PREPARING YOUR MACHINES WITH NECESSARY TOOLS FOR ANDROID DEVELOPMENT

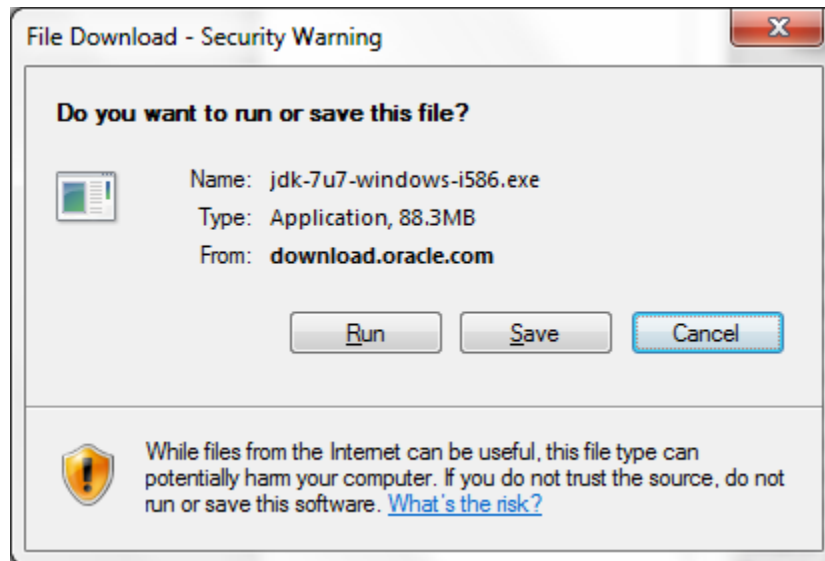## SEPTEMBER, 2012

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Android SDK makes use of the Java SE Development kit (jdk).

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

1. Java SDK

You must have a copy of the **JRE** (Java Runtime Environment) on your system to **run** Java applications and applets. To **develop** Java applications and applets, you need the **JDK** (Java Development Kit), which includes the JRE.
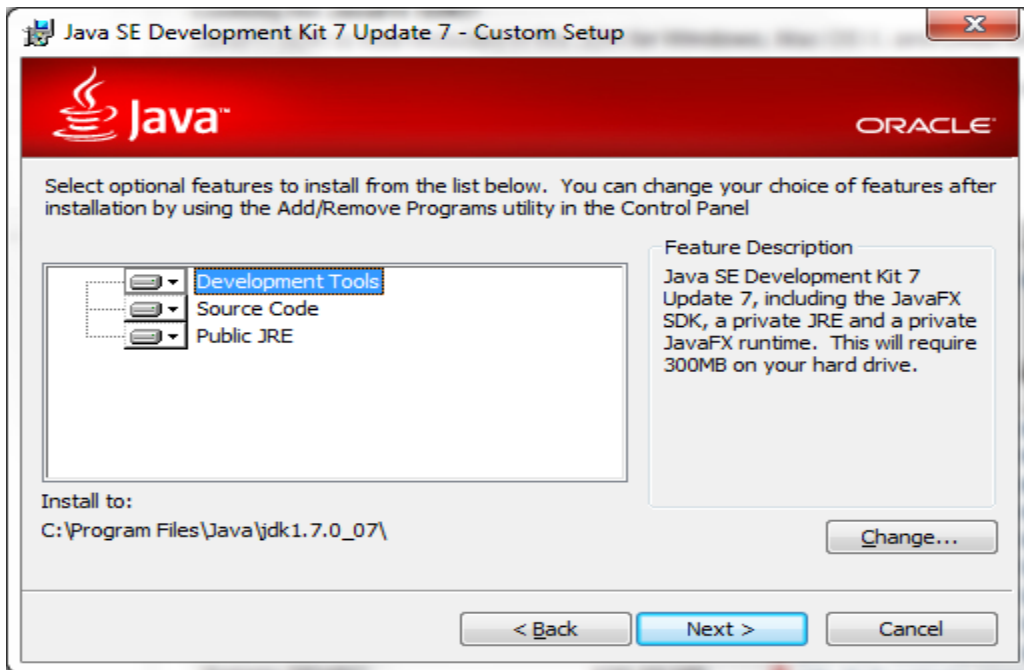
2. Eclipse IDE

Eclipse

The first step towards developing any applications is obtaining the integrated development environment (IDE). In the case of Android, the recommended IDE is Eclipse, a multi-language software development environment featuring an extensible plug-in system. It can be used to develop various types of applications, using languages such as Java, Ada, C, C++, COBOL, Python, etc.

For Android development, you should download the Eclipse IDE for Java Developer

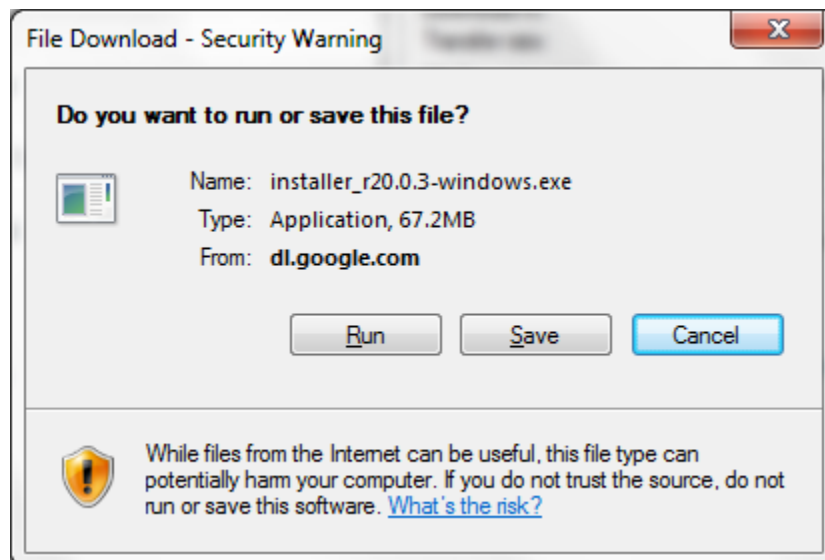Developers (http://www.eclipse.org/downloads/). Six editions are available: Windows (32 and 64-bit), Mac OS X (Cocoa 32 and 64), and Linux (32 and 64-bit). Simply select the relevant one for your operating system. All the examples in this book were tested using the 32-bit version of Eclipse for Windows.

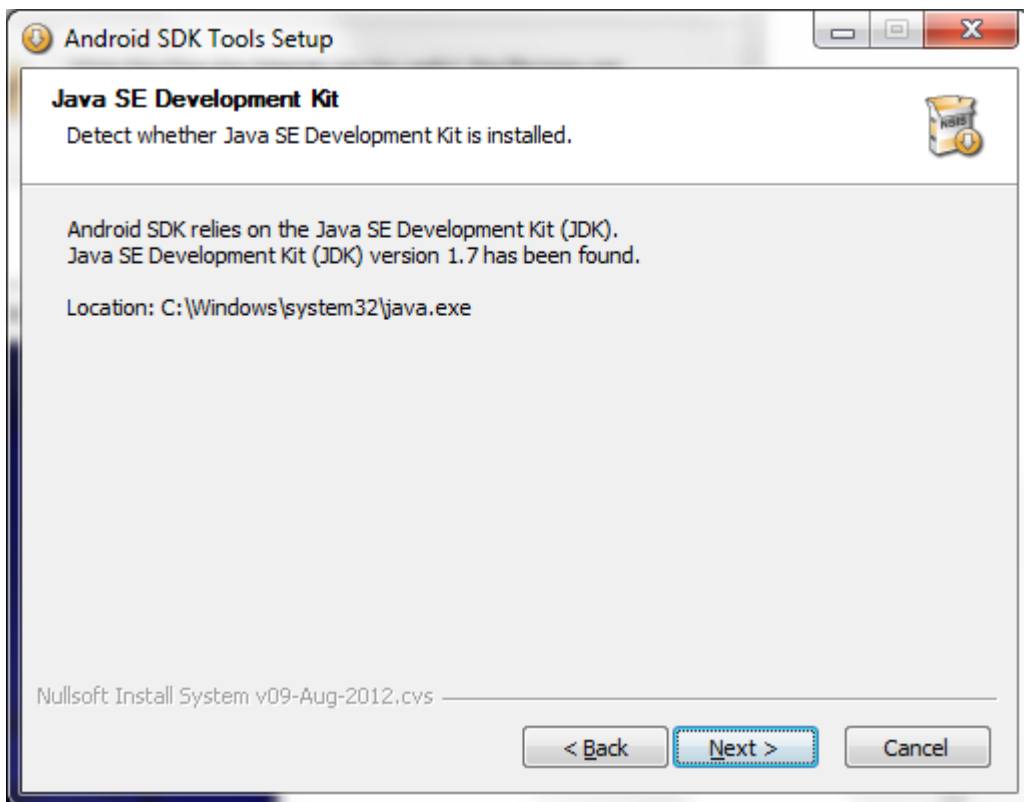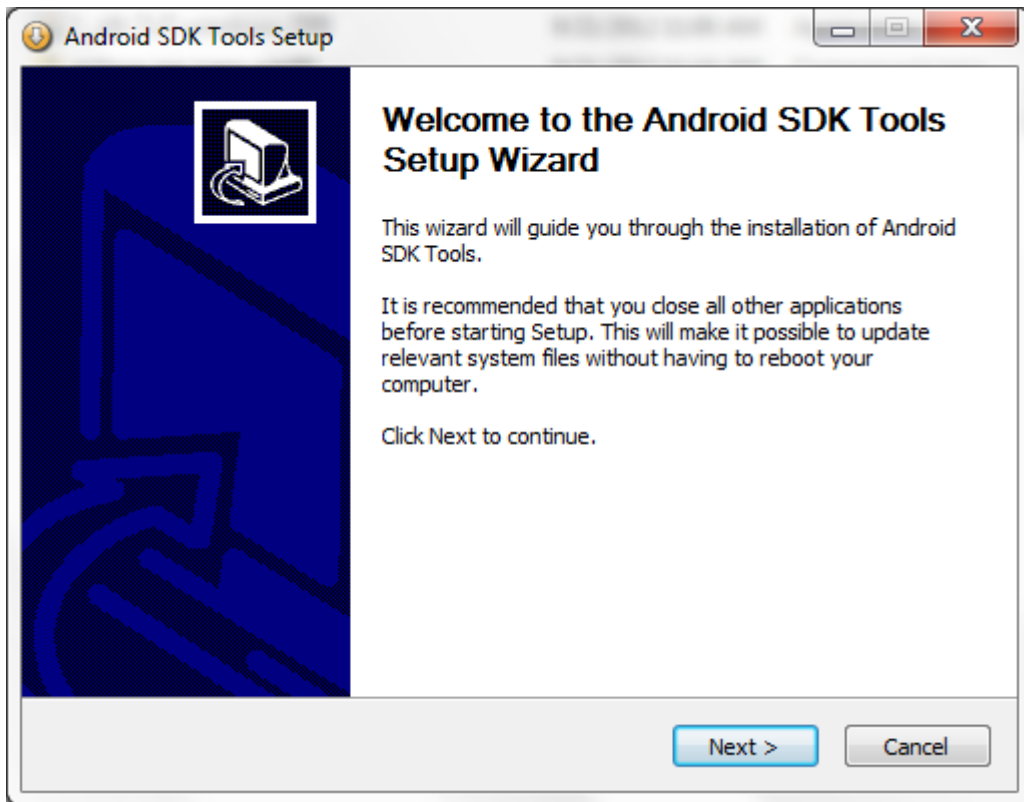Once the Eclipse IDE is downloaded, unzip its content (the eclipse folder) into a folder, say C:\Android\.
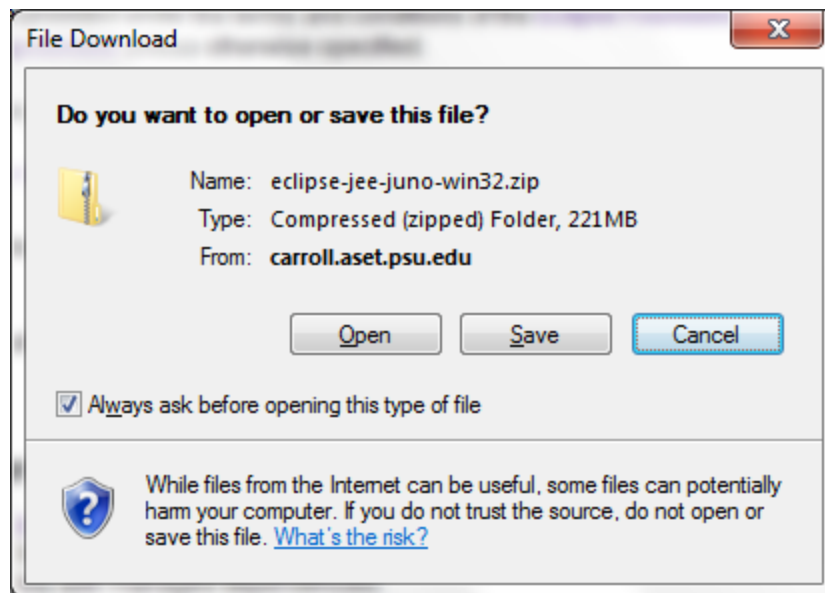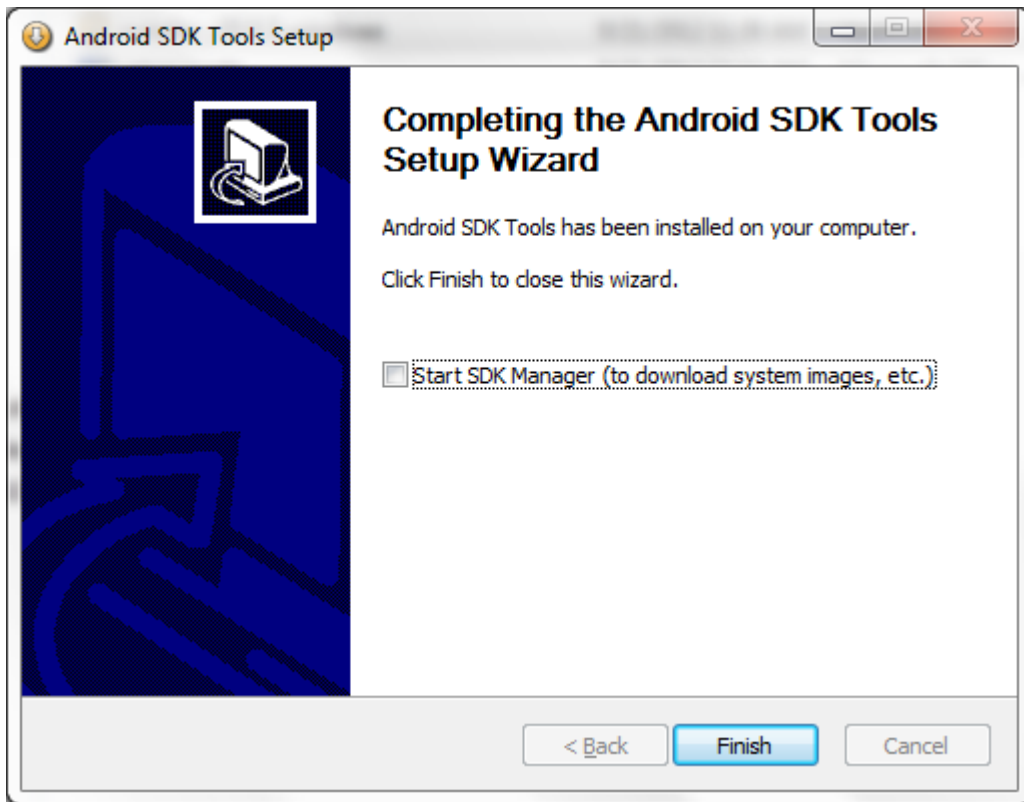
3. Android SDK

The next important piece of software you need to download is, of course, the Android SDK. The Android SDK contains a debugger, libraries, an emulator, documentation, sample code, and tutorials. You can download the Android SDK from http://developer.android.com/sdk/ index.html.

Android SDK Tools Setup

Welcome to the Android SDK Tools Setup Wizard

This wizard will guide you through the installation of Android SDK Tools.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.

Next >   Cancel

Android SDK Tools Setup

Java SE Development Kit
Detect whether Java SE Development Kit is installed.

Android SDK relies on the Java SE Development Kit (JDK).
Java SE Development Kit (JDK) version 1.7 has been found.

Location: C:\Windows\system32\java.exe

Nullsoft Install System v09-Aug-2012.cvs

< Back   Next >   Cancel

Go to help menu and select install new software

Type this in work with text field: http://dl-ssl.google.com/android/eclipse

Install

Available Software
Check the items that you wish to install.

Work with: | Downloads - http://dl-ssl.google.com/android/eclipse | ▼ | Add...

Find more software by working with the "Available Software Sites" preferences.

type filter text

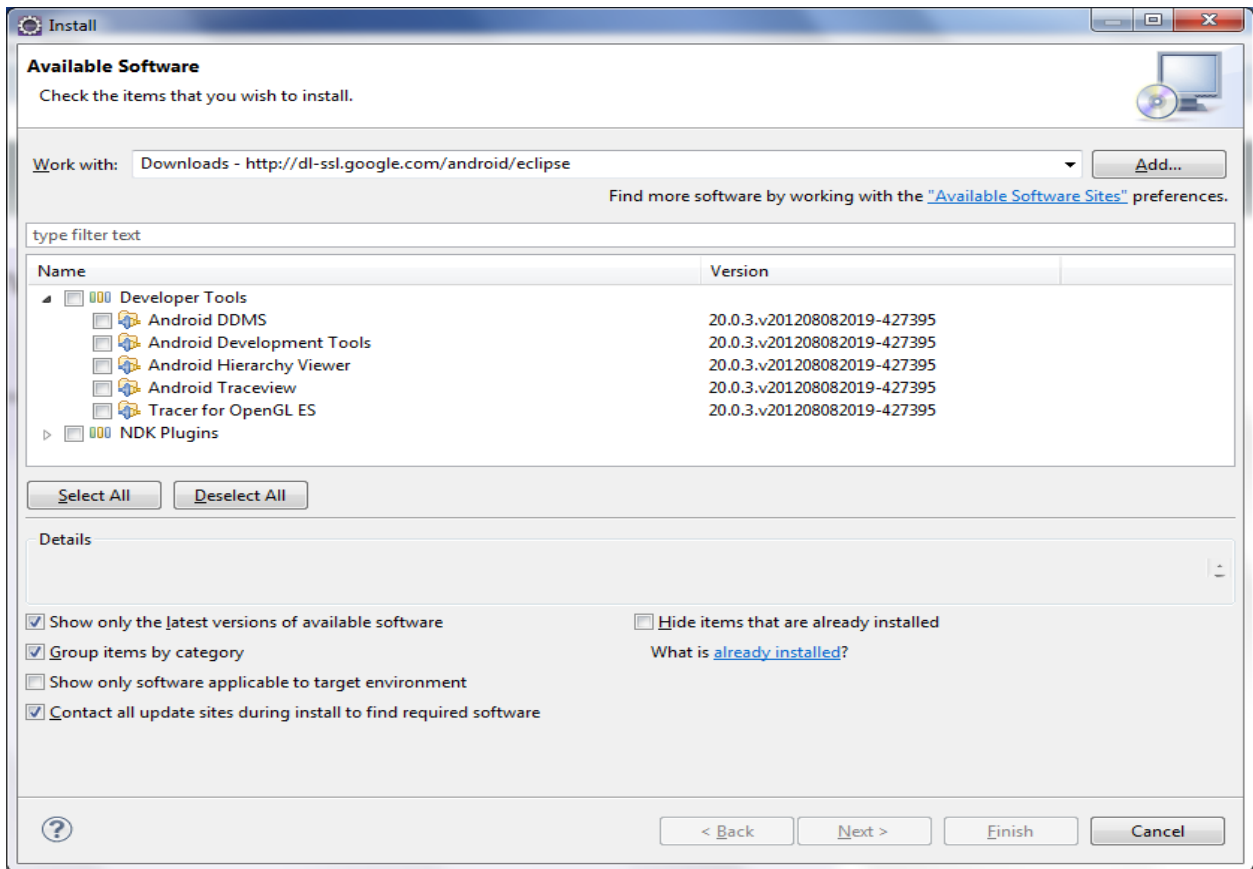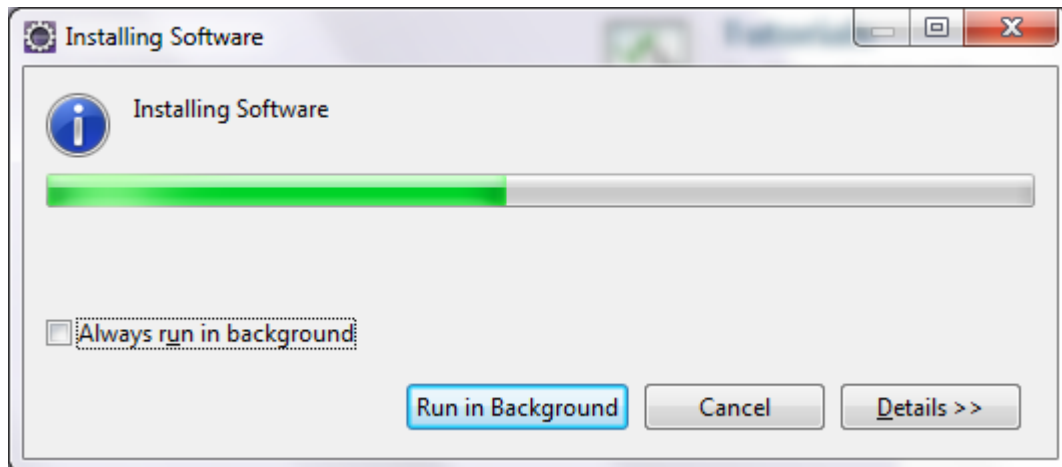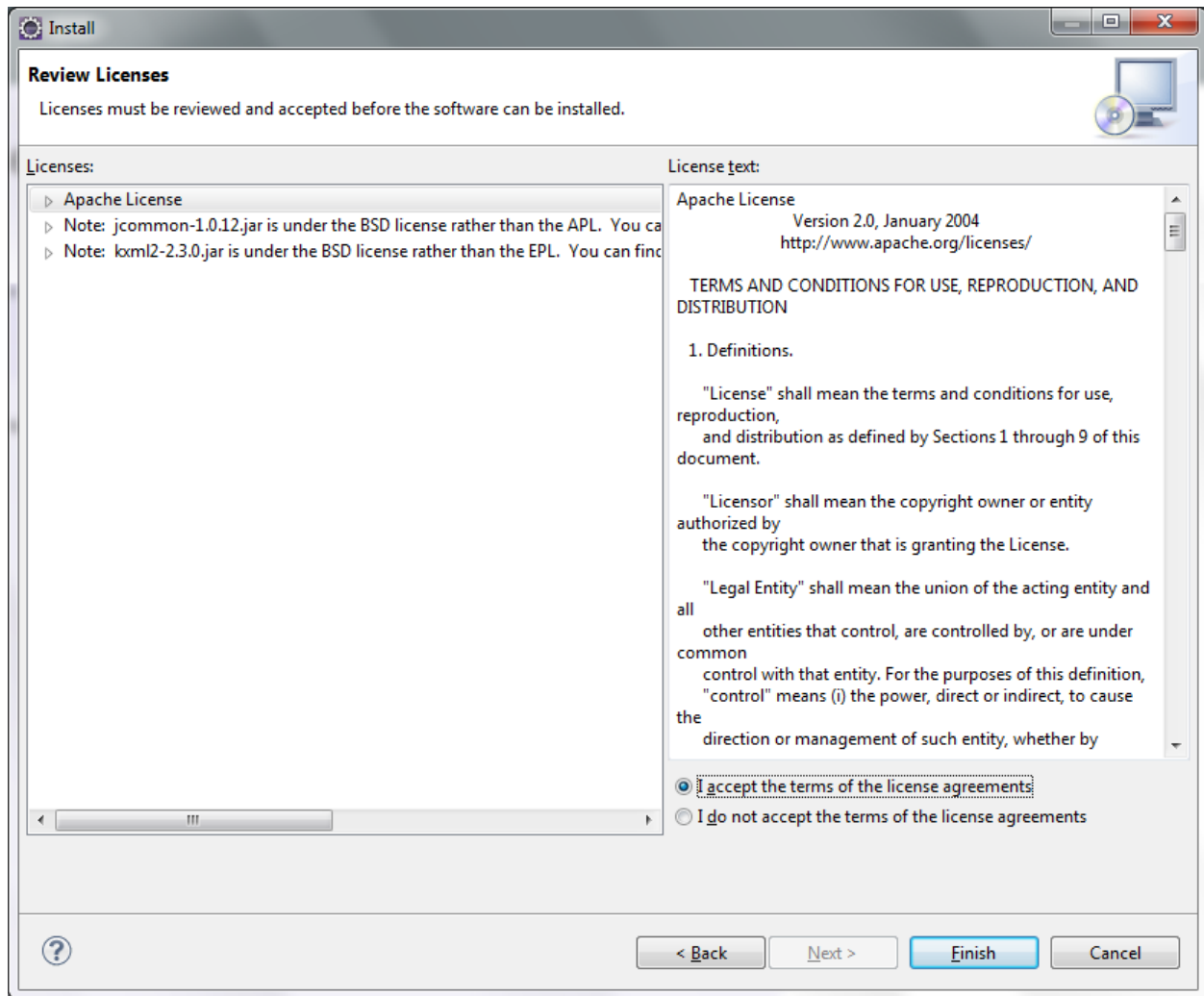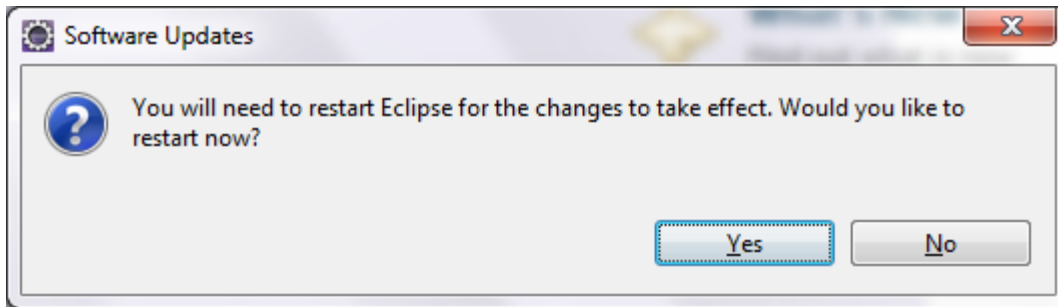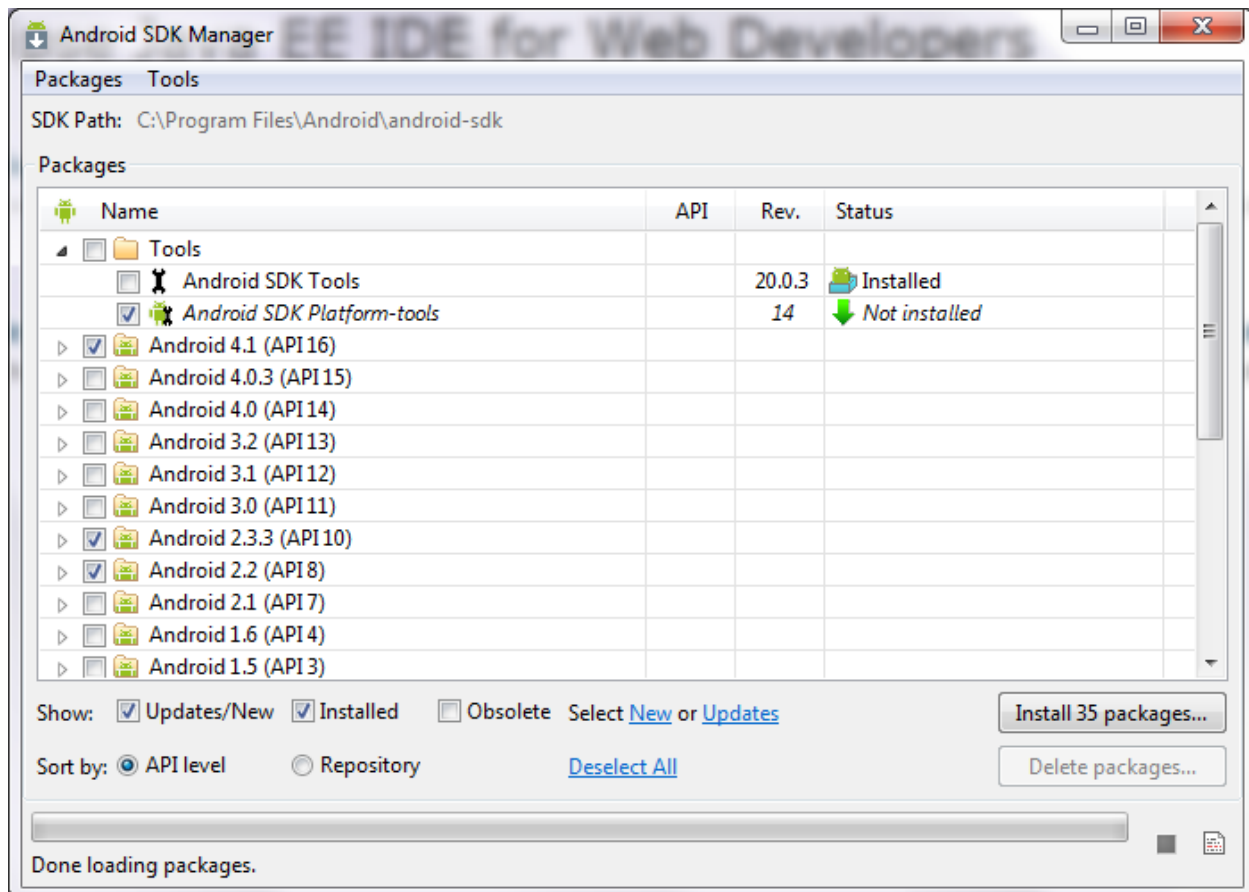| Name	Version	
◢ ☐ ▯▯▯ Developer Tools		
☐ 📦 Android DDMS	20.0.3.v201208082019-427395	
☐ 📦 Android Development Tools	20.0.3.v201208082019-427395	
☐ 📦 Android Hierarchy Viewer	20.0.3.v201208082019-427395	
☐ 📦 Android Traceview	20.0.3.v201208082019-427395	
☐ 📦 Tracer for OpenGL ES	20.0.3.v201208082019-427395	
▷ ☐ ▯▯▯ NDK Plugins		

[Select All] [Deselect All]

Details

☑ Show only the latest versions of available software   ☐ Hide items that are already installed

☑ Group items by category   What is already installed?

☐ Show only software applicable to target environment

☑ Contact all update sites during install to find required software

?   [< Back] [Next >] [Finish] [Cancel]

Install

Install Details
Review the items to be installed.

Name	Version	Id
📦 Android DDMS	20.0.3.v2012080820...	com.android.ide.eclipse.ddms.feature.gro...
📦 Android Development Tools	20.0.3.v2012080820...	com.android.ide.eclipse.adt.feature.group
📦 Android Hierarchy Viewer	20.0.3.v2012080820...	com.android.ide.eclipse.hierarchyviewer.f...
📦 Android Traceview	20.0.3.v2012080820...	com.android.ide.eclipse.traceview.feature....
📦 Tracer for OpenGL ES	20.0.3.v2012080820...	com.android.ide.eclipse.gldebugger.featu...

Size: Unknown

Details

?   [< Back] [Next >] [Finish] [Cancel]

After restart:

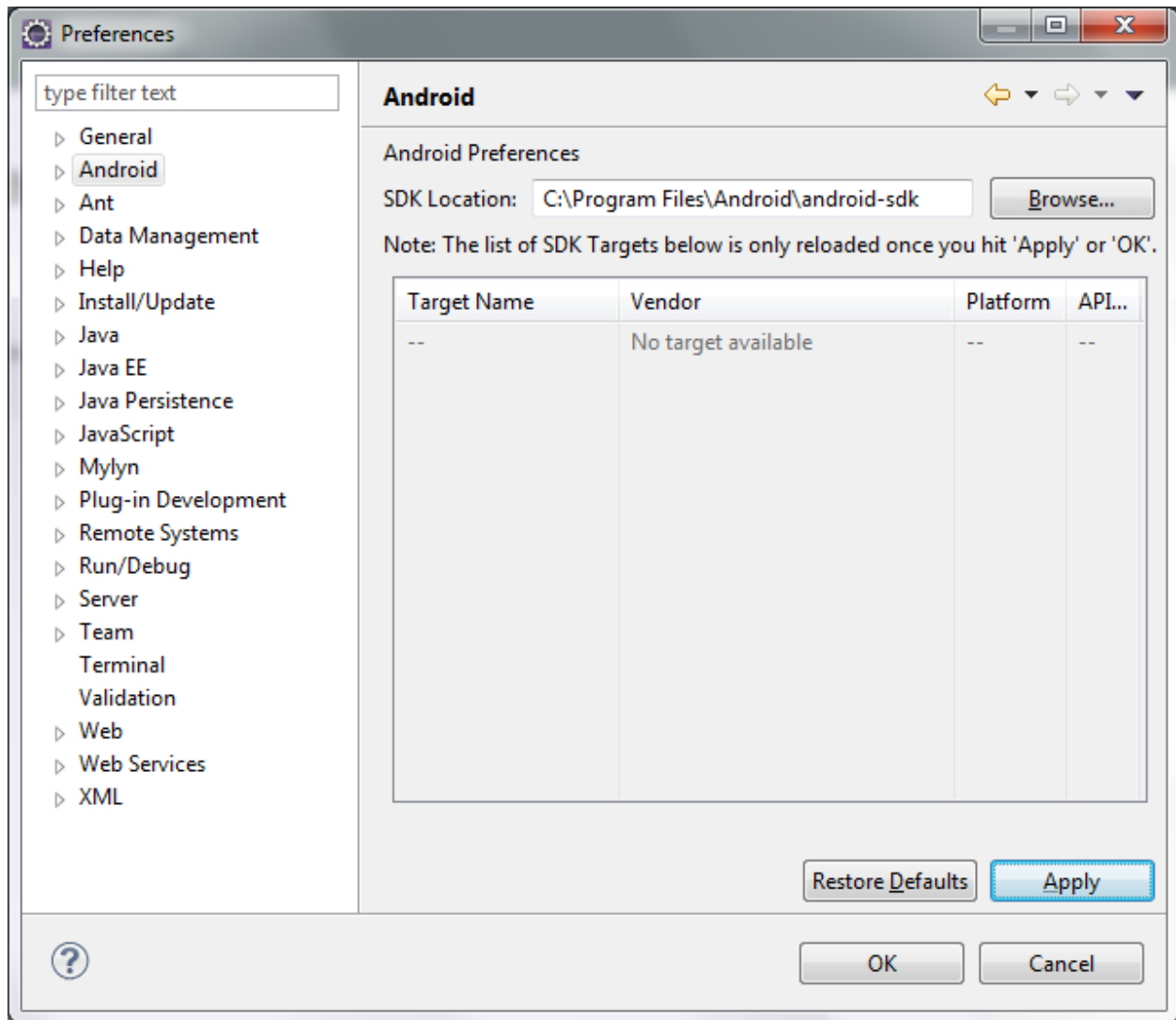Once the SDK is downloaded, unzip its content (the android-sdk-windows folder) into the C:\Android\ folder, or whatever name you have given to the folder you just created.

4. Android Development Tools (ADT)

The Android Development Tools (ADT) plug-in for Eclipse is an extension to the Eclipse IDE that supports the creation and debugging of Android applications. Using the ADT, you will be able to do

- Create new Android application projects.
- Access the tools for accessing your Android emulators and devices.
- Compile and debug Android applications.
- Export Android applications into Android Packages (APK).
- Create digital certificates for code-signing your APK.

To install the ADT, first launch Eclipse by double-clicking on the eclipse.exe file located in the eclipse folder.
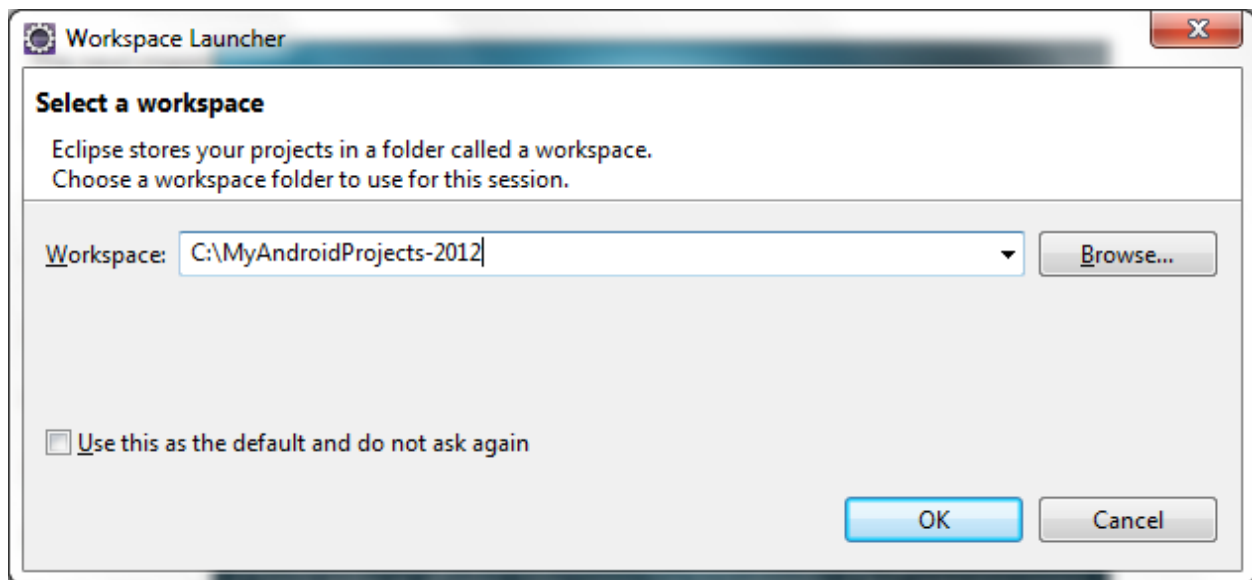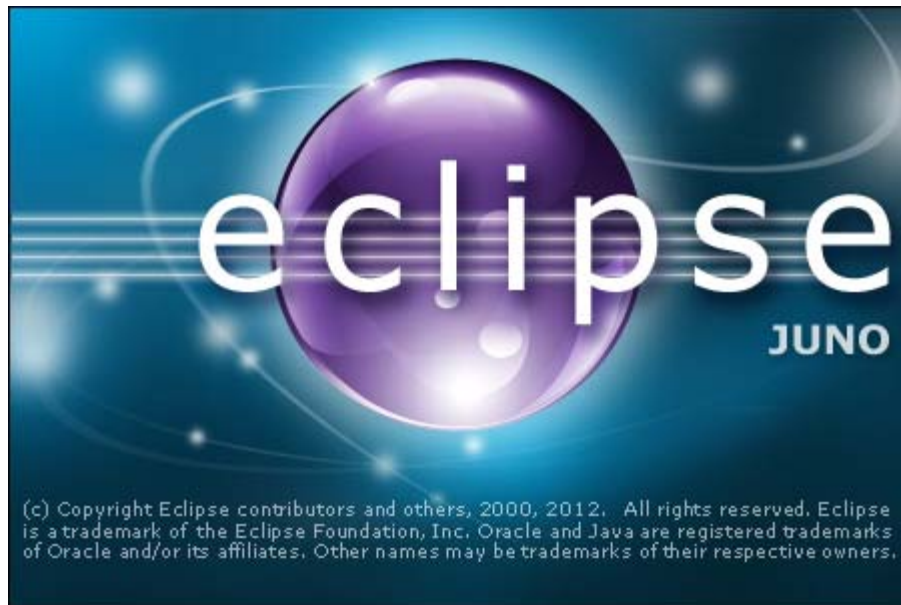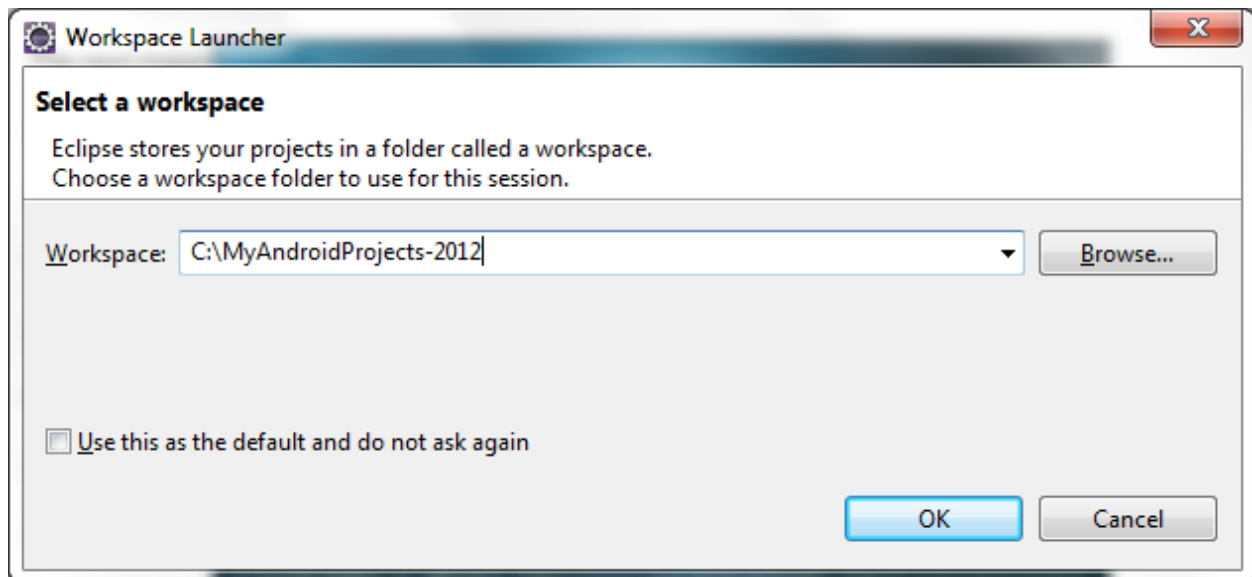
5. Creating Android Virtual Devices (AVD s)

The next step is to create AVD to be used for testing your Android applications. AVD stands for Android Virtual Devices. An AVD is an emulator instance that enables you to model an actual device. Each AVD consists of a hardware profile, a mapping to a system image, as well as emulated storage, such as a secure digital (SD) card.

You can create as many AVDs as you want in order to test your applications with several different configurations. This testing is important to confirm the behavior of your application when it is run on different devices with varying capabilities.

Each version of the Android OS is identified by an API level number. For example, Android 2.3 is level 9 (API 9), while Android 2.2 is level 8 (API 8), and so on. For each level, two platforms are available. For example, level 9 offers the following:

 SDK Platform Android 2.3

 Google APIs by Google Inc.

The key difference between the two is that the Google APIs platform contains the Google Maps library. Therefore, if the application you are writing requires Google Maps, you need to create an AVD using the Google APIs platform (more on this in Chapter 9, "Location Based Services."

Click the Virtual Devices item in the left pane of the window. Then click the New... button located in the right pane of the window.

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Click the Create AVD button when you are done.

Create new Android Virtual Device (AVD)

Name: Android_4.1_My_Emulator

Target: Android 4.1 - API Level 16

CPU/ABI:

SD Card:
- ○ Size: [ ] MiB
- ○ File: [ ] Browse...

Snapshot:
- ☐ Enabled

Skin:
- ◉ Built-in: Default (WVGA800)
- ○ Resolution: [ ] x [ ]

Hardware:

Property	Value	
Abstracted LCD density	240	
Max VM application hea...	48	
Device ram size	512	

New...
Delete

☐ Override the existing AVD with the same name

Create AVD   Cancel

Choose Packages to Install

Packages

Android Support Library, revision 10

Package Description & License

Package Description
Android Support Library, revision 10
By Android
Install path: extras\android\support

Archive Description
Archive for any OS
Size: 1.1 MiB
SHA1: 7c62e542d46ac3bdb89e1b90503d6afae557cf7d

Site
Google Inc. (dl-ssl.google.com)

◉ Accept ○ Reject   ○ Accept All

[*] Something depends on this package   Install   Cancel