Introduction to Cordova

To make it easier for developers to manage their projects the Cordova project team build a single, unified command-line interface (CLI) that works across all of the Cordova support mobile device platforms.

To develop Android apps, you need to install the Android SDK, and also Java if not already installed on your computer. For the Android SDK, you have the choice between installing Android Studio or just the Android SDK Tools (sdk manager).

Installing Cordova is done using a command line tool called Node.js. Node.js is a JavaScript runtime built on Google Chrome's V8 JavaScript engine. Essentially, Node allows you to run JavaScript in a terminal window instead of a browser. This upgrades JavaScript to be a full-fledged programming language, no longer dependent on the browser. Node includes NPM, the Node Package Manager, which allows you to install Node modules, called packages, from the command line. Cordova is installed by a NPM.

Configuring a Cordova Development Environment

Install node.js	Cordova runs on the Node.js platform, which needs to be installed as the first step
Install Git	Git is a version control system, which is used by Cordova behind-the-scenes
Install Cordova	Cordova is installed using the Node Package Manager (npm).
Install Java	The Android SDK needs the Java Development Kit (JDK) to be installed
Install Android Tools	To install the tools needed to build Android app using Cordova you need the Android SDK Tools. The easiesy way to install these tools is to install Android Studio.

1. Installing node.js

Installing Cordova is done using a command line tool called Node. Node is a JavaScript runtime built on Google Chrome's V8 JavaScript engine. Essentially, Node allows you to run JavaScript in a terminal window instead of a browser. This upgrades JavaScript to be a full-fledged programming language, no longer dependent on the browser. Node includes NPM, the Node Package Manager, which allows you to install Node modules, called packages, from the command line. Cordova is installed by a NPM.

To download node.js, go to https://nodejs.org/en, then click the Downloads link and download the version of Node for your operating system.

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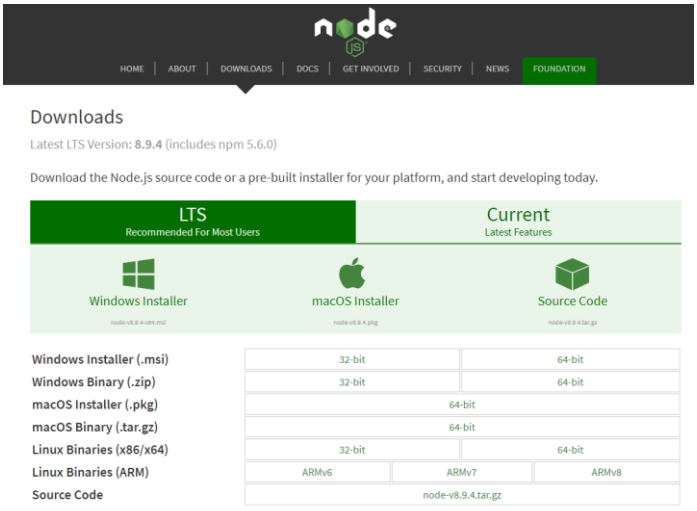
If you are using Mac, you will need to choose the Macintosh Installer, but installing for Windows and other operating systems is pretty straightforward. Once you've downloaded Node, you need to run the install routine. Click Continue, and then Continue to agree to the license.



You'll need to be an administrator to install **node**. Node.js needs to be added to the PATH environment variable, which is done by default.

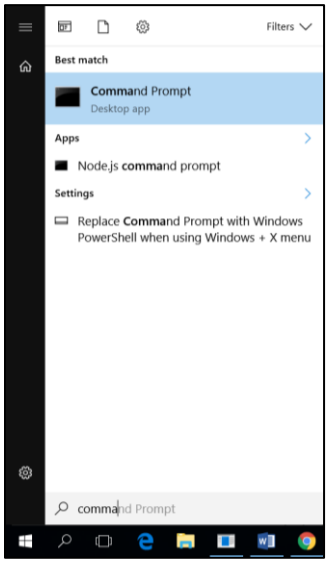
To test the installation, open a command window (make sure you open a new command window to get the updated path settings made by the Node.js installation), and type:

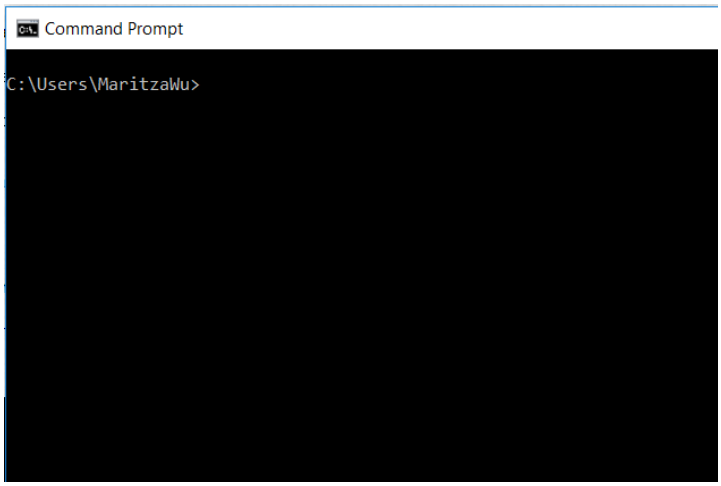
node --version

If the version number is displayed, Node.js is installed and working!

If you are not very familiar with the Command Window or Command Prompt (cmd.exe) is a native Windows applications meant to act as a command-line interpreter. It is used to issue various commands to the system, like file management commands such as copy and delete, as well as a user interface. The command prompt is one of the most powerful tool within the Windows OS. It allows users to do almost anything you can do with a GUI (Graphical User Interface: user interface that allows users to interact with electronics devices through graphical icons and visual indicators such as secondary notation), but simply in words.

To access to the Command Prompt, type “command prompt” in the search icon:





Command Prompt works with commands, some of the commands are:

COMMAND	DESCRIPTION
attrib	Configures file attributes *read only, hidden, system*
cd or chdir	Displays the name of the **current directory** or changes the current folder
cd..	Exit a folder
cd*forder name*	Enter a folder
chkdsk	Checks hard drives for errors. With switches, does repairs.
cls	Clears the screen
copy	Copies a file from one location to another
del	Deletes one or more files
dir	Displays a list of a folder's files and subfolders
echo	Used to display a message or to turn off/on messages in batch scripts
exit	Exits batch script or current command control
find	Searches for a text string in a file or files. Can also be used with output from another command.
ipconfig	Displays all current TCP/IP network configuration values and refreshes Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS) settings
md or mkdir	Creates a directory (folder) or subdirectory (subfolder)
move	Moves a file from one folder to another
path	Sets the command path in the PATH environment variable, which is the set of directories used to search for executable files
rd or rmdir	Deletes a directory (folder)
ren or rename	Changes the name of a file or a set of files

sc	Used to obtain information about services and to configure them. A suite of various commands
sfc	System file checker scans and verifies the versions of all protected system files
shutdown	Shuts down or restarts a computer
start	Starts an application or opens a new command window
tree	Graphically displays the directory structure of a folder or drive
type	Displays the contents of a text file
program name **--version** ***program name*** **-v**	Show the version of the program
xcopy	Powerful command with many switches for copying and backing up files and folders

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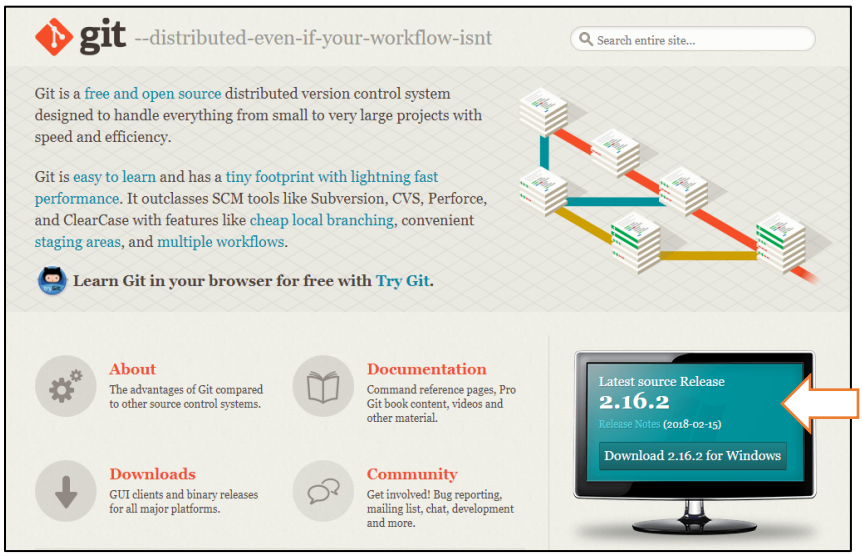
On the summary page, take note of the install location in case you need to add the location to your PATH variable. Open a terminal window and issue the echo command and ask for the PATH variable to view the current PATH variable. Make sure that the PATH that Node.js was installed on is included in your PATH.

2. Installing Git

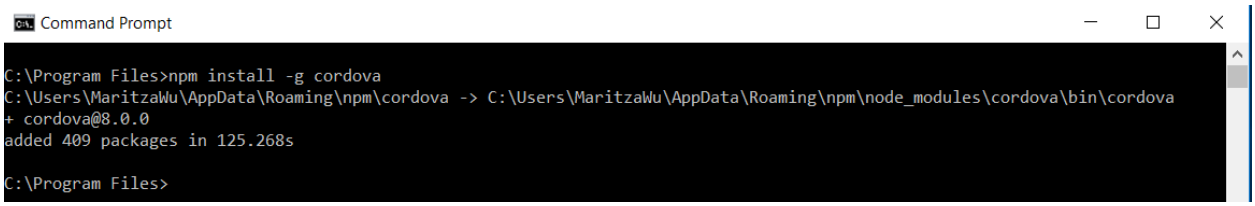
When the CLI was first released, it relied heavily upon GitHub for storage of many of the components it used to manage Cordova application projects. Because of this, you'll need to install a version of Git before you can use the CLI. You can download the latest version Git at https://git-scm.com/



3. Installing Cordova

Cordova is installed using the Node Package Manager (npm). Type the following in the command window to install (under Program Files root):

npm install -g cordova



Test the Cordova install by typing:

cordova –version

If you see the version number, you have successfully installed Apache Cordova!

4. Installing Android Development Tools

For Android Development, there is a step of supporting materials that you need to download and configure:

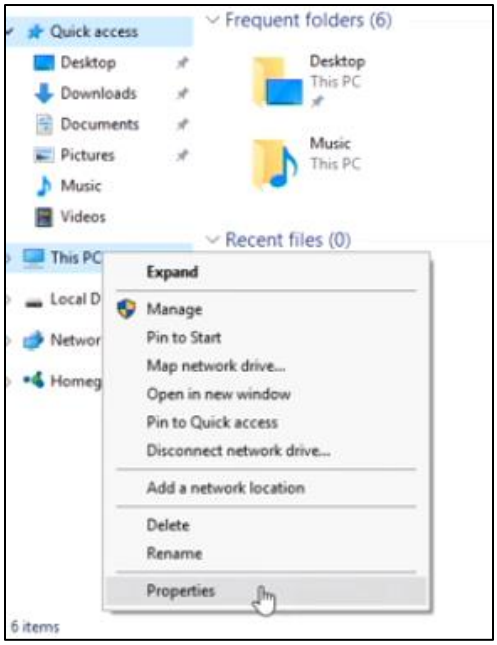
1. Java Development Kit (JDK) installation

On Windows, you will need to go to oracle.com and download the JDK

http://www.oracle.com/technetwork/java/javase/downloads/index.html

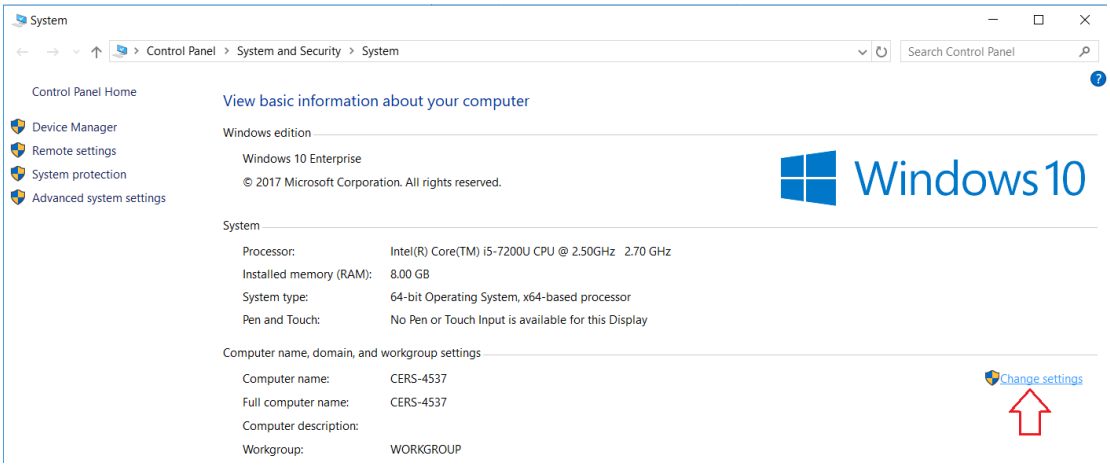
After installing the JDK, now you need to define the JAVA_HOME environment variable.

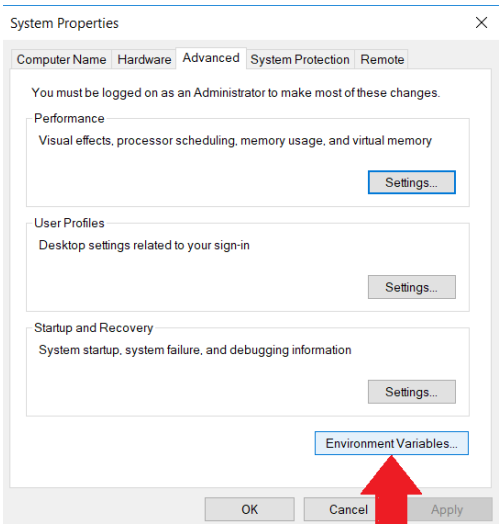
2. Creating the JAVA_HOME path



To check and/or create the PATH on Windows, Right-click on this PC, My Computer, which we'll find in File Explorer's left quick toolbar. Left-click Properties, then left-click advanced system settings.

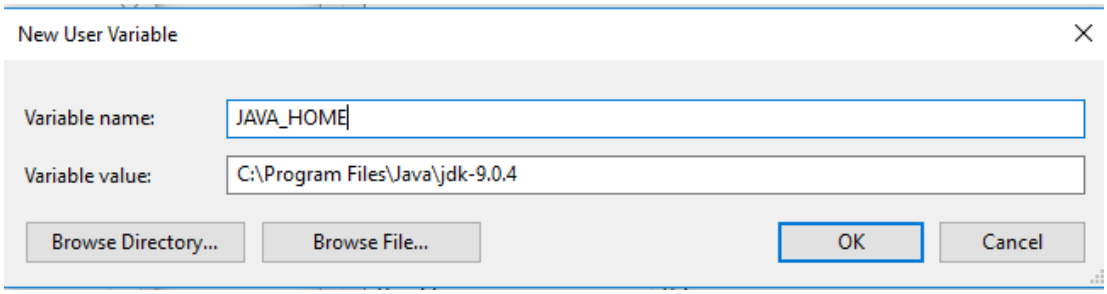
Left-click Environment Variables, and at this point, you can change the variables for the current user or the system if you are an administrator.





In Environment Variables window, look for a user variable entry labeled JAVA_HOME; if there is already one there, you can skip this step. If not click the New button.

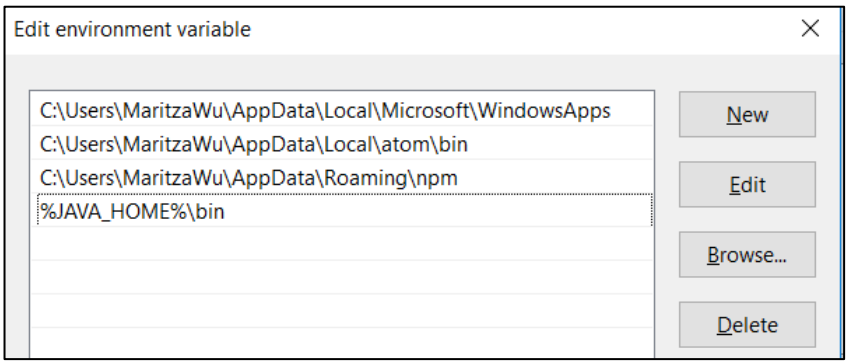
In the New User Variable dialog, type JAVA_HOME into the Variable name field, then populate the Variable value field with the full path pointing to the JDK installation folder. To find the JDK folder location, you can go to **C:\Program Files\Java** and check from the Java folder if the JDK was installed.



On Windows, we need to configure the system so the Java compiler is available to the command-line tools. The JDK installation doesn't update the Windows system path, so you will need to do it manually. To do so:

1. Open the Environment Variables window again
2. Select the PATH variable and click Edit button.
3. In the Edit Environment variable window, if you have more than one environment variable, select C:\Users\hwu\AppData\Roaming\npm and click Edit.
4. Click on New and create a new path for Java:

%JAVA_HOME%\bin to the field. This tells Windows to look for executables in the bin folder underneath the folder name described in the JAVA_HOME variable. In this example, we are adding C\Program Files\Java\jdk-9.0.4\ bin to the path.



To test the configuration, open a new terminal window and then run a test. A terminal window or command prompt is one of the command-line interface programs used to execute commands in Windows operating system.

To open a terminal window, click on Start button, and type Command Prompt

In the command prompt, type ***set***, then press Enter. You should see a long list of environment variables; look for the entry for your new JAVA_HOME variable.

Next, type ***javac*** in the terminal window and press the Enter key. You should see information about the Java Compiler commands scroll past on the screen. If you do, the PATH variable is configured correctly. If you receive an error message, there is an error in the PATH variable configuration that you will have to resolve before continuing.

The following should be displayed in the Command Prompt if java is correctly installed:

Command Prompt

```
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\MaritzaWu>javac
Usage: javac <options> <source files>
where possible options include:
  @<filename>                  Read options and filenames from file
  -Akey[=value]                Options to pass to annotation processors
  --add-modules <module>(,<module>)*
```

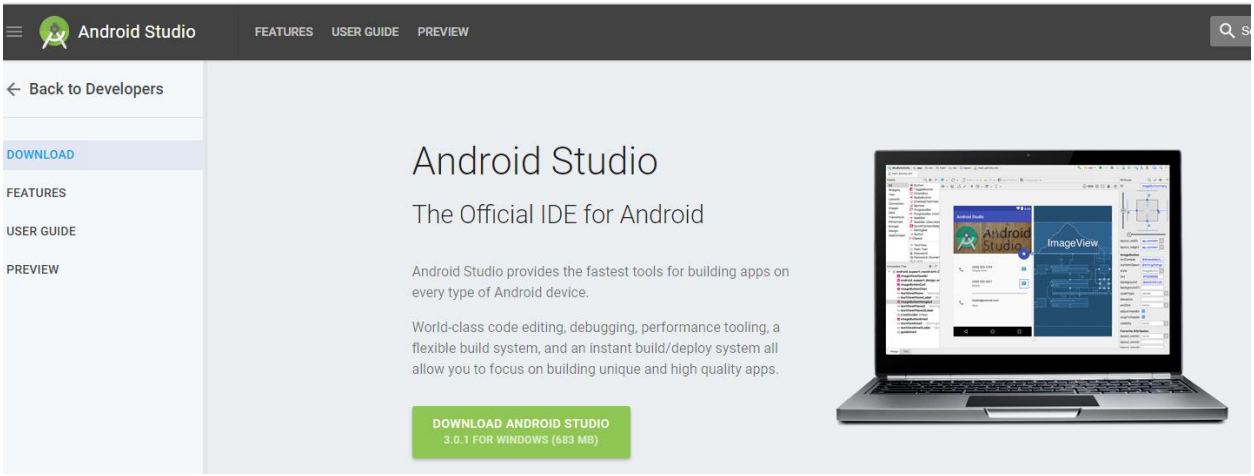
Command Prompt

```
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\MaritzaWu>javac --version
javac 9.0.4

C:\Users\MaritzaWu>
```

5. Installing android studio

Google is currently in transition between developer tools. Since the beginning, Google has offered developers an Eclipse-based IDE[1] called Android Developer Tools (ADT). More than a year ago, Goodle announced a new IDE called Android Studio.

You can download Android Studio from https://developer.android.com/studio/index.html



[1] An **Integrated Development Environment** (IDE) is a software suite that consolidates the basic tools developers need to write and test software. Typically, an IDE contains a code editor, a compiler or interpreter and a debugger that the developer accesses through a single graphical user interface (GUI).
Retrieved from TechTarget.com, Integrated Development Environment (IDE), February 2018