

# Stroke Analyst & Dependencies Installation Guide

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## Introduction

In order to get Stroke Analyst to work correctly in your Linux environment, some dependencies (software) must be installed. The only two required are the Dramms software and the Matlab Runtime. Both Dramms and Matlab have their own installation guides that can be found in their official sites. Here we make an attempt to summarize the information provided by the official presentation of each software just to comfort the users through the installation process. **All official references will be given at the end of this document.**

## FSL Installation

### Install FSL dependencies

1. Install python 2
  - a. Open a terminal in your linux distribution. Here all examples are shown for an Ubuntu 20.04.2 LTS Operating System.
  - b. Type: **sudo apt update**
  - c. Type: **sudo apt install python2-minimal**

```
makis-test@makistest-VirtualBox:~$ sudo apt install python2-minimal
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libgstreamer-plugins-bad1.0-0 libva-wayland2
  linux-headers-5.8.0-43-generic linux-hwe-5.8-headers-5.8.0-43 linux-image-5.8.0-43-generic
  linux-modules-5.8.0-43-generic linux-modules-extra-5.8.0-43-generic
Use 'sudo apt autoremove' to remove them.
```

- d. Check if the python2 installation succeeded: **python2 -V**

```
makis-test@makistest-VirtualBox:~$ python2 -V
Python 2.7.18
makis-test@makistest-VirtualBox:~$
```

2. Install g++ compiler
  - a. **sudo apt install build-essential**

```
python 2.7.18
makis-test@makistest-VirtualBox:~$ sudo apt install build-essential
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

Check:

```
makis-test@makistest-VirtualBox:~$ gcc --version
gcc (Ubuntu 9.3.0-17ubuntu1~20.04) 9.3.0
Copyright (C) 2019 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

3. Download FSL, use this [link](#).
4. Install FSL
  - a. You can follow our guide, but please note that these instructions eventually might become out of date. In that case, please advise yourself using the FSL [official documentation](#).
  - b. Use the fslinstaller.py file to install the FSL software.
  - c. Go to the corresponding directory that the fslinstaller.py file resides, left click and then press "Open in Terminal".
  - d. Then type: **python2 fslinstaller.py**

```
makis-test@makistest-VirtualBox:~/Downloads/SA_installation_files$ python2 fslin
staller.py
--- FSL Installer - Version 3.1.0 ---
[Warning] Some operations of the installer require administrative rights,
for example installing into the default folder of /usr/local.
If your account is an 'Administrator' (you have 'sudo' rights)
then you will be prompted for your administrator password
when necessary.
When asked a question, the default answer is given in square brackets.
Hit the Enter key to accept this default answer.
Where would you like the FSL install to be (including the FSL folder name)? [/us
r/local/fsl]:
```

- e. Follow the instructions presented in this terminal window, you can either follow your personal preference and install FSL in a different location, or choose the default location.
- f. Note that this will take some time depending on your system resources.

## Install Dramms

1. Download Dramms software from the official location. You can either click [here](#), or search it in the web.
2. Open a new terminal and type:
  - a. **sudo apt-get update -y**
  - b. **sudo apt-get install -y libssl-dev**
3. Install cmake, use this [link](#) or follow the instructions provided in the Dramms installation guide.
4. Download the latest Linux release

Platform	Files
Unix/Linux Source (has \n line feeds)	<a href="#">cmake-3.21.2.tar.gz</a>
Windows Source (has \r\n line feeds)	<a href="#">cmake-3.21.2.zip</a>

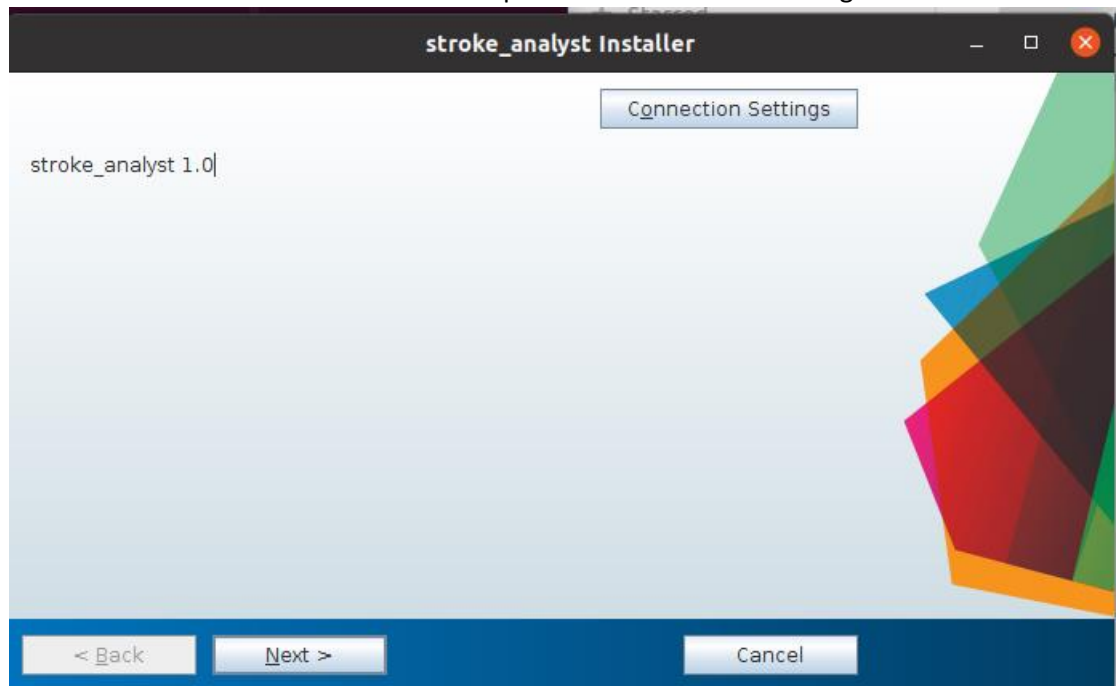
5. Un-Compress the download package using this command: `tar zxvf <package_name>`
6. Go to the folder created by the latest operation
7. Open the README file and follow the corresponding instructions. Here we present, as an example, the minimum required steps that work at this time. Note that preferably, you should follow the official instructions.
  - a. Left click in the cmake folder and open a new terminal window (Open in Terminal).
  - b. Run the following command:  
`./bootstrap && make && sudo make install`  
 Note that you will have to provide your password user root password
8. Install cmake
  - a. Open a new terminal and type: `sudo apt-get install cmake-curses-gui`
9. Install zlib1g package.
  - a. Open a new terminal and Type: `sudo apt install zlib1g-dev`
10. The following steps are completely derived from the official Dramms installation guide, preferably, please follow the official guide.
11. Un-compress the Dramms package. Open a new terminal in the directory that Dramms was installed and type:  
`tar xzf dramms-${version}-source.tar.gz`
12. Change to the build directory  
`cd dramms-${version}-source/build`
13. Type: `ccmake .`
  - a. Change `CMAKE_INSTALL_PREFIX` to the folder you want to install DRAMMS into. This folder should be outside the `dramms-${version}-source` folder. Make sure you have the **write** access to this folder.
    - i. **Note:** Inside this newly created directory lies the **bin** folder of Dramms software. The absolute path to the Dramms's bin directory will be needed when using the SA software (SA uses Dramms to perform non-linear Registration). You can find additional information in the "Stroke Analyst Operator Guide".
  - b. Keep pressing letter `c` on your keyboard until option `g` is available/displayed on the screen.
  - c. Then press `g` on your keyboard to generate the makefiles and to quit this cmake window.
14. Type: `make`

## Install Matlab Runtime

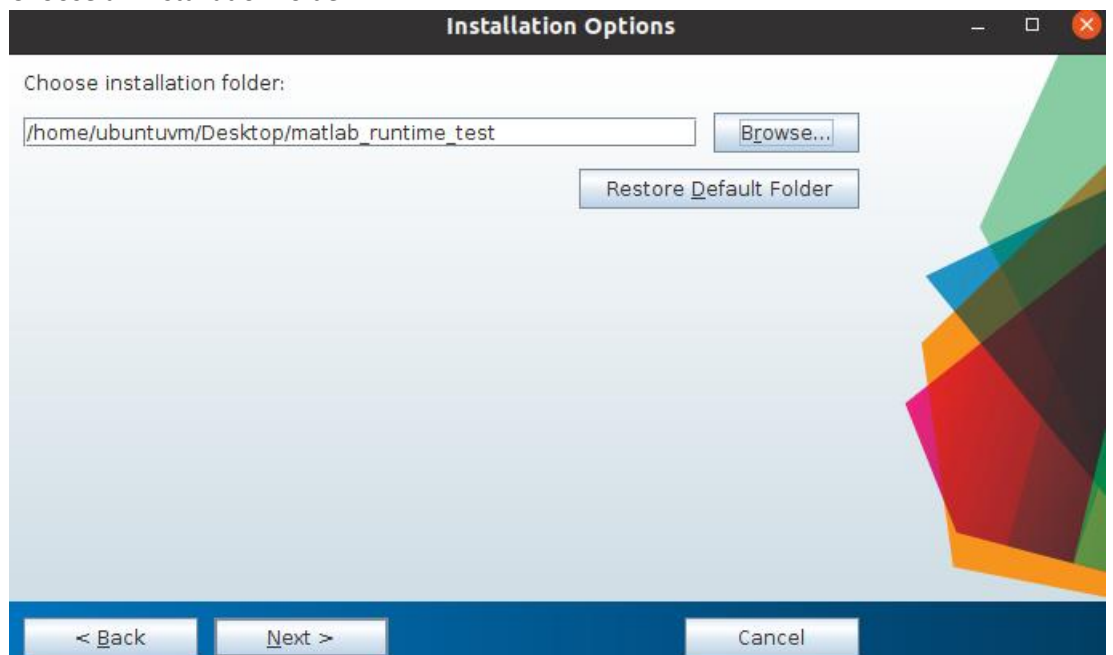
You can either follow the official documentation to download and install Matlab runtime, or you can trigger the Matlab Runtime installer located in the SA package.

1. Open the "stroke\_analyst folder"
2. Go to "for\_redistribution" folder
3. Run the "MyAppInstaller\_web"

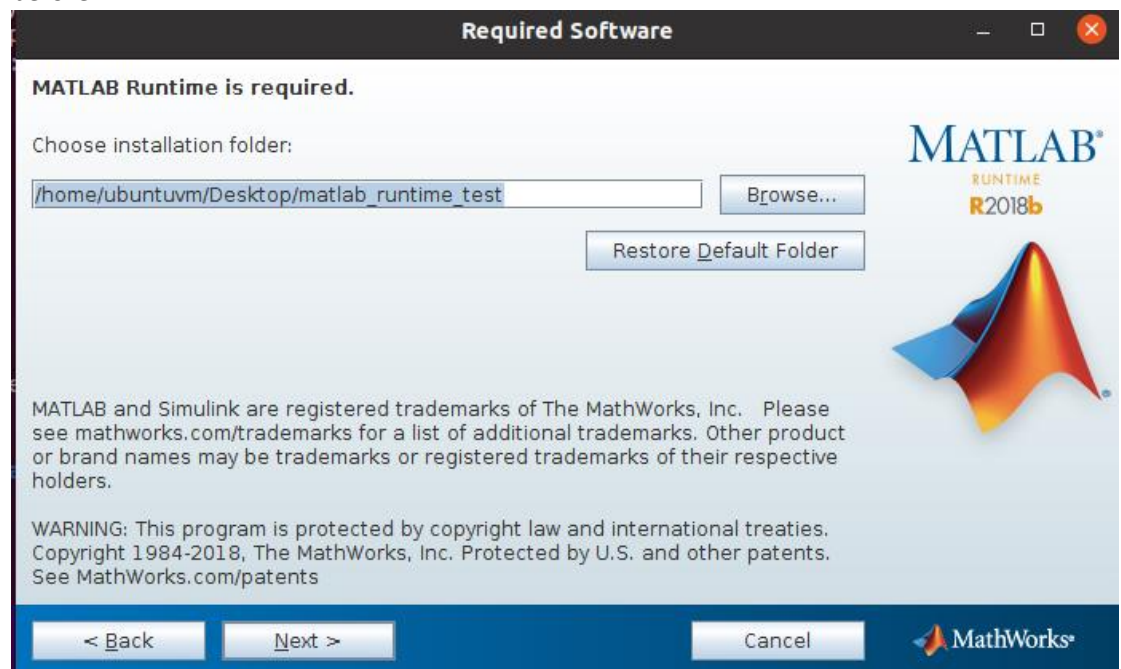
- a. “MyAppInstaller\_web” will install a matlab Runtime that is needed in order to run the SA software and is the last step needed in this installation guide.



- b. Press **next**
- c. Choose an installation folder



- d. Choose the runtime installation folder, you can use the same folder as before.



- e. Click next and accept the terms and conditions after you have read them.  
f. Click install  
g. **After this procedure is finished you have all the required software dependencies to run SA.**

## References, Official locations

Flirt FSL official installation location:

<https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FslInstallation>

CMake

<https://cmake.org/download/>

Dramms software official website:

<https://www.med.upenn.edu/sbia/dramms.html>

Matlab Runtime

<https://uk.mathworks.com/products/compiler/matlab-runtime.html>

[https://uk.mathworks.com/help/compiler\\_sdk/dotnet/install-the-matlab-runtime.html](https://uk.mathworks.com/help/compiler_sdk/dotnet/install-the-matlab-runtime.html)