APNIC Update

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APNIC

Overview

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

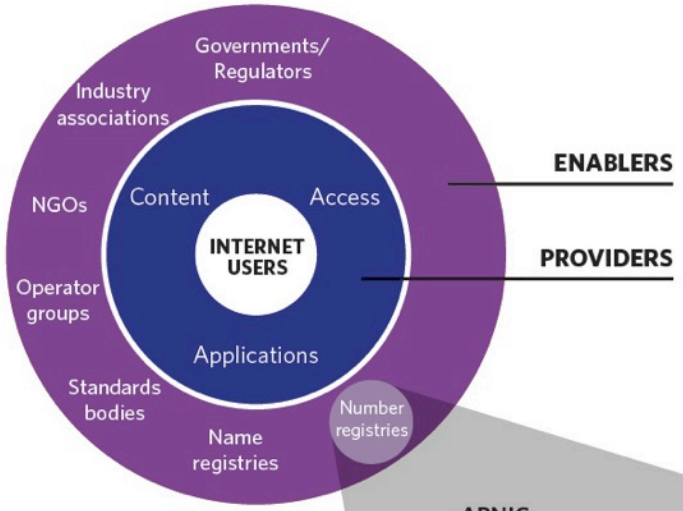
APNIC's Vision:

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

APNIC

APNIC

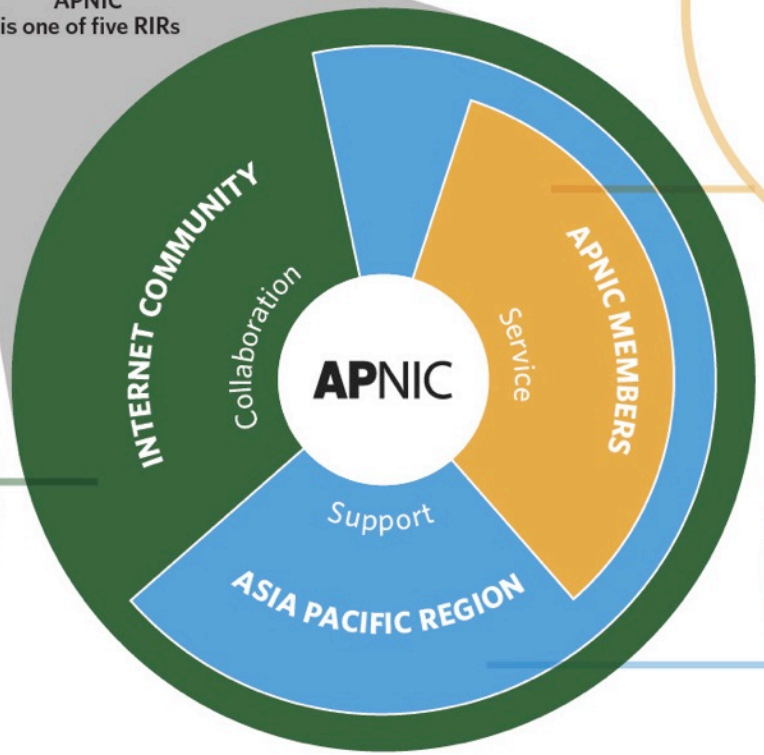
addressing the Internet in the Asia Pacific



ENABLERS

PROVIDERS

APNIC is one of five RIRs



Resource distribution
- IP addresses
- AS numbers

Registration services
- reverse DNS
- Internet routing registry
- resource certification
- whois registry

Original research

Data collection and measurements

Publications

Local/regional/global events

Internet governance

Internet security

Policy development

Capacity building
- training
- workshops
- conferences
- fellowships
- grants

Infrastructure
- root servers
- IXPs
- engineering assistance

APNIC's Mission

- **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
- Provide **leadership and advocacy** in support of its vision and the community
- Facilitate **regional Internet development** as needed throughout the APNIC community

Serving APNIC Members

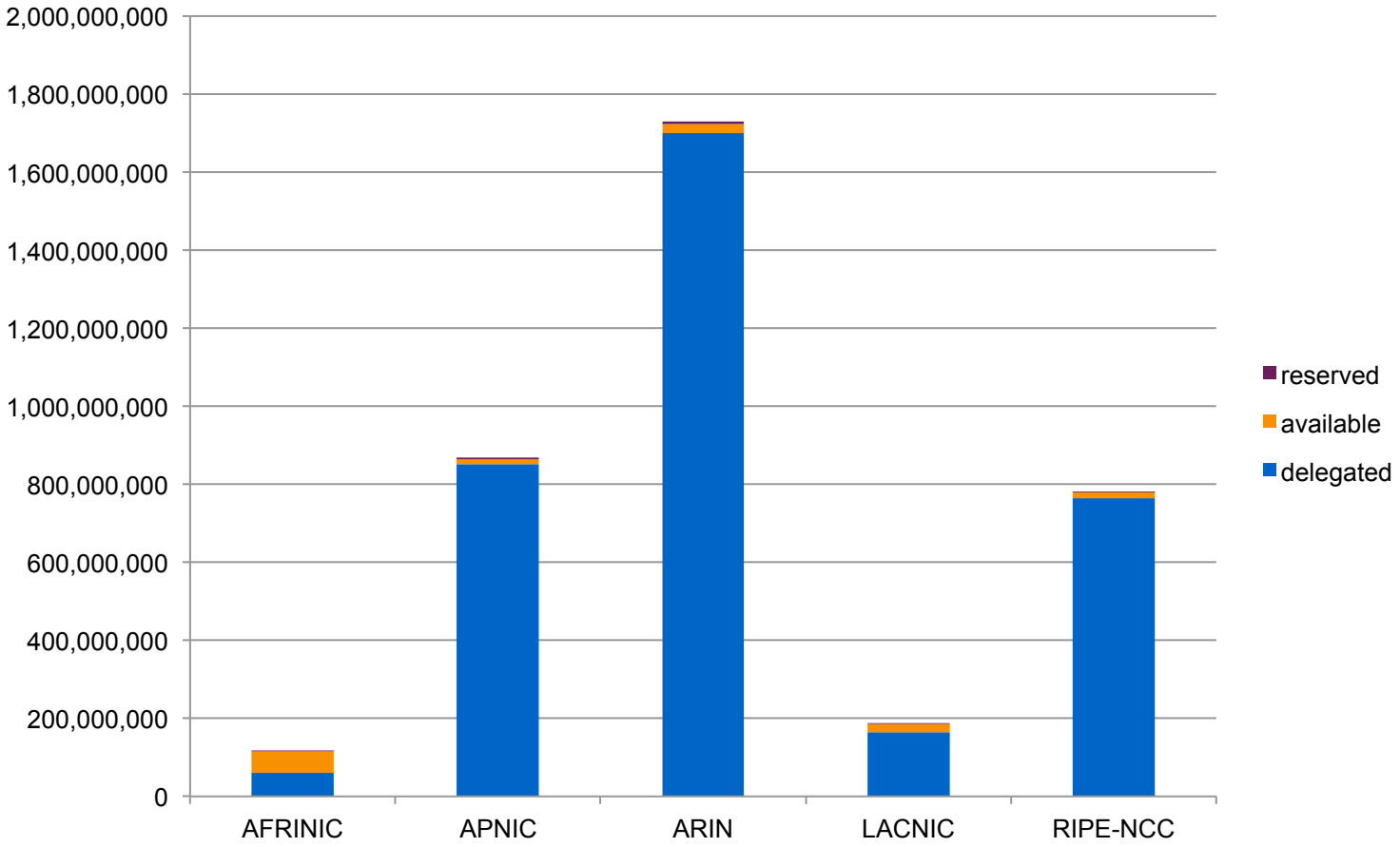
- IPv4
- IPv6
- ASN statistics
- Membership
- Services update

"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"

APNIC

Global IPv4 availability



RIR statistics as of 15 Jan 2014

Ways to get IPv4 in the AP region

- Rationing APNIC's 'last block' of IPv4
- IPv4 address transfer
- Recycling returned IPv4 address space

Rationing the ‘last block’

- APNIC’s last remaining block is 103.0.0.0/8
  - Equal to 16,777,216 addresses
- Each member can only get up to 1,024 addresses (/22)
- Allows new members to get a little bit of IPv4 before it completely runs out

IPv4 address transfer

- Transfer is allowed through:
  - Merger & Acquisition
  - Needs based market transfer
- Needs based market transfer
  - The recipient (or buyer) must show evidence of need before a transfer can be registered by APNIC
  - Policy designed by the community to prevent hoarding

Recycling returned IPv4 address space

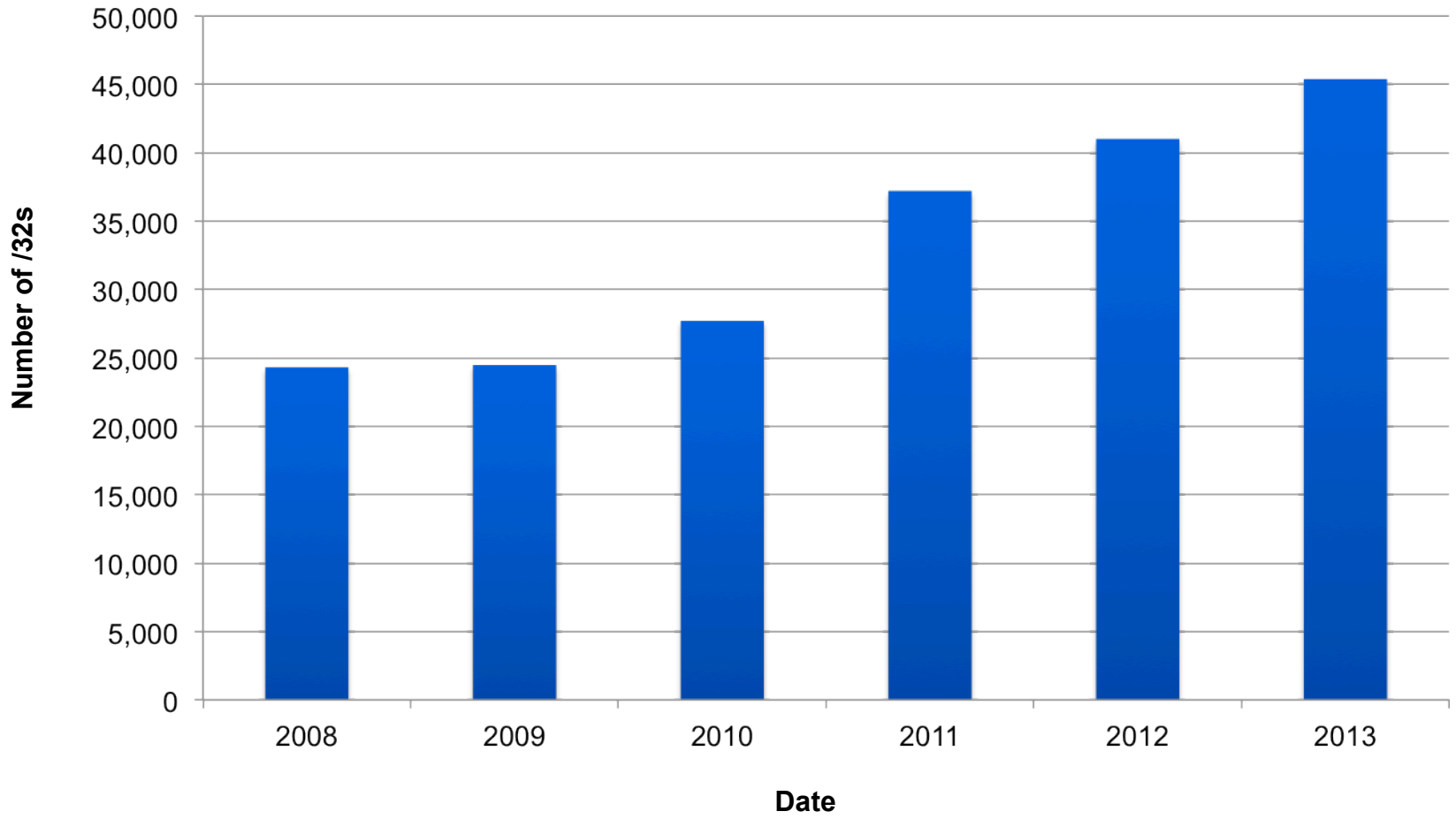
- Address space returned to IANA will be re-distributed equally to all 5 Regional Internet Registries
  - Estimated to happen around late 2015
- The re-distributed space received by APNIC will be rationed like the ‘last block’
  - A member can only get up to 1,024 addresses (/22) from recycled pool

IPv4 sourcing strategy in AP

- If needing a large number of IPv4 addresses, consider market transfer by following these steps:
  1. Get pre-approval from APNIC
  2. Find a source (seller or broker)
     - Check apnic-transfer@apnic.net mailing list
  3. Execute the transfer and register it at APNIC
- If needing just a small amount of IPv4 addresses for your corporate customer, consider signing them up as an APNIC member
  - Get up to 1,024 addresses (/22) from last block
  - And up to 1,024 addresses (/22) from recycled pool

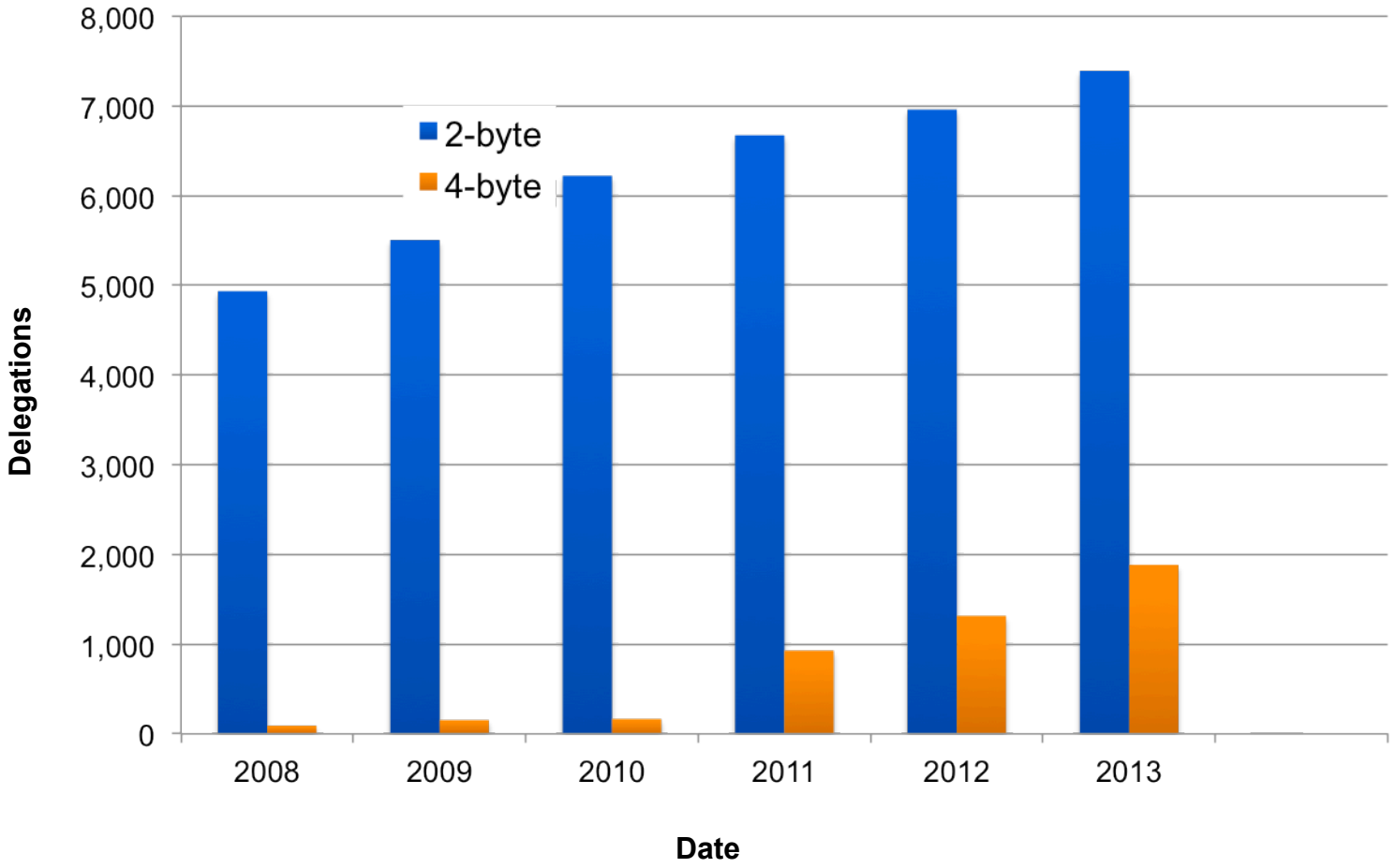
Referral application

Cumulative IPv6 delegations (/32s)



As at 31 October 2013

Cumulative ASN delegations



As at 31 October 2013

Whois news

- New features
  - “geoloc” and “language” attributes for number resource records
  - “whowas” functionality
- Registration Data Access Protocol (RDAP)
  - Web Extensible Internet Registration Data Service (WEIRDS)
  - Pilot service available to test the RDAP protocol
  - APNIC contribution to the RIPE whois server

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

Supporting Internet development in the 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"

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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)
- Endorsed by EC (Pending Implementation)
  - prop-105: Distribution of returned IPv4 address blocks
  - prop-107: AS number transfer policy proposal
  - prop-108: Changes to the APNIC Policy Development Process

Current discussions – need input

- prop-109v001: Allocate 1.0.0.0/24 and 1.1.1.0/24 to APNIC Labs as Research Prefixes
- prop-110v001: Designate 1.2.3.0/24 as Anycast to support DNS Infrastructure
- prop-111-v001: Request-based expansion of IPv6 default allocation size

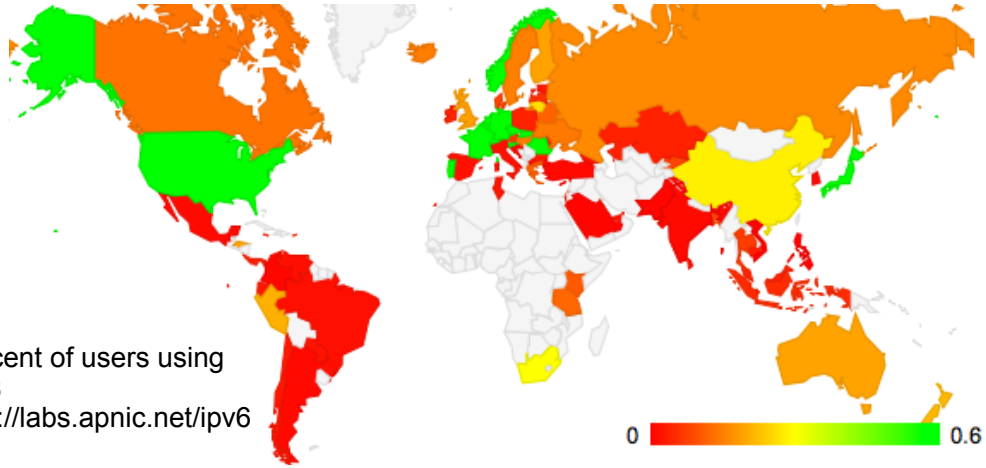
Collaborating with the Internet community

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

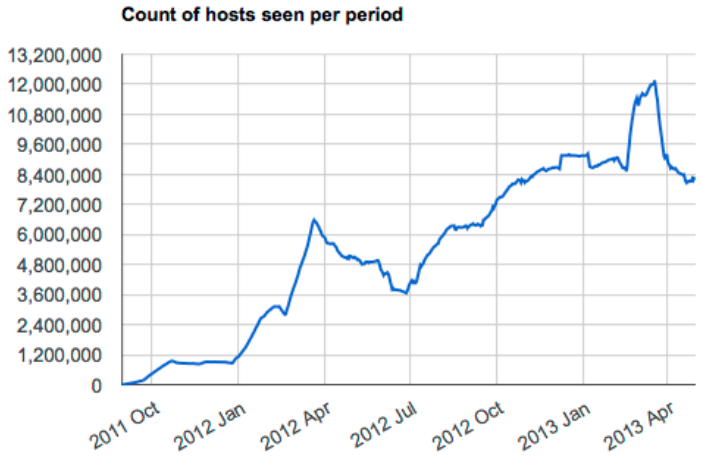
"Provide leadership and advocacy in support of APNIC's vision and the community"

APNIC

APNIC Labs: Measuring IPv6



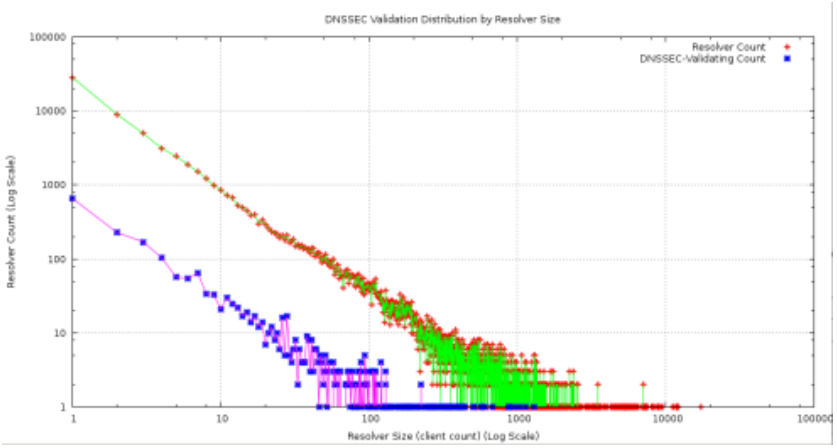
Percent of users using IPv6
http://labs.apnic.net/ipv6



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	AS19782	INDIANAGIGAPOP - Indiana University	1566	100	100
CN	AS37944	CNNIC-CSTNET-AP CHINA SCIENCE AND TECHNOLOGY NETWORK	1354	100	100
CN	AS23910	CNGI-CERNET2-AS-AP China Next Generation Internet CERNET2	7060	100	100
JP	AS9607	BBTOWER BroadBand Tower; Inc.	255	96.0784	96.0784
NZ	AS24226	CATALYST-IT-AS-AP Catalyst IT	830	94.3373	93.9759
JP	AS55394	GREE-NET GREE; Inc.	519	93.6416	71.0983
AU	AS38083	CURTIN-UNI-AS-AP Curtin University	715	89.6503	88.951
US	AS3598	MICROSOFT-CORP-AS - Microsoft Corp	1113	74.9326	72.4169
ID	AS17553	IPBNET-AS-AP Bogor Agricultural University	251	74.9004	60.9562
AU	AS4608	APNIC-AP Asia Pacific Network Information Centre	629	73.6089	70.9062
NZ	AS58666	NASL-AS-AP Network Access Services Limited	206	69.4175	61.165
US	AS5661	USF - UNIVERSITY OF SOUTH FLORIDA	295	69.1525	65.4237
US	AS1312	VA-TECH-AS - Virginia Polytechnic Institute and State Univ.	480	67.7083	62.7083
CZ	AS197451	VUTBR-AS Brno University of Technology	416	64.6635	59.375
GB	AS786	JANET The JNT Association	223135	63.1044	52.4337
US	AS15169	GOOGLE - Google Inc.	12414	60.9312	18.9866
NO	AS57963	LYNET-INTERNETT-AS Lynet Internett AS	326	58.8957	55.2147
US	AS2055	LSU-1 - Louisiana State University	266	58.2707	55.2632
NZ	AS17649	DMZGLOBAL-AP DMZGlobal Ltd	239	58.159	54.3933
US	AS6621	HNS-DIRECPC - Hughes Network Systems	2041	56.8349	56.1979
US	AS6263	NDIN - State of North Dakota; ISD	249	56.6265	54.6185
CN	AS17672	CHINATELECOM-HE-AS-AP asn for Hebei Provincial Net of CT	2706	54.139	51.2565
NZ	AS18119	ACSDATA-NZ ACSData	931	53.4909	52.3093
US	AS1351	UVM-EDU-AS - University of Vermont	242	53.3058	45.8678
CN	AS4538	ERX-CERNET-BKB China Education and Research Network Center	4868	50.4314	47.6787
JP	AS2500	WIDE-BB WIDE Project	208	50	49.0385
HK	AS4528	HKU-AS-HK The University of Hong Kong	635	48.6614	44.5669

APNIC Labs: DNS and DNSSEC

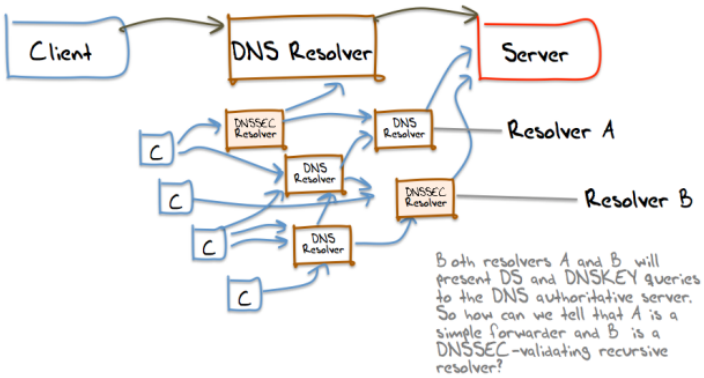


We are measuring the extent of DNSSEC use, and looking at the level of use of DNSSEC validation across resolvers and end clients in the Internet

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?

How can we interpret what we are seeing?



Coming Up…

- APRICOT 2014 Petaling Jaya, Malaysia
  - 18 - 28 February 2014 (includes APNIC 37)
  - **Your Invited!**

www.apnic.net/meetings

Questions?

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