
Overview of the Android Runtime: Core Android Libraries

Android Runtime

C/Java/JNI



Android API Classes											
User Interface				Connectivity							
GUI				net							
widget				telephony							
view				net.wifi							
view.inputmethod				telephony.gsm							
graphics				telephony							
service.wallpaper				net.http							
media				net.rtp							
drm				net.sip							
text				mtip							
text.style				Application							
text.method				app							
accounts				app.admin							
gesture				content							
inputmethodservice				content.res							
media.audiofx				content.pm							
speech				appwidget							
text.util				app.backup							
text.format				location							
speech.tts				hardware.usb							
System				os.storage							
database				os.storage							
database.sqlite				os.storage							
test				os.storage							
test.mock				os.storage							
test.suitebuilder				os.storage							
test.suitebuilder.annotation				os.storage							
test.suitebuilder.location				os.storage							
test.suitebuilder.preference				os.storage							

See www.makelinux.net/android/classes

Android Runtime

- Supports concurrently executing Java apps on mobile devices
 - **Virtual Machine (VM)**
 - **Core Libraries**
 - Core Java classes
 - android.* classes
 - Android concurrency frameworks

C/Java/JNI



See www.vogella.com/tutorials/AndroidBackgroundProcessing/article.html

Android Runtime

- Supports concurrently executing Java apps on mobile devices

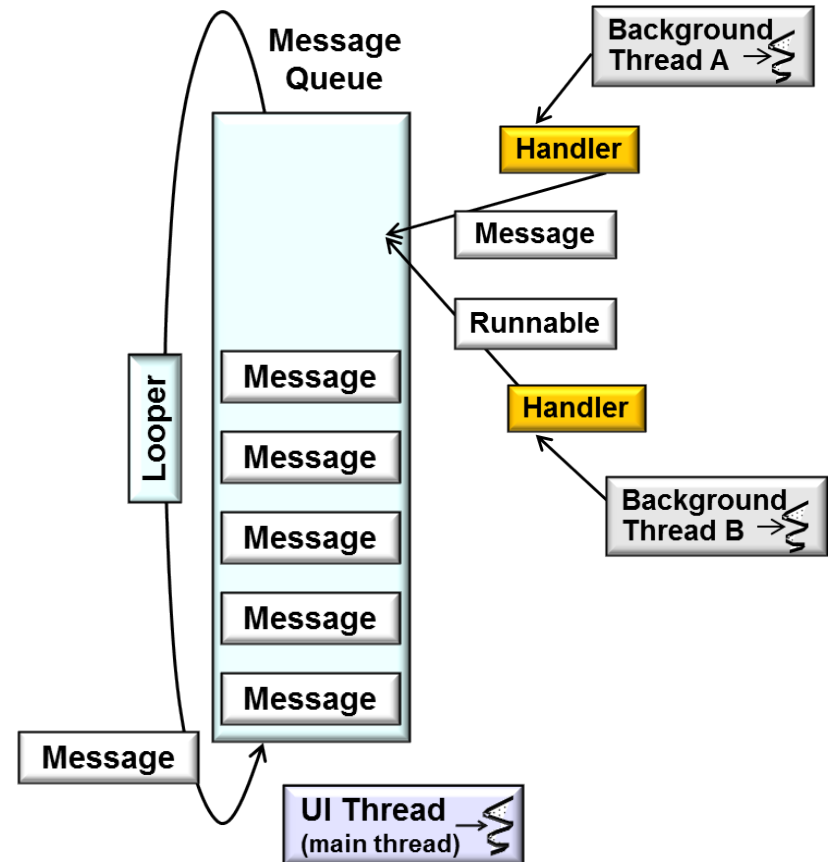
- **Virtual Machine (VM)**

- **Core Libraries**

- Core Java classes
- android.* classes
- Android concurrency frameworks
 - *Handlers, Messages, & Runnables (HaMeR)*
 - Allows operations to run in one or more background threads that publish their results to the UI thread



C/Java/JNI



Android Runtime

- Supports concurrently executing Java apps on mobile devices

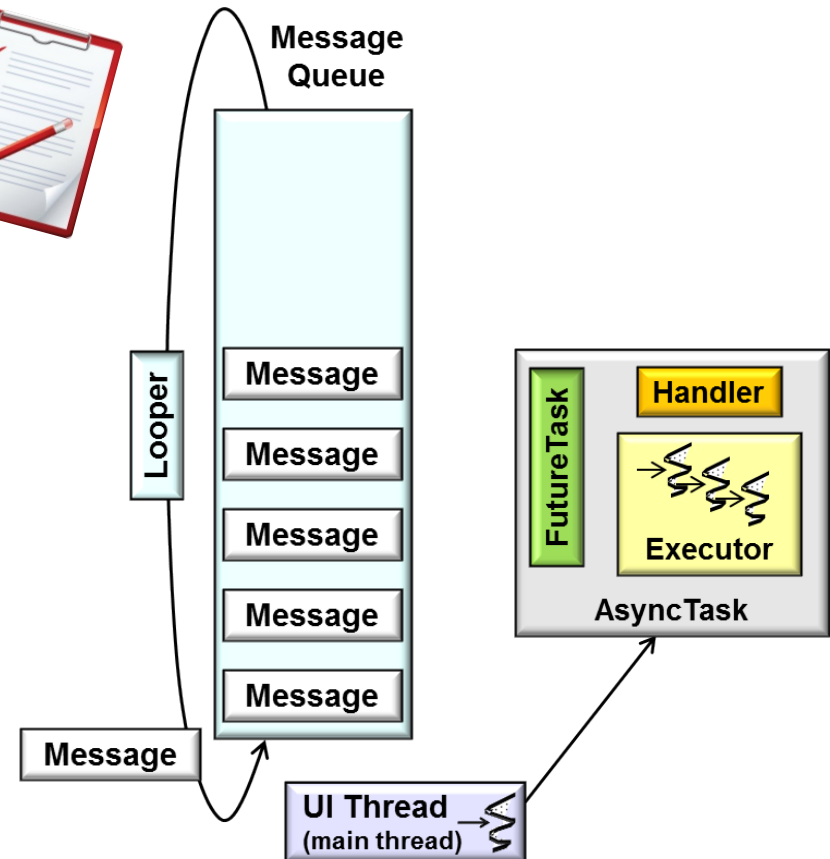
- **Virtual Machine (VM)**

- **Core Libraries**

- Core Java classes
- android.* classes
- Android concurrency frameworks
 - *Handlers, Messages, & Runnables (HaMeR)*
- *AsyncTask*
 - Allows operations to run in one or more background threads & publish results to the UI thread *without* manipulating threads or handlers



C/Java/JNI

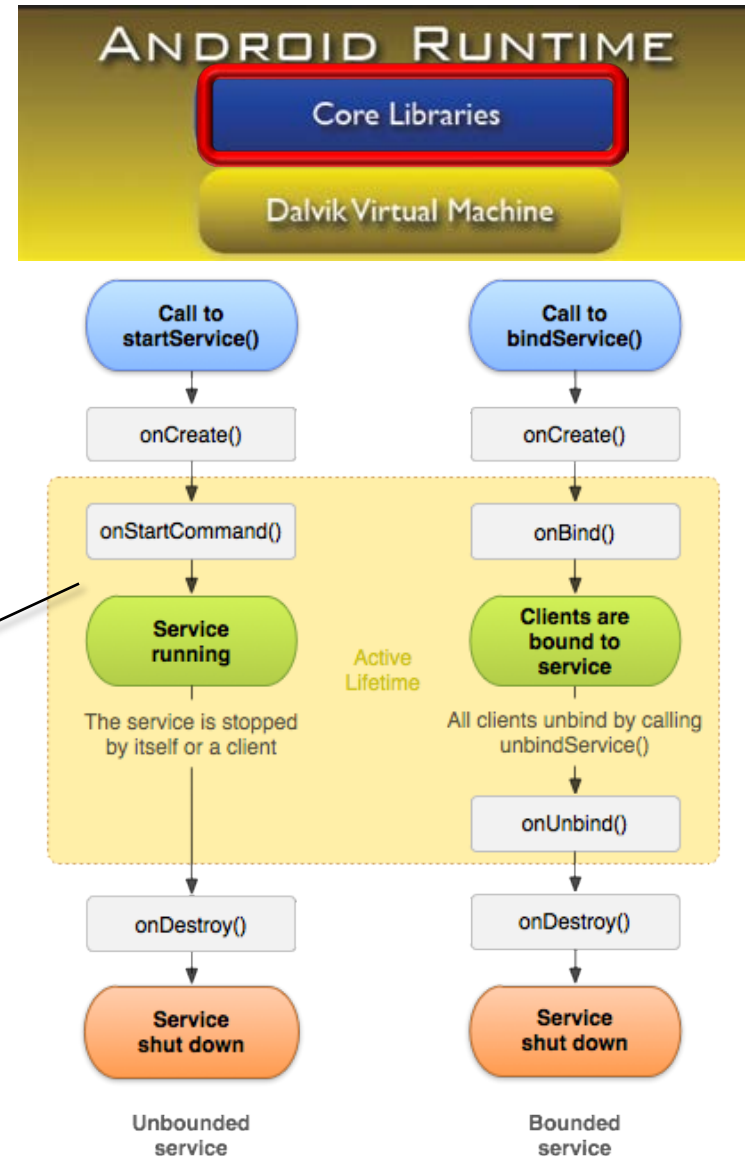


Android Runtime

- Supports concurrently executing Java apps on mobile devices
 - Virtual Machine (VM)
- **Core Libraries**
 - Core Java classes
 - android.* classes
 - Android concurrency frameworks
- Android services framework

Android services allow computations & communication to run in the background

C/Java/JNI

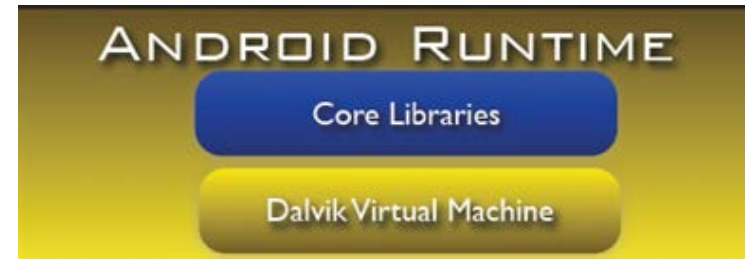


See developer.android.com/guide/components/services.html

Android Runtime

- Supports concurrently executing Java apps on mobile devices
- We'll examine lots of source code related to the Android Runtime

C/Java/JNI



A screenshot of the 'Source' page on the Android website. The page has a navigation bar at the top with links for 'android', 'Source', 'Devices', 'Accessories', and 'Compatibility'. A search icon and a menu icon are on the right. On the left, there is a sidebar with a list of links: 'Overview' (selected), 'Codelines, Branches, and Releases', 'Codenames, Tags, and Build Numbers', 'Project Roles', 'Brand Guidelines', 'Licenses', 'FAQ', 'Downloading and Building', 'Developing', 'Contributing', and 'Community'. The main content area is titled 'The Android Source Code' and contains two sections: 'The Android Source Code' and 'Governance Philosophy'. The first section describes Android as an open-source software stack created for a wide array of devices with different form factors. The second section, 'Governance Philosophy', describes how Android was originated by a group of companies known as the Open Handset Alliance, led by Google, and how it is an open-source effort by a group of organizations with shared needs.

The Android Source Code

Android is an open-source software stack created for a wide array of devices with different form factors. The primary purposes of Android are to create an open software platform available for carriers, OEMs, and developers to make their innovative ideas a reality and to introduce a successful, real-world product that improves the mobile experience for users. We also wanted to make sure there was no central point of failure, where one industry player could restrict or control the innovations of any other. The result is a full, production-quality consumer product with source code open for customization and porting.

Governance Philosophy

Android was originated by a group of companies known as the Open Handset Alliance, led by Google. Today, many companies – both original members of the OHA and others – have invested heavily in Android. These companies have allocated significant engineering resources to improve Android and bring Android devices to market.

The companies that have invested in Android have done so on its merits because we believe an open platform is necessary. Android is intentionally and explicitly an open-source – as opposed to a free software – effort; a group of organizations with shared needs has pooled resources to collaborate on a single implementation of a shared product. The Android philosophy is pragmatic, first and foremost. The objective is a shared product that each contributor can tailor and customize.

See source.android.com