

# Mobile App. Development – 2NMCT (2015)

In de module Mobile App. Development (2NMCT) schakelen we over naar de programmeertaal Java om de eerste Android-apps te ontwikkelen. Dit document beschrijft de noodzakelijke software en de stappen die hierbij moeten doorlopen worden. Alternatieven zijn zeker mogelijk, maar uiteraard kan niet dezelfde ondersteuning gegarandeerd worden. De installatie vraagt enige tijd, hou hier dus mee rekening.

## 1 Java SE Development Kit 7 Downloads

We installeren het laatste nieuwe java-platform: Java SE Development Kit 8 Downloads.

URL: <http://www.oracle.com/technetwork/java/javase/downloads/index.html>

The screenshot shows the Java SE Development Kit 8 Downloads page. At the top, there is a navigation bar with tabs: Overview, Downloads (which is selected), Documentation, Community, Technologies, and Training. Below the navigation bar, the title "Java SE Development Kit 8 Downloads" is displayed. A message thanks the user for downloading the Java Platform, Standard Edition Development Kit (JDK). It states that the JDK is a development environment for building applications, applets, and components using the Java programming language. The page then describes the JDK's tools for developing and testing programs in Java. It includes links to the Java Developer Newsletter, Java Developer Day workshops, and Java Magazine. A note about JDK MD5 Checksum is also present. A section titled "Looking for JDK 8 on ARM?" informs users that ARM downloads have moved to the JDK 8 for ARM download page. Finally, a step for accepting the Oracle Binary Code License Agreement is shown, with the "Accept License Agreement" option selected.

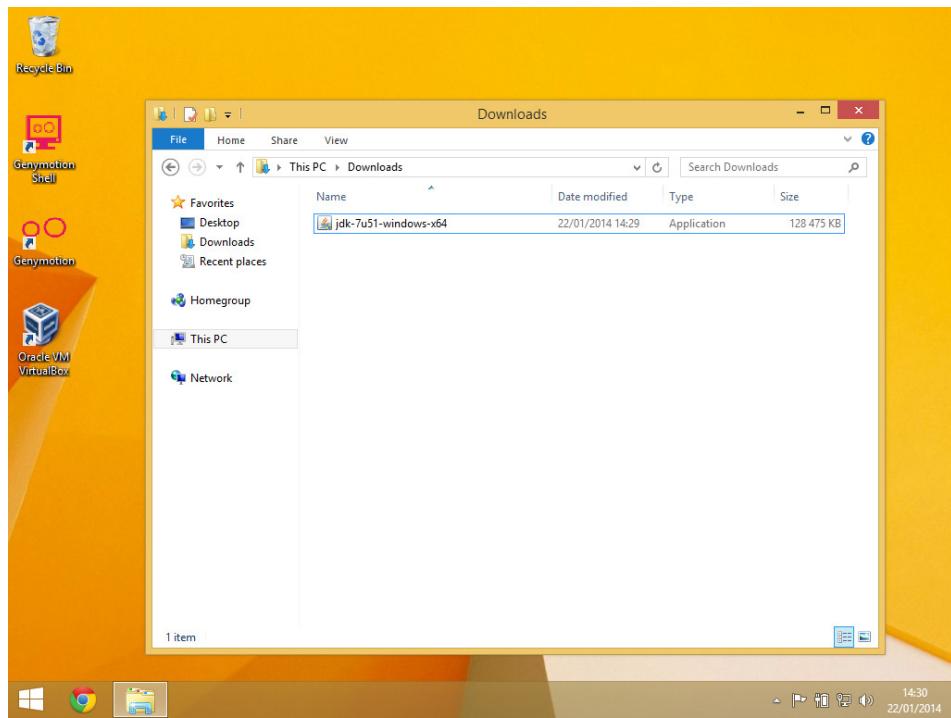
**Java SE Development Kit 8u25**

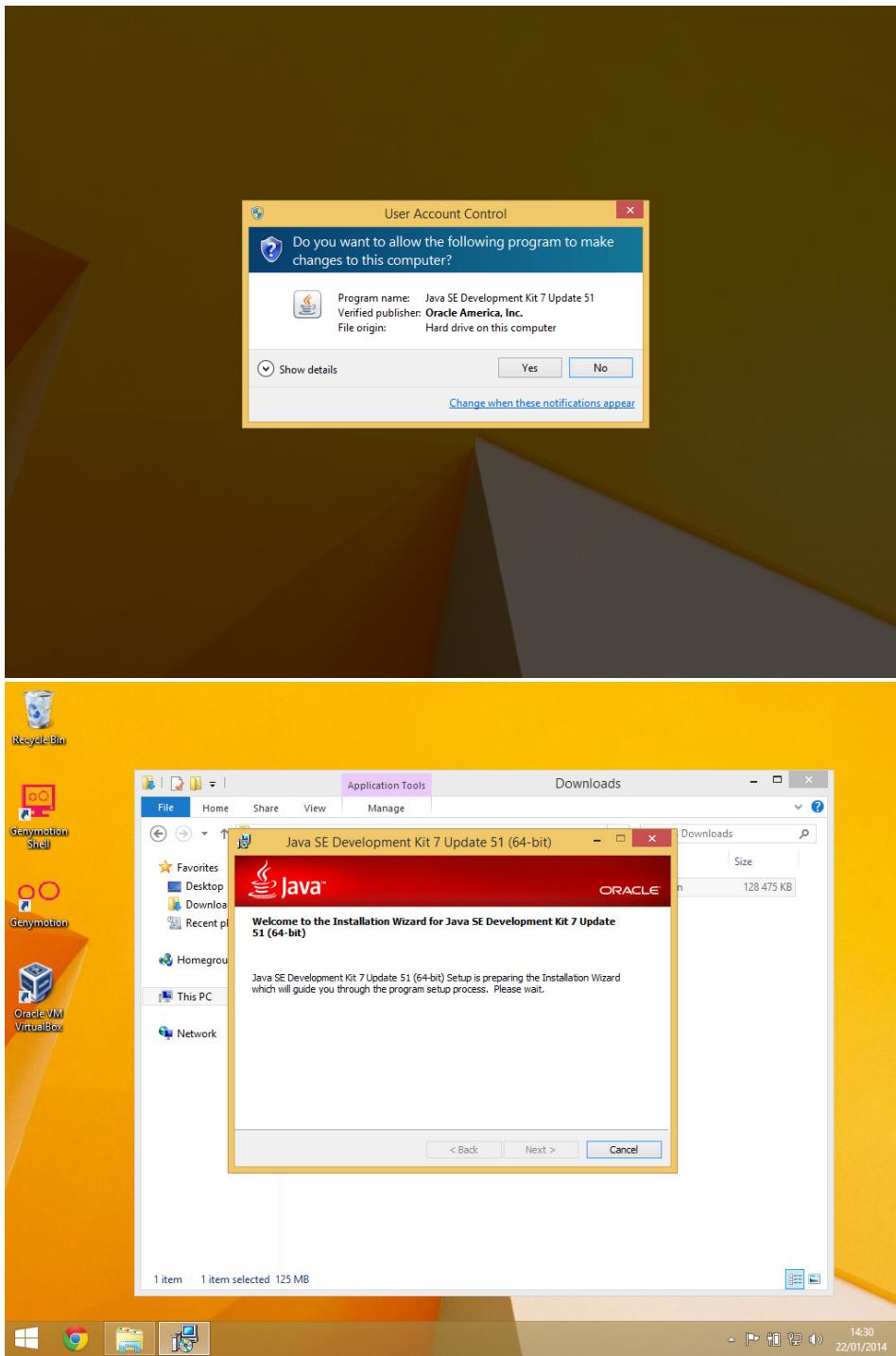
You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

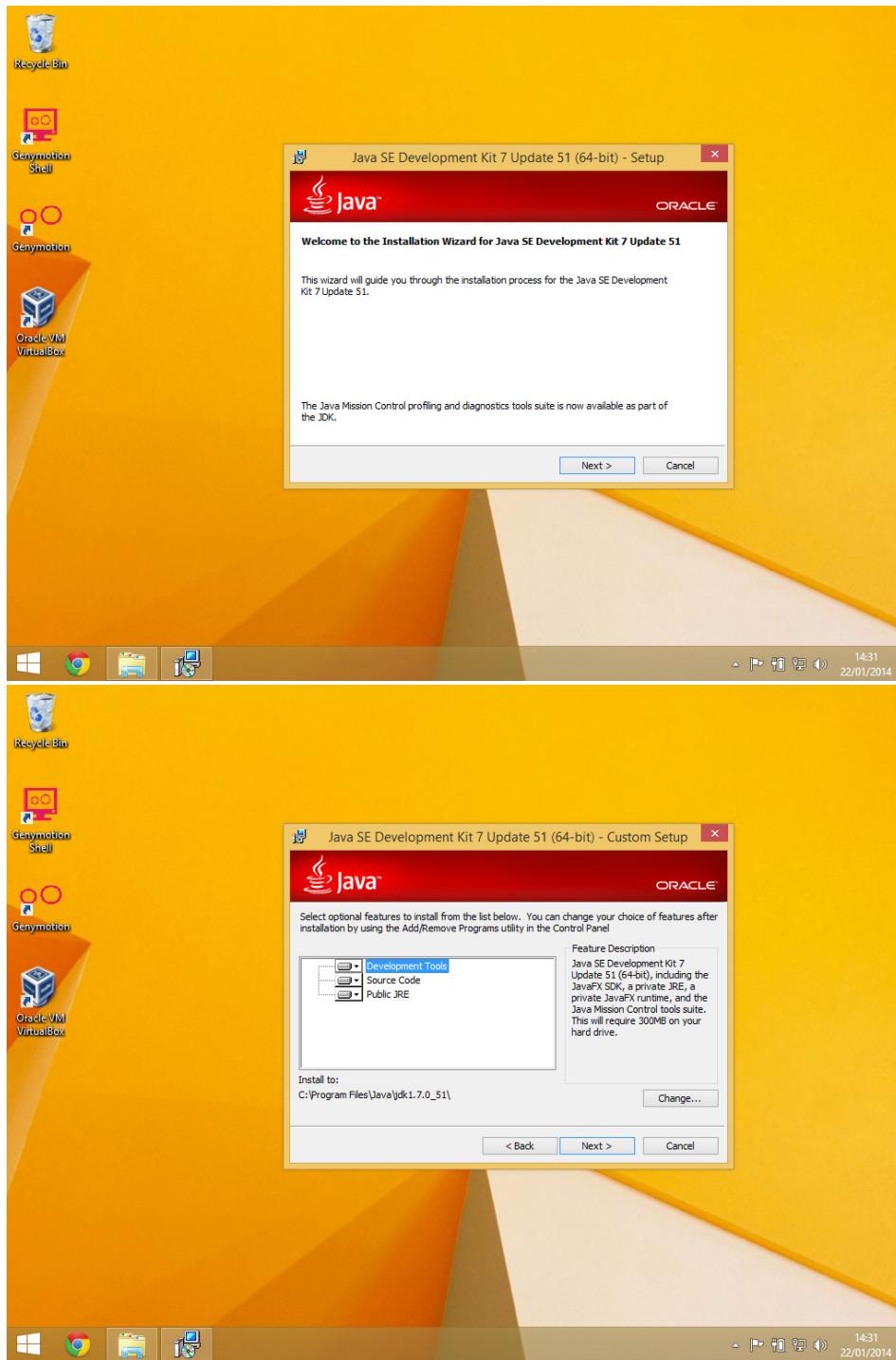
Accept License Agreement  Decline License Agreement

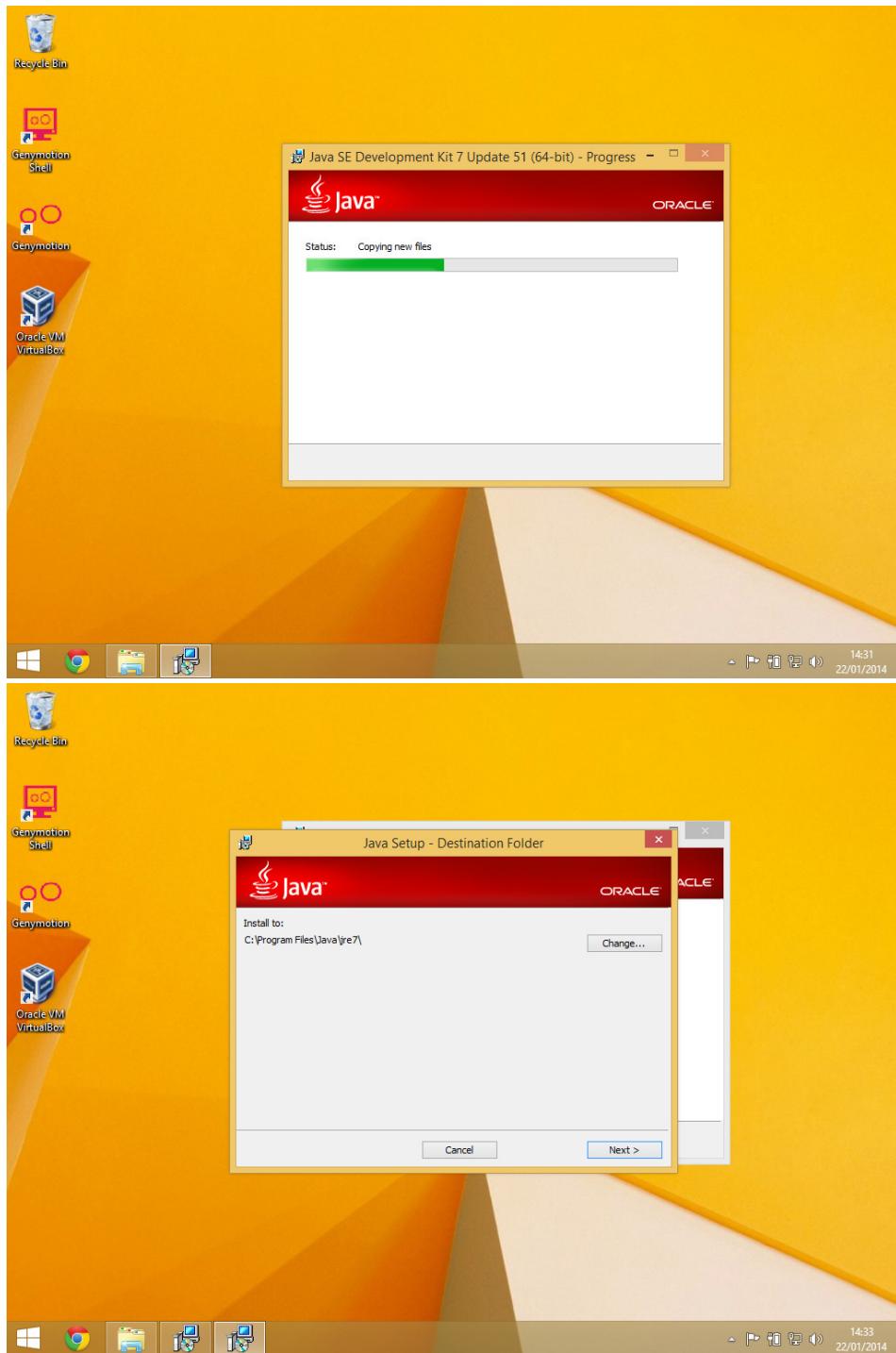
| Product / File Description          | File Size | Download  |
|-------------------------------------|-----------|---|
| Linux x86                           | 135.24 MB | <a href="#">jdk-8u25-linux-i586.rpm</a>         |
| Linux x86                           | 154.88 MB | <a href="#">jdk-8u25-linux-i586.tar.gz</a>      |
| Linux x64                           | 135.6 MB  | <a href="#">jdk-8u25-linux-x64.rpm</a>          |
| Linux x64                           | 153.42 MB | <a href="#">jdk-8u25-linux-x64.tar.gz</a>       |
| Mac OS X x64                        | 209.13 MB | <a href="#">jdk-8u25-macosx-x64.dmg</a>         |
| Solaris SPARC 64-bit (SVR4 package) | 137.01 MB | <a href="#">jdk-8u25-solaris-sparcv9.tar.Z</a>  |
| Solaris SPARC 64-bit                | 97.14 MB  | <a href="#">jdk-8u25-solaris-sparcv9.tar.gz</a> |

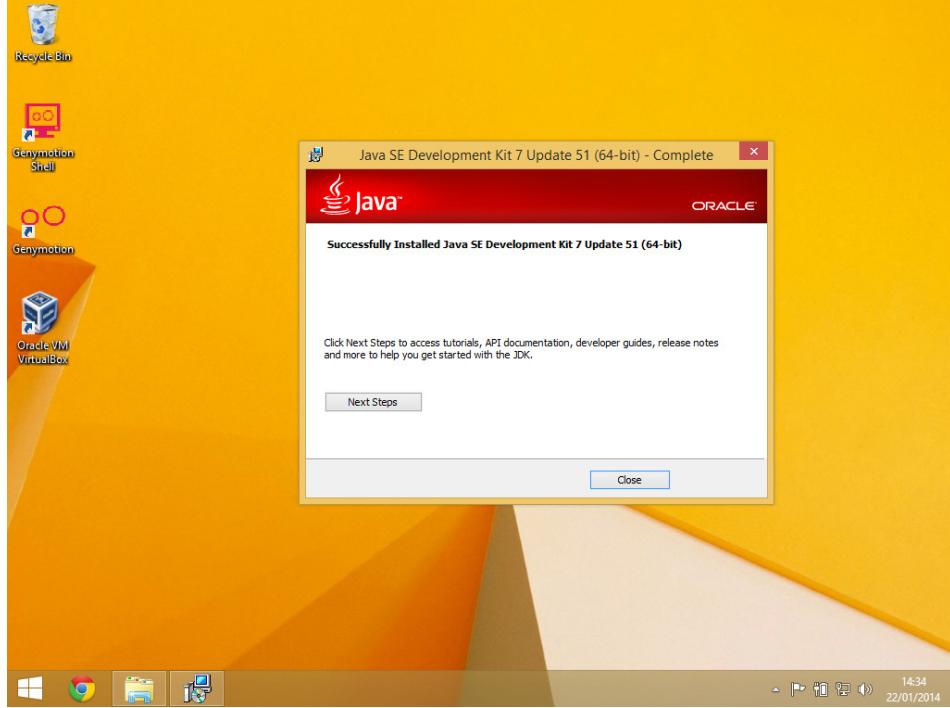
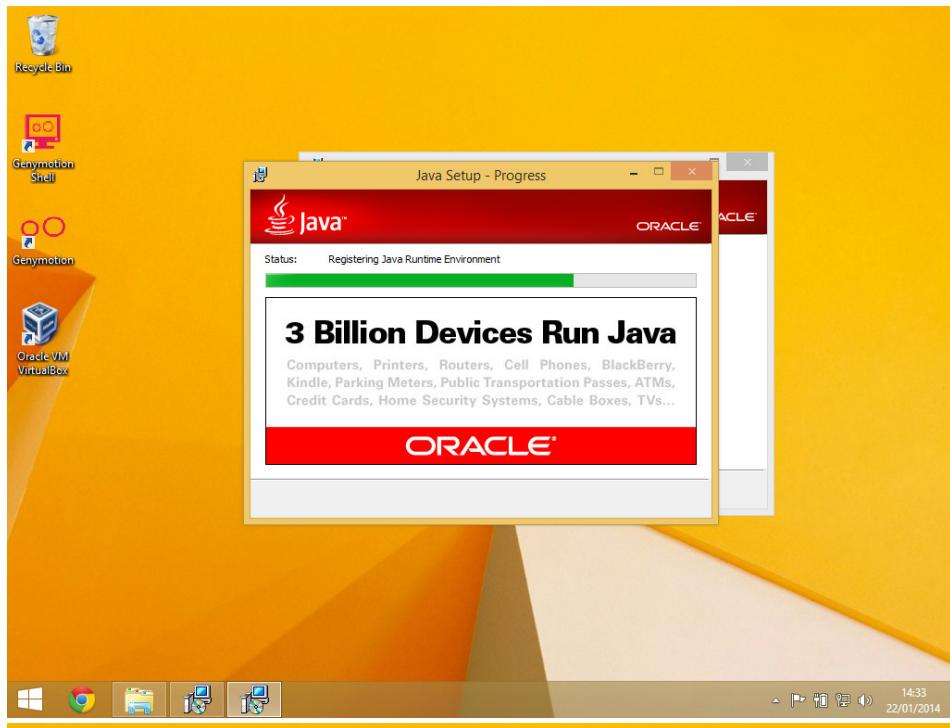
Installatiestappen zijn gelijkaardig als onderstaande stappen (deze zijn voor JDK 7u51)









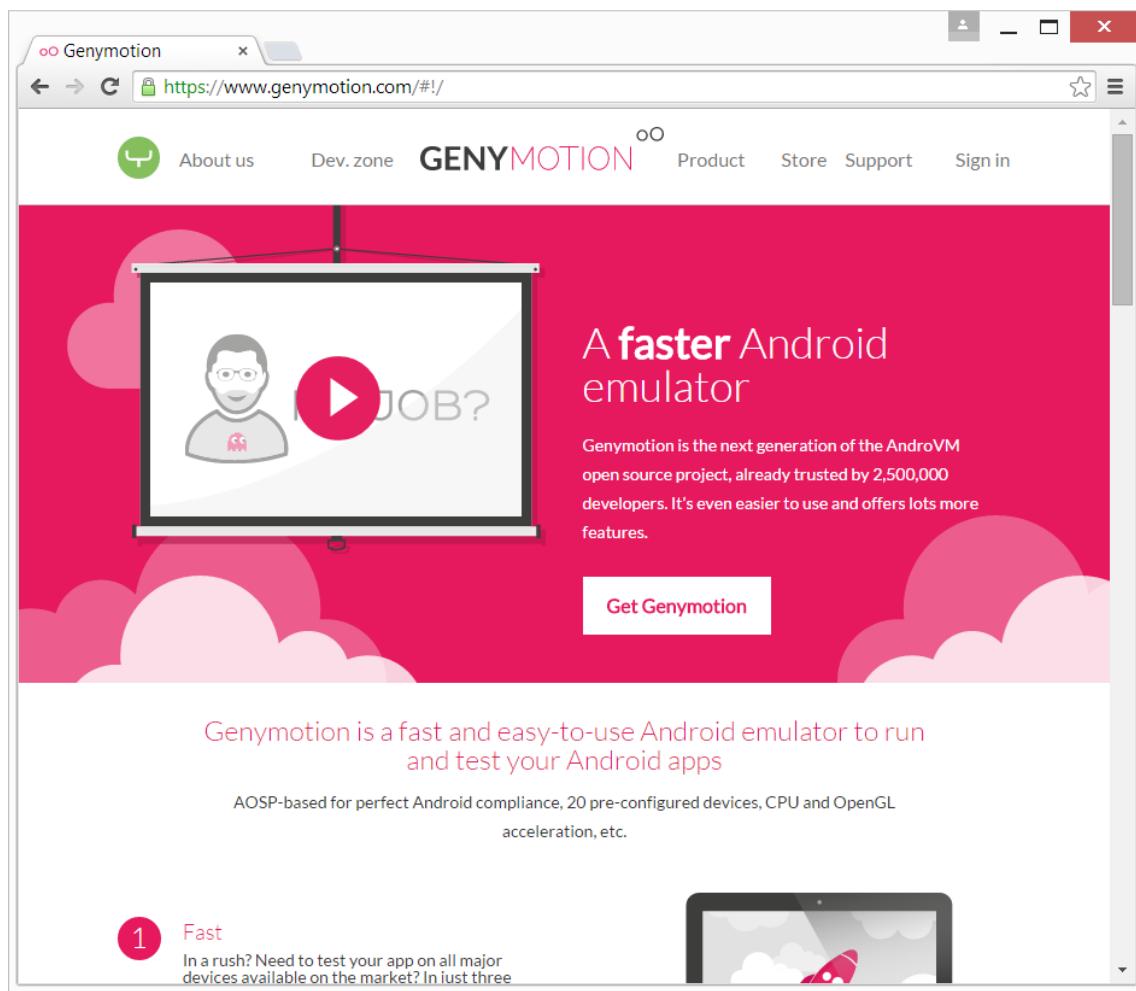


## 2 Genymotion

We installeren de nodige software waارlangs verschillende Android-emulatoren kunnen aangemaakt en opgestart worden. We gebruiken hiervoor Genymotion.

URL: <http://www.genymotion.com/>

Kies voor de eerste, gratis-versie. Maak een login aan. Hou deze gegevens bij: deze zal je nog later nodig hebben bij het creëren van een emulator. De installatiestappen zijn:



oo Genymotion x

https://www.genymotion.com/#!/pricing

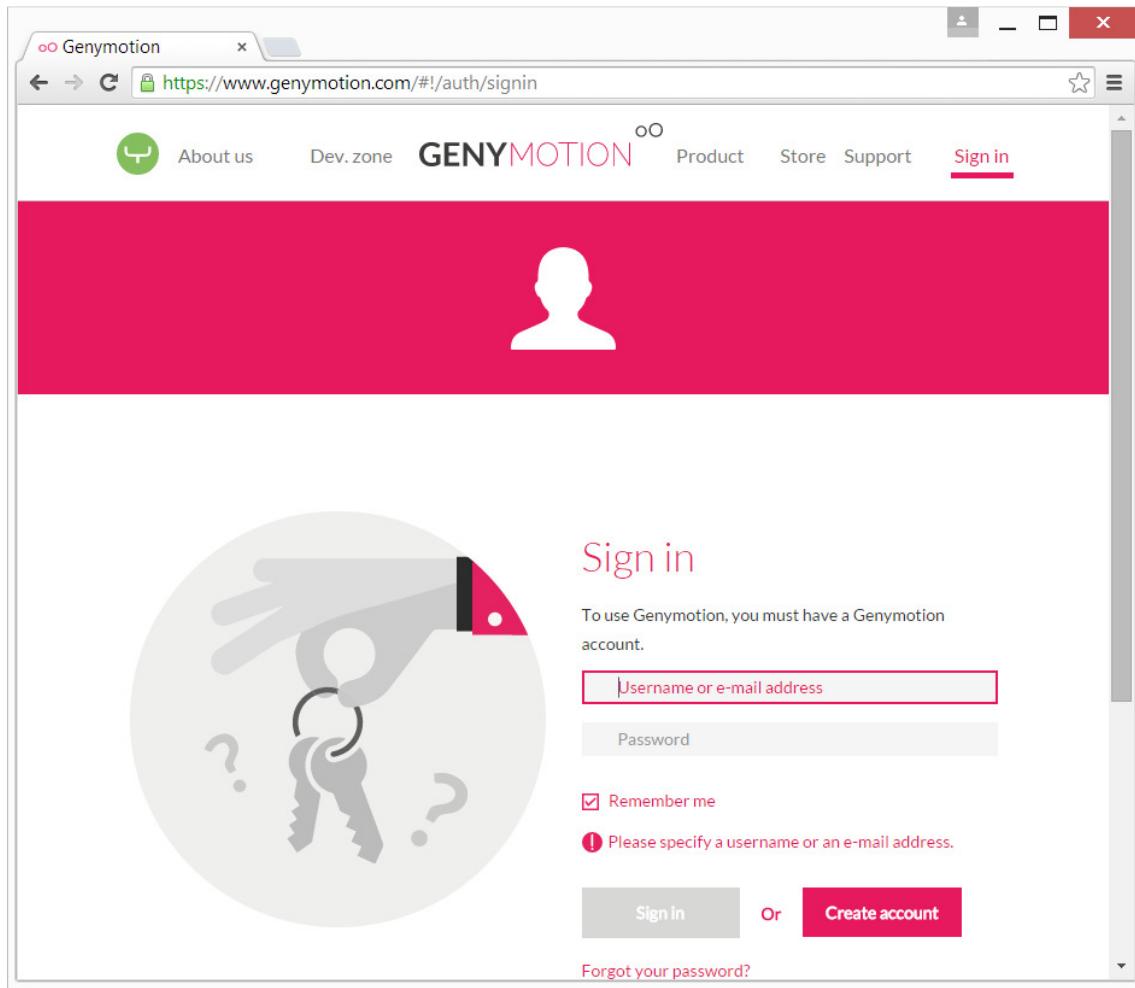
About us Dev. zone GENYMOTION Product Store Support Sign in

|                                      | Free | Business |
|--------------------------------------|------|----------|
| Android 2.3, 4.1, 4.2, 4.3, 4.4, 5.0 | ✓    | ✓        |
| GPS                                  | ✓    | ✓        |
| Camera                               | ✓    | ✓        |
| Multi-touch                          | ✗    | ✓        |
| Accelerometer                        | ✗    | ✓        |
| Java API                             | ✗    | ✓        |

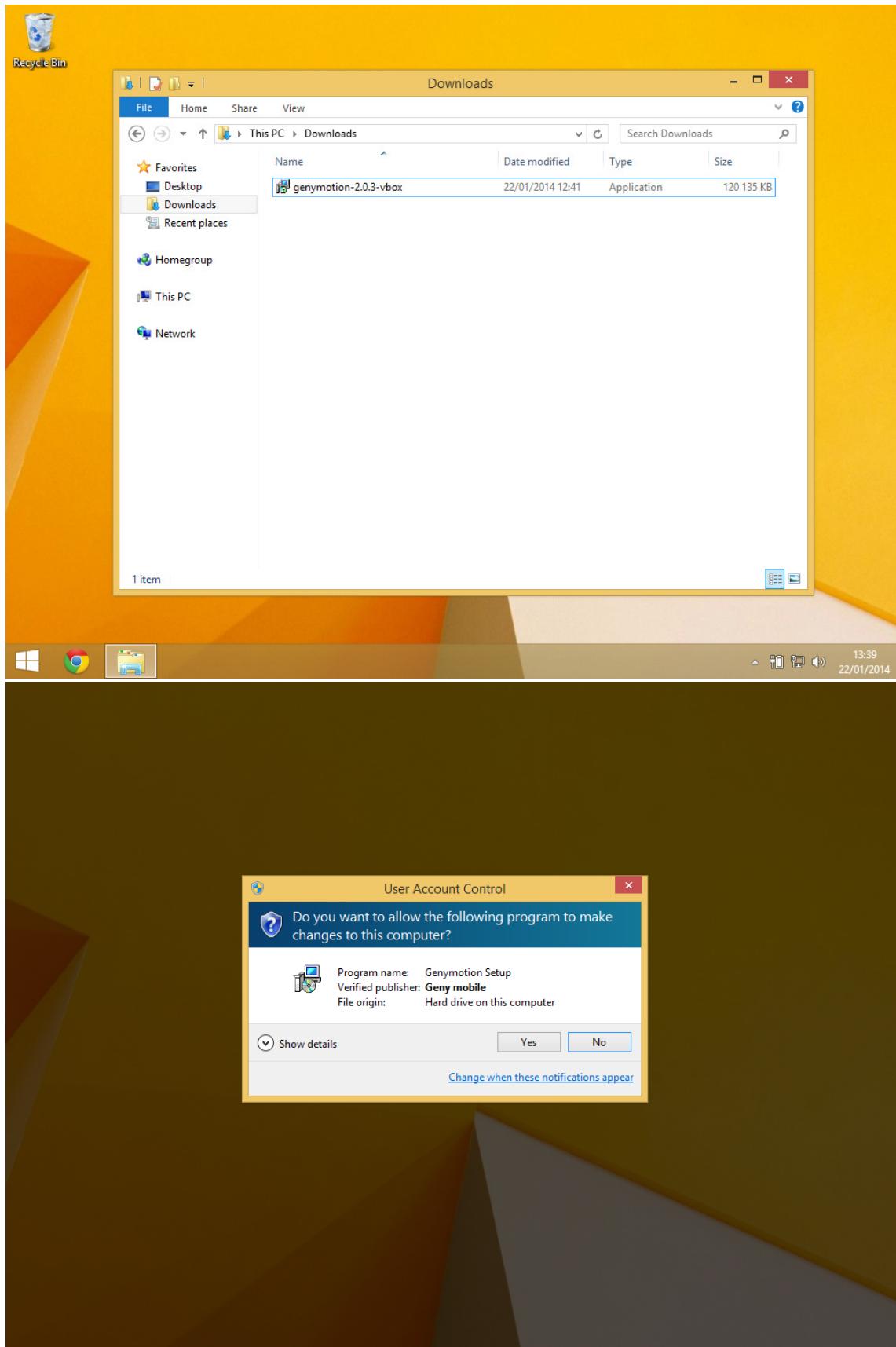
€0

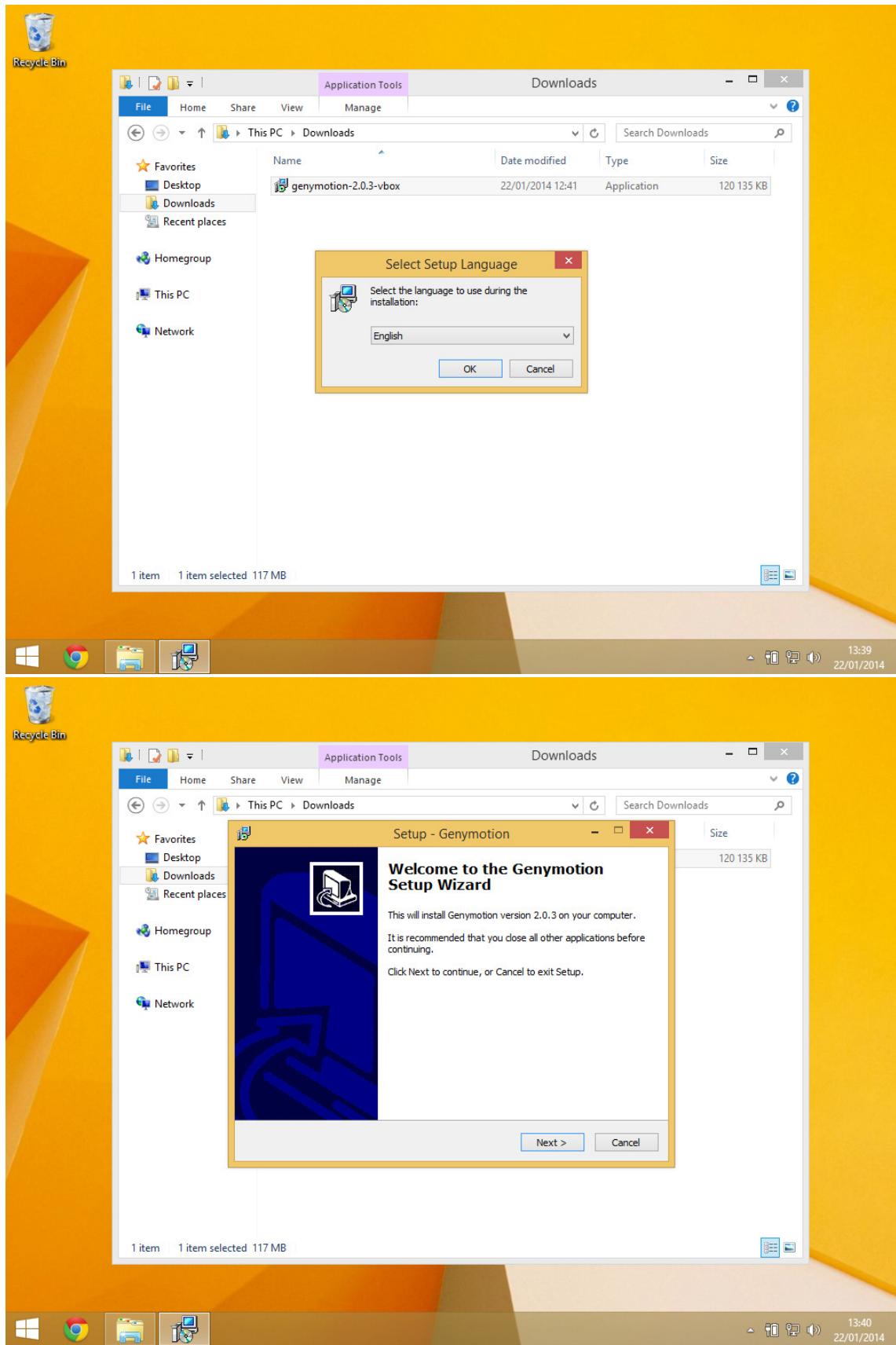
€24.99\* | per month, per user

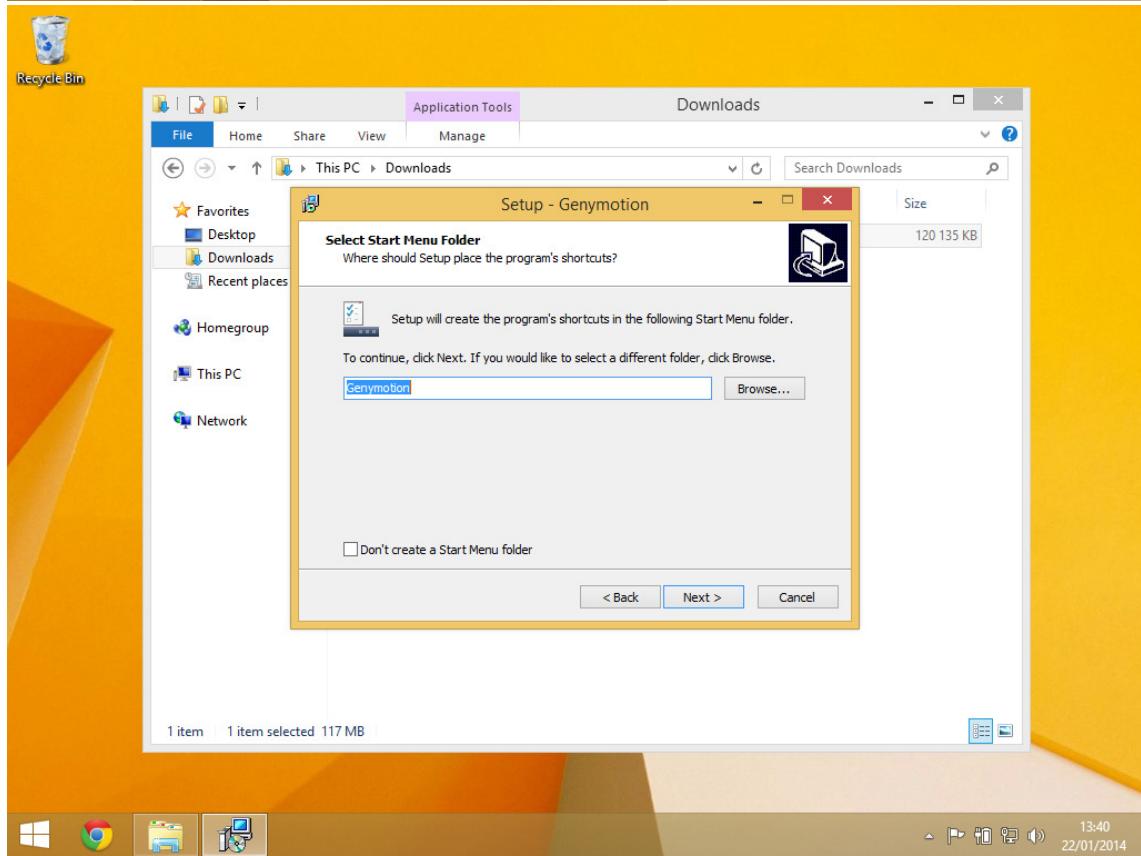
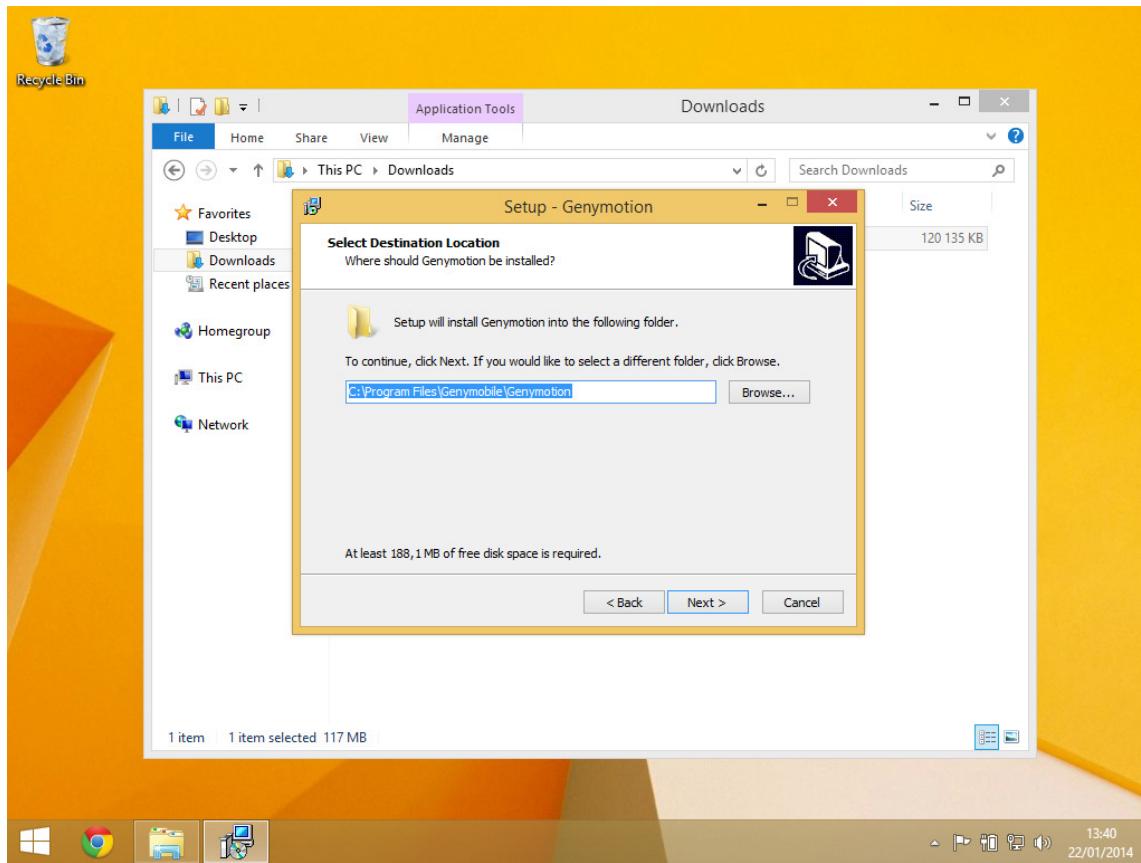
The screenshot shows a web browser window displaying the Genymotion download page at <https://www.genymotion.com/#!/download>. The page has a navigation bar with links for 'About us', 'Dev. zone', 'Product', 'Store', 'Support', and 'Sign in'. Below the navigation bar, there are three tabs: 'Mac', 'Windows' (which is highlighted with a red underline), and 'Linux'. A link to 'Release notes' is also present. A large section below the tabs contains a Windows logo icon and the text: 'System requirements: Microsoft Windows Vista (32/64 bit) or above'. It lists system requirements: 'VT-x or AMD-V capable CPU', 'OpenGL 2.0', '400MB disk space', and '2GB RAM'. At the bottom of the page, there are two download links: '(i) Get Genymotion (117.47MB)' and '(i) Get Genymotion (without VirtualBox) (25.39MB)'. The browser interface includes standard controls like back, forward, and search.

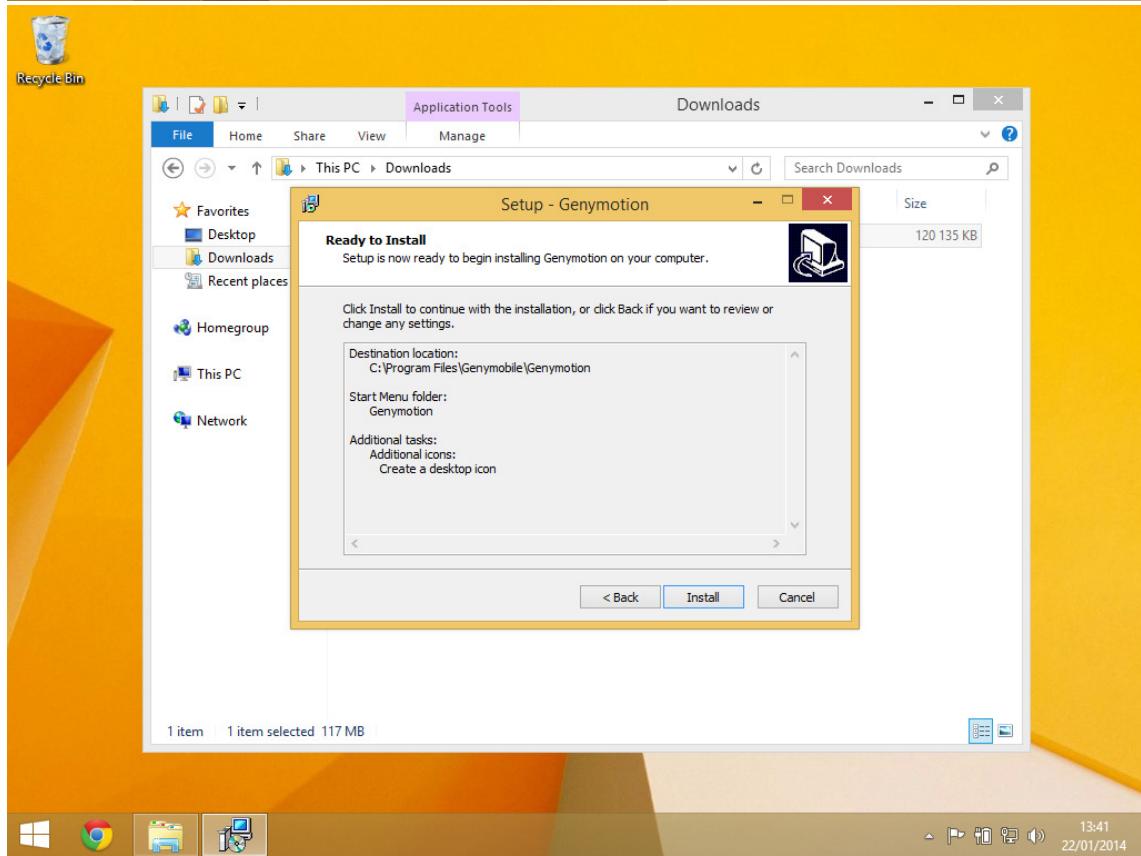
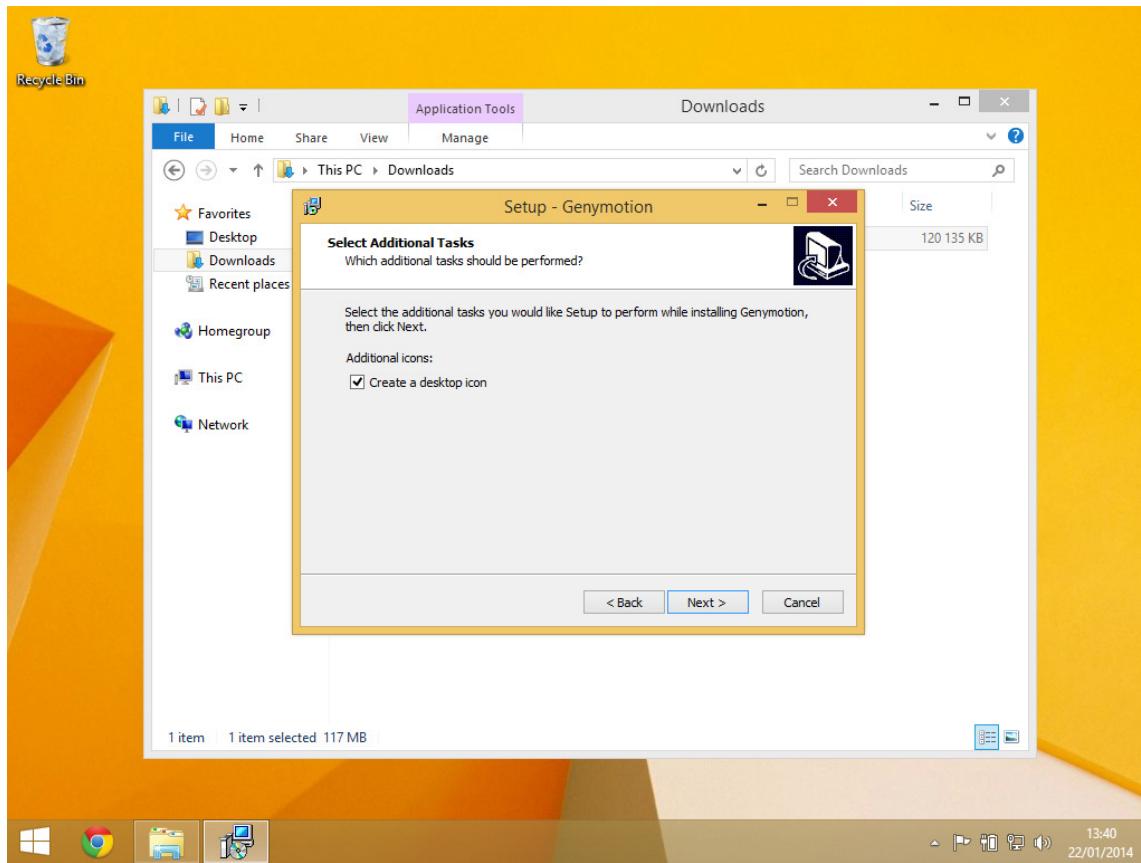


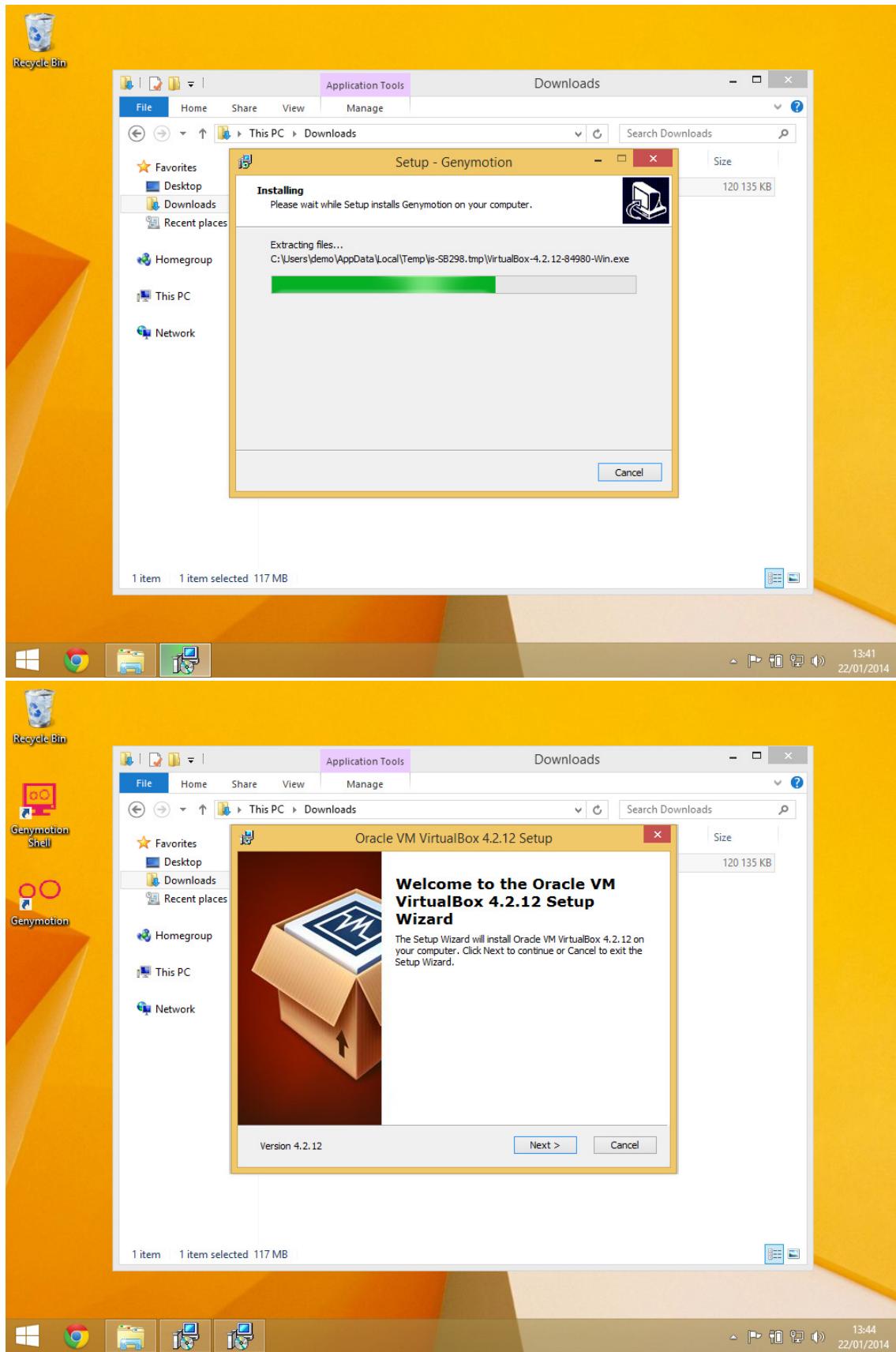
Maak een login en paswoord aan. Beide heb je later nog nodig!

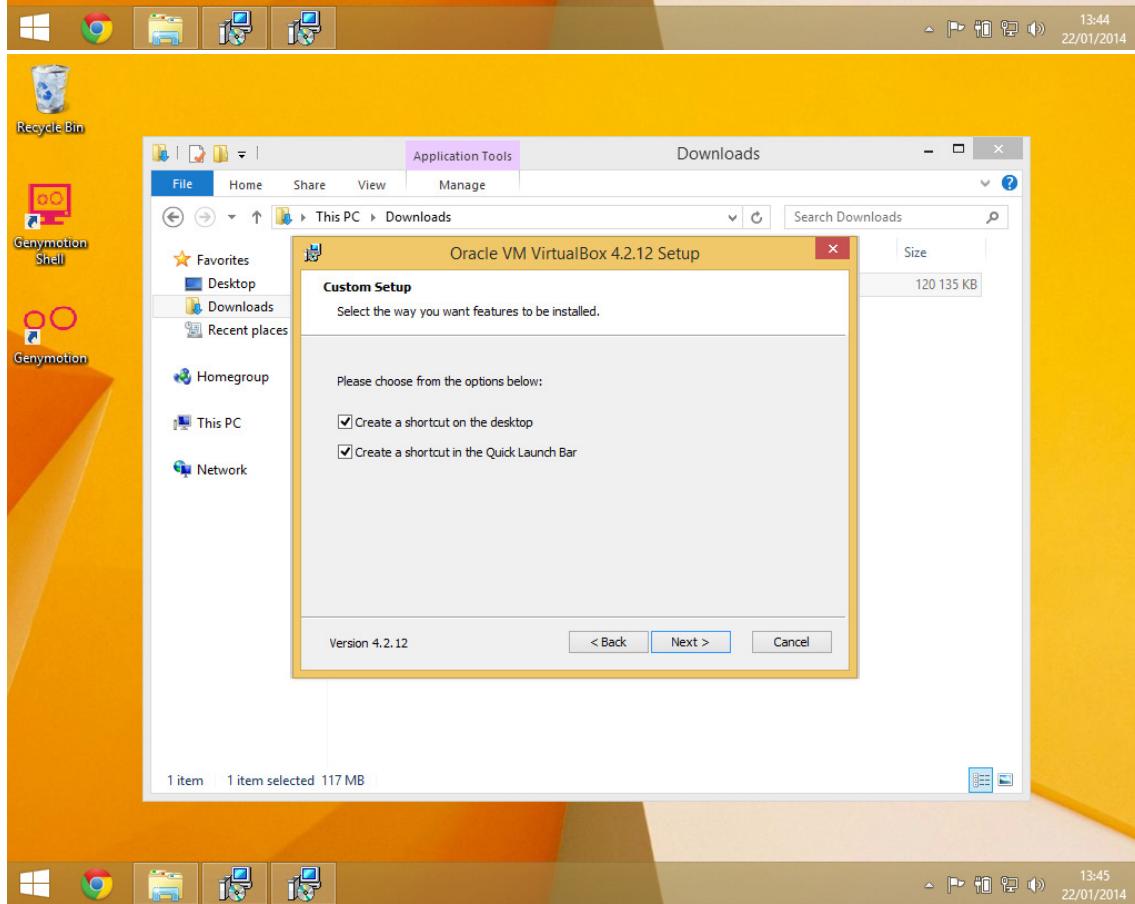
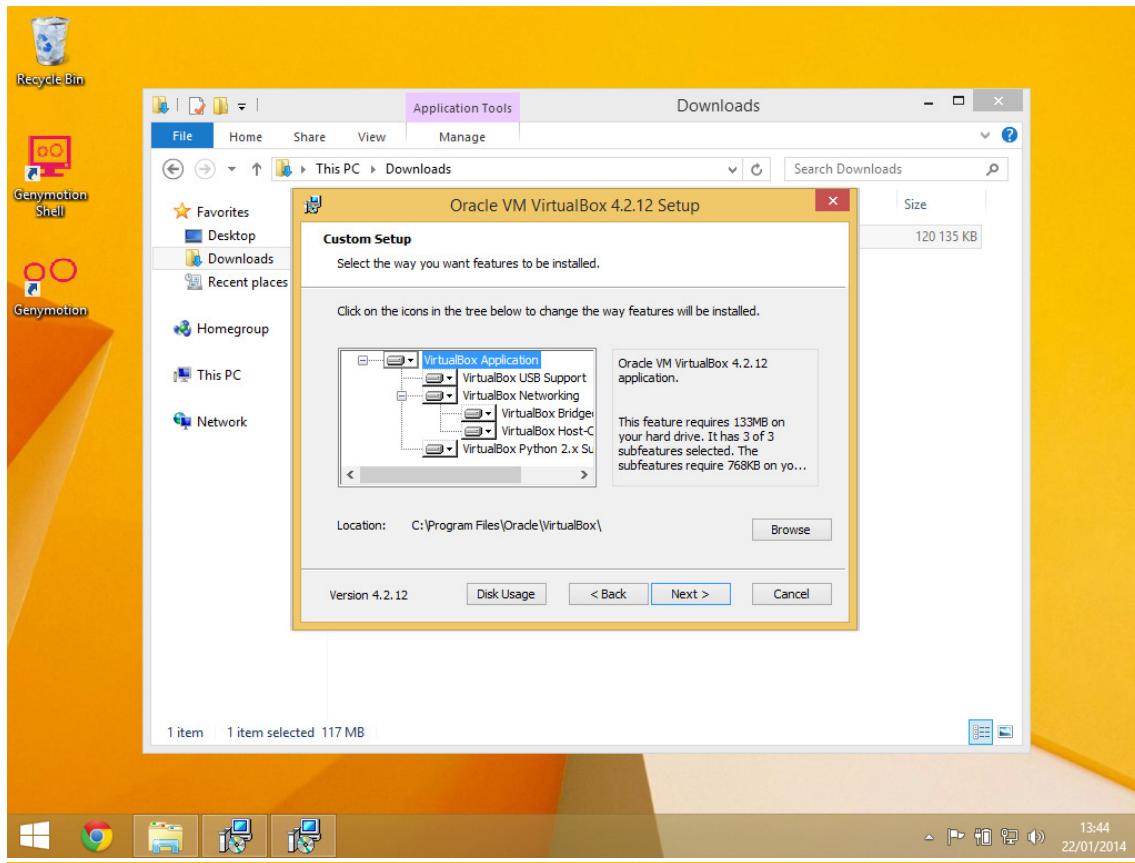


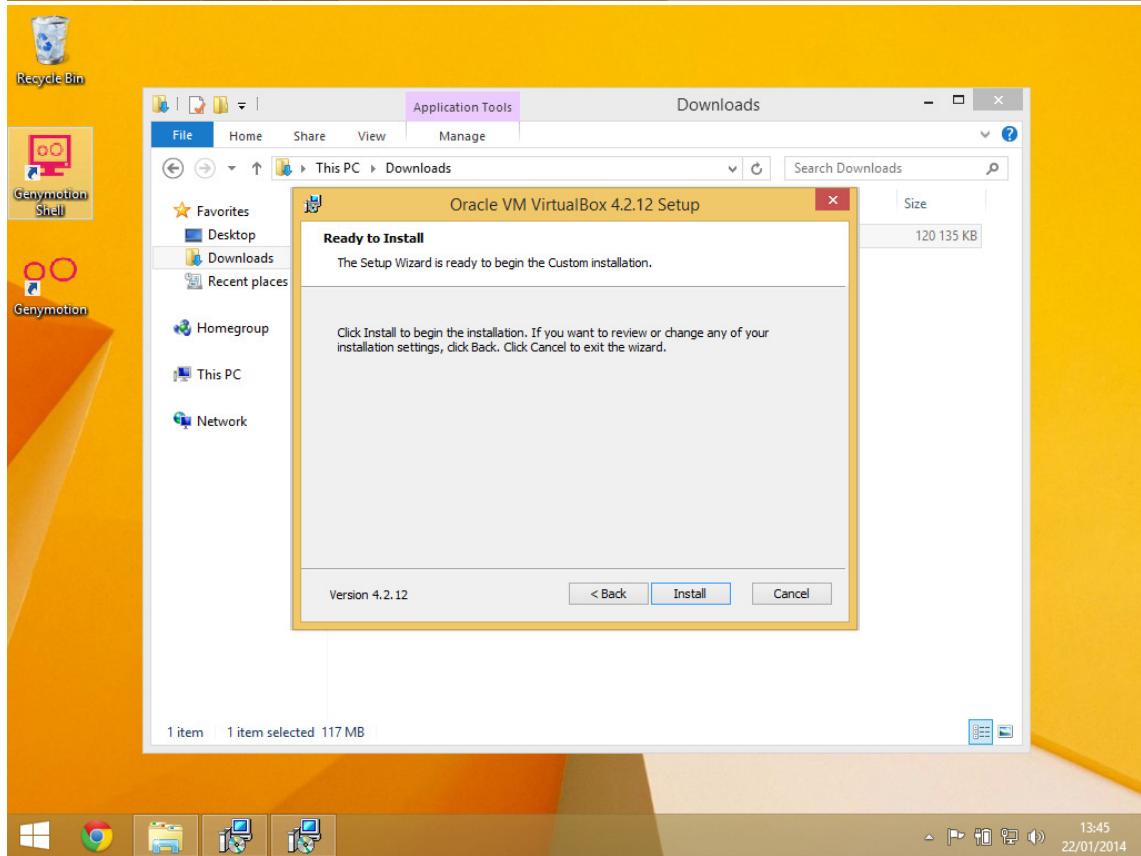
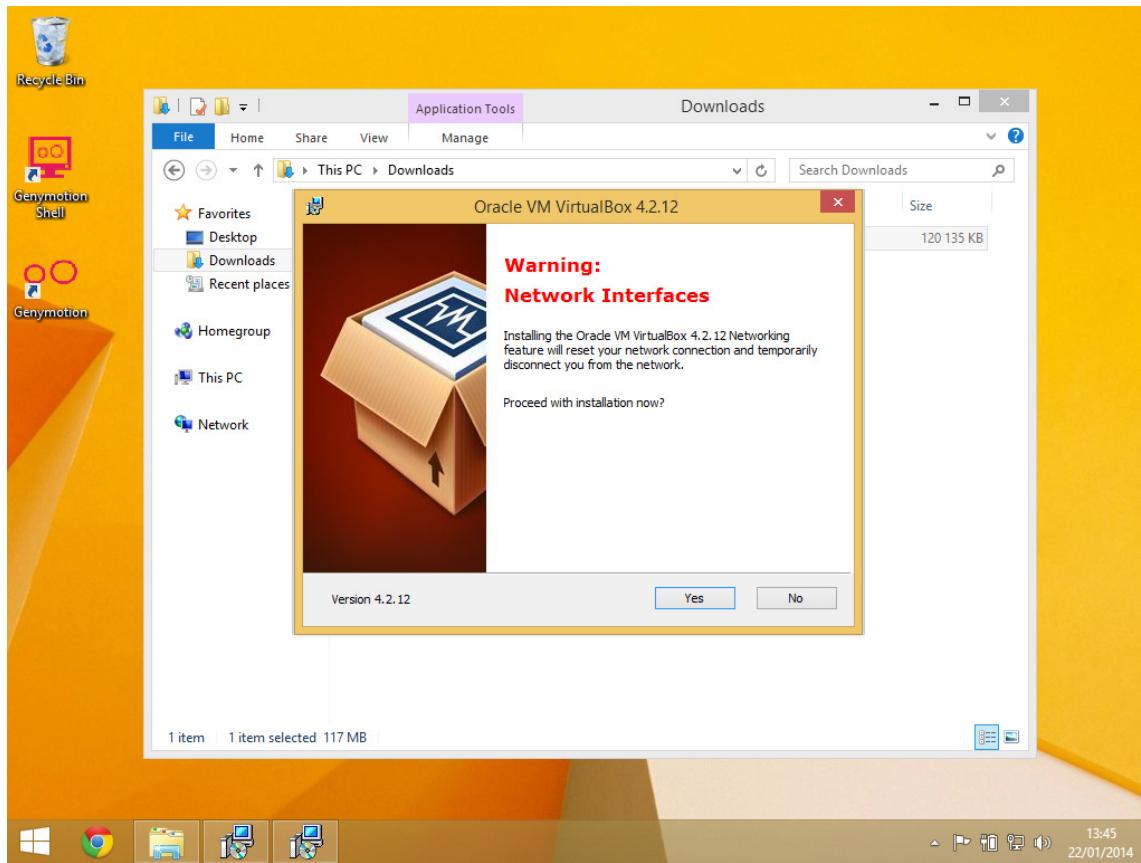


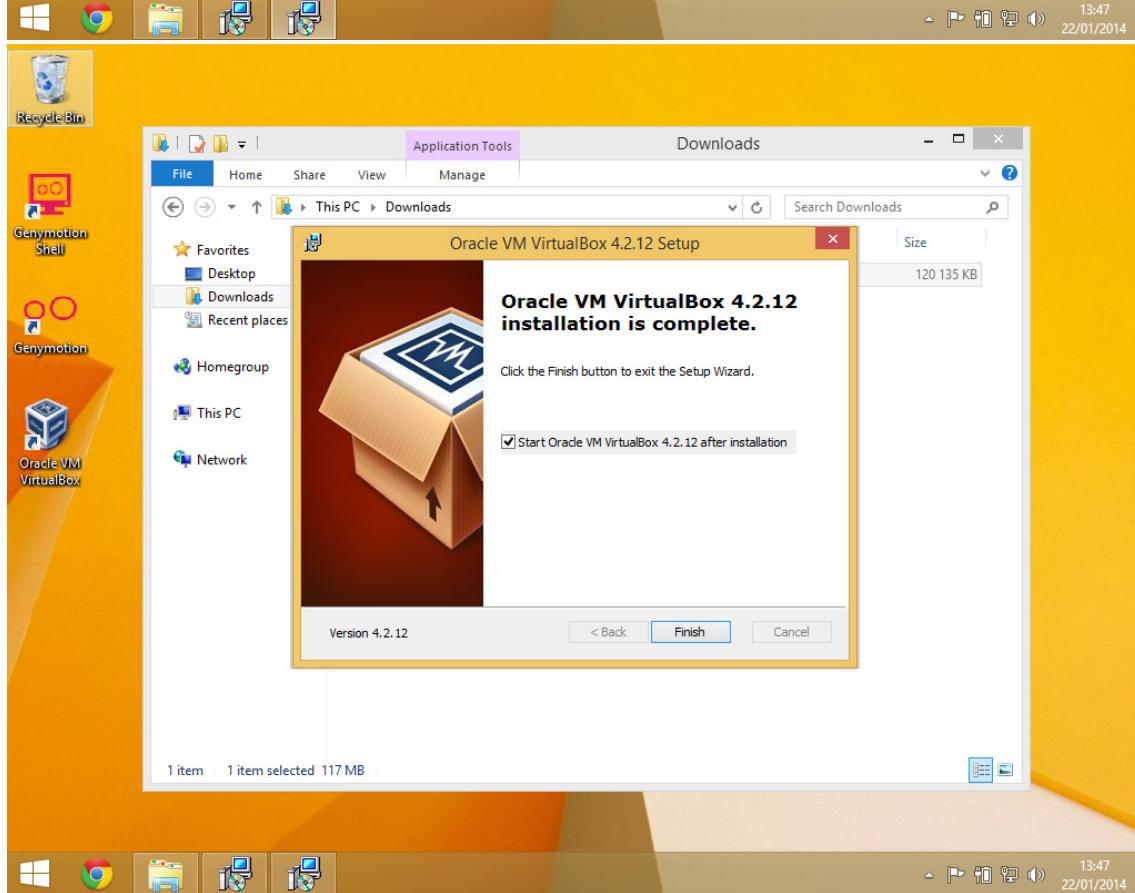
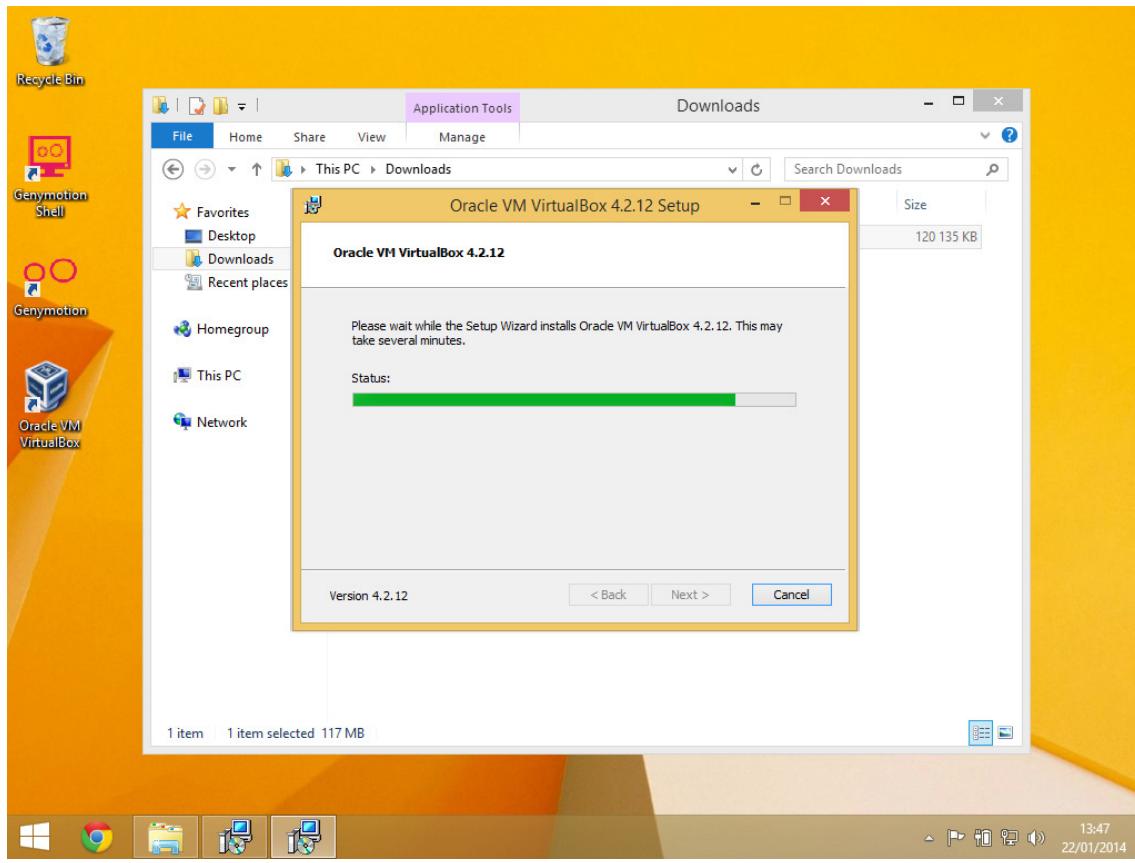


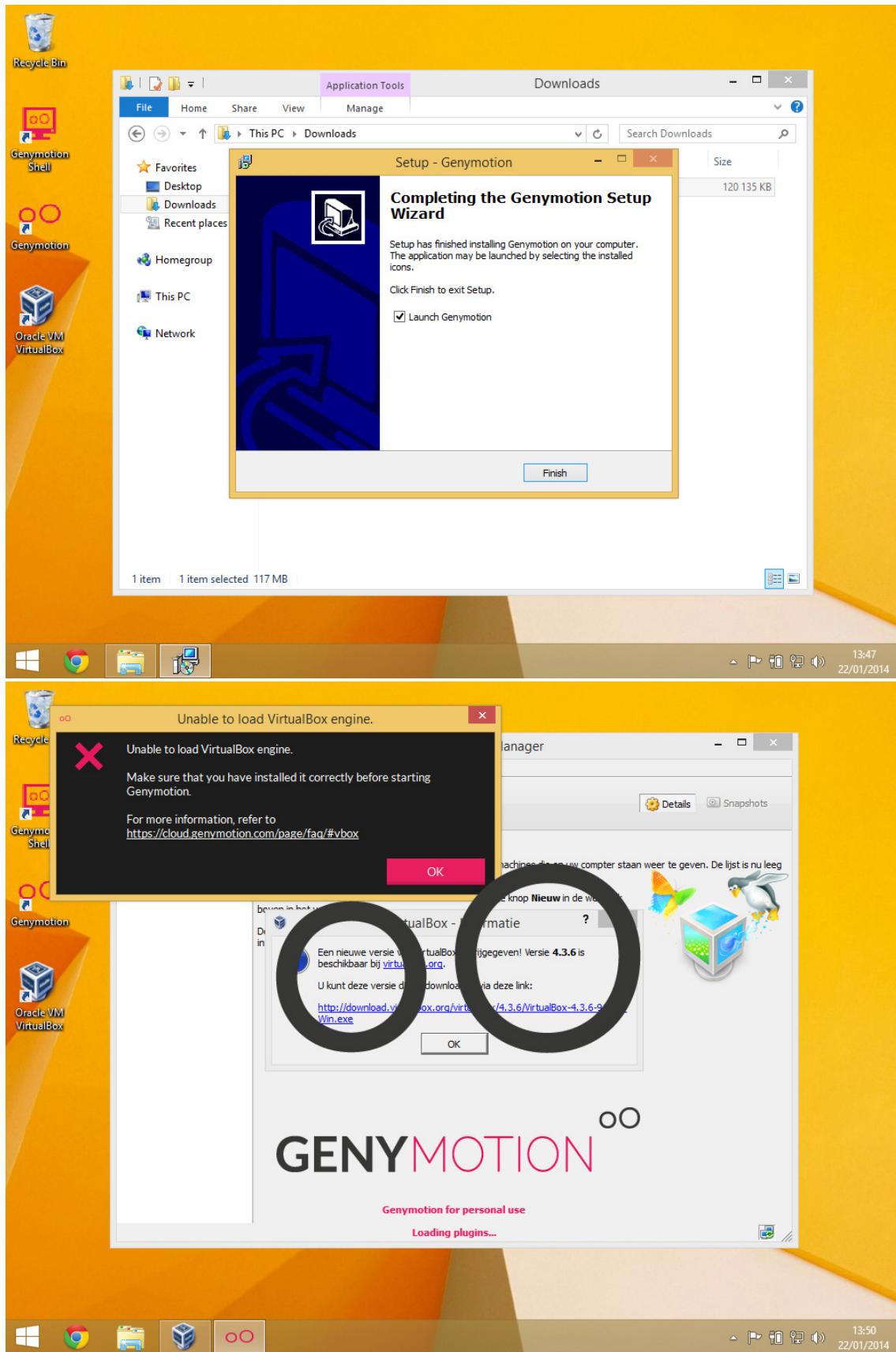




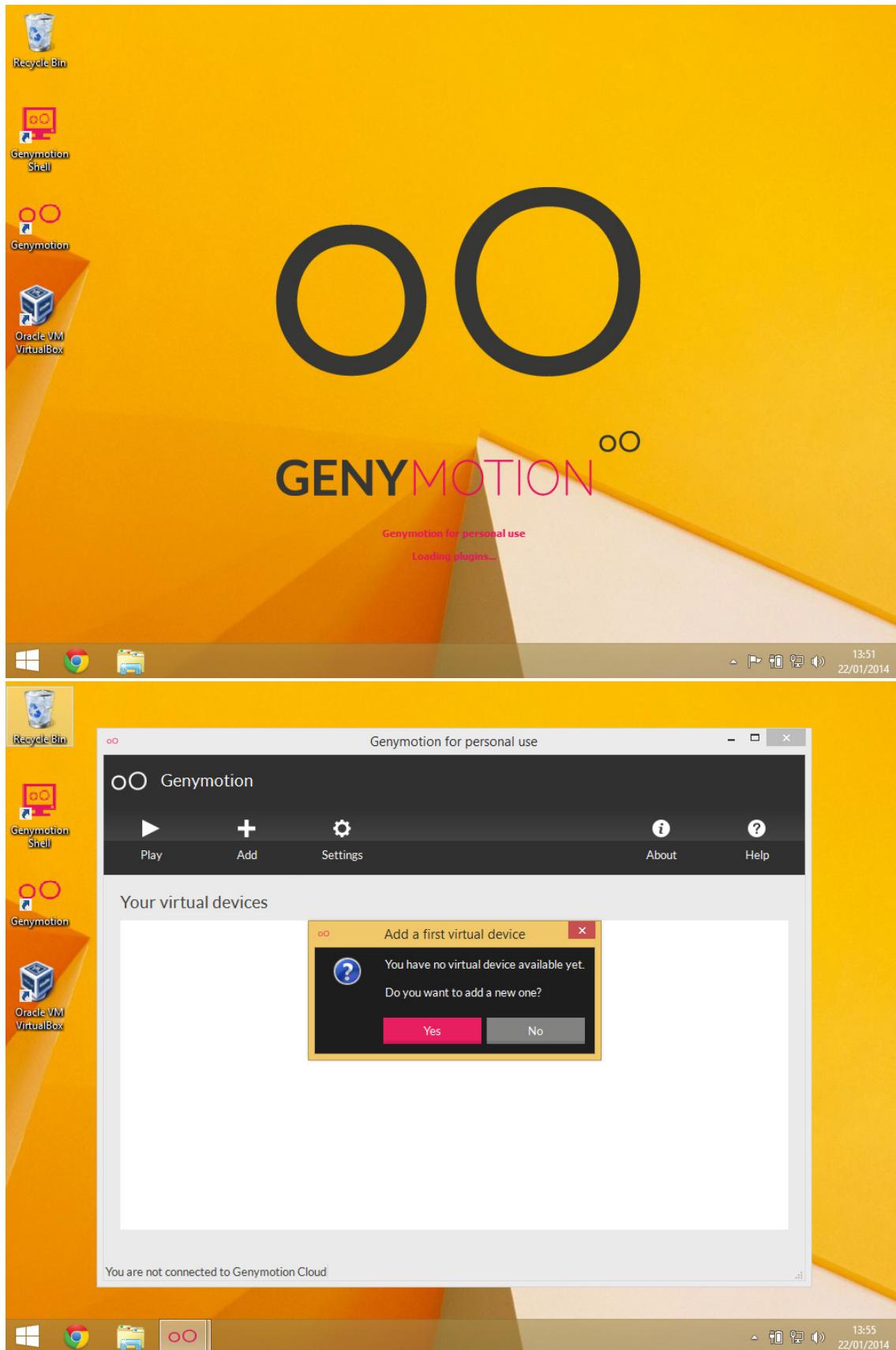




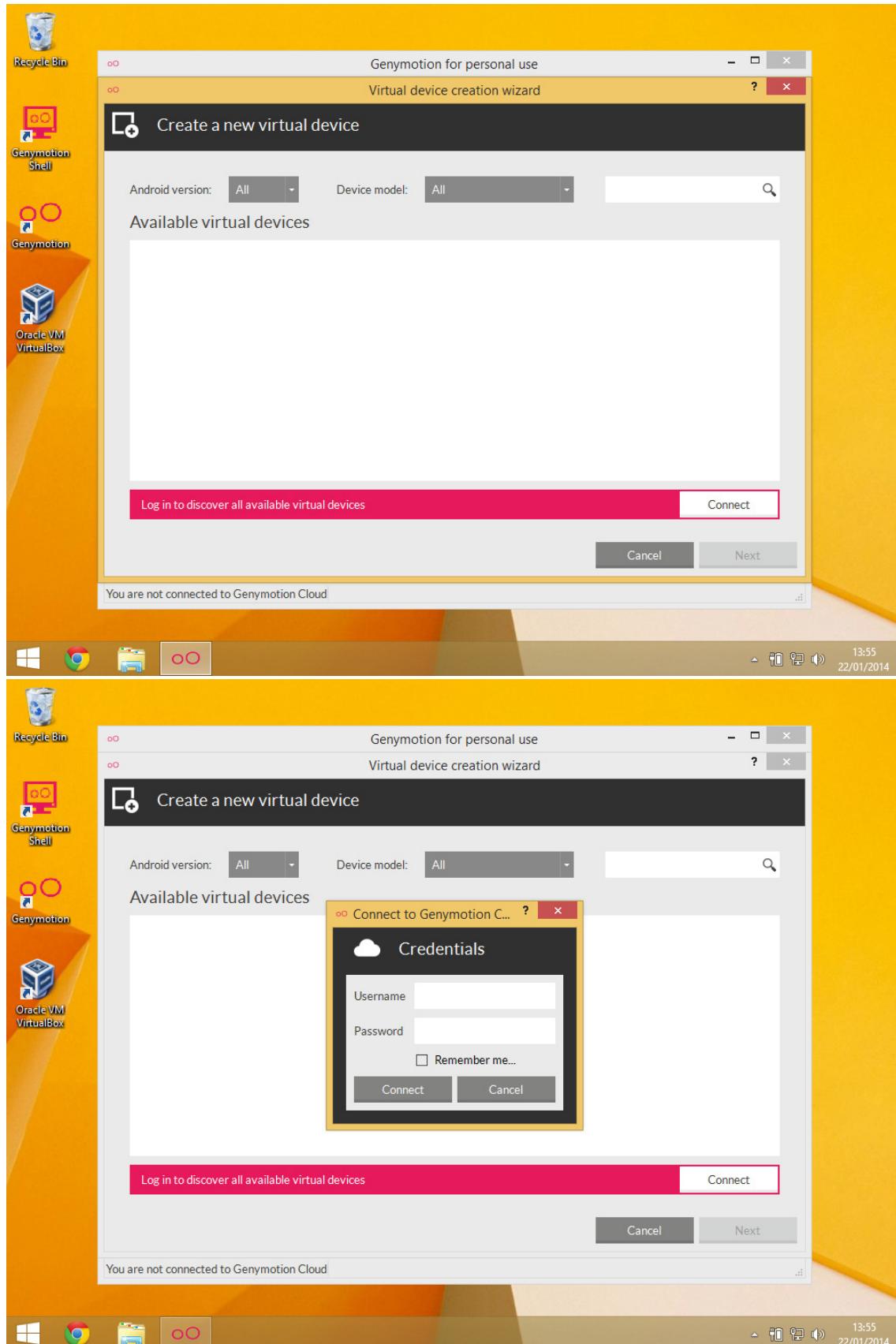




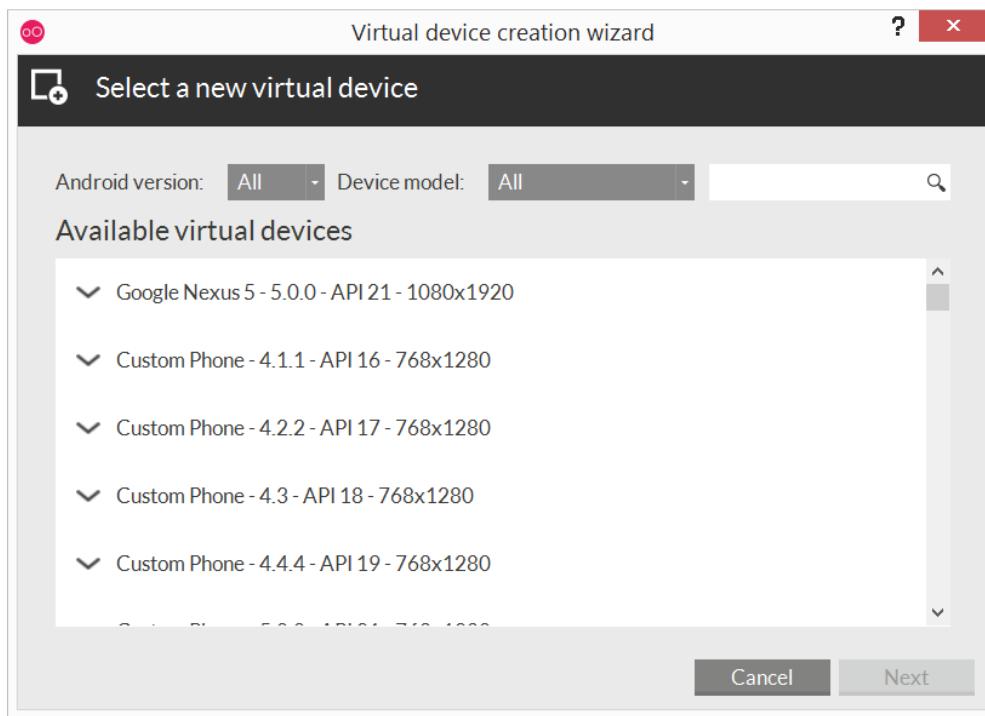
Een heropstart van laptop kan nodig zijn, indien het programma niet onmiddellijk reageert.



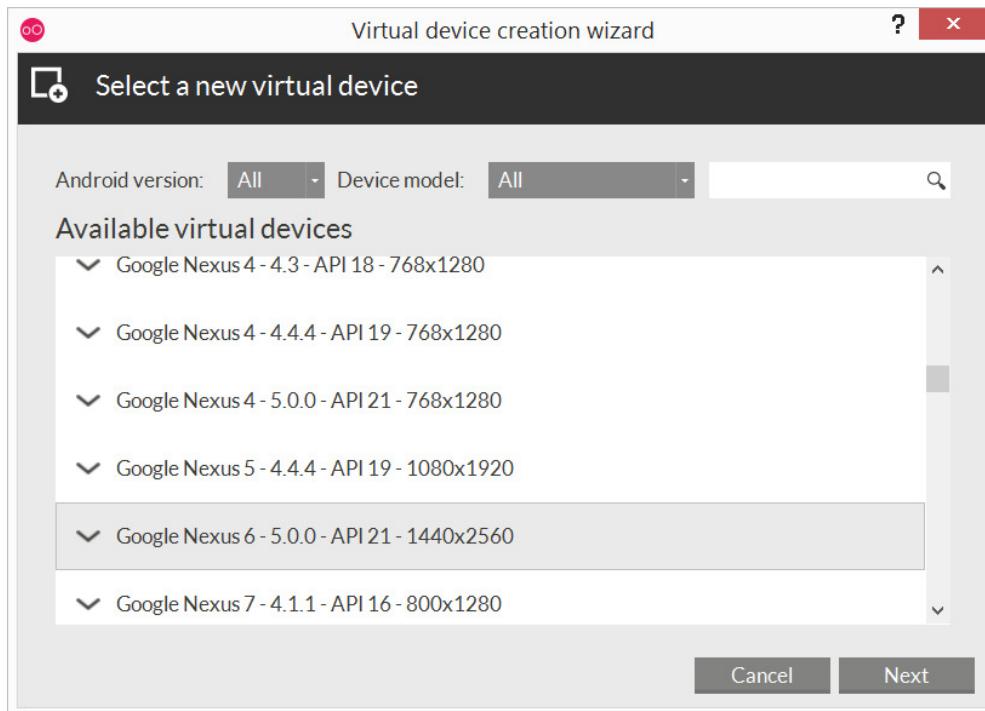
Inloggen is noodzakelijk om een emulator te kunnen aanmaken.



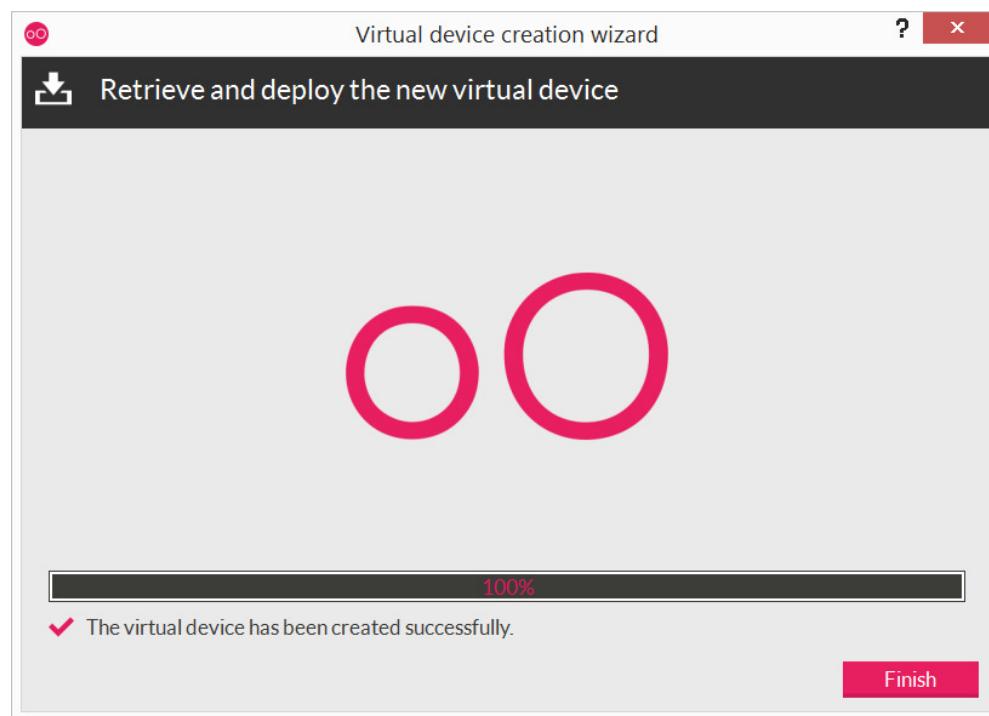
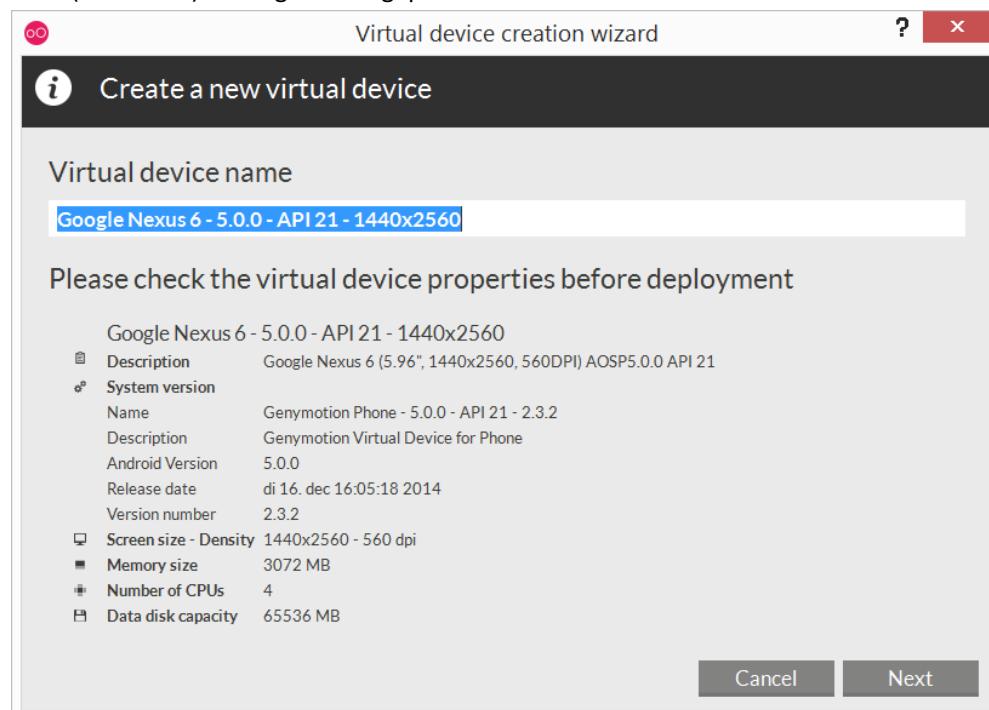
Via Add-knop kunnen we één of meerdere virtuele device downloaden.



Advies: installeren van Google Nexus5 of Nexus6.



Geef (eventueel) vervolgens een gepaste naam aan uw emulator



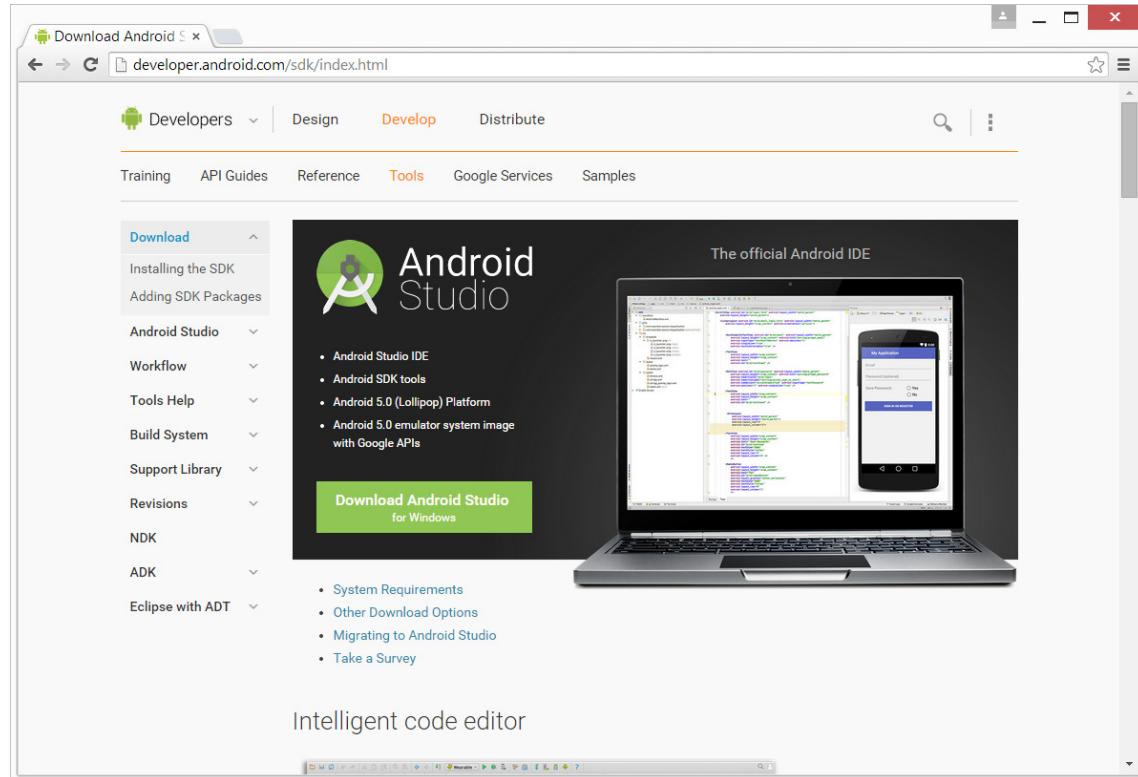
Hierna kan de emulator via de button 'Play' reeds opgestart worden. Test de emulator even uit.

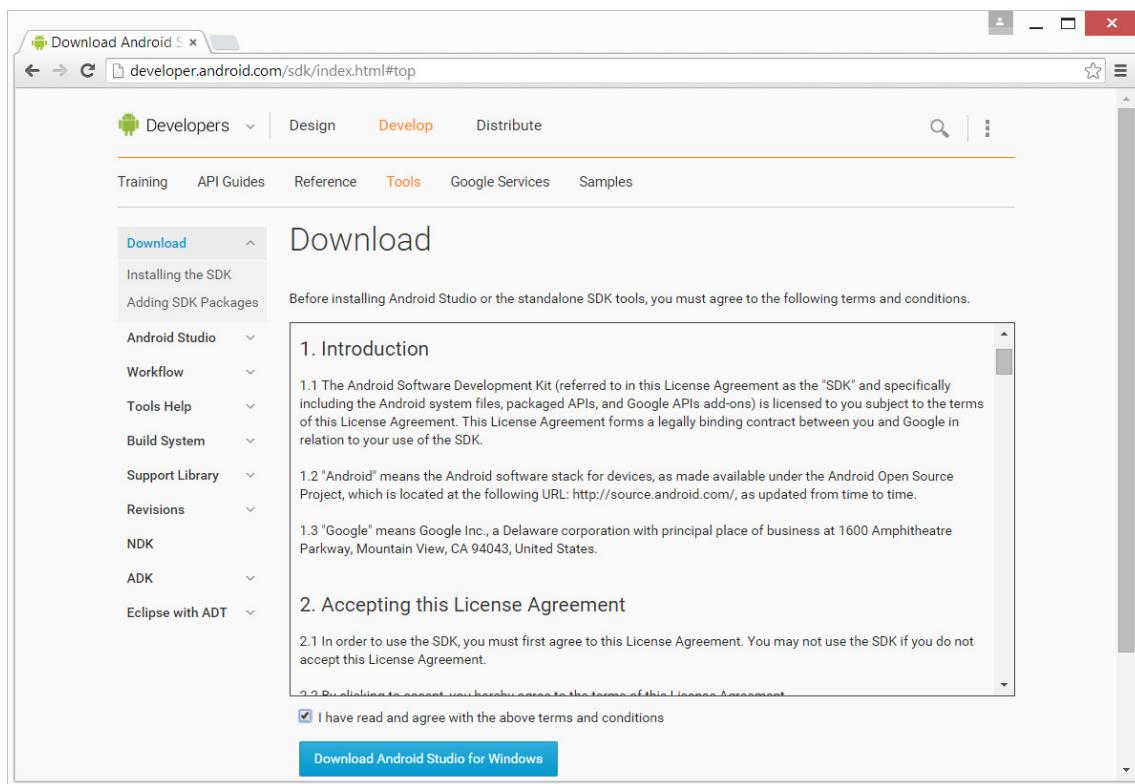


### 3 Install Android Studio & ADT

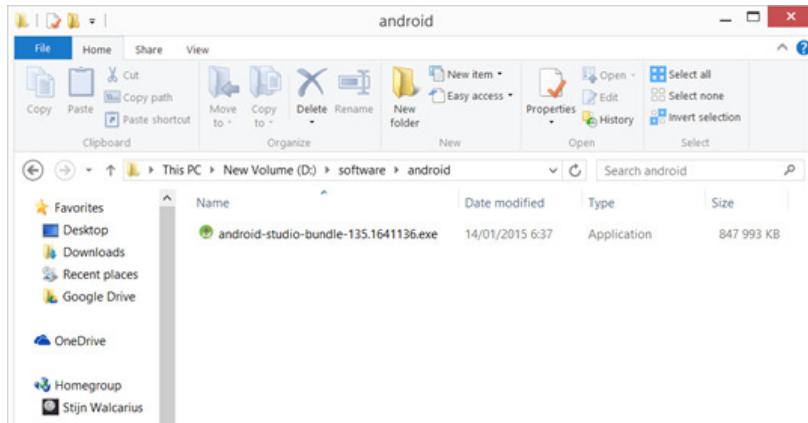
Tenslotte gebruiken we ontwikkelomgeving Android Studio waارlangs we op een snelle manier Android-toepassingen kunnen realiseren.

URL: <http://developer.android.com/sdk/index.html>





Start het gedownload bestand op en installeer volledig Android Studio.



Meer info is te vinden op: <https://developer.android.com/sdk/installing/index.html?pkg=studio>

**Opmerking:** samen met Android Studio worden ook de laatste SDK mee geïnstalleerd. De locatie is NIET meer in dezelfde folder als Android Studio zelf, maar situeert zich typisch op volgende locatie: C:\Users\Stijn\AppData\Local\Android\sdk

In sommige situaties is het wenselijk om jouw app ook op oudere sdk-versies te testen. Zie verder voor meer details.

## 4 Opstarten Android Studio

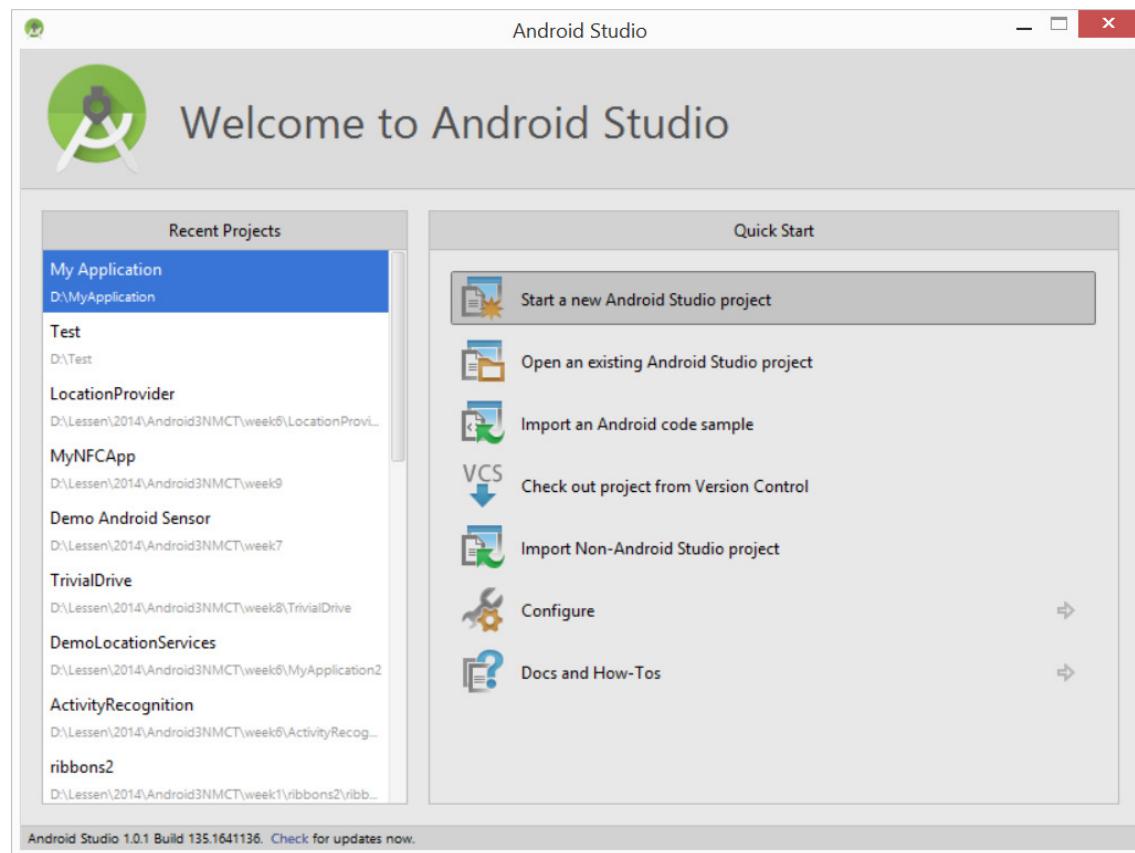
Opstarten van Android Studio kan via het mee geïnstalleerde desktop-icoon. Je kan ook rechtstreeks opstarten via:

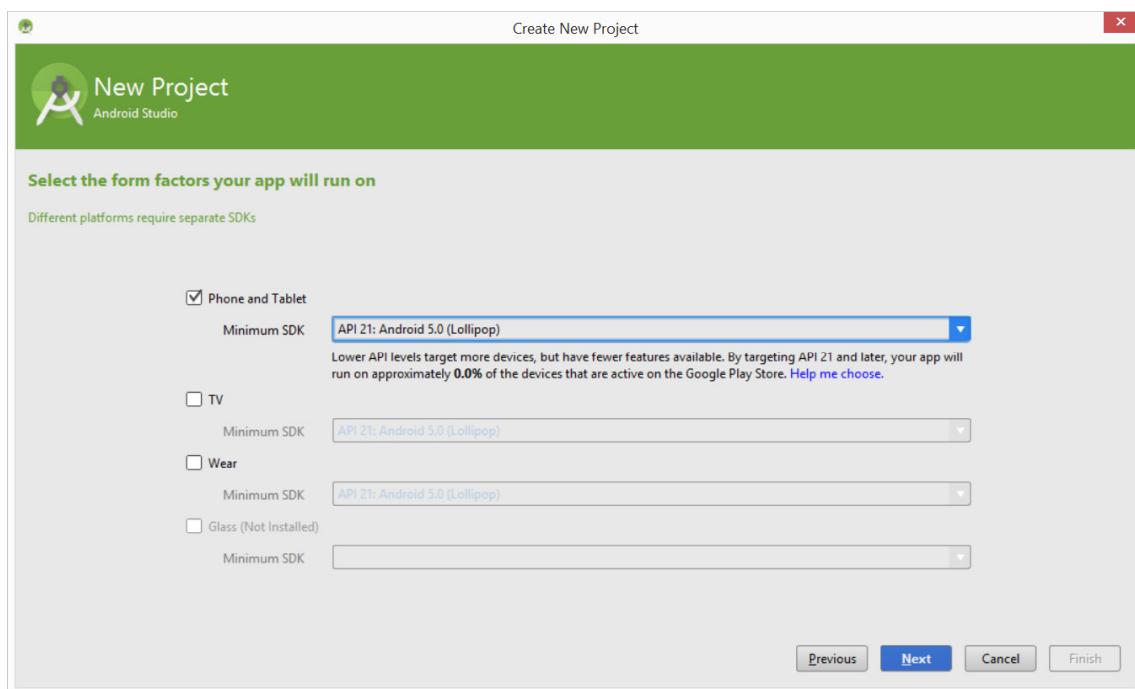
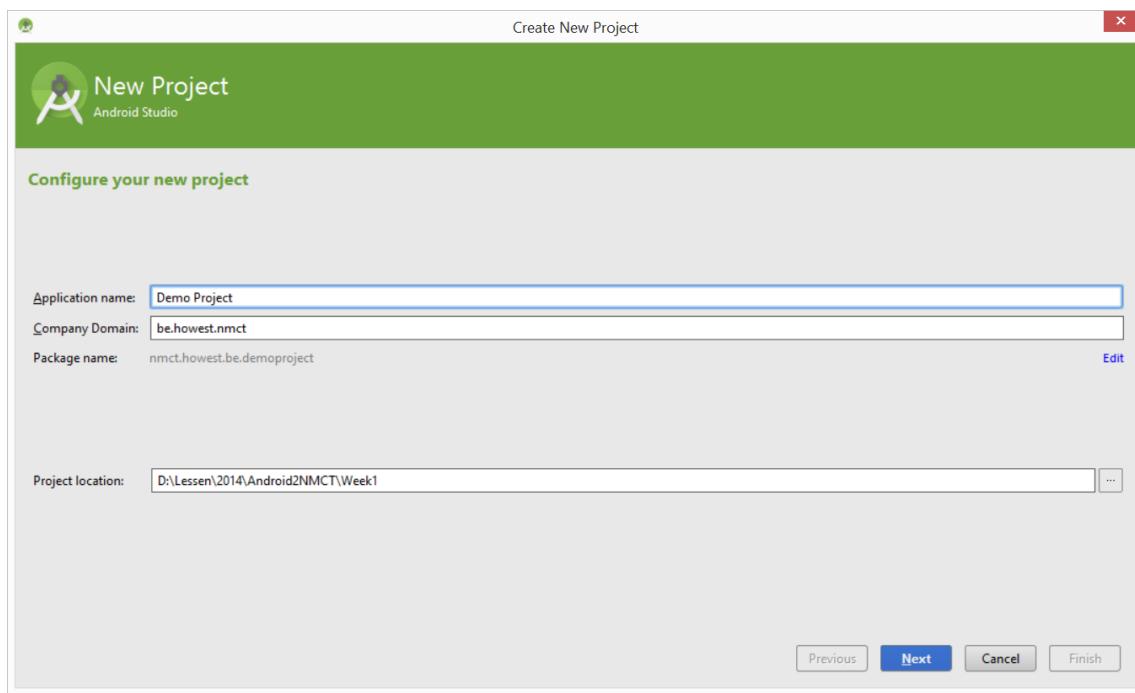
C:\Program Files\Android\Android Studio\bin\studio64.exe

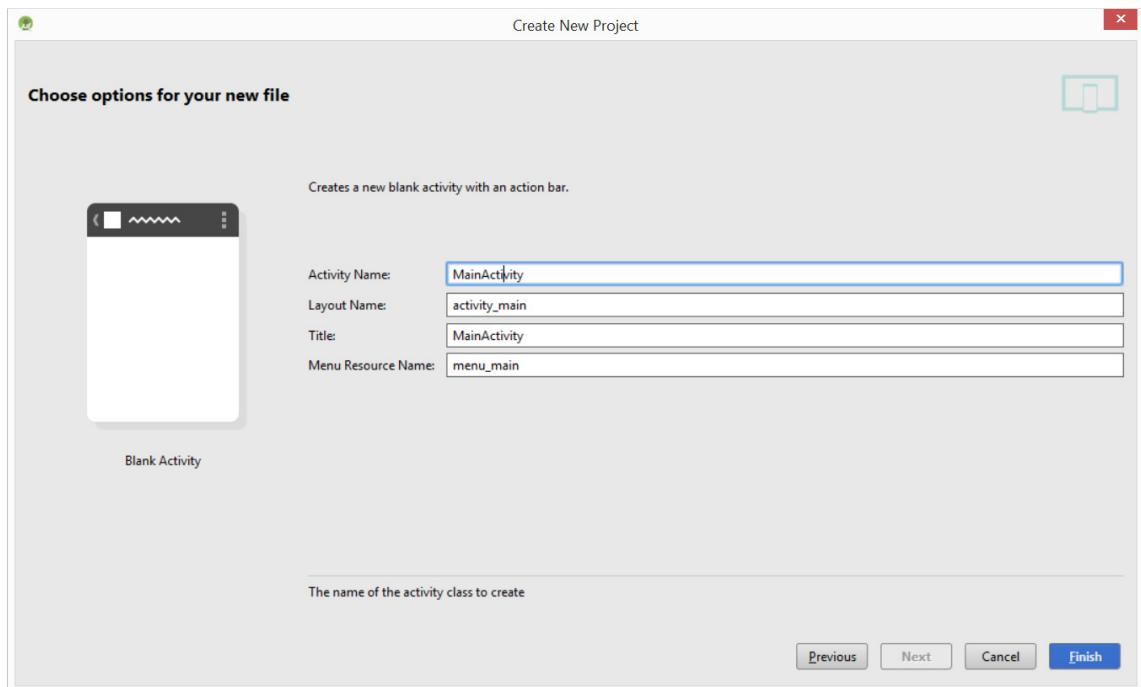
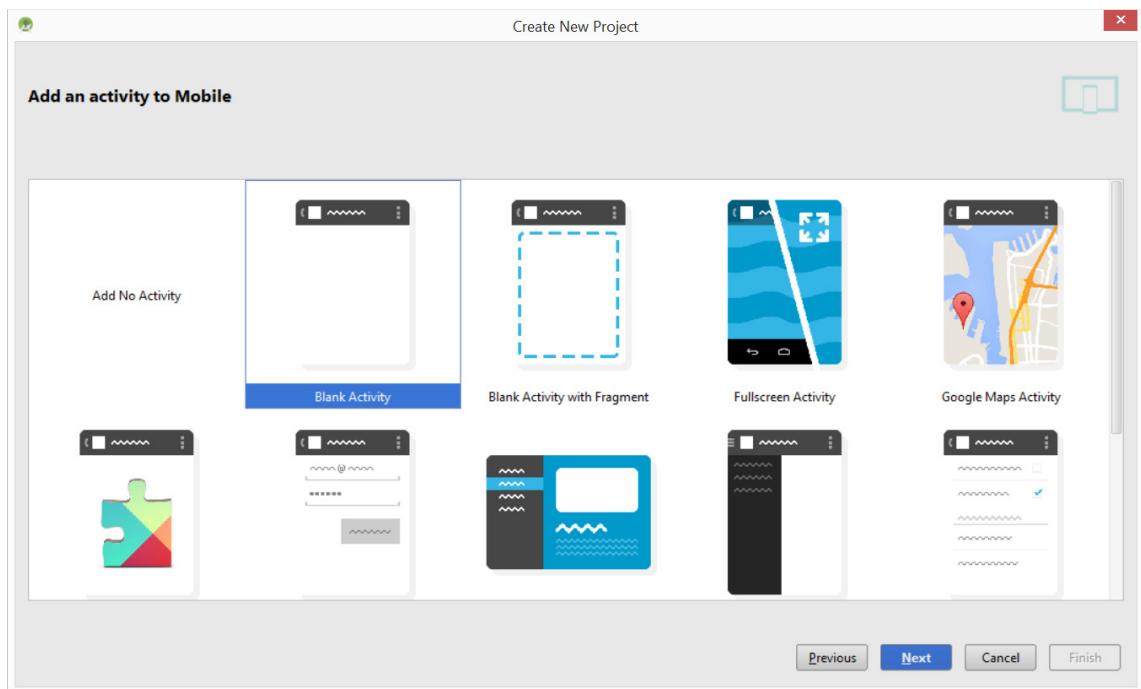
## 5 Test-case: een eerste Android Applicatie

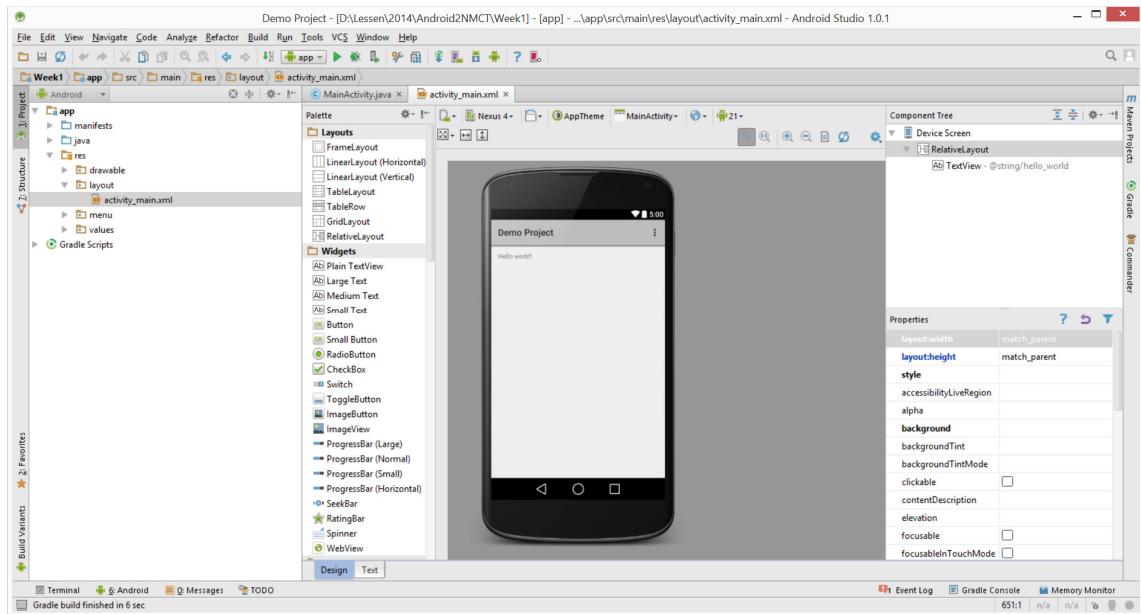
Hieronder maken we een eerste Android-applicatie via Eclipse aan. We wensen de android-app laten draaien op één van de emulatoren die eerder in Genymotion werden aangemaakt.

### Aanmaak Android-Applicatie in Android Studio









Klik hierna meermaals op Next, en tenslotte op Finish. De getoonde schermen worden laten uitvoerig besproken. In Android Studio is het project nu zichtbaar.

## 6 Installatie plugin Genymotion in Android Studio

In Android Studio kan een plugin geïnstalleerd worden, waardoor men een eerder aangemaakte emulator uit Genymotion kan opstarten of een app testen op een reeds opgestarte emulator. Voorwaarde is wel dat Genymotion reeds geïnstalleerd is én werkt.

Werkwijze (bron: <https://www.genymotion.com/#!/download>)



### Android Studio

To install Genymotion plugin for Android Studio:

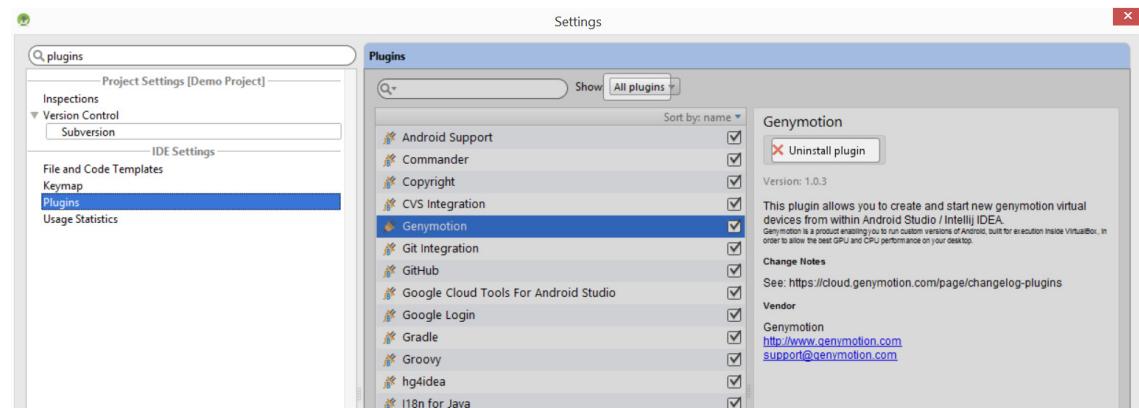
1. In Android Studio, go to File > Settings.
2. Select Plugins and click Browse Repositories.
3. Right-click on Genymotion and click Download and install.

To see Genymotion plugin icon, display the toolbar by clicking View > Toolbar.

You can also download and install manually the plugin [genymotion-idea-plugin.jar](#) (not recommended).

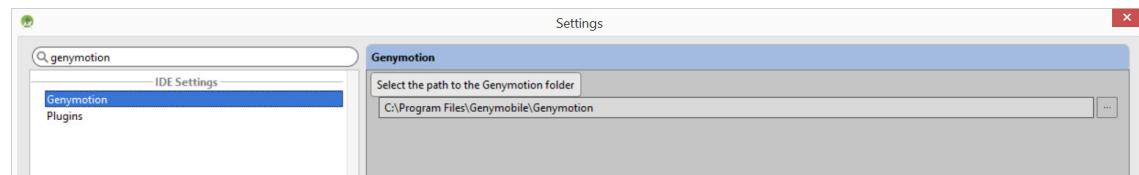
**!** To use this plugin, Genymotion must be installed on your system.

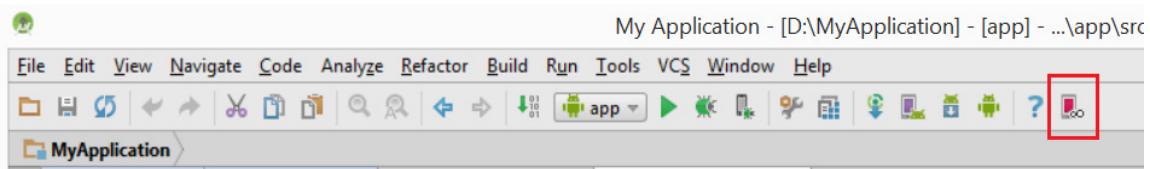
Resultaat NA installatie:



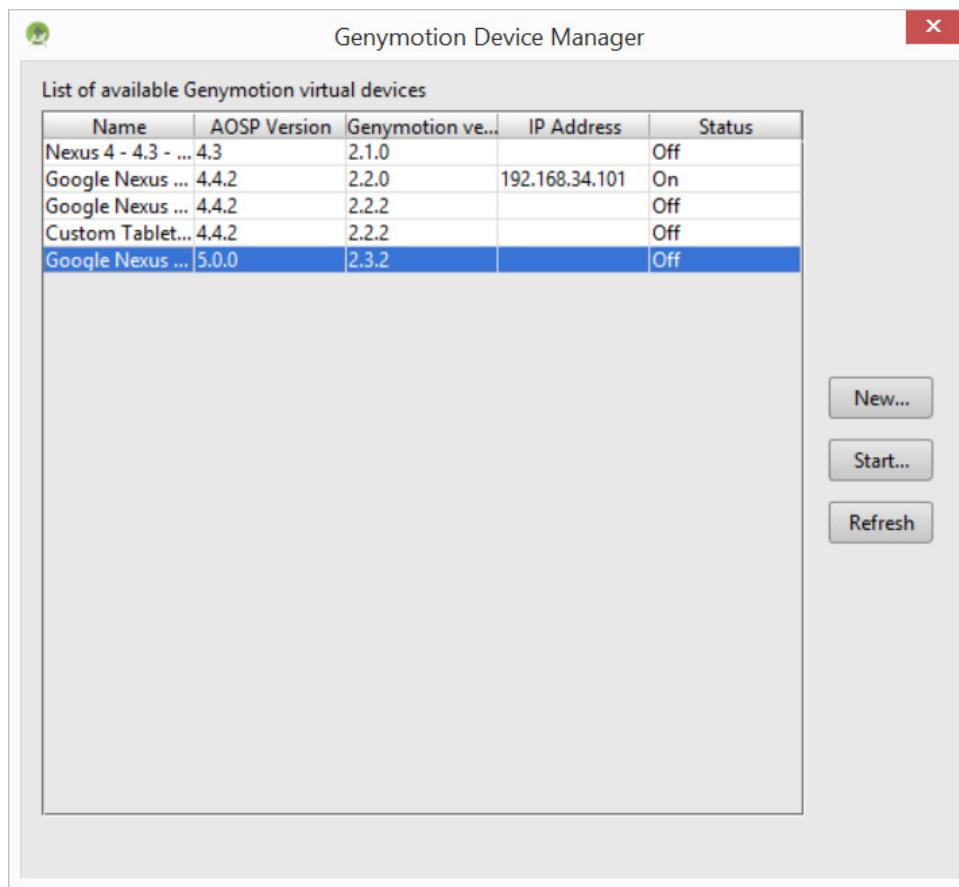
**Controleer of vervolledig volgende instelling in Android Studio:**

- File > Settings...
- Tik bovenaan het zoekvenster 'genymotion' in. Controleer of de installatiefolder van Genymotion correct staat!

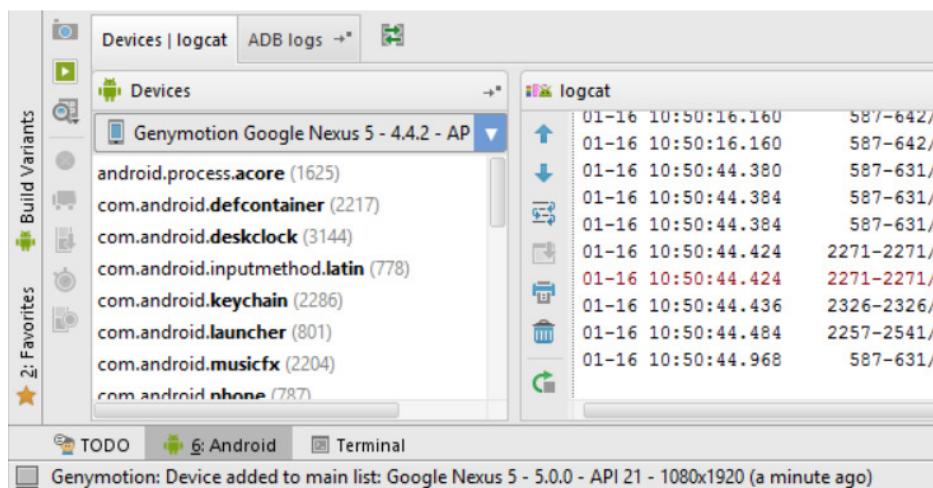




Langs deze weg kan een emulator opgestart worden.

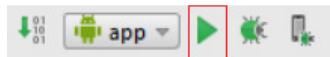


Resultaat in Android Studio:

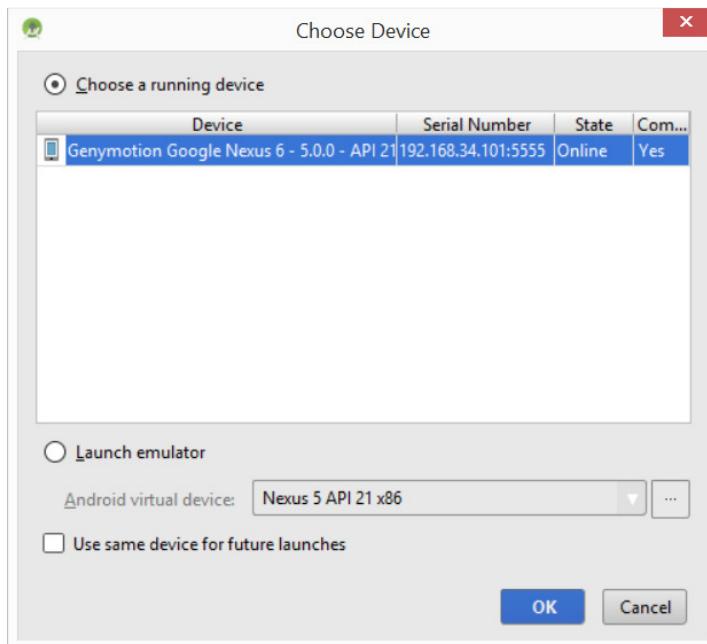


## 7 Test jouw app uit op Genymotion-emulator!

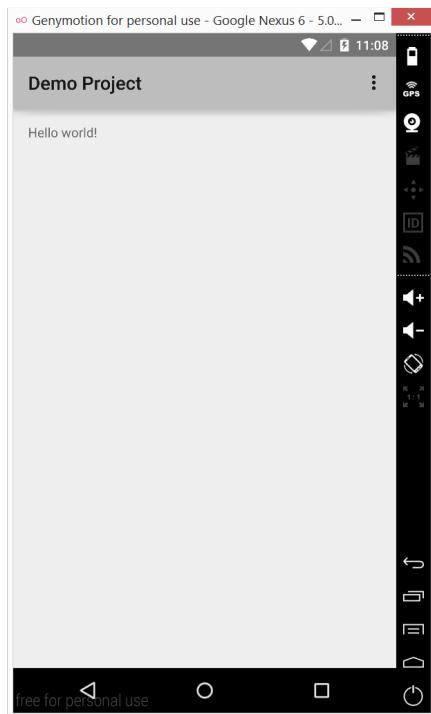
Druk in Android Studio op de sneltoets ‘Shift+F10’ of druk bovenaan op het groene driehoekje.



Op volgend venster selecteer je de werkende emulator:



Jouw eerste app komt te voorschijn op jouw emulator:



## Meerdere SDK's?

Bij het bouwen van een app wenst men de functionaliteit soms ook te testen op eerdere SDK's. Deze moeten eerst geïnstalleerd worden.

Hoe dit moet gebeuren, vindt u terug op:

<https://developer.android.com/sdk/installing/adding-packages.html>

Voor deze module is het voldoende om over de meest recente SDK-versie te beschikken.