

# APNIC Update

Sanjaya  
26 October 2017  
MYNOG

# APNIC



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

# Activities



Serving APNIC Members



Supporting Regional Internet  
Development

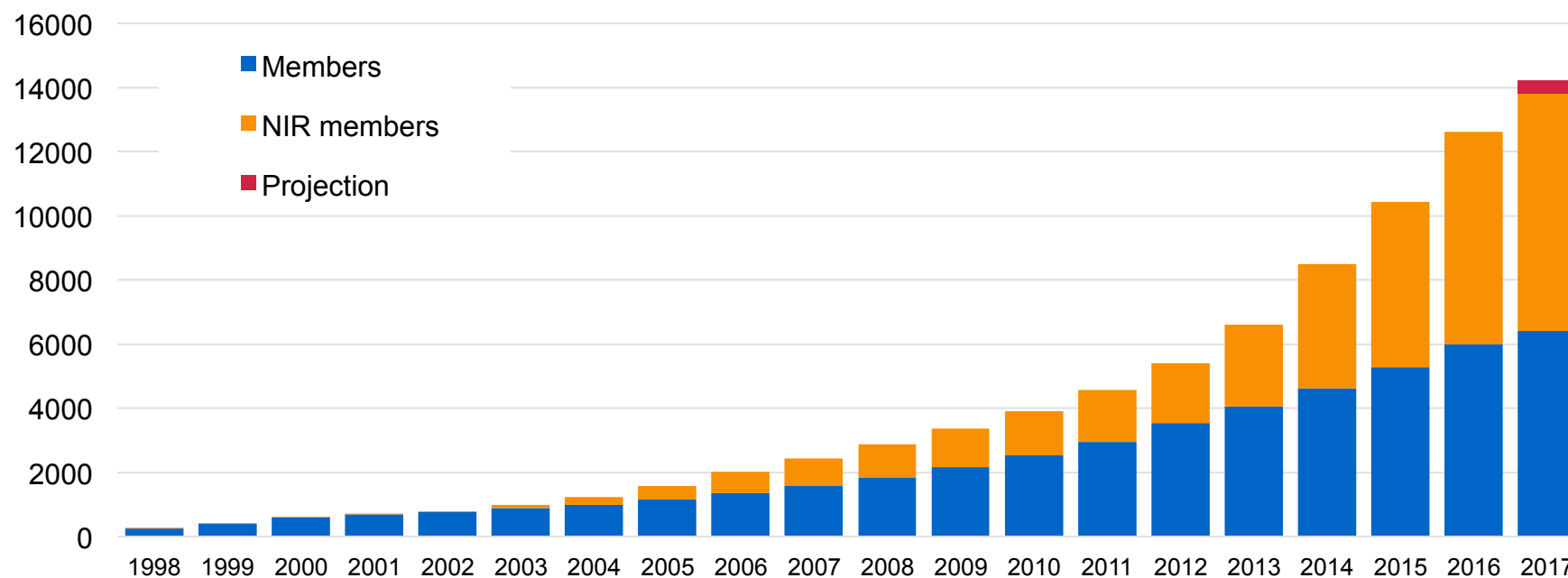


Cooperating with the Global  
Internet Community





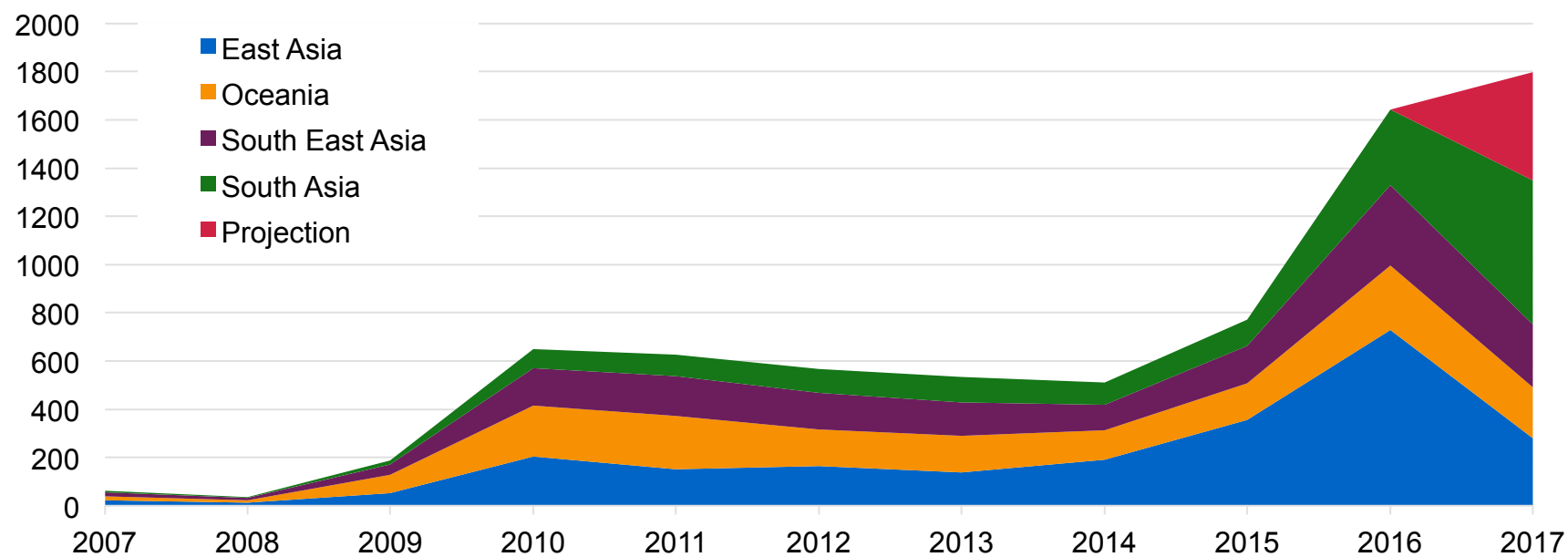
# Membership



As at 30 Sep



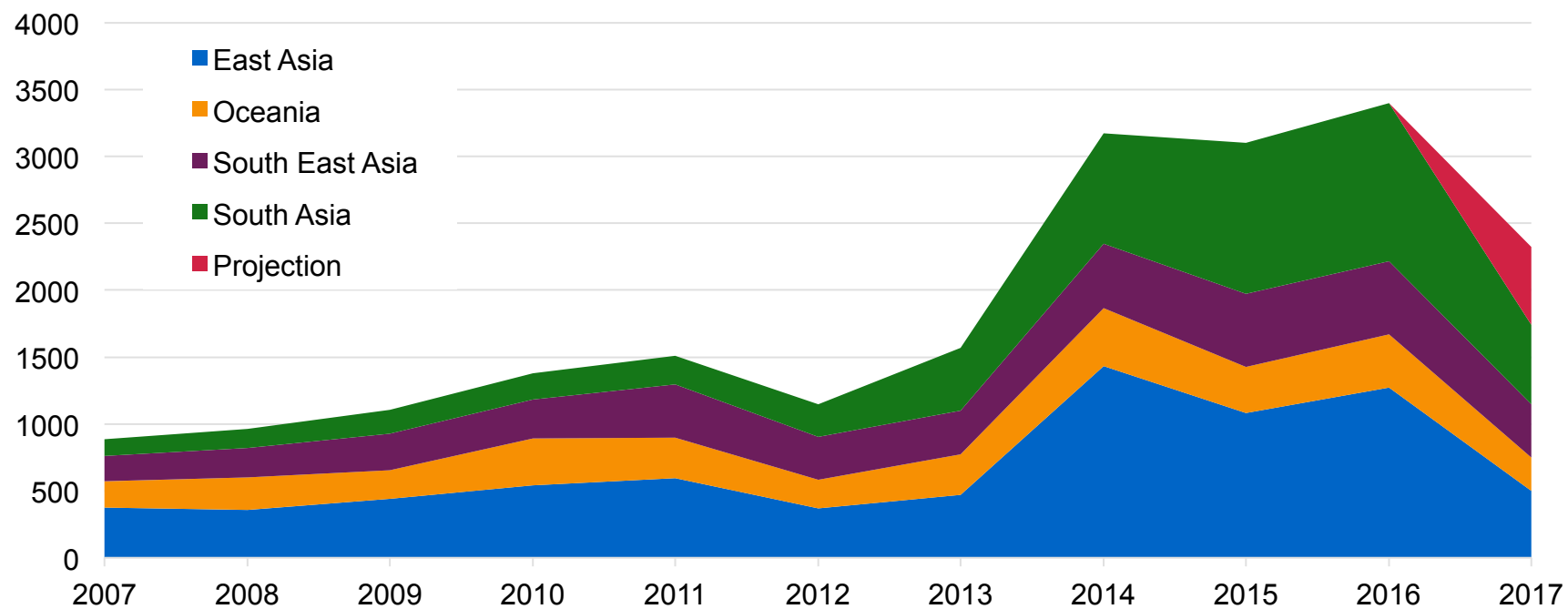
# IPv6 Delegations



As at 30 Sep



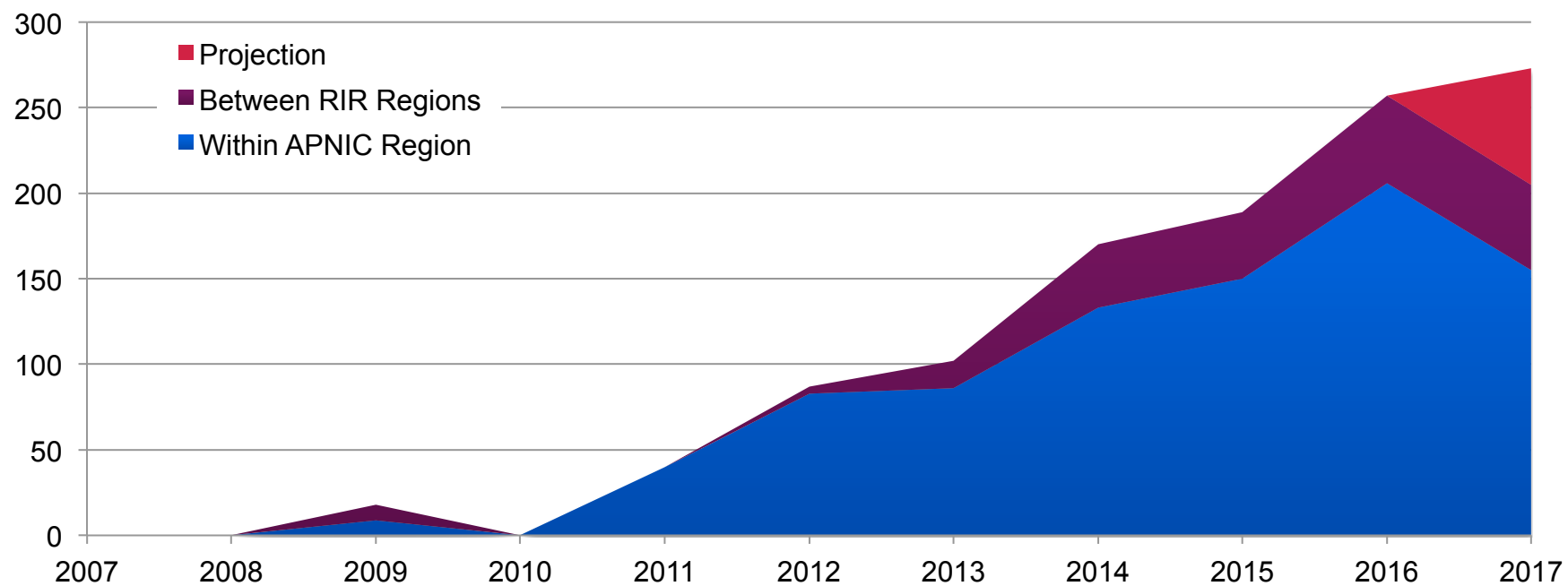
# IPv4 Delegations



As at 30 Sep



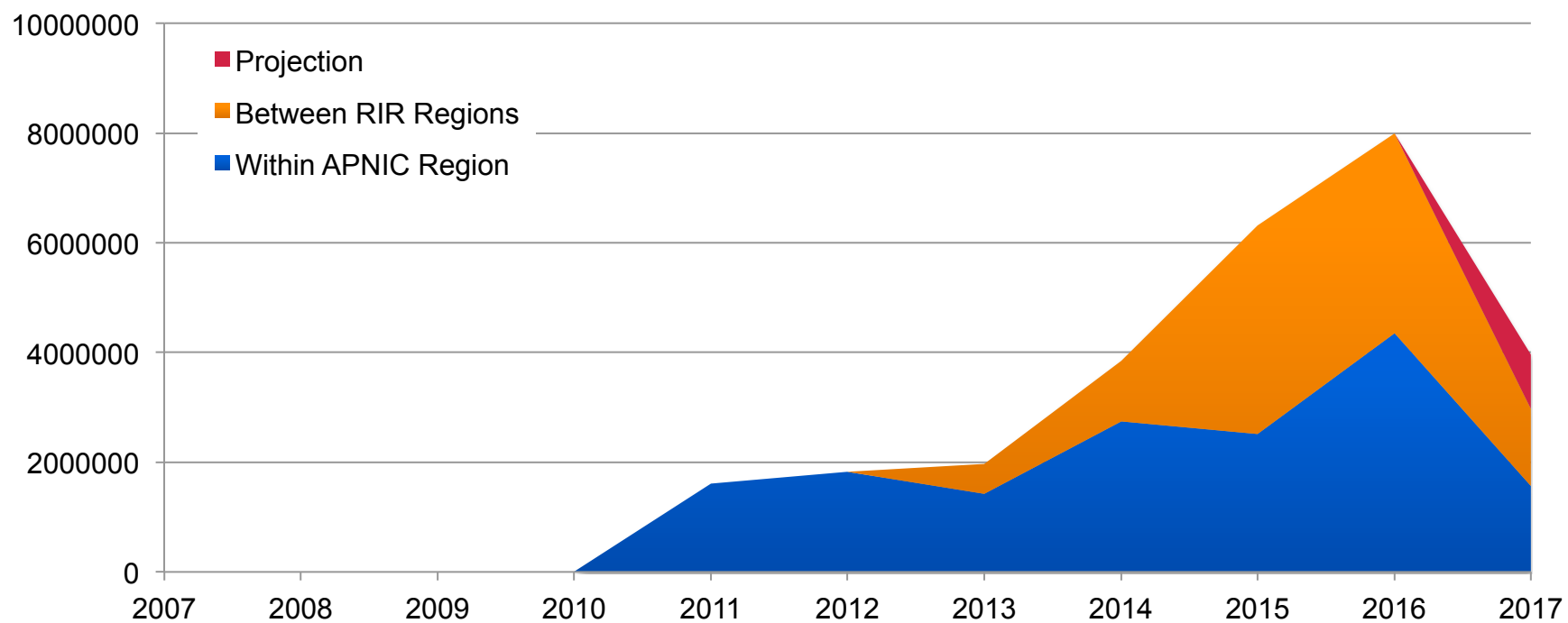
# IPv4 Transfers



As at 30 Sep



# Total IPv4 Transferred

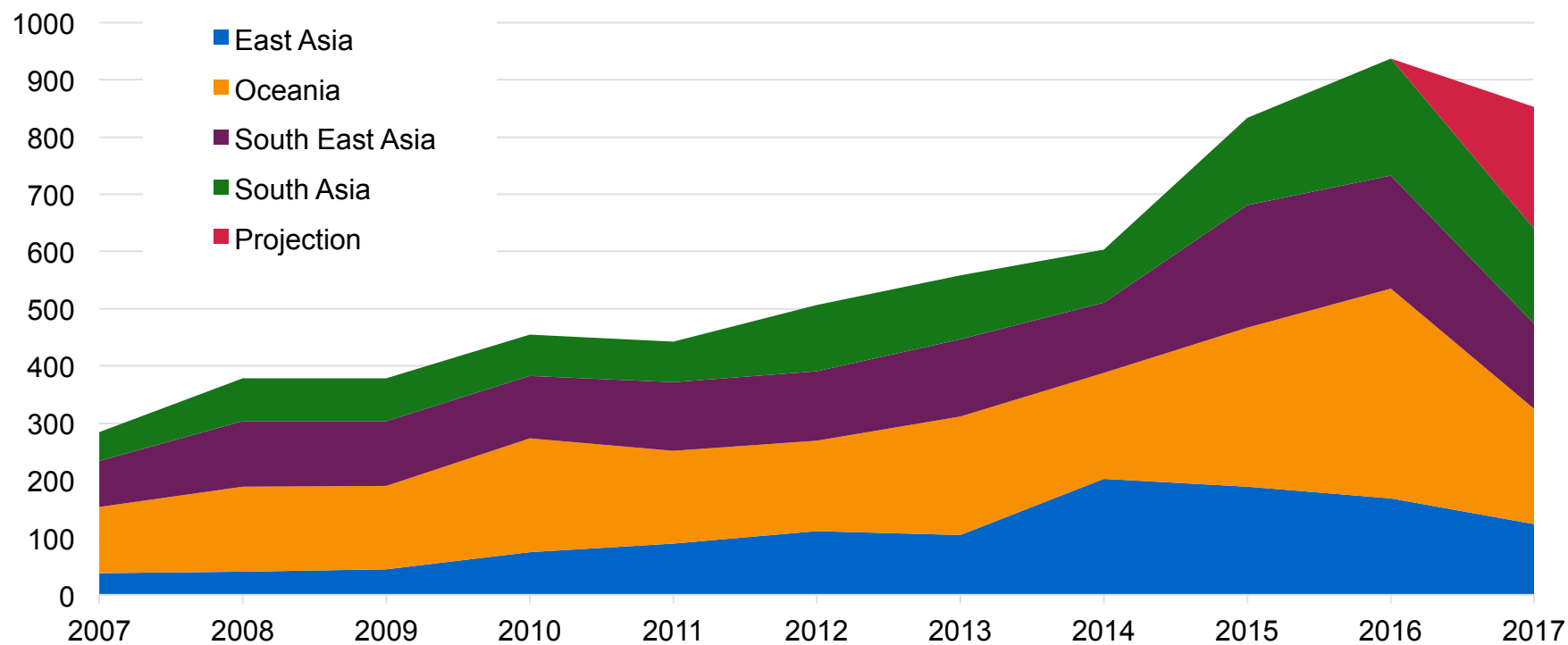


As at 30 Sep





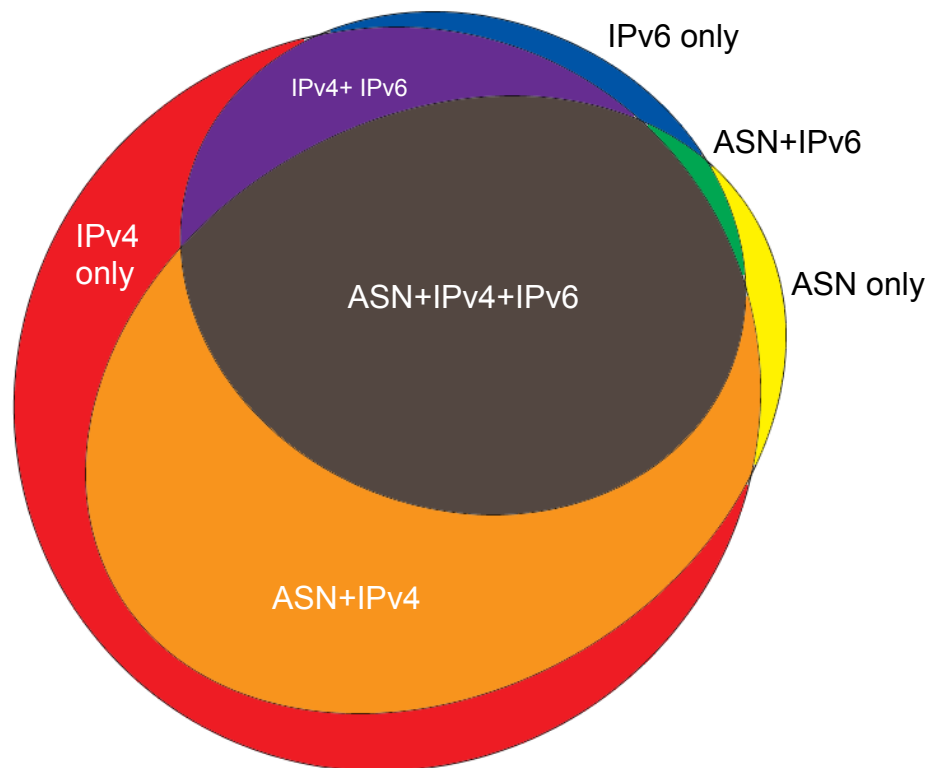
# ASN Delegations



As at 30 Sep



# Resource Holdings



% of Members Holding	
ASN	74%
IPv4	96%
IPv6	55%

As at 30 Sep



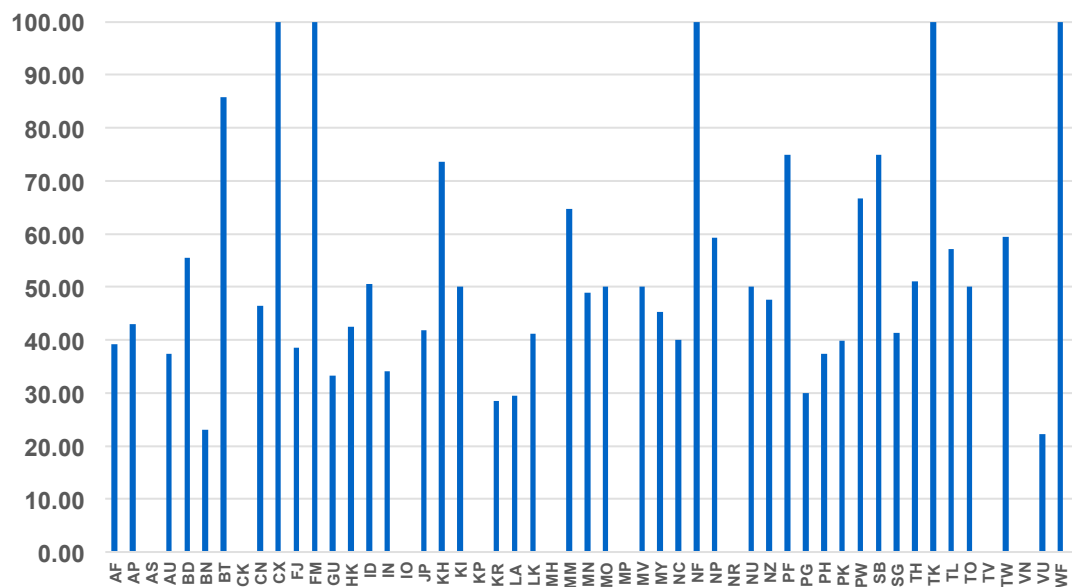
# Whois and Whowas

- Whois
  - “organization object”
  - 56% of Members updated
  - Introduction of ‘last modified’ attribute to replace ‘changed’ attribute

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

- Whowas
  - Improved interface
  - RDAP spec @ IETF 99

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



% organization updates per economy



478 whois qps

WhoWas

202.12.31.0/24

202.12.31.0 - 202.12.31.255  
 202.0.0.0 - 203.255.255.255  
 202.0.0.0 - 202.255.255.255  
 0.0.0.0 - 255.255.255.255



! network name **APNIC-ANYCAST-1**  
 network 202.12.31.0 - 202.12.31.255  
 ! country **AU**  
 type ASSIGNED PORTABLE  
 ! description Anycast node to be located in (but not limited to) HongKong, USA, The Netherlands Asia Pacific Network Information Centre Regional Internet Registry for the Asia-Pacific Region 6 Cordelia Street PO Box 3646 South Brisbane, QLD 4101 Australia

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handle [AIC1-AP](#)  
 name APNIC Infrastructure Contact  
 kind group  
 address 6 Cordelia Street South Brisbane QLD 4101  
 voice +61 7 3858 3100  
 fax +61 7 3858 3199  
 email helpdesk@apnic.net  
 remarks Infrastructure Contact for APNICs own-use network blocks

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handle [IRT-APNIC-IS-AP](#)  
 name IRT-APNIC-IS-AP  
 kind group  
 address South Brisbane, Australia  
 email helpdesk@apnic.net  
 email helpdesk@apnic.net  
 remarks APNIC Infrastructure Services

! network name **APNIC-SERVICES-HK**  
 network 202.12.31.0 - 202.12.31.255  
 ! country **HK**  
 type ASSIGNED PORTABLE  
 ! description Asia Pacific Network Information Centre Regional Internet Registry for the Asia-Pacific Region

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handle [AIC1-AP](#)  
 name APNIC Infrastructure Contact  
 kind group  
 address 6 Cordelia Street South Brisbane QLD 4101  
 voice +61 7 3858 3100  
 fax +61 7 3858 3199  
 email helpdesk@apnic.net  
 remarks Infrastructure Contact for APNICs own-use network blocks

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handle [IRT-APNIC-IS-AP](#)  
 name IRT-APNIC-IS-AP  
 kind group  
 address South Brisbane, Australia  
 email helpdesk@apnic.net  
 email helpdesk@apnic.net  
 remarks APNIC Infrastructure Services



# RPKI



- RIRs move to “all resources” Trust Anchor (2017)
- “Ready to ROA”  
PH, BT, CK, CN, ID, KH, NP, MN

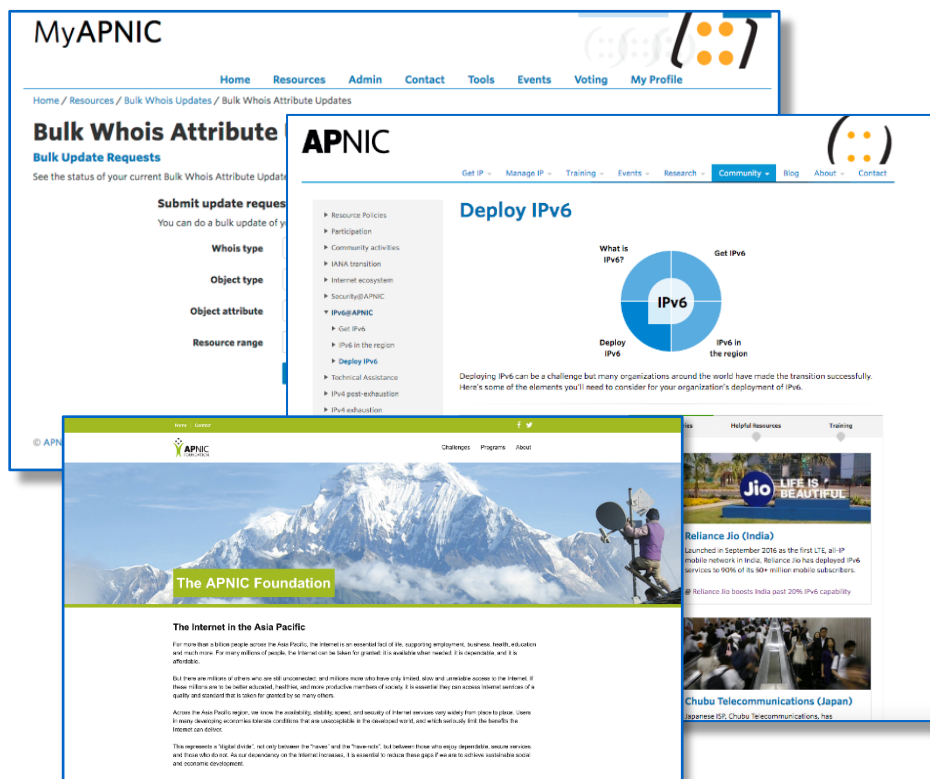


- RPKI uptime 99.9995%
- 21 qps

ROAs	2017
ROA-enabled Members	797
Numbers of ROAs created	722
Number of IPv4 addresses under ROAs (/32s)	15,473,736
Number of IPv6 addresses under ROAs (/56s)	3,124,861,952
% allocated space under ROAs (IPv4)	1.79%
% allocated space under ROAs (IPv6)	0.36%



# APNIC Online



- MyAPNIC
  - Support for Organization object
- apnic.net
  - Wordpress inhouse
  - New IPv6 pages
  - Better program design
- apnic.foundation
  - New CMS and content refresh

# Activities



Serving APNIC Members



Supporting Regional Internet  
Development



Cooperating with the Global  
Internet Community



# Training and TA



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




	2017
Face-to-face training	52
Locations	23
Trainees	1,763
Community Trainers	11
Courses	14
Locations	6
eLearning sessions	109
Trainees	552
Training YouTube videos	115
Views	519,191
Technical Assistance (TA)	10

Updated Courses: IRM, IRR, Network Security, MPLS, SDN, NFV



# apnic.academy



 <p>Internet Resource Management</p> <p>Course</p>	 <p>IPv4/IPv6 Routing</p> <p>Course</p>	 <p>Introduction to CyberSecurity</p> <p>Course</p>
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- Launched April 2017 (Moodle)
  - Free public access
- ‘Introduction to CyberSecurity’  
‘Internet Resource Management’
  - Registered: 1,506
  - Enrolled: 1,506
  - Certified: 279
- Coming:
  - IPv4/IPv6 Routing
  - More Security/CERTs

# Community



- NOGs: 18 presentations, Member consults, tech support, sponsorship
- Root servers: J-root installed in NP
  - Sponsorship of “aggressive NSEC caching” in BIND
- RIPE Atlas
  - Anchors in MM, MN, AU, NP, ID, VN
  - 270+ probes distributed
- MoUs
  - Sri Lanka CERT|CC, ISC;
  - KISA, APIA, Netnod
- 48 fellowships for APNIC 44

# Security



- 21 NOG and CERT events
- APSIG 2017, APriGF 2017, ASEAN, KISA, CNCERT, INTERPOL SG
- Tonga CERT.to: Support and training
- CERT support in the Pacific
- FIRST
  - MoU signed
  - Workshops at APRICOT 2017 and APNIC 44
  - Adli Wahid re-elected to Board
- 36 blog posts
- New team member: **Jamie Gillespie**

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

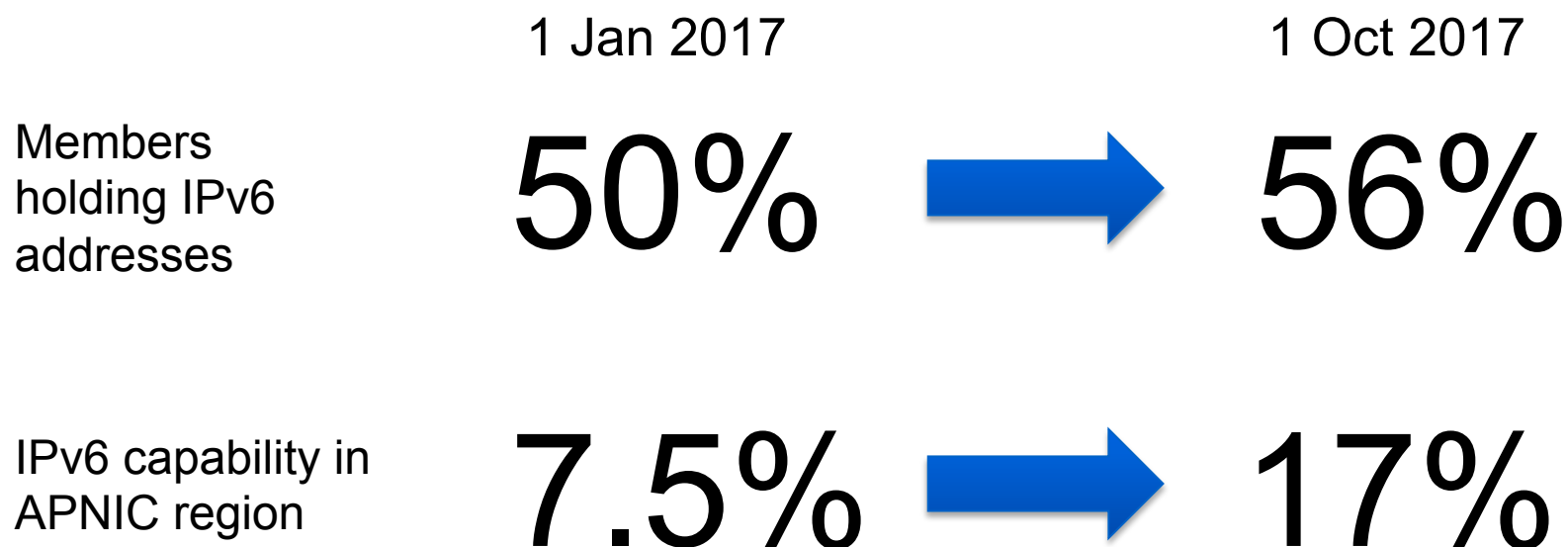
# IPv6



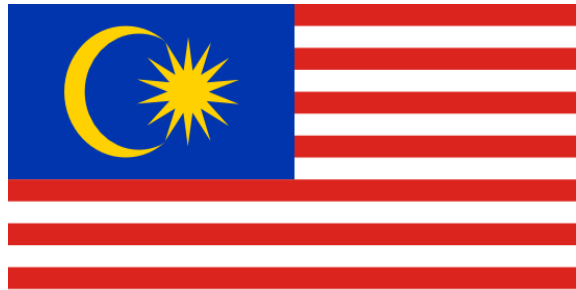
- Training: 15 face-to-face with 457 trainees
- eLearning: 20 sessions with 117 trainees
- 8 presentations at regional events
- World IPv6 Day: 6 June 2017
- Joint APNIC/ITU IPv6 Infrastructure Security Workshops in TH and BT
- New IPv6 web pages, case studies
- 62 blog posts



# IPv6 growth



# About Malaysia



31,164,177 people

21,378,625 users

69% penetration

240 ASes

296.34B GDP

IPv4	171 in BGP
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6,663,936 addresses

0.21 per head

90% visible

IPv6	64 in BGP
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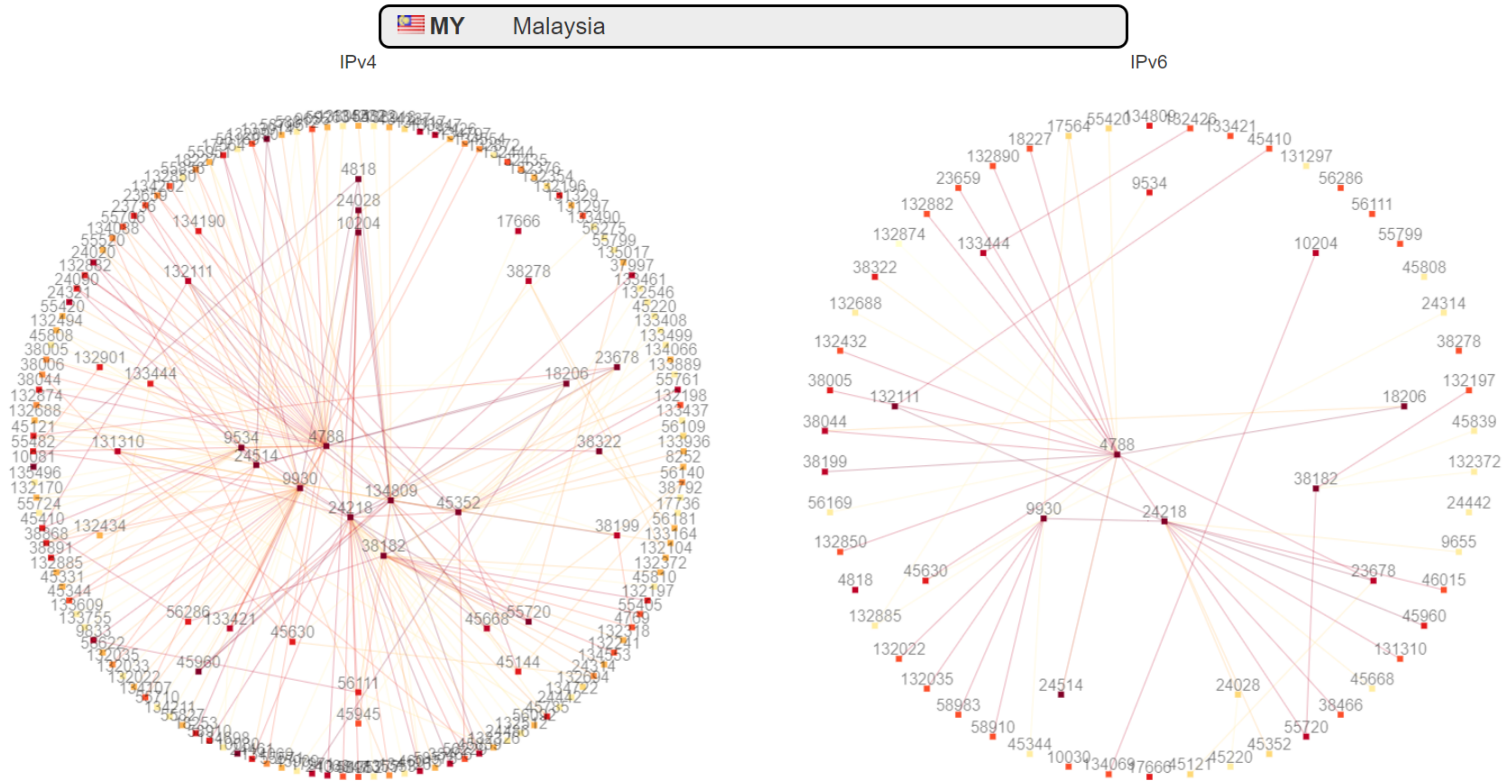
545,464 M addresses

17,502 per head

21% visible

18% capability

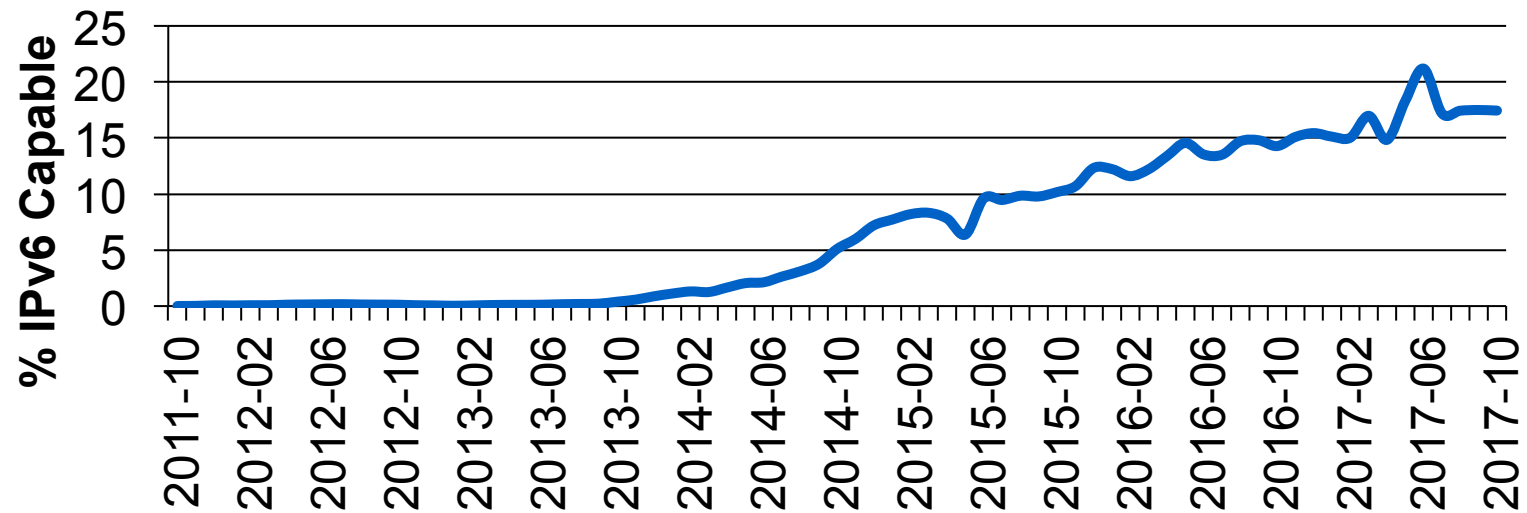
vizAS explores the interconnections between ASes within an economy, and compares the state of interconnections between the IPv4 and IPv6 address families.



<https://labs.apnic.net/vizas>

# Malaysia IPv6 Capability

MY





# Top 10 IPv6 Capable

ASN	AS Name	IPv6 Capable	IPv6 Preferred	# Samples
AS132688	UM-AS-AP University of Malaya	33.24%	31.21%	2262
AS4788	TMNET-AS-AP TM Net, Internet Service Provider	27.95%	25.96%	2893285
AS24314	UPSI-AS-AP University Pendidikan Sultan Idris	25.23%	24.55%	440
AS4818	DIGIIX-AP DiGi Telecommunications Sdn. Bhd.	16.65%	16.50%	635801
AS38044	GITN-NETWORK GITN-NETWORK	10.86%	10.45%	8869
AS9930	TTNET-MY TIME dotCom Berhad	7.42%	7.32%	156976
AS45960	YTLCOMMS-AS-AP YTL COMMUNICATIONS SDN BHD	7.03%	6.95%	103453
AS17564	GITN-PCN-AS-AP GITN (M) Sdn. Bhd.	6.62%	5.32%	3250
AS9534	MAXIS-AS1-AP Binariang Berhad	5.45%	5.23%	813029
AS38322	WEBE-MY-AS-AP WEBE DIGITAL SDN. BHD.	4.02%	3.99%	63594



# labs.apnic.net

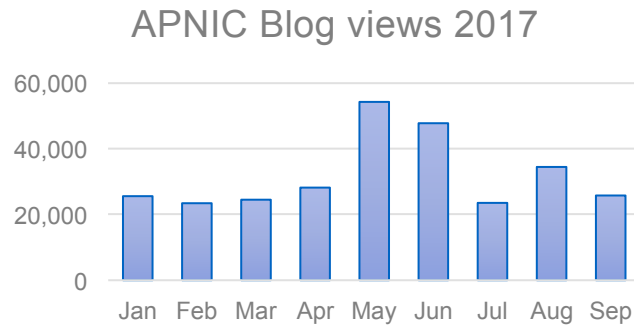


- 21 articles on Blabs and APNIC blogs
- 17 presentations at industry events  
IETF, PTC, OARC, RIRs, NOGs
- Current research topics
  - DNSSEC KSK rollover
  - IPv6 and large MTU settings
  - Latent QUIC capability
  - Dynamic behaviour of BBR
- Geoff Huston serves on ICANN SSAC

# blog.apnic.net



## Views



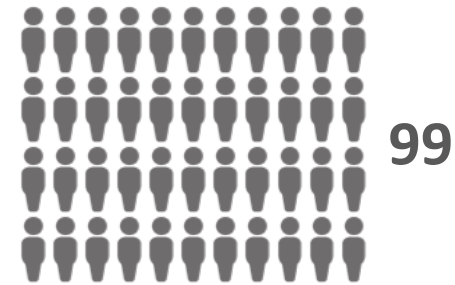
Average: 32k per month

## Economies



Economies covered: 32

## Guest Bloggers



Total: 203 authors to date

## Topics



Top 5: IPv6, Security, Training, NOGs, IXP

As at 30 Sep

# Activities



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# Global Engagement



- FIRST events
- APT PRF
- GSMA MWC
- ITU-WTDC prep process
- GFCE
- IPv6 at APEC TEL 55, with LACNIC
- DNSSEC KSK Rollover, with ICANN
- APriGF, APSIG, PKSIG, PacIGF, NPIGF, IGFA
- APASA launch with ICANN, ISOC (AP hubs) and DotAsia



# RIR Collaboration



- RDAP batch extension proposal
- DNSSEC KSK rollover with RIRs
- Seed Alliance with AFRINIC and LACNIC
- ASO review
- World IPv6 Launch 5<sup>th</sup> anniversary
- Joint APNIC-AFRINIC Boards meeting at AFRINIC 26 / AIS'17
- NRO CGs: engineering, registry, comms, finance, HR, legal
- Participation at all RIR meetings in 2017



# Next Conference

**APRICOT**  
**2018**

**APNIC 45**

**KATHMANDU, NEPAL**  
19 - 28 February 2018

#apricot2018

The logo for APRICOT 2018 features a stylized red mountain range. The central peak is replaced by a pair of large, blue, almond-shaped eyes with red outlines. Below the eyes is a red stupa. To the left of the stupa are several red pine trees. The text 'APRICOT 2018' is in large, bold letters, with 'APRICOT' in black and '2018' in red. Below this, 'APNIC 45' is written in blue. The location and dates 'KATHMANDU, NEPAL' and '19 - 28 February 2018' are in black. A hashtag '#apricot2018' is also present.

<https://2018.apricot.net/register>



# Later...



APNIC 46  
Noumea, New Caledonia  
6 to 13 September 2018



APRICOT 2019  
Daejeon, Republic of Korea  
18 to 28 February 2019





# Stay in Touch!



[blog.apnic.net](http://blog.apnic.net)  
[apnic.net/social](http://apnic.net/social)

Thanks!

