Dataset Comparison

IPv4 vs IPv6 traffic seen at DNS root servers

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IPv4 exhaustion

For most practical purposes IPv4 exhaustion is here.
We compare country-level allocation and observed deployment of IPv4 and IPv6 by examining DNS root traffic collected by DNS-OARC members as part of the Day In The Life (DITL) measurements.

http://www.dns-oarc.net/oarc/data/ditl
datasets

• DNS root traces
  DNS-OARC Day In The Life (DITL)

• IP allocated blocks
  RIR delegation files
  also used for country-level geolocation

• IP announced prefixes
  BGP tables collected by Route Views Project and
  RIPE NCC RIS

• Gross Domestic Product (GDP)
  World Bank
Almost all countries now have at least one IPv6 allocation and a growing fraction were seen at the DNS roots.
interactive web site
http://www.caida.org/research/policy/dns-country/

presets
Allows users to switch between set views.

manual control
Allows full control over both axis and node size
Fraction of address blocks seen at the roots much tighter for IPv4 and IPv6 address blocks. Reflects more uniform usage of IPv4 addresses.
Only Monaco went to zero. Brazil went from unusually low ratio of IPv4 to IPv6, to higher than normal. Overall the ratio of IPv4 and IPv6 allocations was more similar in 2014.
Similar with other metrics, IPv4 is less scattered than IPv6.
The countries with the largest ratios tend to have fewer addresses. China has 40% of US IPv6 addresses, but 80% of it’s IPv6 packets.
There is a positive correlation between wealthier countries and the ratio of IPv4 blocks seen at the DNS roots, but not IPv6 blocks.
• number of countries with allocations
  IPv4 allocations almost 100% seen
  IPv6 allocations have gone from 50% to 61% seen
  Almost all countries now have at least one for both

• IPv6 fraction of blocks seen more dissimilar than IPv4

• correlation between number of IPv4 and IPv6 blocks
  increased between 2009 and 2014

• negative correlation between wealth and ratio of
  blocks seen in IPv4, but not IPv6

http://www.caida.org/research/policy/dns-country/