# I3-Jupiter VM Setup

1. Install VirtualBox from - https://www.virtualbox.org/wiki/Downloads
2. Download Ubuntu LTS Server image from - https://ubuntu.com/download/server
3. Create a VM with RAM 8GB and 20+ GB Hard Drive.
4. Start the VM and mount the Image downloaded in step 2 to install Ubuntu LTS Server on the VM. Update the installation using -

```
sudo apt update && sudo apt upgrade
```

5. Repeat **step 4** to create more VM nodes.
6. In the Network setting for **each VM**, make Adapter 1 **Attached to** as *NAT* and Adapter 2 **Attached to** as *Internal Network*.
7. Start each VM and check the interfaces using **ifconfig -a** to get the network interface which has not been assigned an IP. It should be something like **enp0s8**
8. Assuming the interface is **enp0s8**, create a script called **iface.sh** and run it to set network address for the **VMx**, where x lies in [1,254]

```
sudo ifconfig enp0s8 10.10.10.x/24
```

9. Do the same for all the VMs with different IPs in the subnet 10.10.10.0/24
10. Now all the VMs can reach each other over the 10.10.10.0/24 network.
11. Add the Ubuntu username of the Guest OS for each VM in the /etc/hosts file in the Host OS like so -
    - 10.10.10.x Ubuntu_Username_Of_VMx
12. Enabling SSH access to the Guest VMs from the Host OS-
    - Make sure all VMs have SSH service running using the command `service ssh status`
    - In the network setting of each VM, under Adapter1, select the Advanced dropdown.

- Add port forwarding as below -
    - for VM1 > Host port 5001 - guest port 22
    - for VM2 > Host port 5002 - guest port 22
    - ...
    - ...
- Make a script called startVM.sh (inside the Host OS) with the script below and make it executable using `chmod +x startVm.sh`
- Call startVM.sh with the Ubuntu_Username_Of_VMx like so to start VMx - `./startVm.sh Ubuntu_Username_Of_VMx`

```
#!/bin/bash
vmname = $1
vm=`VBoxManage list runningvms | grep $1`

if [ -z "$vm" ]
        then
        echo "VM not running"
        echo "Starting VM.. ."
        VBoxManage startvm "$1" --type headless
        for i in {1..20}
        do
                printf "$i "
                nc -zv -w1 "$1" 22 >> /dev/null 2>&1
        done

        echo "sshing..."
        sleep 3
else
        echo "VM running"
fi
```

```
if [ $1 == "j1" ]
then
sshport=2221
fi

if [ $1 == "j2" ]
then
sshport=2222
fi

if [ $1 == "j3" ]
then
sshport=2223
fi
```