

# Администрирование сетевых подсистем

## Настройка файловых служб Samba

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## Цели и задачи работы

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## Цель лабораторной работы

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Приобретение навыков настройки доступа групп пользователей к общим ресурсам по протоколу **SMB**.

## Выполнение лабораторной работы

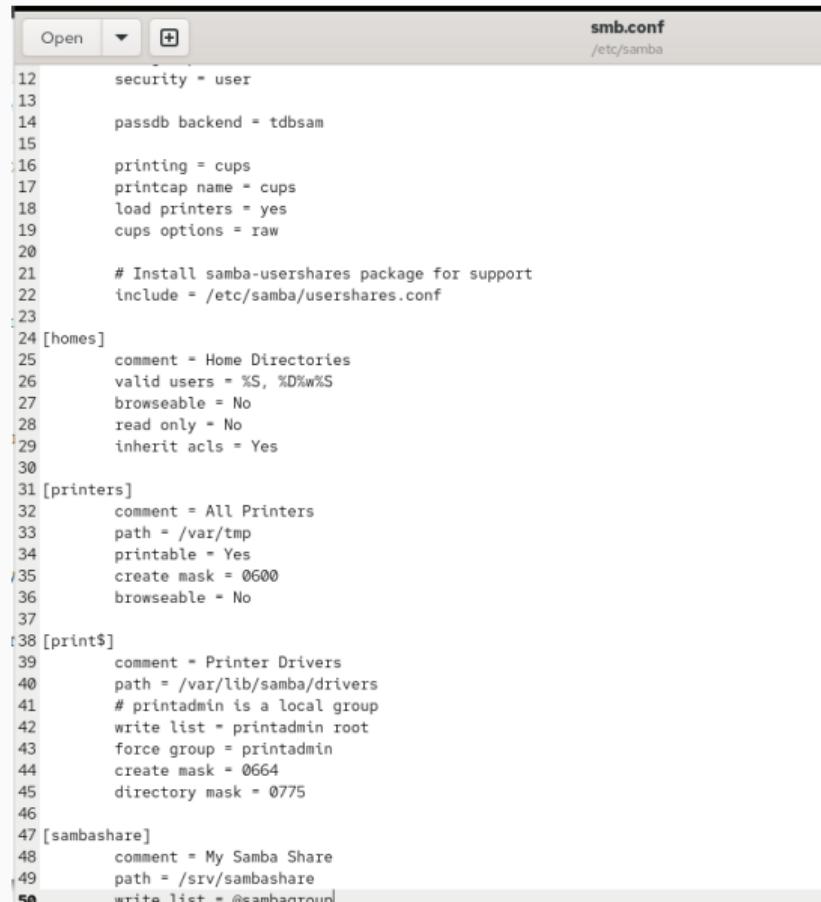
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# Установка Samba на сервере

```
Upgraded:  
libldb-4.21.3-113.el10_0.x86_64  
libwbclient-4.21.3-113.el10_0.x86_64  
samba-common-4.21.3-113.el10_0.noarch  
Installed:  
cifs-utils-7.1-2.el10.x86_64  
samba-4.21.3-113.el10_0.x86_64  
samba-common-tools-4.21.3-113.el10_0.x86_64  
samba-ldb-ldap-modules-4.21.3-113.el10_0.x86_64  
  
libsmbclient-4.21.3-113.el10_0.x86_64  
samba-client-libs-4.21.3-113.el10_0.x86_64  
samba-common-libs-4.21.3-113.el10_0.x86_64  
  
libnetapi-4.21.3-113.el10_0.x86_64  
samba-client-4.21.3-113.el10_0.x86_64  
samba-dcerpc-4.21.3-113.el10_0.x86_64  
samba-libs-4.21.3-113.el10_0.x86_64  
  
Complete!  
[root@server.ahmedfarg.net ~]#  
[root@server.ahmedfarg.net ~]# groupadd -g 1010 sambagroup  
[root@server.ahmedfarg.net ~]# usermod -aG sambagroup ahmedfarg  
[root@server.ahmedfarg.net ~]# mkdir -p /srv/sambashare  
[root@server.ahmedfarg.net ~]# █
```

Рис. 1: Установка пакетов Samba

# Изменение рабочей группы и добавление ресурса



The screenshot shows a text editor window with the title "smb.conf" and the path "/etc/samba". The file contains the Samba configuration settings shown below:

```
12     security = user
13
14     passdb backend = tdbsam
15
16     printing = cups
17     printcap name = cups
18     load printers = yes
19     cups options = raw
20
21     # Install samba-usershare package for support
22     include = /etc/samba/usershare.conf
23
24 [homes]
25     comment = Home Directories
26     valid users = %S, %D%w%S
27     browsable = No
28     read only = No
29     inherit acls = Yes
30
31 [printers]
32     comment = All Printers
33     path = /var/tmp
34     printable = Yes
35     create mask = 0600
36     browsable = No
37
38 [print$]
39     comment = Printer Drivers
40     path = /var/lib/samba/drivers
41     # printadmin is a local group
42     write list = printadmin root
43     force group = printadmin
44     create mask = 0664
45     directory mask = 0775
46
47 [sambashare]
48     comment = My Samba Share
49     path = /srv/sambashare
50     write list = @sambagroup
```

## Правила firewalld

```
<?xml version="1.0" encoding="utf-8"?>
<service>
    <short>Samba</short>
    <description>This option allows you to access and participate in Windows file and printer sharing networks. You need the samba package installed for this option to be useful.</description>
    <include service="samba-client"/>
    <port protocol="tcp" port="139"/>
    <port protocol="tcp" port="445"/>
</service>
/usr/lib/firewalld/services/samba.xml (END)
```

Рис. 3: Файл samba.xml

## Первичный SELinux-контекст

```
[root@server.ahmedfarg.net ~]#  
[root@server.ahmedfarg.net ~]# firewall-cmd --add-service=samba  
success  
[root@server.ahmedfarg.net ~]# firewall-cmd --add-service=samba --permanent  
success  
[root@server.ahmedfarg.net ~]# firewall-cmd --reload  
success  
[root@server.ahmedfarg.net ~]# chgrp sambagroup /srv/sambashare/  
[root@server.ahmedfarg.net ~]# chmod g=rwx /srv/sambashare/  
[root@server.ahmedfarg.net ~]# cd /srv  
[root@server.ahmedfarg.net srv]# ls -Z  
unconfined_u:object_r:nfs_t:s0 nfs unconfined_u:object_r:var_t:s0 sambashare  
[root@server.ahmedfarg.net srv]# semanage fcontext -a -t samba_share_t "/srv/sambashare(/.*)?"  
[root@server.ahmedfarg.net srv]# restorecon -vR /srv/sambashare/  
Relabeled /srv/sambashare from unconfined_u:object_r:var_t:s0 to unconfined_u:object_r:samba_share_t:s0  
[root@server.ahmedfarg.net srv]# ls -Z  
    unconfined_u:object_r:nfs_t:s0 nfs unconfined_u:object_r:samba_share_t:s0 sambashare  
[root@server.ahmedfarg.net srv]# setsebool samba_export_all_rw 1  
[root@server.ahmedfarg.net srv]# setsebool samba_export_all_rw 1 -P  
[root@server.ahmedfarg.net srv]#
```

Рис. 4: Первичный контекст SELinux

## Проверка групп пользователя

```
[ahmedfarg@server.ahmedfarg.net ~]$ id  
[ahmedfarg@server.ahmedfarg.net ~]$ id  
uid=1001(ahmedfarg) gid=1001(ahmedfarg) groups=1001(ahmedfarg),10(wheel) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[ahmedfarg@server.ahmedfarg.net ~]$ newgrp sambagroup  
[ahmedfarg@server.ahmedfarg.net ~]$  
[ahmedfarg@server.ahmedfarg.net ~]$ id  
uid=1001(ahmedfarg) gid=1010(sambagroup) groups=1010(sambagroup),10(wheel),1001(ahmedfarg) context=unconfined_u:unconfine  
d_r:unconfined_t:s0-s0:c0.c1023  
[ahmedfarg@server.ahmedfarg.net ~]$ cd /srv/sambashare/  
[ahmedfarg@server.ahmedfarg.net sambashare]$ touch ahmedfarg@server.txt  
[ahmedfarg@server.ahmedfarg.net sambashare]$ ls  
ahmedfarg@server.txt  
[ahmedfarg@server.ahmedfarg.net sambashare]$ █
```

Рис. 5: Информация о пользователе

```
smbpasswd -a
```

```
[root@server.ahmedfarg.net srv]#  
[root@server.ahmedfarg.net srv]# smbpasswd -L -a ahmedfarg  
New SMB password:  
Retype new SMB password:  
Added user ahmedfarg.  
[root@server.ahmedfarg.net srv]#
```

Рис. 6: Добавление SMB-пользователя

## Установка необходимых пакетов

```
Installed:
cifs-utils-7.1-2.el10.x86_64          kernel-core-6.12.0-55.40.1.el10_0.x86_64
kernel-modules-6.12.0-55.40.1.el10_0.x86_64    kernel-modules-core-6.12.0-55.40.1.el10_0.x86_64
samba-client-4.21.3-113.el10_0.x86_64

Complete!
[root@client.ahmedfarg.net ~]#
[root@client.ahmedfarg.net ~]# less /usr/lib/firewalld/services/samba-client.xml
[root@client.ahmedfarg.net ~]#
[root@client.ahmedfarg.net ~]# firewall-cmd --add-service=samba-client
success
[root@client.ahmedfarg.net ~]# firewall-cmd --add-service=samba-client --permanent
success
[root@client.ahmedfarg.net ~]# firewall-cmd --reload
success
[root@client.ahmedfarg.net ~]# groupadd -g 1010 sambagroup
[root@client.ahmedfarg.net ~]# usermod -aG sambagroup ahmedfarg
[root@client.ahmedfarg.net ~]# █
```

Рис. 7: Установка пакетов на клиенте

## Правила firewalld для клиента

```
<?xml version="1.0" encoding="utf-8"?>
<service>
    <short>Samba Client</short>
    <description>This option allows you to access Windows file and printer sharing networks. You need the samba-client package installed for this option to be useful.</description>
    <include service="netbios-ns"/>
    <port protocol="udp" port="138"/>
</service>
/usr/lib/firewalld/services/samba-client.xml (END)
```

Рис. 8: Файл samba-client.xml

## smb.conf

The screenshot shows a text editor window with the title bar "smb.conf /etc/samba". The file content is a configuration for a Samba server. The configuration includes sections for [global] and [homes]. The [global] section sets the workgroup to AHMEDFARG-NET, security to user, and passdb backend to tdbsam. It also configures printing to cups, printcap name to cups, and load printers to yes. The [homes] section defines home directories for users, setting comment to Home Directories, valid users to %S, %D%w%S, browseable to No, read only to No, and inherit acls to Yes.

```
1 # See smb.conf.example for a more detailed config file or
2 # read the smb.conf manpage.
3 # Run 'testparm' to verify the config is correct after
4 # you modified it.
5 #
6 # Note:
7 # SMB1 is disabled by default. This means clients without support for SMB2 or
8 # SMB3 are no longer able to connect to smbd (by default).
9
10 [global]
11     workgroup = AHMEDFARG-NET
12     security = user
13
14     passdb backend = tdbsam
15
16     printing = cups
17     printcap name = cups
18     load printers = yes
19     cups options = raw
20
21     # Install samba-usershare package for support
22     include = /etc/samba/usershares.conf
23
24 [homes]
25     comment = Home Directories
26     valid users = %S, %D%w%S
27     browseable = No
28     read only = No
29     inherit acls = Yes
```

## Анонимный доступ

```
[root@client.ahmedfarg.net ~]# smbclient -L //server  
Password for [AHMEDFARG-NET\root]:  
Anonymous login successful
```

Sharename	Type	Comment
-----	----	-----
print\$	Disk	Printer Drivers
sambashare	Disk	My Samba Share
IPC\$	IPC	IPC Service (Samba 4.21.3)

SMB1 disabled -- no workgroup available

```
[root@client.ahmedfarg.net ~]# smbclient -L //server -U ahmedfarg  
Password for [AHMEDFARG-NET\ahmedfarg]:
```

Sharename	Type	Comment
-----	----	-----
print\$	Disk	Printer Drivers
sambashare	Disk	My Samba Share
IPC\$	IPC	IPC Service (Samba 4.21.3)
ahmedfarg	Disk	Home Directories

SMB1 disabled -- no workgroup available

```
[root@client.ahmedfarg.net ~]#
```

Доступ под пользователем ahmedfarg

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## Подключение ресурса

```
[root@client.ahmedfarg.net ~]#  
[root@client.ahmedfarg.net ~]# mkdir /mnt/samba  
[root@client.ahmedfarg.net ~]# mount -o username=ahmedfarg,user,rw,uid=ahmedfarg,gid=sambagroup //server/sambashare /mnt/samba/  
Password for ahmedfarg@//server/sambashare:  
mount: (hint) your fstab has been modified, but systemd still uses  
the old version; use 'systemctl daemon-reload' to reload.  
[root@client.ahmedfarg.net ~]#
```

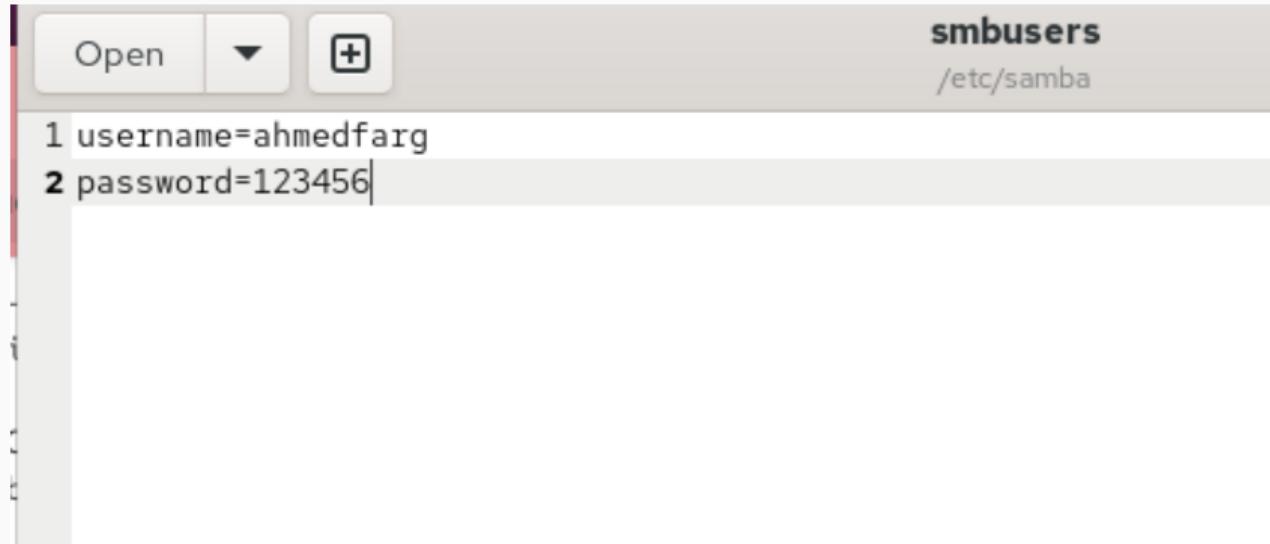
Рис. 11: Ручное монтирование

## Создание файла

```
[ahmedfarg@client.ahmedfarg.net ~]$ newgrp sambagroup
[ahmedfarg@client.ahmedfarg.net ~]$
[ahmedfarg@client.ahmedfarg.net ~]$ id
uid=1001(ahmedfarg) gid=1010(sambagroup) groups=1010(sambagroup),10(wheel),1001(ahmedfarg) context=
unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
[ahmedfarg@client.ahmedfarg.net ~]$
[ahmedfarg@client.ahmedfarg.net ~]$ cd /mnt/samba/
[ahmedfarg@client.ahmedfarg.net samba]$ ls
ahmedfarg@server.txt
[ahmedfarg@client.ahmedfarg.net samba]$ touch ahmedfarg@client.txt
[ahmedfarg@client.ahmedfarg.net samba]$ ls
ahmedfarg@client.txt ahmedfarg@server.txt
[ahmedfarg@client.ahmedfarg.net samba]$ █
```

Рис. 12: Создание файла на общем ресурсе

## Файл учётных данных



The screenshot shows a terminal window with the following interface elements:

- Top bar: "Open" button, dropdown arrow, and a button with a plus sign.
- Title bar: "smbusers" and the path "/etc/samba".
- Text area:

```
1 username=ahmedfarg
2 password=123456
```

Рис. 13: Файл учетных данных smbusers

## fstab

The screenshot shows a file editor window titled "fstab" with the path "/etc" at the top right. The window has standard OS X-style controls: "Open" and a dropdown menu, a "+" button for creating new files, a "Save" button, and a close button. The content of the file is a list of mount entries:

```
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 //server/sambashare /mnt/samba cifs user,rw,uid=ahmedfarg,gid=sambagroup,credentials=/etc/samba/
  smbusers,_netdev 0 0
19 #VAGRANT-BEGIN
20 # The contents below are automatically generated by Vagrant. Do not modify.
21 vagrant /vagrant vboxsf uid=1000,gid=1000,_netdev 0 0
22 #VAGRANT-END
```

## Проверка

```
[root@client.ahmedfarg.net ~]# gedit /etc/fstab
[root@client.ahmedfarg.net ~]# mount -a
mount: (hint) your fstab has been modified, but systemd still uses
      the old version; use 'systemctl daemon-reload' to reload.
[root@client.ahmedfarg.net ~]# mount | grep mnt
server.ahmedfarg.net:/srv/nfs on /mnt/nfs type nfs4 (rw,relatime,vers=4.2,rsize=262144,wsize=262144
,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=192.168.1.30,local_lock=none,addr
=192.168.1.1,_netdev)
//server/sambashare on /mnt/samba type cifs (rw,nosuid,nodev,noexec,relatime,vers=3.1.1,cache=stic
t,upcall_target=app,username=ahmedfarg,uid=1001,forceuid,gid=1010,forcegid,addr=192.168.1.1,file_mo
de=0755,dir_mode=0755,soft,nounix,serverino,mapposix,reparse=nfs,rsize=4194304,wsize=4194304,bsize=
1048576,retrans=1,echo_interval=60,actimeo=1,closetimeo=1,user,_netdev)
[root@client.ahmedfarg.net ~]#
```

Рис. 15: Проверка монтирования через fstab

## Выводы

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## Итоги работы

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- Настроены сервер и клиент Samba
- Обеспечен общий доступ к каталогу
- Настроены SELinux-контексты и межсетевой экран
- Реализовано автоматическое монтирование ресурса
- Созданы сценарии автоматизации настройки