Instructions to install and configure
the C⬤RE virtual machine in your computer

1. Installing the Virtual Machine

1. Download VirtualBox in your system (if you don't have it already) (www.virtualbox.org) and install it.
   a. Check https://www.virtualbox.org/manual/ch01.html#intro-installing for help.
   b. In general any VirtualBox version is valid for this Virtual Machine (VM).
   c. Install the VirtualBox Extension Pack too.
2. Download the VM http://www.it.uc3m.es/~alberto/vcore-4.5_5.zip and unzip the file (the size is 1.2 GB, and once uncompressed you will need 6 extra GB in your hard disk).
3. Start VirtualBox
   a. Generate a new virtual machine (blue button 'New') with the name 'vcore4.5' (or any name you want), type 'Linux', version 'Ubuntu 32-bit'
   b. You will be asked about memory (select what you want to assign to the virtual machine within the green range suggested by the tool).
   c. You then will be asked about the hard disk. Select the third option 'use an existing virtual hard disk file', choose the .vdi file you extracted from the zip with the image and press "Create".

In [settings] -> [network], select "Attached to NAT"
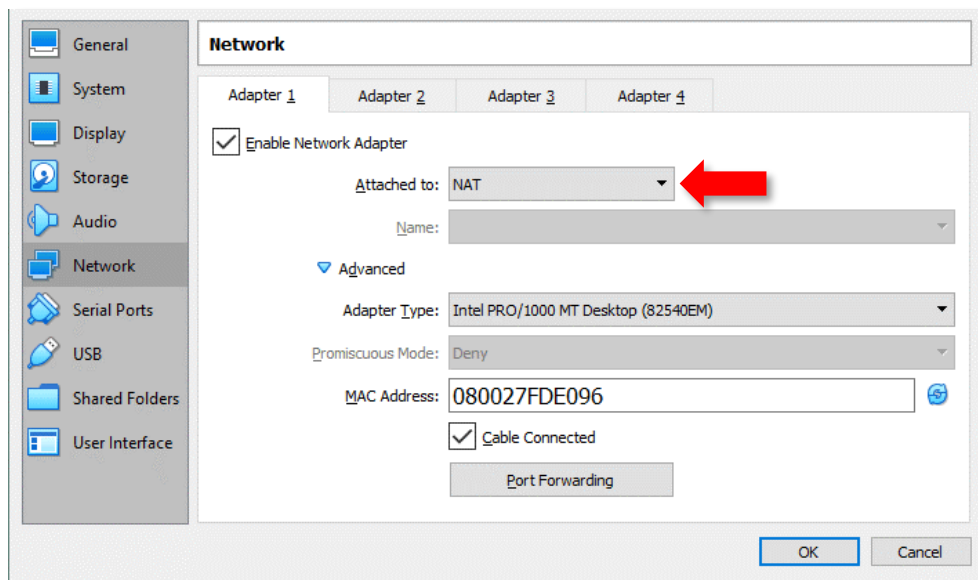
4. In your equipment BIOS be sure to enable the performance enhancements to run virtual machines (in depends on the equipment but they typically include support for VT-x or AMD-V).
   a. In case you see any error related to this, you can deactivate the support for VT-x/AMD-V in VirtualBox: choose -> Settings -> System -> Acceleration -> DISABLE the option 'Enable VT-x/AMD-V'. You should first try to configure your computer BIOS properly because disabling VT-x/AMD-V support is associated with a notorious performance penalty.

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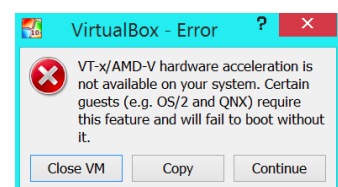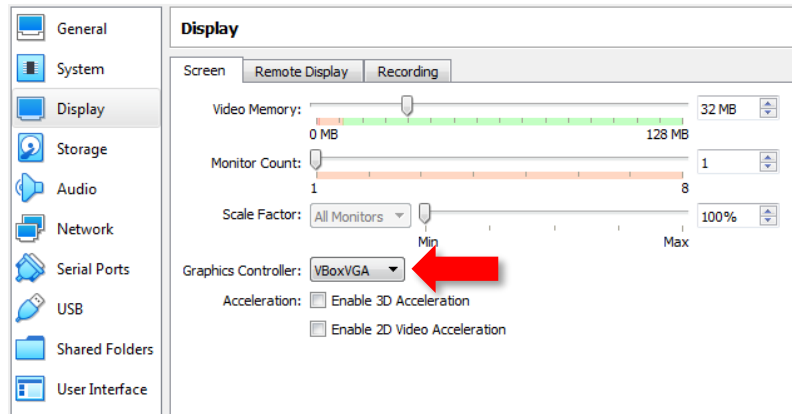
2. Inside the Virtual Machine

The VM you have just installed has the following user and password:
- User: core
- Password: core

It has superuser (root) capacity with the command sudo and the same password

Check that the graphic controller is 'VBoxVGA', and if it is not, with the VM switched off, change it in the following window (Settings->Display->Screen).

With other graphic controllers you may have problems when trying to rescale the windows size of the VM to make it bigger/smaller.

Once you selected 'VBoxVGA', install the *Guest Additions* into the 'guest' Linux system (the operating system that runs in the VM you have just created). With this you will be able to have a larger screen, share files with your host operating system, copy&paste with your host operating system, etc. In order to do this:
  a. Start the VM
  b. In the menu 'Devices' available in the VirtualBox screen of the VM, select 'insert Guest Additions CD image'.
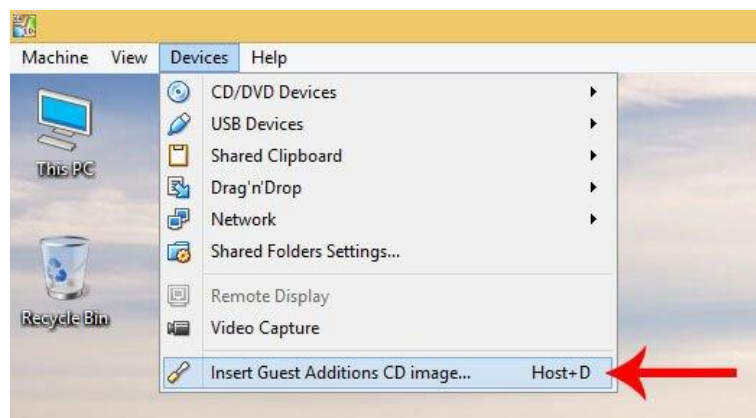
  c. Open a terminal and change to the folder where the Guest Additions disk is mounted: 'cd /media/core/VBox_GAs_5.2.6/ '
     (note that the name of the folder may change depending on the VirtualBox version)
  d. Run 'sudo ./VBoxLinuxAdditions.run'
  e. Once installed (it may take a short while), restart the VM.

3. Extras

- You can update the installed packages if the 'Software Updater' asks you to do so but we do NOT recommend updating the Ubuntu version (in this case LUbuntu) included in the VM to a newer one (just update the different packages).
- Additionally you can install/delete packages or to configure the VM using the command sudo dpkg with the provided password. That way you can install your favority text editor, etc.
- You can only change the configuration of the VM (VirtualBox interface) when the VM is stopped (and not when it is just saved).
- To copy files to/from your VM you have several options:

  a. Open a browser inside the VM and get your files from your favorite server (Drive, Dropbox, etc.)
  b. Insert a removable device (USB stick) and in the VM configuration, 'Devices' -> 'USB', select the corresponding device. The USB stick will not be visible for the external operating system and will be mounted into the VM.
  c. Permanently mount a shared folder with your host VM (only in case you have installed the Guest Additions):
     i. In a terminal (inside the VM) run 'sudo usermod -G vboxsf -a core'
     ii. Shut the VM down, open the configuration of the VM in VirtualBox and select 'Shared folders'. Add the folder you want and select 'Auto-mount'
     iii. Next time you start the VM a new folder '/media/sf_Temp' will appear (in a Linux or Mac environment it is possible that additional permissions are required for the tree of folders where the share folder is or VirtualBox will not be able to access its contents)