Firefox

Add-ons for Firefox Android

Everything You Need to Know!

Today's Speakers

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Table of contents

Why Android, Why Now

A journey in the motivations of this initiative

01

The importance of an open ecosystem

Mozilla operates in the open and delivers open source products.

The open-source nature of **Firefox** has allowed for a large community of developers to contribute to its development, resulting in a highly **customizable** and **secure** browser.

Mozilla operating values

Mozilla operating values are the foundations of our work.

Mozilla is committed to an internet that **includes** all the peoples of the earth, promotes civil discourse, human dignity, and **individual expression**.

Individual expression and customization

Mozilla is committed to an internet that promotes **individual expression**.

Individual expression and **customization** are correlated in that customization allows individuals to **express themselves** in unique ways.

We meet our users where they are and need us

Mozilla is committed to an internet that includes all the peoples of the earth.

Meeting users where they are and need **Firefox** helps to ensure that the internet community can access the products they want **wherever** they are.

Mobile growth

Android and Firefox are **globally** available software.

As of September 2023, Android is the most used mobile operating system worldwide, with a market share of 69.76% and Firefox users are growing on mobile by ~20%.

What Is Changing

02

How Firefox Android changed to extend add-ons support

Multi-processes architecture

Firefox increased code execution **isolation** as part of the reaction to **Spectre** and **Meltdown**.

We are extending support for the extension child process to Firefox for Android. This change enables a **multi-process** architecture for extensions that fits into the Android processes lifecycle.

Android lifecycle and event pages

The Android lifecycle and **Firefox event pages** are both important concepts in software architecture but are not directly related.

The Android lifecycle is a **series of states** an app goes through as it is launched, used, and closed. Event pages allow developers to write background scripts **responding to events** such as clicks, page loads, and tab switches.

They are the perfect fit for the Android process lifecycle.

Low resources and user control

Android manages processes by prioritizing **foreground over background** execution.

Android kills background processes that consume **excessive resources**. We have implemented an experience that lets the **user decide** to shutdown add-ons.

Release Goals

Enabling our open ecosystem on mobile devices

03

Add-ons on mobile devices unlock new capabilities

Add-ons are like **apps** that run in the browser and have a wider distribution **market**.

Opening up what Firefox already supports on desktop enables developers' creativity to **delight** Firefox users.

Opening Android add-ons to all developers

Previously, Android users had access to a **curated collection** of **recommended extensions**.

Our goal is to **enable any developer** to build and make their add-ons available **on Android**.

Support & enable the add-ons community

We're **not just making it possible** to build extensions, we're building tools and resources to **help developers** along the way.

- Android testing recommendations
  mzl.la/webext-android-ux
- Browser API compatibility table
  mzl.la/webext-compat

Opening up Android is just the start

Our **focus** is on opening the extension ecosystem on Android **as it exists today**. That means:

- Manifest version 2
- Event pages
- Some APIs are missing

Opening up Android is just the start

There’s more to come

Next, we will **expand and improve** the WebExtensions platform on Android. This includes:

- Manifest version 3
- Expand API support

We need **developer feedback** to prioritize what we **focus on next**.

User Experience

04

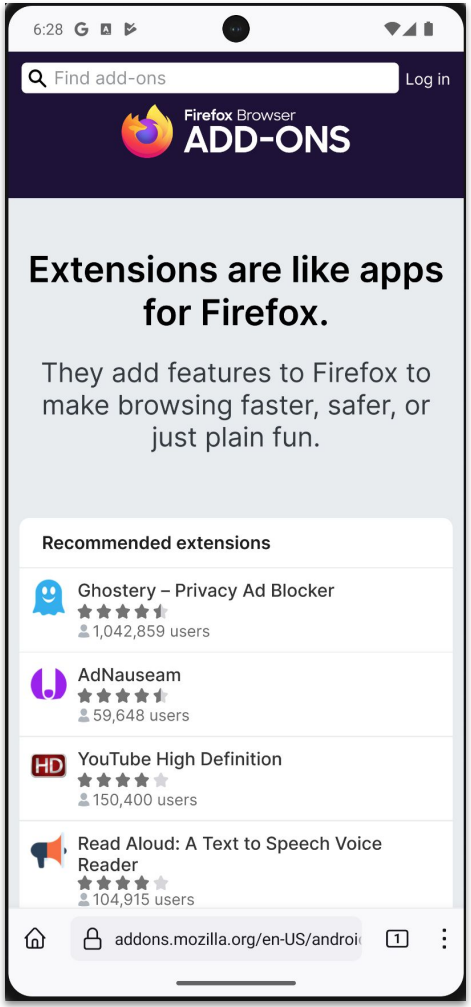
How to find, install, and manage add-ons on Android devices

Recommended content

Expanded Add-ons catalog

The recommended extensions are available in Firefox Android release since August 2020.

On the same page, the user will get access to all the add-ons that developers marked as compatible with Android.

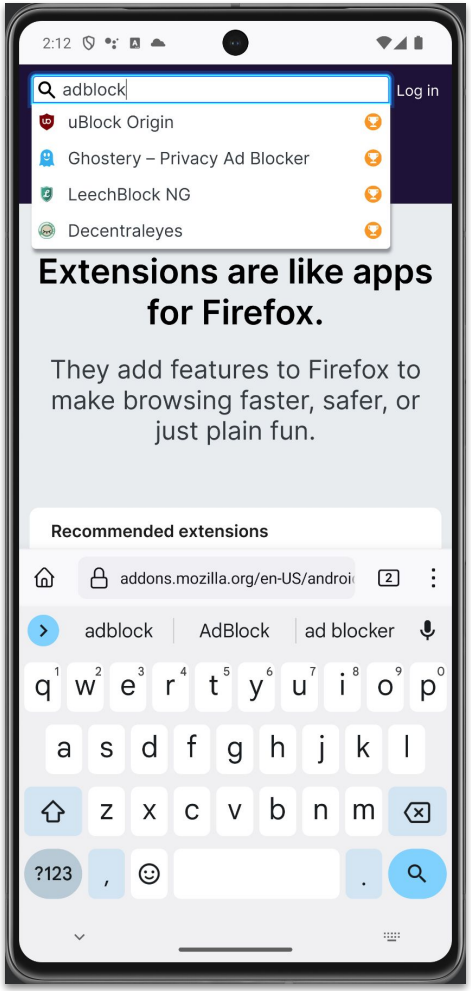


Searching for new content

Search the entire catalog

All the extensions marked compatible with Android are visible in the search bar.

Results are organized by category, relevance, and name as in the desktop experience.

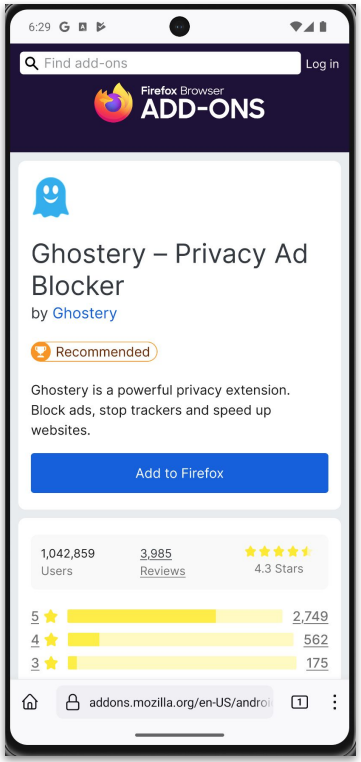


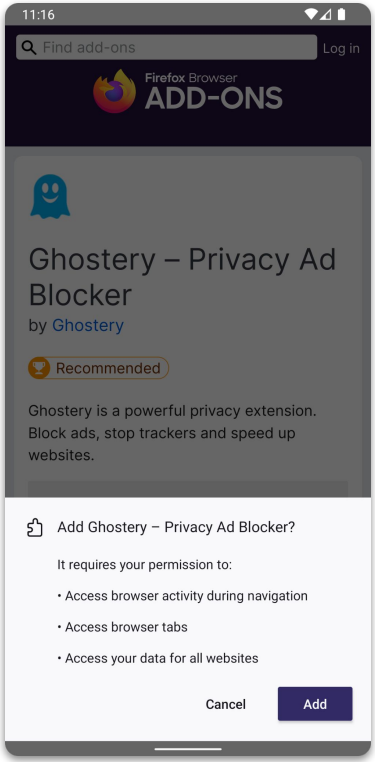
Installation and permissions

Seamless UX

Installing add-ons on Firefox Android is a smooth experience consistent with the current desktop one.

The user is prompted to confirm required permissions during installation and the extension can request optional permissions at runtime.



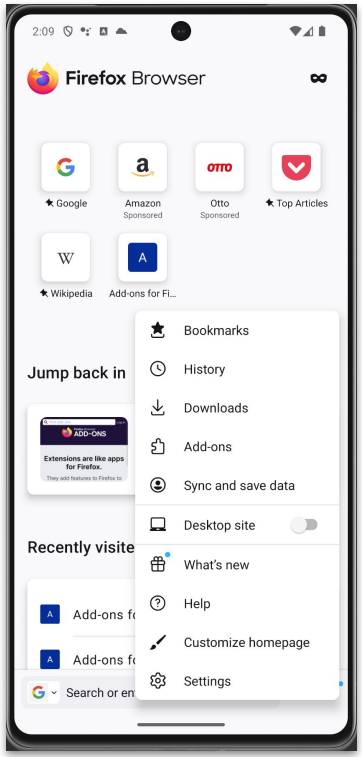


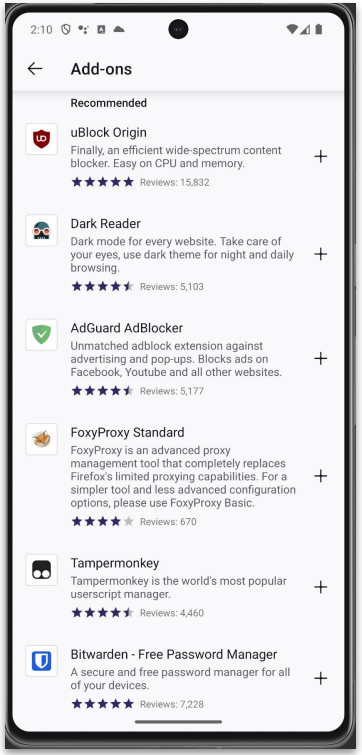
Firefox Android add-ons manager

Manage add-ons

All the installed add-ons are managed via the add-ons manager.

The manager includes notifications for blocked add-ons and settings to enable or disable add-ons in private mode.





Toward the Release

05

A challenging timeline that preserve user experience and safety

A commitment to our users and developers

The **Web Extensions** and **Android Engineering** teams are focused on the critical features needed to expand add-ons on Android.

While doing this, the team built processes to **support** developers and community to streamline the development and adoption of solutions that **personalize** the mobile browsing experience.

A seamless experience is paramount

Stability, **security**, and **performance** are key components for an extensible and personalizable **mobile browsing** experience.

The new architecture has been getting tested and **monitored** for 3 months+ in Nightly, Beta and Release, starting with **Firefox 118**.

Manual QA and automated **functional** and **performance** testing combined with **developer outreach** is in progress.

Enabling more and more add-ons

Starting with **Firefox 119** Nightly and Beta users can install over **75 add-ons**.

On top of monitoring background and foreground **crashes** that exceed a **threshold**, Nightly and Beta users are contributing to **crowd testing** the available add-ons.

Developer outreach and support

Developers are receiving **feedback** from QA testing and getting support from the add-ons **community and evangelism** team.

The outstanding response from the dev community is critical to enable additional content in Nightly and Beta. Developers are getting **1:1 email support**, **office hours**, **webinars**, and **tutorials** to make their extensions ready for Android (what about **t-shirts**?).

Next Steps and Call to Actions

06

What to expect and how to contribute

Get involved!

For **developers**, we have put together several resources to assist in preparing their desktop extensions for Android - those resources are available in one of our recent blog posts.

We invite **end users** to participate in our add-on community testing effort! Details for participating may be found here and all are welcome.

Questions and Answers

07

Development resources

Forum
discourse.mozilla.org

Documentation
extensionworkshop.com

Office hours
extensionworkshop.com/community

Deep-dive resources

Non-persistent background scripts
MDN

Converting to event pages
Tutorial

Firefox process model
Documentation

GeckoView thread topography
Documentation

Thank you!