

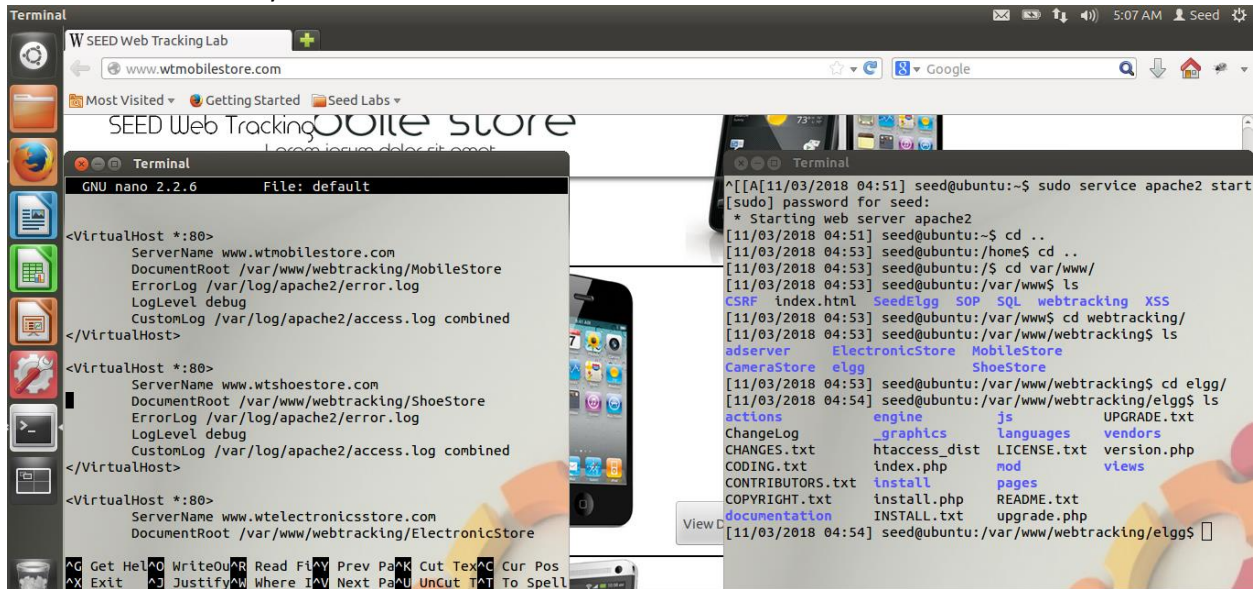
# Lab Report - SEED Labs - Web Tracking Lab

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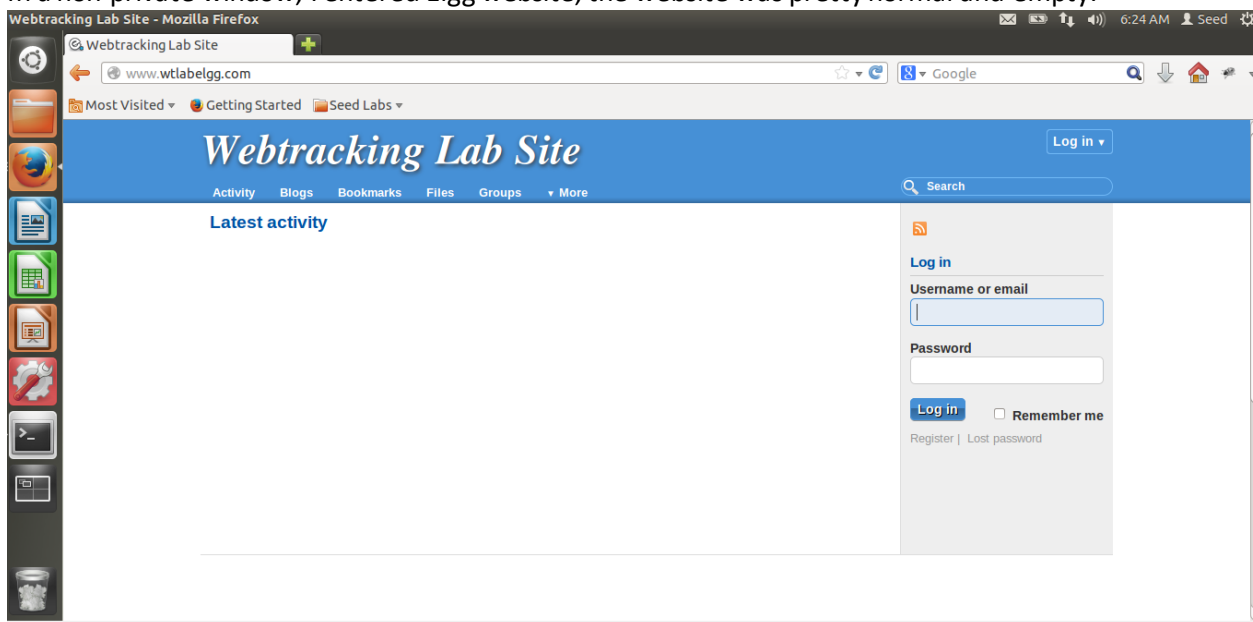
## 2. Environment Configuration:

I have started the Apache server, checked that the websites are working, DNS configured, VirtualHosts and cleared the history and cookies.

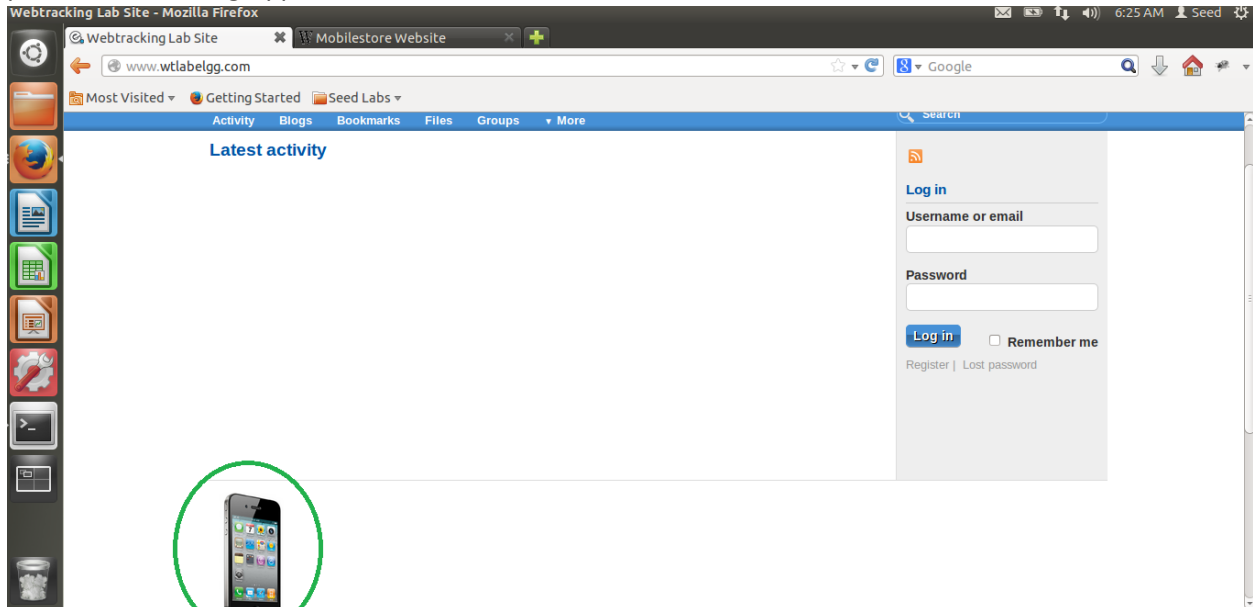


### 3.1 Task 1: Understand the basic working of the web tracking:

In a non private window, I entered Elgg website, the website was pretty normal and empty:



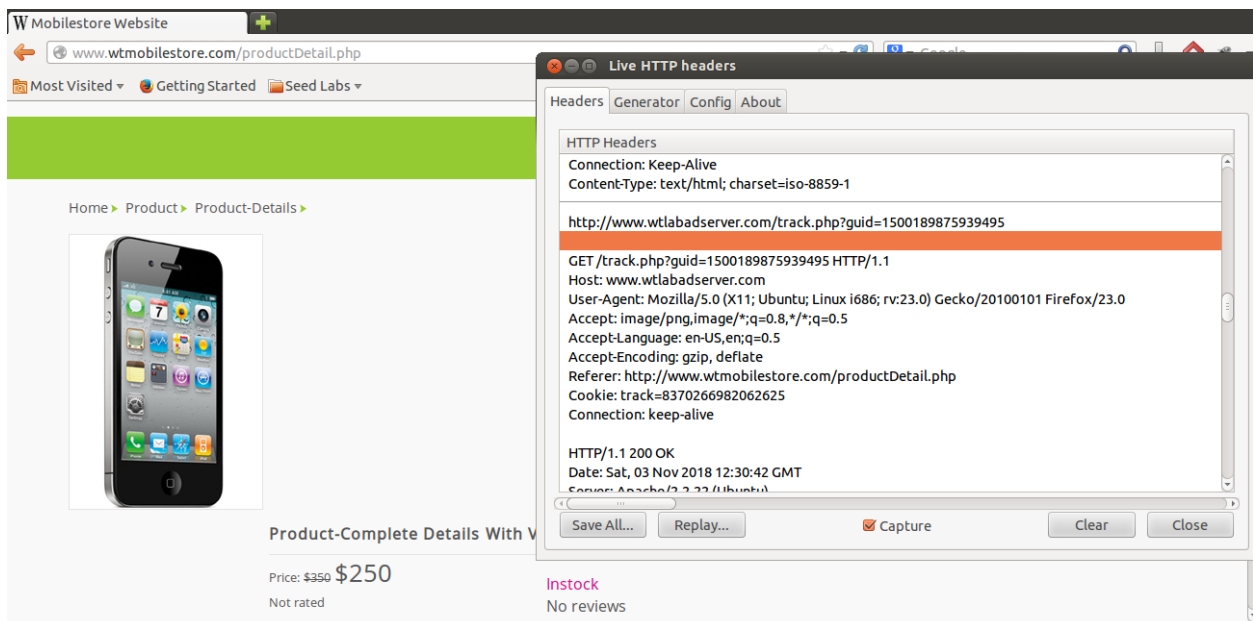
After I opened the wtmobilestore and clicked on view details, I refreshed the Elgg website and the exact phone I was looking appeared at the bottom:



I Reopened the window, and it still there, I observe that the cookie was set in my local cache.

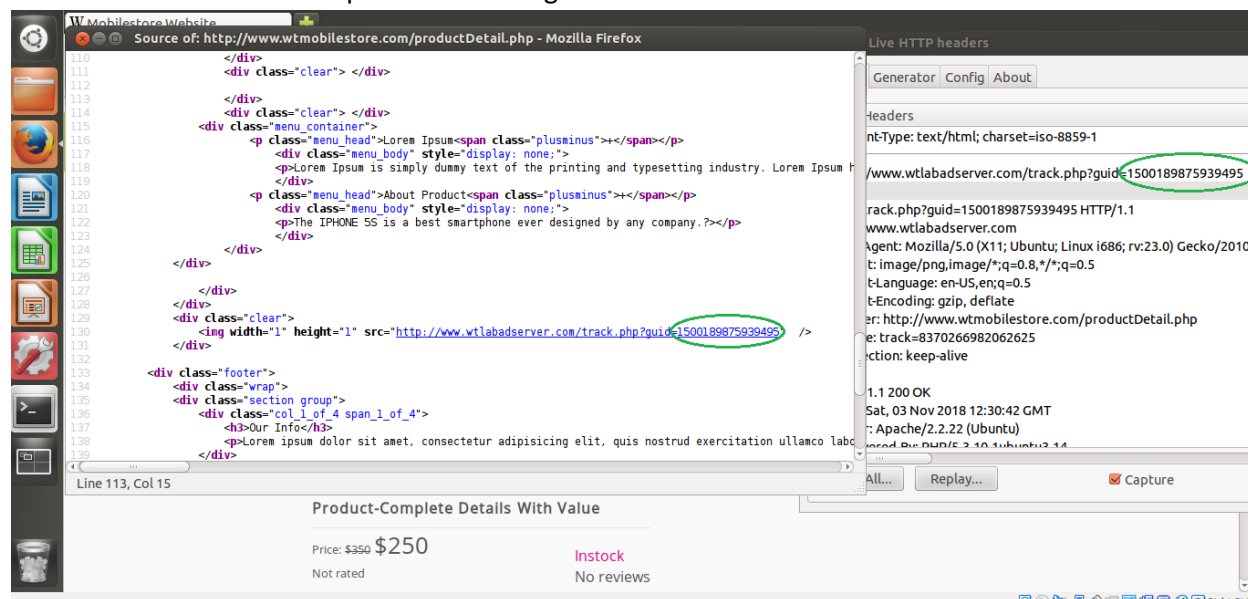
### 3.2 Task 2: Importance of cookie in Web tracking:

I opened the wtmobilestore website, then the Live HTTP Header, and as soon as I clicked on view details, the header information started to flow:

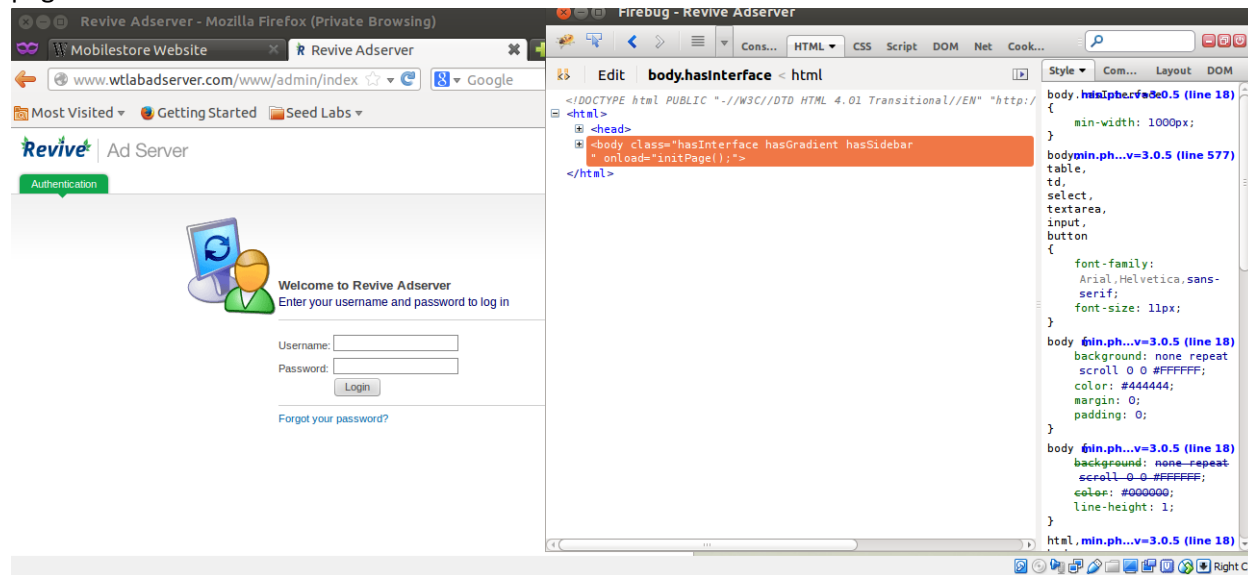


(The taken screenshot request was the only with the cookie, so I guess this is the one which set the third party cookies, also it's a different site from what I browsed so far).

In line number 130 is where the cookie is sent from wtadlabserver which contains an ad that is served by the mobilestore webpage hence it has set a cookie in the browser. The browser goes to fetch <http://www.wtadlabserver.com/ad.html>, the response will come back with a Set-Cookie header that sets a cookie with some unique random string.

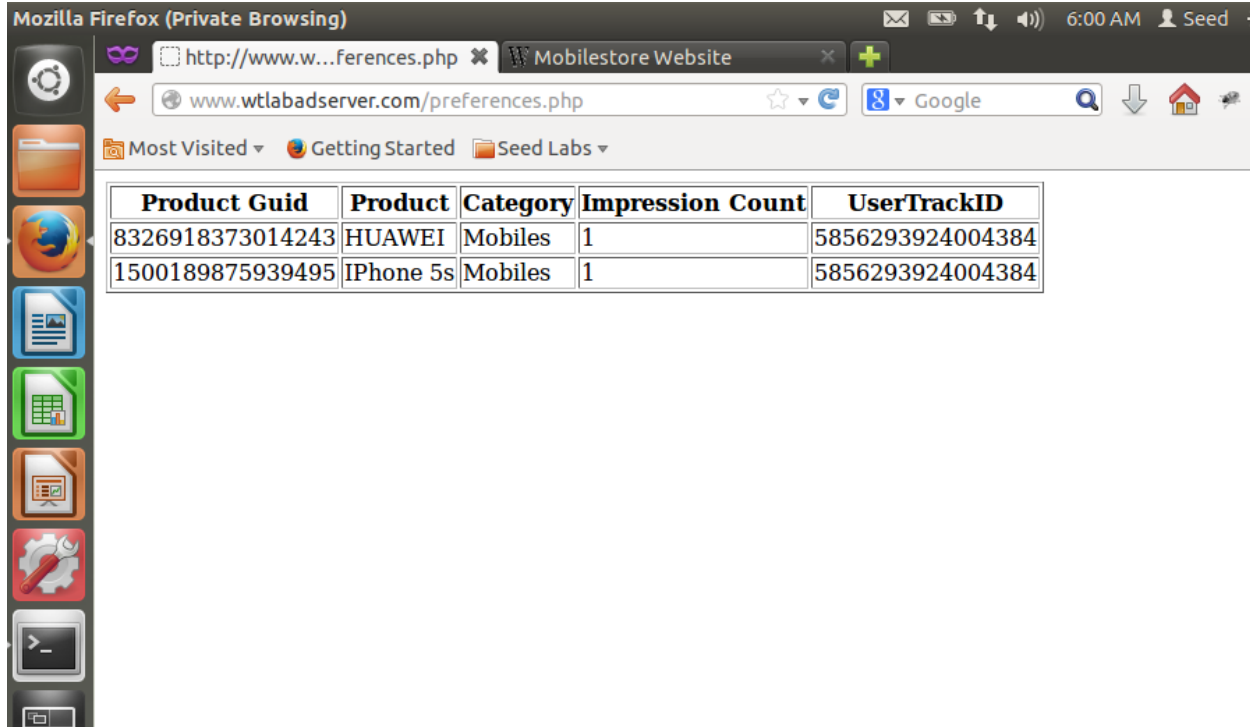


The Firebug extension shows us that the AdServer has an interface of the cookie sent by the mobilestore product page, but the mobilestore page doesn't have that, It is because the cookie was sent by the page.



### 3.3 Task 3: Tracked user interests and data:

I opened <http://www.wtlabadserver.com/preferences.php> website, it was empty, then I browsed two products on the mobilestore website, and refreshed the preferences page, the two products appeared there with the same UserTrackID, I observe that the recently visited documents are saved in a unique id allotted the user which is saved in the database for displaying the ad on other pages.

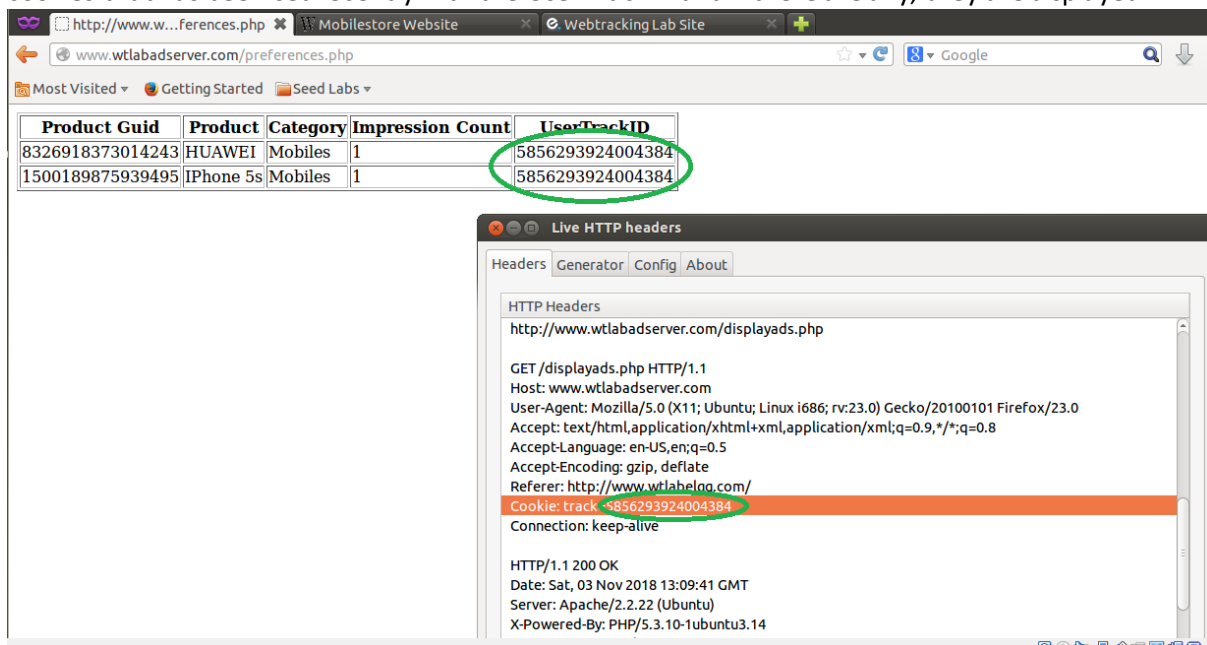


The screenshot shows a Mozilla Firefox Private Browsing window with the address bar displaying <http://www.wtlabadserver.com/preferences.php>. The page content is a table with the following data:

Product Guid	Product	Category	Impression Count	UserTrackID
8326918373014243	HUAWEI	Mobiles	1	5856293924004384
1500189875939495	IPhone 5s	Mobiles	1	5856293924004384

### 3.4 Task 4: How ads are displayed in website:

In the LiveHTTPHeaders, it's clearly observed that it request the "displayads.php", it searches for the cookies that has been set recently with the UserTrackID and if there are any, they are displayed.



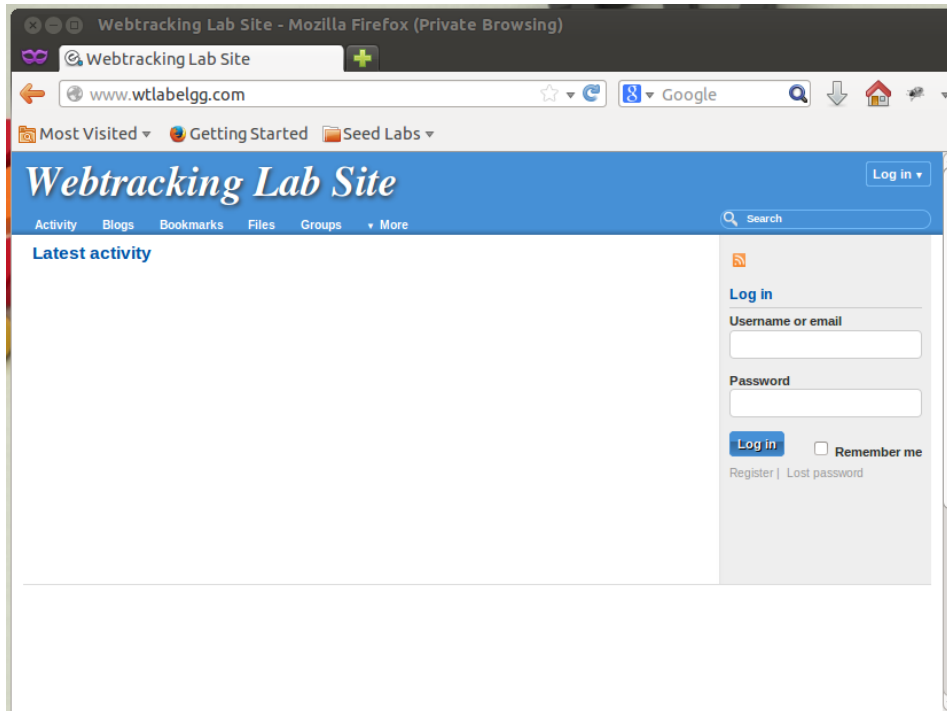
The screenshot shows the Live HTTP Headers window with the following details:

- URL: <http://www.wtlabadserver.com/displayads.php>
- Method: GET
- Host: www.wtlabadserver.com
- User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux i686; rv:23.0) Gecko/20100101 Firefox/23.0
- Accept: text/html,application/xhtml+xml,application/xml;q=0.9,\*/\*;q=0.8
- Accept-Language: en-US,en;q=0.5
- Accept-Encoding: gzip, deflate
- Referer: <http://www.wtlabadserver.com/>
- Cookie: track=5856293924004384
- Connection: keep-alive

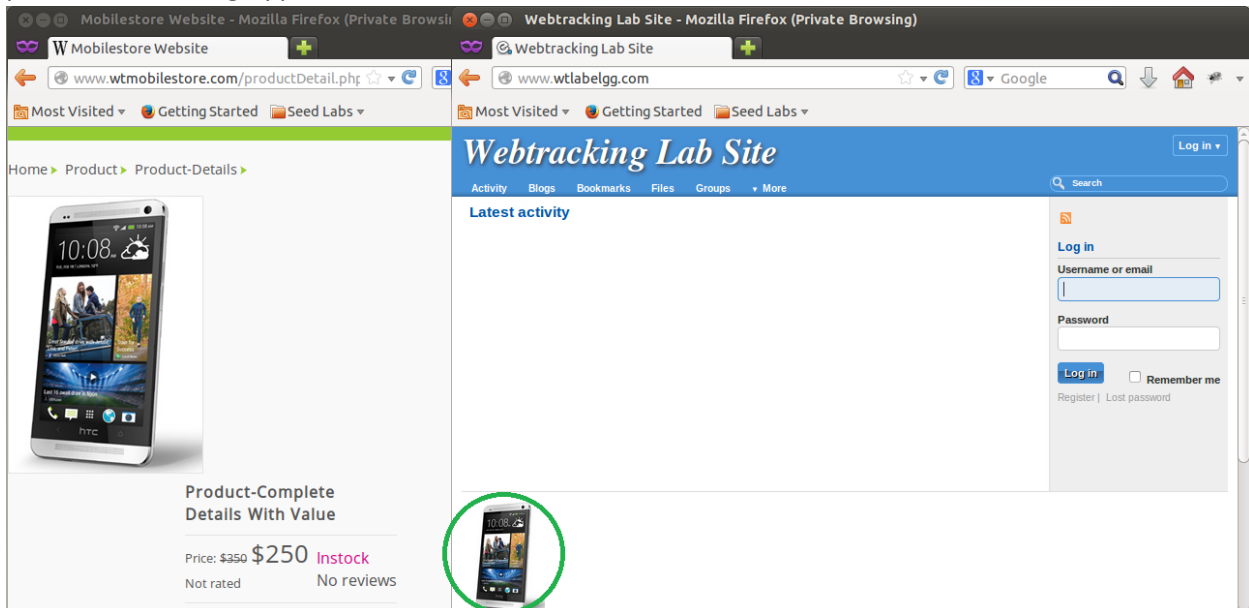
The response status is HTTP/1.1 200 OK, with a Date of Sat, 03 Nov 2018 13:09:41 GMT, Server: Apache/2.2.22 (Ubuntu), and X-Powered-By: PHP/5.3.10-1ubuntu3.14.

### 3.5 Task 5: Tracking in a Private browser window:

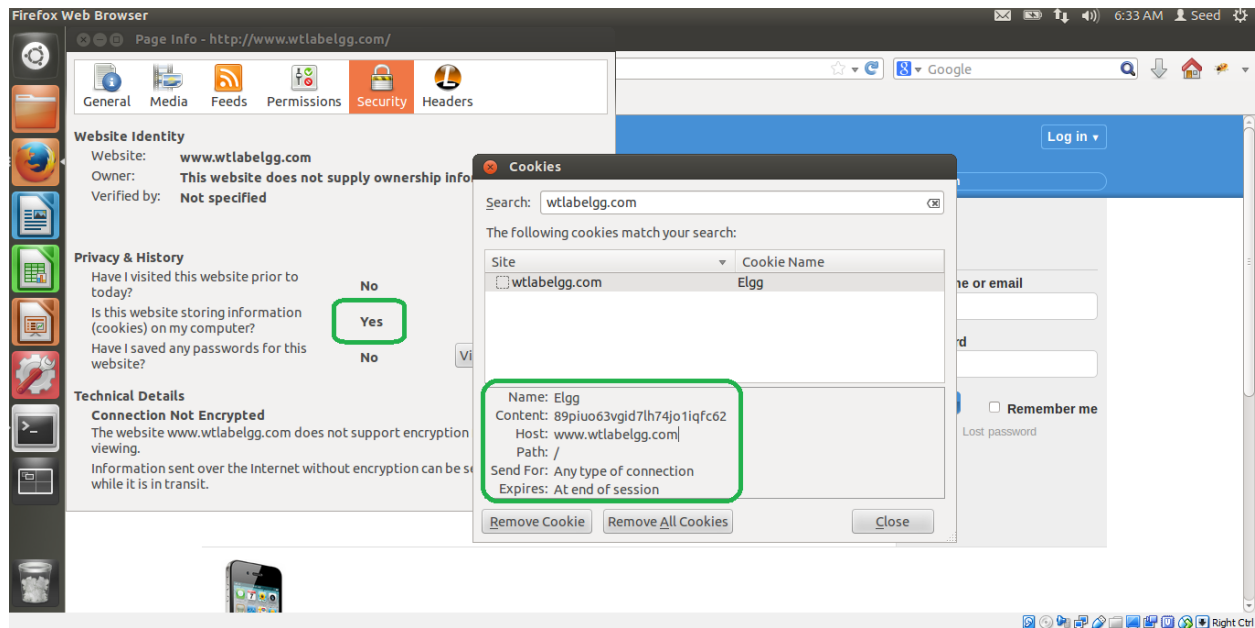
In a Private window, I entered Elgg website, the website was pretty normal and empty:



After I opened the wtmobilestore and clicked on view details, I refreshed the Elgg website and the exact phone I was looking appeared at the bottom:

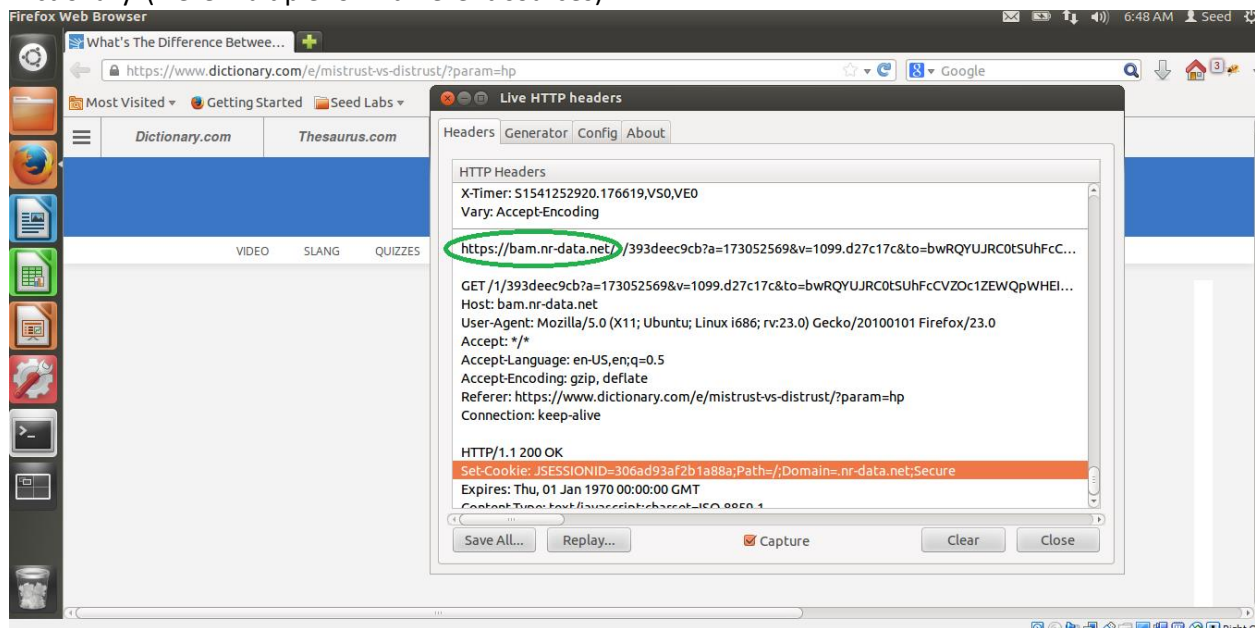


After closing the browser and opening that page again, the ad area was blank like in the beginning. The main difference between task 1 and task 5, is the private session, which stores cookies until the browser is closed and all the data is discarded, and in a normal session stays on the local computer.



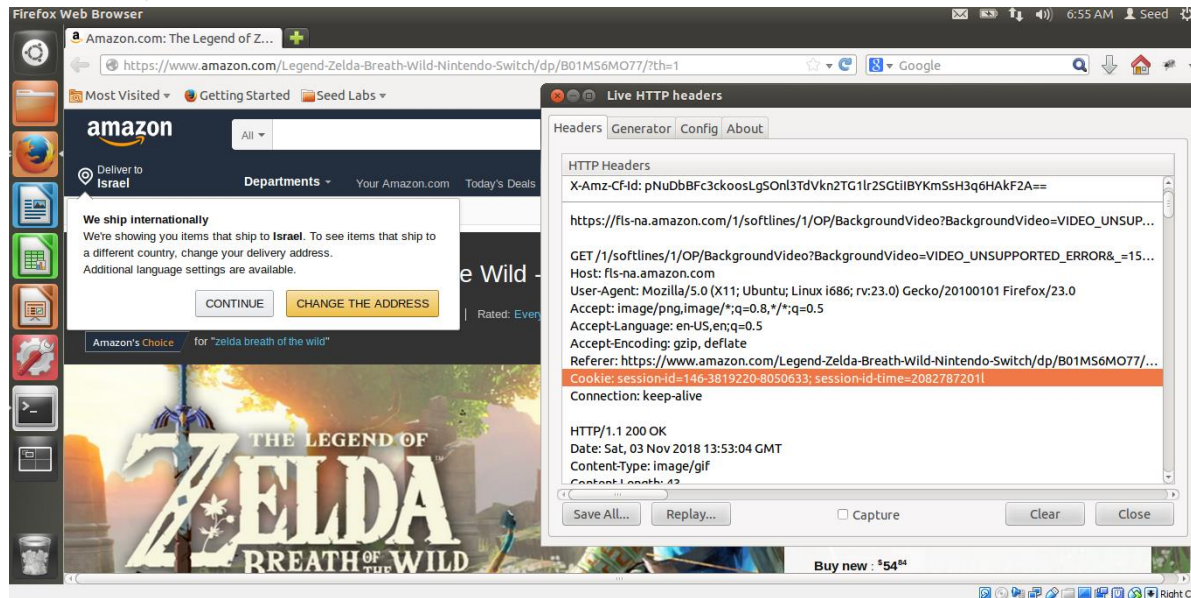
### 3.6 Task 6: Real world tracking:

Dictionary: (were multiple form different sources)





Amazon: (was very hard to find I observe because they are themselves the 3<sup>rd</sup> party cookies providers of themselves)

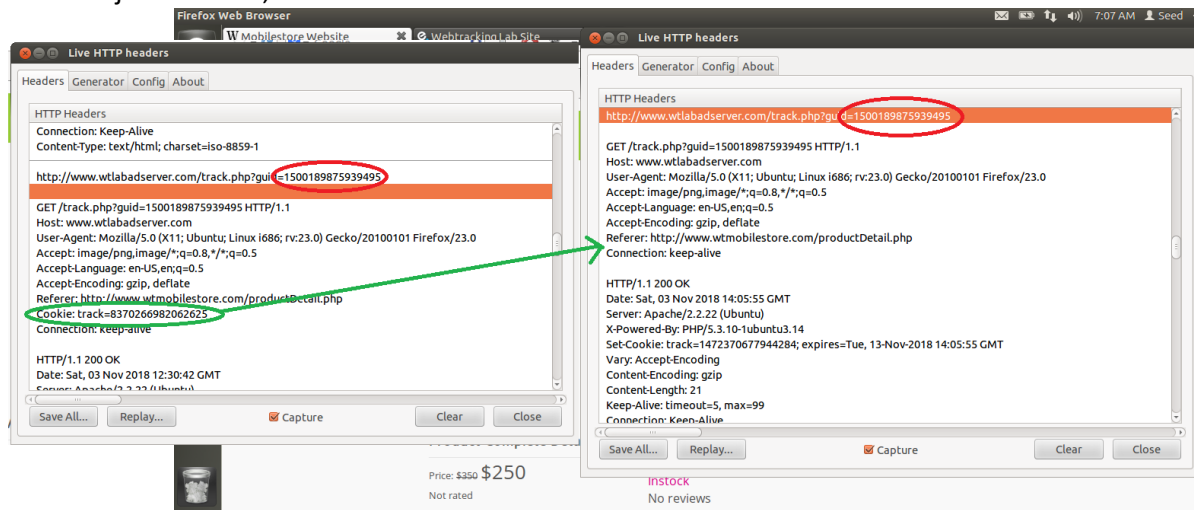


### 3.7 Task 7: Countermeasures:

I disabled in the setting the option "third party cookies", opened wtmobilestore and elgg website, LiveHTTPHeaders.

I browsed to details of some phones, then I checked elgg website for the ads, and it was blank.

My observation, that it blocked from third party cookies as the setting do, and when it request to set cookies it just declines, the difference with task 4:



As I observed, now it just doesn't set the cookie.

