



Android™ Performance Optimization Guide

by AVG, an Avast® company

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Improve battery life

Free up storage space

Save mobile data



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7 Ways to Boost Battery Life, Free Up Storage and Reduce Mobile Data Traffic

If your smartphone or tablet is suffering from poor performance, battery life and is constantly running out of storage, these 7 tips will help you get it back to its feet.

Our [AVG Android App Performance & Trend Report](#) shows that some apps slow down your handset, drain its battery and eat up its storage. While our report helps you understand which apps to avoid or use with care, we know that there are apps you rely on or simply enjoy and want to keep using. It's worth noting, however, that even the latest version of Android is not fully optimized to save precious resources.

In the following 7 steps, we will show you how to squeeze every single ounce of battery life out of your device and help you clean up the things you don't need. In addition, our steps will help you save mobile traffic whenever you can to manage your bills.



Insights Into Android Device and App Optimization

Android devices have to walk a fine line trying to restrict the resource consumption of apps but not limit their functionality too much. We all love our apps and we don't want to stop using them.

In this Guide, we'll walk through not only how to limit your app resource use but also how to get the most out of your battery life, device performance, storage and data plan on Android devices in general.

This guide was written for most Android devices running Android 3.x, Android 4.x and Android 5.x including:

- Smartphones (such as the Samsung Galaxy S6)
- Tablets (Samsung Galaxy Tab, Nexus 7)

Please note that though many phone and tablet makers use Android, they tend to change the way things look and work.

We'll show you how it works on different systems, but if you can't find an option for your exact device, don't worry as many of the steps are the same for most devices.

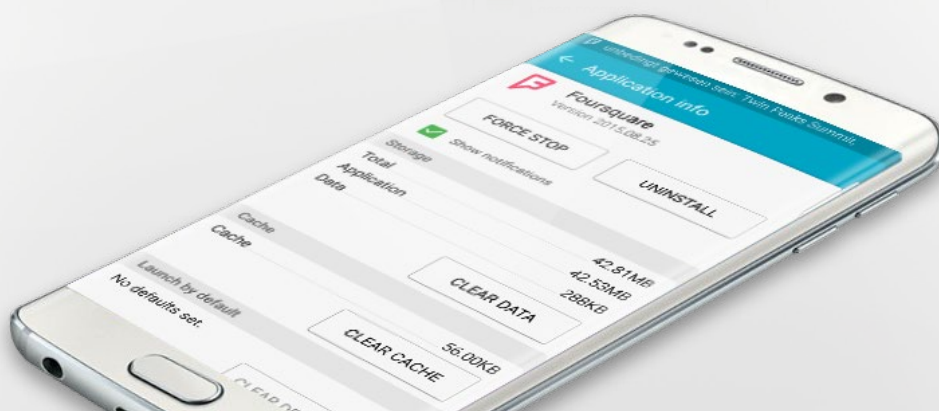
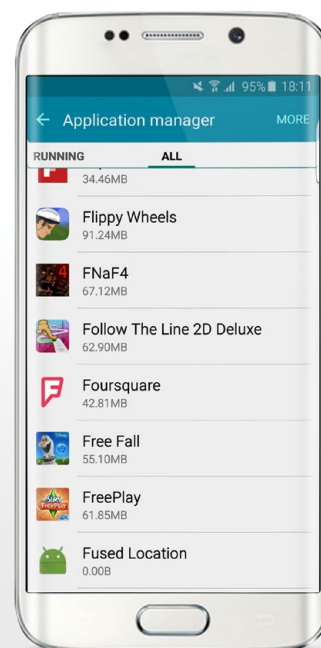


Limit Notifications to Save Battery Life, Performance and Mobile Data

Phone notifications are one of the most useful mobile inventions, giving users information they need to know about new appointments or messages at a glance.

However, not all notifications are necessary and most cause the phone to be constantly active, increasing the drain on the battery and mobile data.

1. To turn off unnecessary notifications, you need to go into the **Apps** or **Application Manager** sections of the settings menu on your device. This will show you a list of all the apps you have running.
2. To turn off notifications for an app, such as **Foursquare**, tap on it and uncheck the **Show Notifications** entry.



✓ Further Limiting an Apps' Battery & Traffic Drain

Limiting notifications is only one side of the coin if you want to reduce the impact an app has on your device.

In each app's settings you will find additional options and features you may want to turn off. We're going to use Facebook as an example to show you how it's done.

Ranking among the most resource-heavy apps, there are a few things any user can do to limit Facebook's use of resources.



1. As with before, the first step is to go to the app's settings page (via the settings page and **App Settings**):
2. From there you will see a number of features that will tax your device, such as:

Facebook chat

If you do not use the chat feature, you can turn it off and have the standalone Messenger app serve as your only way of sending and receiving apps.

Refresh interval

Every hour, Facebook automatically downloads content in the background which has an impact on battery life and traffic, even if you're not using the app. You can limit this to every four hours or turn it off completely. turn it off completely.

Location

Facebook can use the built-in GPS of your device to determine where you are and include that data in posts you make. This too can be turned off to save battery life.

Notifications

This is an alternative way to turn off the app's notifications.

While this is specific to Facebook, many apps on your smartphone or tablet have similar settings. In general, however, you should watch out for any that look to involve background activity, such as "Refresh Interval" or "Background Refresh" and limit the use of built-in features such as GPS/ Location and Bluetooth.

Free Up Space & Limit Mobile Traffic

Our top storage offenders often start off as small apps or games but collect temporary clutter over time, and swell in size.

When this happens, the impact is not just on your device's storage, which obviously declines, but also on your mobile data. Many apps tend to download data in the background in order to be instantly available once you open them. The NYTimes app for example automatically downloads news stories to your devices every 24 hours – even though you may not read all of them.

Almost every app stores temporary files, cookies and other data in order to work. In our internal tests, we found that simply browsing through a typical Facebook timeline for **roughly 60 seconds produced over 5 MByte of temporary files** – including downloaded pictures, ads, cookies and more. **The NYTimes** app created a cache of 10 MB when we watched a 20 sec video and opened one news post.

This cache can be deleted on either a per-app basis or automatically. In this next tip, we'll show you two ways to limit the growing storage impact of apps.

1. Open up the **Application Manager** or **App** menu from within your Settings menu. Tap on an app, such as NYTimes or Facebook and hit the **Clean Cache** Button.



2. Doing this for each app on a regular basis can be quite time consuming, so a tool like [AVG Cleaner for Android](#) (screenshot above) can speed this up. It scans all apps for these caches regularly and allows for the removal of all of them at the same time – by tapping a button or automatically. The only downside of cleaning a cache may be that information, for example a Facebook image, which has been loaded and cached, may need a few extra moments to load when you open it the next time.

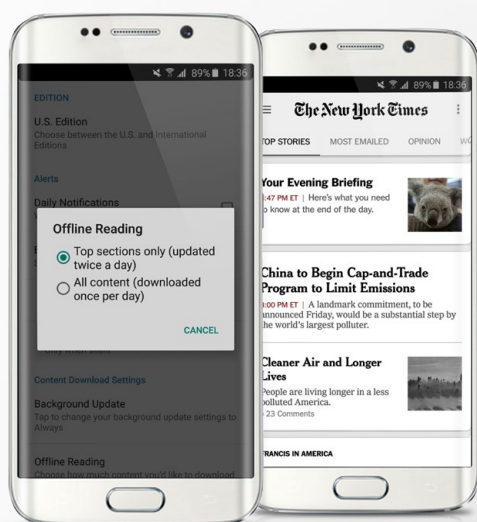
Reduce Data Traffic: Limit the Offline Storage and Background Downloads of Apps

In some cases, an app will include settings which allow the user to limit the amount of data it downloads over Wi-Fi or mobile data and stores locally.

Below we outline how to do that, again using the NYTimes app as an example:



1. Open up the app in question and tap on the three little dots in the upper right corner. Go to **Settings**. From here, you can turn off “Offline Reading” by tapping on **Offline Reading** and selecting **Top sections only**.
2. You can also turn off **Daily Notifications** to limit the amount of stories downloaded and shown on your lock screen and notification center.



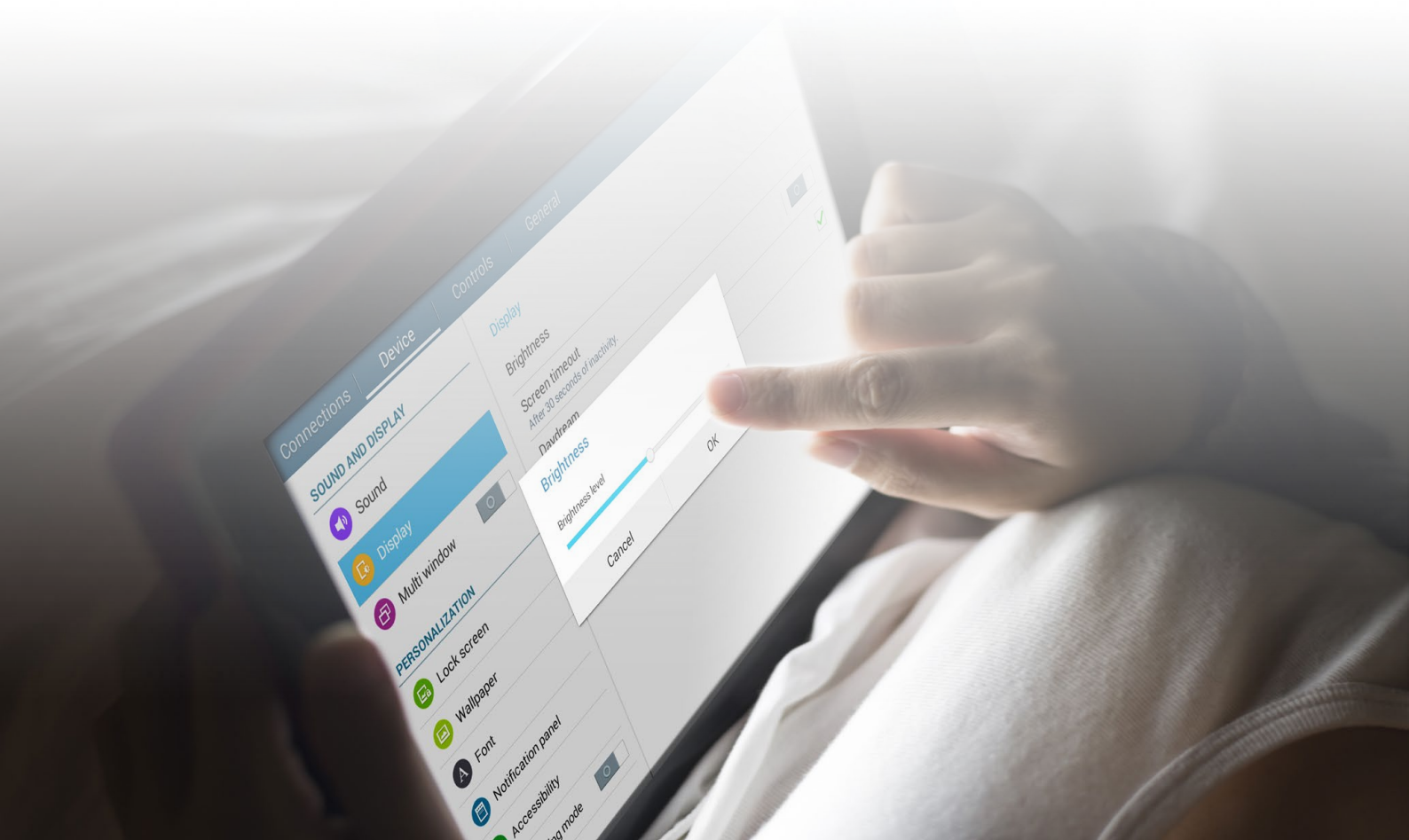
There will be some people who do not want to limit their apps to work in a certain way and in some cases – like with games or video streaming – there’s no technical way to reduce the amount of battery consumption or mobile data usage. Which is fine – this is all about user choice. If you do choose to take action however, these general recommendations should help Android device users reduce the overall resource consumption so they can enjoy using their apps without limitation.

✓ Your Display – Battery Drainer No. 1

These days, virtually all Android smartphones or tablets come with super high-resolution displays that are also extremely bright. While that may be great for browsing the web, sharing photos or playing games, these displays literally eat into your battery life.

Did you know for example that on some smaller tablets with high-resolution displays, a display set to full brightness is responsible for 80 percent of the entire power consumption!

If you're not in bright sunlight, we recommend turning the brightness levels down to **50–70 percent**.



Turn Off Wi-Fi, Bluetooth and GPS to Save Battery Life

Your Android device is full of features that eat into your battery life. It is important to make sure they're off when they're not being used:

Wi-Fi®

Nowhere near a wireless connection? Then turn off your Wi-Fi. Otherwise the built-in Wi-Fi receiver will constantly try to scan for networks – which can increase battery usage by more than 20 percent.

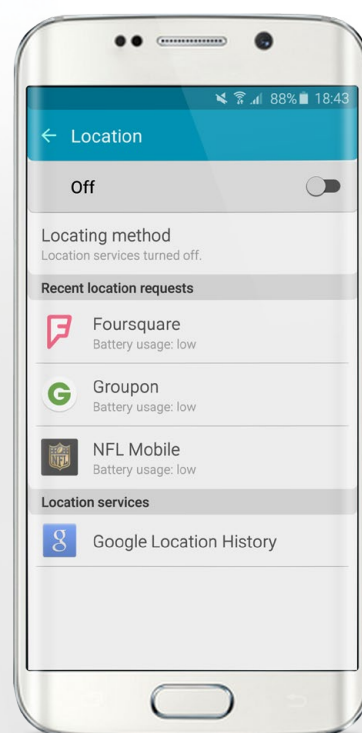
Bluetooth®

Not using a Bluetooth headset or connecting your Android device to your car? Then this setting should also be turned off, otherwise it will continually scan for compatible Bluetooth devices, using up battery as it does so.

GPS

Your mobile GPS is probably one of the biggest power suckers there is. The built-in GPS antennas are really power-hungry, and if your GPS is turned on they continue to draw power even if you're not actively using them – mainly thanks to the alarming number of apps that regularly use the GPS feature such as Google Maps, Facebook or Twitter. . . So if you're at home or just don't need to use any GPS, turn it off.

You'll find the settings for all three features in your swipe down menu or under Settings. Go to **Wireless** (or **Wireless and networks**) and switch off the relevant feature when not in use. Note: GPS can sometimes be referred to as "Location-based services" or can be found under the Privacy section on some smartphones.



✓ Getting Rid of Performance-Sapping Apps

Your Android device is much like your PC: the more apps you install on it, the slower it will get and the sooner it'll run out of juice.

It won't happen with one app nor probably with five, but once you've installed a dozen – or hundreds – of apps, you'll notice a significant slowdown. That's because many apps run features even when you're not using them. So how can you be selective about which apps you do and don't want on your phone? There are tools that help you identify the worst offenders for performance and battery life.

Ours is the free [AVG Cleaner](#) app. Here's how it works as an example:

1. Firstly, install the free app from the Google Play Store or the Amazon Kindle store and launch it.

Next, go to the **App Manager** page. This will give you an overview of all apps that you haven't used in a while and that are draining your resources.



Addressing the Issues Getting Rid of Performance-Sapping Apps cont...

2. The screen is divided into the following categories:

Storage Usage Sort by Storage Usage will help you find the largest apps, such as games or video editing apps, in which you may not need anymore.

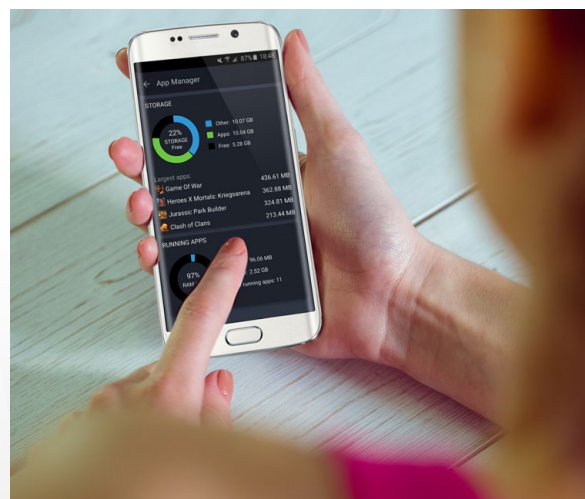
Running Apps Shows all running apps and how much RAM they are consuming

Unused Apps Shows the apps you haven't used in a while. This will help you determine which apps you may have forgotten about and end up sitting there slowing down your phone and tablet and consuming precious space.

Data Usage If you're on a monthly data plan with your mobile carrier, saving every Megabyte counts. If you sort the apps by Data Usage, you'll quickly find the top apps that are using up your monthly data. Again, this will help you either uninstall the app if you don't use it or turn off (or reduce) its background data usage.

Battery Usage This helps you figure out which are the most power-consuming apps on your device. It's very likely they too will have an impact on performance. If you don't need some of the top offenders (for example, apps in the list that drain more than 5% battery), you can get rid of them. If you need them, however, open the settings (if this function is available) and reduce the background activity.

Tap on each category to get to a list of the top resource-hungry list, and remove them if you don't need them anymore.



We hope these tips will be useful. This report is not designed to be judgmental of apps that do require resources to run. The goal is to identify our favorite ones which are heaviest on Android smartphone and tablet resources, and see what can be done to reduce this impact so we can continue to enjoy them while experiencing less of the side effects.

Contact Information

For further information, please visit:.

Our blogs, press information and resources on how to get the most out of your connected devices at AVG Now: <http://now.avg.com>

Our website for details about our performance products: <http://www.avg.com/performance>

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