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Brave

Brave Browser is a Chromium fork with many interesting features not found elsewhere, such as built-in Adblock and other extensions, fingerprinting protection, a cleaner Preferences menu compared to other Chrome forks, and the (opt-in) ability to automatically support (pay) the websites you visit. The developers describe it as "*A browser with your interests at heart.*"[1] with the built-in privacy protections.

Spyware Level: High

Brave is self updating software, uses Google as the default search engine, has built-in telemetry, and even has an opt-out rss-like news feed similar to Firefox Pocket. These shouldn't be the things that come to mind if someone were to imagine a privacy oriented browser.

Auto-updates

Brave will check for updates every time you run it, and you can't turn it off from the browser. Athough, it's on Brave's low priority list to add an option to do so[2]. The reason why it's low priority would be because it's been over a year and there hasn't been an implementation of it yet.

Brave has built-in telemetry

While running, Brave will make lots of requests to the domain `p3a.brave.com` as telemetry. They claim they store the collected data for several days[8]. This feature is an opt-out that can be disabled. This opt-out can be disabled here.

Brave Today

Brave now has new feature similar to Firefox Pocket called Brave Today. If you don't know what Firefox Pocket is, it's basically an rss-like news feed that's shown in every blank tab. This feature Brave has is sadly an opt-out rather than an opt-in and sends lots of requests to Brave's servers. It can't seem to be disabled it in and of itself, but setting the tabs to blank seems to stop the requests.

SafeBrowsing

Brave uses SafeBrowsing. It's a feature that tries to "protect" the user from potentially unsafe websites and extensions. However, it sends requests to fetch the information required. Brave's SafeBrowsing is powered by google.[10] This opt-out can be disabled here.

Brave Rewards

Brave has a rewards program. You can find more information about it here[3]. At first glance it looks like the rewards program is an opt-in, but the browser makes requests to these domains regardless if you sign up or not:

`rewards.brave.com`

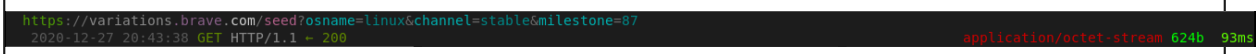
`api.rewards.brave.com`

`grant.rewards.brave.com`

Miscellaneous requests worth noting

Brave on first run sends a request to fetch the library used for checking spelling errors:

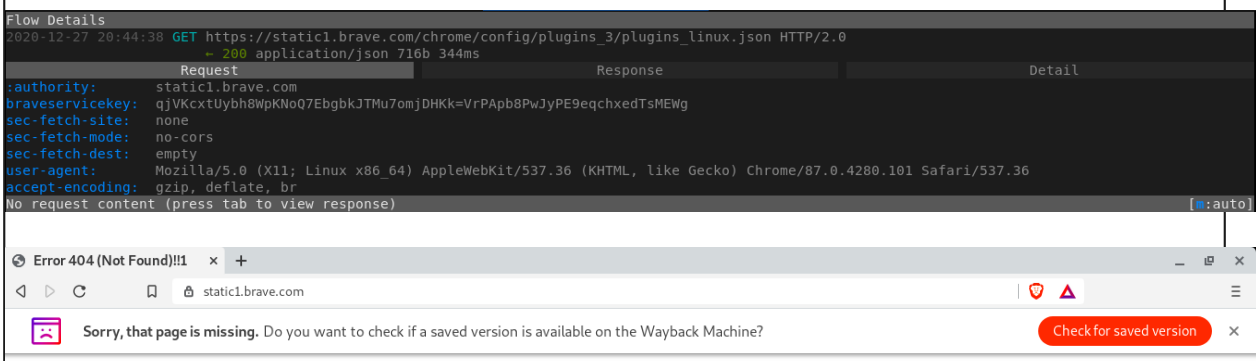
Brave on startup sends a request to `variations.brave.com`. By the looks of this issue,[11] brave uses this to turn on and off features. There isn't a way to disable this as of yet.

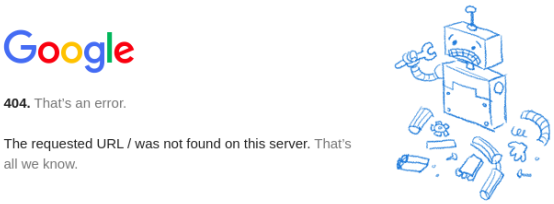


Brave fetches the list of affiliates through `laptop-updates.brave.com`:


```
[{"domains":["coinbase.com","api.coinbase.com"],"headers":{"X-Brave-Partner":"coinbase"},"cookieNames":[],"expiration":31536000000},{"domains":
["softonic.com","softonic.cn","softonic.jp","softonic.pl","softonic.com.br"],"headers":{"X-Brave-Partner":"softonic"},"cookieNames":[],"expiration":
31536000000},{"domains":["marketwatch.com","barrons.com"],"headers":{"X-Brave-Partner":"dowjones"},"cookieNames":[],"expiration":31536000000},
{"domains":["townsquareblogs.com","tasteofcountry.com","ultimateclassicrock.com","xxlmag.com","popcrush.com"],"headers":{"X-Brave-
Partner":"townsquare"},"cookieNames":[],"expiration":31536000000},{"domains":["cheddar.com"],"headers":{"X-Brave-Partner":"cheddar"},"cookieNames":
[],"expiration":31536000000},{"domains":
["upbit.com","sg.upbit.com","id.upbit.com","ccx.upbit.com","ccx.upbitit.com","ccxsg.upbit.com","cgate.upbitit.be","ccxid.upbit.com","cgate.upbitit.tv"],
{"X-Brave-Partner":"upbit"},"cookieNames":[],"expiration":31536000000},{"domains":["eaff.com","stg.eaff.com"],"headers":{"X-Brave-
Partner":"eaff"},"cookieNames":[],"expiration":31536000000},{"domains":["sandbox.uphold.com","api-
sandbox.uphold.com","uphold.com","api.uphold.com"],"headers":{"X-Brave-Partner":"uphold"},"cookieNames":[],"expiration":31536000000},{"domains":
["www.grammarly.com","grammarly.com","static.grammarly.com","gnar.grammarly.com"], "headers":{"X-Brave-Partner":"grammarly"},"cookieNames":
[],"expiration":31536000000}]
```


Brave makes a request to `static1.brave.com` every once and a while, which looks like it's used to fetch plugin information[4]? When the url was placed into the browser, it was directed to Google's error 404 page[9]. This seems kind of unsettling that one of Brave's domains would do that:





A quick `curl --head static1.brave.com` shows that Brave uses Google's gstatic, which uses Cloudflare as well:

```
HTTP/1.1 301 Moved Permanently
Date: Mon, 28 Dec 2020 05:01:12 GMT
Content-Length: 0
Connection: keep-alive
Set-Cookie: __cfduid=d709aad68491c6c6e8e5de88f568ead251609131672; expires=Wed, 27-Jan-21 05:01:12 GMT; path=/; domain=.brave.com; HttpOnly; SameSite=L
ax
Retry-After: 0
Location: https://www.gstatic.com/
Accept-Ranges: bytes
Via: 1.1 varnish
X-Served-By: cache-mdw17324-MDW
X-Cache: HIT
X-Cache-Hits: 0
X-Timer: S1609131672.145281,VS0,VE0
CF-Cache-Status: DYNAMIC
cf-request-id: 074951da410000c55c4e114000000001
Report-To: {"endpoints":[{"url":"https:\/\/a.nel.cloudflare.com\/report?s=kXHTOhDerfjNLE10kZdvC%2Ft0wAzV8CgVSe59VePXhqHQx40WrO2n7xCAh%2FFiTe1Ui1QtJPhs
zON823B5FIiiuD1Jnwms9yKAvhWBoMSuEiabb7e%2Fal4mxTxU7CnOIA%3D%3D"}],"group":"cf-nel","max_age":604800}
NEL: {"report_to":"cf-nel","max_age":604800}
Server: cloudflare
CF-RAY: 6088b8d6c9c7c55c-ORD
```

On the first run, Brave fetches five extensions from `brave-core-ext.s3.brave.com` and tries to install them:

```
  20:43:48 GET  HTTPS …e-ext.s3.brave.com /release/gccbbckogglekeggclmmekihdgdpdgoe/extension_1_0_259.crx          200 …rome-extension 1.53m 2.50s
  20:43:48 GET  HTTPS …e-ext.s3.brave.com /release/afalakplffnnnlkncjhbmahjfjhmlkal/extension_1_0_39.crx          200 …rome-extension  132k 465ms
  20:43:48 GET  HTTPS …e-ext.s3.brave.com /release/cffkpbalmllkdoenhmdmpbkajipdjfam/extension_1_0_797.crx         200 …rome-extension 2.37m 3.01s
> 20:43:48 GET  HTTPS …e-ext.s3.brave.com /release/jicbkmdloagakknpihibphagfckhjdih/extension_1_0_15.crx          200 …rome-extension 10.4k 466ms
  20:43:48 GET  HTTPS …e-ext.s3.brave.com /release/oofiananboodjbbmdelgdommihjbkfag/extension_1_0_21.crx          200 …rome-extension 1.02m 2.15s
```

Not spyware related, but worth noting

Whitelisting spyware from Facebook and Twitter

On its website, Brave claims that "*Brave fights malware and prevents tracking, keeping your information safe and secure. It's our top priority.*"[6]. Yet despite this claim, Brave actually disables its tracking protections for Facebook and Twitter's scripts that allow them to track people across the web.[5] Brave has been actively downplaying the role that JavaScript plays when tracking someone.

"*Loading a script from an edge-cache does not track a user without third-party cookies or equivalent browser-local storage, which Brave always blocks and always will block. In other words, sending requests and receiving responses without cookies or other means of identifying users does not necessarily create a tracking threat.*"[7]

This couldn't be more far from the truth. Just because a website isn't able to store cookies, doesn't mean it can't uniquely identify you. Using JavaScript from Facebook and Twitter would be more than enough to track you and blocking cookies alone isn't going to stop that. Just as a quick point of reference to what information JavaScript can scrape, you might want to visit this website.
They recently added an option here to block some of the scripts from Facebook,

Twitter, and LinkedIn after receiving pushback as a result of the controversy. A quick note is that so long as you're using a chromium based browser, you should be able to manage JavaScript usage either way here.

Anti-privacy search engine by default

Google is the default search engine of Brave. For a browser that claims to be privacy oriented, this is a red flag. They at least make it easy for you to change the default search engine on the first run.

Sources

1. Brave's website [web.archive.org]
2. Add a disable autoupdate feature [web.archive.org]
3. Brave Rewards Program [web.archive.org]
4. Plugin Information? [web.archive.org]
5. Facebook, Twitter Trackers Whitelisted by Brave Browser [web.archive.org]
6. Brave Browser Features [web.archive.org]
7. Script Blocking Exceptions Update [web.archive.org]
8. Brave's Analytics [web.archive.org]
9. Brave's static site [archive.is]
10. Brave's Deviations from Chromium [web.archive.org]
11. Allow to opt-out of Griffin variations [web.archive.org]

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