

# **Защита лабораторной работы № 13**

## **Настройка NFS**

*Администрирование сетевых подсистем*

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## Цель работы

Приобретение навыков настройки сервера NFS для удалённого доступа к ресурсам.

## Настройка сервера NFSv4

```
[saismael@server.saismael.net ~]$ sudo -i
[sudo] password for saismael:
[root@server.saismael.net ~]# dnf -y install nfs-utils
Extra Packages for Enterprise Linux 9 - x86_64 22 kB/s | 31 kB 00:01
Extra Packages for Enterprise Linux 9 - x86_64 1.3 MB/s | 12 MB 00:09
Rocky Linux 9 - BaseOS 2.0 kB/s | 3.6 kB 00:01
Rocky Linux 9 - AppStream 3.4 kB/s | 4.1 kB 00:01
Rocky Linux 9 - Extras 2.1 kB/s | 2.9 kB 00:01
Dependencies resolved.
=====
Package Architecture Version Repository Size
=====
Installing:
nfs-utils x86_64 1:2.5.4-15.el9 baseos 421 k
Upgrading:
libipa_hbac x86_64 2.7.3-4.el9_1.1 baseos 35 k
libldb x86_64 2.5.2-1.el9 baseos 179 k
libsmbclient x86_64 4.16.4-101.el9 baseos 75 k
libsss_certmap x86_64 2.7.3-4.el9_1.1 baseos 78 k
libsss_idmap x86_64 2.7.3-4.el9_1.1 baseos 41 k
libsss_nss_idmap x86_64 2.7.3-4.el9_1.1 baseos 45 k
libsss_sudo x86_64 2.7.3-4.el9_1.1 baseos 34 k
libtdb x86_64 1.4.6-1.el9 baseos 50 k
libwbclient x86_64 4.16.4-101.el9 baseos 43 k
```



A terminal window titled 'root@server:~' showing the command 'mkdir -p /srv/nfs' being entered. The cursor is at the end of the command.

```
[root@server.saismael.net ~]#
[root@server.saismael.net ~]# mkdir -p /srv/nfs
[root@server.saismael.net ~]#
```

## Настройка сервера NFSv4

```
[root@server.saismael.net ~]# semanage fcontext -a -t nfs_t "/srv/nfs(/.*)?"
[root@server.saismael.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.saismael.net ~]# systemctl start nfs-server.service
[root@server.saismael.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.saismael.net ~]#
[root@server.saismael.net ~]# firewall-cmd --add-service=nfs
success
[root@server.saismael.net ~]# firewall-cmd --add-service=nfs --permanent
success
[root@server.saismael.net ~]# firewall-cmd --reload
success
[root@server.saismael.net ~]#
```

```
[root@server.saismael.net ~]# firewall-cmd --add-service=mountd --add-service=rp
c-bind
success
[root@server.saismael.net ~]# firewall-cmd --add-service=mountd --add-service=rp
c-bind --permanent
success
[root@server.saismael.net ~]# firewall-cmd --reload
success
[root@server.saismael.net ~]#
```



## Монтирование NFS на клиенте

```
[root@client.saismael.net home]# sudo mkdir -p /mnt/nfs
[root@client.saismael.net home]# sudo mount server.saismael.net:/srv/nfs /mnt/nfs
```

```
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime,seclabel)
devtmpfs on /dev type devtmpfs (rw,nosuid,seclabel,size=463216k,nr_inodes=115
,mode=755,inode64)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
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
0,ptmxmode=000)
tmpfs on /run type tmpfs (rw,nosuid,nodev,seclabel,size=196728k,nr_inodes=819
,mode=755,inode64)
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)
none on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)
/dev/sda1 on / type xfs (rw,relatime,seclabel,attr2,inode64,logbufs=8,logbsiz
2k,noquota)
selinuxfs on /sys/fs/selinux type selinuxfs (rw,nosuid,noexec,relatime)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=31,pgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=16940)
mqueue on /dev/mqueue type mqueue (rw,nosuid,nodev,noexec,relatime,seclabel)
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime,seclabel,pagesize=2M)
```

## Подключение каталогов к дереву NFS

```
[root@server.saismael.net ~]# mkdir -p /srv/nfs/www
[root@server.saismael.net ~]# mount -o bind /var/www/ /srv/nfs/www/
[root@server.saismael.net ~]# ls /srv/nfs
www
[root@server.saismael.net ~]# exportfs -r
```

```
bash: cd: /mnt/nfs/home/saismael: No such file or directory
[root@client.saismael.net ~]# ls /mnt/nfs
www
```

```
mc [root@server.sais... x root@server:~
/srv/nfs *(ro)
/srv/nfs/www 192.168.0.0/16(rw)
```

## Подключение каталогов для работы пользователей

```
[root@server.saismael.net ~]# mkdir -p -m 700 ~/common
[root@server.saismael.net ~]# cd ~/common
[root@server.saismael.net common]# touch saismael@server.txt
[root@server.saismael.net common]# sudo mkdir -p /srv/nfs/home/saismael
[root@server.saismael.net common]# sudo -i mkdir -p /srv/nfs/home/saismael
```

```
fstab      [-M--] 58 L:[ 1+19 20/ 21] *(766 / 767b) 0010 0x00A [*][X]

#
# /etc/fstab
# Created by anaconda on Tue Nov  1 09:04:15 2022
#
# 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=27cf3818-ffba-4402-9e45-1e9bcc60db4 /                xfs      default
/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.saismael.net:/srv/nfs /mnt/nfs nfs _netdev 0 0
/var/www /srv/nfs/www none bind 0 0
/home/saismael/common /srv/nfs/home/saismael none bind 0 0
```

1Help 2Save 3Mark 4Replac 5Copy 6Move 7Search 8Delete 9PullDn 10Quit



## Внесение изменений в настройки внутреннего окружения виртуальной машины

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

```
Vagrantfile x 01-routing.sh x dhcp.sh x mysql.sh x firewall.sh x mail.sh x mail.sh x ntp.sh x ntp.sh x nfs.sh  
1  #!/bin/bash  
2  
3  echo "Provisioning script $0"  
4  
5  echo "Install needed packages"  
6  dnf -y install nfs-utils  
7  
8  echo "Copy configuration files"  
9  cp -R /vagrant/provision/server/nfs/etc/* /etc  
10  
11  restorecon -vR /etc  
12  
13  echo "Configure firewall"  
14  firewall-cmd --add-service nfs --permanent  
15  firewall-cmd --add-service mountd --add-service rpc-bind --permanent  
16  firewall-cmd --reload  
17  
18  echo "Tuning SELinux"  
19  mkdir -p /srv/nfs  
20  semanage fcontext -a -t nfs_t "/srv/nfs(/.*)?"  
21  restorecon -vR /srv/nfs  
22  
23  echo "Mounting dirs"  
24  mkdir -p /srv/nfs/www  
25  mount -o bind /var/www /srv/nfs/www  
26  echo "/var/www /srv/nfs/www none bind 0 0" >> /etc/fstab  
27  mkdir -p /srv/nfs/home/user  
28  mkdir -p -m 700 /home/user/common  
29  chown user:user /home/user/common  
30  mount -o bind /home/user/common /srv/nfs/home/user  
31  echo "/home/user/common /srv/nfs/home/user none bind 0 0" >> /etc/fstab  
32  
33  echo "Start nfs service"  
34  systemctl enable nfs-server  
35  systemctl start nfs-server  
36  
37  systemctl restart firewalld
```



Приобрел навыки настройки сервера NFS для удалённого доступа к ресурсам.