

Firefox OS Features Guide

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Firefox OS



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About Mozilla

Mozilla is a global community with a mission to put the power of the Web in people's hands. As a nonprofit organization, Mozilla has been a pioneer and advocate for the Web for more than 15 years and is focused on creating open standards that enable innovation and advance the Web as a platform for all. We are committed to delivering choice and control in products that people love and can take across multiple platforms and devices. For more information, visit blog.mozilla.org/press

A stylized graphic of orange and yellow flames or flowing liquid, positioned at the bottom left of the slide.

mozilla

About Firefox OS

Firefox OS smartphones are the first devices powered completely by Web technologies. You get the performance, personalization and price you want in a smartphone packaged in a beautiful, clean, intuitive, and easy-to-use experience.

Firefox OS introduces a brand new concept for smartphones. Adaptive app search literally transforms the phone to meet your needs at any moment, without the need to download anything. Search for your favorite music artist and get app results to buy songs, listen instantly, buy concert tickets and more. Adaptive app search makes it possible for you to access one-time use or downloadable apps and gives you a completely customized experience with the exact content you want, when you want it.

Firefox OS also includes all the things people expect from a smartphone — calls, messaging, email, camera — and those that they want, such as built-in social integration with Facebook and Twitter, location-based services like Nokia HERE maps which include local transit and traffic information, much-loved features like the Firefox Web browser, the Firefox Marketplace and much more.

Our vision is to create a more powerful, open Web, so as more browsers adopt the open Web technologies that power Firefox, Firefox OS and Firefox for Android, you will be able to take the apps you purchase with you across other platforms and devices. Firefox OS also delivers the exceptional security, privacy, customization and user control that you have come to expect from the Firefox Web browser.



Phone Specifications

ZTE Open

1GHz Processor, 256MB RAM, HVGA display

Dimensions: 114 x 62 x 12.5mm

Screen: Capacitive TouchScreen TFT 3.5" 320x480,262K color

Keyboard: Virtual QWERTY

Camera: CMOS Still Image Capture Resolution (in MP) 3MP FF(interpolation)

Chipset: Qualcomm Snapdragon MSM 7225A, 1GHz

GPS / A-GPS

Battery capacity: 1200 mAh

Talk time: 9 hours 20 minutes

Standby time: 7.8 days

Radio: Stereo FM

Micro USB 2.0 high speed

Data and Wireless standards:

UMTS/HSDPA/HSPA/HSPA+: MSM7225A: HSPA (7.2 Mbps DL / 5.76 Mbps UL)

GSM 850/900/1800/1900

Bluetooth: v 2.1+EDRpower class: class 2Profiles: HSP/HFP/SPP Profiles

Wifi: 802.11b, g, n

Memory and RAM:

Internal memory: 512MB NAND + 256MB DDR SDRAM

End user memory: 130MB

Maximum capacity of external memory card (GB): 32GB



Alcatel One Touch Fire

1GHz Processor, 256MB RAM, HVGA display

Dimensions: 115 x 62.3 x 12.2mm

Screen: Capacitive touch, 3.5" HVGA

Keyboard: Virtual QWERTY

Camera: 3.2 MP

Chipset: Qualcomm Snapdragon MSM7227A, 1 GHz CPU

GPS / A-GPS

Battery capacity: 1400 mAh

Talk time: up to 6.7h(2G), 3h(3G)

Standby time: up to 280h(2G)

Radio: Stereo FM

Micro USB 2.0 high speed

Data and Wireless standards:

UMTS 900/2100 and 850/1900/2100 - 3G Data up to 7.2Mbps DL and 384Kbps UL

GSM (850/900/1800/1900)

Bluetooth v3.0 A2DP

Wifi: 802.11b, g, n

Memory and RAM:

Internal memory: 512MB NAND + 256MB RAM

End user memory: 160MB

Maximum capacity of external memory card (GB): 32GB



Getting Started with Firefox OS

We think Firefox OS is a great new smartphone experience for people who want to upgrade from basic feature phones and who will be experiencing a smartphone or coming online for the first time.

Because Firefox OS is built entirely using HTML5 and open Web technologies, it is free from the rules and restrictions of existing proprietary platforms, allowing developers, handset manufacturers and operators to innovate without boundaries, to provide people with the best smartphone experience possible.

Firefox OS is packed full of features and apps, but we included the highlights in this guide. It's also worth pointing out that despite being Web-based, Firefox OS always provides you with access to all the core phone features like your contacts or calendar when you're offline.



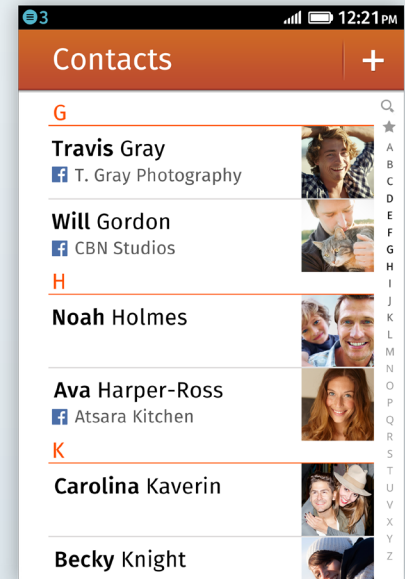
Setup Guide

When you first turn on your Firefox OS phone, you will be presented with a simple Setup Guide. This guide walks you through the steps of setting up the language, WiFi, data, location, correct time zone and date. It's important to ensure all these details are up to date for the optimal performance of your phone.

Towards the end of the Setup Guide, you will be asked if you would like to help improve Firefox OS by sharing certain data about performance, hardware and configurations to help make the operating system even better. As a non-profit, Mozilla uses this data for the sole purpose of improving the operating system (see [Privacy & Security](#) section for more on this). You can also opt to submit an email address to become part of the Mozilla community and be alerted to new products or Mozilla events.

Facebook Social Integration

If you select the Facebook contact import option in the Setup Guide, you simply insert your Facebook credentials and then select which contacts you wish to import. When you go to your phone contacts, you will see each person's associated Facebook photo, phone number and email address, home location and the ability to quickly message them either via SMS or email (if listed). You also have the option to post a message to their wall, view their Facebook profile or highlight them as a favorite contact (which automatically pushes their entry to the top of your contacts list).








Phone Tour

The phone tour appears after you set up your device. It is designed to provide a simple overview of how to navigate, change your phone's settings and use Firefox OS, including how to browse, delete or move apps and how to quickly access notifications.

The Lock Screen and Setting a PIN


Once you are through the Phone Tour, you are presented with the lock screen. By swiping up, you can either unlock the phone or get direct access to the camera to take a photo or shoot video. You can also set a PIN to protect the content on your device by going to 'Settings / Phone Lock / Passcode lock' and entering a PIN.

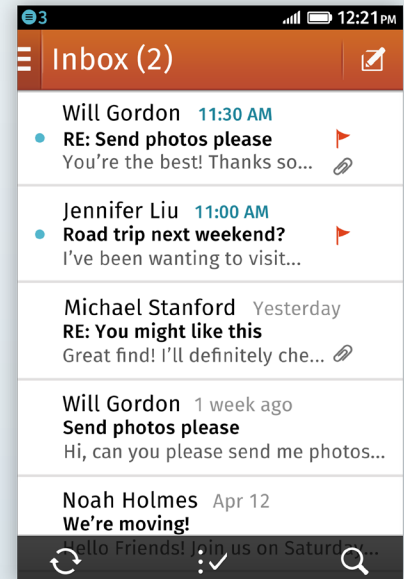
Notifications Panel

The Firefox OS Notifications Panel, which is accessed by swiping down from the top of the screen, provides an easy way to see missed calls, voicemail, SMS text messages and any other activities on your phone. It also allows for quick access to: phone settings , data usage, WiFi , operator data , Bluetooth  or Airplane mode .




Setting up Email

A number of email services are supported by the email setup wizard including Gmail, Windows Live Mail and Yahoo! Mail. You just need to enter your email credentials to get started. For more advanced email users, there is a manual mail setup option which includes support for Exchange, SMTP or IMAP email providers, and can help you use multiple accounts. Email also supports viewing photos and adding them as attachments from within the Gallery app . Before composing an email, we recommend you turn on 'Word Suggestion' by going to 'Settings / Keyboard / Word suggestion,' which will bring up word suggestions as you type an email or text message.



Firefox Web Browser


Firefox OS phones, of course, come with the Firefox Web browser, which is used by hundreds of millions of people worldwide. As always with Firefox, you can use the Awesome Bar (URL Bar) to get where you want to go quickly. Just start typing your search term and the autocomplete function includes possible matches from your browsing history and bookmarked sites. Firefox learns as you use it — over time, it adapts to your preferences and offers better matches.

The Firefox Web browser also allows you to easily add your favorite sites to your bookmarks or add them as shortcuts on your home screen by navigating to a website and then selecting the star icon  and choosing to either 'Bookmark' the site or 'Add to home screen.' The Firefox Start page provides quick access to your Top sites, Bookmarks and History, while Tabs let you multitask by simultaneously browsing more than one Web page.


Firefox offers the Mozilla-pioneered, [Do Not Track](#) feature, so you can tell advertisers that you'd like to opt out of tracking used for advertising — this is turned on in Firefox OS settings. More on this in the [Privacy and Security](#) section.



Camera

The camera can be accessed in two ways, either directly from the lock-screen for quick access to ensure you don't miss those fast moving moments, or by selecting the camera app from the home screen. On first starting the camera, you will be asked whether you want it to use your GPS location to tag your photos — this embeds the GPS coordinates of where you take your photos within the image (this data is not collected by Mozilla or its partners, it is only embedded in your photos), to allow you to more easily categorize your photos at a later date. The camera app also lets you shoot video by selecting the video icon  at the bottom right of the screen.

Gallery, Image Editing and Sharing Your Photos with Twitter

After taking photos, you can easily edit them in the Photo Gallery using the built-in photo editor, by selecting the pen icon . Here you'll find a number of useful image editing features including:

Exposure

You have the ability to increase or decrease exposure to ensure you get the very best photo. You can save the new version of your photo to your gallery and keep the original image.

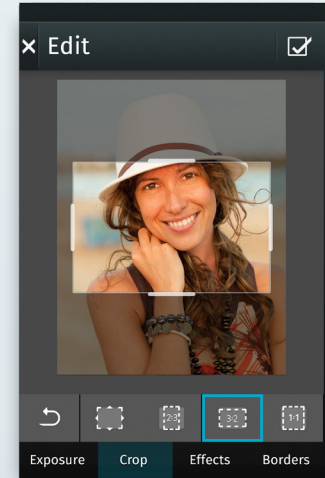


Crop

Even great looking photos need to be cropped. With the Crop feature, you're presented with a number of popular crop ratios like 2:3, 3:2 or 1:1, which helps judge the correct size when planning to put photos in frames or albums. You can make the crop area larger or smaller by dragging the border to where you want it until you find the crop option most suitable for your photo. You can save the new version of your photo to your gallery and keep the original image.


Effects

There are a number of filters or effects that can completely change the look of an image, depending on what kind of mood you're trying to convey. You might want to turn a color photo into a black and white image to create a feeling of a different era, or add a sepia-tone effect, for a feeling of antiquity. Have fun! Whatever you decide, any new image you save will not overwrite your original.



Borders

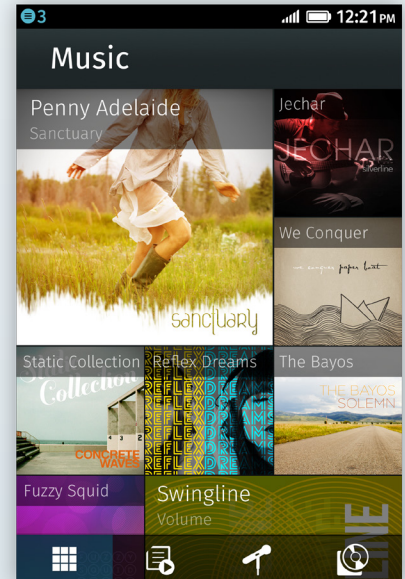
You can add a number of different white or black borders to your photos to make them appear to stand out more prominently.

Once you're done editing your images, they can be set as your wallpaper or shared with friends using Twitter (if installed and signed in), email or Bluetooth, by selecting the  share icon.



Music App 🎵

Music (MP3, AAC, WAV audio files) can be added to your Firefox OS phone. Files can be sorted by playlist 📁, artist 🎤 or album 📀, and album art is carried through to the music app during file transfer. Songs can be further categorized and searched for by the highest rated, recently added, most played or least played songs. There is also a shuffle feature 🔄 under the playlist menu to play a mix of all your songs at random. DRM-free songs can also be shared with friends using Bluetooth, by long-pressing on the song and making sure you are connected with another Bluetooth device.



How to use the Music App 🎵

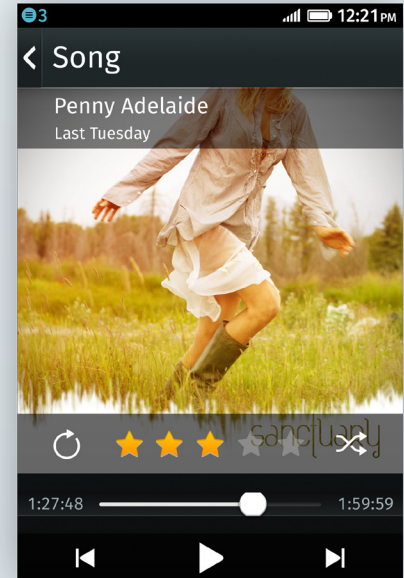
Tap the Music app to get started.

To play a song, tap the related album artwork or find the song you are looking for by searching your playlists 📁, artists 🎤 or albums 🎧.



You will see the song details: album artwork, name of the album and song title, star rating and controls to pause, advance to the next song or go back to the previous song. You can select to repeat 🔄 the song or rate it. You can also turn song shuffle 🎲 on or off providing you have more than one song in your playlist or album.

You can close the music app and open another app and the music will play in the background.

To get back to the music app, you can either tap it again from the home screen or simply long-hold the home button and locate the music app from the multitasking menu.



Here's how to add this music to your Firefox OS phone:

1. In the Settings app , scroll down to the Device section and tap 'Media storage.'
2. In the Media storage settings, enable 'USB mass storage.'
3. Connect your Firefox OS phone to your computer using a USB cable.
4. On a PC, you will see the phone's SD card appear on the desktop as an additional drive. On a Mac, click the 'Finder' in the dock. A new Finder window will open and you should see your phone's SD card listed in the left sidebar under 'Devices.'
5. Select your SD card in the left sidebar (on PC or Mac).
6. Copy and paste your music files (or folders with music files in them) on to the SD card window.*
7. When you are finished, eject the SD card from your computer and disconnect your phone. You can now access your music in the Firefox OS Music app .

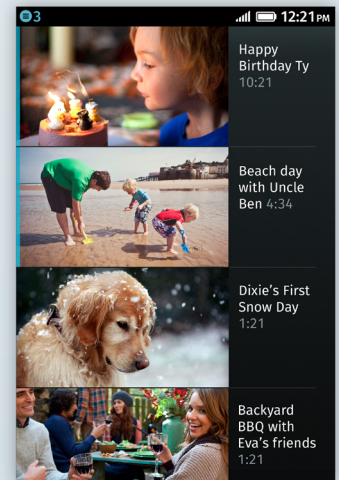
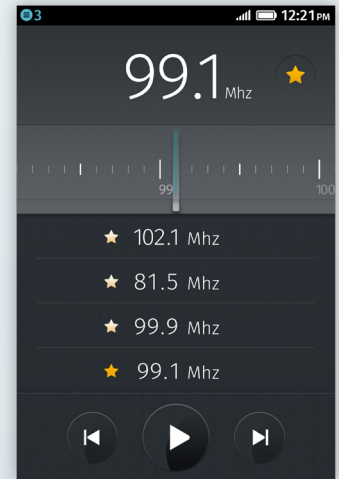
*If you want to add music from a music provider, you must check which files are DRM-free (i.e. not locked to your provider) as these are the only songs you'll be able to transfer.

FM Radio 📻

The FM Radio allows you to listen to live radio broadcasts by simply plugging in your headphones (which act as an antenna). When opening the FM Radio app and finding a station you like, you can bookmark it by selecting the star icon ☆ for quick access to the station later.

Video Player 🎬

You can take videos with the camera app and view them either in the Gallery or the Video Player app. You can import videos (H.264 and VP8 formats) to the Video Player app using the same method for adding music. Videos can be quickly reviewed using the play bar at the bottom of the screen.



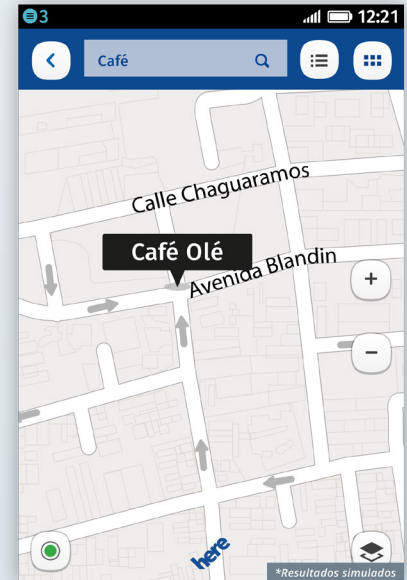
Nokia HERE Maps

HERE Maps from Nokia offer a rich set of features for navigation including Map, Satellite, Public Transport and Live Traffic views. Search for Points of Interest (POI), view local reviews or share and create your own POIs with Nokia 'Collections.' You can use 'Collections,' to save POIs in Nokia's Cloud and access them from any connected computer, or your Firefox OS device. You can also save maps for offline use later.

Using the device's GPS and location services, HERE Maps can pinpoint your location (when you grant the app permission) and give you directions (car, walking and public transportation) to get you to your destination. Traffic Incidents allows you to view Accidents, Construction, Congestion and other traffic conditions.

Internet Sharing (WiFi Hotspot)

You can use your Firefox OS phone as a WiFi hotspot (this may require an additional service fee depending on your carrier) by going to 'Settings / Internet Sharing / WiFi hotspot.' Here you can change the name of your hotspot, add a security password and decide if you would prefer to tether your phone to a USB-connected device, such as a laptop, instead of using WiFi.

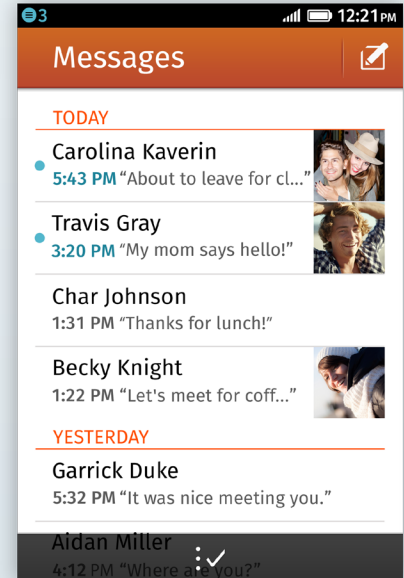


SMS

You can easily send an SMS by opening the SMS app, selecting a contact and writing a message to them. Threaded SMS view allows you to keep track of your individual conversations.

Multitasking

By holding down the home key, you can quickly switch between running apps by swiping the app windows to the left or right and can stop apps running by pressing the 'x,' or swiping the apps window up.




Web Apps and Adaptive App Search

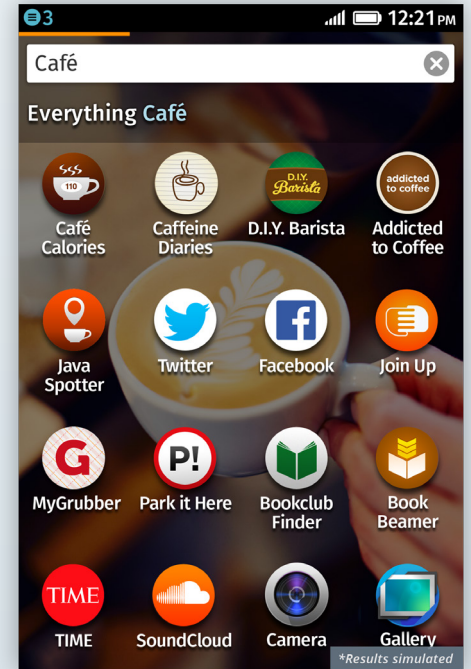
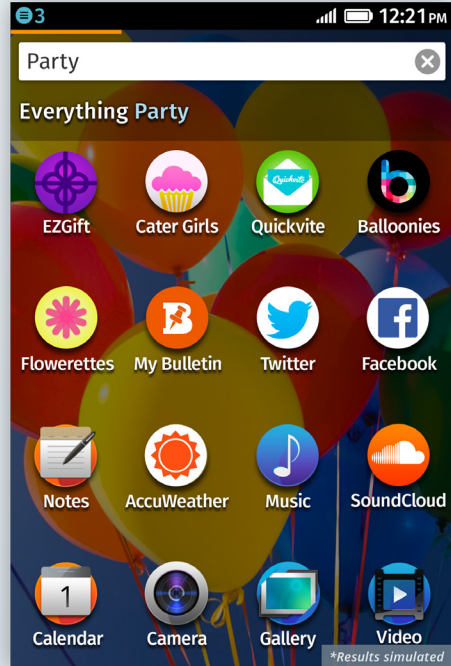
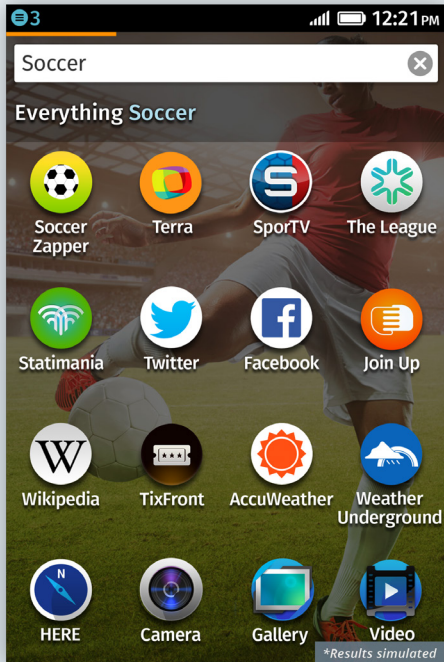
Mozilla is unlocking the Web as the platform for apps because the Web enables limitless innovation and allows every Web developer to easily create and distribute HTML5 apps. With Firefox OS, you can easily discover apps that you need only once (one-time use apps) or find apps that you might download to use frequently. Firefox OS gives you a completely customized experience and helps you get the exact content you want, when you want it.

Developers can now build apps powered by open Web standards (like HTML5, JavaScript and CSS) and new Mozilla pioneered Web APIs that enable Web apps to access the underlying capabilities of the handset previously only available to native apps (e.g. camera, telephony, messaging, Bluetooth). And just because Firefox OS is built on Web technologies doesn't mean you have to be connected to the Web to use any of the core phone features, like making a call.

App Search that Adapts to Meet Your Needs


Firefox OS reinvents app discovery by constantly adapting to your life and interests at any given moment, providing you with a list of relevant, new and previously downloaded apps based on the topics or search terms you enter. When you swipe to the right from the home screen, you are presented with a search bar and list of apps by topic for the Adaptive App Search. If you enter the name of your favorite soccer team in the search bar, your phone background image will change to represent your team and bring up multiple app options — maybe for buying tickets or merchandise, getting the latest team news, or getting answers to all your questions about your team from Wikipedia. It makes it fast and easy to find the app for what you're interested in at any moment.

Once you find an app, you can use it once or download and keep it. Just locate the orange ^ arrow at the bottom right of your screen to either refresh the page or save the app as a favorite by tapping the star icon . You can save just the app or the app including the search term to your home screen.

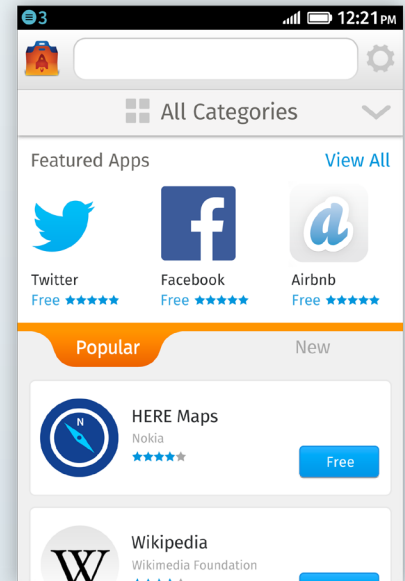


Firefox Marketplace

Another way to find apps is through the Firefox Marketplace, which offers apps in categories like games, news and media, business and productivity. These Web apps can be tied to you and your online identity using Persona, Mozilla's online identity system, which in the future will allow you to take your apps across multiple devices and platforms. Leading mobile apps and Web developers around the globe have leveraged the power of the Web unlocked by Mozilla to release apps in the Firefox Marketplace.

To try it out, select the Firefox Marketplace icon  from your home screen and you will see a number of different app categories including Featured apps and New and Popular apps. You can rate or review any app.

Any app can be downloaded by simply tapping on the app and pressing the install button. You'll notice the install happens immediately, saving the app to your home screen. There's very little waiting during install or when updating apps because most apps are Web-based.



Privacy and Security

Firefox leads the industry in offering privacy and security features like Do Not Track to give you more control over your personal browsing information.

App Privacy and Do Not Track

Do Not Track lets you tell websites and apps that you would like to opt-out of tracking used for advertising. Mozilla introduced Do Not Track to the market and Firefox was the first desktop and mobile browser to offer the privacy feature. Firefox is leading the Web toward a universal standard with this feature. Do Not Track comes off by default on Firefox OS, but can be easily enabled by going to 'Settings / Do Not Track.'

Firefox OS Security

Mozilla is an industry leader and trusted advisor when it comes to Web security. In Firefox OS, Mozilla has implemented a comprehensive, integrated and multi-layered security model that delivers best-of-breed protection against security risks. This includes:

- Employing implicit permission levels based on an app trust model

- A sandboxed execution at runtime

- API-only access to the underlying mobile phone hardware

- A robust permissions model, and a secure installation and update process

For more information on Firefox OS Security visit: developer.mozilla.org/Firefox_OS/Security

The Web is the Platform

Firefox OS is built on an open platform, using a Linux kernel to boot into a Web runtime environment using Mozilla's "Gecko" Web engine, the same engine that powers the Firefox browser. Gecko exposes the hardware capabilities of the phone to Web content through Mozilla pioneered [Web APIs](#). Firefox OS enables the development of smartphones where every feature can be developed as a Web application (calling, messaging, browsing, etc.), where access to the underlying capabilities of a smartphone (Bluetooth, battery status, contacts) were previously only available to native apps.

The Streamlined Firefox OS Software Stack

Gaia: User Interface

Firefox OS delivers a beautiful, clean, intuitive and personalized user experience that is completely based on HTML5 and open Web technologies. You may see different variations of the Firefox OS device user interface as modifying the look and feel is as simple as editing a website.

Gecko: The Web Runtime

Firefox OS is built with Mozilla's Web runtime, the same Gecko rendering engine that powers the Firefox Web browser. The application layer is developed exclusively with open Web technologies, like HTML5, CSS, and JavaScript without the need for a single-vendor native API layer between the Web engine and the kernel. Why? Because we developed Web APIs to access the underlying capabilities of the handset previously only available to native apps. The smaller stack means Firefox OS can also target low to high-end hardware.

Gonk: Kernel and Drivers

This level consists of the kernel, system libraries, firmware and device drivers for enabling certain hardware features such as Bluetooth to talk to apps accessing the Web Engine. Firefox OS phones use an open Linux kernel which shares some of the same components used by many mobile device manufacturers today.

HOW FIREFOX OS CONNECTS HTML5 TO HARDWARE

The diagram illustrates the Firefox OS architecture stack, showing the connection from HTML5 content to hardware. The stack is composed of several layers:

- Gaia:** User interface with HTML5-based Web content. This layer is shown as a transparent green sheet with various app icons (Phone, Messages, Browser, etc.) and a status bar at the top.
- Gecko:** Web runtime with open Web APIs. This layer is shown as a transparent white sheet containing JavaScript code snippets related to battery status and charging events.
- Gonk:** Open Linux kernel and drivers. This layer is shown as a transparent grey sheet.
- Removed:** Single-vendor native API layer between engine and kernel. This layer is shown as a dashed grey sheet, indicating it has been removed from the stack.
- Hardware:** The bottom layer, represented by a black smartphone device.

The diagram shows the layers being peeled away from the hardware, revealing the underlying system components. The Gaia layer is the topmost, followed by Gecko, then Gonk, and finally the hardware at the base. The removed layer is shown as a dashed sheet between the engine and kernel layers.

```

    navigator.battery;
    level = Math.round(b.level);
    charging = (b.charging) ?
    "charging" : (b.chargingTime > 60.0 ?
    "discharging" : "not charging");
    b.addEventListener("levelchange",
    .show);
    b.addEventListener("chargingchange",
    .show);
    b.addEventListener("chargingtimechange",
    .show);
    b.addEventListener("dischargingtimechange",
    .show);
  
```

Thank you for your interest in Firefox OS.

The vibrant Mozilla community and our dedicated partners have worked hard to bring the best smartphone experience possible to get the next billion people online.

If you have any questions, please do not hesitate to contact

press@mozilla.com.



Firefox OS

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Firefox OS