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                 45 kB/s |  39 kB     00:00
Extra Packages for Enterprise Linux 10 - x86_64                2.6 MB/s | 5.5 MB     00:02
Rocky Linux 10 - BaseOS                                        6.2 kB/s | 4.3 kB     00:00
Rocky Linux 10 - BaseOS                                        961 kB/s | 1.8 MB     00:01
Rocky Linux 10 - AppStream                                     8.0 kB/s | 4.3 kB     00:00
Rocky Linux 10 - AppStream                                     1.5 MB/s | 1.9 MB     00:01
Rocky Linux 10 - Extras                                        6.4 kB/s | 3.1 kB     00:00
Rocky Linux 10 - Extras                                        7.6 kB/s | 4.7 kB     00:00
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

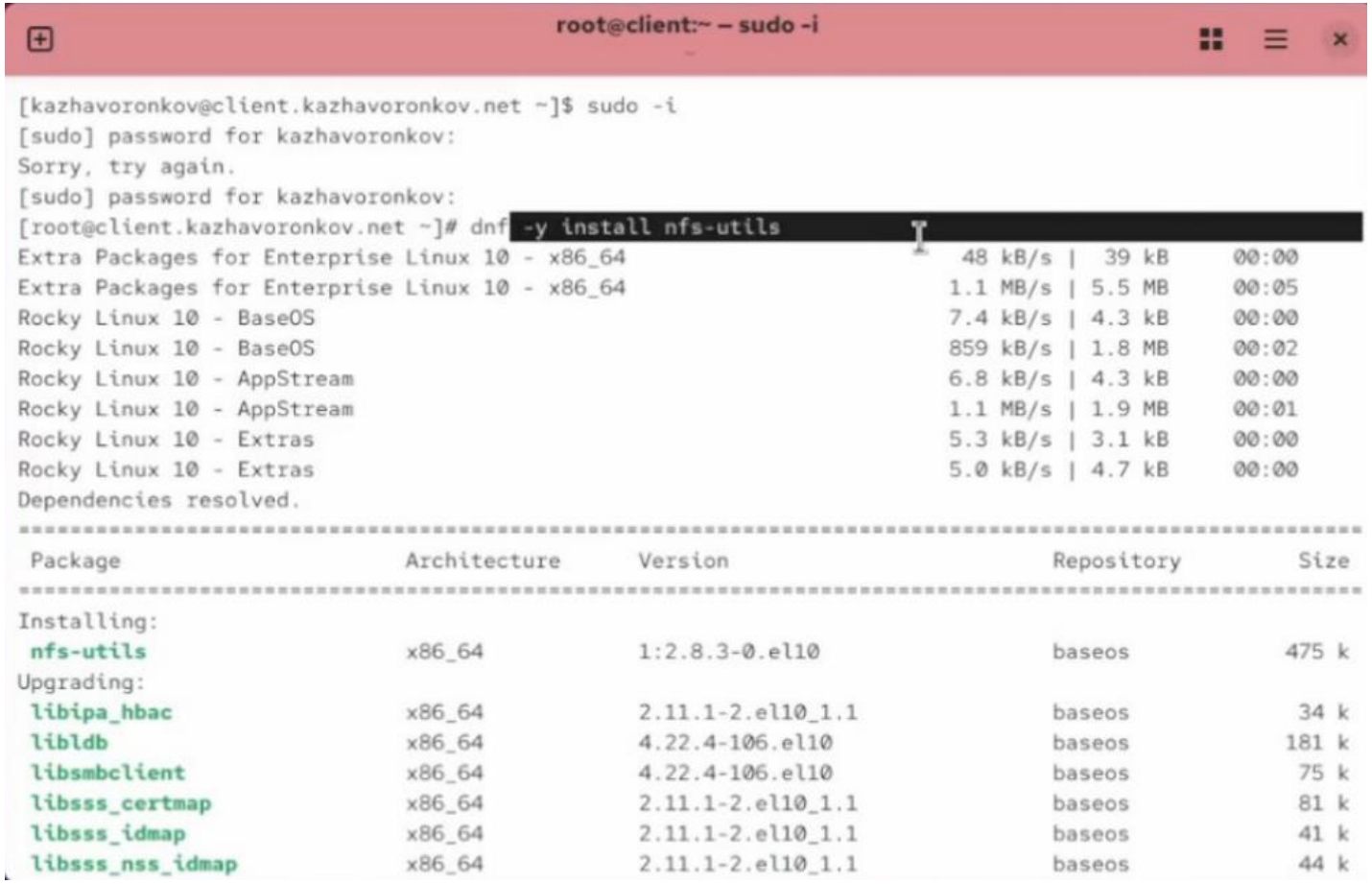
```
Complete!
[root@server.kazhavoronkov.net ~]# mkdir -p /srv/nfs
[root@server.kazhavoronkov.net ~]# nan
```

Настройка сервера NFSv4

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



Настройка сервера NFSv4

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

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
```

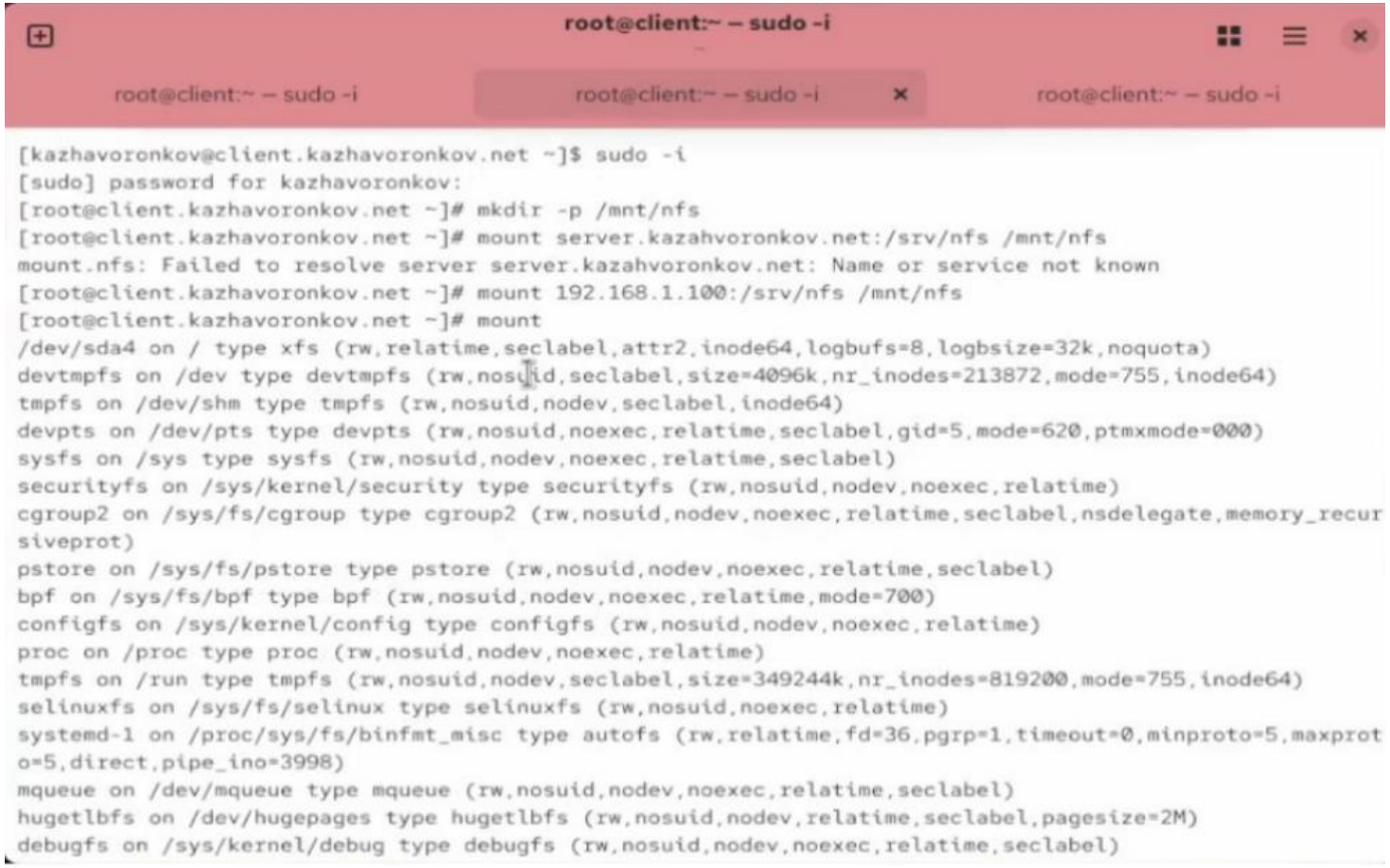
Настройка сервера NFSv4

```
[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 dhcpv6 dhcpv6-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 gpsd grafana gre high-availability http http3 https ident imap imaps iperf2 iperf3 ipfs ipp ipp-clie
nt ipsec irc ircs iscsi-target isns 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 mndp 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 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

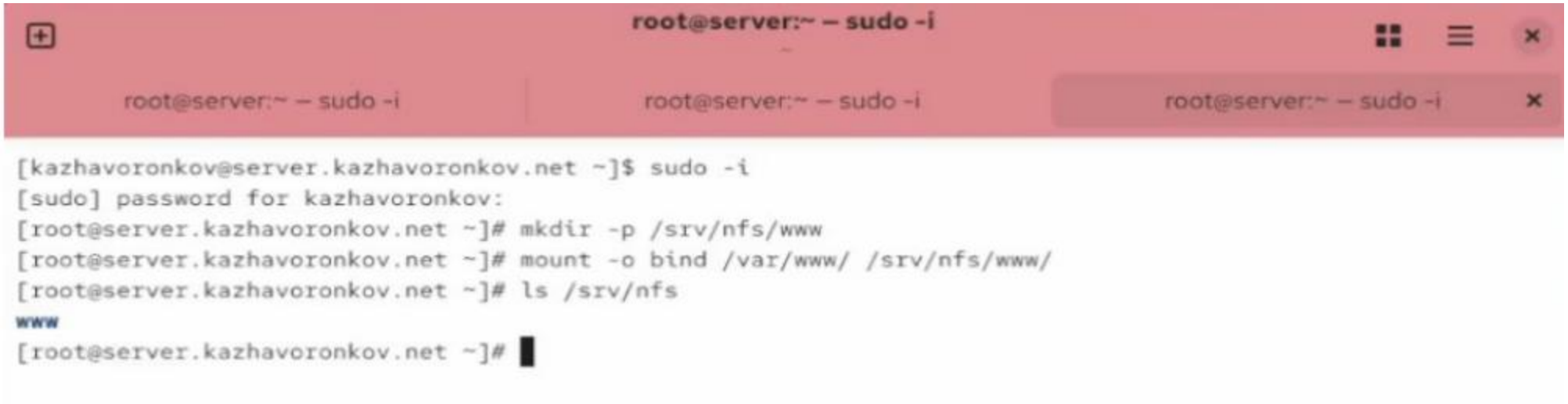
```
[root@client.kazhavoronkov.net ~]# showmount -e server.kazhavoronkov.net
Export list for server.kazhavoronkov.net:
/srv/nfs *
[root@client.kazhavoronkov.net ~]#
```

Монтирование NFS на клиенте



Монтирование NFS на клиенте

Подключение каталогов к дереву NFS



Подключение каталогов к дереву NFS

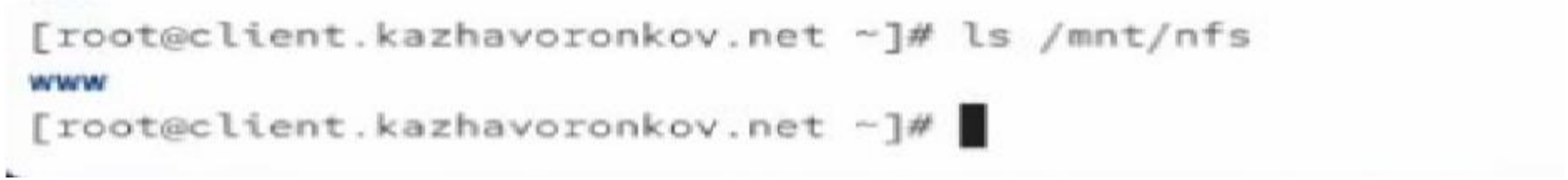
```
[root@client.kazhavoronkov.net ~]# ls /mnt/nfs
www
[root@client.kazhavoronkov.net ~]#
```

Подключение каталогов к дереву NFS

Подключение каталогов к дереву NFS

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

Подключение каталогов к дереву NFS



Подключение каталогов к дереву NFS

Подключение каталогов к дереву NFS

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

Подключение каталогов к дереву NFS

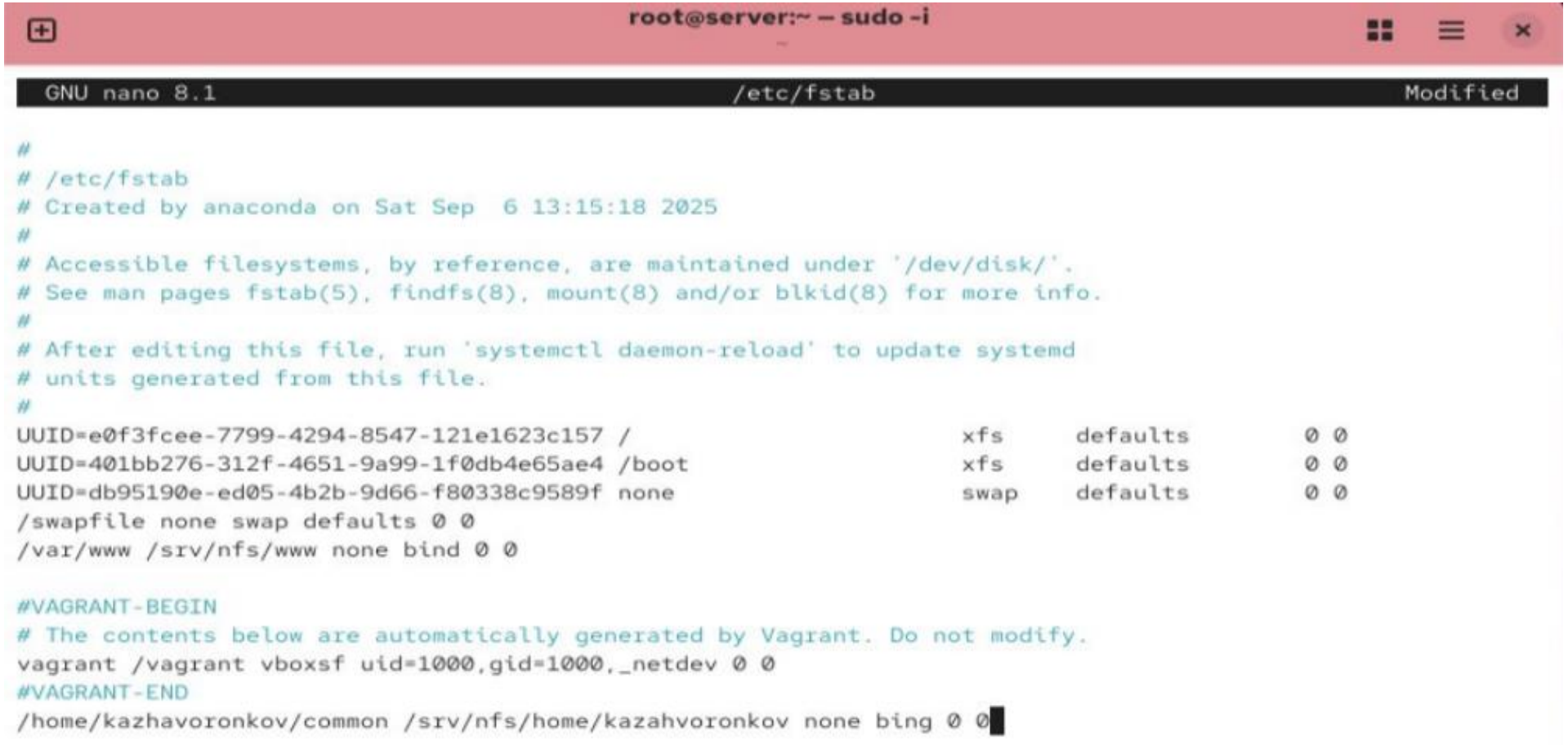
```
[root@client.kazhavoronkov.net ~]# ls /mnt/nfs
www
[root@client.kazhavoronkov.net ~]#
```

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

Подключение каталогов для работы пользователей



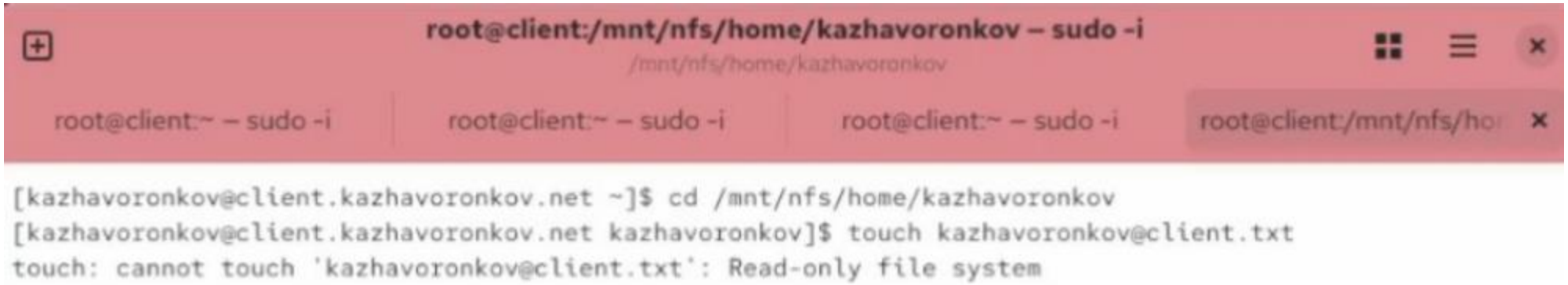
Подключение каталогов для работы пользователей

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

Подключение каталогов для работы пользователей

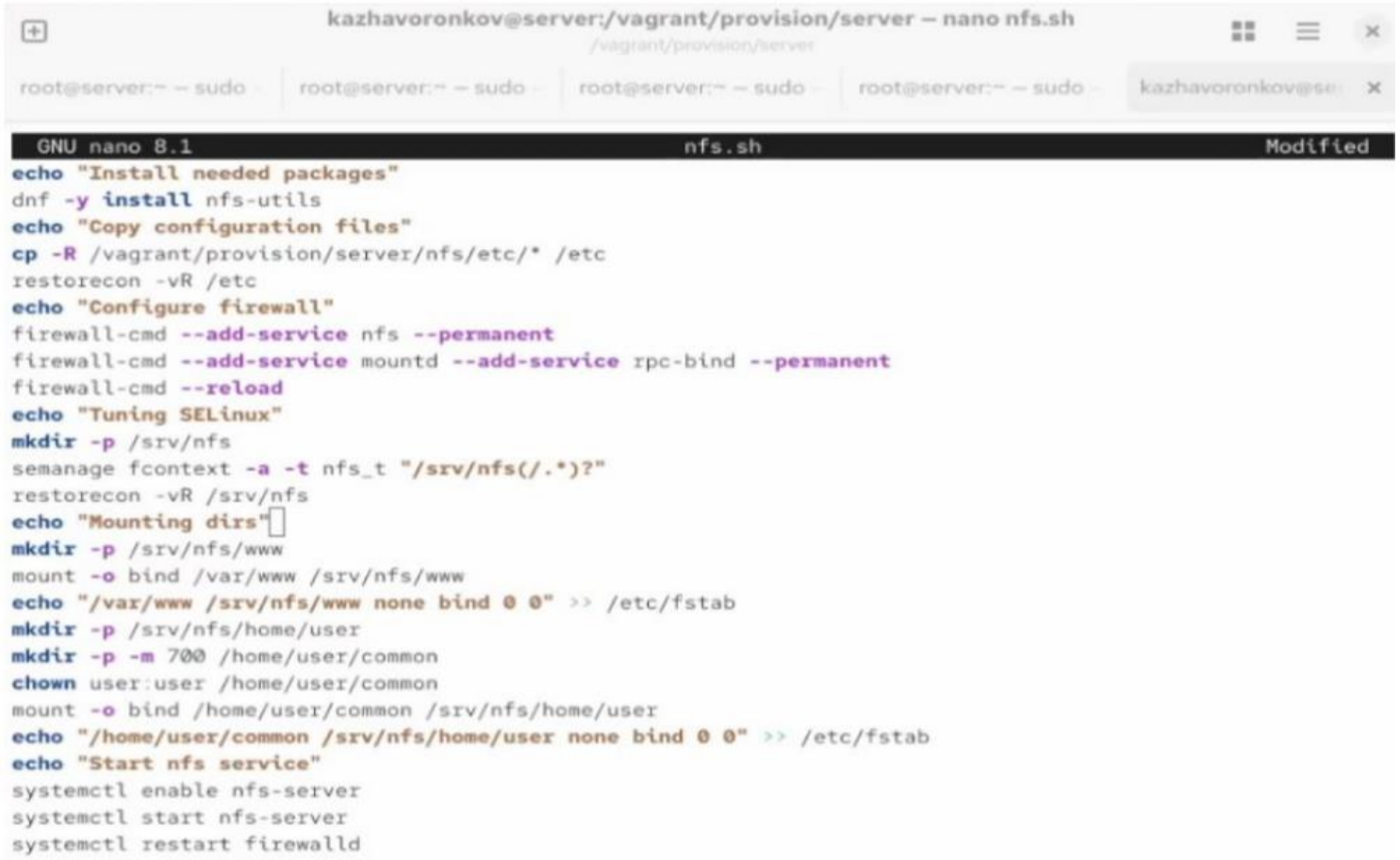
```
[root@client.kazhavoronkov.net ~]# ls /mnt/nfs
home   www
[root@client.kazhavoronkov.net ~]#
```

Подключение каталогов для работы пользователей



Внесение изменений в настройки внутреннего окружения виртуальных машин

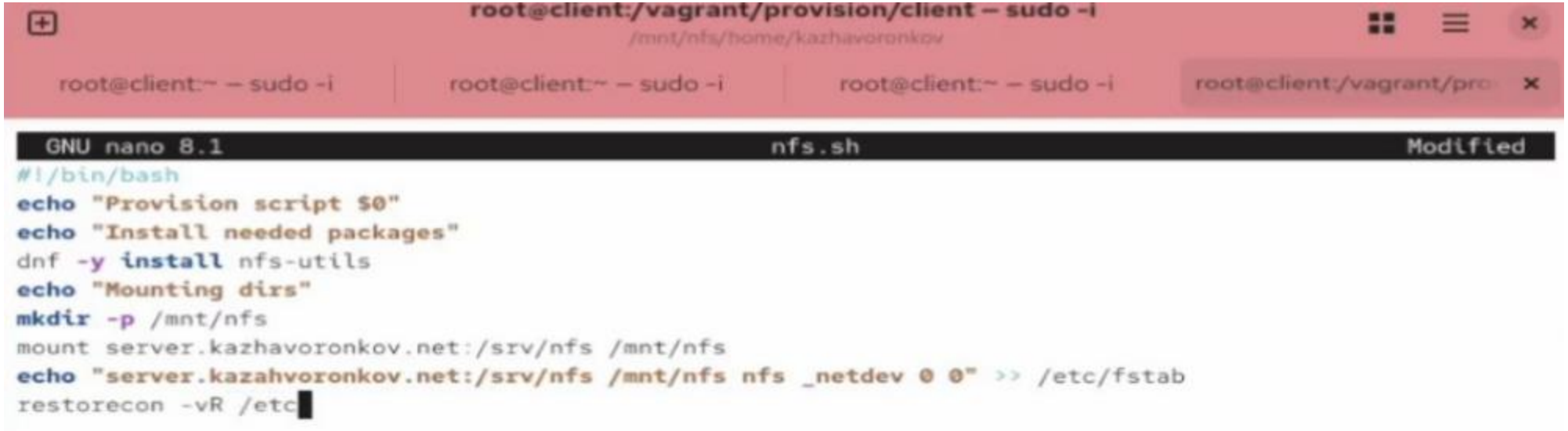
Внесение изменений в настройки внутреннего окружения виртуальных машин



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



Внесение изменений в настройки внутреннего окружения виртуальных машин

```
                  path: "provision/server/ntp.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"
```