SETTING UP THE ENVIRONMENT

Overview

Successfully set up a virtualized Ubuntu Linux environment using Oracle VirtualBox. The project focused on building a reliable virtual machine configured with essential networking and development tools, providing a controlled lab environment for an enterprise security set up.

Objectives

-Demonstrate proficiency in virtualization technologies.

-Build a standardized Linux environment for testing, development, and security labs.

-Enhance technical skills in Linux system administration and package management.

Tools & Technologies

- Oracle VirtualBox (installed with extensions if asked to)

- Ubuntu Desktop 22.04.3 LTS – for generic clients/ desktop Machines: Windows/Mac/Linux

- USB Storage (for VM images, optional for image storage)

Implementation Steps

- Installed and configured VirtualBox as the virtualization platform downloadable from https://www.virtualbox.org/wiki/Downloads matching my operating system.

- Deployed Ubuntu Desktop 22.04 LTS as a guest OS which I downloaded from http://www.ubuntu.com/download/desktop . This was the image I used as per the timing of this project.

- Configured system resources with a minimum of cores 2 CPUs, 2048MB RAM, 25GB disk for optimized performance as shown in the screenshots below:
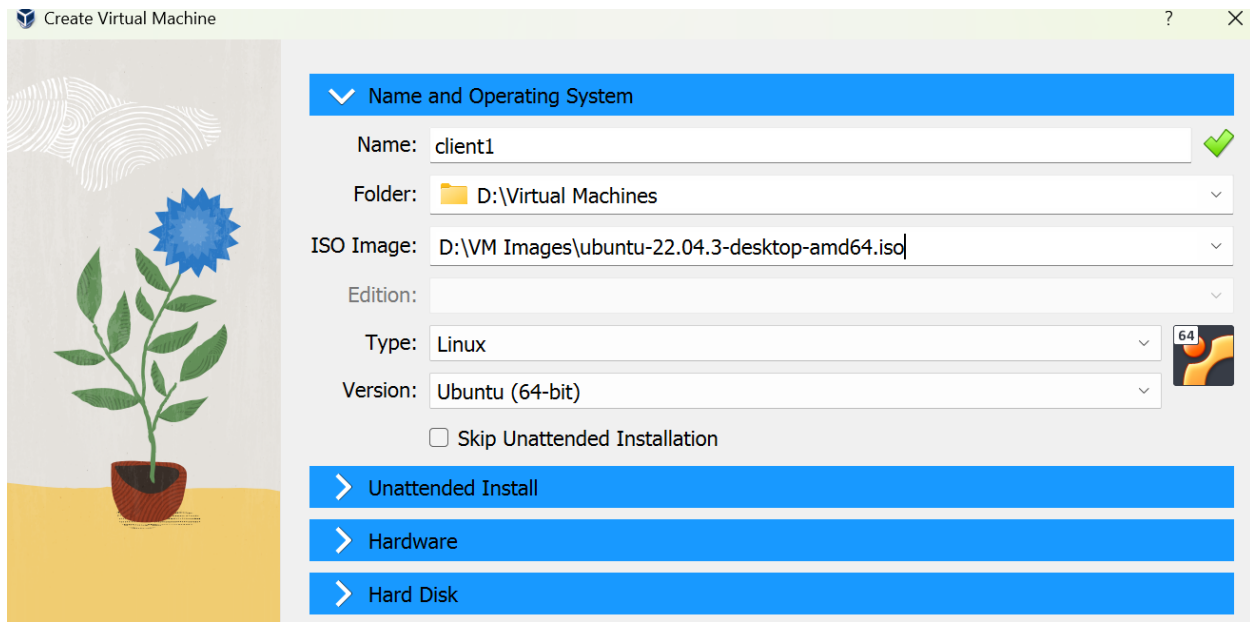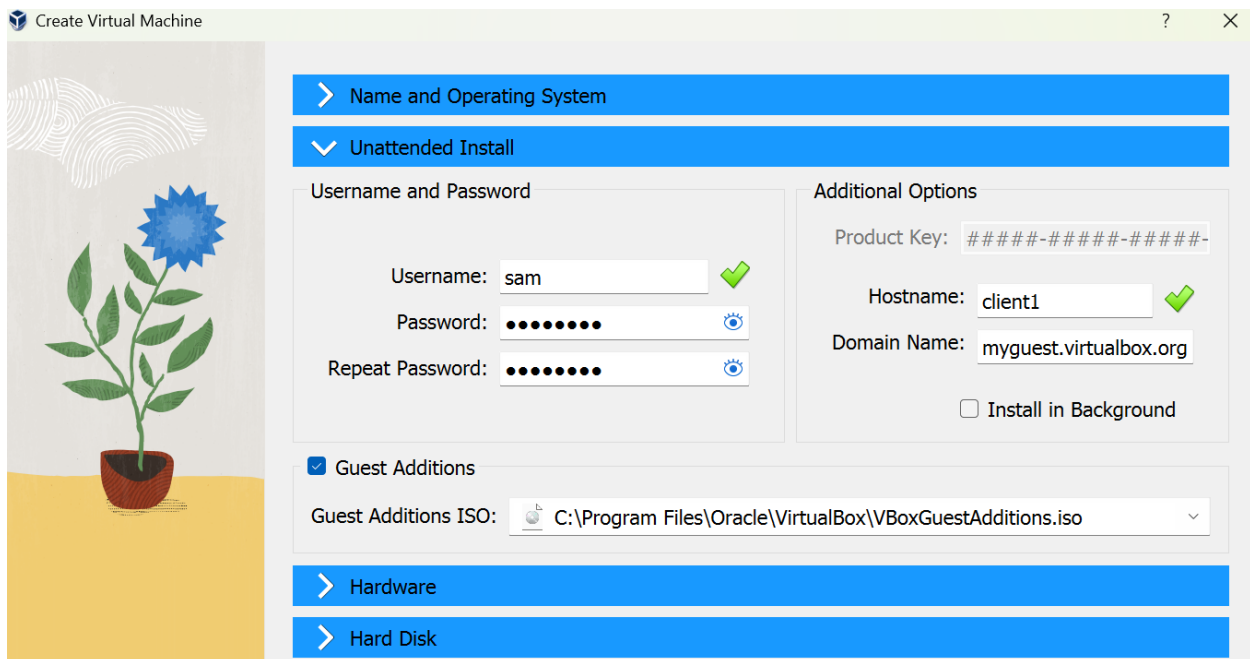
Figure 1/Client 1.
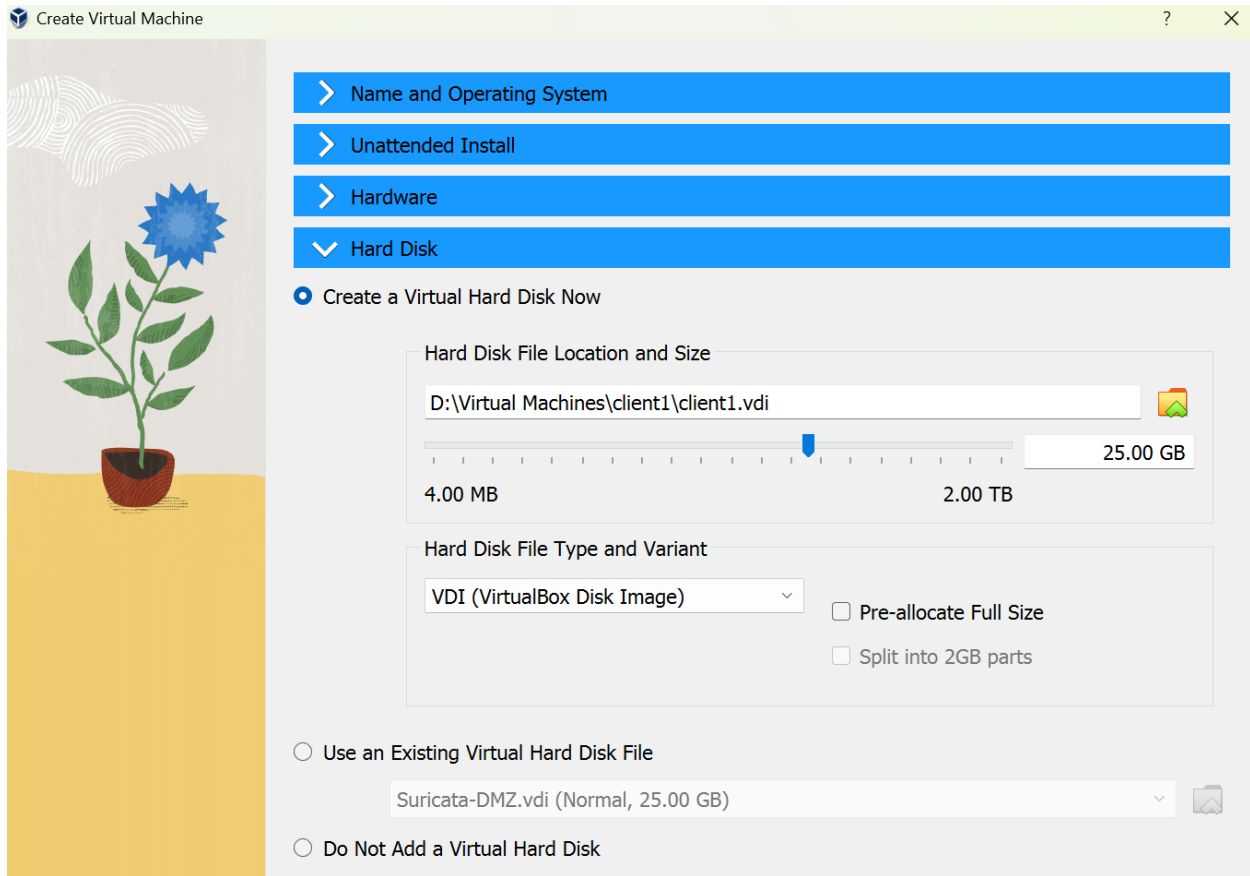

Figure 2/Unattended Installation
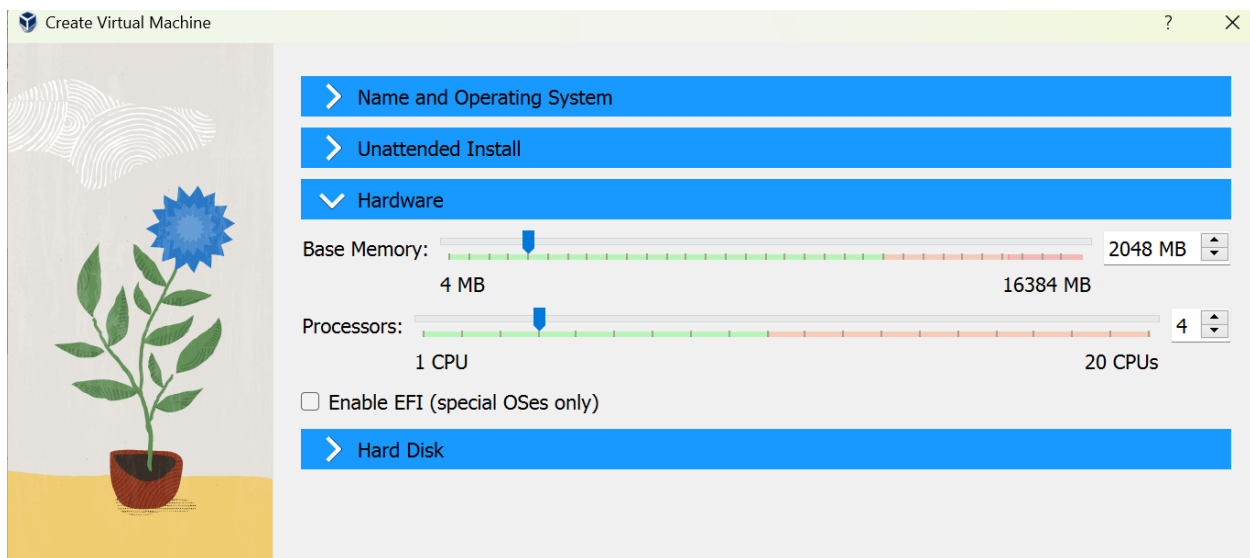
Figure 3/Hardware

Figure 4 /Harddisk

- Installed essential tools for networking, development, and security testing (Wireshark, Git, Nmap, Net-tools, Curl, GCC, Make, Perl, etc.)

- Configured Sudo privileges and applied system updates and upgrades as shown in the commands below. Basic Linux understanding was vital to complete the steps below:

:~$ su -

usermod -aG sudo Sam

Log out and back in for the change to take effect.

Once logged back in, open a terminal window (CTRL-ALT-T).

In the terminal window enter the following commands:

:~$ sudo apt-get update

:~$ sudo apt-get upgrade

:~$ sudo apt-get install -y net-tools

:~$ sudo apt-get install -y git

:~$ sudo apt-get install -y curl

:~$ sudo apt-get install -y htop

:~$ sudo apt-get install -y traceroute

:~$ sudo apt-get install -y nmap

:~$ sudo apt-get install -y Wireshark

:~$ sudo apt-get install -y gcc

:~$ sudo apt-get install -y make

:~$ sudo apt-get install -y perl

Results

Fully Functional Ubuntu virtual machine running in virtual box as shown in the screenshot below. This is the first machine Client 1 as indicated on the enterprise security diagram.
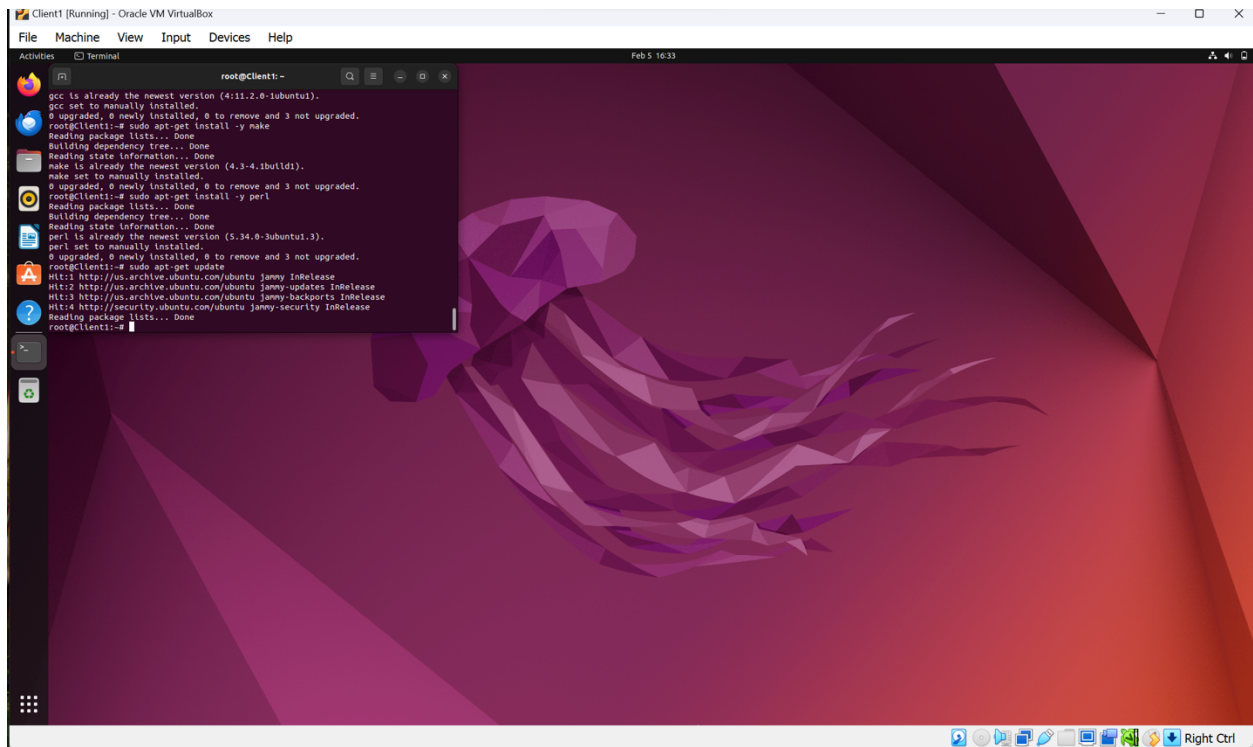
Figure 5/Client 1