INTERNSHIP REPORT ON MOUNT POINT SYNCING AND APACHE SERVER INSTALLATION

A Project Report

Submitted by:

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ACKNOWLEDGEMENT:

The internship opportunity I had with AIRTEL was a great chance for learning and professional development. Therefore, I consider myself as a very lucky individual as I was provided with an opportunity to be a part of it. I am also grateful for having a chance to meet so many wonderful people and professionals who led me though this internship period.

Bearing in mind previous I am using this opportunity to express my deepest gratitude and special thanks to the Sausthav Sir who in spite of being extraordinarily busy with his duties, took time out to hear, guide and keep me on the correct path and allowing me to carry out my project at their esteemed organization and extending during the training.

I express my deepest thanks to Sarbjeet Sehra Sir, Wipro for taking part in useful decision & giving necessary advices and guidance and arranged all facilities to make life easier. I choose this moment to acknowledge his contribution gratefully.

It is my radiant sentiment to place on record my best regards, deepest sense of gratitude to Mr. Gajendra Verma Sir, Wipro for their careful and precious guidance which were extremely valuable for my study both theoretically and practically.

I perceive as this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, in order to attain desired career objectives. Hope to continue cooperation with all of you in the future,
Sincerely,

Kritagya Khandelwal

TABLE OF CONTENT:

1. Objective

2. Abstract

3. Introduction

3.1 Mount point syncing

3.2 Apache Server Installation

4. Internship Discussion

5. Conclusion

6. Bibliography

OBJECTIVES:

Main objective to do the internship was to get acquainted with the IT environment and the basic day to day operations that are done at the back-end to keep the application up and running fine. I understood the basic level of architecture on which mostly companies run their applications and what are the ways to sustain the environment. I also wanted to get my hands dirty with the OS level configurations and deployments which plays an important part in any IT infrastructure. Looking forward for more opportunities in my next internship.

ABSTRACT:

The report presents the two tasks completed during summer internship at AIRTEL which are listed below:

- Mount Point Syncing between to servers for critical data backups.
- Apache Server installation in RHEL 7 server and hosting a webpage/app.

Both tasks are completed successfully.

INTRODUCTION:

- **Mount Point Syncing between two servers for critical data backups**

In this project, I have done mount point syncing between two application servers.

Procedure: two virtual machines were created and RHEL 7 was installed on both of them. Network and hostname were configured by editing the network file on the server.
Additional disks were added in both the servers to make the application mount point. There was use of the following techniques:

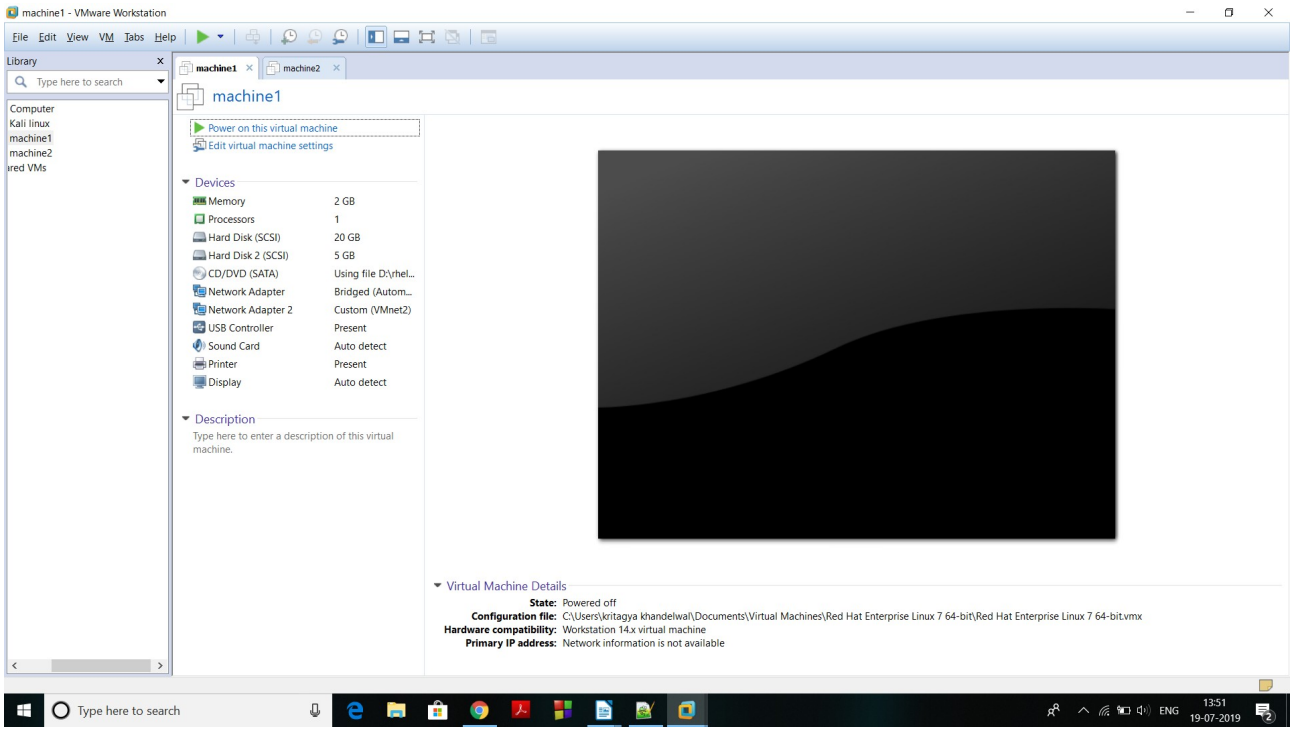
- Passwordless SSH – SSH (Secure SHELL) is an open source and most trusted network protocol that is used to login into remote servers for execution of commands and programs. It is also used to transfer files from one computer to another computer over the network using secure copy (SCP) Protocol.

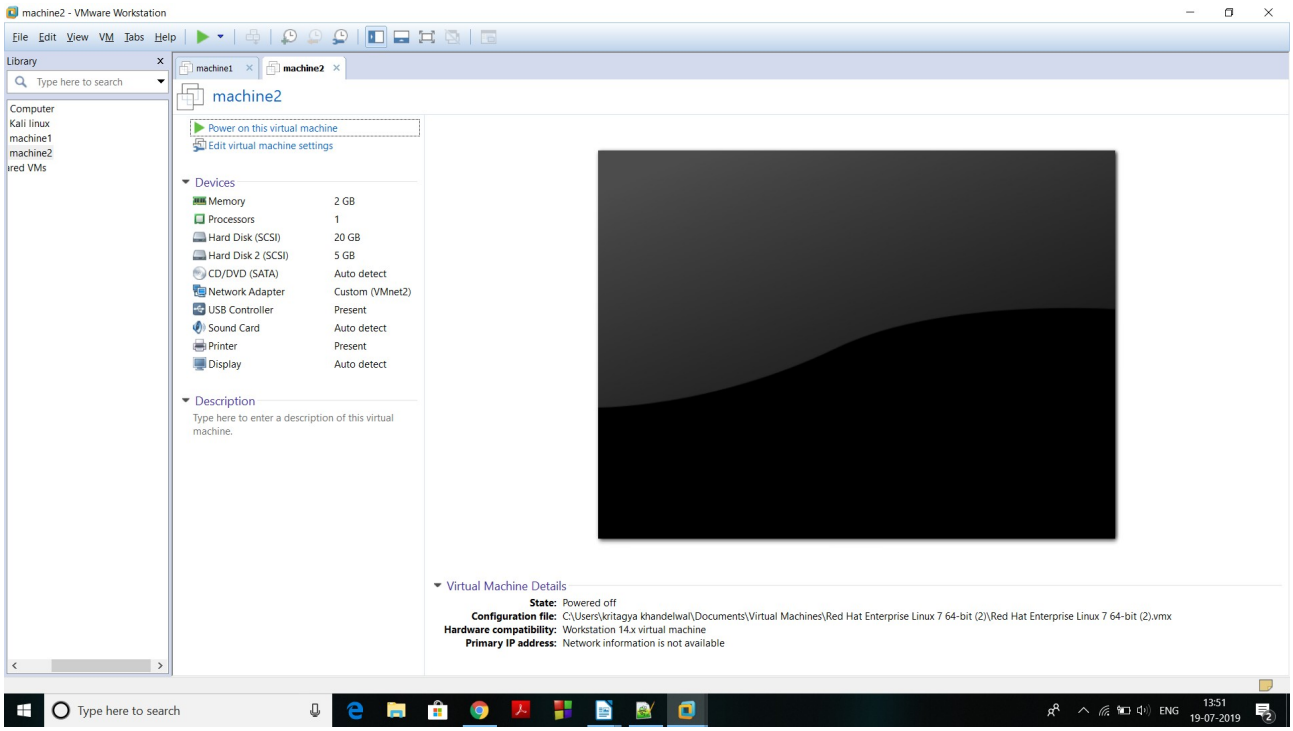
- rsync - Rsync is typically used for synchronizing files and directories between two different systems. For example, if the command `rsync local-file user@remote-host:remote-file` is run, rsync will use SSH to connect as `user` to `remote-host`. Once connected, it will invoke the remote host's rsync and then the two programs will determine what parts of the local file need to be transferred so that the remote file matches the local one.

- cron job -Cron allows Linux and Unix users to run commands or scripts at a given date and time. You can schedule scripts to be executed periodically. Cron

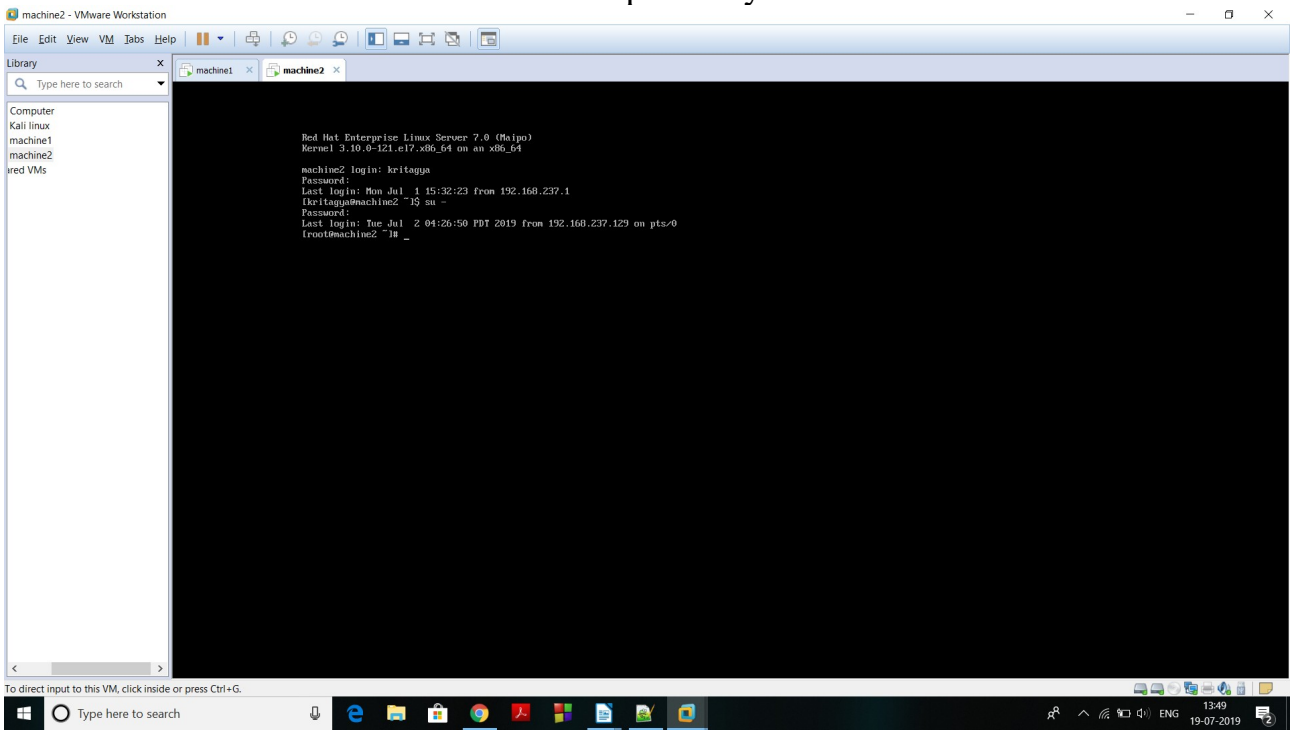
is one of the most useful tool in a Linux or UNIX like operating systems. It is usually used for sysadmin jobs such as backups or cleaning /tmp/ directories and more. The cron service (daemon) runs in the background and constantly checks the /etc/crontab file, and /etc/cron.* directories. It also checks the /var/spool/cron/ directory.

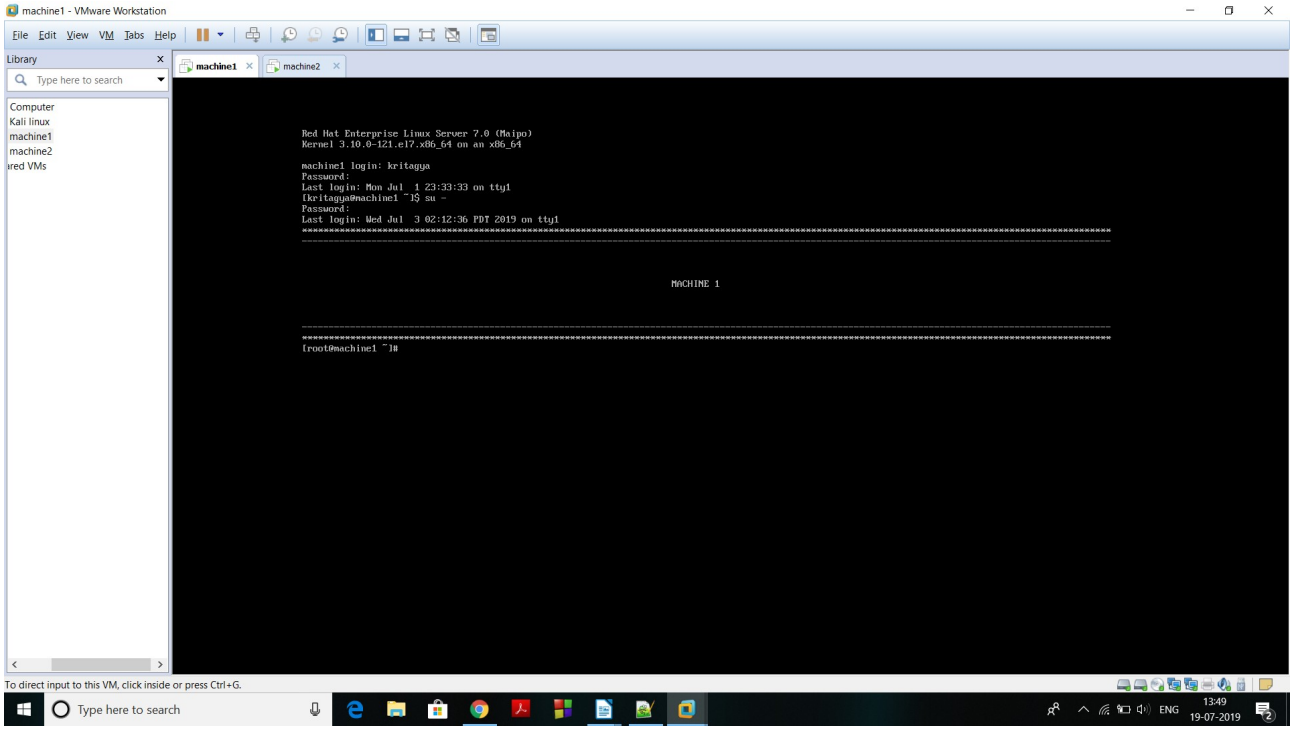
Step 1: Creating 2 VMs in VMware and RHEL 7 server installed on both VMs.



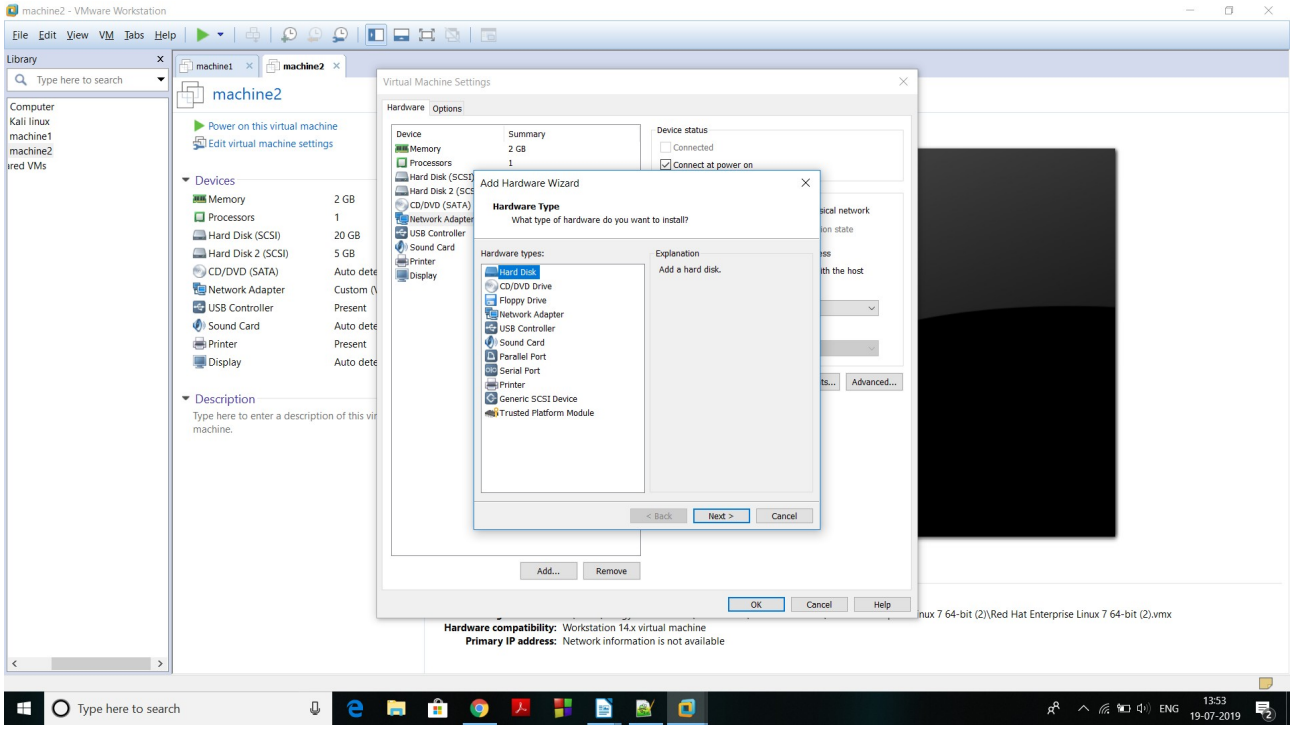


Step 2: Network Configuration on both the VM level and host level. Hostname of the machines are *machine1* and *machine2* respectively.





Step 3: Adding disks to both the servers for creating a mount point on both the servers.


machine2 - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
Computer
Kali linux
machine1
machine2
ared VMs
machine1
machine2
machine2
Power on this virtual machine
Edit virtual machine settings
Devices
Memory 2 GB
Processors 1
Hard Disk (SCSI) 20 GB
Hard Disk 2 (SCSI) 5 GB
CD/DVD (SATA) Auto dete
Network Adapter Custom (
USB Controller Present
Sound Card Auto dete
Printer Present
Display Auto dete
Description
Type here to enter a description of this vir
machine.
Virtual Machine Settings
Hardware Options
Device Summary
Memory 2 GB
Processors 1
Hard Disk (SCSI)
Hard Disk 2 (SCS
CD/DVD (SATA)
Network Adapter
USB Controller
Sound Card
Printer
Display
Device status
Connected
Connect at power on
Add Hardware Wizard
Hardware Type
What type of hardware do you want to install?
Hardware types:
Hard Disk
CD/DVD Drive
Floppy Drive
Network Adapter
USB Controller
Sound Card
Parallel Port
Serial Port
Printer
Generic SCSI Device
Trusted Platform Module
Explanation
Add a hard disk.
< Back
Next >
Cancel
Add...
Remove
OK
Cancel
Help
Advanced...
nux 7 64-bit (2)\Red Hat Enterprise Linux 7 64-bit (2).vmx
Hardware compatibility: Workstation 14.x virtual machine
Primary IP address: Network information is not available
Type here to search
ENG
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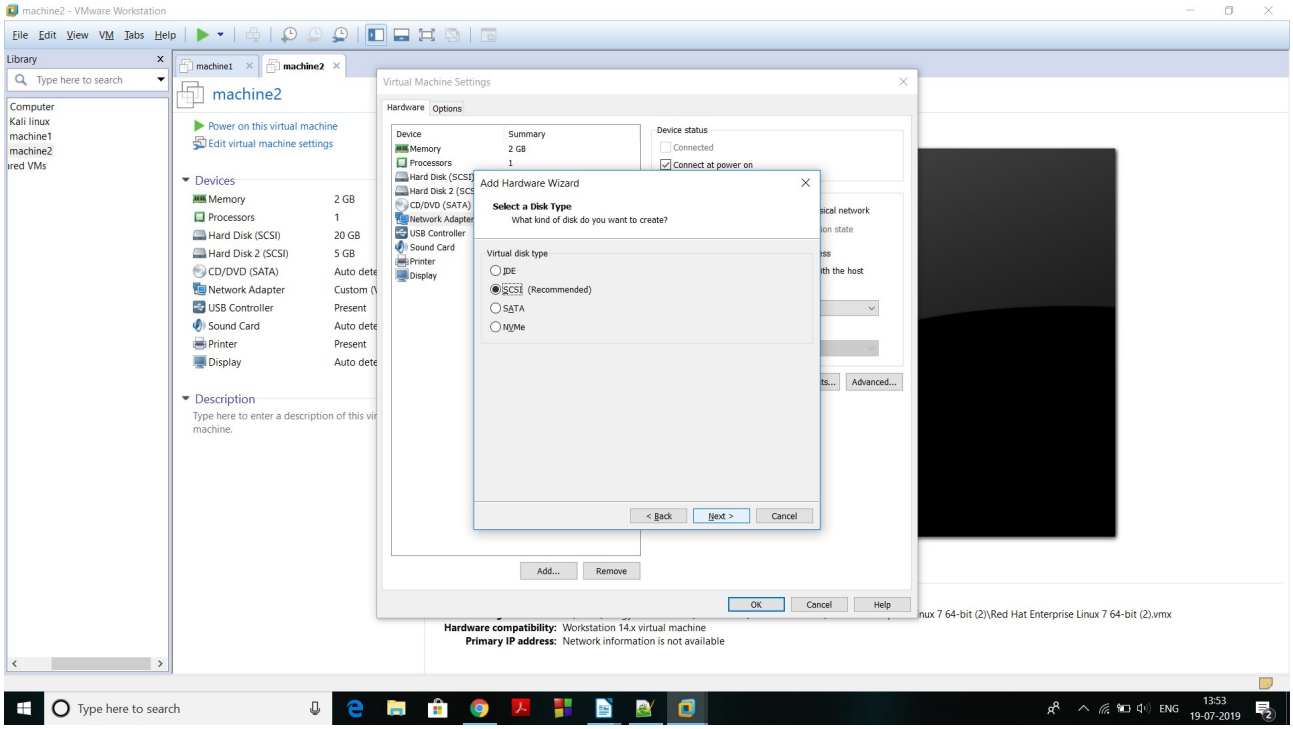
19-07-2019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Hard Disk 2 (SCS
CD/DVD (SATA)
Network Adapter
USB Controller
Sound Card
Printer
Display
Device status
Connected
Connect at power on
Add Hardware Wizard
Select a Disk Type
What kind of disk do you want to create?
Virtual disk type
IDE
SCSI (Recommended)
SATA
NVMe
< Back
Next >
Cancel
Add...
Remove
OK
Cancel
Help
Advanced...
nux 7 64-bit (2)\Red Hat Enterprise Linux 7 64-bit (2).vmx
Hardware compatibility: Workstation 14.x virtual machine
Primary IP address: Network information is not available
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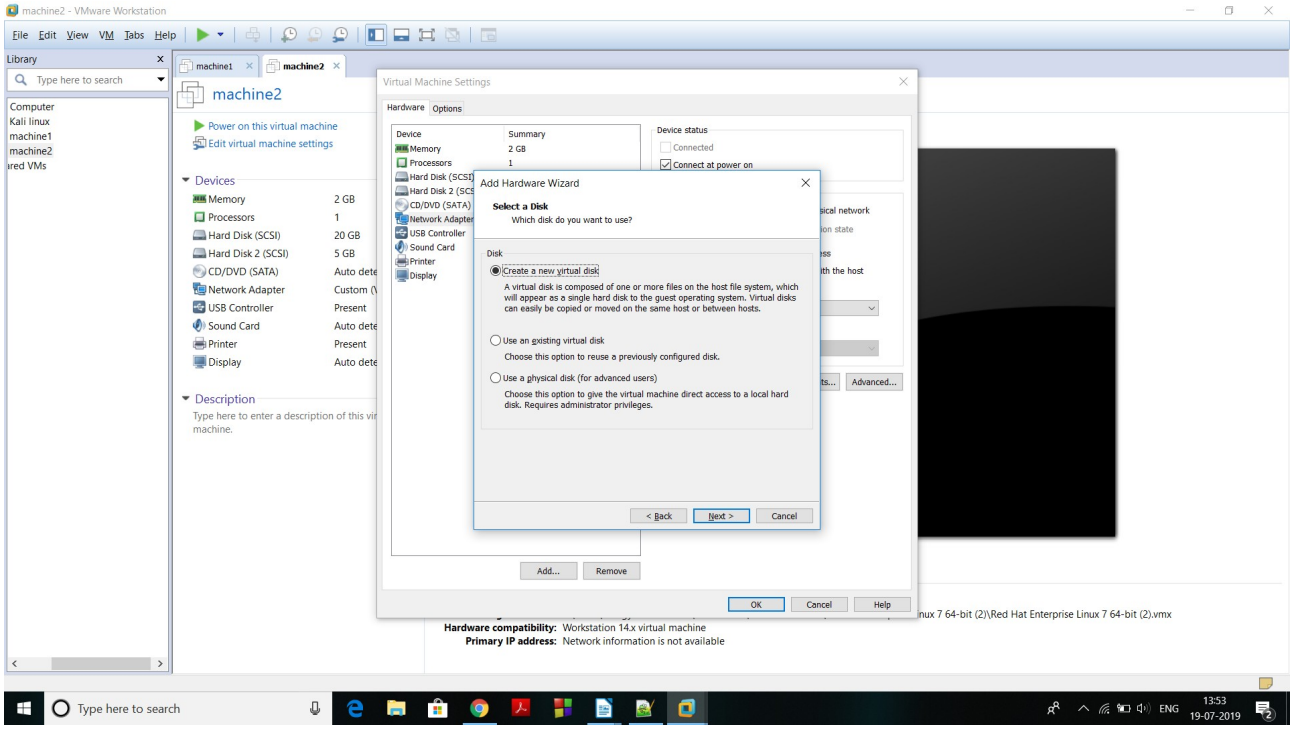
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Sound Card Auto dete
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Display Auto dete
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Processors 1
Hard Disk (SCSI)
Hard Disk 2 (SCS
CD/DVD (SATA)
Network Adapter
USB Controller
Sound Card
Printer
Display
Device status
Connected
Connect at power on
Add Hardware Wizard
Select a Disk
Which disk do you want to use?
Disk
Create a new virtual disk
A virtual disk is composed of one or more files on the host file system, which will appear as a single hard disk to the guest operating system. Virtual disks can easily be copied or moved on the same host or between hosts.
Use an existing virtual disk
Choose this option to reuse a previously configured disk.
Use a physical disk (for advanced users)
Choose this option to give the virtual machine direct access to a local hard disk. Requires administrator privileges.
< Back
Next >
Cancel
Add...
Remove
OK
Cancel
Help
Advanced...
nux 7 64-bit (2)\Red Hat Enterprise Linux 7 64-bit (2).vmx
Hardware compatibility: Workstation 14.x virtual machine
Primary IP address: Network information is not available
Type here to search
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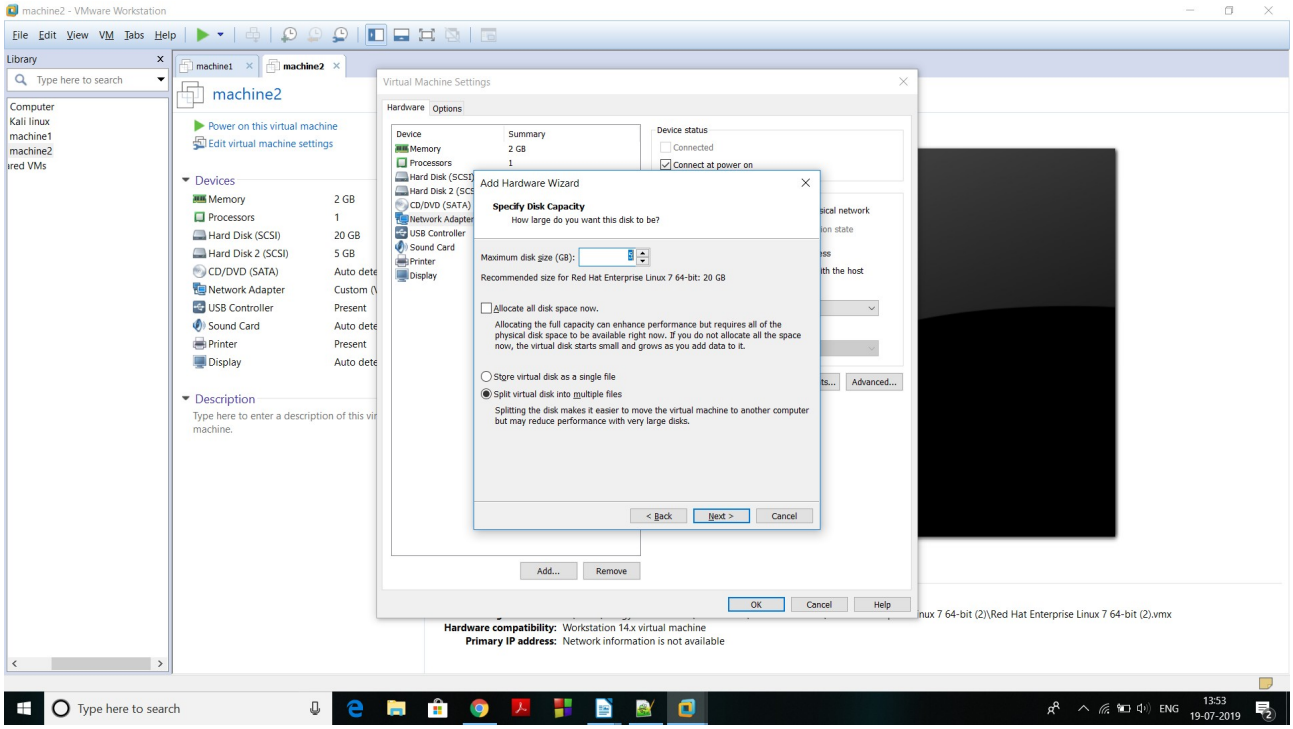
13:53
19-07-2019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Sound Card Auto dete
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Display Auto dete
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Processors 1
Hard Disk (SCSI)
Hard Disk 2 (SCS
CD/DVD (SATA)
Network Adapter
USB Controller
Sound Card
Printer
Display
Device status
Connected
Connect at power on
Add Hardware Wizard
Specify Disk Capacity
How large do you want this disk to be?
Maximum disk size (GB):
Recommended size for Red Hat Enterprise Linux 7 64-bit: 20 GB
Allocate all disk space now.
Allocating the full capacity can enhance performance but requires all of the physical disk space to be available right now. If you do not allocate all the space now, the virtual disk starts small and grows as you add data to it.
Store virtual disk as a single file
Split virtual disk into multiple files
Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.
< Back
Next >
Cancel
Add...
Remove
OK
Cancel
Help
Advanced...
nux 7 64-bit (2)\Red Hat Enterprise Linux 7 64-bit (2).vmx
Hardware compatibility: Workstation 14.x virtual machine
Primary IP address: Network information is not available
Type here to search
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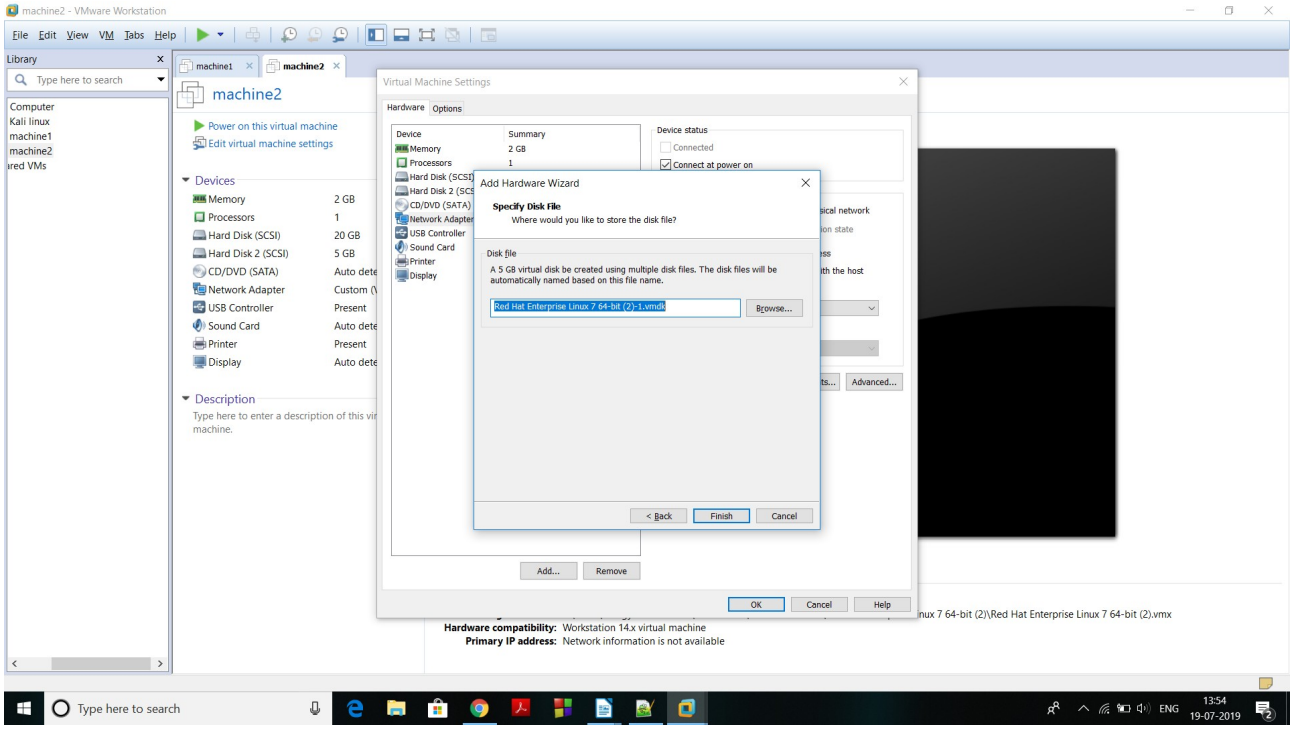
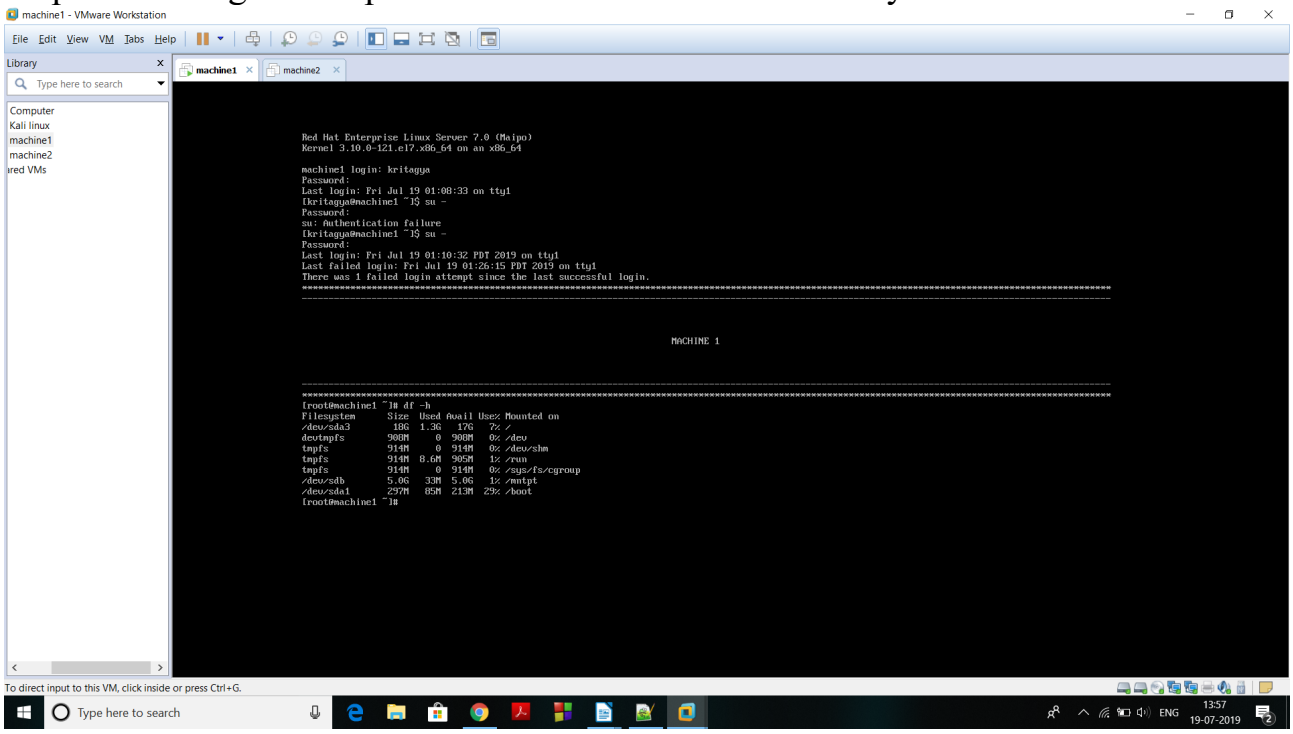
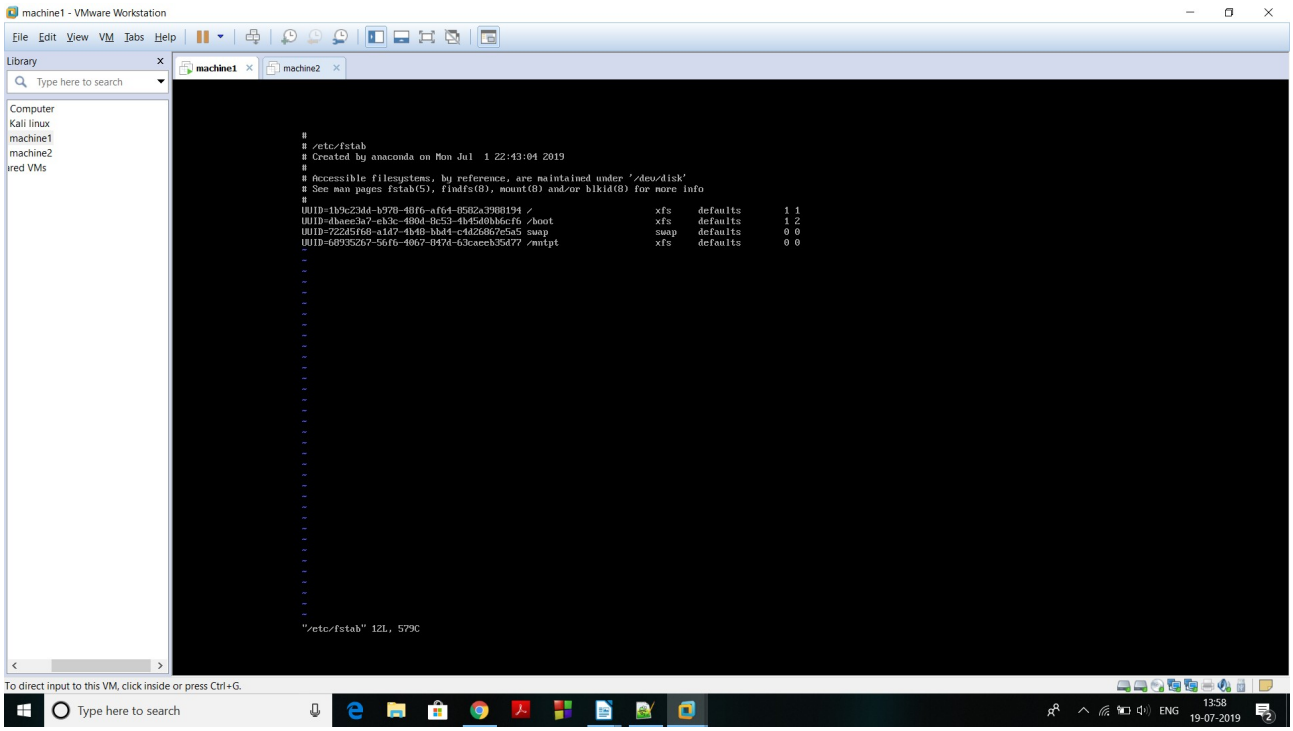
19-07-2019

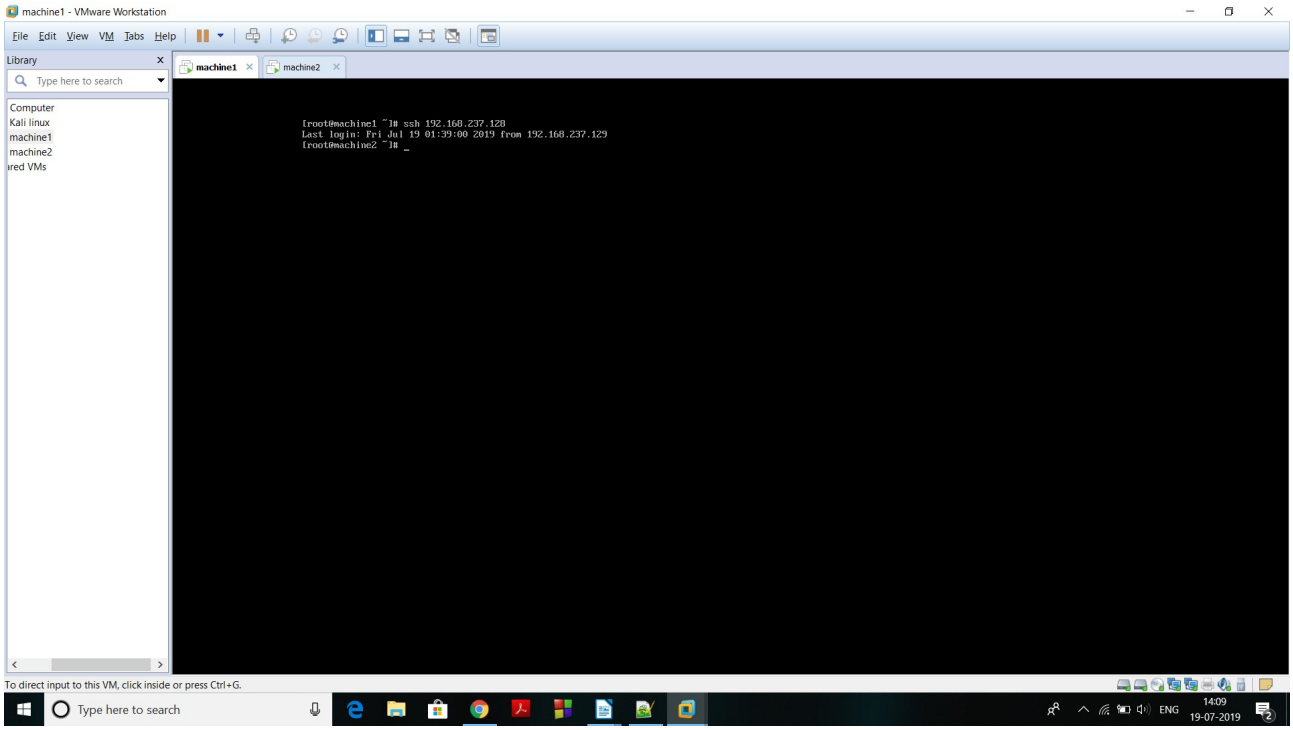


Step 4: Creating Mount points on the servers with xfs file system.

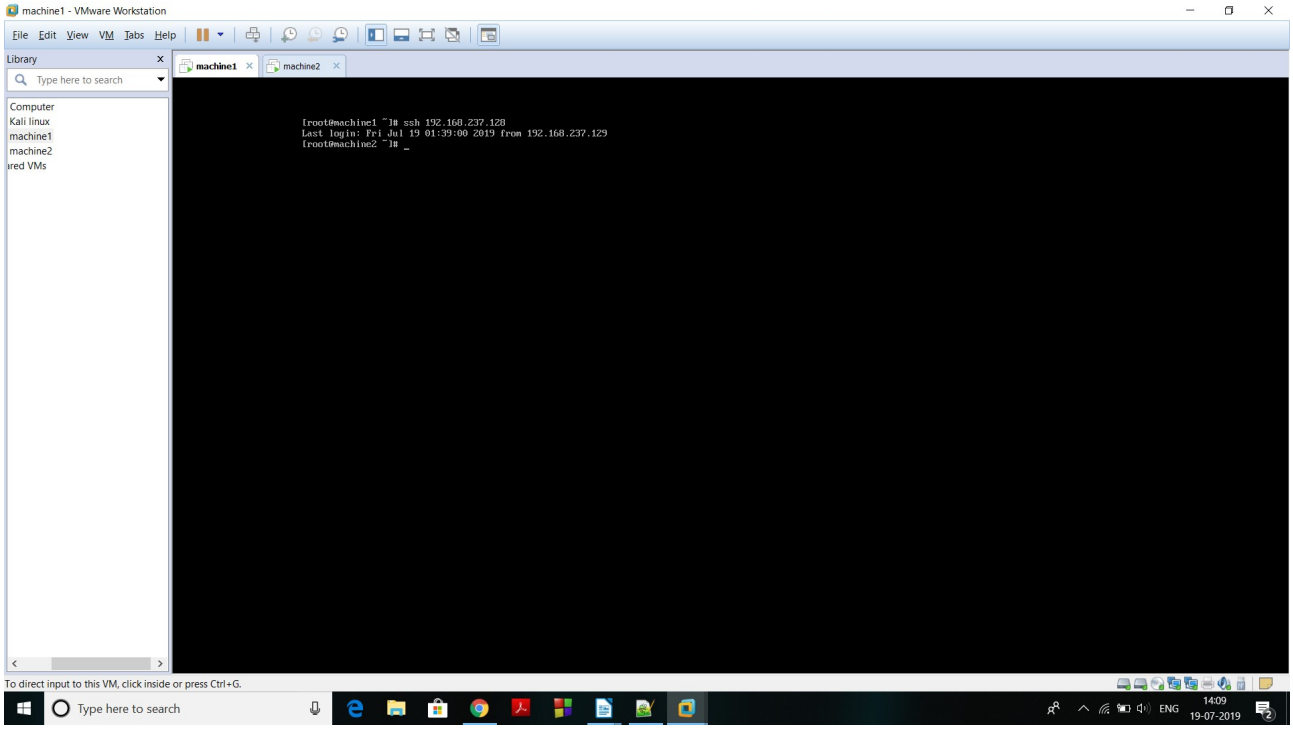


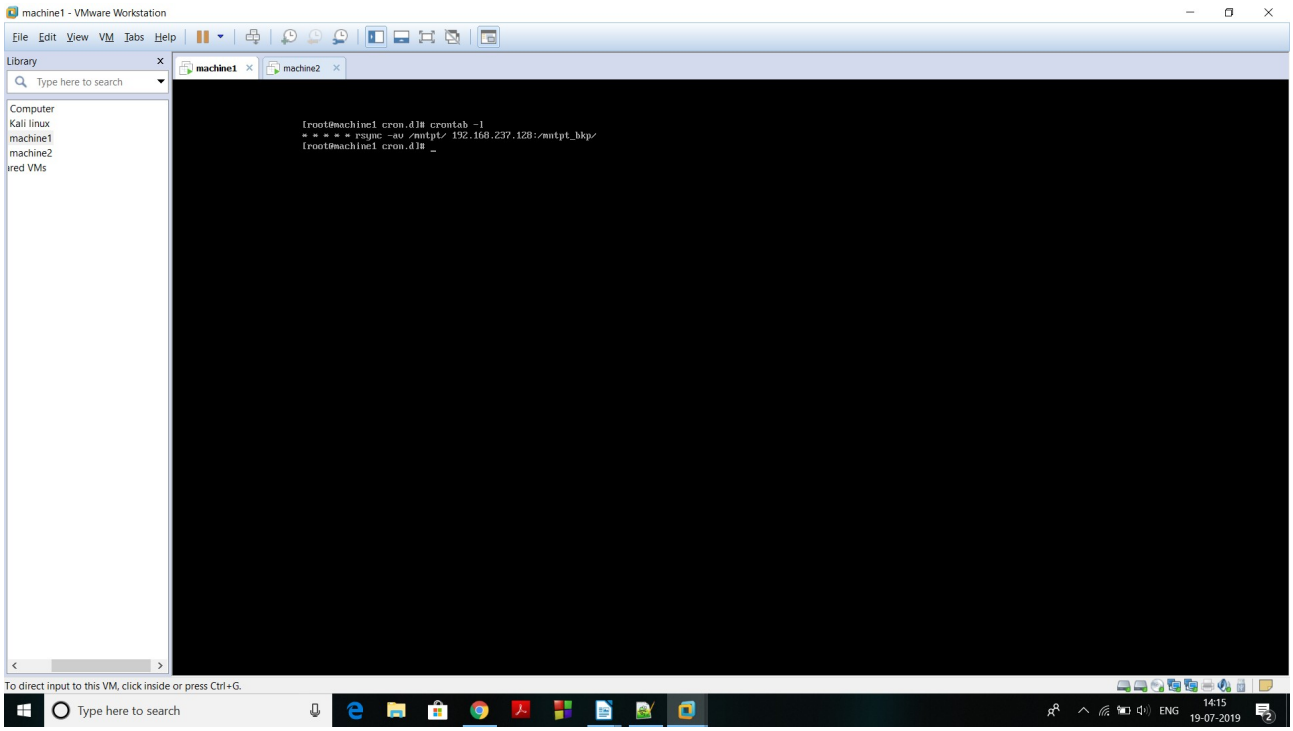


Step 5: Configuring SSH Passwordless connection from *machine1(192.168.237.129)* to *machine2(192.168.237.128).*

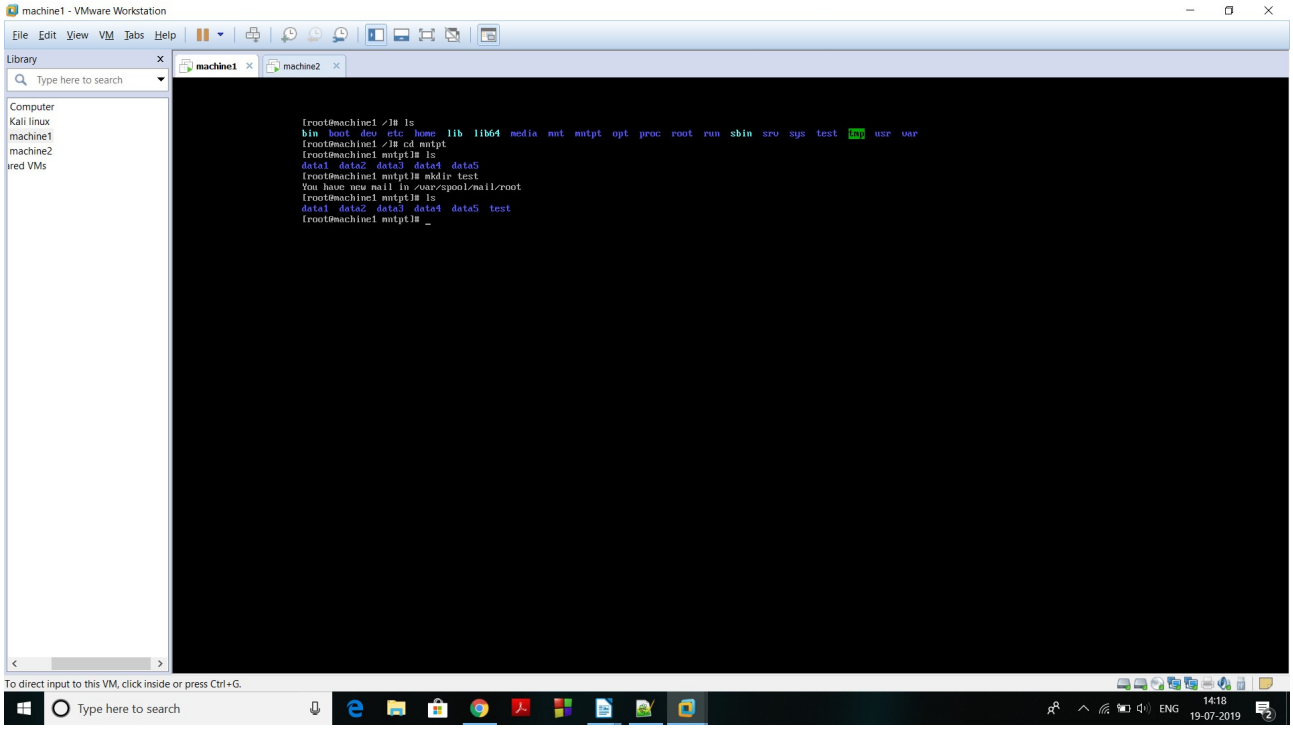


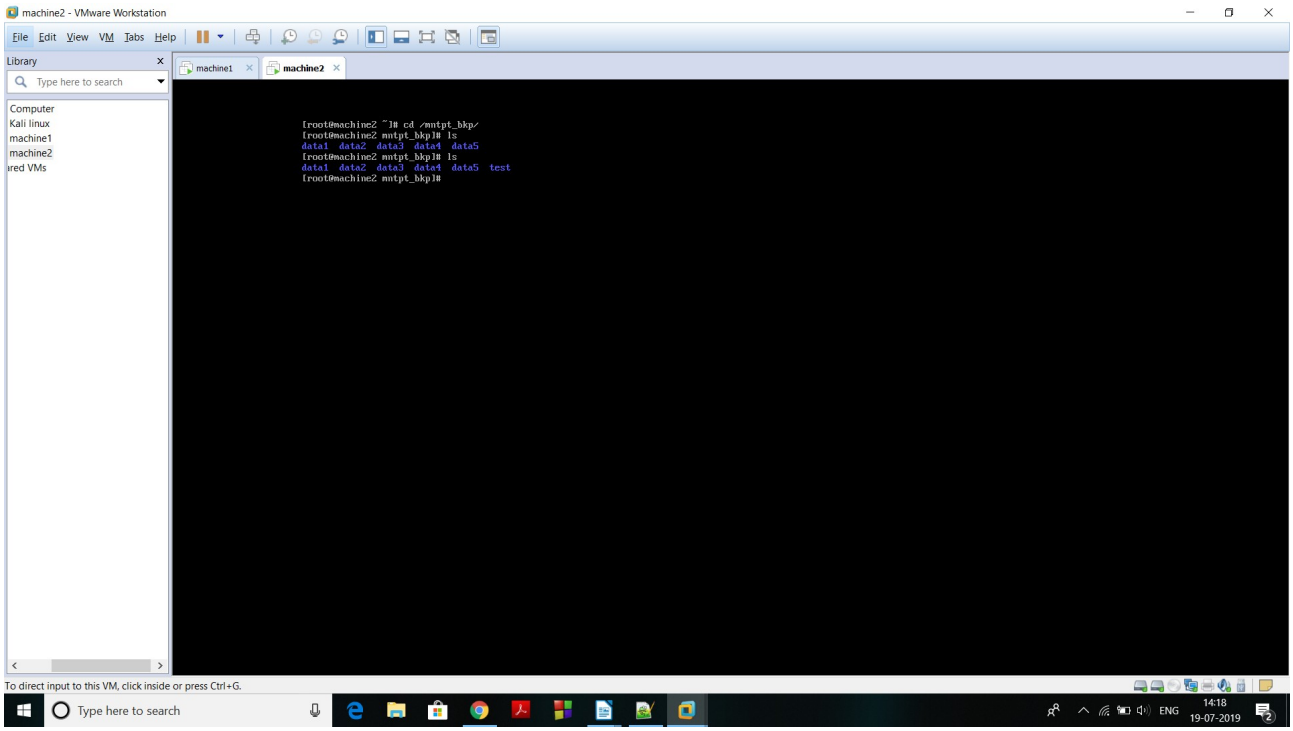
Step 6: Added cronjob in crontab file for executing the rsync command in every second.





Step 7: Testing the Sync is working by updating the directory synced.





So, backup is running fine.

- **Apache Server Installation in RHEL 7 server and hosting a webpage**

YUM Configuration:

Step 1: Mount the iso on the mount point.

Step 2 : go to yum repos directory by navigating through – /*etc/yum.repos.d*

Step 3: create a config file with an extension .repo and mention the URL of the packages that holds all the RPMs.

Step 4: run the command – yum clean all

Step 5: to see of the repository is activated, check it by running – yum repolist all

Step 6: Since, yum is ready now, all the required packages can be installed by using yum install <package-name>

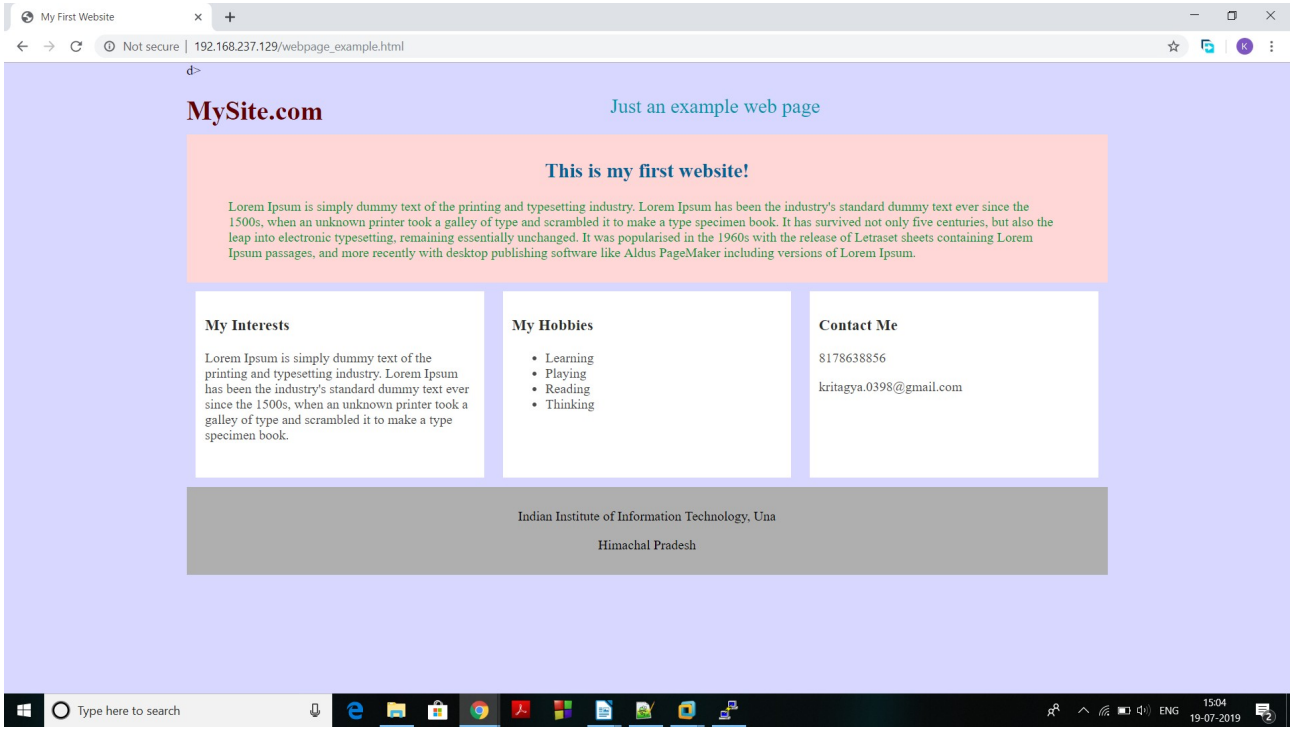
Apache Installation:

Step 1: Run the command – yum install httpd* -y

Step 2: this will install the apache on the server. after that run command - service httpd status|start|stop|restart|reload . To start the httpd service.

Step 3: Add rule to the firewall for httpd service.

Step 4: Now add your source file under */var/www/html/* directory and view the page in browser by typing *https://<ip address of the server>*



webpage hosted on *machine1* IP : 192.1688.237.129 successfully.

INTERNSHIP DISCUSSION:

Internship tenure was about 30 days and in this period I learnt about IT environment in many aspects. Apart from technical knowledge, I also got familiar with IT ethics and morals. I learnt that while doing any task integrity and compliance should be maintained. First week was a little tough for me to figure out how are the things going on my desk. But then with the help of my team members i understood the procedure and what are responsibilities you have when you are on the desk. How to manage queries of other teams and find a solution for the same in our end. I learnt about the back-end technologies used like virtualisation, OS, Networking. And apart from that I also learnt IT ethics for my future career. Nice experience to have guidance of such knowledgable and polite Seniors. Looking forward to work with such team mates in future to hone my skills and make the best out of it.

CONCLUSION:

Overall, I would describe my internship as a positive and instructive experience. I get to know how the infra works in a company how team management plays a very significant role in any project. First week was a little tough for me to figure out how are the things going on my desk. But then with the help of my team members i understood the procedure and what are responsibilities you have when you are on the desk. How to manage queries of other teams and find a solution for the same in our end. I learnt about the back-end technologies used like virtualisation, OS, Networking. And apart from that I also learnt IT ethics for my future career. Nice experience to have guidance of such knowledgable and polite Seniors.

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