

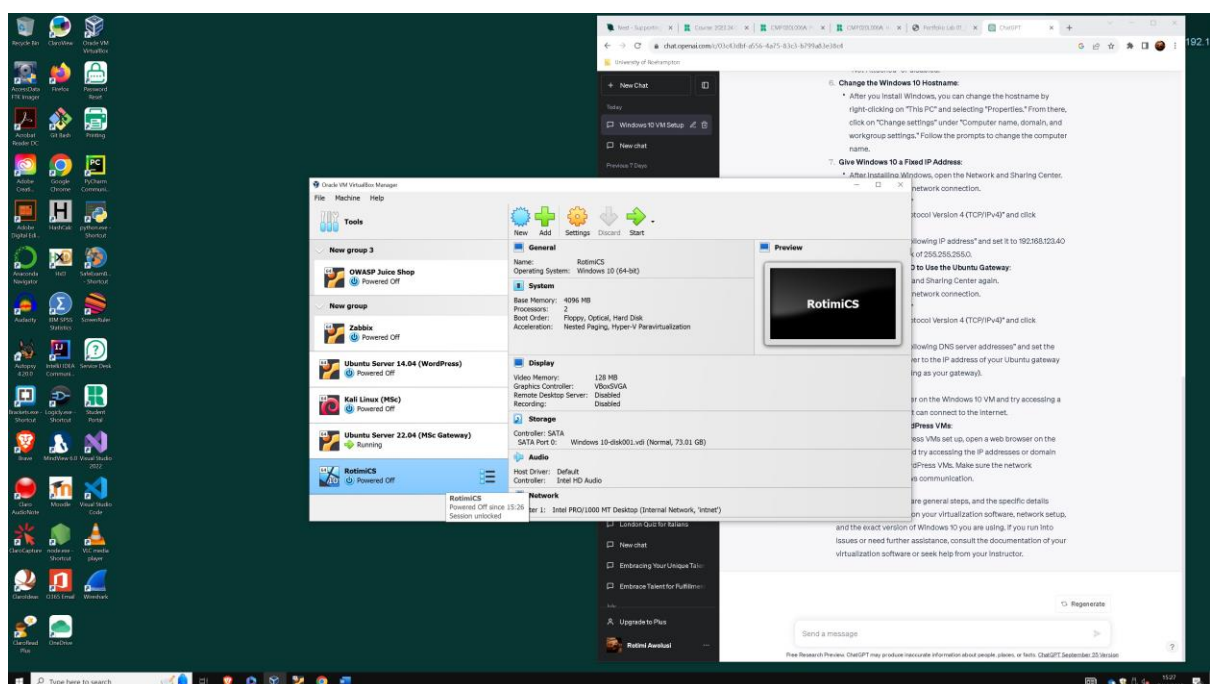
Cybersecurity

Sandboxed Network

Installing, deploying, and configuring a Windows 10 virtual machine on a virtual environment.

1. **Install Virtualization Software**:

- Download and install VirtualBox (or other virtualization software of your choice) from the official website: <https://www.virtualbox.org/>



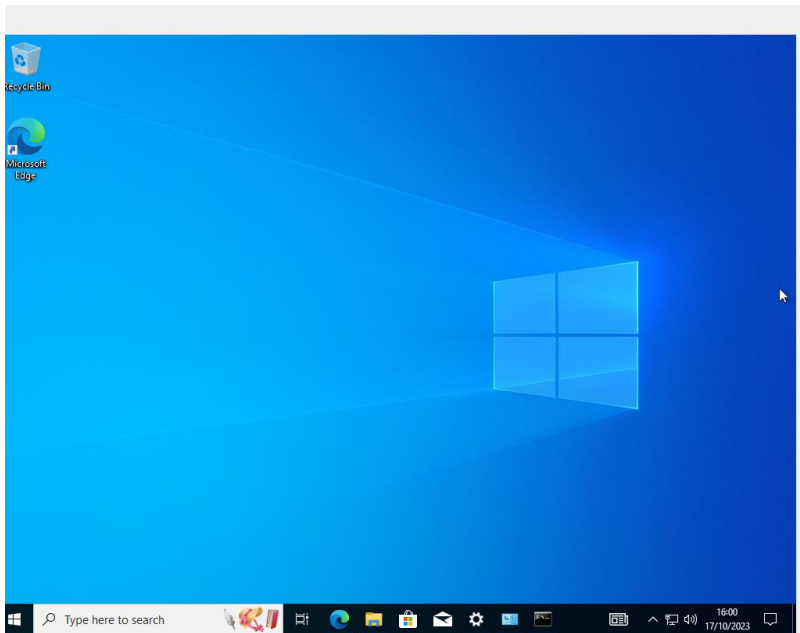
2. **Download Windows 10 ISO**:

- You'll need a Windows 10 ISO file. You might have received one from your instructor. If not, you can download an evaluation version from the official Microsoft website. I uploaded the iso file and activated my windows

3. **Create a New Virtual Machine**:

- Open VirtualBox.
- Click on "New" to create a new virtual machine.
- Follow the wizard:

- Name your VM (e.g., "Windows 10").
- Choose "Windows" as the type.
- Choose "Windows 10 (64-bit)" as the version.
- Allocate memory (4GB or more is recommended).
- Create a virtual hard disk and set its size (at least 40GB)



4. ****Set Network Adapter 1 to Internal Network****:

- Select the virtual machine you just created.
- Click on "Settings."
- Go to the "Network" tab.
- Set "Adapter 1" to "Attached to: Internal Network."

5. ****Disable Other Network Adapters****:

- In the same "Network" tab, make sure other adapters are set to "Not Attached" or disabled.

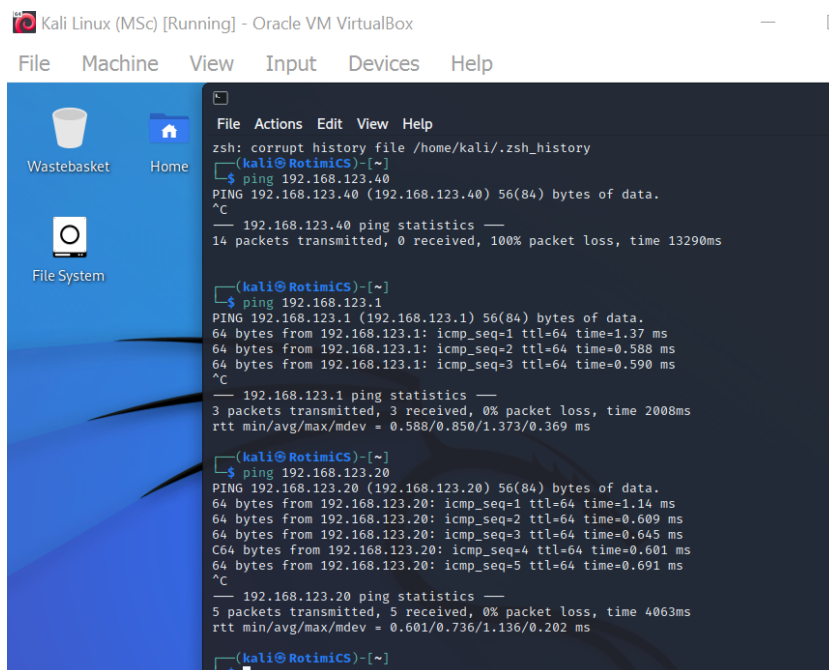
6. ****Change the Windows 10 Hostname****:

- After you install Windows, you can change the hostname by right-clicking on "This PC" and selecting "Properties." From there, click on "Change settings" under "Computer name, domain, and workgroup settings." Follow the prompts to change the computer name.

7. **Give Windows 10 a Fixed IP Address**:

- After installing Windows, open the Network and Sharing Center.
- Click on the active network connection.
- Select "Properties."
- Select "Internet Protocol Version 4 (TCP/IPv4)" and click "Properties."
- Choose "Use the following IP address" and set it to 192.168.123.40 with a subnet mask of 255.255.255.0.

KALI LINUX: Configure the IP address of Kali, changed the hostname, pinged it with other machines and made sure it can access the internet.



The screenshot shows a Kali Linux virtual machine window titled "Kali Linux (MSc) [Running] - Oracle VM VirtualBox". The window has a menu bar with "File", "Machine", "View", "Input", "Devices", and "Help". The desktop background is blue with icons for "Wastebasket", "Home", and "File System". A terminal window is open, displaying the following commands and output:

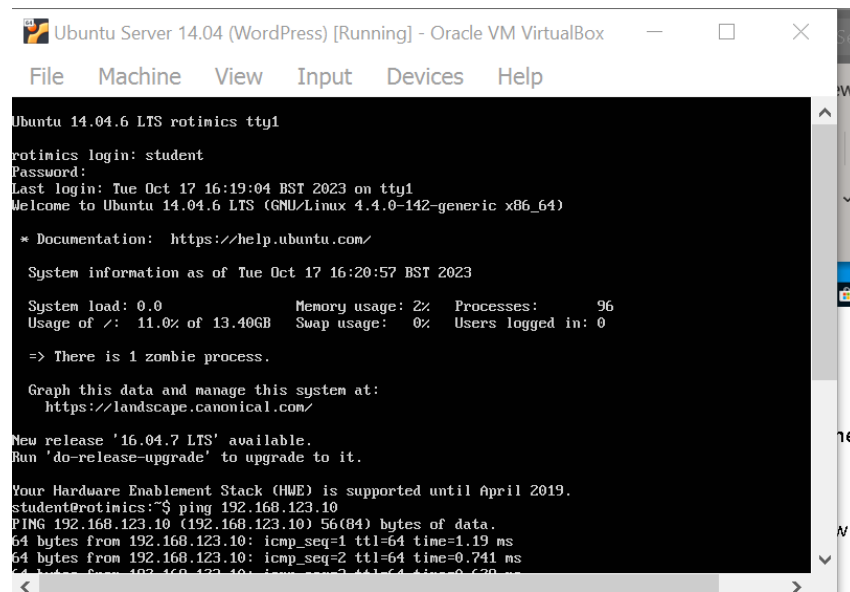
```
File Actions Edit View Help
zsh: corrupt history file /home/kali/.zsh_history
(kali@RotimiCS)~$ ping 192.168.123.40
PING 192.168.123.40 (192.168.123.40) 56(84) bytes of data.
^C
 192.168.123.40 ping statistics —
14 packets transmitted, 0 received, 100% packet loss, time 13290ms

(kali@RotimiCS)~$ ping 192.168.123.1
PING 192.168.123.1 (192.168.123.1) 56(84) bytes of data.
64 bytes from 192.168.123.1: icmp_seq=1 ttl=64 time=1.37 ms
64 bytes from 192.168.123.1: icmp_seq=2 ttl=64 time=0.588 ms
64 bytes from 192.168.123.1: icmp_seq=3 ttl=64 time=0.590 ms
^C
 192.168.123.1 ping statistics —
3 packets transmitted, 3 received, 0% packet loss, time 2008ms
rtt min/avg/max/mdev = 0.588/0.850/1.373/0.369 ms

(kali@RotimiCS)~$ ping 192.168.123.20
PING 192.168.123.20 (192.168.123.20) 56(84) bytes of data.
64 bytes from 192.168.123.20: icmp_seq=1 ttl=64 time=1.14 ms
64 bytes from 192.168.123.20: icmp_seq=2 ttl=64 time=0.609 ms
64 bytes from 192.168.123.20: icmp_seq=3 ttl=64 time=0.645 ms
64 bytes from 192.168.123.20: icmp_seq=4 ttl=64 time=0.601 ms
64 bytes from 192.168.123.20: icmp_seq=5 ttl=64 time=0.691 ms
^C
 192.168.123.20 ping statistics —
5 packets transmitted, 5 received, 0% packet loss, time 4063ms
rtt min/avg/max/mdev = 0.601/0.736/1.136/0.202 ms

(kali@RotimiCS)~$
```

Ubuntu WordPress: I pinged Ubuntu WordPress to Kali and it worked perfectly, I have changed the hostname and made sure it can access the internet.



```
Ubuntu Server 14.04 (WordPress) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Ubuntu 14.04.6 LTS rotinics tty1
rotinics login: student
Password:
Last login: Tue Oct 17 16:19:04 BST 2023 on tty1
Welcome to Ubuntu 14.04.6 LTS (GNU/Linux 4.4.0-142-generic x86_64)

* Documentation:  https://help.ubuntu.com/

System information as of Tue Oct 17 16:20:57 BST 2023

System load: 0.0           Memory usage: 2%    Processes:    96
Usage of /:  11.0% of 13.4GB Swap usage:   0%    Users logged in: 0

=> There is 1 zombie process.

Graph this data and manage this system at:
https://landscape.canonical.com/

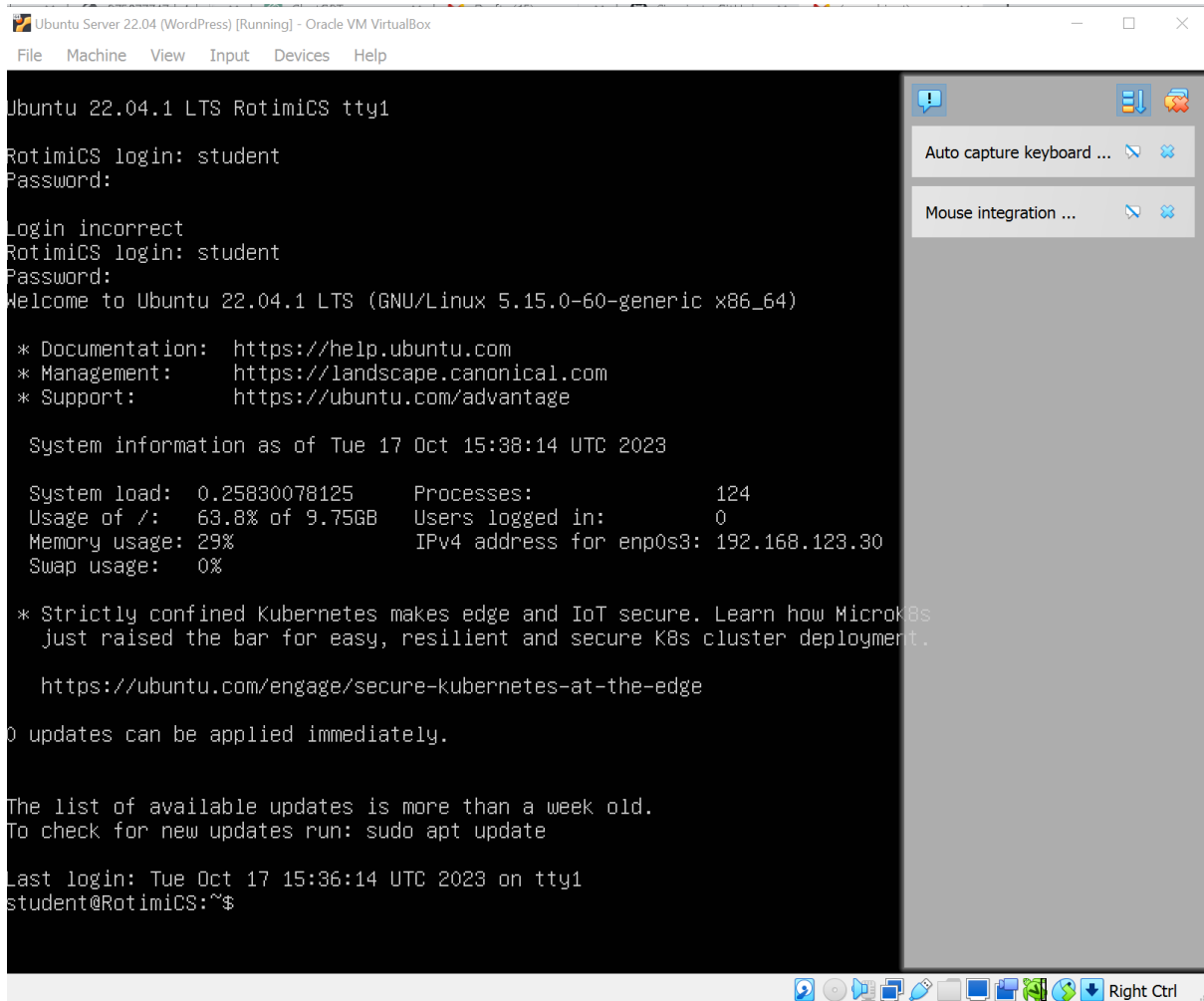
New release '16.04.7 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Your Hardware Enablement Stack (HWE) is supported until April 2019.
student@rotinics:~$ ping 192.168.123.10
PING 192.168.123.10 (192.168.123.10) 56(84) bytes of data.
64 bytes from 192.168.123.10: icmp_seq=1 ttl=64 time=1.19 ms
64 bytes from 192.168.123.10: icmp_seq=2 ttl=64 time=0.741 ms
64 bytes from 192.168.123.10: icmp_seq=3 ttl=64 time=0.650 ms
```

8. **Configure Windows 10 to Use the Ubuntu Gateway**:

- Open the Network and Sharing Center again.
- Click on the active network connection.
- Select "Properties."
- Select "Internet Protocol Version 4 (TCP/IPv4)" and click "Properties."
- Choose "Use the following DNS server addresses" and set the Preferred DNS server to the IP address of your Ubuntu gateway (or the device serving as your gateway).

UBUNTU WORDPRESS 22.04: Configure the IP address, changed the hostname, pinged it with other machines and to sure it can access the internet.



```
Ubuntu Server 22.04 (WordPress) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Ubuntu 22.04.1 LTS RotimiCS tty1
RotimiCS login: student
Password:
Login incorrect
RotimiCS login: student
Password:
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-60-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Tue 17 Oct 15:38:14 UTC 2023

System load:  0.25830078125   Processes:           124
Usage of /:   63.8% of 9.75GB   Users logged in:     0
Memory usage: 29%            IPv4 address for enp0s3: 192.168.123.30
Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

0 updates can be applied immediately.

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Tue Oct 17 15:36:14 UTC 2023 on tty1
student@RotimiCS:~$
```

9. **Test Internet Access**:

- Open a web browser on the Windows 10 VM and try accessing a website to ensure it can connect to the internet.

10. Test Browsing to WordPress VMs

IN CONCLUSION:

Below are step-by-step instructions for setting up Network Adapter 1 as an Internal Network for a Windows 10 VM in two popular virtualization software: VirtualBox Workstation. Choose the one that corresponds to your virtualization software.

For VirtualBox:

1. Open VirtualBox

Launch the VirtualBox application on your computer.

2. Select the Windows 10 VM:**

In the VirtualBox Manager, select your Windows 10 VM from the list of available virtual machines.

3. **Go to Network Settings:**

With the Windows 10 VM selected, click on the "Settings" button (gear icon) in the toolbar or press `Ctrl + S`.

4. **Configure Network Adapter:**

- In the VM settings window, go to the "Network" tab on the left sidebar.
- You'll see "Adapter 1" in the list. Under "Attached to," select "Internal Network" from the drop-down menu.

5. **Set Internal Network Name:**

- After selecting "Internal Network," a field named "Name" will appear. Enter a name for your internal network (e.g., "InternalNetwork").

6. **Save and Close:**

- Click "OK" to save the settings and close the VM settings window.

These steps successfully configure Network Adapter 1 as an Internal Network for your Windows 10 VM, isolating it from the host system and external networks while allowing communication with other VMs on the same internal network.