

Installation of Virtual Machine for PRISMS Software and Visualization Tools

The PRISMS Virtual Machine (VM) contains all the tools, dependencies and training materials you will require for the following training sessions: CASM, PRISMS-PF, PRISMS-Plasticity, PRISMS-Fatigue and DFT-FE. It also includes the auxiliary tools such as DREAM.3D, VisIt, ParaView and VESTA. To run this virtual machine in your own desktop or laptop you will need a hypervisor. We recommend using **Oracle VM VirtualBox version 7** or higher, which is the hypervisor used to create and configure the VM. If you have any issues during installation please contact **David Montiel** (dmontiel@umich.edu).

Requirements

- **Disk space:** The VM file to download takes ~17GB of space (this file can be deleted once the VM is imported into VirtualBox (after step 6). Once installed, the VM will take about ~26 GB.
- **Base Memory (RAM):** The VM is configured to take up to 4G of RAM. If this is too large for the amount of memory of your computer, you can adjust the amount in the VM Settings (Settings -> System -> Motherboard -> Base Memory).
- **Number of CPUs:** The VM is set to utilize up to 8 CPUs of your computer. If this amount is too large, you can also modify it in the VM Settings (Settings -> System -> Processor -> Processors).

The steps below are to install and run the virtual machine (including installing the **VirtualBox** hypervisor) on a **Mac OS**.

For **Windows 10**, please refer to this page:

<https://www.sysnettechsolutions.com/en/install-oracle-vm-virtualbox-on-windows-10/> for the installation of **VirtualBox**. After that, follow the steps below starting from step 5.

- 1) Go to <https://www.virtualbox.org/wiki/Downloads> and download the latest version of VirtualBox on your computer, based on your operating system

VirtualBox 7.0.10 platform packages

- [Windows hosts](#)
- [macOS / Intel hosts](#)
- [Linux distributions](#)
- [Solaris hosts](#)
- [Solaris 11 IPS hosts](#)



- 2) Restart your computer
- 3) Open the installation (.dmg) file and follow the installation instructions.

If there is an installation error message, such as the one shown below,



The installation failed.

The Installer encountered an error that caused the installation to fail. Contact the software manufacturer for assistance.

- a) Go to your Mac System Preferences menu
- b) Click on the Security & Privacy
- c) Hopefully you will see the following message: **System software from developer “Oracle America, Inc.” was blocked from loading.**
- d) Click on “Allow”, right next to that message
- e) Continue with the installation

If the problem persists, consult this page (<https://medium.com/@DMeechan/fixing-the-installation-failed-virtualbox-error-on-mac-high-sierra-7c421362b5b5>) for other options.

- 4) If the installation is successful, verify that the System is allowing software from **Oracle** to run
 - a) Go to your Mac System Preferences menu
 - b) Click on the Security & Privacy
 - c) If you see the message: **System software from developer “Oracle America, Inc.” was blocked from loading**, click on “Allow” right next to that message. Otherwise, close the System Preferences window and continue with the next step.
 - d) Restart your computer

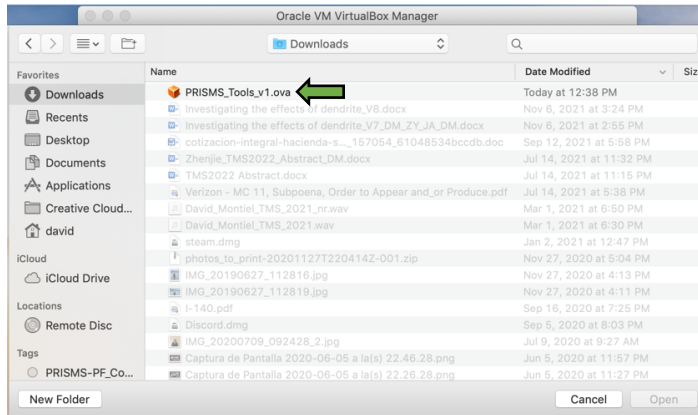
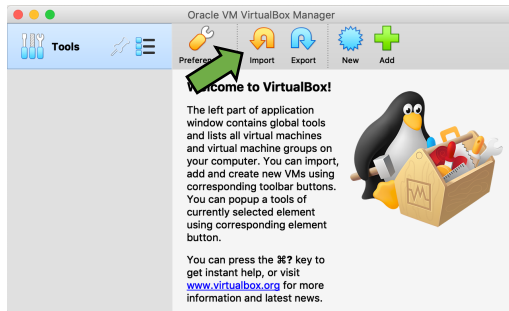
If there are any issues, consult this page (<https://www.howtogeek.com/658047/how-to-fix-virtualboxes-%E2%80%9Ckernel-driver-not-installed-rc-1908-error/>) for other options.

- 5) Once VirtualBox is installed, download the file containing the VM from the following link

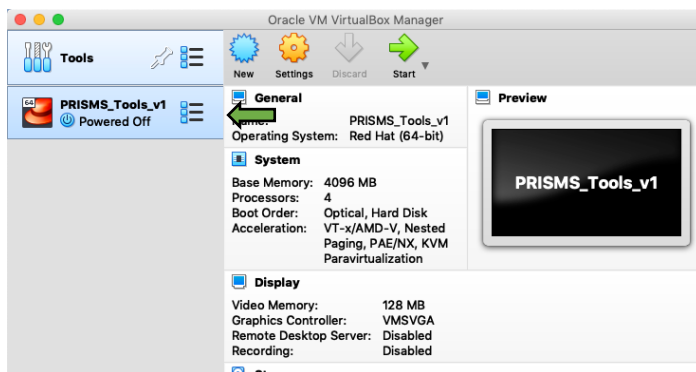
https://www.dropbox.com/s/93e3v045a40v4ao/PRISMS_Tools_v5_3.ova?dl=0

It is a large file (~17 GB), so it may take a while, if your internet connection is not very fast.


- 6) Open the VirtualBox application and import the .ova file you just downloaded. This will extract and load the VM.



The VM should appear on left panel of your VirtualBox window and the VM settings will appear on the right.



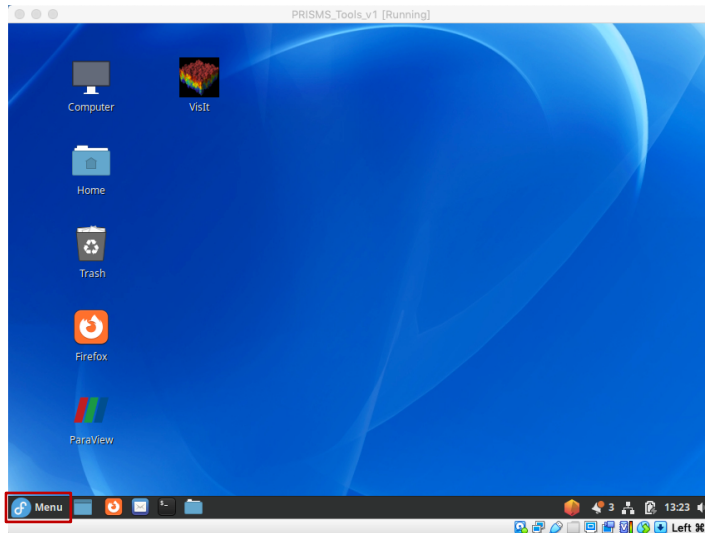
You can now delete the .ova file from your computer.

- 7) Run the VM by clicking on the green Start arrow 

Please refer to the following page, if you get an error message


<https://www.howtogeek.com/658047/how-to-fix-virtualboxs-%E2%80%9Ckernel-driver-not-installed-rc-1908-error/>

- 8) This will launch the VM in a new window. Wait for the Fedora Linux OS to load. After a few seconds (it can take up to a minute or two) you should see the desktop window shown below*



The VM is now loaded and we are ready to use all the PRISMS and visualization tools.

The default user (Admin) is: **prismstools** and the user password (in case you need it) is **prisms_user** (this is also the root password).



- 9) To close the VM, click on **Menu** on the bottom left and then click on the red “Quit” button . Then select the “Shut Down” option. This will close the VM window.

The VM window can be relaunched at any time by clicking on “Start” (step 5). If you close the **VirtualBox**, the VM will automatically reappear on the left panel the next time you launch it, so you will not need to import it again.

Please make sure the VM is loaded before the training session starts.



* If you notice that the Linux desktop icons in the VM window are either too large or too small, you can follow either of these two methods. Depending on your OS, one of these methods may not work:

Method 1

- i) Power off (shut down) the VM
- ii) In the VM VirtualBox Manager window, make sure the PRISMS Tools VM is selected on the left panel
- iii) Click on Settings 
- iv) Go to the Display Menu 

- v) Adjust the Scale Factor: Increase it if the icons are too small. Decrease it if the icons are too large.
- vi) Relaunch the VM and adjust the VM window size.

Method 2

- i) Launch the VM
- ii) Once the Linux OS has loaded and you are on the Desktop screen, click on the main menu  Menu
- iii) In the search bar type "Display"
- iv) Launch the Display settings window  Display
- v) Adjust the resolution, e.g., increase the resolution if the desktop icons are too large.