

Администрирование сетевых подсистем

Настройка файловых служб Samba (Лабораторная работа №14)

Заур Мустафаев

1 декабря 2025

Российский университет дружбы народов, Москва, Россия

Цели и задачи работы

Цель лабораторной работы

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

Настройка сервера Samba

Установка необходимых пакетов

```
sssd-nfs-idmap-2.11.1-2.el10_1.1.x86_64           sssd-proxy-2.11.1-2.el10_1.1.x86_64
Installed:
cifs-utils-7.2-1.el10.x86_64                      libnetapi-4.22.4-106.el10.x86_64
samba-4.22.4-106.el10.x86_64                      samba-client-4.22.4-106.el10.x86_64
samba-common-tools-4.22.4-106.el10.x86_64          samba-dcerpc-4.22.4-106.el10.x86_64
samba-ldb-ldap-modules-4.22.4-106.el10.x86_64      samba-libs-4.22.4-106.el10.x86_64

Complete!
[root@server.zmustafaev.net ~]#
[root@server.zmustafaev.net ~]# groupadd -g 1010 sambagroup
[root@server.zmustafaev.net ~]# usermod -aG sambagroup zmustafaev
[root@server.zmustafaev.net ~]# mkdir -p /srv/sambashare
[root@server.zmustafaev.net ~]#
```

Рис. 1: Создание каталога

Настройка smb.conf

```
[homes]
<----->comment = Home Directories
<----->valid users = %S, %D%w%S
<----->browsable = No
<----->read only = No
<----->inherit acls = Yes

[printers]
<----->comment = All Printers
<----->path = /var/tmp
<----->printable = Yes
<----->create mask = 0600
<----->browsable = No

[print$]
<----->comment = Printer Drivers
<----->path = /var/lib/samba/drivers
<-----># printadmin is a local group
<----->write list = printadmin root
<----->force group = printadmin
<----->create mask = 0664
<----->directory mask = 0775
[sambashare]
<----->comment = My Samba Share
<----->path = /srv/sambashare
<----->write list = @sambagroup
```

Запуск и проверка службы

```
[root@server.zmustafaev.net ~]# systemctl start smb
[root@server.zmustafaev.net ~]# systemctl enable smb
Created symlink '/etc/systemd/system/multi-user.target.wants/smb.service' → '/usr/lib/systemd/system/smb.service'.
[root@server.zmustafaev.net ~]# systemctl status smb
● smb.service - Samba SMB Daemon
   Loaded: loaded (/usr/lib/systemd/system/smb.service; enabled; preset: disabled)
   Active: active (running) since Mon 2025-12-01 09:48:08 UTC; 12s ago
     Invocation: d8fb9f84f4574a7d9d857c43082a78e8
      Docs: man:smbd(8)
             man:samba(7)
             man:smb.conf(5)
    Main PID: 14675 (smbd)
      Status: "smbd: ready to serve connections..."
        Tasks: 3 (limit: 10381)
       Memory: 8.5M (peak: 8.8M)
         CPU: 26ms
      CGroup: /system.slice/smb.service
              ├─14675 /usr/sbin/smbd --foreground --no-process-group
              ├─14678 /usr/sbin/smbd --foreground --no-process-group
              └─14679 /usr/sbin/smbd --foreground --no-process-group

Dec 01 09:48:08 server.zmustafaev.net systemd[1]: Starting smb.service - Samba SMB Daemon...
Dec 01 09:48:08 server.zmustafaev.net systemd[1]: Started smb.service - Samba SMB Daemon.
[root@server.zmustafaev.net ~]# smbclient -L //server
Password for [ZMUSTAFAEV-NET\root]:
Anonymous login successful

      Sharename          Type          Comment
      ----              ----          -----
print$            Disk          Printer Drivers
sambashare        Disk          My Samba Share
IPC$              IPC           IPC Service (Samba 4.22.4)

SMB1 disabled -- no workgroup available
[root@server.zmustafaev.net ~]#
```

Рис. 3: Проверка доступа

Межсетевой экран и SELinux

Настройка 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. 4: Просмотр samba.xml

SELinux: контексты и разрешения

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

Рис. 5: Контексты SELinux

Создание пользователей Samba

Пользователь и группы

```
[zmustafaev@server.zmustafaev.net ~]$ newgrp sambagroup
[zmustafaev@server.zmustafaev.net ~]$ id
uid=1001(zmustafaev) gid=1010(sambagroup) groups=1010(sambagroup),10(wheel),1001(zmustafaev) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
[zmustafaev@server.zmustafaev.net ~]$ cd /srv/sambashare/
[zmustafaev@server.zmustafaev.net sambashare]$ touch zmustafaev@server.txt
[zmustafaev@server.zmustafaev.net sambashare]$ ls
zmustafaev@server.txt
[zmustafaev@server.zmustafaev.net sambashare]$ ls -l
total 0
-rw-r--r--. 1 zmustafaev sambagroup 0 Dec  1 09:53 zmustafaev@server.txt
[zmustafaev@server.zmustafaev.net sambashare]$
```

Рис. 6: Создание файла

Добавление SMB-пользователя

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

Рис. 7: Добавление SMB-пользователя

Настройка клиента Samba

Установка пакетов и конфигурация

```
[root@client.zmustafaev.net ~]#  
[root@client.zmustafaev.net ~]# firewall-cmd --add-service=samba-client  
success  
[root@client.zmustafaev.net ~]# firewall-cmd --add-service=samba-client --permanent  
success  
[root@client.zmustafaev.net ~]# firewall-cmd --reload  
success  
[root@client.zmustafaev.net ~]# groupadd -g 1010 sambagroup  
[root@client.zmustafaev.net ~]# usermod -aG sambagroup zmustafaev  
[root@client.zmustafaev.net ~]#
```

Рис. 8: Группы клиента

Проверка подключения

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

      Sharename      Type      Comment
      -----      ----      -----
      print$        Disk      Printer Drivers
      sambashare    Disk      My Samba Share
      IPC$          IPC       IPC Service (Samba 4.22.4)
SMB1 disabled -- no workgroup available
[root@client.zmustafaev.net ~]# smbclient -L //server -U zmustafaev
Password for [ZMUSTAFAEV-NET\zmustafaev]:
      Sharename      Type      Comment
      -----      ----      -----
      print$        Disk      Printer Drivers
      sambashare    Disk      My Samba Share
      IPC$          IPC       IPC Service (Samba 4.22.4)
      zmustafaev   Disk      Home Directories
SMB1 disabled -- no workgroup available
[root@client.zmustafaev.net ~]#
```

Рис. 9: Просмотр ресурсов

Монтирование ресурсов

Ручное монтирование CIFS

```
[root@client.zmustafaev.net ~]# mkdir /mnt/samba
[root@client.zmustafaev.net ~]# mount -o username=zmustafaev,user,rw,uid=zmustafaev,gid=sambagroup //server/sambashare /mnt/samba/
Password for zmustafaev@//server/sambashare:
[root@client.zmustafaev.net ~]# mount | grep mnt
server.zmustafaev.net:/srv/nfs on /mnt/nfs type nfs4 (rw,relatime,vers=4.2,rsize=26214
4,wsize=262144,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=192.16
8.1.30,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=strict,upcall_target=app,username=zmustafaev,uid=1001,forceuid,gid=1010,forcegid,addr=192.168.1.1,file_mode=0755,dir_mode=0755,soft,nounix,serverino,mapposix,reparse_nfs,rsize=4194304,wsize=4194304,bsize=1048576,retrans=1,echo_interval=60,actimeo=1,close_timeout=1,user)
[root@client.zmustafaev.net ~]#
```

Рис. 10: Монтирование ресурса

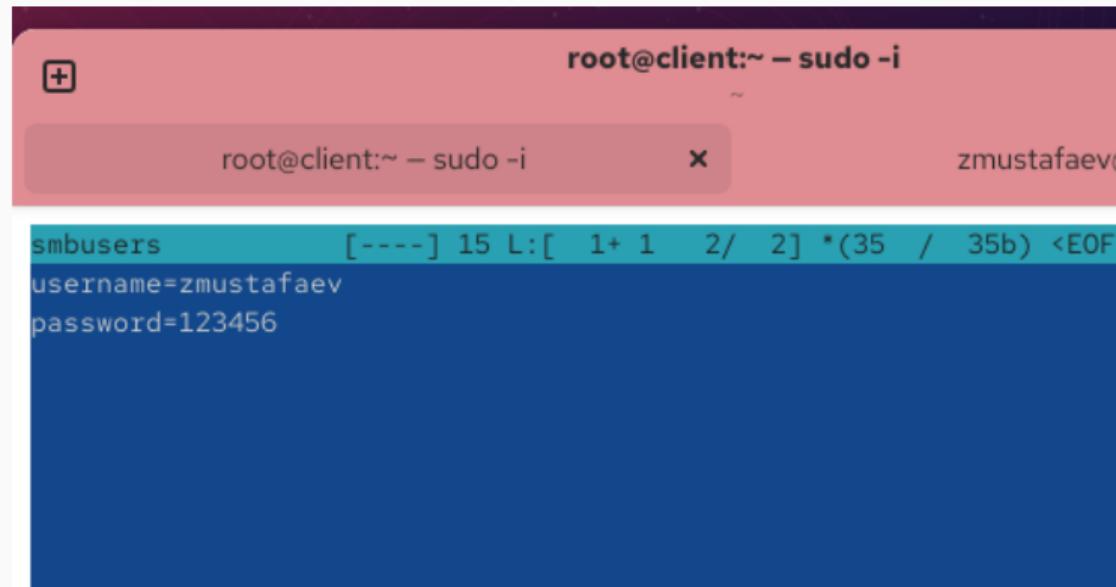
Проверка записи файлов

```
[zmustafaev@client.zmustafaev.net ~]$ newgrp sambagroup
[zmustafaev@client.zmustafaev.net ~]$ 
[zmustafaev@client.zmustafaev.net ~]$ cd /mnt/samba/
[zmustafaev@client.zmustafaev.net samba]$ ls
zmustafaev@server.txt
[zmustafaev@client.zmustafaev.net samba]$ touch zmustafaev@client.txt
[zmustafaev@client.zmustafaev.net samba]$ ls -l
total 0
-rwxr-xr-x. 1 zmustafaev sambagroup 0 Dec  1 10:01 zmustafaev@client.txt
-rwxr-xr-x. 1 zmustafaev sambagroup 0 Dec  1 09:53 zmustafaev@server.txt
[zmustafaev@client.zmustafaev.net samba]$ █
```

Рис. 11: Создание файла на клиенте

Автоматическое монтирование

Файл учётных данных



The screenshot shows a terminal window with a pink header bar. The title bar contains the text "root@client:~ – sudo -i". Below the title bar, there is a red status bar with the text "root@client:~ – sudo -i" on the left and "zmustafaev@" on the right. The main terminal area displays the following text:

```
smbusers      [----] 15 L:[ 1+ 1  2/  2] *(35   /  35b) <EOF>
username=zmustafaev
password=123456
```

Рис. 12: Файл cred

Запись в fstab

```
fstab      [---]  0 L:[ 1+16 17/ 23] *(796 /1128b) 0115 0x073  [*][X]

#
# /etc/fstab
# Created by anaconda on Wed Sep  3 08:53:23 2025
#
# 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=908334c5-81ab-40aa-ad89-1bd296275208 /          xfs    defaults
UUID=964b6a41-d718-411a-a362-f90f740c04d8 /boot       xfs    defaults
UUID=2000-E25B        /boot/efi           vfat   umask=0077,shortname=winnt 0 2
UUID=7e0ea0d4-0dbc-4e9b-bcd8-a0b4c565de96 /home       xfs    defaults
UUID=3c01d968-53fe-4cb3-8a7c-cc0f286d9e58 none       swap    defaults
server.zmustafaev.net:/srv/nfs /mnt/nfs nfs _netdev 0 0
//server/sambashare /mnt/samba cifs user,rw,uid=zmustafaev,gid=sambagroup,credentials=
#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
```

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

Проверка монтирования

```
[root@client.zmustafaev.net ~]#  
[root@client.zmustafaev.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.zmustafaev.net ~]#  
[root@client.zmustafaev.net ~]# mount | grep mnt  
server.zmustafaev.net:/srv/nfs on /mnt/nfs type nfs4 (rw,relatime,vers=4.2,rsize=26214  
4,bsize=262144,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=192.16  
8.1.30,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=strict,upcall_target=app,username=zmustafaev,uid=1001,forceuid,gid=1010,forceg  
id,addr=192.168.1.1,file_mode=0755,dir_mode=0755,soft,nounix,serverino,mapposix,repars  
e=nfs,rsize=4194304,bsize=4194304,retrans=1,echo_interval=60,actimeo=1,c  
losetimeo=1,user,_netdev)  
[root@client.zmustafaev.net ~]#
```

Рис. 14: mount -a

Выводы по проделанной работе

Вывод

- Настроены сервер и клиент Samba
- Реализованы права доступа, SELinux-контексты, SMB-пользователи
- Монтирование выполнено вручную и автоматически через fstab
- Созданы скрипты автоматизации для Vagrant
- Работа демонстрирует принципы управления доступом и безопасностью SMB-ресурсов в Linux