Apple - Batteries - Maximizing Performance
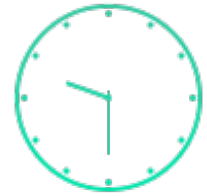
Maximizing Battery Life and Lifespan

"Battery life" is the amount of time your device runs before it needs to be recharged. "Battery lifespan" is the amount of time your battery lasts until it needs to be replaced. Maximize both and you'll get the most out of your Apple devices, no matter which ones you own.

General Performance Tips

Update to the latest software.

Apple software updates often include advanced energy-saving technologies, so always make sure your device is using the latest version of iOS or OS X.

[How to update iOS How to update OS X]

Keep it away from extreme temperatures.

Your device is designed to perform well in a wide range of temperatures, with 62° to72° F (16° to 22° C) as the ideal comfort zone. It's especially important to avoid exposing your device to temperatures higher than 95° F (35° C), which can permanently damage battery capacity. That is, your battery won't power your device as long on a given charge. Charging the device in high temperatures can damage it further. Even storing a battery in a hot environment can damage it irreversibly. When using your device in a very cold

environment, you may notice a decrease in battery life, but this condition is temporary. Once the battery's temperature returns to its normal operating range, its performance will return to normal as well.

Remove certain cases during charging.

Charging your device when it's inside certain styles of cases may generate excess heat, which can affect battery capacity. If you notice that your device gets hot when you charge it, take it out of its case first.

Store it half-charged when you store it long term.

If you want to store your device long term, two key factors will affect the overall health of your battery: the environmental temperature and the percentage of charge on the battery when it's powered down for storage. Therefore, we recommend the following:

- Do not fully charge or fully discharge your device's battery — charge it to around 50%. If you store a device when its battery is fully discharged, the battery could fall into a deep discharge state, which renders it incapable of holding a charge. Conversely, if you store it fully charged for an extended period of time, the battery may lose some capacity, leading to shorter battery life.
- Power down the device to avoid additional battery use.
- Place your device in a cool, moisture-free environment that's less than 90° F (32° C).
- If you plan to store your device for longer than six months, charge it to 50% every six months.

Depending on how long you store your device, it may be in a low-battery state when you remove it from long-term storage. After it's removed from storage, it may require 20 minutes of charging with the original adapter before you can use it.

Tips for iPhone, iPad, and iPod touch

Update to the latest software.

Always make sure your device is using the latest version of iOS.

- If you are using iOS 5 or later, see if you need an update. Go to Settings > General > Software

Update.

- If an update is available, you can plug your device into a power source and update wirelessly or plug it into your computer and update with the latest version of iTunes.

Learn more about updating iOS

Optimize your settings.

Depending on your device's settings, it may use battery power for actions performed automatically or in the background — actions you may not even notice. You can extend your device's battery life by adjusting some of these settings. These tips apply to devices running iOS 7 or later.

Keep Wi-Fi on at all times. When using your device to access data, a Wi-Fi connection uses less power than a cellular network — so connect to a Wi-Fi network whenever one is available. To turn on Wi-Fi, swipe open Control Center, tap the Wi-Fi icon, and log in to a Wi-Fi network. Alternatively, you can go to Settings > Wi-Fi to access a Wi-Fi network.

Adjust brightness. Dim the screen or turn on Auto-Brightness to extend battery life. To dim manually, go to Settings > Wallpapers & Brightness and drag the slider to the left. To return to the default behavior, turn Auto-Brightness off and then on again. When Auto-Brightness is on, your screen adjusts to lighting conditions automatically. To activate it, go to Settings > Wallpapers & Brightness and set Auto-Brightness to On.

Fetch new data less frequently. The more frequently you fetch email or other data, the more battery power your device may use.

- To fetch data manually, go to Settings > Mail, Contacts, Calendars > Fetch New Data and tap Manually.

- To increase the fetch interval, go to Settings > Mail, Contacts, Calendars > Fetch New Data and tap Hourly. Note: This global setting applies to all applications that do not support push services.

- If you receive a lot of email, you can turn off push email to save your battery. Go to Settings > Mail, Contacts, Calendars > Fetch New Data. Set Push to Off. Messages sent to your push email accounts will now be received on your phone based on the global fetch setting rather than as they arrive.

Turn off push notifications. If you receive several notifications every day, this could affect battery life. To disable, go to Settings > Notification Center, choose the app you want to disable, and do the following:

- Change Alert Style to None.

- Turn Badge App Icon off.

- Turn Sounds off.

Note: New data will be received when you open the app.

Minimize use of location services. Apps that actively use location services, such as Maps, may reduce battery life. You can see which applications have recently used location services by going to Settings > Privacy > Location Services. Apps that recently used your location have an indicator next to the on/off switch. If you do not expect a particular app to use location services, you can disable it by toggling the switch to Off. To completely disable location services on your device, go to Settings > Privacy >

Location Services and switch it to Off.

Use Airplane mode in low- or no-coverage areas. Your cellular-enabled device always tries to maintain a connection with a cellular network, which may use more power in low- or no-coverage areas. Turn on Airplane mode to increase battery life in these situations. To turn on Airplane mode, swipe open Control Center and tap the Airplane mode icon. Alternatively, you can go to Settings and set Airplane mode to On. Note that you cannot make or receive calls with Airplane mode on.

Lock your device. Besides offering extra security, locking helps prevent accidental power use. You can also save battery power by setting the Auto-Lock interval so your device turns off more quickly after a period of inactivity. To set the shortest interval, go to Settings > General > Auto-Lock and select 1 Minute.

Minimize automatic iTunes and app downloads. It's convenient to automatically download purchases from the App Store, iBooks Store, or iTunes Store — as well as app updates — to all your devices. But it can affect battery life. To deactivate Automatic Downloads, go to Settings > iTunes & App Store and scroll to Automatic Downloads. Toggle each app's switch to Off to deactivate this feature.

Minimize Background App Refresh. Background App Refresh allows apps to refresh with new content while you're using another app. To save battery power, you can turn off this feature. Go to Settings > General > Background App Refresh and toggle the switch to Off to deactivate the feature entirely or select individual apps to turn off.

Plug in and power on your computer to charge your device.

Make sure your computer is plugged in and powered on when you're using it to charge your iOS device via USB. If your device is connected to a computer that's turned off or is in sleep or standby mode, your device's battery may drain. iPhone 3G and iPhone 3GS cannot be charged with a FireWire power adapter or FireWire-based car charger.

Tips for iPod classic, iPod nano, and iPod shuffle

Update to the latest software.

Always make sure your iPod is using the latest version of Apple software. Put your iPod in its dock or plug it into your computer, and iTunes will notify you of available updates.

Optimize your settings.

Hold and pause. Set the Hold switch when you're not using your iPod. This will prevent iPod from accidentally waking up and using unnecessary power. If you're not listening to your iPod, pause it, or turn it off by pressing the Play button for two seconds.

Equalizer (EQ). Adding EQ to playback increases use of your iPod processor, since EQ isn't encoded in the song. Turn EQ off if you don't use it. If, however, you've added EQ to tracks in iTunes, you'll need to set EQ to "flat" in order to have the effect of "off," because iPod keeps your iTunes settings intact.

Backlight. Setting the backlight to "always on" will significantly reduce your battery life. Use the backlight only when necessary.

Limit fast-forwarding with your iPod classic.

Your iPod classic plays music from a solid-state memory cache to provide skip-free playback and maximize battery life. iPod classic spins its hard drive to fill this cache, which uses power. If you fast-forward through your playlist, iPod classic has to fill its cache more frequently, thus accessing the hard drive more often and using more power. This decreases overall battery life. To extend battery life, create playlists in iTunes that suit your taste so you fast-forward less. Using the shuffle feature may also help to minimize your use of the fast-forward feature.

Plug in and power on your computer to charge your iPod.

Make sure your computer is plugged in and powered on when you're using it to charge your iPod via USB. If your iPod is connected to a computer that's turned off or is in sleep or standby mode, the iPod battery may drain.

Tips for MacBook Air and MacBook Pro

Update to the latest software.

Always make sure your MacBook is using the latest version of OS X. If you're connected to the Internet, OS X automatically checks for software updates every week, but you still control when the updates are installed. To confirm that you're using the latest software, go to the Apple menu and choose Software Update.

Learn more about updating OS X

Optimize your settings.

Energy. The Energy Saver preference pane includes several settings that determine power levels for your MacBook. Your MacBook knows when it's plugged in and runs accordingly. When using battery power, it dims the screen and uses other components sparingly. If you change this setting to maximize performance, your battery will drain more quickly.

Brightness. Dim the screen to the lowest comfortable level to achieve maximum battery life. For instance, when watching a video on an airplane, you may not need full brightness if the cabin lights are off.

Wi-Fi. Wi-Fi consumes power, even if you are not using it to connect to a network. You can turn it off in the Wi-Fi status menu in the menu bar or in Network preferences.

Bluetooth wireless. Likewise, you can turn off Bluetooth to maximize your battery life, since it also consumes power when not in use.

Applications and peripherals. Disconnect peripherals and quit applications not in use. Eject an SD card if you're not currently accessing it.

Plug in and power on your MacBook to charge other devices.

Make sure your MacBook is plugged in and powered on when you're using it to charge other devices via USB. Otherwise those devices may drain the battery in your MacBook faster than normal. If another device is connected to your MacBook when it's turned off or in sleep or standby mode, the device's battery may drain.