# Optimizing Smart Phones

## 1. Restart the phone.
   This is a temporary option, but it works! As long as the problem does not persist, it may have been a one-time error. These things happen occasionally.

## 2. Factory Reset your phone.
   Resetting erases everything and brings your device back to its original, "like new" state. Back up your contacts, memos, and any important information (such as saved passwords in browser) before taking this step. You should also check your Google or Apple account ID.

## 3. Update your smartphone firmware/apps.
   Firmware updates can fix some lags, bugs, and other issues that you may not be aware of. Such issues crop up with reasonable frequency, so updating regularly will ensure the optimum performance for your phone.
   Updating apps may help them run faster, or fix problems. Go to the App Store and tap "My Apps" to see what you have installed, or find the "Apps List" in the Settings menu, depending on your device. If there are updates, you will see an Update button next to the app icon. On Androids, you can tap "Update All" to update ALL apps.

## 4. Check the internal storage space.
   A low amount of internal storage memory could be the reason behind slowdown your phone is having. If your available space is less than 1GB, it is time to start emptying the phone of old programs, pictures, and especially videos, which take up the most space.

## 4a. Uninstall any unused apps.
   Go to the Play Store, and tap the 3 bars at the top-left. Then tap My Apps. Uninstall anything you don't use regularly.

## 4b. Move your personal files to external storage.
   Move your pictures, mp3 files, videos, etc., to a microSD card (if your device supports it), to save space.
   Go to your File Browser (called something different on every Android). Choose to view All Files, then Phone Internal Storage Memory. From there, you can move the files in your Pictures, Music, Video, and Downloads folders to Folders you will create on the SD Memory Card with the same names. In doing so, the phone should detect them on the SD Card, and your programs should still see them.
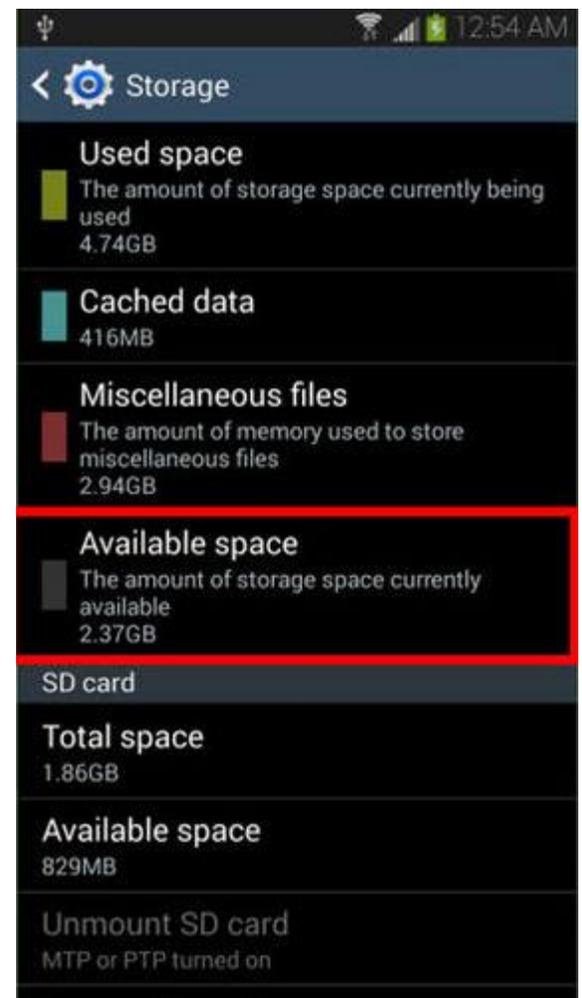
## 5. Wipe your SD Card.

Not all Androids have one (most iDevices don't), but if you do, wiping it can help to speed access up slightly. Basically, you backup the card, format it so that it's clean and empty, then put your files back. The easy way to do this is with a computer:

1. Turn off your Android, then take the SD card out of the device. Place it in an adapter so that it can go into an SD card slot on your computer, or into a media card reader plugged into a USB port on the computer. Your computer may take a minute to detect it.
2. Next, make a folder on your computer's Desktop to put all the files in. Name it something you'll remember, like "SD Card Backup".
3. Open "Computer" ("This PC" on Windows 8) and your MicroSD Card should show up.
4. **Copy** all the files from the SD card and **Paste** them into the folder you created. Make sure they are copy properly, and test them if possible. You may wish to take this time to Delete anything you no longer need/want, however, if you are unsure of what something is, don't delete it. Anything in the Downloads folder may safely be deleted.
5. Back in "Computer", right-click the SD card and click Format. Format the card as FAT32. If this doesn't work, you can plug it back into the phone or tablet and format it there.
6. Once it is freshly formatted, Copy all of your files back to it. You may want to keep a copy of your files on your PC for backup, if you like.
7. Once this is done, Use the icon at the bottom by the time (looks like a USB connector) to Eject the MicroSD Card.
8. Put the MicroSD Card back in your device, and start it up.

If you had some apps installed on the SD Card, you may need to reinstall them, but it should keep any saved data for them.
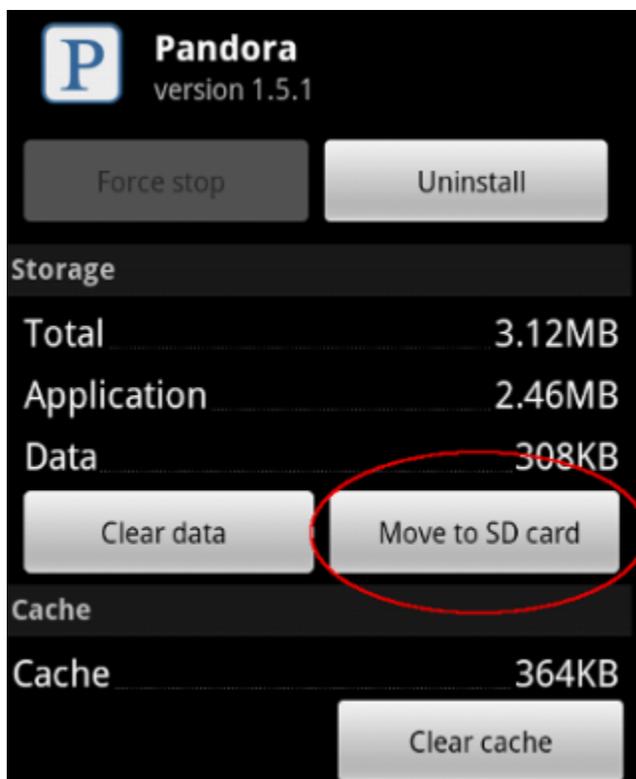


## 6. Move Apps to SD Card.

Go to Settings and find your App Manager (located in a different place on all Android phones). There, you should see a list of your apps, and how much space they take up. Tap on one, and tap the Move to SD Card button to have it installed on the SD Card instead of internal memory. If the Move to SD Card button is darkened or grayed out, it means that app CANNOT be installed to SD Card.

There is no limit to how many apps can be set to run from SD memory, other than the size of the memory card.

There are also apps that can automate this process, but they may or may not work as expected.

## 7. Delete unneeded files.

Remember all those times you said "Wait, let me take another one" after taking a picture? All those pictures you didn't want are still there. The Downloads folder can also be emptied. To delete unneeded pictures, just open the Gallery app and delete the ones that need to go. You can delete videos here as well. You can always open the pictures to compare them first, so that you are sure you're keeping the best copy. Better yet, if you have a TON of pictures, you can move them to your computer, and delete permanently from your device.

Do the same thing for music: open the Music folder using the File Browser from your apps list. Then delete any music you no longer listen to. Do the same thing with the Downloads folder from within the File Browser app. The Downloads folder may contain PDFs or ZIP files you were emailed and downloaded, and any other files you had to download to open. If there is nothing in there you want to keep, go ahead and delete them all. Or you can move them to their appropriate folders on your SD Card.

## 8. Remove any unnecessary shortcuts and widgets

Shortcuts and widgets use precious phone memory space, so the less you have, the smoother your mobile experience. You can remove widgets with a long press and a drag off screen, so it's worth going through your Home Screens and emptying them out.

## 9. Clear your cached data.

Cached data keeps some things in a local storage, like map data for your GPS app, so you don't have to download or generate them each and every time you open the app itself. You can clear the cache for an individual app in that App's info page in Settings, but you can also wipe the entire cache for all apps at once.

Open Settings, and go to the device storage page. Tap **Cached Data,** and tap Yes on the pop-up prompt. The next time you open an app, its cache will be rebuilt as needed. While you're there, you can clear miscellaneous data that is cached by tapping **Misc.,** and checking the boxes next to files for programs you **know** you no longer need the data for. **If you don't know what a file is for, don't delete it.**

## 10. Clear your internet "cache".
- Clear Cache removes temporary stored files from websites you've visited.
- Clear History removes the list of visited web sites.
- Clear Cookies removes your login and/or shopping cart for a specific website.
- Clear form data removes information you entered in forms, like Name, Address, etc.

**Android:**
**-Browser:** Open Browser. Tap the Menu button in the upper right. Tap Settings > Privacy & Security.
**-Chrome:** Open Chrome. Tap the menu button in the upper right. Tap Settings > Advanced > Privacy > Clear Browsing History
**iPad:** Go to Settings and tap Safari. Then choose to Clear History, Cookies, or Cache.
**Windows RT:** Open Internet Explorer. Swipe from the right, and tap Settings > options. Scroll down and under "History", tap Select. Check what you want cleared and tap Delete.

## 11. Help your battery last longer.

Larger screen smartphones drain battery faster. Here are a few ways to minimize this:

    **a.** Turn the brightness down

    **b.** Turn Wi-Fi and Bluetooth off when not in use

    **c.** Turn off any eye candy

    **d.** Get a second battery (keep it in your glove box or in your desk)

## 11e. Keep it fully charged.

Users will note their Smartphones work best and last longer when kept fully charged. Avoid using a device until it completely runs out of power.  This damages its ability to hold a charge and affects its performance. At the end of each day, plug the device into the charger. If you have a spare USB cord, you can charge it while at work by plugging into your computer (be sure it isn't a shared computer!). It's also important to avoid using the device in extreme temperatures, as this can also affect the battery and lower its storage capacity.

Most lithium-ion batteries in cell phones last 3-5 years if you take care of them.

| Temp. Stored At | Capacity Loss |
|---|---|
| 32 F | 6 percent capacity loss per year |
| 77 F | 20 percent capacity loss per year |
| 104 F | 35 percent capacity loss per year |

## 11f. Disable Live Wallpapers!

I know that it's fun now and then to watch the pretty colors move across the screen, or to impress your friends with a live circuit board background, but resist the temptation! Live wallpapers are the one thing that anyone with an android phone can simply avoid using to gain a lot of performance! If you have a live wallpaper, uninstall it and notice the performance boost, and the saved battery life!

## 11g. Disable other animations.

Android's hidden Developer Options menu allows you to dramatically accelerate the animations or disable them completely. First, open the Settings app, scroll down to the bottom, and tap "About phone" or "About tablet". Locate the "Build number" field and tap it seven times. You'll see a notification saying you're now a developer.

Tap the back button and tap the Developer options item that's now appeared near the bottom of the Settings menu. Activate the Developer options slider, scroll down, and modify the "Window animation scale," "Transition animation scale," and "Animator duration scale" options. You can select "Animation off" to disable them or "Animation scale .5x" to make them twice as fast as normal.

Apple fielded a lot of user complaints for the speed of animations in iOS 7. They've sped them up since then, but there's still a way to reduce the interface's animations.

To do so, go to Settings > General > Accessibility. Tap the "Reduce Motion" option and activate the switch. This won't eliminate the animations entirely, but it replaces the motion animations with a fade that feels cleaner — and maybe faster.

## 12. Root the phone (<u>Advanced Users Only</u>).

  Rooting gives you additional options to do with your phone. Although rooting is a risky solution, it is not as risky as it used to be. Unsuccessful rooting process might brick your phone (i.e., it will malfunction). In addition, a successful root will void your warranty. However, you can always unroot the phone (and you will restore your warranty, as the manufacturers cannot tell if you rooted your phone before or not). Here's a list of things that you can do after rooting your phone:

- Overclocking your phone processor. This will ultimately speed up your phone, but will eat up more battery juice than before.
- The ability to delete unwanted pre-installed applications.
- Be careful not to delete any **system application**, like the launcher or the status bar.
- Access to more advanced applications, like **root call blockers**, **normal and notification ads blockers** and **root memory managers**.
- You can also install a **custom ROM**. The ROM is basically what determines how your device's interface looks. It is a **very advanced, risky and not a recommended solution**, because sometimes the custom ROM might not be stable.

## 13. Use apps to clean up junk files.

  If you're rooted, you can even use an app like SD Maid or Clean Master to clean up all the junk for you.

  Search the Play Store for useful root applications. Possible applications that may help include:

- For older phones, an **auto task killer**: Kills chosen applications every 'n' seconds or minutes. This frees up some RAM memory, thus the phone will run faster.
- A good **antivirus** application: Scans your phone for any possible viruses and malwares. These usually slow down your phone.
- A **start up manager**: Allows you to stop number of applications from starting up automatically when the phone boots up.
- **Juice defender** application: Gives your phone more battery juice by stopping services and applications.
- **App Cache Cleaner**: Just tap Clear and it's all gone. There's also an Auto Clear feature, which can clean up your cache at intervals set by you.
- **Spare parts** application: Gives you some more settings to configure in your phone, such as a faster window and transition animation.
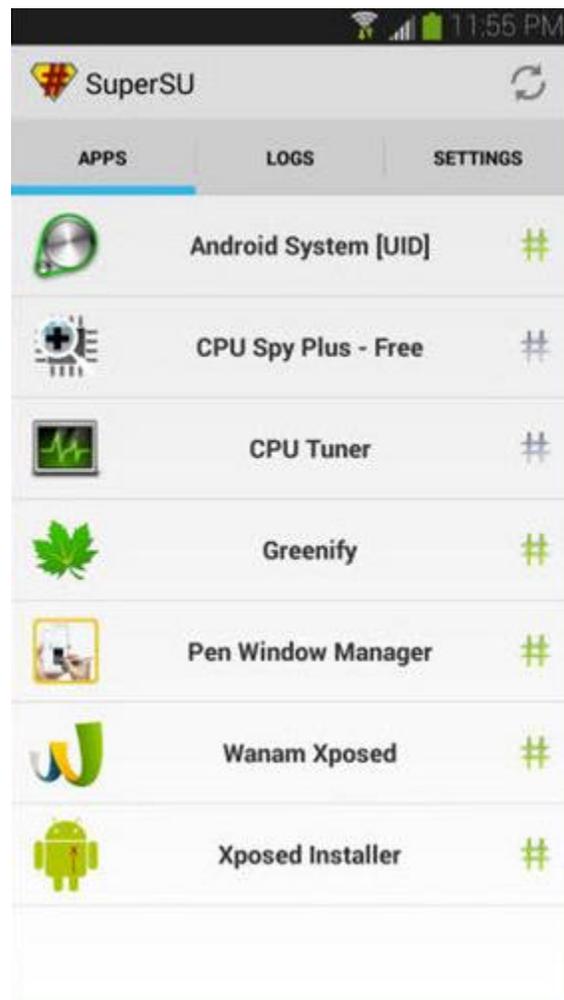
## 14. Minimize your background data usage

Unless you modify your settings, all your apps will look to regularly connect to the Internet for updates, and this uses up not only battery, but also system resources. You can customize which apps automatically update.

Follow these steps to disable all background data:

1. Navigate to Settings.
2. Hit Data usage
3. Launch the context menu via the three dots in the top right corner of the screen (or via the menu button on LG and Samsung models).
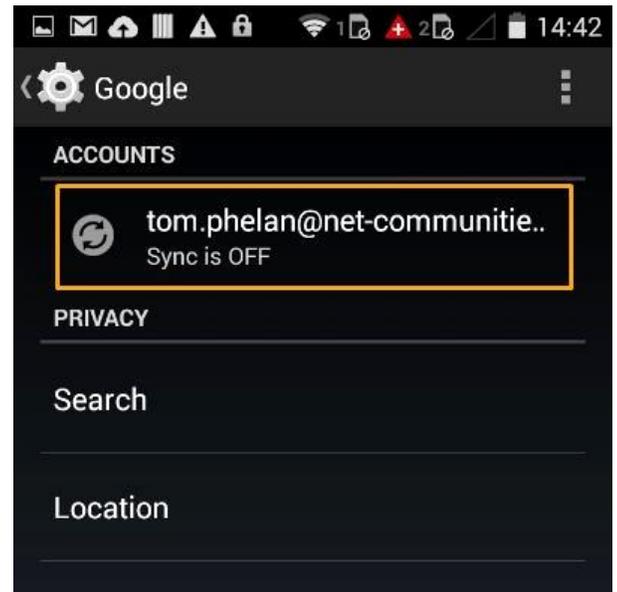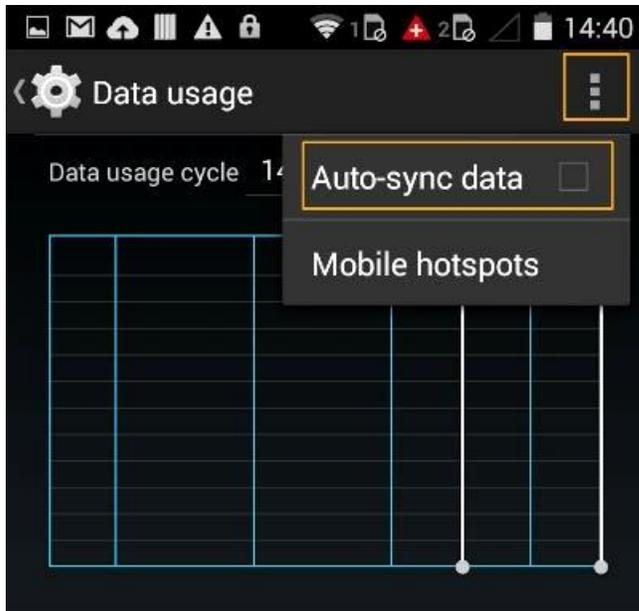






4. Uncheck the Auto-sync data box.

To disable background data for Gmail, Google+ and other Google Services:

a. Go to Settings
b. Hit Google in the accounts list
c. If the account name is green, it's synced; if it's gray, it isn't. Just tap it to change it over.

You can also tailor your apps' background data usage, by changing settings of each app.

Toggle all types of data syncing to off, including **email**, **contacts** and **calendar**.