

04.Oktober 2015

Important Note:

- A)Please remove previous versions before installing a new version.
- B)Installation path containing "SPACE" char's do still not work.

What is LazToApk?

To build a piece of software which can be installed on an android device, you need Java JDK, Android SDK, Android NDK and laz4android.

LazToApk is a software which will help you to configure all these needed 3rd-Party Tools.

What's new?

07.Dezember 2015 (v0.9.0.34)

- updated to download laz4android1.4.4-FPC3.0.0.7z
- fixed ugly bug. Button "Step1: Select/Create Project Folder" on tabsheet "manual" did always reset/overwrite an existing project.
- some source clean-up.
- more fixes and rework for the tabsheet "manual".
- added button to edit the project.

06.Oktober 2015 (v0.9.0.33)

- updated to download android-sdk_r24.3.4-windows.zip
- updated to download android-ndk-r10e-windows-x86.exe
- updated to download laz4android1.5-49903-FPC3.1.1.7z
- updated ndk toolchain to toolchains\arm-linux-androideabi-4.9.
- added option to select android api 23.
- improved installer.

02.August 2015 (v0.9.0.32)

- updated to latest laz4android laz4android1.5-49563-FPC3.1.1.7z
- fix in DetectInstalledSDKBuildTools.
- fix some memory leaks.

06.Mai 2015 (v0.9.0.31)

- read location of JDK from registry.
- added more info messages in case of problems.
- use FileExistsUTF8,DirectoryExistsUTF8 methods.
- added path to ndk toolchain into settings file. (NDKToolChainPath=toolchains\arm-linux-androideabi-4.8\prebuilt\windows\bin\)
- added path to template project into settings file.
- added option to select android api 22.

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Requirements

- Windows
- At least 6GByte free disk space.
- A quick internet connection, because 660MByte needs to be downloaded.
- Recommended: a real Android Device because the Android Emulator is very slow!

Note: The whole installation may take one hour!

Setup the tools to create an Android App with Lazarus/Free Pascal

Please follow **exactly** this instructions, otherwise the chance is very high that your final app will not work!

I tested on windows xp sp3 and on windows 7.

Step 01: Download&Install JDK

Download latest Java JDK **jdk-8u25-windows-i586.exe (32bit is important)** from here: → [Java JDK 8](#)

Java SE Development Kit 8u25

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.

Product / File Description	File Size	Download
Linux x86	135.24 MB	jdk-8u25-linux-i586.rpm
Linux x86	154.88 MB	jdk-8u25-linux-i586.tar.gz
Linux x64	135.6 MB	jdk-8u25-linux-x64.rpm
Linux x64	153.42 MB	jdk-8u25-linux-x64.tar.gz
Mac OS X x64	209.13 MB	jdk-8u25-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	137.01 MB	jdk-8u25-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	97.14 MB	jdk-8u25-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	137.11 MB	jdk-8u25-solaris-x64.tar.Z
Solaris x64	94.24 MB	jdk-8u25-solaris-x64.tar.gz
Windows x86	157.26 MB	jdk-8u25-windows-i586.exe
Windows x64	169.62 MB	jdk-8u25-windows-x64.exe

Java SE Development Kit 8u25 Demos and Samples Downloads

Java SE Development Kit 8u25 Demos and Samples Downloads are released under the [Oracle BSD License](#).

Run the downloaded installer.

It will be installed in to `<C:\Program Files\Java\>`.

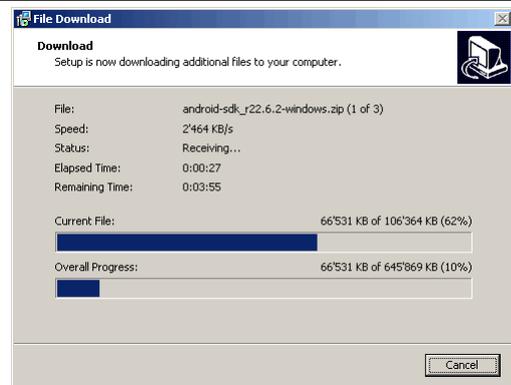
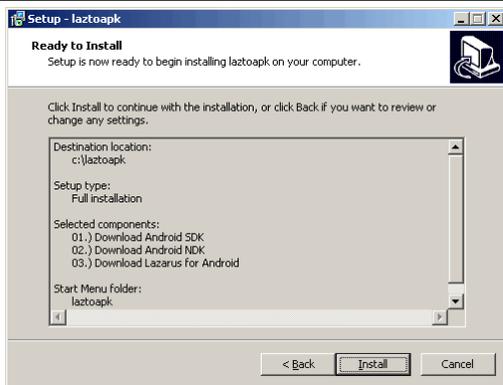
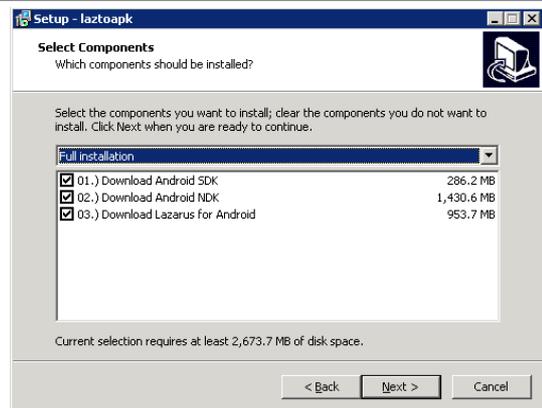
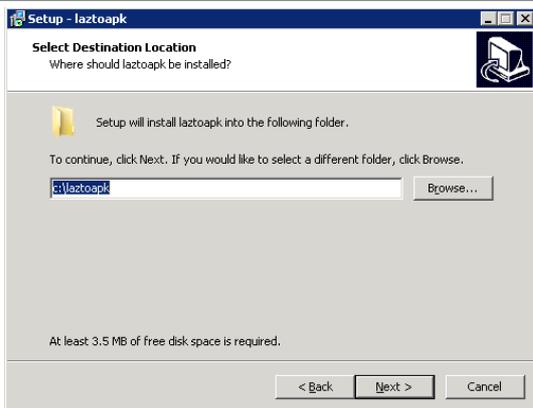
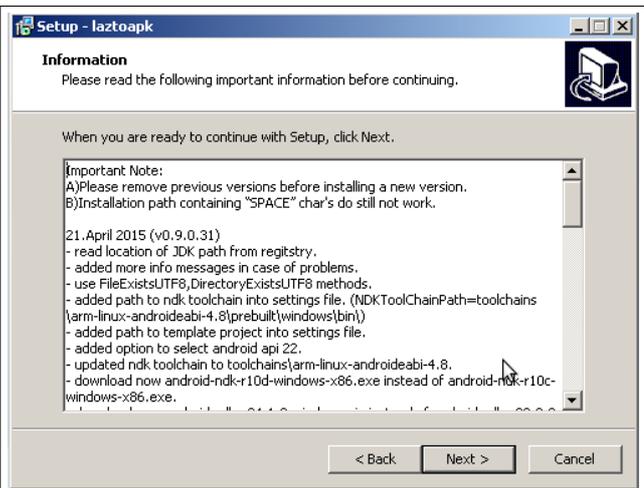
Step 02: Download&Install LazToApk

LazToApk → [Download the setup from here.](#) (sourceforge.net)

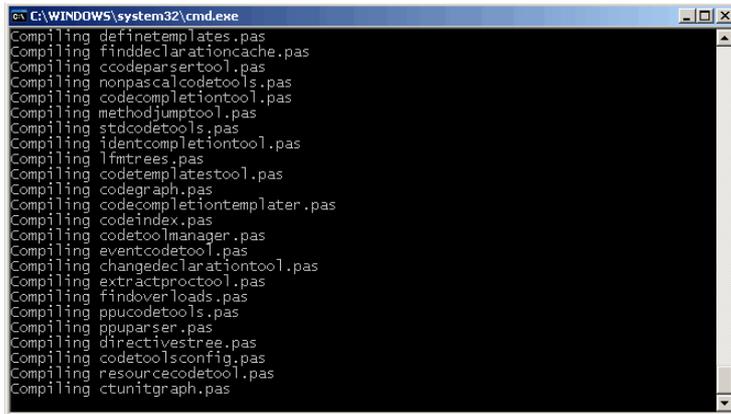
Run the setup.

The setup will automatically:

- 1.) download ndk.zip to `\laztoapk\downloads` and then unpack it to `\laztoapk\downloads\ndk`
- 2.) download sdk.zip to `\laztoapk\downloads` and then unpack it to `\laztoapk\downloads\sdk`
- 3.) download laz4android1.4.4-FPC3.0.0.7z to `\laztoapk\downloads` and then unpack to `\laztoapk\downloads\laz4android`
- 4.) run `\laztoapk\downloads\laz4android\build.bat` to recompile Lazarus.



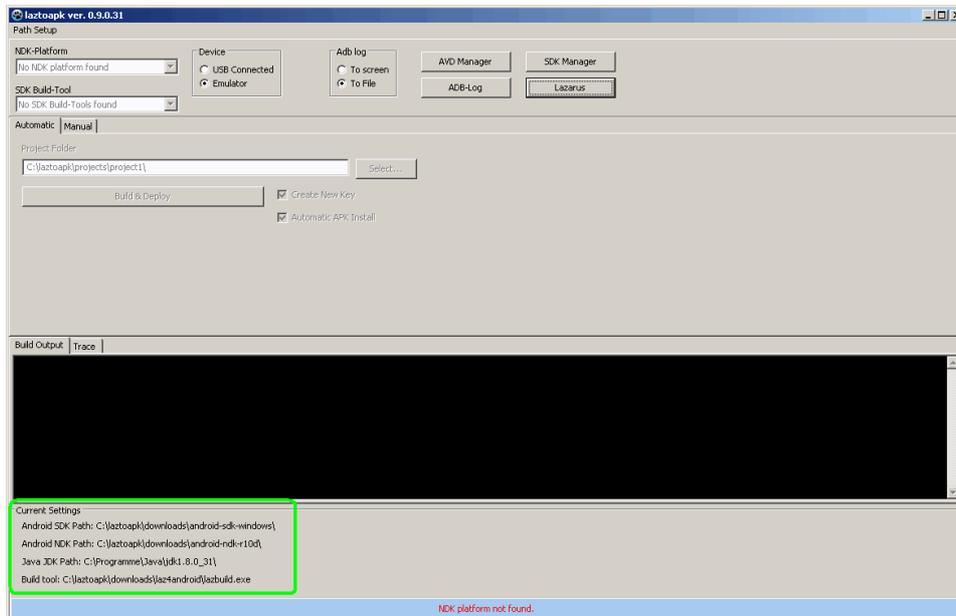
After you press button <Finish>, laz4android get's compiled. This may take a while and look's something like this.



```
C:\WINDOWS\system32\cmd.exe
Compiling definetemplates.pas
Compiling finddeclarationcache.pas
Compiling ccodeparsertool.pas
Compiling nonpascalcodetools.pas
Compiling codecompletiontool.pas
Compiling methodjumptool.pas
Compiling stdcodetools.pas
Compiling identcompletiontool.pas
Compiling lfmtraces.pas
Compiling codetemplatestool.pas
Compiling codegraph.pas
Compiling codecompletiontemplater.pas
Compiling codeindex.pas
Compiling codetoolmanager.pas
Compiling eventcodetool.pas
Compiling changedeclarationtool.pas
Compiling extractproctool.pas
Compiling findoverloads.pas
Compiling ppuccodetools.pas
Compiling ppuparser.pas
Compiling directivestree.pas
Compiling codetoolsconfig.pas
Compiling resourcecodetool.pas
Compiling ctunitgraph.pas
```

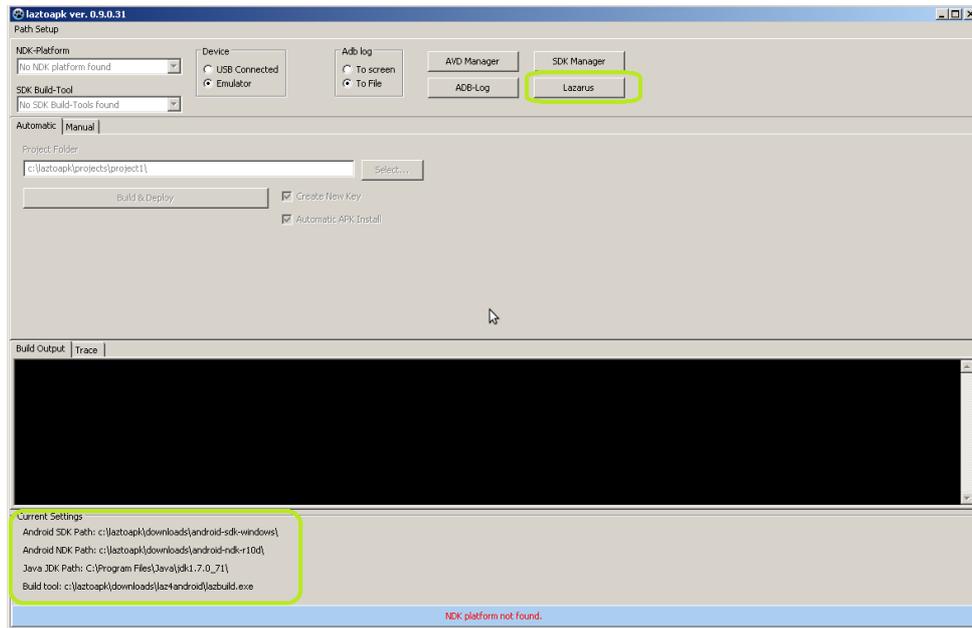
Step 03: Start&Configure LazToApk for the first time

Now the application LazToApk will be started. LazToApk will verify if the folder's for JDK,SDK,NDK and the tool lazbuild.exe is available. If not, then a path setup dialog will show up and you must select the correct path manually.

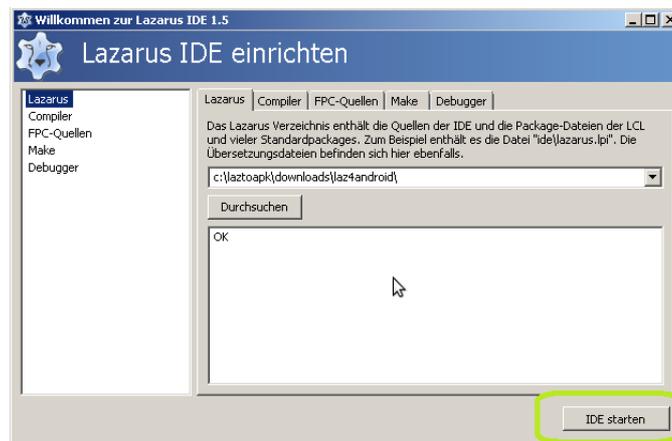


Step 04: Start Lazarus and install Package <CustomDrawn>

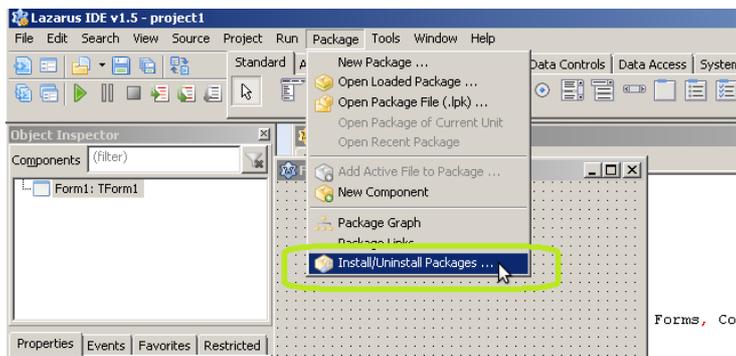
Start Lazarus by clicking onto Button <Lazarus>.



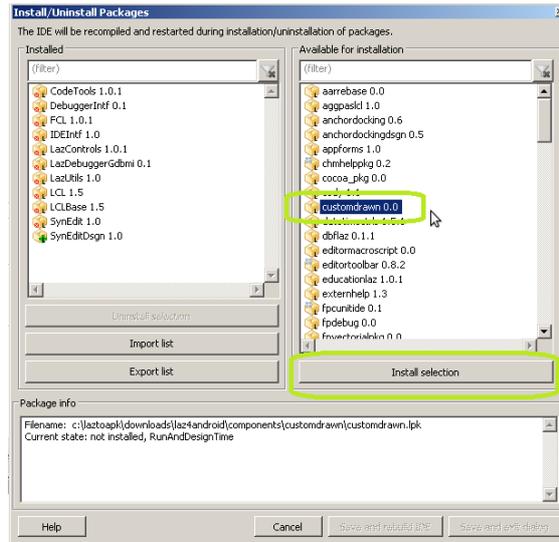
Press button <Start IDE>.



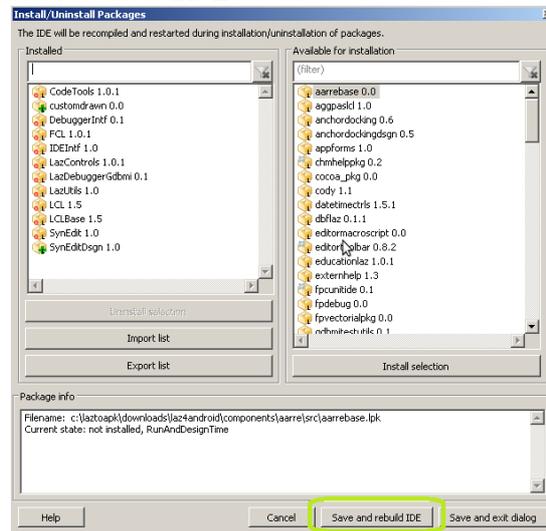
The Lazarus IDE should show up. Choose <Package>, <Install/Uninstall Packages>.



Select the package <CustomDrawn> and Click on <Install selection>.



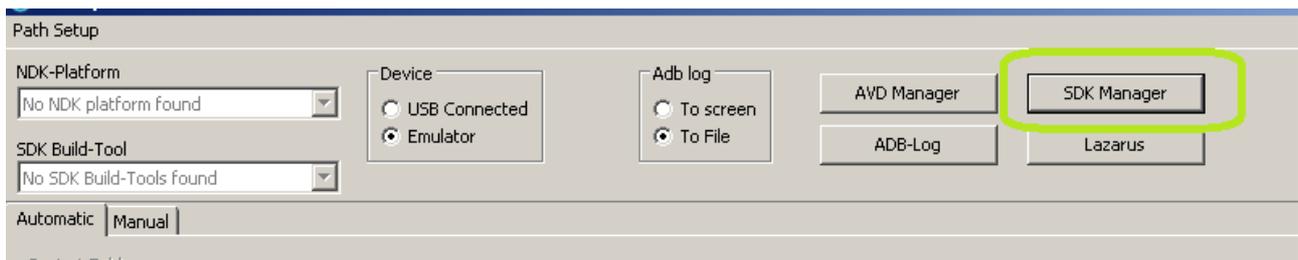
Press Button <Save and Rebuild IDE>



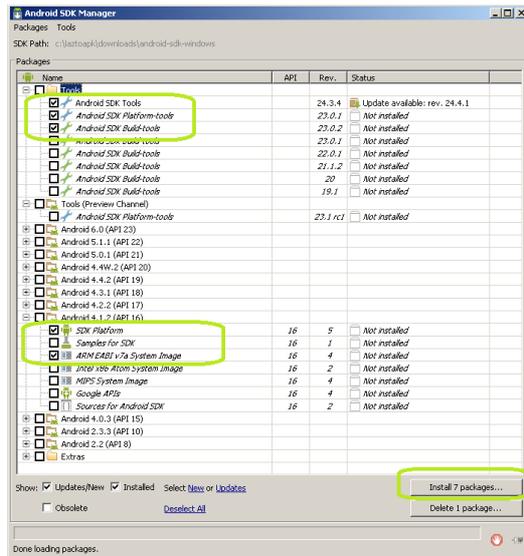
The Lazarus IDE gets rebuilt and restarted. This may take a while. After rebuild/restart is finished, you have to close the Lazarus IDE.

Step 05: Start SDK-Manager and install API's

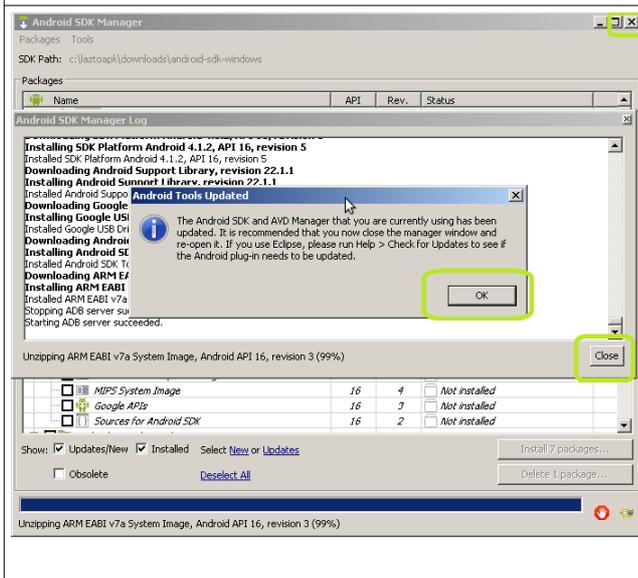
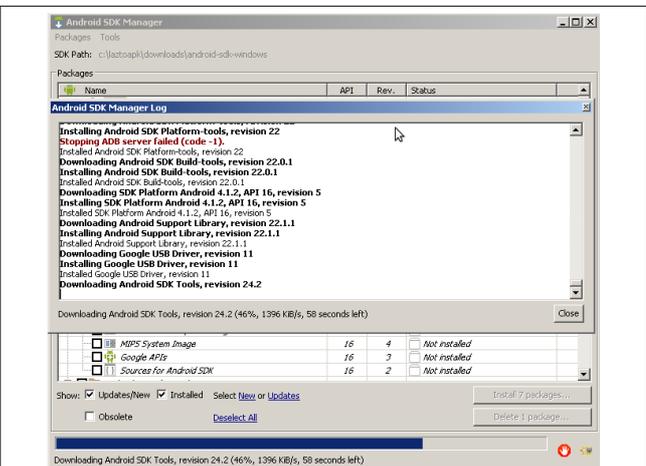
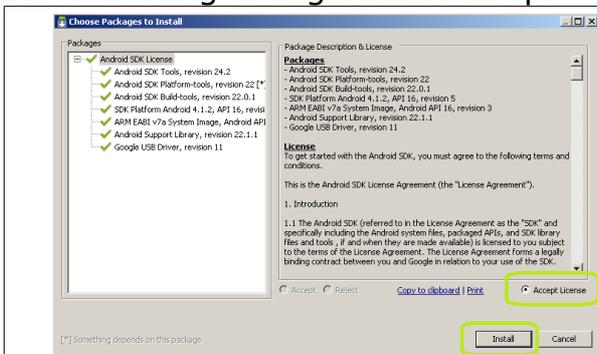
Now LazToApk will look like this. It's time to start the <SDK Manager>.



Select the following packages. (→ you can try some other's but I did not test with other version's!!!!)



The following dialogs will show up.



Now close the SDK Manager.

Step 06: Restart LazToApk and start AVD-Manager

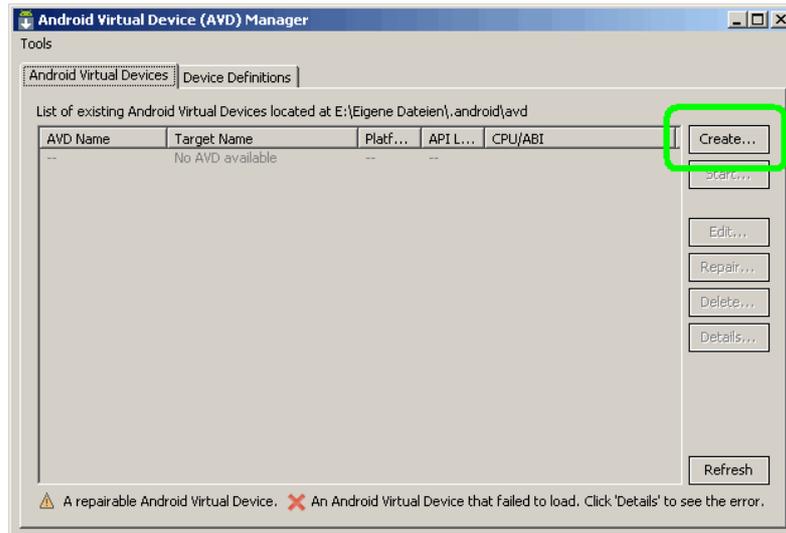
Now close LazToApk and start LazToApk again.

Recommended!!!! If you have a real Android Device then connect it by USB and jump to Step 07.

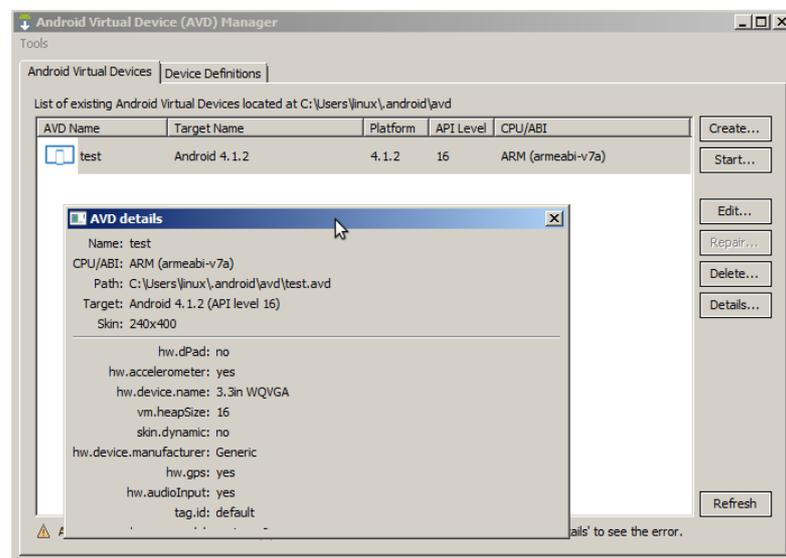
Select <NDK-Platform> 4.1.2 (API16) and press button <Start AVD Manager>

Setup a new virtual android device.

Press Button <Create>.



The choose the following setup:



Press button <Start> to start the virtual android device.

If everything works as expected, then the virtual device will look like this:

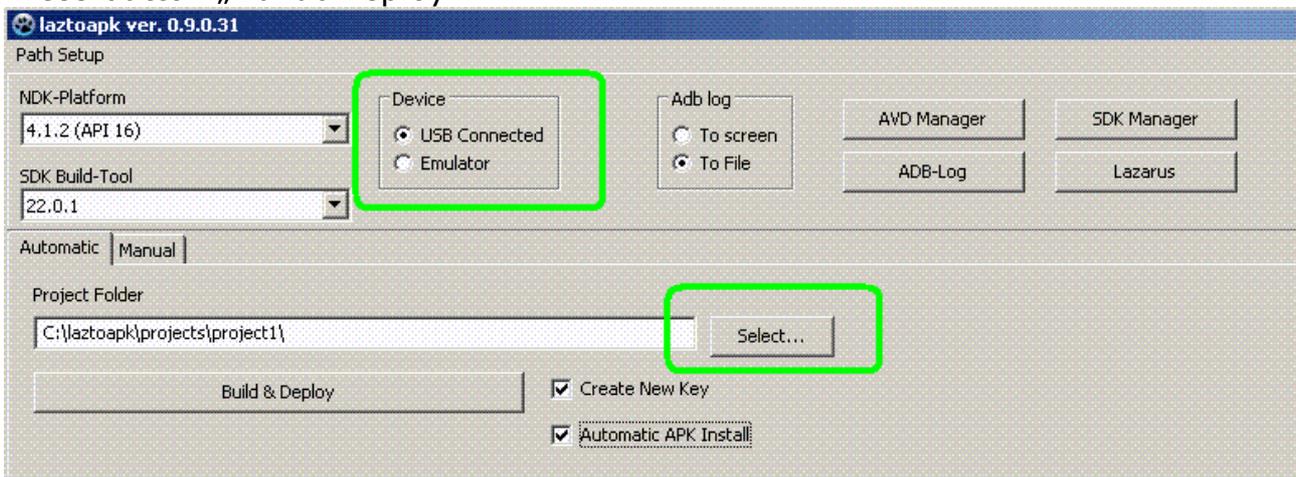


If you do not get so far, please search at google for a solution. I had several times problems to get the Virtual Device running. Sometime it helped to kill process adb.exe and then start again.

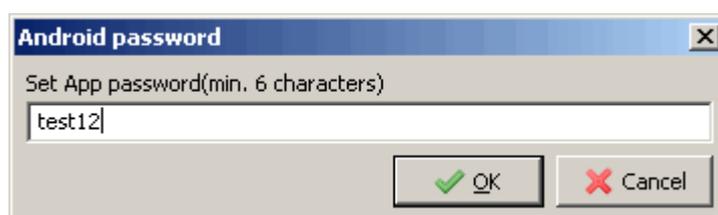
(Or of course you can connect a real android device and run your app there.)

Step 07: Build your first android app

Select if you are using a real Device or an Android virtual Device. Press button „Build&Deploy“.



In the following dialog, define a password for your app and press button <OK>.



The following info message will appear.



You have to enter the same password as before twice in the command windows

```
E:\android\laztoapk\laztoapk.exe
[TCompiler.Compile] end

E:\android\projects\project1\android>REM pause
E:\android\projects\project1\android>REM Adjust these paths to yours
E:\android\projects\project1\android>SET PATH=E:\android\sdk\tools;E:\android\sdk\platform-tools;C:\Programme\Java\jdk1.6.0_45\bin;
E:\android\projects\project1\android>SET APP_NAME=project1
E:\android\projects\project1\android>SET ANDROID_HOME=E:\android\sdk
E:\android\projects\project1\android>SET APK_SDK_PLATFORM=E:\android\sdk\platforms\android-14
E:\android\projects\project1\android>SET APK_PROJECT_PATH=E:\android\projects\project1\android
E:\android\projects\project1\android>mkdir E:\android\projects\project1\android\bin
E:\android\projects\project1\android>keytool -genkey -v -keystore E:\android\projects\project1\android\bin\LCLDebugKey.keystore -alias LCLDebugKey -keyalg RSA -validity 10000
Geben Sie das Keystore-Passwort ein:
```

and do some more input as requested.

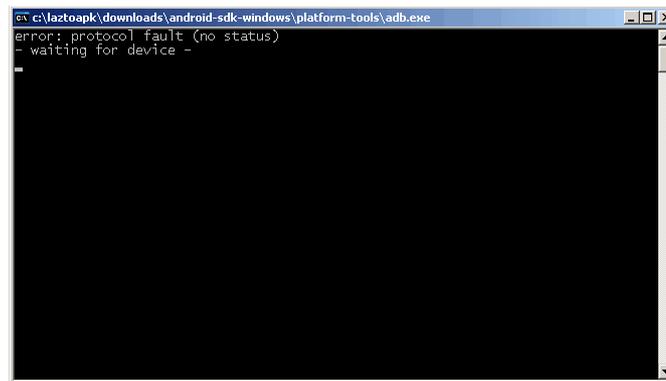
If everything works as expected, then it should look like this:

A screenshot of an adb.exe command window. The title bar reads "E:\android\sdk\platform-tools\adb.exe". The output shows a successful installation of an APK file: "62 KB/s (1386839 bytes in 21.530s) pkg: /data/local/tmp/project1.apk".

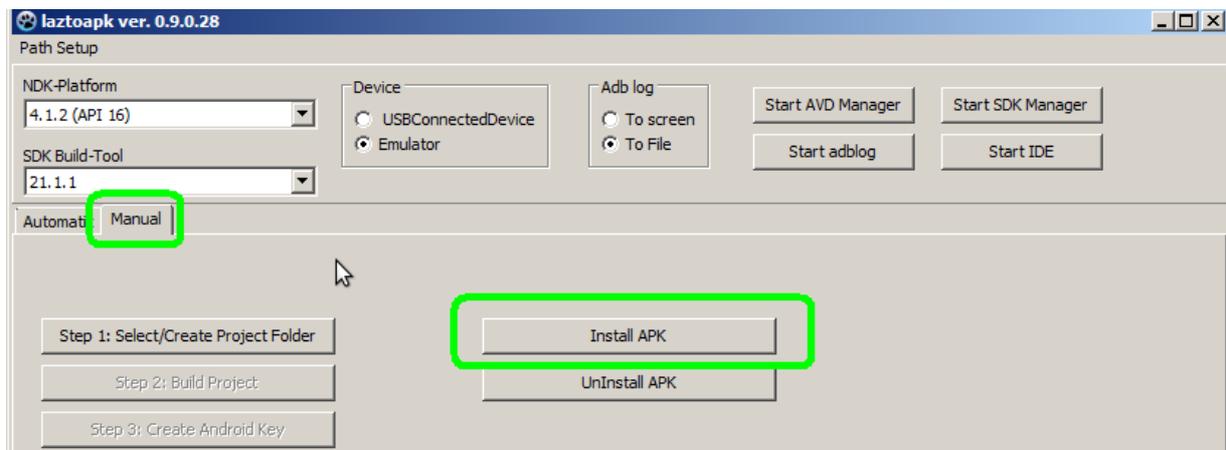
```
E:\android\projects\project1\android>REM call and pause together allow us to see the results in the end
E:\android\projects\project1\android>REM pause
* daemon not running. starting it now on port 5037 *
* daemon started successfully *
62 KB/s (1385635 bytes in 21.601s)
pkg: /data/local/tmp/project1.apk
Success
```

Well done, the app is now installed.

If you see something like this, then the installation of the apk-file failed.



In this case close the virtual android device and start it then again. Then try to install the apk-file manually.



Step 08: Run the app

Let's run the app. Click onto the following icon:



Then click on „Project1“.



And enjoy your first android application.

