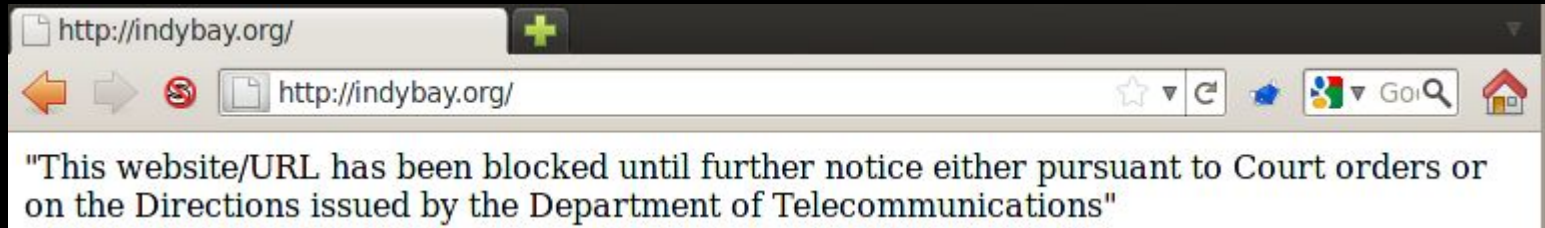


Introduction to Internet Censorship



OONI Partner Training 2021



T. 1669.

Out of scope

- **Censorship on social media platforms**
- **Internet outages/blackouts/shutdowns**
- **Takedown requests**
- **Online trolling**
- **Self-censorship**

Internet censorship

- Censorship on the **network** level
- Blocking of **websites and applications**

Who implements internet censorship?



No.813-7/25/2011-DS (Vol.-IV)

Dated: 17/12/2014

To

All Internet Service Licensees

Sub: Direction to block Internet Website.

Under the powers conferred by Section 69A of the Information Technology Act, 2000 and under the Information Technology (Procedures and Safeguards for Blocking of Access of Information by Public) Rules, 2009, it has been decided to immediately block the access to the following 32 URLs:

- 1) <https://justpaste.it/>
- 2) <http://hastebin.com>
- 3) <http://codepad.org>
- 4) <http://pastie.org>
- 5) <https://paste.org>
- 6) <http://paste2.org>
- 7) <http://slexy.org>
- 8) <http://paste4btc.com/>
- 9) <http://0bin.net>
- 10) <http://www.heypasteit.com>
- 11) <http://sourceforge.net/projects/phorkie>
- 12) <http://atnsoft.com/textpaster>
- 13) <https://archive.org>
- 14) <http://www.hpage.com>
- 15) <http://www.ipage.com/>
- 16) <http://www.webs.com/>
- 17) <http://www.weebly.com/>
- 18) <http://www.000webhost.com/>
- 19) <https://www.freehosting.com>
- 20) <https://vimeo.com/>
- 21) <http://www.dailymotion.com/>
- 22) <http://pastebin.com>
- 23) <https://gist.github.com>
- 24) <http://www.ipaste.eu>
- 25) <https://thesnippetapp.com>
- 26) <https://snjpt.net>
- 27) [http://tny.cz \(Tinypaste\)](http://tny.cz (Tinypaste))
- 28) [https://github.com \(gist-it\)](https://github.com (gist-it))
- 29) <http://snipplr.com/>
- 30) <http://termbin.com>
- 31) <http://www.snippetsource.net>
- 32) <https://cryptbin.com>

2. All the Internet Service licensees are accordingly directed to immediately block the access to above URLs.
3. The compliance be submitted immediately, failing which the Department may initiate action under Rule 12 of the Information Technology (Procedure and Safeguards for Blocking of Access of Information by Public) Rules, 2009. Kindly do not reproduce the name of URLs in the compliance letter. The contents of this letter may kindly be kept confidential.



Αρχική | Ε.Ε.Ε.Π. | Εποπτεία & έλεγχος | Υπεύθυνο παιχνίδι | Παίγνια | Ενημέρωση | Επικοινωνία



Ενημερωτικό μήνυμα

Επιχειρήσατε πρόσβαση σε ιστότοπο μέσω του οποίου παρέχονται μη αδειοδοτημένες υπηρεσίες τυχερών παιγνίων.

Σύμφωνα με τον νόμο, οι πάροχοι υπηρεσιών διαδικτύου είναι υποχρεωμένοι να μην επιτρέπουν την πρόσβαση σε ιστοτόπους μη αδειοδοτημένων παρόχων τυχερών παιγνίων, οι οποίοι αναφέρονται στον οικείο κατάλογο ([Blacklist](#)) που τηρεί η Ε.Ε.Ε.Π.

Επισημαίνεται ότι η συμμετοχή σε τυχερά παίγνια, τα οποία διοργανώνονται χωρίς άδεια από την Ελληνική Δημοκρατία, επισύρει αυστηρές διοικητικές και ποινικές κυρώσεις.

Access Restricted



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

How is internet censorship implemented?

- IP blocking
- DNS tampering
- HTTP blocking (e.g. blockpages)
- SNI based filtering

Server



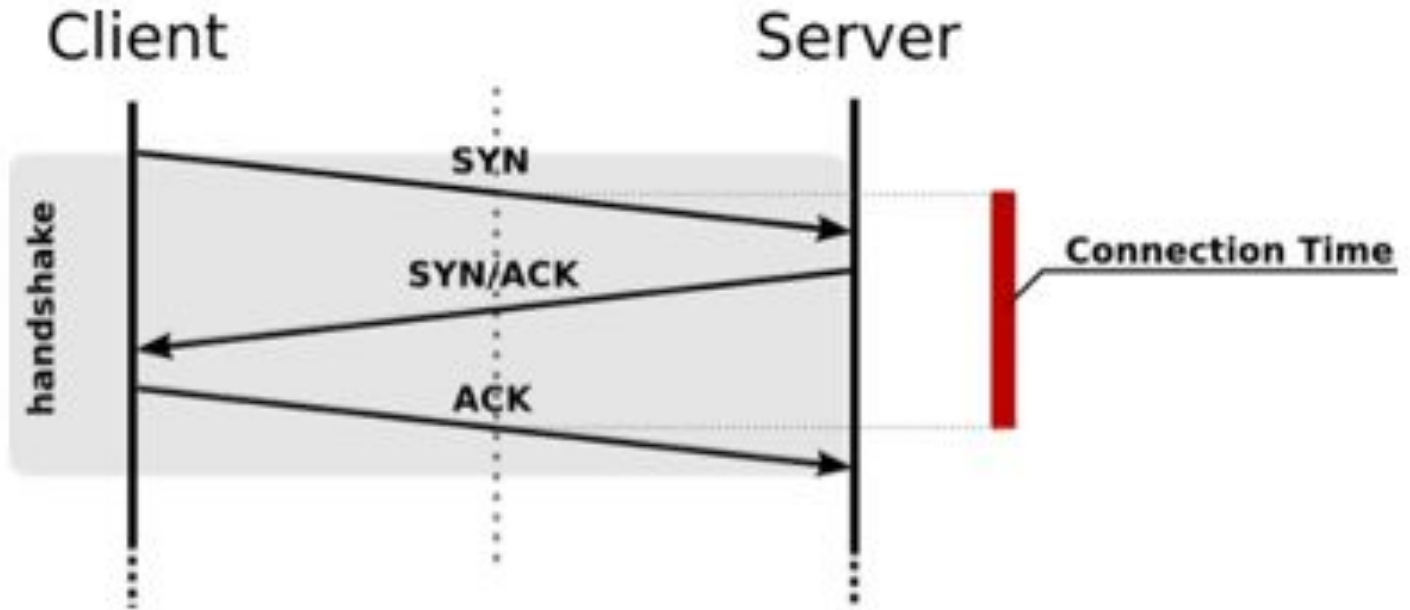
IP address



My IP Address

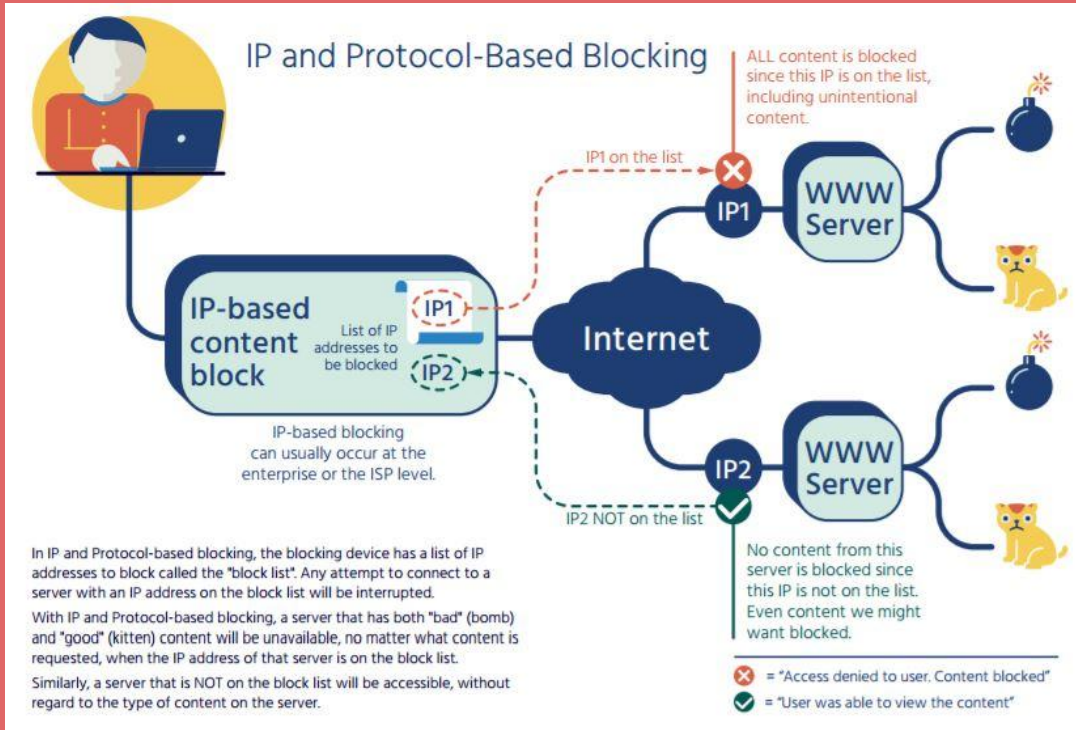
63.255.173.183

TCP/IP

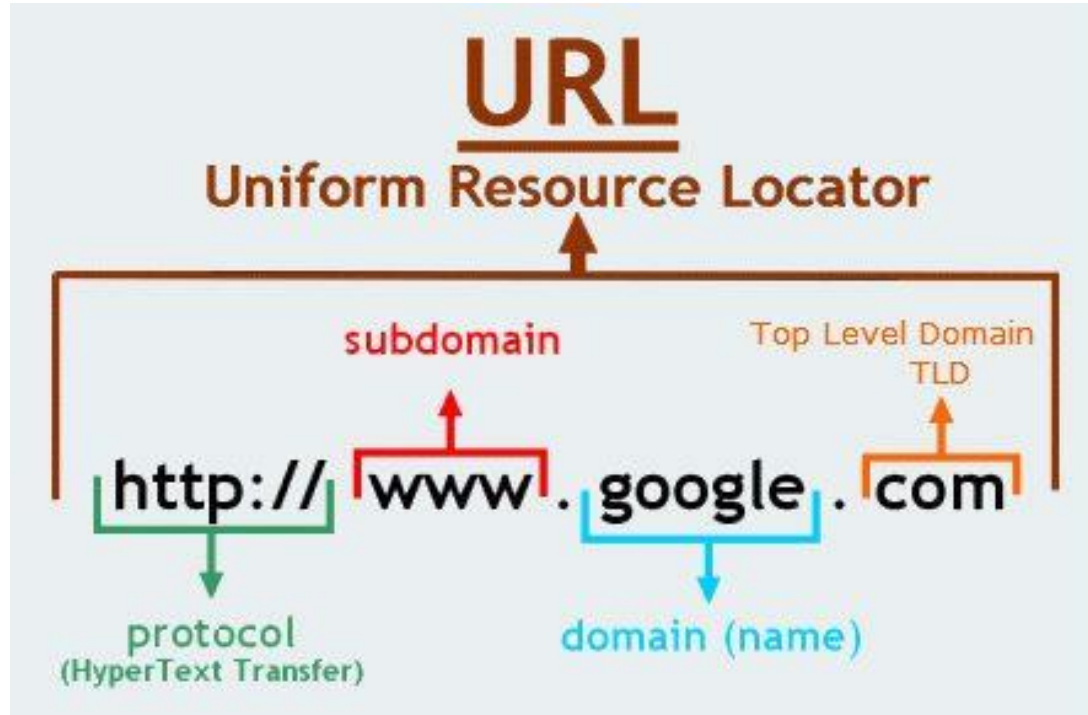


Establishes a **connection** to an internet service

TCP/IP blocking



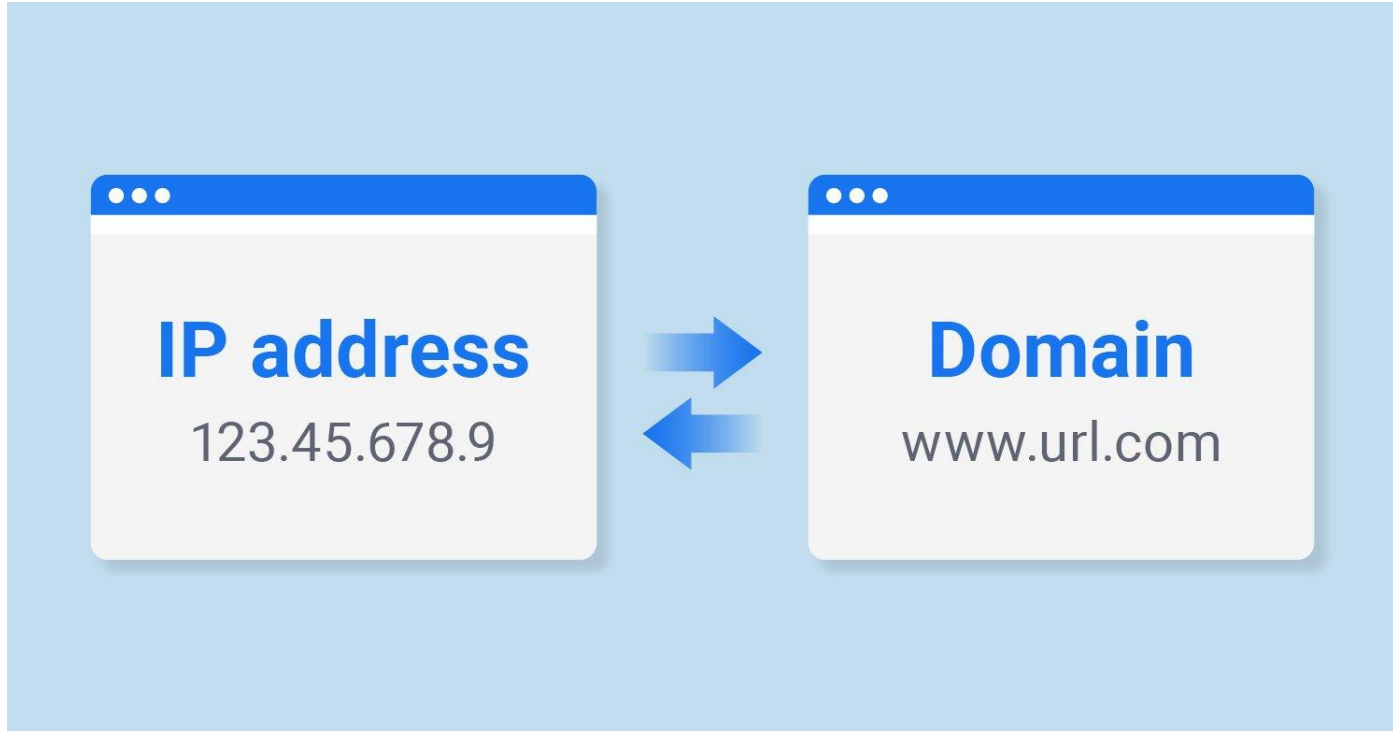
URL



Domain name

<http://www.example.com/page.html>

Domain Name System (DNS)



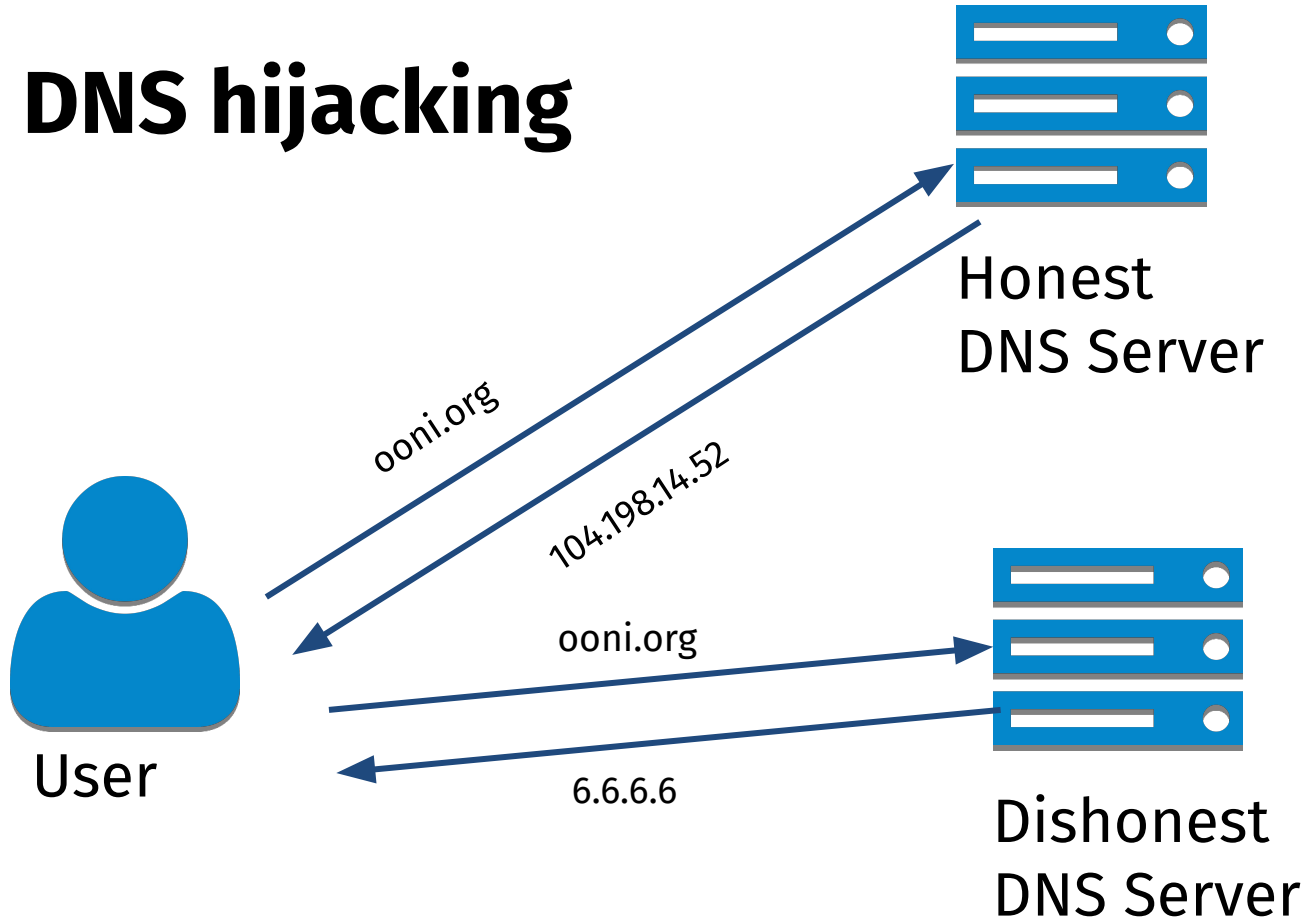
DNS tampering

Umbrella term used to describe various forms of **DNS interference**, including:

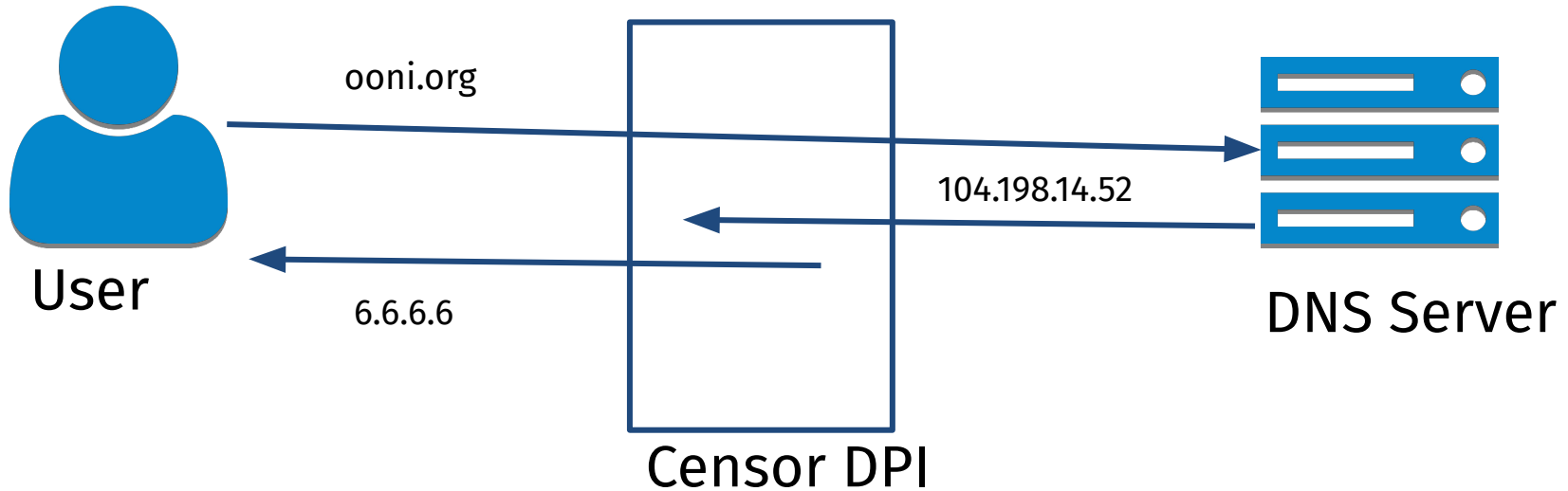
- DNS hijacking
- DNS spoofing

DNS tampering occurs when, upon performing a DNS Lookup for a website, a **wrong IP address** is returned, preventing you from visiting the requested website.

DNS hijacking



DNS spoofing

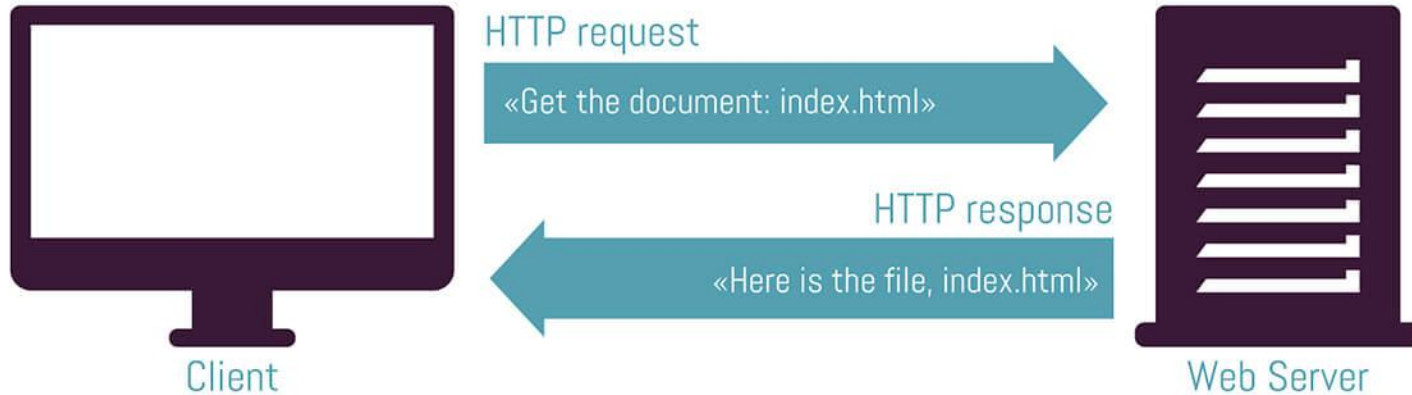


Hypertext Transfer Protocol (HTTP)



Hypertext Transfer Protocol (HTTP)

How HTTP Works



Unencrypted transfer or exchange of data

HTTP blocking

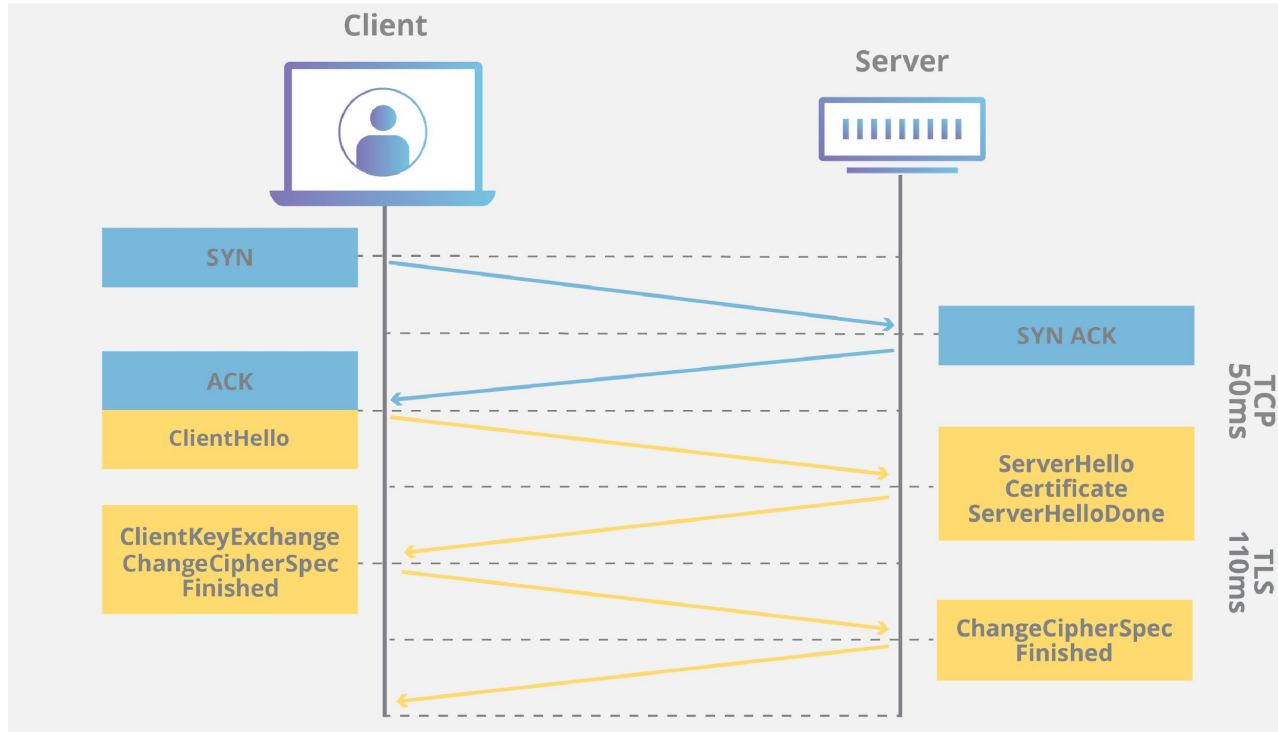
- **HTTP request intercepted (and redirected)** by HTTP transparent proxy (e.g. serving a **block page**)
- **Reset** of the connection

Hypertext Transfer Protocol **Secure** (**HTTPS**)



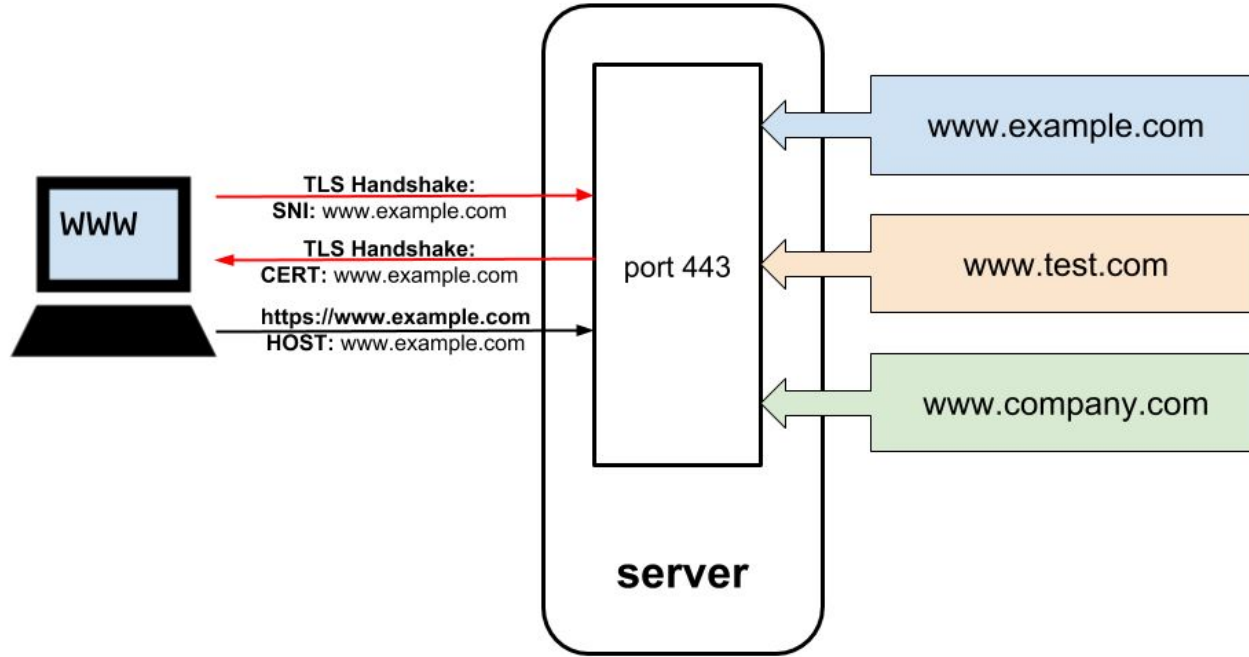
Encrypted transfer or exchange of data

Transport Layer Security (TLS)



TLS is an **encryption protocol** designed to secure internet communications

Server Name Indication (SNI)

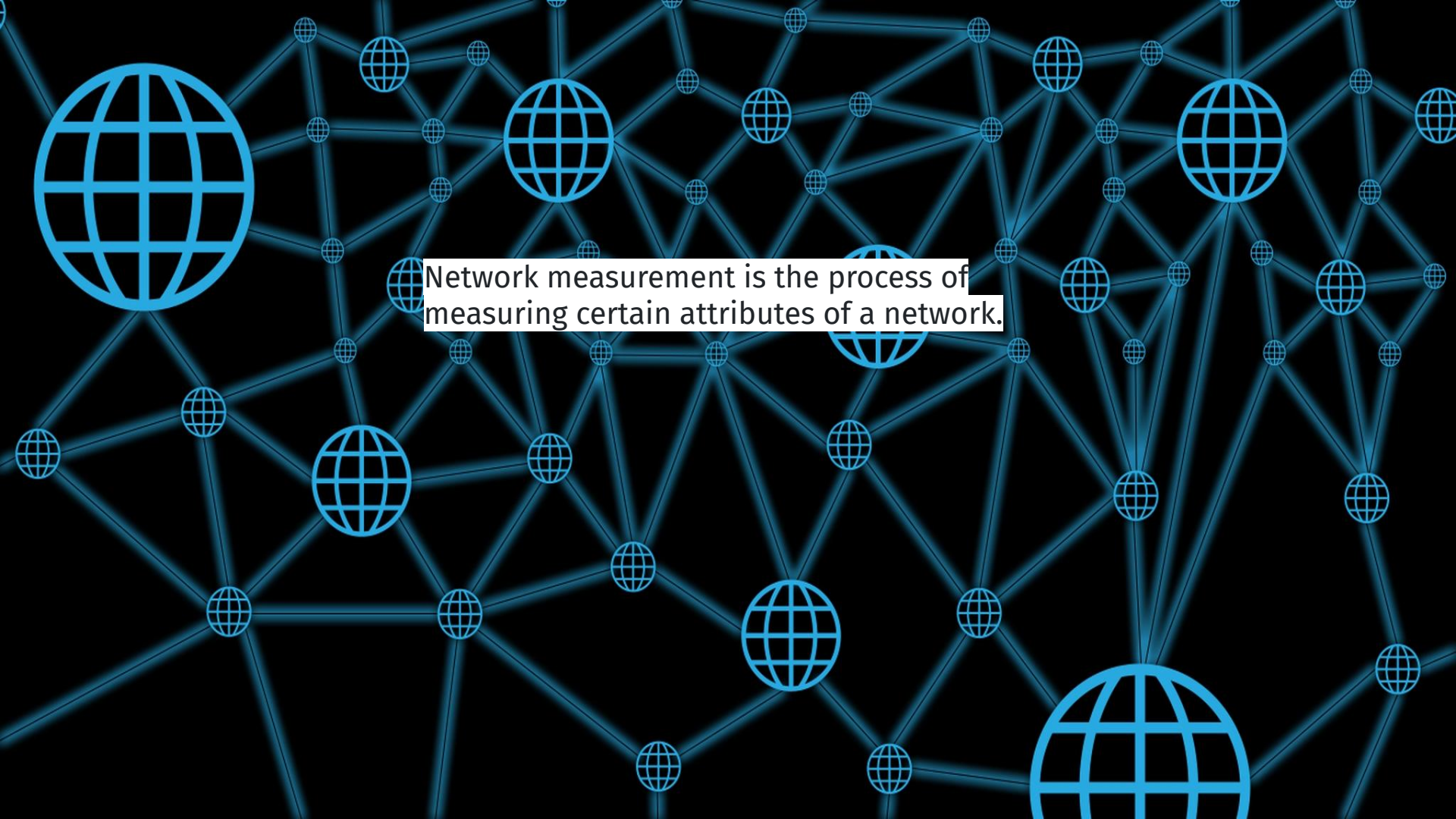


SNI is an **extension for the TLS protocol**, designed to **specify the domain name** of the website during the TLS handshake

SNI based filtering

- Reset connection
- Connection timeout

Investigating TLS blocking in India:
<https://ooni.org/post/2020-tls-blocking-india/>

The background features a complex network of glowing blue lines connecting numerous globe icons of varying sizes. The globes are rendered in a light blue color with a grid pattern representing latitude and longitude. The lines form a dense, interconnected web across the entire frame.

Network measurement is the process of measuring certain attributes of a network.

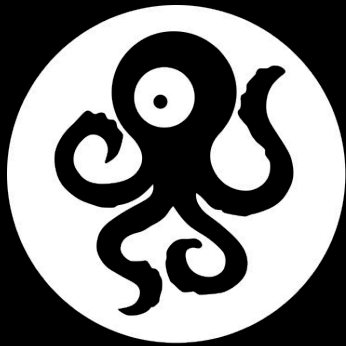
Why measure networks?

- Check/confirm anecdotal reports
- Uncover information controls
- Transparency and oversight
- Collect evidence of information controls

How are networks measured?

- **Direct** measurement
 - Inside the country (requires volunteers/users)
 - Outside the country (remote scanning)
- **Indirect** measurement
 - Analysis of telemetry

Tools for measuring internet censorship



OOONI



**Censored
Planet**



Types of questions answered through censorship measurement

- Which websites are blocked by my ISP?
- How does the blocking of websites differ across networks in my country?
- Are social media apps blocked by my ISP? If so, how do they block access?
- Do circumvention tools work in my network?

Questions?