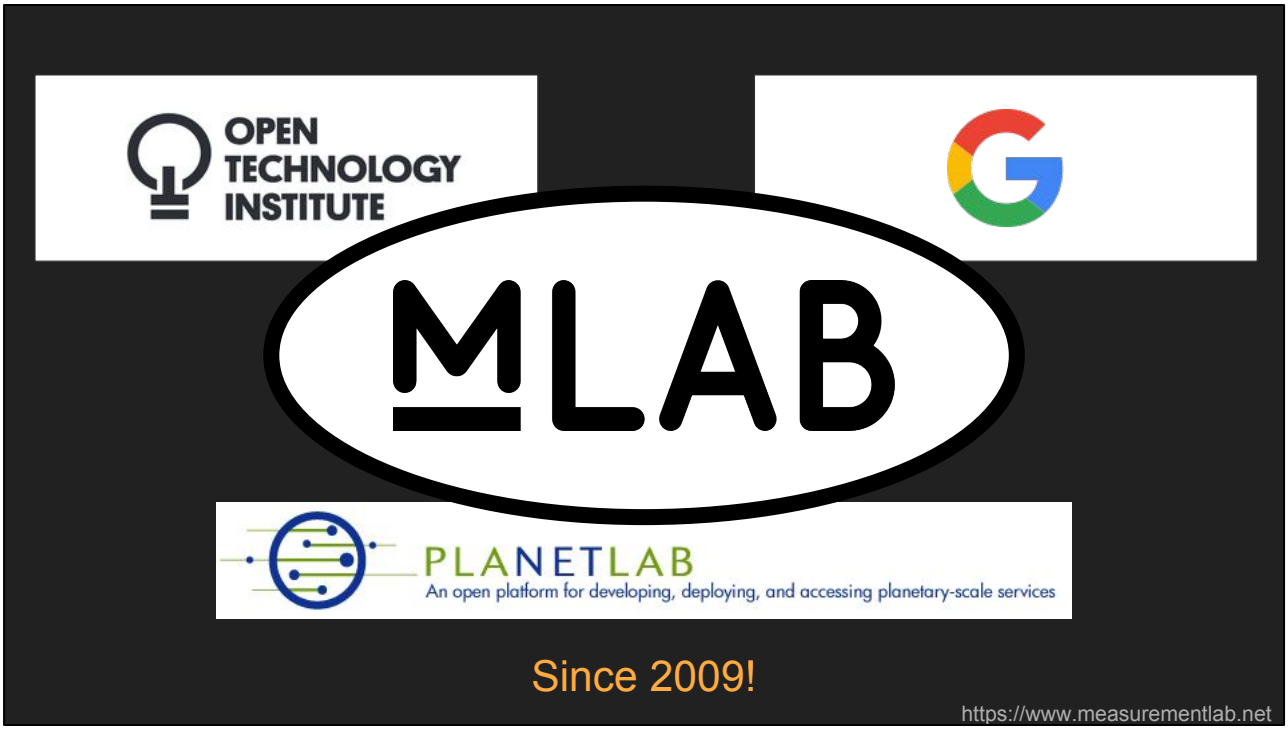
Hello! I'm here today to talk about MLab. There's three MLab people at the summit, do please feel free to talk to any or all of us about any questions or ideas you might have. Those people are Matt Matthis, researcher extraordinaire, Stephen Stuart, mastermind and guru, and myself, Peter Boothe, a software engineer and tech lead on the project.

Some of you know about MLab and others don't so I'll start with a quick orientation of our mission and history and what data we have, and then move on into telling you what our plans are for the future. And I'll get all of that done in the 9 minutes and 30 seconds remaining.

MLab has a mission! Our mission is to measure the Internet, save the data, and make that data universally accessible and useful. Every part of that sentence is important, so I'll circle back to it after giving a little background and history.



MLab was founded in 2009 and is a partnership between three (and hopefully more) organizations: The Open Technology Institute, a civil society organization in Washington DC; Google; and PlanetLab, which is a network measurement platform run out of Princeton. And when I say it's a partnership, I really mean that:

- I have asked people at OTI to do things, and they said no, and then MLab didn't do those things.
- When MLab breaks, it could be (and has been!) a problem for someone at Google, someone at the Open Technology Institute, or someone at PlanetLab, depending on what part of the stack has gone wrong.

Measure the Internet

https://mlab-ns.appspot.com

More than one hundred 1Gb connected sites worldwide, and more coming online in 2017 (and a fleet upgrade to 10Gb)

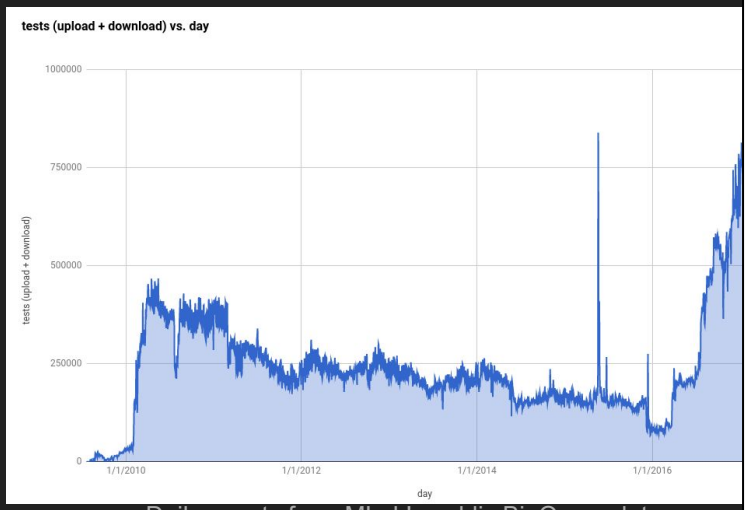
We measure the Internet by hosting experiments and 100+ sites around the world. Our sites are intended to be in data centers next to content, and as such the paths tests take to reach our sites should reflect the paths users take to get to content. Our sites are provisioned in a way that is intended to ensure that the MLab site is not the bottleneck for any test.

Save the Data

Hundreds of thousands of TCP diagnostic tests each day, and growing

Multiple Petabytes in Google Storage

Multiple Terabyte Google Bigquery DBs



Daily counts from MLab's public BigQuery data.

https://www.measurementlab.net

We have hundreds of thousands of tests performed against our infrastructure every data. All the raw data, including the packet captures, is saved and uploaded to Google Cloud Storage. The TCP instrumentation data, which is the data most people care about, we parse and put into SQL-queryable bigquery.

You can wget from our BigStore without any login. If you join discuss@measurementlab.net, you can query our BigQuery data for free. And soon we will be debuting a new visualization system!

Why Google participates in MLab

- MLab measures the performance of the non-Google Internet
- Google sends people to non-Google websites and services
- When the other websites and services work better, Google users have a better user experience

https://www.measurementlab.net

[after reading the slide]

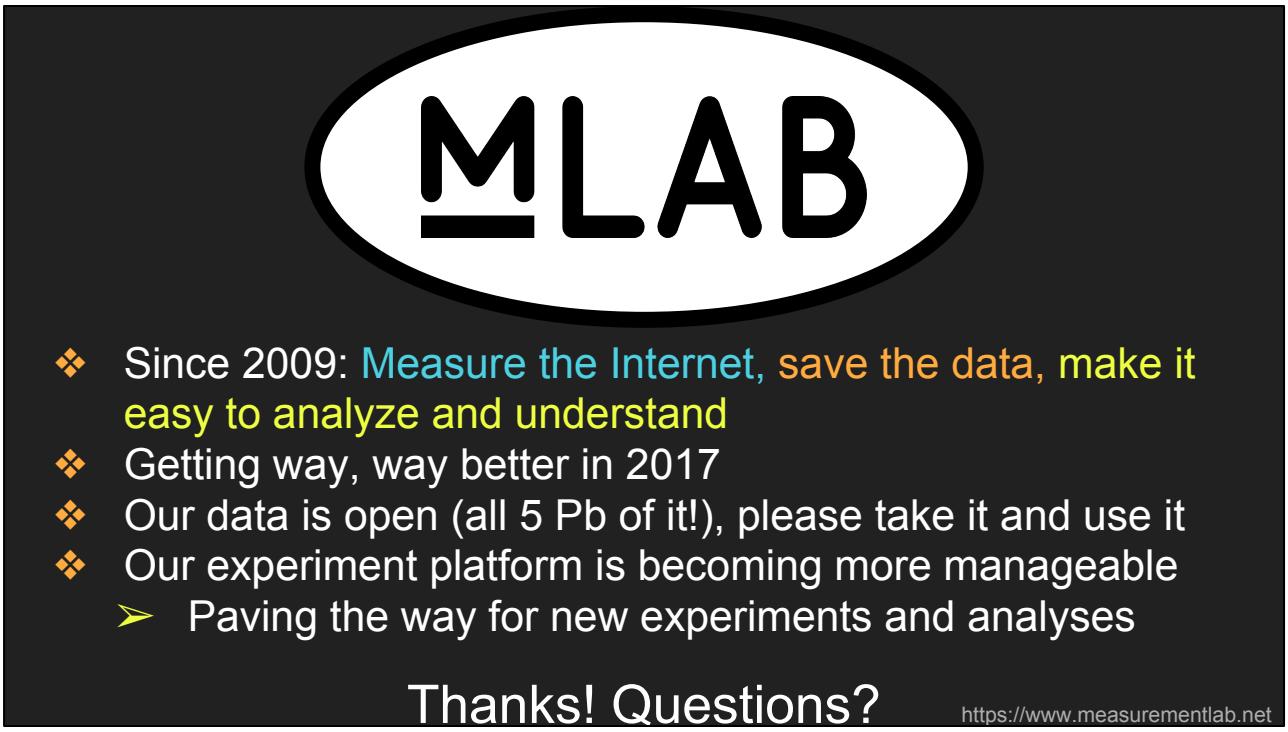
when I explain this project to people, I usually end up explaining that Google participates both out of the goodness of their heart, but also because Google really does have a strong interest in the non-Google Internet performing well.

MLab in 2017

- Major upgrades to the SW, HW, and NW infrastructure
  - Modern virtualization (docker + kubernetes, instead of vservers + scripts)
  - Modern kernels (using netlink + TCP_INFO instead of Web100)
  - HW refresh for both switches and hosts
  - 1Gb uplinks → 10Gb uplinks
  - New sites in the EU and elsewhere
- New visualization of speedtest data
  - Aid all stakeholders in understanding the data

https://www.measurementlab.net

MLab was founded in 2009, and is now almost 8 years old(!) So in 2017 we are helping it grow up.



Summary:
We have a mission, it's going well
Please use our data. There's gold in there, and all it takes is an interested grad student and wget to find it.
The platform is being modernized, and once it is modernized, it will likely be easier to roll out new experiments.