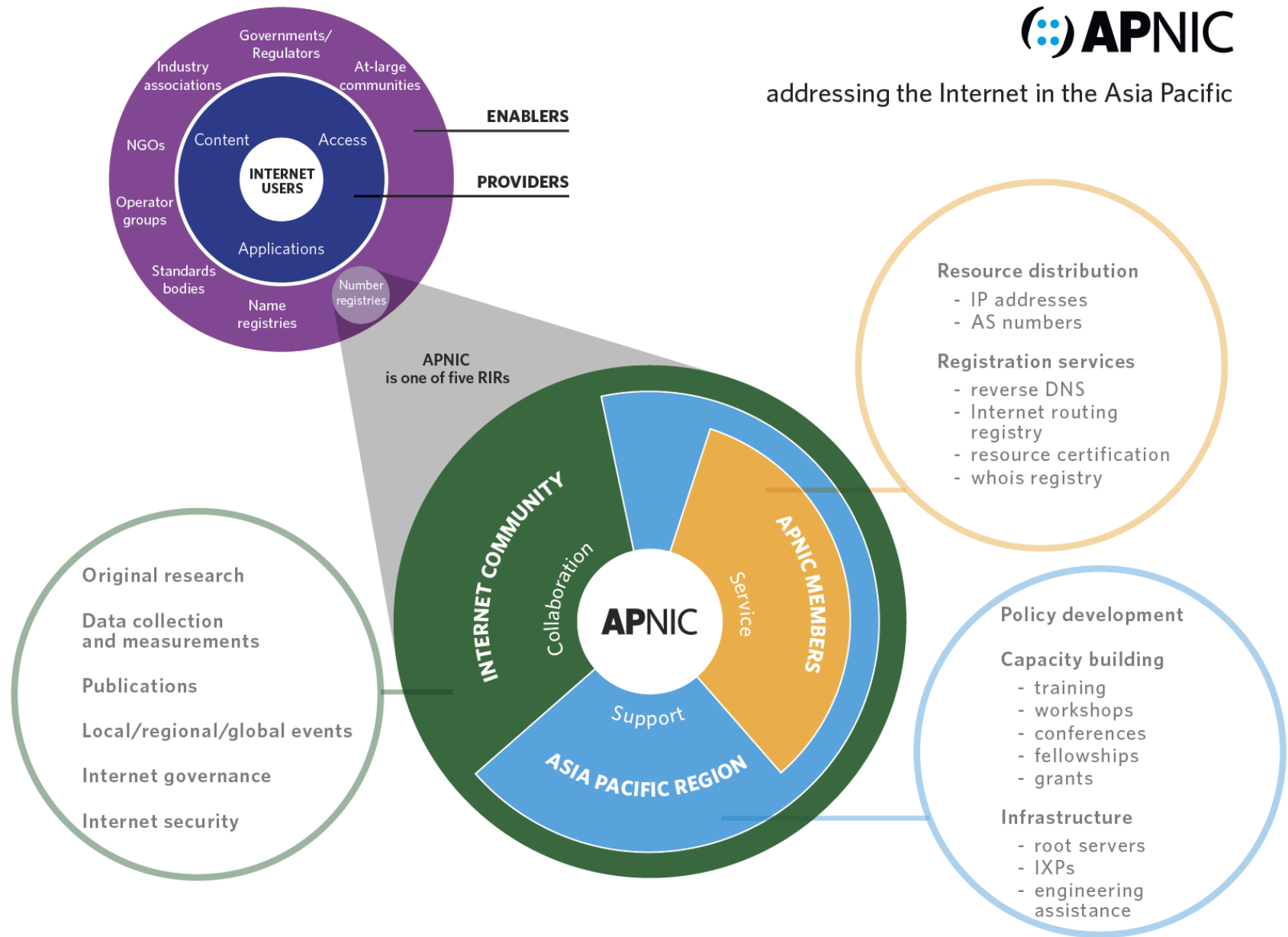
# APNIC Secretariat Report



# APNIC's Mission – 2013

- **Function as the RIR** for the Asia Pacific, in the **service** of the community of Members and others
- Provide Internet registry services to the highest possible standards of **trust, neutrality, and accuracy**
- Provide **information, training, and supporting services** to assist the community in building and managing the Internet
- Support **critical Internet infrastructure** to assist in creating and maintaining a robust Internet environment
- Facilitate **regional Internet development** as needed throughout the APNIC community
- Provide **leadership and advocacy** in support of APNIC's vision and the community

addressing the Internet in the Asia Pacific



# Overview

- Serving APNIC Members
- Supporting Internet development in the Asia Pacific region
- Collaborating with the Internet community
- Corporate support: ISO-9001 Certification

“A global, open, stable, and secure Internet that serves the entire Asia Pacific community”



# Serving APNIC Members

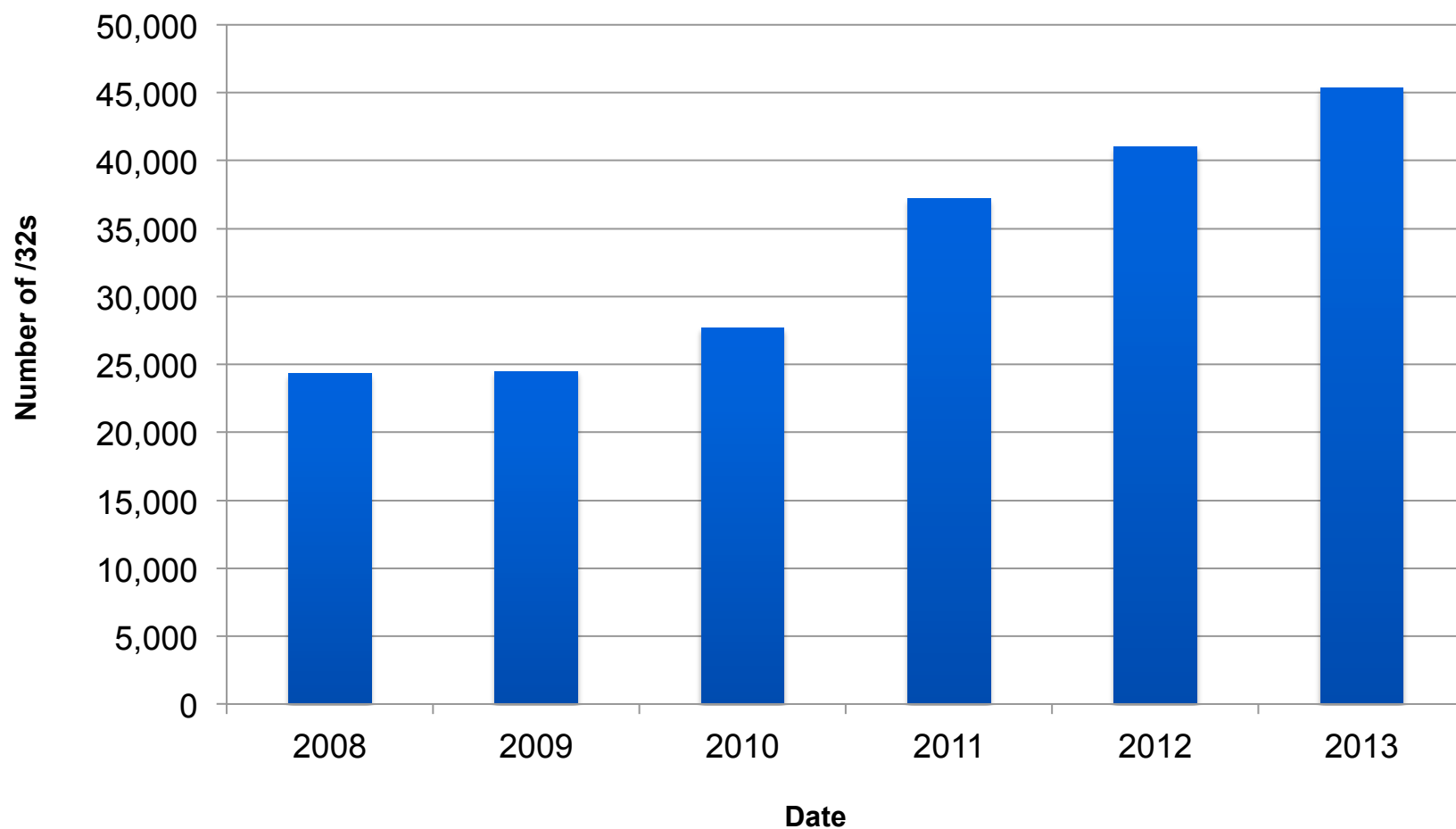
- IPv6 statistics
- IPv4
  - Last /8 statistics
  - Market transfers statistics
- ASN statistics
- Membership growth
- Services update
  - Whois
  - RPKI

“Function as the RIR for the Asia Pacific, in the service of the community of Members and others”

“Provide Internet registry services to the highest possible standards of trust, neutrality, and accuracy”

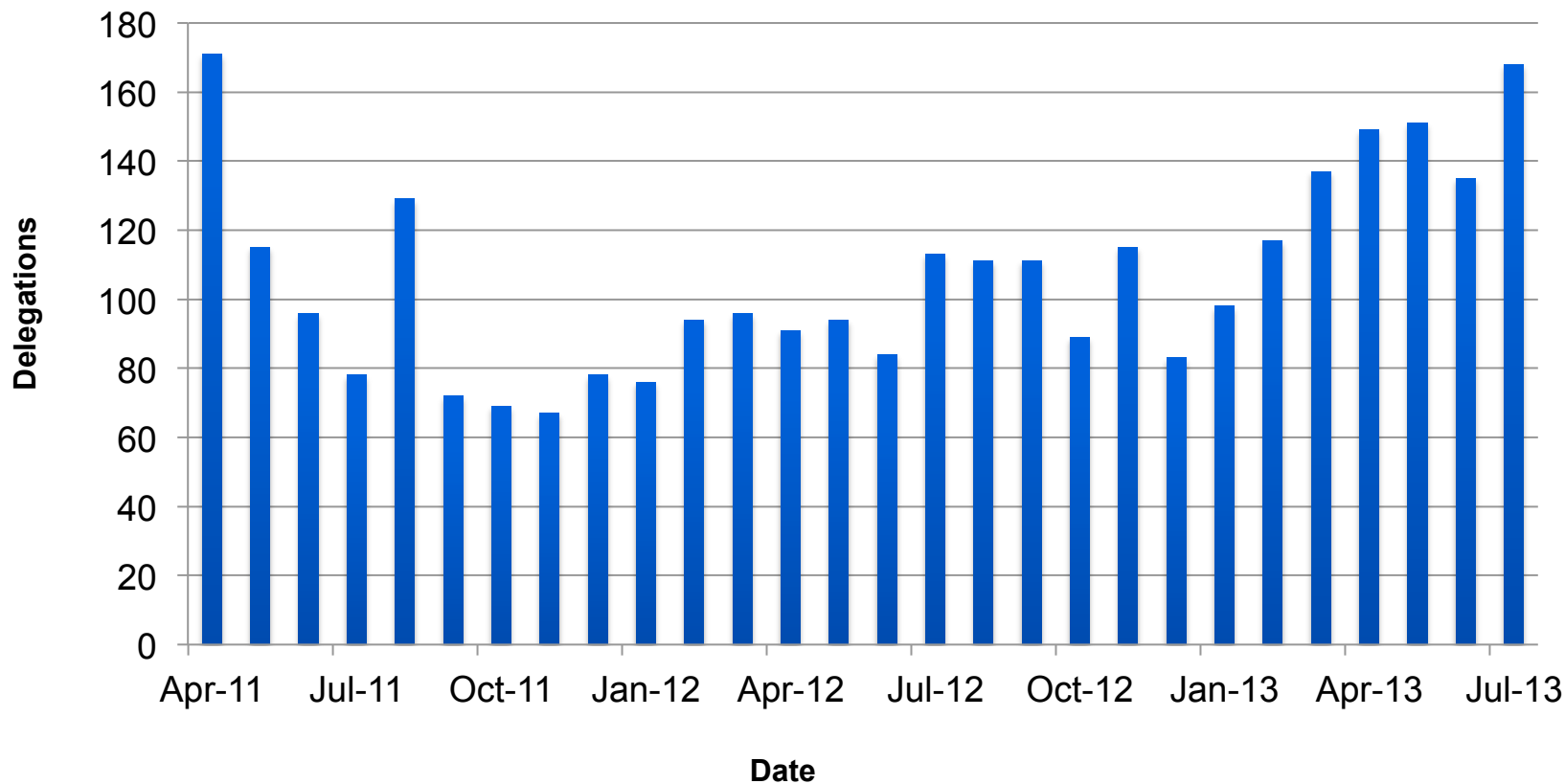


# Cumulative IPv6 delegations (/32s)



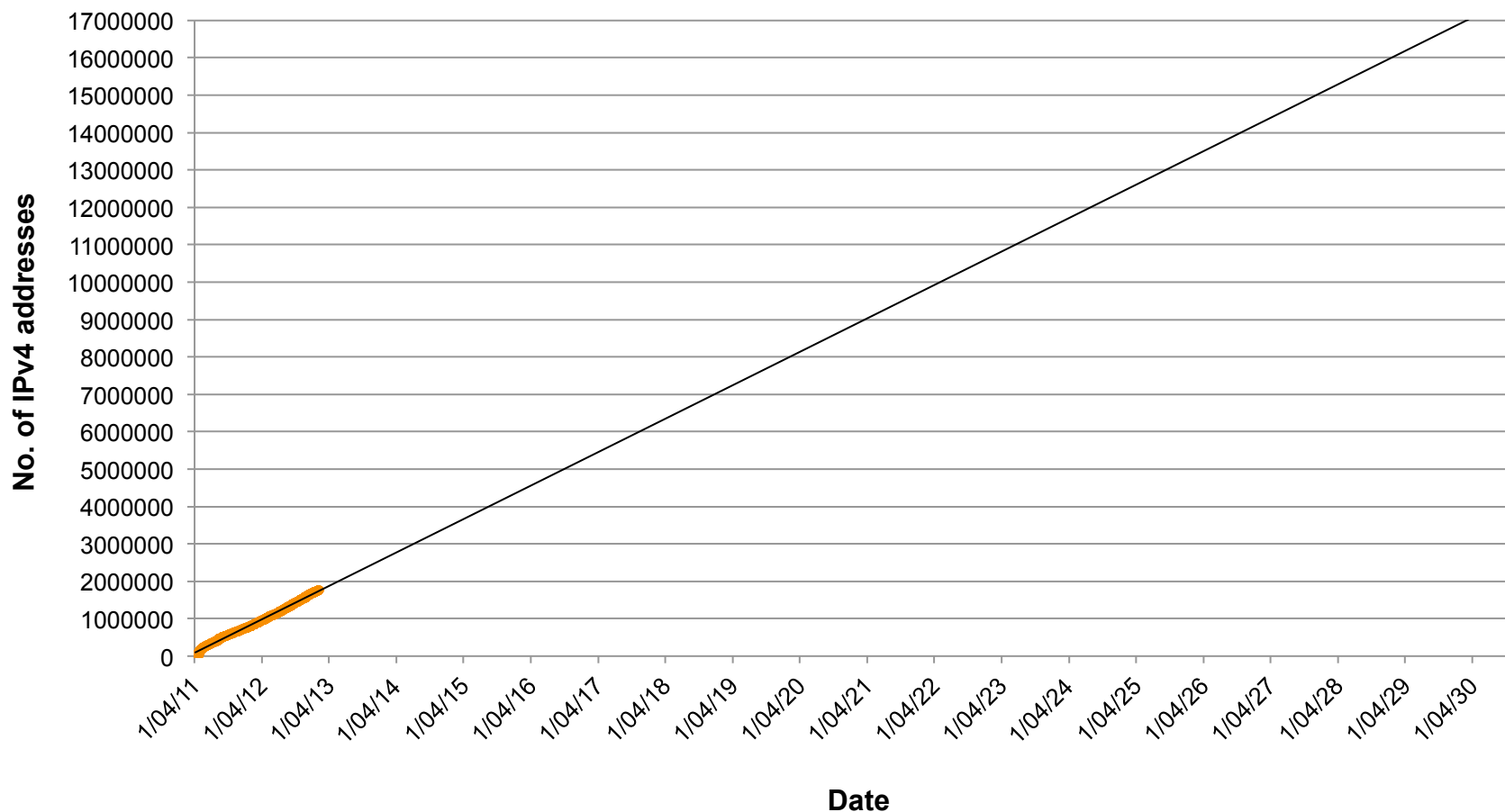
As at 16 August 2013

# IPv4 last /8 delegations



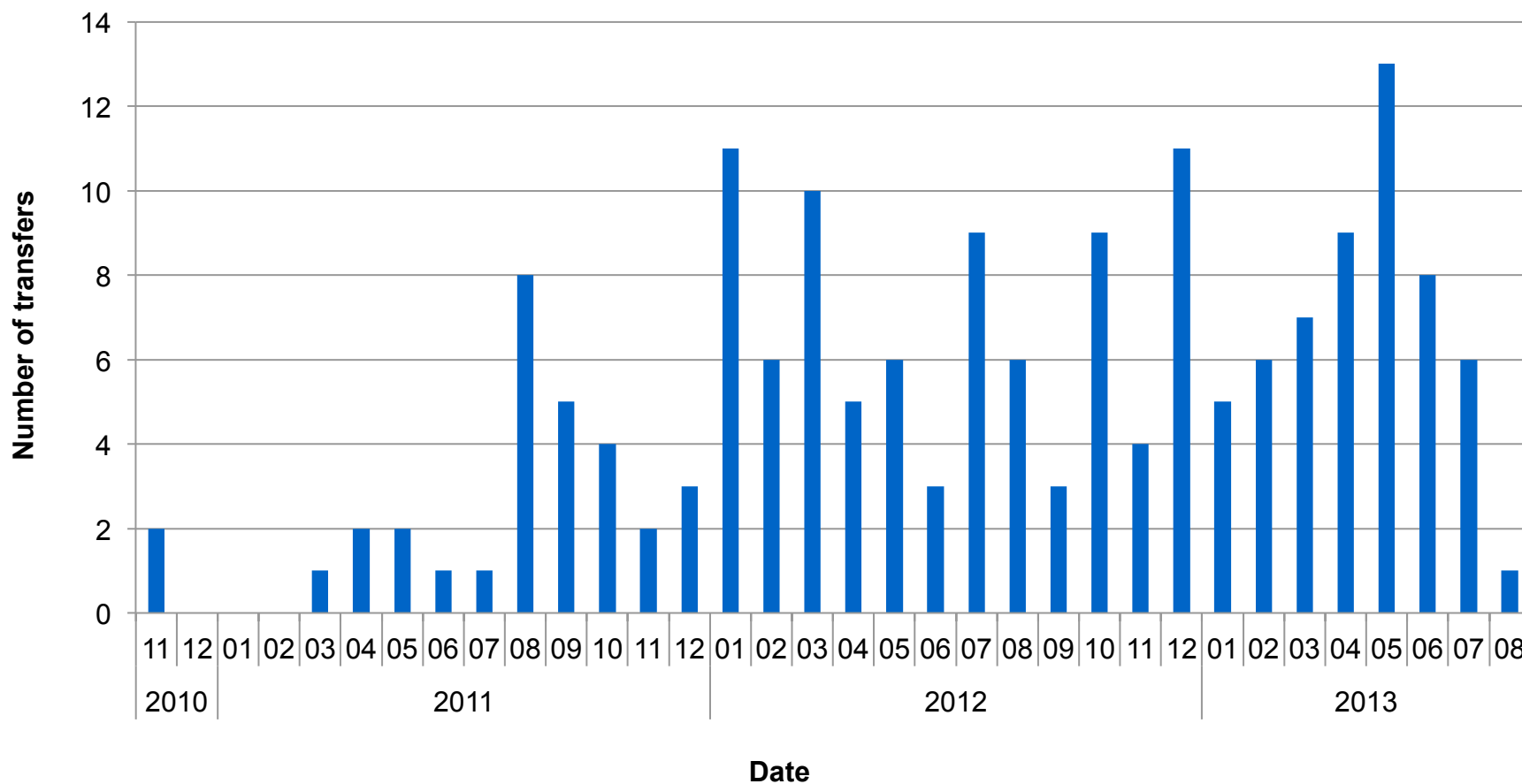
As at 16 August 2013

# IPv4 last /8 delegation trend



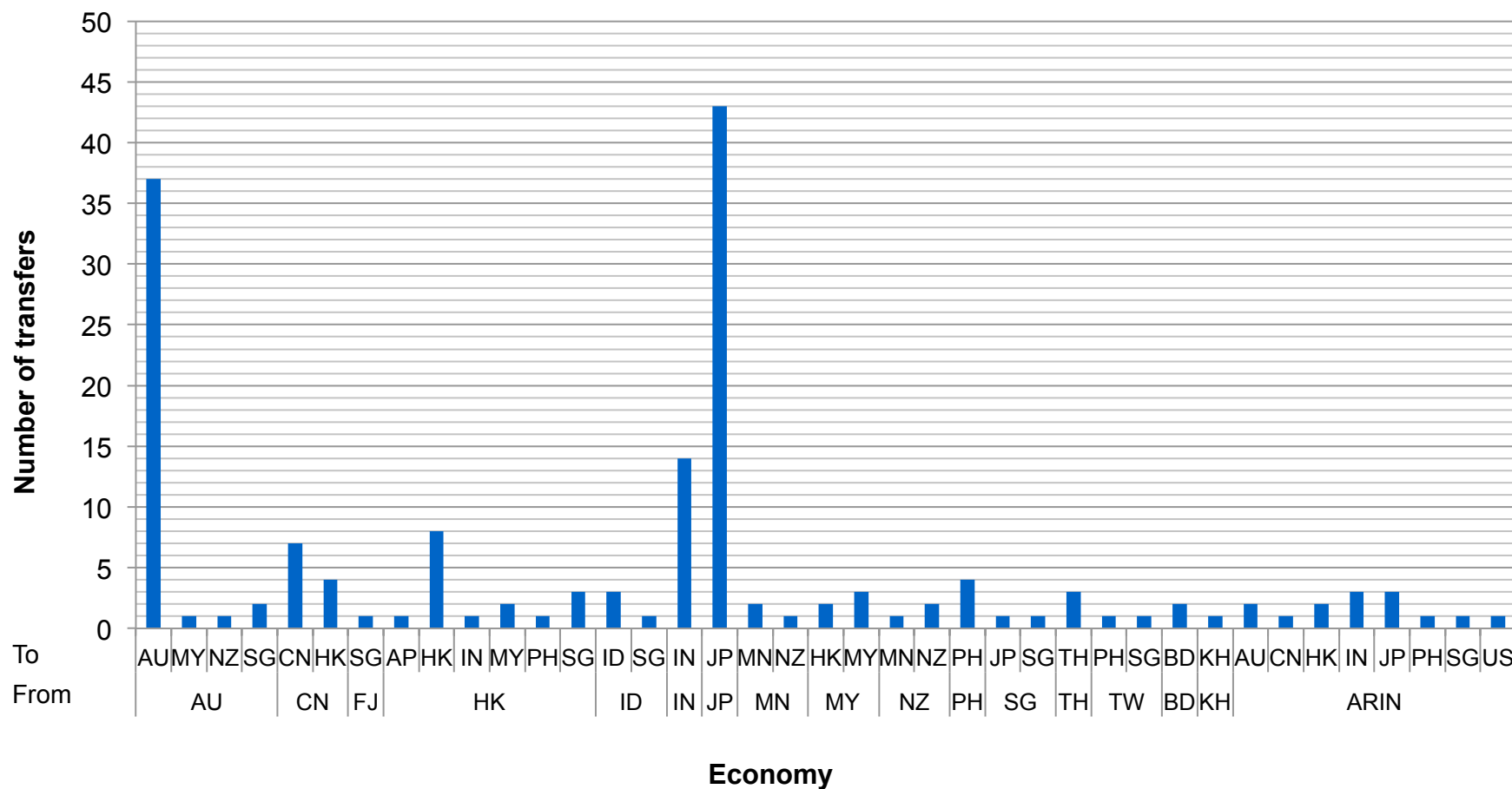


# IPv4 market transfers



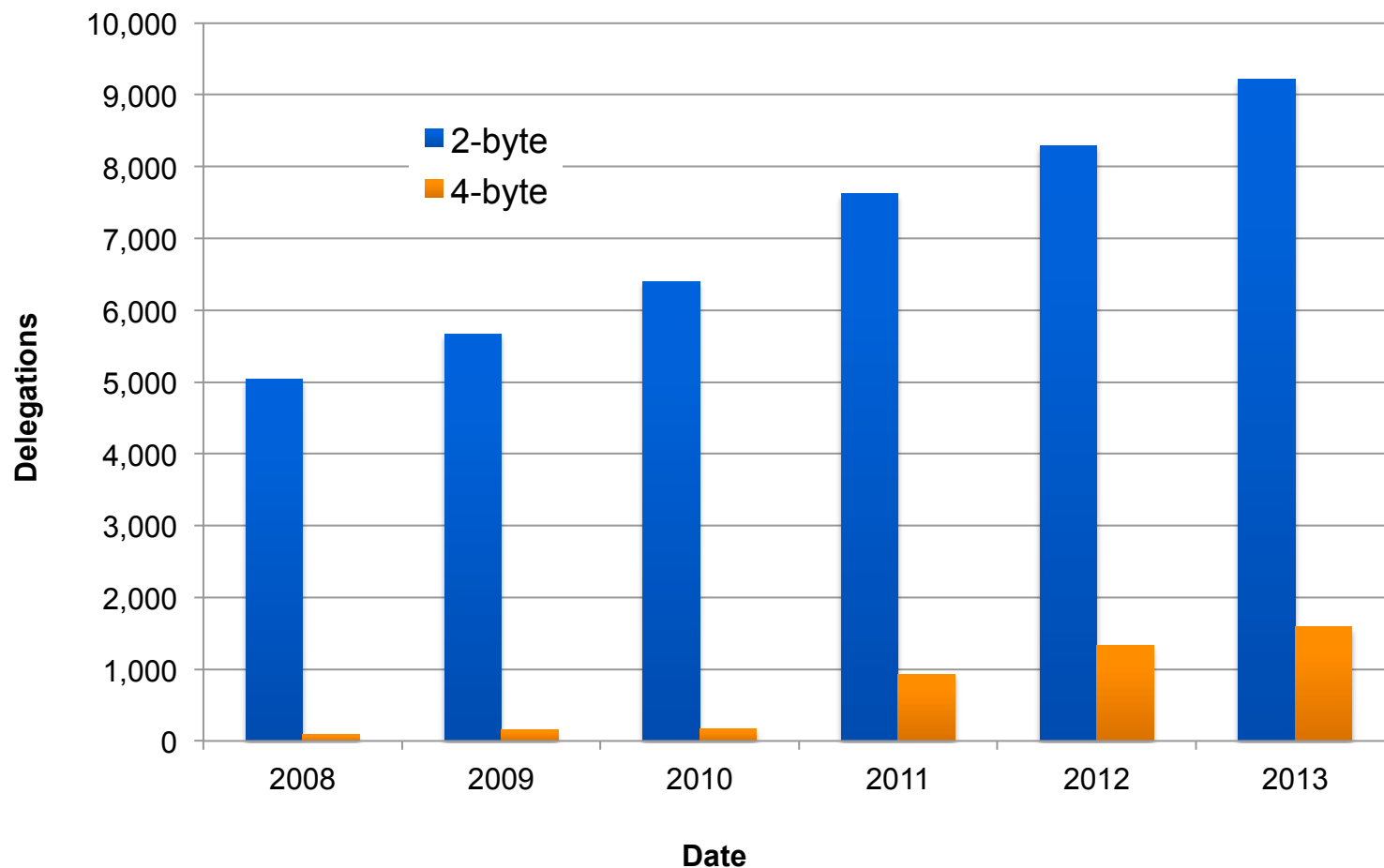
As at 16 August 2013

# IPv4 market transfer by economy



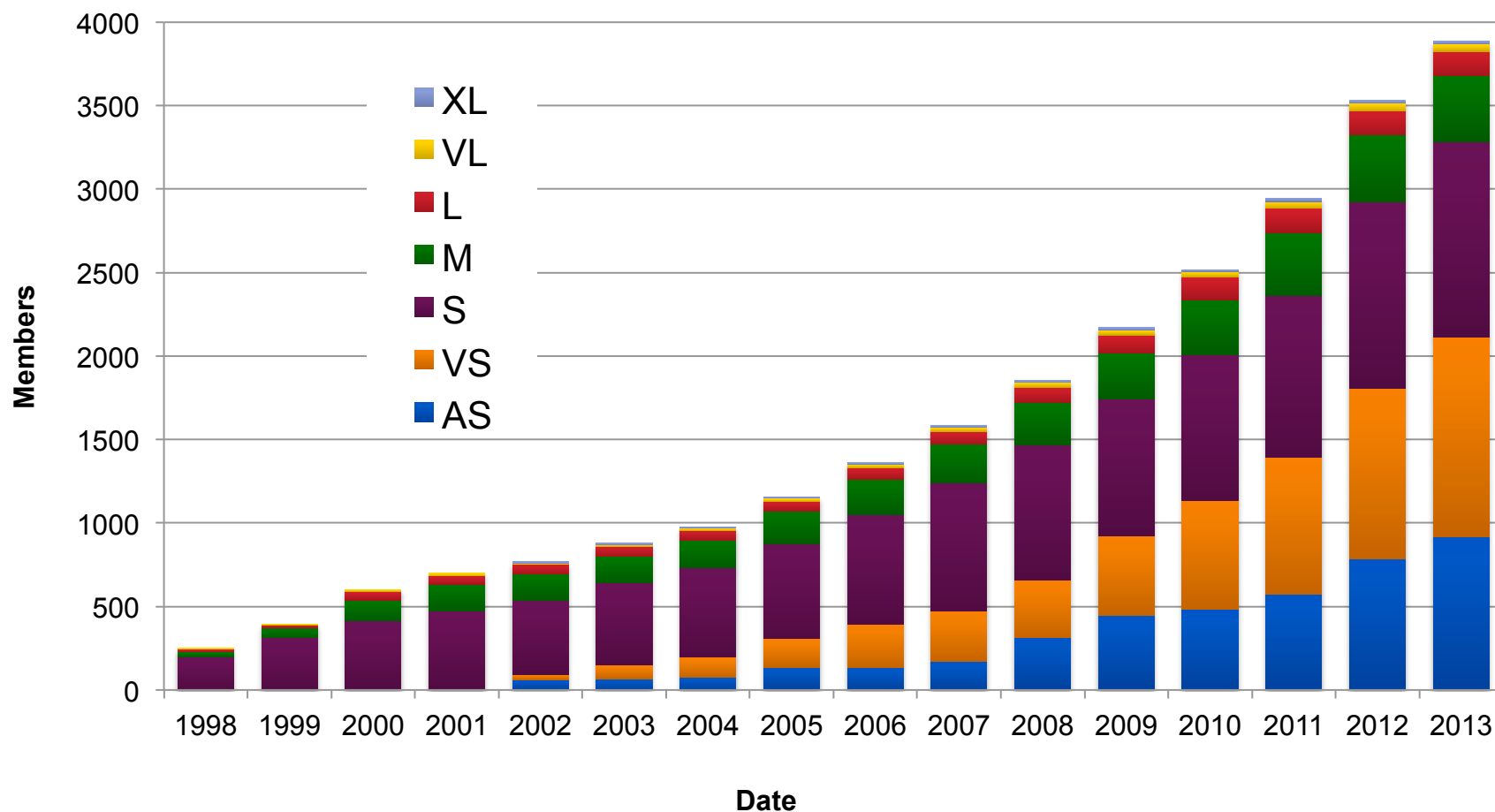
As at 16 August 2013

# Cumulative ASN delegations



As at 16 August 2013

# Membership growth



As at 16 August 2013

# Resource public key infrastructure

- Working with ICANN and the other RIRs towards a global system
- Updated UI in MyAPNIC
- Ability for the public to run their own RPKI system interoperating with APNIC
  - Introduced at APRICOT 2013/APNIC 35
- Public testbed is now live
  - Conducting interoperability testing with JPNIC, ARIN, LACNIC, and RIPE code
  - Chains of resources demonstrated from the other RIRs in both the ERX and transfer space
- APNIC – JPNIC RPKI interoperability test
  - Using three rpki.net code
  - All JPNIC resources are under one unified trust anchor

# Whois updates

- New and improved features to provide a more stable and reliable service
  - “geoloc” and “language” attributes added to inetnum and inet6num objects
  - New feature to view previous versions of resources and how a specific object was changed over time
- Registration Data Access Protocol (RDAP)
  - Suite of specifications currently under development under the IETF’s Web Extensible Internet Registration Data Service (WEIRDS)
  - Pilot service available to test the RDAP protocol
  - Collaboration with the RIPE NCC

# Supporting Internet development in Asia Pacific region

- Policy development
- IPv6 deployment support
- Training
- Root servers
- Information Society Innovation Fund (ISIF Asia)

“Provide information, training, and supporting services to assist the community in building and managing the Internet”

“Support critical Internet infrastructure to assist in creating and maintaining a robust Internet environment”

“Facilitate regional Internet development as needed throughout the APNIC community”



# APNIC policies in 2013

- Implemented:
  - prop-104: Clarifying demonstrated needs requirement in IPv4 transfer policy (Feb 2013)
  - prop-101: Removing multihoming requirement for IPv6 portable assignments (Feb 2013)
- Did not reach consensus at APNIC 35:
  - prop-105: Distribution of returned IPv4 address (modification of prop-088)
    - Returned to author for further development
  - prop-106: Restricting excessive IPv4 address transfers under the final /8 block
    - Abandoned



# New proposals for APNIC 36

- prop-105-v002: Distribution of returned IPv4 address blocks (Modification of prop-088)

[www.apnic.net/policy/proposals/prop-105](http://www.apnic.net/policy/proposals/prop-105)

- This policy proposes to define a separate distribution policy for all non-103 IPv4 address blocks in the APNIC pool, to start the distributions once “Global policy for post exhaustion IPv4 allocation mechanisms by the IANA” is activated.

# New proposals for APNIC 36

- prop-107-v001: AS number transfer policy proposal

[www.apnic.net/policy/proposals/prop-107](http://www.apnic.net/policy/proposals/prop-107)

- This policy would permit the transfer of Autonomous System Numbers (ASNs) within the APNIC region and between regions with compatible inter-regional ASN transfer policies.

- prop-108-v001: Suggested changes to the APNIC Policy Development Process

[www.apnic.net/policy/proposals/prop-108](http://www.apnic.net/policy/proposals/prop-108)

- A proposal to optimize and/or disambiguate procedures carried out under the current APNIC PDP

# IPv6 in the community

- IPv6@APNIC
  - IPv6 Plenaries at APNIC 36 which focused on implementing a holistic strategy and IPv6 for decision makers
  - ICANN 46, Beijing
  - Global IPv6 and Next Generation Internet Summit 2013, Beijing
  - Vietnam IPv6 Plenary, Ho Chi Minh City
- Asia Pacific IPv6 Task Force (APIIPv6TF)
  - Established to encourage IPv6 deployment and serve as a platform for knowledge exchange
  - APNIC continues to provide Secretariat services
  - Met at APNIC 35 and 36

[www.apnic.net/ipv6](http://www.apnic.net/ipv6)

- Whitepaper on IPv6 for decision makers published

[www.apnic.net/ipv6-decision-makers](http://www.apnic.net/ipv6-decision-makers)

# Training update

- Continuing focus on IPv6 deployment
  - Comprehensive face-to-face and eLearning sessions
  - IPv6 eLearning day (first Wednesday of every month)
- eLearning
  - Every Wednesday in three time zones
  - 23 modules (1-hour duration per module)
  - Enhanced schedule for 2013
- Face-to-Face
  - Extensive hand-on exercises
  - Physical and Virtual Training Labs to enable participants to build and configure networks
- Engineering Assistance offered on a cost-recovery basis

[training.apnic.net](http://training.apnic.net)

# Training delivered in 2013 (Jan to Jul)

- Face-to-face training
  - 40 courses in 20 locations
  - 1101 participants
- eLearning
  - 66 courses
  - 498 participants



As at 16 August 2013

# Root server deployment

- New I-Root in Ulaanbaatar, Mongolia
- F-root upgrades in Chennai, Hong Kong, and Seoul
- Small node trial in Dhaka

[www.apnic.net/rootserver](http://www.apnic.net/rootserver)



# ISIF Asia

- ISIF Asia award winners recognized. AUD 3,000 plus opportunity to attend the 2013 IGF in Bali. Categories:
  - Innovation on access provision
  - Innovation on learning and localization
  - Code for the common good
  - Rights

[www.isif.asia/Awards2013](http://www.isif.asia/Awards2013)

- 2013 Community Choice Award for the project with the most community votes; winner received 2,237 votes!
- Call for 2014 Grants launched in June 2013; 139 applications received
- To date, ISIF Asia has allocated AUD 1.2m to 38 projects in 17 economies across the Asia Pacific region

[www.isif.asia](http://www.isif.asia)

# ISIF Asia – Seed Alliance

Member of the Seed Alliance for Internet development and digital innovation

- Joint effort with LACNIC (Frida) and AFRINIC (FIRE), with generous support from IDRC and Sida
- Evaluation and research communications activities are underway with support from the “Developing Evaluation & Communication Capacity in Information Society Research project”

[www.isif.asia/seed\\_alliance](http://www.isif.asia/seed_alliance)



# Collaborating with the Internet community

- Labs
- External Relations
- Public Affairs
- Internet governance
- NRO activities

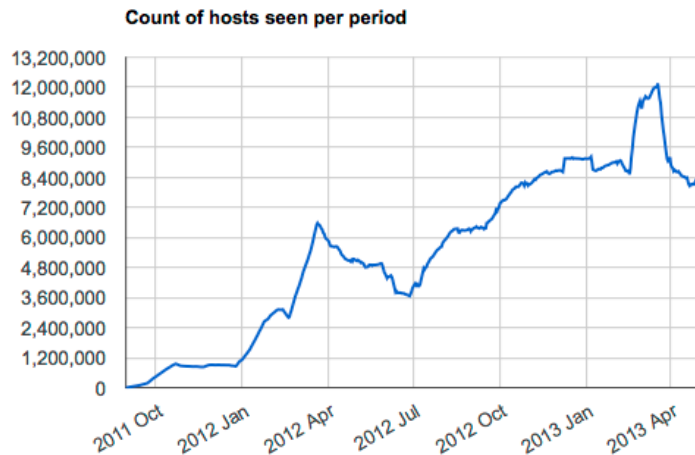
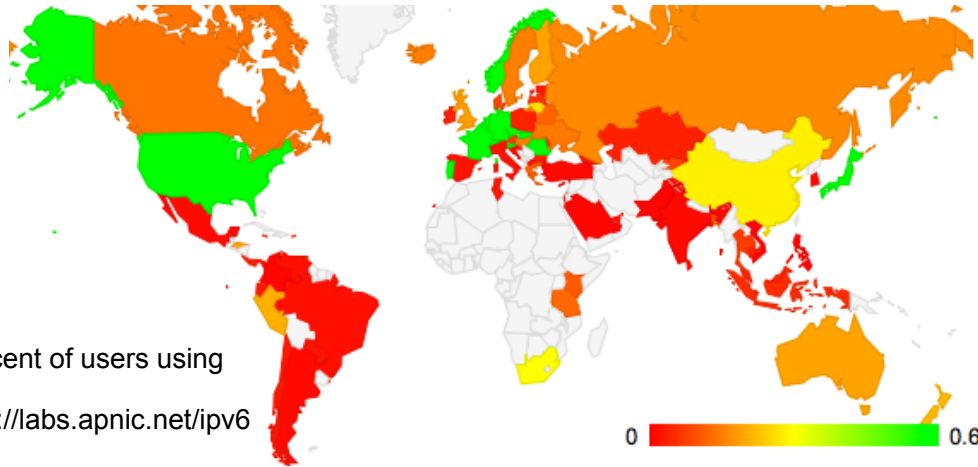
“Provide leadership and advocacy in support of APNIC’s vision and the community”



# APNIC Labs

- IPv6 measurements
  - IPv6 client capability per economy, autonomous system, etc
- Resource reporting
  - IPv4, IPv6 and ASN reporting
  - Global RIR statistics
- New: DNS and DNSSEC
  - Measuring the number of clients protected by DNSSEC resolvers
  - Cost of DNSSEC in additional delay, packet sizes

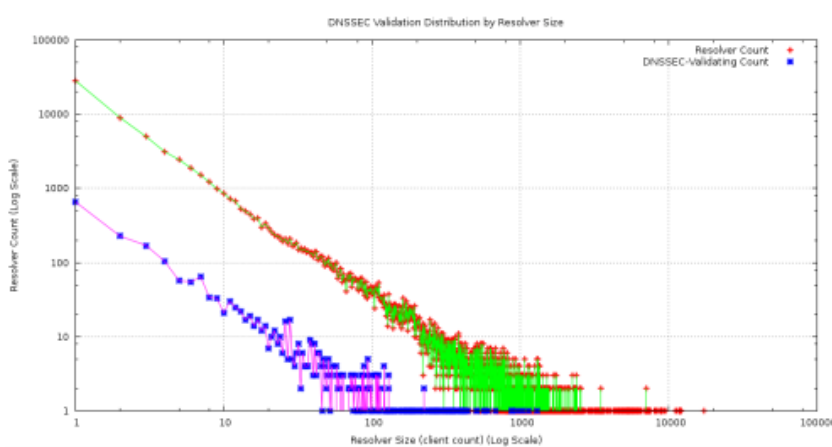
# Measuring IPv6



We've been conducting a large-scale IPv6 measurement across the Internet to provide baseline data about the rate of deployment of IPv6 across countries and individual networks

Economy	ASN	AS Name	# samples	v6 capable	v6 preferred
US	<a href="#">AS19782</a>	INDIANAGIGAPOP - Indiana University	1566	100	100
CN	<a href="#">AS37944</a>	CNNIC-CSTNET-AP CHINA SCIENCE AND TECHNOLOGY NETWORK	1354	100	100
CN	<a href="#">AS23910</a>	CNGI-CERNET2-AS-AP China Next Generation Internet CERNET2	7060	100	100
JP	<a href="#">AS9607</a>	BBTOWER BroadBand Tower, Inc.	255	96.0784	96.0784
NZ	<a href="#">AS24226</a>	CATALYST-IT-AS-AP Catalyst IT	830	94.3373	93.9759
JP	<a href="#">AS55394</a>	GREE-NET GREE, Inc.	519	93.6416	71.0983
AU	<a href="#">AS38083</a>	CURTIN-UNI-AS-AP Curtin University	715	89.6503	88.951
US	<a href="#">AS3598</a>	MICROSOFT-CORP-AS - Microsoft Corp	1113	74.9326	72.4169
ID	<a href="#">AS17553</a>	IPBNET-AS-AP Bogor Agricultural University	251	74.9004	60.9562
AU	<a href="#">AS4608</a>	APNIC-AP Asia Pacific Network Information Centre	629	73.6089	70.9062
NZ	<a href="#">AS58668</a>	NASL-AS-AP Network Access Services Limited	206	69.4175	61.165
US	<a href="#">AS5661</a>	USF - UNIVERSITY OF SOUTH FLORIDA	295	69.1525	65.4237
US	<a href="#">AS1312</a>	VA-TECH-AS - Virginia Polytechnic Institute and State Univ.	480	67.7083	62.7083
CZ	<a href="#">AS197451</a>	VUTBR-AS Brno University of Technology	416	64.8635	59.375
GB	<a href="#">AS786</a>	JANET The JNT Association	223135	63.1044	52.4337
US	<a href="#">AS15169</a>	GOOGLE - Google Inc.	12414	60.9312	18.9866
NO	<a href="#">AS57963</a>	LYNET-INTERNETT-AS Lynet Internett AS	326	58.8957	55.2147
US	<a href="#">AS2055</a>	LSU-1 - Louisiana State University	266	58.2707	55.2632
NZ	<a href="#">AS17649</a>	DMZGLOBAL-AP DMZGlobal Ltd	239	58.159	54.3933
US	<a href="#">AS6621</a>	HNS-DIRECPC - Hughes Network Systems	2041	56.8349	56.1979
US	<a href="#">AS6263</a>	NDIN - State of North Dakota; ISD	249	56.6265	54.6185
CN	<a href="#">AS17672</a>	CHINATELECOM-HE-AS-AP asn for Hebei Provincial Net of CT	2706	54.139	51.2565
NZ	<a href="#">AS18119</a>	ACSDATA-NZ ACSData	931	53.4909	52.3093
US	<a href="#">AS1351</a>	UVM-EDU-AS - University of Vermont	242	53.3058	45.8678
CN	<a href="#">AS4538</a>	ERX-CERNET-BKB China Education and Research Network Center	4868	50.4314	47.6787
JP	<a href="#">AS2500</a>	WIDE-BB WIDE Project	208	50	49.0385
HK	<a href="#">AS4526</a>	HKU-AS-HK The University of Hong Kong	635	48.6614	44.5669

# DNS and DNSSEC

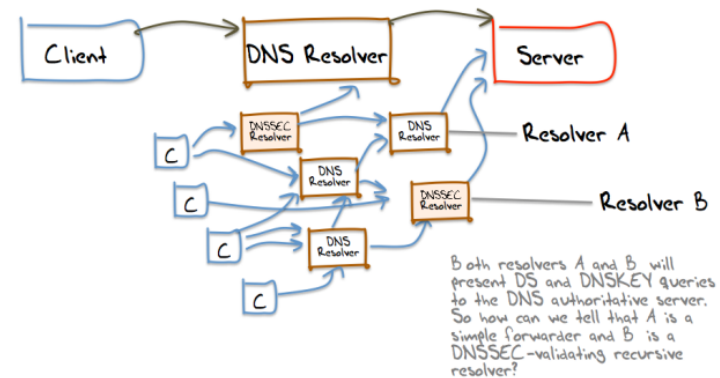


We are measuring the extent of DNSSEC use, and looking at the level of use of DNSSEC validation across resolvers and end clients in the Internet

How can we interpret what we are seeing?

## What are the questions?

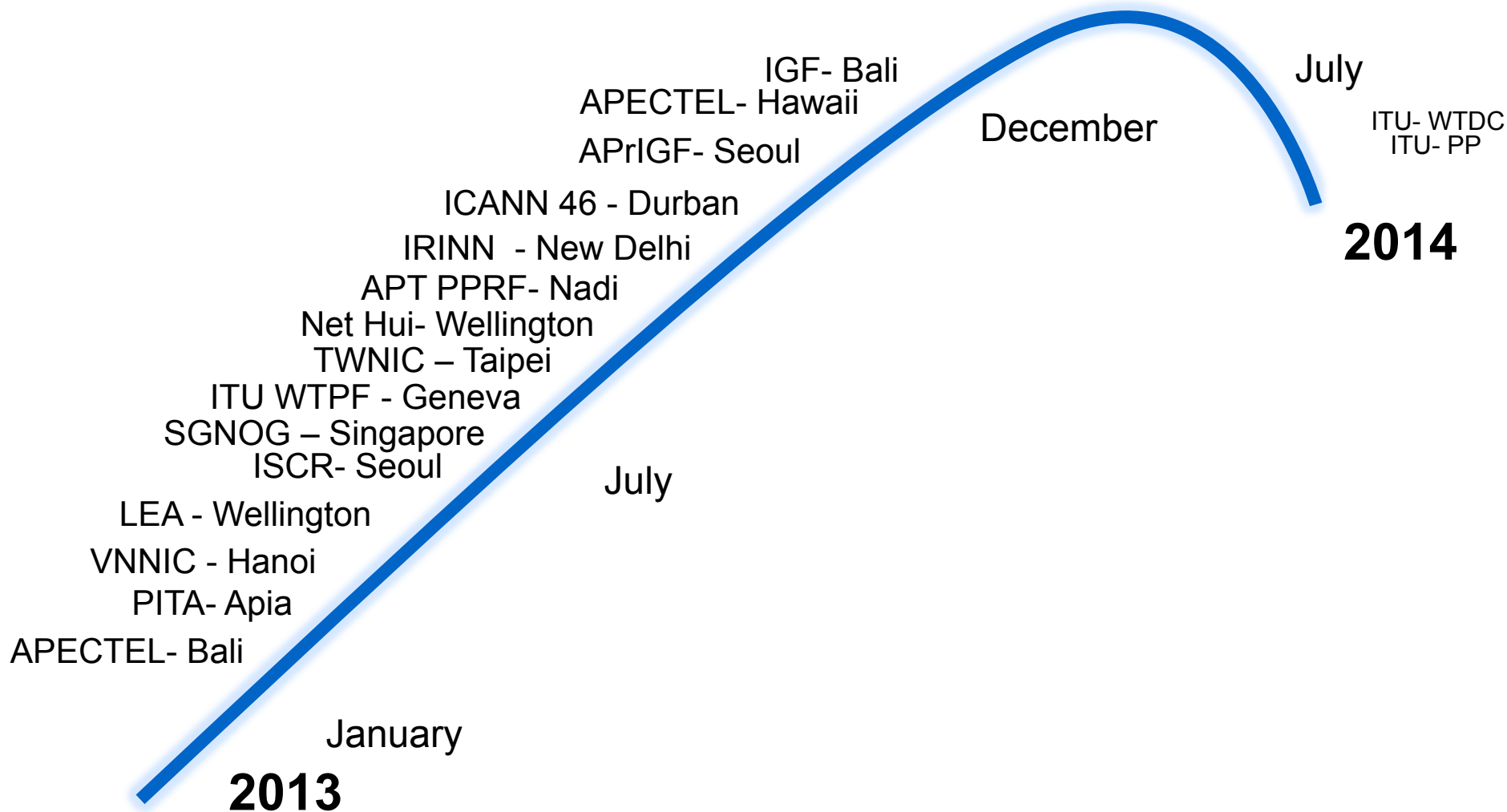
1. What proportion of DNS resolvers are DNSSEC-capable?
2. What proportion of users are using DNSSEC-validating DNS resolvers?
3. Where are these users?
4. How long does DNSSEC validation take for a client?



# External Relations

- APNIC is actively involved in the evolution of the multistakeholder model
  - Importance of the IGF after WSIS
  - Collaboration with other I\* organizations: ICANN (ASO), NRO, ISOC
  - Support to the Internet community: NOGs and OPMs
- APNIC has engaged actively with governments and intergovernmental organizations:
  - Globally: ITU and OECD
  - Regionally: APT, APEC TEL
  - Also has started collaboration with LEAs

# External Relations



# External Relations

- Network Operator Groups (NOG)
  - SGNOC, PACNOC, SANOC
- NIR Open Policy Meetings (OPM)
  - IRINN, TWNIC, VNNIC
- Outreach on security
  - International Symposium on Cyber Crime Response (ISCR), Korea
  - Engagement with Law Enforcement Agencies
    - Collaboration with New Zealand police and InternetNZ
- Collaboration with Internet (I\*) organizations
  - ICANN
  - ISOC
  - NRO

# External Relations

## Regional engagements:

- APT
  - APNIC has become an affiliate member
  - Preparatory processes for upcoming ITU conferences
- APEC – TEL
  - Development Steering Group (DSG)
  - IPv6 promotion and security
- Regional and National IGF initiatives
  - NetHui
  - APriIGF
- Pacific
  - PITA
  - PICISOC



# Public Affairs – current processes

- ITU
  - World Conferences → Development and Plenipotentiary
  - Fifth WTPF: Informal Experts Group, Opinions on IPv4 and IPv6
- IGF initiatives
  - APriIGF Multistakeholder Steering Group
  - National and regional initiatives
    - NetHui, Australia, India, Pacific
  - 2013 global IGF in the region → Bali, Indonesia
- OECD - Study on IPv6
  - Geoff Huston on public policy implications of CGNs and NATs

# Internet governance landscape

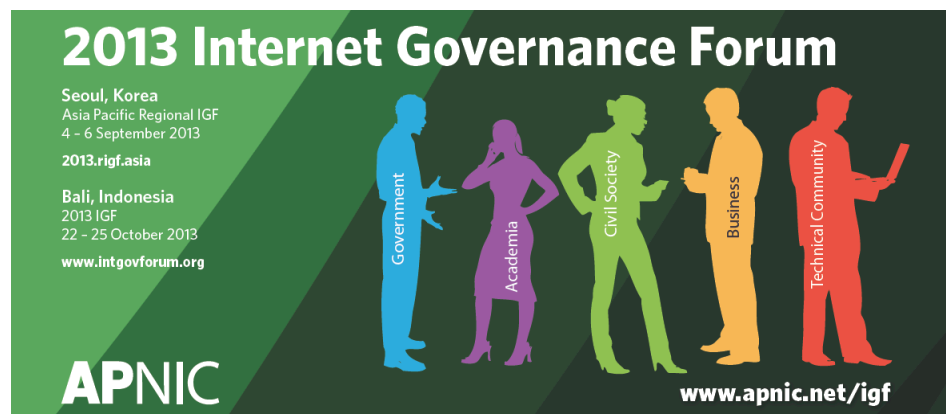
- During the last thirty years, we have seen the Internet and its coordination structures develop in an open, bottom-up, and multistakeholder environment
- It is just in the last few years that the Internet has received increased attention from governments
  - Internet seen as a critical infrastructure
  - Growing concerns about the consequences of cybercrime
- Some recognize the current successes, others support an intergovernmental model
  - Ongoing discussions

# Internet Governance Forum

- Multistakeholder model in action
  - Open discussions that can help inform policy making on all aspects of Internet governance
  - Does not produce concrete outcomes
  - Participation to all on equal footing

[www.apnic.net/igf](http://www.apnic.net/igf)

- **APrIGF** – Seoul, Korea  
from 4-6 September
- **Global IGF** – Bali,  
Indonesia from 22-25  
October



# Number Resource Organization

- Paul Wilson is serving as the Chair of the NRO EC in 2013
- Coordinating body for the five RIRs
- Joint activities with the other four RIRs
  - Resource Certification
  - Global statistics and report publication
  - Internet governance
  - Global policy development
    - Global Policy Proposal for Post Exhaustion IPv4 Allocation Mechanisms by IANA
  - MoU with the RIPE NCC
    - Technical, Business

# Number Resource Organization

- APNIC is supporting the NRO by engaging in:
  - The global IGF
  - Three ICANN Meetings
  - WTPF; WTDC and related preparatory meetings
- German Valdez has recently been appointed as the NRO Executive Secretary

[www.nro.net](http://www.nro.net)

# ISO 9001 - Certification



# What is ISO?



- International Organisation for Standardisation
  - Various standards ISO 9001 (QMS), 14001 (Environment), 18001 (Health & Safety) etc.
- The ISO 9000 series, is a set of standards that specify requirements for quality systems: ISO 9001:2008

# Why have an ISO 9001 certification?

- Continual improvement of performance and coordination
- Greater focus on your organizational objectives and customer expectations
- Standardization - ensuring that the same service is delivered at the same standard, every time
- International recognition - certification with an independent Conformity Assessment Body



# What is APNIC certified for?

*“The provision of services relating to the distribution and management of Internet number resources across the Asia Pacific region”*

- This ensures that APNIC is not running in some ad-hoc manner, but in a well organized, well-managed environment, within a “Quality Management System” (QMS)
- It covers our relationship with our Members, both bottom-up and top-down

# Which processes are covered?

Bottom-up for the processes to:

- Join APNIC as a Member
- Processes to allocate resources
- Interaction for Member services
- Finance billing services
- Provision of training and conference events

Top-down for the processes to:

- Run APNIC membership and stakeholder surveys
- EC and ELT planning based on survey results to complete strategic and activity planning across the APNIC Secretariat
- APNIC Director and Manager quarterly planning

# The three ISO “Principles”

## 1. SAY WHAT YOU DO

The QMS

(Policies, Procedures and Work Instructions)

## 2. DO WHAT YOU SAY

The implementation of the QMS

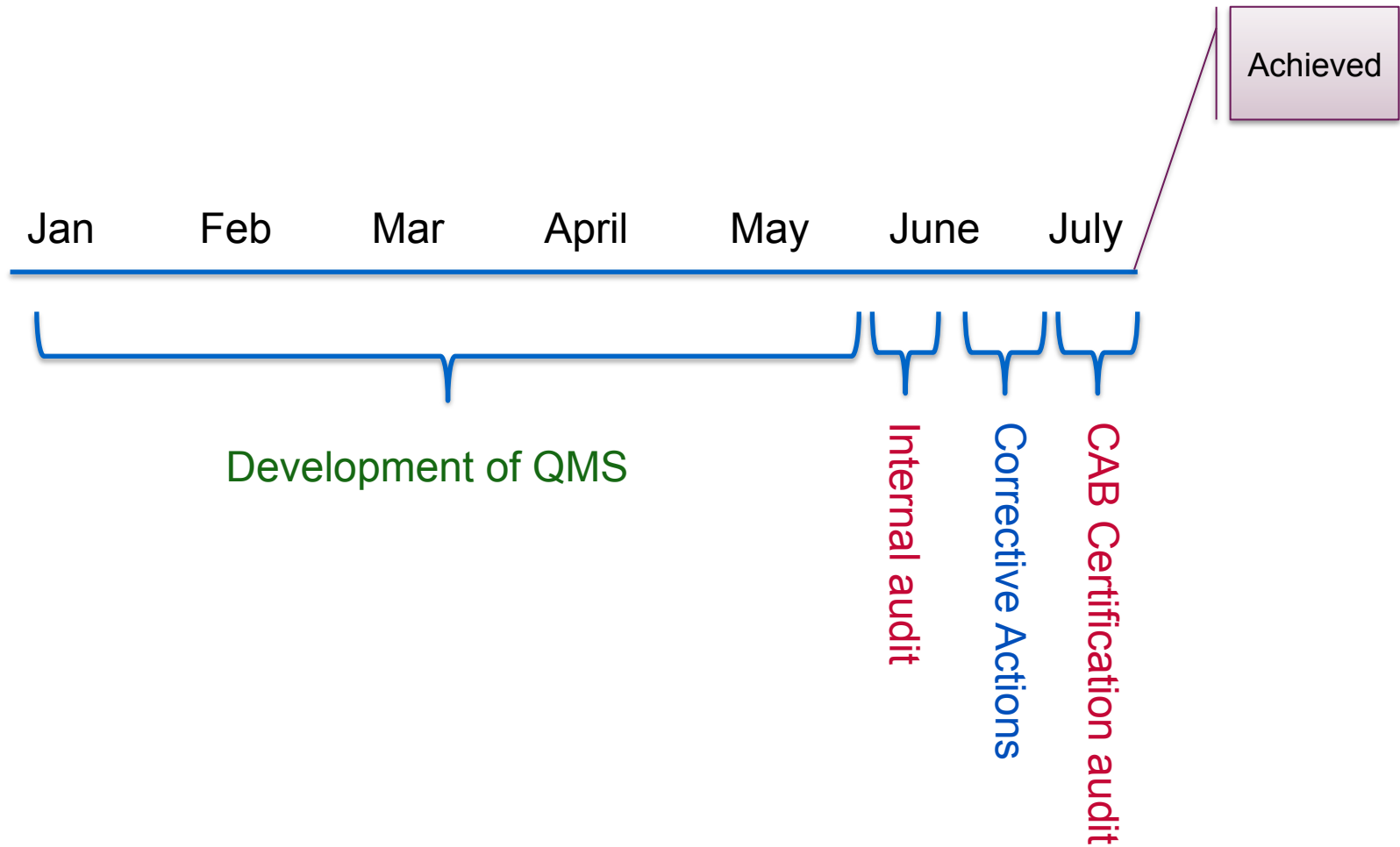
## 3. AND PROVE IT

Records

# Conformity Assessment Body – (external certification body) audit

- They look for evidence that the system is working as per the QMS (records)
- They will interview employees
- Quality must be a part of what you normally do and not a procedure in a manual

# Implementation timeframe



# ISO 9001 certification



“APNIC must be congratulated on the quality and amount of work undertaken to develop and implement the QMS over many years. There is evidence that staff already have a thorough understanding of the QMS functions, processes, and procedures, and the value that it has as a business tool”

*Dan Bromley, Best Practice Auditor*

Thank you

