

Лабораторная работа №13

Настройка NFS

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НПИБд-01-23

Настройка сервера NFSv4

```
[root@server.kazhavoronkov.net ~]# dnf -y install nfs-utils
Extra Packages for Enterprise Linux 10 - x86_64
Extra Packages for Enterprise Linux 10 - x86_64
Rocky Linux 10 - BaseOS
Rocky Linux 10 - BaseOS
Rocky Linux 10 - AppStream
Rocky Linux 10 - AppStream
Rocky Linux 10 - Extras
Rocky Linux 10 - Extras
Dependencies resolved.
=====
Package           Architecture   Version        Repository      Size
=====
Installing:
nfs-utils         x86_64        1:2.8.3-0.el10  baseos          475 k
Upgrading:
libipa_hbac       x86_64        2.11.1-2.el10_1.1    baseos          34 k
libldb            x86_64        4.22.4-106.el10     baseos         181 k
libsmbclient      x86_64        4.22.4-106.el10     baseos          75 k
libsss_certmap    x86_64        2.11.1-2.el10_1.1    baseos          81 k
libsss_idmap      x86_64        2.11.1-2.el10_1.1    baseos          41 k
libsss_nss_idmap  x86_64        2.11.1-2.el10_1.1    baseos          44 k
libsss_sudo       x86_64        2.11.1-2.el10_1.1    baseos          33 k
libtalloc          x86_64        2.4.3-100.el10      baseos          33 k
libtdb             x86_64        1.4.13-100.el10     baseos          55 k
libtevent          x86_64        0.16.2-100.el10     baseos          50 k
libwbclient        x86_64        4.22.4-106.el10     baseos          43 k
samba-client-libs x86_64        4.22.4-106.el10     baseos          5.3 M
samba-common       noarch        4.22.4-106.el10     baseos         174 k
samba-common-libs x86_64        4.22.4-106.el10     baseos          104 k
```

Настройка сервера NFSv4

```
Complete!
[root@server.kazhavoronkov.net ~]# mkdir -p /srv/nfs
[root@server.kazhavoronkov.net ~]# nano
```

Настройка сервера NFSv4



The screenshot shows a terminal window with a red header bar. The header bar contains the text "root@server:~ - sudo -i". Below the header is a black status bar with three pieces of information: "GNU nano 8.1" on the left, "/etc/exports" in the center, and "Modified" on the right. The main area of the terminal is a white space where the command "/srv/nfs *(ro)" has been typed and is highlighted with a blue selection bar.

```
root@server:~ - sudo -i
GNU nano 8.1          /etc/exports          Modified
/srv/nfs *(ro)
```

Настройка сервера NFSv4

```
[root@server.kazhavoronkov.net ~]# semanage fcontext -a -t nfs_t "/srv/nfs(/.*)?"  
[root@server.kazhavoronkov.net ~]# restorecon -vR /srv/nfs  
Relabeled /srv/nfs from unconfined_u:object_r:var_t:s0 to unconfined_u:object_r:nfs_t:s0  
[root@server.kazhavoronkov.net ~]# systemctl start nfs-server.service  
[root@server.kazhavoronkov.net ~]# 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@server.kazhavoronkov.net ~]# firewall-cmd --add-service=nfs  
success  
[root@server.kazhavoronkov.net ~]# firewall-cmd --add-service=nfs --permanent  
success  
[root@server.kazhavoronkov.net ~]# firewall-cmd --reload  
success  
[root@server.kazhavoronkov.net ~]# █
```

Настройка сервера NFSv4

```
root@client:~ - sudo -i
[kazhavoronkov@client.kazhavoronkov.net ~]$ sudo -i
[sudo] password for kazhavoronkov:
Sorry, try again.
[sudo] password for kazhavoronkov:
[root@client.kazhavoronkov.net ~]# dnf -y install nfs-utils
Extra Packages for Enterprise Linux 10 - x86_64
Extra Packages for Enterprise Linux 10 - x86_64
Rocky Linux 10 - BaseOS
Rocky Linux 10 - BaseOS
Rocky Linux 10 - AppStream
Rocky Linux 10 - AppStream
Rocky Linux 10 - Extras
Rocky Linux 10 - Extras
Dependencies resolved.
=====
           Package           Architecture      Version       Repository      Size
=====
Installing:
  nfs-utils          x86_64        1:2.8.3-0.el10    baseos      475 k
Upgrading:
  libipa_hbac        x86_64        2.11.1-2.el10_1.1  baseos      34 k
  libldb             x86_64        4.22.4-106.el10   baseos     181 k
  libsmbclient       x86_64        4.22.4-106.el10   baseos      75 k
  libssss_certmap   x86_64        2.11.1-2.el10_1.1  baseos      81 k
  libssss_idmap      x86_64        2.11.1-2.el10_1.1  baseos      41 k
  libssss_nss_idmap x86_64        2.11.1-2.el10_1.1  baseos      44 k
```

Настройка сервера NFSv4

```
[root@server.kazhavoronkov.net ~]# showmount -e server.kazhavoronkov.net
Export list for server.kazhavoronkov.net:
/srv/nfs *
```

Настройка сервера NFSv4

```
[root@server.kazhavoronkov.net ~]# systemctl stop firewalld.service  
[root@server.kazhavoronkov.net ~]# █
```

Настройка сервера NFSv4

```
[root@client.kazhavoronkov.net ~]# showmount -e server.kazhavoronkov.net
Export list for server.kazhavoronkov.net:
/srv/nfs *
[root@client kazhavoronkov.net ~]#
```

Настройка сервера NFSv4

```
[root@server.kazhavoronkov.net ~]# systemctl start firewalld  
[root@server.kazhavoronkov.net ~]# █
```

Настройка сервера NFSv4

```
[root@server.kazhavoronkov.net ~]# lsof | grep TCP
lsof: WARNING: can't stat() fuse.gvfsd-fuse file system /run/user/1001/gvfs
      Output information may be incomplete.
lsof: WARNING: can't stat() fuse.portal file system /run/user/1001/doc
      Output information may be incomplete.

systemd    1                      root  265u    IPv6          7787    0t0    TCP *:web
sm (LISTEN)
systemd    1                      root  305u    IPv4          66390    0t0    TCP *:sun
rpc (LISTEN)
systemd    1                      root  307u    IPv6          64678    0t0    TCP *:sun
rpc (LISTEN)
cupsd    1088                     root    7u    IPv6          8909    0t0    TCP local
host:ipp (LISTEN)
cupsd    1088                     root    8u    IPv4          8910    0t0    TCP local
host:ipp (LISTEN)
sshd    1093                     root    7u    IPv4          8886    0t0    TCP *:dow
n (LISTEN)
sshd    1093                     root    8u    IPv6          8888    0t0    TCP *:dow
n (LISTEN)
sshd    1093                     root    9u    IPv4          8890    0t0    TCP *:ssh
(LISTEN)
sshd    1093                     root   10u    IPv6          8892    0t0    TCP *:ssh
(LISTEN)
```

Настройка сервера NFSv4

```
[root@server.kazhavoronkov.net ~]# lsof | grep UDP
lsof: WARNING: can't stat() fuse.gvfsd-fuse file system /run/user/1001/gvfs
      Output information may be incomplete.
lsof: WARNING: can't stat() fuse.portal file system /run/user/1001/doc
      Output information may be incomplete.

systemd    1          root  306u    IPv4          64671    0t0    UDP *:sun
rpc
systemd    1          root  308u    IPv6          64685    0t0    UDP *:sun
rpc
avahi-dae 698        avahi   12u    IPv4          8301    0t0    UDP *:mdn
s
avahi-dae 698        avahi   13u    IPv6          8302    0t0    UDP *:mdn
s
chronyd   740        chrony   5u    IPv4          8135    0t0    UDP local
host:323
chronyd   740        chrony   6u    IPv6          8136    0t0    UDP local
host:323
chronyd   740        chrony   7u    IPv4          8137    0t0    UDP *:ntp
```

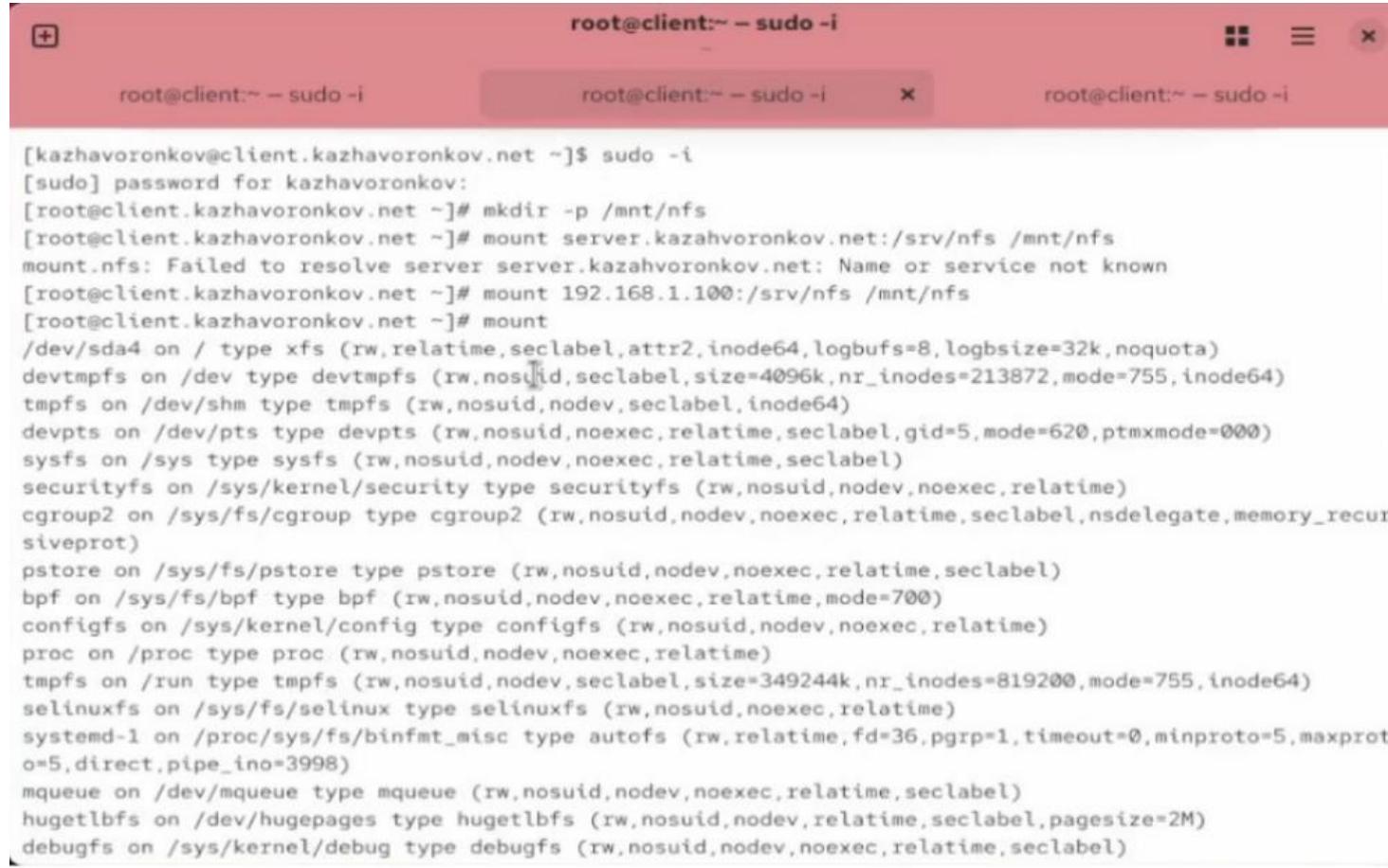
Настройка сервера NFSv4

```
[root@server.kazhavoronkov.net ~]# firewall-cmd --get-services
0-AD RH-Satellite-6 RH-Satellite-6-capsule afp alvr amanda-client amanda-k5-client amqp amqps anno-1602 ann
o-1800 apcupsd aseqnet audit ausweisapp2 bacula bacula-client bareos-director bareos-filedaemon bareos-stor
age bb bgp bitcoin bitcoin-rpc bitcoin-testnet bitcoin-testnet-rpc bittorrent-lsd ceph ceph-exporter ceph-m
on cfengine checkmk-agent civilization-iv civilization-v cockpit collectd condor-collector cratedb ctdb dds
dds-multicast dds-unicast dhcp dhcpcv6 dhcpcv6-client distcc dns dns-over-quic dns-over-tls docker-registry
docker-swarm dropbox-lansync elasticsearch etcd-client etcd-server factorio finger foreman foreman-proxy fr
eeipa-4 freeipa-ldap freeipa-ldaps freeipa-replication freeipa-trust ftp galera ganglia-client ganglia-mast
er git gpgsql grafana gre high-availability http http3 https ident imap imaps iperf2 iperf3 ipfs ipp ipp-clie
nt ipsec irc ircs iscsi-target jenkins kadmin kdeconnect kerberos kibana klogin kpasswd kprop kshell k
ube-api kube-apiserver kube-control-plane kube-control-plane-secure kube-controller-manager kube-controller
-manager-secure kube-nodeport-services kube-scheduler kube-scheduler-secure kube-worker kubelet kubelet-rea
donly kubelet-worker ldap ldaps libvirt libvirt-tls lightning-network llmnr llmnr-client llmnr-tcp llmnr-ud
p managesieve matrix mdns memcache minecraft minidlna mnyp mongoDB mosh mountd mpd mqtt mqtt-tls ms-wbt mss
ql murmur mysql nbd nebula need-for-speed-most-wanted netbios-ns netdata-dashboard nfs nfs3 nmea-0183 nrpe
ntp nut opentelemetry openvpn ovirt-imageio ovirt-storageconsole ovirt-vmconsole plex pmcd pmproxy pmwebapi
pmwebapis pop3 pop3s postgresql privoxy prometheus-node-exporter proxy-dhcp ps2link ps3netsrv p
tp pulseaudio puppetmaster quassel radius radsec rdp redis redis-sentinel rootd rpc-bind rquotad rsh rsyncd
rtsp salt-master samba samba-client samba-dc sane settlers-history-collection sip sips slimevr slp smtp sm
tp-submission smtps snmp snmpTLS snmpTLS-trap snmptrap spiderOak-lansync spotify-sync squid ssdp ssh ssh-cu
stom statsrv steam-lan-transfer steam-streaming stellaris stronghold-crusader stun stuns submission supertu
xkart svdrp svn syncthing syncthing-gui syncthing-relay synergy syscomlan syslog syslog-tls telnet tentacle
terraria tftp tile38 tinc tor-socks transmission-client turn turns upnp-client vdsm vnc-server vrrp warpin
ator wbem-http wbem-https wireguard ws-discovery ws-discovery-client ws-discovery-host ws-discovery-tcp ws-
discovery-udp wsdd wsdd-http wsman wsmans xdmcp xmpp-bosh xmpp-client xmpp-local xmpp-server zabbix-agent z
abbix-java-gateway zabbix-server zabbix-trapper zabbix-web-service zero-k zerotier
[root@server.kazhavoronkov.net ~]# firewall-cmd --add-serv
```

Настройка сервера NFSv4

```
[root@client.kazhavoronkov.net ~]# showmount -e server.kazhavoronkov.net
Export list for server.kazhavoronkov.net:
/srv/nfs *
```

Мониторинг NFS на клиенте



```
[kazhavoronkov@client.kazhavoronkov.net ~]$ sudo -i
[sudo] password for kazhavoronkov:
[root@client.kazhavoronkov.net ~]# mkdir -p /mnt/nfs
[root@client.kazhavoronkov.net ~]# mount server.kazhavoronkov.net:/srv/nfs /mnt/nfs
mount.nfs: Failed to resolve server server.kazhavoronkov.net: Name or service not known
[root@client.kazhavoronkov.net ~]# mount 192.168.1.100:/srv/nfs /mnt/nfs
[root@client.kazhavoronkov.net ~]# mount
/dev/sda4 on / type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)
devtmpfs on /dev type devtmpfs (rw,nosuid,seclabel,size=4096k,nr_inodes=213872,mode=755,inode64)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev,seclabel,inode64)
devpts on /dev/pts type devpts (rw,nosuid,noexec,relatime,seclabel,gid=5,mode=620,ptmxmode=000)
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime,seclabel)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
cgroup2 on /sys/fs/cgroup type cgroup2 (rw,nosuid,nodev,noexec,relatime,seclabel,nsdelegate,memory_recursiveprot)
pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime,seclabel)
bpf on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)
configfs on /sys/kernel/config type configfs (rw,nosuid,nodev,noexec,relatime)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
tmpfs on /run type tmpfs (rw,nosuid,nodev,seclabel,size=349244k,nr_inodes=819200,mode=755,inode64)
selinuxfs on /sys/fs/selinux type selinuxfs (rw,nosuid,noexec,relatime)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=36,pgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=3998)
mqueue on /dev/mqueue type mqueue (rw,nosuid,nodev,noexec,relatime,seclabel)
hugetlbfs on /dev/hugepages type hugetlbfs (rw,nosuid,nodev,relatime,seclabel,pagesize=2M)
debugfs on /sys/kernel/debug type debugfs (rw,nosuid,nodev,noexec,relatime,seclabel)
```

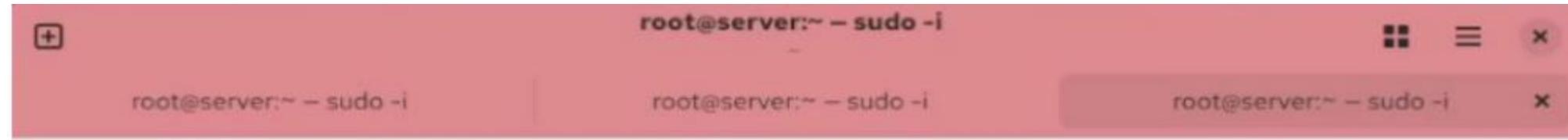
Мониторинг NFS на клиенте



The screenshot shows a terminal window titled "root@client:~ – sudo -i". It contains three tabs: "root@client:~ – sudo -i", "root@client:~ – sudo -i", and "root@client:~ – sudo -i". The active tab displays the contents of the "/etc/fstab" file, which is currently being modified. The file includes comments about the creation by anaconda and instructions for systemctl daemon-reload. It lists several entries for local drives and a swapfile, followed by a Vagrant configuration section and a final entry for an NFS share.

```
#  
# /etc/fstab  
# Created by anaconda on Sat Sep  6 13:15:18 2025  
#  
# Accessible filesystems, by reference, are maintained under '/dev/disk/'.  
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.  
#  
# After editing this file, run 'systemctl daemon-reload' to update systemd  
# units generated from this file.  
#  
UUID=e0f3fce-7799-4294-8547-121e1623c157 / xfs defaults 0 0  
UUID=401bb276-312f-4651-9a99-1f0db4e65ae4 /boot xfs defaults 0 0  
UUID=db95190e-ed05-4b2b-9d66-f80338c9589f none swap defaults 0 0  
/swapfile none swap defaults 0 0  
#VAGRANT-BEGIN  
# The contents below are automatically generated by Vagrant. Do not modify.  
vagrant /vagrant vboxsf uid=1000,gid=1000,_netdev 0 0  
#VAGRANT-END  
server.kazahvoronkov.net:/srv/nfs /mnt/nfs nfs _netdev 0 0
```

Подключение каталогов к дереву NFS



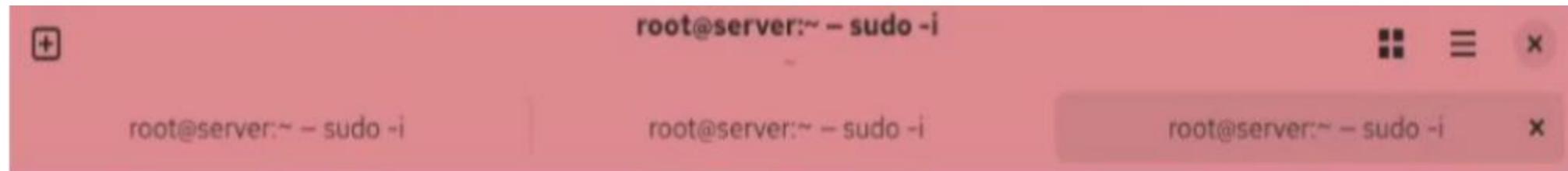
The screenshot shows a terminal window with three tabs, all titled "root@server:~ – sudo -i". The active tab on the right contains the following command history:

```
[kazhavoronkov@server.kazhavoronkov.net ~]$ sudo -i
[sudo] password for kazhavoronkov:
[root@server.kazhavoronkov.net ~]# mkdir -p /srv/nfs/www
[root@server.kazhavoronkov.net ~]# mount -o bind /var/www/ /srv/nfs/www/
[root@server.kazhavoronkov.net ~]# ls /srv/nfs
www
[root@server.kazhavoronkov.net ~]#
```

Подключение каталогов к дереву NFS

```
[root@client.kazhavoronkov.net ~]# ls /mnt/nfs  
www  
[root@client.kazhavoronkov.net ~]#
```

Подключение каталогов к дереву NFS



The screenshot shows a terminal window with three tabs, each displaying a root prompt and a sudo command:

- Tab 1: root@server:~ – sudo -i
- Tab 2: root@server:~ – sudo -i
- Tab 3: root@server:~ – sudo -i

The content of the active tab (Tab 3) is as follows:

```
GNU nano 8.1
/etc/exports
Modified
/srv/nfs *(ro)
/srv/nfs/www 192.168.0.0/16(rw)
```

Подключение каталогов к дереву NFS

```
[root@server.kazhavoronkov.net ~]# exportfs -r  
[root@server.kazhavoronkov.net ~]#
```

Подключение каталогов к дереву NFS

```
[root@client.kazhavoronkov.net ~]# ls /mnt/nfs  
www  
[root@client.kazhavoronkov.net ~]# █
```

Подключение каталогов к дереву NFS



The screenshot shows a terminal window with three tabs, all titled "root@server:~ – sudo -i". The active tab displays the contents of the `/etc/fstab` file using the `GNU nano 8.1` editor. The file contains the following configuration:

```
#  
# /etc/fstab  
# Created by anaconda on Sat Sep  6 13:15:18 2025  
#  
# Accessible filesystems, by reference, are maintained under '/dev/disk/'.  
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.  
#  
# After editing this file, run 'systemctl daemon-reload' to update systemd  
# units generated from this file.  
#  
UUID=e0f3fcee-7799-4294-8547-121e1623c157 /          xfs    defaults      0  0  
UUID=401bb276-312f-4651-9a99-1f0db4e65ae4 /boot       xfs    defaults      0  0  
UUID=db95190e-ed05-4b2b-9d66-f80338c9589f none        swap   defaults      0  0  
/swapfile none swap defaults 0 0  
#VAGRANT-BEGIN  
# The contents below are automatically generated by Vagrant. Do not modify.  
vagrant /vagrant vboxsf uid=1000,gid=1000,_netdev 0 0  
#VAGRANT-END  
/var/www /srv/nfs/www none bind 0 0
```

Подключение каталогов к дереву NFS

```
[root@server.kazhavoronkov.net ~]# exportfs -r  
[root@server.kazhavoronkov.net ~]#
```

Подключение каталогов к дереву NFS

```
[root@client.kazhavoronkov.net ~]# ls /mnt/nfs  
www  
[root@client.kazhavoronkov.net ~]# █
```

Подключение каталогов для работы пользователей

```
[kazhavoronkov@server.kazhavoronkov.net ~]$ mkdir -p -m 700 ~/common
[kazhavoronkov@server.kazhavoronkov.net ~]$ cd ~/common
[kazhavoronkov@server.kazhavoronkov.net common]$ touch kazhavoronkov@server.txt
[kazhavoronkov@server.kazhavoronkov.net common]$ mkdir -p /srv/nfs/home/kazhavoronkov
mkdir: cannot create directory '/srv/nfs/home': Permission denied
[kazhavoronkov@server.kazhavoronkov.net common]$ sudo -i
[sudo] password for kazhavoronkov:
[root@server.kazhavoronkov.net ~]# mkdir -p /srv/nfs/home/kazhavoronkov
[root@server.kazhavoronkov.net ~]# mount -o bind /home/kazhavoronkov/common /srv/nfs/home/kazhavoronkov
mount: (hint) your fstab has been modified, but systemd still uses
      the old version; use 'systemctl daemon-reload' to reload.
[root@server.kazhavoronkov.net ~]#
```

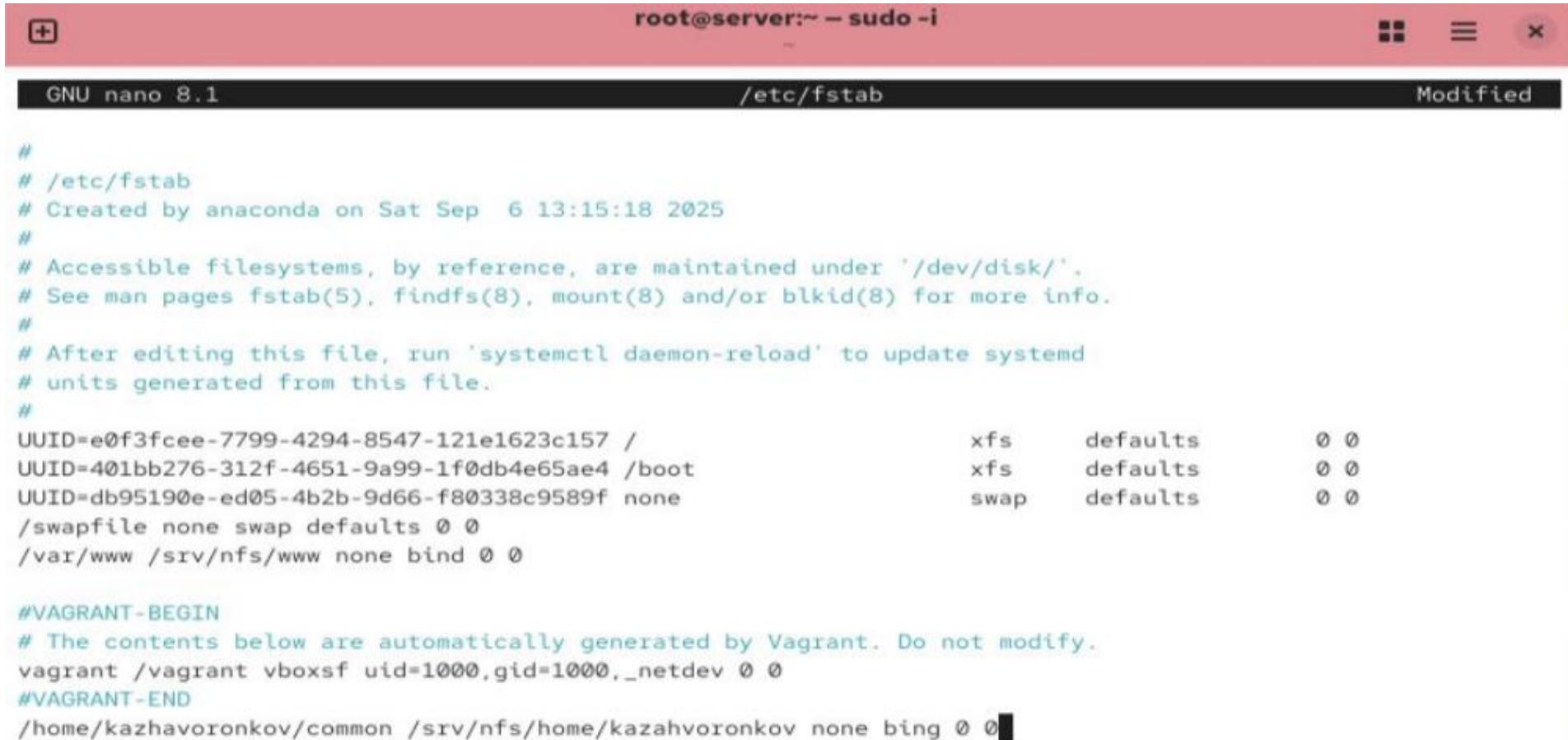
Подключение каталогов для работы пользователей



The screenshot shows a terminal window with a red header bar. The header bar contains the text "root@server:~ - sudo -i". Below the header is a toolbar with icons for file operations. The main area of the terminal shows the contents of the "/etc/exports" file being edited with "GNU nano 8.1". The file contains the following lines:

```
GNU nano 8.1                               /etc/exports                               Modified
/srv/nfs *(ro)
/srv/nfs/www 192.168.0.0/16(rw)
/srv/nfs/home/kazahvoronkov 192.168.0.0/16(rw)
```

Подключение каталогов для работы пользователей



The screenshot shows a terminal window titled "root@server:~ – sudo -i". The window has a red header bar and a black main area. The title bar also includes icons for maximizing, minimizing, and closing the window. The main area is a text editor for the "/etc/fstab" file, showing the following content:

```
GNU nano 8.1          /etc/fstab          Modified

#
# /etc/fstab
# Created by anaconda on Sat Sep  6 13:15:18 2025
#
# Accessible filesystems, by reference, are maintained under '/dev/disk/'.
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.
#
# After editing this file, run 'systemctl daemon-reload' to update systemd
# units generated from this file.
#
UUID=e0f3fcee-7799-4294-8547-121e1623c157 /          xfs      defaults      0 0
UUID=401bb276-312f-4651-9a99-1f0db4e65ae4 /boot        xfs      defaults      0 0
UUID=db95190e-ed05-4b2b-9d66-f80338c9589f none        swap      defaults      0 0
/swapfile none swap defaults 0 0
/var/www /srv/nfs/www none bind 0 0

#VAGRANT-BEGIN
# The contents below are automatically generated by Vagrant. Do not modify.
vagrant /vagrant vboxsf uid=1000,gid=1000,_netdev 0 0
#VAGRANT-END
/home/kazhavoronkov/common /srv/nfs/home/kazahvoronkov none bing 0 0
```

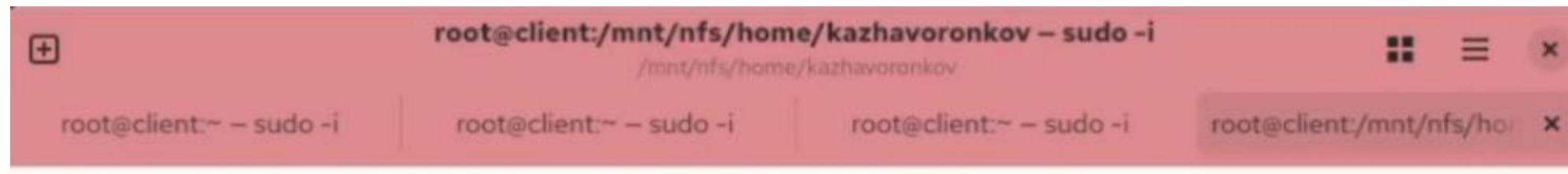
Подключение каталогов для работы пользователей

```
[root@server.kazhavoronkov.net ~]# exportfs -r  
[root@server.kazhavoronkov.net ~]#
```

Подключение каталогов для работы пользователей

```
[root@client.kazhavoronkov.net ~]# ls /mnt/nfs
home  www
[root@client.kazhavoronkov.net ~]# █
```

Подключение каталогов для работы пользователей



A screenshot of a terminal window with a red header bar. The header bar contains the text "root@client:/mnt/nfs/home/kazhavoronkov – sudo -i" and a path "/mnt/nfs/home/kazhavoronkov". There are also icons for maximizing, minimizing, and closing the window. Below the header, there are four tabs with the same title "root@client:~ – sudo -i". The main terminal area shows the following command history:

```
[kazhavoronkov@client.kazhavoronkov.net ~]$ cd /mnt/nfs/home/kazhavoronkov
[kazhavoronkov@client.kazhavoronkov kazhavoronkov]$ touch kazhavoronkov@client.txt
touch: cannot touch 'kazhavoronkov@client.txt': Read-only file system
```

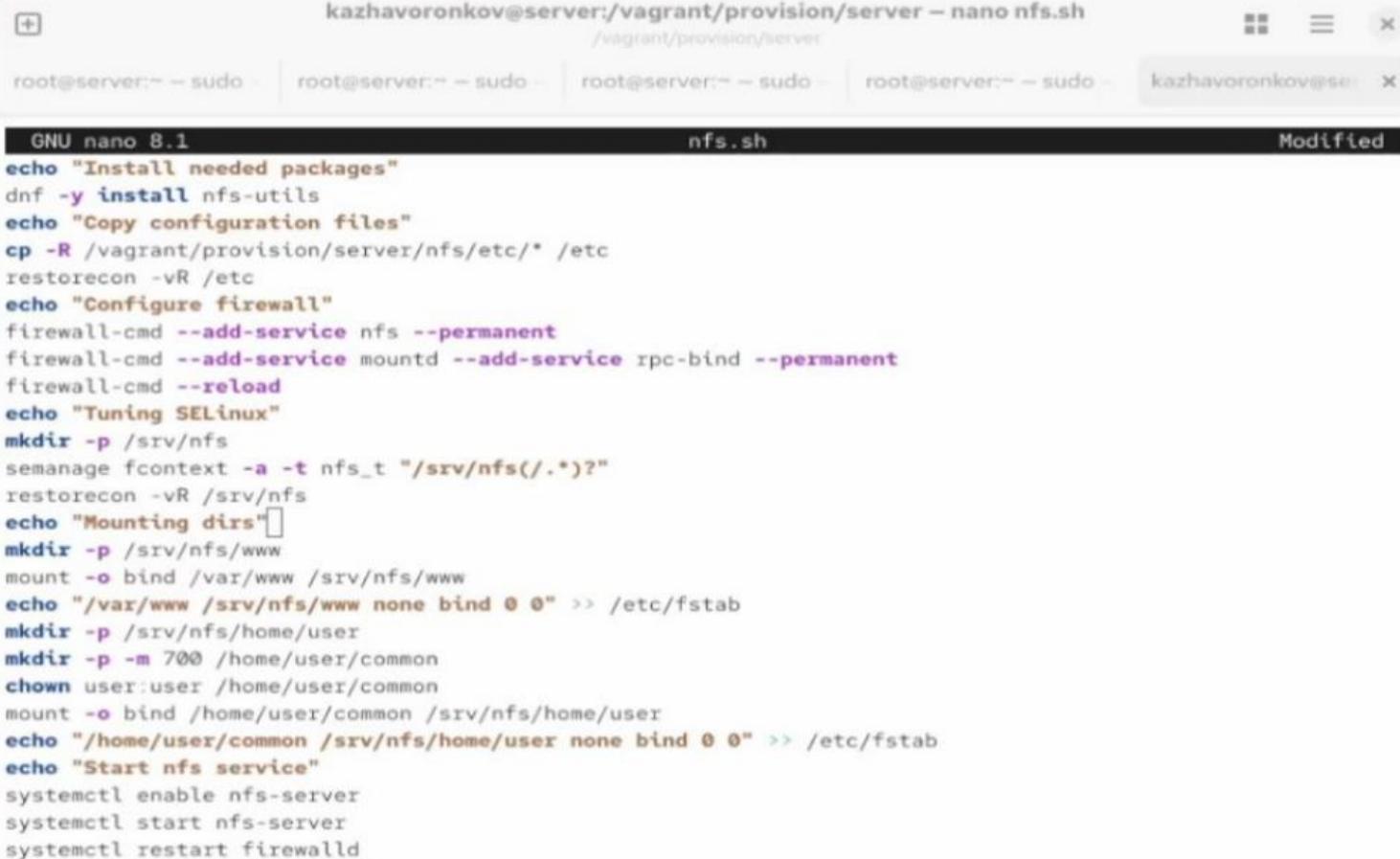
Внесение изменений в настройки внутреннего окружения виртуальных машин



The screenshot shows a terminal window with several tabs open. The active tab is titled "kazhavoronkov@server:/vagrant/provision/server" and contains the following command history:

```
[kazhavoronkov@server.kazhavoronkov.net common]$ cd /vagrant/provision/server
[kazhavoronkov@server.kazhavoronkov.net server]$ mkdir -p /vagrant/provision/server/nfs/etc
[kazhavoronkov@server.kazhavoronkov.net server]$ cp -R /etc/exports /vagrant/provision/server/nfs/etc/
[kazhavoronkov@server.kazhavoronkov.net server]$ touch nfs.sh
[kazhavoronkov@server.kazhavoronkov.net server]$ chmod +x nfs.sh
[kazhavoronkov@server.kazhavoronkov.net server]$ nano nfs
```

Внесение изменений в настройки внутреннего окружения виртуальных машин

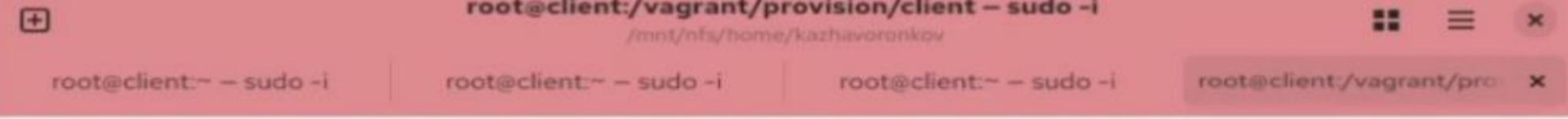


```
GNU nano 8.1          nfs.sh          Modified
echo "Install needed packages"
dnf -y install nfs-utils
echo "Copy configuration files"
cp -R /vagrant/provision/server/nfs/etc/* /etc
restorecon -vR /etc
echo "Configure firewall"
firewall-cmd --add-service nfs --permanent
firewall-cmd --add-service 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
```

Внесение изменений в настройки внутреннего окружения виртуальных машин

```
[root@client.kazhavoronkov.net kazhavoronkov]# cd /vagrant/provision/client
[root@client.kazhavoronkov.net client]# touch nfs.sh
[root@client.kazhavoronkov.net client]# chmod +x nfs.sh
[root@client.kazhavoronkov.net client]# █
```

Внесение изменений в настройки внутреннего окружения виртуальных машин



The screenshot shows a terminal window with four tabs, each labeled "root@client:~ - sudo -i". The active tab displays a file named "nfs.sh" being edited with the nano text editor. The file contains a bash script for provisioning an NFS mount:

```
GNU nano 8.1
#!/bin/bash
echo "Provision script $0"
echo "Install needed packages"
dnf -y install nfs-utils
echo "Mounting dirs"
mkdir -p /mnt/nfs
mount server.kazhavoronkov.net:/srv/nfs /mnt/nfs
echo "server.kazahvoronkov.net:/srv/nfs /mnt/nfs nfs _netdev 0 0" >> /etc/fstab
restorecon -vR /etc
```

Внесение изменений в настройки внутреннего окружения виртуальных машин

```
    path: "provision/server/nfs.sh"
server.vm.provision "server nfs",
  type: "shell",
  preserve_order: true,
  path: "provision/server/nfs.sh"
```

```
    path: "provision/client/ntp.sh"
client.vm.provision "client nfs",
  type: "shell",
  preserve_order: true,
  path: "provision/client/nfs.sh"
```