Day 3 : Virtualization and SSH Protocol

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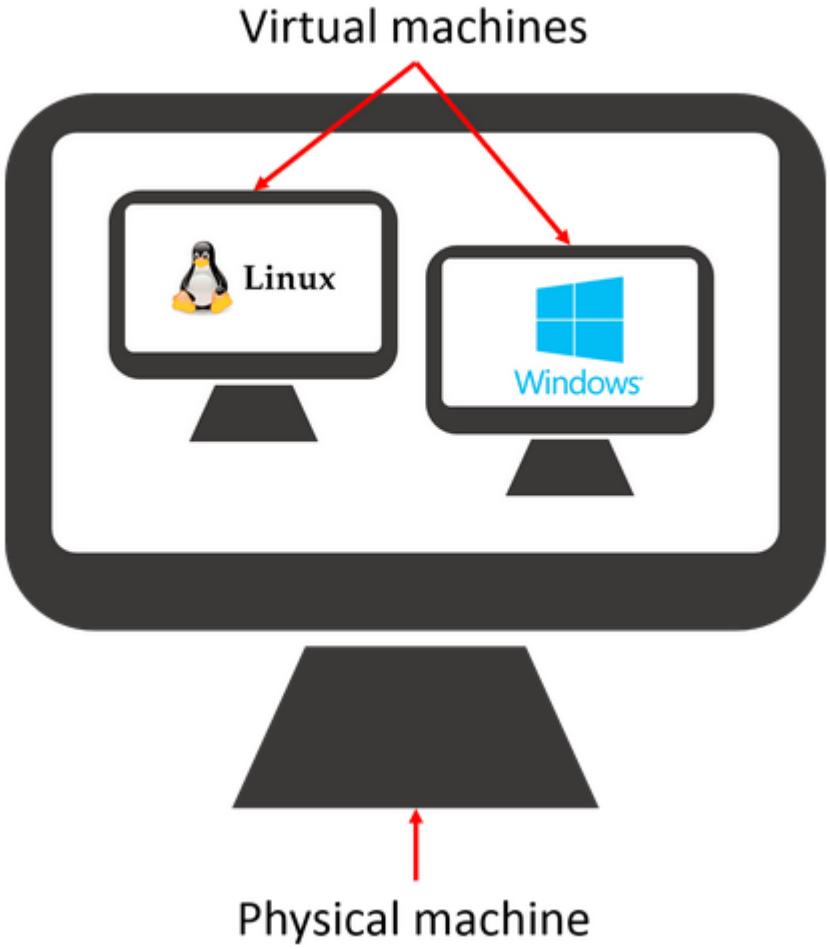
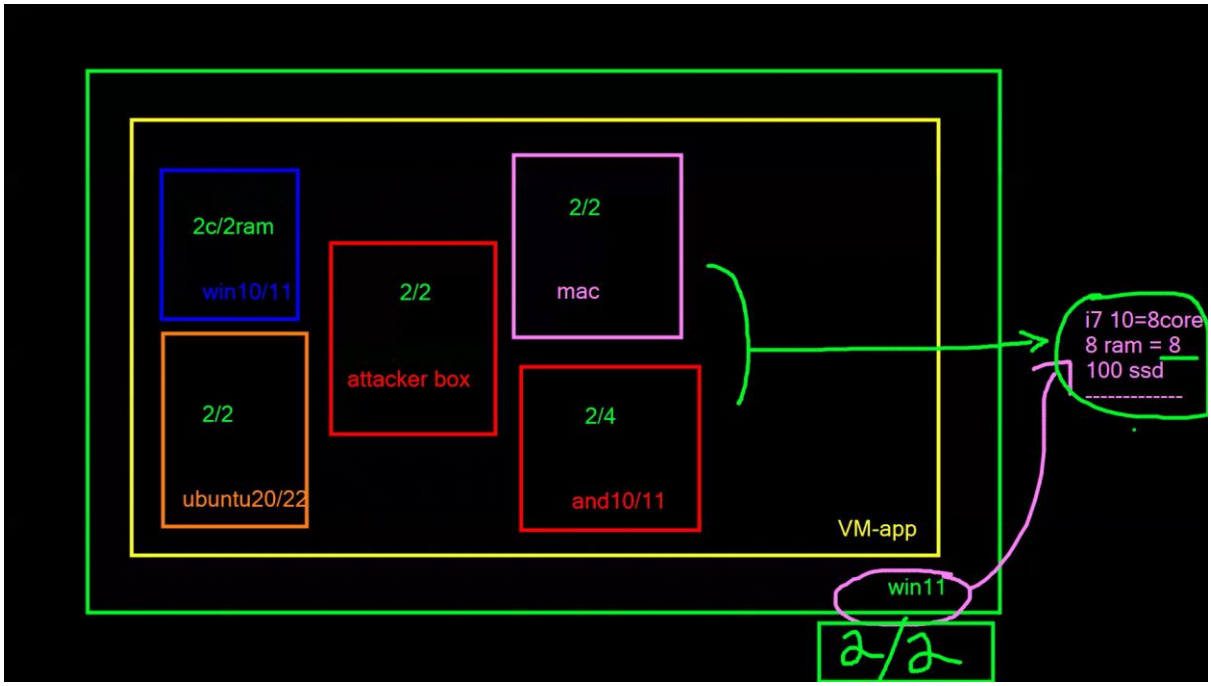
Virtualization:

Virtualization is technology that you can use to create virtual representations of servers, storage, networks, and other physical machines. Virtual software mimics the functions of physical hardware to run multiple virtual machines simultaneously on a single physical machine.



Basically, virtualization software creates machine you want by providing all requirements in terms of virtual or software



In this Picture there is allocation of core and ram allocation to each virtual machine as per your PC specifications this is very helpful information before downloading and using so many virtual machines.

This picture

- Win11 is our main machine we are using or Physical machine, Inside this we can install apps that support virtualization that is Virtual Box or VMware workstation.
- Based on our specs we have : 6 GB RAM and 8 Core processor.
- After that, lets say we download win10 iso file as show in picture and install in virtual box so
- Minimum requirement to run windows 10 is 2 cores and 2GB ram.
- We download another machine which is ubuntu we also allocate 2 cores and 2GB ram

Main Calculation: main windows machine requires minimum 2GB Ram and 2 Core or processor to do all the tasks so after that we left with - **6 GB RAM and 6 Cores**

Here Storage matters I Would recommend minimum 200 GB storage.

But we cannot use all 6GB RAM and 6 Cores Because we have to Run VMapp, browsing and other task (Meetings) so **we Can use 4 GB RAM and 4 Cores for Our virtual Machines**

We left with 4 GB Ram and 4 Cores

We have 5 Virtual Machines installed and we Can use 2 virtual machines at a time that have minimum requirement of 2 GB Ram and 2 Cores

Hence, We Can Run windows 10 and Ubuntu at a time OR

Windows 10 and Attacker Box at a time OR

Windows 10 and Mac at a time

So, every Combination that Fits within Remaining amount of RAN and processors We can use along With Our main windows machine.

Ngrok:

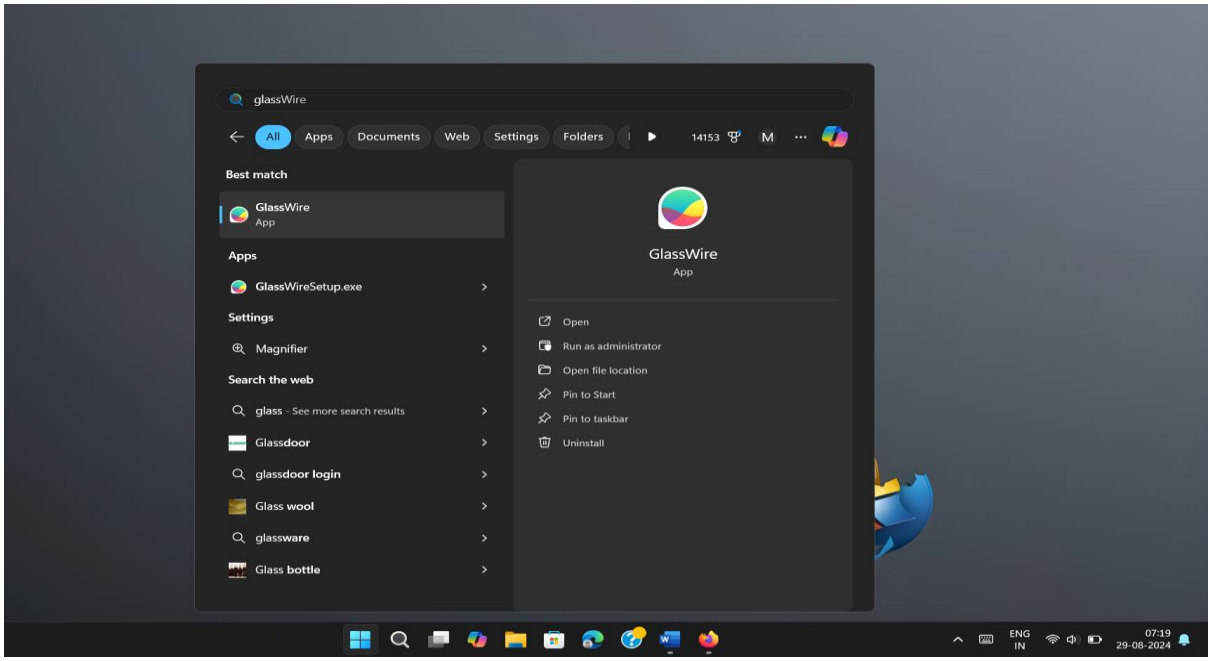
Most useful Tool for port forwarding and helps to create static Domain.

During class, Sir suggest and show us very Good software Glasswire

Glasswire:

Software used to monitor your Network Activity and it is also a personal firewall you can set your own rules, Info About how many devices are Connected to your network With visually stunning Graphics.

I also download that software



SSH Protocol :

The Secure Shell (SSH) protocol is a method for securely sending commands to a computer over an unsecured network. SSH uses cryptography to authenticate and encrypt connections between devices. SSH also allows for tunnelling, or port forwarding, which is when data packets are able to cross networks that they would not otherwise be able to cross. SSH is often used for controlling servers remotely, for managing infrastructure, and for transferring files.

To download this SSH service in Our linux machine command required is :

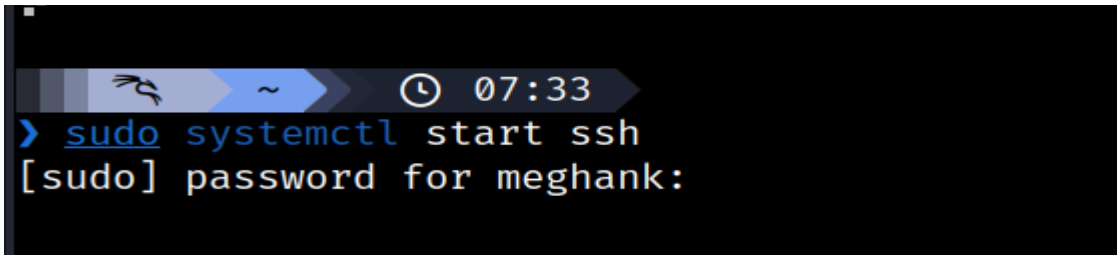
sudo apt-get install openssh-server -y

But for almost all kali linux user ssh is already there as I use kali linux

I also use ssh service to do practical how ssh able connect to other machine

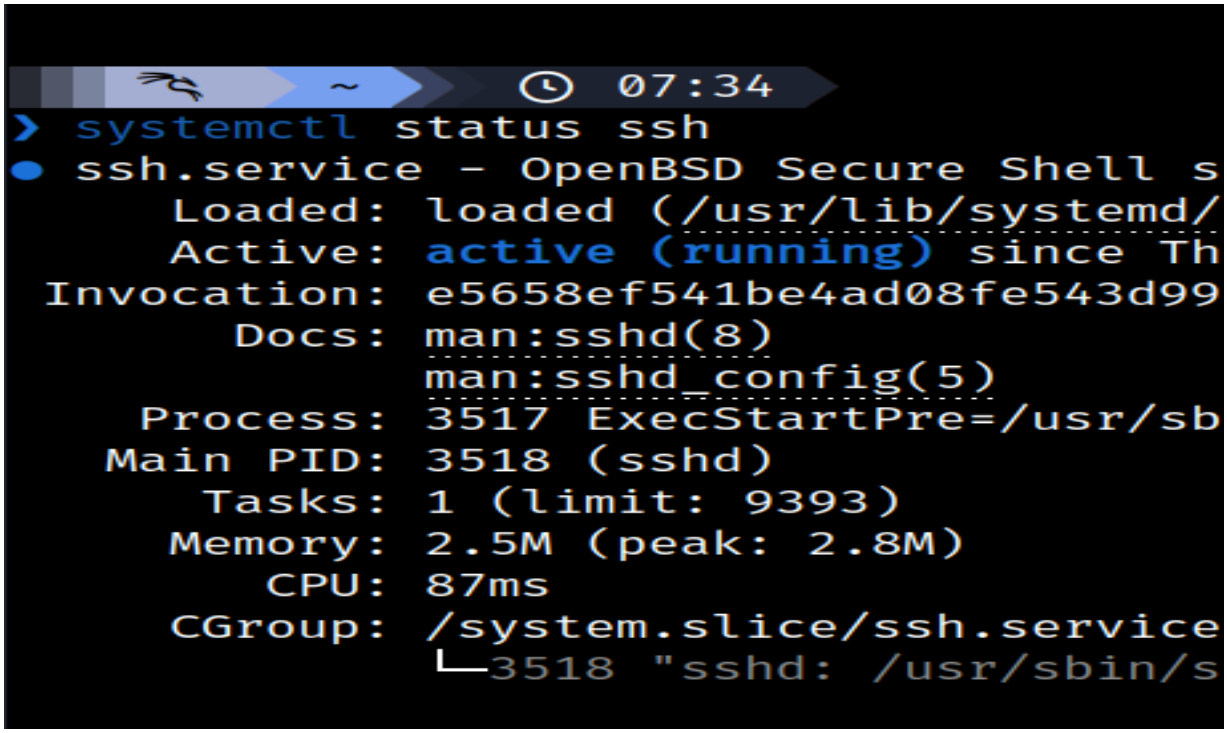
So I first turned on my kali machine and start ssh service using command

sudo systemctl start ssh



You can also check status of ssh service By using Command

sudo systemctl status ssh

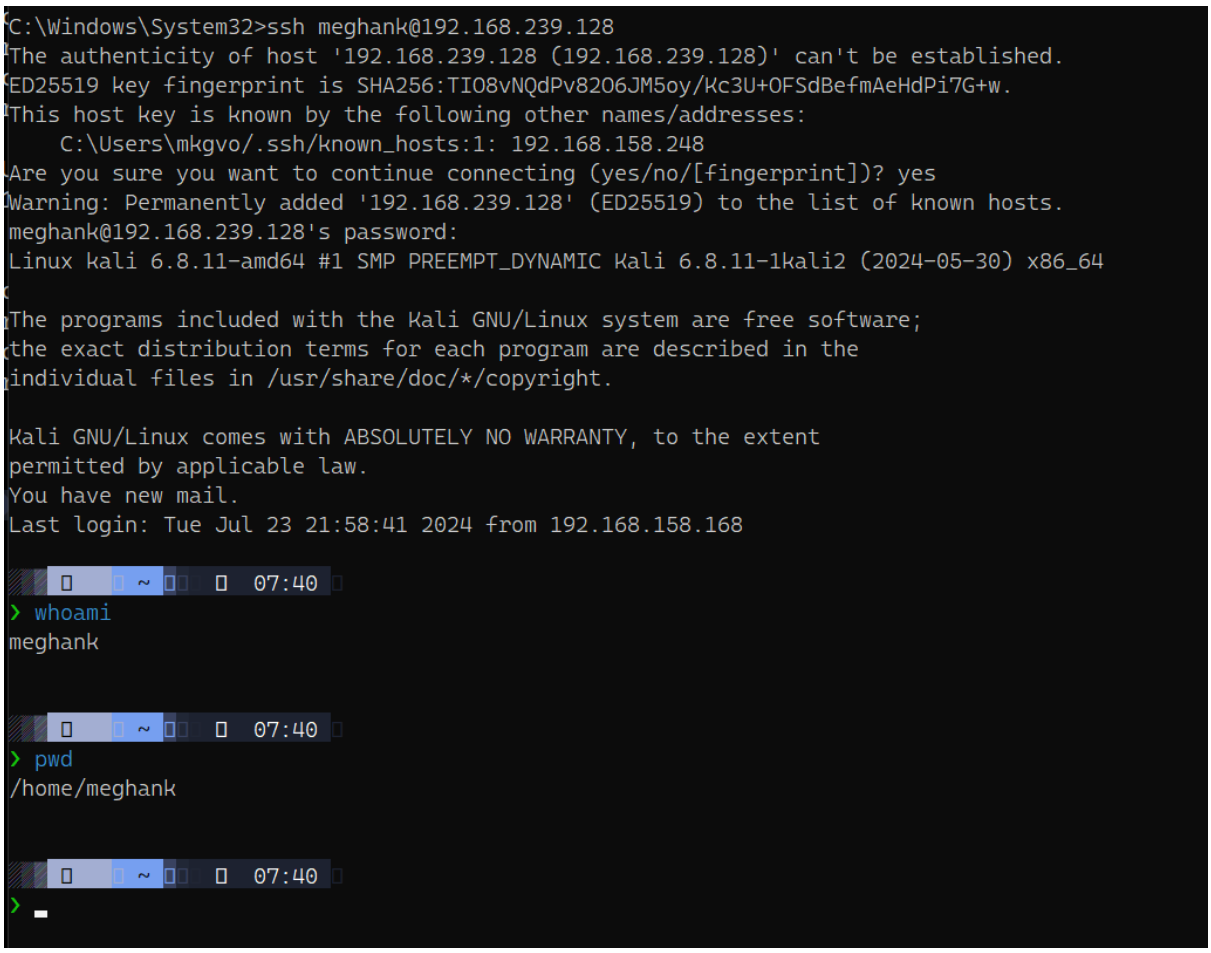


To connect to this my running ssh service in kali linux machine I used my main windows machine command line utility :

To connect ssh server command/syntax used is :

ssh machine_name@machine_IP

So, As per syntax I used following command to connect to my linux using windows



Windows cmd ask me for my machine password that I want to connect so this is very high security in ssh. I enterned my linux machine password so I entered in linux successfully

And I am successful to connect to My VMware kali machine.