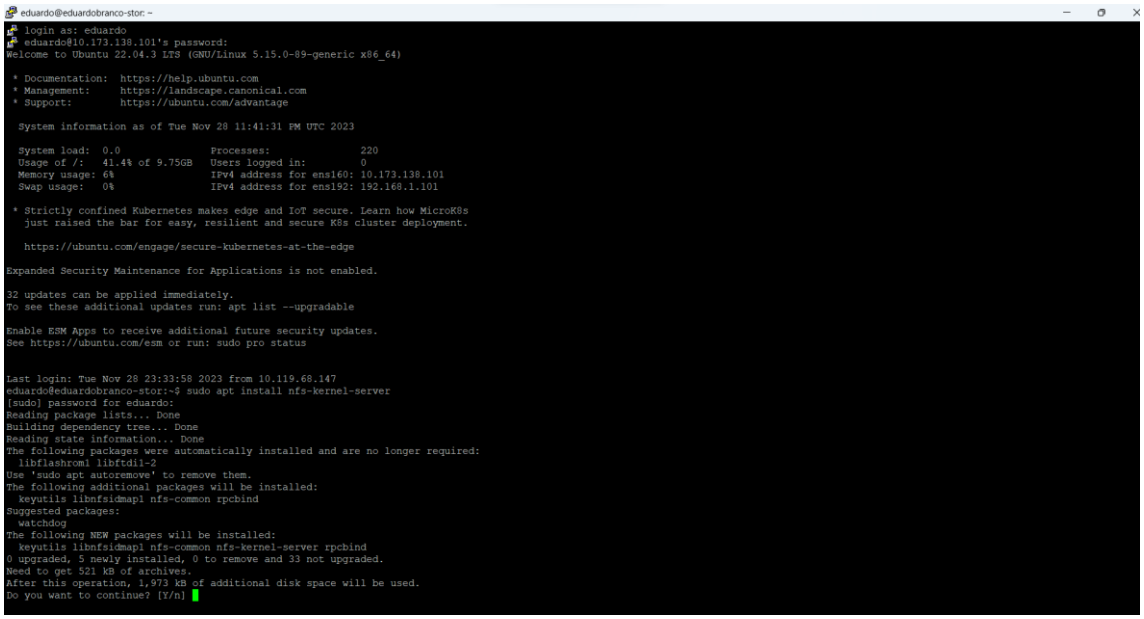
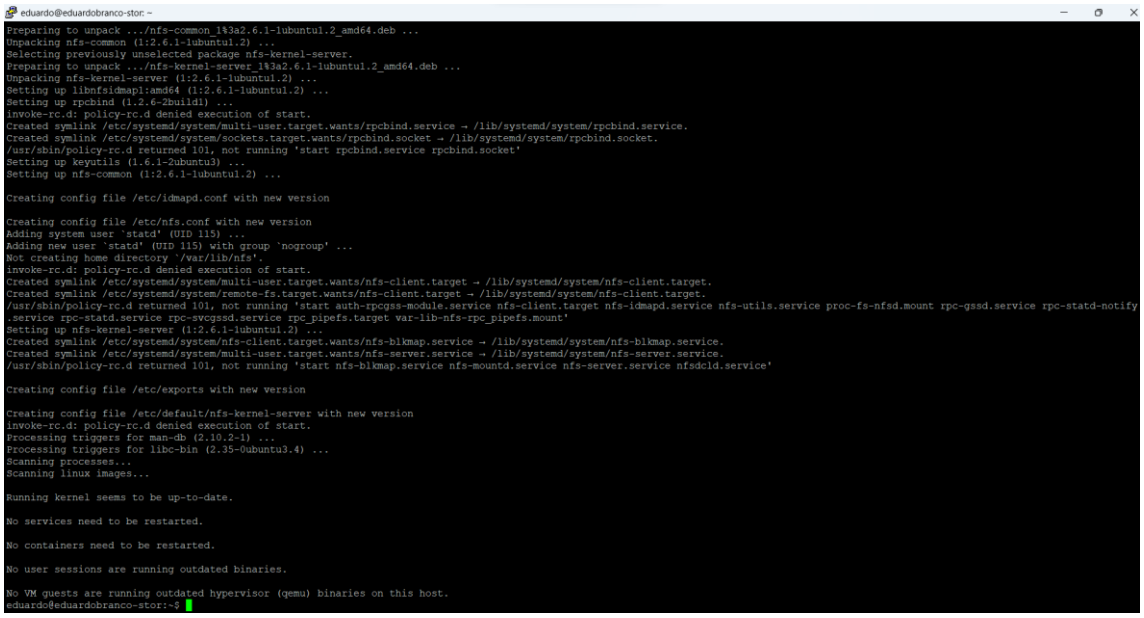
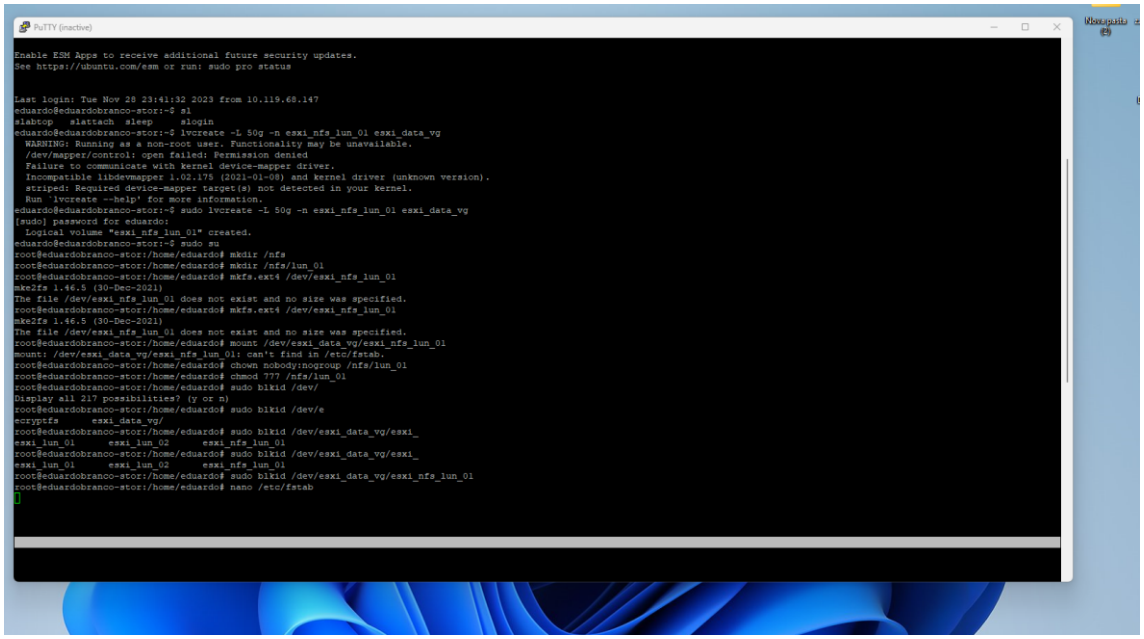
Vmware - NFS


eduardo@eduardobranco-stor: ~
login as: eduardo
eduardo@10.173.138.101's password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-89-generic x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/advantage
System information as of Tue Nov 28 11:41:31 PM UTC 2023
System load: 0.0
Usage of /: 41.4% of 9.75GB
Memory usage: 6%
Swap usage: 0%
Processes: 220
Users logged in: 0
IPv4 address for ens160: 10.173.138.101
IPv4 address for ens192: 192.168.1.101
* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
just raised the bar for easy, resilient and secure K8s cluster deployment.
https://ubuntu.com/engage/secure-kubernetes-at-the-edge
Expanded Security Maintenance for Applications is not enabled.
32 updates can be applied immediately.
To see these additional updates run: apt list --upgradable
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
Last login: Tue Nov 28 23:33:58 2023 from 10.119.68.147
eduardo@eduardobranco-stor:~$ sudo apt install nfs-kernel-server
[sudo] password for eduardo:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
libflashrom1 libftdi1-2
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
keyutils libnfsidmap1 nfs-common rpcbind
Suggested packages:
watchdog
The following NEW packages will be installed:
keyutils libnfsidmap1 nfs-common nfs-kernel-server rpcbind
0 upgraded, 5 newly installed, 0 to remove and 33 not upgraded.
Need to get 521 kB of archives.
After this operation, 1,973 kB of additional disk space will be used.
Do you want to continue? [Y/n]


eduardo@eduardobranco-stor: ~
Preparing to unpack .../nfs-common_1%3a2.6.1-1ubuntu1.2_amd64.deb ...
Unpacking nfs-common (1:2.6.1-1ubuntu1.2) ...
Selecting previously unselected package nfs-kernel-server.
Preparing to unpack .../nfs-kernel-server_1%3a2.6.1-1ubuntu1.2_amd64.deb ...
Unpacking nfs-kernel-server (1:2.6.1-1ubuntu1.2) ...
Setting up libnfsidmap1:amd64 (1:2.6.1-1ubuntu1.2) ...
Setting up rpcbind (1.2.6-2build1) ...
invoke-rc.d: policy-rc.d denied execution of start.
Created symlink /etc/systemd/system/multi-user.target.wants/rpcbind.service → /lib/systemd/system/rpcbind.service.
Created symlink /etc/systemd/system/sockets.target.wants/rpcbind.socket → /lib/systemd/system/rpcbind.socket.
/usr/sbin/policy-rc.d returned 101, not running 'start rpcbind.service rpcbind.socket'
Setting up keyutils (1.6.1-2ubuntu3) ...
Setting up nfs-common (1:2.6.1-1ubuntu1.2) ...
Creating config file /etc/idmapd.conf with new version
Creating config file /etc/nfs.conf with new version
Adding system user `statd' (UID 115) ...
Adding new user `statd' (UID 115) with group `nogroup' ...
Not creating home directory `/var/lib/nfs'.
invoke-rc.d: policy-rc.d denied execution of start.
Created symlink /etc/systemd/system/multi-user.target.wants/nfs-client.target → /lib/systemd/system/nfs-client.target.
Created symlink /etc/systemd/system/remote-fs.target.wants/nfs-client.target → /lib/systemd/system/nfs-client.target.
/usr/sbin/policy-rc.d returned 101, not running 'start auth-rpcgss-module.service nfs-client.target nfs-idmapd.service nfs-utils.service proc-fs-nfsd.mount rpc-gssd.service rpc-statd-notify
.service rpc-statd.service rpc-svcgssd.service rpc_pipefs.target var-lib-nfs-rpc_pipefs.mount'
Setting up nfs-kernel-server (1:2.6.1-1ubuntu1.2) ...
Created symlink /etc/systemd/system/nfs-client.target.wants/nfs-blkmap.service → /lib/systemd/system/nfs-blkmap.service.
Created symlink /etc/systemd/system/multi-user.target.wants/nfs-server.service → /lib/systemd/system/nfs-server.service.
/usr/sbin/policy-rc.d returned 101, not running 'start nfs-blkmap.service nfs-mountd.service nfs-server.service nfsdcld.service'
Creating config file /etc/exports with new version
Creating config file /etc/default/nfs-kernel-server with new version
invoke-rc.d: policy-rc.d denied execution of start.
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.4) ...
Scanning processes...
Scanning linux images...
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
eduardo@eduardobranco-stor:~$


eduardo@eduardobranco-stor: ~
Get:4 http://ca.archive.ubuntu.com/ubuntu jammy-updates/main amd64 nfs-common amd64 1:2.6.1-1ubuntu1.2 [241 kB]
Get:5 http://ca.archive.ubuntu.com/ubuntu jammy-updates/main amd64 nfs-kernel-server amd64 1:2.6.1-1ubuntu1.2 [140 kB]
Fetched 521 kB in 0s (2,134 kB/s)
Selecting previously unselected package libnfsidmap1:amd64.
(Reading database ... 109819 files and directories currently installed.)
Preparing to unpack .../libnfsidmap1_1%3a2.6.1-1ubuntu1.2_amd64.deb ...
Unpacking libnfsidmap1:amd64 (1:2.6.1-1ubuntu1.2) ...
Selecting previously unselected package rpcbind.
Preparing to unpack .../rpcbind_1.2.6-2build1_amd64.deb ...
Unpacking rpcbind (1.2.6-2build1) ...
Selecting previously unselected package keyutils.
Preparing to unpack .../keyutils_1.6.1-2ubuntu3_amd64.deb ...
Unpacking keyutils (1.6.1-2ubuntu3) ...
Selecting previously unselected package nfs-common.
Preparing to unpack .../nfs-common_1%3a2.6.1-1ubuntu1.2_amd64.deb ...
Unpacking nfs-common (1:2.6.1-1ubuntu1.2) ...
Selecting previously unselected package nfs-kernel-server.
Preparing to unpack .../nfs-kernel-server_1%3a2.6.1-1ubuntu1.2_amd64.deb ...
Unpacking nfs-kernel-server (1:2.6.1-1ubuntu1.2) ...
Setting up libnfsidmap1:amd64 (1:2.6.1-1ubuntu1.2) ...
Setting up rpcbind (1.2.6-2build1) ...
invoke-rc.d: policy-rc.d denied execution of start.
Created symlink /etc/systemd/system/multi-user.target.wants/rpcbind.service → /lib/systemd/system/rpcbind.service.
Created symlink /etc/systemd/system/sockets.target.wants/rpcbind.socket → /lib/systemd/system/rpcbind.socket.
/usr/sbin/policy-rc.d returned 101, not running 'start rpcbind.service rpcbind.socket'
Setting up keyutils (1.6.1-2ubuntu3) ...
Setting up nfs-common (1:2.6.1-1ubuntu1.2) ...
Creating config file /etc/idmapd.conf with new version
Creating config file /etc/nfs.conf with new version
Adding system user `statd' (UID 115) ...
Adding new user `statd' (UID 115) with group `nogroup' ...
Not creating home directory `/var/lib/nfs'.
invoke-rc.d: policy-rc.d denied execution of start.
Created symlink /etc/systemd/system/multi-user.target.wants/nfs-client.target → /lib/systemd/system/nfs-client.target.
Created symlink /etc/systemd/system/remote-fs.target.wants/nfs-client.target → /lib/systemd/system/nfs-client.target.
/usr/sbin/policy-rc.d returned 101, not running 'start auth-rpcgss-module.service nfs-client.target nfs-idmapd.service nfs-utils.service proc-fs-nfsd.mount rpc-gssd.service rpc-statd-notify
.service rpc-statd.service rpc-svcgssd.service rpc_pipefs.target var-lib-nfs-rpc_pipefs.mount'
Setting up nfs-kernel-server (1:2.6.1-1ubuntu1.2) ...
Created symlink /etc/systemd/system/nfs-client.target.wants/nfs-blkmap.service → /lib/systemd/system/nfs-blkmap.service.
Created symlink /etc/systemd/system/multi-user.target.wants/nfs-server.service → /lib/systemd/system/nfs-server.service.
/usr/sbin/policy-rc.d returned 101, not running 'start nfs-blkmap.service nfs-mountd.service nfs-server.service nfsdcld.service'
Creating config file /etc/exports with new version
Creating config file /etc/default/nfs-kernel-server with new version
invoke-rc.d: policy-rc.d denied execution of start.
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.4) ...
Scanning processes...
Scanning linux images...
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
eduardo@eduardobranco-stor:~$ sudo init 6

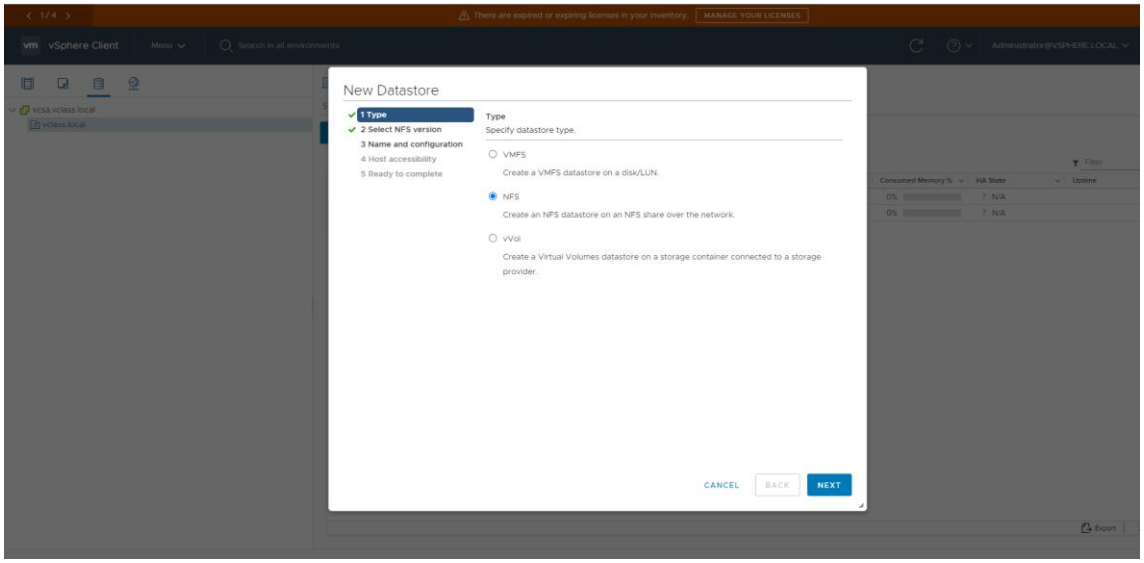

PuTTY (inactive)
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
Last login: Tue Nov 28 23:41:32 2023 from 10.119.68.147
eduardo@eduardobranco-stor:~$ sl
slabtop slattach sleep slogin
eduardo@eduardobranco-stor:~$ lvcreate -L 50g -n esxi_nfs_lun_01 esxi_data_vg
WARNING: Running as a non-root user. Functionality may be unavailable.
/dev/mapper/control: open failed: Permission denied
Failure to communicate with kernel device-mapper driver.
Incompatible libdevmapper 1.02.175 (2021-01-08) and kernel driver (unknown version).
striped: Required device-mapper target(s) not detected in your kernel.
Run `lvcreate --help' for more information.
eduardo@eduardobranco-stor:~$ sudo lvcreate -L 50g -n esxi_nfs_lun_01 esxi_data_vg
[sudo] password for eduardo:
Logical volume "esxi_nfs_lun_01" created.
eduardo@eduardobranco-stor:~$ sudo su
root@eduardobranco-stor:/home/eduardo# mkdir /nfs
root@eduardobranco-stor:/home/eduardo# mkdir /nfs/lun_01
root@eduardobranco-stor:/home/eduardo# mkfs.ext4 /dev/esxi_nfs_lun_01
mke2fs 1.46.5 (30-Dec-2021)
The file /dev/esxi_nfs_lun_01 does not exist and no size was specified.
root@eduardobranco-stor:/home/eduardo# mkfs.ext4 /dev/esxi_nfs_lun_01
mke2fs 1.46.5 (30-Dec-2021)
The file /dev/esxi_nfs_lun_01 does not exist and no size was specified.
root@eduardobranco-stor:/home/eduardo# mount /dev/esxi_data_vg/esxi_nfs_lun_01
mount: /dev/esxi_data_vg/esxi_nfs_lun_01: can't find in /etc/fstab.
root@eduardobranco-stor:/home/eduardo# chown nobody:nogroup /nfs/lun_01
root@eduardobranco-stor:/home/eduardo# chmod 777 /nfs/lun_01
root@eduardobranco-stor:/home/eduardo# sudo blkid /dev/
Display all 217 possibilities? (y or n)
root@eduardobranco-stor:/home/eduardo# sudo blkid /dev/e
ecryptfs esxi_data_vg/
root@eduardobranco-stor:/home/eduardo# sudo blkid /dev/esxi_data_vg/esxi_
esxi_lun_01 esxi_lun_02 esxi_nfs_lun_01
root@eduardobranco-stor:/home/eduardo# sudo blkid /dev/esxi_data_vg/esxi_
esxi_lun_01 esxi_lun_02 esxi_nfs_lun_01
root@eduardobranco-stor:/home/eduardo# sudo blkid /dev/esxi_data_vg/esxi_nfs_lun_01
root@eduardobranco-stor:/home/eduardo# nano /etc/fstab

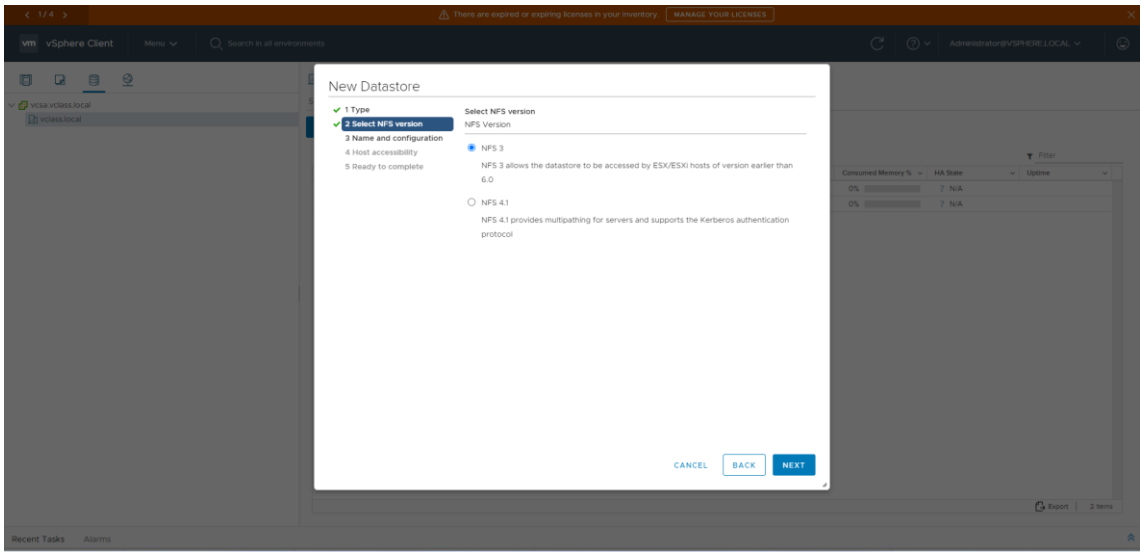
root@eduardobranco-stor: /home/eduardo

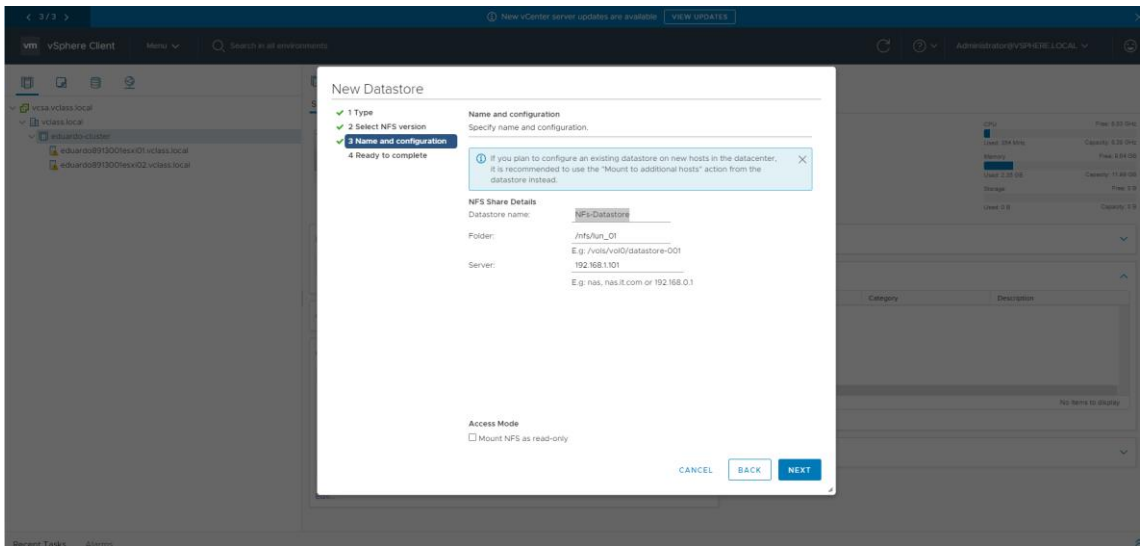
```
  GNU nano 6.2                                                                                   /etc/fstab
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point>   <type>  <options>       <dump>  <pass>
# / was on /dev/ubuntu-vg/ubuntu-lv during curtin installation
/dev/disk/by-id/dm-uuid-LVM-aE2OUCtz4UYrZdhalvV8EQPW4jqe476pMEtuOiunZinVy9N0buLPrjGxqK2wZxKU / ext4 defaults 0 1
# /boot was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/f5b288b9-9b73-4219-95a0-dab66985977e /boot ext4 defaults 0 1
```

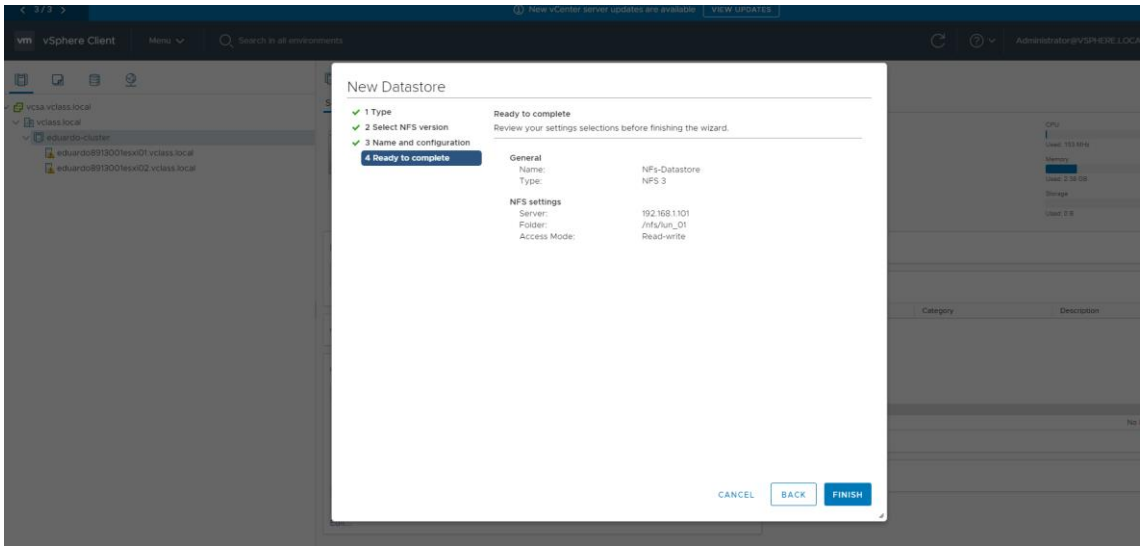
root@eduardobranco-stor: /home/eduardo

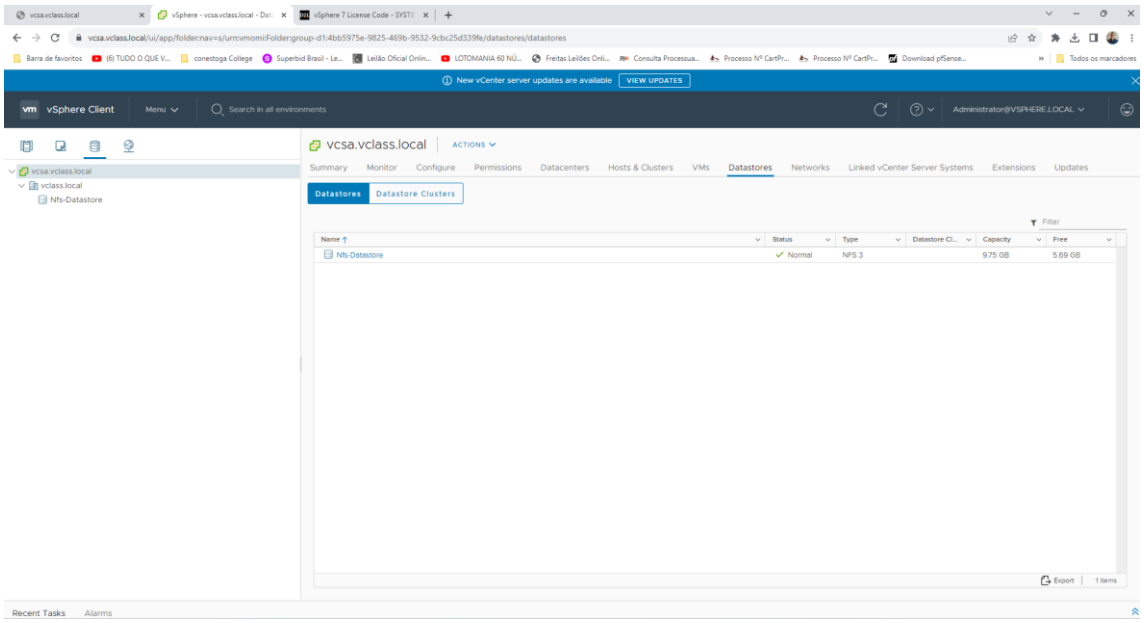
```
  GNU nano 6.2                                                                         /etc/exports *
/nfs/lun_01     192.168.1.102(rw,sync,no_subtree_check)
/nfs/lun_01     192.168.1.103(rw,sync,no_subtree_check)
exportfs -ra
# /etc/exports: the access control list for filesystems which may be exported
#               to NFS clients.  See exports(5).
#
# Example for NFSv2 and NFSv3:
# /srv/homes       hostname1(rw,sync,no_subtree_check) hostname2(ro,sync,no_subtree_check)
#
# Example for NFSv4:
# /srv/nfs4        gss/krb5i(rw,sync,fsid=0,crossmnt,no_subtree_check)
# /srv/nfs4/homes  gss/krb5i(rw,sync,no_subtree_check)
#
```

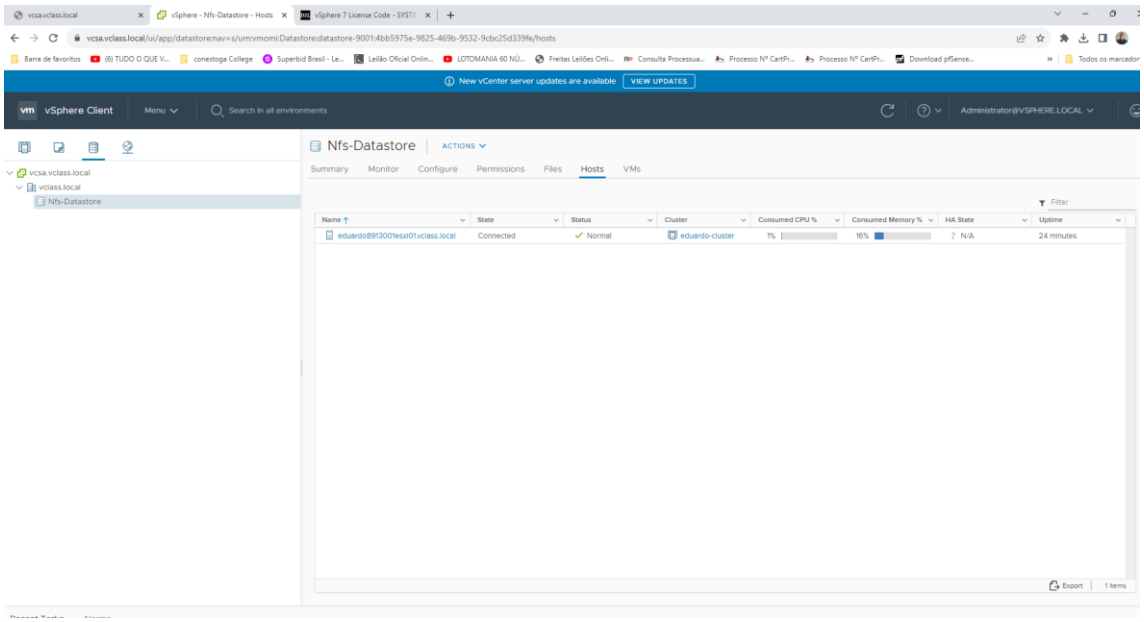

New Datastore
1 Type
2 Select NFS version
3 Name and configuration
4 Host accessibility
5 Ready to complete
Type
Specify datastore type.
VMFS
Create a VMFS datastore on a disk/LUN.
NFS
Create an NFS datastore on an NFS share over the network.
vVol
Create a Virtual Volumes datastore on a storage container connected to a storage provider.
CANCEL
BACK
NEXT

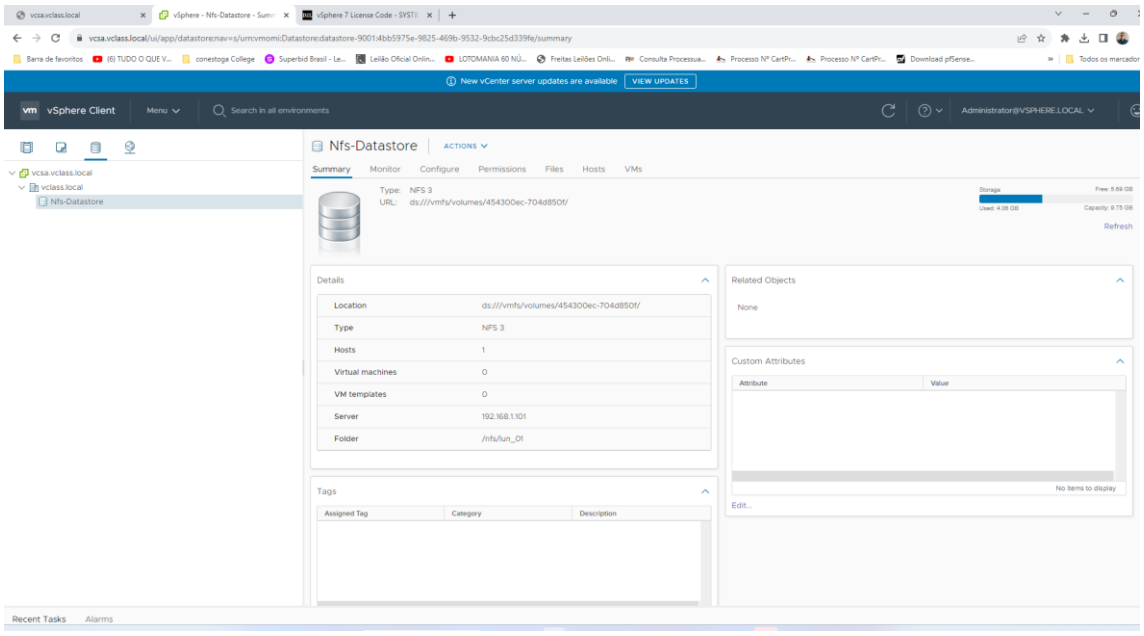

New Datastore
1 Type
2 Select NFS version
3 Name and configuration
4 Host accessibility
5 Ready to complete
Select NFS version
NFS Version
NFS 3
NFS 3 allows the datastore to be accessed by ESX/ESXi hosts of version earlier than 6.0
NFS 4.1
NFS 4.1 provides multipathing for servers and supports the Kerberos authentication protocol
CANCEL
BACK
NEXT


New Datastore
1 Type
2 Select NFS version
3 Name and configuration
4 Ready to complete
Name and configuration
Specify name and configuration.
If you plan to configure an existing datastore on new hosts in the datacenter, it is recommended to use the "Mount to additional hosts" action from the datastore instead.
NFS Share Details
Datastore name:
NFS-Datastore
Folder:
/nfs/lun_01
E.g: /vols/vol0/datastore-001
Server:
192.168.1.101
E.g: nas, nas.it.com or 192.168.0.1
Access Mode
Mount NFS as read-only
CANCEL
BACK
NEXT


New Datastore
1 Type
2 Select NFS version
3 Name and configuration
4 Ready to complete
Ready to complete
Review your settings selections before finishing the wizard.
General
Name: NFs-Datastore
Type: NFS 3
NFS settings
Server: 192.168.1.101
Folder: /nfs/lun_01
Access Mode: Read-write
CANCEL
BACK
FINISH


vcsa.vclass.local
ACTIONS
Summary
Monitor
Configure
Permissions
Datacenters
Hosts & Clusters
VMs
Datastores
Networks
Linked vCenter Server Systems
Extensions
Updates
Datastores
Datastore Clusters
Name
Status
Type
Capacity
Free
Nfs-Datastore
Normal
NFS 3
9.75 GB
5.69 GB
Recent Tasks
Alarms





1. View the content pane and record the information about the datastore.
    a. Datastore type – NFS3
    b. Capacity of the datastore 9.75gb
    c. Free space of the datastore 5.69 GB
    d. Used space of the datastore 4.06 GB

1. What is NFS?

Network File System (NFS) It's a protocol for distributed file systems that lets a user on a client computer get to files over a network as if they were on the local storage. NFS allows remote entry to files and folders, creating a way to share and get to data among various computers in a network.

2. What are the benefits of using NFS in Server Virtualization?

Individual server-level management at the personal server level is easier.

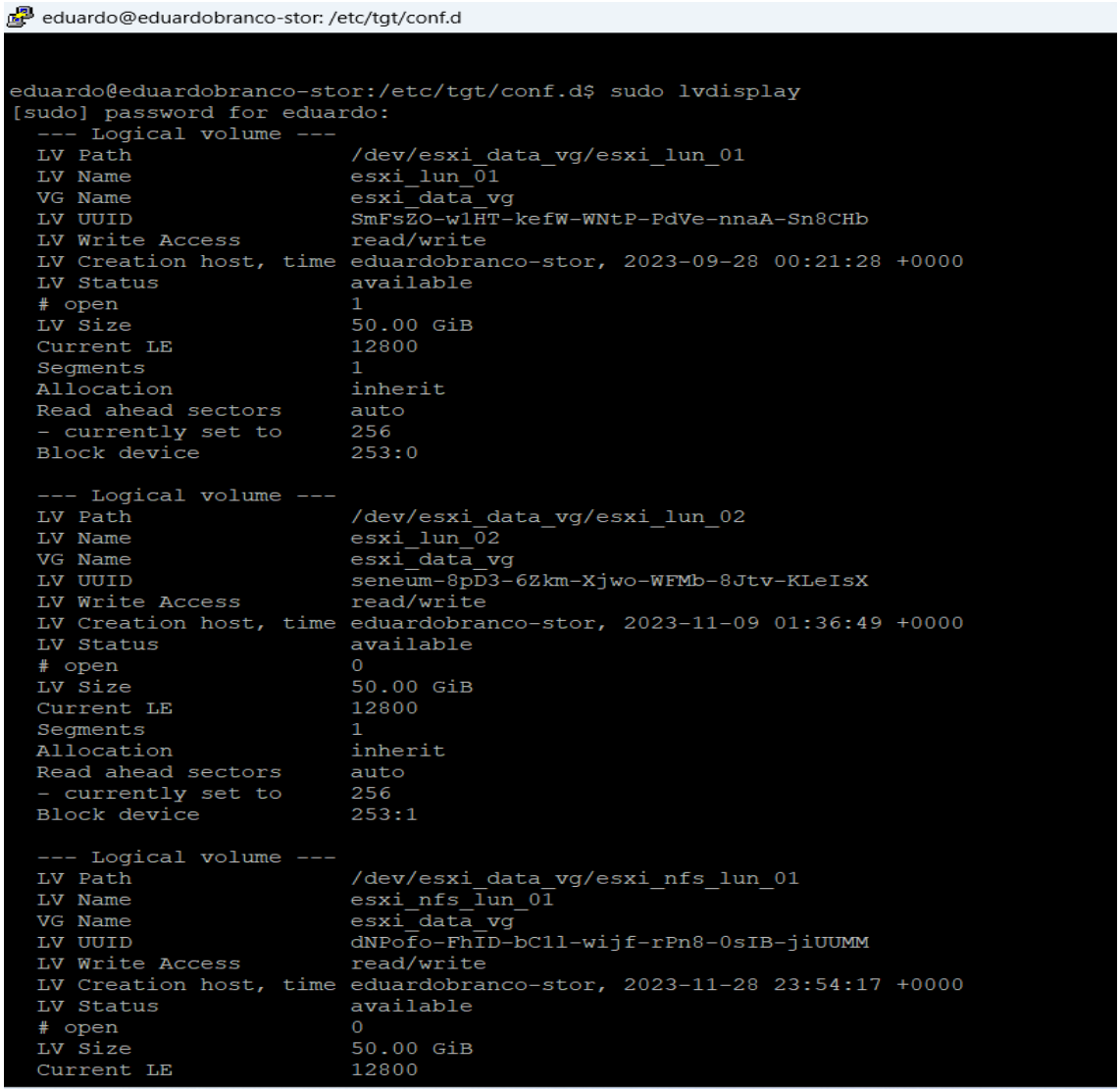
• Centralized storage: NFS provides a centralized storage solution, allowing multiple virtual machines (VMs) to access the same storage resources simultaneously. This centralization improves resource utilization and facilitates the management and allocation of storage capacity.

• Ease of Scalability: NFS makes it easy to scale storage resources as needed. Additional storage can be added to the NFS server, and VMs can access it without requiring extensive reconfiguration at the individual server level.

• Flexible access: NFS supports file-level storage access, making it suitable for various workloads. VMs can access files directly, and this flexibility is beneficial for applications that require shared file access.

• Network efficiency: NFS operates over standard Internet Protocol (IP), making it network-friendly. It efficiently uses network resources to transfer data between the storage server and virtualized servers.

• Compatibility: NFS is a widely supported protocol, making it compatible with various operating systems and virtualization platforms. This compatibility improves interoperability in mixed technology environments.


eduardo@eduardobranco-stor: /etc/tgt/conf.d
eduardo@eduardobranco-stor:/etc/tgt/conf.d$ sudo lvdisplay
[sudo] password for eduardo:
--- Logical volume ---
LV Path /dev/esxi_data_vg/esxi_lun_01
LV Name esxi_lun_01
VG Name esxi_data_vg
LV UUID SmFsZO-w1HT-kefW-WNtP-PdVe-nnaA-Sn8CHb
LV Write Access read/write
LV Creation host, time eduardobranco-stor, 2023-09-28 00:21:28 +0000
LV Status available
open 1
LV Size 50.00 GiB
Current LE 12800
Segments 1
Allocation inherit
Read ahead sectors auto
- currently set to 256
Block device 253:0
--- Logical volume ---
LV Path /dev/esxi_data_vg/esxi_lun_02
LV Name esxi_lun_02
VG Name esxi_data_vg
LV UUID seneum-8pD3-6Zkm-Xjwo-WFMb-8Jtv-KLeIsX
LV Write Access read/write
LV Creation host, time eduardobranco-stor, 2023-11-09 01:36:49 +0000
LV Status available
open 0
LV Size 50.00 GiB
Current LE 12800
Segments 1
Allocation inherit
Read ahead sectors auto
- currently set to 256
Block device 253:1
--- Logical volume ---
LV Path /dev/esxi_data_vg/esxi_nfs_lun_01
LV Name esxi_nfs_lun_01
VG Name esxi_data_vg
LV UUID dNPofo-FhID-bC1l-wijf-rPn8-0sIB-jiUUMM
LV Write Access read/write
LV Creation host, time eduardobranco-stor, 2023-11-28 23:54:17 +0000
LV Status available
open 0
LV Size 50.00 GiB
Current LE 12800