

Introduction

Websites often serve data from third parties. This content can have various purposes, one of which is advertising. While third-party advertising supports free services and information on the internet, the desire to provide relevant advertisements contributes to tracking of users. Users sensitive to tracking can use a number of tools to mitigate this tracking.

This poster presents a study on various web privacy tools analyzing the direct effect of each tool on the user. This research was conducted as a part of a larger project that is currently ongoing [1]. We found that different web privacy tools do, in fact, reduce privacy invasions and produce a more pleasant user experience for internet users.

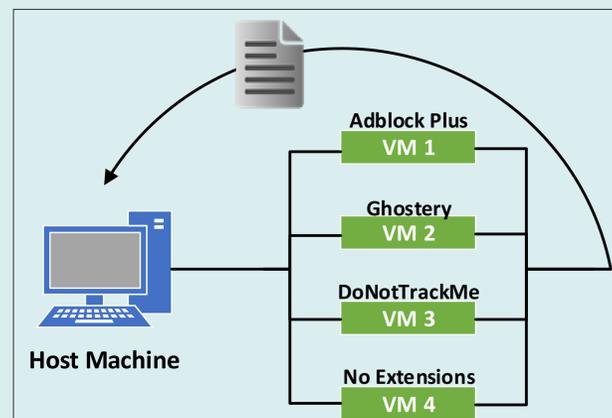


Figure 1. Process of retrieving data from virtual machines.

Methods

- Firefox used as our web browser
- Each VM was started and then simultaneously given an instruction to fetch data from one website
- All cookies were cleared before collecting data from a different website
- This process was repeated for every website.
- Collected the load time and persistent cookies of each website
- Repeated this entire process three times and then averaged the data

Background

Cookies:

- Cookies are used to maintain information about users
- More recently used for advertising, social network integration, and tracking

Problem:

- Users' personal information is being recorded across other unrelated websites
- Advertisements cause web pages to load more slowly affecting users browsing experiences

Existing Solutions:

- Web privacy tools exist to aid a user in protecting personal information and to block unwanted trackers and/or advertising when surfing the web

Web Privacy Tools:

- Adblock Plus, Ghostery, DoNotTrackMe



Results

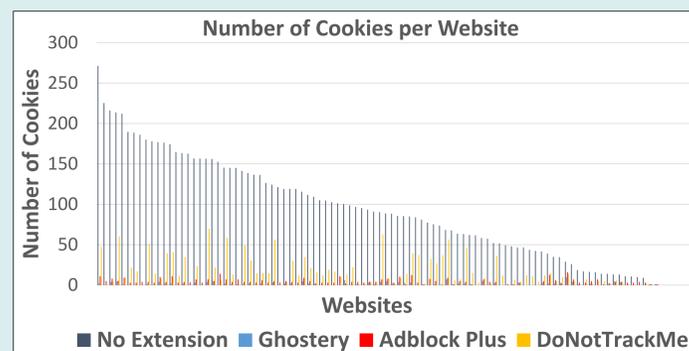


Figure 2. Tracking data for top 100 sites with the most cookies.

Adblock Plus: 84.2% decrease
DoNotTrackMe: 73.9% decrease
Ghostery: 89.0% decrease

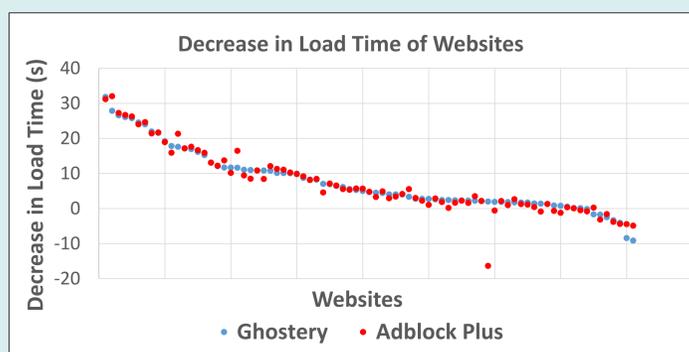


Figure 3. User experience data for top 100 sites with the most cookies measured as the decrease in load time from the control.

Adblock Plus: 7.40 second average difference
Ghostery: 7.61 second average difference

Conclusions

- Web privacy tools are very effective at reducing tracking
- Some cookies are allowed to exist because they are not involved in tracking and are needed for complete functionality of a website
- The most efficient tool configuration reduces tracking, while causing little to no effect on functionality
- Performance differs between tools because of a slightly different balance of usability and tracking reduction in each
- Web privacy tools are very effective in contributing to a more pleasant user experience page load times

Acknowledgments

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Project Goals

Research Question:

How do different web privacy tools affect tracking and user experience on the internet?

Process:

Visit websites using different web privacy tools and collect data relevant to tracking and user experience.

References

- [1] C. J. Hoofnagle and N. Good. (2012 October) The Web Privacy Census. [Online]. Available: <http://law.berkeley.edu/privacycensus.htm>