

APNIC Activity Report

APNIC General Meeting
26 February 2016

APNIC's Vision

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

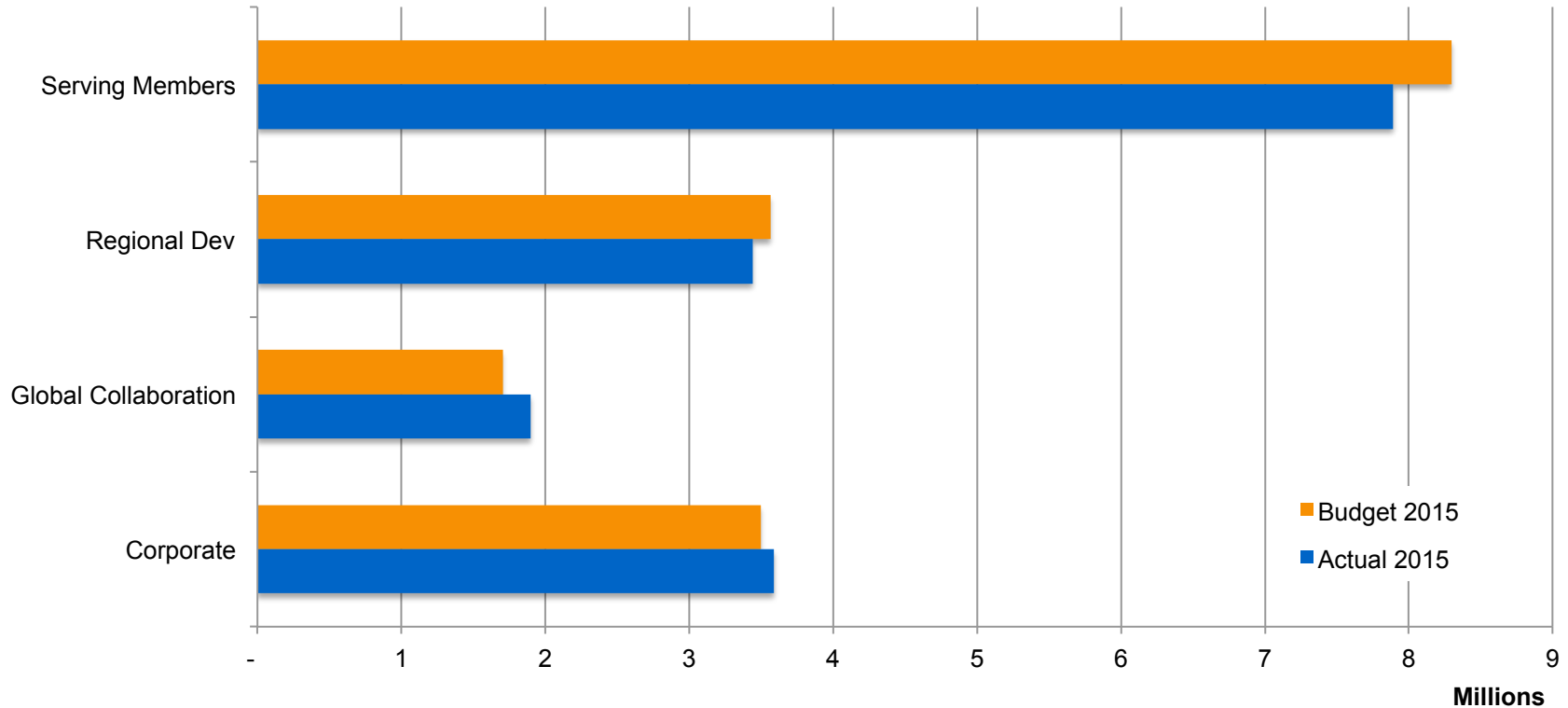
APNIC Activities

Serving

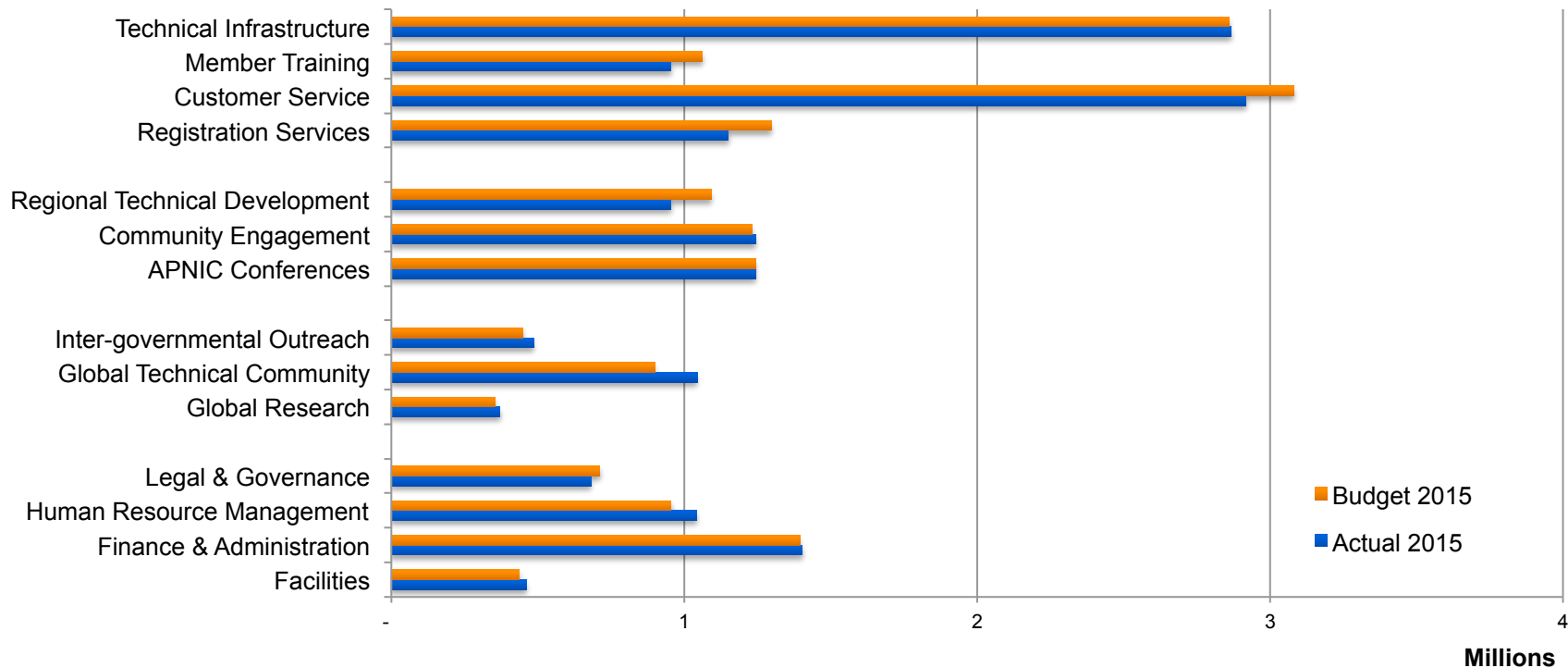
Supporting

Cooperating

2015 Activity Plan and Budget



2015 Activity Plan and Budget



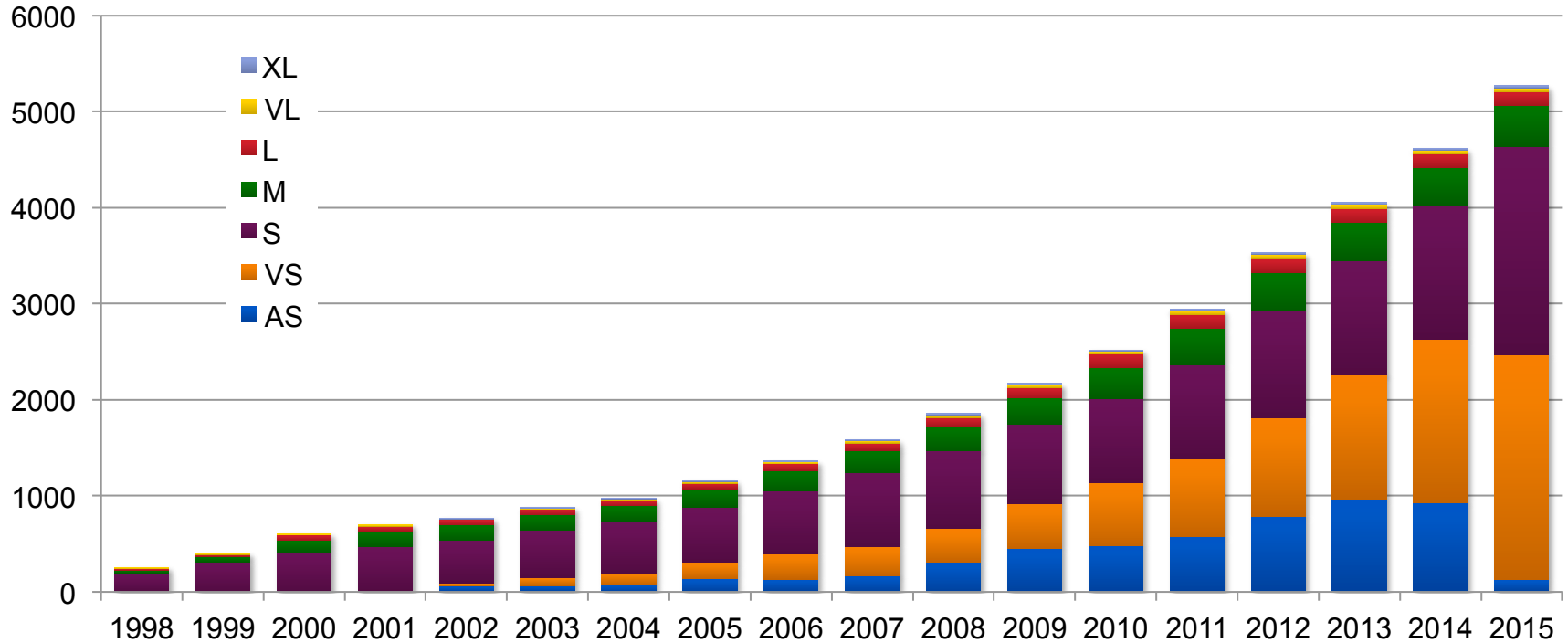
Serving the Region

Serving

Supporting

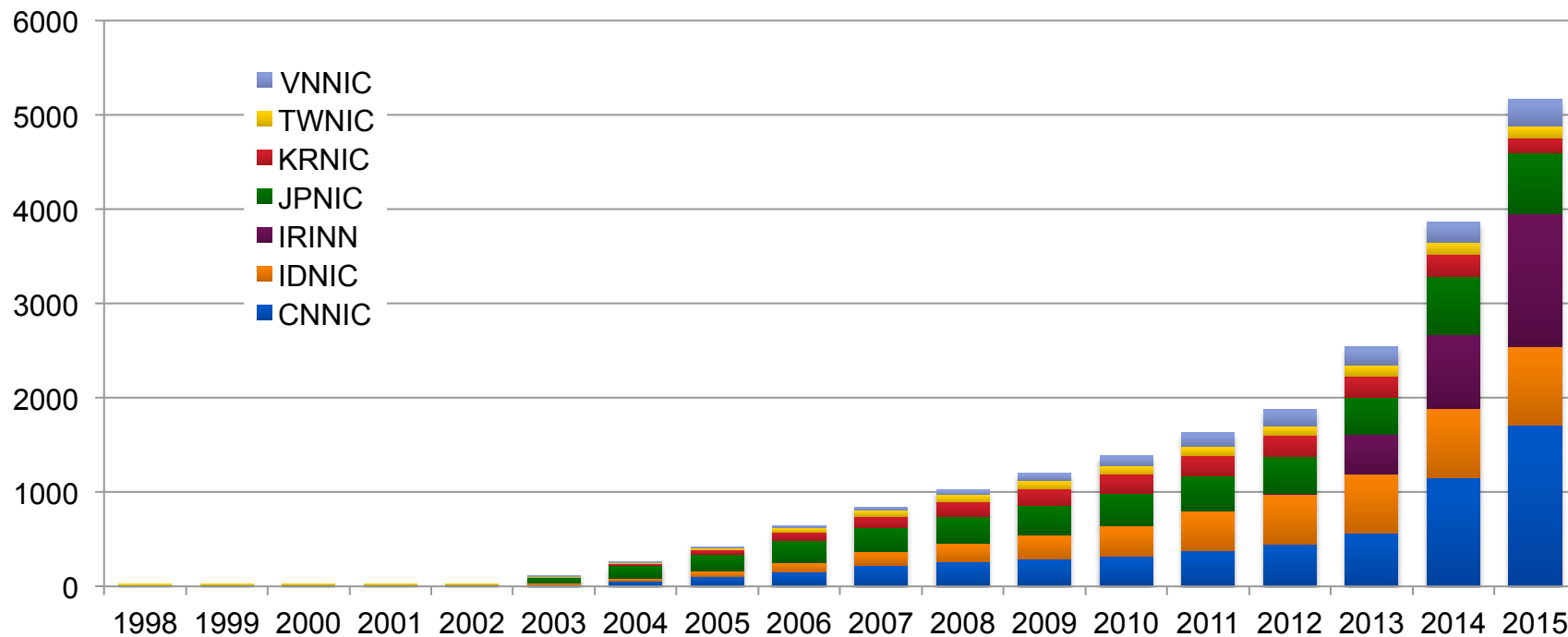
Cooperating

APNIC Membership



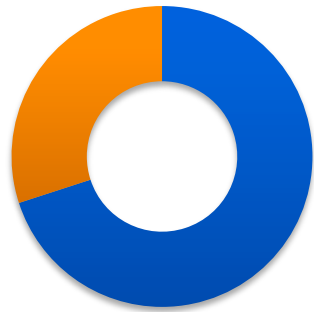
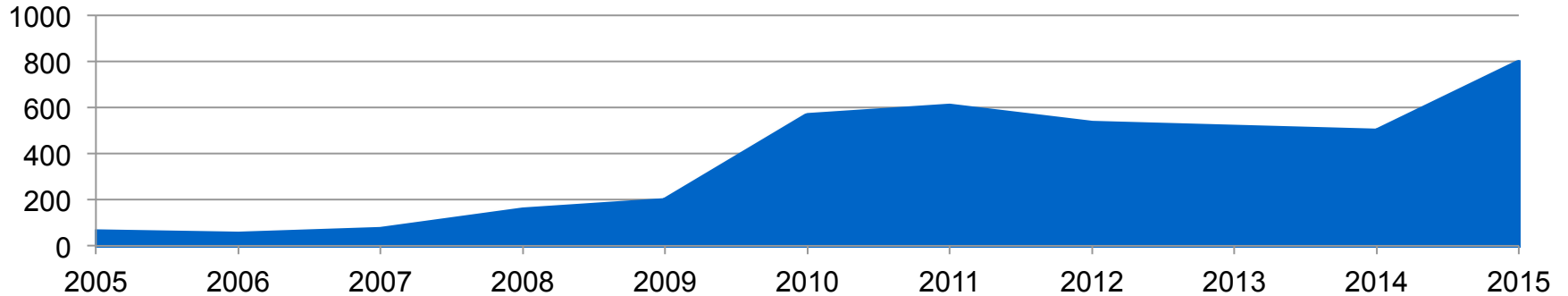
As at 31 Dec

Total NIR Sub-Accounts



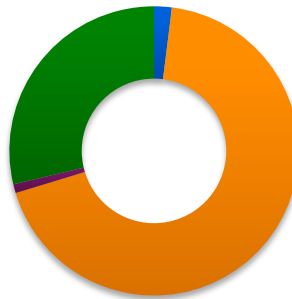
As at 31 Dec

Annual IPv6 Delegations



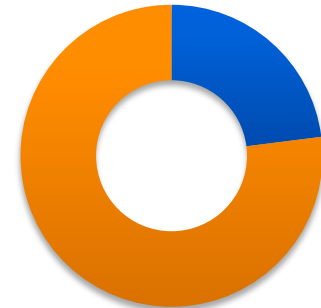
■ Allocation
■ Assignment

By delegation type



■ >=/31
■ /32
■ /43-/47
■ /48

By size

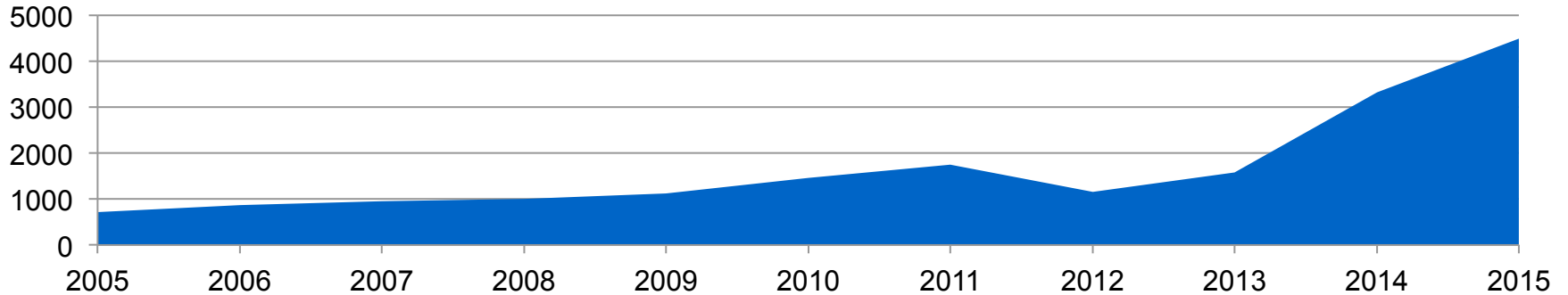


■ One-click
■ Normal

By request type

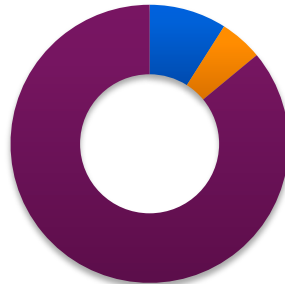
As at 31 Dec

Annual IPv4 Delegations



- From 103 pool
- From recovered pool

By pool



- /24
- /23
- /22

By size

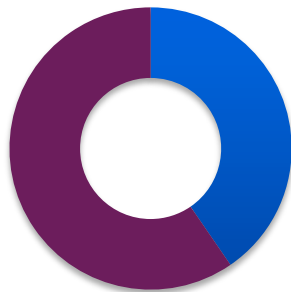
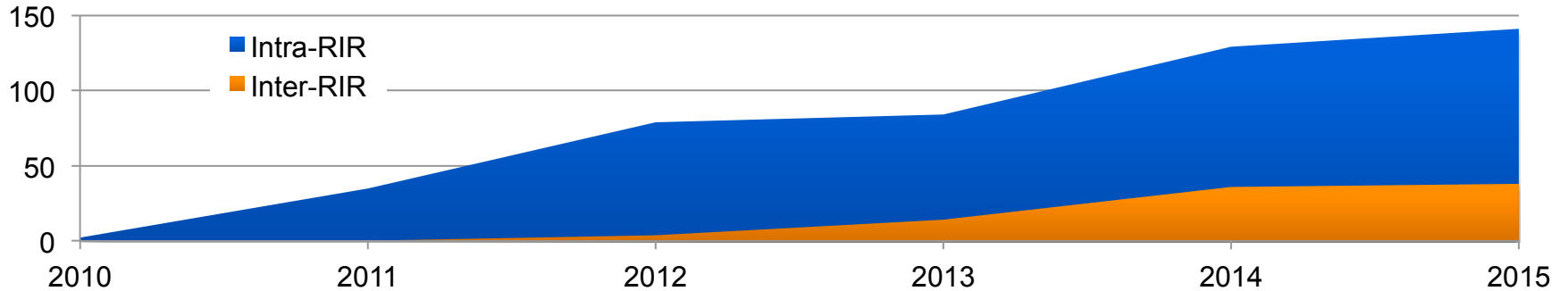


- NIR
- New
- Existing

By Member

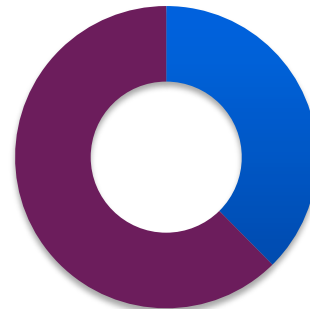
As at 31 Dec

Annual IPv4 Transfers



Using listing service

■ Used
■ Did not use

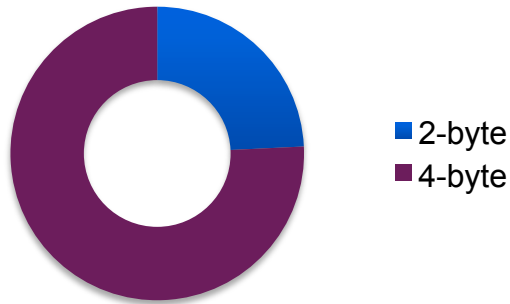
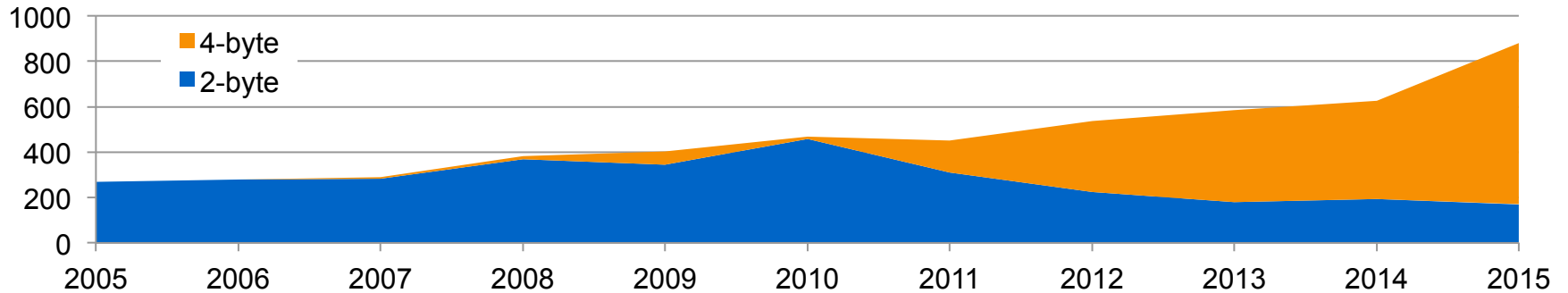


Pre-approval usage

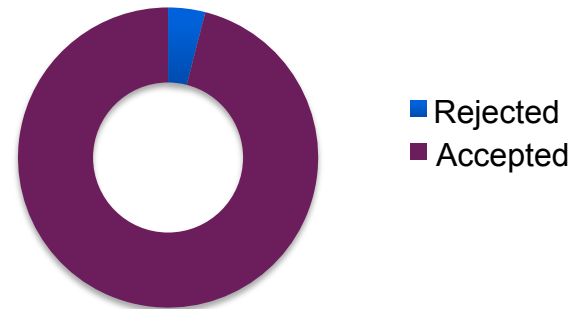
■ Used
■ Remaining

As at 31 Dec

Annual ASN Assignments






By type



4-byte return rate

As at 31 Dec

Projects in 2015 - example

Project	Activity	Status
RDAP deployment	Update whois server to latest RIPE software, then configure, test and deploy with RDAP support	
RPKI support	Launch and promote "Ready to ROA" campaign, aiming to increase RPKI adoption by at least 100% in 2015	
Upgrade Master and NRTM whois	...	
...	...	
...	...	



Registration Data Access Protocol

RDAP Deployed in
production 2015

Solves a number of
limitations to WHOIS
protocol

www.apnic.net/rdap

Standardized JSON query/response

RESTful web services over HTTP

Automatic inter-registry redirection

Authorization at attribute level

Internationalization using UTF-8

RPKI



**READY TO
ROA**



- 10 face-to-face and eLearning RPKI training courses delivered
- Offline simulation of production system
- Create and revoke ROAs, observe changes to routing state in lab

RPKI presentations to NOGs and conferences

'Ready to ROA' Campaign – hands-on sessions to help Members create ROAs

Shirts, stickers, web content to promote campaign

Regional RPKI adoption has tripled in past year – 0.8% to 2.7% and rising

www.apnic.net/roa

MyAPNIC Improvements



Two-Factor Authentication

Please use your authenticator app to generate a six-digit security code.

If you are not able to generate a security code, enter your backup code instead.

Six-digit security code

Remember me in this browser?

Authenticate

- Two-factor authentication using TOTP
- Access all MyAPNIC services (corporate contact, voting, Resource Certification)

MyAPNIC speed improvements - average 24% faster response time

Log in to MyAPNIC using your email address

MyAPNIC Login

Username/Email Address

Password

Login

[Forgot your login information?](#)

[Don't have access to MyAPNIC?](#)

Maintainer list

MyAPNIC checks this maintainer list when making updates to Whois objects. You can only add or delete a maintainer that is not associated with your Internet resources. For more information, please read this [Maintainer Guide](#).

Registered maintainers	Auth. method	Password	Deletes
MAINT-MYAPNIC-AP	MDS-PW	Valid password	Delete
MAINT-AP-TESTMAINTAINER	MDS-PW	Valid password	Delete
MAINT-AP-TESTMAINTAINER1	MDS-PW	Valid password	Delete

You cannot delete this maintainer as it is associated with your Internet resources. For more information, please read this [Maintainer Guide](#).

Maintainer Password Add

Maintainers managed as independent objects

Website Improvements



APNIC

CONTACT US WHOIS & WEBSITE MyAPNIC
Advanced Whois search

Get IP Manage IP Training Events Research Community Blog About

Your IP address: 2001:dc0:a000:4:bccd:a04e:ef5f:9949

GET IP ADDRESSES TRANSFER IP ADDRESSES GO IPv6 PARTICIPATE WHAT IS APNIC?

APNIC is the Regional Internet Registry administering IP addresses for the Asia Pacific

Community

NZSeries: Light-bulb moment allows research community to make a difference
By Robbie Mitchell
John Hine takes us back to where the Internet all began in New Zealand - inside its universities.

Community

NZSeries: Internet helping NZ retain and attract talent
By Robbie Mitchell
As we count down to APRICOT 2016, we speak to some local Internet champions to learn about the history, challenges and opportunities of the Internet in New Zealand.

Highlight

APRICOT 2016
APNIC 41

Online voting and proxy appointment now open for APNIC EC election
You have until 09:00 (UTC +13), Wednesday, 24 February 2016 to vote online or appoint a proxy for the APNIC 41 EC election. [Click here to see the nominees.](#)

Tech matters

APNIC Technical Colloquium 2015

Policy

YOUR VOTE

APNIC

CONTACT US WHOIS & WEBSITE MyAPNIC
Advanced Whois search

Get IP Manage IP Training Events Research Community Blog About

Manage IP

APNIC Services Roadmap

- MyAPNIC
- APNIC Services
 - Resource certification
 - DNSSec
 - Registration services
 - Routing Registry
 - Get more IPv6 addresses
 - APNIC Services Roadmap
 - Manage Internet resources
 - Manage Historical resources

Complete - In progress - Not started -

APNIC

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Advanced Whois search

Get IP Manage IP Training Events Research Community Blog About

Get IP

Membership and Internet Resource Application Process

1 Application

Average time: 20 minutes to complete the form

Before you start, it may be helpful to have the following information:

- Company Registration Number
- Certificate of Incorporation or other relevant documentation that verifies the establishment and existence of your organization
- Network abuse email
- Network information such as implementation date, equipment and network topology diagram

Complete the New Member and Internet Resource Application Form.

2 Evaluation

Average time: 2 to 5 working days

The information you provide in your application will be evaluated. APNIC will contact you regarding approval or if additional information is required.

Navigation and usability improvements to home page and services pages

Training Needs Assessment



Topics	Key survey responses	APNIC actions
eLearning	Improve topics; alternative video hosting platform	<ul style="list-style-type: none">• Reduced from 4 to 3 sessions• Changed time slots to 11:00; 13:00 and 15:00 – increased participation• Video-on-demand• Reviewing content
Self-paced learning	Support for online learning and certification	<ul style="list-style-type: none">• Looking to partner with RIPE NCC on course development (Internet governance, whois)
Face-to-Face	Strong interests in advanced topics such as network security, IPv6, BGP, DNSSEC and SDN	<ul style="list-style-type: none">• Reviewing and updating existing courses• Introduced Juniper-based materials and Juniper training lab
Capacity	Request for more and frequent training	<ul style="list-style-type: none">• Third and fourth trainers starting in October/ November to increase training capacity

Training in 2015



Received training contribution from nine organizations including:

- World Bank
- JICA
- ITU



77 face-to-face courses held in 20 locations

2,194 trainees face-to-face

726 trainees in 117 eLearning sessions

Video archives
80 videos
138,319 views

Technical Assistance



Support for scalable and resilient networks and best practices in network operations





www.apnic.net/tas

- Distribution and registration of resources
- Supporting reverse DNS delegation
- Managing whois and IRR
- Resource Certification
- IPv6 deployment
- Internet infrastructure security








Outreach in Sri Lanka (8 Members), Bangladesh (13 Members), Thailand (10 Members)



Serving Members: 2015

Project	Activity	Status
ARMS development	ASN delegation functionality was migrated from Perl to a Java service and deployed.	
Billing service improvements	New merchant facility introduced. PayPal and recurring credit card billing readied for 2016	
Feedback tool	Instant feedback service implemented across five Member contact points	
Unplanned project: Skype integration	Skype integration into Helpdesk telephony system for improved access to Helpdesk	

Serving Members: 2015

Project	Activity	Status
New CRM system	Project planning and user requirements indicated project scope was larger than initially anticipated. Project underway and due for completion 2017.	
Upgrade backup system	Review of backup approach completed, with new technology implemented to improve APNIC's backup systems.	
Upgrade Master and NRTM whois	Project postponed to 2016.	
Improved monitoring system	New monitoring system integrated into APNIC systems.	
Adoption of ISO 27001: 2013 Information Security Standard	Risk assessment completed and a security framework established for planned continuation of project in 2016.	

Serving Members: 2015

Project	Activity	Status
Curriculum and accreditation	Training curriculum updated and training lab equipment upgraded. Preliminary work on exam-based accreditation system begun for 2016 completion.	
Unplanned project: Analysis of APNIC's IDN and EAI system capability	Analysis and project recommendations completed	

Supporting the Region

Serving

Supporting

Cooperating

2015 Policy Implementations



Proposals approved at
APNIC 40 Policy SIG

prop-113: Modification in
the IPv4 eligibility criteria

prop-114: Modification in
the ASN eligibility criteria

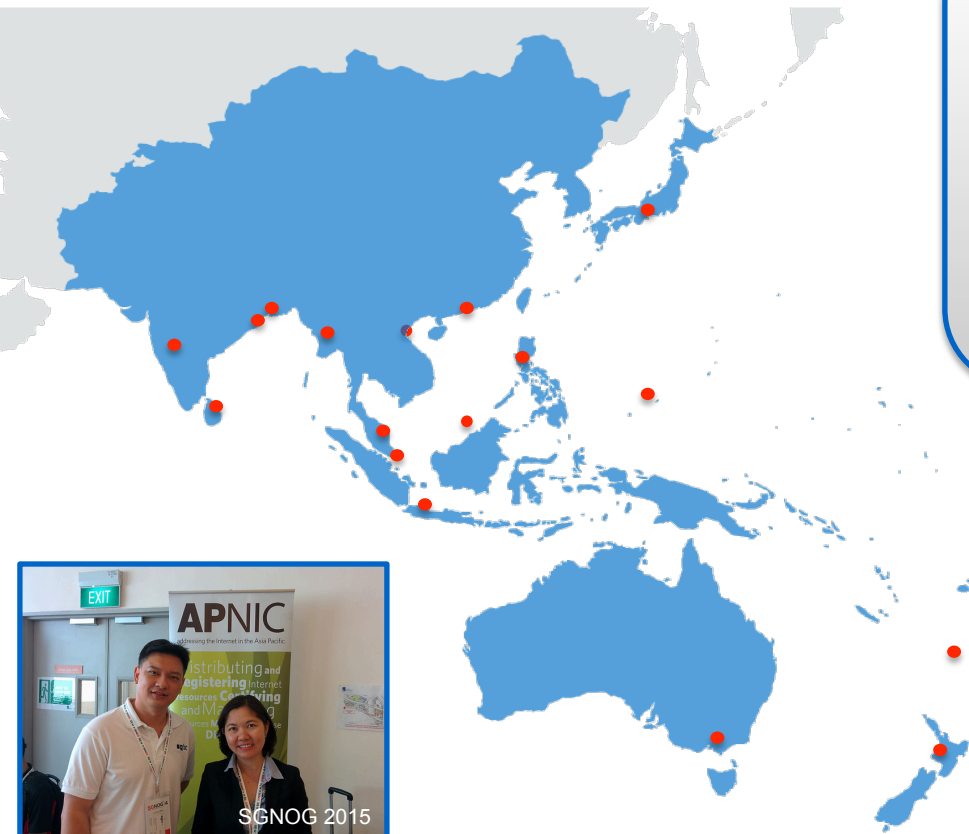
www.apnic.net/policy

NOGs in 2015



Participated in 17 NOG events JANOG, HKNOG, PHNOG, bdNOG, LKNOG, MyNOG, SGNOC, IDNOG, AusNOG, NZNOG, SANOG, PACNOG, MMNOG

- Technical and APNIC updates
- Hostmaster consultations
- Training sessions
- Sponsorship and logistical support



SGNOG 2015

www.apnic.net/nog

Community Development



RIPE Atlas anchor deployment in Maldives – Dhiraagu staff



Probe hosts in the Philippines



PacNOG 18



MoU signing for L-root

Supported 5 RIPE Anchor deployments; distributed 120 RIPE Atlas probes

16 fellowships for APRICOT 2015; 24 for APNIC 40 including 6 youth fellowships

Supporting new L-root (ICANN) server instance in Apia, Samoa

Working with NSRC in New Caledonia and Samoa on IXP support

IPv6 in 2015



539 trainees in 13 economies

IPv6 presentations at 14 events

IPv6 workshop with ITU in TH and TAS in MN

Supporting APIIPv6TF Secretariat

www.apnic.net/ipv6

Security Outreach



NOGs, CSIRTs and LEA events
PK, CN, HK, KR, JP, PH, SG,
MY, ID, AU, LK, MV, TW

Collaboration with JICA and
KISA to deliver regional
CERT training

Geoff Huston member of
ICANN SSAC

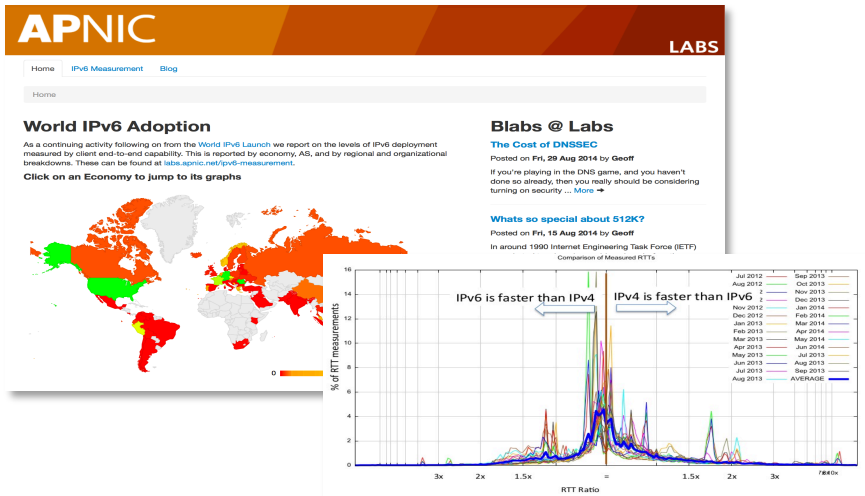
Adli Wahid member of FIRST
Board; invited to join
INTERPOL Global
Cybercrime Expert Group

www.apnic.net/security

APNIC Labs



Research statistics and evidence to help the APNIC community make informed technical decisions



Over 3 million measurements per day

Measuring IPv6, DNSSEC, DNS

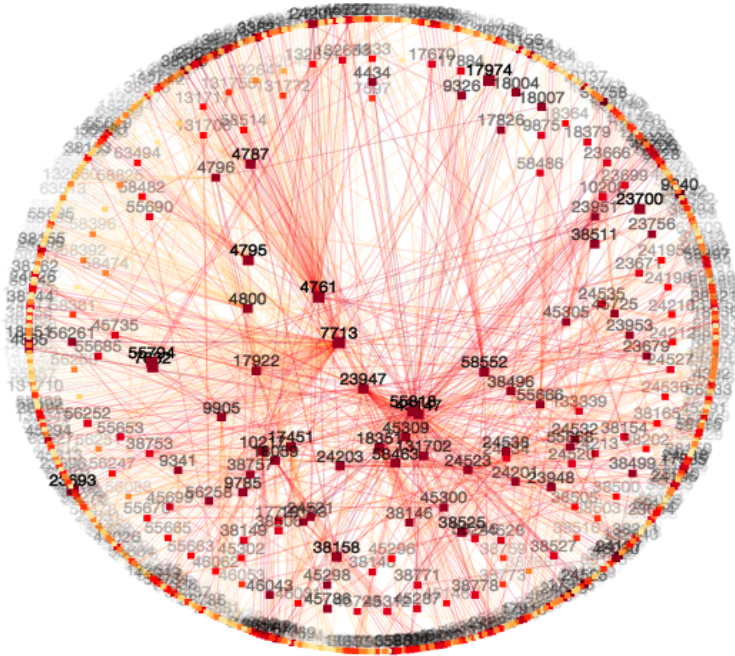
HTML5 allows measurements on mobile devices (replacing Flash)

Critical data for DNS Root Zone key roll and ICANN's Universal Acceptance (IDN) program

Research presentations at 18 forums including IETF, RIRs, ICANN, DNS OARC, NOGs, OECD

labs.apnic.net

ASN Visual Exploration: vizAS



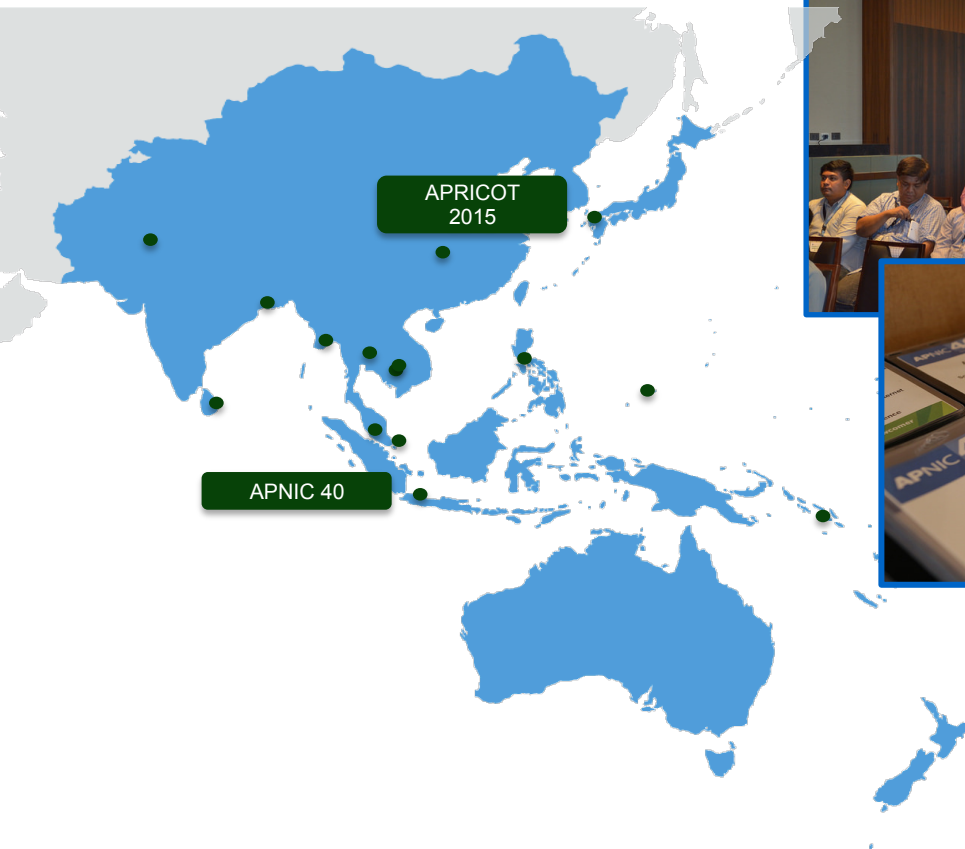
Graphical display of BGP paths within a single economy

Relationships between service and transit ASNs identified

Public tool – Have a go!

labs.apnic.net/vizas

APNIC Events



16 economies in 2015

PK, BD, LK, MM, KH,
TH, MY, SG, PH, ID,
SB, JP, MN, GU, LA,
MG

Attendance

Conferences: 1,364

Member outreach
events: 614

Improving Communication



APNIC



Event Wrap: Taiwan Internet Forum

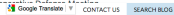
By Robbie Mitchell on 17 Dec 2015
Categories: Community, Events
Tags: Event Wrap, Internet of Things, IPv6, Taiwan, Taiwan Internet Forum, TWNIC



APNIC staff participated in the inaugural Taiwan Internet Forum held in Taipei, Taiwan from 8 to 11 December.

TWNIC launches 2015 Taiwan Internet Forum in Taipei

Hosted by TWNIC, the event included three parallel meetings: the Global IPv6 Summit in Taiwan, the TWNIC IP Open Policy Meeting, and the Taiwan



APNIC



Championing IPv6 deployment in Malaysia

By Aurora Mat Salim on 1 Dec 2015
Category: Tech matters
Tags: IPv6, Malaysia



Telekom Malaysia Source: CFP/Photo, Wikimedia Commons

In August 2015, Telekom Malaysia became one of the top-10 IPv6 network operators in the world, according to World IPv6 Launch, measuring over 15% IPv6 deployment.

These figures are comparable to APNIC Latin results, which also reveal that both IPv6 capabilities and preference have increased by over 50% since the start of 2015.

This growth has been a great achievement and reward for over 10 years of development. Most importantly our customers are enjoying the benefits from IPv6, notably more public address space, as well as default IP assignments.

Building a network and awareness from inside-out and top-down



Telekom Malaysia (TM) started deploying IPv6 in 2004 but did not make it available for commercial services until 2011.

Our inside-out approach meant we started by first enabling the core IP network before moving outwards to customer endpoints. We chose this approach because of the challenges associated with Customer Premises Equipment (CPE) compatibility; the cost of providing one-to-one replacement being the biggest challenge.

In 2012, TM started providing compatible CPEs to its customers before launching its dual stack service in 2013. Our migration strategy was to give room to existing users to make their own

Get updates

APNIC



Encouraging more women to consider an ICT career in Fiji

By Shadrika Magan on 9 Dec 2015
Categories: Community, Development



Recognised fact that women are not equally represented in the ICT industry, United Nations EMD Figures highlighting an estimated shortfall of more than million skilled female ICT professionals worldwide.

has not escaped the attention of Seneca Narayan, Communications Director at UN Women in Fiji. UN Women is mandated to get more women lead in male-majority roles, such as computer programming and technical education, as part of the World's Sustainable Development Goals, which notes gender equality and the empowerment of women.

She, who was also an APNIC 38 fellow, has witnessed the lack of women in related roles in Fiji. Along with other interested women, she joined a 'Girls Women in ICT' group to help encourage more women to consider a career in their field.

Turning the Tide for Women in the Pacific' forum in Nadi, Fiji, in November 2015.

Promote equal representation of women in industry workplaces and in the workplaces

Get updates

APNIC

Latest Tweets

3 common misconceptions about IPv6 via @geoffhuston

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Blog and social media provide day-to-day insight into APNIC and community

Great community content – 44 Guest Posts – thank you

In 2015:
376 blog posts
68 event wrap reports
116,892 views
Award winning!



blog.apnic.net



Internet Operational Research Grants

New fund supporting the Internet research community in the Asia Pacific

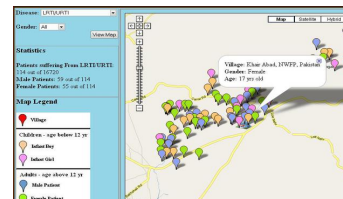
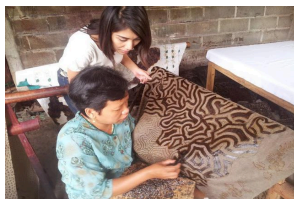
Research to improve availability, reliability, and security of the Internet in the Asia Pacific

Network measurement and analysis

IPv6 deployment


BGP Routing

Network Security



<p>Awards 2015</p>	<p>78 nominees from 12 AP economies; 5 awarded</p>	<p>India: I Change My City, www.ichangemycity.com Indonesia: Batik Fractal, www.batikfractal.com Pakistan: doctHERs, www.docthers.com Pakistan: Jaroka Tele-Healthcare, www.umtrust.org</p>
<p>Grants 2015</p>	<p>4 projects in progress</p>	<p>Pacific Islands: Peer strategy, NSRC/Telco2 Nepal: TV White spaces deployment, NepalWireless Bangladesh: Mobile and diagnostic devices, UniDhaka India: Carrier access in rural emergencies, InnovadorsLab</p>
<p>Grants 2016 launched</p>	<p>Looking for innovative approaches that use Internet technology</p>	<p>Technical innovation: access provision, electricity supply, devices, IoT, IPv6, security, privacy Community Impact: Women & girls in IT, democracy enhancement, open data, applications for economic empowerment and poverty alleviation</p>

Cooperation SIG

Project	Deliverables	Status
Cooperation SIG	Cooperation SIG established, with Chair and Co-Chair elected. Two SIG meetings held in 2015 and mailing list hosted by APNIC.	

www.apnic.net/sigs

Collaborating Globally

Serving

Supporting

Cooperating

Global Cooperation



IPv6 advocacy

Coordination with RIRs and Internet organizations

Engaging with government agencies in training and skills development

Supporting IANA Transition

Promoting the RIR model





IANA Stewardship Transition

- IANA transition proposal
 - Incorporating CRISP plan
 - Completed on 29 Oct 2015
 - Awaiting CCWG Accountability Proposal
- CCWG accountability proposal
 - Completed on 23 Feb 2016
 - Now awaiting Chartering Organisation approval by 9 March
- Next steps
 - ASO approval
 - Submission to ICANN Board



Implementation

- Service Level Agreement
 - SLAv4 published (24 Feb 2016)
 - Meeting during ICANN 55 (Mar 2016)
- IANA Intellectual Property Rights
 - Transfer to IETF Trust, terms under development
- Review Committee
 - 3 members from each region
 - Initial APNIC appointments decided (22 Feb 2016)

RIR Collaboration



RSM meeting, ARIN 35



AFRINIC 23



George Michaelson

RIR Stability Fund established

RIR Transparency matrix available on NRO website

APNIC Labs research collaboration with RIPE NCC and LACNIC

Event support for AFRINIC 23

Active NRO Coordination Group participation – engineering, registry, communications, finance, HR

RIR staff visits to APNIC – LACNIC, AFRINIC, RIPE NCC

Coming next



APNIC 42 (with bdNOG 6),
Dhaka, Bangladesh
29 Sep - 6 Oct 2016

conference.apnic.net/42

Coming later

- Ho Chi Minh City
 - 20 February to 3 March 2017
- Taichung
 - 7 to 14 September 2017

THANK YOU