Measuring Trends in IPv6 Support

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What’s New?

- At IETF 96 we presented our Happy Eyeballs data gathered in betas of iOS 10 and macOS Sierra
  - 6% of connections had both IPv4 and IPv6 addresses, 87% of which ended up using IPv6
  - Happy Eyeballs fell back to a secondary address on 5% of eligible connections
- We now have five months of data from wider deployment, and are looking at trends in IPv6 usage and Happy Eyeballs. 0.1% of connections are sampled
Connection Breakdowns

**October 2016**
- IPv4 Only Hosts: 91%
- Dual Stack Hosts: 9%

**March 2017**
- IPv4 Only Hosts: 90%
- IPv6 Only Hosts: 3%
- Dual Stack Hosts: 7%
Rise of IPv6-Only Hosts

- Percentage of Total Connections
- Dual Stack Hosts
- IPv6 Only Hosts
- IPv4 Only Hosts

- Rise of IPv6-Only Hosts
- Percentage of Total Connections
- October 2016
- November 2016
- December 2016
- January 2017
- February 2017
- March 2017
Measuring Happiness

Percentage of H-E Connections

IPv6 Won
IPv4 Won
IPv4 Won as Fallback

October 2016
November 2016
December 2016
January 2017
February 2017
March 2017
Measuring Happiness

Percentage of H-E Connections

- IPv4 Won
- IPv4 Won as Fallback

October 2016
November 2016
December 2016
January 2017
February 2017
March 2017
Summary

• The overall split between IPv4 and IPv6 connections has held steady, but a growing number of IPv6 connections only had an IPv6 address to attempt

  • More networks are deploying NAT64, or are suppressing IPv4 responses

• Happy Eyeballs racing results have fluctuations that seem to correspond to the rise of IPv6-only connections

• As we see more IPv6-only connections, the remaining Happy Eyeballs races show more fallback to IPv4, showing that the better-performing IPv6 deployments are the ones switching to IPv6-only