

Compilation Virtual Machine Setup

Objective

This guide is intended to detail installation and configuration of the virtual machine used in the PIQUE™ Quick Start Guide. This is helpful when configuring similar natively-installed linux computers or modified virtual machine environments.

This guide will run through setting up a Qt 5.7 cross compiling environment in Windows (running Ubuntu 16.04 LTS in a VirtualBox™ virtual machine) for the PIQUE running Raspbian linux. All operating systems involved are 64 bit installations.

Requirements

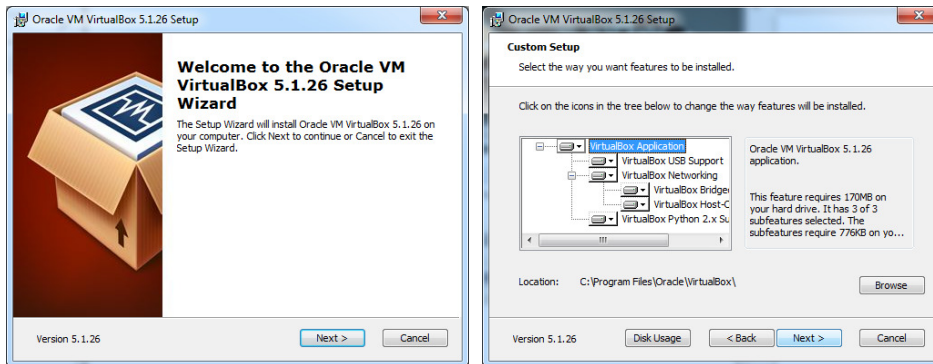
Windows or Linux computer running Oracle™ VirtualBox software.

Initial Steps

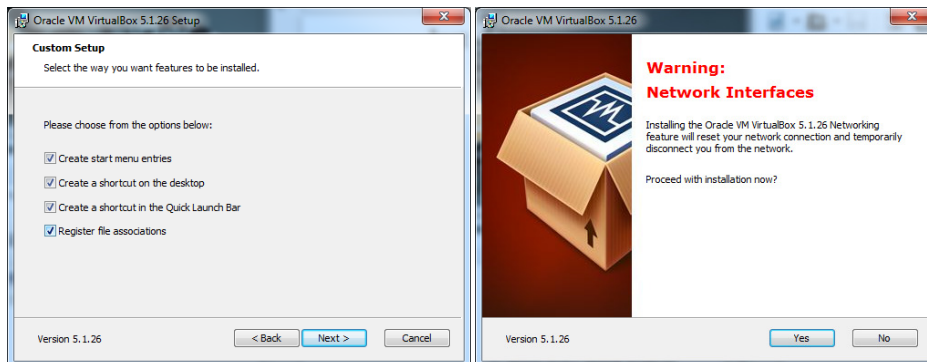
Download Oracle VirtualBox via this link: <https://www.virtualbox.org/wiki/Downloads>

Download Ubuntu 16.04 LTS via <https://www.ubuntu.com/download/desktop>

Launch the downloaded VirtualBox setup program and click Next.

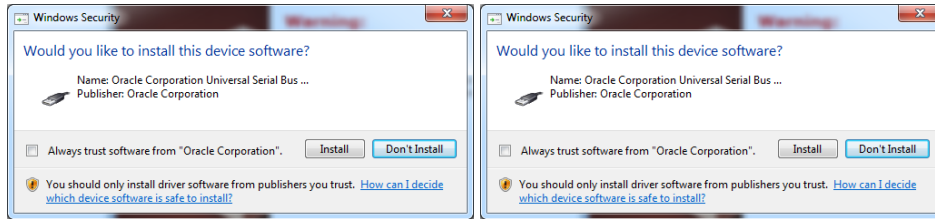


Accept setup defaults:



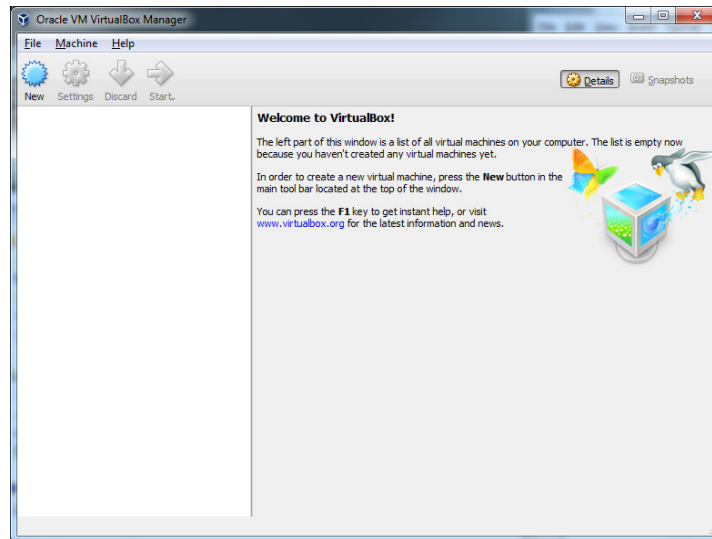
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After the final “Yes”, VirtualBox installs USB and network drivers. The USB driver may not be needed, but is representative of a typical VirtualBox installation. The network driver is needed for connection to the PIQUE.

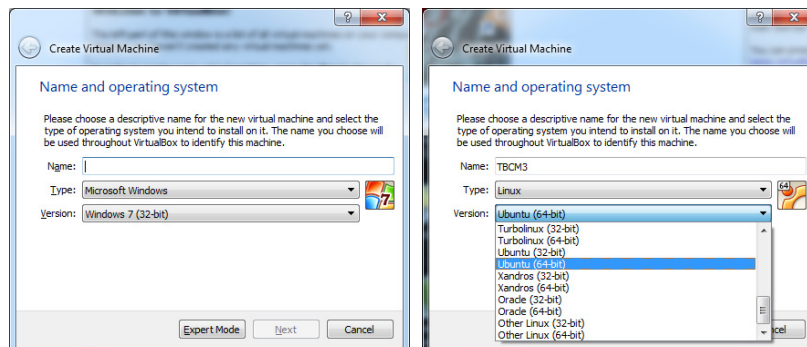


After installation of VirtualBox, launch it.

Set up a new virtual machine (VM) by clicking on the “New” icon in the top left.



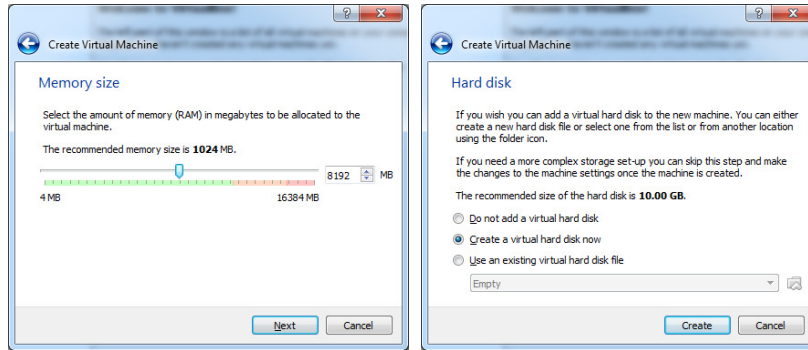
Select “Linux” in the type dropdown, and “Ubuntu (64-bit)” in the Version dropdown. Enter PIQUE in the “Name:” field.



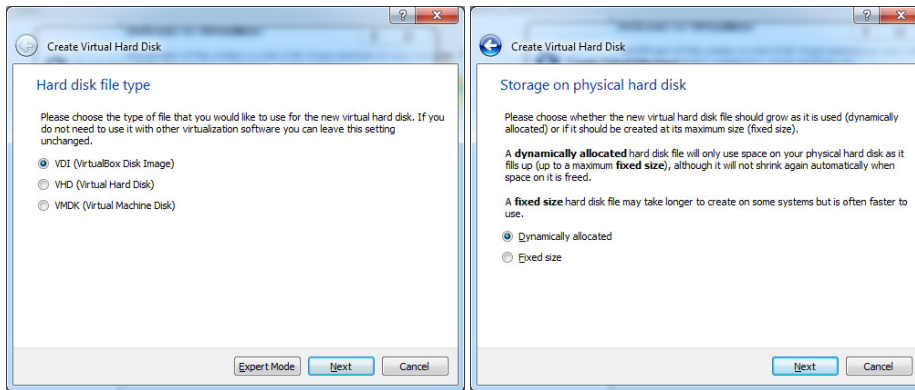
Note: If you do not see a 64-bit version option in the drop down menu, reboot and ensure virtualization support is enabled in your BIOS and your computer needs to be restarted.

Choose the amount of RAM to dedicate to the VM (while it is running). 8 GB was selected in this guide but 2 to 4 GB should be ok as well. Create a virtual hard disk during setup as well.

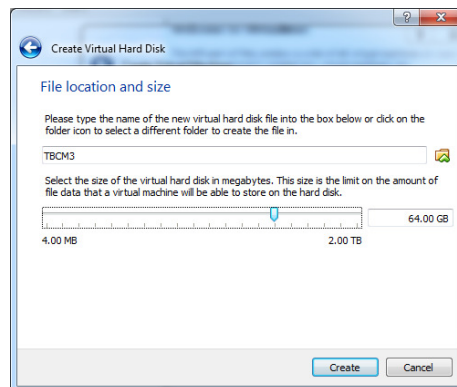
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The sysroot files that will be setup later need a consistent storage location. In this example, a dynamically-allocated VDI-type disk was chosen:

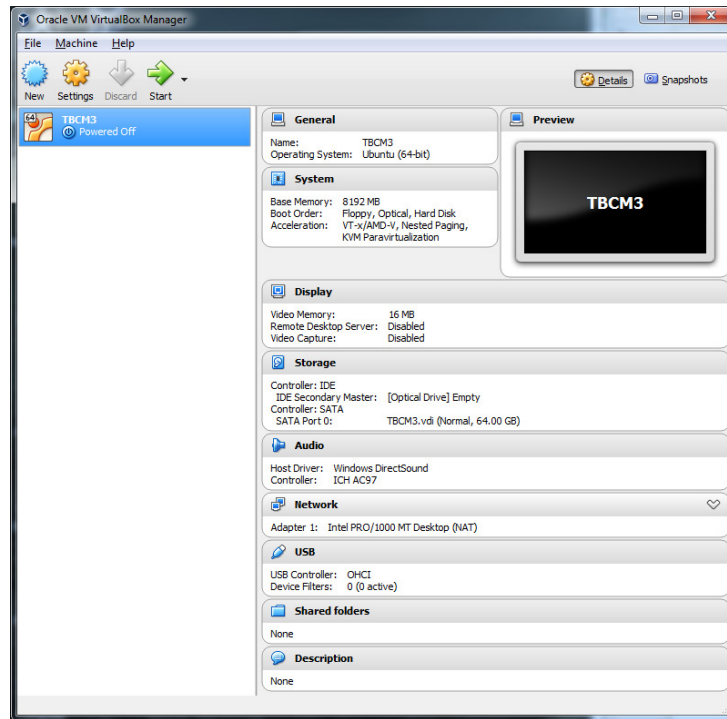


Qt can potentially take up a lot of space when all the modules are used. It is recommended that at least 50GB are allocated for the VM.



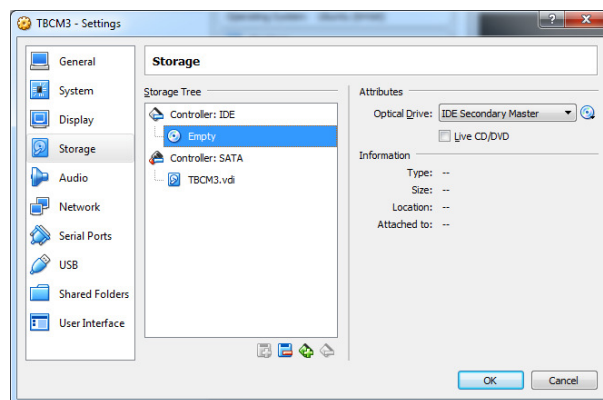
Click the “Create” button to create the virtual machine. It will appear in the list of virtual machines in Oracle VM VirtualBox Manager:

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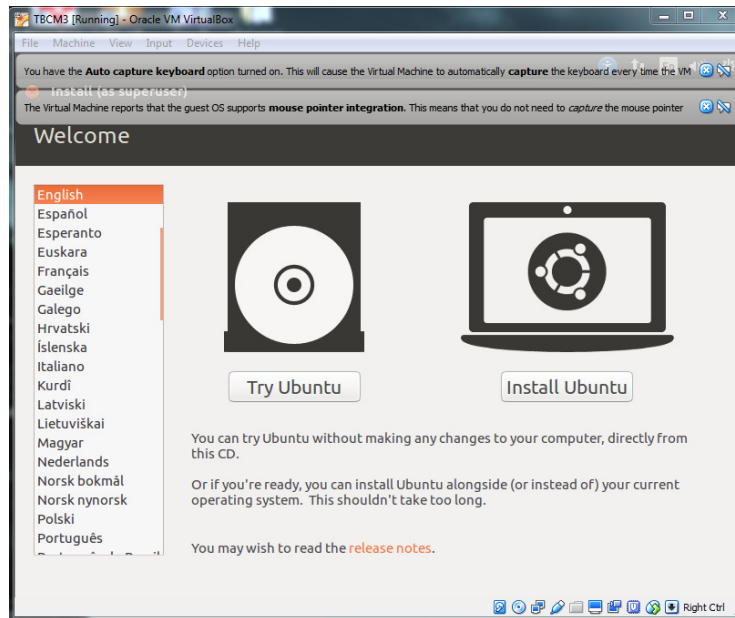
Right click on the name of the virtual machine that was just set up (PIQUE in this case) and select settings.

In the leftmost column, select Storage. In the center column, select the “Empty” disk icon under Controller: IDE, then in the rightmost column you should see an “Optical Drive” attribute. To the right of that is another disk icon. Click that and select “Choose virtual optical disk file”. Navigate to where the downloaded ubuntu iso file is (ubuntu-16.04.3-desktop-amd64.iso in this case) and select it. Also make sure that a VDI file (PIQUE.vdi in the guide's case) is selected under the Controller: SATA section. Then hit OK. Now you can run the VM by hitting the green Start arrow near the top.

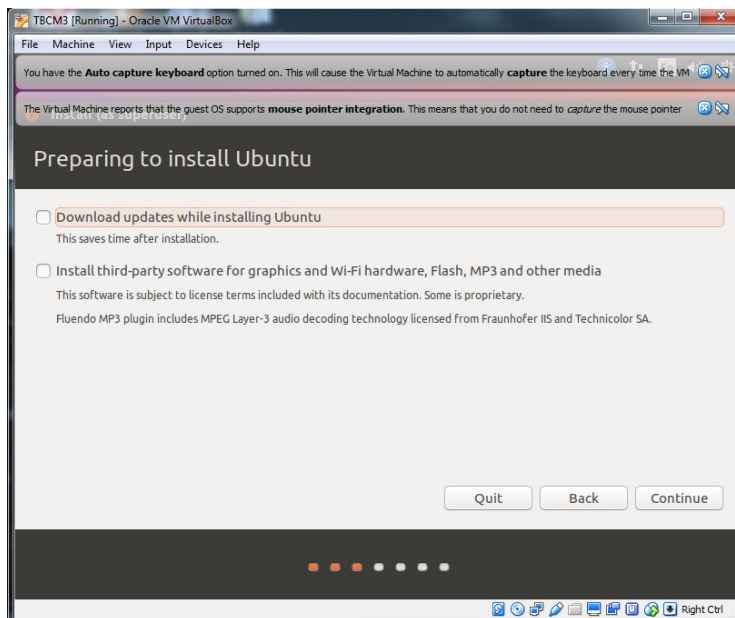


Once the virtual machine is running, you'll be prompted to install Ubuntu. Select the “Install Ubuntu” option.

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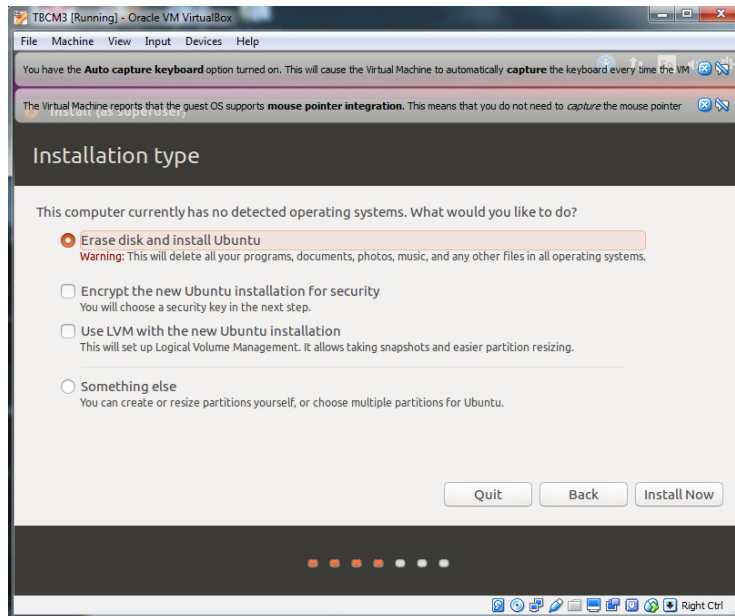


Skip installation of third-party software and Ubuntu updates by selecting “Continue” without checking either check box.

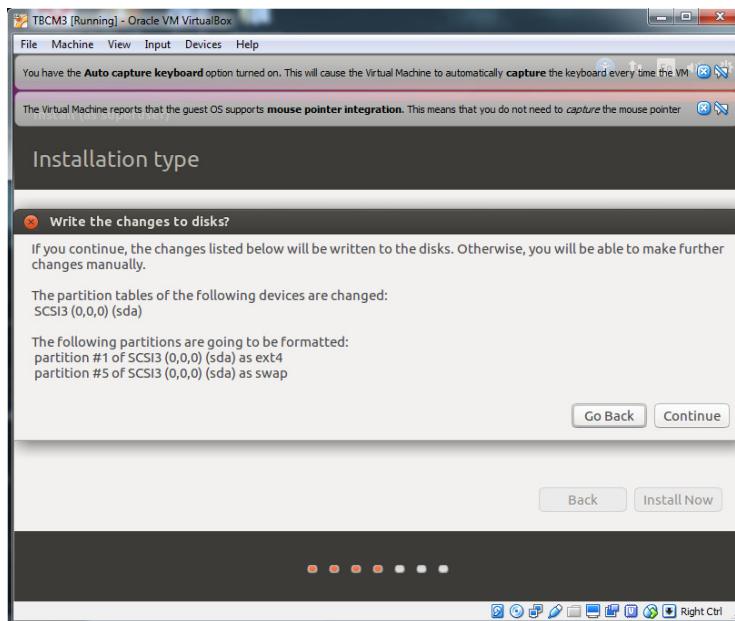


Select “Erase disk and install Ubuntu”. Then click “Install Now”.

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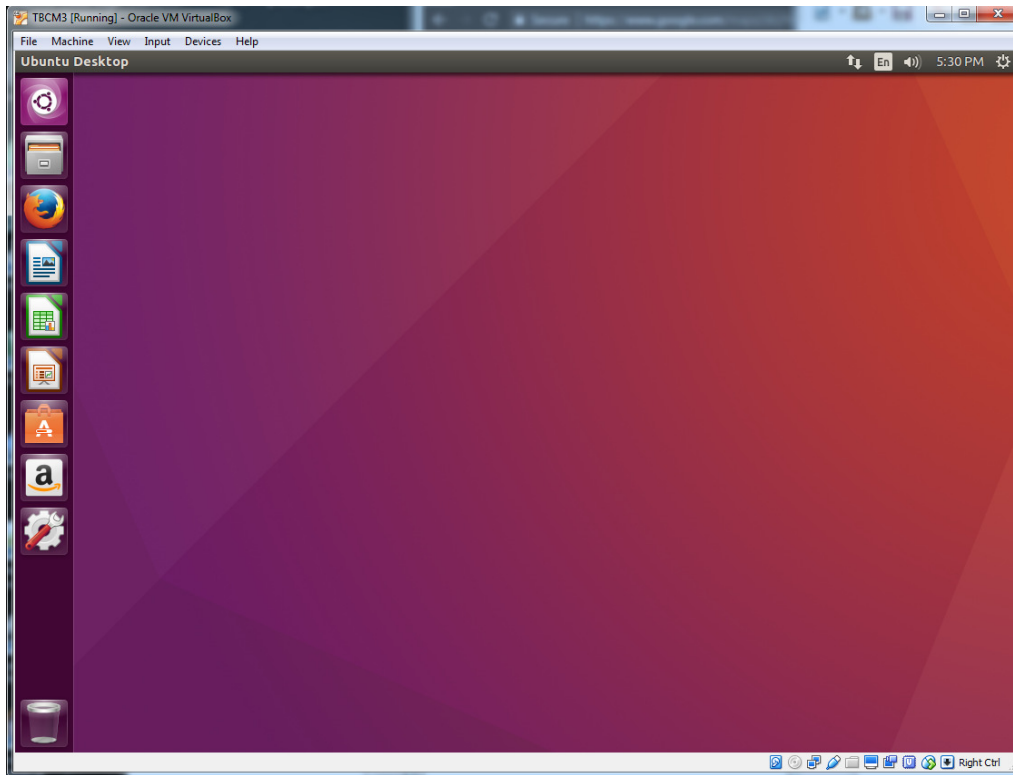
You'll be asked to confirm changes to the virtual disk. Click "Continue" to proceed with installation.



When prompted, select the appropriate geographical region, keyboard layout, and superuser information. After that information is submitted, the VM will prompt you to reboot. After the reboot and startup, you will be prompted to remove the installation medium. As there is no installation medium to remove, press the Enter key.

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You now have a fresh install of Ubuntu 16.04 VM running on your Windows machine.



Next Steps

Your virtual machine is prepared for the next step, installation of Qt Open Source development tools, detailed in other available documents.