

## 2018 CIDER

### 2018 CIDER ASPECT Tutorial

ASPECT was part of the tutorial sessions at the 2018 CIDER workshop. Please see instructions below on how to download and install the necessary software to follow this tutorial.

- Tutorial slides: [rene\\_gassmoeller\\_tutorial\\_cider2018.pdf](#) (5 MB, uploaded by Lorraine Hwang 2 years 1 month ago)
- Video recording: <https://youtu.be/ELoFgxBrDyU>

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### Prerequisites for CIDER 2018 Tutorial

#### VirtualBox

You can download and install VirtualBox \*before\* the tutorial or use the installation files that are on the USB drives that will be distributed at the beginning of the tutorial. You can download the software from [VirtualBox downloads](#).

Use [these directions](#) to install VirtualBox.

If your host machine is any linux system, both virtualbox and virtualbox-dkms packages must be installed. Also check to make sure you have exFAT filesystem drivers. Windows and Mac systems should have it by default. On Ubuntu, the packages required are exfat-utils and exfat-fuse.

We recommended that your computer has at least 20 to 30 GB of free disk space and preferably 8 GB of RAM. If your computer has less RAM check the Troubleshooting section for how to reduce the memory allocation of the virtual machine.

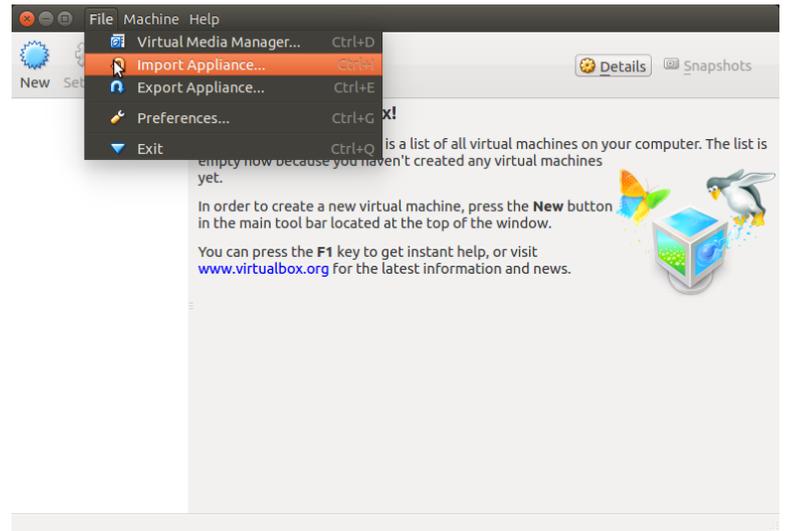
#### Tutorial Image

During the first tutorial session, you will receive a 16 GB USB drive with an OVA file called “CIDER2018.ova” and the installation files for VirtualBox. This image contains the software for all CIDER tutorials. Copy it onto the laptop you are going to use for the tutorial.

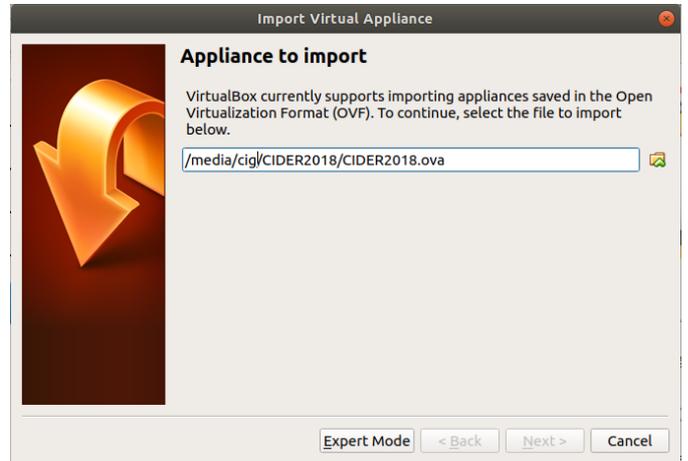
Alternatively, you can also download the virtual machine from here: [CIDER2018 Virtual Machine](#). Note that this file is over 5GB in size and will take a long time to download (it is not recommended to do this during the tutorial as the Wifi will be unable to provide sufficient speed for multiple simultaneous downloads).

#### Importing the CIDER2018 tutorial virtual machine

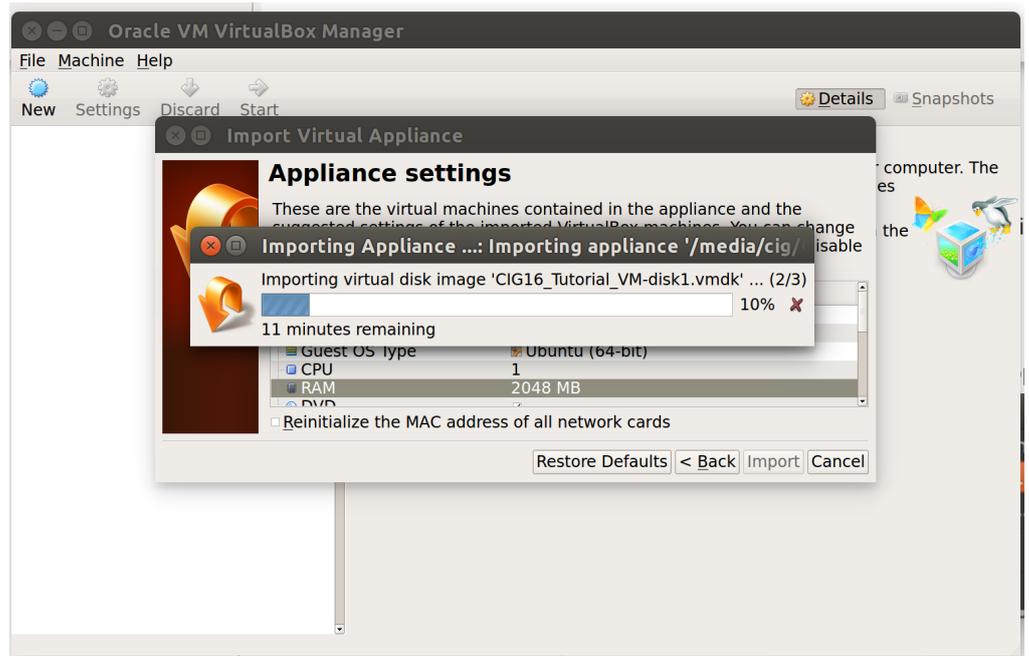
1. Run VirtualBox.
2. Select from the menu “Import appliance”:



3. Select the copied/downloaded CIDER2018.ova:



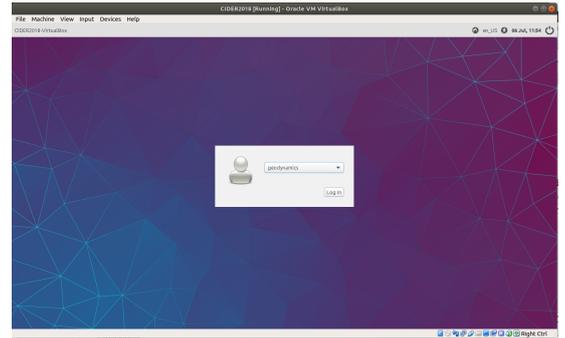
4. Select Next and Import:



5. Click on start (the green arrow) to launch the image:



6. You know it worked if you see the following login screen:



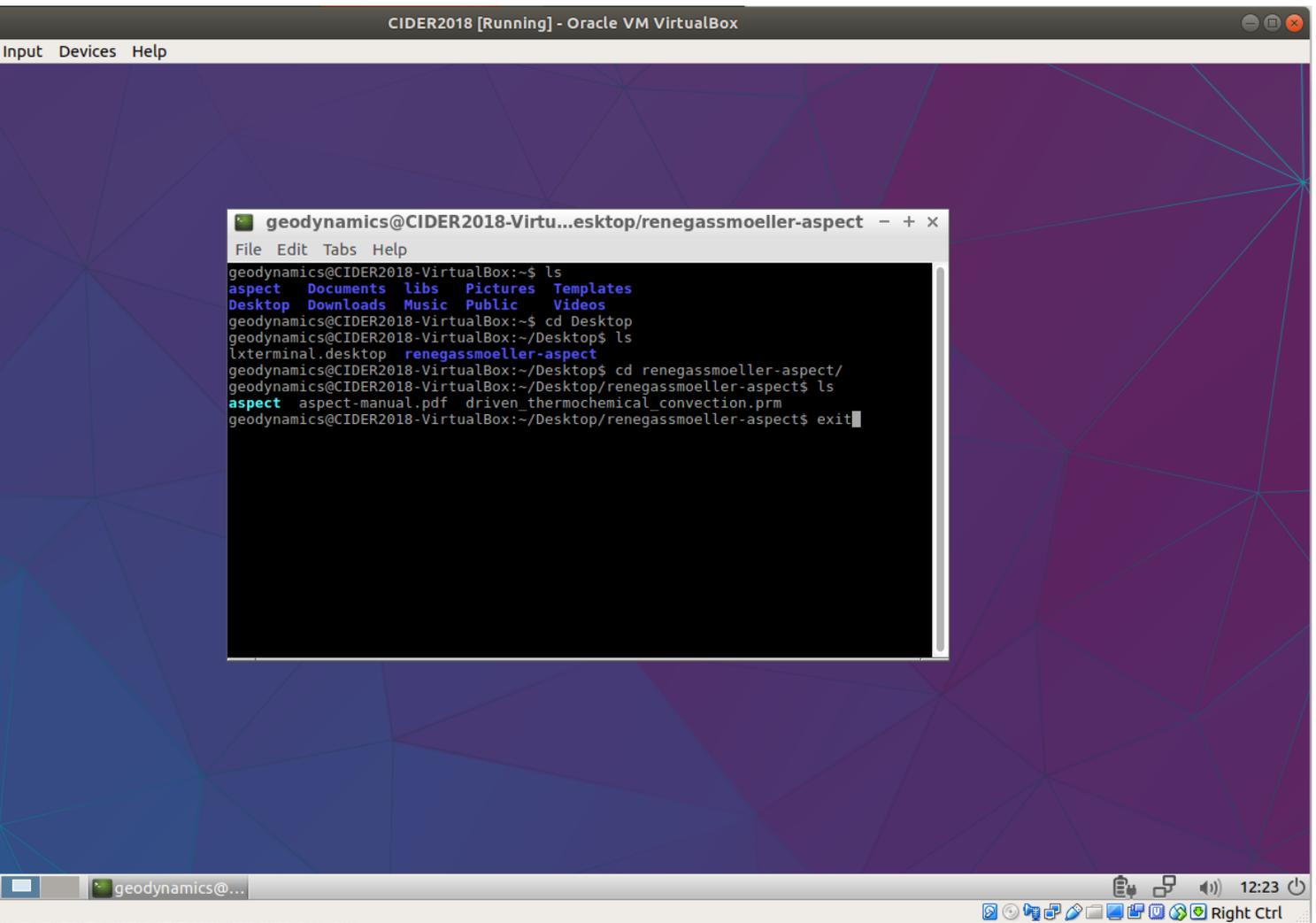
### the virtual machine

VirtualBox to run a separate ('guest') operating system inside your normal (or 'host') operating system. For this tutorial we use a Lubuntu 16.04 linux inside the virtual machine, because it provides a very intuitive interface, and importantly is relatively lightweight, keeping the size small, and the machine runs very fast.

The virtual machine contains the following users for the individual tutorials:

- geodynamics
- mineralphysics
- seismology

Select any of the above users and login to the system. Note that all of the users listed above do not have a password. Lubuntu separates the common 'Start' menu in the bottom left corner of the screen from the 'Shutdown/Logout/Switch user' menu in the bottom right corner of the screen, but otherwise the layout of file explorer should be vaguely familiar to all users of 'Windows'/'MacOS'/'generic Linux' users.



of the work in the tutorials will happen in the linux terminal, and if you are not used to working in the terminal it is a good time to familiarize yourself with some basic commands:

You can open a new terminal by pressing `ctrl+alt+t`, or double-clicking on the LXTerminal shortcut on the desktop.

You can exit the terminal by typing `exit` and pressing `enter`.

You can change directories in the terminal using the command `cd` followed by the directory name (or `cd ..` to go up one directory). Just typing `cd` and pressing `enter` brings you back to your home directory. Most of the work will happen in the directory 'Desktop' and some subdirectory of it.

You can always press `Tab` once or twice and the terminal will try to auto-complete the command you were typing (very useful for long or unknown filenames!)

You can list all files in the current directory using the command `ls`.

You can start programs by typing their name and pressing `enter` (try `leafpad` for a simple text editor).

When a program that you started from the terminal is running, you can type more commands in the terminal, but they will only be executed when you close the program.

You can always open additional terminals to work in other directories while keeping the old one open.

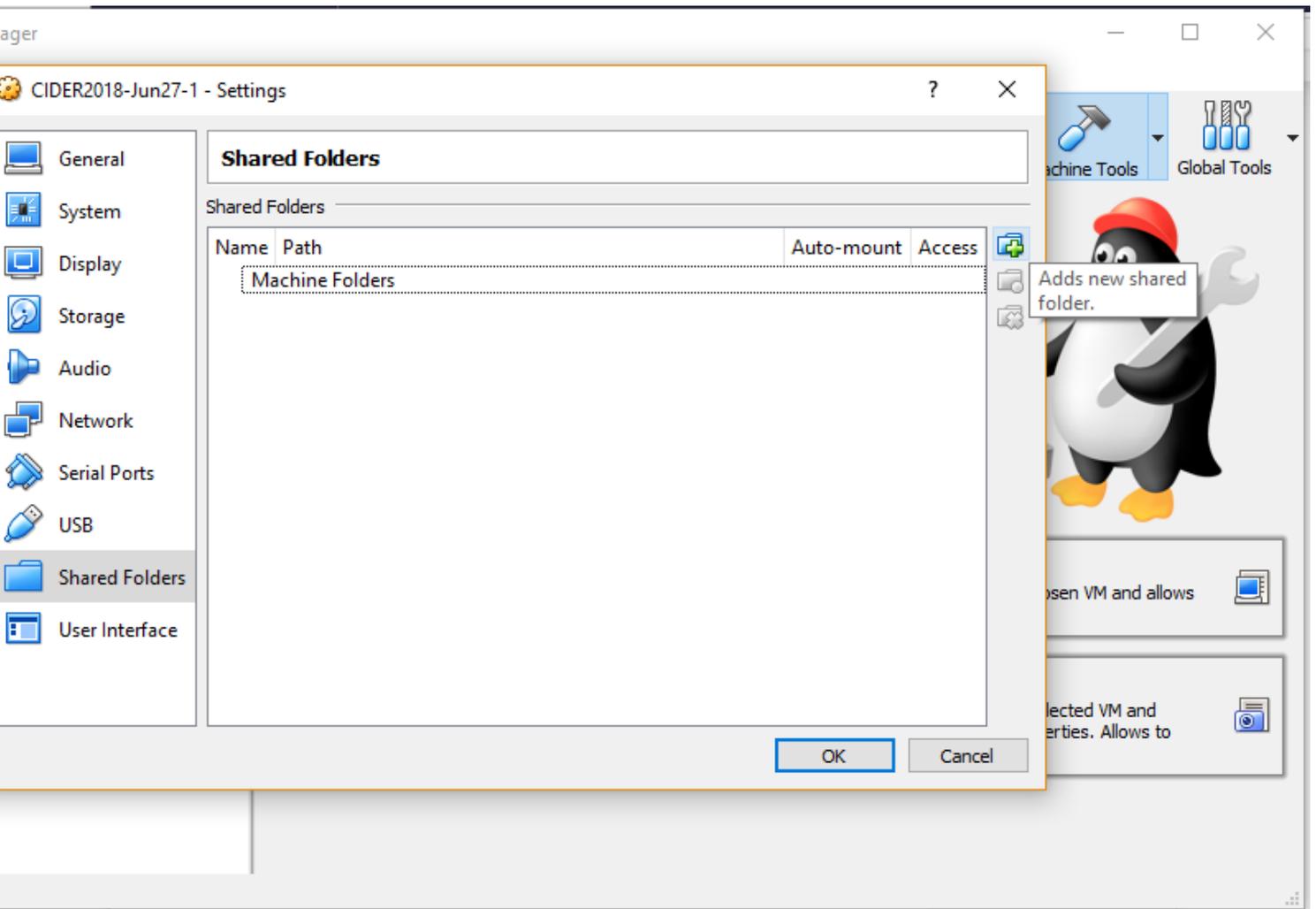
as all required software installed, but if you are familiar with linux and you want to install additional (your favorite text editor), do it as cideradmin, using the password cideradmin:

```
sudo apt-get install <package name> to install ubuntu packages.
```

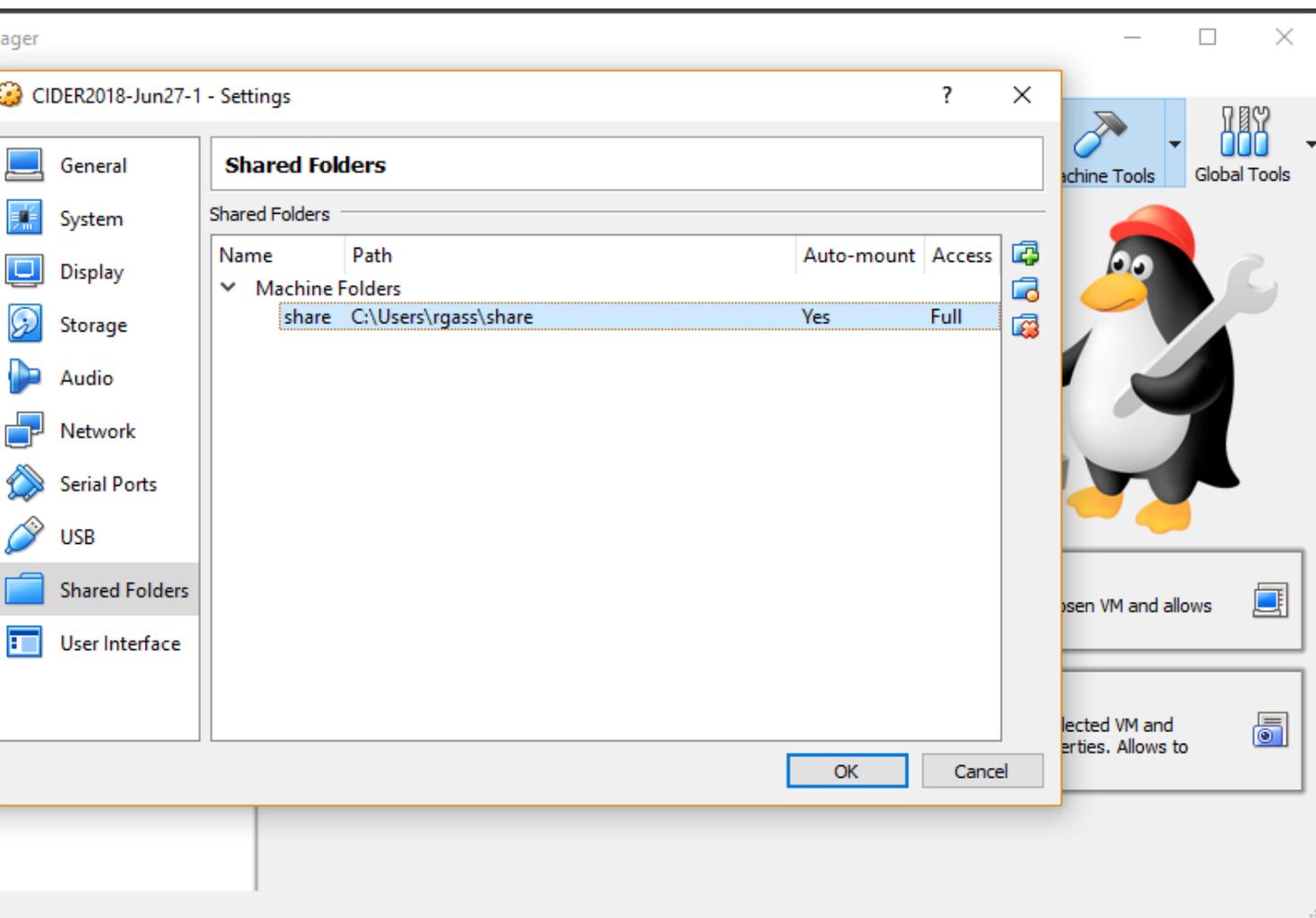
Start the CIDER2018 virtual machine and log into the user required for your current tutorial.

### **Setting up a shared folder between host and guest operating system**

You will need to transfer data between the virtual machine and your host operating system. In order to allow this, you will need to create a new folder on your laptop. Give it a name (e.g. 'share') and open the settings of the CIDER2018 virtual machine. Go to the 'Shared Folders tab' and add the newly created folder as a shared folder by clicking on the green plus icon. Select your newly created folder (do *not* select the read-only option in the dialog that opens).



name that VirtualBox assigns to this shared folder (most likely 'share'). If everything worked your look like this:



the settings and start your virtual machine. To mount the shared folder inside the virtual machine as explained above and use the following commands:

der

(le time per user account)

(password type cideradmin)

```
boxsf -o rw share shared_folder/
```

```
password type cideradmin )
```

create a new directory in your home directory called `shared_folder` and every file you copy into this folder will be accessible to the operating system in the folder share that you created at the beginning of this subsection. You will need to repeat these steps (except for the first step) every time you restart the virtual machine, thus test it now once, but only repeat it once for the rest of your tutorial.

Check if the hardware feature that allows virtual machines to work efficiently (Intel VT-x) is disabled. If while starting the VM you get error messages like 'This host supports Intel VT-x, but Intel VT-x is disabled' on your computer, enter the BIOS settings, and make sure the 'VT-x' setting is set to 'Enabled'. As the instructions are called slightly differently for different laptops, please let us know if you need help with this problem. The virtual machine by default allocates 2 CPU cores and 4 GB of RAM. If your laptop has less than 8 GB of RAM or less than 2 CPU cores, you might want to reduce these numbers (e.g. to 1 CPU core and 2 GB of RAM). You can do this by clicking on the CIDER2018 virtual machine icon in VirtualBox, and then go to the Systems tab. The amount of RAM is set in the Motherboard panel, and the number of CPU cores can be set in the processor panel. You will need to power off the virtual machine in order to change these settings.

Check if the shared folder will not allow writing into the shared folder inside of the virtual machine. This can be fixed by becoming the superuser inside of the virtual machine. To move an example file called 'test' into a folder named 'shared\_folder' you will have to use the following commands:

```
cideradmin (when asked for the password type cideradmin)  
mv test shared_folder/ (when asked for the password type cideradmin)
```