SSN COLLEGE OF ENGINEERING

Department of Computer Science and Engineering

UCS2621 Cloud Computing

Assigned Date: 18.03.2024. ***Due Date: 18. 03.2024***

Creation of Virtual Machine and Installing different flavours of Linux OS

I. *Creating a Virtual Machine (Hosted- Virtual Machine)*

1. *Install Virtual Box in Host Operating System (amd- 64 bit processorarchitecture).*
2. *Check whether the processor supports virtualization or not by givingfollowing command in terminal*

   Command to check if CPU supports Virtualization or Not.
   ]$ grep --color vmx /proc/cpuinfo
   ]$ cat /proc/cpuinfo| egrep "vmx|svm"
   ]$ grep –E 'svm|vmx' /proc/cpuinfo

   vmx – Intel VT-x, virtualization support enabled in BIOS.svm – AMD SVM,virtualization enabled in BIOS.

3. *Create a Virtual Machine (VM) with 1 GB RAM and 10 GB Hard Disk and install Ubuntu 16.04.1 Desktop as guest OS. Name the VM as VM1.*

   http://releases.ubuntu.com/16.04/

4. *Switch the login into root user privilege mode by using the command*
   ]$ sudo -i
   When asked for password, give your system password
   give ***]$ ifconfig*** *and check default IP address*

Creation of Virtual Machine and Executing a C/JAVA/Python Program in VM

I. Install C and execute a C program for the following requirement.

To install C, C++ compilers in Ubuntu 20.04

]$ sudo apt-get install basic-utilities

Write a C program to count and display number of words in a file.

II. *Install Java Development Kit in VM.In Ubuntu 16.04.1*

]$ sudo apt-get install openjdk-8-jdk

In Ubuntu 20.04

]$ sudo apt-get install default-jdk

Refer to : https://phoenixnap.com/kb/install-java-ubuntu

Set path variables in bashrc file

https://www.wikihow.com/Set-Up-Your-Java_Home-Path-in-Ubuntu

Check the java version installed

]$ java -version

Execute a simple Java Program in a Virtual Machine.

III. *Install Python in VM.*

Execute a simple Python Program in a Virtual Machine.

Answer:

Creation of Virtual Machine and Installing different kinds of Linux OS

Aim: Creation of Virtual Machine and Installing Different Flavors of Linux OS

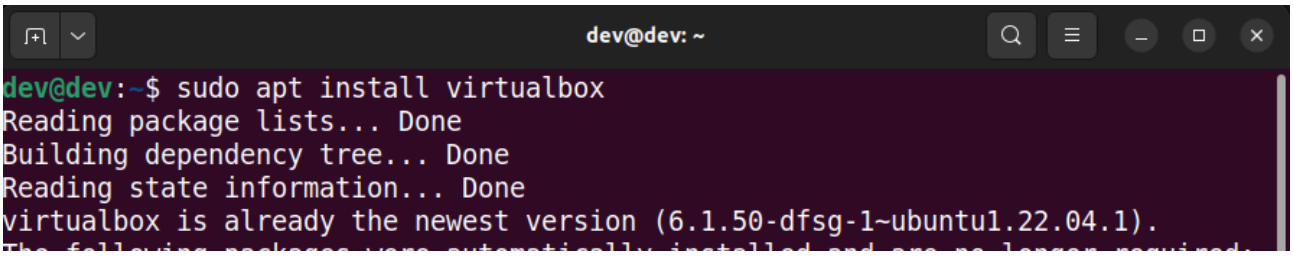
The Steps Are:

0)Need to Check if virtualization is supported by the processor or not by giving the following command in the terminal

dev@dev:~$ grep --color vmx /proc/cpuinfo
dev@dev:~$** cat /proc/cpuinfo | egrep "vmx|svm"**dev@dev:~$ grep -E 'svm/vmx' /proc/cpuinfo

Virtualization support is present in machine. This is confirmed by the presence of the svm(Secure Virtual Machine) flag in the /proc/cpuinfo output. The svm flag indicates that the AMD's virtualization technology is supported by the CPU

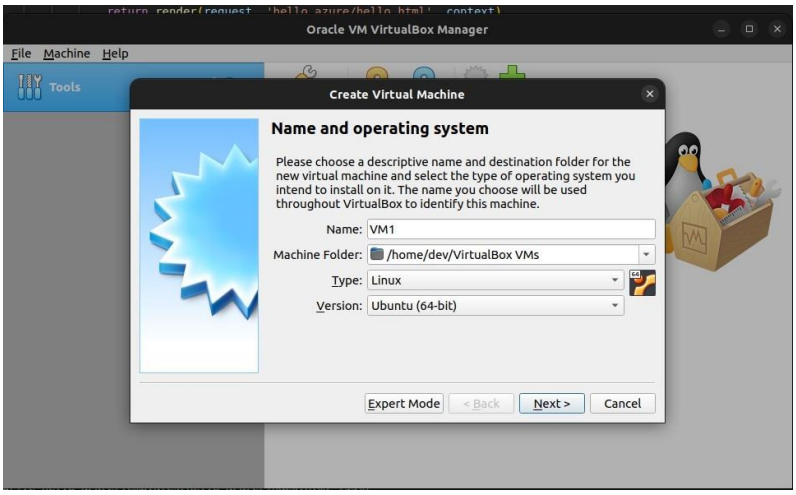
1)Next,Installing the virtualBox using:
dev@dev:~$ sudo apt install virtualbox



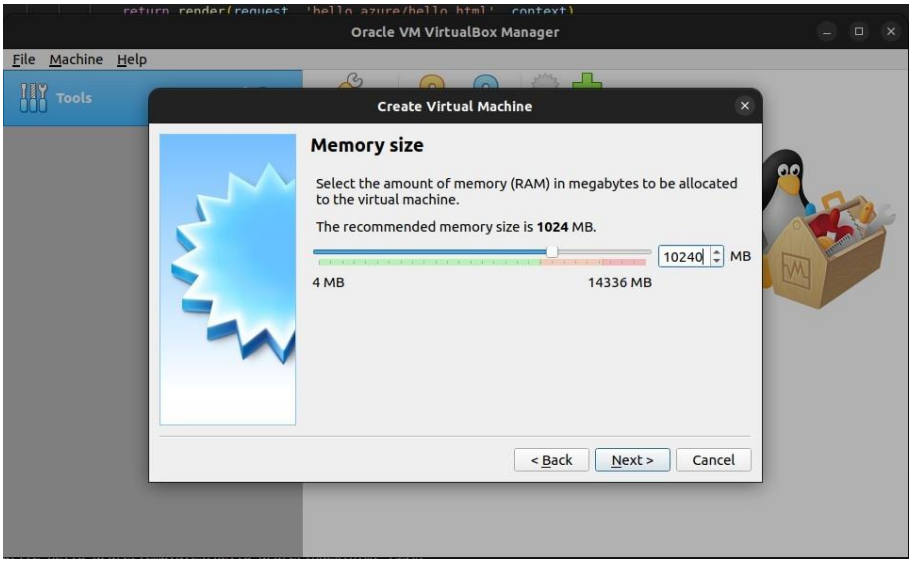
2)Downloading linux os from:
http://releases.ubuntu.com/16.04/ About the OS

iso file: 4-bit PC (AMD64) desktop image

3)Deploying Ubuntu 16.04.7

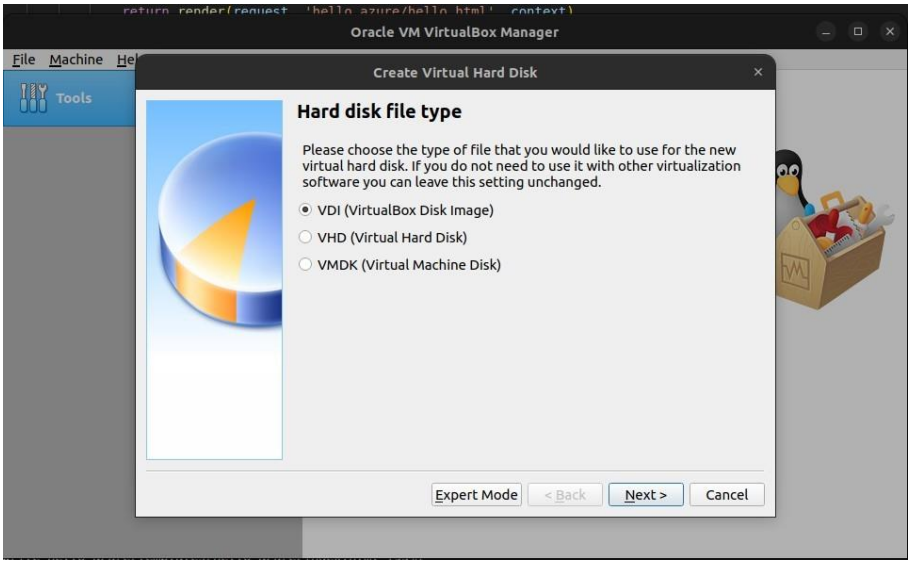


VM Name:
VM1Type:
Linux
Version: Ubuntu (64-bit)

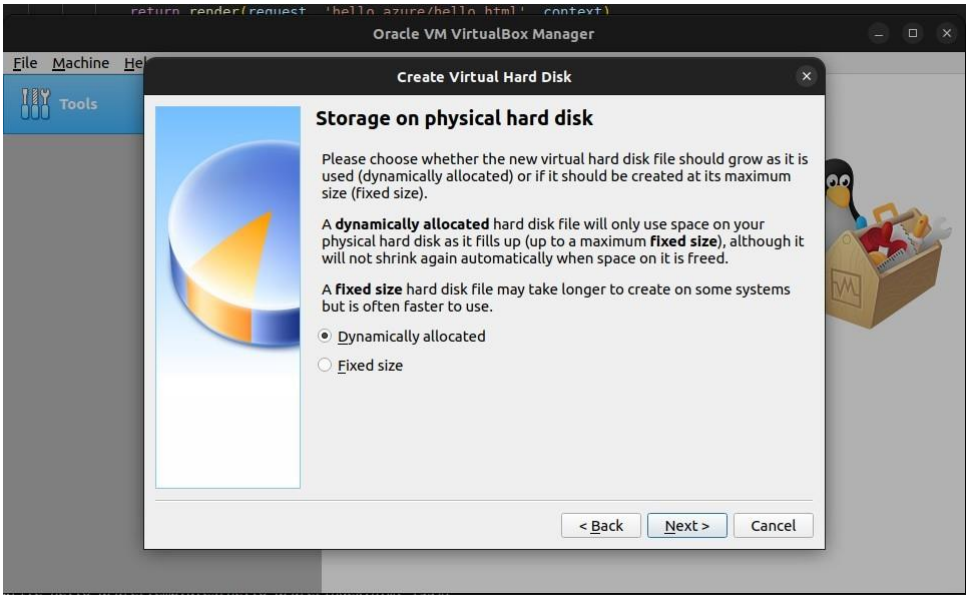


Memory Size: 10GB

This creates a Virtual hard disk for VM1

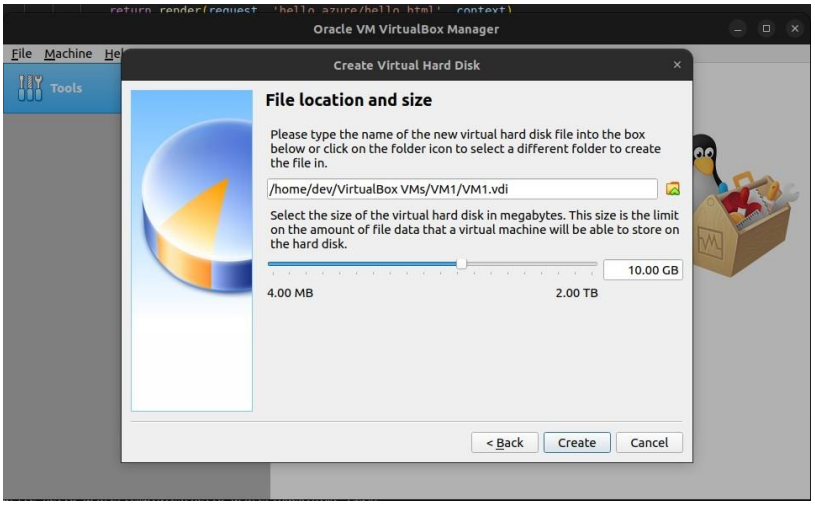


the native disk image format is VD1



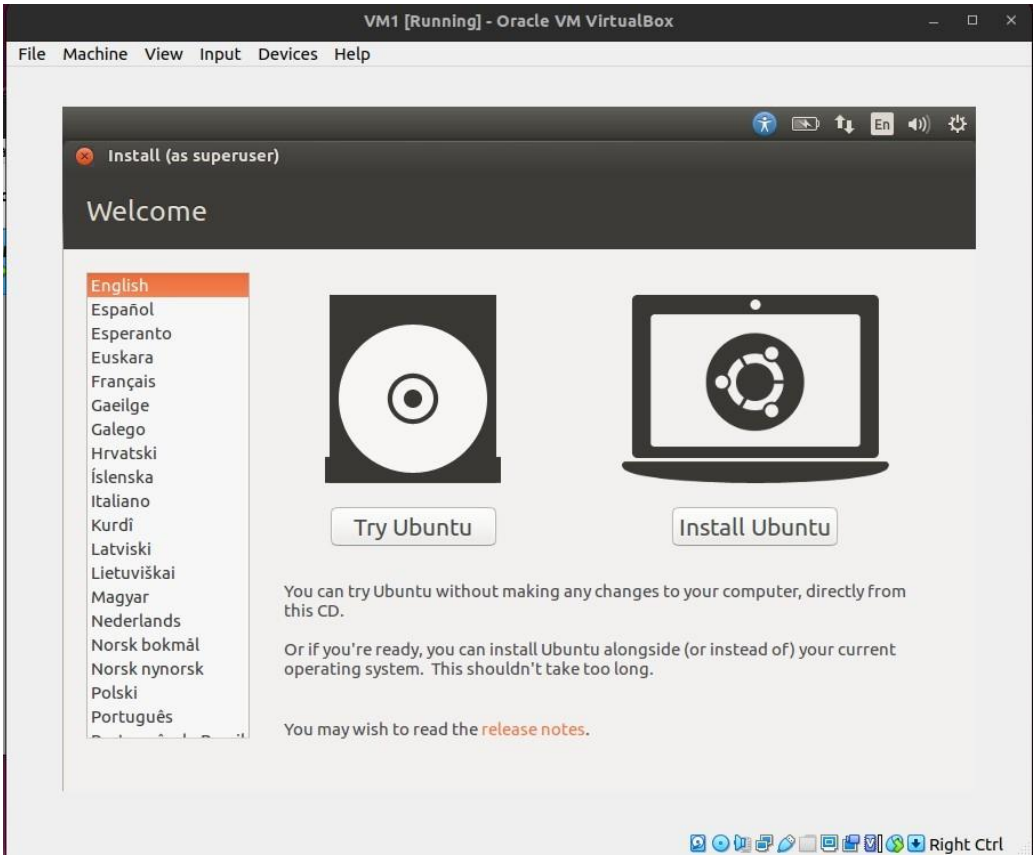
In a dynamically allocated hard disk file, the space on your physical hard disk is used only as it gets filled up (up to a maximum fixed size). However, it does not automatically shrink again when space is freed up.

On the other hand, a fixed-size hard disk file may take longer to create on some systems but is often faster to use.

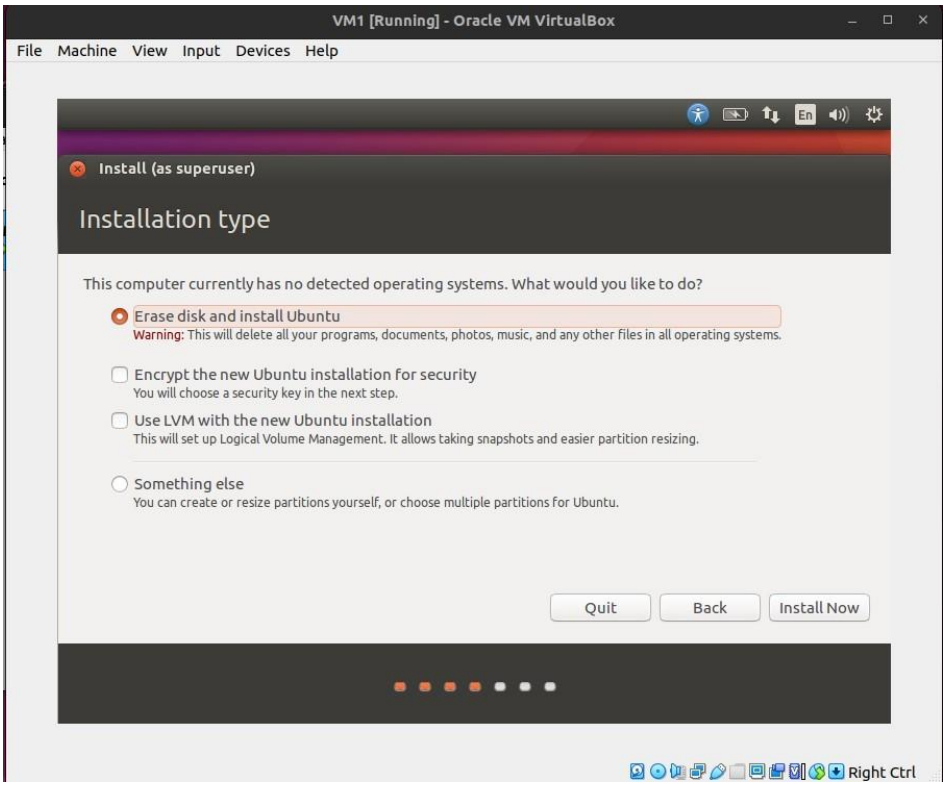


Select the VM1 and click on start.

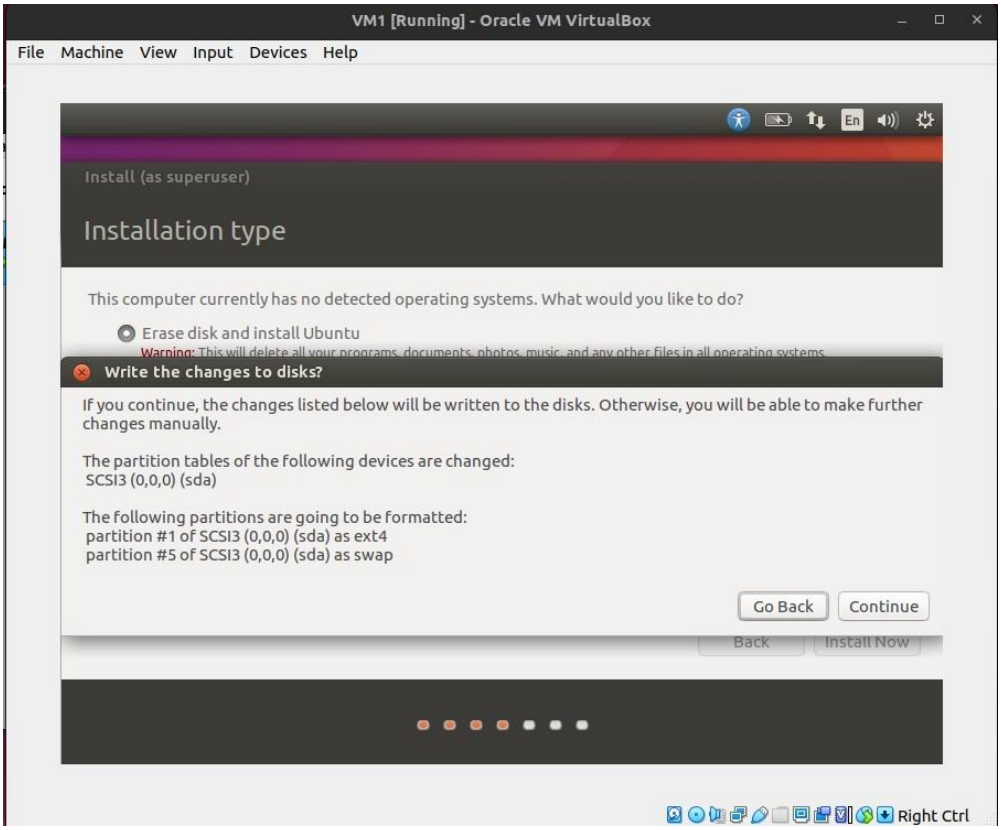
Select the Ubuntu ISO file.



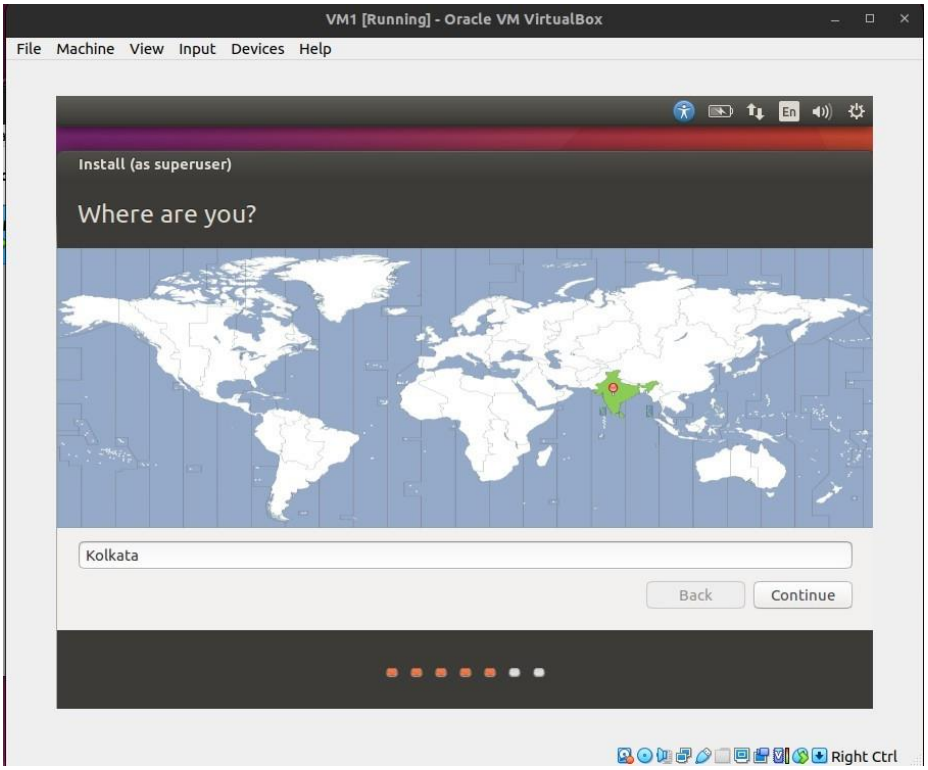
Click on Install Ubuntu to Deploy in your machine.



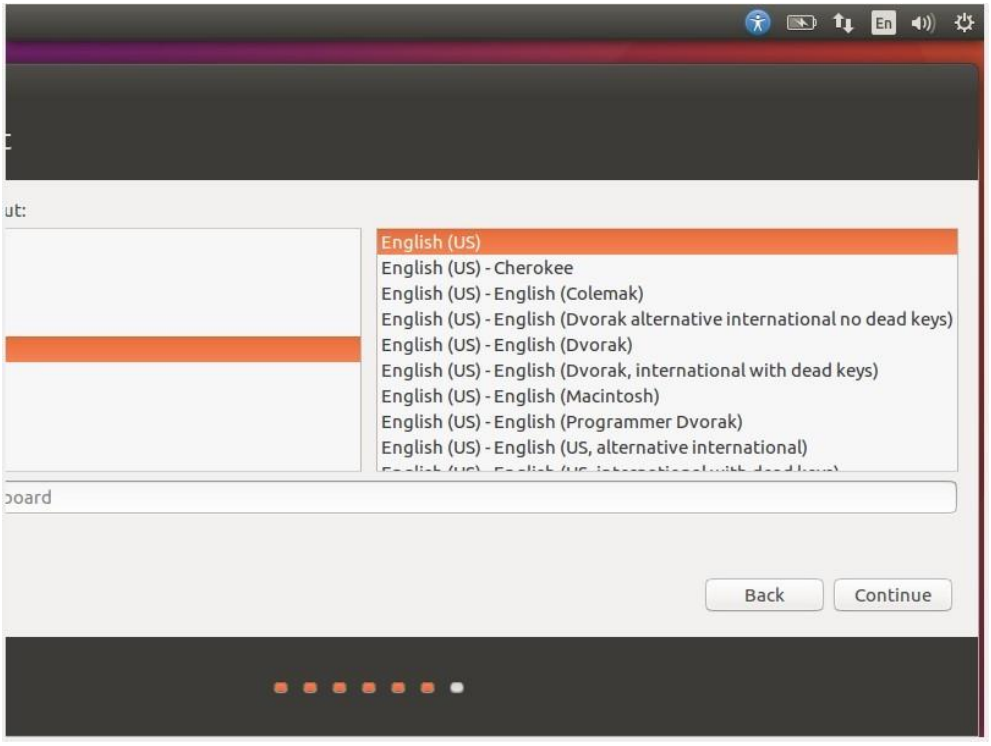
Drase disk and install Ubuntu option will delete all the file that is in the splited space simply click Install Now



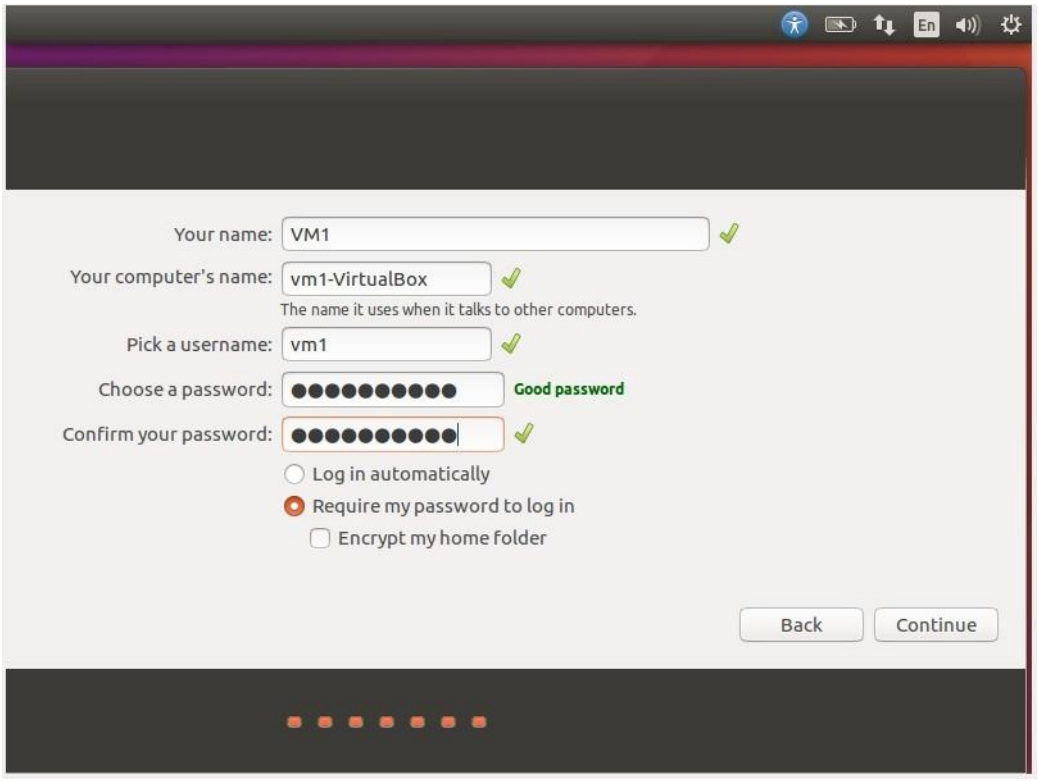
This will Display the space that allocated to the OS and file system. Click on **Continue**



Select the location and Click on **Continue**



Select the Language and Click on **Continue**



Your Name: User name
Your Computer name:
Machine name and Set the strong password

Click on Continue

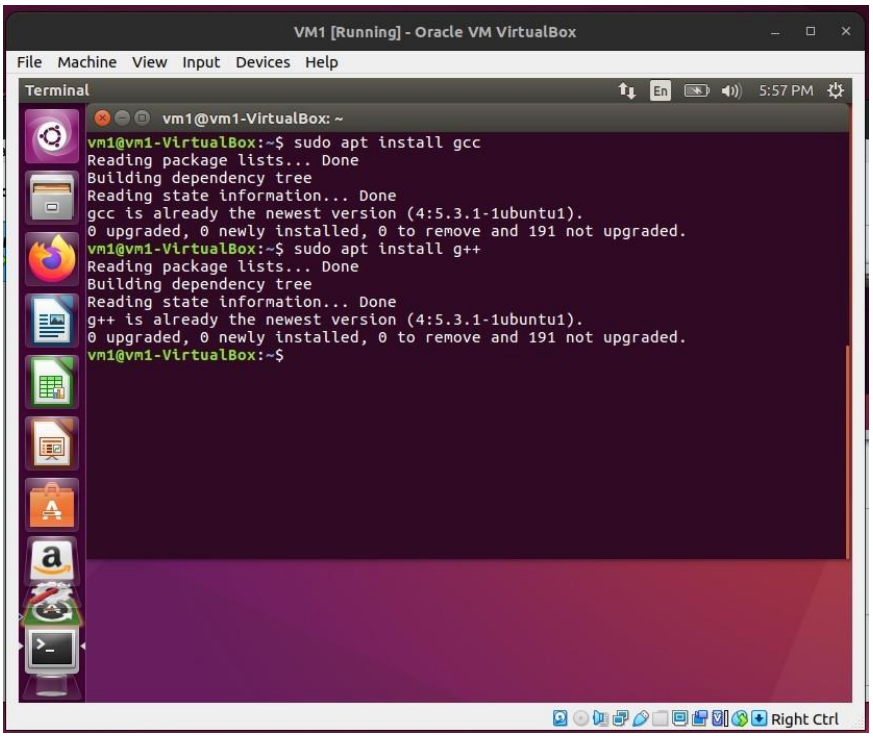
Wait for 20 to 30 min to deploy the Ubuntu16 on your Host OS.

Then wait for restart....

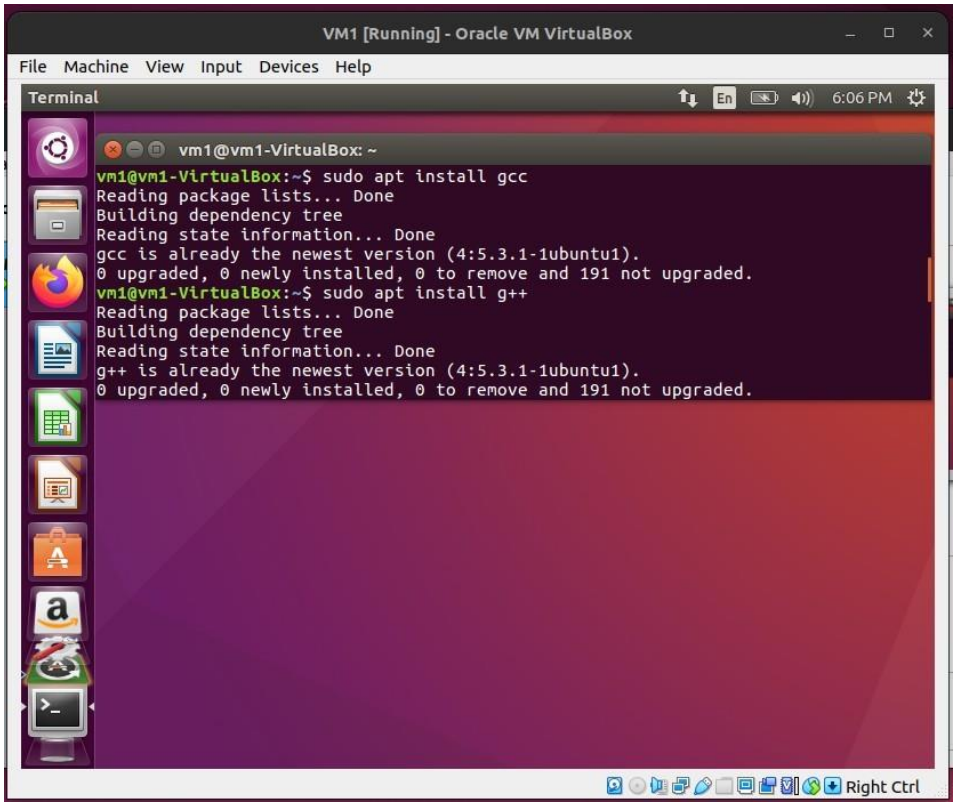
Now you good to go. by providing your password.

4)Deploy a Java Application.

4.1)Install C and C++ and run C and C++ program.

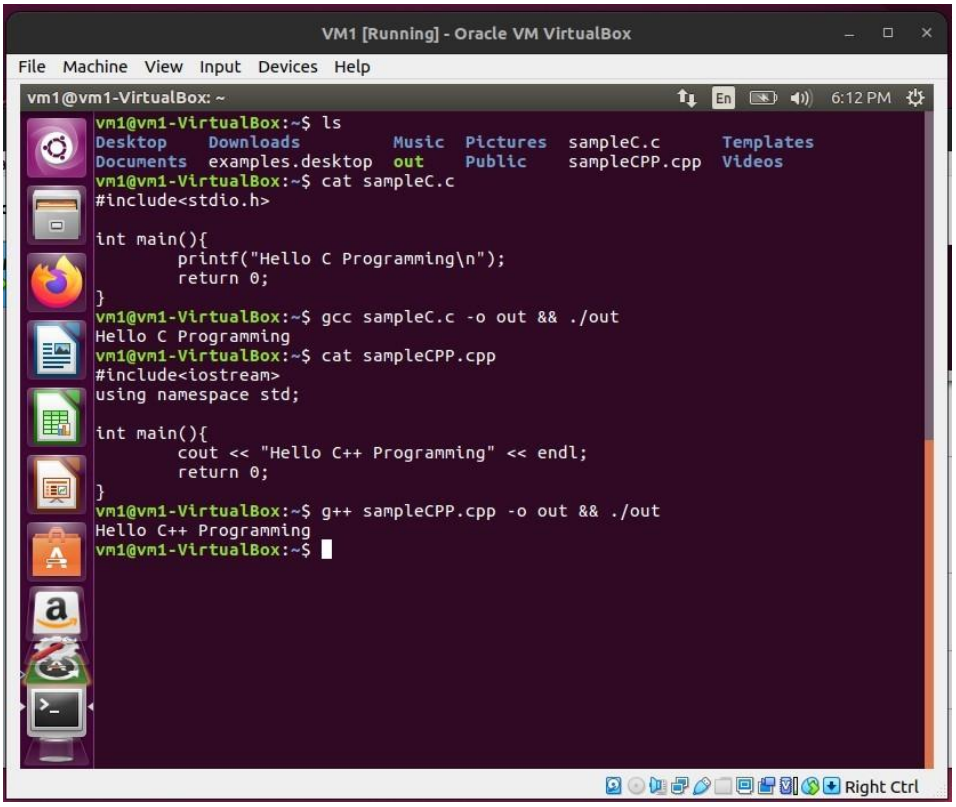


Open the terminal and run the below commands. vm1@vm1-VirtualBox:~$ **sudo apt install gcc** vm1@vm1-VirtualBox:~$ **sudo apt install g++**


VM1 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Terminal
6:06 PM
vm1@vm1-VirtualBox: ~
vm1@vm1-VirtualBox:~$ sudo apt install gcc
Reading package lists... Done
Building dependency tree
Reading state information... Done
gcc is already the newest version (4:5.3.1-1ubuntu1).
0 upgraded, 0 newly installed, 0 to remove and 191 not upgraded.
vm1@vm1-VirtualBox:~$ sudo apt install g++
Reading package lists... Done
Building dependency tree
Reading state information... Done
g++ is already the newest version (4:5.3.1-1ubuntu1).
0 upgraded, 0 newly installed, 0 to remove and 191 not upgraded.
Right Ctrl

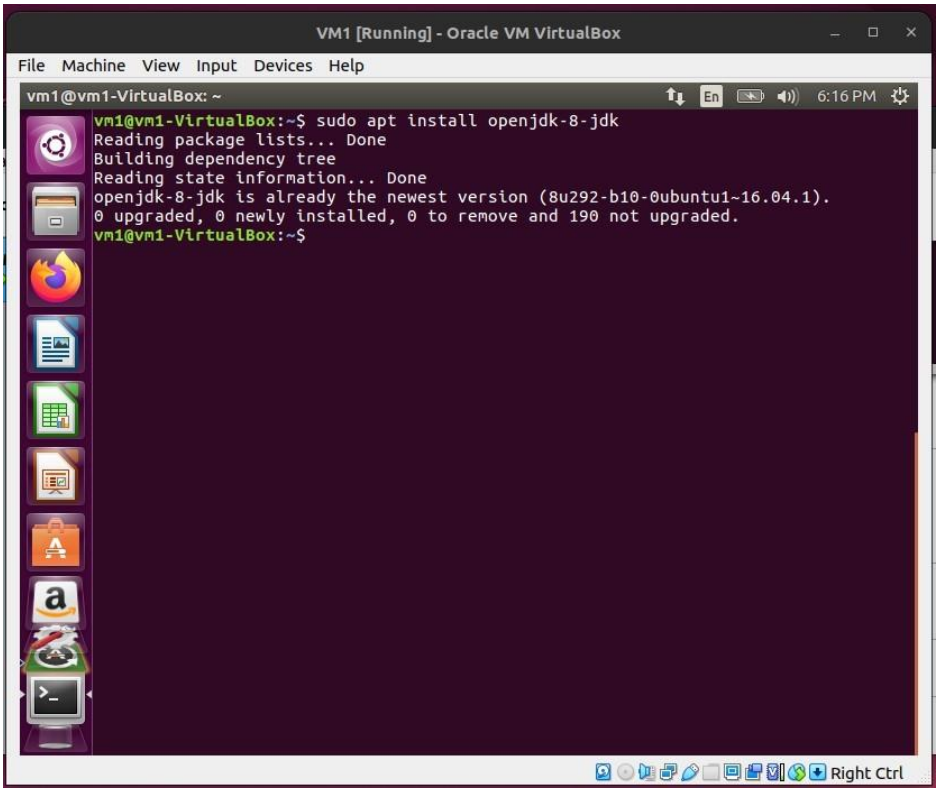
4.1.1)Create a sampleC.c file and write a sample code and run it.

4.1.2)Create a sampleCPP.cpp file and write a sample code and run it.

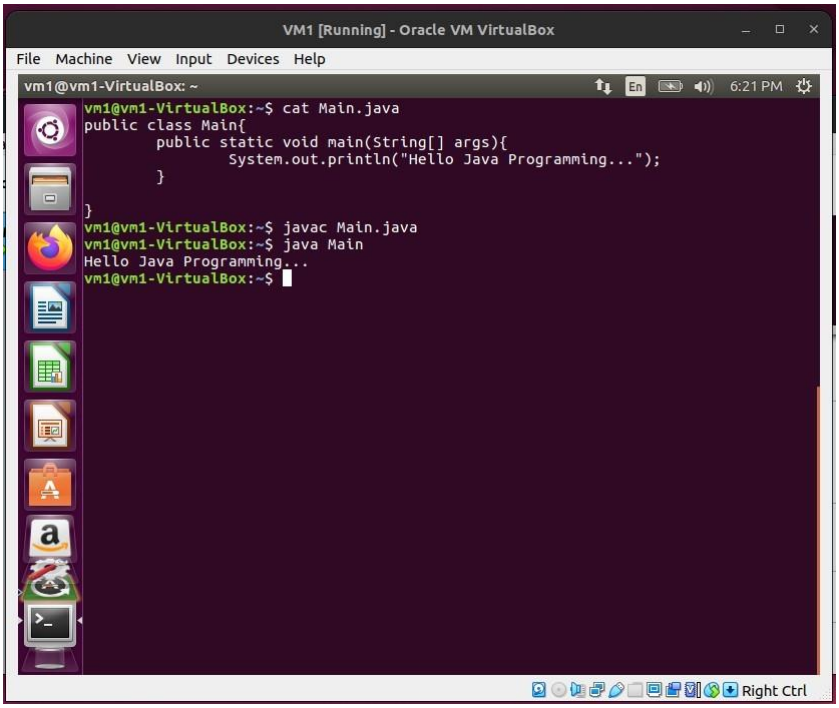


4.2)Install java and run java program.

vm1@vm1-VirtualBox:~$ **sudo apt install openjdk-8-jdk**


VM1 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
vm1@vm1-VirtualBox: ~
6:16 PM
vm1@vm1-VirtualBox:~$ sudo apt install openjdk-8-jdk
Reading package lists... Done
Building dependency tree
Reading state information... Done
openjdk-8-jdk is already the newest version (8u292-b10-0ubuntu1~16.04.1).
0 upgraded, 0 newly installed, 0 to remove and 190 not upgraded.
vm1@vm1-VirtualBox:~$
Right Ctrl

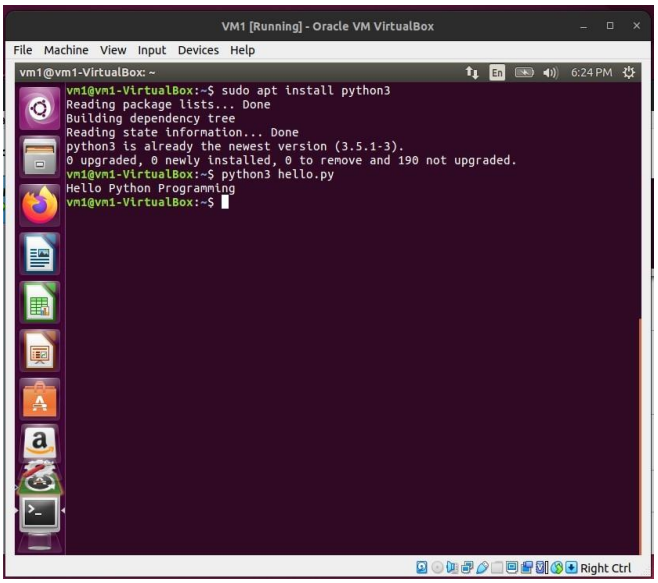
4.2.1)create a simple java file with simple code and run the java file.



4.3) Install python and run python program.

vm1@vm1-VirtualBox:~$ **sudo apt install python3**

4.3.1)create a simple java file with simple code and run the java file.



Result: Created Virtual Machine and Installed Different flavours of Linux OS