Software setup

> ❓ **Overview**
>
> **Teaching:** 10 min
> **Exercises:** 10 min
> **Questions**
> - What software do I need?
>
> **Objectives**
> - Get all the necessary software installed before beginning the lessons

File download (DO BEFORE ARRIVING)

For the workshop you will need to download a large (~10 GB) `.ova` file which contains the virtual machine (VM) that we will be using. Because of it's large size it's important to download it before the workshop.

To download it use:

Bash

```bash
curl -O "ftp://elwood.ru.ac.za/pub/geyer/NWU_pulsartiming/virtual_box/pulsarVM.ova"
```

or if you don't have `curl` installed you can use `wget`:

Bash

```bash
wget ftp://elwood.ru.ac.za/pub/geyer/NWU_pulsartiming/virtual_box/pulsarVM.ova
```

Assumed knowledge

This course assumes that you have basic proficiency with the command line / bash terminal, a text editor and simple Python scripting. If you are unfamiliar with any of these concepts, we recommend the following tutorials:

- (linux) command line / bash SWC Lesson (https://swcarpentry.github.io/shell-novice/), ADACS Lesson (https://adacs.org.au/courses/introduction-to-bash/)
- command line text editor (emacs (https://www.linuxfordevices.com/tutorials/linux/emacs-editor-tutorial/)/vim (https://www.tutorialspoint.com/vim/index.htm#)/nano (https://www.linuxfordevices.com/tutorials/linux/nano-editor-in-linux/))
- Python scripting SWC Lesson (http://swcarpentry.github.io/python-novice-gapminder/), ADACS Lesson (https://adacs.org.au/courses/introduction-to-python/)
- Statistics SARAO lesson (https://www.sarao.ac.za/lessons/an-introduction-to-data-analysis/)

Installing VirtualBox

To make the software installation easier we are going to use a virtual machine (VM) that has all the required software preinstalled. We will run the VM using VirtualBox which is a tool for managing and running VMs. To install, follow the instructions in here (https://www.virtualbox.org/wiki/Downloads) which contains detailed instructions. The following sections will will summarize how to install on common systems. If you have an issue refer to the full instructions (https://www.virtualbox.org/wiki/Downloads) on the website or email Nick (nswainston@swin.edu.au)

Windows

Download the `.exe` file from this link (https://download.virtualbox.org/virtualbox/7.0.10/VirtualBox-7.0.10-158379-Win.exe) and follow the setup instructions.

Linux (Ubuntu 22.04)

How to install is OS dependent so there are more details instructions here (https://www.virtualbox.org/wiki/Linux_Downloads). Here is an example of how to install it for Ubuntu 22.04 by downloading the `.deb` and installing it with `apt`:

```bash
Bash

wget https://download.virtualbox.org/virtualbox/7.0.10/virtualbox-7.0_7.0.10-158379~Ubuntu~jammy_amd64.deb
sudo apt install ./virtualbox-7.0_7.0.10-158379~Ubuntu~jammy_amd64.deb
```

Using Virtual Box

Once you have VirtualBox installed you can open it to open the `.ova` file that you downloaded earlier:

- Click `File` (top left) then `Import Appliance...`
- Click the folder icon and navigate to the `.ova` file you downloaded earlier
- All the default setting are fine so just click yes until it starts `Importing appliance ...`
- Once it's done you should see a `pulsarVM` VM in the left hand side of the VirtualBox window, click on it and then click `Start` (top right)
- The VM will start up, click `Debian GNU/Linux` or wait a few seconds then you should VM window and the terminal

VirtualBox tips and FAQ

VirtualBox can be a bit confusing at first so here are a few tips:

- If you VM fails to start, check the logs (`Ctrl + L`) for clues why. If you see an error like
  `HM: HMR3Init: Attempting fall back to NEM: VT-x is disabled in the BIOS for all CPU modes` you have to change your BIOS settings to enable virtualization technology (e.g. for ASUS motherboard (https://www.asus.com/us/support/FAQ/1045141/))
- You can use Right Ctrl to use VirtualBox shortcuts (https://defkey.com/oracle-vm-virtualbox-shortcuts#54716)
- To make use of your full screen resolution open `View` (top left), then `Virtual Screen 1` and click `Scale to 100%`. Then once you change the window to full screen it should use your full screen resolution

> ❶ Key Points
>
> - How to install software

Contact The Carpentries (mailto:team@carpentries.org)