



Android Application Development Development Tools

IDE & Android SDK

IDE



Eclipse

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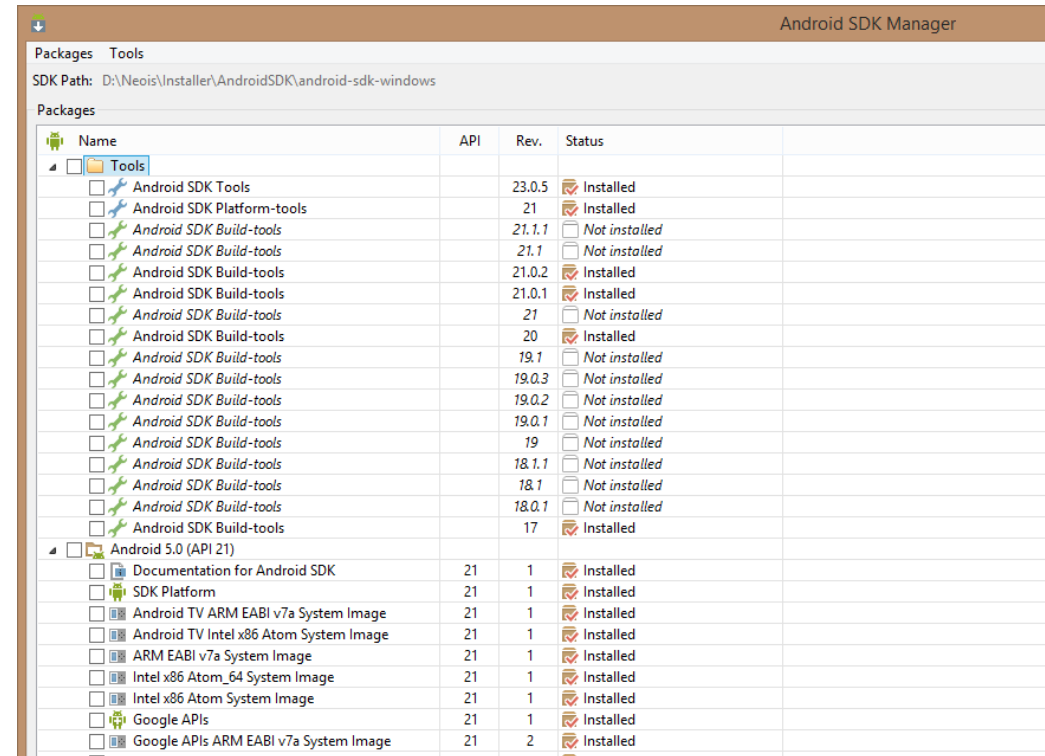


ADT



Android Studio

Android SDK

A screenshot of the Android SDK Manager window. The title bar says "Android SDK Manager". Below the title bar, there are tabs for "Packages" and "Tools". The "Packages" tab is selected. The "SDK Path" is shown as "D:\Neois\Installer\AndroidSDK\android-sdk-windows". The main area displays a list of packages with columns for Name, API, Rev., and Status. The list is divided into two sections: "Tools" and "Android 5.0 (API 21)".

Name	API	Rev.	Status
Tools			
Android SDK Tools		23.0.5	Installed
Android SDK Platform-tools		21	Installed
Android SDK Build-tools		21.1.1	Not installed
Android SDK Build-tools		21.1	Not installed
Android SDK Build-tools		21.0.2	Installed
Android SDK Build-tools		21.0.1	Installed
Android SDK Build-tools		21	Not installed
Android SDK Build-tools		20	Installed
Android SDK Build-tools		19.1	Not installed
Android SDK Build-tools		19.0.3	Not installed
Android SDK Build-tools		19.0.2	Not installed
Android SDK Build-tools		19.0.1	Not installed
Android SDK Build-tools		19	Not installed
Android SDK Build-tools		18.1.1	Not installed
Android SDK Build-tools		18.1	Not installed
Android SDK Build-tools		18.0.1	Not installed
Android SDK Build-tools		17	Installed
Android 5.0 (API 21)			
Documentation for Android SDK	21	1	Installed
SDK Platform	21	1	Installed
Android TV ARM EABI v7a System Image	21	1	Installed
Android TV Intel x86 Atom System Image	21	1	Installed
ARM EABI v7a System Image	21	1	Installed
Intel x86 Atom_64 System Image	21	1	Installed
Intel x86 Atom System Image	21	1	Installed
Google APIs	21	1	Installed
Google APIs ARM EABI v7a System Image	21	2	Installed

IDE & Android SDK

IDE

Write Code
Syntax Check
Code Refactoring
UI Preview
Version Control

Android SDK

Compile
Deploy
Signing
Emulator

Why Android Studio but not Eclipse?

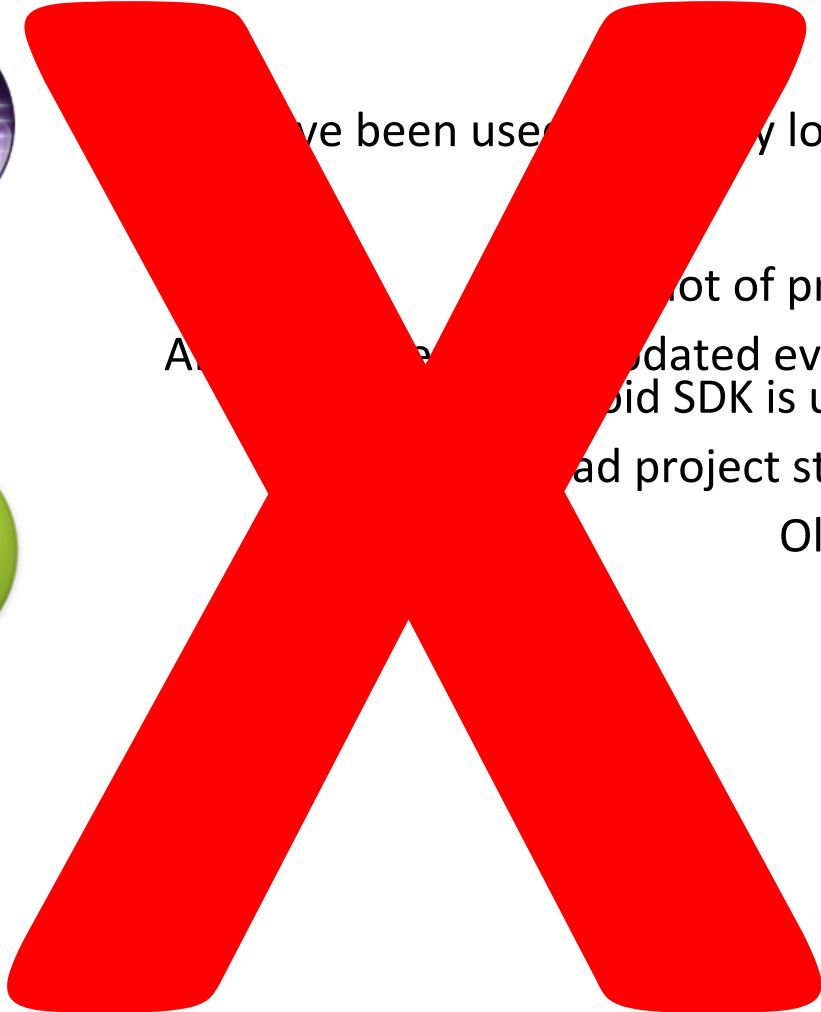


Eclipse

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ADT



Pros

Have been used for a long time

Cons

Not of problems

Updated everytime

Android SDK is updated

Bad project structure

Old world

Pros

Well-designed project structure focusing on Android Project

Dependencies: Smart way to use library

Excellent UI previewing for fighting with Fragmentation

Faster

Multiple-APK generation

Advanced code completion and refactoring

Google updates Android Studio first then ADT

New world

Cons

RAM consuming



























Android Studio

Installation

- Install JDK 1.8 (Why 1.8?)
- Setup `JAVA_HOME`
 - *Windows Only*
 - **Start menu > Computer > System Properties > Advanced System Properties.** Then open **Advanced tab > Environment Variables** and add a new system variable `JAVA_HOME` that points to your JDK folder, for example `C:\Program Files\Java\jdk1.7.0_21`.
- Install Android Studio
- Download Packages via **SDK Manager**
 - Have some coffee ... instant noodle ... watch some movie ... take a nap ... may be for a whole night
 - * If you have a copy of Android SDK, you can just copy it to your machine

SDK Package

Tools

   Tools			
  Android SDK Tools		24.3.3	 Installed
  <i>Android SDK Platform-tools</i>		22	 Installed
  Android SDK Build-tools		22.0.1	 Installed
  Android SDK Build-tools		22	 Installed
  Android SDK Build-tools		21.1.2	 Installed
  <i>Android SDK Build-tools</i>		20	 <i>Not installed</i>
  <i>Android SDK Build-tools</i>		19.1	 <i>Not installed</i>

SDK Package: Tools

- **Android SDK Tools**
 - Debugging Tools
 - Emulator
 - Basic Utilities
- **Android SDK Platform-tools**
 - Device Connector
- **Android SDK Build-tools**
 - Cross Compiler
 - APK Packer

Install them all
and always
update to the latest

SDK Package: Android X

Android 5.1.1 (API 22)			
<input type="checkbox"/> Documentation for Android SDK	22	1	<input checked="" type="checkbox"/> Installed
<input type="checkbox"/> SDK Platform	22	2	<input checked="" type="checkbox"/> Installed
<input type="checkbox"/> Samples for SDK	22	6	<input checked="" type="checkbox"/> Installed
<input type="checkbox"/> Android TV ARM EABI v7a System Image	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Android TV Intel x86 Atom System Image	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Android Wear ARM EABI v7a System Image	22	2	<input type="checkbox"/> Not installed
<input type="checkbox"/> Android Wear Intel x86 Atom System Image	22	2	<input type="checkbox"/> Not installed
<input type="checkbox"/> ARM EABI v7a System Image	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Intel x86 Atom_64 System Image	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Intel x86 Atom System Image	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Google APIs	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Google APIs ARM EABI v7a System Image	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Google APIs Intel x86 Atom_64 System Image	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Google APIs Intel x86 Atom System Image	22	1	<input type="checkbox"/> Not installed
<input type="checkbox"/> Sources for Android SDK	22	1	<input checked="" type="checkbox"/> Installed

Core

SDK Package: Back to Android X

Q: What is API Level?

Android 5.1.1 (API 22)			
Documentation for Android SDK	22	1	Installed
SDK Platform	22	2	Installed
Samples for SDK	22	6	Installed
Android TV ARM EABI v7a System Image	22	1	Not installed
Android TV Intel x86 Atom System Image	22	1	Not installed
Android Wear ARM EABI v7a System Image	22	2	Not installed
Android Wear Intel x86 Atom System Image	22	2	Not installed
ARM EABI v7a System Image	22	1	Not installed
Intel x86 Atom_64 System Image	22	1	Not installed
Intel x86 Atom System Image	22	1	Not installed
Google APIs	22	1	Not installed
Google APIs ARM EABI v7a System Image	22	1	Not installed
Google APIs Intel x86 Atom_64 System Image	22	1	Not installed
Google APIs Intel x86 Atom System Image	22	1	Not installed
Sources for Android SDK	22	1	Installed

API Level

New API Level

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New APIs added & Some Old APIs deprecated

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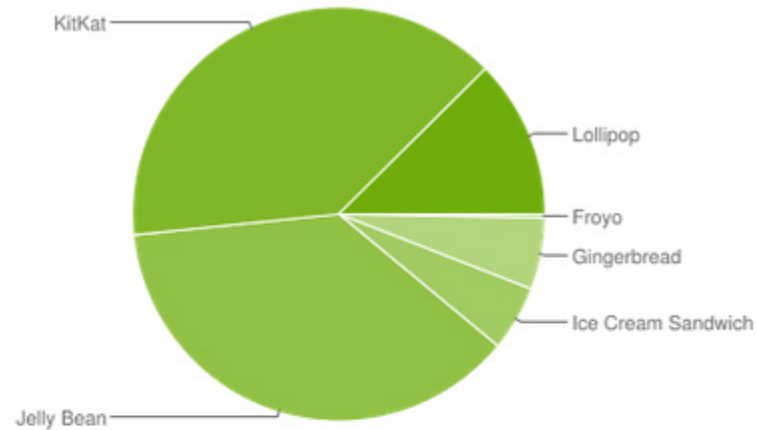
Some New UIs added & Some New UIs deprecated

Fragmentation: Software




































Version	Codename	API	Distribution
2.2	Froyo	8	0.3%
2.3.3 - 2.3.7	Gingerbread	10	5.6%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	5.1%
4.1.x	Jelly Bean	16	14.7%
4.2.x		17	17.5%
4.3		18	5.2%
4.4	KitKat	19	39.2%
5.0	Lollipop	21	11.6%
5.1		22	0.8%

Data collected during a 7-day period ending on June 1, 2015.




































Any versions with less than 0.1% distribution are not shown.



SDK Package: Extras

<input type="checkbox"/>  Extras					
<input type="checkbox"/>  Android Support Repository		15	 Installed	Must	
<input type="checkbox"/>  Android Support Library		22.2	 Installed		
<input type="checkbox"/>  Google AdMob Ads SDK		11	 Installed	Windows Only	
<input type="checkbox"/>  Google Cloud Messaging for Android Library		3	 Installed		
<input type="checkbox"/>  Google USB Driver		11	 Installed		
<input type="checkbox"/>  Google Play services for Fit Preview		1	 Installed		
<input type="checkbox"/>  Google Play services		25	 Installed		
<input type="checkbox"/>  Google Repository		19	 Installed		
<input type="checkbox"/>  Google Play Billing Library		5	 Installed		
<input type="checkbox"/>  Google Play Licensing Library		2	 Installed		
<input type="checkbox"/>  Google Play APK Expansion Library		3	 Installed		
<input type="checkbox"/>  Android Auto API Simulators		1	 Installed		
<input type="checkbox"/>  Google Web Driver		2	 Installed		
<input type="checkbox"/>  Intel x86 Emulator Accelerator (HAXM installer)		5.3	 Installed		
<input type="checkbox"/>  Market Licensing		1	 Installed		
<input type="checkbox"/>  Ndk Bundle		1	 Installed		
<input type="checkbox"/>  Usb Driver		3	 Installed		

SDK Package: Extras

<input type="checkbox"/>  Extras			
<input type="checkbox"/>  Android Support Repository		15	 Installed
<input type="checkbox"/>  Android Support Library		22.2	 Installed
<input type="checkbox"/>  Google AdMob Ads SDK		11	 Installed
<input type="checkbox"/>  Google Cloud Messaging for Android Library		3	 Installed
<input type="checkbox"/>  Google USB Driver		11	 Installed
<input type="checkbox"/>  Google Play services for Fit Preview		1	 Installed
<input type="checkbox"/>  Google Play services		25	 Installed
<input type="checkbox"/>  Google Repository		19	 Installed
<input type="checkbox"/>  Google Play Billing Library		5	 Installed
<input type="checkbox"/>  Google Play Licensing Library		2	 Installed
<input type="checkbox"/>  Google Play APK Expansion Library		3	 Installed
<input type="checkbox"/>  Android Auto API Simulators		1	 Installed
<input type="checkbox"/>  Google Web Driver		2	 Installed
<input type="checkbox"/>  Intel x86 Emulator Accelerator (HAXM installer)		5.3	 Installed
<input type="checkbox"/>  Market Licensing		1	 Installed
<input type="checkbox"/>  Ndk Bundle		1	 Installed
<input type="checkbox"/>  Usb Driver		3	 Installed

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Packages: Support Library

- **Android Support Repository**
- **Android Support Library**

An API extension allows you to use new-age APIs in older platform

- ActionBar
- Fragment
- Theming

Provides some advanced and popular APIs

- DrawerLayout
- ViewPager
- etc.

Packages: Google Play services

- **Google Repository**
- **Google Play Services**

Access Google's services APIs

- Google Maps
- In-App Purchase
- User Authentication
- Google+
- etc.