Лабораторная работа №13

СТУДЕНТ: САХНО

ГРУППА: НФИБД-02-23

Цель

Приобрести навыки настройки сервера NFS для удалённого доступа к ресурсам.

Задания

Установить и настроить сервер NFSv4.

Подмонтировать удалённый ресурс на клиенте.

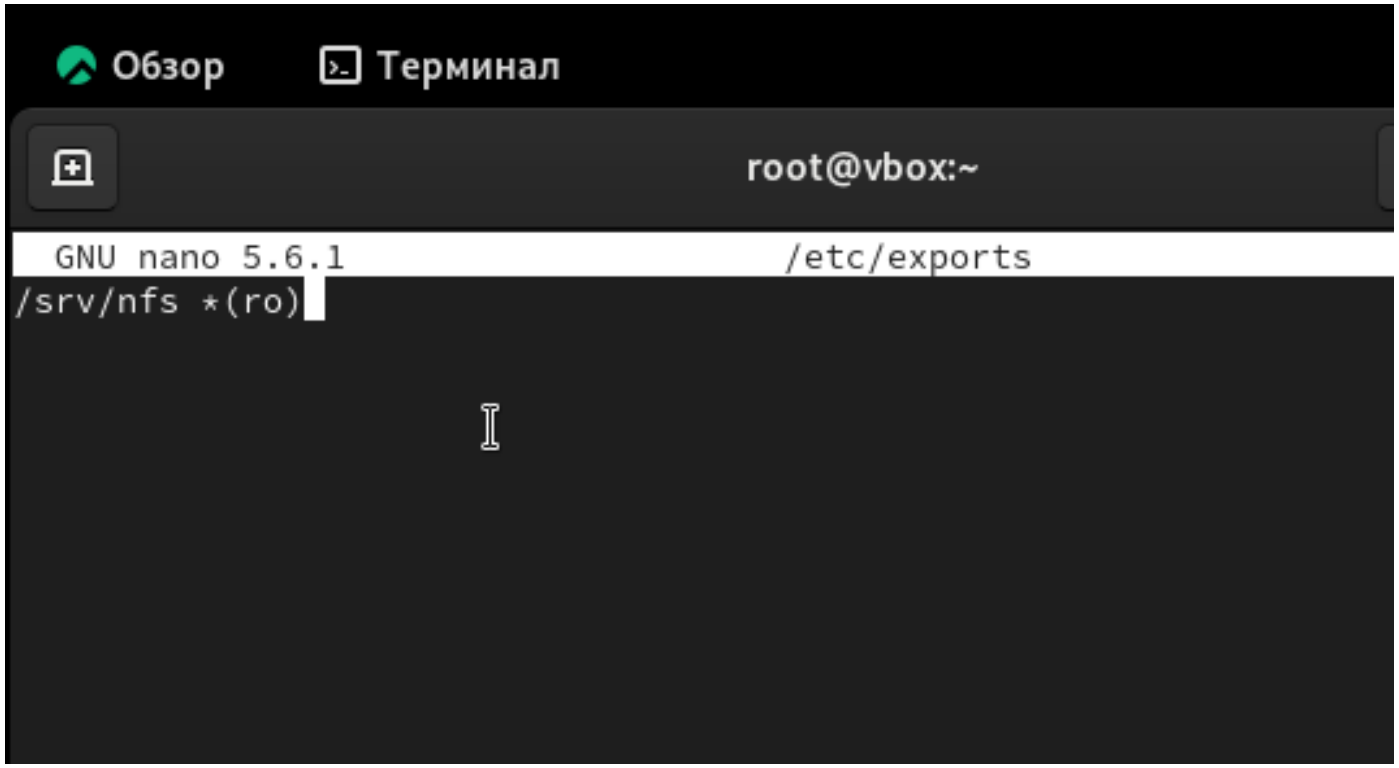
Подключить каталог с контентом веб-сервера к дереву NFS.

Подключить каталог для удалённой работы вашего пользователя к дереву NFS.

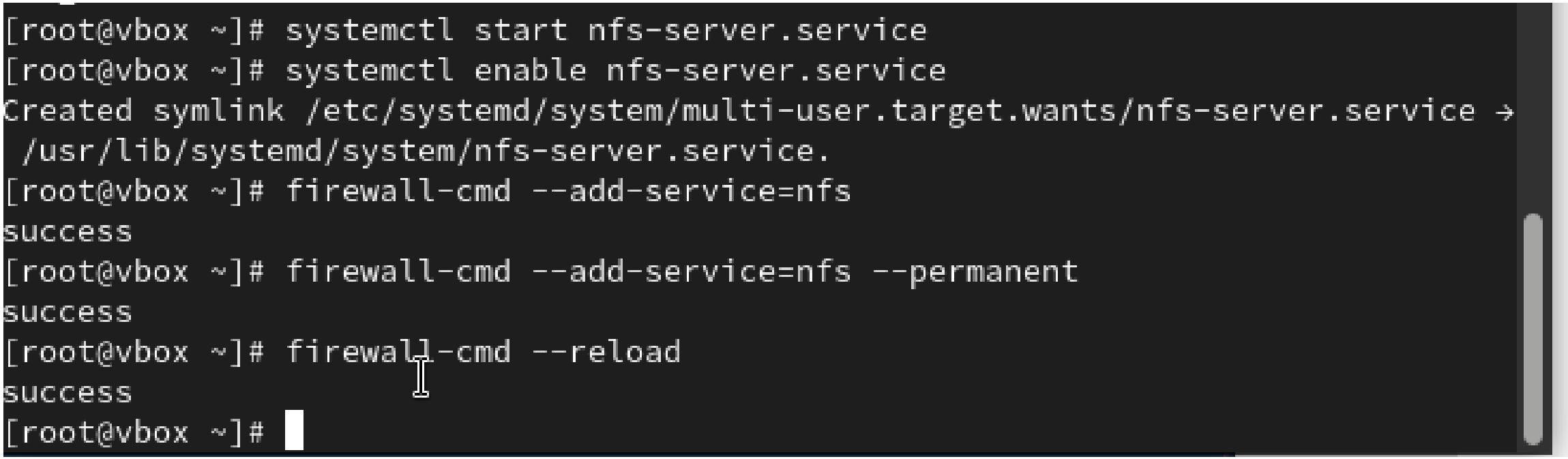
Написать скрипты для Vagrant, фиксирующие действия по установке и настройке сервера NFSv4 во внутреннем окружении виртуальных машин server и client. Соответствующим образом внести изменения в Vagrantfile

```
  Установка        : sssd-nfs-idmap-2.9.7-4.el9_7.1.x86_64                  7/
  Запуск скриптлета: sssd-nfs-idmap-2.9.7-4.el9_7.1.x86_64                  7/
  Проверка         : gssproxy-0.8.4-7.el9.x86_64                            1/
  Проверка         : libev-4.33-6.el9.x86_64                                2/
  Проверка         : libnfsidmap-1:2.5.4-38.el9.x86_64                      3/
  Проверка         : libverto-libev-0.3.2-3.el9.x86_64                      4/
  Проверка         : nfs-utils-1:2.5.4-38.el9.x86_64                        5/
  Проверка         : rpcbind-1.2.6-7.el9.x86_64                             6/
  Проверка         : sssd-nfs-idmap-2.9.7-4.el9_7.1.x86_64                  7/

Установлен:
  gssproxy-0.8.4-7.el9.x86_64              libev-4.33-6.el9.x86_64
  libnfsidmap-1:2.5.4-38.el9.x86_64        libverto-libev-0.3.2-3.el9.x86_64
  nfs-utils-1:2.5.4-38.el9.x86_64          rpcbind-1.2.6-7.el9.x86_64
  sssd-nfs-idmap-2.9.7-4.el9_7.1.x86_64

Выполнено!
```

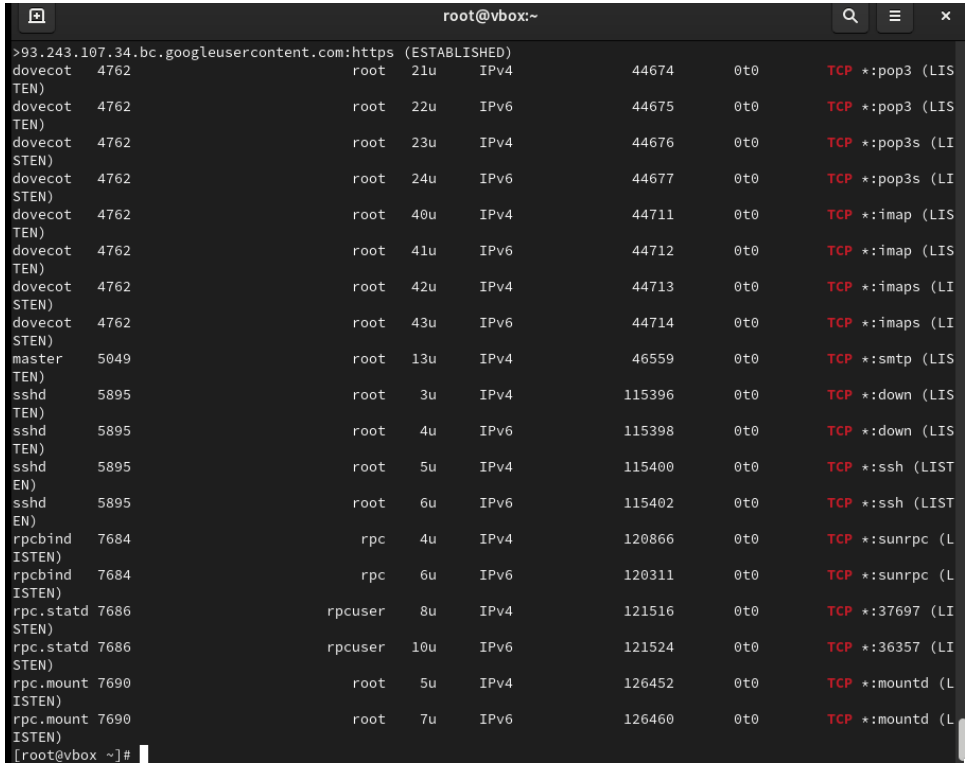
Задание №1



Задание №1


[root@vbox ~]# systemctl start nfs-server.service
[root@vbox ~]# systemctl enable nfs-server.service
Created symlink /etc/systemd/system/multi-user.target.wants/nfs-server.service →
/usr/lib/systemd/system/nfs-server.service.
[root@vbox ~]# firewall-cmd --add-service=nfs
success
[root@vbox ~]# firewall-cmd --add-service=nfs --permanent
success
[root@vbox ~]# firewall-cmd --reload
success
[root@vbox ~]#

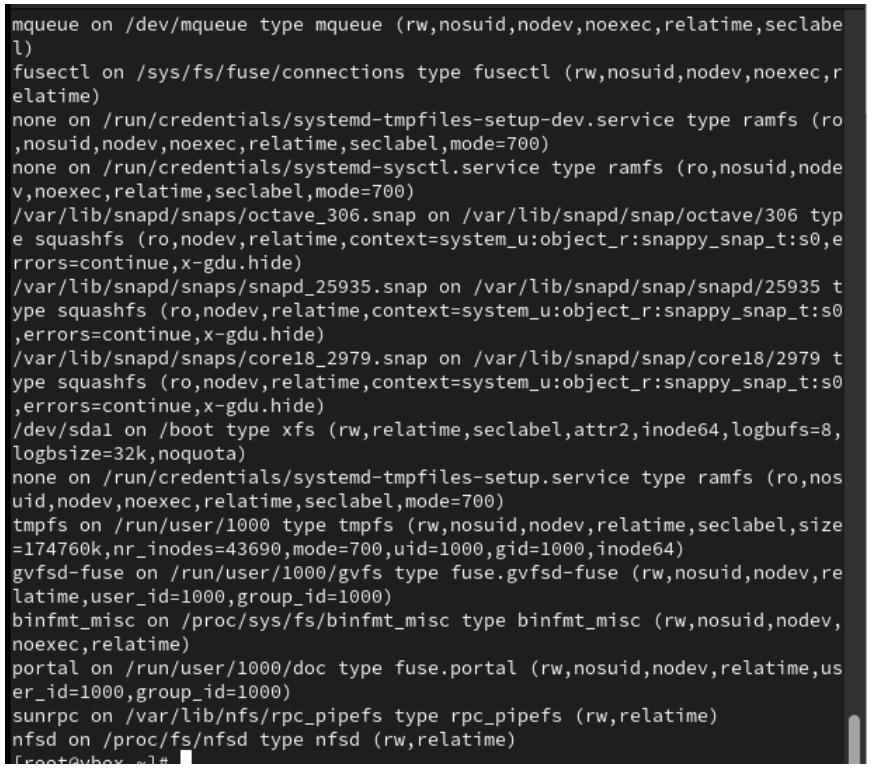
Задание №1


root@vbox:~
>93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
dovecot 4762 root 21u IPv4 44674 0t0 TCP *:pop3 (LISTEN)
dovecot 4762 root 22u IPv6 44675 0t0 TCP *:pop3 (LISTEN)
dovecot 4762 root 23u IPv4 44676 0t0 TCP *:pop3s (LISTEN)
dovecot 4762 root 24u IPv6 44677 0t0 TCP *:pop3s (LISTEN)
dovecot 4762 root 40u IPv4 44711 0t0 TCP *:imap (LISTEN)
dovecot 4762 root 41u IPv6 44712 0t0 TCP *:imap (LISTEN)
dovecot 4762 root 42u IPv4 44713 0t0 TCP *:imaps (LISTEN)
dovecot 4762 root 43u IPv6 44714 0t0 TCP *:imaps (LISTEN)
master 5049 root 13u IPv4 46559 0t0 TCP *:smtp (LISTEN)
sshd 5895 root 3u IPv4 115396 0t0 TCP *:down (LISTEN)
sshd 5895 root 4u IPv6 115398 0t0 TCP *:down (LISTEN)
sshd 5895 root 5u IPv4 115400 0t0 TCP *:ssh (LISTEN)
sshd 5895 root 6u IPv6 115402 0t0 TCP *:ssh (LISTEN)
rpcbind 7684 rpc 4u IPv4 120866 0t0 TCP *:sunrpc (LISTEN)
rpcbind 7684 rpc 6u IPv6 120311 0t0 TCP *:sunrpc (LISTEN)
rpc.statd 7686 rpcuser 8u IPv4 121516 0t0 TCP *:37697 (LISTEN)
rpc.statd 7686 rpcuser 10u IPv6 121524 0t0 TCP *:36357 (LISTEN)
rpc.mount 7690 root 5u IPv4 126452 0t0 TCP *:mountd (LISTEN)
rpc.mount 7690 root 7u IPv6 126460 0t0 TCP *:mountd (LISTEN)
[root@vbox ~]#

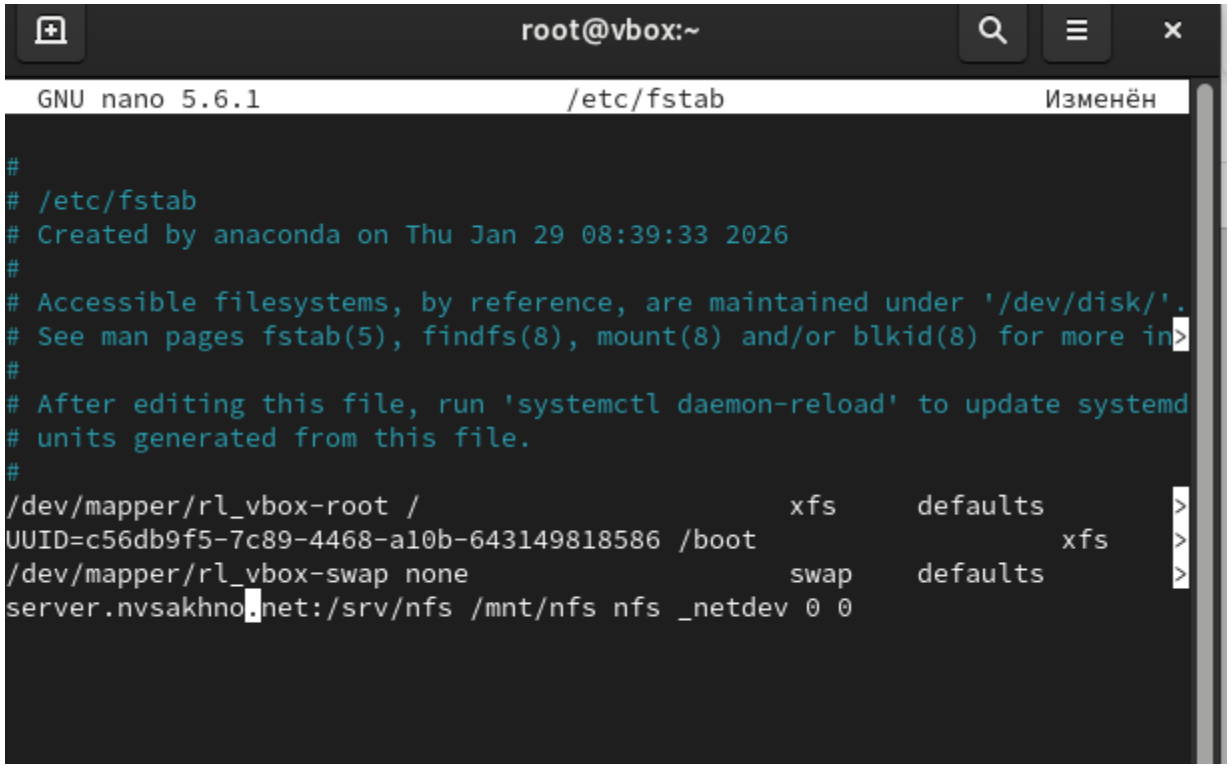
Задание №1


RH-Satellite-6 RH-Satellite-6-capsule afp amanda-client amanda-k5-client a
mqp amqps apcupsd audit ausweisapp2 bacula bacula-client bareos-director b
areos-filedaemon bareos-storage bb bgp bitcoin bitcoin-rpc bitcoin-testnet
bitcoin-testnet-rpc bittorrent-lsd ceph ceph-exporter ceph-mon cfengine c
heckmk-agent cockpit collectd condor-collector cratedb ctdb dds dds-multic
ast dds-unicast dhcp dhcpv6 dhcpv6-client distcc dns dns-over-tls docker-r
egistry docker-swarm dropbox-lansync elasticsearch etcd-client etcd-server
finger foreman foreman-proxy freeipa-4 freeipa-ldap freeipa-ldaps freeipa
-replication freeipa-trust ftp galera ganglia-client ganglia-master git gp
sd grafana gre high-availability http http3 https ident imap imaps ipfs ip
ipp-client ipsec irc ircs iscsi-target isns jenkins kadmin kdeconnect ke
rberos kibana klogin kpasswd kprop kshell kube-api kube-apiserver kube-con
trol-plane kube-control-plane-secure kube-controller-manager kube-controll
er-manager-secure kube-nodeport-services kube-scheduler kube-scheduler-sec
ure kube-worker kubelet kubelet-readonly kubelet-worker ldap ldaps libvirt
libvirt-tls lightning-network llmnr llmnr-client llmnr-tcp llmnr-udp mana
gesieve matrix mdns memcache minidlna mongodb mosh mountd mqtt mqtt-tls ms
-wbt mssql murmur mysql nbd nebula netbios-ns netdata-dashboard nfs nfs3 n
mea-0183 nrpe ntp nut opentelemetry openvpn ovirt-imageio ovirt-storagecon
sole ovirt-vmconsole plex pmcd pmproxy pmwebapi pmwebapis pop3 pop3s postg
resql privoxy prometheus prometheus-node-exporter proxy-dhcp ps2link ps3ne
tsrv ptp pulseaudio puppetmaster quassel radius rdp redis redis-sentinel r
potd rpc-bind rquotad rsh rsyncd rtsp salt-master samba samba-client samba
-dc sane sip sips slp smtp smtp-submission smtps snmp snmptls snmptls-trap
snmptrap spideroak-lansync spotify-sync squid ssdp ssh ssh-custom steam-s
treaming svdrp svn syncthing syncthing-gui syncthing-relay synergy syslog
syslog-tls telnet tentacle tftp tile38 tinc tor-socks transmission-client
upnp-client vdsm vnc-server warpinator wbem-http wbem-https wireguard ws-d
iscovery ws-discovery-client ws-discovery-tcp ws-discovery-udp wsman wsman
s xdmcp xmpp-bosh xmpp-client xmpp-local xmpp-server zabbix-agent zabbix-s
erver zerotier
[root@vbox ~]#

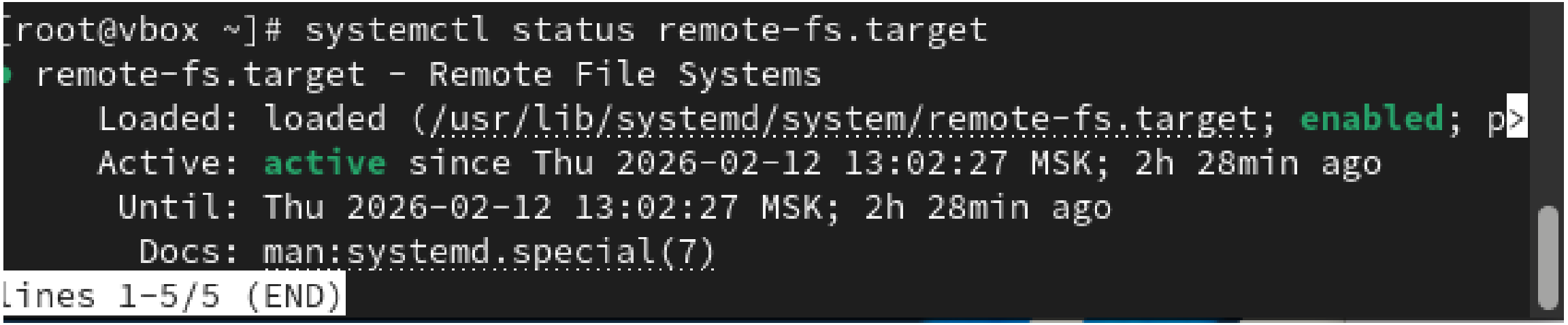
Задание №1


mqueue on /dev/mqueue type mqueue (rw,nosuid,nodev,noexec,relatime,seclabel)
fusectl on /sys/fs/fuse/connections type fusectl (rw,nosuid,nodev,noexec,relatime)
none on /run/credentials/systemd-tmpfiles-setup-dev.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)
none on /run/credentials/systemd-sysctl.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)
/var/lib/snapd/snaps/octave_306.snap on /var/lib/snapd/snap/octave/306 type squashfs (ro,nodev,relatime,context=system_u:object_r:snappy_snap_t:s0,errors=continue,x-gdu.hide)
/var/lib/snapd/snaps/snapd_25935.snap on /var/lib/snapd/snap/snapd/25935 type squashfs (ro,nodev,relatime,context=system_u:object_r:snappy_snap_t:s0,errors=continue,x-gdu.hide)
/var/lib/snapd/snaps/core18_2979.snap on /var/lib/snapd/snap/core18/2979 type squashfs (ro,nodev,relatime,context=system_u:object_r:snappy_snap_t:s0,errors=continue,x-gdu.hide)
/dev/sda1 on /boot type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)
none on /run/credentials/systemd-tmpfiles-setup.service type ramfs (ro,nosuid,nodev,noexec,relatime,seclabel,mode=700)
tmpfs on /run/user/1000 type tmpfs (rw,nosuid,nodev,relatime,seclabel,size=174760k,nr_inodes=43690,mode=700,uid=1000,gid=1000,inode64)
gvfsd-fuse on /run/user/1000/gvfs type fuse.gvfsd-fuse (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)
binfmt_misc on /proc/sys/fs/binfmt_misc type binfmt_misc (rw,nosuid,nodev,noexec,relatime)
portal on /run/user/1000/doc type fuse.portal (rw,nosuid,nodev,relatime,user_id=1000,group_id=1000)
sunrpc on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw,relatime)
nfsd on /proc/fs/nfsd type nfsd (rw,relatime)

Задание №2


root@vbox:~
GNU nano 5.6.1 /etc/fstab Изменён
#
/etc/fstab
Created by anaconda on Thu Jan 29 08:39:33 2026
#
Accessible filesystems, by reference, are maintained under '/dev/disk/'.
See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more in
#
After editing this file, run 'systemctl daemon-reload' to update systemd
units generated from this file.
#
/dev/mapper/rl_vbox-root / xfs defaults
UUID=c56db9f5-7c89-4468-a10b-643149818586 /boot xfs
/dev/mapper/rl_vbox-swap none swap defaults
server.nvsakhno.net:/srv/nfs /mnt/nfs nfs _netdev 0 0

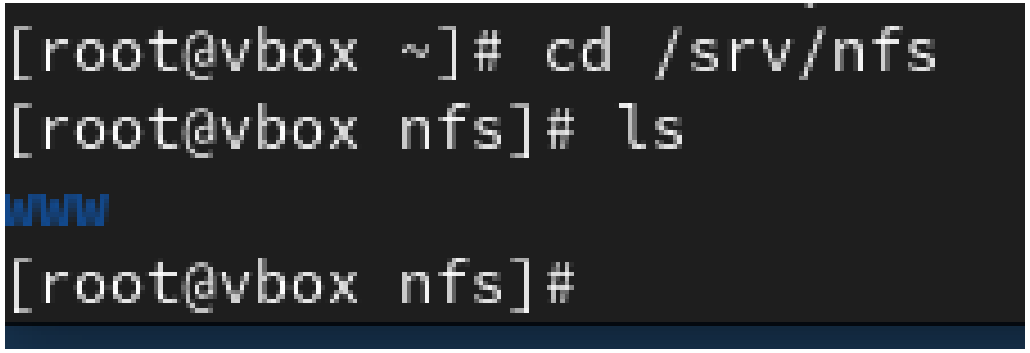
Задание №2


[root@vbox ~]# systemctl status remote-fs.target
remote-fs.target - Remote File Systems
Loaded: loaded (/usr/lib/systemd/system/remote-fs.target; enabled; p>
Active: active since Thu 2026-02-12 13:02:27 MSK; 2h 28min ago
Until: Thu 2026-02-12 13:02:27 MSK; 2h 28min ago
Docs: man:systemd.special(7)
lines 1-5/5 (END)

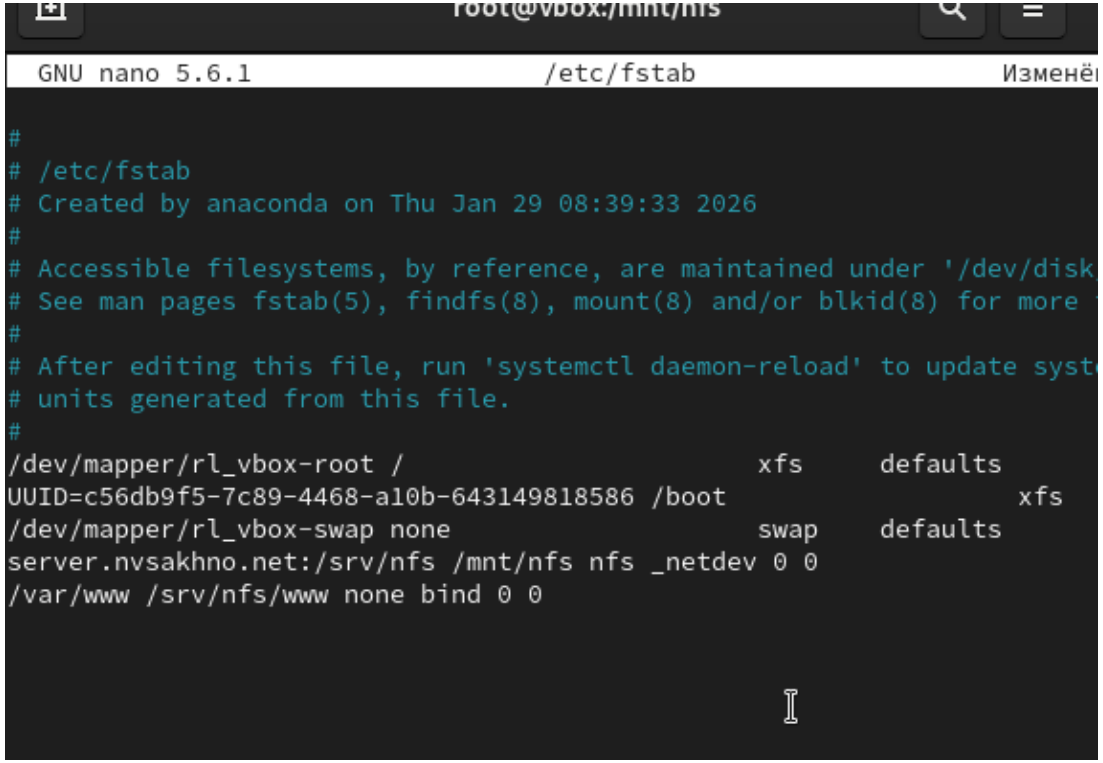
Задание №2

```
[root@vbox ~]# mkdir -p /srv/nfs/www
[root@vbox ~]# mount -o bind /var/www/ /srv/nfs/www/
mount: (hint) your fstab has been modified, but systemd still
       the old version; use 'systemctl daemon-reload' to relo
[root@vbox ~]#
```

Задание №3



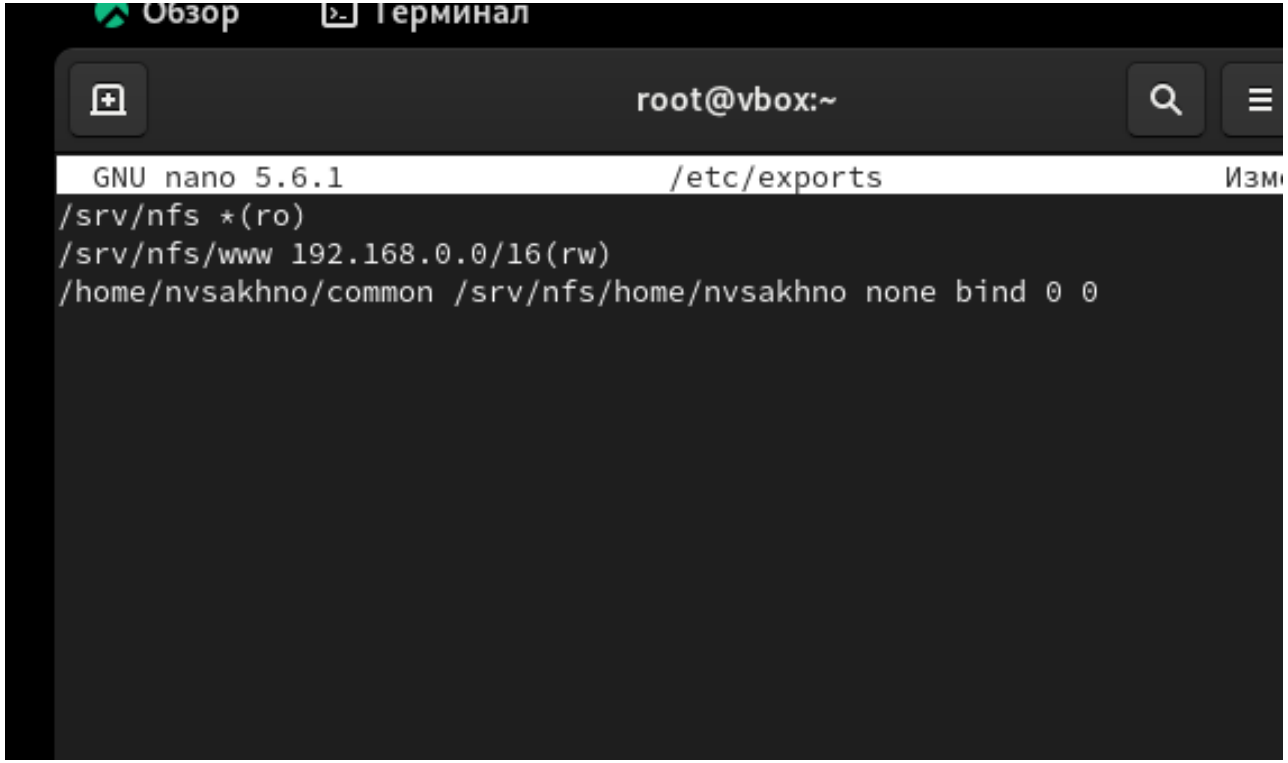
Задание №3


root@vbox:/mnt/nfs
GNU nano 5.6.1 /etc/fstab Изменён
#
/etc/fstab
Created by anaconda on Thu Jan 29 08:39:33 2026
#
Accessible filesystems, by reference, are maintained under '/dev/disk
See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more
#
After editing this file, run 'systemctl daemon-reload' to update syst
units generated from this file.
#
/dev/mapper/rl_vbox-root / xfs defaults
UUID=c56db9f5-7c89-4468-a10b-643149818586 /boot xfs
/dev/mapper/rl_vbox-swap none swap defaults
server.nvsakhno.net:/srv/nfs /mnt/nfs nfs _netdev 0 0
/var/www /srv/nfs/www none bind 0 0

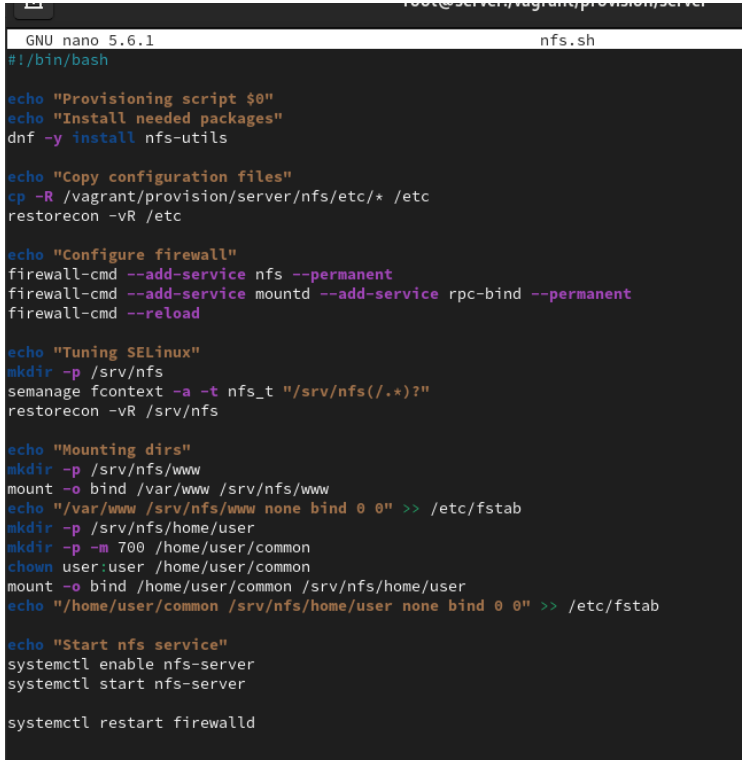
Задание №3

```
root@vbox ~]# mkdir -p -m 700 ~/common
root@vbox ~]# cd ~/common
root@vbox common]# touch nvsakhno@server.txt
root@vbox common]#
```

Задание №4


Обзор
Терминал
root@vbox:~
GNU nano 5.6.1 /etc/exports
/srv/nfs *(ro)
/srv/nfs/www 192.168.0.0/16(rw)
/home/nvsakhno/common /srv/nfs/home/nvsakhno none bind 0 0

Задание №4


GNU nano 5.6.1 nfs.sh
#!/bin/bash
echo "Provisioning script $0"
echo "Install needed packages"
dnf -y install nfs-utils
echo "Copy configuration files"
cp -R /vagrant/provision/server/nfs/etc/* /etc
restorecon -vR /etc
echo "Configure firewall"
firewall-cmd --add-service nfs --permanent
firewall-cmd --add-service mountd --add-service rpc-bind --permanent
firewall-cmd --reload
echo "Tuning SELinux"
mkdir -p /srv/nfs
semanage fcontext -a -t nfs_t "/srv/nfs(/.*)?"
restorecon -vR /srv/nfs
echo "Mounting dirs"
mkdir -p /srv/nfs/www
mount -o bind /var/www /srv/nfs/www
echo "/var/www /srv/nfs/www none bind 0 0" >> /etc/fstab
mkdir -p /srv/nfs/home/user
mkdir -p -m 700 /home/user/common
chown user:user /home/user/common
mount -o bind /home/user/common /srv/nfs/home/user
echo "/home/user/common /srv/nfs/home/user none bind 0 0" >> /etc/fstab
echo "Start nfs service"
systemctl enable nfs-server
systemctl start nfs-server
systemctl restart firewalld

Задание №5

Вывод:

В процессе выполнения данной лабораторной работы я приобрел навыки настройки сервера NFS для удалённого доступа к ресурсам.