Running Android Applications on BlackBerry 10

developer.blackberry.com/android

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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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<tr>
<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](http://developer.blackberry.com/android/apisupport)
Upcoming Releases

PlayBook 2.1 and BlackBerry 10
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

Compatibility

This compatibility test determines how compatible your app is with the BlackBerry PlayBook OS. This test compares the features used by your app with a list of Android features that are not supported by the BlackBerry Runtime for Android Apps (see the list here). The test generates warnings for each unsupported feature used by your app.

Specify the .apk file you want to test:
C:\Documents and Settings\mahendra\My Documents\Downloads\ApiDemons.apk

Specify your Android SDK folder:
C:\Program Files\Android\android-sdk-windows

Start Test
Converting existing Android apps

► Option 1: online packager
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
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
• 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
Development mode

Enable software development tools.

Use Development Mode: ON
Expires in 10 Days

Development Address: 169.254.0.1

Debug Token: Not Installed

Remove Debug Token
BlackBerry App World
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

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.
7:48 AM – 16 Sep 12

Matt Hamann  No changes required to my Android app to deploy on @BlackBerryDev #playbook. Nice.
9:59 AM Jun 1

Chuck is Busy  Thx for all the tools. I'm a newbie, got my keys in 30 min. Signed my first android app, so easy.
8:35 PM – 18 Aug 12

Ernest  @BlackBerryDev I can’t express my happiness. My app runs perfectly, just I needed 2.1 Tablet OS Emulator. Thank you very much.
4:20 PM – 17 Sep 12

Philippe-Olivier D.  @stroughtonsmith @BlackBerryDev Im making more money on the app world that the app store and play store combined.
11:41 AM – 31 Jul 12

KVApps Development  Porting Apps From Android To PlayBook & BB 10 is very easy! #TeamBlackBerry @BlackBerryDev
8:45 PM – 30 Aug 12

KVApps Development  Celebrating 44 BlackBerry PlayBook & BlackBerry Apps! Time To Quit Android Dev! @BlackBerryDev #TeamBlackBerry
11:56 PM – 29 Aug 12

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.
3:46 PM Jun 1

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