

Some World IPv6 Day Measurement Results

draft-keranen-ipv6day-measurements-01

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Measurements

- End-user perspective
- 1 (+2) test site(s)
 - YMMV
- Starting 1 week before the day
- One test run every 3 hours
- 10,000 most popular sites
- Measuring: AAAA records, TCP connection delays & failures

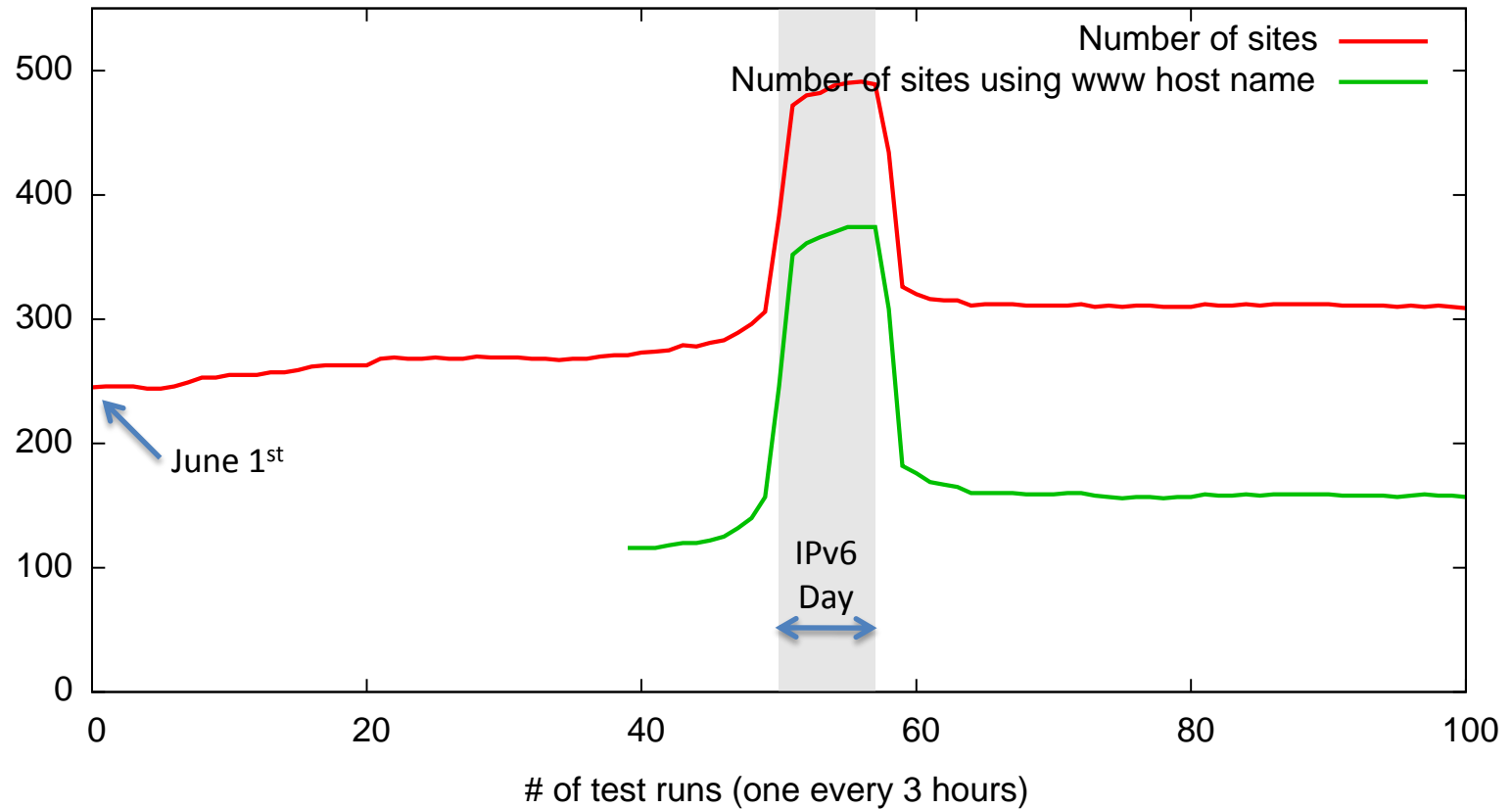


DNS Tests

- What fraction of sites have AAAA records?
- What was the impact of IPv6 day?
- Using
 - Alexa top sites list (from June 1st)
 - DNS A and AAAA record queries with different (“IPv6”) host names: www, www6, ipv6, v6, ipv6.www, www.ipv6, v6.www, www.v6
 - Local DNS server
 - cache flushed on every round, no whitelisting

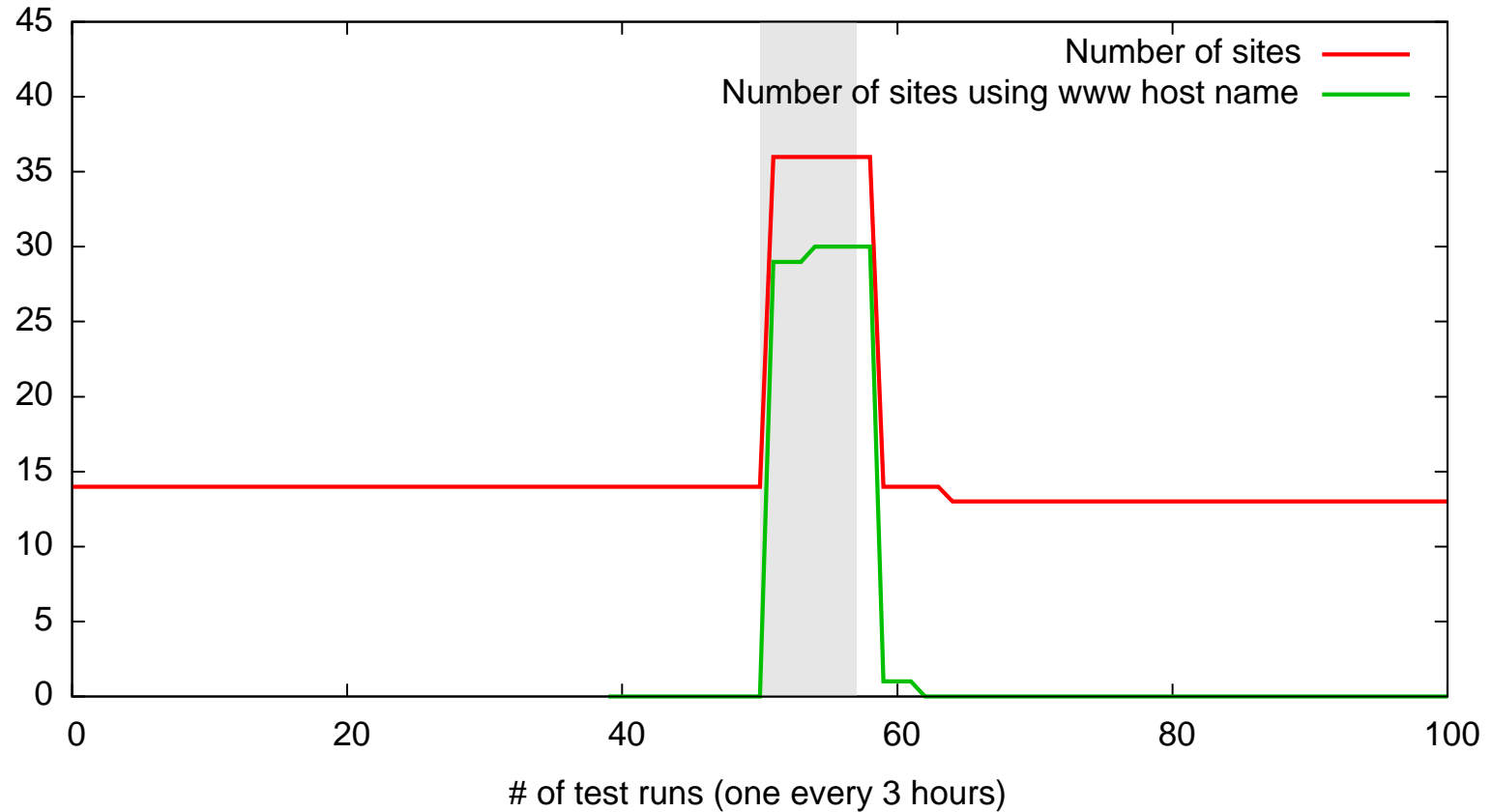
DNS Tests

Number of sites with AAAA DNS records in the top 10,000 most popular sites



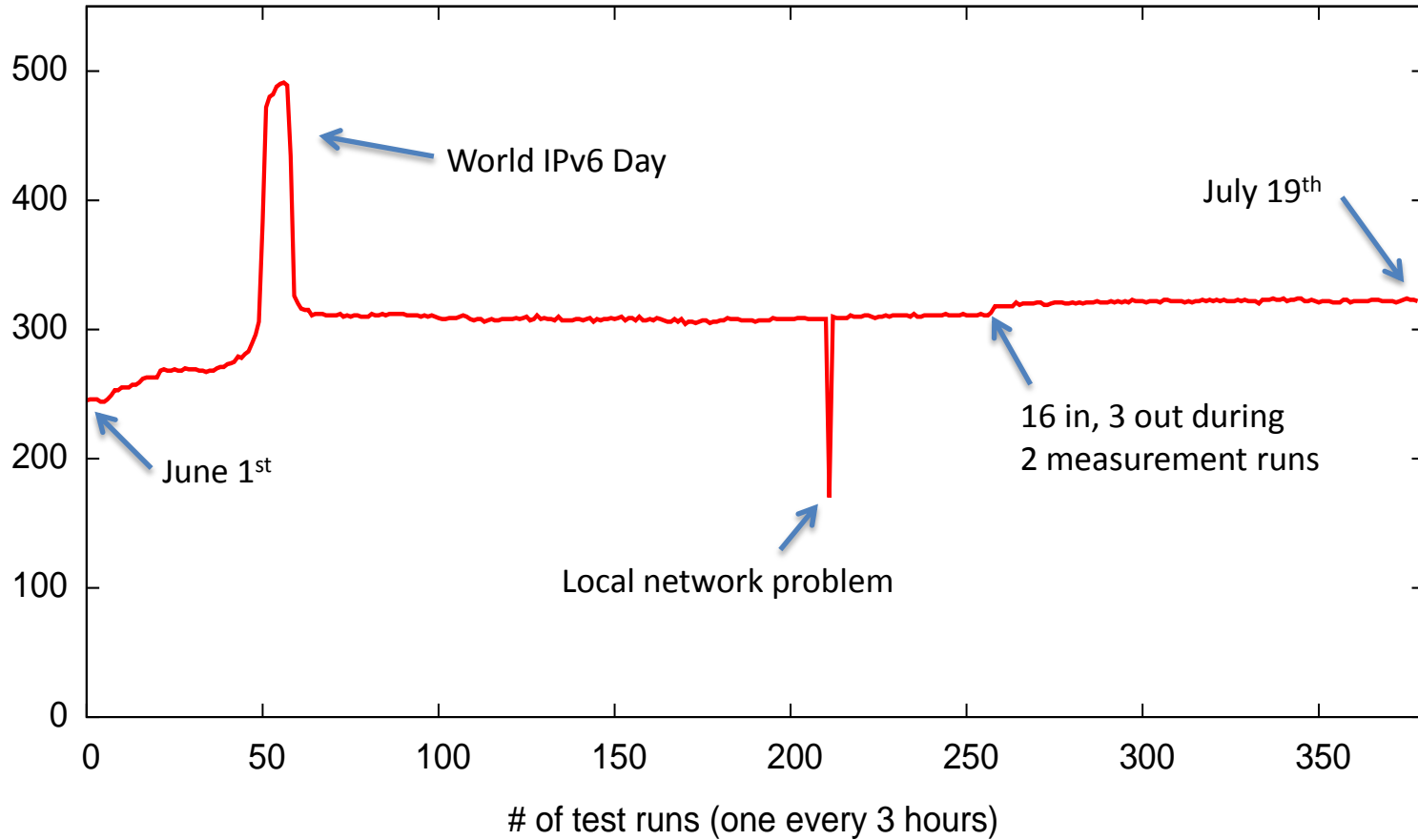
DNS Tests

Number of sites with AAAA DNS records in the top 100 most popular sites



Long-term Trend

Number of sites with AAAA DNS records in the top 10,000 most popular sites

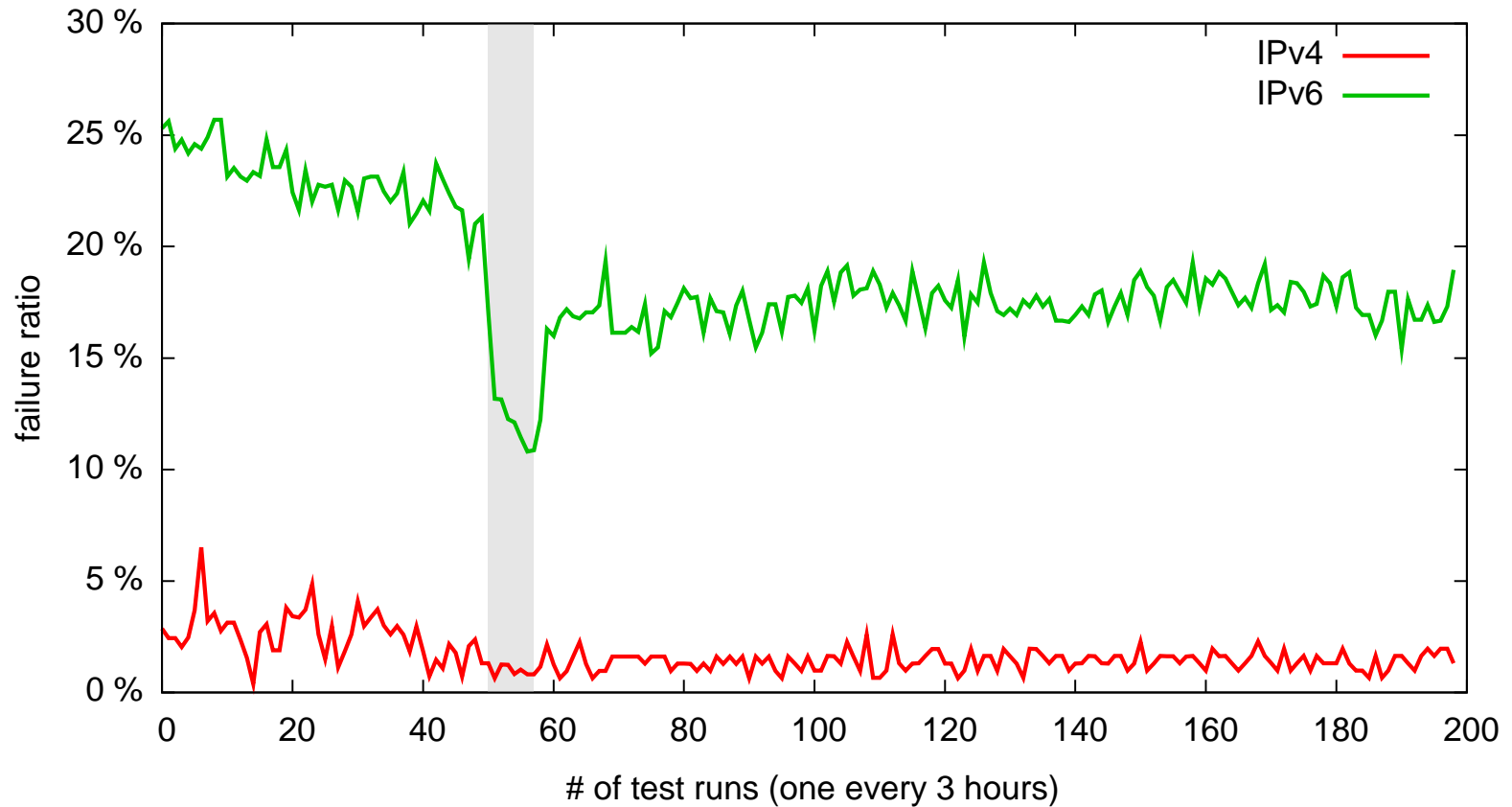


TCP Connection Tests

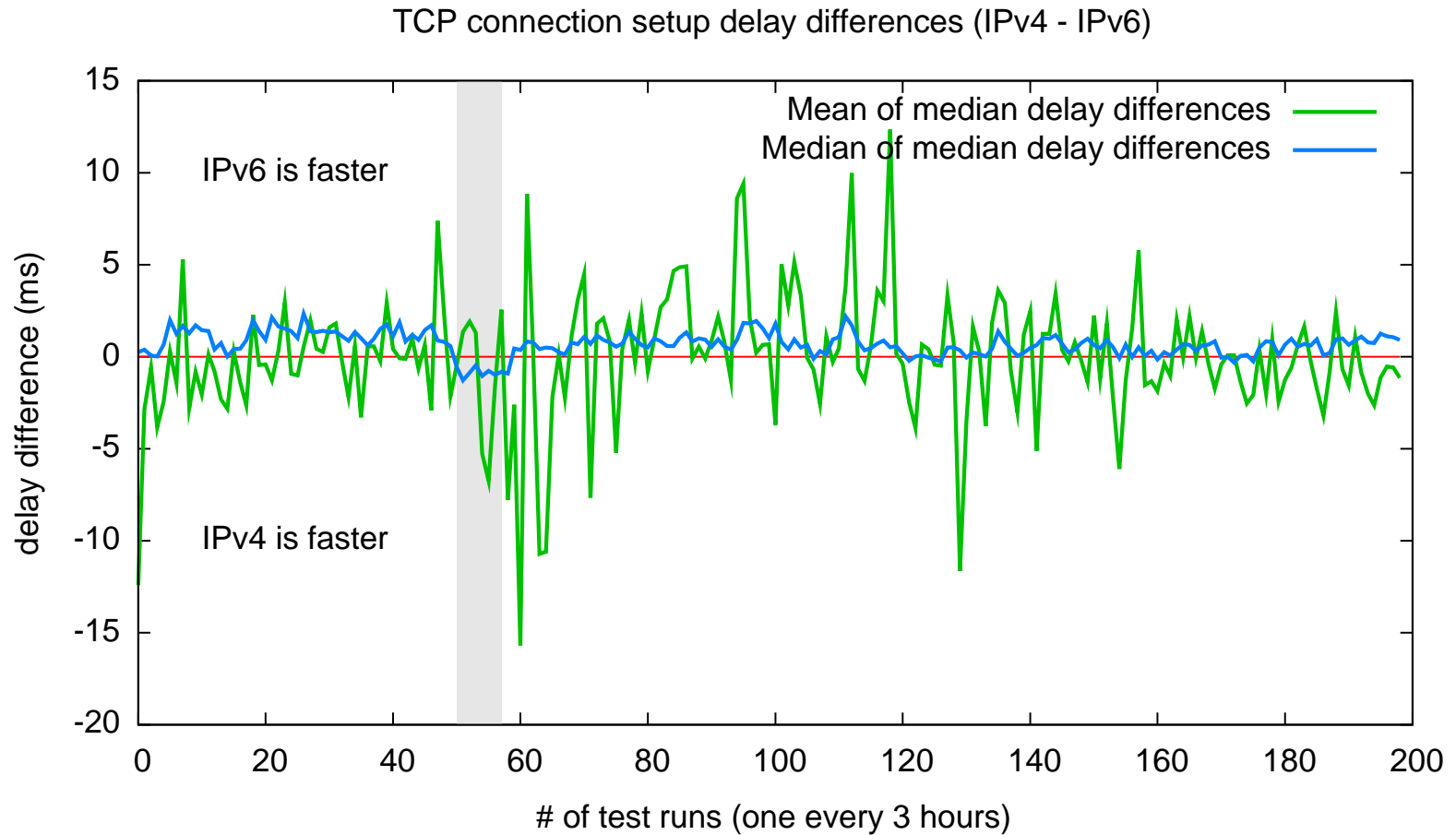
- How many sites accessible with IPv4 and IPv6?
- Are there differences in TCP connection set-up delays (RTTs) for IPv4 and IPv6?
- Establishing 10 TCP connections with IPv4 and IPv6 to port 80
 - Using the addresses from the first DNS A and AAAA responses
 - Measure and compare median delays

Inaccessible Sites

TCP connection setup failure ratio (for the first DNS response)



Delay Tests



(Some) Conclusions

- World IPv6 day had very visible effect on IPv6 content availability and failure ratios
- Large fraction of sites with AAAA records may not still answer to TCP (HTTP) connection attempts
 - Test sites with IPv6 host names? Measurement errors?
- Delay characteristics are, on average/median, quite similar with IPv4 and IPv6
 - IPv6 often even faster than IPv4
 - Apparently production-quality IPv6 setups