

# Review of Web Filtering Processes and Implementation of a Web Circumvention

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**Abstract**—Some text.

**Index Terms**—web filtering, web circumvention, tcp, ip, dns, proxy

## I. INTRODUCTION

As the internet access is growing each time faster, that stills the same for its providers. Creating a website has never been such simple. Thus, people can be interested in blocking a website access, no matter their motivation: governmental decision, personal interests... Depending on the huge technical diversity of internet, we will only focus on web filtering in this article.

This article is intended for an intermediate audience, since we will remind some base knowledge about network packets and internet, and also work to obtain an interesting result for people who might want to filter using our technique.

The world wide web comes from the arpanet project in the USA, for military purposes. That was the first network to transmit packed in peer-to-peer. Things has changed and now everyone can send packets all over the world, considering you have a computer. The TCP/IP model is at the base of this functionality: in fact, both of TCP and UDP are protocols used with the IP protocol. Both are using the routing tables to reach the endpoint, but UDP sends the packets one time, without verifying any reception, while TCP initializes a session with a three steps handshake. Concerning the security, TLS 1.3 is currently used with TCP: that corresponds to HTTPS. Having TLS or not will have an essential impact on our web filtering technique choice. [ref to sni doc]

The first step is to define the websites to be filtered, based on various criterias. A realistic dimension has to be take into account: indeed, depending the rights we have, we won't (or we will) be able to restrict the desired accesses. That corresponds to the second step, choosing a filtering method. Ideally, the process used restricts only the website list we made, but that is quite impossible. In fact, we observe that some sites are still reachable despite they're in our list (false positive), and other sites not designated before are restricted

(false negative). Both of these rules are inversely proportional 9[quote tools pdf].

Place here three fundamental questions and how we'll proceed

Some text.

## II. REQUIREMENTS

Some text.

## III. EXISTING FILTERING TECHNIQUES

Some text as intro.

### A. TCP/IP Content Filtering (Deprecated)

- 1) *Who's likely to implement it?:* Some text.
- 2) *Functional description:* Some text.
- 3) *Bypassing techniques:* Some text.

### B. TCP/IP Header Filtering

- 1) *Who's likely to implement it?:* Some text.
- 2) *Functional description:* Some text.
- 3) *Bypassing techniques:* Some text.

### C. Proxy Based Filtering

- 1) *Who's likely to implement it?:* Some text.
- 2) *Functional description:* Some text.
- 3) *Bypassing techniques:* Some text.

### D. Hybrid IP and Proxy Filtering

- 1) *Who's likely to implement it?:* Some text.
- 2) *Functional description:* Some text.
- 3) *Bypassing techniques:* Some text.

### E. DNS Deregistration

- 1) *Who's likely to implement it?:* Some text.
- 2) *Functional description:* Some text.
- 3) *Bypassing techniques:* Some text.

### F. BlindTLS

- 1) *Who's likely to implement it?:* Some text.
- 2) *Functional description:* Some text.

3) *Bypassing techniques*: Some text.

#### G. *HTTPS SNI Filtering*

1) *Who's likely to implement it?*: Some text.

2) *Functional description*: Some text.

3) *Bypassing techniques*: Some text.

#### H. *Disuasion techniques*

1) *Remote surveillance*: Some text.

2) *Social monitoring*: Some text.

Place here the conclusion table with some text.

### IV. METHODOLOGY

Some text.

### V. RESULTS

Some text.

### VI. CONCLUSION

Some text.

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### REFERENCES

- [1] H. Kopka and P. W. Daly, *A Guide to L<sup>A</sup>T<sub>E</sub>X*, 3rd ed. Harlow, England: Addison-Wesley, 1999.