

Android Development

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Abstract

Slides from the talk follow.

Android Development

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Android History

- Android, Inc. 2003
 - Andy Rubin – Danger, Inc.
 - T-Mobile Sidekick (Hiphop)
- Google acquires in 2005
 - Not much is public at this point



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More History

- 2007-11-05 “Open” Handheld Alliance
- 2008-09-23 T-Mobile G1 released – Android 1.0
- Open Source releases lag



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“Open Source”

- Linux Kernel “It’s Linux”
- Java / Dalvik
- Android Market + other Google apps



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Android Architecture

- Operating System
 - Kernel / ramdisk (/)
 - OS /system
 - Userdata /data
 - SD /sdcard
- Mix of native and java
- bionic – originally BSD C lib
- Dalvik



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Android Application

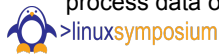
- Install apk using adb, web download, etc.
- Window / Activity
 - Each application is a new user
- View
 - Each visible “page” of an application
- Widget
 - text, image, drop down, etc.



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More Android Arch

- Activities
visible UI as an activity. Launching application starts activity
- Services
persist for a long time, ie: networked application
- Content providers
manage access to persisted data, ie: SQLite dbase
- Broadcast receivers
process data or respond to event



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Development

- SDK releases for app development
- adb attaches to devices and/or emulators
- Eclipse + ADT allow live debugging
- JDK
- Linux / Windows / OS X
- Android NDK – ARMv5/ARMv7



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Android OS builds

- Google releases lag
- CyanogenMod very popular
- Supports many devices
- Also supports emulator!
 - Well, for most things
- Different than application builds
 - repo / git / jdk / etc



Steps to build CM

- x86_64 Linux / OS X supported
- Install native packages, JDK, etc.
- Install Android SDK
- Install repo / repo sync -j<n> (8GB+)
- (backup files)
- ROM Manager now required
- Lunch / mka to build (5GB)
- Copy ramdisk, system, userdata sometimes



Links:

- <http://developer.android.com/>
- <http://developer.android.com/videos/>
- <http://www.ibm.com/developerworks/opensource/library/os-android-devel/>
- http://wiki.cyanogenmod.com/?title=Compile_CyanogenMod_for_Emulator



