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January 30, 2009

Projecting Android on the Big Screen



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Suppose you need to show off an Android application. Maybe you are making a VC funding pitch, or you are demonstrating for carriers at the upcoming **Mobile World Congress** (<http://www.mobileworldcongress.com/>) , or you are explaining to a government agency how your Android app will simultaneously cure world hunger and keep tabs on area potholes.

The simplest thing to do when presenting Android to a large audience is to use the emulator, connected to a notebook, connected to a projector. This is quick, easy, and you may already have the projector if you do this sort of presentation a lot.

However, there are times when the emulator is insufficient. Perhaps the application needs actual GPS coordinates rather than faked values supplied by DDMS. Perhaps the application needs actual accelerometer movements rather than ones provided by a sensor simulator. Perhaps the application integrates with other [applications](#) that are on the device but not on an emulator (e.g., YouTube player).

You could buy or rent a **device projector** (<http://www.elmousa.com/digital-visual-presenters.php>) , but even this has issues if you need to be moving the device around (e.g., play an accelerometer-aware game).



Or, you can try DroidEx.

DroidEx extends the live device screen capturing [technology](#) built into DDMS and hierarchyviewer. It gives you a window displaying a live 6 fps (frames per second) perspective of the screen contents of an actual Android device. Since most of the work was done by the core Android team with their toolsmithing, DroidEx itself is about ~100 lines of very lightly tested code.

To get it, [download](#) the 3K JAR file from:

<http://groups.google.com/group/cw-android/web/DroidEx.jar> (<http://groups.google.com/group/cw-android/web/droidex.jar>)



To run it, you need to put it and the ddmslib.jar from your SDK tools/ folder on the classpath and invoke `com.commonware.droidex.DroidEx`, such as:

```
java -cp DroidEx.jar:/opt/android-sdk-linux_x86-1.0_r2/tools/lib/ddmlib.jar  
com.commonware.droidex.DroidEx
```

It also requires that the adb daemon be running, such as a development PC/Mac.

It assumes there is precisely one device plugged in or emulator running. All it does is open a window showing you the contents of that device's or emulator's screen.

It also suffers from the following limitations:

- The screen-capture logic in Android proper seems to occasionally miss updates for some reason. I've seen this with DDMS and hierarchyviewer too, so I'm assuming it's something in the Android firmware. Hence, sometimes DroidEx will appear to be a movement behind (e.g., you clicked up in a list, and DroidEx still shows the previous one as the selected item)
- Once, adb or the device seemed to reject DroidEx part-way through a projection session, causing the image to freeze on DroidEx's window and a bunch of error messages to be logged to stderr. Closing and reopening DroidEx was sufficient to clear up this condition.

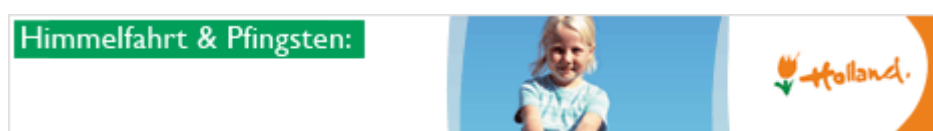
Also, this was compiled against 1.0r2's version of ddmslib.jar, so it may or may not work with other versions of the SDK.

DroidEx is a ~~very~~ quick and dirty hack, to solve a specific problem. It is far from perfect and may have any number of bugs. Eventually, I will clean it up and release it as open source, as there are a number of ways to extend DroidEx to make it even more useful, such as:

- Doing a better job of packaging, so you don't have to fuss with the classpath and manually specifying the class name
- Allowing the frames-per-second rate to be set on the command line
- Allowing you to specify which device/emulator to project, if there is more than one attached
- Allowing you to save a session either as a set of still images (e.g., one every X seconds) or as a movie clip
- Creating a server variant so the live animation can be viewed online

Questions regarding DroidEx should be asked in the **CW-Android Google Group**

(<http://groups.google.com/group/cw-android>) , the support area for the CommonsWare line of **Android programming books** (<http://commonsware.com/android/>) and related bits of stuff.



(<http://media.fastclick.net/w/click.here?cid=221060&mid=412830&sid=53195&m=1&c=0>)

Might We Suggest...

- **Resource Roundup: Android Source Code** (<http://www.androidguys.com/2009/02/16/resource-roundup-android-source-code/>)

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[Projecting Android on the Big Screen « A Commons Blog](#)

[...] Read the rest in today's Building 'Droids installment on AndroidGuys! [...]

 AndroidTapp.com · 61 weeks ago

0  

This is awesome! Downloading now. I have some uses for device projections. Thanks!




Reply

 Tyler Onbekend · 59 weeks ago

0  

Great proof of concept. Would love to see this as an average-user-friendly application. Does this require root like all the other screen capture solutions we've seen floating around out there?

Reply

 0  

Mark Murphy · 59 weeks ago

@Tyler:

No, this does not require root. In fact, there's no software running on the device itself, beyond the standard stuff that's already on there. DroidEx uses the same services that DDMS and hierarchyviewer use for their screen images.

You'll need the SDK installed on the projecting PC, so you have the adb daemon and such. But otherwise, that should be it.

Reply

Resource Roundup: Android Source Code | AndroidGuys

[...] code (under the Apache License 2.0), it is probably simplest to just cut-and-paste. For example, DroidEx was created by examining some of the classes that make up DDMS and hierarchyviewer, to see how they [...]

Resource Roundup: Android Source Code | The Androider

[...] code (under the Apache License 2.0), it is probably simplest to just cut-and-paste. For example, DroidEx was created by examining some of the classes that make up DDMS and hierarchyviewer, to see how they [...]



richard · 48 weeks ago

0

I am very impressed and looking forward to your code release.

However, lib/ddmlib.jar seems to be removed from SDK-1.5, so I guess it won't work any more, right?

ps. It works at SDK-windows-1.1_r1

Reply



Mark Murphy · 48 weeks ago

0

I have not yet tried DroidEx with 1.5. There may be some changes needed.

Reply



klaus · 31 weeks ago

0

It works for me on 1.5 (on an HTC Magic)...

Reply



anton · 26 weeks ago

0

nice software! i used it to present my software on the viennese localcamp this weekend! i would love to have a zoom feature, could you get me the source-code, so i can implement this little feature?

Reply



dethx · 25 weeks ago

0

It's work on my ubuntu but not in Windows

```
java -cp DroidEx.jar:D:\Data\android-sdk-windows-1.5_r3\tools\lib\ddmlib.jar com.commonware.droidex.DroidEx
```

Do I missing something. Thanks for great great software.

Reply



devthx · 25 weeks ago

0



sorry for my fool. Fix it - replace : with ;

```
java -cp DroidEx.jar;D:\Data\android-sdk-windows-1.5_r3\oolslibddmlib.jar com.commonware.droidex.DroidEx
```

Reply



Rick · 3 weeks ago

0



Has anyone gotten this software to work on Android 2.0 or 2.1?

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Comments by intense debate