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Installation instructions for BEAST and BEAGLE on Avell G1550 RTX MUV/A65 RTX MUV V.1

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Laise Moraes[1]

[1]Fundação Oswaldo Cruz / Instituto Gonçalo Moniz

Laise Moraes
Fundação Oswaldo Cruz / Instituto Gonçalo Moniz

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Installing dependency packages

1 Open a terminal (Ctrl + Alt + T).
Update the package list and install the dependency packages for the BEAST and BEAGLE.

Command

```
sudo apt-get update
sudo apt-get install -y autoconf automake build-essential g++-8 gcc-8
git libcanberra-gtk-module libcanberra-gtk3-module libfreetype6-dev
libgl1-mesa-dev libglew-dev libglm-dev libsdl2-dev libsdl2-image-dev
libtool mesa-utils ocl-icd-opencl-dev ocl-icd-libopencl1 openjdk-8-
jdk openjdk-8-jre pkg-config
sudo apt-get update
```

Installing Intel OpenCL implementations

2 Create a directory called softwares to your HOME directory, switch to it and then download the Intel OpenCL implementations installer.
Unpack the compressed .tar.gz file, switch to installer directory and install the Intel OpenCL implementations, accepting defaults.
After installation, remove the Intel OpenCL implementations installer directory and installer.

Command

```
mkdir $HOME/softwares
cd $HOME/softwares
wget http://registrationcenter-
download.intel.com/akdlm/irc_nas/vcp/16284/intel_sdk_for_opencl_applic
ations_2020.0.270.tar.gz
tar -zxvf intel_sdk_for_opencl_applications_2020.0.270.tar.gz
cd intel_sdk_for_opencl_applications_2020.0.270
bash install.sh
cd ..
rm -rf intel_sdk_for_opencl_applications_2020.0.270*
```

Installing NVIDIA CUDA drivers

3 Get the PPA repository and install the NVIDIA CUDA driver.

Command

```
wget
https://developer.download.nvidia.com/compute/cuda/repos/ubuntu1804/x8
6_64/cuda-ubuntu1804.pin
sudo mv cuda-ubuntu1804.pin /etc/apt/preferences.d/cuda-repository-
pin-600
wget
http://developer.download.nvidia.com/compute/cuda/10.2/Prod/local_inst
allers/cuda-repo-ubuntu1804-10-2-local-10.2.89-440.33.01_1.0-
1_amd64.deb
sudo dpkg -i cuda-repo-ubuntu1804-10-2-local-10.2.89-440.33.01_1.0-
1_amd64.deb
sudo apt-key add /var/cuda-repo-10-2-local-10.2.89-
440.33.01/7fa2af80.pub
sudo apt-get update
sudo apt-get -y install cuda
```

Installing BEAGLE

4 Build the BEAGLE from the source repository.

Command

```
git clone --depth=1 https://github.com/beagle-dev/beagle-lib.git
cd beagle-lib
./autogen.sh
./configure --prefix=$HOME/softwares/beagle --with-
opencl=/opt/intel/system_studio_2020/opencl/SDK --with-
cuda=/usr/local/cuda
make install
make check
cd ..
```

Installing BEAST

5 Download the BEAST installer and unpack the compressed .tgz file.
After install, remove the compressed .tgz file.

Command

```
cd $HOME/softwares
wget https://github.com/beast-dev/beast-
mcmc/releases/download/v1.10.5pre1/BEASTv1.10.5pre.tgz
tar -zxvf BEASTv1.10.5pre.tgz
rm BEASTv1.10.5pre.tgz
```