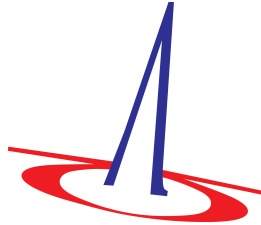


WHIZARD Tutorial: Installing the Virtual Machine



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1 Preliminaries

This manual is intended as a step-by-step instruction for installing the Virtual Machine (VM) environment for the WHIZARD tutorial.

The WHIZARD tutorial uses the VirtualBox software by Oracle, which is available for free for all platforms of interest. The machine emulates an Ubuntu 32bit system, so that the WHIZARD can run inside a uniform setup for all users. Please go step by step through this manual and perform the described actions, as far as applicable.

If you don't want to use a VM for running WHIZARD, you can skip this installation manual entirely. In that case, you will have to install WHIZARD on your laptop by yourself (which is of course possible). The standard installation process is described in the WHIZARD manual which you can access via WHIZARD's website

<http://whizard.hepforge.org>

2 Prerequisites

The following two steps are recommended if you didn't use a virtual machine on you laptop, yet. Otherwise, skip to the next Section.

2.1 Virtualization in BIOS

After switching on your laptop, open the BIOS setup utility and make sure that the CPU virtualization options are enabled. Then boot the computer as usual.

(This should normally be the case, so you may skip this step. However, if the VM fails for this reason, you may be forced later to reboot the computer and switch on the CPU virtualization options.)

2.2 Kernel Headers Package

[Linux:] Make sure that the kernel header files are installed on your computer. This depends on your operating system. The package should be called, e.g., `kernel-desktop-devel`. (The VirtualBox package installer should check this automatically, but it didn't on my OS.)

3 Installing VirtualBox

3.1 Existing Installation?

You need the `virtualbox` package on your laptop. It may already be installed. The package name is `virtualbox`.

If `virtualbox` is already installed, you may skip this installation section and proceed with creating the `WHIZARD` VM. The `WHIZARD` VM disk image is designed for the most recent version of `virtualbox`, 4.3.10. So, if an existing installation fails, you should update your outdated `virtualbox` package, or uninstall it completely and do a fresh installation, which we describe now.

3.2 Install VirtualBox 4.3

Go to the VirtualBox website

<https://www.virtualbox.org>

Select **Downloads** and find a VirtualBox package. Select the OS, version, and CPU flavor that match your laptop.

The package should install automatically, using the package manager of your OS.

3.3 Configure VirtualBox

Open a terminal and launch `virtualbox`:

```
$ virtualbox
```

You should now see the VirtualBox window. There are some optional configuration options:

1. You may check the number of CPU cores and enable more than one, if you have a multicore machine.
2. You should also check the network settings.

All steps described so far can be performed in advance. For the next steps, you need the `WHIZARD` VM image.

4 Import the Prebuilt VM

Once virtualbox has been launched, you can import a prebuilt virtual machine. You have to download the file either from the WHIZARD website

`http://whizard.hepforge.org/mc4bsm-2014/whizard220.ova`

or from a USB stick during the tutorial session. This is a large file (3GB)!

Store this somewhere on you file system. Within virtualbox, select File → Import Appliance to import the image into virtualbox.

4.1 Configure the VM

Click **Start**. You should see a new window opening. There may be some messages which you can read or click away. From now on, there is a **Host Key** (default: the right CTRL key) which switches between the VM and your desktop.

You get a login window.

- User: `whizard-apprentice`
- Password: `whizard220`

Your account on the VM is configured with the Fluxbox window manager. Choose applications with the right mouse button. Open a shell (bash), found under Applications → shells.

Within this VM shell, run the script

```
$ . scripts/initial.sh
```

This finishes VM configuration. Close and power off the VM.

4.2 Run WHIZARD

Now start the VM again. This time, the VM window enlarges itself after launch. Log in and open a shell in the VM. You are now ready for the Tutorial.

5 Alternative Path: Create a New Virtual Machine

This is an alternative to the previous installation. Instead of importing a prebuilt VM, you will build your own VM and just import the WHIZARD installation of data as a virtual disk drive.

5.1 Download the Disk Image

Download the disk image from one of the USB sticks that are available in the Tutorial session. The image file is called

`whizard-apprentice.vdi`

If the file is in zipped (or gzipped) form, unzip it now on your computer.

Warning: This is a large file, 6 GB. Please make sure that you have at least this amount of free disk space.

5.2 Create the VM

Start virtualbox again (or switch to the virtualbox window, if it still running), and click **New** for a new VM. You will be asked for

- A machine name: `whizard` (or any name you like).
- An OS flavor: `Linux`
- A specific OS: `Ubuntu 32bit`. (Please select the 32bit version even if your laptop is a 64bit machine.)
- Memory size for the VM. If possible, allocate at least 2 GB.
- Hard Drive: “Use an existing virtual hard drive file” and select the VM disk image that you have just downloaded.

The VM is now available.

5.3 Configure the VM

Click **Start**. You should see a new window opening. There may be some messages which you can read or click away. From now on, there is a **Host Key** (default: the right CTRL key) which switches between the VM and your desktop.

You get a login window.

- User: `whizard-apprentice`
- Password: `whizard220`

Your account on the VM is configured with the Fluxbox window manager. Choose applications with the right mouse button. Open a shell (bash), found under Applications → shells.

Within this VM shell, download and install the “guest extension” software packages:

```
$ sudo apt-get -y install virtualbox-guest-dkms virtualbox-guest-utils  
virtualbox-guest-x11
```

This finishes VM configuration. Close and power off the VM.

5.4 Run WHIZARD

Now start the VM again. This time, the VM window enlarges itself after launch. Log in and open a shell in the VM. You are now ready for the Tutorial.