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## V2 Set up Virtual Machine (VM)

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### Set up Virtual Machine (VM)

You will need to set up the VM before you begin the lab exercises in this course.

#### Minimum Requirements

- At least 6 GB of RAM - recommend larger amount to run the Guest OS and Host OS simultaneously.
- Virtual Box (min 5.0.26)
- Linux / Windows / Mac all tested. There are known issues with running the VM on IBM Lifeboat RHEL

It is recommended to close other open applications, such as Lotus Notes, Lotus Sametime, and Microsoft Office, to ensure memory is made available to the VM if running on the minimum configuration.

Discuss tips or issues with this process in the applicable forum topics [here](#).

#### Opening your Virtual Machine

To set up the VM, perform the following steps:

1. For the VM to run, BIOS configuration may be required. Some machines will have Virtualization Technology turned off by default. Amend your BIOS settings by switching the machine fully off and entering the BIOS. How you get into BIOS depends on the machine you're using. Some of the ThinkPads have a blue button on the side of the keyboard, which will enter the required setup. Once in the BIOS, go to Advanced and switch Virtualization Technology [Enable]. (For more information read <http://www.sysprobs.com/disable-enable-virtualization-technology-bios>.)
2. Download and Install [VirtualBox](#). The version used to create the VM is 5.0.26 ([https://www.virtualbox.org/wiki/Download\\_Old\\_Builds\\_5\\_0](https://www.virtualbox.org/wiki/Download_Old_Builds_5_0)), so assume this is the minimum needed. **We have had reports of later versions (specifically 5.0.32) having issues with network connectivity on Windows 7. Using version 5.0.26 solved the issue.** (Thanks to David Beange for this feedback)

##### Note

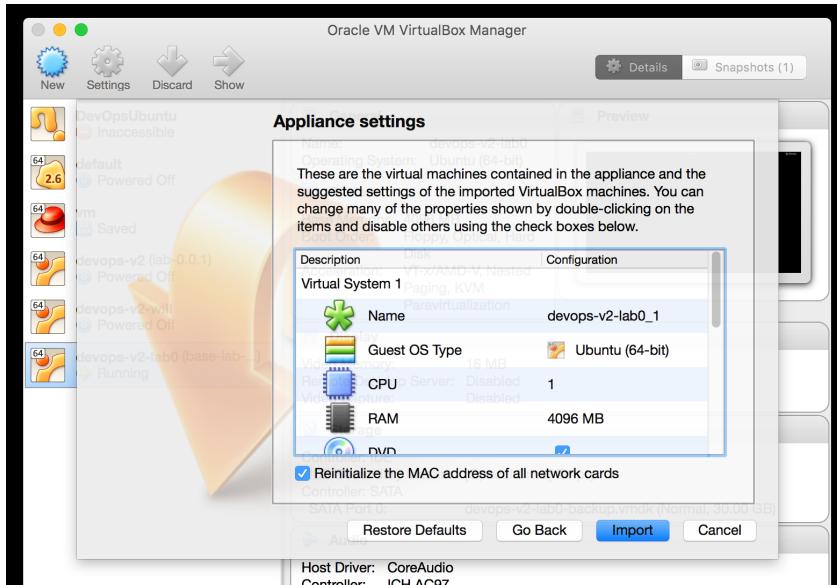
If using **IBM Open Client RHEL** or some other kind of RHEL supplied by IBM, we have had limited success running the VM. The best solution we have found, to date, is to use the [instructions here](http://joelinoff.com/blog/?p=1444) (<http://joelinoff.com/blog/?p=1444>) and NOT to download and install the VirtualBox image from the oracle website.

If running a **Windows laptop** we have experienced issues with specific versions of VirtualBox. Historically only version 4.1.12 of Virtualbox has worked. It is available here (or just google it) <http://download.virtualbox.org/virtualbox/4.1.12/>

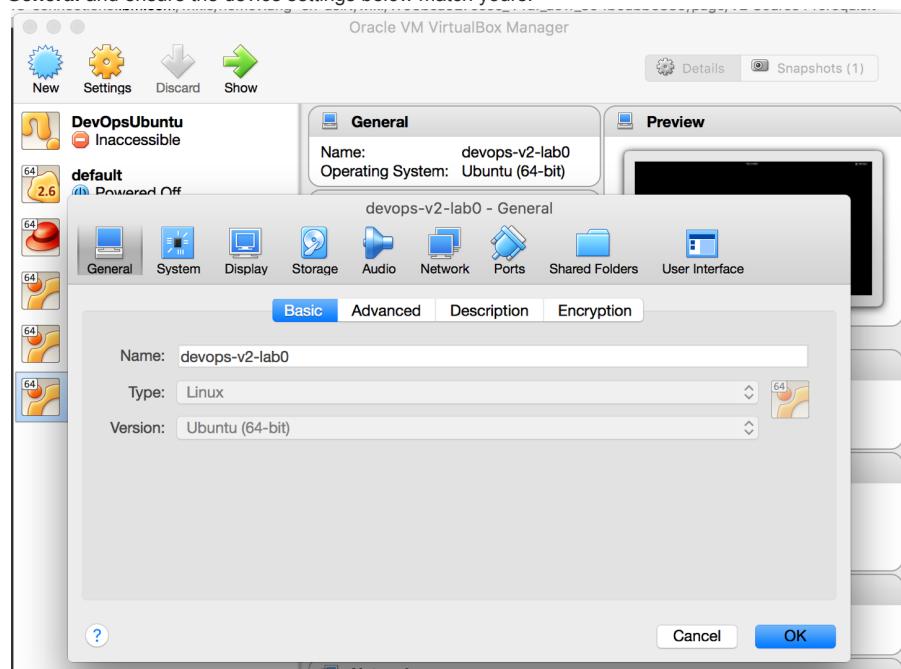
3. Download [Devops VM](#). (The file is nearly 3 GB and can take approximately 5 hours to download, so you need to plan accordingly.) Download options are: Use your browser, use FTP, or use wget. Here is more information about each option;
  - Click the link and use your browser (<https://ibm.box.com/s/yiza5dhjaag0m4tsr2yjot6yjswxvk8>)
4. You can verify the integrity of the downloaded files by running one of several checksums and comparing to the following md5 entry.
5. - Mac users: Run the md5 command as shown below
  - Windows users: A tool such as this is required to compute the MD5 as it is not built into the OS (<http://winmd5.com/>).
  - For Linux: Use the command md5checksum

```
~/Documents
$ md5 devops-v2-lab0_v21.ova
MD5 (devops-v2-lab0_v21.ova) = 41b6087ced61c08c5c0175ede231a94d
```

6. Once the download is complete; open VirtualBox and select File > Import and navigate to the devops-v2-lab0\_v21.ova file that was downloaded. On the screen that pops up; select *Reinitialize the MAC address of all network cards*. This import process may take time to complete.

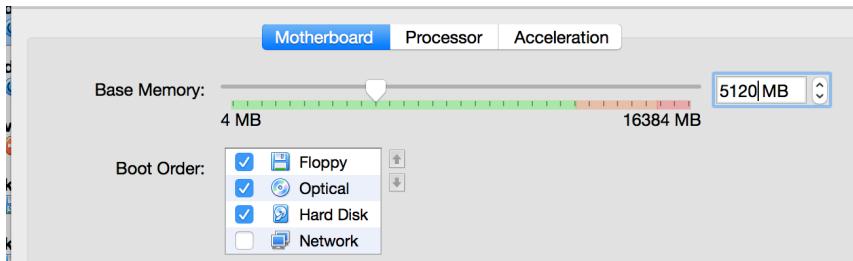


7. Ensure that the VM is configured to use 64-bit architecture as this may have changed while importing the virtual device. To do this; select **Settings > General** and ensure the device settings below match yours.

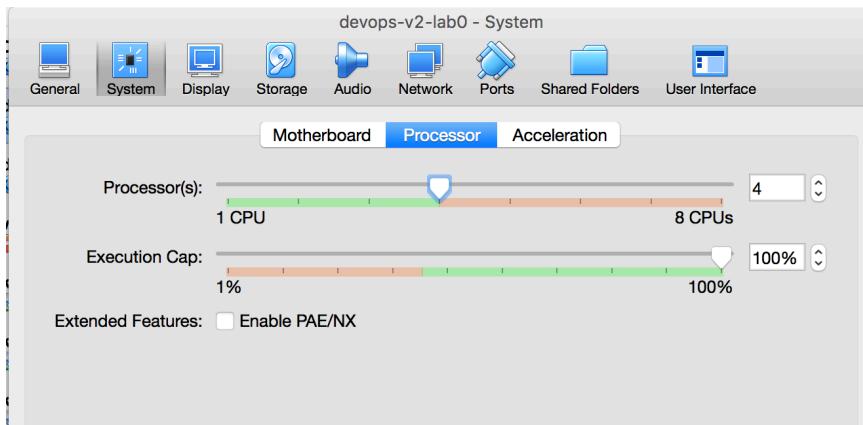


### Configure RAM and CPU for better performance

1. In order to make the VM perform better, we will increase the RAM and CPU for the vm. To do this; select **Settings > System**, click on **Motherboard** and increase the RAM to 5120MB. This should now look as follows:

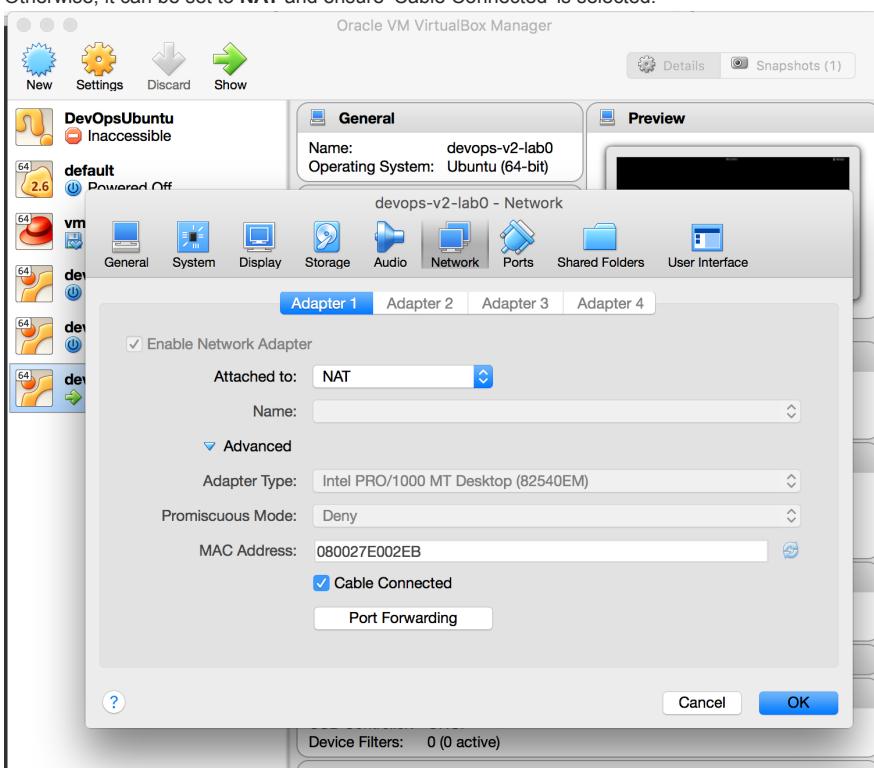


2. In **Settings > System** click processor and up it to 4. Depending on your system specification, you may receive a warning or just not be able to select 4 altogether. Set it to the highest recommended value, denoted by green as follows:



## Configuring the Network Settings

- If required, perform network configuration for the VM by opening the settings and moving to the Network tab.
  - Ensure that it is set to *Bridged* if you are **not** working on an IBM network.
  - Otherwise, it can be set to **NAT** and ensure 'Cable Connected' is selected.



When the VM loads; its networking stack will appear as 'Wired Adapter' even though you're on WIFI in the host OS.

## Starting your VirtualMachine

- Start the VM using the start button or by right clicking and selecting start.

You may see a blinking underscore for sometime if your machine does not have very much RAM. You may also be presented with the GRUB menu to select an OS. Hit enter on the Ubuntu version at the top of this list, if required

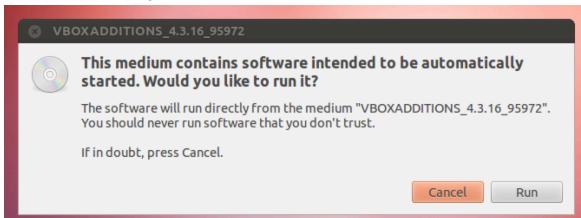
- Following the load of the welcome screen, log-in details are below [but you may be logged in straight away as the default user (devops)]:

User ID: devops and password: devops (there is no 0/ zero in the password). Enter **password** and click **the arrow** or hit "enter" to log in. (*Do not use Guest Session.*)

## Install VBOX Guest Additions

**NOTE** - Ensure this step is run, to ensure you get the best experience whilst using the VM.

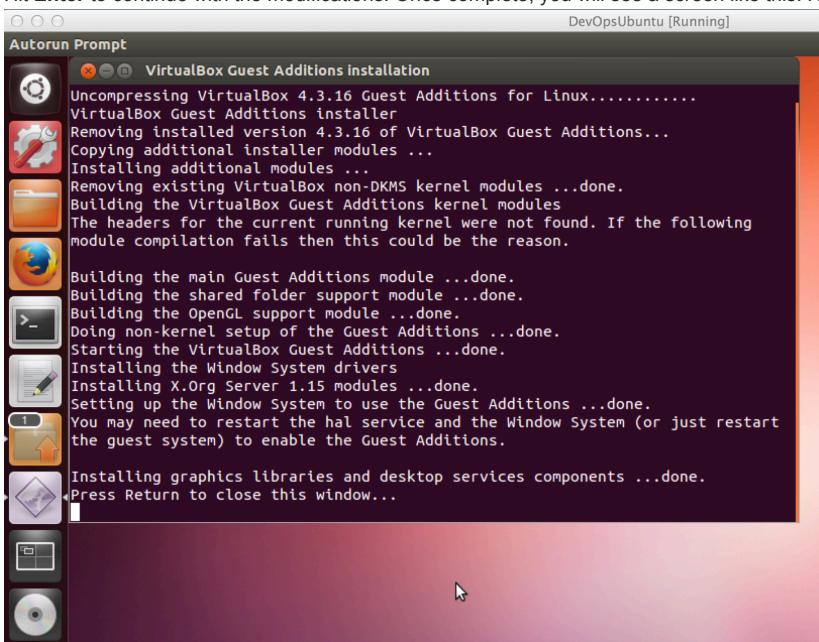
1. Ensure that the screen resolution is suitable for your machine. You will know that the resolution is appropriate when you can see the trash can in the bottom left-hand corner once you have logged in.
2. Login to the VM. In the top menu bar (in the host machine); select **Devices > Insert Guest Additions CD Image**.
3. This will prompt you to run the loaded device. Select **Run**, and a Terminal window will appear.



4.

5. If prompted for a password, enter "devops"

6. Hit **Enter** to continue with the modifications. Once complete, you will see a screen like this. Hitting **Enter** again will close this prompt.



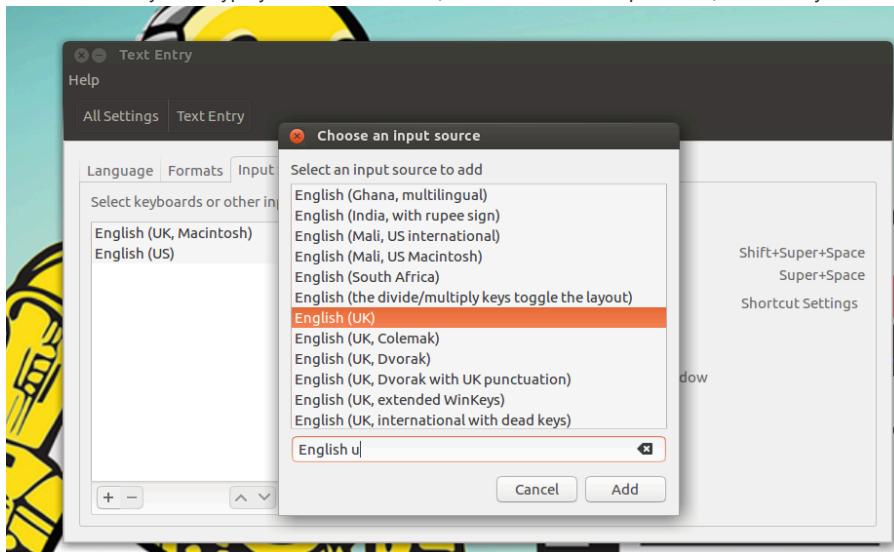
- 7.
8. Reboot the VM and it should allow you to adjust to your window size and will provide better mouse/keyboard support.

## Configuring the Keyboard

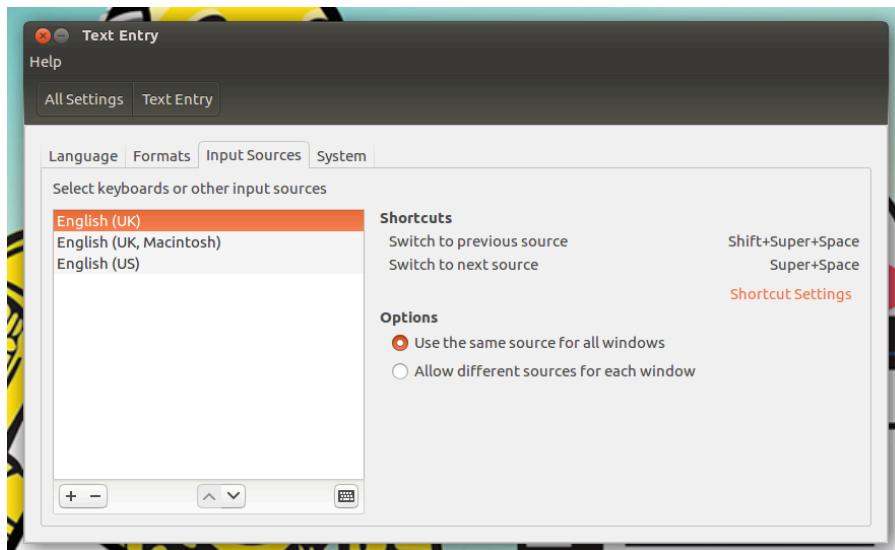
1. To change the keyboard settings for different layouts and languages; open **System Settings** inside the VM and navigate to **Keyboard**.



2. Once there, select **Text Entry** from the bottom left-hand corner.
3. On this new screen, select the **+ icon in the bottom left hand corner**. This will prompt you to search for a new Keyboard type or select one from the list. Once the keyboard type you want is selected, hit **Add**. In the example below, the UK Keyboard is being added.



4. To set this new keyboard as the one to use, increase it on the list of available ones by hitting the **^ button under the list of keyboards**.

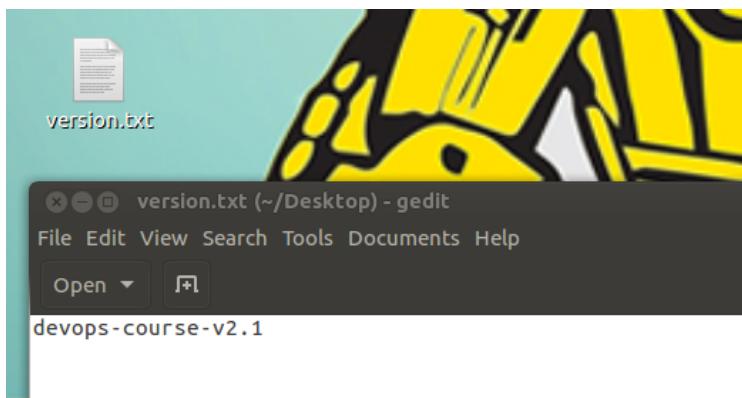


### Verifying the Correct Version of the VM

Verify the VM version is the OS expected including patch. On the Terminal, run the command `uname -a` to ensure that it matches the information below (with the exception of the date & time):

```
~ $ uname -a
Linux devops-v2 4.4.0-57-generic #78-Ubuntu SMP Fri Dec 9 23:50:32 UTC 2016 x86_64 x86_64 x86_64 GNU/Linux
```

On the Desktop there is text file called `version`; ensure its contents match below

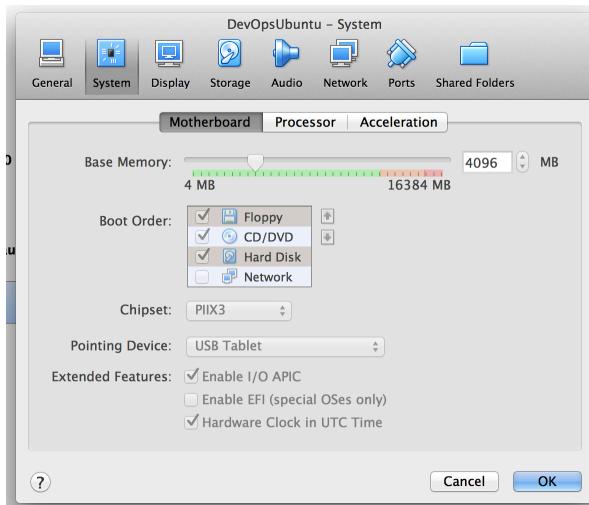


### Troubleshooting your VirtualMachine

If the virtual machine fails to import or start, the first thing to check is that Virtualization is enabled on the BIOS for your computer. Without this setting enabled, the VM won't run.

Sometimes the VM can change from 64-bit to 32-bit (usually after trying to run it with Virtualization disabled in the BIOS). The VM has to be set to 64-bit in order to run.

If the VM imports OK and appears to start but hangs for a very long time, ensure that there is enough RAM supplied to the device. This can be managed in the Settings tab for the device. It is recommended that you supply the device with 4GB of RAM.



## Create a Bluemix account

Navigate to <https://bluemix.net> and sign up using your IBM email address to get an account on Bluemix. As an IBMer you should be able to get access to a free account with a limited amount of free space and services. A Bluemix account is required for the final lab and sometimes it can take time for your account to be activated.

## What's in my VirtualMachine?

The VM that comes with the course consists of the following tools:

Ubuntu OS	Puppet	AngularJS
Docker	Node.js	Jenkins
Grunt	MongoDB	Vector

## Comments

*There are no comments.*