Running Android Applications on BlackBerry 10

developer.blackberry.com/android
Overview

- BB Runtime for Android Apps
- Upcoming Releases
- Converting Existing Applications
- BB Development Basics
- BB App World
- Q&A
What's BB Runtime for Android Apps?

► It’s Android Open source v2.3.3 aka “Gingerbread” Application Framework running on top of Playbook/BB10 OS and Libraries

► Enables Android apps to be installed and run inside it

► Deep integration with BB native framework with the objective to make Android app indistinguishable from native apps
BB Runtime for Android Apps, version 2.1 Compatibility

- About 70% of Android apps are fully compatible (no code changes)
- Not all Android APIs are supported
  - Time constraints
  - Certain APIs are used by very few % of the apps
  - Hardware and native OS limitations

<table>
<thead>
<tr>
<th>Unsupported features in PlayBook 2.1</th>
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<tbody>
<tr>
<td>Telephony</td>
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<td>Bluetooth</td>
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<td>VOIP</td>
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Want to use Google Maps?

• Support for location based intents to display maps

• Use WebView + web services (Google, Bing, etc.) to display map content within apps

• More details on mapping support can be found on the API Support Page developer.blackberry.com/android/apisupport
Upcoming Releases

PlayBook 2.1 and BlackBerry 10

developer.blackberry.com/android
PlayBook 2.1 OS
BlackBerry Runtime for Android Apps

- Improved Usability
  - Multi-Window support
  - Stability

- Improved Compatibility
  - Camera APIs
    - Front and Rear Camera Support
    - Video Recording
  - In-app Payments
    - Android MarketBillingService API is supported
BlackBerry 10
BlackBerry Runtime for Android Apps

• Improved Usability
  ▶ Integration with virtual keyboard
  ▶ BlackBerry Permission Prompts
  ▶ Support for BB10 screen resolution
  ▶ Intents invoke core BB10 apps
  ▶ Notifications mapped to BB10

• Improved Compatibility
  ▶ PIM APIs
  ▶ Telephony APIs

► 4.2” screen
► 1280 × 768 resolution
► Micro USB
► Micro HDMI
► Bluetooth, WiFi, microSIM
Highlights for Android Runtime Roadmap

PlayBook 2.1 OS

- Multi window support
- Stability
- Camera APIs (Front/Rear, Video Recording)
- In-App Payments for Android Market

BlackBerry 10

- Integration with virtual keyboard
- BlackBerry Permission Prompts
- Support for BB10 screen resolution
- Intents invoke core BB10 apps
- Notifications mapped to BB10
- PIM APIs
- Telephony APIs
Converting Existing Android Apps
Converting Existing Android Apps

- **Tools**
  - Online Conversion Tool
  - Eclipse Plug-in
  - Command-line Tools
  - Simulators

- **Basic concepts**
  - Code Signing
  - Development Debug Tokens
Converting existing Android apps

► Option 1: online packager
Converting existing Android apps

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Converting existing Android apps

► Option 1: online packager

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Converting existing Android apps

<Option 2: command-line SDK>

Repackage your APK to a BAR file in 4 easy steps…

1) **apk2barVerifier**
   - run a compatibility check on your APK file

2) **apk2bar**
   - package your APK file as a BAR file

3) **batchbar-signer**
   - sign your application

4) **blackberry-deploy**
   - deploy your app

```
C:\Android\android-sdk\bin> apk2barVerifier HelloWorld.apk
C:\Android\android-sdk\bin> apk2bar HelloWorld.apk
C:\Android\android-sdk\bin> batchbar-signer HelloWorld.bar author.p12 p12password rdkpassword
C:\Android\android-sdk\bin> blackberry-deploy -installApp -device 169.254.0.1 -package HelloWorld.bar -password devicepassword
```
Converting existing Android apps

- Option 2: BlackBerry Plug-in for ADT

ADT Plug-in for Eclipse + BlackBerry Plug-in for ADT

- PlayBook is just another device target for your existing Android project

- Debug applications on PlayBook just like on other Android devices
  - adb, ddms, jdwp, logcat, etc.

- Use the same IDE & project, BB plug-in adds the functionality to test/debug/package against BlackBerry devices
BlackBerry Development Basics
PlayBook/BB10 development basics

BAR files

• A BAR file is the native PlayBook/BlackBerry 10 application package
  ▶ What APK files are for Android BAR files are for BlackBerry

• BAR files contain executables, images, media, etc.

• blackberry-deploy: load a packaged app onto the device
  ▶ The device has to be in development mode
PlayBook/BB10 development basics

Development mode

Enable software development tools.

Use Development Mode
Expires in 10 Days

Development Address
169.254.0.1

Debug Token
Not Installed

Remove Debug Token
BlackBerry App World

- Global marketplace
- FREE to register as a vendor
- FREE to submit apps and upgrades
- 70/30 revenue share
- Credit card, PayPal, carrier billing
- Free and paid apps catalog
- Integrated barcode scanning
BlackBerry developers make money!

- 13% of BlackBerry developers have made over $100,000 from App World (Evans Data Group)
- App World generates 40% more revenue per app than Google Play (Vision Mobile)
- More paid downloads than Google Play (PaidContent.org)
- 43% more downloads per app than Apple App Store (Research2Guidance)
Success Stories From Android Developers
Second Gear Games

https://developer.blackberry.com/whyblackberry/secondgear

- Ported Android game to PlayBook.
- Translated and re-compiled in less than 1 hr.
- No noticeable performance differences.
- IDE—1 project and common code-base for 2 platforms.
- Increase discoverability in AppWorld.
- BlackBerry games generating more revenue.
Pine Lake Communications Inc.
https://developer.blackberry.com/whyblackberry/cubifice

- Re-packaged Android game app (Cubifice) to BB10
- Installed Eclipse tools and ported game ~ 1 hour
- 500+ downloads in first 2 days.
- 25X more than Android Market.
Success Stories

**Steven Bell** @torontohacker
It's been 4 months since my app was published. Downloads for; iOS: 125, Android: 150, Blackberry Playbook: 5,457! AutoAppForum.com

**Stephan Schultz** I don't know how you do it @BlackBerryDev, but my Android app is running faster on the DevAlpha than on my Galaxy Nexus.

**Matt Hamann** No changes required to my Android app to deploy on @BlackBerryDev #playbook. Nice.

**Chuck is Busy** @BlackBerryDev @BlackBerryDev Thx for all the tools. I'm a newbie, got my keys in 30 min. Signed my first android app, so easy. #TeamBlackBerry

**Ernest** @BlackBerryDev I can't express my happiness. My app runs perfectly, just I needed 2.1 Tablet OS Emulator. Thank you very much.

**Philippe-Olivier D.** @stroughtonsmith @BlackBerryDev Im making more money on the app world that the app store and play store combined.

**KVApps Development** Porting Apps From Android To PlayBook & BB 10 is very easy! #TeamBlackBerry @BlackBerryDev

**KVApps Development** Celebrating 44 BlackBerry PlayBook & BlackBerry Apps! Time To Quit Android Dev! @BlackBerryDev #TeamBlackBerry

**Sucroid** @BlackBerryDev All the Android apps on my PB run very well under OS 2.1. And my #PlayBook apps have no issues with the new OS. Thank you.

**BGR** @BGR Developer ports Android app to BlackBerry PlayBook, sees 25 times more downloads bgr.co/S0j7D7 by @zacharye Expand
Important Links

- BlackBerry Runtime for Android apps homepage
  developer.blackberry.com/android

- Android Repackaging Tools
  developer.blackberry.com/android/tools

- BlackBerry Developer Blog
  devblog.blackberry.com

- Twitter Support Channels
  @BlackBerryDev
  @james_dreher

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