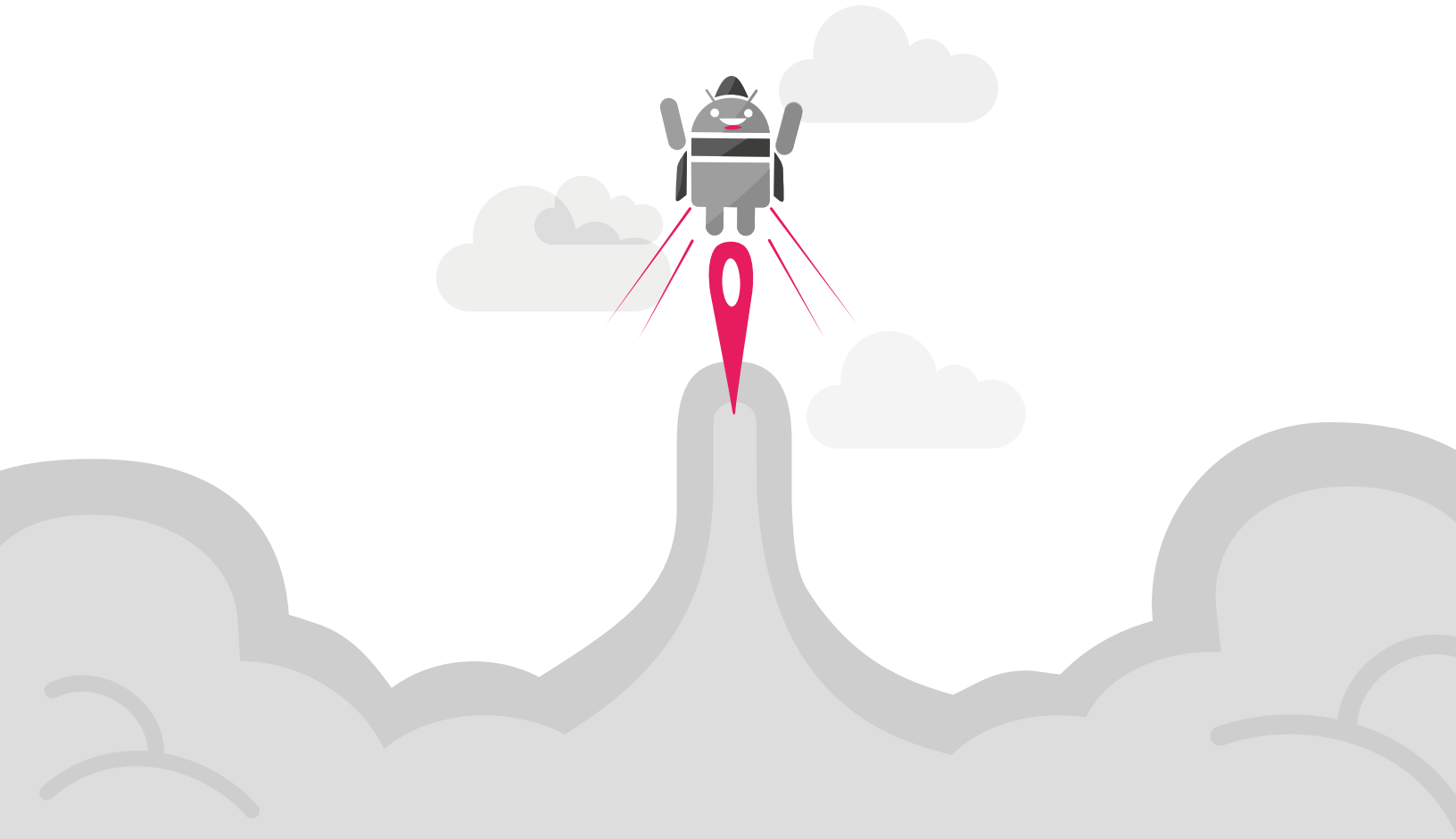
GENYMOTION

User Guide

Version 2.8.1 | November 30th, 2016



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Overview

Genymotion is an Android emulator which comprises a complete set of sensors and features in order to interact with a virtual Android environment. With Genymotion, you can test your Android applications on a wide range of virtual devices for development, test and demonstration purposes.

Genymotion is fast, simple to install and powerful thanks to user-friendly sensor widgets and interaction features. It is available for Windows, Mac OS X and Linux operating systems.

This user guide will take you through Genymotion download and installation steps and will help you get familiar with the interface so that you can make full use of Genymotion resources and have a fully operational application.

In this guide, the following instructional icons are used:

 ***Notes, tips or additional information.***

 ***Situations that could cause performance issues or data losses.***

Follow the simple installation process, start one of the Android virtual devices and enjoy playing with your application!

Requirements

This chapter lists the prerequisites for an optimal use of Genymotion.

Operating system

Genymotion is compatible with the following operating systems:

- Microsoft Windows 7, 8/8.1, 10 (32 or 64 bit);
- Mac OS X 10.9 or above;
- Linux Ubuntu 16.04 (Xenial Xerus) (64 bit) or above;
- Linux Debian 8 (Jessie) (64 bit);
- Linux Fedora 24 (64 bit);

Genymotion cannot be run from a virtual machine. Indeed, it needs a direct access to the hardware in order to provide OpenGL acceleration. Running Genymotion from a virtual machine prevents it to directly access the hardware components. Therefore, Genymotion is incompatible when installed from VMWare, Parallels, Hyper-V or VirtualPC.

Hardware

Genymotion requires that you have the following hardware on your computer:

- OpenGL 2.0 capable video card, with an up-to-date driver. We recommend the use of one of the following minimum graphic chips: Intel HD Graphics 4000 (2012), Nvidia GeForce 500 Series (2011), ATI Radeon HD 6000 Series (2011);
- 64 bit CPU, with VT-x or AMD-V capability, enabled in BIOS settings;
- RAM memory: at least 2GB;
- Screen resolution greater than 1024 x 768 pixels;
- Free space on hard disk: at least 100MB.

A minimum of 2GB of free space is required to deploy a virtual device. You might need more than 8GB depending on your use of the virtual devices and the applications you have installed.

Software

To run virtual devices, you must install Oracle VM VirtualBox 5.0.28. Genymotion might work

with older versions of Oracle VM VirtualBox but we cannot guarantee it.

Web browser

For installation, updates and services provided by the Genymotion website, one of the following web browsers is required:

- Internet Explorer: version 10 or above;
- Mozilla Firefox: version 3.0 or above;
- Google Chrome: version 2.0 or above;
- Safari: version 4.0 or above.

Installation

Genymotion operation relies on the use of Oracle VM VirtualBox in the background. This enables virtualizing Android operating systems. If you do not already have Oracle VM VirtualBox installed, you will be asked to do so prior to installing Genymotion.

> ***If you already have Oracle VM VirtualBox, note that we recommend version 5.0.28.***

To install Genymotion, follow the steps corresponding to your operating system.

Windows

To download Genymotion for Windows:

1. Go to the *Genymotion download* page.
   From this page, you can:
   - download the ready-to-run Genymotion installer for Windows (recommended).
     This package includes Oracle VM VirtualBox installer.
   - download the Windows 32/64-bit package.
     In this case, you must first download and install **VirtualBox for Windows hosts** from the *Download VirtualBox* page.

     > ***When installing VirtualBox, in the Custom setup window, make sure VirtualBox Networking is enabled.***

2. Save and run the `.exe` file.
3. Select the setup language and click **OK**. By default, the Genymotion language corresponds to your system language.
   The Genymotion setup wizard opens. Click **Next**.
4. Select the destination folder by clicking **Browse**.
   The default destination folder is `C:\Program Files\Genymobile\Genymotion`. Then click **Next**.
5. Select the start menu folder by clicking **Browse** or check **Don't create a Start menu folder** and click **Next**.
6. Select whether or not to create a desktop icon and click **Next**.
7. Click **Install** and **Finish**.

Mac OS X

To download Genymotion for Mac OS X:

1. Download and install **VirtualBox for OS X hosts** from the *Download VirtualBox* page.

   When installing VirtualBox, in the Custom setup window, make sure VirtualBox Networking is enabled.

2. When finished, reboot.
3. Go to the *Genymotion download* page and download the Mac OS X 64-bit package.
4. Open the `.dmg` file.
5. Drag and drop Genymotion and Genymotion Shell to the **Applications** directory.

Linux

Almost every GNU/Linux system comes with an installer package for Oracle VM VirtualBox.

1. Browse for the Oracle VM VirtualBox installer in your directories.
   If you do not have the installer or if you need to install a specific version, download and install **VirtualBox for Linux hosts** from the *Download VirtualBox* page.

   When installing VirtualBox, in the Custom setup window, make sure VirtualBox Networking is enabled.

2. Go to the *Genymotion download* page and download the Linux package corresponding to your system.
3. Run the following commands:

```
chmod +x <Genymotion installer path>/genymotion-<version>_
<arch>.bin
cd <Genymotion installer path>
./genymotion-<version>_<arch>.bin -d <Genymotion installer path>
```

4. Run Genymotion using the following command:

```
cd <Genymotion installer path>
./genymotion
```

Make sure that the `dkms` package is installed and that it compiles VirtualBox kernel modules each time a new kernel update is available.
To do so, run `sudo /etc/init.d/vboxdrv status`. You should get the message "VirtualBox kernel modules (vboxdrv, vboxnetflt, vboxnetadp, vboxpci) are loaded". If not, force VirtualBox kernel modules compilation by running `sudo /etc/init.d/vboxdrv setup` .
Make also sure that you are part of the `vboxusers` group. If not, run `sudo usermod -a -G vboxusers <login>`.

License

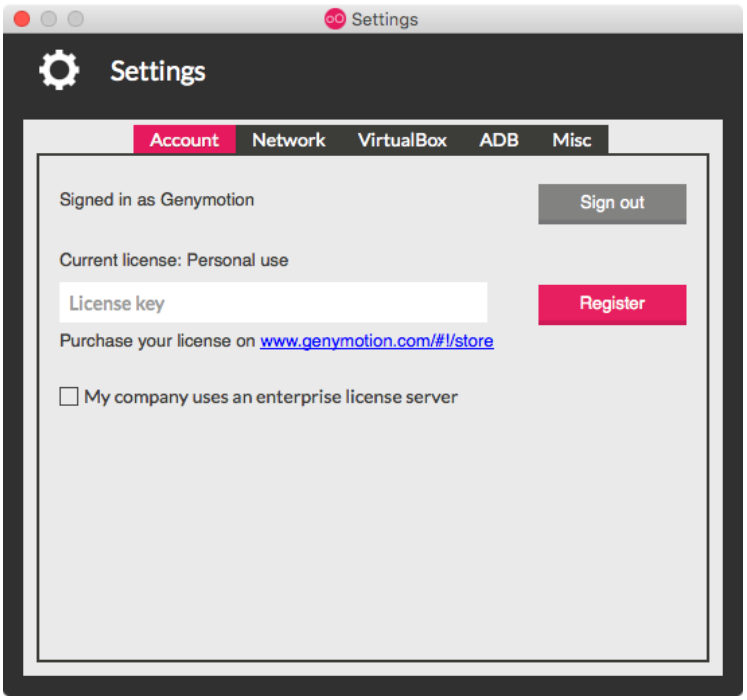
This chapter explains how to register and manage your license or how to enable the license server if your company uses one. In this case, refer directly to section *Enabling the license server*.

Registering the license key

> ***To register your license key, you must have a valid Genymotion account. To create your account, please visit the Account creation page.***

To register your Genymotion license key:

1. Start Genymotion in one of the following ways depending on your operating system:
   - **Windows**: Click from your application menu.
   - **Mac OS X**: Click from the **Applications** directory.
   - **Linux**: Run `<Genymotion installer path>/genymotion`.
2. Click and open the **Account** tab.
3. Click **Sign in** to authenticate to Genymotion.
4. In the **Credentials** window, enter your username and password and click **Sign in**.



5. Enter your license key and click **Register**.
   Once you are registered, your license details are displayed in this window.

Genymotion automatically connects to your user account to check the validity of the license key. If Genymotion cannot connect to your account for several days, the license type switches to Personal use until the next connection of Genymotion to your account. This ensures nobody else uses your license.

If you have any problems registering your license key, please contact us via the *Support* form.

Managing licenses

Once your license(s) validated, you can at any time refer to your user settings on the Genymotion website to view their details.

To manage your license(s):

1. Sign in to the *Genymotion website*.
2. Go to your user settings by clicking  .
3. Click **Orders**.
   - In **Current License**, you can see the license key associated with your account, as well as its validity period. In this section, you can download Genymotion by clicking **Download Genymotion**.
   - In **Other Licenses**, you can see all licenses already purchased, their validity period as well as their related user accounts and e-mails. In this section, you can renew these licenses by clicking **Extend License**.

     If you wish to renew licenses and add some new ones at the same time, you must make two separate transactions.

Enabling the license server

This section is only intended to users whose company has subscribed to the license server.

The license server 1.0 is only compatible with Genymotion 2.6.0 and above.

This section explains how you can retrieve a license from the license server in order to use Genymotion within your company's network. To retrieve a license, follow the steps below:

1. Create a user account from *www.genymotion.com*.
2. Install Genymotion by following the steps detailed in chapter *Installation*.
3. Start Genymotion and go to **Settings > Account**.
4. Click **Sign in** to authenticate to Genymotion.
5. In the **Credentials** window, enter your username and password and click **Sign in**.

6. Check **My company uses an enterprise license server**.
7. Enter the server address by clicking **Edit**.
   The location as well as the expiration date and time of your license are displayed.

   Depending on your network configuration, you may need to add a port number, eg: server_ip:8888. The default port is 443 as HTTPS protocol is used.

This allocates you a license. Then you can:

- free the license to make it available for other users by clicking **Release**. This also closes Genymotion.
- renew the license by clicking **Renew**.

Requesting an offline license

To use Genymotion outside the company's network for a given period of time and if your IT manager has enabled this option, you can request an offline license.

To request an offline license, from **Settings > Account**, you must enter the desired duration in days and click **Request**. Then you can:

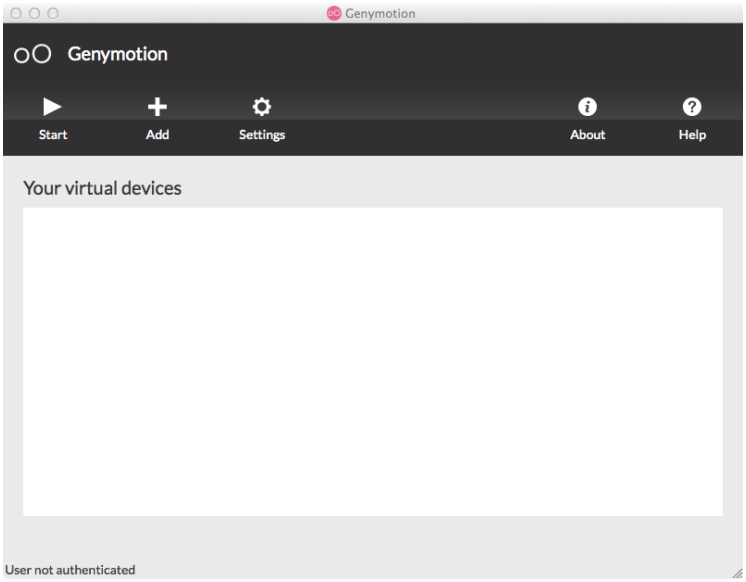
- free the offline license to make it available for other users by clicking **Release**. This also closes Genymotion.
- renew the offline license by clicking **Renew**.

Basic steps

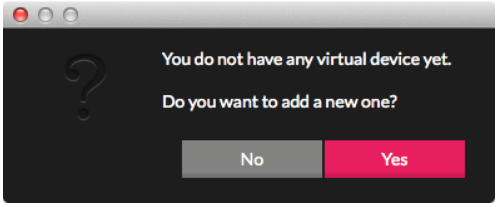
To start using Genymotion and run your Android application in a virtual device, follow the steps below:

1. Start Genymotion in one of the following ways depending on your operating system:
   - **Windows**: Click from your application menu.
   - **Mac OS X**: Click from the **Applications** directory.
   - **Linux**: Run `<Genymotion installer path>/genymotion`.

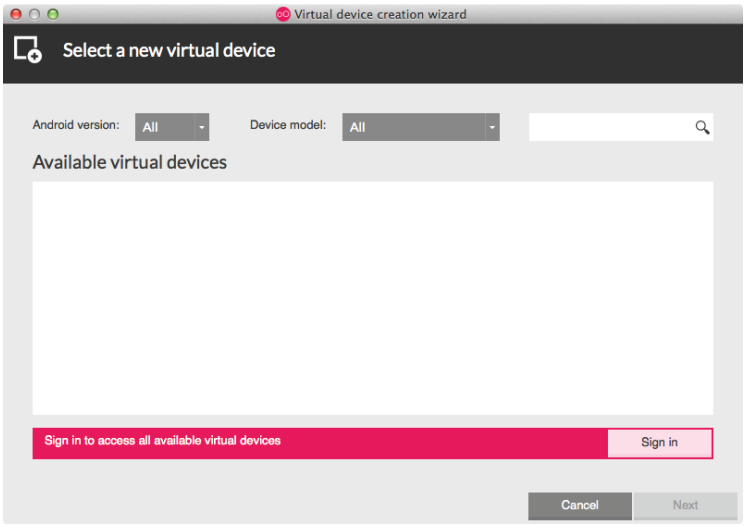
   The Genymotion main window opens:



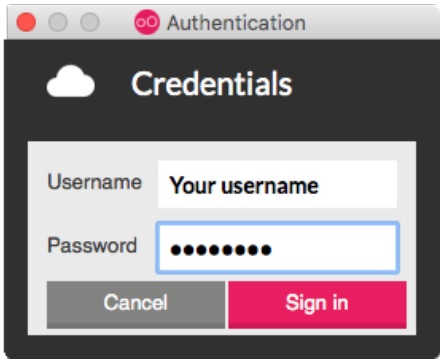
2. When the following window pops up, click **Yes**:



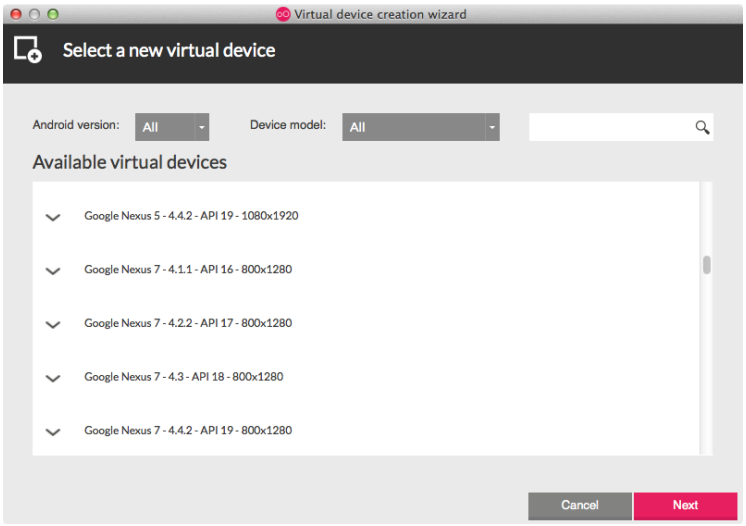
The **Select a new virtual device** window opens:



3. Click **Sign in**.
   The **Credentials** window opens:



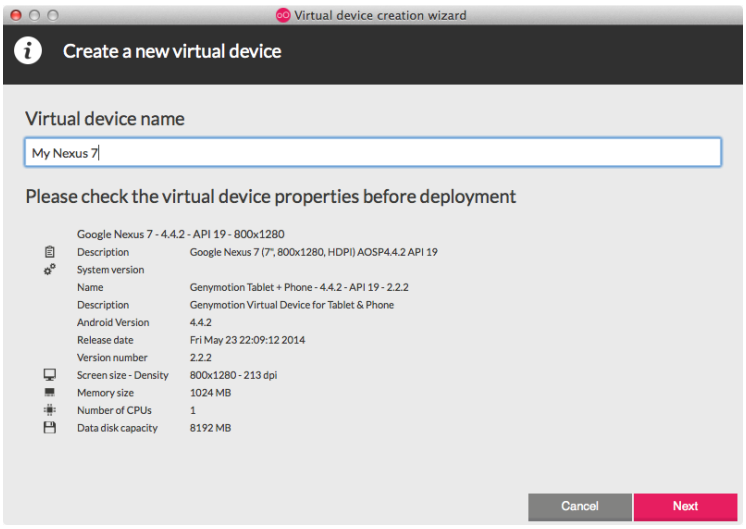
4. Fill in the fields with your username and password and click **Sign in**.
   The **Available virtual devices** list appears:



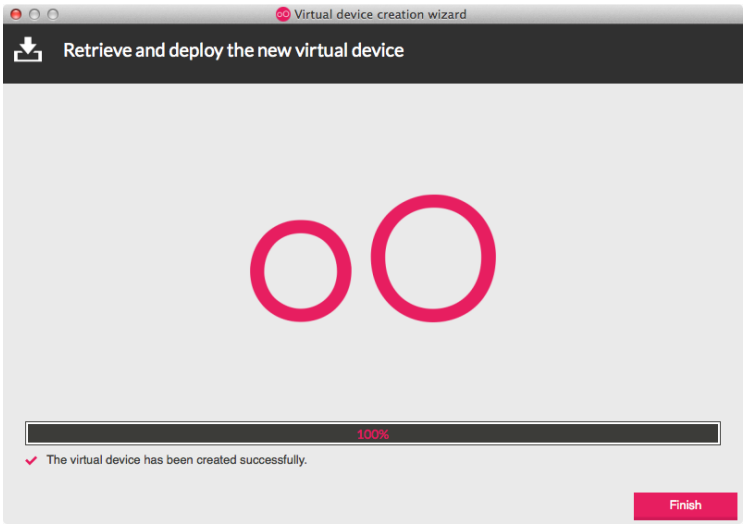
5. Select a virtual device from the list and click **Next**.

   If you cannot add a virtual device at this step, you may be running out of free space. We recommend that you check the free remaining space on your hard disk.

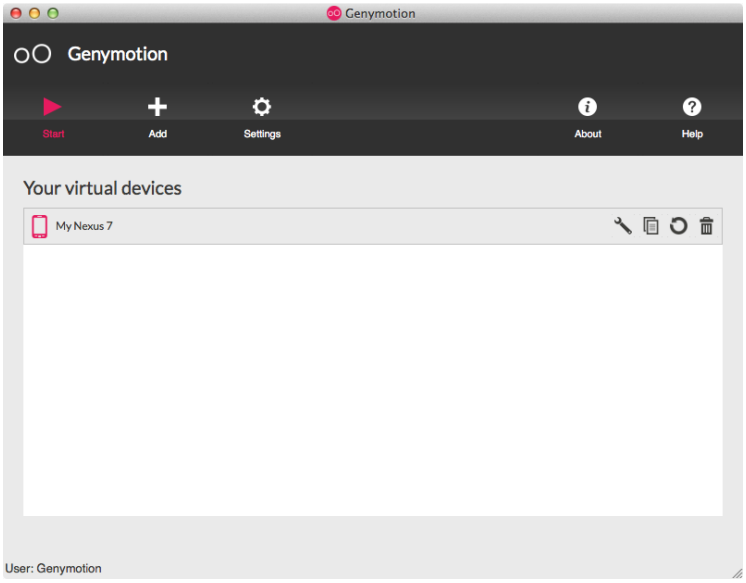
   The **Create a new virtual device** window opens:



6. Enter a name for your new virtual device and click **Next**.
   Your virtual device is being downloaded and deployed:



7. Click **Finish** to close the deployment window.
   Your virtual device appears in the Genymotion main window:



8. Click ▶ to start your newly created virtual device.
   The virtual device window opens:

9. Deploy your Android application in either of the following ways:
   - Drag and drop the application `APK` file into the virtual device window.
   - Run the following command: `adb install <application name>.apk`.
   - Download and install the application directly from the virtual device using a web link.

For more information about sensor and feature emulation as well as interaction with a virtual device, please refer to chapter *Virtual Devices*.

Application

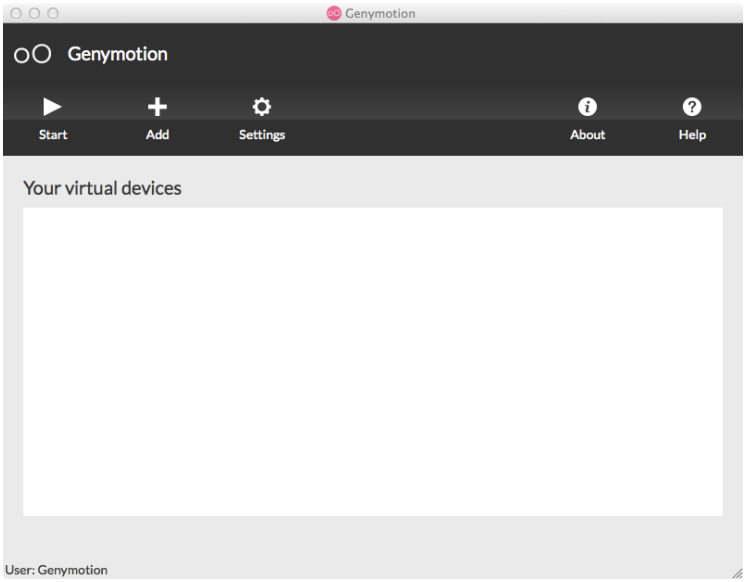
This chapter introduces Genymotion user interface and actions you can perform from the different windows. Therefore, you will learn to start Genymotion, to add and start a virtual device, to configure the application, to get information and help, and finally to update Genymotion.

Starting Genymotion

Start Genymotion in one of the following ways depending on your operating system:

- **Windows**: click from your application menu.
- **Mac OS X**: click from the **Applications** directory.
- **Linux**: run `<Genymotion installer path>/genymotion`.

The Genymotion main window opens:



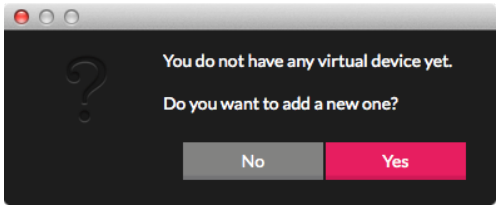
From the menu bar, you can perform the following actions:

- Start the selected virtual device using **Start** ;
- Add a new virtual device using **Add** ;
- Open Genymotion settings using **Settings** ;
- Open the information window using **About** ;
- Open the documentation using **Help** .

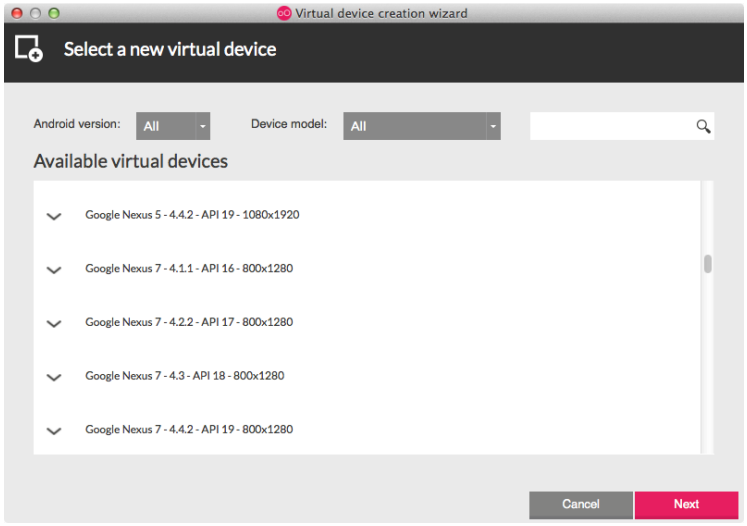
Adding a new virtual device

To add a virtual device, perform the action corresponding to your situation:

- You have never created a virtual device:
  When the following window pops up, click **Yes**:

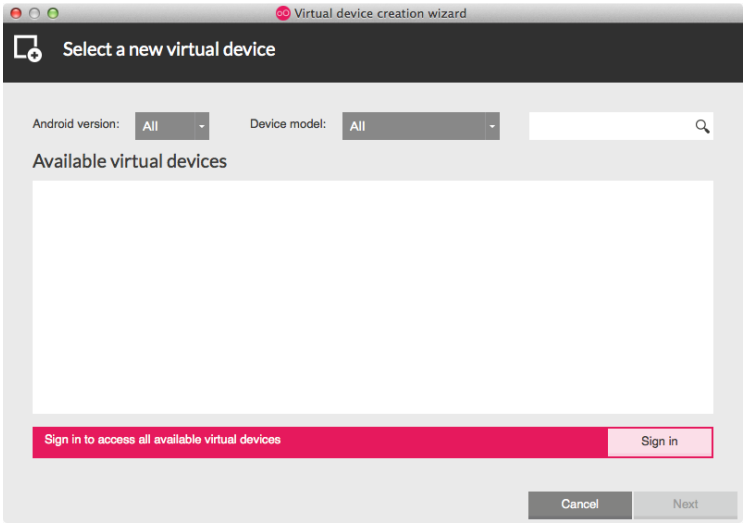


- You have already created a virtual device:
  Click + from the main window.
  The **Select a new virtual device** window opens:

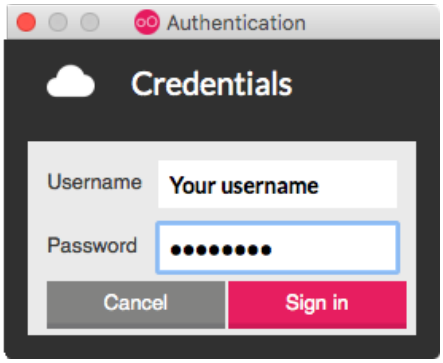


If you cannot see any virtual device in the list, you need to sign in to your Genymotion account:

1. In the **Select a new virtual device** window, click **Sign in**:



The **Credentials** window opens:



2. Enter your username and password and click **Sign in**.

For more information about deploying a virtual device, please refer to chapter *Basic steps*.

You can then select a virtual device from the **Available virtual devices** list, filter virtual devices by Android version or device model or add a custom virtual device, as explained in the procedures mentioned below.

Filtering virtual devices by Android version

From the **Android version** drop-down list of the Genymotion main window, you can choose to display only virtual devices running a specific Android version.

You can also filter virtual devices using the search bar.

Available versions are:

- 2.3.7, also known as API level 10 or Gingerbread;
- 4.1.1, also known as API level 16 or Jelly Bean;
- 4.2.2, also known as API level 17 or Jelly Bean;
- 4.3, also known as API level 18 or Jelly Bean;
- 4.4.4, also known as API level 19 or KitKat;
- 5.0.0, also known as API level 21 or Lollipop;
- 5.1.0, also known as API level 22 or Lollipop;
- 6.0.0, also known as API level 23 or Marshmallow.

Filtering virtual devices by model

From the **Device model** drop-down list of the Genymotion main window, you can choose to display only a certain range of virtual devices.

You can also filter virtual devices using the search bar.

Available models are:

- **Google devices:** Galaxy Nexus, Nexus 9, Nexus 6, Nexus 10, Nexus 4, Nexus 5, Nexus 7, Nexus 7 2013, Nexus One, Nexus S, Nexus 5X, Nexus 6P.
- **HTC devices:** Evo, One, One X, One XL.
- **LG devices:** Optimus L3 II.
- **Motorola devices:** Droid Razr, Moto X, Xoom.
- **Samsung devices:** Galaxy Note, Galaxy Note 2, Galaxy Note 3, Galaxy S2, Galaxy S3, Galaxy S4, Galaxy S5, Galaxy S6.
- **Sony devices:** Xperia S, Xperia Tablet S, Xperia Z, Tablet Z.

Adding a custom virtual device

If you cannot find the virtual device you need, you can select a customizable phone or tablet from the available ones:

- Custom Phone - 4.1.1 - API level 16 - 768x1280;
- Custom Phone - 4.2.2 - API level 17 - 768x1280;
- Custom Phone - 4.3 - API level 18 - 768x1280;

- Custom Phone - 4.4.4 - API level 19 - 768x1280;
- Custom Phone - 5.0.0 - API level 21 - 768x1280;
- Custom Phone - 5.1.0 - API level 22 - 768x1280;
- Custom Tablet - 4.1.1 - API level 16 - 2560x1600;
- Custom Tablet - 4.2.2 - API level 17 - 2560x1600;
- Custom Tablet - 4.3 - API level 18 - 2560x1600;
- Custom Tablet - 4.4.4 - API level 19 - 2560x1600;
- Custom Tablet - 5.0.0 - API level 21 - 2560x1600;
- Custom Tablet - 5.1.0 - API level 22 - 2560x1600.

Once you have deployed one of those virtual devices, you can edit the RAM, screen size and density from the **Configuration** menu by clicking .

For more information about configuring virtual devices, please refer to section *Configuring a virtual device*.

Starting a virtual device

After having created one or several virtual devices, they are made available in the **Your virtual devices** list of the Genymotion main window.

To start a virtual device:

1. Select the virtual device you wish to run.
2. Click .

For more information about running a virtual device, please refer to chapter *Virtual Devices*.

Configuring Genymotion

When clicking from the main window, you can configure Genymotion with different kinds of parameters:

- Account;
- Network;
- VirtualBox;
- ADB;
- Misc.

Account

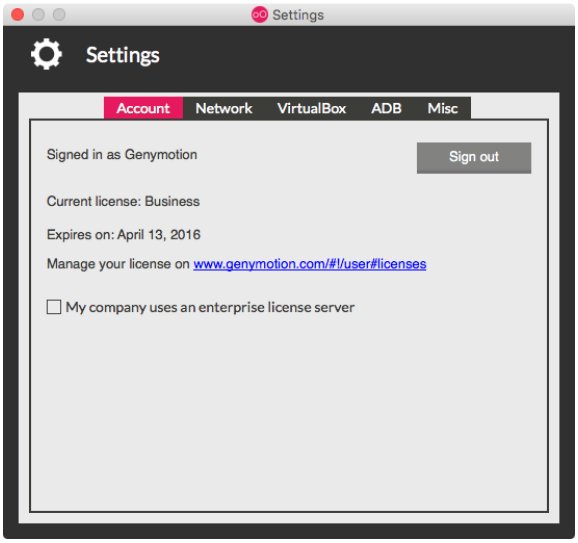
From the **Account** tab, you can sign in to the application and register your license key or enable the license server if your company uses one.

To sign in to Genymotion and use all the features corresponding to your license plan, follow the procedure corresponding to your situation:

You have a license

If you are using a Personal use, an Indie or a Business license:

1. Click **Sign in** to authenticate to Genymotion.
2. In the **Credentials** popup, enter your username and password and click **Sign in**.
3. Once you are signed in, your license type and expiration date are displayed in this window.
4. If you are using an Indie or a Business license, you must then register your license key by copying it in the corresponding field and clicking **Register**.

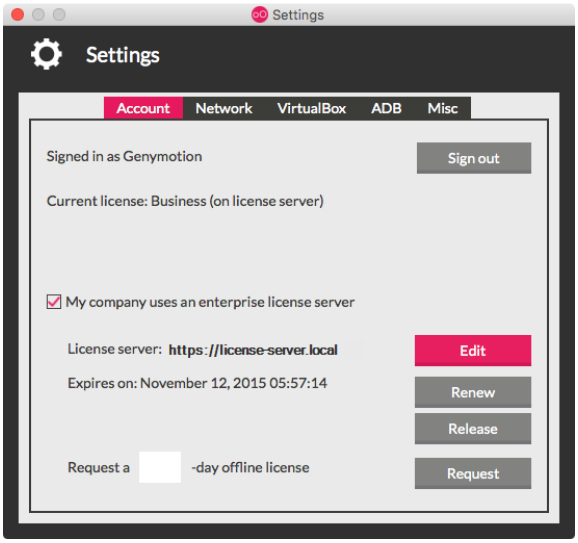


Your company uses an enterprise license server

If your company uses a license server, you must define its location:

1. Click **Sign in** to authenticate to Genymotion.
2. In the **Credentials** window, enter your username and password and click **Sign in**.
3. Check **My company uses an enterprise license server**.

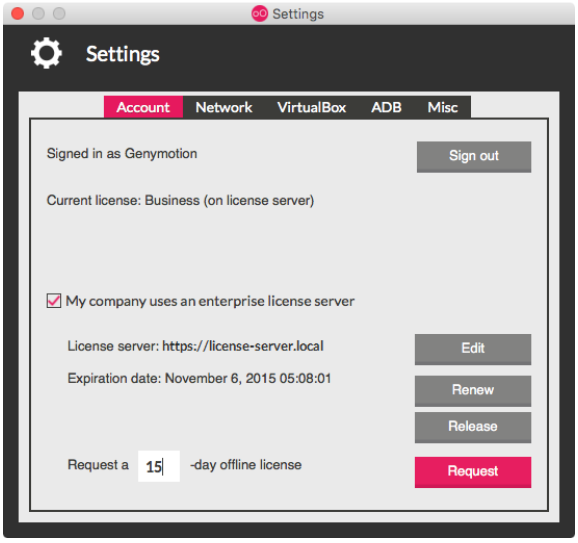
4. Enter the license server address by clicking **Edit**.
   The location server address as well as the expiration date and time of the license you've been allocated are displayed. Then you can:
   - renew your license by clicking **Renew**.
   - release your license and make it available to other users by clicking **Release**.



If offline licenses have been enabled by the administrator of the license server, the offline license request option is enabled in this window.

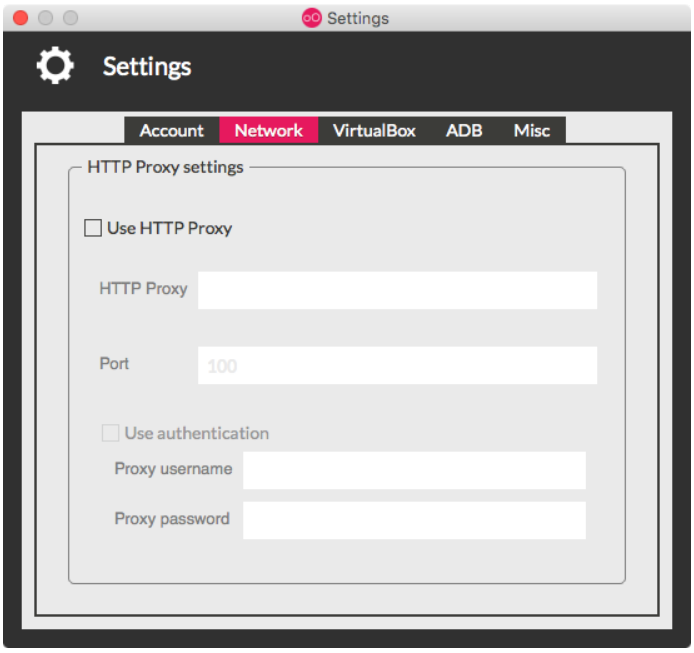
To request an offline license, enter a duration in days and click **Request**. Once you have been allocated an offline license, you can:

- renew your offline license by clicking **Renew**.
- release your offline license and make it available to other users by clicking **Release**.



Network

From the **Network** tab, you can modify the network settings to adapt to your Internet access.

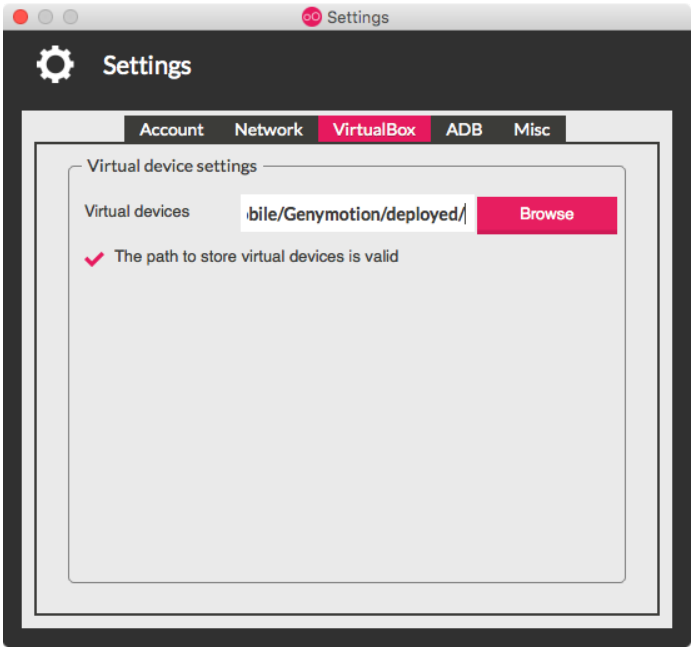


To define your HTTP proxy settings, check the following options:

- **Use HTTP Proxy**: enables Genymotion to use a proxy when connecting to the Genymotion website.
  You must set your HTTP proxy address and port in the corresponding fields.
- **Use authentication**: enables proxy authentication.
  You must enter your proxy username and password in the corresponding fields.

VirtualBox

From the **VirtualBox** tab, you can define the storage location of your virtual devices.

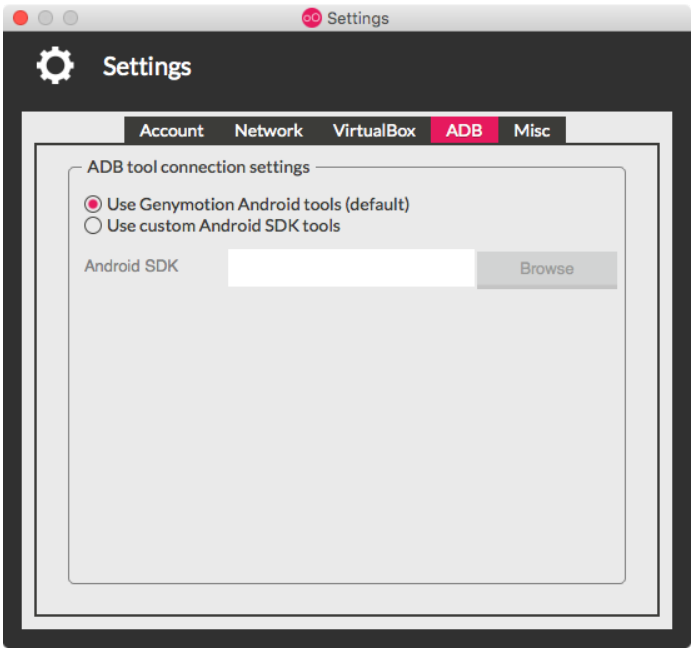


In the **Virtual devices** field, set where to store Genymotion virtual devices by clicking **Browse**.

The virtual device path must be an absolute path.

ADB

By default, Genymotion uses its own Android tools. From the **ADB** tab, you can configure Genymotion to use specific Android tools (from the Android SDK).



Use Genymotion Android tools (default) is the option enabled by default.

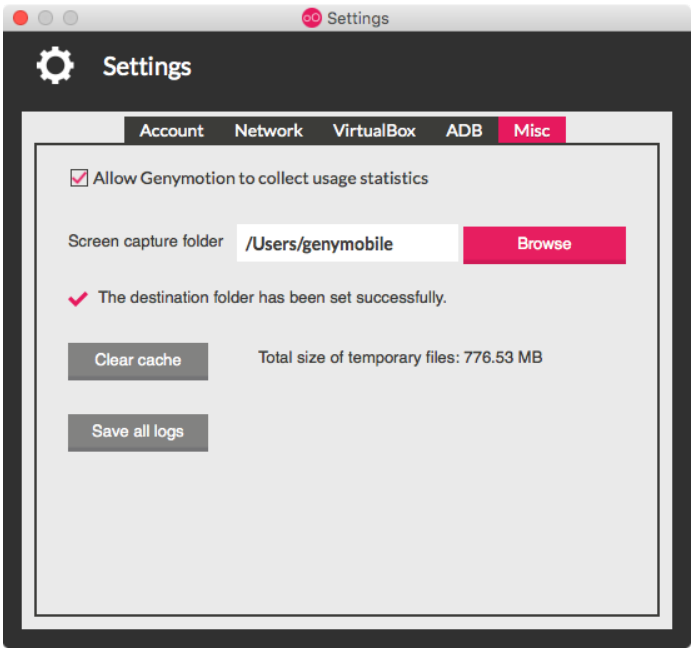
If you wish to use specific Android tools:

1. Download Android Developer Tools (ADT) from the ADT Download page.
2. Extract the archive files in the folder of your choice.
3. Check **Use custom Android SDK tools**.
4. In the **Android SDK** field, set the path to the Android SDK folder by clicking **Browse**.
5. Click **OK**.

⚠ `adt-bundle\sdk\platform-tools` ***is not a valid value.***

Misc

From the **Misc** tab, you can define various settings related to the use of Genymotion.



You can perform the following actions:

- Check or uncheck **Allow Genymotion to collect usage statistics**: this helps us understand how the application is used in order to further improve it.
- Define the storage path of screenshots and screencasts: set the location of the screen capture folder by clicking **Browse**.
- Remove temporary files by clicking **Clear cache**.
- Generate an archive containing all virtual device logs by clicking **Save all logs**.
  By default, the archive containing all log files is stored in the following folders:
  - **Windows**: `%LocalAppData%\Genymobile\Genymotion\deployed\<virtual device name>\`
  - **Mac OS X**: `$HOME/.Genymobile/Genymotion/deployed/<virtual device name>/`
  - **Linux**: `$HOME/.Genymobile/Genymotion/deployed/<virtual device name>/`

  If you generate an archive for assistance purposes, you can send it to us via the *Support* form.

Getting details and help

To get details on the Genymotion version you are using and your license type, click ⓘ.

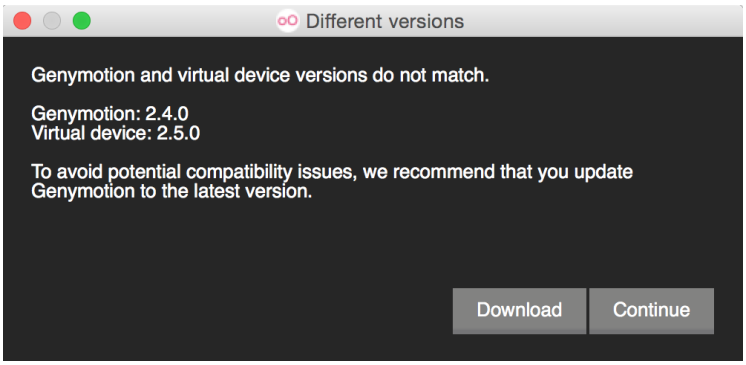
When using Genymotion, to open this online documentation, click ?.

Updating Genymotion

If your virtual devices are up-to-date and a new version of Genymotion has been released, a pop-up window prompts you to download the latest version of Genymotion.

To update Genymotion:

1. When the following window pops up, click **Download**.



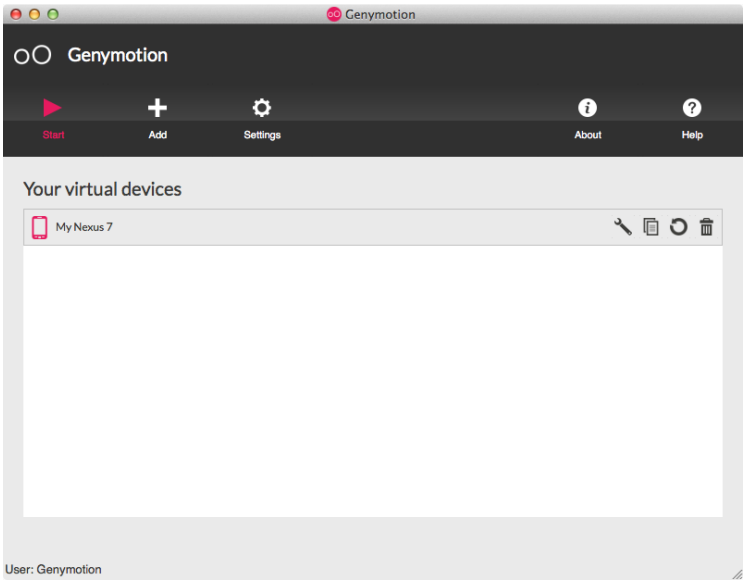
2. Follow the steps mentioned in chapter *Installation*.

Virtual Devices

Virtual devices are Android devices preconfigured and deployed by Genymotion. They allow you to deploy and test your own application with the sensors and features provided by Genymotion. This chapter explains how to manage and run virtual devices, deploy an application, emulate sensors and features, interact with virtual devices, update them and generate their logs.

Managing virtual devices

Your deployed Android virtual devices are displayed in the **Your virtual devices** list of the Genymotion main window:

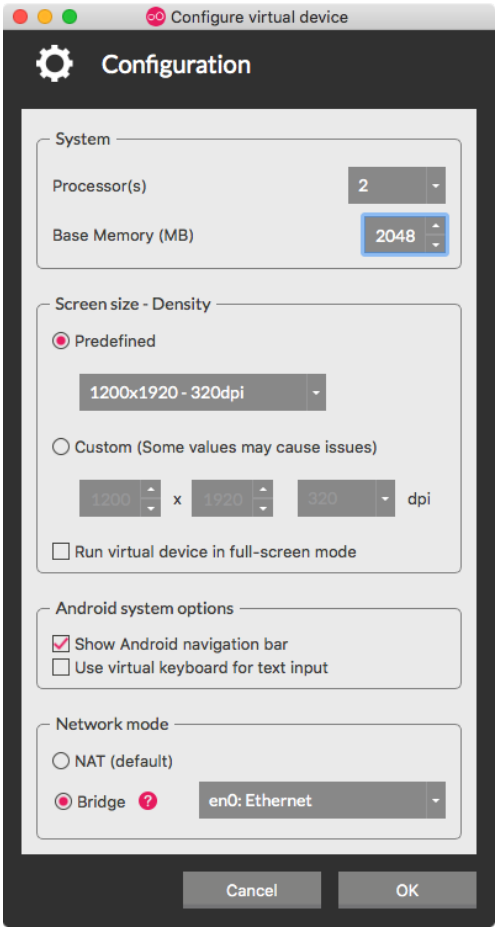


From this list, you can:

- configure a virtual device using ;
- clone a virtual device using ;
- reset a virtual device using ;
- delete a virtual device using .

Configuring a virtual device

When clicking , the **Configuration** window opens:



From this window, you can configure the following parameters:

- **System**
  - **Processor(s)**: sets the number of processors used by the virtual device.
    By default, the value is set to 1, which is the recommended value for an optimal use.

    When defining more processors, we advise setting one less than the total amount of processors to leave one dedicated to the host and avoid performance issues.

  - **Base memory (MB)**: sets the memory space allocated to the virtual device.
    The value must be below the memory of your computer and take into account the memory space used by your computer.

    We advise that you set the values recommended for the real devices (512MB to 2048MB).

- **Screen size - density**
  - **Predefined**: sets the screen size and density from a predefined list.
  - **Custom**: sets a custom screen size and density.

    You may experience display or performance issues when using custom screen size and density values.

  - **Run virtual device in full-screen mode**: displays the virtual device in full-screen mode, adjusted to your screen size.
- **Android system options**
  - **Show Android navigation bar**: displays the Android navigation bar in the virtual device.

  - **Use virtual keyboard for text input**: uses the virtual keyboard when selecting a text input area.
- **Network mode**
  - **NAT (default):** Network Address Translation (NAT) is the simplest way of accessing an external network from a virtual device. It does not require any configuration on the host network. For this reason, it is the default networking mode.
  - **Bridge:**The virtual device is a full participant in the physical network. It can contact other machines on the network and can be contacted by other machines as if it were a physical computer on the network. But the network needs to have a DHCP server that provides a valid IP address to the virtual device. You must select the interface on which you want to apply the bridge. For more information, refer to the *official VirtualBox documentation*.

Cloning a virtual device

Cloning a virtual device consists in duplicating a virtual device. The clone contains all settings of the original virtual device.

This feature is only available with Indie and Business licenses.

To clone a virtual device:

1. Select the virtual device you wish to clone.
2. Click .
3. Enter a name for the new virtual device.
4. Click **Clone**.
5. Wait until the cloning process is finished and click **Finish**.

Resetting a virtual device

After the deployment of a new virtual device, a snapshot is created. Thus, you can restore the factory settings of your virtual device at any time.

This feature is only available with Indie and Business licenses.

To reset a virtual device, click ↻ and **Yes**.

All installed applications, system patches, settings and data will be lost.

Deleting a virtual device

To delete a virtual device:

1. Select the virtual device you wish to delete.
2. Click 🗑.
3. In the confirmation window, click **Yes**.

Starting virtual devices

You can start virtual devices using either the Genymotion main window or a command prompt.

From the Genymotion main window

To start a virtual device from the Genymotion main window:

1. Select the virtual device you wish to run.
2. Click ▶.

From a command prompt

This is only possible with Indie and Business licenses. For more information, please refer to section GMTool.

1. Open a command prompt.
2. Retrieve the list of available virtual devices by running:
   - **Windows:** `<Genymotion installer path>\gmtool admin list`
     Genymotion default installation path is `C:\Program Files\Genymobile\Genymotion`

- **Mac OS X:** `/Applications/Genymotion.app/Contents/MacOS/gmtool admin list`
- **Linux:** `<Genymotion installer path>/gmtool admin list`

3. Start one of the virtual devices by running:
   - **Windows:** `<Genymotion installer path>\gmtool admin start "<virtual device name>"`
   - **Mac OS X:** `/Applications/Genymotion.app/Contents/MacOS/gmtool admin start "<virtual device name>"`
   - **Linux:** `<Genymotion installer path>/gmtool admin start "<virtual device name>"`

After starting a virtual device, the following window opens. This is where your virtual device runs and where you can interact with it:

For more information about deploying a virtual device, please refer to chapter *Basic steps*.

Deploying an application

To deploy an application to a virtual device, use either of the following methods:

- Drag and drop the application `APK` file into the virtual device window.
- Run the following command: `adb install <application name>.apk`.

- Download and install the application directly from the virtual device using a web link.

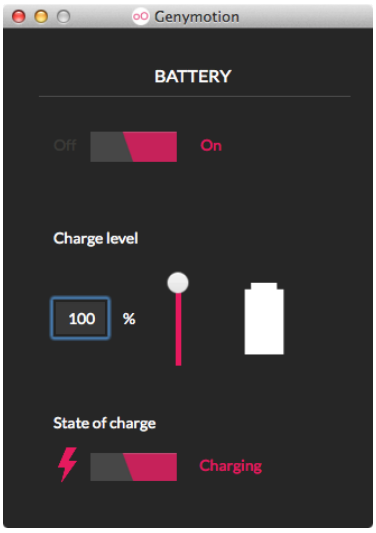
Emulating sensors and features

To simulate various behaviors of your application according to specific use cases, Genymotion provides easy-to-use widgets which emulate the following sensors and features:

- Battery;
- GPS;
- Camera;
- Capture;
- Remote control;
- Identifiers;
- Network;
- Phone.

Battery

The Battery widget allows you to test how your application reacts with different battery charge levels and states of charge.



To use the Battery widget:

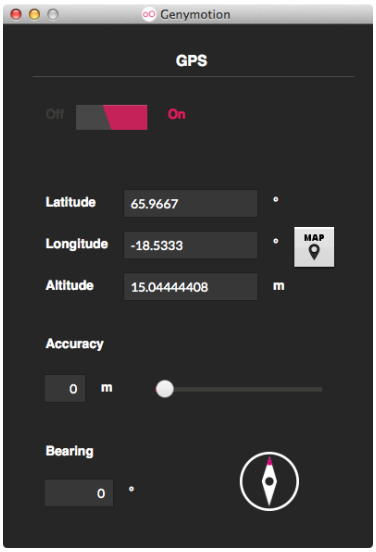
1. Click .
2. Activate the battery simulation mode by clicking **On**.
3. Modify the charge level using the slider or enter a value in the **Charge level** field.

4. Modify the state of charge by clicking the **State of charge** button:
   - Click once to activate the **Charging** state.
     This simulates that the power supply is plugged in and the battery is charging.
   - Click twice to activate the **Discharging** state.
     This simulates that the power supply is unplugged and the battery is discharging.

By default, the virtual device emulates the same battery charge level as the one of your computer. If your computer does not have a battery (desktop computer), the simulation mode is automatically activated.

GPS

The GPS widget allows real-time activation and modifications of a position, accuracy and bearing.



To use the GPS widget:

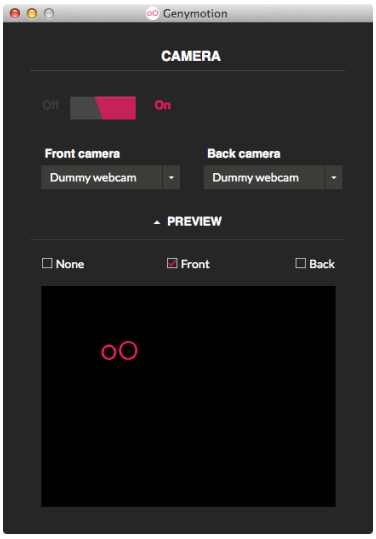
1. Click GPS.
2. Activate the GPS simulation mode by clicking **On**. This enables the reception of generated GPS frames in the virtual device.
3. Set the latitude value you wish to simulate using the **Latitude** field.
   The latitude value must range from -90° to 90°.
4. Set the longitude value you wish to simulate using the **Longitude** field.
   The longitude value must range from -180° to 180°.
5. Set the altitude value you wish to simulate using the **Altitude** field.
   The altitude value must range from -20m to 10000m.
6. Set an accuracy value using the slider or by entering a value in the **Accuracy** field.
   The accuracy value must range from 0m to 200m.

7. Set a bearing value using the compass or by entering a value in the **Bearing** field.
   The bearing value must range from 0° to 359.99°.

   Many applications do not rely on the GPS orientation, but use the device accelerometer or gyroscope to determine the bearing of the device, which are not yet supported.

Camera

The Camera widget allows you to send a video stream from a virtual device to the Android system. With this widget, you can test an Android application that uses an Android built-in camera.



The video stream can come from a dummy camera or a real physical webcam connected or integrated into your computer.

To use the Camera widget:

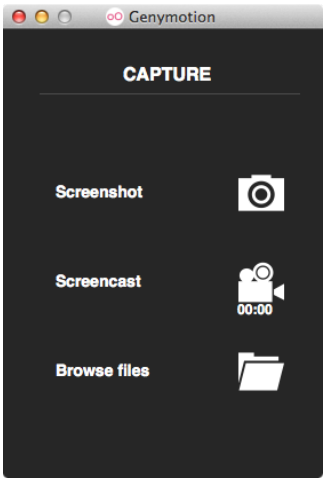
1. Click .
2. Activate the Camera widget by clicking **On**.
   Genymotion detects available webcams on your computer.
3. Select the source of data you wish to use in the **Front camera** and **Back camera** fields. The front camera sends data to the Android front camera and the back camera sends data to the Android back camera.
   - Dummy webcam: data are images generated by the widget;
   - Physical (real) webcam: data are images sent by the selected webcam.

4. Click **Preview** to see the video stream sent to the Android system. You can check the following options:
   - **None**: does not display any data;
   - **Front**: displays the front camera data;
   - **Back**: displays the back camera data.

Capture

The Capture widget allows you to take a screenshot or screencast of virtual devices. This way, you can broadcast images or videos of your applications.

This feature is only available with Indie and Business licenses.



To use the Capture widget, click .

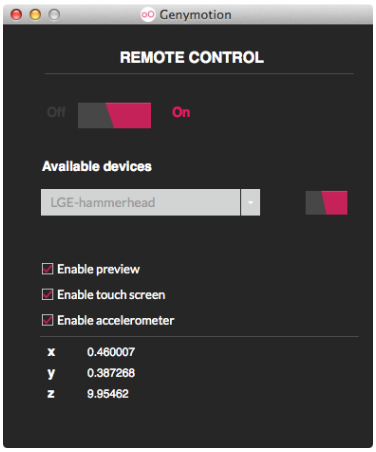
- **Screenshot**: When clicking , a screenshot of your virtual device is captured and stored in the configured folder.
- **Screencast**: When clicking , a video of your virtual device starts recording. Clicking twice stops the recording.
  If your virtual device emits sound, it will be captured in the video.
- **Browse files**: When clicking , your file explorer opens, allowing you to directly access your screenshots and screencasts.
  All screenshots and screencasts are stored in your home directory, in a folder named with your virtual device name. You can change this default folder in Genymotion **Settings > Misc**, as explained in section *Misc*.

All features can be accessed via shortcuts even if the Capture widget is not displayed.

Remote control

With the Remote control widget, you can take control of a virtual device from a physical device (any phone or tablet running Android version 2.2/API level 8/Froyo or above). This widget works with a specific Android application that runs on the physical device and forwards touch inputs and accelerometer events to Genymotion. As a result, you can test your application as if you were holding a device in your hands.

This feature is only available with Indie and Business licenses.



The Remote control widget requires to have ADB installed on your computer. For more information, please refer to section *ADB*.

To use the Remote control widget:

1. Connect your physical device either by wire or with Wi-Fi.
   To connect with Wi-Fi, your physical device must support ADB over network. If so:
   1. On your physical device, go to **Menu > System settings > Developer options**.

      If you have not unlocked this menu yet, go to Menu > System settings > About and click several times on Build number until you get a message meaning that Developer options are now available.

   2. Check **Android debugging** and then **ADB over network**.
   3. Connect your physical device to the Wi-Fi and retrieve its IP address from the Wi-Fi menu.
   4. Open a command prompt and enter `<path to ADB>\connect <IP>`.
2. Click .
3. Activate the widget by clicking **On**.
   Genymotion tries to detect any connected Android device.

4. Select your device from the **Available devices** drop-down list and click **Start**.

   If the device is connected to ADB and not visible in the list, restart the widget.

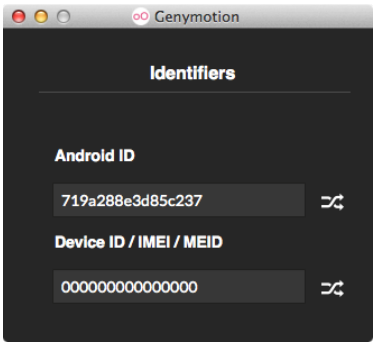
5. Check the desired options:
   - **Enable preview**: enables previewing your Genymotion screen on your physical device.
   - **Enable touch screen**: allows your physical device to send touch events to Genymotion.
   - **Enable accelerometer**: allows your physical device to send accelerometer events to Genymotion.

The Remote control widget automatically stops when you disconnect your device.

Identifiers

The Identifiers widget shows **Device ID** and **Android ID** numbers. You can view and edit these values at any time, without having to reboot your virtual device.

This feature is only available with Indie and Business licenses.



To use the Identifiers widget, click ID.

- **Android ID**
  An Android ID is a 64-bit number randomly generated when the user first sets up the device. It remains the same for the whole lifetime of the user's device. Android 4.2.2 and greater versions support multiple user accounts, each one having a unique Android ID.
  When clicking, a random Android identifier is generated. Valid Android ID numbers are 16-hexadecimal digit long.

  You are not allowed to set an empty Android ID.

- **Device ID / IMEI / MEID**
  By default, a new virtual device is deployed with the default device ID number 00000000000000 0.
  When clicking, a random identifier is generated.
  As IMEI or MEID numbers are used as device ID, Genymotion generates numbers compliant

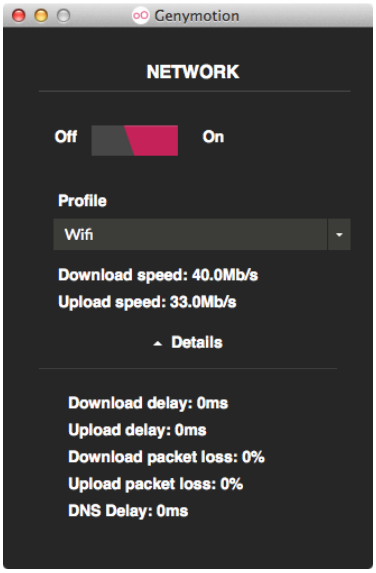
with the GSM 02.16 standard and the 3GPP2 specification (14 digits or hexadecimal digits + a checksum digit).
Valid characters for setting device ID/IMEI/MEID are:

- lower-case and upper-case letters **[a-z, A-Z]**;
- digits **[0-9]**;
- dots **[.]**;
- dashes **[-]**;
- underscores **[_]**.

Network

The Network widget allows you to test how your application reacts with different network quality and performance types.

This feature is only available with Indie and Business licenses.



To use the Network widget:

1. Click .
2. Activate the network simulation by clicking **On**.

   When activating the widget for the first time, the profile network is automatically set to Wifi. It then takes the last network profile used.

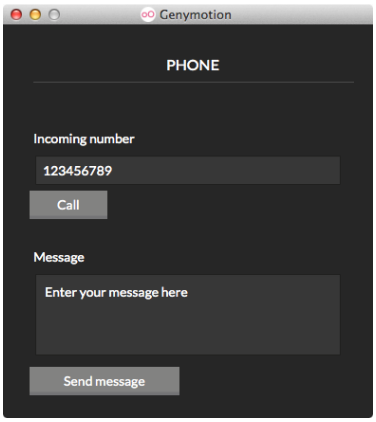
3. Select a network type from the **Profile** drop-down list. Network profiles and their corresponding values are listed in the table below.

	Upload speed	Download speed	Upload delay	Download delay	Upload packet loss	Download packet loss	DNS delay
No data	0Kb/s	0Kb/s	0ms	0ms	100%	100%	0ms
GPRS	40Kb/s	40Kb/s	500ms	500ms	0.01%	0.01%	1000ms
Edge	200Kb/s	240Kb/s	400ms	400ms	0.01%	0.01%	800ms
3G	1.5Mb/s	7.2Mb/s	100ms	100ms	0.01%	0.01%	200ms
4G	5.5Mb/s	17.9Mb/s	50ms	50ms	0.01%	0.01%	100ms
4G (high DNS delay)	5.5Mb/s	17.9Mb/s	50ms	50ms	0.01%	0.01%	3000ms
4G (high packet losses)	5.5Mb/s	17.9Mb/s	50ms	50ms	10%	10%	100ms
Wifi	33.0Mb/s	40.0Mb/s	0ms	0ms	0%	0%	0ms

Phone

The Phone widget allows you to test applications relying on telephony features and observe their behavior when receiving a call or a text message.

This feature is only available with Indie and Business licenses.



To use the Phone widget, click or **Ctrl + 8**.

To simulate an incoming call:

1. Enter an incoming phone number.
2. Click **Call**.

To simulate an incoming message:

1. Enter an incoming phone number.
2. Enter a text message.
3. Click **Send message**.
   The text message is displayed in the virtual device via a notification and can also be read in the **Messaging** application.

Interacting with virtual devices

This section describes features that help you easily interact with your virtual devices.

Multi-touch simulation

Because in most cases, virtual devices are controlled with mouse and keyboard, some shortcuts have been implemented to help simulate common gestures:

- Zoom in: **right click + move mouse left**
- Zoom out: **right click + move mouse right**
- Tilt forth: **right click + move mouse up**
- Tilt back: **right click + move mouse down**
- Clockwise rotation: **Shift + right click + move mouse right**
- Counterclockwise rotation: **Shift + right click + move mouse left**

If you use Mac OS X, replace right click with ctrl + click.

Drag and drop

To drag and drop files from your computer to the virtual device, ADB must be installed. To configure ADB, please refer to section *ADB*. The behavior of dragged and dropped files is different according to the file type:

- **Regular files**: Regular files are stored in `/sdcard/Download`.
  They can be accessed via the **File Manager** application provided in the virtual device.
- **Android applications**: APK files are installed on the virtual device.
  If the same application already exists but with another signature, you can decide to override the existing application.

- **Flashable archives**:
  Zip archives detected as flashable (containing a `/system` folder) are flashed on the device.

  Such archives may damage your virtual device. We recommend restarting your virtual device after flashing an archive.

Copy and paste

The clipboard is shared between your computer and Genymotion. Thus, you can easily copy and paste text from your computer to Genymotion, and vice versa.

Sound volume

You can control the volume of the sound emitted by your virtual device by clicking or .

Rotate screen

You can rotate the screen of your virtual device by clicking .

Depending on the Android version and the density of your virtual device, the Rotate screen feature may not be available. If you are using an Android version 4.2 or above, make sure that the Rotate screen feature is not locked in the right-hand bar. Rotation might also be locked in portrait or landscape mode by the current running application. In this case, it is not possible to change it via the Rotate screen button or via the `rotation setangle` command in Genymotion Shell.

Pixel Perfect

With Pixel Perfect, you can be highly precise in the development of your user interface and ensure every pixel of your application really looks as it should. One pixel of the virtual device is displayed using one pixel of your computer screen.

This feature is only available with Indie and Business licenses.

Click once to enable Pixel Perfect. Click twice to disable it.

If the virtual device screen size is larger than your computer screen size, the virtual device window will be maximized and you will be able to use scrollbars to move inside the screen.

Navigation buttons

With the navigation buttons, you can navigate between applications or display actions that can be performed.

- **Back**
  Click  once to go back to the previous page. Click twice to exit the application.
- **Recent apps**
  Click  to display the recently used applications.
- **Menu**
  Click  to display actions you can perform within an application.
- **Home**
  Click  to display the home page at any time.
- **Power**
  Click  to shut down the running virtual device.

Display tips

When navigating within a virtual device, you can at any time change its display:

- **Full-screen mode**: You can switch to full-screen mode by pressing **F11**. Pressing a second time reverts to the original screen size.

  On Mac OS X, you may have to use the key combination ctrl + fn + F11.

- **Custom size**: You can resize the virtual device window by selecting and dragging an edge or a corner of the window.
- **Fit to content**: When the virtual device window is resized, black areas appear on the borders. Double-click in one of those areas to fit the virtual device window size to its content.

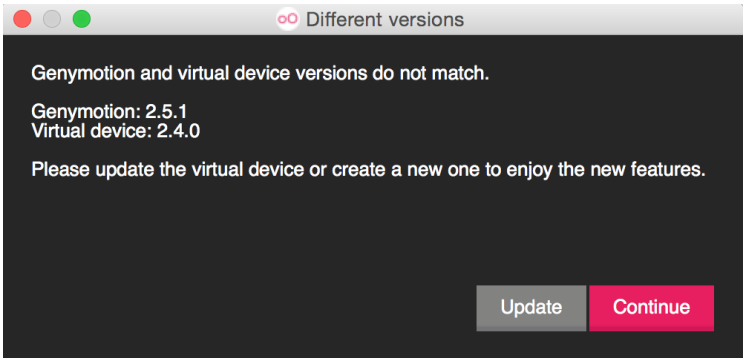
Updating virtual devices

If Genymotion is up-to-date and a new version of virtual devices has been released, a pop-up window prompts you to automatically update your virtual devices while keeping all your installed packages and applications.

This is only possible with an Indie or a Business license. If you are using the Personal use mode of Genymotion, you must deploy the new version of virtual devices.

To update your virtual devices:

1. When the following window pops up, click **Update**.



2. Wait until the update process is finished and click **Finish**.

You must have the latest version of Genymotion to update your virtual devices.

Generating virtual device logs

In some cases, notably for assistance purposes, you may need to generate a log archive, either for a specific virtual device or for all virtual devices. Follow either of the procedures below.

For one virtual device

From the Genymotion main window:

1. Right-click on the virtual device.
2. Click **Generate log archive**.
3. Select the path to save the generated archive.
   By default, log files are stored in the following folders:
   - **Windows**: `C:\Users\<user>\AppData\Local\Genymobile\Genymotion\deployed\<virtual device name>\Logs`
   - **Mac OS X**: `$HOME/.Genymobile/Genymotion/deployed/<virtual device name>/`
   - **Linux**: `$HOME/.Genymobile/Genymotion/deployed/<virtual device name>/`
4. Wait until the archive is generated and click **Close**.

If you have generated logs for assistance purposes, you can send the archive or the log files to us via the *Support* form.

For all virtual devices

From the Genymotion main window:

1. Click ⚙.
2. From the **Misc** tab, click **Save all logs**.
3. Select the path to save the generated archive.
   By default, log files are stored in the following folders:
   - **Windows**: `C:\Users\<user>\AppData\Local\Genymobile\Genymotion\deployed\<virtual device name>\Logs`
   - **Mac OS X**: `$HOME/.Genymobile/Genymotion/deployed/<virtual device name>/`
   - **Linux**: `$HOME/.Genymobile/Genymotion/deployed/<virtual device name>/`
4. Wait until the archive is generated and click **Close**.

If you have generated logs for assistance purposes, you can send the archive or the log files to us via the *Support* form.

Keyboard Shortcuts

In this section, you will find all available keyboard shortcuts for a faster use of Genymotion and virtual device features.

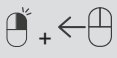
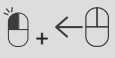
Genymotion shortcuts

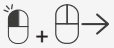
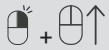
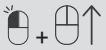
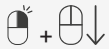
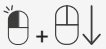
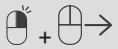
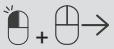
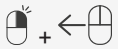
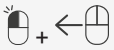
The table below lists all shortcuts that can be used in Genymotion. For shortcuts related to the use of virtual devices, please refer to section *Virtual device shortcuts*.

Action	Shortcut Windows/Linux	Shortcut Mac OS X
Start virtual device	Ctrl + L	Cmd ⌘ + L
Add virtual device	Ctrl + N	Cmd ⌘ + N
Open About window	Ctrl + A	Cmd ⌘ + A
Open User Guide	Ctrl + H	
Open Genymotion settings	Ctrl + C	Cmd ⌘ + C
Delete virtual device	Ctrl + D	Cmd ⌘ + D
Open virtual device settings	Ctrl + R	Cmd ⌘ + R
Clone virtual device	Ctrl + P	Cmd ⌘ + P
Reset virtual device	Ctrl + F	Cmd ⌘ + F
Generate virtual device log archive	Ctrl + K	Cmd ⌘ + K

Virtual device shortcuts

The table below lists all shortcuts that can be used in virtual devices. For shortcuts related to the use of the application, please refer to section *Genymotion shortcuts*.

Category	Action	Shortcut Windows/Linux	Shortcut Mac OS X
Widgets	Open Battery widget	Ctrl + 1	Cmd ⌘ + 1
Widgets	Open GPS widget	Ctrl + 2	Cmd ⌘ + 2
Widgets	Open Camera widget	Ctrl + 3	Cmd ⌘ + 3
Widgets	Open Capture widget	Ctrl + 4	Cmd ⌘ + 4
Widgets	Open Remote Control widget	Ctrl + 5	Cmd ⌘ + 5
Widgets	Open Identifiers widget	Ctrl + 6	Cmd ⌘ + 6
Widgets	Open Network widget	Ctrl + 7	Cmd ⌘ + 7
Widgets	Open Phone widget	Ctrl + 8	Cmd ⌘ + 8
Capture	Take screenshot	Ctrl + Shift + S	Cmd ⌘ + Shift + S
Capture	Make screencast	Ctrl + Shift + V	Cmd ⌘ + Shift + V
Capture	Open screen capture destination folder	Ctrl + Shift + E	Cmd ⌘ + Shift + E
Multi-touch	Zoom in		Ctrl + 

Category	Action	Shortcut Windows/Linux	Shortcut Mac OS X
Multi-touch	Zoom out		Ctrl + 
Multi-touch	Tilt forth		Ctrl + 
Multi-touch	Tilt back		Ctrl + 
Multi-touch	Rotate clockwise	Shift + 	Ctrl + 
Multi-touch	Rotate counterclockwise	Shift + 	Ctrl + 
Volume	Increase volume	Ctrl + +	Cmd ⌘ + +
Volume	Decrease volume	Ctrl + −	Cmd ⌘ + −
Display	Rotate screen	Ctrl + F11	
Display	Enable/Disable Pixel Perfect	Ctrl + R	Cmd ⌘ + R
Display	Activate full-screen	F11	Ctrl + Fn + F11
Display	Show/Hide toolbar	Ctrl + T	Cmd ⌘ + T
Navigation	Back	Ctrl + ←	Cmd ⌘ + ←
Navigation	Recent apps	Ctrl + Space	
Navigation	Menu	Ctrl + M	Cmd ⌘ + M

Category	Action	Shortcut Windows/Linux	Shortcut Mac OS X
Navigation	Home	Ctrl + Home	Cmd ⌘ + Home
Navigation	Power	Ctrl + Esc	

Glossary

A

Accelerometer

A sensor that detects motion and orientation of a device.

ADB

See Android Debug Bridge.

ADT

See Android Developer Tools.

Advanced Micro Dynamics virtualization

A set of hardware extensions for the X86 processor architecture, designed to perform repetitive tasks normally performed by software and improve resource use and virtual machine performance.

AMD-V

See Advanced Micro Dynamics Virtualization.

Android Debug Bridge

A command line utility that allows communication with an emulator instance or a connected Android device. Android Debug Bridge is a client-server program that includes three components: a client, a server and a service. Genymotion is compliant with Android Debug Bridge.

Android Developer Tools

A plugin for Eclipse IDE that provides a suite of tools for developing applications on Android platforms.

Android ID

A 64-bit number randomly generated when the user first sets up a device. It remains the same for the whole lifetime of the user's device. Android 4.2.2 and greater versions support multiple user accounts, each one having a unique Android ID.

Android SDK

The software development kit that provides developer tools to build, test and debug Android applications, containing among others ADB, ADT and AAPT.

Android Studio

An integrated development environment from which you can develop Android applications. It is based on IntelliJ IDEA.

B

Baseband

The component in charge of a device telephony features. Genymotion emulates a baseband and interacts with it via the Phone widget, an API or Genymotion Shell.

Basic Input Output System

An instruction program which checks each component during machine boot to adapt the operating system to the hardware environment.

Battery widget

A Genymotion feature that tests how your application reacts with different battery charge levels and states of charge.

BIOS

See Basic Input Output System.

C

Cache

A buffer storage where temporary files are stored.

Camera widget

A Genymotion feature that sends a video stream from a webcam to the Android system. It aims at testing an Android application that uses an Android built-in camera.

Capture widget

A Genymotion feature that takes a screenshot or makes a screencast of actions performed on virtual devices.

Central Processing Unit

The functional unit of a computer that consists of one or more processors and their internal storages.

CPU

See Central Processing Unit.

D

Device ID/IMEI/MEID

A device unique identification number which comprises 14 digits or hexadecimal digits and a checksum digit, complying with the GSM 02.16 standard and the 3GPP2 specification. The device ID corresponds to the IMEI number for GSM phones and to the MEID number for CDMA phones.

E

Eclipse

An integrated development environment from which one can develop various types of applications.

F

Flashable archive

A zip-compressed archive file containing a system folder.

G

Genymotion Shell

A command prompt designed to interact with Genymotion virtual devices.

GPS widget

A Genymotion feature that allows real-time activation and modifications of a position, accuracy and bearing of a virtual device.

Gradle

A build engine running on the Java platform.

H

Host-only network

A virtual network contained within the host computer. Host-only network must be enabled when installing VirtualBox for Genymotion to run on your computer.

HTTP proxy

An intermediary component between a local network and the Internet that a HTTP request queries to retrieve information from the web.

I

IDE

See Integrated Development Environment.

Identifiers widget

A Genymotion feature that shows device ID and Android ID numbers and allows viewing and editing these values at any time, without having to reboot the virtual device.

Integrated Development Environment

An application from which one can develop applications.

Intel virtualization technology

The Intel processor's hardware ability to divide and isolate its computing capacity for multiple host virtual machines and their operating systems.

Intel VT-x

See Intel virtualization technology.

L

License server

A feature allowing large companies to manage Genymotion licenses without needing to register a license key for every employee.

Log file

A file that records all events that occur when using an application.

M

Maven

A build engine running on the Java platform.

Multi-touch

The ability of a device to recognize common gestures in order to interact with a touch screen.

N

Network widget

A Genymotion feature that tests the behavior of an application with different network qualities of service.

O

OpenGL

An application programming interface for rendering 2D and 3D vector graphics.

Oracle VM VirtualBox

A software that virtualizes operating systems by using hardware resources of the host system to install guest systems.

P

Phone widget

A Genymotion feature that allows to test applications relying on telephony features.

Pixel Perfect

A Genymotion feature that enables being highly precise in the development of a user interface: one pixel of a virtual device is displayed using one pixel of the computer screen.

Plugin

A software element that can be added to an existing application to extend its capabilities.

R

Remote control widget

A Genymotion feature that takes control of a virtual device from a physical device (any phone or tablet running Froyo/API 8 or greater).

S

Software Development Kit

A set of tools designed for helping developers create applications meant to run on a specific environment.

V

Virtual device

An Android device preconfigured in Genymotion and run by Oracle VM VirtualBox. Genymotion virtual devices are the platforms on which applications are tested.

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