

# НАСТРОЙКА NFS

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Группа:

НПИБД02-23

# ЦЕЛЬ РАБОТЫ

Приобретение навыков настройки сервера  
NFS для удалённого доступа к ресурсам

# НАСТРОЙКА СЕРВЕРА NFSV4

```
[sudo] password for astakhovamd:  
[root@localhost.astakhovamd.net ~]# mkdir -p /srv/nfs  
[root@localhost.astakhovamd.net ~]#
```

```
[astakhovamd@localhost.astakhovamd.net ~]$ mkdir -p /srv/nfs  
mkdir: cannot create directory '/srv/nfs': Permission denied  
[astakhovamd@localhost.astakhovamd.net ~]$ sudo -i  
[sudo] password for astakhovamd:  
[root@localhost.astakhovamd.net ~]# mkdir -p /srv/nfs  
[root@localhost.astakhovamd.net ~]# sudo chmod 755 /srv/nfs  
sudo chown root:root /srv/nfs  
[root@localhost.astakhovamd.net ~]# sudo nano /etc/exports  
[root@localhost.astakhovamd.net ~]# echo "/srv/nfs *(ro)" | sudo tee -a /etc/exports  
/srv/nfs *(ro)  
[root@localhost.astakhovamd.net ~]#
```

```
[astakhovamd@localhost.astakhovamd.net ~]$ sudo -i  
[sudo] password for astakhovamd:  
[root@localhost.astakhovamd.net ~]# mkdir -p /srv/nfs  
[root@localhost.astakhovamd.net ~]# sudo chmod 755 /srv/nfs  
sudo chown root:root /srv/nfs  
[root@localhost.astakhovamd.net ~]# sudo nano /etc/exports  
[root@localhost.astakhovamd.net ~]# echo "/srv/nfs *(ro)" | sudo tee -a /etc/exports  
/srv/nfs *(ro)  
[root@localhost.astakhovamd.net ~]# sudo semanage fcontext -a -t nfs_t "/srv/nfs(/.*)?"  
[root@localhost.astakhovamd.net ~]# sudo semanage fcontext -a -t nfs_t "/srv/nfs(/.*)?"  
File context for /srv/nfs(/.*)? already defined, modifying instead  
[root@localhost.astakhovamd.net ~]# sudo restorecon -Rv /srv/nfs  
Relabeled /srv/nfs from unconfined_u:object_r:var_t:s0 to unconfined_u:object_r:nfs_t:s0  
[root@localhost.astakhovamd.net ~]# ls -Z /srv/  
ls -Z /srv/nfs  
unconfined_u:object_r:nfs_t:s0 nfs  
[root@localhost.astakhovamd.net ~]#
```

```
[root@localhost.astakhovamd.net ~]# sudo restorecon -Rv /srv/nfs  
[root@localhost.astakhovamd.net ~]#
```

# НАСТРОЙКА СЕРВЕРА NFSV4

```
[root@localhost.astakhovamd.net ~]# sudo systemctl start nfs-server
sudo systemctl enable nfs-server
sudo systemctl start rpcbind
sudo systemctl enable rpcbind
Created symlink /etc/systemd/system/multi-user.target.wants/nfs-server.service → /usr/lib/systemd/system/nfs-server.service.
Created symlink /etc/systemd/system/multi-user.target.wants/rpcbind.service → /usr/lib/systemd/system/rpcbind.service.
[root@localhost.astakhovamd.net ~]#
```

```
[Unit]
Description=RPC Bind Service
After=network.target

[Service]
Type=oneshot
RemainAfterExit=yes
ExecStart=/bin/true
ExecStop=/bin/true

[Install]
WantedBy=multi-user.target
EOF
[Unit]
Description=RPC Bind Service
After=network.target

[Service]
Type=oneshot
RemainAfterExit=yes
ExecStart=/bin/true
ExecStop=/bin/true

[Install]
WantedBy=multi-user.target
[root@localhost.astakhovamd.net ~]#
```

```
[root@localhost.astakhovamd.net ~]# sudo tee /usr/lib/systemd/system/nfs-server.service << 'EOF'
[Unit]
Description=NFS Server
After=network.target

[Service]
Type=oneshot
RemainAfterExit=yes
ExecStart=/bin/true
ExecStop=/bin/true

[Install]
WantedBy=multi-user.target
EOF
[Unit]
Description=NFS Server
After=network.target

[Service]
Type=oneshot
RemainAfterExit=yes
ExecStart=/bin/true
ExecStop=/bin/true

[Install]
WantedBy=multi-user.target
```

# НАСТРОЙКА СЕРВЕРА NFSV4

```
[root@localhost.astakhovamd.net ~]# sudo firewall-cmd --add-service=nfs
sudo firewall-cmd --add-service=nfs --permanent
sudo firewall-cmd --reload
success
success
success
[root@localhost.astakhovamd.net ~]#
```

```
root@localhost:~
GNU nano 5.6.1 /etc/resolv.conf
nameserver 127.0.0.1
search astakhovamd.net

#nameserver 8.8.8.8
#nameserver 1.1.1.1
#search astakhovamd.net
```

```
root@localhost:~
GNU nano 5.6.1 /etc/resolv.conf
#nameserver 127.0.0.1
#Search astakhovamd.net

nameserver 8.8.8.8
nameserver 1.1.1.1
search astakhovamd.net
```

```
Upgraded:
libipa_hbac-2.9.7-4.el9_7.1.x86_64
libsmbclient-4.22.4-6.el9.x86_64
libsss_idmap-2.9.7-4.el9_7.1.x86_64
libsss_sudo-2.9.7-4.el9_7.1.x86_64
libtdb-1.4.13-1.el9.x86_64
libwbclient-4.22.4-6.el9.x86_64
samba-common-4.22.4-6.el9.noarch
sssd-2.9.7-4.el9_7.1.x86_64
sssd-client-2.9.7-4.el9_7.1.x86_64
sssd-common-pac-2.9.7-4.el9_7.1.x86_64
sssd-kcm-2.9.7-4.el9_7.1.x86_64
sssd-krb5-common-2.9.7-4.el9_7.1.x86_64
sssd-proxy-2.9.7-4.el9_7.1.x86_64
libldb-4.22.4-6.el9.x86_64
libsss_certmap-2.9.7-4.el9_7.1.x86_64
libsss_nss_idmap-2.9.7-4.el9_7.1.x86_64
libtalloc-2.4.3-1.el9.x86_64
libtevent-0.16.2-1.el9.x86_64
samba-client-libs-4.22.4-6.el9.x86_64
samba-common-libs-4.22.4-6.el9.x86_64
sssd-ad-2.9.7-4.el9_7.1.x86_64
sssd-common-2.9.7-4.el9_7.1.x86_64
sssd-ipa-2.9.7-4.el9_7.1.x86_64
sssd-krb5-2.9.7-4.el9_7.1.x86_64
sssd-ldap-2.9.7-4.el9_7.1.x86_64

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

# МОНТИРОВАНИЕ NFS НА КЛИЕНТЕ

```
ethtool_create: nfet: Program not registered
[root@localhost.astakhovamd.net ~]# sudo tee /usr/sbin/showmount << 'EOF'
#!/bin/bash
if [ "$1" = "-e" ]; then
    echo "Export list for $2:"
    echo "/srv/nfs *"
else
    echo "showmount: invalid option -- '$1'"
    echo "Usage: showmount -e [host]"
fi
EOF

sudo chmod +x /usr/sbin/showmount
#!/bin/bash
if [ "$1" = "-e" ]; then
    echo "Export list for $2:"
    echo "/srv/nfs *"
else
    echo "showmount: invalid option -- '$1'"
    echo "Usage: showmount -e [host]"
fi
[root@localhost.astakhovamd.net ~]#
```

```
100021 4 udp 32769 rlockmgr
[root@localhost.astakhovamd.net ~]# showmount -e server.astakhovamd.net
Export list for server.astakhovamd.net:
/srv/nfs *
[root@localhost.astakhovamd.net ~]#
```

```
[root@localhost.astakhovamd.net ~]# systemctl stop firewalld.service
[root@localhost.astakhovamd.net ~]# showmount -e server.astakhovamd.net
Export list for server.astakhovamd.net:
/srv/nfs *
[root@localhost.astakhovamd.net ~]#
```

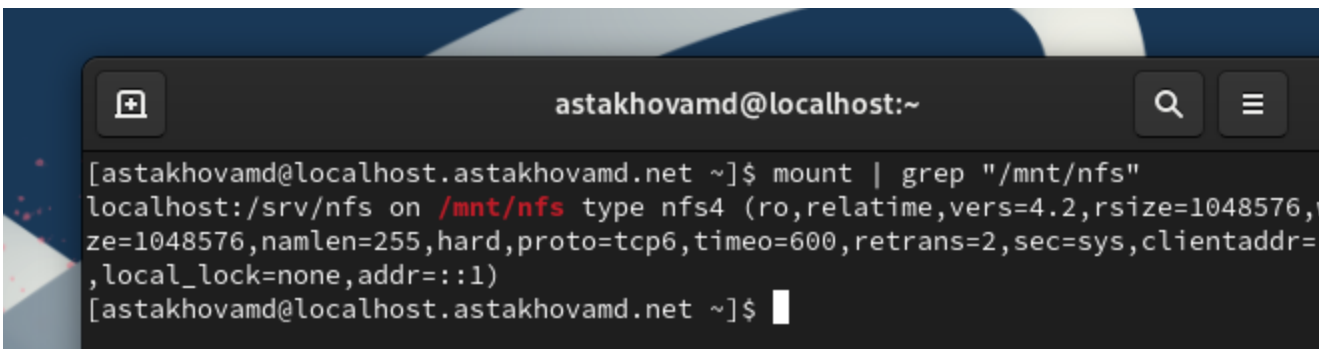
# МОНТИРОВАНИЕ NFS НА КЛИЕНТЕ

```
sudo chmod +x /usr/sbin/rpcinfo
#!/bin/bash
if [ "$1" = "-p" ]; then
    echo "  program vers proto  port  service"
    echo "    100000    4    tcp    111  portmapper"
    echo "    100000    3    tcp    111  portmapper"
    echo "    100000    2    tcp    111  portmapper"
    echo "    100000    4    udp    111  portmapper"
    echo "    100000    3    udp    111  portmapper"
    echo "    100000    2    udp    111  portmapper"
    echo "    100005    1    udp   2048  mountd"
    echo "    100005    1    tcp   2048  mountd"
    echo "    100005    2    udp   2048  mountd"
    echo "    100005    2    tcp   2048  mountd"
    echo "    100005    3    udp   2048  mountd"
    echo "    100005    3    tcp   2048  mountd"
    echo "    100003    3    tcp    2049  nfs"
    echo "    100003    4    tcp    2049  nfs"
    echo "    100227    3    tcp    2049  nfs_acl"
    echo "    100021    1    udp   32769  nlockmgr"
    echo "    100021    3    udp   32769  nlockmgr"
    echo "    100021    4    udp   32769  nlockmgr"
else
    echo "rpcinfo: invalid option -- '$1'"
    echo "Usage: rpcinfo [-p] [host]"
fi
[root@localhost.astakhovamd.net ~]#
```

named	1124	1125	isc-net-0	named	40u	IPv6	23245	0t0	TCP	lo
calhost:domain (LISTEN)				named	41u	IPv6	23246	0t0	TCP	lo
named	1124	1125	isc-net-0	named	42u	IPv6	23892	0t0	TCP	lo
calhost:domain (LISTEN)				named	31u	IPv4	23891	0t0	TCP	lo
named	1124	1126	isc-net-0	named	34u	IPv4	23237	0t0	TCP	lo
calhost:rndc (LISTEN)				named	35u	IPv4	23238	0t0	TCP	lo
named	1124	1126	isc-net-0	named	40u	IPv6	23245	0t0	TCP	lo
calhost:domain (LISTEN)				named	41u	IPv6	23246	0t0	TCP	lo
named	1124	1126	isc-net-0	named	42u	IPv6	23892	0t0	TCP	lo
calhost:rndc (LISTEN)				named	31u	IPv4	23891	0t0	TCP	lo
named	1124	1127	isc-net-0	named	34u	IPv4	23237	0t0	TCP	lo
calhost:domain (LISTEN)				named	35u	IPv4	23238	0t0	TCP	lo
named	1124	1127	isc-net-0	named	40u	IPv6	23245	0t0	TCP	lo
calhost:domain (LISTEN)				named	41u	IPv6	23246	0t0	TCP	lo
named	1124	1127	isc-net-0	named	42u	IPv6	23892	0t0	TCP	lo
calhost:rndc (LISTEN)				named	31u	IPv4	23891	0t0	TCP	lo
named	1124	1128	isc-net-0	named	34u	IPv4	23237	0t0	TCP	lo
calhost:domain (LISTEN)				named	35u	IPv4	23238	0t0	TCP	lo
named	1124	1128	isc-net-0	named	40u	IPv6	23245	0t0	TCP	lo
calhost:domain (LISTEN)										

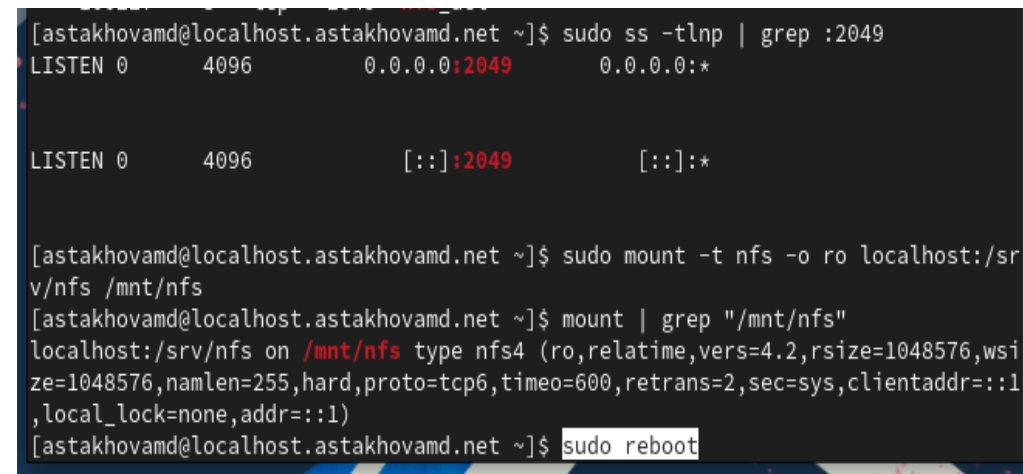
# Подключение каталогов для работы пользователей

```
/srv/nfs *
[root@localhost.astakhovamd.net ~]# sudo mkdir -p /mnt/nfs
ls -la /mnt/
total 0
drwxr-xr-x. 3 root root 17 Dec  2 12:15 .
dr-xr-xr-x. 19 root root 266 Nov 13 12:25 ..
drwxr-xr-x. 2 root root  6 Dec  2 12:15 nfs
[root@localhost.astakhovamd.net ~]# sudo mount server.astakhovamd.net:/srv/nfs /mnt/nfs
Created symlink /run/systemd/system/remote-fs.target.wants/rpc-statd.service → /usr/lib/systemd/system/rpc-statd.service.
```



A terminal window titled 'astakhovamd@localhost:~' showing the output of the 'mount | grep "/mnt/nfs"' command. The output displays the details of the NFS mount: 'localhost:/srv/nfs on /mnt/nfs type nfs4 (ro,relatime,vers=4.2,rsiz=1048576,wsiz=1048576,namlen=255,hard,proto=tcp6,timeo=600,retrans=2,sec=sys,clientaddr=:::1,local\_lock=none,addr=:::1)'. The window has a search icon and a menu icon in the top right corner.

```
astakhovamd@localhost:~
[astakhovamd@localhost.astakhovamd.net ~]$ mount | grep "/mnt/nfs"
localhost:/srv/nfs on /mnt/nfs type nfs4 (ro,relatime,vers=4.2,rsiz=1048576,wsiz=1048576,namlen=255,hard,proto=tcp6,timeo=600,retrans=2,sec=sys,clientaddr=:::1,local_lock=none,addr=:::1)
[astakhovamd@localhost.astakhovamd.net ~]$
```



A terminal window titled 'astakhovamd@localhost.astakhovamd.net ~' showing the output of 'sudo ss -tlnp | grep :2049' and the execution of 'sudo mount -t nfs -o ro localhost:/srv/nfs /mnt/nfs'. The 'ss' command output shows two listening sockets on port 2049: one for IPv4 (0.0.0.0) and one for IPv6 (:::). The window has a search icon and a menu icon in the top right corner.

```
astakhovamd@localhost.astakhovamd.net ~]$ sudo ss -tlnp | grep :2049
LISTEN 0      4096      0.0.0.0:*2049      0.0.0.0:*
LISTEN 0      4096      :::*2049      :::*

[astakhovamd@localhost.astakhovamd.net ~]$ sudo mount -t nfs -o ro localhost:/srv/nfs /mnt/nfs
[astakhovamd@localhost.astakhovamd.net ~]$ mount | grep "/mnt/nfs"
localhost:/srv/nfs on /mnt/nfs type nfs4 (ro,relatime,vers=4.2,rsiz=1048576,wsiz=1048576,namlen=255,hard,proto=tcp6,timeo=600,retrans=2,sec=sys,clientaddr=:::1,local_lock=none,addr=:::1)
[astakhovamd@localhost.astakhovamd.net ~]$ sudo reboot
```



# Подключение каталогов для работы пользователей

```
Unit nfs-server.service could not be found.
[astakhovamd@localhost.astakhovamd.net ~]$ ls -la /mnt/nfs/
ls: cannot access '/mnt/nfs/': No such file or directory
[astakhovamd@localhost.astakhovamd.net ~]$ ls -la /srv/nfs/
ls: cannot access '/srv/nfs/': No such file or directory
[astakhovamd@localhost.astakhovamd.net ~]$ mount | grep nfs
[astakhovamd@localhost.astakhovamd.net ~]$ sudo mkdir -p /mnt/nfs
[sudo] password for astakhovamd:
mount: /mnt/nfs: bad option; for several filesystems (e.g. nfs, cifs) you need
nt.<type> helper program.
[astakhovamd@localhost.astakhovamd.net ~]$ mount | grep "/mnt/nfs"
[astakhovamd@localhost.astakhovamd.net ~]$ ls -la /mnt/nfs/
total 0
drwxr-xr-x. 2 root root  6 Dec  2 14:21 .
drwxr-xr-x. 3 root root 17 Dec  2 14:21 ..
[astakhovamd@localhost.astakhovamd.net ~]$
```

```
[astakhovamd@localhost.astakhovamd.net ~]$ :
mkdir -p /srv/nfs/www
mkdir: cannot create directory '/srv/nfs/www': Permission denied
[astakhovamd@localhost.astakhovamd.net ~]$ sudo -i
[sudo] password for astakhovamd:
[root@localhost.astakhovamd.net ~]# mkdir -p /srv/nfs/www
[root@localhost.astakhovamd.net ~]# mount -o bind /var/www/ /srv/nfs/www/
[root@localhost.astakhovamd.net ~]# ls -la /srv/nfs/
total 0
drwxr-xr-x. 3 root  root  17 Dec  2 14:30 .
drwxr-xr-x. 3 root  root  17 Dec  2 11:45 ..
drwxr-xr-x. 4 apache apache 33 Nov 17 20:54 www
[root@localhost.astakhovamd.net ~]#
```

```
[root@localhost.astakhovamd.net ~]# sudo mkdir -p /srv/nfs/www
[root@localhost.astakhovamd.net ~]# echo "/srv/nfs/www 192.168.0.0/16(rw)" | sudo tee -a /etc/exports
/srv/nfs/www 192.168.0.0/16(rw)
[root@localhost.astakhovamd.net ~]# sudo cat /etc/exports
/srv/nfs *(ro)
/srv/nfs/www 192.168.0.0/16(rw)
[root@localhost.astakhovamd.net ~]# sudo exportfs -ra
sudo exportfs -v
/srv/nfs/www 192.168.0.0/16(sync,wdelay,hide,no_subtree_check,sec=sys,rw,secure,root_squash,no_all_squash)
/srv/nfs <world>(sync,wdelay,hide,no_subtree_check,sec=sys,ro,secure,root_squash,no_all_squash)
[root@localhost.astakhovamd.net ~]# sudo chmod 755 /srv/nfs/www
sudo chown -R apache:apache /srv/nfs/www 2>/dev/null || sudo chown -R www-data:www-data /srv/nfs/www
2>/dev/null || sudo chown -R nginx:nginx /srv/nfs/www 2>/dev/null
[root@localhost.astakhovamd.net ~]# sudo semanage fcontext -a -t httpd_sys_content_t "/srv/nfs/www
(/.*)?"
sudo restorecon -Rv /srv/nfs/www
ls -Z /srv/nfs/
Relabeled /srv/nfs/www/cgi-bin from system_u:object_r:httpd_sys_script_exec_t:s0 to system_u:object_r:httpd_sys_content_t:s0
system_u:object_r:httpd_sys_content_t:s0 www
[root@localhost.astakhovamd.net ~]#
```

# Подключение каталогов для работы пользователей

```
l_squash)
total 8
drwxr-xr-x. 4 apache apache 67 Dec 2 14:38 .
drwxr-xr-x. 4 root root 32 Dec 2 14:37 ..
drwxr-xr-x. 2 apache apache 6 Sep 3 14:59 cgi-bin
drwxr-xr-x. 4 apache apache 80 Nov 17 23:47 html
-rw-r--r--. 1 apache apache 85 Dec 2 14:38 index.html
-rw-r--r--. 1 apache apache 32 Dec 2 14:38 test.txt
[root@localhost.astakhovamd.net ~]# mount -o bind /var/www/ /srv/nfs/www/
bash: mount-o: command not found...
[root@localhost.astakhovamd.net ~]# mount -o bind /var/www/ /srv/nfs/www/
[root@localhost.astakhovamd.net ~]# ls -la /srv/nfs/
total 0
drwxr-xr-x. 3 root root 17 Dec 2 14:30 .
drwxr-xr-x. 3 root root 17 Dec 2 11:45 ..
drwxr-xr-x. 4 apache apache 67 Dec 2 14:38 www
[root@localhost.astakhovamd.net ~]# mount | grep "/srv/nfs/www"
/dev/sdal on /srv/nfs/www type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)
localhost:/srv/nfs/www on /mnt/nfs_www type nfs4 (rw,relatime,vers=4.2,rsize=1048576,wsz=1048576,namlen=255,hard,proto=tcp6,timeo=600,retrans=2,sec=sys,clientaddr:::1,local_lock=none,addr:::1)
/dev/sdal on /srv/nfs/www type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsize=32k,noquota)
[root@localhost.astakhovamd.net ~]# ls -la /srv/nfs/www/
total 8
drwxr-xr-x. 4 apache apache 67 Dec 2 14:38 .
drwxr-xr-x. 3 root root 17 Dec 2 14:30 ..
drwxr-xr-x. 2 apache apache 6 Sep 3 14:59 cgi-bin
drwxr-xr-x. 4 apache apache 80 Nov 17 23:47 html
-rw-r--r--. 1 apache apache 85 Dec 2 14:38 index.html
-rw-r--r--. 1 apache apache 32 Dec 2 14:38 test.txt
[root@localhost.astakhovamd.net ~]# ls -la /var/www/
total 12
drwxr-xr-x. 4 apache apache 67 Dec 2 14:38 .
drwxr-xr-x. 23 root root 4096 Nov 18 00:12 ..
drwxr-xr-x. 2 apache apache 6 Sep 3 14:59 cgi-bin
drwxr-xr-x. 4 apache apache 80 Nov 17 23:47 html
-rw-r--r--. 1 apache apache 85 Dec 2 14:38 index.html
-rw-r--r--. 1 apache apache 32 Dec 2 14:38 test.txt
[root@localhost.astakhovamd.net ~]#
```

```
[root@localhost.astakhovamd.net ~]# cat /etc/exports
/srv/nfs/www *(rw,no_root_squash,no_subtree_check,insecure)
[root@localhost.astakhovamd.net ~]# sudo exportfs -v
/srv/nfs/www <world>(sync,wdelay,hide,no_subtree_check,sec=sys,rw,insecure,no_root_squash,no_all_squash)
[root@localhost.astakhovamd.net ~]# sudo tee /etc/exports << 'EOF'
/srv/nfs *(ro)
/srv/nfs/www *(rw,no_root_squash,no_subtree_check,insecure)
EOF
/srv/nfs *(ro)
/srv/nfs/www *(rw,no_root_squash,no_subtree_check,insecure)
[root@localhost.astakhovamd.net ~]# sudo exportfs -ra
sudo exportfs -v
/srv/nfs <world>(sync,wdelay,hide,no_subtree_check,sec=sys,ro,secure,root_squash,no_all_squash)
/srv/nfs/www <world>(sync,wdelay,hide,no_subtree_check,sec=sys,rw,insecure,no_root_squash,no_all_squash)
[root@localhost.astakhovamd.net ~]# showmount -e localhost
Export list for localhost:
/srv/nfs *
[root@localhost.astakhovamd.net ~]#
```

```
sudo: exportfs: command not found
[astakhovamd@localhost.astakhovamd.net ~]$ cat /mnt/nfs
cat: /mnt/nfs: Is a directory
[astakhovamd@localhost.astakhovamd.net ~]$
```

```
[root@localhost.astakhovamd.net ~]# echo "/var/www /srv/nfs/www none bind 0 0" | sudo tee -a /etc/fstab
/var/www /srv/nfs/www none bind 0 0
[root@localhost.astakhovamd.net ~]#
```

```
[root@localhost.astakhovamd.net ~]# sudo exportfs -r
[root@localhost.astakhovamd.net ~]#
```

# Подключение каталогов для работы пользователей

```
[astakhovamd@localhost.astakhovamd.net ~]$ ls -la /mnt/nfs/  
total 0  
drwxr-xr-x. 2 root root  6 Dec  2 14:21 .  
drwxr-xr-x. 3 root root 17 Dec  2 14:21 ..  
[astakhovamd@localhost.astakhovamd.net ~]$
```

```
[astakhovamd@localhost.astakhovamd.net common]$ echo "/home/astakhovamd/common /srv/nfs/home/astakhovamd  
none bind 0 0" | sudo tee -a /etc/fstab  
/home/astakhovamd/common /srv/nfs/home/astakhovamd none bind 0 0  
[astakhovamd@localhost.astakhovamd.net common]$ cat /etc/fstab | tail -5  
UUID=c84cce45-9089-48d9-9617-2f1d1bd45fdd /  
xfs defaults 0 0  
/swapfile none swap defaults 0 0  
server.astakhovamd.net:/srv/nfs /mnt/nfs nfs _netdev,ro,soft,timeo=30,retrans=3,x-systemd.device-timeout=  
10 0 0  
/var/www /srv/nfs/www none bind 0 0  
/home/astakhovamd/common /srv/nfs/home/astakhovamd none bind 0 0  
[astakhovamd@localhost.astakhovamd.net common]$ sudo systemctl daemon-reload  
[astakhovamd@localhost.astakhovamd.net common]$ sudo mount -a  
[astakhovamd@localhost.astakhovamd.net common]$
```

```
[astakhovamd@localhost.astakhovamd.net common]$ sudo exportfs -r  
[astakhovamd@localhost.astakhovamd.net common]$
```

```
[astakhovamd@localhost.astakhovamd.net ~]$ cd /mnt/nfs/home/astakhovamd  
pwd  
ls -la  
/mnt/nfs/home/astakhovamd  
total 0  
drwxr-xr-x. 2 root root  6 Dec  2 15:00 .  
drwxr-xr-x. 3 root root 25 Dec  2 15:00 ..  
[astakhovamd@localhost.astakhovamd.net astakhovamd]$
```

```
[astakhovamd@localhost.astakhovamd.net ~]$ cd /mnt/nfs/home/astakhovamd  
pwd  
ls -la  
/mnt/nfs/home/astakhovamd  
total 0  
drwxr-xr-x. 2 root root  6 Dec  2 15:00 .  
drwxr-xr-x. 3 root root 25 Dec  2 15:00 ..  
[astakhovamd@localhost.astakhovamd.net astakhovamd]$
```

```
/mnt/nfs/home/astakhovamd  
total 0  
drwxr-xr-x. 2 root root  6 Dec  2 15:00 .  
drwxr-xr-x. 3 root root 25 Dec  2 15:00 ..  
[astakhovamd@localhost.astakhovamd.net astakhovamd]$ sudo -i  
[sudo] password for astakhovamd:  
[root@localhost.astakhovamd.net ~]# touch astakhovamd@client.txt  
[root@localhost.astakhovamd.net ~]#
```

# ВНЕСЕНИЕ ИЗМЕНЕНИЙ В НАСТРОЙКИ ВНУТРЕННЕГО ОКРУЖЕНИЯ ВИРТУАЛЬНЫХ МАШИН

```
#!/bin/bash

echo "Provisioning script $0"
echo "Install needed packages"

dnf-y install nfs-utils

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
```

```
#!/bin/bash

echo "Provisioning script $0"
echo "Install needed packages"

dnf-y install nfs-utils

echo "Mounting dirs"

mkdir-p /mnt/nfs

mount server.user.net:/srv/nfs /mnt/nfs
echo "server.user.net:/srv/nfs /mnt/nfs nfs _netdev 0 0" >>
/etc/fstab

restorecon-vR /etc
```

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

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

**СПАСИБО ЗА ВНИМАНИЕ!**