

# Poster: Evolution of Adblock Plus’s Acceptable Ads

Ahsan Zafar  
Department of Computer Science  
North Carolina State University  
Raleigh, USA  
azafar2@ncsu.edu

Anupam Das  
Department of Computer Science  
North Carolina State University  
Raleigh, USA  
anupam.das@ncsu.edu

**Abstract**—Online trackers are prevalent across different websites, and many privacy-enhancing tools have also been developed to thwart their tracking capabilities. The most popular tools are based on blacklists that block privacy infringing contents. Several browser extensions such as Adblock Plus are based on blacklists. However, Adblock Plus, *by default*, also maintains an exception list to whitelist ads that follow certain guidelines. Adblock Plus’ *Acceptable Ads Program* is based on this exception list. We perform a longitudinal analysis of a total of 141 versions of this exception list spanning from 2012 to 2020. By performing a differential analysis we analyze how exception rules have evolved over time in terms of both contents they exempt and the participation of domain/companies responsible for serving such contents.

## I. INTRODUCTION

We spend a significant portion of our daily routine surfing the Web. Today, we interact with the Web in almost every facet of our lives: socializing, banking, health care, education, and entertainment. This makes the Web a gold mine for data brokers who quietly track and collect data about our lifestyles as we interact with the Web. To counter such privacy-invasive tracking we have seen the rise of many privacy-enhancing web tools like ad- and tracker-blocking browser extensions, VPN services and anonymity networks like Tor. Among these tools ad- and tracker-blocking browser extensions have seen substantial adoption due to their ease of deployment and use Adblock Plus [1], Ghostery [2] and Disconnect [3] are some of the most widely used privacy-enhancing browser extensions. Most of these extensions use filters to block unwanted web resources; some of these filters are community driven while others are more centrally managed and curated by specific third-party companies. However, some tool like Adblock Plus maintains an exception list to allow certain ‘Acceptable Ads’ to be exempted from blocking, *by default*.

In this study, we perform a longitudinal study of 141 versions of Adblock Plus’s exception list from 2012 to 2020 to uncover the trends in the exception rules. We achieve this by comparing different versions of the exception list based on the filter options and restriction types used in exception rules. Moreover, we identify the top companies and domains that are most prevalent in the acceptable ads program.

## II. METHODOLOGY

### A. Exception Rules

Exception list contains exception rules for companies (i.e., domain owners) that have contacted Adblock Plus to whitelist certain web resources. We refer to these companies as *partners* (as termed in the exception list). These partners are interesting entities in the list as Adblock Plus charges a monthly fee for companies that gain more than 10 million additional ad impressions through their participation [4]. For example, the following lines represent information about a partnering company with the acceptable ads program.

```
!:partner_token=Amazon Advertising
!:partner_id=ec725ef475df5236
!:type=partner
!:forum=https://adblockplus.org/forum/viewtopic.php?f=12
&t=9791
! Amazon text ads
@@||adsensecustomsearchads.com^$elemhide,document,
subdocument,domain=d14qd3he451861.cloudfront.net
```

Here, we refer to Amazon Advertising as a *partner* to Adblock Plus’s acceptable ads program, where Amazon Advertising is whitelisting contents from adsensecustomsearchads.com. We refer to adsensecustomsearchads.com as a *whitelisted* domain. The domains enlisted under the ‘domain’ option (in this case d14qd3he451861.cloudfront.net) are the domains on which the exception rule is applied. We refer to these domains (i.e., d14qd3he451861.cloudfront.net) as *surrogate* domains. When we refer to domains we refer to second-level domains (TLD+1).

### B. Data Collection

As Adblock Plus maintains its own copies of exception list [5] for acceptable ads, we resorted to Internet archival services such as Wayback Machine [6] to retrieve the necessary data. We used an automation script to retrieve all versions accessible on Wayback Machine. Table I highlights the number of different versions of the exception list obtained from Wayback Machine. We obtained a total of 141 versions.

TABLE I: Number of different versions of the exception list.

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Versions	4	3	14	15	10	14	56	26	N/A

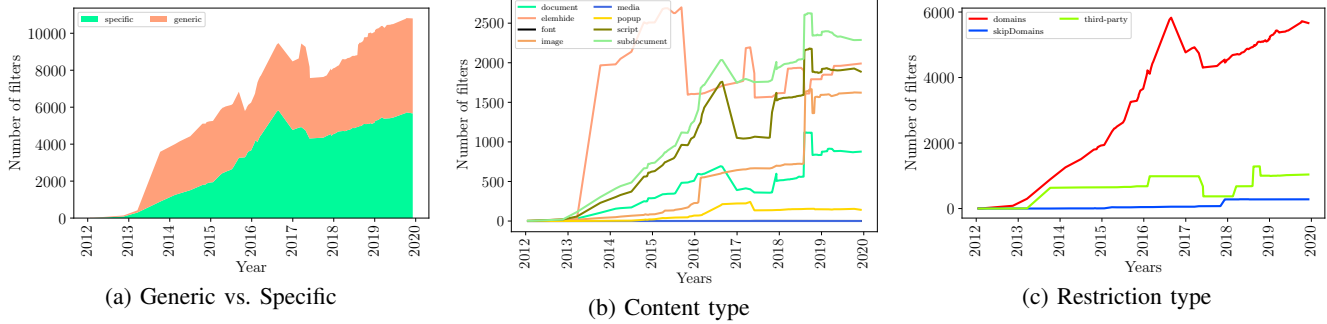


Fig. 1: Distribution of filters type, content type and various restrictions used in exception rules.

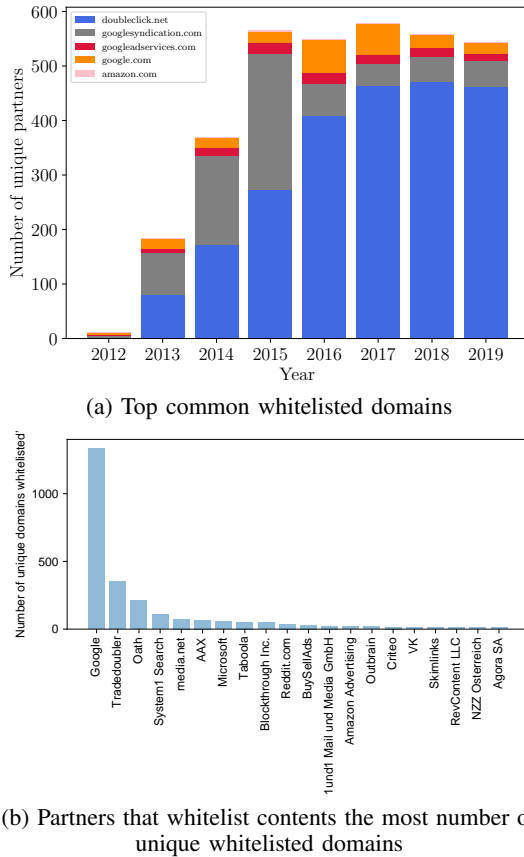


Fig. 2: Top whitelisting partners and whitelisted domains in Adblock Plus's exception list.

### III. OUR FINDINGS

We first look at the type of exception rules used and the content types whitelisted. Figure 1 shows our findings. We see that in the exception list specific rules, in general, dominate over generic rules, which makes sense as exception rules are usually meant to whitelist contents originating from specific domains. In terms of content type, we see that 'subdocument' (e.g., enables iframe), 'script' (e.g., allows script to run) and 'elemhide' (e.g., disables element hiding) are more prominent than others. For restriction types used in rules, we see that most rules contain 'domain' option; this aligns with what we

found earlier where specific rules dominate over generic rules. **Finding 1:** Exception rules are more domain specific and tend to allow 'subdocument', 'script' and 'elemhide' type content to be displayed or executed. This gives us a clear picture of what type of contents exception rules override.

We then look at the top common whitelisted domains, i.e., domains that are whitelisted by the most number of partners. According to Figure 2a, we see that doubleclick.net, googlesyndication.com, googleadservices.com, and google.com are the top four whitelisted domains. All of these domains are owned by Google. We also find that Google is the most dominant partner that whitelists the most number of unique domains. According to Figure 2b Google whitelists 1334 unique domains, 33.7% of the total whitelisted domains. One thing to note is that online advertisement is a major source of revenue for top five partners. Google, for instance, derives most of its revenue from AdSense network [7].

**Finding 2:** Google not only whitelists the most number of unique domains, but is also whitelisted by the most number of whitelisting partners.

To the best of our knowledge, we are the first, to shed light on domains and contents that are being whitelisted by different companies under the acceptable ads program.

### IV. FUTURE WORK

In the future we want to closely analyse why certain exceptions rules were added or deleted. We also want to explore if trackers are exploiting the exception rules in any way. Lastly, we want to understand how users feel about the exception list being enabled by default.

### REFERENCES

- [1] Adblock plus. Eyeo GmbH. [Online]. Available: <https://adblockplus.org/>
- [2] Ghostery. Cliqz. [Online]. Available: <https://www.ghostery.com/>
- [3] Disconnect. [Online]. Available: <https://disconnect.me/>
- [4] Acceptable ads. Adblock Plus. [Online]. Available: <https://adblockplus.org/en/about#monetization>
- [5] Acceptable ads: Exception list. Adblock Plus. [Online]. Available: <https://easylis-downloads.adblockplus.org/exceptionrules.txt>
- [6] Internet archive: Wayback machine. [Online]. Available: <https://archive.org/web/>
- [7] Google advertisement revenue. [Online]. Available: <https://www.statista.com/statistics/266249/advertising-revenue-of-google/>