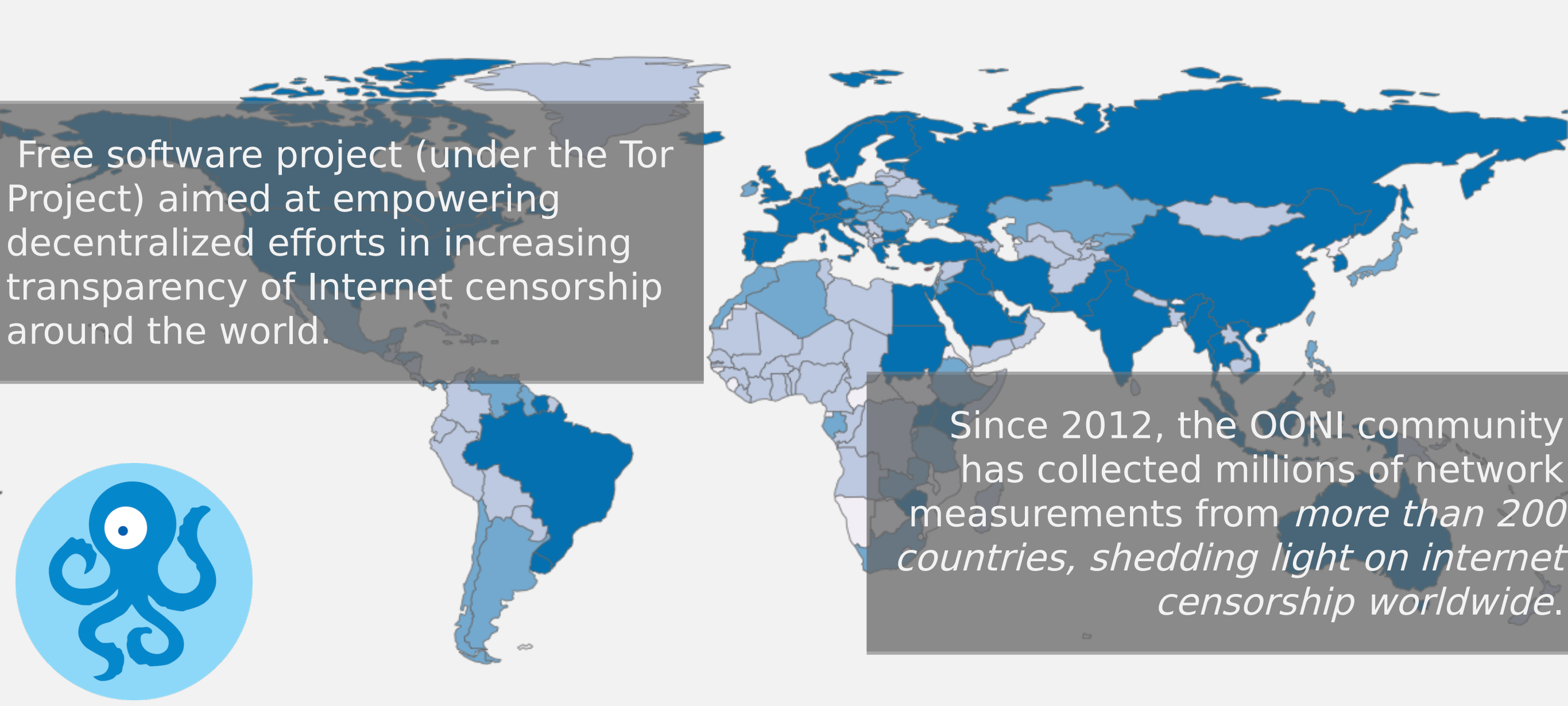




Collect Evidence of Internet Censorship

A Call to Action

FSCONS 2017, 4th November 2017
Maria Xynou

A world map with various shades of blue highlighting different regions. The map is the background for the text and logo.

Free software project (under the Tor Project) aimed at empowering decentralized efforts in increasing transparency of Internet censorship around the world.

Since 2012, the OONI community has collected millions of network measurements from *more than 200 countries, shedding light on internet censorship worldwide.*



<https://ooni.torproject.org>

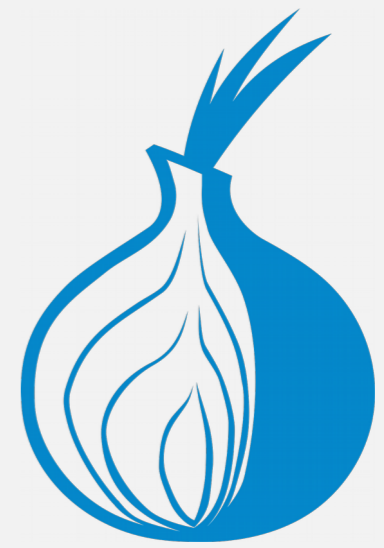
OONI: Open Observatory of Network Interference



Blocking of **websites**



Blocking of **instant messaging apps**



Blocking of **censorship circumvention tools**



Detection of **middle boxes**

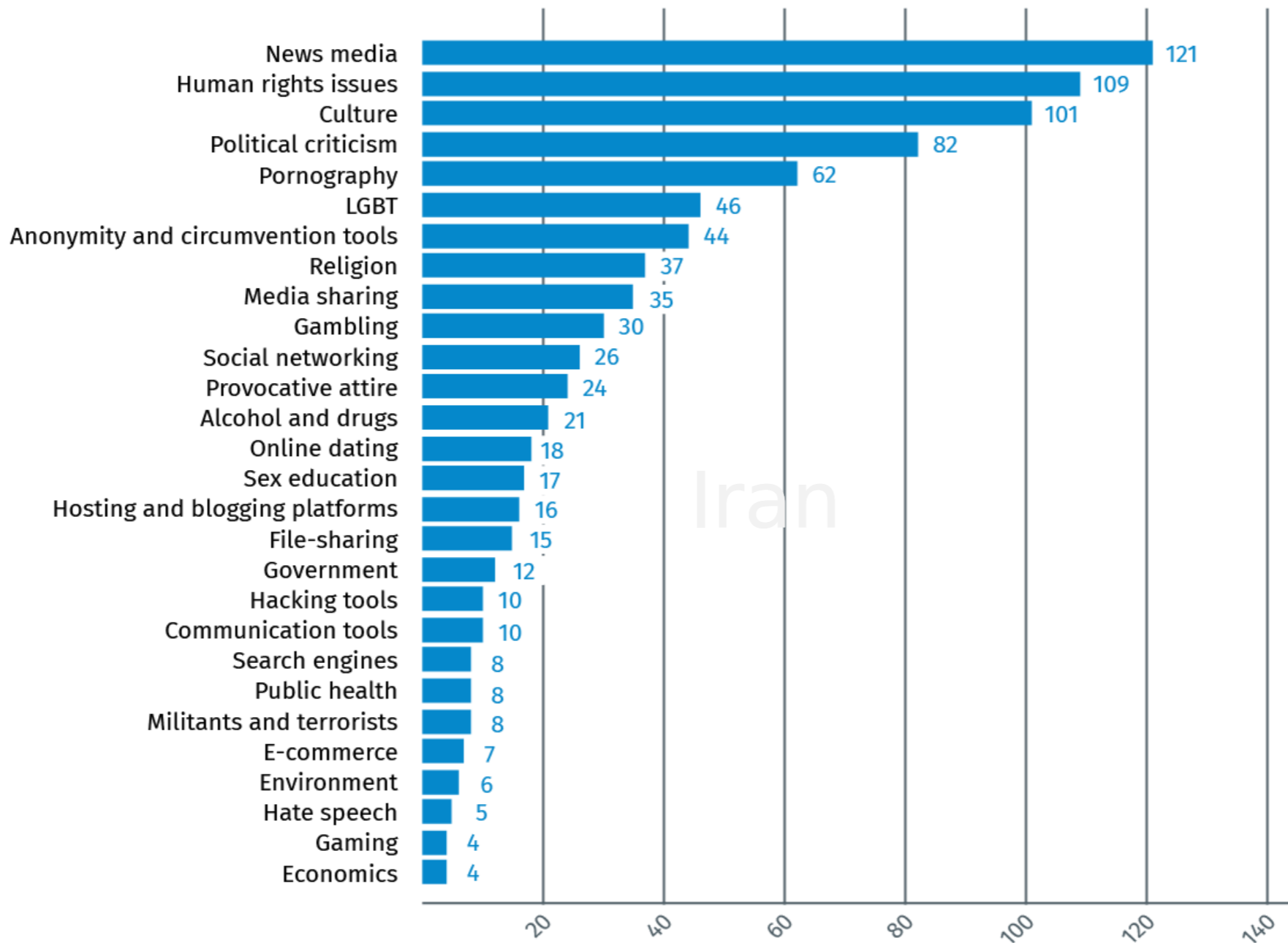


Measurement of **network speed & performance**

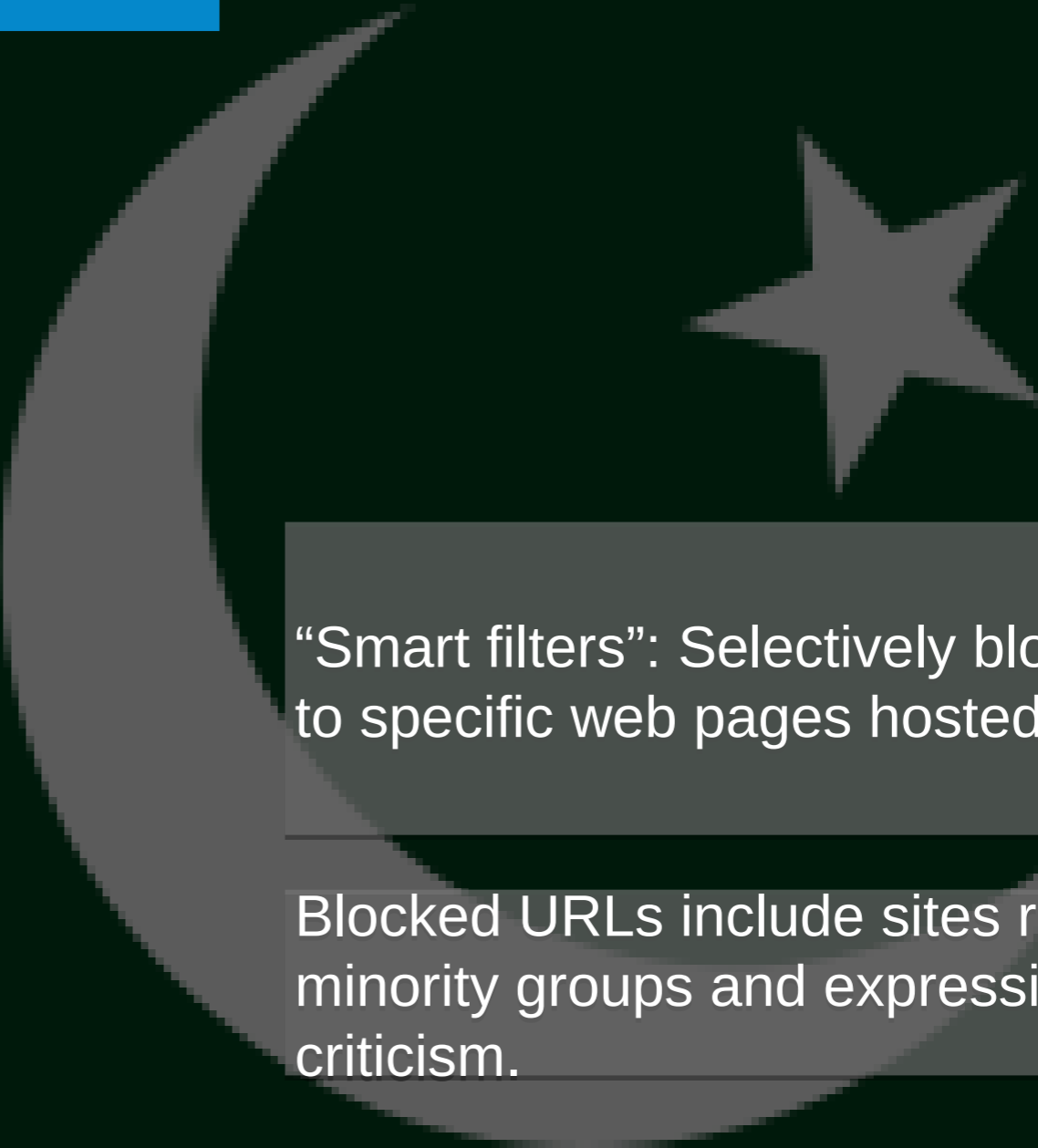
OONI Software Tests

Blocked domains in Iran

From 2014 to 2017



Pakistan



“Smart filters”: Selectively blocking access to specific web pages hosted on HTTP

Blocked URLs include sites run by ethnic minority groups and expressing religious criticism.

<https://ooni.torproject.org/post/pakistan-internet-censorship/>

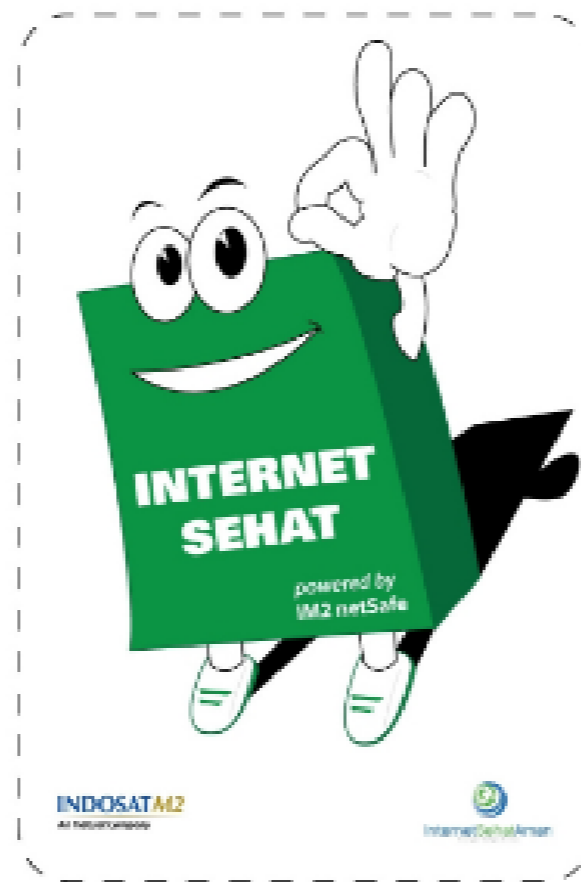
Indonesia

Vimeo and Reddit blocked even though their ban was lifted more than 2 years ago.

Blocked URLs include LGBT sites, an online translator, and sites providing information for AIDS/HIV prevention.

<https://ooni.torproject.org/post/indonesia-internet-censorship/>

Access Restricted



Based on Regulation of the Minister of Communication and Information No. 19 of 2014

Cuba



Many of the blocked sites express criticism towards Castro's regime.

Skype blocked by means of RST injection.

<https://ooni.torproject.org/post/cuba-internet-censorship-2017/>

The background of the slide features the Malaysian flag, which consists of a blue canton with a white crescent and a 14-pointed star, and nine horizontal stripes of red and white. A blue banner is overlaid on the top left.

Malaysia's 1MDB scandal

39 websites censored through the DNS injection of block pages

News outlets, blogs, and medium.com blocked for covering the 1MDB scandal

<https://ooni.torproject.org/post/malaysia-report/>

Uganda's 2016 General Elections

Site	Smile Telecom	Orange
http://facebook.com	Blocked	Blocked
https://facebook.com	Blocked	Not blocked
http://twitter.com	Blocked	Blocked
https://twitter.com	Blocked	Not blocked
http://whatsapp.com	Blocked	Not blocked
http://viber.com	Blocked	Not blocked

<https://ooni.torproject.org/post/uganda-social-media-blocked/>

Ethiopia's wave of political protests



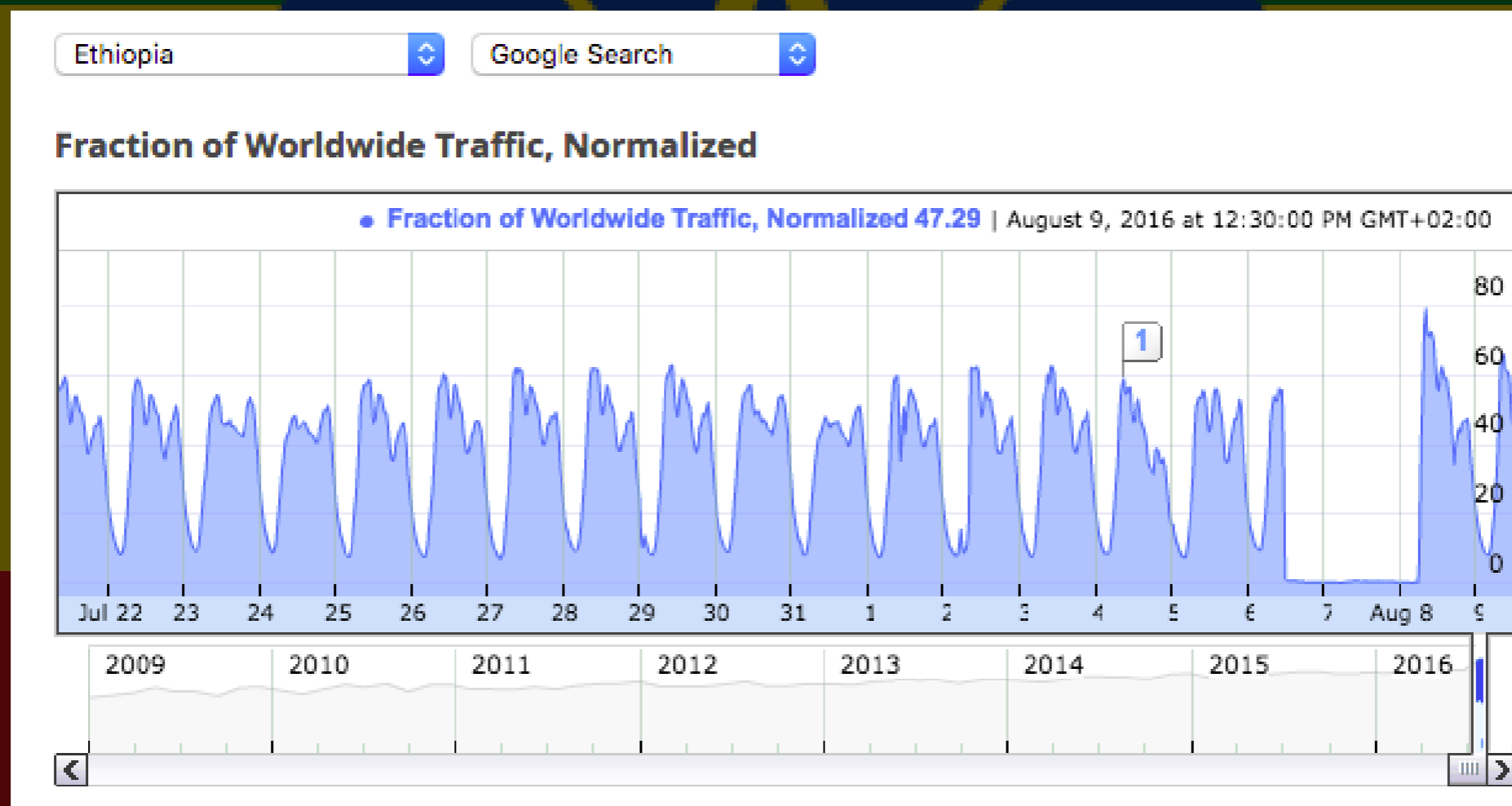
WhatsApp blocked

Deep Packet Inspection (DPI) detected

Media outlets, LGBT sites, human rights websites, political opposition sites & circumvention tool sites found to be blocked

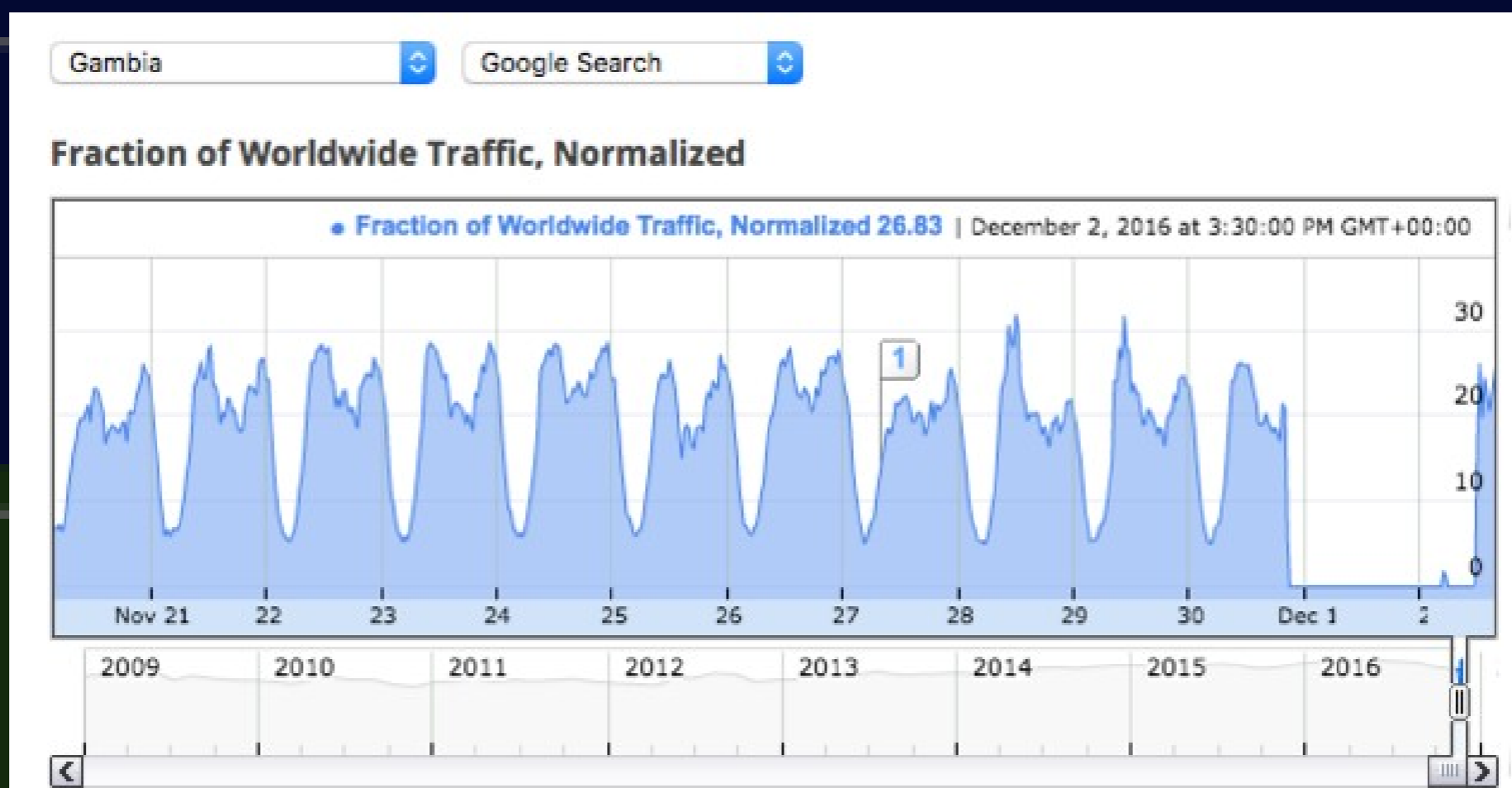
<https://ooni.torproject.org/post/ethiopia-report/>

Internet blackout in Ethiopia



<https://ooni.torproject.org/post/ethiopia-internet-shutdown-amidst-recent-protests/>

Internet blackout in The Gambia: 2016 Presidential Election



<https://ooni.torproject.org/post/gambia-internet-shutdown/>

Catalonia



At least 25 sites related to the Catalan independence referendum censored by means of DNS tampering & HTTP blocking.

<https://ooni.torproject.org/post/internet-censorship-catalonia-independence-referendum/>

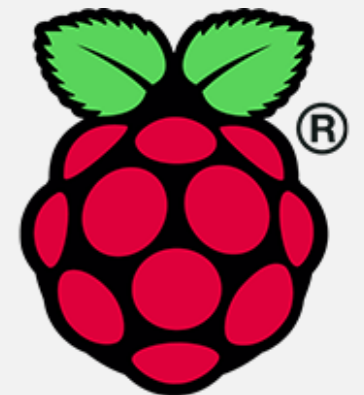


Linux or
macOS

Android

iOS

Raspberry
Pi



Run OONI Probe



ooniprobe Dashboard

ooniprobe 2.2.1-dev | **running** | Location: IS (AS47172)

Test Tor



Test the Web



Test Instant Messaging Apps



Test for Middle Boxes



Last 4 tests

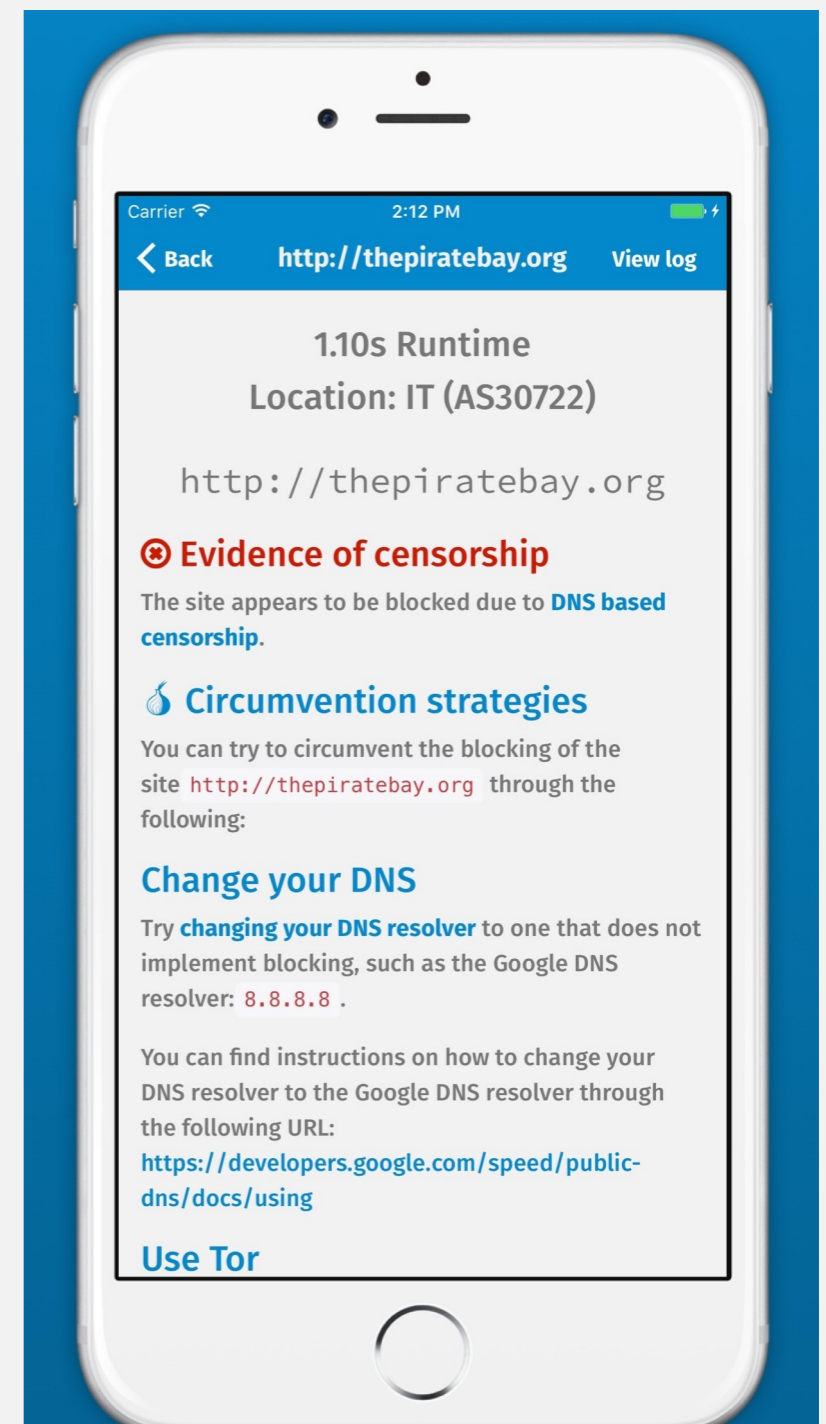
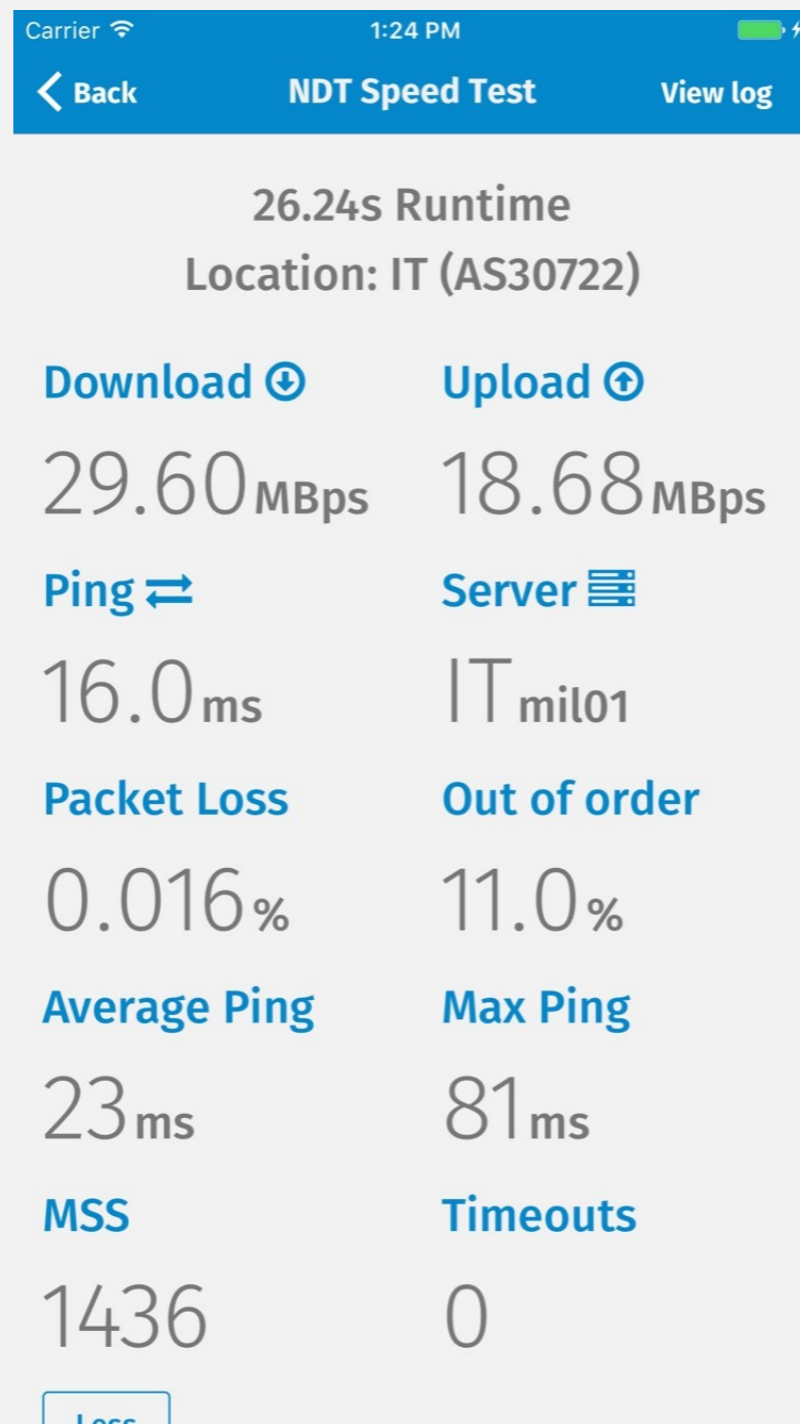
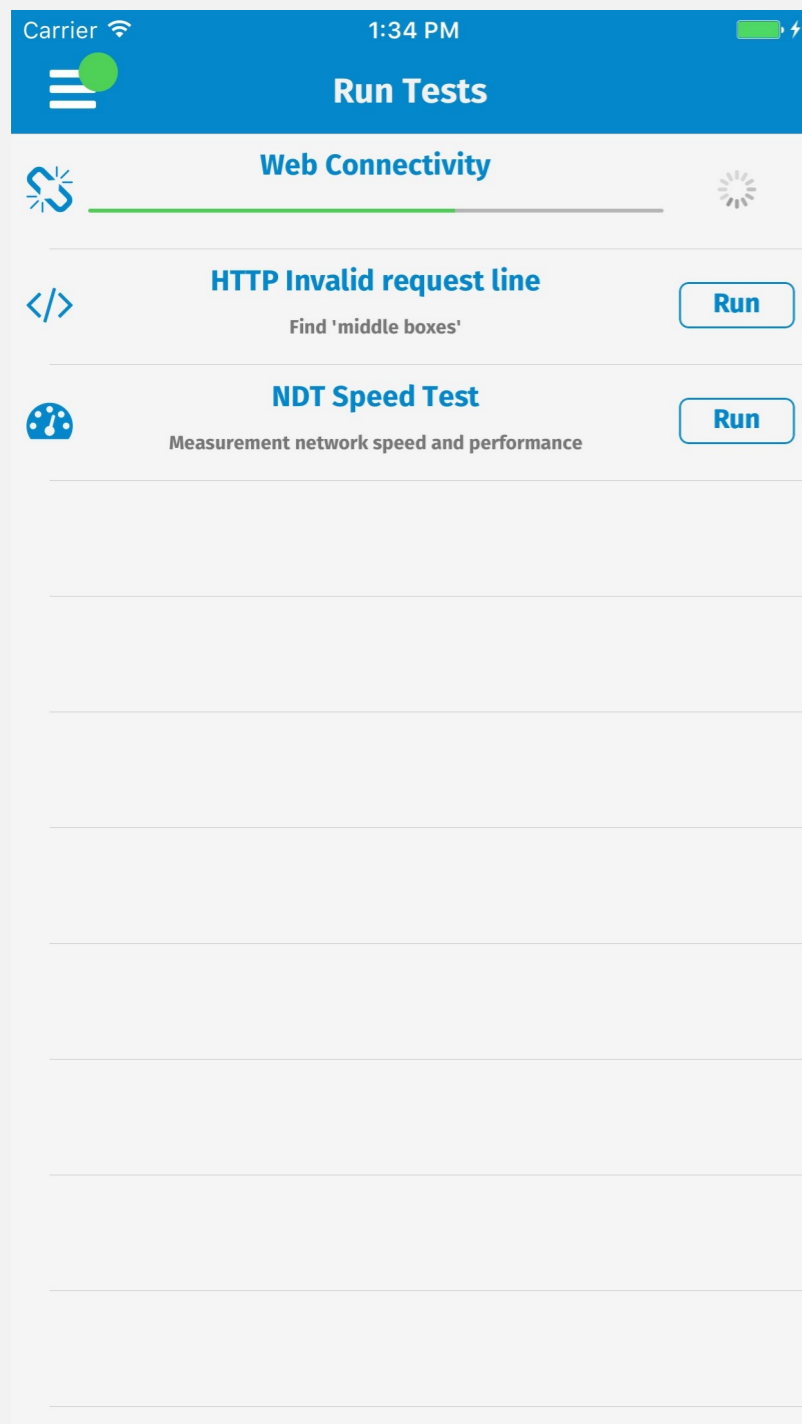
tcp_connect	Nov 1, 2017 4:35 AM	AS47172	IS	
meek_fronted_requests_test	Nov 1, 2017 4:34 AM	AS47172	IS	
vanilla_tor	Nov 1, 2017 3:13 AM	AS47172	IS	
http_invalid_request_line	Nov 1, 2017 3:05 AM	AS47172	IS	

[View your measurements](#)

OONI Probe web user interface



OONI Probe on Raspberry Pis



OONI Probe mobile apps



Let's fight internet censorship together!

Test Name

Internet Censorship

- Web Connectivity
Check if websites are blocked.
[Learn how this test works here](#)

Speed & Performance

- NDT Speed Test
- DASH Video Streaming

Middleboxes

- HTTP Invalid Request Line
- HTTP Header Field Manipulation.

What you can do

Generate a link and share it with your friends and contacts around the world. Encourage them to run OONI Probe to test the sites of your choice!

URLs

http://



+ Add URL

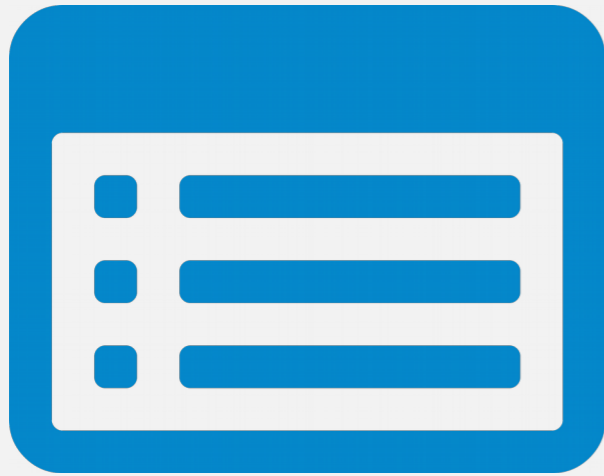
GENERATE

OOONI Run (<https://run.ooni.io>)

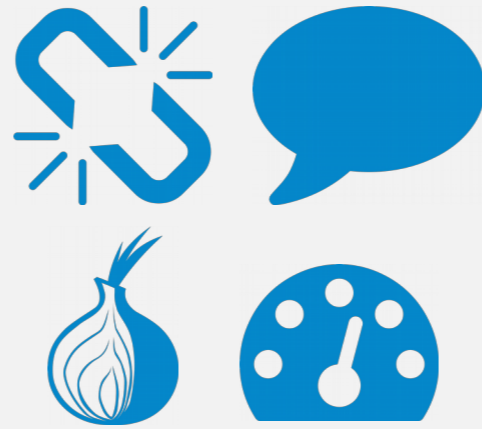
- Anyone monitoring your internet activity (e.g. ISP) will know that you are running ooniprobe.
- Types of URLs tested include provocative or objectionable sites (e.g. pornography).
- Unless you opt-out, all network measurement data is published and could be linked back to you.

<https://ooni.torproject.org/about/risks/>

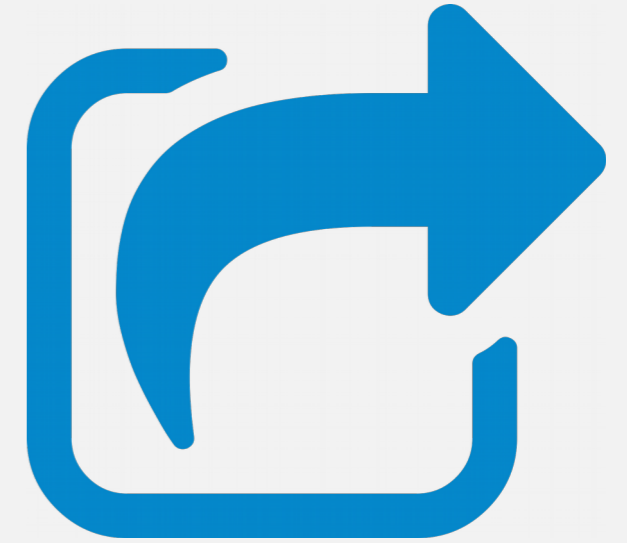
Potential risks: OONI Probe is a tool for investigations!



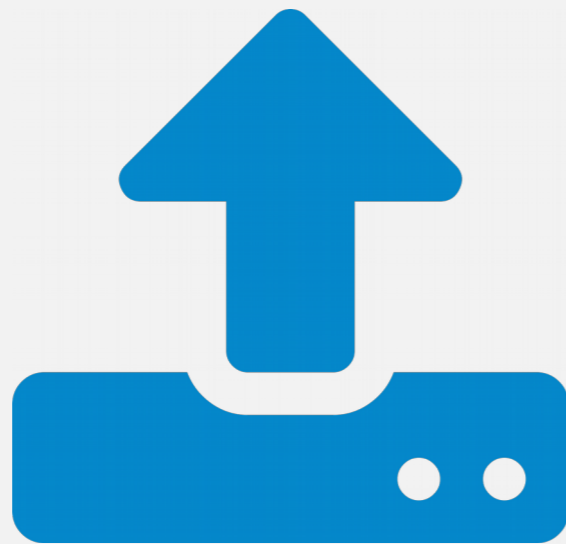
Contribute to test lists



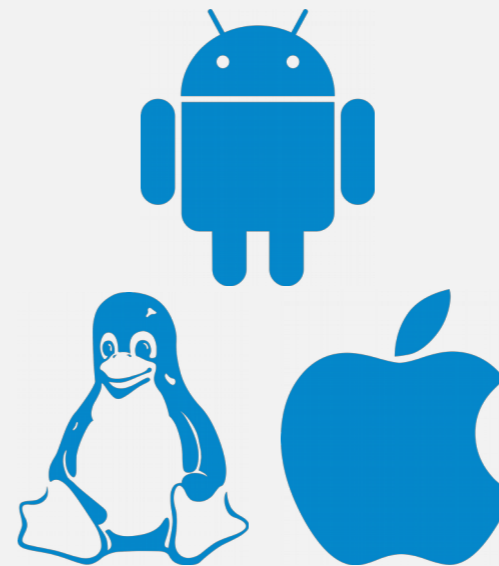
Types of test to run



Privacy settings



How you upload data



Platform for running ooniprobe

Choices you can make

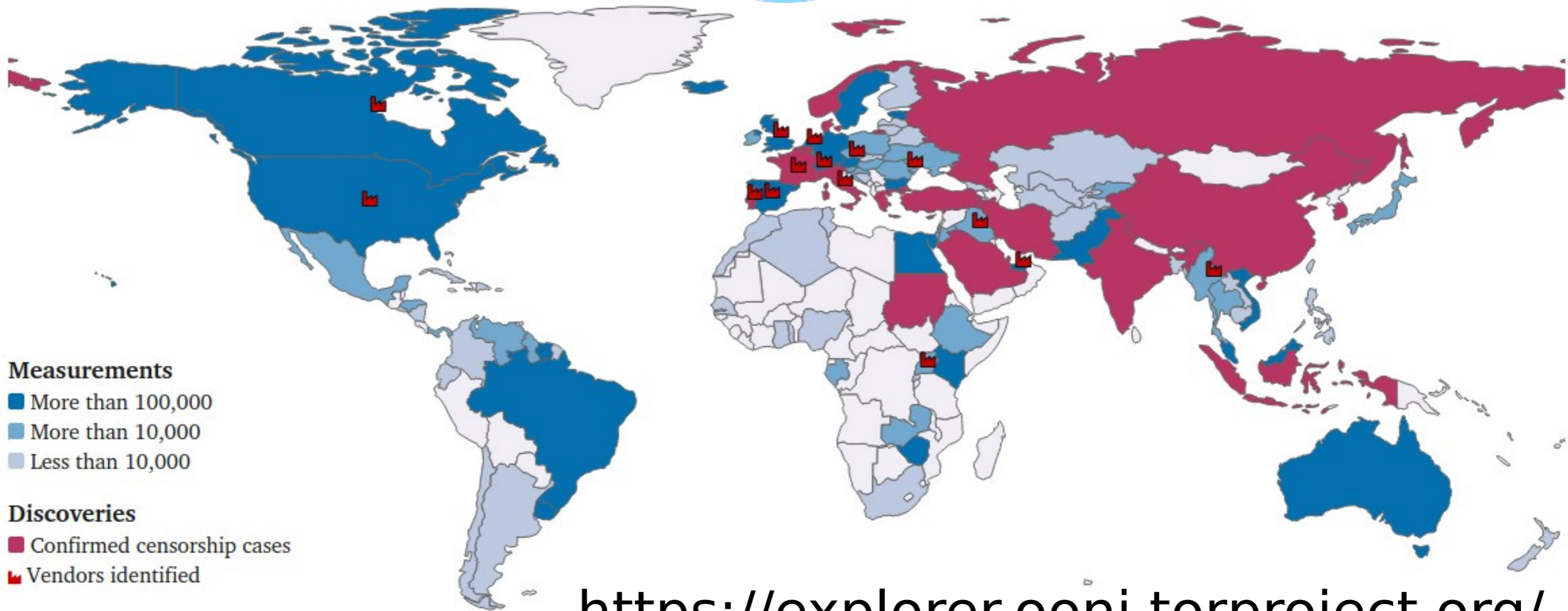
- Global list: Internationally relevant websites
- Country-specific lists: Websites that are relevant to a specific country
- How to contribute to test lists:
<https://ooni.torproject.org/get-involved/contribute-test-lists/>
- Citizen Lab github repo:
<https://github.com/citizenlab/test-lists>

Test lists:

Determining which sites to test for
censorship

- Evidence of censorship events
- Transparency of information controls
- Allows researchers to conduct independent studies & to explore other research questions
- Allows the public to verify OONI findings

Open Data



OOONI Explorer



Norway

- Bar Chart
- Measurements
- Country Data
- Methods
- Vendors
- Blocked Sites

Here's what we know about anomalies with internet connections located in Norway.

1,025,916 Measurements Collected



[View Older](#)

The graph above shows when we've run tests, and how many sites we've found to be blocked ■ out of all measured ■.

[Filter Results](#) ▼

Country Code	Asn	Test Name	Input	Start Time
NO	AS29695	http_header_field_ma...		2017-10-02T00:02:17....
NO	AS29695	facebook_messenger		2017-10-02T00:02:08....

Welcome to the OONI API

Dynamically updated every day, the OONI API enables researchers and data scientists to analyze all data collected from OONI Probes around the world.

Download and search [OOONI Probe](#) network measurements.

Join the OONI data analyst community and help uncover internet censorship worldwide!

[READ THE API DOCS](#)

Latest Measurements

ASN	Country code	Test Start Time	Test Name	
AS44244	IR	2017-10-31 01:53:14	ndt	Download
AS44244	IR	2017-10-31 01:53:13	http_invalid_request_line	Download

- “Normal” and “anomalous” measurements.
- “Anomalous” measurements MIGHT contain evidence of censorship, but not necessarily (i.e. false positives).
- We only confirm a case of censorship when we have detected a block page.

Interpreting the data

- OONI Partnership Program
- Run OONI Probe
- Contribute to test lists
- Analyze the data
- Tell stories
- Host an OONI workshop, engage others! :)

Get involved!

- **OOONI:** <https://ooni.torproject.org/>
- **OOONI data:** <https://ooni.torproject.org/data/>
- **Software:** <https://github.com/TheTorProject/ooni-probe>
- **Contact the OOONI team:**
contact@openobservatory.org
Twitter: @OpenObservatory
IRC: #ooni (irc.oftc.net) -
<https://slack.openobservatory.org/>

Resources & contacts