

HOW INTERNET STANDARD AND TECHNOLOGY DEVELOP?

By Charles Mok, Chairman

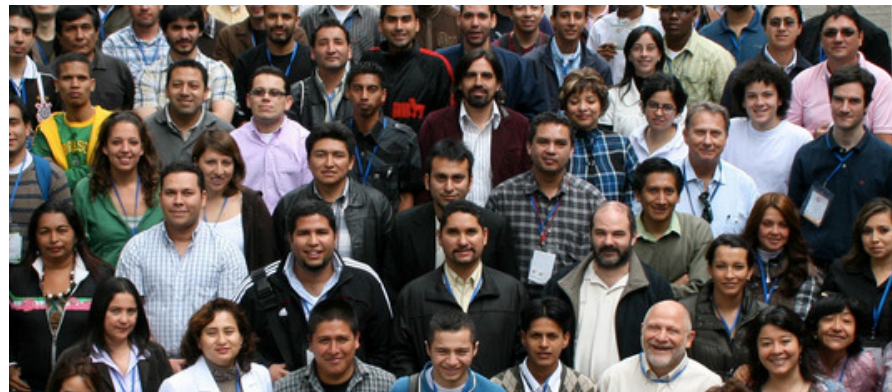
THE INTERNET IS FOR EVERYONE.

THE INTERNET SOCIETY (ISOC)



The Internet Society is an international cause-related organization that works for the open *development* and *evolution* of the Internet for all people.

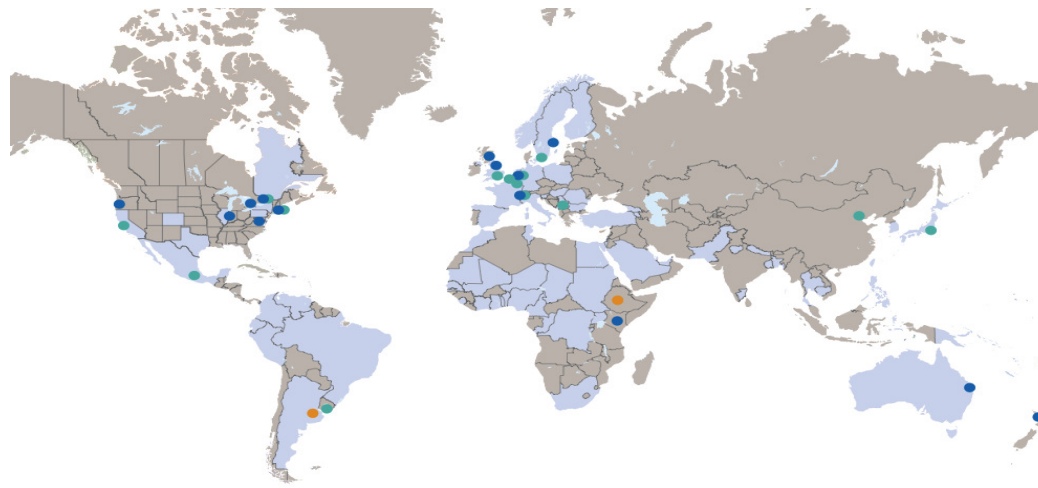
The Internet is for everyone...
*and the Internet Society is for everyone
who cares about the Internet!*



THE INTERNET SOCIETY – WHO ARE WE?



- Founded in 1992 by Internet Pioneers as an international non-profit organization
 - 100+ organization members
 - Tens of thousands of individual members
 - 85+ chapters worldwide
 - Regional Bureaus: Africa, Europe, Latin America & Caribbean, North America, South & South East Asia



THE INTERNET SOCIETY'S VISION



- We see a future in which people everywhere can use the Internet to improve quality of life:

...when standards, technologies, business practices, and government policies sustain an open and universally accessible platform for innovation, creativity, and economic opportunity.





THE INTERNET MODEL

- The Internet is successful in large part due to its unique model of development and deployment
 - Shared global ownership – no central control
 - Open technical standards
 - Collaborative Engagement models – researchers, business, civil society, government
 - Freely accessible processes for technology and policy development
 - Transparent and collaborative governance



INTERNET ECOSYSTEM ORGANISATIONS INCLUDE:



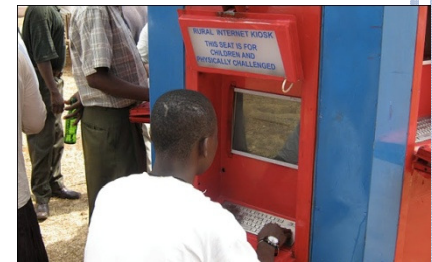
- **Technical standards bodies** such as the Internet Engineering Task Force (**IETF**) and the World Wide Web Consortium (**W3C**)
- Organizations that manage global addressing resources such as ICANN and the Internet Assigned Numbers Authority (**IANA**)
- Regional Internet Registries (**RIR**), and Domain Name Registries and Registrars.
- Network infrastructure providers such as DNS providers, network operators, and Internet Exchange Points (**IXPs**)
- Individuals and Organizations that use the Internet
- Organizations that provide education and build capacity for Internet technologies, such as educational institutions, and governmental agencies



WHAT MAKES THE INTERNET SOCIETY UNIQUE?

Focus is **Internet Development, Standards, Policy**

- Enables regional capacity and technical community building throughout the world
- Key player in Internet policy
 - Particularly in the UN Internet Governance Forum (IGF) and other intergovernmental forums
- Organisational home of the Internet Engineering Task Force (IETF), Internet Architecture Board (IAB), and related bodies



THE CHANGING SHAPE OF THE FUTURE INTERNET



- We have 2 billion connected, 4 billion more to come online
- Those yet to be connected will create both new opportunities and new challenges for the Internet as we know it
- The majority of the growth will come from the developing world.
 - China is already the second largest Internet-using country the world and it will likely surpass the US soon, adding 250 million Internet users over the next decade.
 - Countries such as India and Brazil should add another 200 million Internet users, while the fastest rate of growth is likely to come from Africa, which is starting from a much smaller base.



THE INTERNET SOCIETY: WORKING TO SUPPORT THE NEXT BILLIONS ONLINE

The Internet Society is working on

- Strategic Development Initiatives
 - Technical Capacity Building
 - Promoting Access-Enabling Policy and Regulatory Environments
 - Developing Communities of Practice and Multi-stakeholder Participation
- Next Generation Leaders Programme/Internet Institute
 - Unique blend of coursework and practical experience to help prepare young professionals from around the world to become the next generation of Internet technology, policy, and business leaders



INTERNET SOCIETY HONG KONG (ISOC HK)



○ IPv6

- Internet Governance
- Government Policy Consultation
- Regional Conferences
- Digital Copyright – The 3C Series
- Youth Fighters
- Other IT/ Internet-related Activities/ Events
- Support Industry & Community Activities

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IP ADDRESS ALLOCATION

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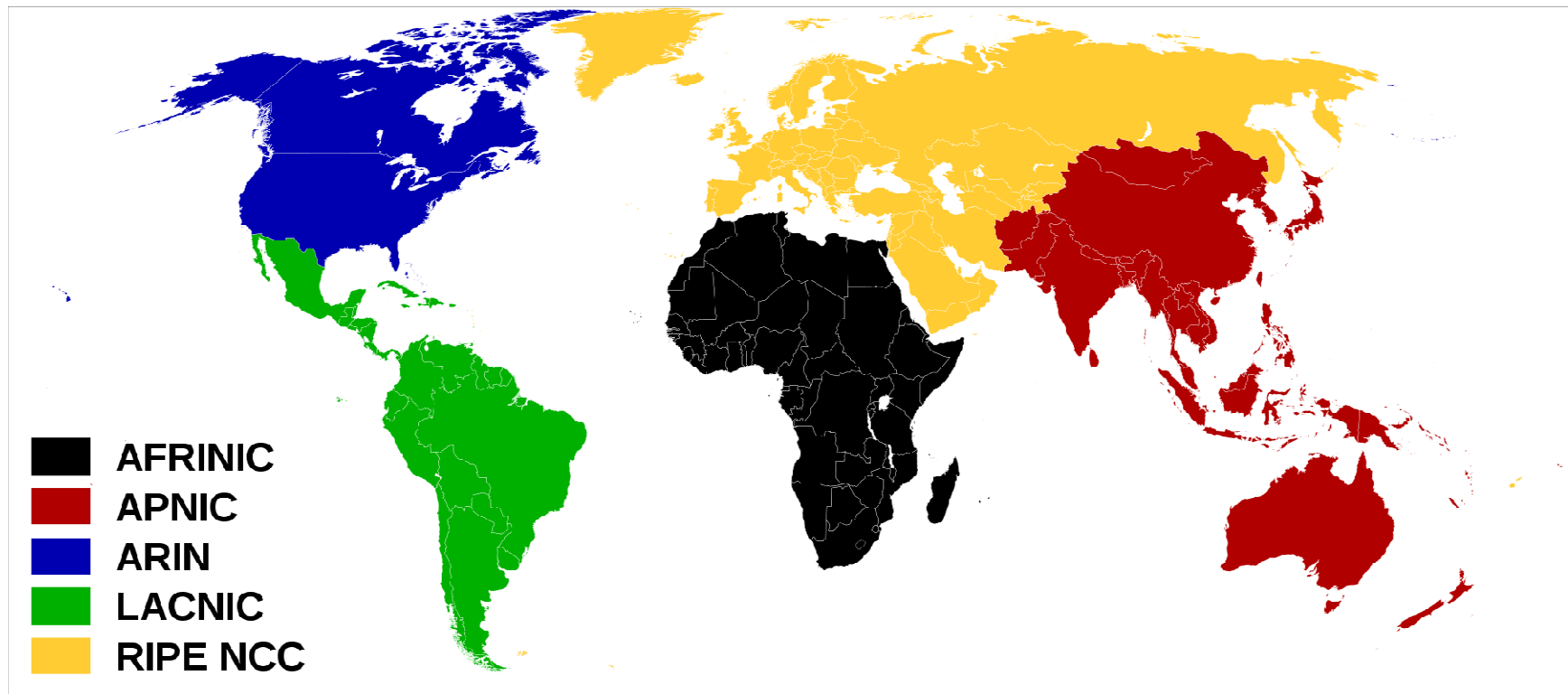


REGIONAL ADDRESS ALLOCATION

- Internet Assigned Numbers Authority (IANA) delegates the task to 5 Regional Internet Registries (RIR):

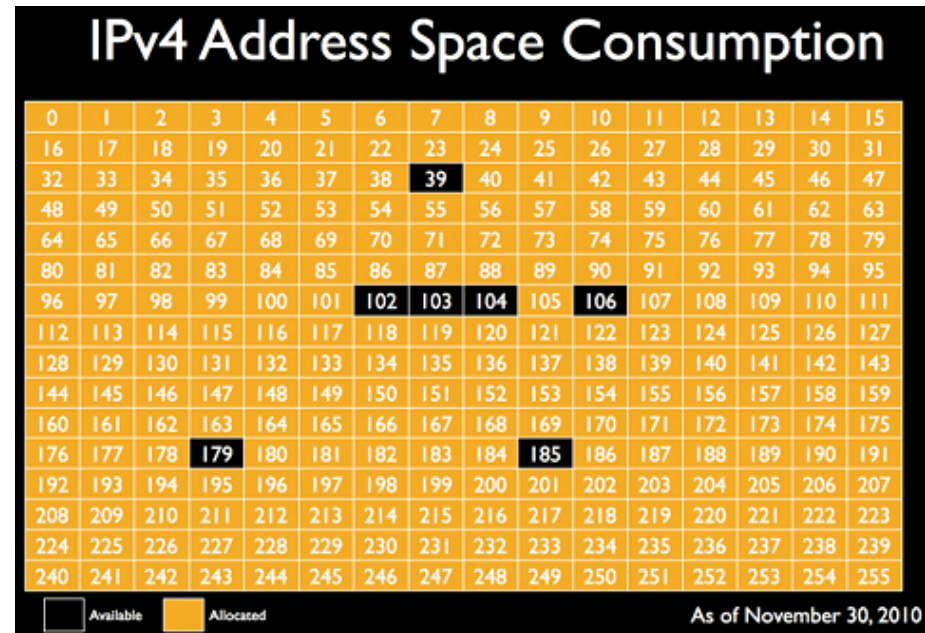
African Network Information Centre (AFRINIC)	for Africa
American Registry for Internet Numbers (ARIN)	for the US, Canada and parts of the Caribbean region
Asia-Pacific Network Information Centre (APNIC)	for Asia, Australia, New Zealand, and neighboring countries
Latin America and Caribbean Network Information Centre (LACNIC)	for Latin America and parts of the Caribbean
Réseaux IP Européens Network Coordination Centre (RIPE)	for Europe, the Middle East and Central Asia

REGIONAL ADDRESS ALLOCATION MAP



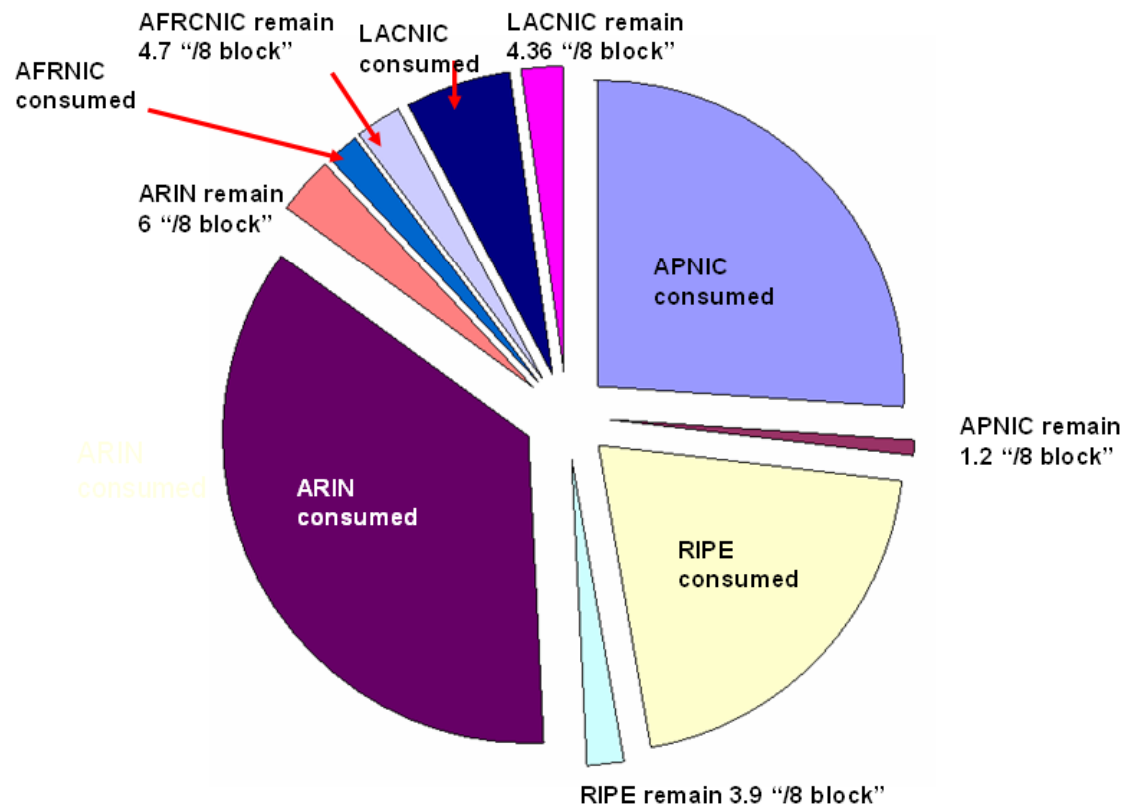
IANA IPv4 Pool Exhaustion

Address Pool
before 1 Feb 2011



- 1 Feb – IANA allocated 39/8 and 106/8 to APNIC
- 3 Feb – Each RIR gets the last /8, APNIC - 103/8, ARIN – 104/8, RIPE – 185/8, LACNIC – 179/8, AFRNIC – 102/8
- 3 Feb - IANA announced IPv4 address pool depleted.

UPDATES ON V4 ADDRESS CONSUMPTION IN RIR IN TERMS OF /8s (APRIL 2011)



RIR	Assigned /8s	Remain /8s
APNIC	53.97	1.2 (2%)
RIPE	45.02	3.9 (8.6%)
ARIN	77.9	6 (7.7%)
AFRCNIC	8.25	4.7 (57%)
LACNIC	15.6	4.3 (28%)

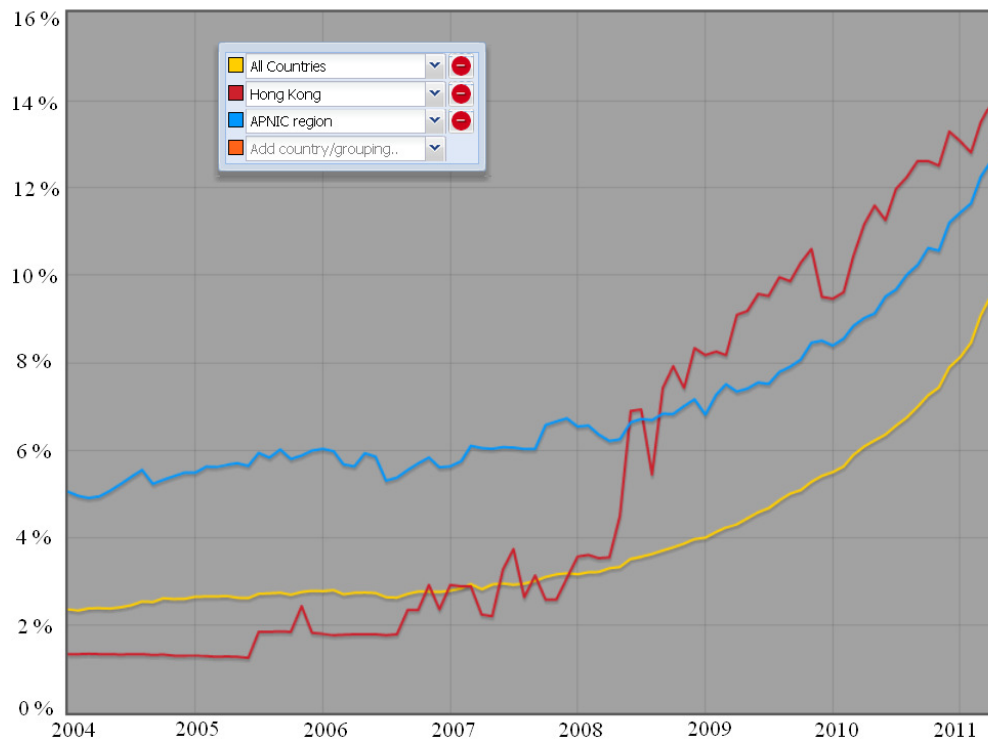
APNIC FINAL /8 POLICY

- Activated on 15 April 2011
- Remaining last block is 103/8
- All members can only have one and only one chance to get a /22 block
- Use the /22 block to set up v6<->v4 transition systems supporting their IPv6 networks
- Last /8 can serve up to 5 years
- Implies that after 15 April, all new service providers in the Region can only offer IPv6 connections to customers



IPv6 READINESS IN GLOBAL ROUTING

- No. of IPv6 Autonomous System Numbers (ASNs) = 3828
Total number of ASNs (IPv4+IPv6) = 37807
- IPv6 occupies 10.1 % of global routing backbones



Hong Kong 14.5 %

APNIC 13.3 %

Global 10.03 %

Source

<http://v6asns.ripe.net/v/6>

ROLES OF ISOC-HK IN IPV6

- Organize with APNIC technical training and workshops on annual basis (over 300 engineers trained)
- Establish IPv6 Hong Kong Directory (www.ipv6world.asia)
- Hosts local and international conferences
- Set up IPv6 Work Group to raise interest and keep track of global development
- Promote IPv6 awareness with other organisations



IPv6 ACTIVITIES

- 8 Jun 2011 – World IPv6 Day
- Feb 2011 – APRICOT-APAN 2011, Hong Kong
- 26 Aug 2010 - Remote Participation of APNIC 31 in Hong Kong
- 24 – 25 Aug 2010 – APNIC IPv6 Training and IRM / Policy Training
- 9 – 11 Jun 2010 – APNIC IPv6 Training
- 13-14 Apr 2010 – INET Asia (IPv6 half-day session)
- 13 Apr 2010 – IPv6 Directory launched (<http://www.ipv6world.asia/>)
- 24 Mar 2010 – ISOC-HK/ IET Talk on IPv6
- 23 Feb 2010 – IPv6World.Asia Talk: Security Issues Arising from IPv6 Deployment
- 23 Nov 2009 – IPv6World.Asia Conference and APNIC IPv6 Technical Workshops
- 11-12 Jun 2009 – APNIC IRME & IPv6 Technical Training
- Feb 2008 – IPv6 Working Group formed (Convener: Che-Hoo Cheng)

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IPv6 PARTNERS



Internet Society Hong Kong is keen to work with different partners for the development of IPv6 in Hong Kong

- OGCIO, Hong Kong SAR Government
- Asia Pacific Network Information Centre (APNIC)
- Hong Kong Internet Exchange (HKIX)
- DotAsia Organisation
- IPv6 Forum Hong Kong
- Hong Kong Internet Service Providers Association (HKISPA)
- Hong Kong Cyberport
- Hong Kong Internet Registration Corporation (HKIRC)

- Supporting IT Organisations: HKIE, IEEE HK, HKITF, HKCS, WTIA, PISA, ISIA etc.
- Business Partners: Cisco, HP, Juniper, Microsoft , NTT Asia Communications, PCCW, WT&T, etc.

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WORLD IPv6 DAY (8 JUN)



- 8 June, 2011 is dubbed “World IPv6 Day” as on that day, **Facebook** (www.facebook.com), **Google** (www.google.com; www.youtube.com) and **Yahoo** (www.yahoo.com), websites with more than one billion combined visits each day, are joining major content delivery networks **Akamai** and **Limelight Networks**, and the **Internet Society**, for the first global-scale trial of the new Internet Protocol, IPv6. Participants will offer their content over IPv6 for a 24-hour “test flight” .
- Motivate stakeholders to prepare for IPv6 and ensure smooth transition
- Find out and resolve connection issues under controlled environment
- All parties to work together for fixing problems



WORLD IPv6 DAY IN HK (8 JUN)

- Call for Participation in IPv6 “test flight” on 8 June
- IPv6 Hong Kong Directory - IPv6 enabled websites (www.ipv6world.asia)
- Survey on IPv6 Awareness
- Kickstart IPv6! Seminar (8 Jun)
 - Overseas Speakers: **Geoff Huston**, *Chief Scientist, Asia Pacific Network Information Centre (APNIC)*
 - *Kuo-Wei Wu*, *Board Member, ICANN*
- Show your support to World IPv6 Day by adding this badge to your Facebook profile.



STATUS OF IPv6 DEPLOYMENT IN HK

- HKIX, .hk and .asia support IPv6
- Cyberport offers IPv6 connection to tenants
- HARNET deploys IPv6 for linking up 8 universities
- OGCIO rolled out 231 government websites on IPv6 since Nov 2009
- 6 ISPs roll out IPv6 by dual-stack (v4+v6) in limited scale (PCCW, HGC, WTT, NTT, CPCNET, PACNET)
- CUHK has IPv6 Stratum 2 NTP server ntp.cuhk.edu.hk; HKO will launch the same by late 2011





THANK YOU!

www.isoc.hk

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