

Module I

Android Intro

- Android簡介
- 開發工具與環境建立

認識Android (1 / 3)

- ▶ 以Linux為基礎的開放原始碼行動裝置作業系統，於2008年推出
- ▶ 因為是Apache免費開放原始碼許可證，故深受行動裝置廠商們喜愛，可以自行增減以符合自己需求的功能，更無須公開修改後的原始碼 (hTC Sense, Motorola Motoblur, Samsung Touchwiz...等)
- ▶ Android使用Java作為應用程式開發的語言，吸引大量Java開發者投入，讓APP市場蓬勃發展 (2013年7月已有突破100萬個APP)
- ▶ 推出後僅兩年即超越Nokia稱霸十年之久的Symbian系統，成為全球現今市佔率最高的行動裝置作業系統



認識Android (2/3)

▶ 行動裝置作業系統銷售量與市佔率

作業系統 ◆	2013銷售量 ◆	2013市佔率 ◆	2012銷售量 ◆	2012市佔率 ◆
Android	120,961,445	61.9%	53,341,250	45.8%
iOS	70,400,159	36.0%	61,465,632	52.8%
Windows	4,031,802	2.1%	1,162,435	1.0%
Other	41,598	0.1%	379,000	0.3%

From Wikipedia

認識Android (3/3)

▶ Android版本更新歷程與API數字對應一覽

Version	Code Name	Release Date	API Level
1.5	Cupcake 紙杯蛋糕	2009/4/17	3
1.6	Donut 甜甜圈	2009/9/15	4
2.0 – 2.1	Éclair 閃電泡芙	2009/10/26 2010/1/12	5 ~ 7
2.2 – 2.2.x	Froyo 霜凍優格	2010/5/20	8
2.3 – 2.3.x	Gingerbread 薑餅	2010/12/6	9 ~ 10
3.0 – 3.2.x	Honeycomb 蜂窩	2011/2/22	11 ~ 13
4.0 – 4.0.x	Ice Cream Sandwich 冰淇淋三明治	2011/10/19	14 ~ 15
4.1 – 4.3.x	Jelly Bean 雷根糖	2012/6/28	16 ~ 18
4.4 – 4.4.x	KitKat 奇巧	2013/10/31	19
5.0	Lollipop 棒棒糖	2014/10/15	21

API 20為4.4KitKat適用於穿戴式裝置

Google Play

- ▶ 前身為Android Market，於2012/3/6整合影音多媒體等服務後，更名為Google Play上線至今
- ▶ 目前已有超過100萬個應用程式在Play商店線上，付費服務支援全球129個國家，累積APP下載量已超過500億次
- ▶ 欲將完成的APP上架至Play商店，只需支付一次Google開發者費用25 USD即可，付費APP所得與Google Play採三七分帳，上架也無須審核
- ▶ 與iOS APP開發比較，學習、撰寫與發佈門檻都較親近開發者們



Google play

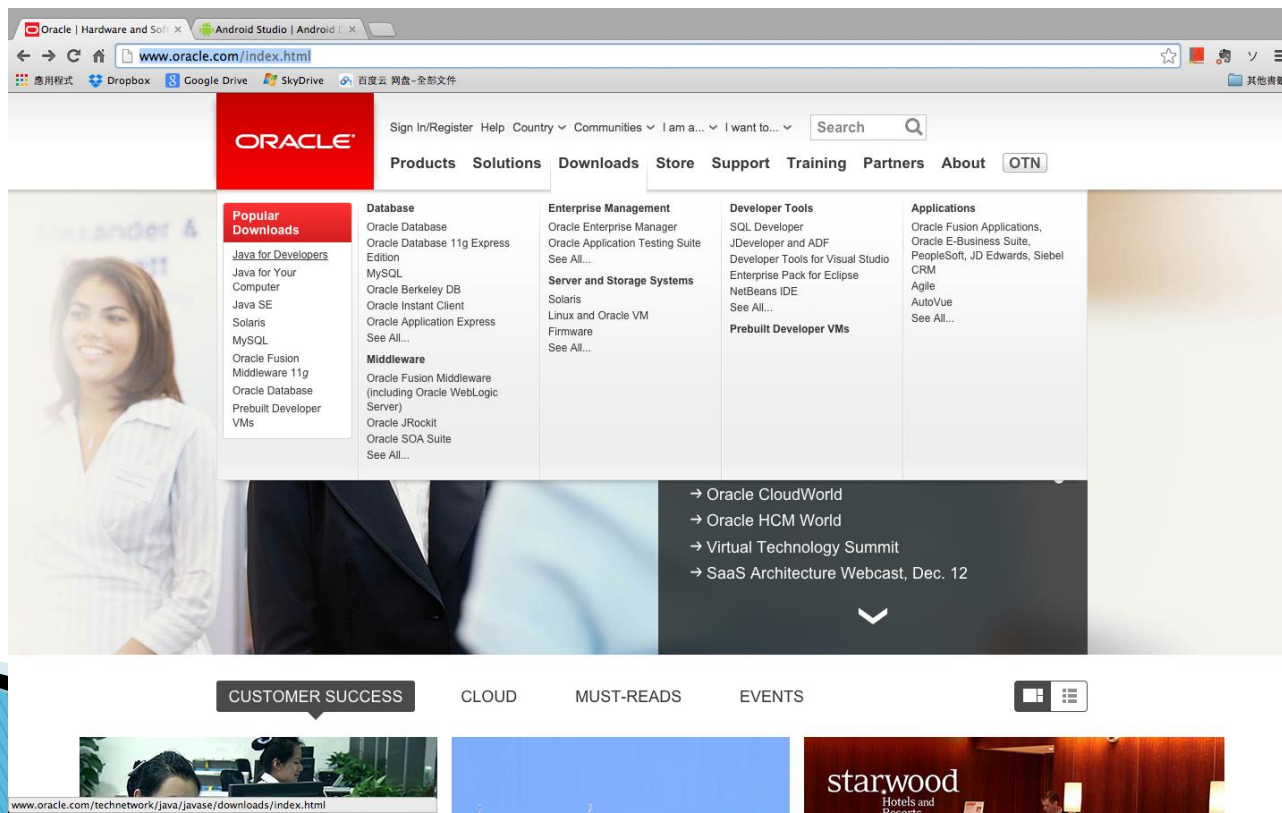
Android開發所需工具

- ▶ 必備項目：
 - JDK (Java Development Kit)
 - Integrated Development Environment (Android Studio)
 - Android SDK (Software Development Kit)
- ▶ Android Studio為Google開發維護的Android整合開發工具，於2013年5月的Google發表大會上公佈，在2014年12月正式推出1.0正式版本，並表示未來將不再支援Eclipse ADT的更新。因此剛接觸學習Android者，強烈建議使用此開發工具

安裝流程 (1 / 5)

▶ JDK下載

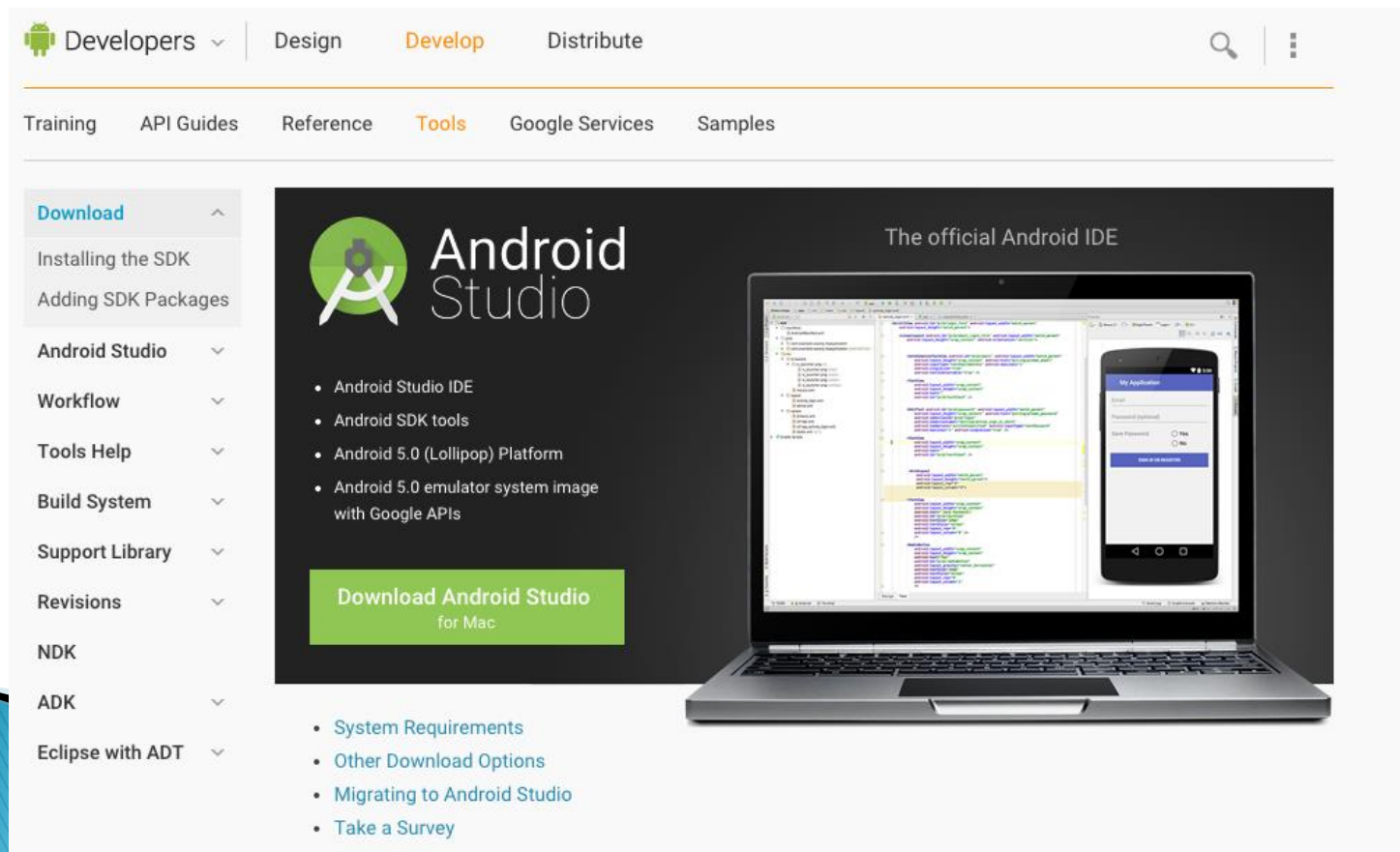
- 要能與Android相容，請下載JDK SE5以後的版本
- Java官網 <http://www.oracle.com>
- 下載完畢即啟動程式，依步驟指示完成安裝即可



安裝流程 (2/5)

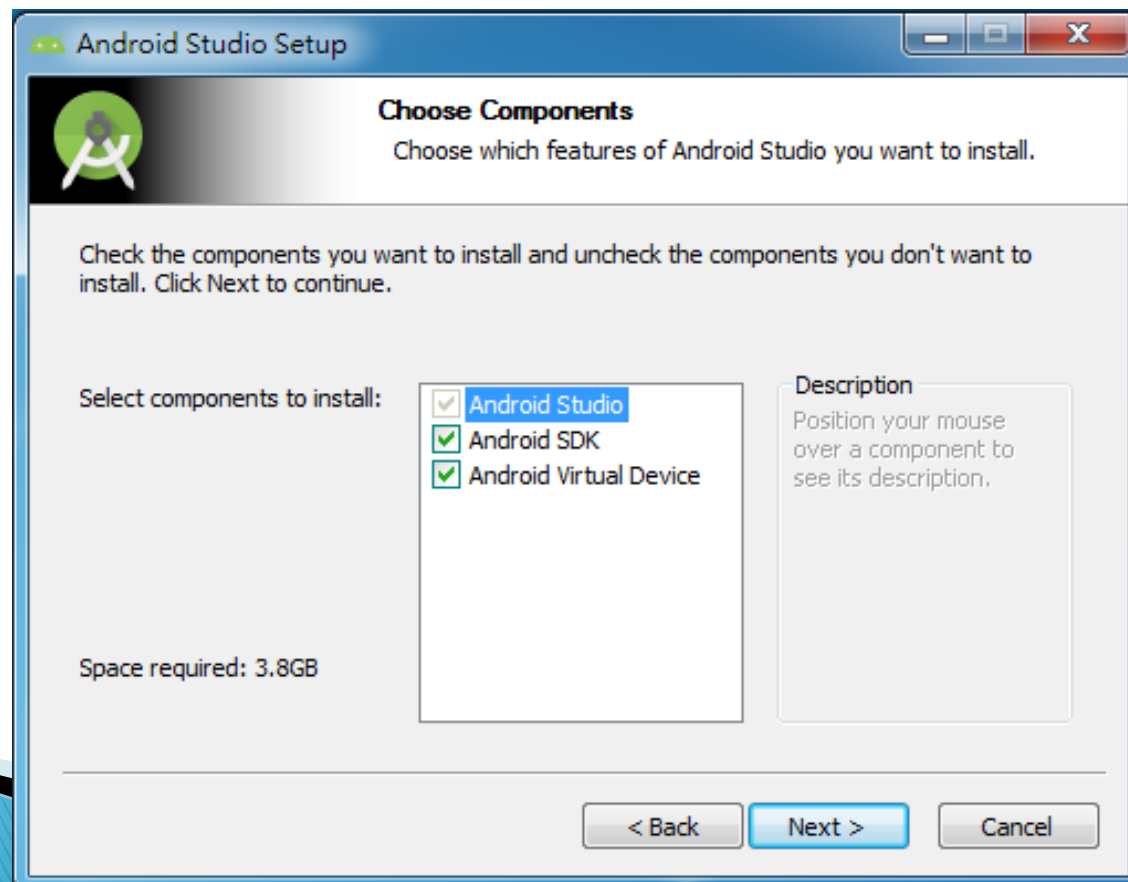
▶ Android Studio下載

- Android Developer網站下載：Develop→Tools→Download
- 瀏覽器會自動偵測作業系統，並顯示對應的下載版本



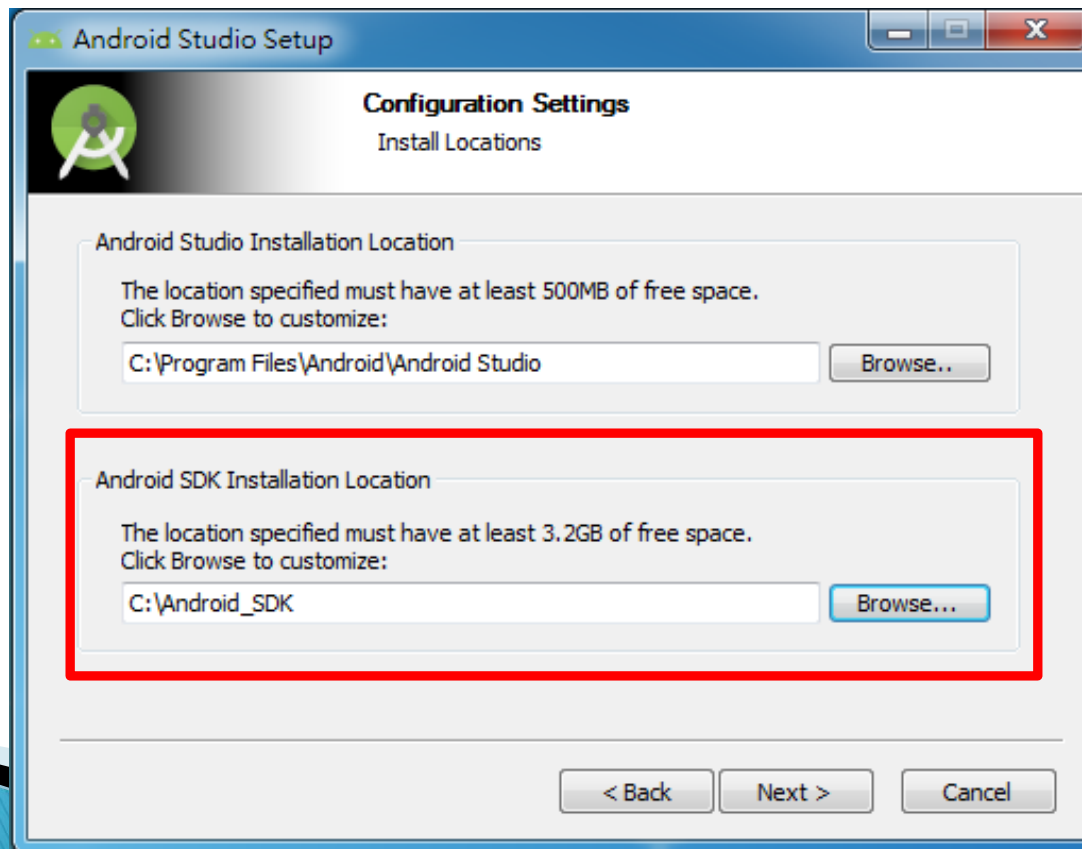
安裝流程 (3/5)

- ▶ 開啟下載後的.exe執行檔進行安裝，同時也安裝開發Android APP需要的SDK(Software Development Kit)與Android Virtual Machine(虛擬機器)



安裝流程 (4/5)

- ▶ 安裝路徑設定：
 - Android Studio按預設路徑即可
 - SDK建議安裝在自行建立的目錄裡 (以後找相關檔案較方便)



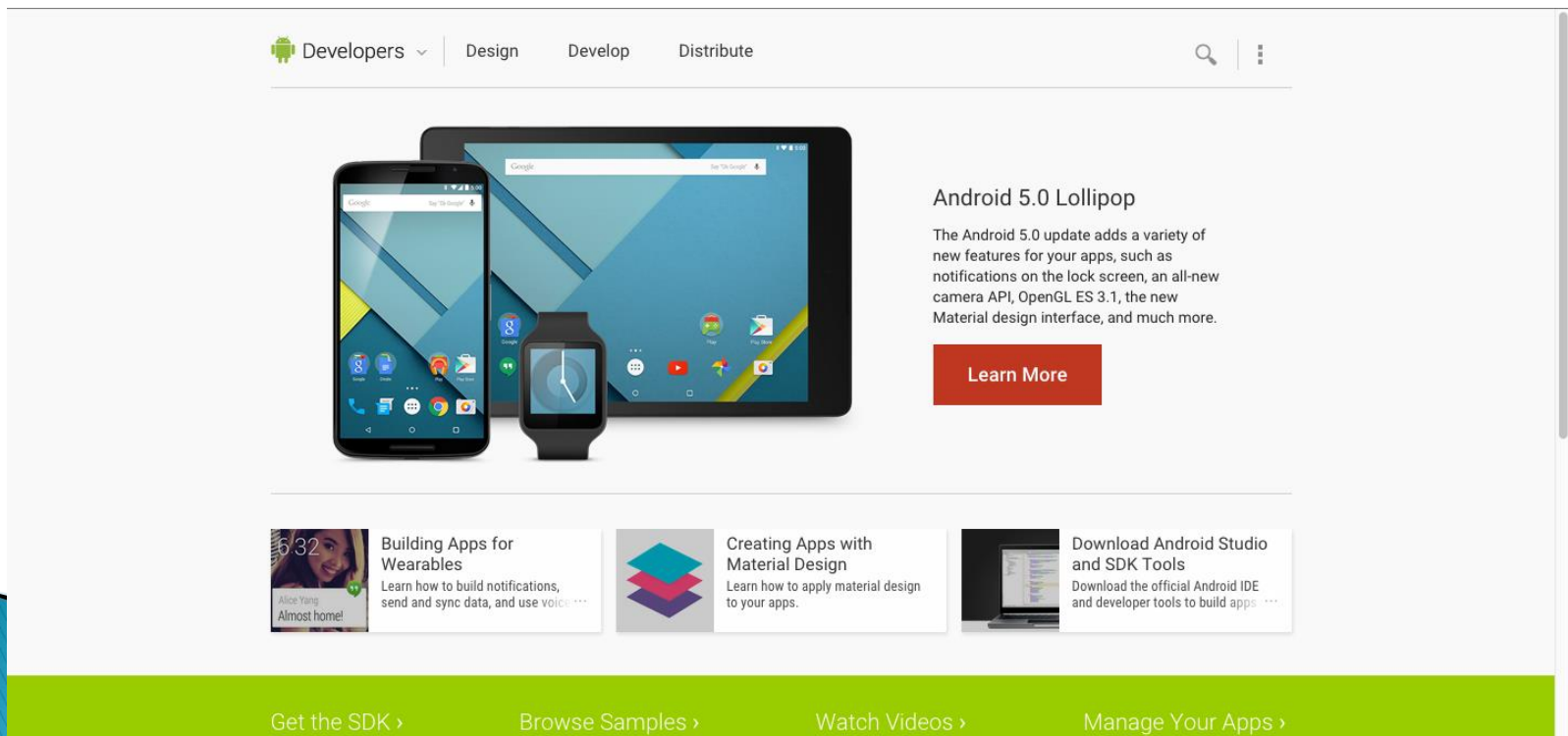
安裝流程 (5/5)

▶ Android SDK安裝

- 開啟Android SDK Manager，可進行勾選欲安裝的相關套件
- Tools目錄：建議為最新版
(可參考Android Developer官網 Develop→Tools→Revisions)
- 最新版Android API 目錄：
 - Documentation for Android SDK：SDK文件
 - SDK Platform：Android API
 - Samples for SDK：SDK範例
 - ARM System Image：Android模擬器需要
- 其它版本API目錄：依開發需求安裝其SDK Platform即可
- Extras目錄：
 - Android Support Library：向前版本支援的相關函式庫
 - Google Play Services：使用Google相關功能所需，如Google Maps

官方網站

- ▶ Android Developer官網首頁
<http://developer.android.com/index.html>
(請加到我的最愛)
- ▶ 最新資訊、範例程式碼與API文件查詢都在此處！



The screenshot shows the Android Developer website homepage. At the top, there is a navigation bar with the Android logo, a dropdown menu labeled 'Developers', and links for 'Design', 'Develop', and 'Distribute'. A search icon and a menu icon are also present. The main content area features a large image of an Android smartphone, a tablet, and a smartwatch, all displaying the Android 5.0 Lollipop interface. To the right of this image, the text 'Android 5.0 Lollipop' is displayed, followed by a paragraph describing the new features: 'The Android 5.0 update adds a variety of new features for your apps, such as notifications on the lock screen, an all-new camera API, OpenGL ES 3.1, the new Material design interface, and much more.' Below this text is a red 'Learn More' button. At the bottom of the main content area, there are three featured articles: 'Building Apps for Wearables' by Alice Yang, 'Creating Apps with Material Design', and 'Download Android Studio and SDK Tools'. The footer of the website is a green bar with four links: 'Get the SDK', 'Browse Samples', 'Watch Videos', and 'Manage Your Apps'.

Developers ▾ | Design | Develop | Distribute

Android 5.0 Lollipop

The Android 5.0 update adds a variety of new features for your apps, such as notifications on the lock screen, an all-new camera API, OpenGL ES 3.1, the new Material design interface, and much more.

Learn More

Building Apps for Wearables
Learn how to build notifications, send and sync data, and use voice...

Creating Apps with Material Design
Learn how to apply material design to your apps.

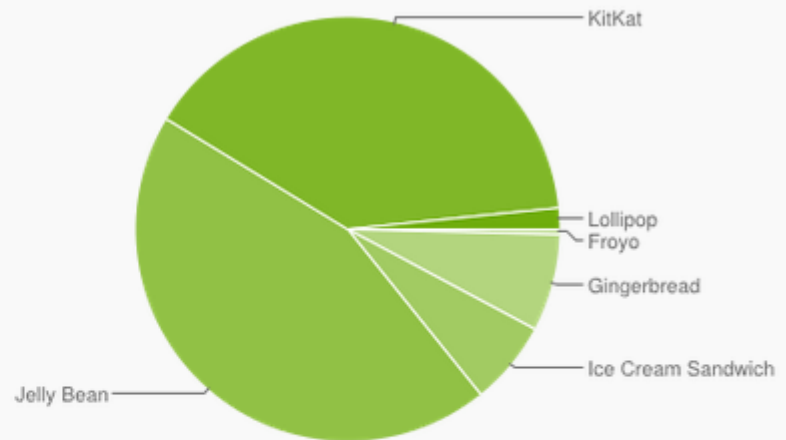
Download Android Studio and SDK Tools
Download the official Android IDE and developer tools to build apps...

Get the SDK ▸ | Browse Samples ▸ | Watch Videos ▸ | Manage Your Apps ▸

官方參考資訊

- ▶ Android Developer 官網首頁 About→Dashboards
- ▶ Platform Versions：提供最新各版本市佔比率
- ▶ Screen Sizes and Densities：提供最新裝置螢幕尺寸比率
- ▶ OPEN GL Version：提供最新OPEN GL ES版本比率(遊戲使用)

Version	Codename	API	Distribution
2.2	Froyo	8	0.4%
2.3.3 - 2.3.7	Gingerbread	10	7.4%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	6.4%
4.1.x	Jelly Bean	16	18.4%
4.2.x		17	19.8%
4.3		18	6.3%
4.4	KitKat	19	39.7%
5.0	Lollipop	21	1.6%



Data collected during a 7-day period ending on February 2, 2015.
Any versions with less than 0.1% distribution are not shown.