



Network Measurements

Censorship and Digital Rights in Southeast Asia

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History

13th General Elections

HTTP was prevalent

A few independent efforts tested and found that through DPI, matching urls in browser requests were being blocked/delayed

[Sinar Project Summary](#)

[Tests](#)



Isteri PI Bala: Kami betul-betul macam pelarian

200,268 views · 29 Apr 2013

864 157 SHARE SAVE

kini tv **KiniTV** 1.23M subscribers

SUBSCRIBED

This clip has been blocked for reason unknown. Meanwhile, please go to the link below for the interview: <https://www.facebook.com/photo.php?v=...>

Again 2014

Similar Techniques

Denials

Systematic censorship testing needed, multiple tests

Home grown Blocked or Not site

- Needed clients
- Needed more tests

BBC Trending

#BBCTrending: #Kangkung spinach blog blocked in Malaysia



By BBC Trending
What's popular and why

🕒 16 January 2014

14 January 2014 Last updated at 14:10

#BBCTrending: Be careful about spinach



By BBC Trending
What's popular and why



Hundreds of fake images are being shared on social media. Malaysia's prime minister is being widely lampooned for a comment he made about the price of water spinach.

If food is a faux pas reserved for politicians, especially being used in a get-together with the people and Prime Minister Najib Razak's (Najib Razak) remarks about...

malay mail COVID-19

HOME MALAYSIA SINGAPORE WORLD MONEY LIFE EAT/DRINK SHOWBIZ OPINION SPORTS TECH/GADGETS DRIVE VIDEOS 精彩大马 PROJEKMM

HOME / MALAYSIA

MCMC denies blocking BBC 'kangkung' page

Thursday, 16 Jan 2014 09:55 AM MYT
BY BOO SU-LYN

IN MALAYSIA

JUST IN POPULAR

40 minutes ago
Terengganu Foundation offers 15pc discount on outstanding study loan repayments

55 minutes ago
Dr Mahathir backs ex-Bersatu member in Chini by-election

1 hour ago
Melaka CM says civil servants must be committed to fighting Covid-19

1 hour ago
Hannah Yeoh, lawyers laud police professionalism in investigation against her, pledge to continue...

1 hour ago
Veteran journalist and PAS activist Subky Latif dies of illness

MCMC says it did not block the BBC's webpage that lampoons the Prime Minister over his 'kangkung' remarks. — Reuters pic

Government denials

OONI!

Found OONI project did everything we wanted to do and joined their amazing community of like minded people



Regional Overview

Network Landscape

1 Million internet users as of 2016

71% internet penetration

Five main ISPs, each provide mobile
and/or fiber internet to homes



Legal Background

Communications & Multimedia Act

Bans indecent,
threatening or offensive
content

MAKLUMAN

Laman sesawang ini tidak dapat diakses di Malaysia kerana kandungannya melanggar undang-undang negara.

NOTIFICATION

This website is not available in Malaysia as it violates the National law.

Untuk maklumat lanjut / for more information [click here](#)

Malaysian Censorship

2015-2018

39 websites found to be blocked through the DNS injection of block pages.

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

2018 - Present

LGBT, Fan Fiction, interfaith religious sites

Thailand

59.8% internet penetration rate in 2016

7 major ISPs, 6 providing mobile internet

Government-ISP relationships

mean ISP's will cooperate with censorship



Legal Background

Law facilitating
censorship:

Lèse-majesté

Computer Related Crime
Act



**เว็บไซต์นี้มีเนื้อหาและข้อมูลที่ไม่เหมาะสม
ถูกระงับ โดยกระทรวงดิจิทัลเพื่อเศรษฐกิจและสังคม**

Thailand Censorship

13 websites blocked via DNS Hijacking & HTTP transparent proxies

Blocked sites include:

- Wikileaks.org
- Censorship circumvention tool sites (e.g. hotspotshield.com)
- News outlets (nypost.com, dailymail.co.uk)

Myanmar

19% internet penetration on 2016

Myanmar Posts and Telecom (MPT)
and Bagan Cybertech (currently
Yatanarpon Telecom)

Both state controlled



Legal Background

Telecommunication Law 2013 -allows the government to both censor information and setup surveillance

Computer Science Development, -requires permit to import computing equipment

-Various defamation laws



Myanmar Censorship

Commercial filtering devices by Bluecoat detected by OONIprobe in 2012.

No signs of this software appeared to currently be present in the 6 networks where tests were recently run.

The sites of the U.S embassy in Myanmar and of the Organization of American States (OAS) presented strong signs of TCP/IP and HTTP blocking.

Indonesia

132.7 million internet users, >50%
internet penetration rate

Over 300 ISPs, only 35 owning network
infrastructure

3 largest providers: Telkom, Indosat,
and XL-Axiata

Both Telkom and Indosat are partially
state-owned



Legal background

Electronic Information and Transactions Law

-used to prosecute individuals who distribute, transmit

- (i) material against propriety,
- (ii) gambling material,
- (iii) defamatory material, and
- (iv) material containing extortions or threats

Indonesian Censorship

161 websites were found to be blocked during the testing period

Indonesian ISPs appear to be implementing block pages primarily through DNS hijacking

Vimeo and Reddit banned

Most censorship implemented for reinforcement of cultural norms

Why test?

Data backed evidence

- Freedom of Internet and similar reports and rankings use anecdotal news reports
-

Testing Scenarios

```
Successfully bootstrapped Tor  
Found your IP via Tor 118.101.106.139  
Fetching required net test inputs...  
Looking up collector and test helpers  
Performing GET request to http://medium.com over Tor  
Performing GET request to http://medium.com  
The two body lengths appear to not match  
censorship could be happening  
Headers appear to *not* match  
Report ID: er9YnC2W0eX87zpHN4F498EhnaFHyEgrdCuGJ5kwuBs1L3c.j3G  
Main loop terminated.  
sweemeng@sweemengpi
```

Continuous Testing

Need data

Number of sites blocked over time
days, months, years

Different periods of censorship (more,
less?)

Better coverage

Different categories, especially those
related to rights and freedoms

- Press
- Religion
- Political Criticism



Malaysia

3,805,613 Measurements



Myanmar (Burma)

255,341 Measurements



Singapore

330,231 Measurements



Indonesia

1,664,405 Measurements

On Servers

Run as many tests as possible

Every day, every hour

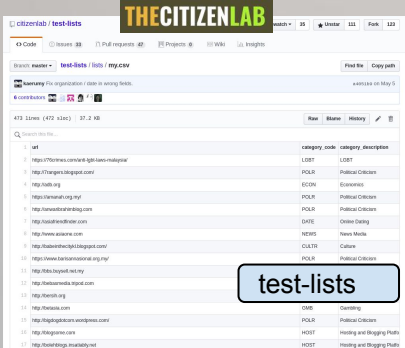
Something easily installed that runs in the background

- ooniprobe
- [probe-cli](#)

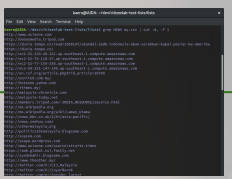


```
kaeru@spidey: ~  
websites          100 tested  
TM Net, Internet Service Provider 5 blocked  
AS4788 (MY)  
#65 - 13 Feb 20 01:19 UTC  
performance      Download: 106.55 Mbit/s  
TM Net, Internet Service Provider Upload: 53.20 Mbit/s  
AS4788 (MY)       Ping: 7.00ms  
#66 - 13 Feb 20 01:20 UTC  
middlebox         Detected: false  
TM Net, Internet Service Provider  
AS4788 (MY)  
#67 - 13 Feb 20 02:05 UTC  
websites          100 tested  
TM Net, Internet Service Provider 5 blocked  
AS4788 (MY)  
^C  
kaeru@ooniprobe-debian:~$ ooniprobe list  
[0] 0:cu* "xavier.home.kaeru.my" 15:44 23-Jun-20
```


Coverage of Test Lists

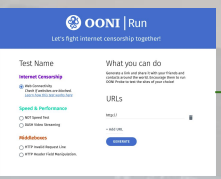


test-lists



Easy to generate custom URL test lists for OONI Run if URL and metadata exists on Citizen Lab test-lists by filtering by country, category and tags

```
grep NEWS my.csv | cut -d, -f 1
```



OOONI Run and OONI Probe Mobile

test-list sourced specific URLs to crowdsource event specific measurements from mobile users such as elections



probes

Dashboards / Report categories generated from metadata in tests-lists makes it easier to auto-generate reports/dashboards including regional and country comparisons

OOONI Probe on Raspberri Pi and Servers

test-list sourced specific URLs help collect continuous comprehensive daily tests



probes

Data on events to provide context on censorship reports can be sourced from **WikiData**

State of Media Freedom in Southeast Asia 2018

Country	News Media	Description	Online Censorship Detected	Government or Legally Sanctioned Block	Details
Malaysia	MalaysiaKini	MalaysiaKini is an online news portal published in English, Malay, Chinese and Tamil.	Yes	Yes	Censorship details and data
Malaysia	Malaysian Insider	Malaysian Insider was a popular Malaysian bilingual news site.	Yes	Yes	Censorship details and data
Malaysia	Malay Mail	The Malay Mail is a newspaper in Kuala Lumpur, Malaysia.	None	None	Censorship details and data
Cambodia	Cambodia Daily	The Cambodia Daily was an English-language daily newspaper based in Cambodia.	Yes	None	Censorship details and data
Vietnam	Tuoi Tre	Tuoi Tre is a major daily newspaper in Vietnam, publishing in Vietnamese from Ho Chi Minh City.	Yes	Yes	Censorship details and data

State of Media Freedom in Malaysia 2018

News Media	Description	Online Censorship Detected	Government or Legally Sanctioned Block	Details
MalaysiaKini	MalaysiaKini is an online news portal published in English, Malay, Chinese and Tamil.	Yes	Yes	Censorship details and data
Malaysian Insider	Malaysian Insider was a popular Malaysian bilingual news site.	Yes	Yes	Censorship details and data
Malay Mail	The Malay Mail is a newspaper in Kuala Lumpur, Malaysia.	None	None	Censorship details and data

News Media	Description	Censorship Incidents	Gov Sanctioned	Details
The Star	The Star is an English-language tabloid-format newspaper in Malaysia.	None	None	Censorship details and data
News Straits Times	The News Straits Times is an English language newspaper published in Malaysia.	None	None	Censorship details and data

reports & dashboards

Measurement Data Sourced from OONI API

URL test coverage consistent with test-lists and categories used by reports

measurement data



Anomaly summary for year 2020

2020 2019 2018 2017

Country	ANON	COMM	GMB	GAME	REL	GRP	HUMR	NEWS	SRCH	MISC	PROV	HO
Myanmar	0	0	2	3	2	2	3	3	3	0	4	1
Malaysia	5	1	12	1	14	9	16	18	5	1	5	5
Indonesia	101	26	47	25	79	63	161	126	34	6	29	71
Viet Nam	2	0	4	0	3	2	7	17	1	0	1	1
Cambodia	2	0	2	2	2	2	2	6	5	0	2	0

News Media

Site URL	Binariang Berhad	Celcom Axiata Berhad	DIGI Telecommunications Sdn. Bhd.	GB Network Solutions Sdn. Bhd.	TIME dotCom Berhad	TM Net, Internet Service Provider	U Mobile Sdn Bhd	YTL COMM SDN B
http://abc.go.com/	0	0	0	0	0	0	1	0
http://hotzone.yahoo.com/	0	0	0	0	1	1	0	1
http://malaysia-chronicle.com/	0	0	0	0	0	0	1	0
http://incac.org/	0	0	0	0	0	2	0	0
http://twitter.com/#/insider_latest	0	0	0	0	0	2	0	0
http://www.benedelman.org/	0	0	0	0	0	12	0	0
http://www.granma.cu/	0	0	0	0	0	1	0	0
http://www.huffingtonpost.com/	0	0	0	0	0	14	0	0
http://www.indiatimes.com/	1	0	1	0	0	18	0	0
http://www.kcna.kp/	0	1	0	1	0	1	0	0
http://www.kwongwah.com.my/	0	1	0	0	0	1	0	0
http://www.malayiakini.tv/	0	2	2	0	1	0	0	0
http://www.people.com.cn/	0	0	0	0	1	0	0	0
http://www.petitiononline.com/foiMsia/petition.html	0	0	0	0	0	1	0	0
http://www.sinchew.com.my/	0	1	0	0	0	0	0	0
https://cyber.harvard.edu/	0	0	0	0	0	4	0	0
https://turbobit.net/	0	1	0	0	0	0	0	0
https://www.rambler.ru/	0	0	0	0	0	1	0	0

Censorship Dashboards from OONI API

Live Events - Elections, Protests

Dynamic

different urls, hour by hour

Need to prepare

Activists, civil society and media

It's hard to troubleshoot problems during dynamic events such as protests, elections

Workshops to install, and test OONI apps on phone

Prepare web apps

Coverage of ISPs



OONI Run

Prepare some lists and test them

<https://run.ooni.io>

Have them ready to be modified to add new links and a channel to share it

Cambodia 2018 Elections

Cambodia 2018 Elections Internet Censorship Monitoring

Collaborative effort to test and collect Internet censorship evidence during Cambodia's 2018 Elections.

How to help

Install OONI Probe App

You will need to first download and install OONI Probe App for Android or iPhone

- [OONI Probe Android](#)
- [OONI Probe iPhone](#)

Run the Tests

Once installed all you need to do is click the following link:

[TEST ALL SITES LINK](#)

[TEST NEWS AND MEDIA SITES LINK](#)

[TEST NGO SITES LINK](#)

[TEST SOCIAL MEDIA SITES LINK](#)

You can also generate your own set of links to test at run.ooni.io to share with your networks.

<https://sinarproject.org/digital-rights/kh-2018-elections/cambodia-2018-elections>

Malaysian Elections

Censorships of Election Results

2 hour window

Measurements collected for live.undi.info

Network	Start Time (Malaysian Time GMT+8)	Status
TMNet AS4788	2018-05-09 17:20	OK
TMNet AS4788	2018-05-09 17:22	OK
DiGi AS4818	2018-05-09 17:30	OK
DiGi AS4818	2018-05-09 17:45	OK
TMNet AS4788	2018-05-09 20:31	OK
TMNet AS4788	2018-05-09 20:34	OK
DiGi AS4818	2018-05-09 21:45	OK
Unknown (AS0)	2018-05-09 21:51	OK
DiGi AS4818	2018-05-09 21:51	OK
DiGi AS4818	2018-05-09 21:52	OK
TMNet AS4788	2018-05-09 21:55	DNS Hijacking
Maxis AS9534	2018-05-09 21:55	DNS Hijacking
Time AS9534	2018-05-09 21:56	OK
DiGi AS4818	2018-05-09 22:13	OK
DiGi AS4818	2018-05-09 22:44	OK
TMNet AS4788	2018-05-09 22:52	DNS Hijacking
YTL AS45960	2018-05-09 22:55	OK
DiGi AS4818	2018-05-09 23:59	OK
Time AS9930	2018-05-10 00:50	OK

Report

Led to resignation of some members of the Malaysian Communications and Multimedia Commission

HOME / MALAYSIA

Watchdog: TM, Maxis censored 'live' result site on Polling Day

Wednesday, 16 May 2018 08:53 PM MYT
By Zurairi AR



Voters queue up to cast their votes outside a polling station during the 14th general elections in SMK Sri Muar, Muar May 9, 2018. — Picture by Firdaus Latif

KUALA LUMPUR, May 16 — Broadband providers Telekom Malaysia and Maxis blocked access to 'live' election result site *live.undi.info* on the evening of Polling Day, tech advocacy and watchdog group Sinar Project revealed today.

Based on its monitoring on May 9, Sinar Project said the censorship was done through a process called **domain name server (DNS) hijacking**, starting from 9.55pm.

IN MALAYSIA

JUST IN POPULAR

6 minutes ago
Sabah minister tells Highway contractor signages

14 minutes ago
Covid-19: Malaysia's flexibility to modify procedures within 2

20 minutes ago
Report: Dr Mahathir with Anwar due to will continue alliance

57 minutes ago
Finance minister: G RM40m to 40,000 B recipients

1 hour ago
Ismail Sabri: Local private pool operator compliance

1 hour ago
RTD employee in Te fined for amending

Fahmi Fadzil
@fahmi_fadzil

The blocking of @malaysiakini's GE14 result microsite by @SKMM_MCMC is absolutely unacceptable.

The public has the right to know who authorized this action and why. Said officer(s) must also be made to take responsibility for this anti-democratic act.



Yoursay: MCMC's explanation for blocking M'kini site unacceptable. YOURSAY | Complaints should be investigated and substantiated before a website is blocked.

m.malaysiakini.com

9:42 AM · May 21, 2018 · Twitter for iPhone

Collaboration

- Legal Analysis
- Community Groups
 - Community Internet Centres
 - Social Welfare Sites