

Администрирование сетевых подсистем

Настройка сервера NFS

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Цель работы

Цель лабораторной работы

Получить практический опыт настройки сервера NFS и организации удалённого доступа к файловым ресурсам.

Установка и подготовка каталога

```
Installing      : sssd-nfs-idmap-2.10.2-3.el10_0.2.x86_64          7/7
Running scriptlet: sssd-nfs-idmap-2.10.2-3.el10_0.2.x86_64          7/7

Installed:
  gssproxy-0.9.2-10.el10.x86_64           libev-4.33-14.el10.x86_64           libnfsidmap-1:2.8.2-3.el10.x86_64
  libverto-libev-0.3.2-10.el10.x86_64       nfs-utils-1:2.8.2-3.el10.x86_64       rpcbind-1.2.7-3.el10.x86_64
  sssd-nfs-idmap-2.10.2-3.el10_0.2.x86_64

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

Рис. 1: Установка nfs-utils

Экспорт каталога через NFS



The screenshot shows a terminal window with a light gray background. At the top, there are three buttons: 'Open' (with a downward arrow), a standard window control button, and a '+' button. To the right of these buttons, the word 'exports' is displayed in bold black font, followed by '/etc'. Below this header, the file content is shown in a monospaced font. The first line of the file is '1 /srv/nfs *(ro)', where '1' is in red, indicating it is the current line being edited.

```
1 /srv/nfs *(ro)
```

Рис. 2: Содержимое /etc/exports

Запуск сервиса и firewall

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

Рис. 3: Запуск сервиса и настройка firewall

Проверка доступности ресурса

```
Installed:
  gssproxy-0.9.2-10.el10.x86_64
  libnfsidmap-1:2.8.2-3.el10.x86_64
  nfs-utils-1:2.8.2-3.el10.x86_64
  sssd-nfs-idmap-2.10.2-3.el10_0.2.x86_64

  libev-4.33-14.el10.x86_64
  libverto-libev-0.3.2-10.el10.x86_64
  rpcbind-1.2.7-3.el10.x86_64

Complete!
[root@client.ahmedfarg.net ~]#
[root@client.ahmedfarg.net ~]# showmount -e server.ahmedfarg.net
clnt_create: RPC: Unable to receive
[root@client.ahmedfarg.net ~]# showmount -e server.ahmedfarg.net
Export list for server.ahmedfarg.net:
/srv/nfs *
[root@client.ahmedfarg.net ~]# █
```

Рис. 4: Успешное подключение

Разрешение необходимых служб

```
xmpp-bosh xmpp-client xmpp-local xmpp-server zabbix-agent zabbix-java-gateway zabbix-server zabbix-trapper z
-web-service zero-k zerotier
[root@server.ahmedfarg.net ~]# firewall-cmd --add-service=mountd --add-service=rpc-bind
success
[root@server.ahmedfarg.net ~]# firewall-cmd --add-service=mountd --add-service=rpc-bind --permanent
success
[root@server.ahmedfarg.net ~]# firewall-cmd --reload
success
[root@server.ahmedfarg.net ~]# █
```

Рис. 5: Добавление mountd и rpc-bind

Подключение каталога

```
[root@client.ahmedfarg.net ~]#  
[root@client.ahmedfarg.net ~]# mkdir -p /mnt/nfs  
[root@client.ahmedfarg.net ~]# mount server.ahmedfarg.net:/srv/nfs /mnt/nfs  
[root@client.ahmedfarg.net ~]# mount | grep srv  
server.ahmedfarg.net:/srv/nfs on /mnt/nfs type nfs4 (rw,relatime,vers=4.2,rsize=262144,wsiz  
255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=192.168.1.30,local_lock=none,addr=192.168.1.1)  
[root@client.ahmedfarg.net ~]# █
```

Рис. 6: Монтируем каталог /srv/nfs

Автомонтиране при загрузке

The screenshot shows a file editor window with the following interface elements:

- Top-left: "Open" button, dropdown arrow, and a small icon.
- Top-center: Title bar with "fstab" and "/etc".
- Top-right: "Save" button and a three-line menu icon.

The content of the file is as follows:

```
1
2 #
3 # /etc/fstab
4 # Created by anaconda on Wed Sep  3 08:53:23 2025
5 #
6 # Accessible filesystems, by reference, are maintained under '/dev/disk/'.
7 # See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.
8 #
9 # After editing this file, run 'systemctl daemon-reload' to update systemd
10 # units generated from this file.
11 #
12 UUID=908334c5-81ab-40aa-ad89-1bd296275208 /          xfs    defaults      0 0
13 UUID=964b6a41-d718-411a-a362-f90f740c04d8 /boot       xfs    defaults      0 0
14 UUID=2000-E25B /boot/efi      vfat   umask=0077,shortname=winnt 0 2
15 UUID=7e0ea0d4-0dbc-4e9b-bcd8-a0b4c565de96 /home       xfs    defaults      0 0
16 UUID=3c01d968-53fe-4cb3-8a7c-cc0f286d9e58 none       swap   defaults      0 0
17 server.ahmedfarg.net:/srv/nfs /mnt/nfs nfs _netdev 0 0
18 #VAGRANT-BEGIN
19 # The contents below are automatically generated by Vagrant. Do not modify.
20 vagrant /vagrant vboxsf uid=1000,gid=1000,_netdev 0 0
21 #VAGRANT-END
```

A horizontal scroll bar is visible at the bottom of the code area. The line "17 server.ahmedfarg.net:/srv/nfs /mnt/nfs nfs _netdev 0 0" is highlighted with a light gray background.

Экспорт дополнительного каталога



The screenshot shows a file editor window with the title bar "exports /etc". In the top left corner are "Open" and "Save" buttons, and a "+" icon for creating new entries. The main area contains two lines of configuration:

```
1 /srv/nfs *(ro)
2 /srv/nfs/www 192.168.0.0/16(rw)
```

The second line is currently selected, indicated by a grey background.

Рис. 8: Экспорт каталога

Подключение личного каталога

```
[ahmedfarg@server.ahmedfarg.net ~]$ mkdir -p -m 700 ~/common
[ahmedfarg@server.ahmedfarg.net ~]$ cd ~/common/
[ahmedfarg@server.ahmedfarg.net common]$ touch ahmedfarg@server.txt
[ahmedfarg@server.ahmedfarg.net common]$ ls
ahmedfarg@server.txt
[ahmedfarg@server.ahmedfarg.net common]$
```

Рис. 9: Создание каталога common

Создание файлов с клиента

```
[ahmedfarg@client.ahmedfarg.net ~]$ cd /mnt/nfs/home/ahmedfarg/  
[ahmedfarg@client.ahmedfarg.net ahmedfarg]$ ls  
ahmedfarg@server.txt  
[ahmedfarg@client.ahmedfarg.net ahmedfarg]$ touch ahmedfarg@client.txt  
[ahmedfarg@client.ahmedfarg.net ahmedfarg]$ ls  
ahmedfarg@client.txt ahmedfarg@server.txt  
[ahmedfarg@client.ahmedfarg.net ahmedfarg]$ █
```

Рис. 10: Создание файла на клиенте

Итоги

- Развернут и настроен сервер NFS
- Настроена работа через firewall и SELinux
- Реализовано автомонтирование через `/etc/fstab`
- Добавлены пользовательские каталоги и автоматизация через скрипты