

IMACS installation guide

This is a step-by-step guide for installing the IMACS virtual machine (VM).

Step 1: Download and install Oracle VM VirtualBox

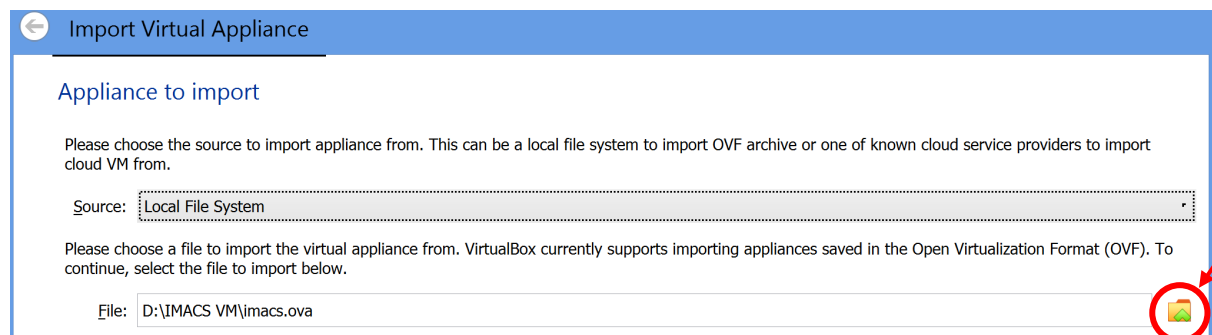
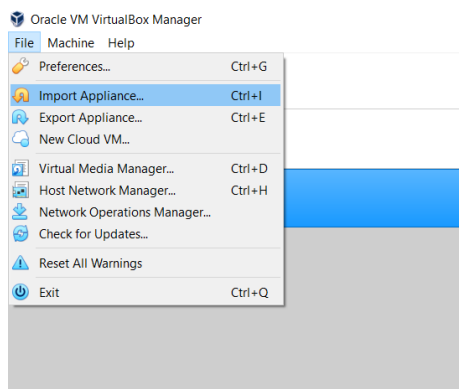
Go to <https://www.virtualbox.org/wiki/Downloads> and download the latest Oracle VM VirtualBox for your operating system. Install Oracle VM VirtualBox.

Step 2: Download the *imacs.ova* file

Download the '*imacs.ova*' file from [here](#) (password is **imacsES**). This file is pretty big (around **25.2 GB**; you can delete it after installation). An **additional 25 GB** would be required when importing this virtual machine to your local computer. Please ensure that you have enough space (around **50 GB**) on your computer or external hard disk or USB drive to download and import the file.

Step 3: Import *imacs.ova* file

Open Oracle VM VirtualBox and click on "File" in the upper left corner. Then choose the option "Import Appliance..." as shown below.



After selecting the *imacs.ova* file, you should see a window as shown below. You could change the settings (CPU and RAM) based on your system. The simulator is a bit compute-intensive, and as such, assigning at least 2 CPU is recommended with 4GB RAM.

← Import Virtual Appliance

Appliance settings

These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.

Name	imacs 1
Product	IMACS is a framework for performance evaluation of IMAge in the Closed-loop System
Product-URL	www.es.ele.tue.nl/ecs/imacs
Description	Academic Toolchain
Guest OS Type	Ubuntu (64-bit)
CPU	4
RAM	3072 MB
DVD	<input checked="" type="checkbox"/>
USB Controller	<input checked="" type="checkbox"/>
Sound Card	<input checked="" type="checkbox"/> ICH AC97
Network Adapter	<input checked="" type="checkbox"/> Intel PRO/1000 MT Desktop (82540EM)
Storage Controller (IDE)	PIIX4
Storage Controller (IDE)	PIIX4
Storage Controller (SATA)	AHCI
Virtual Disk Image	imacs-disk001.vmdk
Base Folder	C:\Users\smohamed\VirtualBox VMs
Primary Group	/

Machine Base Folder:

MAC Address Policy: Include only NAT network adapter MAC addresses

Additional Options: ☒ Import hard drives as VDI

Appliance is not signed

If you use an external hard disk or USB drive, change the “Machine Base Folder” to point to a location in the external memory. This location would be the base address of your VM.

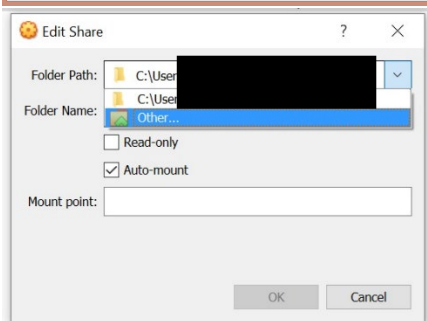
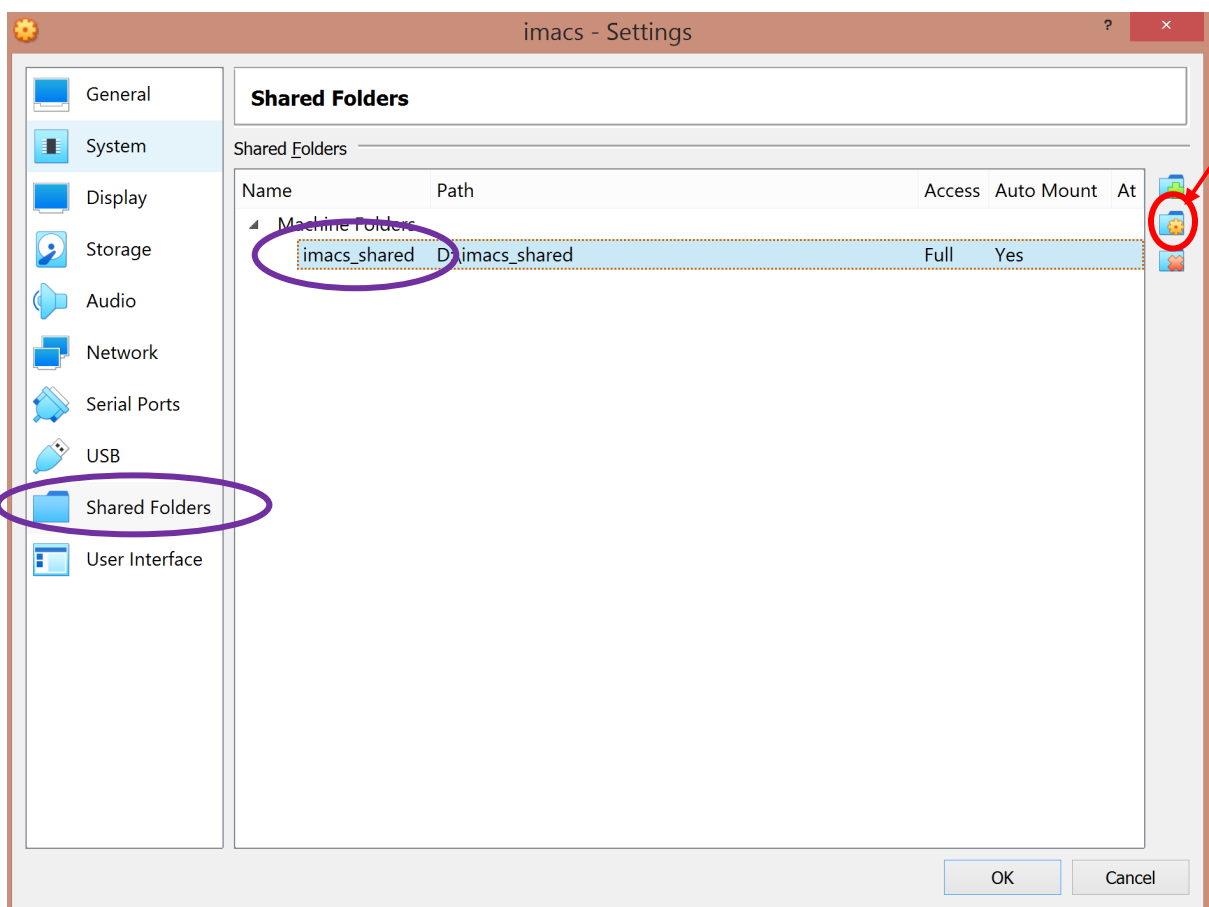
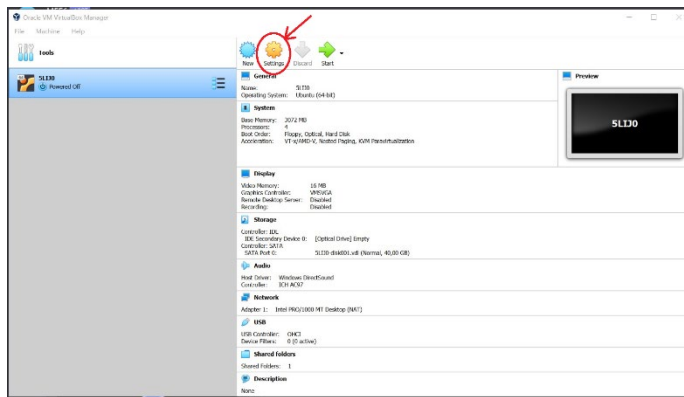
Make sure you have **at least 27 GB of memory available in the “Machine Base Folder”**. If not, you would receive an error (**Error Code 0x80070057**) while importing.

Now you have to click on “Import”.

The import can take several minutes depending on your computer.

Step 4: Setup the “shared folder”.

Once the VM is imported, you have to set up the “shared folder”. This is a folder that can communicate (share files) between the host and the VM. To do this, you have to select the VM “imacs” and click on “Settings”, as shown below in the red circle.



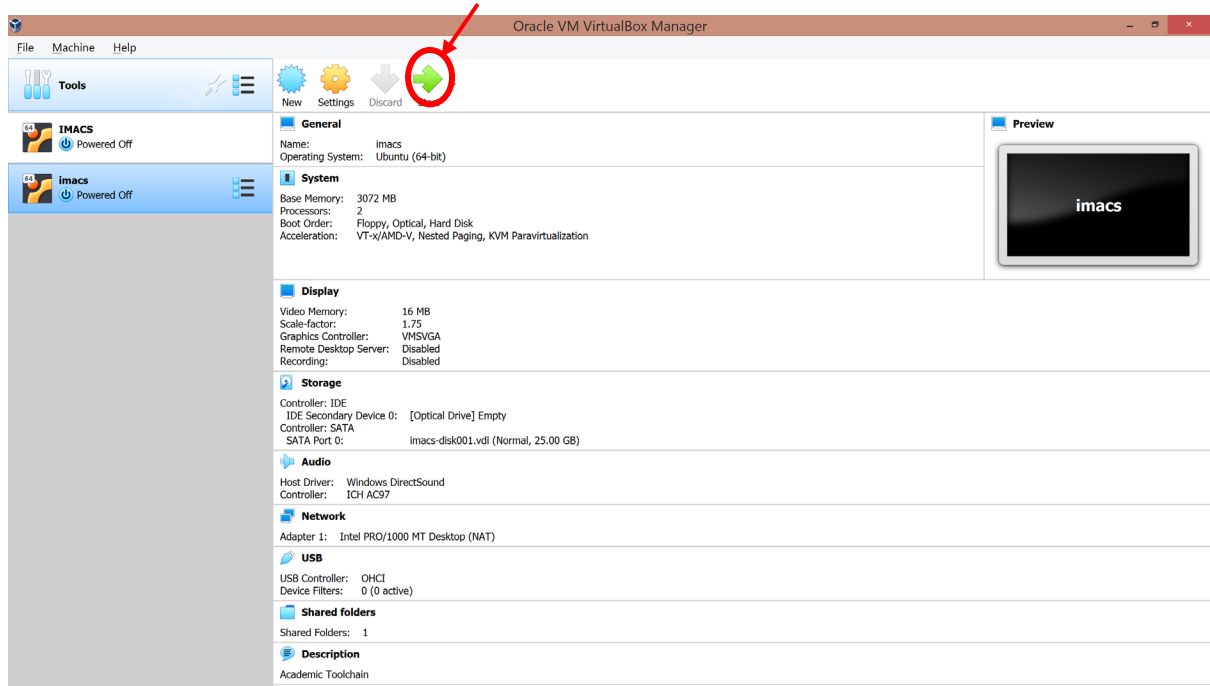
The window shown above pops up, and here you have to change the directory by clicking on **“Other...”**. Then your file finder will open, and you can select the folder you want to be the

shared folder. After doing this, click on “OK” in the “Edit Share” window and in the “imacs-Settings” window to save the changes.

If you start the VM without setting the Shared Folder, an error will pop up.

Step 5: Start the VM

Select the VM “imacs” and click on “Start”, shown below in the red circle.



Now your VM will startup, and this can take a while.

The login password for ‘imacs’ VM is: **imacsES**

If you get a black screen here, you probably do not have the correct BIOS settings on your computer. So you have to open your BIOS (restart your computer while pressing F2) and go to the advanced tab. Here you must **enable “Virtualization Technology”** and save these changes. Then repeat from step 5 onwards.

Step 6: Screen resolution

After starting the VM, if you face screen resolution issues, you can change it by **View → Virtual Screen 1 → Resize to <YOUR_SCREEN_RESOLUTION>**.

Guide for the shared folder

A shared folder is essential to transfer files between your host machine and VM.

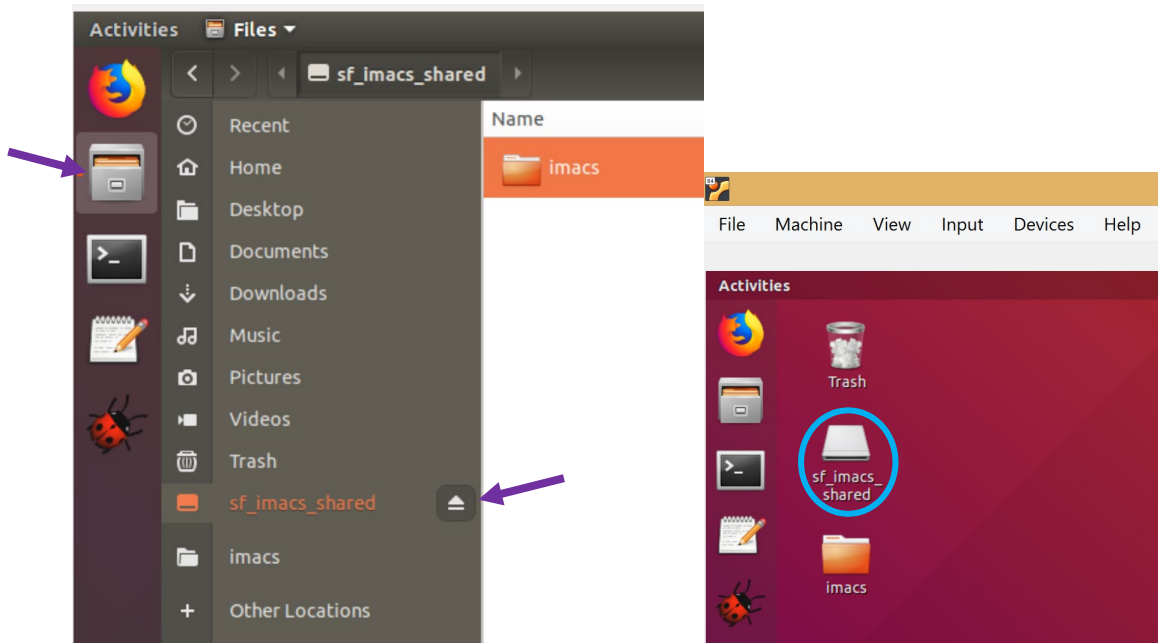
Version 1: Putting files in there via your host machine

To put files in the shared folder via the host, you have to save or paste the file you want in the folder you chose in “Step 4: change the folder of the ‘shared folder’”.

Version 2: Putting files in there via the VM “imacs”

You have to save or paste the file into the shared folder. This folder can be found in multiple ways.

1: Open the “Files” and go to “sf_imacs_shared”.

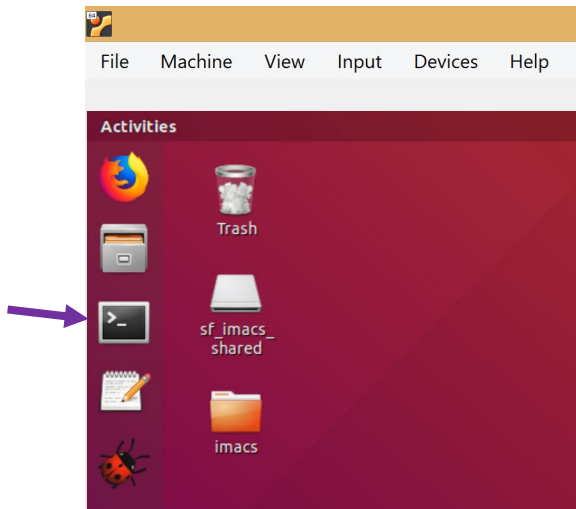


2: Click on “sf_imacs_shared” on the desktop. As shown above in a blue circle on the right image.

Guide to starting IMACS

Step 1: Open a terminal inside the VM

Click on the terminal icon on the left to open a terminal.



Step 2: Run the following commands to open CoppeliaSim

```
$ vrep
```

You will see the following options and CoppeliaSim will start, FYI CoppeliaSim is the new name for VREP.

```
imacs@imacs-VirtualBox:~$ vrep
[CoppeliaSimClient] loading the CoppeliaSim library...
[CoppeliaSimClient] done.
[CoppeliaSimClient:loadinfo] launching CoppeliaSim...
[CoppeliaSim:loadinfo] CoppeliaSim V4.2.0., (rev. 5), flavor: 0
[CoppeliaSim:loadinfo] using the default Lua library.
[CoppeliaSim:loadinfo] loaded the video compression library.
[CoppeliaSim:loadinfo] if CoppeliaSim crashes now, try to install libgl1-mesa-dev on your system:
>sudo apt install libgl1-mesa-dev
[CoppeliaSim:loadinfo] OpenGL: VMware, Inc., Renderer: llvmpipe (LLVM 6.0, 256 bits), Version: 3.0 Mesa 18.0.5
[CoppeliaSim:loadinfo] simulator launched
```

Step 2: Run the following commands to open MATLAB (You should open a new terminal)

```
$ sudo su (password is imacsES)
```

```
$ matlab
```

You will see the following options and MATLAB will start. Don't worry with the Gtk-Message: 14:10:25.724: Failed to load module "canberra-gtk-module" message. It will not cause any problem.

```
imacs@imacs-VirtualBox:~$ sudo su
[sudo] password for imacs:
root@imacs-VirtualBox:/home/imacs# matlab
MATLAB is selecting SOFTWARE_OPENGL rendering.
Gtk-Message: 14:10:25.724: Failed to load module "canberra-gtk-module"
```

If you have any questions or would like to contribute to improving the guide,

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