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| **DOCUMENT RULES:** | |
| **Task Number / Name:** | **Task 8 / NFS server and client** |
| **Task name & column name should be written:** | **Bold (CTRL+B)** |
| **Commands should be written in the after # sign:** | *Italic (CTRL+I) #hostname* |
| **Output photo should be cropped or compressed:**  **Photo could be more than one:**  **If you need extra lines, add the line next after it:** | ***Description photo should be with title bar (CTRL + I + B)*** |
| **All other text should be written:** | Standard |
| **Font name and text size:** | Calibri and 9 |
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| **#** | **Task names** | **Command steps and outputs** |
| **1** | 1. Lab requirements:   - We need 2 Ubuntu VMs on “Desktop Hypervisor with Snapshoot”  - if you have fresh ubuntu clone it 2 times.  -give the these “NFS server” and “NFS Client” names of each.  -change host name into given template  - MobaXterm terminal Client software should access to guest VM | *Ubuntu 18.04 Bionic Beaver mini.iso*  Find updated fresh installation in the VMWare workstation Make full clone        Change “NFS server” and “NFS Client” names of each.    Boot up servers and Check hosts name using these commands  #*hostname* -> hit enter and you will see hosts name and you should change names. (#*hostnamectl* these command usefull)  Try to change hostnames using these commands.  #*nmtui* -> hit enter if it is not found you can install it then change hostname or try to change host name again using and (*#sudo hostnamectl set-hostname nfsserver* and repeat it second server *#sudo hostnamectl set-hostname nfsclient*) or (#sudo nano /etc/hostname or #sudo nano /etc/hosts after chages name try to #sudo reboot -> hit enter. The changes take effect immediately after system reboot.)  Check ip address *#ip addr*  If you see same ip try to renew it using *#sudo dhclient* and then *#ip addr you will see new IP* |
| **2** | 1. **Check status of firewall and take screenshot of the CLI output.** 2. **If firewall is not installed left it as have.** 3. **Give permanent SSH access from.** 4. **SSH virtual port is 22. If SSH server is not installed, please install it.** 5. **To be check connectivity use commands.** 6. **Update the system and application.** 7. **Configure ssh** | **For instance: start**, **stop**, **enable**, **disable, status**  *# firewall-cmd –state*  #*ping x.x.x.x*  *#telnet x.x.x.x 22*  *#sudo apt-get update*  #apt-get install openssh-server  and make sure it is running  #service ssh restart  See status of openssh-server:  #systemctl status ssh |
| **3** | 1. **Installation NFS Server**   <https://vitux.com/install-nfs-server-and-client-on-ubuntu/> | *#sudo apt install nfs-kernel-server* |
|  | 1. **Start nfs** | *#sudo systemctl start nfs-kernel-server.service* |
|  | **10 Example:** | */data \*(rw,sync,subtree\_check)* |
|  | **11 Manually create :** | *#* sudo mkdir -p /mnt/sharedfolder  #sudo chown nobody:nogroup /mnt/sharedfolder  *#sudo chmod 777* /mnt/sharedfolder |
|  | **12 Apply the new config via:** | *#*sudo nano /etc/exports  /mnt/sharedfolder clientIP(rw,sync,no\_subtree\_check)     * **rw**: read and write operations * **sync**: write any change to the disc before applying it * **no\_subtree\_check**: prevent subtree checking |
|  | Export the shared directory | #sudo exportfs -a |
|  | Open firewall for the client (s) | #sudo systemctl restart nfs-kernel-server |
|  |  | #sudo ufw allow from [clientIP or clientSubnetIP] to any port nfs |
| **4** | **NFS Client setup** |  |
|  | Check and test  -Client IP  -Client Hostname  -NFSClient setup | Boot up servers and Check hosts name using these commands  #*hostname* -> hit enter and you will see hosts name and you should change names. (#*hostnamectl* these command usefull)  Try to change hostnames using these commands.  #*nmtui* -> hit enter if it is not found you can install it then change hostname or try to change host name again using and (*#sudo hostnamectl set-hostname nfsserver* and repeat it second server *#sudo hostnamectl set-hostname nfsclient*) or (#sudo nano /etc/hostname or #sudo nano /etc/hosts after chages name try to #sudo reboot -> hit enter. The changes take effect immediately after system reboot.)  Check ip address *#ip addr*  If you see same ip try to renew it using *#sudo dhclient* and then *#ip addr-> hit enter-> you will see new IP* |
| **4.1** | NFS Client Configuration | *#sudo apt install nfs-common* |
| **4.2** | Create any folder with any name | *#*sudo mkdir -p /mnt/sharedfolder\_client |
| **4.3** | Try to check file server if it is shared for nfs client!? | *#showmount -e 192.168.234.132* |
| **4.4** | Mount “shared folder on NFSServer” folder to NFSClient**.** | sudo mount serverIP:/exportFolder\_server /mnt/mountfolder\_client |
| **4.5** | There are two way: Test the connection |  |
| **4.6** | 1 -mount | #sudo mkdir /data (creting directory)  # sudo mount -t nfs 192.168.234.132:/data /data (mounting nfsserver IP to nfs client) second data folder on NFSCleint  #mount (shows us ) |
| **4.7** | 2 - fstab | If you want to use #fstab method please unmount first. |
| **4.8** | This command unmount the first mounting | *#sudo umount -t nfs 192.168.234.132:/data /data -> hit neter for unmount then #mount -> to see are there mounted somesing.*  output |
| **4.9** | Adding shared folders path into fstab. | #sudo nano /etc/fstab -> hit enter  Add this string into fstab file and see and close  192.168.234.132:/data /data nfs defaults,\_netdev 0 0 |
|  | IN client crate file and see in the server | #touch file1 /mnt/sharedfolder |
|  | We see in the server |  |