iMAP India 2024 Internet Censorship Report

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About iMAP

The Internet Monitoring Action Project (iMAP) aims to establish regional and in-country networks that monitor network interference and restrictions to the freedom of expression online in nine countries: Myanmar, Cambodia, Hong Kong, India, Indonesia, Malaysia, Philippines, Thailand, and Vietnam. Sinar Project is currently working with national digital rights partners in these nine countries. The project is done via Open Observatory Network Interference (OONI) detection and reporting systems, and it involves the maintenance of test lists as well as the collection and analysis of measurements.

More information is available at imap.sinarproject.org. Any enquiries and suggestions about this report can be directed to team@sinarproject.org.

How to use this report

This report is aimed at researchers, policy-makers, and the general population interested in understanding the state of internet censorship in India. We analyzed public data published by the Open Observatory of Network Interference (OONI) to provide evidence of the websites and web services that are being blocked in the country and the method of their blocking. This report aims to highlight the fairly opaque processes of internet censorship in India and make a case for regulation to make website blocking more transparent and accountable.

This report is not meant to provide a comparison of internet censorship measurements across countries or among different website categories covered by the iMAP project.

About CIS

The Centre for Internet and Society (CIS) is a non-profit organization that conducts interdisciplinary research on Internet and digital technologies from policy and academic perspectives. The areas of focus include digital accessibility for persons with disabilities, access to knowledge, intellectual property rights, openness (including open data, free and open source software, open standards, open access, open educational resources, and open video), internet governance, telecommunication reform, digital privacy, and cybersecurity. The research at CIS seeks to elucidate the reconfiguration of social processes and structures through the internet and digital media technologies and vice versa.

Through its diverse initiatives, CIS explores, intervenes in, and advances contemporary discourse and regulatory practices regarding the internet, technology, and society in India and elsewhere.

About Sinar Project

Sinar Project is a civic tech initiative that uses open technology, open data, and policy analysis to systematically make important information public and more accessible to the Malaysian people. It aims to improve governance and encourage greater citizen involvement in the nation's public affairs by making the Malaysian Parliament and Government more open, transparent, and accountable. More information is available at https://sinarproject.org.

Abbreviations

ALDR	Alcohol and Drugs
ANON	Anonymization and Circumvention tools
ASN	Autonomous System Number
COMT	Communication Tools
CTRL	Control Content
CULTR	Culture
DNS	Domain Name System
COMM	E-commerce
ECON	Economics
ENV	Environment
FILE	File-sharing
GMB	Gambling
GAME	Gaming
GOVT	Government
HACK	Hacking Tools
HATE	Hate Speech
HOST	Hosting and Blogging Platforms
HUMR	Human Rights Issues
HTTP	Hypertext Transfer Protocol
IGO	Intergovernmental Organisations
ICCPR	International Covenant on Civil and Political Rights
iMAP	Internet Monitoring Action Project
IP	Internet Protocol
ISP	Internet Service Provider
MMED	Media Sharing
MISC	Miscellaneous Content
NEWS	News Media
DATE	Online Dating
OONI	Open Observatory Network Interference

POLR	Political Criticism
PORN	Pornography
PROV	Provocative Attire
PUBH	Public Health
REL	Religion
SRCH	Search Engines
XED	Sex Education
GRP	Social Networking
MILX	Terrorism and Militants
TCP	Transmission Control Protocol
TLS	Transport Layer Security

Table of Content

Introduction

In light of India's increasingly stringent and opaque laws around online content takedown, there is a need to increase transparency about what content is blocked to hold censors accountable and to make a case for reform. In this report, we summarize reports of censorship in India over the past year, examine their legal basis, and present an analysis of public data on blocked online content.

This work is part of a broader effort by the Internet Monitoring Action Project (iMAP), a group of 10 countries in South and Southeast Asia collaborating to examine internet censorship in the region. We analyzed internet measurements collected and published by the Open Observatory of Network Interference (OONI) project. The dataset contains 7.7 million measurements from 12,827 websites across 326 unique networks in India collected between July 2023 and June 2024.

Key Findings

- OONI data confirmed reports of two news websites, Hindutva Watch and The Kashmir Walla, being blocked this year.
- Popular online eSIM services were found to be blocked. Following the blocking of VPNs and anonymous messaging apps last year, there appears to be a trend in blocking services that allow users to operate the internet anonymously.
- Transparency reports, Right to Information (RTI) requests, and news reports indicate that a large volume of online content is being censored by issuing takedown orders to popular social media platforms. This indicates a need to conduct new types of measurements to bring transparency to this process.

Background

In this section, we provide an overview of India's online censorship laws and summarize media reports of censorship over the past year.

Population	1.4 billion
Internet penetration (% of population using the internet)	52%[1]
Mobile subscriptions (per 100 inhabitants)	85.69 (Urban: 133.72; Rural: 59.19)[2]
Freedom on the Net ranking (2023)	50/100; Partly free
Religion (%)	Hinduism: 79.8%, Islam: 14.2%, Christianity: 1.7%, Others: 4.3% (2011 Census)
ICCPR Ratification	Yes

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[1] Majumdar, R. (n.d.). 52% of Indian population had internet access in 2022, says report. The Economic Times. https://economictimes.indiatimes.com/tech/technology/52-of-indian-population-had-internet-access-in-2022-says-report/articleshow/99964704.cms
[2] Wireless tele-density reported by TRAI: https://www.trai.gov.in/sites/default/files/PR_No.23of2024_0.pdf

Legal Environment

In this section, we describe the legal landscape that enables the blocking of content online. The government and courts draw their power to block websites from the IT and Copyright Acts. While blocking orders issued by courts are in the public domain, government orders are subject to confidentiality requirements and hence lack transparency. The government's process of blocking websites has also been criticized for being executive-driven and not giving website owners a chance at a fair trial.[3]

Section 69A of The Information Technology Act, 2000

Section 69A of the Information Technology (IT) Act regulates the blocking and takedown of online content. It grants the central government and courts power to issue directions for blocking public access to "any information generated, transmitted, received, stored, or hosted in any computer resource". The act stipulates that information may be blocked concerning (i) the interest of sovereignty and integrity of India, (ii) defense of India, (iii) security of the State, (iv) friendly relations with foreign States, (v) public order, and (vi) for preventing incitement to the commission of any cognizable offense relating to above.

The Information Technology (Procedure and Safeguards for Blocking for Access of Information by Public) Rules, 2009, state specific procedures for blocking content under Section 69A. Notably, Rule 16 requires that blocking orders remain confidential.

Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021

The IT Rules, 2021 issued under the rule-making power granted to the government under sections 69A, 79, and 87(2) of the Information Technology Act, 2000 contain provisions for content blocking and takedown that apply to social media intermediaries and digital media publishers.[4]

In April 2023, an amendment to the IT Rules empowered the central government to set up a fact check unit to identify any false information relating to the government. It mandates that social media intermediaries must take action against content identified by the unit or risk their safe harbour protections.[5]

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[3] *To preserve freedoms online, amend the IT Act.* (2019, April 15). Hindustan Times. https://www.hindustantimes.com/analysis/to-preserve-freedoms-online-amend-the-it-act/story-aC0jXUId4gpydJyuoBcJdI.html

[4] *On the legality and constitutionality of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021* — The Centre for Internet and Society. (2021, June 21). https://cis-india.org/internet-governance/blog/on-the-legality-and-constitutionality-of-the-information-technology-intermediary-guidelines-and-digital-media-ethics-code-rules-2021

[5] *Statement on the notification of the IT Amendment Rules,* 2023. (2023, April 6). Internet Freedom Foundation. https://internetfreedom.in/statement-on-the-notification-of-the-it-amendment-rules-2023/

Copyright Laws

Several website blocking orders are issued each year on grounds of copyright infringements. Section 52 of the Copyright Act, 1957 and Section 79(3)(b) of the IT Act govern the blocking of online content for copyright purposes.[6]

Challenges to the IT Rules and Amendments

There have been at least 17 challenges to the IT Rules 2021 in various High Courts in India, with the Kerala, Bombay, and Madras High Courts passing interim stay orders against specific provisions of the rules. The Union Government has argued for these various challenges to be heard together by the Supreme Court, which has stayed all pending proceedings and new matters on this issue before the High Courts while leaving the interim orders operational.[7]

The Bombay High Court heard multiple petitions challenging the constitutionality of the April 2023 amendment to the IT Rules that allow the government to set up a fact-checking unit to identify and take down false information relating to the government. The various petitioners, Kunal Kamra (a political satirist and stand-up artist), the Editors Guild of India, and the Association of Indian Magazines argued against requiring social media intermediaries to act on content arbitrarily identified by the government with no legal basis.[8,9]

In January 2024, the Bombay High Court refused to put a stay on the notification for the formation of a fact-checking unit, following which the petitioner approached the Supreme Court with an appeal. In March 2024, the Supreme Court placed a stay on the notification.[10] The Supreme Court also transferred all pending petitions relating to the IT Rules 2021 to the Delhi High Court.[11]

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[6] *Finding 404: A Report on Website Blocking in India* (2023, January 12). Software Freedom Law Center, India. https://sflc.in/finding-404-report-website-blocking-india/

[7] *Supreme Court stays proceedings before High Courts challenging IT Rules, 2021, interim orders to continue.* (2022, May 9). Internet Freedom Foundation. https://internetfreedom.in/supreme-court-stays-proceedings-before-high-courts-challenging-it-rules-2021-interim-orders-to-continue/

[8] Mathi, S., Author, G., Johari, S., M., Deep, A., & Barik, S. (2023, April 11). *IT Rules fact-check amendment faces first legal challenge in Bombay HC.* MediaNama. https://www.medianama.com/2023/04/223-kunal-kamra-it-rules-fact-check-amendment-bombay-high-court/

[9] *Centre says it will not notify fact checking unit till September 4.* (2023, July 21). The Hindu. https://www.thehindu.com/news/national/wont-notify-fcu-under-new-it-rules-till-september-4-centre-to-hc/article67105366.ece

[10] *Challenge to the IT Rules 2023.* SCC Observer. https://www.scobserver.in/cases/challenge-to-the-it-rules-2023/

[11] *Supreme Court Transfers Petitions Pending Before Various HCs Against IT Rules 2021 To Delhi High Court.* (2024, March 24). LiveLaw.in. https://www.livelaw.in/top-stories/supreme-court-petitions-against-it-rules-2021-transferred-delhi-hc-253147

X Corp vs. Union Of India

In June 2023, the High Court of Karnataka dismissed a petition filed by X Corp (formerly known as Twitter, Inc.) against blocking orders relating to 39 URLs issued by the government between February 2021 and February 2022. X Corp argued that the orders violated Section 69a of the IT Act "both substantially and procedurally" and that account holders were not notified of the blocks.[12] The courts also imposed exemplary costs in this case, which obstruct access to justice by discouraging similar intermediaries from approaching a court, including genuine claims that blocking orders substantively or procedurally violates Section 69A.

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[12] *Twitter loses plea challenging Centre's blocking orders, Karnataka HC imposes ₹50 lakh cost*. (2023, June 30). The Hindu.
https://www.thehindu.com/news/national/karnataka-hc-dismisses-twitter-petition-challenging-centres-blocking-orders-imposes-50-lakh-cost/article67026370.ece

Reported Cases of Internet Censorship

This section examines reported cases of internet censorship in India.

Large-Scale Social Media Censorship During Farmers' Protests

In February 2024, the Ministry of Electronics and Information Technology, under the direction of the Ministry of Home Affairs, issued blocking orders for 177 social media accounts on Facebook, X, Instagram, Snap and Reddit relating to farmers' protests in the country.[13] Experts pointed out that such preemptive blocking of entire accounts had no legal basis.[14] The blocks were issued for the duration of the protest, but some of the accounts reportedly remain blocked.[15]

Political Censorship During Elections

The Election Commission of India ordered X to block content from elected politicians, political parties, and candidates for the duration of the election. X complied with the orders but issued a statement that disagreed with the blocks and called for more transparency. It also publicly disclosed the orders.[16]

Blocking Websites Related to Cybercrimes

More than one hundred websites were blocked for facilitating illegal investments and job scams. The blocks were ordered by the Indian Cybercrime Coordination Centre (I4C), which operates under the Ministry of Home Affairs.[17]

IP-Based Blocking and Concerns of Unintended Censorship

The Department of Telecommunications (DoT) issued instructions to internet service providers (ISPs) to maintain and share a list of "customer-owned" IP addresses that host internet services through Indian ISPs so that they can be traced for blocking purposes. This

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[13] *Amid farm protest, IT ministry blocks 177 accounts, links.* (2024, February 20). Hindustan Times. https://www.hindustantimes.com/india-news/amid-farm-protest-it-ministry-blocks-177-accounts-links-101708366564358.html

[14] *Why Dozens of 'X' Accounts of Farmers & Tribal Activists Are Now 'Withheld'.* (2024, February 23). The Quint https://www.thequint.com/news/india/inside-hundreds-of-social-media-accounts-farmers-dalit-tribal-activists-withheld-blocked

[15] *X post from SFLC.in.* (2024, April 15). https://x.com/sflcin/status/1779777347224244465

[16] *X Calls For Transparency Regarding ECI Orders Against Political Tweets; MediaNama's Take.* (2024, April 17). Medianama.
 https://www.medianama.com/2024/04/223-india-election-commission-asks-x-takedown-political-tweets/

[17] Over 100 Websites Blocked For Facilitating Organised Illegal Investments. (2023, December 06). NDTV. https://www.ndtv.com/india-news/over-100-websites-blocked-for-facilitating-organised-illegal-investments-4639503

led to concerns about unintended censorship of websites and web services that share IP addresses.[18]

Blocking of Hate Speech Tracking Account

The Twitter/X account of Hindutva Watch, a project that documents hate speeches and hate crimes against religious minorities in the country, was blocked. Its founder has approached the Delhi High Court to challenge the decision.[19]

Blocking of Online News Portals

On 4 April 2024, Bolta Hindustan, a Hindi news portal, was blocked by YouTube, citing a blocking notice from the Ministry of Information and Broadcasting under Rule 15(2) of the IT Rules 2021.[20] YouTube reinstated the channel a month later, stating that the account did not violate its Terms of Service. Legal experts noted that there is no provision to keep blocking orders of this nature confidential.[21]

Another online news portal, National Dastak, with a following of almost 10 million subscribers, also had their YouTube channel blocked under similar grounds.

Blocking of Online Streaming Services Publishing "Obscene" Content

The Ministry of Information and Broadcasting (MIB) ordered the blocking of 18 streaming platforms, 19 websites, 10 apps, and 57 social media accounts for publishing "obscene, vulgar, and, in some instances, pornographic content".[22]

Blocking of eSIM Providers

The websites and apps of Airalo and Holafly, companies that sell eSIMs for travelers, were blocked in India. These apps allowed users to register phone numbers anonymously

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[18] *DoT's order to trace server IP addresses will lead to unintended censorship.* (2024, January 25). Centre for Internet and Society.
https://cis-india.org/internet-governance/blog/dot2019s-order-to-trace-server-ip-addresses-will-lead-to-unintended-censorship

[19] *Delhi HC issues notice on Hindutva Watch's petition challenging the blocking of their entire X/Twitter account.* (2024, May 02). Internet Freedom Foundation.
https://internetfreedom.in/delhi-hc-issues-notice-on-hindutva-watchs-petition-challenging-the-blocking-of-their-entire-x-twitter-account-2/

[20] *X Post from SFLC.in.* (2024, April 05). https://x.com/sflcin/status/1776186805005717877

[21] *YouTube Reinstates Blocked and Demonetised Channels.* (2024, May 21). Medianama.
https://www.medianama.com/2024/05/223-youtube-reinstates-blocked-demonetised-channels/

[22] *Government blocks 18 streaming platforms for obscene, pornographic content.* (2024, March 14). Hindustan Times.
https://www.hindustantimes.com/india-news/government-blocks-18-streaming-platforms-for-obscene-pornographic-content-101710399048111.html

without conducting identity verification checks, and the Department of Telecommunications claimed they were being used for online scams.[23]

Network Landscape

The broadband network landscape in India is dominated by a few players, with the top five service providers holding 98.36% of the market share. The dominant players are Reliance Jio Infocomm Ltd (52.05% of market share), Bharti Airtel (29.57%), Vodafone Idea (13.82%), BSNL (2.67%), and Atria Convergence (0.24%). Wireless connections are more dominant in the country, with wired connections accounting for only 4.3% of internet connections. Private service providers hold 92.26% of the market share of wireless connections.

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[23] *Why Indian government asked Apple and Google to ban these two SIM apps*. (2024, January 14) Times of India. https://timesofindia.indiatimes.com/gadgets-news/why-government-asked-apple-and-google-to-ban-these-two-sim-apps/articleshow/106821374.cms

Findings on Internet Censorship in Cambodia

All of the findings are based on data collected through OONI from 1 July 2023 to 30 June 2024.

Blocking of Websites

Throughout the period, 7.7 million measurements from 12,827 websites were tested on OONI. At the time of writing, the current test list contains 1,660 websites in the Global Test List and 721 websites in the India Test List.

While India does have some known block pages, as shown below, the country has many ISPs that potentially implement various censorship methods. In this report, only domains that redirect to such block pages are marked as Confirmed Blockings. Additionally, as OONI's existing fingerprints have traces of false positives, a minimum of 5 confirmed by OONI counts is needed to be counted for the domain to be a Confirmed Blocking in this report. Furthermore, in the case of India, there was [evidence](#) of popular websites hosting their site on the ISPs network for quicker loading times as the ISPs sometimes offer such edge networking services. ISP redirects may therefore be false positives. Hence, for this report, only those with a high anomaly ratio are marked as Likely Blocked or Inaccessible. This is because known blocked websites, such as www.tiktok.com, have been found with unknown errors on OONI, so ambiguous anomalies cannot be ruled out as false positives.

Not Allowed by DOT

	Jul-Sep 2023	Oct-Dec 2023	Jan-Mar 2024	Apr-Jun 2024	Total
Measured	2,443,737	1,568,391	1,904,841	1,808,920	7,725,889
Blocked	52,043	42,858	46,485	78,754	220,140
Block rate	2.13%	2.73%	2.44%	4.35%	2.85%
Domain	12,398	2,471	2,568	2,571	12,827
ASNs	163	169	148	147	326

Table 1: Summary of OONI web connectivity measurements for India from 1 July 2023 to 30 June 2024.

These measurements were analyzed using the heuristics in Annex IV, and 440 confirmed blocked websites and 81 likely blocked or inaccessible websites were found. The full list of these confirmed blocked websites is in Annex I.

Category	Number of websites tested	Number of blocked websites	Percentage of blocked websites	Number of likely blocked or inaccessible websites	Percentage of likely blocked or inaccessible websites
ALDR	46	0	0.00%	0	0.00%
ANON	122	7	5.74%	13	10.66%
COMM	82	32	39.02%	2	2.44%
COMT	147	29	19.73%	2	1.36%
CTRL	23	1	4.35%	0	0.00%
CULTR	140	18	12.86%	4	2.86%
DATE	37	6	16.22%	0	0.00%
ECON	38	0	0.00%	0	0.00%
ENV	82	0	0.00%	0	0.00%
FILE	121	57	47.11%	12	9.92%
GAME	46	11	23.91%	3	6.52%
GMB	38	8	21.05%	2	5.26%
GOVT	66	0	0.00%	4	6.06%
GRP	102	14	13.73%	3	2.94%
HACK	48	4	8.33%	1	2.08%
HATE	7	0	0.00%	0	0.00%
HOST	139	12	8.63%	7	5.04%
HUMR	203	5	2.46%	2	0.99%
IGO	16	0	0.00%	0	0.00%
LGBT	99	7	7.07%	1	1.01%
MILX	28	17	60.71%	2	7.14%
MISC	8	0	0.00%	0	0.00%
MMED	118	68	57.63%	3	2.54%
NEWS	294	36	12.24%	12	4.08%
POLR	112	10	8.93%	7	6.25%
PORN	90	76	84.44%	1	1.11%
PROV	21	3	14.29%	0	0.00%
PUBH	74	0	0.00%	0	0.00%

REL	88	7	7.95%	2	2.27%
SRCH	44	6	13.64%	1	2.27%
XED	44	2	4.55%	1	2.27%
Uncategorized	10303	4	0.04%	0	0.00%

Table 2: Summary of OONI web connectivity measurements for India from 1 July 2023 to 30 June 2024 by category.

Note: Blocked and likely blocked measurements include Confirmed Blocked, Anomaly, and Failures on OONI measurements.

The findings below highlight the blocking of websites by certain categories or events relevant in India. We did not find a significant change from last year.

News Websites

A comparison of the confirmed blocks listed by OONI data in 2023 and those in 2024 revealed the following websites to be blocked this year.

Websites found blocked in the past year	Description
hindutvawatch.org	OONI data confirmed the blocking of Hindutva Watch, a project that documents hate speeches and hate crimes against religious minorities in the country.[24]
thekashmirwalla.com	A Srinagar-based news website, The Kashmir Walla, was blocked.[25]

Human Rights Websites

An analysis of the list of confirmed blocks in OONI data did not reveal any additional human rights websites that were not previously reported to be blocked.

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[24] *Delhi HC issues notice on Hindutva Watch's petition challenging the blocking of their entire X/Twitter account.* (2024, May 02). Internet Freedom Foundation. https://internetfreedom.in/delhi-hc-issues-notice-on-hindutva-watchs-petition-challenging-the-blocking-of-their-entire-x-twitter-account-2/

[25] *Srinagar-based news portal The Kashmir Walla's website in India blocked* (2023, August 21). The Hindu. https://www.thehindu.com/news/national/website-social-media-handles-blocked-in-india-says-srinagar-based-news-portal-the-kashmir-walla/article67216978.ece

Methods of Website blocking

This section selected a well-known blocked website (tiktok.com) in India to analyze using OONI data. Do note that other censorship methods that are beyond OONI measurements may be used, particularly for different domains or ASNs that were not covered. The blocking techniques can also be attributed to "collateral censorship", where a user faces internet interference not from their own ISP but from other ISPs that have peering or traffic-sharing agreements with their ISP.

The analysis focused on the five largest ISPs in India, which control over 95% of the market share. The common methods of blocking were noted to be DNS, HTTPS, TCP, and TLS. All five ISPs, with the exception of Vodafone Idea, utilized some form of DNS blocking. All five ISPs were also found to interfere with TLS-encrypted connections.
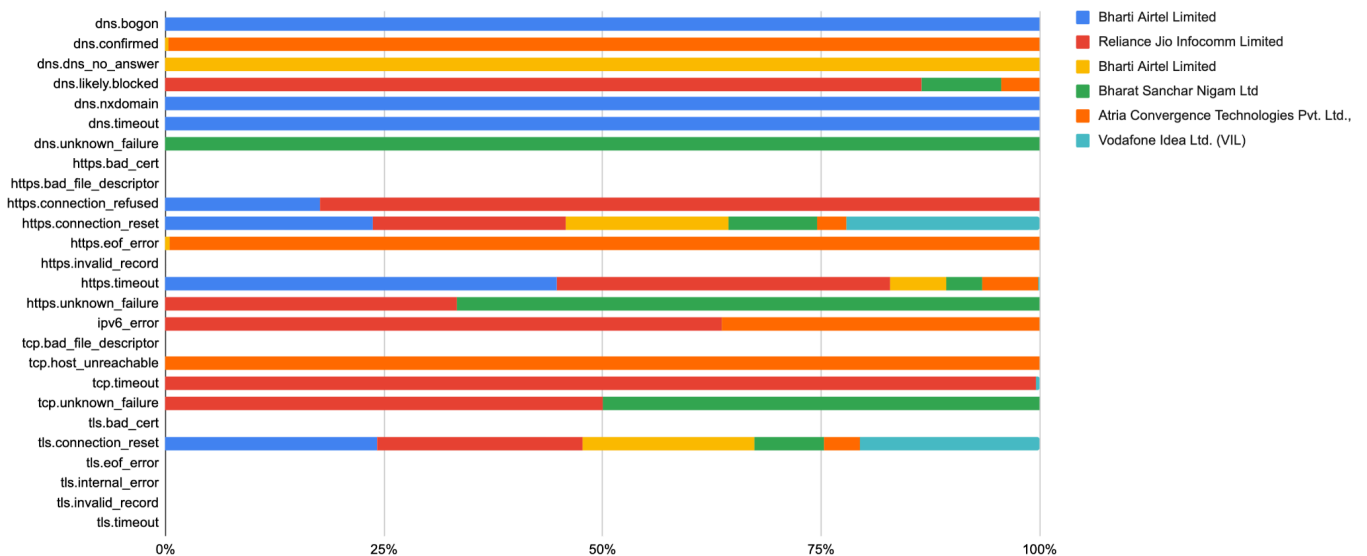

Figure 1: Blocking methods used to block www.tiktok.com in India.

Findings on Internet Shutdowns

India continues to impose the highest number of internet shutdowns worldwide each year. Access Now's Keep It On report recorded 116 shutdowns in 2023,[26] and the Internet Shutdown Tracker reports 31 shutdowns in 2024 at the time of writing.[27] In 2023, India conducted one of its most prolonged continuous internet shutdowns spanning over 200 days in the state of Manipur from 3 May 2023 to 3 December 2023.[28]

Findings on Takedown Requests

Data suggests that takedown orders issued to popular social media platforms, such as X, Facebook, Instagram, and YouTube, are becoming a predominant form of online censorship in India. However, there is little transparency into what is being blocked on these platforms. A parliamentary response suggests that out of the 6,775 items blocked by the Ministry of Electronics and Information Technology (MeitY) in 2022, about half (3,417) were Twitter/X posts and accounts, and about a quarter (1,743) were on Facebook. There was a similar trend between 2019 and 2021.[29] In 2023, the government issued 6,954 such orders by October.[30]

In its transparency report, Meta revealed that it restricted access to 10,558 items (5,882 temporarily) between July 2022 and June 2023 and 4,400 items (350 temporarily) between July 2023 and December 2023.[31] Google received 3,868 government requests in 2023 to takedown 37,219 items and complied with roughly 40% of the requests.[32] Since 2022, X has stopped publishing transparency reports detailing government takedown requests.[33]

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[26] *Shrinking democracy, growing violence: internet shutdowns in 2023*. (2024, May 15). Access Now. https://www.accessnow.org/wp-content/uploads/2024/05/2023-KIO-Report.pdf
[27] *Internet Shutdowns*. SFLC.in. https://internetshutdowns.in/
[28] *A trend of long internet shutdowns in India, the Manipur Crisis*. (2023, October 16). SFLC.in
 https://internetshutdowns.in/blog/trend-long-internet-shutdowns-india-manipur-crisis/
[29] *'We don't interfere' says Indian govt while blocking 6,775 URLs in 2022*. (2023, February 10). Medianama. https://www.medianama.com/2023/02/223-dont-interfere-says-indian-govt-urls-blocked-2022/
[30] *Website blocking orders grew hundredfold in 10 years, says RTI response*. (2024, January 09). The Hindu. https://www.thehindu.com/news/national/website-blocking-orders-grew-hundredfold-in-10-years-says-rti-response/article67723322.ece
[31] *Transparency Report*. (2024). Meta. https://transparency.meta.com/reports/content-restrictions/country/IN/
[32] *Transparency Report*. (2024). Google. https://transparencyreport.google.com/government-removals/government-requests/IN?hl=en
[33] *Twitter's transparency reporting has tanked under Elon Musk*. (2024, February 22). Fast Company. https://www.fastcompany.com/90853794/twitters-transparency-reporting-has-tanked-under-elon-musk

Acknowledgement of Limitations

- **Period of study**
  To examine the most recent censorship trends and events, we limited the findings of this study to OONI network measurements collected from 1 July 2023 to 30 June 2024.

- **Vantage points**
  Although the network measurements were collected from 326 vantage points in India, OONI software testing was not consistently done across all networks.

- **Use of domain as a unit of measurement of websites**
  In general, "URL" (or in OONI's terms – input) and "domain" are interchangeable terms used to refer to a website. In the OONI test list, the full URLs are input in the probe to be tested for censorship, similar to a URL starting with "https" or "http" in a browser. The URLs are measured for censorship by OONI Probe with the Web Connectivity experiment, which is designed to measure whether access to tested URLs is interfered with through DNS tampering, TCP/IP blocking, an HTTP transparent proxy, or through TLS interference. However, when analyzing results on OONI, the reader should be aware that there are differences in the numbers concerning the specific input or domain, as a different volume of measurements may have been collected for a URL (e.g. https://www.hrw.org/asia/cambodia) in comparison to a domain (e.g. www.hrw.org).

  In this 2024 report, we based our analysis primarily on URLs because they were thought to provide more context on the reason why the web page was blocked and could be categorized more similarly to the Citizen Lab test lists, which are URL format. However, in this 2024 report, we based our analysis on domains, so readers will need to be cautious about making year-to-year comparisons.

- **Confirmed blockings vs Likely blockings or Inaccessible**
  The confirmed blocked websites are based on the data where the testing result shows a trace to a government or ISP block page. This typically means that there is a block page served when the user tries to access the website on a particular network, or that DNS resolution returns an IP address associated with censorship. These cases are automatically annotated as "confirmed blocked" based on fingerprints added to OONI's database. When a website is found confirmed blocked, it may only be blocked on specific networks and still remain accessible on the rest.

Confirmed blockings may also be specific based on the URL; for example, https://abc.com/ may be censored but not https://www.abc.com/.

In this 2024 report, confirmed blockings and likely blockings were consolidated based on the country. See [Verifying OONI measurements](#).

- **Test lists**
  The websites tested for censorship on OONI are either from the [Citizen Lab test lists](#) or additional websites tested by [OONI Probe](#) users. While the websites in the test lists are categorized based on specific [standardised categories](#), the percentage of blocked or likely blocked cases may not necessarily reflect the entire state of internet censorship in the country, as only sampled websites are included in the testing.

- **Differences in numbers with OONI data**
  The findings in this report were obtained after further processing the data from OONI. This involved obtaining more confirmed blockings and eliminating false positives through additional heuristics and manual verification by iMAP researchers based on country or local context. While these heuristics will eventually be added to OONI's fingerprints, OONI will only process them for future testing.

  Additionally, iMAP researchers have categorized blocked websites that were not part of the Citizen Lab test lists but were tested on OONI via custom test lists. Hence, the figures in this report may differ from the results on [OONI Explorer](#).

- **Testing of instant messaging apps and circumvention tools**
  The instant messaging apps and circumvention tools are limited to those tested on OONI. Therefore, the results may not reflect the state of censorship of apps more commonly used in individual countries.

Conclusion

In this report, we summarized news reports of censorship in India over the past year, examined the legal basis for blocking of online content in India, and presented an analysis of the OONI dataset.

OONI data confirmed the blocking of two news websites in the last year. We did not find much change in the blocking of websites when compared to previous years. In addition, we found that popular online eSIM services were blocked in the country. Following the blocking of VPNs and anonymous messaging apps last year, there appears to be a trend in blocking services that allow users to operate the internet anonymously. Furthermore, we found that transparency reports, Right to Information (RTI) requests, and news reports indicate that a large volume of online content is being censored by issuing takedown orders to popular social media platforms. This indicates a need to conduct new types of measurements to bring transparency to this process.

Contribute to the Study

If you would like to contribute to the OONI measurements, there are several ways to get involved:

- Perform testing on various platforms, both on Mobile (iOS and Android) and Desktop, including on the CLI on Linux platforms. The domains you test can be either randomly selected from the Citizenlab Test Lists or custom test lists specific to your needs.
- Contribute to the test lists on GitHub or on OONI.
- Translate the OONI Probe to your local language here.
- Participate in community discussions on the OONI Slack channel or our Volunteers Telegram Channel.

Acknowledgements

Annex I: List of Confirmed Blockings

Blocked Websites
thunder.free-signal.com
adultwork.com
alipay.com
fabulous.com
romwe.co.in
www.buydomains.com
www.datsbrandstore.in
www.tencent.com
mail.qq.com
www.camcard.com
www.camscanner.com
www.cmcm.com
www.parallel-app.com
www.ucweb.com
www.ziggo.nl
desijammers.com
funscrape.com
subscene.com
watchcric.org
www.ceramopolis.com
www.crickethighlights.cricket

Blocked Websites
www.doffitt.com
www.lushstories.com
www.totalsportek.com
adultfriendfinder.com
www.flirthookup.com
www.pof.com
1337x.st
1337x.to
300mbfilms.org
acefile.co
alfafile.net
apniisp.com
cloud.mail.ru
downloadming.com
eztv.ag
eztv.re
filefreak.com
filmimusic.com
kat.am
katcr.to
kickasstorrents.to
kikass.to
limetorrents.pro
mirrorace.com
musicindiaonline.com

Blocked Websites
muskurahat.com
mymaza.com
nitroflare.com
piratebay.live
rargb.to
sendit.cloud
sendspace.com
shareit.one
songslover.com
streamplay.to
thepiratebay.asia
thepiratebay.org
www.300mbfilms.ws
www.limetorrents.info
www.limetorrents.lol
www.rarbg.to
www.weiyun.com
x1337x.eu
yts.lt
yts.mx
zeefiles.download
zupload.me
ihago.net
speed-new.com
www.pubgmobile.com

Blocked Websites
dafabet.com
mycasino.in
www.dafabet.com
www.royalvegas.com
9gag.tv
kitty.live
ok.ru
weibo.com
www.imqq.com
aadharcardstatusdownload.com
adf.ly
depositfiles.com
telegra.ph
www.blogster.com
2020sikhreferendum.org
citizensinchargefoundation.org
dubai2020.us
pb13.org
pb4u.org
pbteam.org
pun2k.org
rj10.org
sadapind.org
sikhsarenotindian.org
sikhsforjustice.org

Blocked Websites
www.azaadmic.com
www.referendum2020.org
yes2khalistan.org
yesfor2020.org
1tamilgun.com
appairbrush.com
cricfree.be
gogoanime.tv
imgbox.com
karachimag.com
mazafm.com
paktimes.com
qqplayer.net
streamsport365.com
topupmp3.com
video.webcric.com
vipmarathi.com
vivavideo.tv
vshare.eu
www.actionbd.net
www.beautyplus.com
www.bigo.tv
www.desitellybox.me
www.liveleak.com
www.meitu.com

Blocked Websites
www.mgtv.com
www.sendspace.com
www.studycrux.com
www.ushareit.com
www.y2mate.com
y.qq.com
articles.timesofindia.indiatimes.com
currentaffairspk.com
farazahmed.com
hinduhumanrights.org
hindutvawatch.org
sikhsiyasat.net
www.indybay.org
www.visarev.com
kashmircivitas.com
khilafah.net
www.bannedthought.net
30plusgirls.com
beeg.com
indiansexstories.net
pornhub.com
savitabhabhi.com
www.40somethingmag.com
www.89.com
www.antarvasnax.com

Blocked Websites
www.comdotgame.com
www.nutaku.net
www.playboy.com
www.pornhub.com
www.sex.com
www.x-art.com
www.xnxx.com
www.xvideos.com
www.youporn.com
xhamster.com
yourlust.com
1escorts.net
translate.baidu.com
www.baidu.com
anonymouse.org
api.protonvpn.ch
guardster.com
hide.me
mega.nz
privatevpn.com
speedify.com
threema.ch
www.anonymsurfen.com
www.cyberghostvpn.com
www.hidemyass.com

Blocked Websites
www.jmarshall.com
www.megaproxy.com
www.purevpn.com
www.ultimate-anonymity.com
www.vpngate.net
www.vpnunlimited.com
brandonly.in
buydomains.com
cmcm.com
hihonor.com
hugedomains.com
intsig.net
lazada.co.id
lockerdome.com
meitu.com
mob.com
romwe.com
stdfireworks.com
tencent.com
tucows.com
www.aliexpress.com
www.binance.com
www.bitfinex.com
www.hypeshop.in
www.kraken.com

Blocked Websites
www.kucoin.com
www.lalamove.com
www.shein.com
www.shein.in
www.shop101.com
www.snapdealwinner.org
ziggo.nl
briarproject.org
ctrlq.org
element.io
mobile.element.io
tamtam.chat
web.wechat.com
www.apusapps.com
www.domobile.com
www.estrongs.com
www.wechat.com
bolly-zone.me
collegehumor.com
csfd.cz
hellohyderabad.com
problems.in
www.b4blaze.com
www.collegehumor.com
www.dowrycalculator.com

Blocked Websites
www.mp3.com
www.replaymatches.net
www.themoviedb.org
pof.com
tantanapp.com
www.singoldating.com
1377x.to
bollyextreme.com
cckerala.com
downace.com
freefundoo.com
hidester.com
mio.to
mobidreamz.com
racaty.net
rapidgator.net
sabishare.com
savefrom.net
songs.pk
songsinn.com
sunomusic.com
terabox.com
wapindia.net
waprocks.in
www.bitcomet.com

Blocked Websites
www.xender.com
z-lib.org
huya.com
isoland2.lilithgames.com
scopely.com
www.chessrushgame.com
www.cyberhunter.game
www.dawn-of-isles.com
www.lifeafter.game
www.mobilelegends.com
bet365.com
m.dafabet.com
parimatch-in.com
williamhill.com
www.europacasino.com
micous.com
qq.com
scontent-frt3-2.cdninstagram.com
tiktok.com
wechat.com
weibo.cn
www.helo-app.com
www.kwai.com
www.tiktok.com
www.vigovideo.net

Blocked Websites
www.wemeet.net
xiaohongshu.com
myrailinfo.in
www.hackhull.com
www.zone-h.org
bit.ly
freedns.afraid.org
pastebin.com
raw.githubusercontent.com
turbobit.net
www.ebaumsworld.com
bannedthought.net
kukiblackday.com
secure.avaaz.org
www.americansforkashmir.org
beyondexgay.com
gaytoday.com
www.gayegypt.com
www.gayscape.com
www.pinkcupid.com
lovelykashmir.wordpress.com
pctvbill.blogspot.in
www.alqassam.ps
0123movie.net
037hdmovie.com

Blocked Websites
123-hd.com
123moviesfree.net
9anime.live
9anime.to
9animetv.to
apunkabollywood.com
channelmyanmar.org
flixhq.to
fmovies.co
fmovies.to
fullhdfilmizlesene.pw
gomovies.sx
goojara.to
hdtoday.tv
ibomma.net
imagebam.com
imagessearchyahoo.com
liveleak.com
motchill.info
movies-watch.com.pk
moviesda4.net
myflixerz.to
newgrounds.com
nyaa.si
rutracker.org

Blocked Websites
sflix.to
soap2day.rs
streamable.com
tamildhool.net
thenetnaija.net
tudou.com
uzmovi.com
vimple.ru
watchmovierulz.to
www.dailymotion.com
www.du-recorder.com
www.veoh.com
youku.com
163.com
bdcburma.wordpress.com
dunyanews.tv
eimitimes.in
lankeshpatrike.com
mpaper.sakshi.com
naharolgithoudang.in
news.sina.com.cn
newsdog.co
nndh.com
sheikyermami.com
sikhsiyasat.in

Blocked Websites
sina.cn
sina.com.cn
thekashmirwalla.com
thepiratescove.us
twocircles.net
vtc.vn
www.ashams.com
www.atjehcyber.net
www.dailymail.co.uk
www.imamali8.com
www.kabobfest.com
www.nndh.com
www.rahulyadav.com
www.unipay2u.com
clarionproject.org
dravidianprofessionals.com
influence.in
kashmirawareness.org
kashmirscholarsnetwork.org
ljp.org.in
runforkashmir.org
standupamericanow.org
standwithkashmir.org
www.aiadmk.website
www.khilafah.com

Blocked Websites
2adultflashgames.com
3movs.com
89.com
borwap.pro
cerdas.com
chaturbate.com
desivdo.com
dirtyindianporn.info
eporner.com
fullporner.com
fuq.com
gayboystube.com
gizmoxxx.com
goldendesi.com
hdpornvideoxxx.pro
hdsex.pro
hdzog.com
heavy-r.com
imagefap.com
indiansexbar.mobi
ixxx.com
maturetube.com
motherless.com
myfreecams.com
nutaku.net

Blocked Websites
[ok.xxx](ok.xxx)
poringa.net
pornkai.com
pornma.com
redtube.com
redwap-xxx.com
sambaporno.com
serviporno.com
[sex.com](sex.com)
sexm.xxx
sexvideos.host
sxyprn.com
theporndude.com
tnaflix.com
toroporno.com
trahkino.cc
tube8.com
tubegalore.com
tukif.com
videosdemadurasx.com
xhamster3.com
xlivesex.com
xnxx.tv
xv-videos1.com
xvideos.com

Blocked Websites
xxx-sex.fun
xxx.com
xxx18.uno
xxxhdvideo.mobi
xxxtube1.com
youjizz.com
youjizz.sex
youporn.com
rawpoint.biz
riya-kapoor.com
ganduhotspot.blogspot.com
popularfrontindia.org
takbeeremusalsal.blogspot.com
baidu.com
www.sina.com.cn
youdao.com
qcloud.com
ucweb.com
videolan.org
xnxx.com
www.scarleteen.com

Annex II: List of ISPs

ASN	ASN Name
AS55836	Reliance Jio Infocomm Limited
AS138730	Sns Internet Services Private Limited
AS16276	OVH SAS
AS45609	Bharti Airtel Limited
AS45271	<unknown>
AS9829	Bharat Sanchar Nigam Ltd
AS24560	Bharti Airtel Limited
AS24309	Atria Convergence Technologies Pvt. Ltd.,
AS134033	HIREACH BROADBAND PRIVATE LTD
AS31898	Oracle Corporation
AS58966	<unknown>
AS133982	Excitel Broadband Private Limited
AS17665	ONEOTT INTERTAINMENT LIMITED
AS38266	Hutchison Max Telecom Limited
AS147267	GBPL GLOBAL BROADBAND PRIVATE LIMITED
AS132770	Gazon Communications India Limited
AS135718	<unknown>
AS55577	Beam Telecom Pvt Ltd
AS55352	Microscan Computers Private Limited
AS45820	TTSL-ISP DIVISION
AS141806	SANSOM NETTECH PVT LTD
AS134674	Tata Play Broadband Private Limited
AS55824	National Knowledge Network
AS138245	Xpress Net Solution
AS55947	Bangalore Broadband Network Pvt Ltd
AS135760	Speednet Unique Network Pvt Ltd
AS136714	Stampede Communications Pvt. Ltd.
AS17488	HATHWAY CABLE AND DATACOM LIMITED

ASN	ASN Name
AS14061	DigitalOcean, LLC
AS24186	RailTel Corporation of India Ltd.
AS58906	Shivansh Infotech pvt Ltd
AS141317	Neha Infonet
AS23860	Alliance Broadband Services Pvt. Ltd.
AS18209	Beam Telecom Pvt Ltd
AS17747	SITI NETWORKS LIMITED
AS9498	Bharti Airtel Limited
AS45916	Gujarat Telelink Pvt Ltd
AS133596	Infranet Services Private Limited
AS141556	Rv Infotainment Private Limited
AS138754	Kerala Vision Broad Band Private Limited
AS17465	Asianet Satellite Communications Pvt Ltd
AS133311	Maxtech Broadband Pvt Ltd
AS136334	Vortex Netsol Private Limited
AS133696	Fastway Transmission Private Limited
AS138225	One Eight Technologies Private Limited
AS133968	Logon Broadband
AS45769	D-Vois Broadband Pvt Ltd
AS4755	Tata Communications Limited
AS13335	Cloudflare, Inc.
AS133648	MNR Broadband Services Pvt. Ltd.
AS132453	TRIPLE PLAY BROADBAND PRIVATE LIMITED
AS132758	Eye Fastnet Service Private Limited
AS133301	DWANIRINN
AS132754	Realtel Network Services Pvt Ltd
AS45194	Syscon Infoway Pvt. Ltd.
AS7633	Software Technology Parks of India - Bangalore
AS21859	Zenlayer Inc
AS133287	Andhra Pradesh State FiberNet Limited
AS16509	Amazon.com, Inc.
AS17813	Mahanagar Telephone Nigam Limited

ASN	ASN Name
AS131442	Digital Network Associates Pvt Ltd
AS131473	SRM University
AS133007	UCN CABLE NETWORK PVT. LTD
AS131269	Beam Telecom Pvt Ltd
AS45184	DEN Networks Limited
AS132296	Seven Star Digital Network Private Limited
AS58762	Candor infosolution Pvt Ltd
AS136318	Inter Net Ly Private Limited
AS58678	Intech Online Private Limited
AS18002	World Phone Internet Services Pvt. Ltd.
AS134946	Indophone Networks
AS131210	2713/4 lakshmi building adipampa road v.v.mohalla
AS45775	WISH NET PRIVATE LIMITED
AS56268	Northeast Dataa Network Pvt Ltd
AS132215	Power Grid Corporation of India Limited
AS137956	Indian Institute of Technology Ropar
AS17754	Excellmedia
AS133661	Netplus Broadband Services Private Limited
AS10029	SHYAM SPECTRA PVT LTD
AS56166	Indian Institute of Science Education and Research Bhopal
AS58898	Rainbow communications India Pvt Ltd
AS40676	Psychz Networks
AS133001	Airnet Cable And Datacom Pvt Ltd
AS138296	Juweriyah Networks Private Limited
AS58765	Bittel Telecom Pvt Ltd
AS58971	Shine Communications Pvt Ltd
AS24554	Fivenetwork Solution India Pvt Ltd Internet
AS132116	Ani Network Pvt Ltd
AS45582	VAINAVI INDUSTIES LTD, INTERNET SERVICE PROVIDER, INDIA
AS45117	Ishan's Network
AS18229	CtrlS Datacenters Ltd.
AS45536	Readylink Internet Services Limited

ASN	ASN Name
AS18196	7 STAR DOT COM Pvt. Ltd
AS137000	VIJAYALAKSHMI NET SERVICES PVT LTD
AS135834	Multicraft Digital Technologies Private Limited
AS135031	RI Networks Pvt. Ltd.
AS138790	Sankrish Systems And Technologies Pvt Ltd
AS45804	Meghbela Cable & Broadband Services (P) Ltd
AS138771	Specific Net Pvt. Ltd.
AS141514	Sancfil Technologies Internet Services Pvt.Ltd
AS134259	Skynet
AS17483	City Online Services Ltd
AS9830	SWIFT ONLINE BORDER AS
AS135139	SKYLINK NETWORKS
AS17917	Quadrant Televentures Limited
AS55847	National Knowledge Network
AS141536	Interlock Communication
AS18101	Reliance Communications Limited
AS63949	Linode, LLC
AS137085	Ani Broadband Service Pvt Ltd
AS147216	Solanki Fibre Connect Pvt Ltd
AS133590	Wow Solutions and Systems Pvt Ltd
AS137282	KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY
AS146902	BIGVENTURES MEDIA PVT LTD
AS42201	PVDataNet AB
AS58405	18A/19,DODDANEKUNDI
AS141270	Indian Institute Of Technology Indore
AS136284	Paradise Telecom Pvt Ltd
AS132768	Five network Broadband Solution Pvt Ltd
AS134426	Mahataa Information India Private Limited
AS18207	YOU Broadband & Cable India Ltd.
AS45415	Vasai Cable Pvt. Ltd.
AS59164	Apollo Online Services Pvt ltd
AS133973	Net Connect Wifi Pvt Ltd

ASN	ASN Name
AS136946	Weebo networks Pvt Ltd
AS132757	Sristi Sanchar Webnet Ltd.
AS135719	Lm Energy And Software Private Limited
AS134023	Aligarh Muslim University
AS55862	Wan and lan Internet Pvt.Ltd
AS132497	DIGITAL NETWORK ASSOCIATES PRIVATE LIMITED
AS136336	Thamizhaga Internet Communications Private Limited
AS135722	Teleglobal Communications Pvt Ltd
AS45528	Tikona Infinet Ltd.
AS10199	Tata Communications Limited
AS45235	GEOCITY NETWORK SOLUTIONS PVT LTD
AS133997	E and U Technology Services LLP
AS134875	ZPOINT KOTA
AS132556	Blue Lotus Support Services Pvt Ltd
AS135801	C32 Broadband Pvt. Ltd.
AS135207	Cloudnet Communications Pvt Ltd
AS17426	Primesoftex Ltd
AS138272	Hi5 Multimedia Services Pvt Ltd
AS55839	Microsense Private Limited
AS136373	Allied It Infrastructure And Services Pvt Ltd
AS17762	Tata Teleservices (Maharashtra) Ltd
AS135247	K Net Solutions Pvt Ltd
AS58965	ANJANI BROADBAND SOLUTIONS PVT.LTD.
AS135872	<unknown>
AS136374	Microtalk Communications Pvt Ltd
AS210777	Daryll Swer
AS133652	Zapbytes Technologies Pvt. Ltd.
AS132559	Gatik Business Solutions
AS133232	SAMPARK ESTATES PVT. LTD.
AS141799	INDTEL INFRA PRIVATE LIMITED
AS133589	DECO MEDIA AND COMMUNICATIONS PVT LTD
AS135239	Sonali Internet Services Pvt Ltd

ASN	ASN Name
AS55410	Vodafone Idea Ltd. (VIL)
AS58659	Quest Consultancy Pvt Ltd
AS132971	Sikka Star powered by Sikka Broadband
AS134026	Ultranet services private limited
AS139537	SFour Cablenet Pvt. Ltd.
AS135845	Krishiinet Infocom Private Limited
AS134886	Super Sonic Broadband Pvt Ltd
AS133647	ELXIRE DATA SERVICES PVT. LTD.
AS135697	Tachyon Communications Pvt Ltd
AS134009	NETCOM ENTERPRISES PVT LTD
AS134177	Rural Broadband Pvt. Ltd
AS132785	Shiv Nadar University
AS135208	<unknown>
AS141834	Neolog Online Services Private Limited
AS137133	Billa Broadband Network Pvt Ltd
AS138671	SAHYOG OPTIC PVT. LTD.
AS134052	LANCEFIBERNET PVT LTD
AS212238	Datacamp Limited
AS135692	Global Ra Net Services Pvt. Ltd.
AS136323	Ngc Broadband Pvt. Ltd.
AS141340	IIT Madras
AS137679	Shree Net Online Services Private Limited
AS59162	U.P. COMMUNICATION SERVICES PVT LTD
AS134053	ETHERNET XPRESS PVT. LTD.
AS134042	MAHA Mediacom LLP
AS138281	Hybrid Hash Pvt. Ltd.
AS135734	Birla Institute Of Technology And Science
AS134375	Fusionnet Web Services Private Limited
AS138778	Skyrocket Network Solutions
AS134032	INFONET COMM ENTERPRISES
AS142508	Netfirst Communication Pvt Ltd
AS135763	GAYATRI COMMUNICATIONS

ASN	ASN Name
AS140137	Starplanet Technovision Private Limited
AS36351	SoftLayer Technologies Inc.
AS55644	Vodafone Idea Ltd. (VIL)
AS146860	Skytech Mediacom Opc Private Limited
AS134316	World Star Communication
AS136696	Arktel Networks Pvt. Ltd
AS138277	Radinet Info Solutions Private Limited
AS135817	ESTO MEDIA PRIVATE LIMITED
AS134341	jdm broadband services pvt ltd
AS135738	Adn Broadband
AS133278	Dehradun Enet Solutions Private Ltd
AS132420	E2E Networks Limited
AS132220	JPR Digital Pvt. Ltd.
AS136633	Sanhati Infocom Services Private Limited
AS132335	LeapSwitch Networks Pvt Ltd
AS4758	National Informatics Centre
AS133227	Anish Infoline Pvt Ltd
AS141303	Dvr Broadband Services
AS20473	The Constant Company, LLC
AS133685	SDN TELECOM PVT LTD
AS136724	Praction Networks Pvt Ltd
AS135706	Ddc Broadband Pvt. Ltd.
AS140171	Reis Network Solutions
AS140118	Indian Institute Of Technology Banaras Hindu University
AS142498	AJINKYA INTERNET PVT LTD
AS134307	Classicnet Broadband Network
AS137125	Netsat Communications Private Limited
AS8075	Microsoft Corporation
AS133720	SOFT CALL CUST-O-CARE PRIVATE LIMITED
AS36492	Google, LLC
AS139557	Abis Badlapur Network Private Limited
AS138290	Unigro Infranet Online Pvt. Ltd.

ASN	ASN Name
AS133273	Tata Institute of Social Sciences
AS55814	Siliguri Internet & Cable TV Pvt. Ltd.
AS30337	Deloitte Services LP
AS135780	AirFiber Networks Pvt Ltd
AS135269	Fast 4 Technologies
AS131299	tornado net private limited
AS140952	Strong Technology, LLC
AS132934	Skymax Broadband Services Pvt. Ltd.
AS139490	Aspt Networks Pvt Ltd
AS134860	Entire Cable And Broadband Opc Private Limited
AS141014	Balaji Teleworks Development Pvt Ltd
AS45648	Bell Teleservices India Pvt Ltd
AS146872	Weblink Systems Private Limited
AS136704	Apex Broadband Network Pvt. Ltd.
AS45433	Kappa Internet Services Private Limited
AS133255	Elxer Communications Private Limited
AS135214	Spider Broadband Pvt. Ltd.
AS134337	R2 Net Solutions Pvt Ltd
AS134899	Cityzone Infonet Pvt Ltd
AS137087	Sb Networks
AS55832	HOME SYSTEMS PVT.LTD
AS138311	Limerick Technologies Pvt Ltd
AS58763	Balaji Services
AS133275	Gigantic Infotel Pvt Ltd
AS137114	Kwikzo Telecomm Pvt Ltd
AS134258	Bhawani Cable and Broadband Services
AS137678	Protoact Digital Network Pvt. Ltd.
AS141837	Goodluck Broadband Private Limited
AS133674	Adarsh Infosolutions
AS136637	Cify IT Services Pvt Ltd
AS133289	Deshkal Network Pvt Ltd
AS141295	Madhya Pradesh Agency For Promotion Of Information Technology

ASN	ASN Name
AS135714	Fans Networks Private Limited
AS132976	Kings Broadband Pvt Ltd
AS38207	Rajesh Multi Channel Pvt Ltd.
AS45194	Joister Group of Companies.
AS134343	VIGHNAHARTA TELEINFRA PRIVATE LIMITED
AS132774	Niss Internet services private limited
AS38266	Vodafone Idea Ltd. (VIL)
AS18229	Pioneer Elabs Ltd.
AS133000	ARJUN TELECOM PVT. LTD.
AS146855	MEGHLINK INDIA LLP
AS45271	Idea Cellular Limited
AS63949	Akamai Technologies, Inc.
AS133661	Capsule Networks
AS9583	Sify Limited Service Provider India
AS137166	Satellite Netcom Private Limited
AS135217	Peak Air Pvt Ltd
AS135872	GTPL KCBPL BROADBAND PVT LTD
AS38623	VIETTEL (CAMBODIA) PTE., LTD
AS134047	Live Line Network Technology Pvt Ltd
AS13335	Cloudflare Inc
AS139508	Wide Netcom India
AS203020	HostRoyale Technologies Pvt Ltd
AS9009	M247 Europe SRL
AS138220	Sasa Broadband Technologies Pvt. Ltd.
AS141329	Udupi Fastnet Private Limited
AS149584	SCNSKY DIGITAL OPC PRIVATE LIMITED
AS141266	Inri Communications Pvt Ltd
AS141529	Vmps Internet Private Limited
AS135258	Sdh Network Pvt Ltd
AS132423	Indian Institute of Technology Bombay
AS134732	Dot Internet
AS135212	Digiway Net Pvt Ltd

ASN	ASN Name
AS138746	Live Fibernet
AS146881	DAAN COMMUNICATIONS PRIVATE LMITED
AS132137	Shree Omkar Infocom Pvt Ltd
AS137409	GSL Networks Pty LTD
AS55734	Symbios Creation Pvt. Ltd.
AS136641	RIZWAN CABLE NETWORK
AS149268	Roarnet Broadband Pvt Ltd
AS134940	Faridabad Netcom Pvt. Ltd.
AS134333	SS BROADBAND SERVICES PVT LTD
AS47589	Kuwait Telecommunication Company (Under Association)
AS137101	RENU TECHNOLOGIES
AS136370	SAI NETWORKS
AS20940	Akamai International B.V.
AS135813	Rush Me Broadband Private Limited
AS151476	IBOX Communications
AS147221	INSPITELE SOLUTIONS PRIVATE LIMITED
AS139567	Nirija Solutions Private Limited
AS133300	Soibam Technology Private Limited
AS137157	Skynet Datacom Pvt Ltd
AS147277	C FIBER COMMUNICATIONS PVT LTD
AS45884	RVR Infrastructure Limited Service provider hyderabad india
AS134858	iForce Networks
AS146884	SKYCOMM INTERNET SERVICES PRIVATE LIMITED
AS199524	G-Core Labs S.A.
AS134014	NET 4 U SERVICES PVT LTD
AS141253	Hyosec Solutions Private Limited
AS38625	CJONLINE ISP India
AS132771	Fibre Air Services Private Limited
AS55333	Tatanet Services Limited
AS134292	Limrafiber Mvc Info Pvt Ltd
AS150008	Pioneer Elabs Ltd.
AS133989	SBR Telecom Pvt. Ltd

ASN	ASN Name
AS136308	Deenet Services Pvt Ltd
AS211585	Canopus It Solutions Pvt Ltd
AS132974	Suraj Network
AS135685	INET FIBER PVT LTD
AS137604	Sahjanand Telecom Pvt Ltd
AS149550	MAZENTA CREATIONS
AS135777	Shreenortheast Connect And Services Pvt Ltd
AS139195	Seans Media Pvt Ltd
AS135226	Jeecommunications
AS133317	srinagar Net tech P ltd
AS133711	Home Broadband Services LLP
AS137138	S A Internet Solution Pvt Ltd
AS133668	Eikon Technologies
AS137594	Flashcom Network Private Limited
AS133469	Multinet (Udaipur) Private Limited
AS134939	DYSINT NETWORKS PVT LTD
AS136342	Winux Communications Pvt. Ltd.
AS133676	Precious netcom pvt ltd
AS132572	Fasthook Networks Pvt Ltd
AS135208	Megahertz Internet Network Pvt. Ltd.
AS134033	Mithril Telecommunications Private Limited
AS135774	MANGALURU BROADBAND NETWORK PRIVATE LIMITED
AS45469	Elecon Information Technology Ltd.
AS133270	Hps Digital Broadband Pvt Ltd
AS135259	SKYLINE INFONET PRIVATE LIMITED
AS135177	Sgci Private Limited
AS141269	Fast Net Telecommunications Private Limited
AS140160	Spaceworld Communications India Private Limited
AS132780	Indian Institute of Technology Delhi
AS17483	CityOnline Services Ltd
AS138796	Earthlink Broadband Pvt. Ltd.
AS149240	Megatel Networks Private Limited

ASN	ASN Name
AS142485	SUNDARAM BROADBAND PRIVATE LIMITED
AS133313	Saha Institute of Nuclear Physics
AS137109	Grace Teleinfra Pvt Ltd
AS134022	Genstar Network Solutions Pvt Ltd.
AS141275	Maxnet Digital Pvt Ltd
AS134922	R G TECHNOSOLUTIONS PVT LTD
AS55286	B2 Net Solutions Inc. US
AS135765	WEBMAX NETWORK SOLUTIONS PRIVATE LIMITED
AS142527	KKD BROADBAND PRIVATE LIMITED
AS134884	ARICHWAL IT SERVICES PRIVATE LIMITED
AS136902	Alegra Communication Private Limited
AS141281	Max Computer
AS139549	Crisp Enterprises
AS18002	AS Number for Interdomain Routing
AS58640	NEXTRA TELESERVICES PVT. LTD.
AS139524	A C N Fiber Private Limited
AS135193	SRI SAI COMMUNICATION AND INTERNET PRIVATE LIMITED
AS149222	DREAMNET GIGAFIBER PRIVATE LIMITED
AS140120	Graceway Infrastructure And Services Private Limited
AS136365	Shri Samarth Broadband
AS140189	Treelink Broadband Private Limited
AS139559	Prayag Broadband Pvt Ltd
AS131215	116 MADHAV DARSHAN
AS133271	Willaegis Online Private Limited
AS136358	Omsai Cable Systems India Pvt Ltd
AS134944	Sri Lakshmi Networks Private Limited
AS147213	KOSHI BROADBAND COMMUNICATIONS OPC PVT LTD
AS136290	Country Online Services PVT LTD
AS135772	Powernet
AS134323	UNIQUE NET SERVICE
AS135775	Proline Datatech Services Pvt. Ltd.
AS136175	Serverhosh Internet Service

ASN	ASN Name
AS46844	Sharktech
AS138794	Deenet Internet Services Pvt Ltd
AS135266	AAKASH INTERNET SERVICES PRIVATE LIMITED
AS141261	More Wifi Internet Pvt Ltd
AS132960	Mukand Infotel Pvt Ltd.
AS140164	ConnectSpacelink Infomedia Pvt Ltd
AS135724	Allnet Broadband Network Pvt Ltd
AS135679	Suncity Broadband Pvt Ltd
AS55441	TTSL-ISP DIVISION
AS56209	R. K. INFRATEL LIMITED
AS38794	United Information Highway Co.,Ltd.
AS140174	Mithril Telecommunications Private Limited
AS59191	PEERCAST TELECOM INDIA PVT LTD
AS134055	Intermedia Cable Communication Pvt Ltd
AS135761	Userlinks Netcom Pvt. Ltd.
AS135818	Green Tech Net Com Pvt Ltd
AS134877	Sri Vari Network Private Limited
AS138737	Antarjal It Communication Pvt. Ltd.

Annex III: Glossary

DNS	DNS, which stands for Domain Name System, maps domain names to IP addresses. A domain is a name that is commonly attributed to websites (when they're created), so that they can be more easily accessed and remembered. For example, twitter.com is the domain of the Twitter website. However, computers can't connect to internet services through domain names, but based on IP addresses: the digital address of each service on the internet. Similarly, in the physical world, you would need the address of a house (rather than the name of the house itself) in order to visit it. The Domain Name System (DNS) is what is responsible for transforming a human-readable domain name (such as ooni.org) into its numerical IP address counterpart (in this case:104.198.14.52), thus allowing your computer to access the intended website.
HTTP	The Hypertext Transfer Protocol (HTTP) is the underlying protocol used by the World Wide Web to transfer or exchange data across the internet. The HTTP protocol allows communication between a client and a server. It does so by handling a client's request to connect to a server, and the server's response to the client's request. All websites include an HTTP (or HTTPS) prefix (such as http://example.com/) so that your computer (the client) can request and receive the content of a website (hosted on a server). The transmission of data over the HTTP protocol is unencrypted.
Heuristics	Heuristics obtain further confirmed blockings other than that which are detected based on OONI blocking fingerprints. More detailed explanation can be found [here]().
ISP	An Internet Service Provider (ISP) is an organization that provides services for accessing and using the internet. ISPs can be state-owned, commercial, community-owned, non-profit, or otherwise privately owned. Vodafone, AT&T, Airtel, and MTN are examples of ISPs.
Middle boxes	A middlebox is a computer networking device that transforms, inspects, filters, or otherwise manipulates traffic for purposes other than packet forwarding. Many Internet Service Providers (ISPs) around the world use middleboxes to improve network performance, provide users with faster access to websites, and for a number of other networking purposes.

	Sometimes, middleboxes are also used to implement internet censorship and/or surveillance. The OONI Probe app includes two tests designed to measure networks with the aim of identifying the presence of middleboxes.
TCP	The Transmission Control Protocol (TCP) is one of the main protocols on the internet. To connect to a website, your computer needs to establish a TCP connection to the address of that website. TCP works on top of the Internet Protocol (IP), which defines how to address computers on the internet. When speaking to a machine over the TCP protocol you use an IP and port pair, which looks something like this: 10.20.1.1:8080. The main difference between TCP and (another very popular protocol called) UDP is that TCP has the notion of a "connection", making it a "reliable" transport protocol.
TLS	Transport Layer Security (TLS) – also referred to as "SSL" – is a cryptographic protocol that allows you to maintain a secure, encrypted connection between your computer and an internet service. When you connect to a website through TLS, the address of the website will begin with HTTPS (such as https://www.facebook.com/), instead of HTTP.

A comprehensive glossary related to OONI can be accessed here:
https://ooni.org/support/glossary/.

Annex IV: Methodology

Data

Data computed based on the heuristics for this report can be downloaded here: https://github.com/Sinar/imap-data whereas aggregated data can be downloaded from OONI Explorer.

Coverage

The iMAP State of Internet Censorship Country Report covers the findings of network measurement collected through Open Observatory of Network Interference (OONI) OONI Probe App that measures the blocking of websites, instant messaging apps, circumvention tools and network tampering. The findings highlight the websites, instant messaging apps and circumvention tools confirmed to be blocked, the ASNs with censorship detected and method of network interference applied. The report also provides background context on the network landscape combined with the latest legal, social and political issues and events which might have an effect on the implementation of internet censorship in the country.

In terms of timeline, this second iMAP report covers measurements obtained in the one-year period from 1 July 2022 to 30 June 2023. The countries covered in this round are Cambodia, Hong Kong (China), Indonesia, Malaysia, Myanmar, Philippines, Thailand, India, Vietnam and Timor-Leste.

How are the network measurements gathered?

Network measurements are gathered through the use of OONI Probe app, a free software tool developed by Open Observatory of Network Interference (OONI). To learn more about how the OONI Probe test works, please visit https://ooni.org/nettest/.

iMAP Country Researchers and anonymous volunteers run OONI Probe app to examine the accessibility of websites included in the Citizen Lab test lists. iMAP Country Researchers actively review the country-specific test lists to ensure up-to-date websites are included and context-relevant websites are properly categorised, in consultation with local communities and digital rights network partners. We adopt the approach taken by Netalitica in reviewing country-specific test lists.

It is important to note that the findings are only applicable to the websites that were examined and do not fully reflect all instances of censorship that might have occurred during the testing period.

How are the network measurements analysed?

OONI processes the following types of data through its [data pipeline](#):

Country code

OONI by default collects the code which corresponds to the country from which the user is running OONI Probe tests from, by automatically searching for it based on the user's IP address through their [ASN database](#) the [MaxMind GeoIP database](#).

Autonomous System Number (ASN)

OONI by default collects the Autonomous System Number (ASN) of the network used to run OONI Probe app, thereby revealing the network provider of a user.

Date and time of measurements

OONI by default collects the time and date of when tests were run to evaluate when network interferences occur and to allow comparison across time. UTC is used as the standard time zone in the time and date information. In addition, the charts generated on OONI MAT will exclude measurements on the last day by default.

Categories

The 32 website categories are based on the Citizenlab test lists: https://github.com/citizenlab/test-lists. As not all websites tested on OONI are on these test lists, these websites would have unclassified categories.

No.	Category Description	Code	Description
1	Alcohol & Drugs	ALDR	Sites devoted to the use, paraphernalia, and sale of drugs and alcohol irrespective of the local legality.
2	Religion	REL	Sites devoted to discussion of religious issues, both supportive and critical, as well as discussion of minority religious groups.
3	Pornography	PORN	Hard-core and soft-core pornography.

No.	Category Description	Code	Description
4	Provocative Attire	PROV	Websites which show provocative attire and portray women in a sexual manner, wearing minimal clothing.
5	Political Criticism	POLR	Content that offers critical political viewpoints. Includes critical authors and bloggers, as well as oppositional political organizations. Includes pro-democracy content, anti-corruption content as well as content calling for changes in leadership, governance issues, legal reform. Etc.
6	Human Rights Issues	HUMR	Sites dedicated to discussing human rights issues in various forms. Includes women's rights and rights of minority ethnic groups.
7	Environment	ENV	Pollution, international environmental treaties, deforestation, environmental justice, disasters, etc.
8	Terrorism and Militants	MILX	Sites promoting terrorism, violent militant or separatist movements.
9	Hate Speech	HATE	Content that disparages particular groups or persons based on race, sex, sexuality or other characteristics
10	News Media	NEWS	This category includes major news outlets (BBC, CNN, etc.) as well as regional news outlets and independent media.
11	Sex Education	XED	Includes contraception, abstinence, STDs, healthy sexuality, teen pregnancy, rape prevention, abortion, sexual rights, and sexual health services.
12	Public Health	PUBH	HIV, SARS, bird flu, centers for disease control, World Health Organization, etc
13	Gambling	GMB	Online gambling sites. Includes casino games, sports betting, etc.
14	Anonymization and circumvention tools	ANON	Sites that provide tools used for anonymization, circumvention, proxy-services and encryption.
15	Online Dating	DATE	Online dating services which can be used to meet people, post profiles, chat, etc
16	Social Networking	GRP	Social networking tools and platforms.

No.	Category Description	Code	Description
17	LGBT	LGBT	A range of gay-lesbian-bisexual-transgender queer issues. (Excluding pornography)
18	File-sharing	FILE	Sites and tools used to share files, including cloud-based file storage, torrents and P2P file-sharing tools.
19	Hacking Tools	HACK	Sites dedicated to computer security, including news and tools. Includes malicious and non-malicious content.
20	Communication Tools	COMT	Sites and tools for individual and group communications. Includes webmail, VoIP, instant messaging, chat and mobile messaging applications.
21	Media sharing	MMED	Video, audio or photo sharing platforms.
22	Hosting and Blogging Platforms	HOST	Web hosting services, blogging and other online publishing platforms.
23	Search Engines	SRCH	Search engines and portals.
24	Gaming	GAME	Online games and gaming platforms, excluding gambling sites.
25	Culture	CULTR	Content relating to entertainment, history, literature, music, film, books, satire and humour
26	Economics	ECON	General economic development and poverty related topics, agencies and funding opportunities
27	Government	GOVT	Government-run websites, including military sites.
28	E-commerce	COMM	Websites of commercial services and products.
29	Control content	CTRL	Benign or innocuous content used as a control.
30	Intergovernmental Organizations	IGO	Websites of intergovernmental organizations such as the United Nations.
31	Miscellaneous content	MISC	Sites that don't fit in any category (XXX Things in here should be categorised)

IP addresses and other information

OONI does not collect or store users' IP addresses deliberately. OONI takes measures to remove them from the collected measurements, to protect its users from potential risks. However, there may be instances where users' IP addresses and other potentially personally-identifiable information are unintentionally collected, if such information is included in the HTTP headers or other metadata of measurements. For example, this can occur if the tested websites include tracking technologies or custom content based on a user's network location.

Network measurements

The types of network measurements that OONI collects depend on the types of tests that are run. Specifications about each OONI test can be viewed through its git repository, and details about what collected network measurements entail can be viewed through OONI Explorer or through OONI's measurement API.

In order to derive meaning from the measurements collected, OONI processes the data types mentioned above to answer the following questions:
- Which types of OONI tests were run?
- In which countries were those tests run?
- In which networks were those tests run?
- When were tests run?
- What types of network interference occurred?
- In which countries did network interference occur?
- In which networks did network interference occur?
- When did network interference occur?
- How did network interference occur?

To answer such questions, OONI's pipeline is designed to answer such questions by processing network measurements data to enable the following:
- Attributing measurements to a specific country.
- Attributing measurements to a specific network within a country.
- Distinguishing measurements based on the specific tests that were run for their collection.
- Distinguishing between "normal" and "anomalous" measurements (the latter indicating that a form of network tampering is likely present).
- Identifying the type of network interference based on a set of heuristics for DNS tampering, TCP/IP blocking, and HTTP blocking.
- Identifying block pages based on a set of heuristics for HTTP blocking.
- Identifying the presence of "middle boxes" within tested networks.

According to OONI, false positives may occur within the processed data due to a number of reasons. DNS resolvers (operated by Google or a local ISP) often provide users with IP addresses that are closest to them geographically. While this may appear to be a case of DNS tampering, it is actually done with the intention of providing users with faster access to websites. Similarly, false positives may emerge when tested websites serve different content depending on the country that the user is connecting from, or in the cases when websites return failures even though they are not tampered with.

Furthermore, measurements indicating HTTP or TCP/IP blocking might actually be due to temporary HTTP or TCP/IP failures, and may not conclusively be a sign of network interference. It is therefore important to test the same sets of websites across time and to cross-correlate data, prior to reaching a conclusion on whether websites are in fact being blocked.

Since block pages differ from country to country and sometimes even from network to network, it is quite challenging to accurately identify them. OONI uses a series of heuristics to try to guess if the page in question differs from the expected control, but these heuristics can often result in false positives. For this reason OONI only says that there is a confirmed instance of blocking when a block page is detected.

Upon collection of more network measurements, OONI continues to develop its data analysis heuristics, based on which it attempts to accurately identify censorship events.

The full list of country-specific test lists containing confirmed blocked websites in Myanmar, Cambodia, Hong Kong, Indonesia, Malaysia, Philippines, Thailand, and Vietnam can be viewed here: https://github.com/citizenlab/test-lists.

Confirmed blocked OONI measurements were based on fingerprints recorded here
https://github.com/ooni/blocking-fingerprints. These fingerprints are based on either DNS
or HTTP blocking. Fingerprints recorded as confirmed blockings are either those
implemented nationally or by ISPs.

Hence, heuristics as below were run on raw measurements on all countries under iMAP to
further confirm blockings.

Firstly, IP addresses with more than 10 domains were identified. Then each of the IP address was checked for the following:

Does the IP in question point to a government blockpage?					
Yes	No, page timed out or shows Content Delivery Network (CDN) page.				
⬇	⬇				
Confirmed blocking	What information can we get about the IP by doing a whois lookup?				
	Government entity	Local ISP[34]	CDN[35] / Private IP		
	⬇	⬇	⬇		
	Confirmed blocking	**Likely Blocked or Inaccessible**	Do we get a valid TLS certificate for one of the domains in question when doing a TLS handshake and specifying the SNI		
			Yes	No, there were blocking fingerprints found.	No, timed out
			⬇	⬇	⬇
			False positive	**Confirmed blocking**	Sampled measurement is analyzed on OONI Explorer.

When blocking is determined, any domain redirected to these IP addresses would be marked as 'dns.confirmed'.

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[34] In the case of India, there was evidence of popular websites hosting their site on the ISPs network for quicker loading times as the ISPs sometimes offer such edge networking services, hence websites redirected to local websites not marked as blocked.

[35] In general, websites redirected to popular CDN such as CloudFlare, Amazon, Google, etc. are marked as not blocked.

Secondly, HTTP titles and bodies were analyzed to determine blockpages. This [example](#) shows that the HTTP returns the text 'The URL has been blocked as per the instructions of the DoT in compliance to the orders of Court of Law'. Any domain redirected to these HTTP titles and bodies would be marked as 'http.confirmed'.

As a result, false positives are eliminated and more confirmed blockings are obtained.

In the [2022 report](#), only confirmed blockings based on OONI or new fingerprints were reported.

For this round of reporting in 2023, we had also further identified confirmed blockings by verifying blockings shown in news reports with OONI measurements. This is because there were blockings that could be not identified using the DNS or HTTP fingerprints. Typically, these websites were redirected to an unknown or bogon IP address, or had other unknown errors which are ambiguous on whether they are true or false positives of censorship. Hence, based on the news reports where the blocked websites were cited, confirmed blockings were further found by comparing available measurements on OONI. In particular for this study, we would mark them as confirmed blockings if there are more than 30 measurements and have an anomaly rate of more than 1% throughout the one-year period of study, in addition to manually checking the OONI measurements by cross-checking across networks, countries and time periods.

For this round of reporting in 2024, the confirmed blockings were further consolidated based on OONI's existing fingerprints and heuristics processed on the data during the coverage period, in addition to taking into account a weighted anomaly ratio, measurement count and past analysis of the country. In summary, these were the rules applied to obtain this year's list of confirmed and likely blockings.

	Confirmed blockings	Likely blockings or inaccessible
Malaysia	Confirmed by OONI only	None
Myanmar	• Confirmed by heuristics (govt block page) • Confirmed by OONI (govt block page)	High weighted anomaly ratio and confirmed by news report/ block notice
Thailand	• Confirmed by heuristics (govt block page) • Confirmed by OONI (govt block page)	High weighted anomaly ratio
Philippines	• Confirmed by heuristics (govt block page) • Confirmed by OONI (govt block page) • Confirmed by news report/ block notice	High weighted anomaly ratio
India	• Confirmed by OONI with at least 5 counts • Confirmed by heuristics (govt block pages)	High weighted anomaly ratio
Indonesia	• Confirmed by OONI with at least 5 counts • Confirmed by heuristics (govt block pages)	High weighted anomaly ratio
Vietnam	• Confirmed by heuristics (govt block page) • Confirmed by news report/ block notice	• High weighted anomaly ratio • Confirmed by OONI (due to being ISP redirects)
Cambodia	• Confirmed by news report/ block notice	• High weighted anomaly ratio • Confirmed by OONI (due to being ISP redirects)
Hong Kong	None	High weighted anomaly ratio

Weighted anomaly ratio: It is calculated by finding the ratio of the Anomaly and Confirmed counts over the total measurements per ASN factoring weights based on number of measurements per domain and per ASN. A high anomaly ratio is when the P90 of the anomaly ratio of a domain exceeds 90%.