

Becoming a Pro

IN Mobile Applications Testing



Mobile APPS: **Distribution/Installation/Logs**

How to enable Developers Options ?

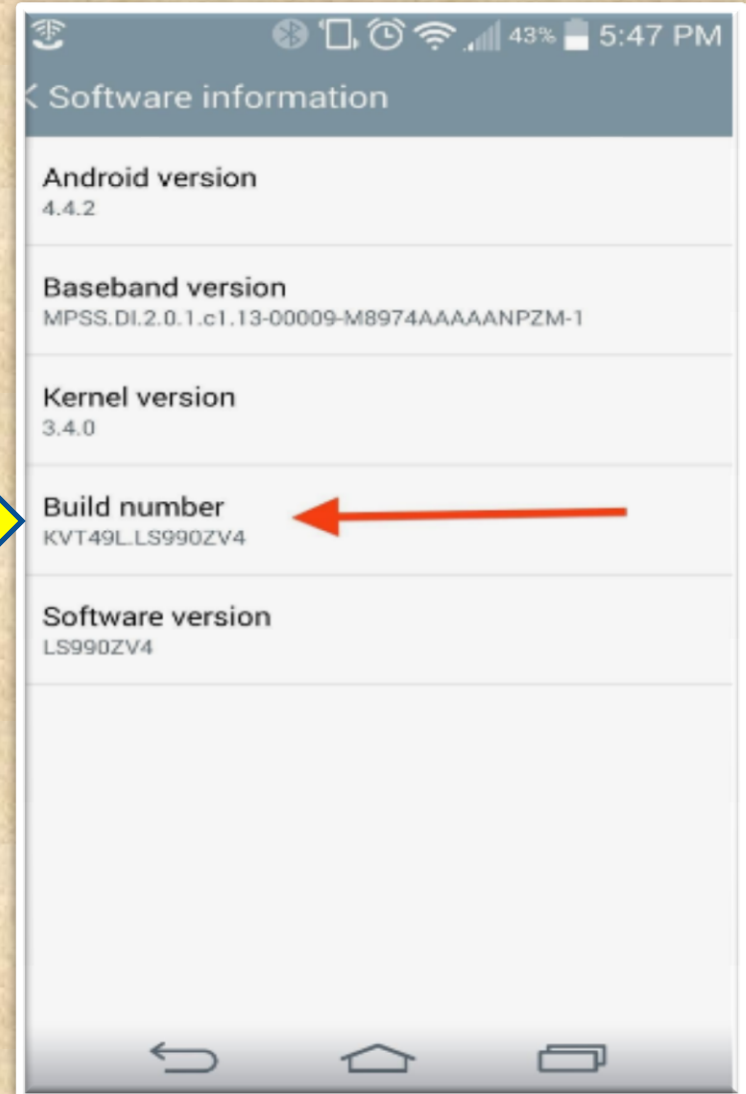
1. Enable USB debugging in the device system settings, under **Developer options**.



2. To make it visible, go to **Settings > About phone** and tap **Build number seven times**.



3. Return to the previous screen to find **Developer options** at the bottom.



Mobile APPS: *Distribution/Installation/Logs*

(contin.)How to enable Developers Options ?

Open Developers Options



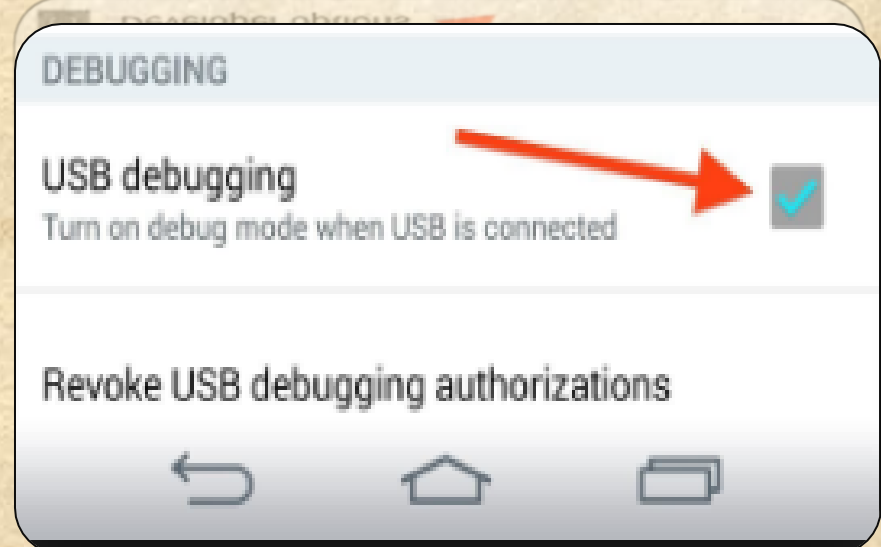
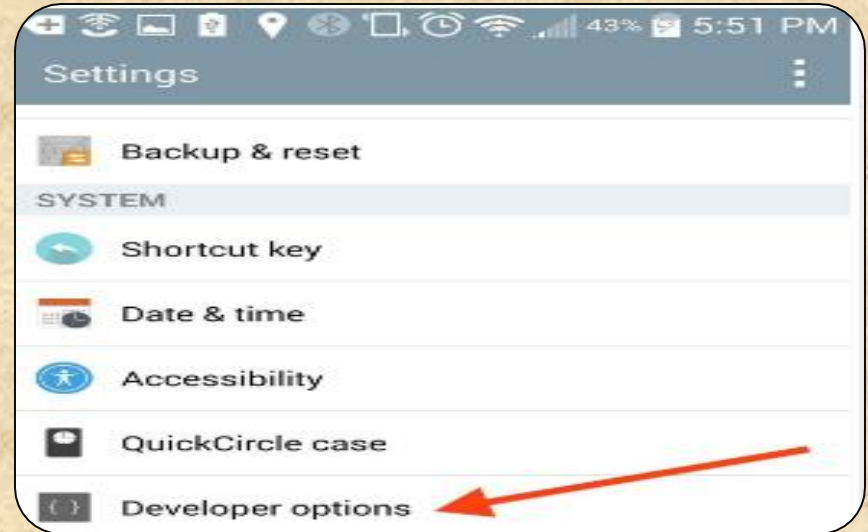
Check the box USB debugging.



This setting will allow you to connect your device to your computer, then issue **fastboot** commands via **ADB**.



This is useful for rooting, unlocking bootloaders, **installing recoveries**, and a ton more.



Mobile APPS: *Distribution/Installation/Logs*

Do I have a correct USB Configuration on my Device?

Open Developers Options



Tap on "Select USB Configuration" Menu

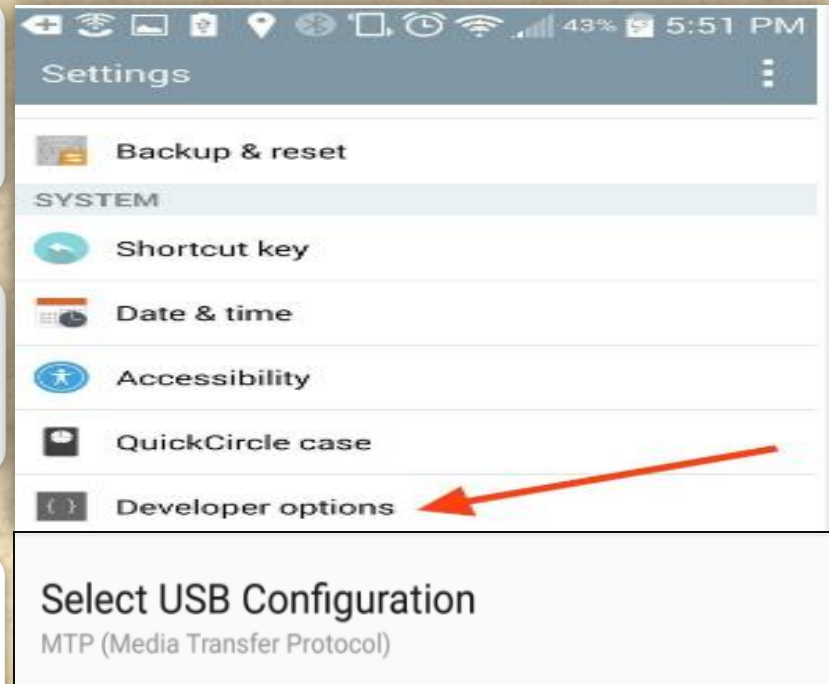


Make sure it's set to MPT

(Media Transfer Protocol)



Having a problem with your PC detecting your Device? This might be a solution.



Mobile APPS: *Distribution/Installation/Logs*

How to make your device “Authorized” in Android Studio ?

Open Developers Options



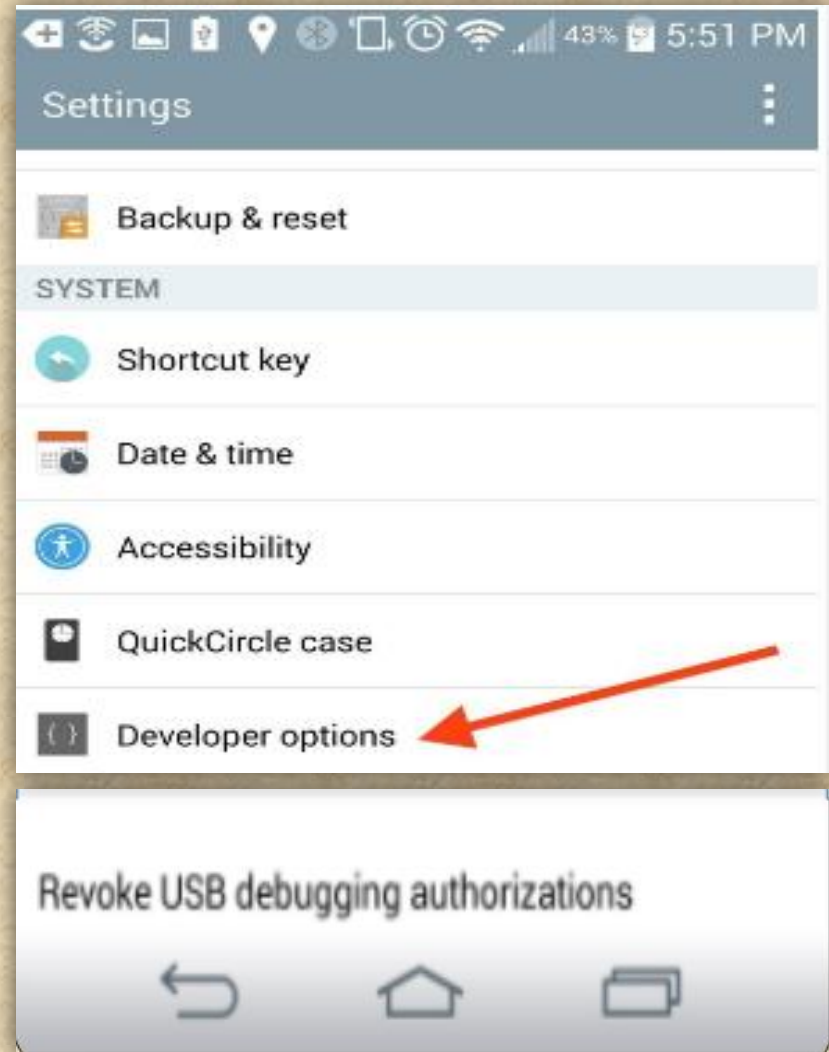
Tap on
“Revoke USB Debugging
Authorization”



Tap OK when message pops up
“revoke access to USB debugging..”



Disconnect and then connect USB cable to your
PC/Laptop
Sometime you will need to turn off and back ON
Developers Options menu (don't forget to check
USB debugging box again)



Mobile APPS: **Distribution/Installation/Logs**



Android Studio

Powered by IntelliJ Platform

Mobile APPS: *Distribution/Installation/Logs*



Android
Studio

What is
Android Studio?

Android Studio is the official integrated development environment (IDE) for **Android** platform development.

The official language for Android development is **Java**. Large parts of Android are written in **Java** and its APIs are designed to be called primarily from **Java**.

It is possible to develop C and C++ apps using the Android Native Development Kit (NDK), however it isn't something that Google promotes.



android

What is ADB in Android Studio

Android Debug Bridge (adb) is a versatile command line tool that lets you communicate with an emulator instance or connected Android-powered device.

It is a client-server program that includes three components:

A **client**, which sends commands. The client runs on your development machine. You can invoke a client from a shell by issuing an adb command. Other Android tools such as DDMS also create adb clients.

A **daemon**, which runs commands on a device. The daemon runs as a background process on each emulator or device instance.

A **server**, which manages communication between the client and the daemon. The server runs as a background process on your development machine.

What is ADB LOCATS?

Logcat is a command-line tool that dumps a log of system messages, including stack traces when the device throws an error and messages that you have written from your app with the Log class

ANDROID MONITOR includes a logcat Monitor that displays debug messages.

The logcat Monitor displays system messages, such as when a garbage collection occurs, as well as messages that you can add to your app using the LOG class.

It displays messages in real time and also keeps a history so you can view older messages.

What is ADB LOCATS?

**To set a LOG
LEVEL : in the
log level MENU
Select the
Following
Options**

Verbose - Show all log messages (the default).

Debug - Show debug log messages that are useful during development only, as well as the message levels lower in this list.

Info - Show expected log messages for regular usage, as well as the message levels lower in this list.

Warn - Show possible issues that are not yet errors, as well as the message levels lower in this list.

Error - Show issues that have caused errors, as well as the message level lower in this list.

Assert - Show issues that the developer expects should never happen.

Mobile APPS: **Distribution/Installation/Logs**

What is ADB LOCATS?

HOMEWORK : <http://adbshell.com/commands/adb-logcat>

Some most useful commands

adb logcat *:V *lowest priority, filter to only show Verbose level*

adb logcat *:D *filter to only show Debug level*

adb logcat *:I *filter to only show Info level*

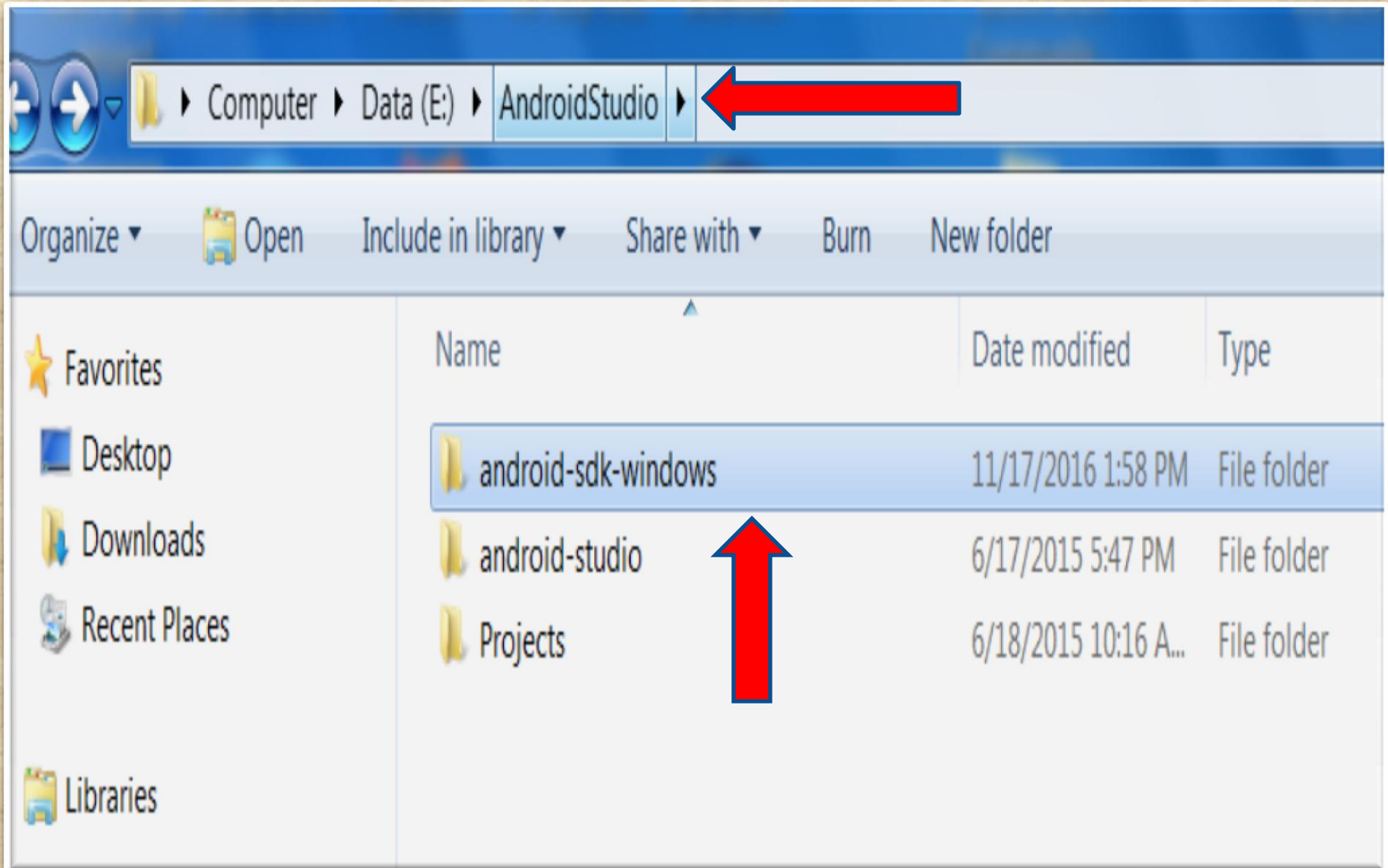
adb logcat *:W *filter to only show Warning level*

adb logcat *:E *filter to only show Error level*

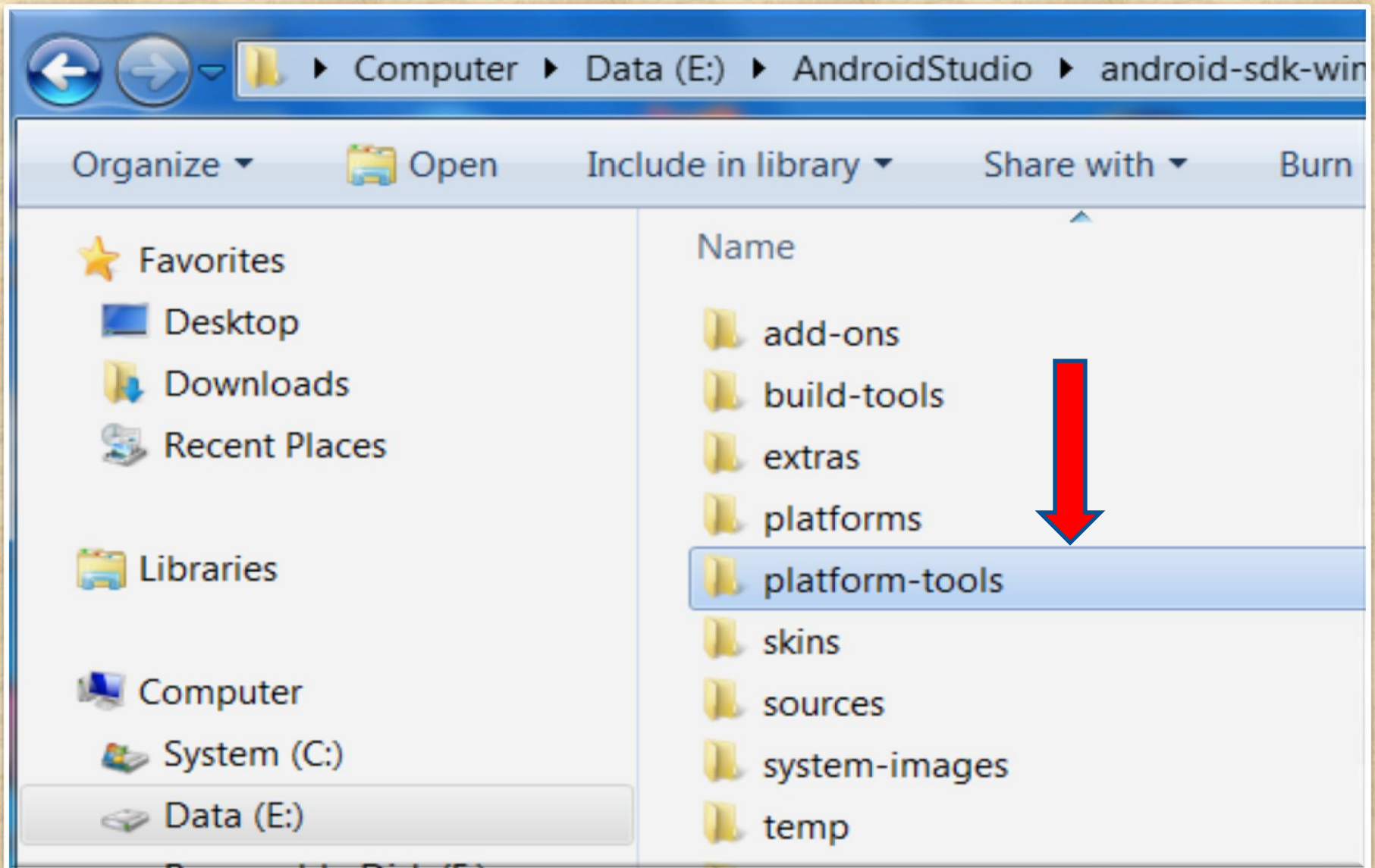
adb logcat *:F *filter to only show Fatal level*

adb logcat *:T *filter to show steps leading up to errors and warnings*

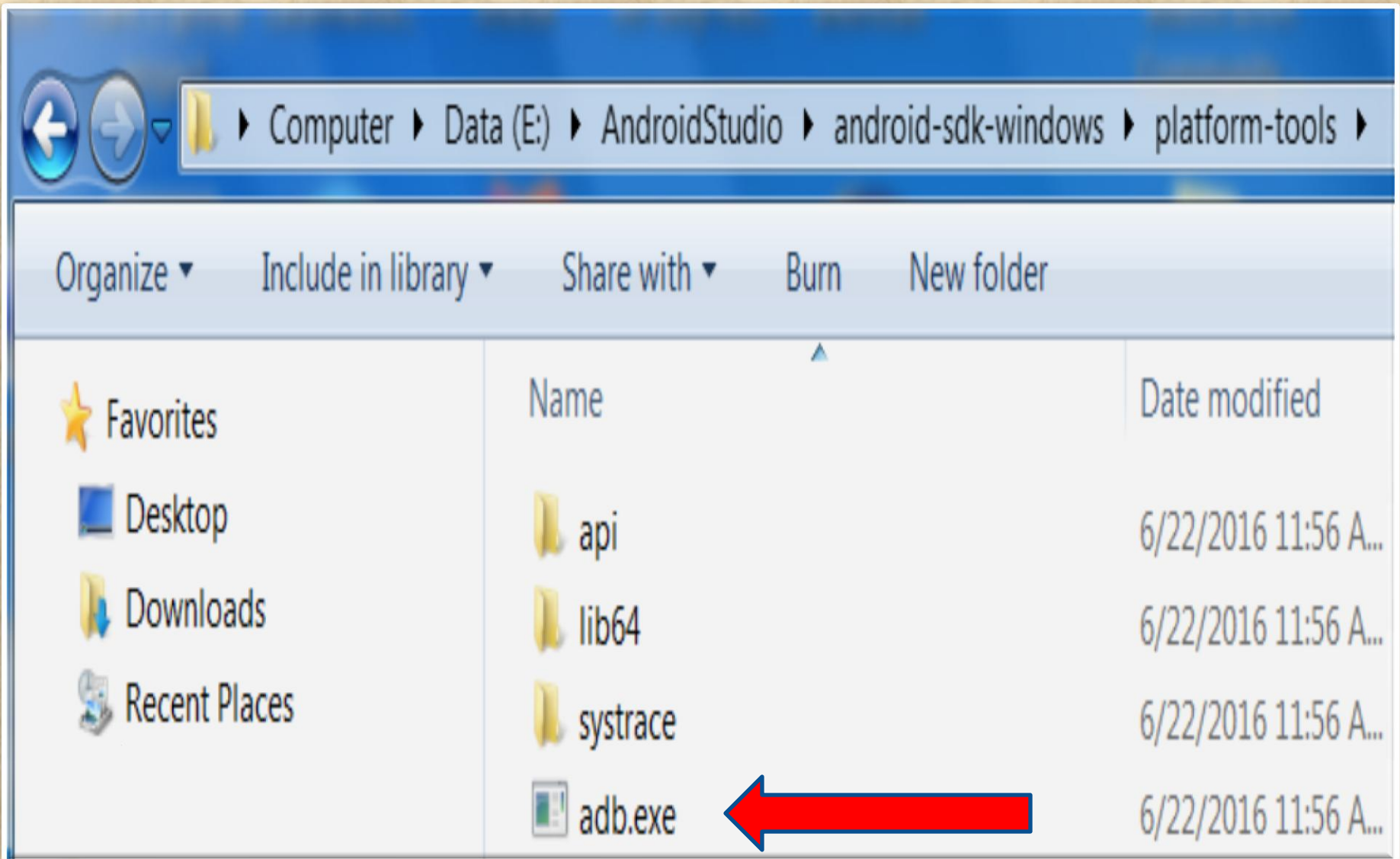
Mobile APPS: **Distribution/Installation/Logs**



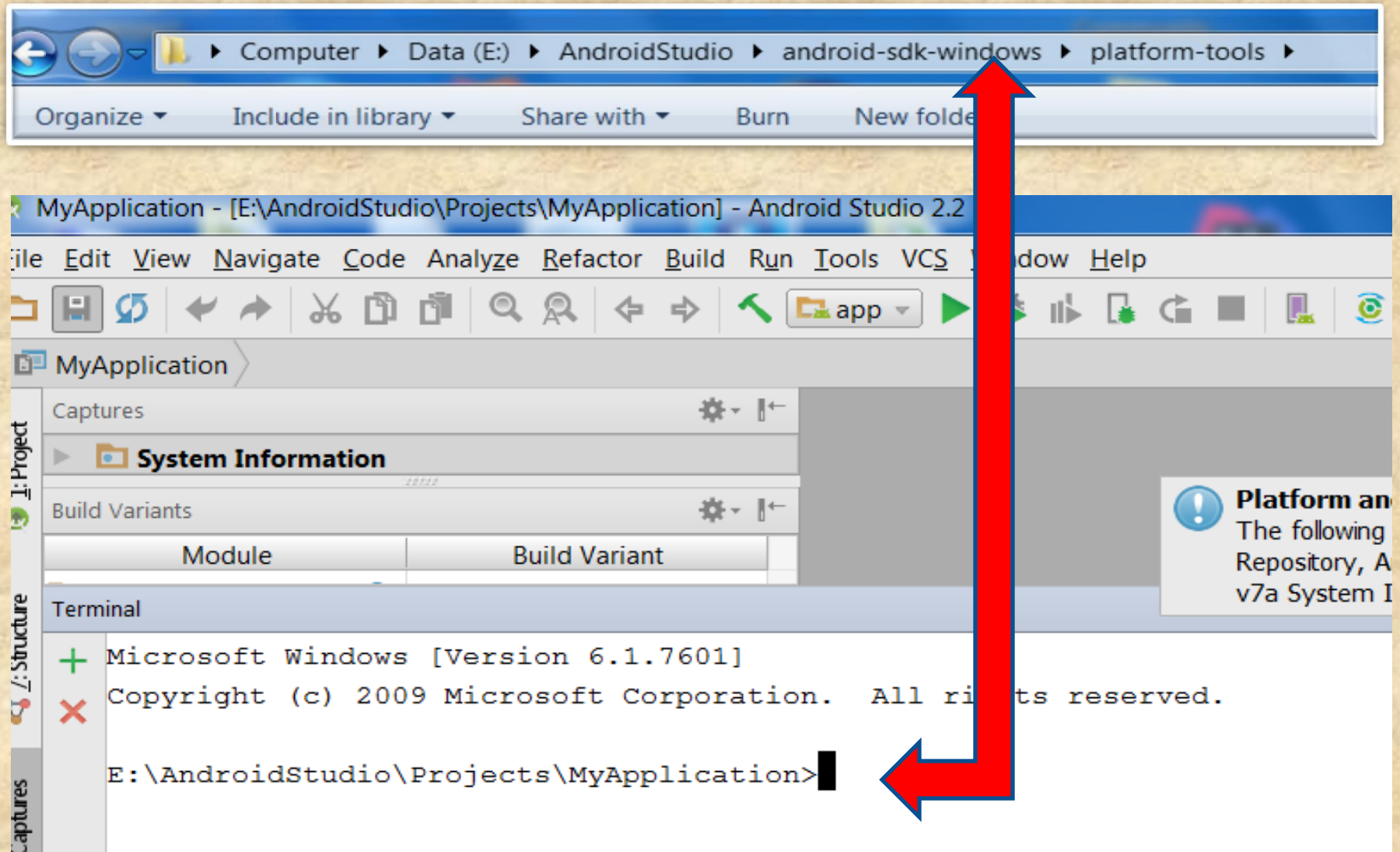
Mobile APPS: **Distribution/Installation/Logs**



Mobile APPS: **Distribution/Installation/Logs**



Mobile APPS: *Distribution/Installation/Logs*



Mobile APPS: **Distribution/Installation/Logs**

MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

MyApplication

Captures

System Information

Build Variants

Module	Build Variant
--------	---------------

Terminal


Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

E:\AndroidStudio\Projects\MyApplication>cd E:\AndroidStudio\android-sdk-windows\platform-tools

E:\AndroidStudio\android-sdk-windows\platform-tools>

Platform and Plugin Updates

The following components are ready to [update](#): A Repository, Android SDK Platform-Tools 25.0.2, A v7a System Image, Android SDK Tools 25.2.4



Mobile APPS: **Distribution/Installation/Logs**

The screenshot shows the Android Studio 2.2 interface. The top menu bar includes File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, and Help. The toolbar contains various icons for file operations, navigation, and development. The left sidebar shows the Project, Structure, and Captures panels. The main editor area displays the 'MyApplication' project. The 'System Information' tab is active, showing details about the system and the build environment. The 'Build Variants' tab is also visible, showing a table with columns for Module and Build Variant. The 'Terminal' window at the bottom shows the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

E:\AndroidStudio\Projects\MyApplication>cd E:\AndroidStudio\android-sdk-windows\platform-tools

E:\AndroidStudio\android-sdk-windows\platform-tools>adb devices
```

A red arrow points to the 'adb devices' command in the terminal.

Platform and Plugin Updates

The following components are ready to [update](#): Android Repository, Android SDK Platform-Tools 25.0.2, Android v7a System Image, Android SDK Tools 25.2.4

Mobile APPS: *Distribution/Installation/Logs*

MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2

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Module	Build Variant
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Terminal

Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

E:\AndroidStudio\Projects\MyApplication>cd E:\AndroidStudio\android-sdk-windows\platform-tools

E:\AndroidStudio\android-sdk-windows\platform-tools>adb devices

List of devices attached

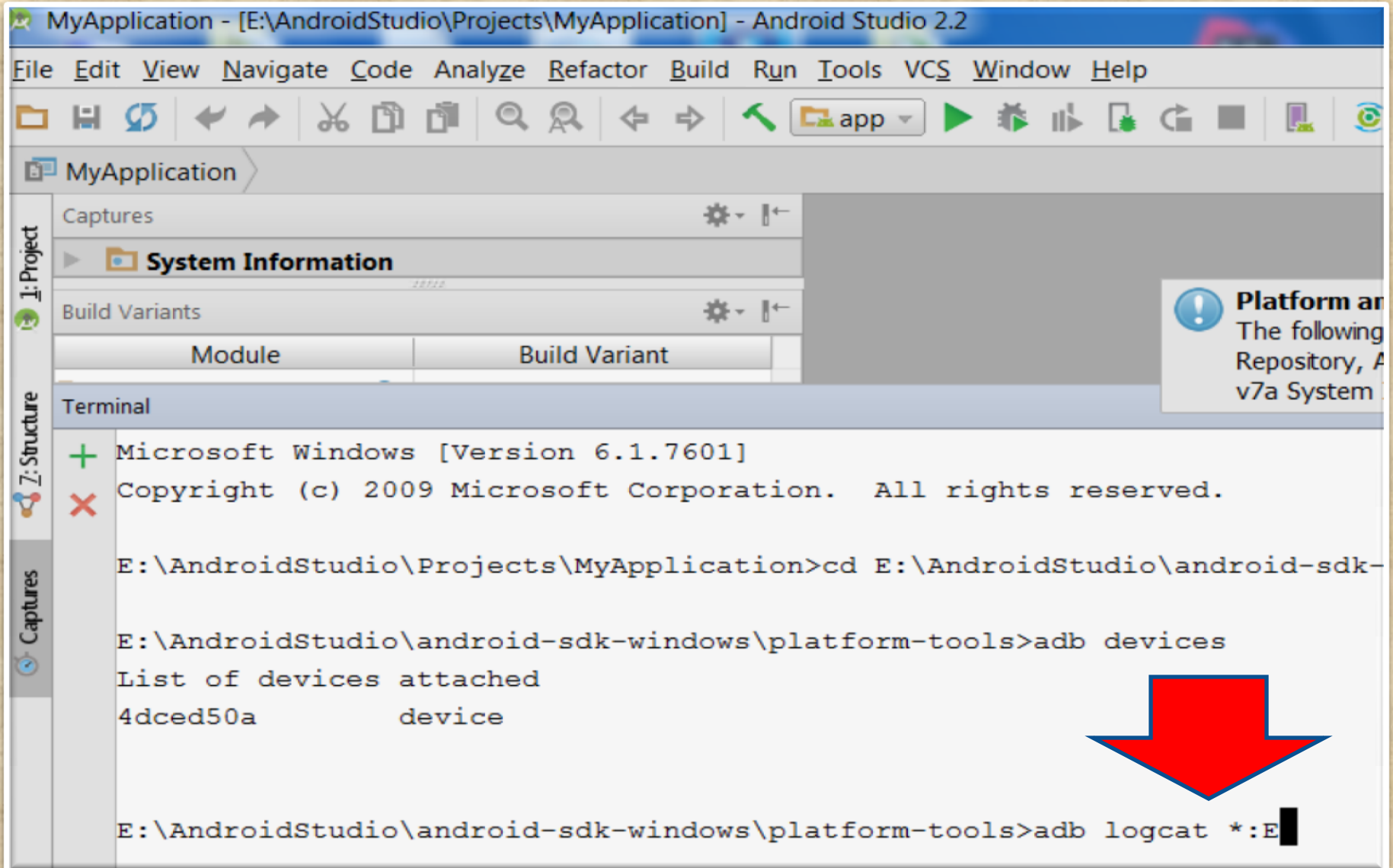
4dced50a	device
----------	--------

E:\AndroidStudio\android-sdk-windows\platform-tools>

Platform and Plugin Updates

The following components are ready to [update](#): Android Repository, Android SDK Platform-Tools 25.0.2, Android v7a System Image, Android SDK Tools 25.2.4

Mobile APPS: *Distribution/Installation/Logs*



The screenshot shows the Android Studio 2.2 interface. The top menu bar includes File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, and Help. The toolbar contains various icons for file operations, navigation, and running the application. The left sidebar shows the Project, Build Variants, and Terminal tabs. The main editor area displays the terminal output of the following commands:

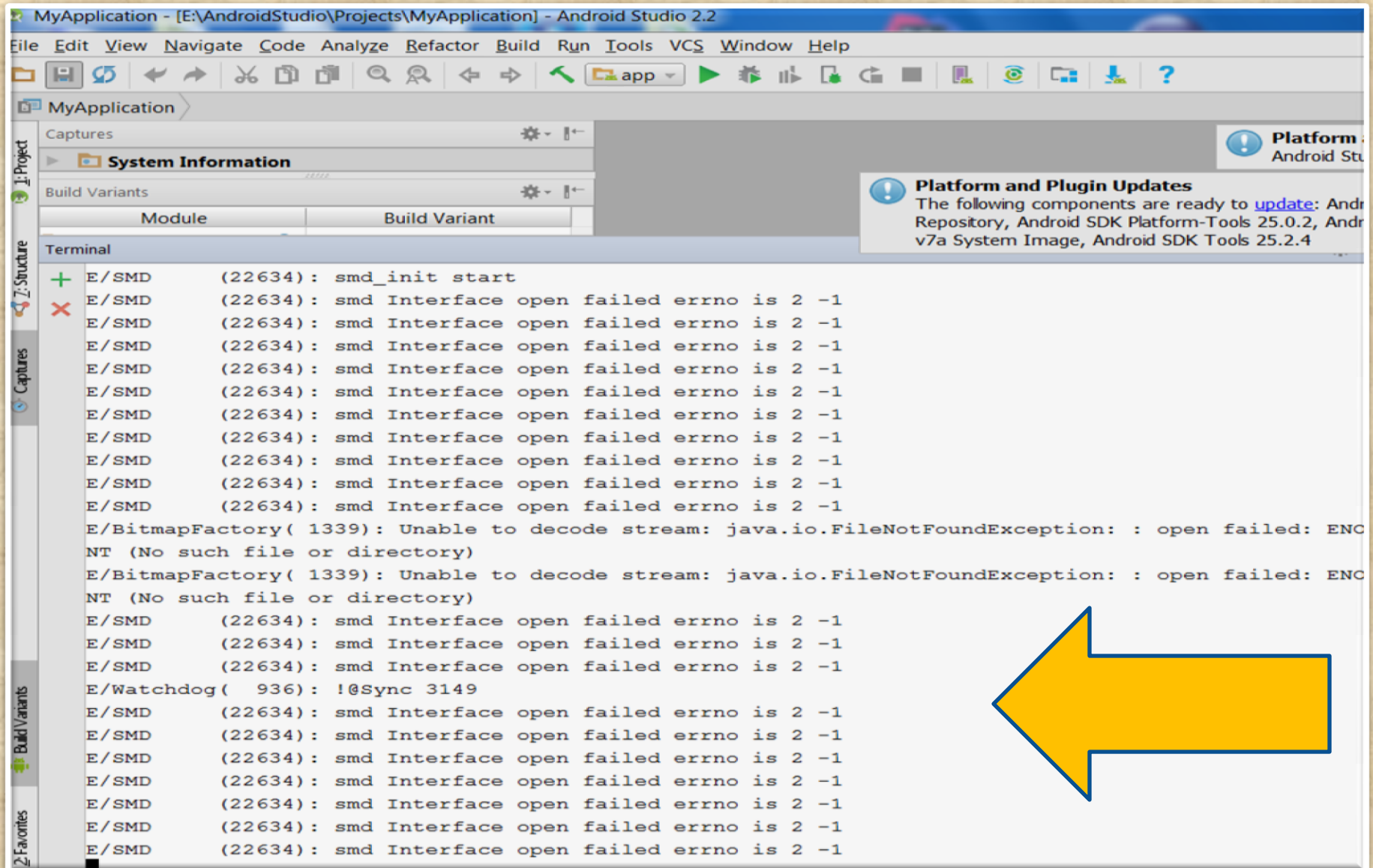
```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

E:\AndroidStudio\Projects\MyApplication>cd E:\AndroidStudio\android-sdk-
E:\AndroidStudio\android-sdk-windows\platform-tools>adb devices
List of devices attached
4dced50a          device

E:\AndroidStudio\android-sdk-windows\platform-tools>adb logcat *:E
```

A large red arrow points to the terminal output, specifically highlighting the command `adb logcat *:E`.

Mobile APPS: Distribution/Installation/Logs

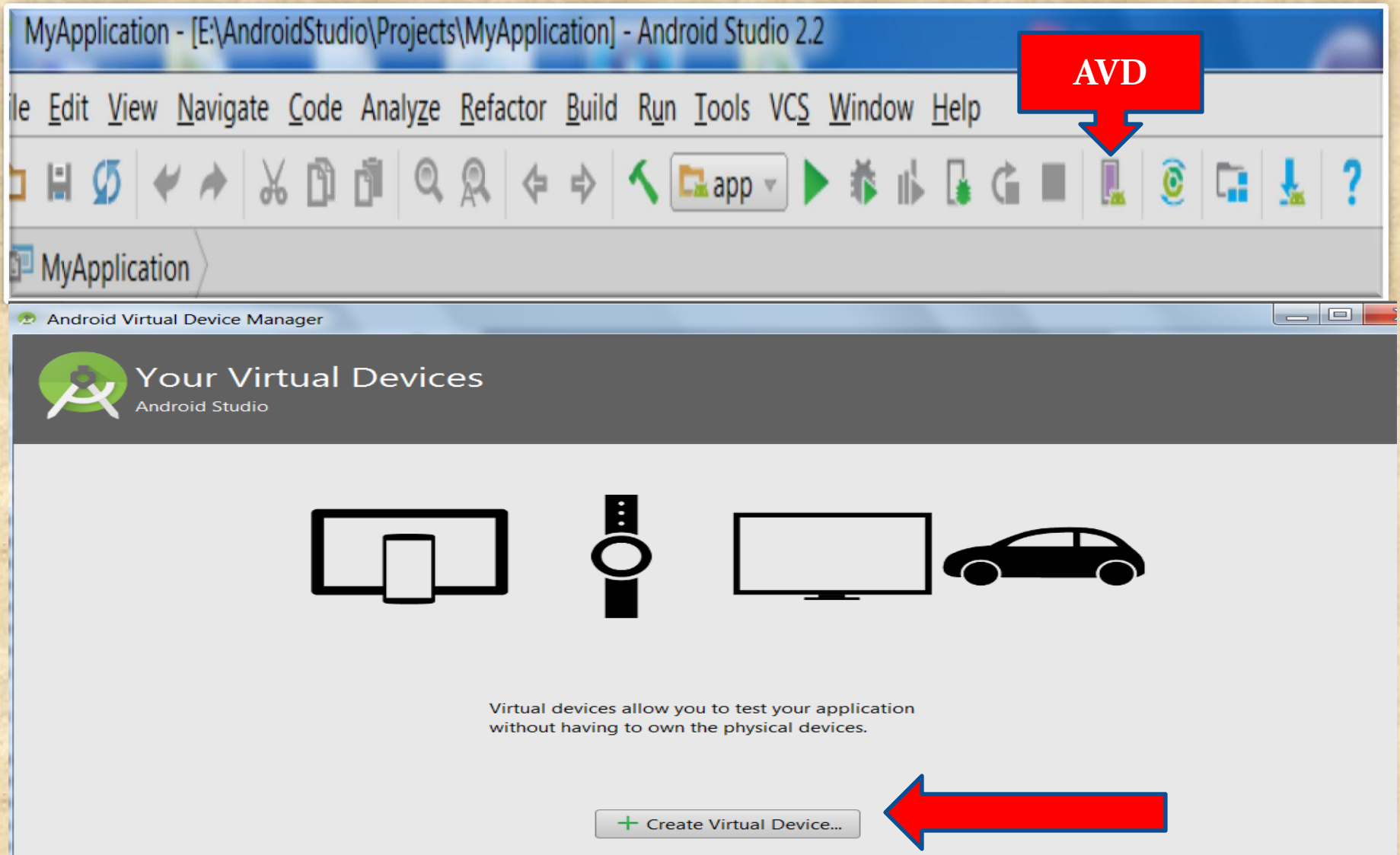


The screenshot shows the Android Studio 2.2 interface. The top menu bar includes File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, and Help. The toolbar contains various icons for file operations, navigation, and development. The left sidebar shows the Project, Structure, and Captures panels. The main editor area displays the 'System Information' tab, which includes a table for 'Build Variants' and a 'Terminal' window. The terminal window shows the following log output:

```
E/SMD (22634): smd_init start
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/BitmapFactory( 1339): Unable to decode stream: java.io.FileNotFoundException: : open failed: ENO
NT (No such file or directory)
E/BitmapFactory( 1339): Unable to decode stream: java.io.FileNotFoundException: : open failed: ENO
NT (No such file or directory)
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/Watchdog( 936): !@Sync 3149
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
```

A large yellow arrow points to the terminal log output.

Mobile APPS: **Distribution/Installation/Logs**



Mobile APPS: Distribution/Installation/Logs

Virtual Device Configuration

Select Hardware
Android Studio

Choose a device definition

Category	Name	Size	Resolution	Density
TV	Nexus S	4.0"	480x800	hdpi
Wear	Nexus One	3.7"	480x800	hdpi
Phone	Nexus 6P	5.7"	1440x2560	560dpi
	Nexus 6	5.96"	1440x2560	560dpi
	Nexus 5X	5.2"	1080x1920	420dpi
	Nexus 5	4.95"	1080x1920	xxhdpi
	Nexus 4	4.7"	768x1280	xhdpi
	Galaxy Nexus	4.65"	720x1280	xhdpi
	5.4" FWVGA	5.4"	480x854	mdpi
	5.1" WVGA	5.1"	480x800	mdpi
	4.7" WXGA	4.7"	720x1280	xhdpi

New Hardware Profile Import Hardware Profiles

Nexus 5

1080px
4.95"
1920px


Size: normal
Ratio: long
Density: 420dpi

Clone Device...

Previous Next Cancel Finish Help

Mobile APPS: **Distribution/Installation/Logs**

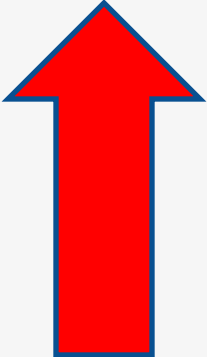
Virtual Device Configuration

 **System Image**
Android Studio


Select a system image

Recommended x86 Images Other Images

Release Name	API Level ▼	ABI	Target
null Download	25	x86_64	Android API 25 (with Google APIs)
null Download	25	x86	Android API 25 (with Google APIs)
Lollipop	22	x86	Android 5.1 (with Google APIs)



Lollipop



API Level
22


Android
5.1

Google Inc.

System Image
x86


Mobile APPS: *Distribution/Installation/Logs*


Virtual Device Configuration

 **Android Virtual Device (AVD)**
Android Studio


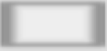

Verify Configuration

AVD Name

 Nexus 5 4.95 1080x1920 420dpi

 Lollipop Android 5.1 x86

Startup orientation

 Portrait  Landscape 

Emulated Performance Graphics:

Device Frame ☒ Enable Device Frame


AVD Name






The name of this AVD.

Recommendation
Virtual machine acceleration driver is out-of-date.
[Reinstall Haxm](#)

Mobile APPS: **Distribution/Installation/Logs**

Android Virtual Device Manager

 Your Virtual Devices
Android Studio

Type	Name	Resolution	API	Target	CPU/ABI	Size on Disk	Actions
	Nexus 5 API 22	1080 × 1920: xxhdpi	22	Android 5.1 (Goog...	x86	650 MB	   

Edit > Set Graphics to Software GL2.0