## **CREATING A VIRTUAL MACHINE AND INSTALLING A GUEST OS**

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#### **INTRODUCTION:**

There exist numerous complexities that could arise in multi-platform applications such as Jalview. It is essential to constantly test such applications across a wide range of supported platforms to ensure full compatibility. This is commonly a challenge as the developers usually work on one platform. To carry out cross-platform testing, developers would need to either:

- Purchase multiple systems with various operating systems as needed or
- Employ virtualisation solutions<sup>1</sup>

The former option is very expensive and less practical, while the later is inexpensive and highly practical. This document aims to provide a technical guide for installing a virtualisation software and creating one or more virtual operating system.

### **THINGS YOU NEED:**

- 1. Virtualisation software
- 2. Guest OS Image An ISO image of any OS supported by the virtualisation software

**Note:** For the purpose of this documentation, I shall employ the following:

- Host OS Mac OS X
- Virtualisation Software Virtual Box
- Guest OS Linux Ubuntu -16.04.2

### **SETUP STEPS:**

- 1. Download and Install Virtual Box from here https://www.virtualbox.org/
- 2. Download Ubuntu-16.04.2 from here https://www.ubuntu.com/download/desktop
- 3. Create a VM for the new guest OS:
  - a. Start Virtual Box
  - b. Click 'New' button on the main tool bar menu
  - c. Provide a name for the new guest OS (i.e. Ubuntu-16.04.2)
  - d. Select guest OS type and version, then click continue
  - e. Allocate memory (I recommend 2048MB or more)
  - f. Create a virtual hard disk using the following settings:
    - Hard disk file type VDI (Virtual Disk Image)
    - Storage on Physical hard disk Dynamically allocated

<sup>&</sup>lt;sup>1</sup> https://en.wikipedia.org/wiki/Comparison\_of\_platform\_virtualization\_software

- Hard disk size (I recommend something above 10GB)
- File location use default
- g. Click 'Create' and the new VM will appear on the main left menu bar
- 4. Next configure and load a guest OS:
  - a. Select the new VM created and click the "Settings" button on the main tool bar menu. This will pop up a new dialog.
  - b. Go to the "Storage" tab
  - c. Add new virtual optical
    - Choose disk
    - Next, select the downloaded ISO from step two
    - Ensure virtual optical drive is set to 'IDE Primary Master'
    - Click 'Ok'
- 5. Select the new VM again and click 'Start' button on the main tool bar
- 6. Next, follow the standard OS installation to complete the installation.

Note: You can repeat steps 2 – 6 to add as many Guest OS variant as you need, provided that the VM software supports it. More ISO for variants of various OS can be obtained from the links below:

- Linux ISOs <u>http://linuxlookup.com/linux\_iso</u>
- Windows ISOs <u>http://windowsiso.net/</u>
- Other Unix ISOs <u>http://www.unixdownload.net/</u>

SCREENSHOTS

New Settings Discard	Start	* Details Snapshots
Windows 10	🧧 General	Preview
10 Wered Off	Name: Windows 10	
Linux mint 0.6 W Powered Off	bit)	
Windows 7	System	Windows 10
Powered Off	Base Memory: 2048 MB Boot Order: Floppy, Optical, Hard Disk Acceleration: VT-x/AMD-V, Nested Paging, Hyper-V Paravirtualization	Willdows To
	Display	
	Video Memory: 128 MB Scale-factor: 1.20 Remote Desktop Server: Disabled Video Capture: Disabled	
	Storage	
	Controller: SATA SATA Port 0: Windows 10.vdi (Normal,	16.00 GB)
	🍃 Audio	
	Host Driver: CoreAudio Controller: Intel HD Audio	
	Network	
	Adapter 1: Intel PRO/1000 MT Desktop (N	AT)
	🧼 USB	
	USB Controller: OHCI	



Figure 2: Adding a new VM



Figure 3: Adding Hard disk for a new VM



Figure 4: Configuring Hard disk

Mindows 10	General	Preview
10 Wered Off	Name: Ubuntu-16.04.2	_
Linux mint Weight Off	System	
Windows 7	Base Memory: 2048 MB	Ubuntu-16.04.2
7 W Powered Off	Boot Order: Floppy, Optical, Hard Disk Acceleration: VT-x/AMD-V, Nested Paging, KVM	
Ubuntu-16.04.2 Powered Off	1 Paravirtualization	
	📃 Display	
	Video Memory: 16 MB Remote Desktop Server: Disabled Video Capture: Disabled	
	Storage	
	Controller: IDE IDE Secondary Master: [Optical Drive] Empty Controller: SATA SATA Port 0: Ubuntu-16.04.2.vdi (Normal, 8	3.00 GB)
	🍃 Audio	
	Host Driver: CoreAudio Controller: ICH AC97	
	Network	
	Adapter 1: Intel PRO/1000 MT Desktop (NAT)	
	🧼 USB	
	USB Controller: OHCI Device Filters: 0 (0 active)	
	Shared folders	
	None	
	Description	



#### Figure 6: Loading Ubuntu 16.04

			Oracle VM VirtualBox Manager	
Ent	3		Ubuntu-16.04.2 (Running)	s
New	Setti	You have the Auto conture kouth		
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2.6	0 P	Welcome		
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		Esperanto		
		Euskara		
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		Gaeilge		100
		Galego		
		Hrvatski		
		Islenska		
		Italiano	The Ulbury for	
		Latvicki	Iry Ubuntu	
		Lietuviškai		
		Magyar	You can try Ubuntu without making any changes to your computer, directly from	$\leq$
		Nederlands	this CD.	1000
		Norsk bokmål	Or if you're ready, you can install Ubuntu alongside (or instead of) your current	
		Norsk nynorsk	operating system. This shouldn't take too long.	
		Polski		
		Português	You may wish to read the release notes.	$\leq$
				100
			🖸 💿 💭 💭 💭 🖉 🙂 Left 🕱 🎢	
			None	
			Description	

Figure 7: Installing Ubuntu



**Figure 8: Progressed Ubuntu Installation** 



Figure 9: Final Output - Ubuntu OS Guest on Mac OS Host