

# Geneious Floating License Manager Version 2.1.2

Biomatters Ltd

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## Introduction

A Geneious Floating License is provided by a server to clients that can request a license over a network. The Geneious Floating License Manager provides command line tools for administrating Geneious Floating Licenses. This manual will guide you through installing and using the Geneious Floating License Manager.

## Prerequisites

Before proceeding with the installation you should note the following:

- Don't attempt this installation if you don't have full administrator rights for the machine in question, and if you don't know how to configure network services and firewalls.
- You must make sure that your machine's hostname and IP address agree because the license manager will use this. If they don't agree (i.e. looking up the hostname returns a different IP address to the one your machine is actually using), you will get an error which includes the phrases 'Vendor daemon can't talk to lmgrd' and 'EXITING DUE TO SIGNAL 37'.
- We strongly recommend that the Floating License Manager not be publicly accessible over the internet, as FlexNet Publisher version 11.8, which is provided for Geneious, is known to contain remote access security vulnerabilities. For more information see [CVE Details](#). If you wish to make your floating licenses available over the internet, allowing access via a VPN is the best option. If this is not possible, please contact us for advice.
- If you have previously installed the Geneious Floating License Manager on the host machine, make sure you uninstall that version before installing this new version. You should find the uninstaller in the previous install directory (`uninstall` on Linux, `uninstall.exe` on Windows and `Geneious License Server Uninstaller.app` on Mac OS X). The uninstaller may take a few seconds to launch so be patient.
- The license manager can coexist with other FLEXnet license manager installations on the same operating system but if you don't want to use our standard scripts, stop the install once you reach the step where the installer asks to configure the ports and move to the section about setting up the manager with your own FLEXnet installation at the end of this manual.
- You cannot host multiple Geneious licenses on the same license manager.

To serve a Geneious Floating License, you must have a machine that has a fixed IP address and registered hostname that resolves to that IP address, and is always turned on so disable sleep or power saving features. You also need to ensure that you have full rights to open the

necessary ports - it isn't uncommon for some environments to have policies in place that prevent administrators on machines from making services available on the required ports so make sure you have permission to install this service.

If you have complicated licensing requirements such as needing to have multiple groups using different licenses that may be subscriptions or perpetual licenses, and you want to centralize the servers on one physical machine, the only way to do this is to virtualize the servers. We suggest installing VMware or similar and creating a new host for each group's license server. A lightweight Linux installation would be a good solution. Each machine should have a unique fixed IP address.

Regardless of whether it is a virtual machine, or a physical host, you will need to ensure that both the license server and vendor daemon ports are open to the client machines and also give your users the IP address/hostname of the license manager. They will then enter the hostname and license server port into the appropriate boxes in Geneious which will then request a license from the server.

If you have issues with clients not being able to get licenses, the most common cause is that the two ports required are not open on your firewall (27001 and 49630 by default but you can change these during installation), or the user is putting the wrong hostname and port details into the dialog (27001 by default, not the 49630 although that does need to be accessible from the client too.)

Clients can connect to the server via a VPN, but if the VPN connection is severed, they will lose the license within five minutes. The license server will recover the license fifteen minutes after the connection was lost. For this reason, users on a VPN must make sure they stay connected until they close Geneious if they want to continue using the floating license.

## System Requirements

- Windows XP or later on Intel (Windows 2000 and Itanium are not supported)
- Most 64-bit Linux distributions on Intel based on RedHat, Debian or SuSE with Linux Standard Base 3.0 support
- Mac OS X 10.8.3 (Mountain Lion) or later with Java 8 JDK installed

## Installing the Geneious Floating License Manager

Download the appropriate Geneious Floating License Manager software for your chosen computer. Versions for Windows, Linux and Mac are available. Windows versions are available in 32 and 64 bit versions, while the Linux and Mac versions are 64 bit only. Windows and Linux versions are also available with or without a bundled Java Runtime Environment. On MacOS,

the Java 8 JDK (available from [here](#)) must be installed prior to running the floating license manager installer.

If you have a previous installation of Geneious Floating License Manager, either on a different machine or if you are intending to relocate the installation to a different directory, go into the current Geneious Floating License Manager installation directory and run the `uninstall` program which will remove the current service and associated files along with releasing the license from that machine. Doing so will avoid issues when you rerun the installer.

Before installing on Linux, make sure you have the Linux Standard Base (LSB) installed. If the LSB is not installed the Floating License Manager installer will fail with the error 'Cannot run program "/code>./lmstat"/'. On Debian-based systems, including Ubuntu, that are old enough to contain an `lsb` package you can install it using:

```
sudo apt-get install lsb
```

On newer Debian (Testing or Stretch after Sept 2015) and Ubuntu 16.04LTS and later which do not have a package named `lsb`, instead use the following commands

```
sudo ln -sf /lib64/ld-linux-x86-64.so.2 /lib64/ld-lsb-x86-64.so.2
sudo ln -sf /lib64/ld-linux-x86-64.so.2 /lib64/ld-lsb-x86-64.so.3
```

On Redhat-based systems such as CentOS and Fedora, you can install it using:

```
sudo yum install redhat-lsb
```

If you have a minimal Linux install of a version that uses `SysV`, you may also lack the `sysvutils` package which the installation requires since it provides the `service` command. You can tell if you are in this situation if you have available on the command line neither the command `service` nor `systemctl`. Instructions for acquiring `sysvutils` to get the `service` command will depend on your distribution and could be found with a web search.

You will need to take the following steps as administrator or root and have internet access (direct or via a proxy).

Run the Geneious Floating License Manager installer package. This will launch a graphical installer for the Geneious Licensing Utility and tools and then prompt for the two ports the server will run on, your activation ID and proxy settings for internet access if necessary. This installer will create a service called `geneiouslm` which runs `lmgrd` (License Manager Daemon).

If you would like to add the license to an already configured FLEXnet licensing system, you should not continue with the installation after the point at which it asks to set the ports for the service. Hit **Cancel** and the software will be installed but it won't have activated the license or configured the service. See the section on setting up the license with your own FLEXnet server at the end of this manual.

Be sure to open the specified ports on your firewall (27001 and 49630 by default but you may have chosen different values) so that Geneious clients can then access it. If you don't open these ports on your firewall, clients will report that they cannot connect to the server so if you are seeing this issue, that is very likely to be the cause and you should add both port exceptions in the firewall settings of the operating system the Geneious Floating License Manager software is installed on. You may also need to add Geneious to the allowed applications that can access the internet on the client machines but you would need to do that so that Geneious can download data from NCBI anyway.

If you want to change the ports the server runs on later, you can just reinstall the server and change your port selections. Do not change the installation directory without uninstalling the previous installation first.

## Connecting to the license server from Geneious

To connect to license server from Geneious:

1. Start up Geneious
2. Select *Activate License...* from the *Help* menu
3. Check the "Use floating license server" option
4. Enter the hostname/IP address of the server and license server port (default is 27001).
5. Click OK to start using the license

Once you have set up Geneious to use the floating license, it will automatically check it out whenever Geneious starts up and check it in when Geneious shuts down. If there are no seats available, this copy of Geneious will be placed in a queue until one comes available.

## Monitoring and controlling your server

### Windows

From the command prompt, you can run the following commands to control the license manager daemon:

- Start geneiouslm service – `sc start geneiouslm`
- Stop geneiouslm service – `sc stop geneiouslm`
- Check geneiouslm is running – `sc query geneiouslm`

In the installation directory, there is also a file called `geneiouslm.log` which you can look at and it will let you know if the server started, what ports it is on and you'll also see a record of the licenses coming and going.

## Linux

From a terminal, you can run the following commands as root or using 'sudo' to control the license manager daemon:

- Start geneiouslm service – `service geneiouslm start`
- Stop geneiouslm service – `service geneiouslm stop`
- Check geneiouslm is running – `service geneiouslm status`
- Restart geneiouslm service – `service geneiouslm restart`

In the installation directory, there is a `vendor` directory which contains the `geneiouslm.log` file. This has a record of your server's activities.

Note, you should wait at least 60 seconds before starting the daemon again after stopping it otherwise the operating system won't have cleared the port. Restarting includes this wait.

By default, the daemon may not automatically start on a reboot. For example, with older RedHat based systems you may have to run the following to make it start each time the system restarts:

```
chkconfig geneiouslm on
```

Or for newer RedHat or other distributions that use systemd services

```
systemctl enable geneiouslm
```

Note that the actual binary that serves the licenses is called `lmgrd`.

## Mac OS X

From Terminal.app, you can run the following commands using 'sudo' to control the license manager daemon:

- Start geneiouslm service –  
`launchctl load /Library/LaunchDaemons/com.biomatters.geneiouslm.plist`

- Stop geneiouslm service –  
`launchctl unload /Library/LaunchDaemons/com.biomatters.geneiouslm.plist`
- Restart geneiouslm service –  
Use the above commands to stop the the service then start it

In the installation directory, there is a **vendor** directory which contains the `geneiouslm.log` file. This has a record of your server's activities.

You can check the status of the license server with the following command which should be run from inside the **vendor** directory:

```
./lmstat -c geneious.lic
```

The daemon should automatically start when your system is rebooted.

Note that if you're running the Mac OS X firewall you may be asked if you want to allow the application `lmgrd` to accept incoming connections. This is the actual binary that serves the licenses so you should allow it access.

## floatingLicenseManager

floatingLicenseManager is a command-line utility which provides you with ways of manipulating your floating license that are not convenient or available through the installer, specifically:

- Checking that a floating license has been activated
- Activating a floating license
- Returning an activated license so it can be activated on a new server
- Creating a "borrow file" to allow users to detach a license from the license server and use it offsite

floatingLicenseManager must be run as administrator/root and unless it is in your path, you should precede it with `./` on Linux or Mac OS X so that the shell knows to run the command from the current directory, assuming you're already in the directory that contains the utility.

### Checking your license has been activated

To check what floating license if any is activated, use the following command:

```
floatingLicenseManager -check
```

## Activating your license

Licenses must be activated against the Geneious operations server before they can be used. You will need an internet connection to do this. To activate the floating license, use the following command:

```
floatingLicenseManager -activate
    -activationID <activation ID>
    [-proxyHost <proxy host> -proxyPort <proxy port>
    [-proxyUserid <proxy userid> -proxyPassword <proxy password>]]
```

Where:

- <activationID> is the activation ID sent to you by Biomatters on the purchase of your license.
- The other arguments specify the settings needed to use the proxy in your organisation. Please note that if you are using a proxy on Windows the proxy settings will be determined using WinInet and should not be specified here.

For example:

```
floatingLicenseManager -activate -activationID 1ACC-6AF5-489B-3B2B-A9B1
```

Or:

```
floatingLicenseManager -activate -activationID 1ACC-6AF5-489B-3B2B-A9B1
    -proxyHost myProxy -proxyPort 8080
    -proxyUserid "Joe Bloggs" -proxyPassword myPassword
```

Your license can only be activated on one computer at once. If you want to move your license server to a new computer, you will need to release the license, as explained in the next section.

## Releasing your license

If you want to move your license to a new server, you will need to release your license back to the Geneious operations server so that it is available to be activated elsewhere. You will need an internet connection to do this. To release the floating license, use the following command on the machine the license is currently installed on:



```
floatingLicenseManager -release
    [-proxyHost <proxy host> -proxyPort <proxy port>
    [-proxyUserid <proxy userid> -proxyHost <proxy userid>]]
```

Note that this command will not release a license that is activated on another machine, it must be executed on the same machine the license was activated on.

## Uninstalling the license manager daemon

If you want to remove the daemon and release the license in a single step at the command line, use the following command:

```
floatingLicenseManager -uninstall
```

You should then delete the installation directory to remove the program entirely.

## Creating a borrow file

Floating licenses can be borrowed, ie their seats temporarily detached from the server and associated with a particular computer so that the license can be used when a connection to the license server is not available. If you do not want to provide this ability, you can ignore this section.

Borrowing should be used with care, because seats which have been borrowed are not available to other users until they are returned and they can only be returned when the borrower is back on the same network as the license server. Users can borrow a license through Geneious only if they have been given a “borrow file” (borrow.txt) which gives them permission to do so.

To create a borrow file to give to a user who wants to borrow a license, use the following command:

```
floatingLicenseManager -allowBorrow
    [-user <username>]
    [-expiry <dd-MMM-yyyy>]
    [-outpath <path to borrow file>]"
```

Where:

- <user> is the username of the user who is allowed to borrow. This must match the name of the user account on the computer where the license is borrowed. If this parameter is omitted any user can use the borrow file.

- `<dd-MMM-yyyy>` is the expiry date, ie the date (midnight at the start of that day) when the license will automatically be returned to the server. If this parameter is omitted, the expiry date will be the following day.
- `<path to borrow file>` is the directory `borrow.txt` will be written to. If omitted the current directory will be used.

Once a borrow file has been created, the user should start Geneious to receive a license from the server (they may have to wait until one is available) and they can then go into the Help menu and choose **Borrow Floating license**. Geneious will ask for the borrow file which they should browse to and select, and this will then complete the process of disconnecting the license seat from the server, allowing the user to take it away.

To return the borrow file prior to its expiry date, the user must be on the same network as the license server, then open Geneious and select **Borrow Floating License** again. This will uncheck this option and return the borrow file.

If the borrow file is not returned by the user, the borrow period will automatically end on the expiry date of the borrow file. Geneious features will then become restricted, and the license server will return to the original seat count.

## Setting up the Geneious Floating license with your own FLEXnet server

You can install a Geneious floating license on your own FLEXnet server if it uses `lmgrd/lmutil` version 11.3+ to administer licenses. Version 10 or older is not supported because it doesn't support Trusted Storage which is required for Geneious floating licenses. If your server meets these requirements you can continue. If not, you'll either need to upgrade, or install the default Geneious Floating License Manager daemon on a different machine (or Virtual Machine) so it won't clash with your present FLEXnet server installation.

To install a Geneious floating license on an existing FLEXnet server, [download](#) and run our Floating License Manager (FLM) installer on your FlexLM server, but ensure you CANCEL INSTALLATION at the point that port information is requested. This will install our FLM software and other key files, but will not install the FLM daemon that would normally serve your license.

Then activate the Geneious license via the command line. To do this, navigate to the installation folder for the Geneious Floating License Manager and run `floatingLicenseManager -activate -activationID xxxx-xxxx` etc as previously described under **Activating your License**.

This will contact Flexnet and register the license activation and create the necessary license files in trusted storage (which can also be used by your FlexLM).

Then create the `geneious.lic` and `geneious.opt` files. Because Geneious licenses are stored in Trusted Storage, your license file (`geneious.lic`) does not contain any features. Its presence

just informs your license server to look in Trusted Storage for any licenses from the Geneious vendor. This sort of license file is called a “bootstrap” license file.

Create a `geneious.lic` file that looks like this:

```
SERVER this_host ANY 27001
VENDOR geneious options=geneious.opt PORT=49630
```

You can change the port values, but leave everything else as it is here.

Create a `geneious.opt` file that looks like this to ensure that the license is made available again 15 minutes after contact is lost with a client:

```
TIMEOUTALL 900
```

Don't set the value of `TIMEOUTALL` lower than 900.

The Geneious vendor daemon (`geneious` or `geneious.exe`), bootstrap license (`geneious.lic`), options file (`geneious.opt`) and shared library (`geneious_libFNP.so`, `geneious_libFNP.dylib` or `geneious_libFNP.dll`) will be in the same directory as the `floatingLicenseManager`. To use these with your own copy of `lmgrd` consult the FLEXnet License Administration Guide. You will need all three files in the same directory and you may need to specify the library path as being where the three files have been put. You may also want to consult the startup script that should also be in the `floatingLicenseManager` directory if you're on Linux or MacOS to see how they work or use them as templates to run the daemon.