

# Browsers and other useful software (Part 1)



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September 12, 2024

## What is a browser?

- **A program**
- **Reads text somewhere on the web**
  - **HTML (Hypertext Markup Language)**
  - **Javascript**
  - **Many others (pHp, Python, etc)**
- **Interprets it and displays that to you.**
  - **Might involve downloading or installing code (Flash, extensions, Silverlight, etc.)**
- **Allows interaction**
  - **Text inputs**
  - **Clicks**
  - **Hyperlinks**

Flash and other technologies like it needed to download code to your computer. This becomes a vector for attack by hackers, and flash was constantly getting hacked – that's why it has eventually died (replaced by HTML5). HTML and Javascript tend to be more secure because they're just text, interpreted by the browser. That makes it much harder for hackers to target.

## Main website pieces

- **“Cookies” to remember things (stored on your machine)**
- This is how **“Remember who I am”** works when logging in.
- Also, one of the ways information about what you’ve looked at is passed around for ads
- **Ads**
  - Images, videos
- **Content**
  - Text, images, videos
- **Fields to type into**
- **“Capcha”**
  - To prove you’re human (i.e. not a robot)

## Which Browser, and why does it matter

- **Browsers interpret websites, show them to you, and allow you to interact with them.**
- **Compatibility**
- **Load Times**
- **Security**
- **User Interface**
- **Configurability**

## Browser Engines

- **Two main browser engines – Each has browsers based on their engines**
- **Firefox/Gecko**
  - **Mozilla Firefox**
  - **Waterfox**
  - **LibreWolf**
  - **Ghostery**
  - **Tor**
- **Chromium/Blink/WebKit**
  - **Microsoft Edge**
  - **Google Chrome**
  - **Brave**
  - **Opera**
  - **Vivaldi**
  - **Arc**
- **WebKit2**
  - **Safari**
  - **DuckDuckGo**

Safari and DuckDuckGo use their own engine, based on WebKit2.

Chromium's Blink is also based on WebKit, but an earlier version. Apple and Google maintained WebKit for a while, but then went their own separate ways, so Google now has Blink, while Apple has WebKit2 (although they just call it WebKit).

The browser engine interprets the text from the website, and has the rendering engine show it to you.

## Decisions, decisions

Browser	Engine	Open Source	Ram	Ads	Telemetry	Extensions	Platforms
Firefox	Firefox	Y	8	0	Optional	10	WML/AI
LibreWolf	Firefox	Y	8	8	N	10	WML
Brave	Chromium	Y	4	8	Y	9	WML/AI
Ghostery	Chromium	Y	8	8	?	10	WML/AI
Chrome	Chromium	N	4	0	Y	10	WML/AI
Edge	Chromium	N	2	4	Y	10	WML/AI
Opera	Chromium	N	8	8	Y	5	WML/AI
Vivaldi	Chromium	N	8	4	Y	10	WML/AI
DuckDuckGo	Chromium/ Webkit	Partial	10	4	N	10	WM/AI
Thorium	Chromium	Y	6	0	Y	10	WML/A
Arc	Chromium	N	8	8	Y	10	WM/I
Safari	WebKit/ Proprietary	N	10	0	Y	7	M/I

Higher is better for Ram and Extensions

N is preferred for Telemetry

W (Windows) M (Mac) L (Linux) A (Android) I (iPhone)

NOTE: Ghostery has an ad-blocking extension for most other browsers

Arc requires a sign in to synchronize tabs.

Other browsers allow a signing, but don't require it

## Using Browsers

- **You can install multiple browsers.**
- **Install, check it out, and remove it if you don't like it.**
- **Typically a good idea to have a "Firefox"-ish browser and a "Chrome"-ish browser, plus OS built-in browser.**
- **e.g. Brave and Ghostery (my favorites), as well as the OS built-in browser (Safari or Edge)**
- **This allows you to switch browsers if a website has compatibility issues with one of them.**
- **Using multiple browsers is why a password manager is better than the browsers built-in password feature.**
- **Keeping bookmarks in sync is the biggest headache with multiple browsers.**
- **Most browsers can import from other browsers bookmarks.**
- **Configure your home page and search engine**

## Using Browsers

- **Use extension sparingly – Password manager and ad blockers are probably the only two.**
- **Shopping extensions are privacy nightmares.**
- **Keep your browser UP TO DATE!**
- **Use Private Web Browser to keep browser from saving information about websites.**

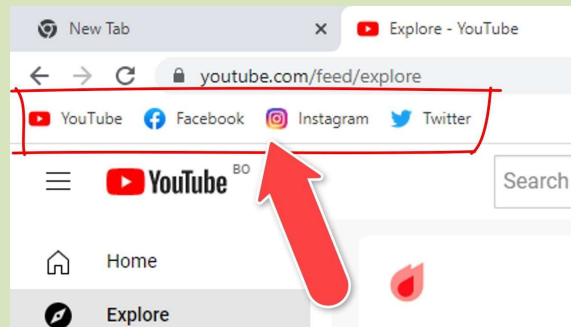
## Configuring Browsers - Security

- **Trusted Sites**
- **Restricted Sites**
- **Javascript**
  - **Disable except for sites you trust that need it**
- **Java**
- **Plugins**

## Configuring Browsers

- **“Sync” feature – disable.**
- **Phishing and malware protection – Enable!**
- **Instant search – turn it off**
- **Popup windows – disallow them!**
- **Cookies**
  - **Typically want “Block 3rd-party cookies & data”**
- **Location**
  - **Don’t allow sites to track my location (more important for laptops and phones)**
- **Password and forms – disable.**
- **Use your password manager instead**
- **Use a private search engine**
  - **DuckDuckGo, Brave, Ghostery**

## Bookmark bars



- **Bookmark bars are a convenient way to get to your favorite websites**

## More Information

- **Browser download sites to download browser**
- **Google the browser and choose the result with a URL with the browser name in it.**
  - Arc.net, brave.com, thorium.rocks, librewolf.net, ghostery.com, vivaldi.com, duckduckgo.com
  - Mozilla.com/en-US/firefox (Mozilla is the org that owns firefox)
- **Compare two browsers by searching “A” vs “B”**
- **Spreadsheet of features (techy)**
  - <https://docs.google.com/spreadsheets/d/1JqygIRJXzaj8OcQw9jHabxFUdsv9iWJXMPXcL7On0M/edit?gid=1628450822#gid=1628450822>