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**RAMNIRANJAN JHUNJHUNWALA COLLEGE GHATKOPAR (W), MUMBAI - 400 086**

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**Name :- Vishal Sanjay Yadav**

**Roll No.:- 6423**

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| **Practical No.:-0 Installation of Red Hat Linux** |
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| Virtual Machine  1.Click create new vm  2.Typical  3.Click installer disc image file (browse Rhel.iso file)  4.Click i will install th os machine  5.Linux ver-red hat 6 64 bit  6.VM Name :-TYIT\_Linux\_6423  7.Location D drive  8.Split virtual disk into multiple size 20gb  9.Customize hardware  10.New cd/dvd — connect at power on  use iso image file  11.Network adaptor – connect at power on  host only:private network  12.Click close  13.Finish  14.Power on VM  15.skip-tab  16.English  17.basic storage device  18.re-initiallize all  19.Localhostlocaldomain  20.Asia /kolkata  21.Root\_Password: **tyituser**  22.Confirm: **tyituser**  23.click use anyway  24.create custom layout  25.click create  26.standard partition - create  Mount point : /  File type:ext4  Size:10000  Click to force to be a primary partition  ok  27.create other 2 partition  standard partition - create  Mount point : /boot  File type:ext4  Size:2000  ok  28.create one more partition  standard partition - create  Mount point : /  File type:swap  Size:4000  ok  29. next  30.format  31.write changes to disk  32.next  33.select Desktop  Select Red hat enterprise linux  Customize now  34.**Base system—**  select network file system  Networking tools  Performance tool  Perl support  Printing client  Security tool  35.**Servers—**  E-mail server  FTP Server  NFS file-server  Print server  Server platform  36.**Web services—**web server,web server engine  37.**database–**mysql database client,server  38.**ststem management–**messaging client support,server support  39.**Dekstopp–**fonts,general purpose dekstop,graphics administration tools,input methods ,kde desktop ,legacy X window,remote desktop client ,X window system  40.Next  41.create user  Username:rjcit  Full name:rjcit  Password:**tyituser**  Confirm psswd:**tyituser**  42.select date and time→next  43.finish  44.click other login root |

| **Practical No.:-1 Basic Commands** |
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| **Making file using cat cmd and display it**    **Create file using vi and insert text in it**    **Copy newfile to secondfile**    **Move file**    **Process :- ps and kill cmd**    **Using top cmd**    **Man ls** |

| **Practical No.:-2 Working with Smart Devices** |
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| **fdisk -l**    **fdisk /dev/sda**    **M for partition help menu:**    **N for new partition**    **P for partition 1-4**    **w**    **partx -a /dev/sda**    **Partx -l /dev/sda**    **mkfs.ext4 /dev/sda4**    mkdir /file1    **ls /**    **vim /etc/fstab**  **Esc**  **:wq**    **Insert i**    **After insert esc→:wq**    **mount -a**  **df**    **df -hT [human readable format]**    **Remove partition**  **umount /dev/sda4**  **df -hT to check the partition removed**    **Remove the line that we write in vim**    **rmdir /file1**    **fdisk /dev/sda**  Command :**m** to open menu  To delete the partition use **d**  Enter partition number:**4**    **w** to write table to disk  **Partx -a /dev/sda** →To see the all partition  **Df -hT** to see the available disk in human readable format |

| **Practical No.:-3** |
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| **Crontab -e**          **mail**    **Change user by: su username**  **Eg:- su - root**  **Root user**   **a]LVM**     **Extend Primary Partition**      **Extend Partition**      **Creating Physical Volume**    **Creating volume group and logical volume**  **Pvs**    **Volume Group**  vgcreate tybscit-A /dev/sda4  Vgs    **Logical Volume**  lvcreate -n user1 -L +2GB tybscit-A  lvs    cd /dev/mapper  mkfs.ext4 /dev/mapper/tybscit–A-user1    **mkdir /user1**  **mount /dev/mapper/tybscit–A-user1 /user1**  **df -h**  **df -hT**    **cd /media**  **ls**    **cd RHEL\_6.0\ x86\_64\ Disc\ 1/**  **mkdir /RHEL6**  **cd/**  **ls**        cd /RHEL6  cp -vr /media/RHEL\_6.0\ x86\_64\ Disc\ 1/\* /RHEL6/     **b]Network** **ifconfig**          **ifconfig**    **service network restart**    **ip route show**    **ip address show**    **ping 192.168.1.3**    **Add another ip address**  **ip addr add dev eth0 192.168.10.10/24**  **ip route show** |

| **Practical No.:-4 Working with Users, Groups and Permission** |
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| **Add Users**          **All 4 Users:**    **Groups:**      **Creating Super User vishal:**  useradd vishal  passwd vishal    **vi /etc/sudoers**        **esc—>:wq!**    **Changing Password of User Jackson**    **Going back to root—-->su - root**  **Changing to jackson User**   **Administrative Commands**     **To see the passwords**  cat /etc/passwd      **Chage command is use to change the user’s password**    **Using passwd command to Unlock the password**    **Using passwd command to Lock the Password**    **Chsh command to change the shell of user**      **Group add tyitfriends**  **Adding Members in tyitfriends group**      **To see all the groups:**  cat /etc/group      **Userdel to delete the user**    **Groupdel to delete the group** |

| **Practical No.:-5 FireWall** |
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| **a]Securing Server with iptables:**  **service iptables stop :**To Stop Firewalls    **service iptables restart:**To Restart Firewalls    **iptables -L**    **Iptables command to accept connections by default(accept)**    **Iptables command to deny connections by default(drop)**    **Iptables command to reject connections by default(reject)**    **Iptables -L :**To check the connections    **Accept host with IP address 192.168.1.5**    **Block all incoming connections to port 22.**    **Allowing All incoming ssh connection**    **Allowing outgoing ssh connection for specific address**    **Allowing outgoing ssh connection which established for incoming ssh connection request**    **Iptables for incoming ping request**    **To drop all outgoing telnet connection**    **To Reject all incoming telnet connection**    **Iptables to reject all incoming traffic except ssh & local connection**    **Iptables to drop all the incoming connections on a specific network interface**    **Iptables -L: to show all the work done by above commands.**      **To Flush all the rules -Iptables -F** |

| **Practical No.:-6 Setting up Samba Server** |
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| Open Windows Network Connections Folder through this path  **“Control Panel\Network and Internet\Network Connections”**    **Click on Details... To view the System IPv4 Address “192.168.1.10”.**    **Now, Open The VMware Network Adapter and click on Properties.**    **Now click on Internet Protocol Version 4 and set the below lines as follow:**  **IP address: 172.16.1.134**  **Subnet mask: 255.255.224.0**  **Default gateway: 172.16.0.1**    **Now, Switch on the Linux Machine on VMware and the set IP address for it.**    **Ifconfig: to check the ip address of the system.**    **Go to the packages directory**    **Install all samba packages.**    **Check whether the samba package is installed or not.**    **Create a Samba user account that has access to the share.**      **Create a directory /data on the Linux file system on the Samba server.**    **Change directory as data.**          **Give full permission to this directory then, Set directory with the samba share t type, if you want to treat the files as samba share data.**      **Open smb.conf file with vi editor.**    **Add the below data at the end of the file:**    **Restart the smb service.**      **Go to Firewall:** System => Administration => Firewall.    **Turning off the firewall by clicking on Disable then clicking on apply to make changes.**        **Now, try to ping the ipaddress of the system to receive the packets from Windows Server.**  **Ping 172.16.11.3**    **On Windows Server, open the run command by pressing “Windows + r”.**    **Type ping ipaddress of the Windows System to receive packets from VMware Networks.**  **Ping 172.16.11.133 -t** |

| **Practical No.:-7 Configuring DNS Server** |
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| **DNS Configuration**  **1) root@server ~]#ifconfig**    **2) root@server ~]#vim /etc/sysconfig/network-scripts/ifcfg-eth0**      **Then :q!**    **3) root@server ~]#vim /etc/hosts**        **4) root@server ~] #vim /etc/sysconfig/network**        **5) root@server ~]#vim /etc/resolv.conf**      **Then :q!**    **6) root@server ~]service network restart**      **RHEL Disk—>Packages**    **Install All bind packages**    **Come to home directory using cd command**    **Query to check whether the bind packages are installed or not.**  **rpm -qa | grep bind**    **vi /etc/named.conf**    **For setting number press ESC and type : se nu**      **Line 11:** listen-on port 53 {192.168.191.129; }  **Line 12: For commenting this line put # Sign in front of it.**  **Line 17 : allow-query { any; };**  **Check the last line of file and note down the last line**    **Check The Last Line**    **Open that line which we have noted down before,**  **vi /etc/named.rfc1912.zones**    **Line 13:** Change Zone “localhost.localdomain” IN to zone “tyit.com” IN.  **Line:15:** Change file “named.localhost” to “forward.zone”.    **Line 30**: change zone “1.0.0.127.in-addr.arpa” IN to zone “1.168.192.in-addr.arpa” IN  **Line 33**: change file “named.loopback” to file “reverse.zone”      **Change directory to cd /var/named**      **Copy the files into new file using cp named.localhost forward.zone**    **Copy the files into new file using cp named.localhost reverse.zone**      **Open forward zone file using vi forward.zone**    **Change the few lines of below window**      **Open reverse zone file using vi reverse.zone**    **Change the few lines of below window**      **chgrp named forward.zone**    **chgrp named reverse.zone**    **Start the dns server using service named start**    **Check the dns is configured**  **Use dig command: dig server.tyit.com**    **OR**  **Dig -x 192.168.1.3** |

| **Practical No.:-8 Setting Up a Mail Server** |
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| **a]Configuring mail using mutt**          **rpm -qa | grep mutt**    **Create user1**    **Create user2**    **Switch to user1 using su – user1 and type message**  **su – user1**    **Ctrl+d to save and quit**  **Mail -s Hello user2**  **Hello User2**  **This is User1**    **Switch to root to check user1 message**  **Su – root**          **Press r**    **Press enter**    **Press enter**  **Reply save and quit esc-:wq!**      **Type y**      **Now switch to user1**      **Type y**    **Press enter** |

| **Practical No.:-9 Configuring Booting with GRUB** |
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| **Install the Grub package from packages folder by searching “grub”.**    **Open grub configuration file in the “/boot/grub/grub.conf” directory.**    **Copy the last 6 lines from title Red Hat Enterprise Linux and paste it below and make some changes**  **in it.**    **Only change the title as shown below.**    **Also change the timeout service.**    **Increase it by 30.**    **Like this will be shown after changes.**    **Restart the Linux environment by using “init 6”.**    **After restarting we can see there is a 30 seconds timeout shown at last of the 2nd sentence.**    **By pressing any key it will ask about which environment do we want to run.**  **As we can see both the grub entries are shown below**    **By up and down arrow we can select the environment which we want to run.**  **By pressing enter on our new environment which we have created by name “My Client Machine.”**  **It will open the same environment as of the Red Hat Enterprise Linux, it means the environment it working correctly.** |

| **Practical No.:-10 Working on Shell-script** |
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| **i]Positive and Negative** **vi Prog1**      **Changing the mode +x(executable file) Prog1 File Name**    **Bash to run the Prog1 File**    **Negative**   **ii]Greater than or less than**       **Less Than**   **iii]Even or Odd**        **iv]Vowels and Consonant**      **v]Leap Year**      **vi]Profit and Loss**     **Profit**    **Loss**    **vii]File exist or not**         **viii]Program to give grades using expr command**     **Output:-**   **ix]Program to check whether the number is +ve or -ve using elif**     **Output:-**   **x]Program to print the day of the week using case..in**     **Output:-**     **xi]Program to check the pattern using case**     **Output:-**     **xii]Program menu driven**     **Output:-**             **xiii]Program to print first n number and their sum:while loop**     **Output:-**   **xiv]Program to illustrate the use of For loop**     **Output:-**   **xv]Program to print Table**     **Output:-** |