



Opening Up Android Development

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Agenda

Prior presentation

Introduction to
the Android Platform,
the eco system and
Android application development

This time all development

About Manfred Moser

- Long time Linux user and Java developer currently working as Android application developer
- Presenter about Android related topics at e.g. AndroidTO, AnDevCon...
- Author of the chapter “Android Application Development with Apache Maven” in the book Maven: The Complete Reference
- Committer on Maven Android Plugin and author of Maven Android SDK Deployer

What is Android?

Not quite an operating system only.

Linux kernel

custom Linux distro

Dalvik VM

Middleware (sort of like app server)

API's

Standard applications (capabilities)

SDK

further tools

Is it using the JVM?

No. Only using JDK tools to create Java
bytecode.

Translated to Dalvik executable code.

Dalvik VM –
optimized virtual machine for small devices,
multiple instances run in parallel,
no JIT yet

Java?

Default language.

Apache Harmony based JDK, a bunch of commons libraries in Platform as part of API

Proven to be possible JRuby, Groovy, Scala, Clojure, Squeak, Javascript...

Native development?

Good support for low level C / high level Java
integration using JNI

RenderScript and OpenGL

Both not necessary for first apps (unless..)

What else is there for development?

Webkit browser
SQLite database
Open GL ES
Open Core

Rich API for accessing all the above and more.
All applications are equal
Can act as components

What we won't talk about

MonoDroid

PhoneGap

Titanium

and so on

Application Development

Default tools is ADT - Eclipse Plugin

Rich set of tools ddms, adb, avd manager, emulator(s), traceview in SDK

Very rich API

More external tools – maven plugin, roboguice, robotium, DroidFu and many more

Development

Activity and Activity life cycle

<http://developer.android.com/reference/android/app/Activity.html>

Development

AndroidManifest

<http://developer.android.com/guide/topics/manifest/manifest-intro.html>

Development

Views

<http://developer.android.com/guide/topics/ui/index.html>

Development

Resources

<http://developer.android.com/guide/topics/resources/index.html>

Development

Data storage

<http://developer.android.com/guide/topics/data/data-storage.html>

- SQLite
- Preferences
 - Files

Development

Intents

<http://developer.android.com/guide/topics/intents/intents-filters.html>

Development

Asynchronous tasks

Development

More things to look at like

Widgets

BroadCastReceivers

Services

Working with multimedia

Release time

Version code and number

Sign

Zipalign

Proguard

Distribution

On your website

On Android market

On other markets

(shop4apps, slideme, andappstore, getjars...)

Feedback, Updates

Android Market interface

Statistics
Comments
Stack Traces

Summary

Easy to get started

Very powerful and feature rich

Lots of subtleties as with any complex system

Resources

<http://developer.android.com>

<http://groups.google.com/android-developers>

<http://stackoverflow.com/questions/tagged/android>

A whole bunch of books and more