

Лабораторная работа №14

Тема «Настройка файловых служб Samba»
по дисциплине «Администрирование сетевых подсистем»

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Цель работы:

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

Задание

1. Установить и настроить сервер Samba.
2. Настроить на клиенте доступ к разделяемым ресурсам.
3. Написать скрипты для Vagrant, фиксирующие действия по установке и настройке сервера Samba для доступа к разделяемым ресурсам во внутреннем окружении виртуальных машин server и client. Соответствующим образом необходимо внести изменения в Vagrantfile.

Выполнение работы

Настройка сервера Samba

```
Complete!  
[root@server.mrshcherbak.net etc]# groupadd -g 1010 sambagroup  
[root@server.mrshcherbak.net etc]# usermod -a -G sambagroup mrshcherbak  
[root@server.mrshcherbak.net etc]# mkdir -p /srv/smbashare
```

```
root@server:/etc  
[root@server.mrshcherbak.net etc]# dnf -y install samba samba-client cifs-utils  
Rocky Linux 9 - BaseOS  
4.4 kB/s | 4.1 kB  
00:00  
Rocky Linux 9 - AppStream  
7.7 kB/s | 4.5 kB  
00:00  
Rocky Linux 9 - Extras  
4.2 kB/s | 2.9 kB
```

```
mc [root@server.mrshcherbak.net]:/etc/samba  
smb.conf [-M--] 8 L: [ 10+21 31/ 47] +(641 / 954b) 0112 0x070 [*] [X]  
[global]  
<----->workgroup = MRSHCHERBAK-NET  
<----->security = user  
  
<----->passdb backend = tdbsam  
  
<----->printing = cups  
<----->printcap name = cups  
<----->load printers = yes  
<----->cups options = raw  
  
[homes]  
<----->comment = Home Directories  
<----->valid users = %S, %D%w%S  
<----->browseable = No  
<----->read only = No  
<----->inherit acls = Yes  
  
[printers]  
<----->comment = All Printers  
<----->path = /var/tmp  
<----->printable = Yes  
<----->create mask = 0600  
<----->browseable = No  
  
[print$]  
<----->comment = Printer Drivers  
<----->path = /var/lib/samba/drivers  
<----->write list = @printadmin root  
<----->force group = @printadmin  
<----->create mask = 0664  
<----->directory mask = 0775  
<----->  
[smbashare]  
<----->comment = My Samba Share  
<----->path = /srv/smbashare  
<----->write list = @sambagroup  
  
1Help 2Save 3Mark 4Replac 5Copy 6Move 7Search 8Delete 9PullDn 10Quit
```

Содержимое файла /etc/samba/smb.conf

Проверка на наличие синтаксических ошибок в файле smb.conf

```
[root@server.mrshcherbak.net samba]# testparm
Load smb config files from /etc/samba/smb.conf
Loaded services file OK.
Weak crypto is allowed by GnuTLS (e.g. NTLM as a compatibility fallback)

Server role: ROLE_STANDALONE

Press enter to see a dump of your service definitions

# Global parameters
[global]
    printcap name = cups
    security = USER
    workgroup = MRSHCHERBAK-NET
    idmap config * : backend = tdb
    cups options = raw

[homes]
    browseable = No
    comment = Home Directories
    inherit acls = Yes
    read only = No
    valid users = %S %D%%S

[printers]
    browseable = No
    comment = All Printers
    create mask = 0600
    path = /var/tmp
    printable = Yes

[print$]
    comment = Printer Drivers
    create mask = 0664
    directory mask = 0775
    force group = @printadmin
    path = /var/lib/samba/drivers
    write list = @printadmin root

[sambashare]
    comment = My Samba Share
    path = /srv/sambashare
    write list = @sambagroup
```

Запуск Samba и просмотр его статуса

```
[root@server.mrshcherbak.net samba]# systemctl start smb
[root@server.mrshcherbak.net samba]# systemctl enable smb
Created symlink /etc/systemd/system/multi-user.target.wants/smb.service → /usr/lib/systemd/system/smb.service.
[root@server.mrshcherbak.net samba]# systemctl status smb
● smb.service - Samba SMB Daemon
   Loaded: loaded (/usr/lib/systemd/system/smb.service; enabled; preset: disabled)
   Active: active (running) since Mon 2023-12-18 21:23:32 MSK; 15s ago
     Docs: man:smbd(8)
           man:samba(7)
           man:smb.conf(5)
  Main PID: 8507 (smbd)
    Status: "smbd: ready to serve connections..."
     Tasks: 3 (limit: 4476)
    Memory: 13.1M
       CPU: 163ms
    CGroup: /system.slice/smb.service
            └─8507 /usr/sbin/smbd --foreground --no-process-group
              └─8509 /usr/sbin/smbd --foreground --no-process-group
                └─8510 /usr/sbin/smbd --foreground --no-process-group

Dec 18 21:23:32 server.mrshcherbak.net systemd[1]: Starting Samba SMB Daemon...
Dec 18 21:23:32 server.mrshcherbak.net smbd[8507]: [2023/12/18 21:23:32.472929, 0] ../../source3/smbd/server.c:1746(main)
Dec 18 21:23:32 server.mrshcherbak.net smbd[8507]: smbd version 4.18.6 started.
Dec 18 21:23:32 server.mrshcherbak.net smbd[8507]: Copyright Andrew Tridgell and the Samba Team 1992-2023
Dec 18 21:23:32 server.mrshcherbak.net systemd[1]: Started Samba SMB Daemon.
```

```
[root@server.mrshcherbak.net samba]# smbclient -L //server
Password for [MRSHCHERBAK-NET\root]:
Anonymous login successful

  Sharename      Type            Comment
  -----
  print$         Disk            Printer Drivers
  sambashare     Disk            My Samba Share
  IPC$           IPC             IPC Service (Samba 4.18.6)

SMB1 disabled -- no workgroup available
```

Содержимое файла
/usr/lib/firewalld/services/samba.xml

```
root@server:/etc/samba
<?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>
~
~
~
~
~
(END)
```

```
[root@server.mrshcherbak.net samba]# less /usr/lib/iptables/services/samba.xml
[root@server.mrshcherbak.net samba]# firewall-cmd --add-service=samba
success
[root@server.mrshcherbak.net samba]# firewall-cmd --add-service=samba --permanent
success
[root@server.mrshcherbak.net samba]# firewall-cmd --reload
success
[root@server.mrshcherbak.net samba]# chgrp sambagroup /srv/smbshare
[root@server.mrshcherbak.net samba]# chmod g=rwx /srv/smbshare
```

Настройка межсетевого экрана и прав доступа для каталога с разделяемым ресурсом

```
[root@server.mrshcherbak.net samba]# cd /srv
[root@server.mrshcherbak.net srv]# ls -Z
unconfined_u:object_r:nfs_t:s0 nfs unconfined_u:object_r:var_t:s0 smbshare
```

```
[root@server.mrshcherbak.net srv]# semanage fcontext -a -t samba_share_t "/srv/smbshare(/.*)?"
[root@server.mrshcherbak.net srv]# restorecon -vR /srv/smbshare
Relabeled /srv/smbshare from unconfined_u:object_r:var_t:s0 to unconfined_u:object_r:samba_share_t:s0
[root@server.mrshcherbak.net srv]# cd /srv
[root@server.mrshcherbak.net srv]# ls -Z
unconfined_u:object_r:nfs_t:s0 nfs unconfined_u:object_r:samba_share_t:s0 smbshare
[root@server.mrshcherbak.net srv]# setsebool samba_export_all_rw 1
[root@server.mrshcherbak.net srv]# setsebool samba_export_all_rw 1 -P
```

```
[root@server.mrshcherbak.net srv]# logout
[mrshcherbak@server.mrshcherbak.net ~]$ cd /srv/smbshare
[mrshcherbak@server.mrshcherbak.net smbshare]$ touch mrshcherbak@server.txt
touch: cannot touch 'mrshcherbak@server.txt': Permission denied
```

Отказано в доступе в создании файла на разделяемом ресурсе

```
[mrshcherbak@server.mrshcherbak.net ~]$ cd /srv/smbshare
[mrshcherbak@server.mrshcherbak.net smbshare]$ touch mrshcherbak@server.txt
[mrshcherbak@server.mrshcherbak.net smbshare]$ ls
mrshcherbak@server.txt
[mrshcherbak@server.mrshcherbak.net smbshare]$ id
uid=1001(mrshcherbak) gid=1001(mrshcherbak) groups=1001(mrshcherbak),10(wheel),986(vboxsf),1010(smbagroup) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
[mrshcherbak@server.mrshcherbak.net smbshare]$
```

Монтирование файловой системы Samba на клиенте

```
root@client:~
[mrshcherbak@client.mrshcherbak.net ~]$ sudo -i
[sudo] password for mrshcherbak:
[root@client.mrshcherbak.net ~]# dnf -y install samba-client cifs-utils
Rocky Linux 9 - Extras
1.2 kB/s | 2.9 kB
00:02
Rocky Linux 9 - Extras
8.7 kB/s | 14 kB
00:01
Last metadata expiration check: 0:00:01 ago on Mon 18 Dec 2023 08:06:12 PM UTC
.
```

Содержимое файла /usr/lib/firewalld/services/samba-client.xml

```
root@client:/vagrant/provision/client
<?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>
~
~
~
~
(END)
```

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



```
mc [root@client.mrshcherbak.net]:/etc/samba
smb.conf [BM--] 19 L: [ 1+10 11/ 42] *(330 / 863b) 0032 0x020 [*][X]
# See smb.conf.example for a more detailed config file or
# read the smb.conf manpage.
# Run 'testparm' to verify the config is correct after
# you modified it.
#
# Note:
# SMB1 is disabled by default. This means clients without support for SMB2 or
# SMB3 are no longer able to connect to smbd (by default).
#
[global]
<----->workgroup = MRSHCHERBAK-NET
<----->security = user
#
<----->passdb backend = tdbsam
#
<----->printing = cups
<----->printcap name = cups
<----->load printers = yes
<----->cups options = raw
#
[homes]
<----->comment = Home Directories
<----->valid users = %S, %D%\%S
<----->browseable = No
<----->read only = No
<----->inherit acls = Yes
#
[printers]
<----->comment = All Printers
1Help 2Save 3Mark 4Replac 5Copy 6Move 7Search 8Delete 9PullDn 10Quit
```

Содержимое файла /etc/samba/smb.conf

```
[root@client.mrshcherbak.net samba]# smbclient -L //server
Password for [MRSHCHERBAK-NET\root]:
Anonymous login successful

      Sharename      Type      Comment
      -----      -
      print$         Disk      Printer Drivers
      sambashare     Disk      My Samba Share
      IPC$           IPC       IPC Service (Samba 4.18.6)
SMB1 disabled -- no workgroup available
[root@client.mrshcherbak.net samba]# logout
[mrshcherbak@client.mrshcherbak.net ~]$ smbclient -L //server -U mrshcherbak
Password for [MRSHCHERBAK-NET\mrshcherbak]:

      Sharename      Type      Comment
      -----      -
      print$         Disk      Printer Drivers
      sambashare     Disk      My Samba Share
      IPC$           IPC       IPC Service (Samba 4.18.6)
      mrshcherbak    Disk      Home Directories
```

Создала точку монтирования и получила доступ к общему ресурсу

```
[root@client.mrshcherbak.net ~]# mkdir /mnt/samba
[root@client.mrshcherbak.net ~]# mount -o username=mrshcherbak //server/smbashare /mnt/samba
Password for mrshcherbak@//server/smbashare:
```

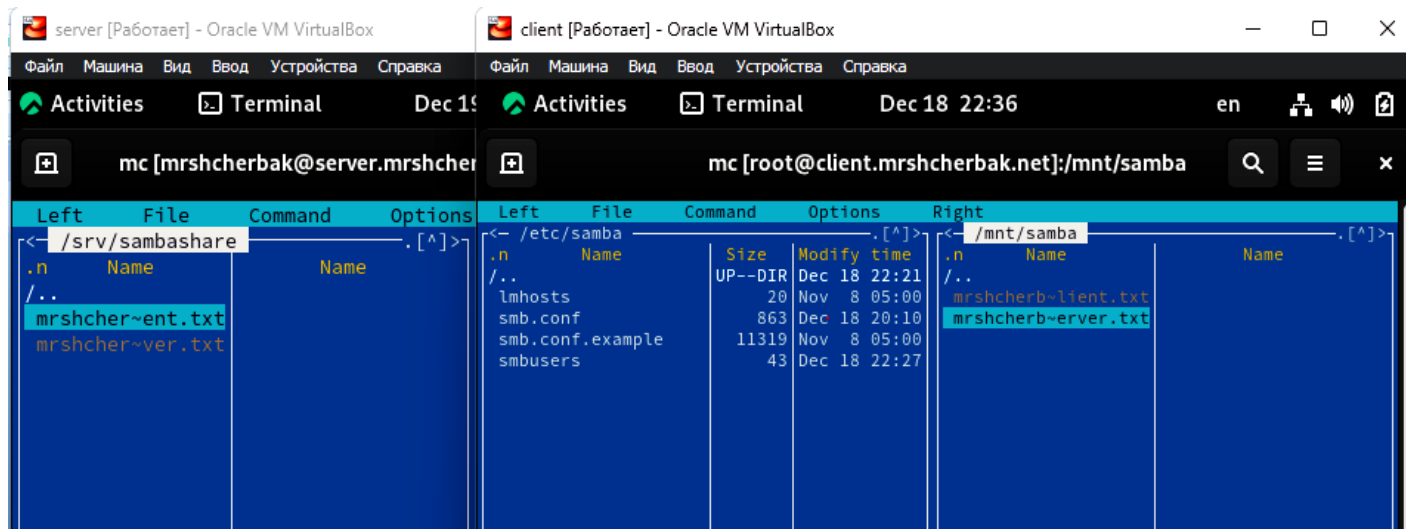
Убедилась, что mrshcherbak может записывать файлы на разделяемом ресурсе

```
[mrshcherbak@client.mrshcherbak.net ~]$ cd /mnt/samba
[mrshcherbak@client.mrshcherbak.net samba]$ touch mrshcherbak@client.txt
[mrshcherbak@client.mrshcherbak.net samba]$ ls
mrshcherbak@client.txt
[mrshcherbak@client.mrshcherbak.net samba]$
```

Создание файла smbusers и просмотр его содержимого

```
[root@client.mrshcherbak.net ~]# touch /etc/samba/smbusers
[root@client.mrshcherbak.net ~]# chmod 600 /etc/samba/smbusers
[root@client.mrshcherbak.net ~]# cat /etc/samba/smbusers
username=mrshcherbak
password=Rastamana035
[root@client.mrshcherbak.net ~]#
```

```
mc [root@client.mrshcherbak.net]:/etc
fstab [B---] 127 L: [ 1+14 15/ 21] *(588 / 748b) 0010 0x00A
#
# /etc/fstab
# Created by anaconda on Tue Oct 10 14:23:22 2023
#
# 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=84c25f24-8084-4b27-b4f2-24350066c776 / xfs defaults 0 0
/swapfile none swap defaults 0 0
//server/smbashare /mnt/samba cifs vers=3.0,user,rw,uid=mrshcherbak,gid=sambagroup,credentials=/etc/samba/smbusers,_netdev 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
```



Внесение изменений в настройки внутреннего окружения виртуальных машин

```
[root@server.mrshcherbak.net ~]# cd /vagrant/provision/server
[root@server.mrshcherbak.net server]# mkdir -p /vagrant/provision/server/smb/etc/samba
[root@server.mrshcherbak.net server]# cp -R /etc/samba/smb.conf /vagrant/provision/server/smb/etc/samba/
[root@server.mrshcherbak.net server]# cd /vagrant/provision/server
[root@server.mrshcherbak.net server]# touch smb.sh
[root@server.mrshcherbak.net server]# chmod +x smb.sh
[root@server.mrshcherbak.net server]# mc
```

```
[root@client.mrshcherbak.net etc]# cd /vagrant/provision/client
[root@client.mrshcherbak.net client]# mkdir -p /vagrant/provision/client/smb/etc/samba
[root@client.mrshcherbak.net client]# cp -R /etc/samba/smb.conf /vagrant/provision/client/smb/etc/samba/
[root@client.mrshcherbak.net client]# cp -R /etc/samba/smbusers /vagrant/provision/client/smb/etc/samba/
[root@client.mrshcherbak.net client]# cd /vagrant/provision/client
[root@client.mrshcherbak.net client]# touch smb.sh
[root@client.mrshcherbak.net client]# chmod +x smb.sh
[root@client.mrshcherbak.net client]# mc
```

```
mc [root@server.mrshcherbak.net]:/vagrant/provision/...
smb.sh [-M--] 0 L: [ 1+ 2 3/ 43] *(13 / 910b) 0076 0x04C [X]
#!/bin/bash

LOGIN=mrshcherbak
PASS=Rastamana035

echo "Provisioning script $0"

echo "Install needed packages"
dnf -y install samba samba-client cifs-utils

echo "Copy configuration files"
cp -R /vagrant/provision/server/smb/etc/* /etc
chown -R root:root /etc/samba/*
restorecon -vR /etc

echo "Configure firewall"
firewall-cmd --add-service samba --permanent
firewall-cmd --reload

echo "Users and groups"
groupadd -g 1010 sambagroup
usermod -aG sambagroup $LOGIN
echo -ne "$PASS\n$PASS\n" | smbpasswd -L -a -s $LOGIN

echo "Make share dir"
mkdir -p /srv/sambashare
chgrp sambagroup /srv/sambashare
chmod g=rwx /srv/sambashare

echo "Tuning SELinux"
semanage fcontext -a -t samba_share_t "/srv/sambashare(/.*)?"

setsebool samba_export_all_rw 1
setsebool samba_export_all_rw 1 -P

restorecon -vR /srv/sambashare

echo "Start smb service"
systemctl enable smb
systemctl start smb

systemctl restart firewalld
```

Содержимое файла smb.sh на сервере

```
mc [root@client.mrshcherbak.net]:/vagrant/provision/client
smb.sh [----] 0 L:[ 1+21 22/ 34] *(412 / 722b) 0103 0x067
#!/bin/bash

LOGIN=mrshcherbak

echo "Provisioning script $0"
mkdir -p /mnt/samba

echo "Install needed packages"
dnf -y install samba-client cifs-utils

echo "Copy configuration files"
cp -R /vagrant/provision/client/smb/etc/* /etc
chown -R root:root /etc/samba/*

restorecon -vR /etc

echo "Configure firewall"
firewall-cmd --add-service samba-client --permanent
firewall-cmd --reload

echo "Users and groups"
groupadd -g 1010 sambagroup
usermod -aG sambagroup $LOGIN

echo "Mounting dirs"
mkdir -p /srv/smbashare

echo "//server/smbashare /mnt/samba cifs mrshcherbak,rw,credentials=/etc/samba/smbusers,uid=mrshcherbak,gid=sambagroup,_netdev 0 0" >> /etc/fstab

restorecon -vR /etc

umount /mnt/samba
mount /mnt/samba
```

Содержимое файла smb.sh на клиенте

```
*C:\Work\mrshcherbak\vagrant\Vagrantfile - Notepad++
Файл Правка Поиск Вид Кодировки Синтаксисы Опции Инструменты Макросы Запу
Vagrantfile x
67
68     server.vm.provision "server mail",
69         type: "shell",
70         preserve_order: true,
71         path: "provision/server/mail.sh"
72
73     server.vm.provision "server ssh",
74         type: "shell",
75         preserve_order: true,
76         path: "provision/server/ssh.sh"
77
78     server.vm.provision "server ntp",
79         type: "shell",
80         preserve_order: true,
81         path: "provision/server/ntp.sh"
82
83     server.vm.provision "server nfs",
84         type: "shell",
85         preserve_order: true,
86         path: "provision/server/nfs.sh"
87
88     server.vm.provision "SMB server",
89         type: "shell",
90         preserve_order: true,
91         path: "provision/server/smb.sh"
92
93
94     server.vm.provider :virtualbox do |v|
95         v.linked_clone = true
```

```
*C:\Work\mrshcherbak\vagrant\Vagrantfile - Notepad++
Файл Правка Поиск Вид Кодировки Синтаксисы Опции Инструменты Макросы Запуск
Vagrantfile x
133
134         preserve_order: true,
135         run: "always",
136         path: "provision/client/01-routing.sh"
137
138     client.vm.provision "client mail",
139         type: "shell",
140         preserve_order: true,
141         path: "provision/client/mail.sh"
142
143     client.vm.provision "client ntp",
144         type: "shell",
145         preserve_order: true,
146         path: "provision/client/ntp.sh"
147
148     client.vm.provision "client nfs",
149         type: "shell",
150         preserve_order: true,
151         path: "provision/client/nfs.sh"
152
153     client.vm.provision "SMB client",
154         type: "shell",
155         preserve_order: true,
156         path: "provision/client/smb.sh"
157
158     client.vm.provider :virtualbox do |v|
159         v.linked_clone = true
160         # Customize the amount of memory on the VM
161         v.memory = 1024
```

Вывод: таким образом, в ходе выполнения л/р №14 я приобрела навыки настройки доступа групп пользователей к общим ресурсам по протоколу SMB.