

APP自動化測試環境建置

建立應用程式 UI 自動化測試 - 以 Robot Framework 為例

<https://ithelp.ithome.com.tw/users/20168859/ironman/7650>

install appium

<https://ithelp.ithome.com.tw/articles/10360843>

Robot Framework 安裝及初體驗

install python

<https://www.python.org/downloads/>

install nvm

<https://github.com/coreybutler/nvm-windows>

nvm install lts

nvm use 22.16.0

npm install -g appium

```
C:\Users\A>nvm use 22.16.0
Now using node v22.16.0 (64-bit)

C:\Users\A>npm install -g appium
npm warn deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Check out lru-cache if you want a good and tested way to coalesce async requests by a key value, which is much more comprehensive and powerful.
npm warn deprecated lodash.get@4.4.2: This package is deprecated. Use the optional chaining (?.) operator instead.
npm warn deprecated rimraf@2.4.5: Rimraf versions prior to v4 are no longer supported
npm warn deprecated glob@6.0.4: Glob versions prior to v9 are no longer supported

added 390 packages in 1m
npm notice
npm notice New major version of npm available! 10.9.2 -> 11.4.2
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.4.2
npm notice To update run: npm install -g npm@11.4.2
npm notice

C:\Users\A>appium
[Appium] Welcome to Appium v2.19.0
[Appium] The autodetected Appium home path: C:\Users\A\.appium
[Appium] Appium REST http interface listener started on http://0.0.0.0:4723
[Appium] You can provide the following URLs in your client code to connect to this server:
http://10.99.30.40:4723/
http://127.0.0.1:4723/ (only accessible from the same host)
http://172.26.144.1:4723/
[Appium] No drivers have been installed in C:\Users\A\.appium. Use the "appium driver" command to install the one(s) you want to use.
[Appium] No plugins have been installed. Use the "appium plugin" command to install the one(s) you want to use.
```

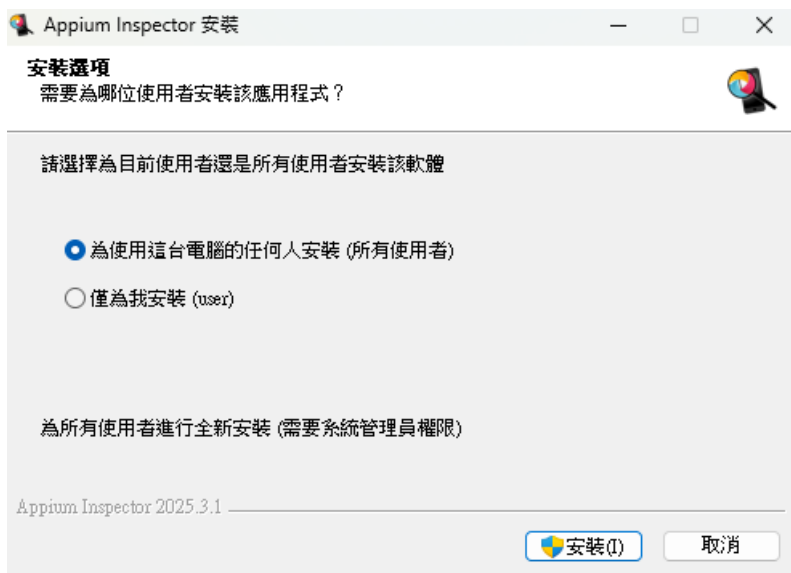
```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.22631.4751]
(c) Microsoft Corporation. All rights reserved.

C:\Users\A>appium driver install uiautomator2
✓ Checking if 'appium-uiautomator2-driver' is compatible
✓ Installing 'uiautomator2'
i Driver uiautomator2@4.2.3 successfully installed
- automationName: UiAutomator2
- platformNames: ["Android"]

C:\Users\A>
```

install appium-inspector

<https://github.com/appium/appium-inspector>



```
{
  "platformName": "Android",
  "appium:automationName": "uiautomator2",
  "appium:deviceName": "Android",
  "appium:appPackage": "com.android.settings",
  "appium:appActivity": ".Settings"
}
```

安裝其他套件

```
pip install robotframework
pip install robotframework-appiumlibrary
```

要讓 Appium 透過 USB 控制實體手機（例如 Android）來做測試，你需要讓你的 **notebook（筆電）** 與手機透過 **USB 連線**，並配合幾個工具來完成連接。這裡用 **Android + Windows notebook** 為範例流程說明。

□ 一、前置條件檢查

□ 手機端設定：

1. **開啟「開發者選項」**
 - 到手機設定 → 關於手機 → 點「版本號」七次 → 解鎖開發者模式
2. **打開 USB 偵錯**
 - 設定 → 系統 → 開發者選項 → 開啟「USB 偵錯」
3. **用 USB 傳輸線接上筆電**

□ 二、筆電端（Windows）準備

1□ 安裝 ADB (Android Debug Bridge)

最快方法：安裝 Android Platform Tools（免裝 Android Studio）：

□ 下載網址：<https://developer.android.com/studio/releases/platform-tools>

Windows

解壓縮後，把 `platform-tools` 資料夾加到環境變數 `PATH`。

Mac

```
brew install --cask android-platform-tools
```

驗證：

```
adb devices
```

第一次會提示你在手機上授權，允許 USB 偵錯。

▣ 三、安裝 Appium 驅動（UIAutomator2）

```
appium driver install uiautomator2
```

確認：

```
appium driver list
```

▣ 四、啟動 Appium Server

```
appium
```

預設會在 `http://localhost:4723` 開啟伺服器。

▣ 五、撰寫測試程式連接手機

▣ 以 Python 為例（也可用 Java、JS 等）

```
from appium import webdriver

desired_caps = {
    "platformName": "Android",
    "deviceName": "Android Device",    # 或填 adb devices 顯示的 ID
    "appPackage": "com.android.settings", # 測試用，可改成你自己的 app
    "appActivity": ".Settings",
    "automationName": "UiAutomator2"
}

driver = webdriver.Remote("http://localhost:4723/wd/hub", desired_caps)

driver.quit()
```

▣ 六、常見問題排解

問題	解法
<code>adb devices</code> 看不到手機	檢查線材、USB 傳輸模式是否為「資料傳輸」，確認有開 USB 偵錯
Appium 找不到設備	確認驅動安裝好、手機有授權、Appium Server 已啟動
Appium 錯誤：no device found	驗證 <code>adb devices</code> 有成功列出設備
Appium Inspector 無法開啟 session	確認 desired capabilities 正確，並與 appium port 對上

如果你想搭配 Robot Framework 來寫測試，也可以再幫你整合 robotframework-appiumlibrary 的使用方式。

是否也需要說明 iOS 連線流程（macOS + iPhone 測試）？

🕒修訂版本 #15

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