

# How to install a registration tool

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# Install registration tool from the Brain Imaging Centre at McGill

## 1. Installing VMware Player

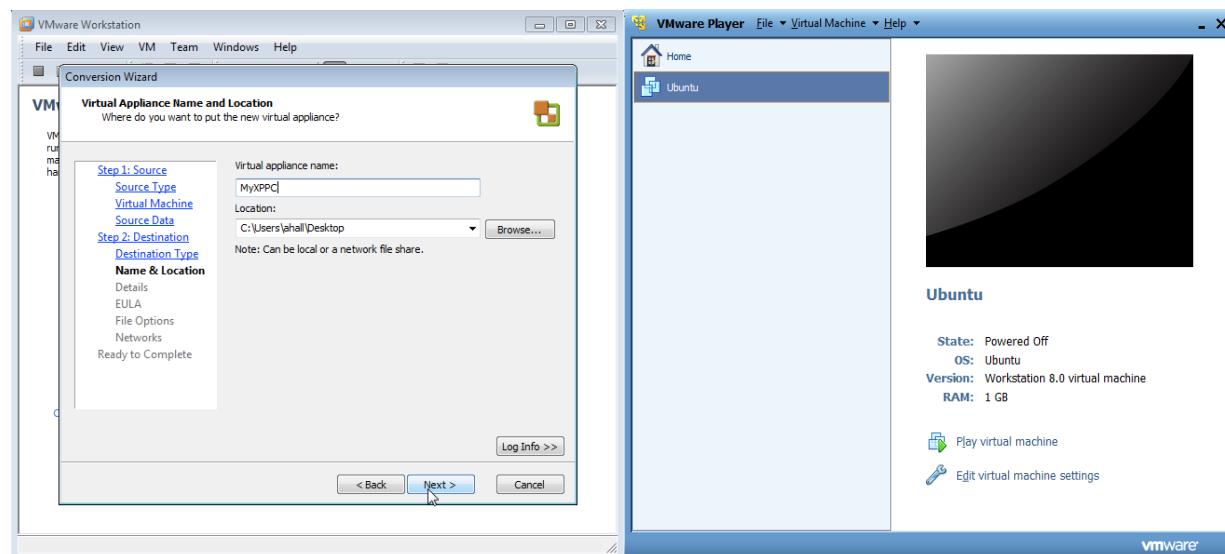
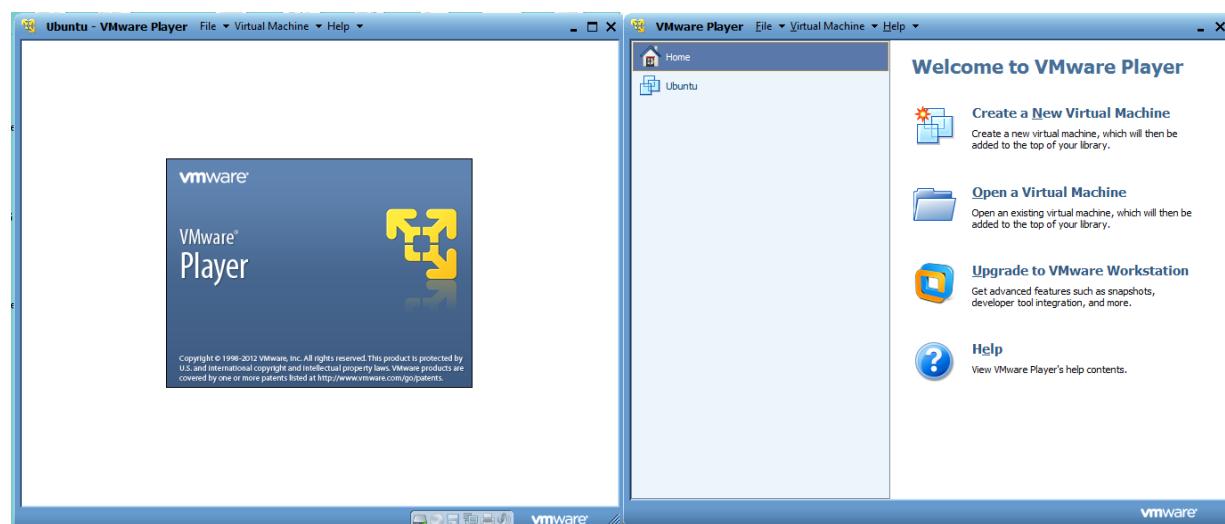
Download and install the VMware Player application program from the VMware web set to the machine on which you will work. The VMware Player application can be downloaded from here:

Download installation file from

[https://my.vmware.com/web/vmware/free#desktop\\_end\\_user\\_computing/vmware\\_player/5\\_0](https://my.vmware.com/web/vmware/free#desktop_end_user_computing/vmware_player/5_0)

Download install Document

[http://www.vmware.com/pdf/view45\\_installation\\_guide.pdf](http://www.vmware.com/pdf/view45_installation_guide.pdf)



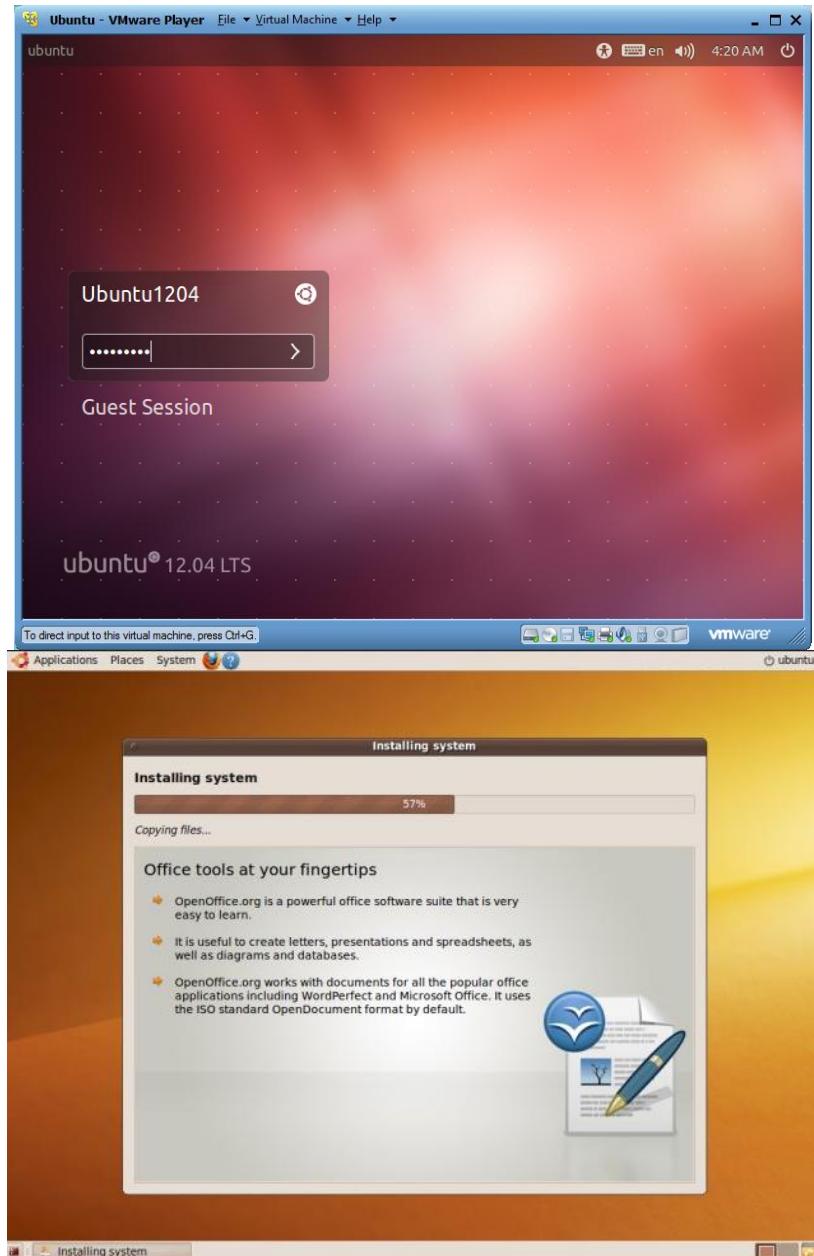
## 2. Ubuntu\_12.04-i686

Here you can find information on how to install and configure various server applications. It is a step-by-step, task-oriented guide for configuring and customizing your system.

Download file <.iso> form <http://www.ubuntu.com/download>

and Here you can find information on how to install Ubuntu from

<https://help.ubuntu.com/12.04/installation-guide/index.html>



### 3. log in to ubuntu

Download three files from <http://packages.bic.mni.mcgill.ca/minc-toolkit/Debian/>

- bic-mni-models-0.1.1-20120421.deb
- minc-toolkit-0.3.11-20120707-Ubuntu\_12.04-i686.deb
- minc-toolkit-testsuite-0.1.1-20120422.deb

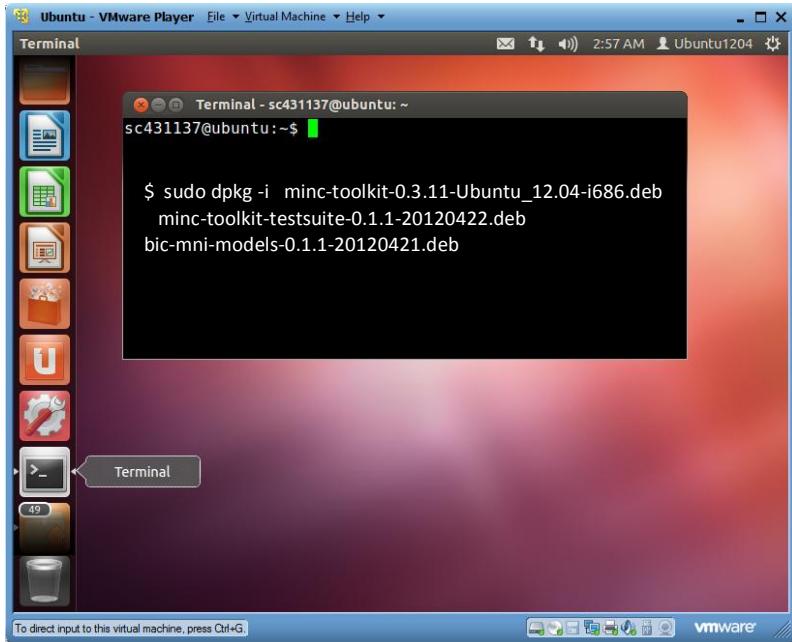
## Index of /minc-toolkit/Debian

<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
 <a href="#">Parent Directory</a>		-	
 <a href="#">bic-mni-models-0.1.1-20120421.deb</a>	23-Apr-2012 15:32	129M	
 <a href="#">minc-toolkit-0.3.6-20120423-Ubuntu_11.04-x86_64.deb</a>	23-Apr-2012 15:12	87M	
 <a href="#">minc-toolkit-0.3.7-20120424-Debian_6-x86_64.deb</a>	24-Apr-2012 20:21	87M	
 <a href="#">minc-toolkit-0.3.7-20120424-Ubuntu_10.04-i686.deb</a>	24-Apr-2012 18:40	83M	
 <a href="#">minc-toolkit-0.3.7-20120424-Ubuntu_11.04-x86_64.deb</a>	24-Apr-2012 17:01	87M	
 <a href="#">minc-toolkit-0.3.8-20120531-Debian_6-x86_64.deb</a>	31-May-2012 16:00	87M	
 <a href="#">minc-toolkit-0.3.9-20120604-Debian_6-x86_64.deb</a>	04-Jun-2012 18:22	89M	
 <a href="#">minc-toolkit-0.3.9-20120604-Ubuntu_11.04-x86_64.deb</a>	04-Jun-2012 18:19	89M	
 <a href="#">minc-toolkit-0.3.10-20120703-Debian_6-x86_64.deb</a>	04-Jul-2012 19:23	93M	
 <a href="#">minc-toolkit-0.3.10-20120703-Ubuntu_10.04-i686.deb</a>	04-Jul-2012 18:27	88M	
 <a href="#">minc-toolkit-0.3.10-20120703-Ubuntu_10.04-x86_64.deb</a>	04-Jul-2012 18:28	93M	
 <a href="#">minc-toolkit-0.3.10-20120703-Ubuntu_11.04-x86_64.deb</a>	03-Jul-2012 20:15	93M	
 <a href="#">minc-toolkit-0.3.10-20120703-Ubuntu_12.04-i686.deb</a>	04-Jul-2012 18:28	132M	
 <a href="#">minc-toolkit-0.3.10-20120703-Ubuntu_12.04-x86_64.deb</a>	04-Jul-2012 18:28	136M	
 <a href="#">minc-toolkit-0.3.11-20120707-Debian_6-x86_64.deb</a>	07-Jul-2012 22:18	93M	
 <a href="#">minc-toolkit-0.3.11-20120707-Ubuntu_10.04-i686.deb</a>	07-Jul-2012 22:18	89M	
 <a href="#">minc-toolkit-0.3.11-20120707-Ubuntu_10.04-x86_64.deb</a>	07-Jul-2012 22:18	93M	
 <a href="#">minc-toolkit-0.3.11-20120707-Ubuntu_12.04-i686.deb</a>	07-Jul-2012 22:18	132M	

#### 4. Install BNC, on Terminal, type

```
$ sudo dpkg -i minc-toolkit-<version>.deb minc-toolkit-testsuite-<version>.deb bic-mni-models-<version>.deb
```

```
$ sudo dpkg -i minc-toolkit-0.3.11-20120707-Ubuntu_12.04-i686.deb minc-toolkit-testsuite-0.1.1-20120422.deb bic-mni-models-0.1.1-20120421.deb
```



```
sudo apt-get install build-essential  
sudo apt-get install g++  
sudo apt-get install libnetcdf*  
sudo apt-get install -f
```

**5. For Ubuntu, user need to install addition library files.**

install dependencies:

**Step 1** \$ sudo apt-get install libc6 libstdc++6 imagemagick perl freeglut3 libgl1 libxcb1 libxdmcp6 libx11-6 libxext6 libxau6 libuuid1 libjpeg62 libexpat1 libtiff4

install dependencies: sudo apt-get install missing library

**Step 2** \$ sudo apt-get install -f (afterwards to install missing libraries.)

To use, source the environment in /opt/minc/minc-toolkit-config.sh for bash

Step 3 \$ sh /opt/minc/minc-toolkit-config.sh

Step 4 \$ . ~/bashrc

Step 5 \$ mincinfo –version (from check version of minc)

Addition information please see :

<http://www.bic.mni.mcgill.ca/ServicesSoftware/ServicesSoftwareMincToolKit>

## 6. Download additional files \*\*\*\*

User need to download additional files from <http://repo.phenogenomics.ca/repo/MICe-software/MICe-software-dist-v0.6.2c.tar.gz> and <https://github.com/mfriedel/minc-stuffs/downloads>

And extract MICe-software-dist-v0.6.2c.tar.gz

- copy library Directory
  - 1) PMP0.7.1/\*.\*
  - 2) MICe0.6.1/\*.\*
  - 3) mice-build-model-0.6.1/\*.\*
  - 4) mni\_autoreg-0.99.6/\*.\*
  - 5) Getopt/\*.\*
  - 6) inormalize-1.0.2/\*.\*
  - 7) Getopt-Tabular-0.3/\*.\*
  - 8) mice-minc-tools-0.2/\*.\*
  - 9) and etc.

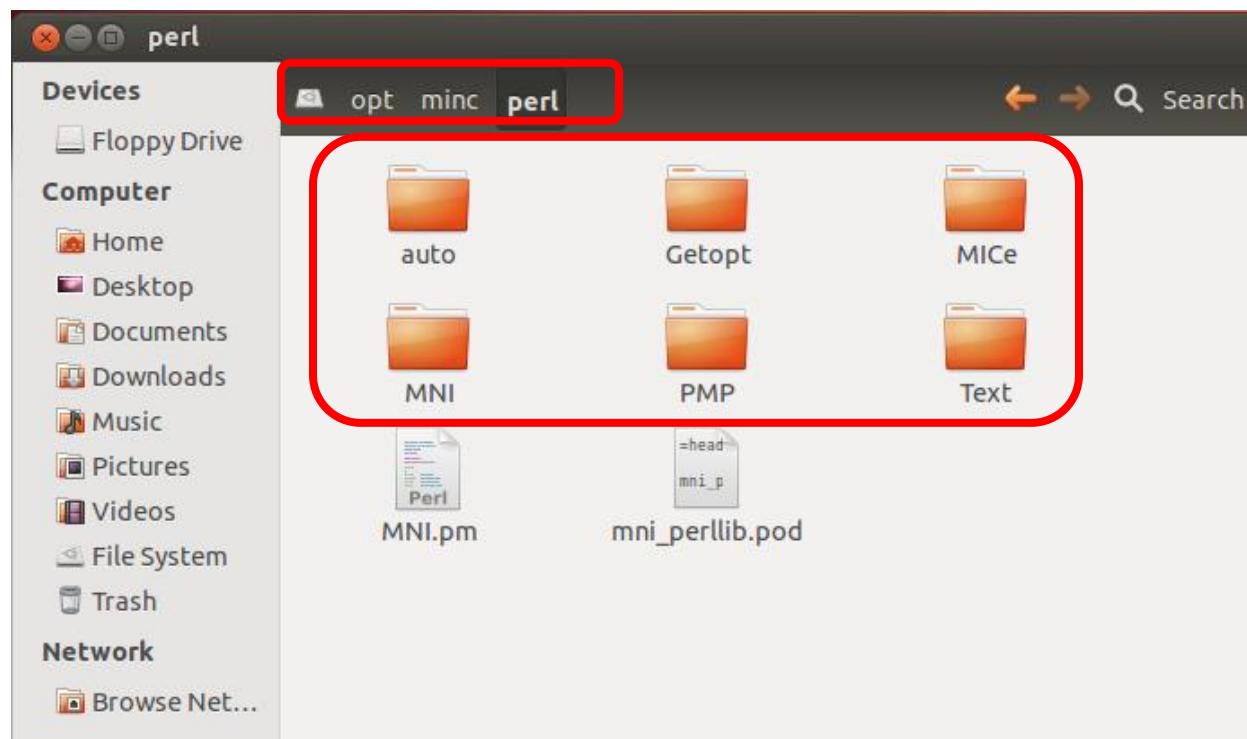
To install by copy Folder in 1)-8) in order to replace under Directory /opt/minc/perl/\_\_\_\_\_

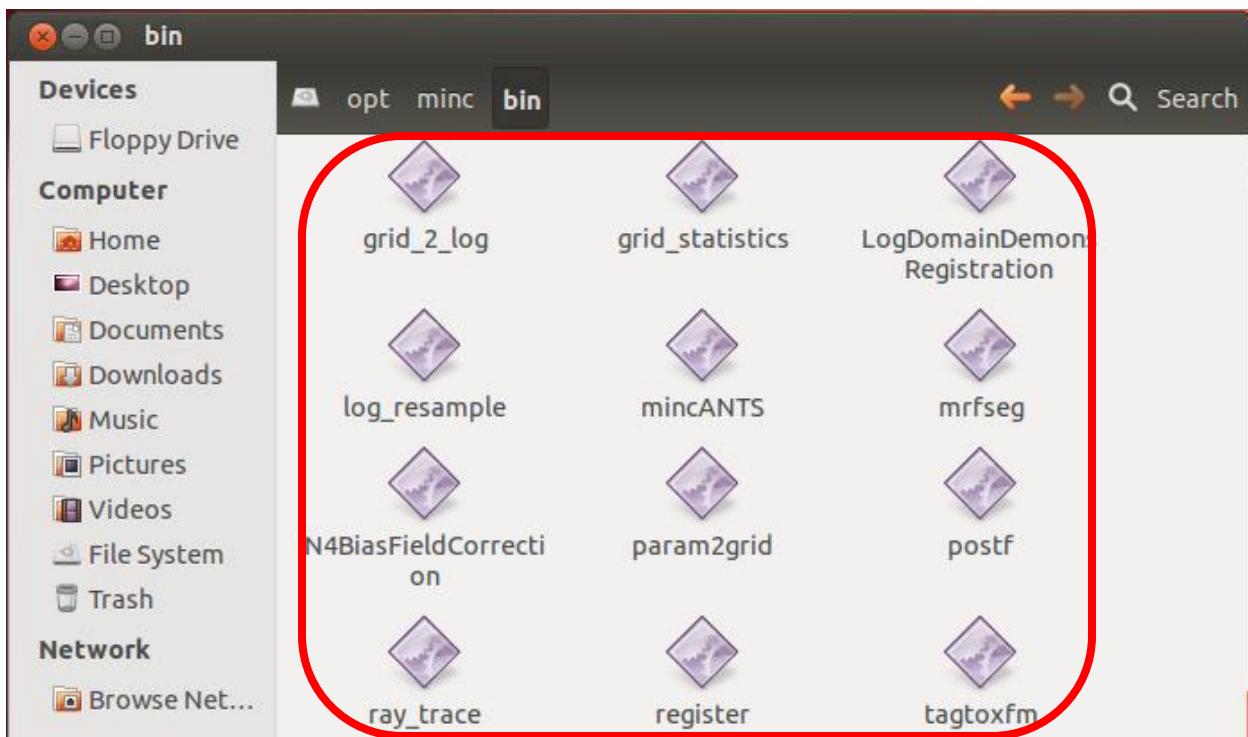
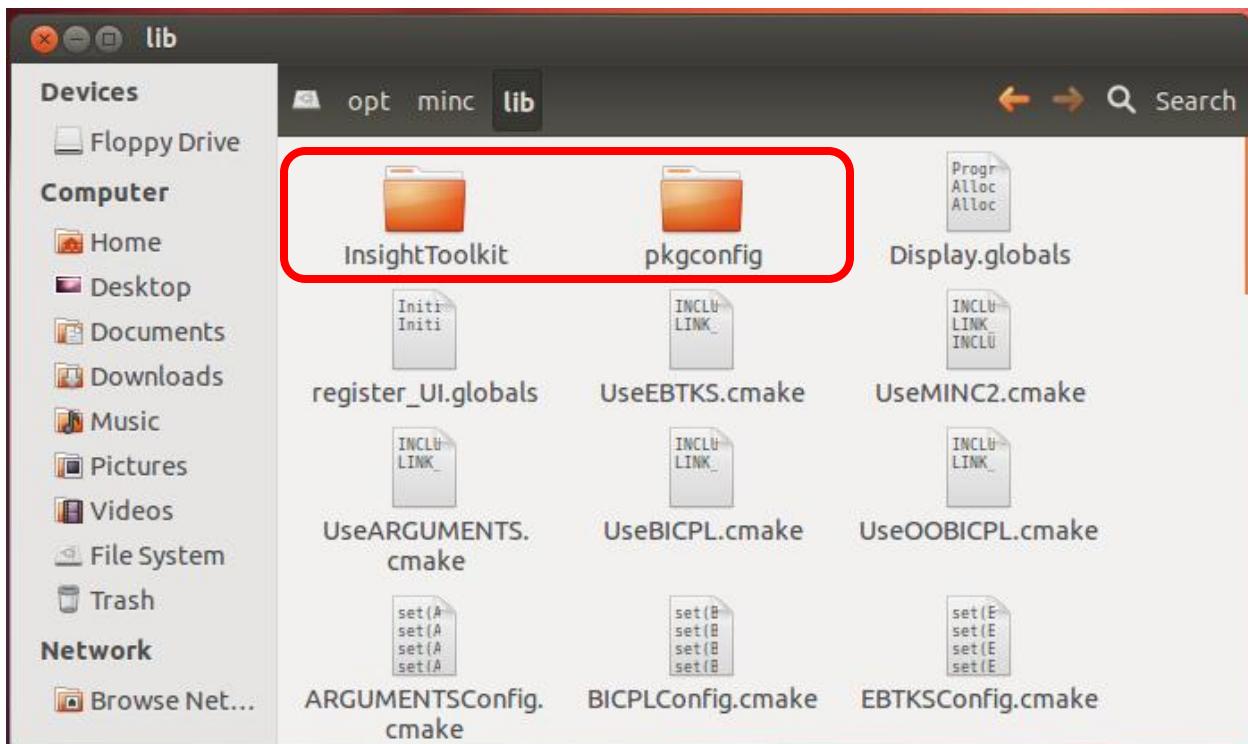
Examples

```
$ cp /home/sc431137/Downloads/PMP/*.* /opt/minc/perl/PMP/
```

```
$ mkdir /opt/minc/perl/MICe
```

```
$ cp /home/sc431137/Downloads/MICe/*.* /opt/minc/perl/MICe/
```



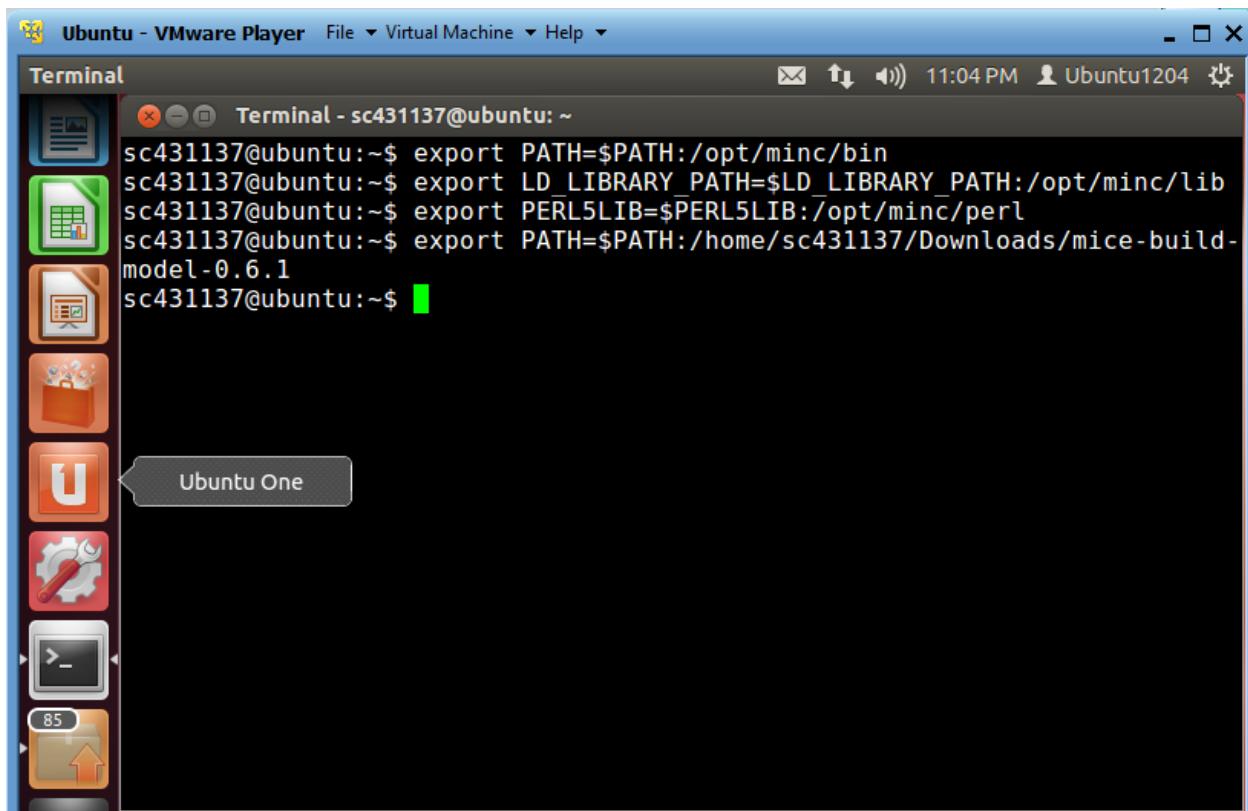


**7. install additional files, on Terminal, type**

```
$ perl -MCPAN -e 'install DBI'
```

**8. Setting environment, on Terminal, type**

```
$ export PATH=$PATH:/opt/minc/bin  
$ export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/opt/minc/lib  
$ export PERL5LIB=$PERL5LIB:/opt/minc/perl  
$ export PATH=$PATH:/home/sc431137/Downloads/mice-build-model-0.6.1 later
```



\* export PATH=\$PATH:/home/sc431137/Downloads/mice-build-model-0.6.1/tools



## 9. install minc-stuffs Download additional files \*\*\*\*

9.1 Download <https://github.com/mfriedel/minc-stuffs>

name	age	message
data	2 months ago	Initial commit. [mfriedel]
m4	2 months ago	Initial commit. [mfriedel]

9.2 on terminal, type ./configure and make , make install.

```
./configure --with-minc2 --prefix=/directory/to/install/to --with-build-path=/directory/containing/minc2
./configure --with-minc2 --prefix=/home/sc431137/Downloads/mfr --with-build-path=/opt/minc
make
make install
```

9.3 Setting environment, on Terminal, type

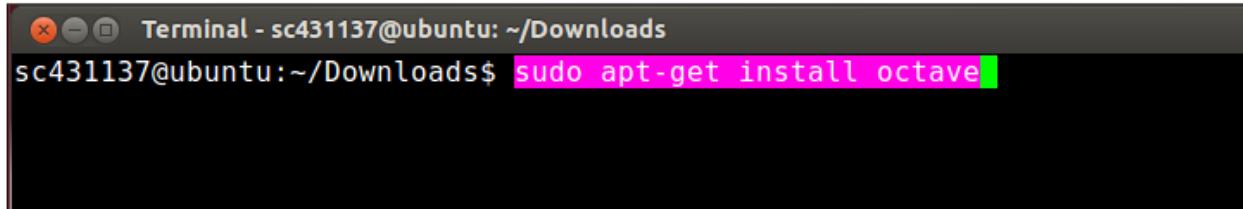
```
export PATH=$PATH:/home/sc431137/Downloads/mfriedel-minc-stuffs-77b502e/src
or
export PATH=$PATH:/home/sc431137/Downloads/mfr/bin
```

## 10 How to update Octave on Ubuntu.

Open terminal and type following one commands (Application > Accessories > Terminal):

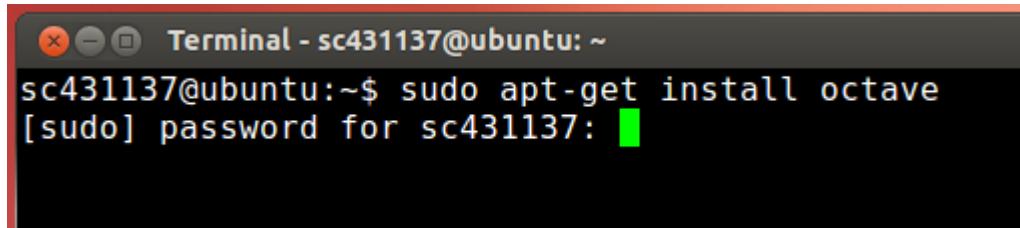
To upgrade individual software called command:

1) \$ sudo apt-get install octave



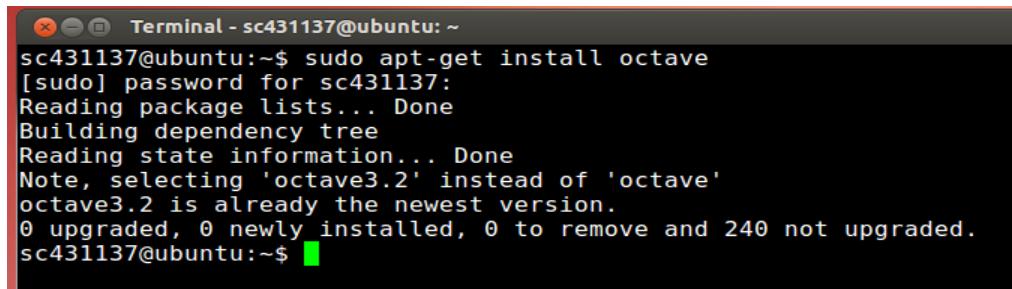
```
Terminal - sc431137@ubuntu: ~/Downloads
sc431137@ubuntu:~/Downloads$ sudo apt-get install octave
```

2) type password : \_\_\_\_\_



```
Terminal - sc431137@ubuntu: ~
sc431137@ubuntu:~$ sudo apt-get install octave
[sudo] password for sc431137: █
```

3) Finished

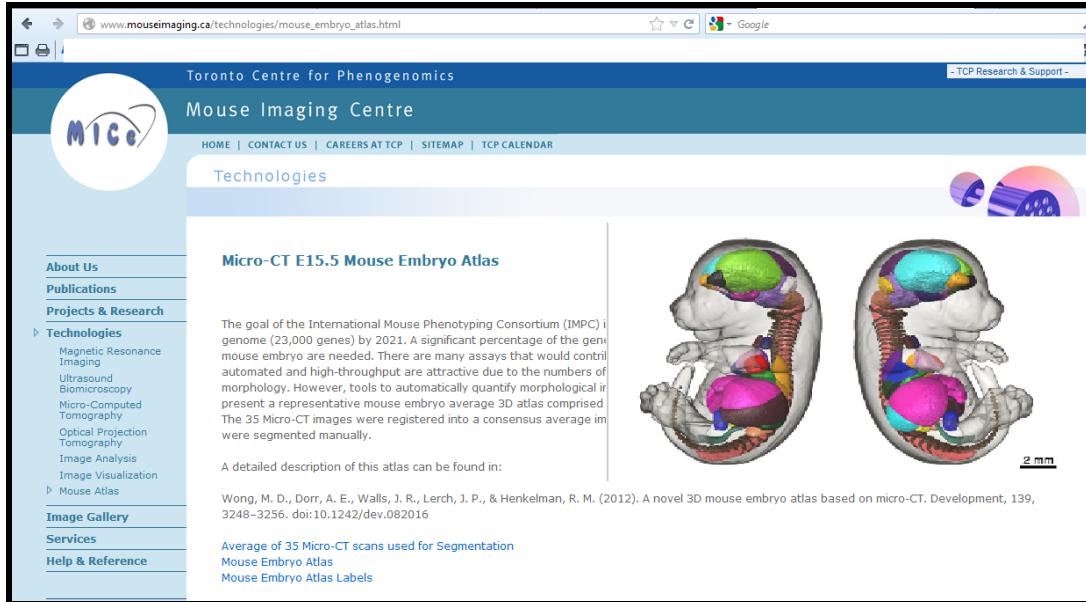


```
Terminal - sc431137@ubuntu: ~
sc431137@ubuntu:~$ sudo apt-get install octave
[sudo] password for sc431137:
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'octave3.2' instead of 'octave'
octave3.2 is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 240 not upgraded.
sc431137@ubuntu:~$ █
```

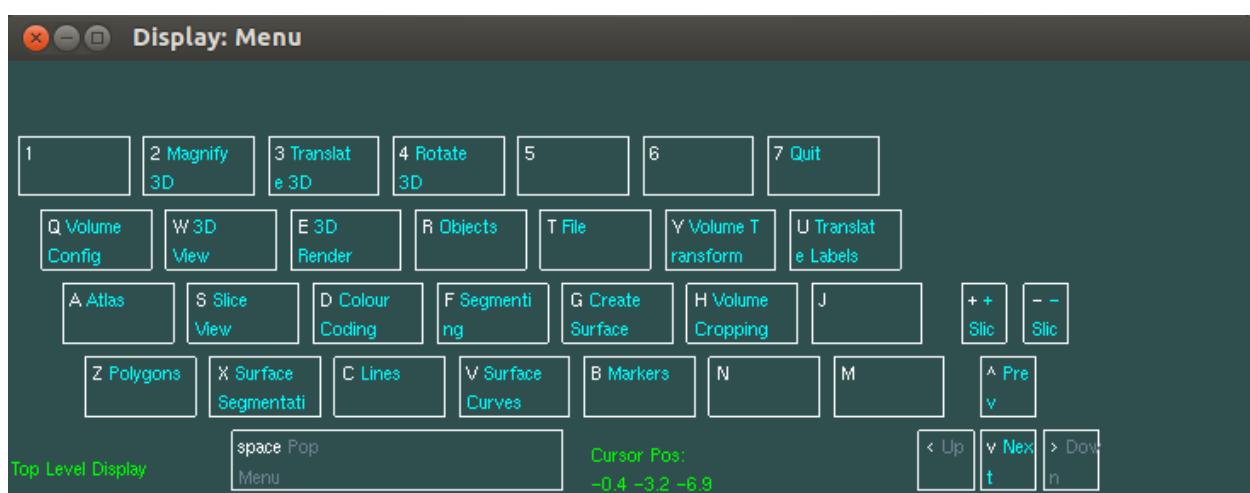
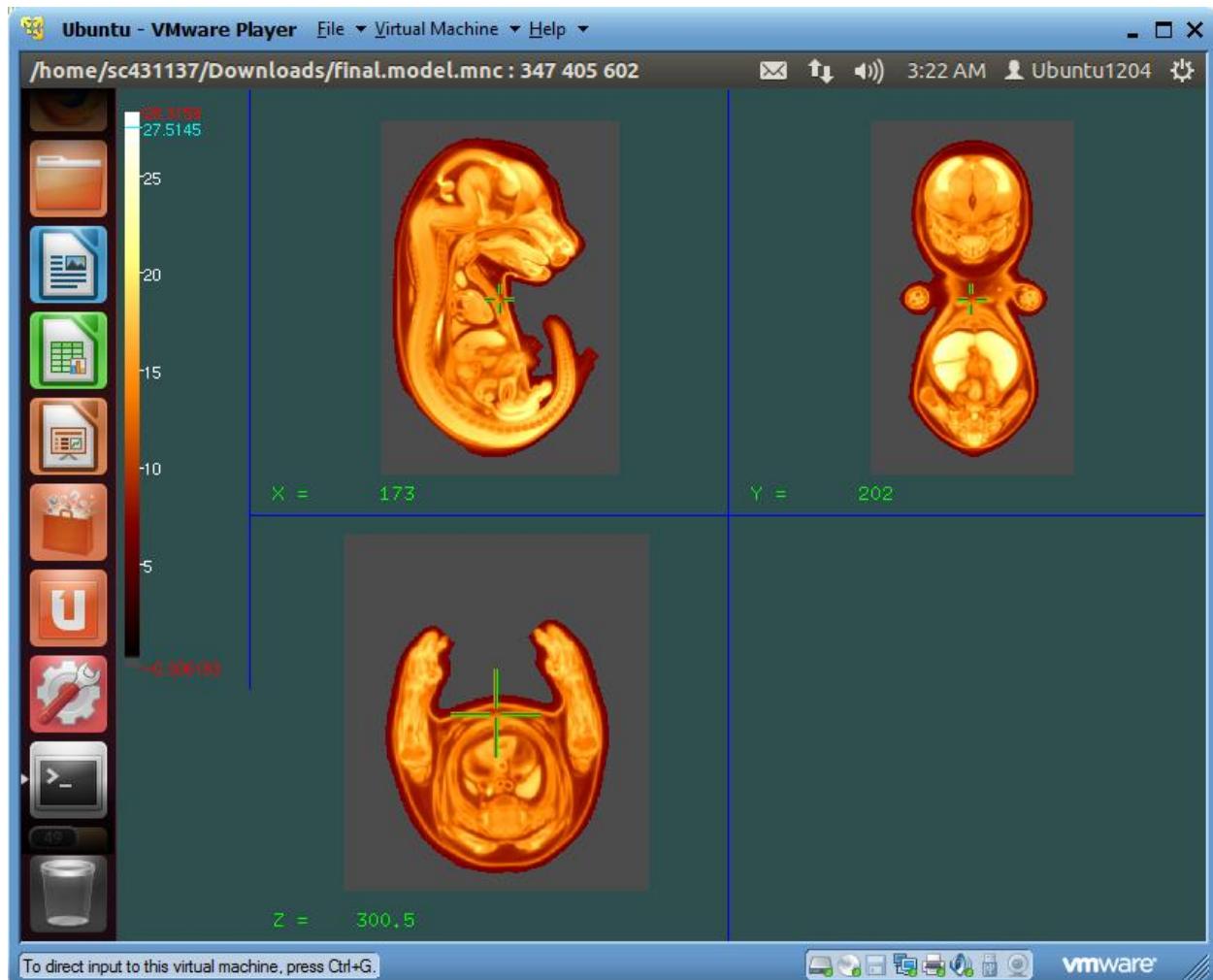
## 11. Test Display tool

\$ Display final.model.mnc

([http://www.mouseimaging.ca/mnc/mouse\\_embryo\\_atlas/final.model.mnc](http://www.mouseimaging.ca/mnc/mouse_embryo_atlas/final.model.mnc))



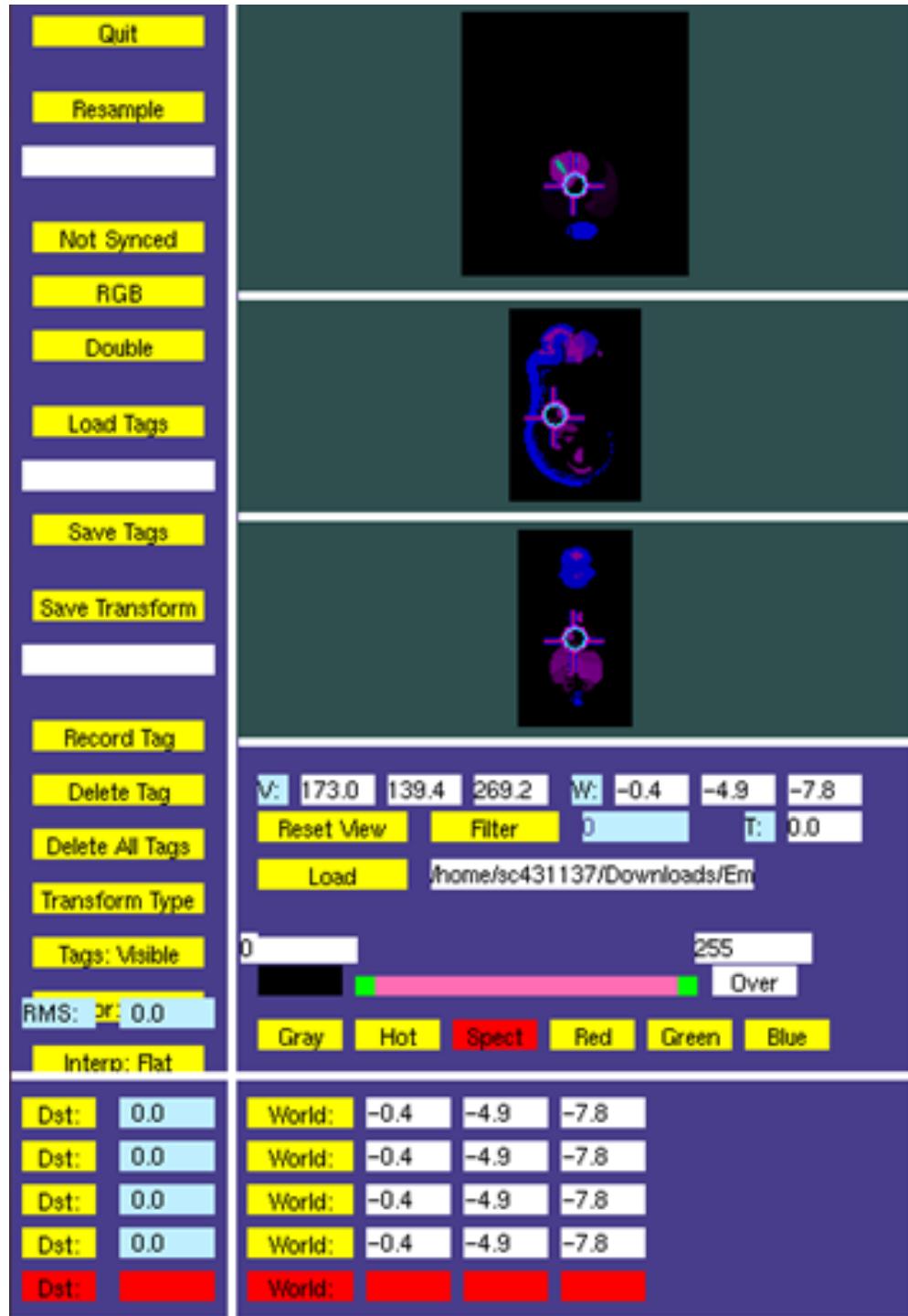
```
Terminal - sc431137@ubuntu: ~
al.model.mnc
Input /home/sc431137/Downloads/final.model.mnc
Reading Volume:  0% done. (2/1000)  Time: 59 sec out of
approx 8.2 hrs
Reading Volume:  9% done. (86/1000)  Time: 90 sec out of
approx 17.4 min
Reading Volume:  18% done. (176/1000)  Time: 110 sec out
of approx 10.5 min
Reading Volume:  32% done. (321/1000)  Time: 2.2 min out
of approx 6.9 min
Reading Volume:  47% done. (472/1000)  Time: 2.5 min out
of approx 5.3 min
Reading Volume:  58% done. (575/1000)  Time: 2.9 min out
of approx 5 min
Reading Volume:  78% done. (781/1000)  Time: 3.2 min out
of approx 4.1 min
Reading Volume: DONE in 3.5 min
Objects input.
Histogramming: .....
sc431137@ubuntu:~$
```



## 12. Test register tool

```
$ register Embryo_Atlas_labels.mnc final.model.mnc
```

([http://www.mouseimaging.ca/mnc/mouse\\_embryo\\_atlas/Embryo\\_Atlas\\_labels.mnc](http://www.mouseimaging.ca/mnc/mouse_embryo_atlas/Embryo_Atlas_labels.mnc))  
 ([http://www.mouseimaging.ca/mnc/mouse\\_embryo\\_atlas/final.model.mnc](http://www.mouseimaging.ca/mnc/mouse_embryo_atlas/final.model.mnc))





### 13. How to register two volumes using Register tool (manual)

volume1.mnc - data  
 volume2.mnc - the atlas

- 1) First - use Register to make tag points between atlas and data :
- 2) Type register volume1.mnc volume2.mnc
- 3) Then place cursor with left button, record with right button
- 4) After 5–6 points, save tags
- 5) Choose transform type to be 7 dof
- 6) Save transform

The user can move throughout the volumes, and create tag points within the volumes. If enough tag points for two volumes are picked, then a transformation is computed for registering the two volumes.

#### SYNOPSIS

```
register [-version] [-help] [-rgb] [-cmap] [-single] [-double] [-global variable value]]
[volume1"filename] [volume2"filename] [tags.tag]
```

#### DESCRIPTION

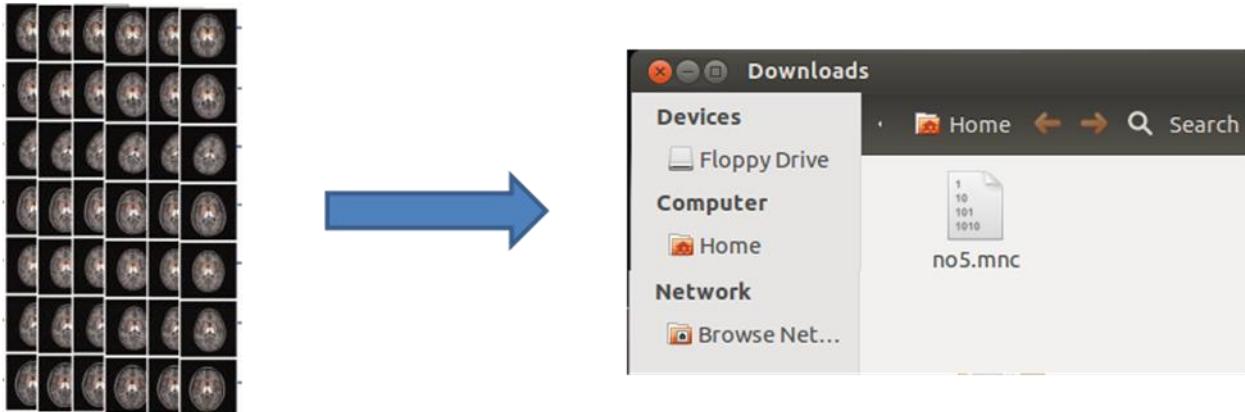
Register is an interactive graphics application. It can display one or two volumes (typically MR or PET), and the merged image of the two. Some, but not all, versions will allow switching between single and double buffer mode and between RGB and colour map mode, so the options -rgb, -cmap, -single, -double are useful for setting the initial state of the program. There are three viewports for each volume, showing transverse, sagittal, coronal slices. The user can move throughout the volumes, and create tag points within the volumes. If enough tag points for two volumes are picked, then a transformation is computed for registering the two volumes. This transform is used in displaying the merged image and in allowing the user to start a process which resamples one of the volumes into the same space as the other. A vector volume will normally be converted to an RGB volume, on input. I don't know what that means in terms of register's display. Alternatively, the vector can be converted to a scalar whose value is the mean of the vector components, by setting the global variable Convertvectorsto\_rgb to FALSE.

#### Reference

<http://en.wikibooks.org/wiki/MINC/VisualTools/register>

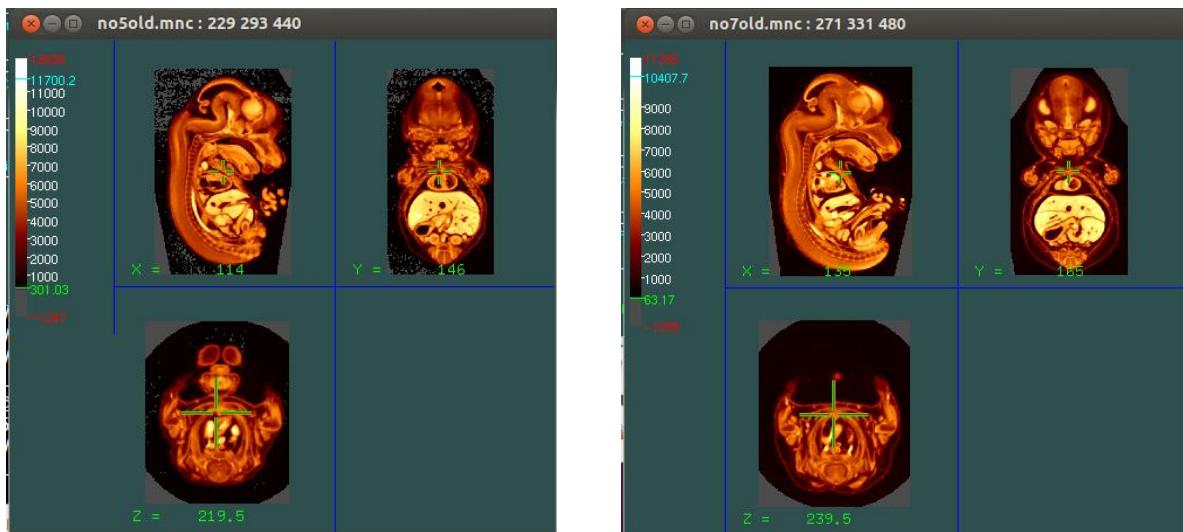
## 14. How to convert DCM to MNC

- dcm2mnc \*.dcm /Destination\_Folder/



**120419 -> Embryo15.5\_test(120419)**

**120420 -> Embryo15.5\_test(120420)**



## References

<https://wiki.phenogenomics.ca/display/MICePub/Building+a+registration+quarantine>

[http://en.wikibooks.org/wiki/MINC/Tools/mni\\_autoreg](http://en.wikibooks.org/wiki/MINC/Tools/mni_autoreg)

<http://en.wikibooks.org/wiki/MINC/VisualTools/register>