How to Install Applications (APK Files) on Your Android Phone

Overview

An Android application is stored in an APK file (i.e., a file named by {*Application Name*}.apk). You must install the APK on your Android phone in order to run it. There are three different ways to install APK files on your phone:

- The easiest way is simply to download the application from the Android Market or from a web site directly to the SD card mounted in your phone, then click on the APK file to install it.
- The second way is to download the APK file to your computer, mount your phone's SD card in the computer (or connect the phone with the SD inserted in it to the computer via USB cable) and copy the APK file to the SD card, then insert the SD card in the phone and install the APK file from the SD card using an Application Installer or File Manager that you download from the Android Market. This method is useful for installing non-market applications (i.e., applications not available on the Android Market).
- The third way is to install the Android Software Development Kit (SDK) on your computer, then connect the phone via USB cable to the computer and use the Android Debug Bridge (contained in the SDK) to install the APK on the phone. This method is more suitable for developers and technical users who need to install non-market applications.

Note: Because of the diversity in Android devices, some methods may not be supported on your phone. Also, depending on whether you have internet or cellular service on your Android phone and the type of application you desire to install, one of the three methods may work better for you than the others. The following sections provide detailed instructions for each of the methods.

All methods require that an SD card be mounted in the phone. To mount an SD card, simply insert it into the phone. If you have unmounted the SD card (via the **Settings** application) but have not removed it from the phone, you can remount it by either removing and then re-inserting the SD card or by simply powering your phone off then back on.

Installing applications from the Android Market to your phone:

Requirements: This method requires that you have 1) either cellular or internet service on your Android phone to access the Android Market, 2) a gmail.com account for accessing the Market, and 2) the SD card mounted (inserted) in the phone.

1. Open the Android **Market** application in the **Applications** menu. If you have never accessed the Android Market on your phone, you will be prompted for the login and password of your gmail.com account. Enter this information to create a Market account.

2. Within the Android Market, you can select the appropriate option on the menu bar to locate the application you want to install: **Applications** displays a categorized list of all applications available on the market, **Games** shows a categorized list of all available games, and **Download** lists the APK files you have already downloaded from the market.
3. You can also use the **Search** (i.e., magnifying glass) icon to quickly find a specific application. You will get a list of matching applications along with each one's description and rating.
4. Click on the application you want and more details about that application are displayed (e.g., the number of downloads and user comments).
5. To install the application, just click on the **Install** button on the bottom of the screen.
6. In the next screen, you will see more details about the application including the different functionalities it needs to access. Click **OK** to finish installing the application.

Installing non-market application (APK) files from a web site directly to your phone:

Requirements: This method requires that you have 1) either cellular or internet service on your Android phone to use the browser, and 2) the SD card mounted (inserted) in the phone.

1. Open the Applications menu (i.e., the tab in the bottom center of the phone's home screen) and click on the **Settings** application.
2. Select **Applications** from the Settings menu.
3. Make sure that the first selection, **Unknown Sources**, is checked so that you can install an APK file from a location other than the Android Market. A warning message about the phone being vulnerable to attack will be displayed. Select OK to continue if you trust the APK file you are about to download. You can change this setting back after the current installation is complete.
4. Open the browser on your phone and navigate to the web page where the application's APK has been made available for download.
5. Click the download link on the web site to download the APK directly to your phone's SD card. You should see a message that says "Starting download".
6. In the upper left-hand corner of the screen, an animated, downward-pointing arrow will display; when the animation stops, the download is complete. Click on the arrow and you should see the newly-downloaded "application.apk" file name listed in the **Notifications** section. (Note: if clicking on the arrow doesn't open the Notifications list, return to the home screen and pull down on the Status bar at the top of the screen to see the list.)
7. Click on the application's APK file name. A new screen showing the selected application's name at the top is displayed. This screen gives you more details about the application including the different functionalities it will need to access. To install the application, just click on the **Install** button on the bottom of the screen.
8. A new screen is displayed once the installation is complete and you can choose to immediately run the application by clicking the **Open** button on the bottom of the screen.

Installing non-market application (APK) files from a computer to your phone using an Application Installer or File Manager:

Requirements: This method requires an SD card for the phone. Also, if you do not already have an application installer or file manager installed on your phone, then cellular or internet service is required to access the Android Market, from which you can install an application installer or file manager.

1. Download the application (APK) file to a folder of your choice on your computer. ***Note***: *You'll sometimes find that when you download an APK file to your computer, the extension is changed to .zip by the browser. Try renaming the file within a .apk extension in place of the .zip extension.*
2. The next step is to copy the APK file from your computer to an SD card. You have two options for performing the copy ~ either the SD card can be mounted in the phone or it can be unmounted. Copying to an unmounted card requires that you have a USB card reader attachment that accommodates an SD card. Alternatively, copying to a mounted SD card requires you to connect the phone to the computer via USB cable, which requires that you install (or have already installed) USB drivers for the phone on your computer. Instructions for each of these options follow.

   A. **Option 1 –** Copy to unmounted SD card:
      1. Assuming the card is currently inserted in your phone, you will need to remove it. First, open the Applications menu on the phone and select the **Settings** application. From the Settings menu, select **SD card & phone storage**, then select **Unmount SD card**.
      2. Open the back of the phone and remove the SD card.
      3. Mount the SD card on your computer (i.e., insert it into a USB SD card adaptor and insert it in your computer's USB port).
      4. An Autoplay wizard may pop up on your computer. If not, open the computer explorer / file manager application on your computer. You should see the SD card listed as an accessible device.
      5. Use the file manager to copy the APK file from your computer to the root directory of the SD card.
      6. Eject the SD card from your computer (i.e., right-click on the SD card device shown in your computer explorer / file manager application and select 'Eject' or 'Unmount'). A message is typically displayed telling you it is safe to remove the device.
      7. Remove the USB SD card adapter from your computer, take out the SD card and then insert the SD card into your Android phone.
      8. Continue with step 3 below.

   B. **Option 2-** Plug the phone into the computer's USB port:
      1. If you are running Windows on your computer, this option requires that you have USB drivers for the phone installed on your computer. These drivers are available by installing the Android SDK. If you currently do not have the drivers installed, please follow steps 1 – 4 in the next section, "**Installing non-market APK files from a computer to your Android phone using the Android Software Development Kit (SDK)**", before proceeding to step B-3.

2. If you are running Linux or Mac OS X on your computer, you do not need to install USB drivers. However, if you are a Linux user, you need to complete step 5 in the next section, "**Installing non-market APK files from a computer to your Android phone using the Android Software Development Kit (SDK)**", before proceeding to step B-3.

3. Plug the phone into the computer via the phone's USB cable.

4. To mount the phone, pull down on the status bar at the top of your phone's screen and select **USB Connected**, then select **Mount**.

5. An Autoplay wizard may pop up on your computer. If not, open the computer explorer / file manager application on your computer. You should see the phone has been mounted and is listed as an accessible device. Click on it to navigate to the phone's SD card.

6. Use the computer's file manager to copy the APK file from your computer to the phone's SD card.

7. Unmount the phone from your computer (i.e., right-click on the phone device shown in your computer explorer / file manager application and select 'Eject' or 'Unmount'). It is safe to remove the device when it disappears from the computer explorer / file manager device list.

8. Unplug the phone from the computer.

9. Continue with step 3 below.

3. Open the Applications menu (i.e., the tab in the bottom center of the phone's home screen) and click on the **Settings** application.

4. Select **Applications** from the Settings menu.

5. Make sure that the first selection, **Unknown Sources**, is checked so that you can install an APK file from a location other than the Android Market. A warning message about the phone being vulnerable to attack will be displayed. Select **OK** to continue if you trust the APK file you are about to download. You can change this setting back after the current installation is complete.

6. If you do not already have an application installer or file manager installed on your phone, you will need to download one from the Android Market and install it. To do so, follow steps 7 and 8. If you already have an application installer on your phone, skip to step 9.

7. Open the Android Market application in the Applications menu on the phone and search for "App Installer". (Note: if you have never accessed the Android Market before, please see the first section, "**Installing applications from the Android Market to your phone**" for more information.) Several app installer applications will be listed. Click on one of the free installers in the list (e.g., 'AppInstaller' by Cdroid Themes), then click on the **Install** button at the bottom of the screen. Alternatively, search for a free file manager, such as 'Astro File Manager' by Metago, and install it from the market.

8. After the application installer or file manager is installed, pull down on the status bar at the top of the screen and you should see its name listed; click on this name to open the application. (You can also open the installer or file manager by following step 9.)

9. If you already have an application installer or file manager on your phone, open the **Applications** menu and select the application installer or file manager to open it.

10. The installer will list all the APK files stored directly in the root directory of your SD card. In the list, you should see the APK file you copied to the SD card in step 2. Click on this APK file name. Similarly, the file manager will provide a list of the SD card contents, from which you can select the APK file.

11. A new screen showing the selected application's name at the top is displayed. This screen gives you more details about the application including the different functionalities it will need to access. To install the application, just click on the **Install** button on the bottom of the screen.
12. A new screen is displayed once the installation is complete and you can choose to immediately run the application by clicking the **Open** button on the bottom of the screen.

Installing non-market application (APK) files from a computer to your Android phone using the Android Software Development Kit (SDK):

1. Download the Android Software Development Kit (SDK) from the Android SDK Download Site.
2. Once downloaded, find a safe installation location on your machine and simply extract the zipped files to this directory.

   For example,

   - on Mac or Linux, install in **$HOME/**
   - on Windows, install in **C:/**

   By default, the SDK files are unpacked into a directory named android-sdk-<machine-platform>. Make note of the full path to and directory name of this directory where the SDK files are unpacked on your system. Enter this full path and name wherever you see the placeholder, $ANDROID_SDK_PATH, in the remaining instructions.

3. Add the $ANDROID_SDK_PATH/tools directory to your computer's System PATH:

   Windows XP / Vista
   a. Right-click on the **My Computer** icon, then select **Properties**.
   b. Select the Advanced tab and click the **Environment Variables** button.
   c. In the new dialog box, double-click on **Path** (located under System Variables). Add the full path, $ANDROID_SDK_PATH/tools, to the PATH variable.

   Linux / Mac OS X
   a. Edit the hidden file $HOME/.bash_profile or $HOME/.bashrc looking for the line that sets the PATH variable. If neither file exists, create $HOME/.bash_profile.
   b. Add the full path, $ANDROID_SDK_PATH/tools, to the PATH variable. If no PATH line exists you can add the line by typing the following:
      export PATH=$PATH:$ANDROID_SDK_PATH/tools;

4. **If you are running on a Windows computer**, install the USB drivers for connecting to an Android device:

   Windows Vista: Perform a fresh installation
   To install the Android USB driver on Windows Vista for the first time:

   a. Connect your phone to your computer's USB port. Windows will detect the device and launch the Found New Hardware wizard.

b.   Select "Locate and install driver software."
c.   Select "Don't search online."
d.   Select "I don't have the disk. Show me other options."
e.   Select "Browse my computer for driver software."
f.   Click "Browse..." and locate the folder, $ANDROID_SDK_PATH\usb_driver. As long as you specified the exact location of the installation package, you may leave "Include subfolders" checked or unchecked—it doesn't matter.
g.   Click "Next." Vista may prompt you to confirm the privilege elevation required for driver installation. Confirm it.
h.   When Vista asks if you'd like to install the Google ADB Interface device, click "Install" to install the driver.

Windows XP: Perform a fresh installation
To install the Android USB driver on Windows XP for the first time:

a.   Connect your Android-powered device to your computer's USB port. Windows will detect the device and launch the Hardware Update Wizard.
b.   Select "Install from a list or specific location" and click "Next."
c.   Select "Search for the best driver in these locations"; un-check "Search removable media"; and check "Include this location in the search."
d.   Click "Browse..." and locate $ANDROID_SDK_PATH\usb_driver.
e.   Click "Next" to install the driver.

Additional installation/upgrade details can be found on the USB Driver for Windows page of the Android Developer's web site.

5. **If you are running Ubuntu Linux**, you need to add a rules file that contains a USB configuration for the type of phone you want to connect. Each phone manufacturer uses a different vendor ID and you must include your phone's vendor ID in the rules file. For a list of vendor IDs, see the table of USB Vendor IDs. To create the rules file:

a.   Log in as root and create this file: /etc/udev/rules.d/51-android.rules.
b.   Depending on your Unbuntu release, add the following line to the file (where *[Vendor ID]* is the correct vendor ID for your phone:

   For Gusty/Hardy:
   SUBSYSTEM=="usb", SYSFS{idVendor}=="*[vendor ID]*", MODE="0666"
   For Dapper:
   SUBSYSTEM=="usb_device", SYSFS{idVendor}=="*[vendor ID]* ", MODE="0666"

c.   Now execute: chmod a+r /etc/udev/rules.d/51-android.rules
d.   Note: In step 11, after you open a command/terminal window, you can verify that your phone is connected by executing adb devices command in a command/terminal window. If connected, you'll see the device name listed as a "device."

If you want to connect more than one type of phone, add a separate line for each different phone (vendor) you want to connect. For more details, refer to the Android Developer's web page, Setting up a Device for Development.

6. **If you are running on Mac OS X**, you do not need to install a USB driver and may continue with step 7.
7. Download the application (APK) file to a folder of your choice on your computer.
8. Connect the phone to the computer through the USB port if you did not already do so in step 4.
9. Enable installation of non-market applications on your phone:
    a. On your phone, open the Applications menu (i.e., the tab in the bottom center of the phone's home screen) and click on the **Settings** application, then select **Applications** from the Settings menu.
    b. Make sure that the first selection, **Unknown Sources**, is checked so that you can install an APK file from a location other than the Android Market. A warning message about the phone being vulnerable to attack will be displayed. Select **OK** to continue if you trust the APK file you are about to download. You can change this setting back after the current installation is complete.
10. Turn on "USB debugging" on your phone: open the Applications menu and select **Development**, then enable **USB debugging**.
11. Open a command/terminal window:

    • On Windows, select **Start** > **Run** > then type 'cmd'.
    • On Mac OS X, open the **Applications** folder, select **Utilities**, then **Terminal**.
    • On Linux, select **Applications** > **Accessories** > **Terminal**.

12. In the command/terminal window, enter the following command:

    adb install <APK_FILE_PATH><APK_FILE>

    Example:

    C:\ >adb install C:\Desktop\BrailleBuddies.apk
    2513 KB/s (14175084 bytes in 5.506s)
         pkg: /data/local/tmp/BrailleBuddies.apk
    Success
    C:\>

13. Open the Applications menu on the phone and select the newly installed application to open it.
14. If the application did not install, try issuing the command *adb usb* in the command/terminal window to restart the ADBD daemon monitoring the USB, then repeat Step 12.