APNIC Policies that Changed the Internet

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Step back to the mid-2000s

IANA IPv4 Free Pool
The community had become complacent about exhaustion.

It had been a case of the ‘boy who cried wolf’ where people had stopped paying attention to stories about IPv4 exhaustion… they had not given much thought to the eventual day when there would be no more addresses left for IANA to allocate.

Izumi Okutani
Former JPNIC Policy Liaison
First come, first served

• First come, first served was the norm
• If that continued, APNIC region would probably eaten most remaining space
• What about Africa?
• Was this fair?
A final /8 each

- 102/8
- 103/8
- 104/8
- 179/8
- 185/8
A soft landing: /22 from the last /8

13,000+ delegations from 103/8 – without this policy, addresses would have exhausted long ago

Innovation has continued in APAC: 1000s of new ISPs, data centres and start-ups since 2011

Emerging economies have benefitted
- BD: 68 members → 473 members
- PK: 51 Members → 146 Members
- KH: 25 Members → 74 Members
- MM: 2 Members → 53 Members
- PH 93 Members → 222 Members
Making it last: 103/8

![Graph showing the growth of IP addresses over time in East Asia, South East Asia, South Asia, and Oceania.]
A brief aside: How’d we get to /22?

- Minimum requirement set at /21, had to show use of /23
- Hard for start-up ISPs in emerging economies to do – stifling growth
- Policy changed the requirements and min allocation to /22
- Great example of community adjusting policy to its needs
Scarcity bites

... /22

APNIC
103/8

/20

/18

/18

/22
The policy was deeply divisive because it recognized that addresses were being transferred between parties for financial gain.

But the movement of addresses wasn’t going to stop. If we didn’t have this policy, the accuracy of the registry – which the community relies on – could be severely impacted.

Geoff Huston
APNIC Chief Scientist
IPv4 transfers take off
Accessing IPv4 in other regions

Legacy holders

- DEC
- DOD
- HP
- GEC
- DNIC
- MIT
- IBM
- FORD
- XEROX
- INTEROP
- SITA
- APPLE
- ELI LILLY
- CSS
- PRUDENTIAL SECURITIES
- CAP DEBIS
- CCS
- JTC
- DUPONT
- AT&T
- BOEING
- ARPANET
- USAISC
- JAPAN
- JET
- UK GOV
- STANFORD UNIVERSITY
- MERIT
- PSINET
- HALIBURTON
- UK DEFENCE
- USPS
- BOLT
- BERANEK
- AND NEWMAN
- MERCK
- BELL
- NORTHERN RESEARCH
- NORSK
- JANA
- AMATEUR RADIO
- DIGITAL COMMUNICATIONS

ARIN
RIPE NCC
APNIC
IPv4 transfers take off

Between RIR Regions
Within APNIC Region
What about IPv6?

Prop-016
Prop-031
Prop-035
Prop-037
Prop-041
Global policy
Global policy (Revised)

Prop-057

Prop-073
Prop-082

Prop-083

Prop-101
Prop-102
Prop-121
Prop-122
What’s the common thread?

All these policies were created by people just like you!
GET INVOLVED!
What is a Policy?

In the APNIC region, a policy refers to the rules and requirements or criteria that one must meet to be eligible to receive IP and ASN resources.

A policy proposal is a formal, written submission that outlines an idea for a new policy. If a policy proposal is successful it will become a policy.
Why do we need resource policy?

IP address and AS numbers are public shared resources. APNIC policies ensure that these resources are managed properly and distributed with the goal of fairness and consistency in mind.

The common aim of a policy is to ensure proper usage of Internet number resources according to the technical and operational needs of the network. This is vital for the continued stable growth of the Internet.
Policy change

Policies change constantly.
They evolve as the needs of the technical community change.
Good policy relies on a range of opinions.
APNIC policies are developed by Members and the Internet community in a bottom-up process of consultation and consensus.
What’s APNIC’s role?

• The APNIC Secretariat is the organization that manages resources, implements policy and provides a range of services to the community

• APNIC staff
  o Provide information and support to people who want to be involved in the policy development process
  o Provide support to the Policy SIG
  o Help authors to draft proposal wording
  o Manage the implementation of policy changes
  o Inform the policy changes to the community
Who can Participate?

Policies are developed **by and for** the Asia Pacific Internet community, which includes the APNIC membership.

** Anyone ** can participate in the policy development process for managing and distributing IP addresses.

- Whether you are a seasoned network engineer, a decision maker, a student in the IT field, or a user of the Internet, you can join the discussion.

You are invited to be part of this development process.
Why participate?

• It is an opportunity to learn and share experiences and best practices in the Internet

• Policies affect your organization’s operating environment and are constantly changing

• **Ensure your organization's needs are represented**

• It’s a great way to build your profile and contribute to the Internet

• You can directly impact the way APNIC manages Internet number resources

• Make these policies work for your networks and future growth
Participate in APNIC Policy

www.apnic.net/community/policy/participate
Policy Special Interest Group (SIG) Charter

Develop policies and procedures which relate to the management and use of Internet address resources by APNIC, NIRs, ISPs and other organizations within the Asia Pacific region.
What is a SIG?

A SIG, or Special Interest Group, is an open forum for the community to discuss topics of interest. There are no entry requirements to participate in the activity of the APNIC Policy SIG.

You don’t “join” a Special Interest Group, you participate in it. The first step to participation is usually to subscribe to the SIG mailing list.

Special Interest Group Guidelines
https://www.apnic.net/community/participate/sigs/
APNIC Policy SIG

Policy SIG Chair
Sumon Ahmed Sabir

Co-Chairs
Bertrand Cherrier
Ching-Heng Ku

Secretariat Support
Sunny Chendi
George Odagi

Elected by the Asia Pacific Internet Community
Policy Development Process

APNIC policies are developed by the community in a bottom-up approach. This approach is part of the Policy Development Process or commonly referred to as the ‘PDP’.

PDP describes the process through which policy proposals are submitted, considered, and adopted by APNIC.
Policy Process

What are the key characteristics of the PDP?

**Open**
Anyone in the community - Member or not - can propose a policy. This can be a proposed change to an existing policy or a new one altogether. Anyone can participate from the beginning, during the discussion as well as in the decision-making process.

**Transparent**
APNIC publicly documents all policy discussions and decisions to provide complete transparency of the policy development process. These documents, the associated discussion in the mailing list, and decisions are freely available for viewing at any time.

**Bottom-up**
The Policy Development Process is driven by the Internet community - by those who need and use these resources. It is catered to address the needs and requirements of the Asia-Pacific Internet community. APNIC stays neutral in the process.
Policy Development Process

1. **Author submits proposal**
2. **Posted to mailing list for discussion**
3. **Community discusses proposal on SIG mailing list**
4. **Author proposes policy or amendment**
5. **Open Policy SIG Meeting**
6. **Consensus at SIG and AMM**
7. **Posted back to the mailing list**
8. **Consensus is confirmed**
9. **EC Instructs Secretariat**
10. **Secretariat Implement s**
11. **Before meeting**
12. **During meeting**
13. **After meeting**

- **Can policy be improved?**
- **Secretariat implements policy**
- **Community discusses proposals, face to face, policy**
- **Executive Council (EC) endorses policy**
- **Community has chance to raise any final objections during final call**
- **SIG Chair confirms consensus**
- **EC Chair gathers consensus**
- **AGM/AMM gathers consensus**
It all starts with a Proposal

• Who can propose a policy idea?
• Why would you do it?
• What is required?
• Where do you start?

Complete the online form
https://www.apnic.net/community/policy/proposals/submit-a-policy-proposal/
Policy SIG Mailing list

• Some people think it’s a great idea
• Others disagree
• The author tries to convince or compromise
• The Chairs monitor the discussions and participate as appropriate

Join the mailing list
https://mailman.apnic.net/mailman/listinfo/sig-policy
Policy SIG meeting

• Author presents
• People line up at the microphone
  – Ask questions
  – Express support
  – Explain their concerns
  – Argue and praise
• Remote participation is available so those not at the meeting in-person can still fully participate

Check the conference agenda
https://conference.apnic.net/46/program
Consensus Decision Making

• Consensus =
  – “general agreement” taking into consideration comments on the mailing list and at the meeting.

• Objections
  – Minor Objections:
    • some problems may occur for some members of the community
  – Major Objections:
    • major problems will occur for members of the community

• Participants should “work together” to resolve objections
Chairs consider many sources

• Mailing list discussions
• Discussions at the SIG meeting
  – Incl. remote participants
• Show of hands
  – Not a vote, a way of “broadly gauging opinion”
  – CONFER assists remote participation
    • Require one-off registration
  – The Chair will ask for both

Have your say remotely
https://confer.apnic.net/
After the Open Policy Meeting (OPM)

- Consensus at the Member Meeting
- Mailing List Comment Period
- EC Endorsement
- Editorial Comment Period
- Implementation
What’s next?

• Subscribe to the mailing list
  – sig-policy@apnic.net

• Review the proposals
  – https://www.apnic.net/community/policy/proposals/

• Discuss with others
  – Morning and afternoon tea, lunch, dinner

• Participate in Policy SIG Meeting
  – Check conference program
APNIC Fellowships

• APNIC Standalone conference in September
• Encourages gender and economic diversity
• Professionals, Youth, and Returning Fellows
• Package Includes:
  – An economy class return flight ticket
  – Twin shared hotel accommodation with breakfast and Wi-Fi
  – A fixed cash allowance of AUD 100 for any incidentals
  – Complimentary registration to workshop, conference and social events
• Selection Committee - volunteers from the community
Next Conference

Register now

https://conference.apnic.net/46/register/register
PROPOSALS UNDER DISCUSSION
prop-118: No need policy in APNIC region

• Proposal
  – Remove the requirement to demonstrate need when transferring IPv4 addresses into or within the APNIC region.
  – Simplify transfer of IPv4 space between resource holders.
  – Ease some administration on APNIC staff, increase database accuracy.
  – Would not apply to AS number transfers.

• Status
  – Initially discussed at APNIC 44
  – No progress at APNIC 45
  – Submitted new version for APNIC 46 and posted to mailing list
prop-124: - Clarification on IPv6 Sub-Assignments

• Proposal
  – Clarifies the definition of assigned address space for IPv6 delegations under section 2.2.3 of APNIC Internet Number Resource Policies document.
  – Allowing temporary sub-assignments from within existing IPv6 assignment

• Status
  – To be discussed at APNIC 46
  – Posted to Policy SIG mailing list for community discussion
prop-126: PDP Update

• Proposal
  – To allow that consensus is determined also looking at the opinions of community members that are not able to travel to the meetings, adjust the time required before the relevant SIG to submit the proposals, not requiring “double” consensus with the APNIC members and facilitating a simple method for appeals.

• Status
  – To be discussed at APNIC 46
  – Posted to Policy SIG mailing list for community discussion
Thanks!

blog.apnic.net

apnic.net/social