# IPv6 deployment

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# IPv6 deployment
# the beauty pageant

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# What do we have?

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We have a simple, scalable, effective method to test IPv6 capability
We know the source IPs of tested clients, and how they map to provider and economy
We have a long-baseline of activity
    Long enough to make observations on trends

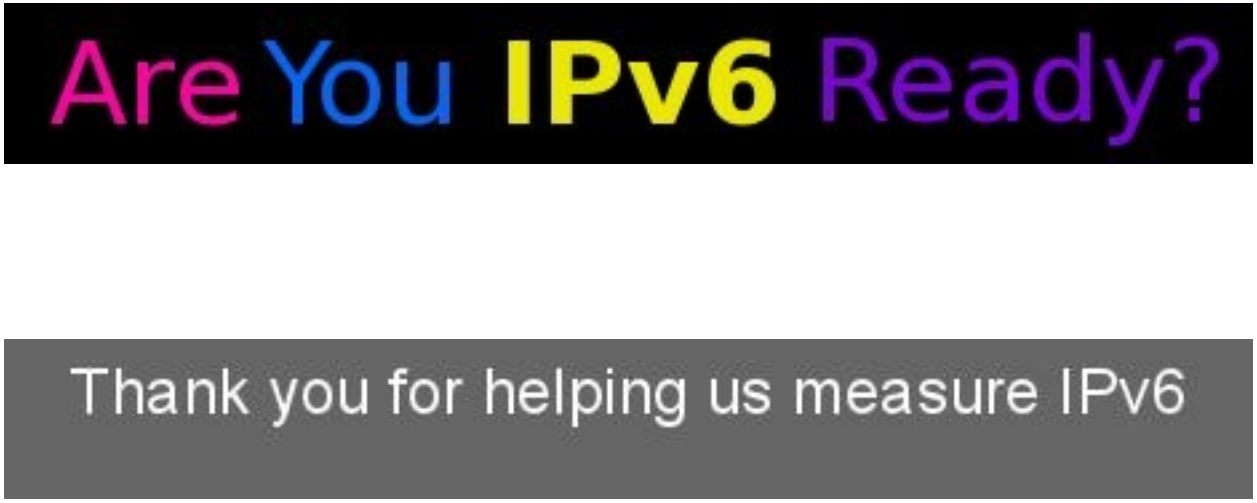
We think we have some useful **data**

# Data

50+ weeks of collated measurements via javascript & flash using 1x1 image fetches
Includes client tests to check Dual Stack Preference, IPv6 only capability, auto-tunnel access, V6 Literal
Now seeing ~ 300,000 measurements per day
Covers 100+ economies worldwide in sufficient detail to be statistically useful
(UN defines 249 Economies, and areas of interest)

# Flash?

APNIC has bought flash advertizing. If you see either of these “banner” adverts PLEASE do not click on them:



# What’s today’s question?

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Is IPv6 capability across the Internet uniform or "lumpy"?

Is IPv6 capability much the same across the entire Internet?

Or can we see differences in IPv6 client capability metrics across different economies?

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Or, to put it more crudely:
Are the various national IPv6 promotion campaigns and public procurement programs gaining any traction for IPv6 deployment within this industry?
Can we measure how **effective** Ipv6 deployment efforts are?

Not just measure operating systems capability in vista, windows-7 or end user devices like the iphone.

Not just measure ad-hoc tunnels and latent IPv6 capability in the end host, but true deployed services

# So.. What did we find?

# IPv6 Capability Data

Relative IPv6 capability, per economy

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As seen from client-side

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Relative IPv6 capability, per economy
As seen from client-side
Focused on “real” IPv6 capability

- Native IPv6
- Excluding ad-hoc tunnels (teredo, 6to4)
- Including infrastructure such as HE and 6rd embedded in the ISP, or statically configured

# IPv6 Capability Data

Measuring V6 preference in dual-stack

**Not** auto-tunnel. Its either v6 native from ISP, or a manual tunnel eg with HE

..its **not** looking at end clients capable of v6

Its the number of people who are *capable*, and *enabled*, and **delivered** V6

Relative, compared to world average

Look inside the single-line number.

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Comparisons are ugly, but maybe its time for some baseline observations about the kind(s) of capital investment challenges different economies are facing with IPv6…

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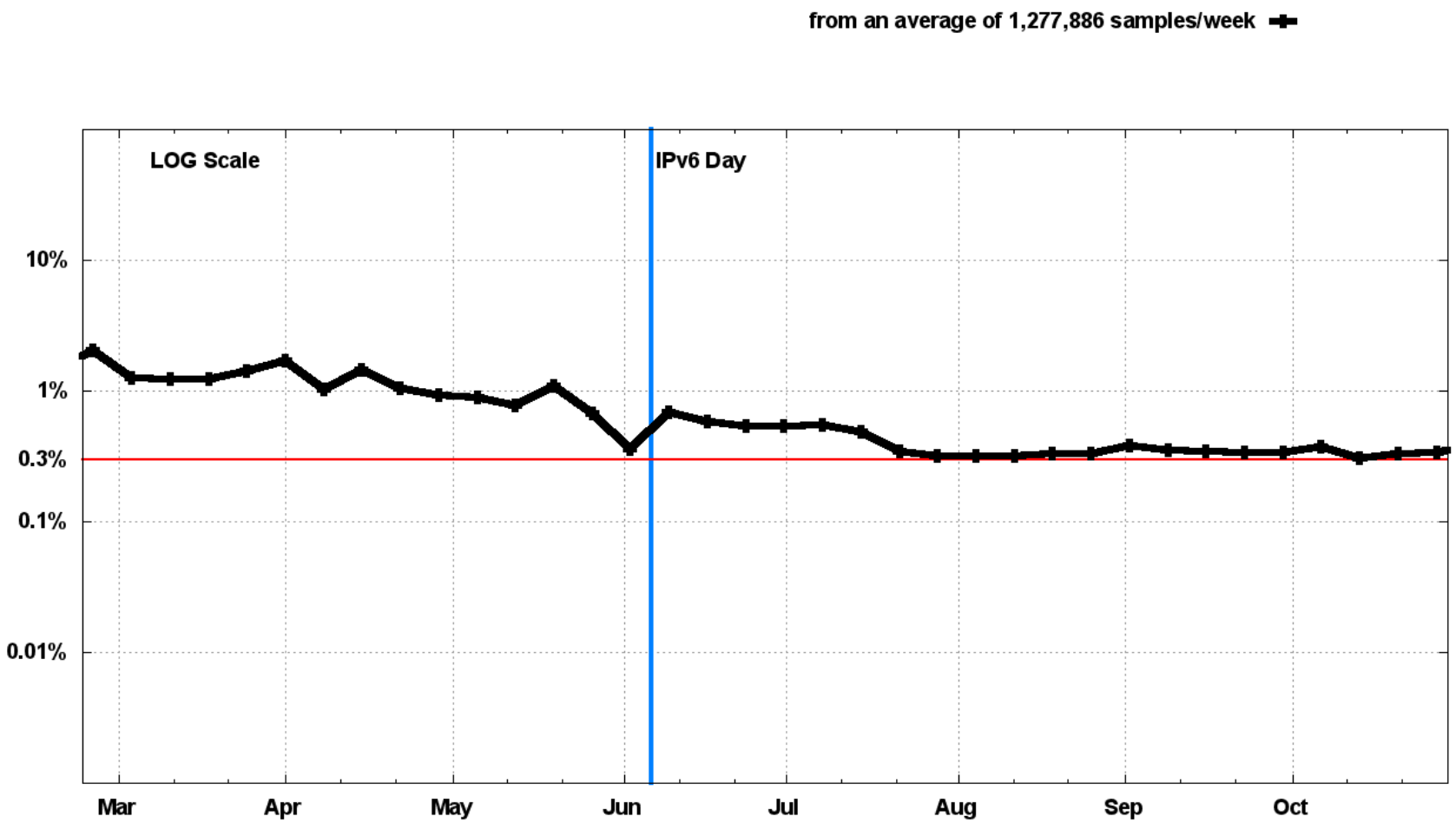
Comparisons are ugly, but maybe its time for some baseline observations about the kind(s) of capital investment challenges different economies are facing with IPv6…
Some very obvious winners and losers in the national IPv6 capability rankings.
Some BIG economies down below the headline world 0.3% - 0.4% figure

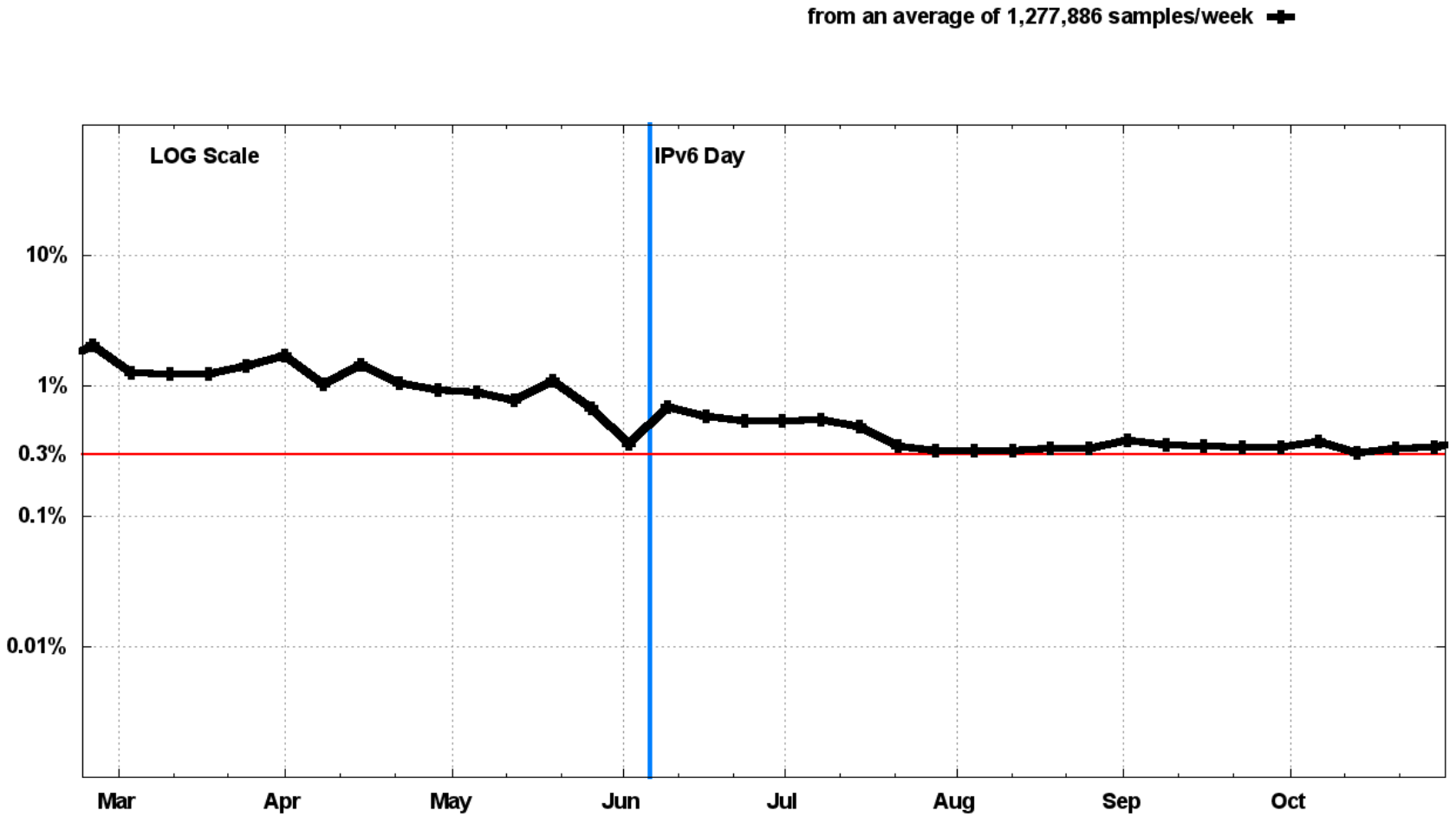
# The headline:

# The headline: the world is on 0.3%

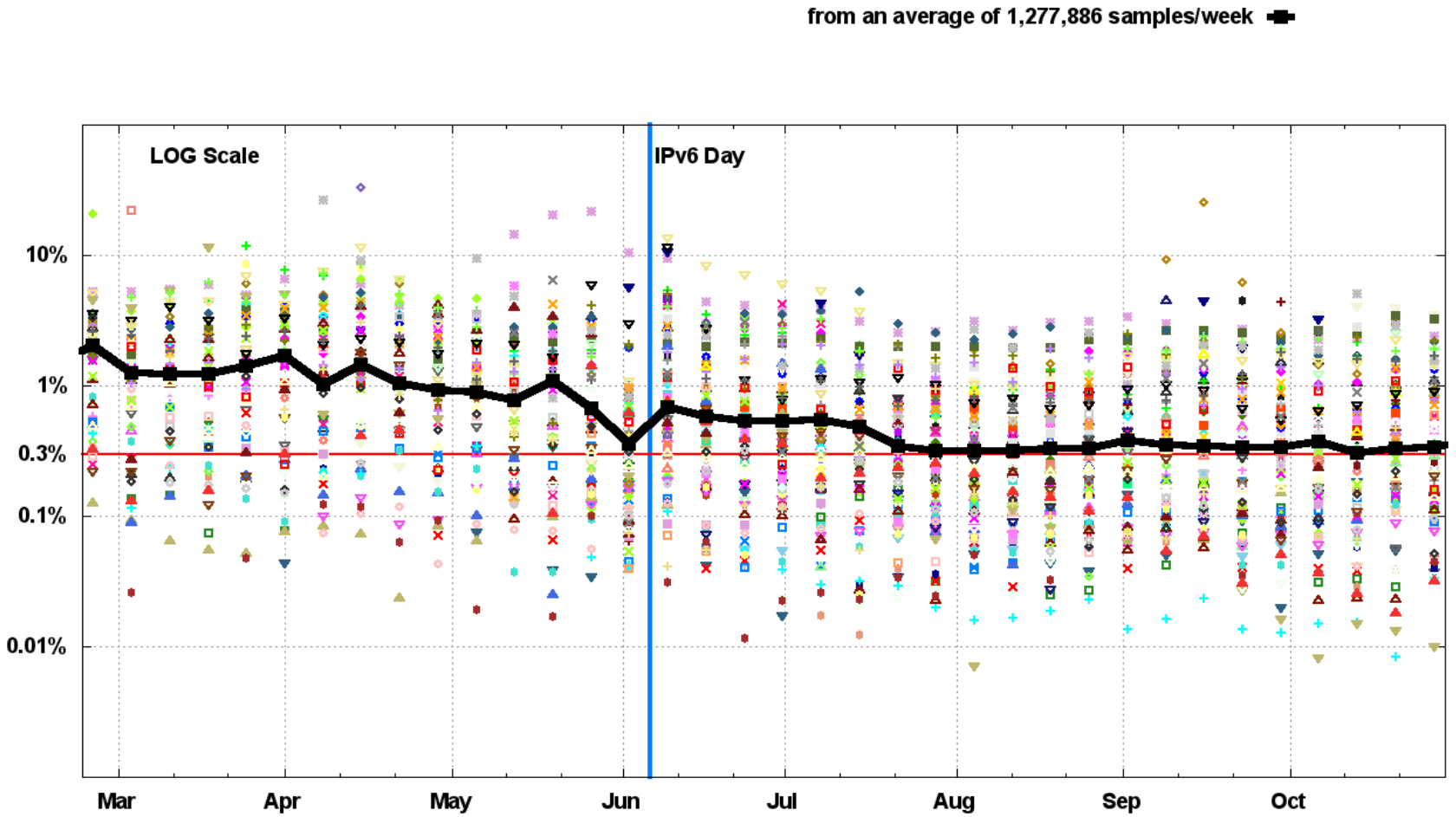
# Worldwide IPv6 capability 2011



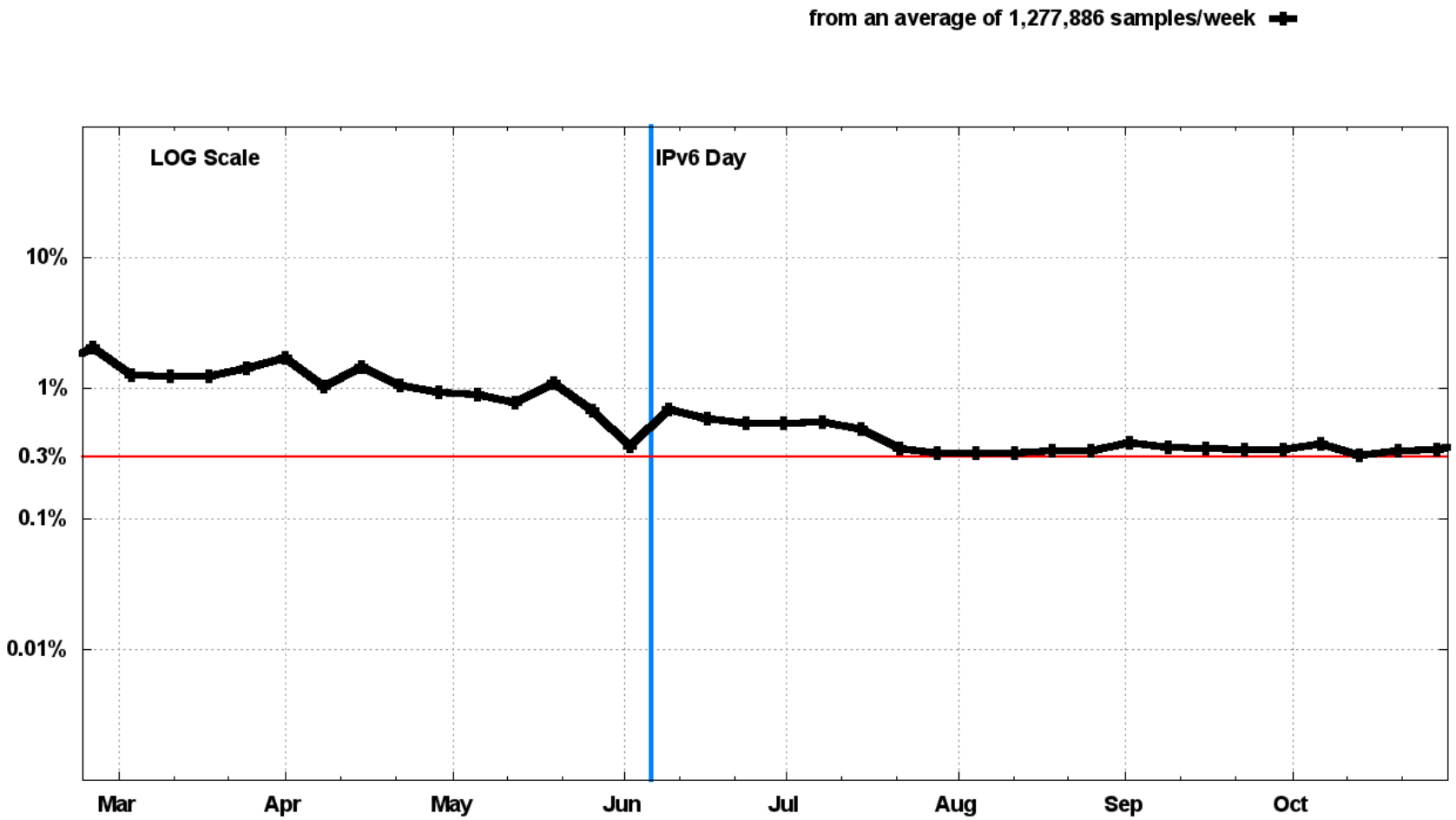
# Whats the distribution like?



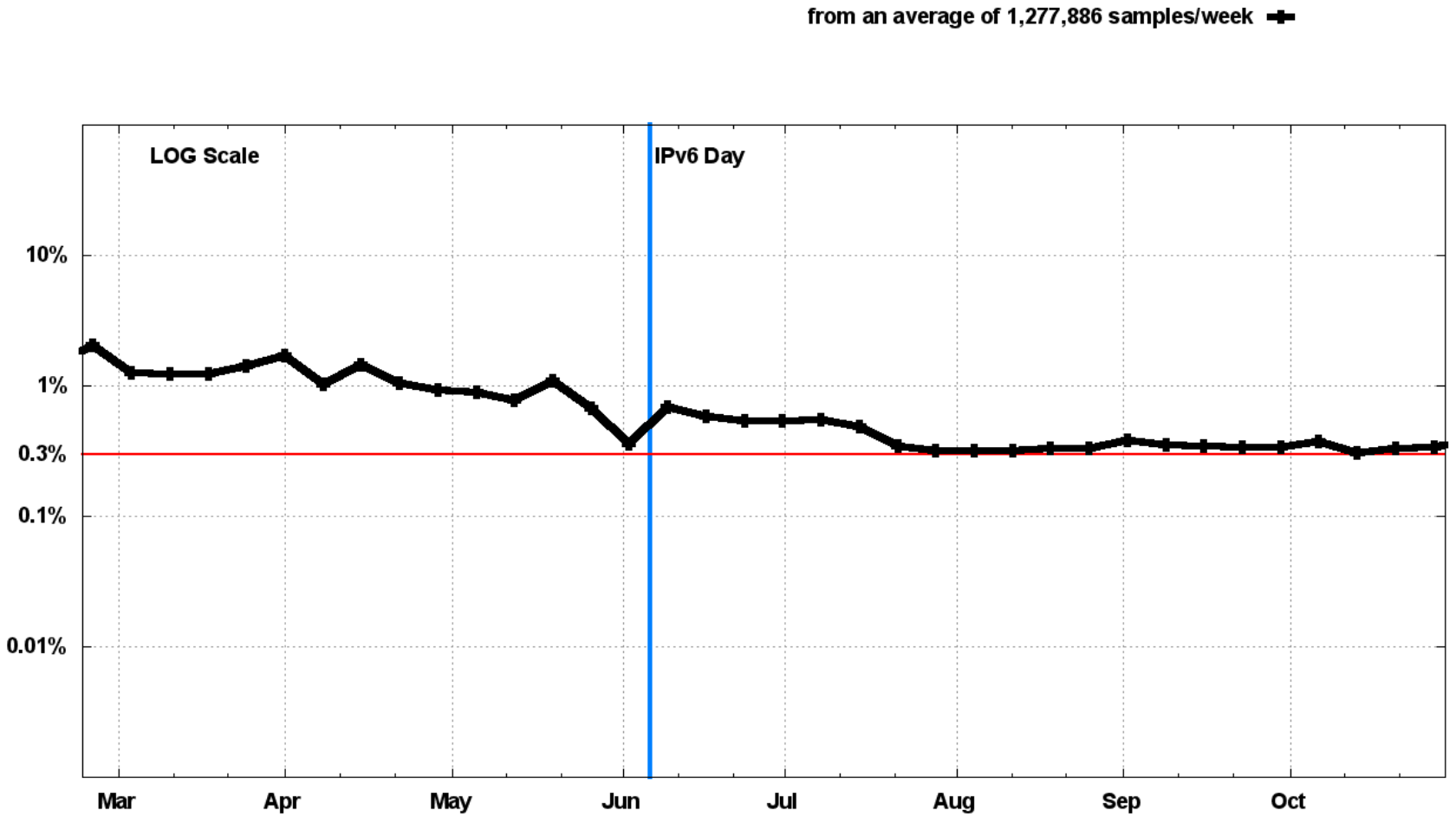
# There is a huge variance!



# What's the breakdown by Region?



# IPv6 Capability by UN Regions, 2011



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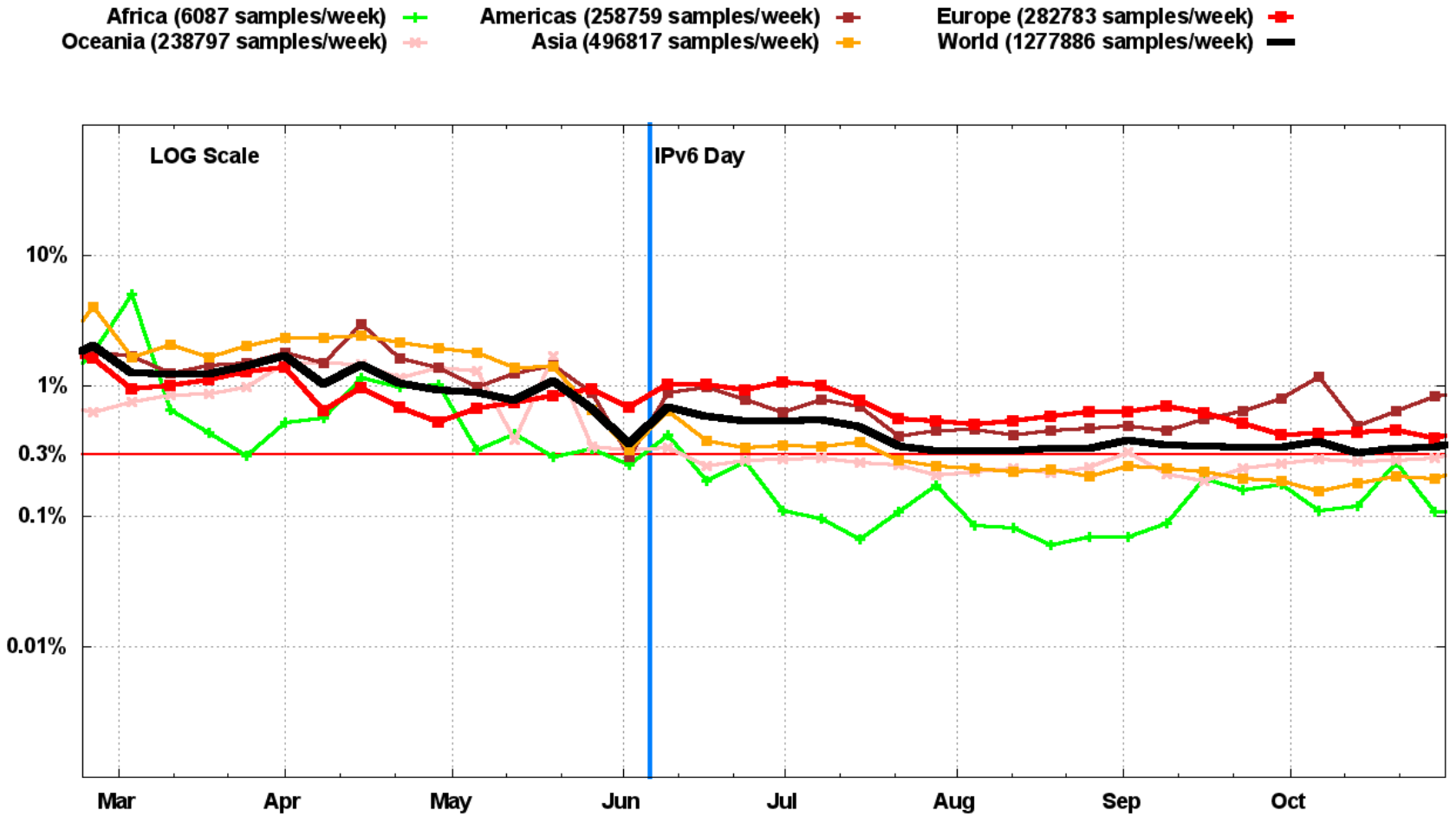
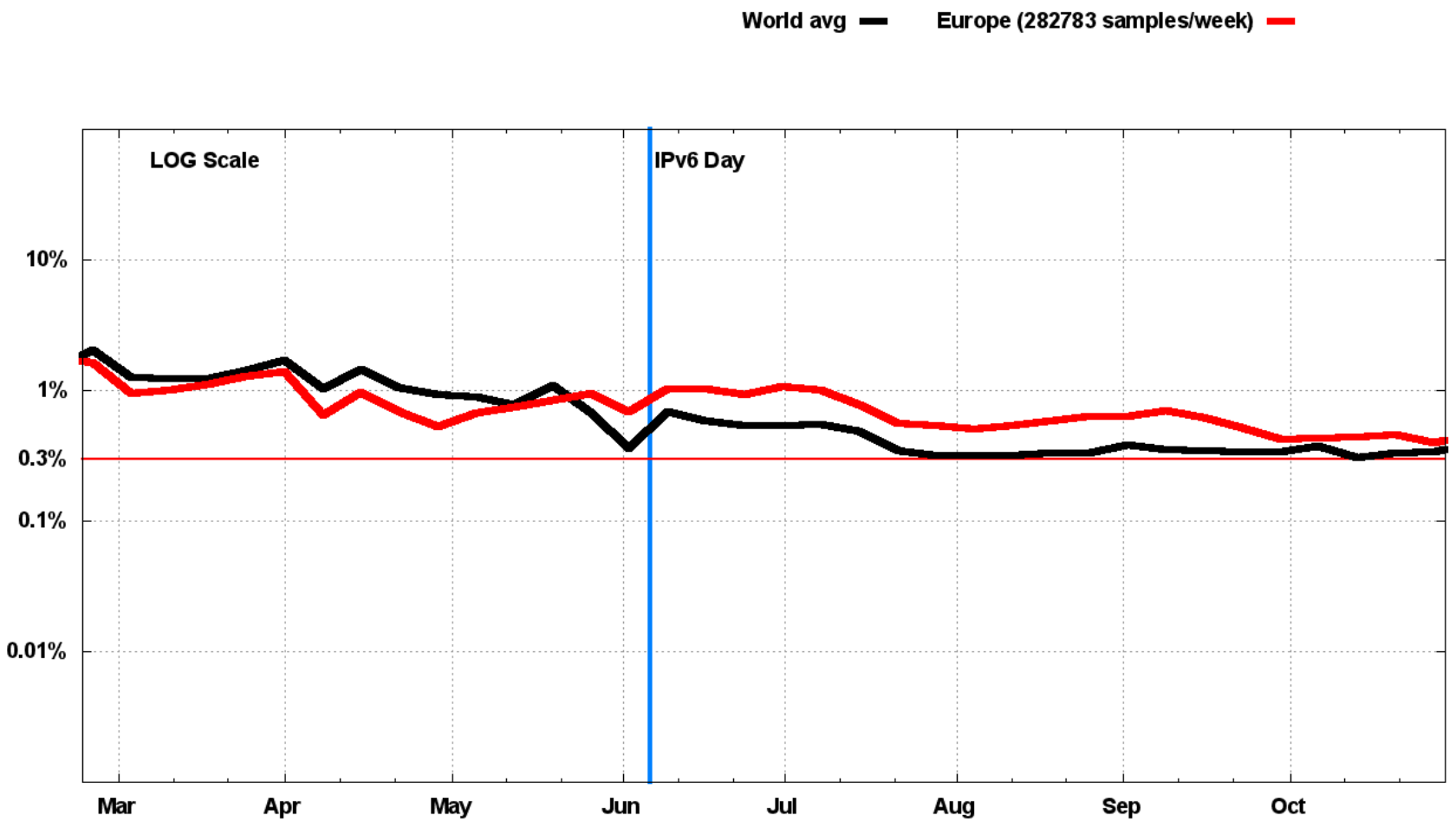
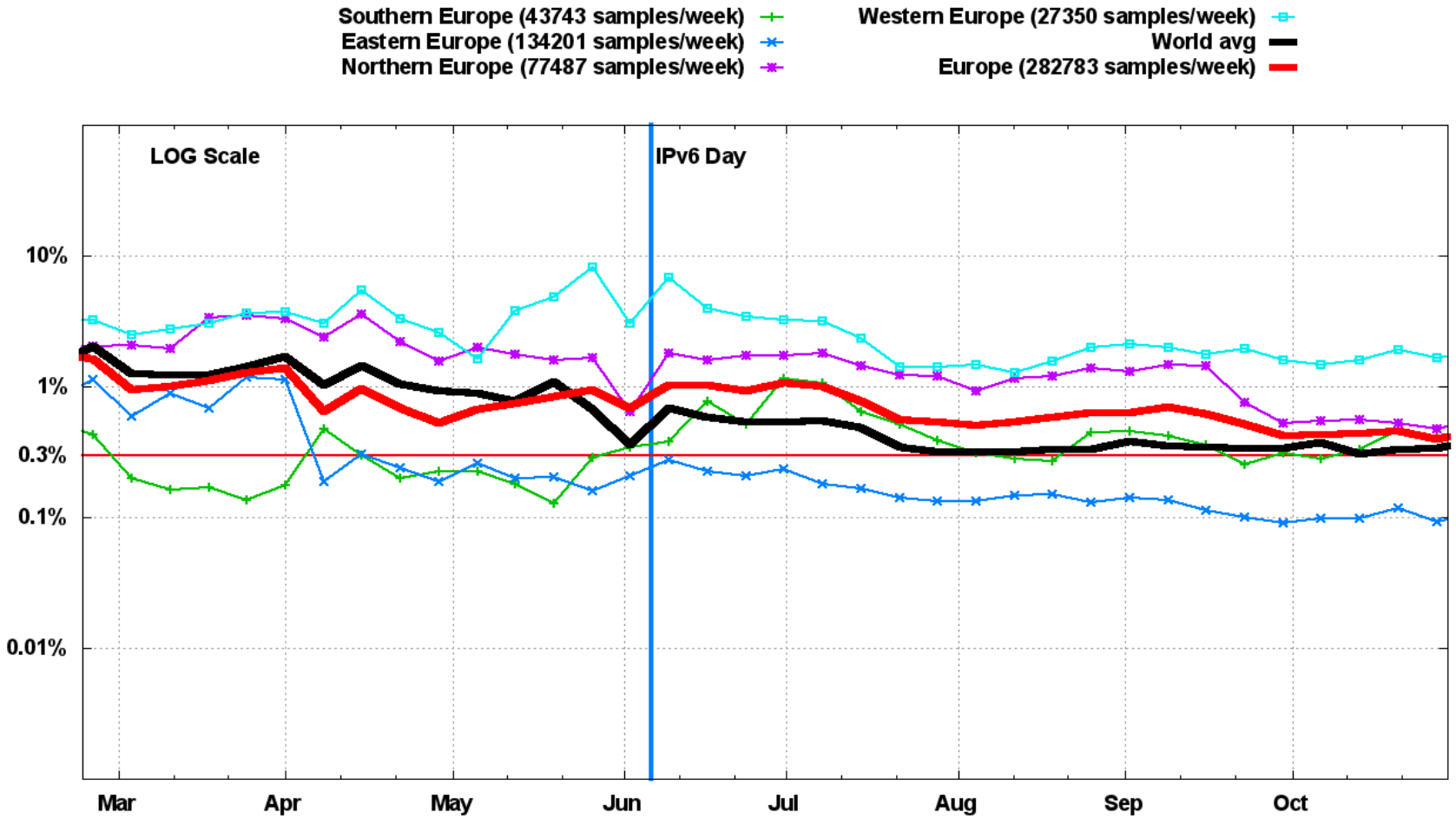


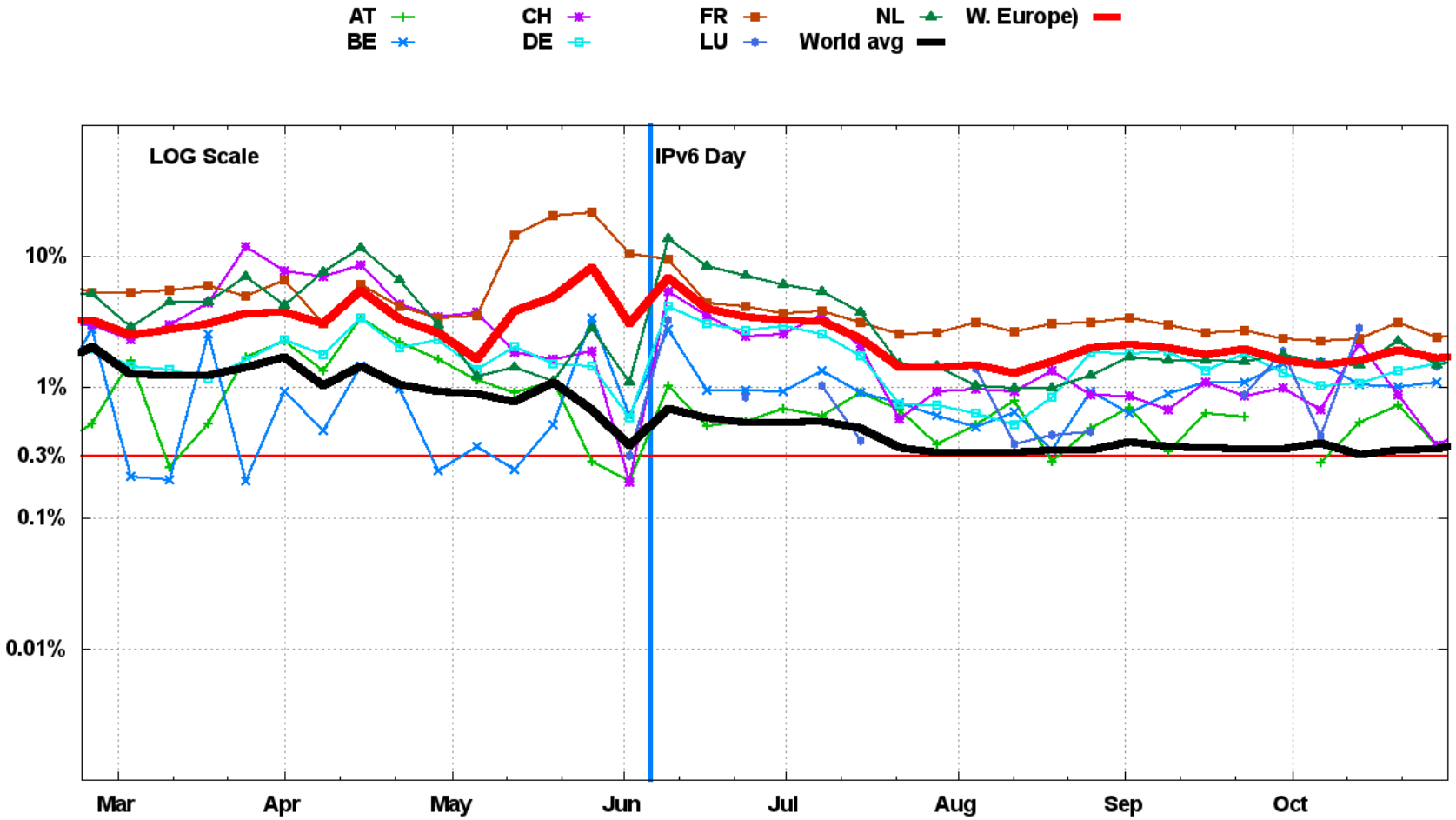
# European IPv6 capability 2011



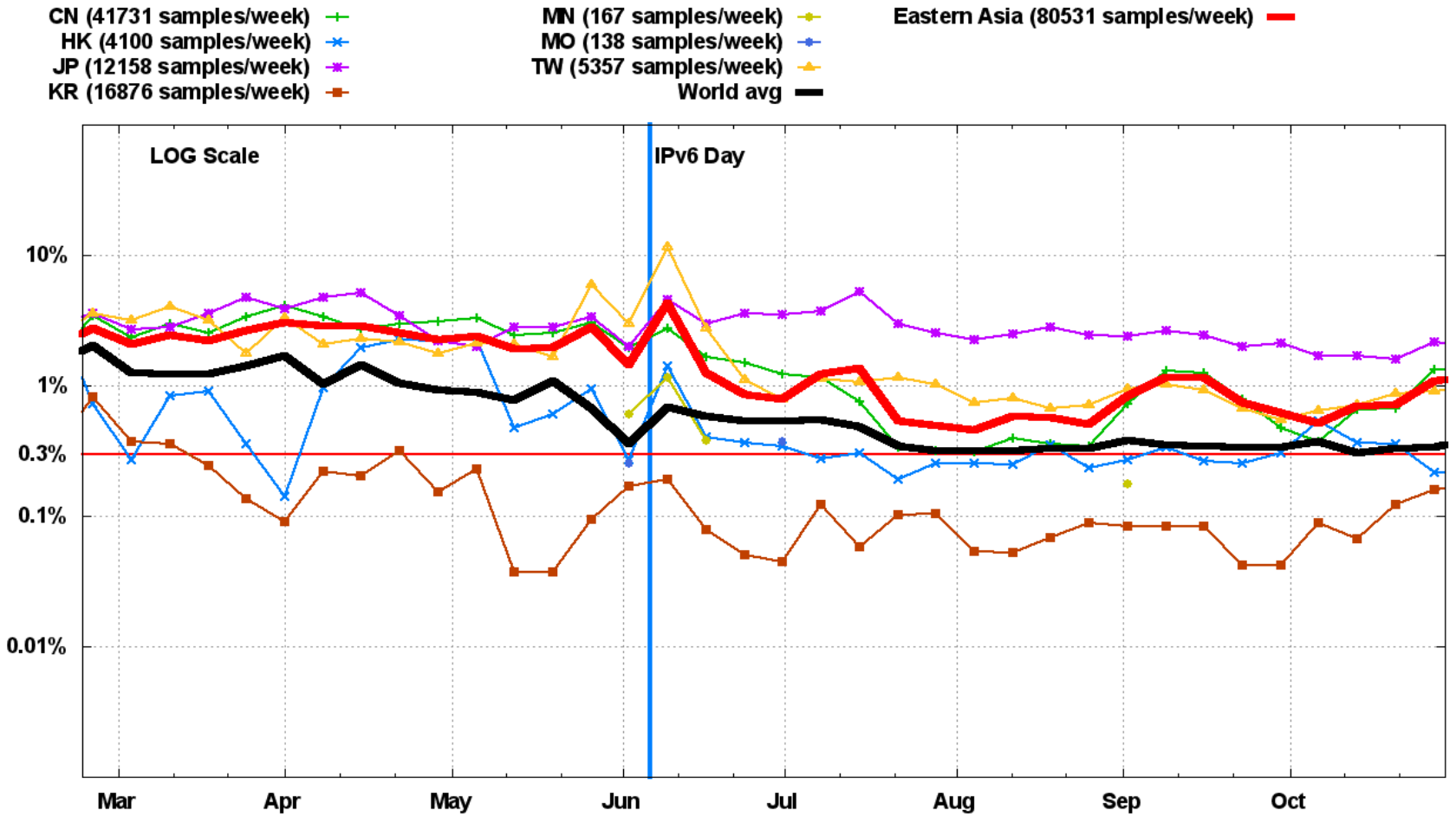
# European IPv6 by sub-region 2011



# W.Europe IPv6 by economy 2011



# E. Asia IPv6 Capability by economy 2011



# Observations

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IPv6 service is extremely ‘lumpy’ at the economy level

- High variances between economies, regions
- High variances inside regions
- Economic/Pop **size and GDP** is not necessarily a good indicator of IPv6 capability

Spikes in IPv6 probably reflect events

- We’re still measuring our own ‘advocacy’ at meetings with IPv6 on the network

We have a long way to go with IPv6 to get to parity

# Where are we going with this?

Continue 1x1 activity, maintain a long baseline measurement of IPv6 activity
Publish regularly updated data on the details of IPv6 usage by economy, UN region, and other useful groupings

Data at http://labs.apnic.net/ipv6-measurement/