

# Лабораторная работа №5

## Управление системными службами

---

Акунаева Антонина Эрдниевна

2025-10-04

Российский университет дружбы народов, Москва, Россия

## Информация

---

# Докладчик

---

- Акунаева Антонина Эрдниевна
- студент ФФМиЕН, НПИбд-01-24
- Российский университет дружбы народов
- 1032240492@pfur.ru
- <https://github.com/Akuxee>



## Цели и задачи

---

- Получить навыки управления системными службами операционной системы посредством systemd.
1. Выполните основные операции по запуску (останову), определению статуса, добавлению (удалению) в автозапуск и пр. службы Very Secure FTP (раздел 5.4.1).
  2. Продемонстрируйте навыки по разрешению конфликтов юнитов для служб firewalld и iptables (раздел 5.4.2).
  3. Продемонстрируйте навыки работы с изолированными целями (разделы 5.4.3, 5.4.4).

## Материалы и методы

---

- Linux (дистрибутив Rocky 9.6)
- Linux Fedora Sway (Markdown)
- Oracle VirtualBox

## Выполнение лабораторной работы

---

## Проверка статуса и установка Very Secure FTP

```
[aeakunaeva@aeakunaeva ~]$ su -
Password:
[root@aeakunaeva ~]# systemctl status vsftpd
Unit vsftpd.service could not be found.
[root@aeakunaeva ~]# dnf -y install vsftpd
Last metadata expiration check: 0:45:12 ago on Sat 27 Sep 2025 08:18:21 PM MSK.
Dependencies resolved.
=====
 Package           Architecture      Version       Repository      Size
 =====
 Installing:
  vsftpd          x86_64          3.0.5-6.el9    appstream     157 k

Transaction Summary
=====
Install 1 Package

Total download size: 157 k
Installed size: 347 k
Downloading Packages:
```

## Запуск Very Secure FTP

```
Installing      : vsftpd-3.0.5-6.el9.x86_64                         1/1
Running scriptlet: vsftpd-3.0.5-6.el9.x86_64                         1/1
Verifying       : vsftpd-3.0.5-6.el9.x86_64                         1/1

Installed:
  vsftpd-3.0.5-6.el9.x86_64

Complete!
[root@aekunaeva ~]# systemctl start vsftpd
[root@aekunaeva ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; disabled; preset: >
   Active: active (running) since Sat 2025-10-04 21:50:42 MSK; 8s ago
     Process: 7098 ExecStart=/usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf (code=exit>
    Main PID: 7099 (vsftpd)
      Tasks: 1 (limit: 24613)
     Memory: 744.0K
        CPU: 5ms
      CGroup: /system.slice/vsftpd.service
              └─7099 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Oct 04 21:50:42 aekunaeva.localdomain systemd[1]: Starting Vsftpd ftp daemon...
Oct 04 21:50:42 aekunaeva.localdomain systemd[1]: Started Vsftpd ftp daemon.
lines 1-13/13 (END)
```

## Подключение автозапуск Very Secure FTP

```
[root@aekunaeva ~]# systemctl enable vsftpd
Created symlink /etc/systemd/system/multi-user.target.wants/vsftpd.service → /us
r/lib/systemd/system/vsftpd.service.
[root@aekunaeva ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; enabled; preset: d
   Active: active (running) since Sat 2025-10-04 21:50:42 MSK; 1min 17s ago
     Main PID: 7099 (vsftpd)
        Tasks: 1 (limit: 24613)
       Memory: 744.0K
          CPU: 5ms
        CGroup: /system.slice/vsftpd.service
                   └─7099 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Oct 04 21:50:42 aekunaeva.localdomain systemd[1]: Starting Vsftpd ftp daemon...
Oct 04 21:50:42 aekunaeva.localdomain systemd[1]: Started Vsftpd ftp daemon.
lines 1-12/12 (END)
```

## Отключение автозапуск Very Secure FTP

```
[root@aekunaeva ~]# systemctl disable vsftpd
Removed "/etc/systemd/system/multi-user.target.wants/vsftpd.service".
[root@aekunaeva ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; disabled; preset: disabled)
   Active: active (running) since Sat 2025-10-04 21:50:42 MSK; 2min 9s ago
     Main PID: 7099 (vsftpd)
        Tasks: 1 (limit: 24613)
       Memory: 744.0K
          CPU: 5ms
        CGroup: /system.slice/vsftpd.service
                   └─7099 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Oct 04 21:50:42 aekunaeva.localdomain systemd[1]: Starting Vsftpd ftp daemon...
Oct 04 21:50:42 aekunaeva.localdomain systemd[1]: Started Vsftpd ftp daemon.
lines 1-12/12 (END)
```

## Список символических ссылок запуска сервисов

```
[root@aekunaeva ~]# ls /etc/systemd/system/multi-user.target.wants
atd.service          firewalld.service      ModemManager.service    sssd.service
auditd.service       irqbalance.service     NetworkManager.service tuned.service
avahi-daemon.service kdump.service        remote-fs.target      vmtoolsd.service
crond.service        libstoragemgmt.service rsyslog.service
cups.path            mcelog.service        smartd.service
cups.service         mdmonitor.service     sshd.service

[root@aekunaeva ~]# systemctl enable vsftpd
Created symlink /etc/systemd/system/multi-user.target.wants/vsftpd.service → /usr/lib/
systemd/system/vsftpd.service.

[root@aekunaeva ~]# ls /etc/systemd/system/multi-user.target.wants
atd.service          firewalld.service      ModemManager.service    sssd.service
auditd.service       irqbalance.service     NetworkManager.service tuned.service
avahi-daemon.service kdump.service        remote-fs.target      vmtoolsd.service
crond.service        libstoragemgmt.service rsyslog.service
cups.path            mcelog.service        smartd.service
cups.service         mdmonitor.service     sshd.service
                                         I

[root@aekunaeva ~]#
```

## Статус VSFTPD: запущенный файл юнита

```
[root@aekunaeva ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; enabled; preset: disabled)
   Active: active (running) since Sat 2025-10-04 21:50:42 MSK; 3min 45s ago
     Main PID: 7099 (vsftpd)
        Tasks: 1 (limit: 24613)
       Memory: 744.0K
          CPU: 5ms
        CGroup: /system.slice/vsftpd.service
                  └─7099 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Oct 04 21:50:42 aekunaeva.localdomain systemd[1]: Starting Vsftpd ftp daemon...
Oct 04 21:50:42 aekunaeva.localdomain systemd[1]: Started Vsftpd ftp daemon.
[root@aekunaeva ~]#
```

## Список зависимостей юнита VSFTPD

```
[root@aekunaeva ~]# systemctl list-dependencies vsftpd
vsftpd.service
• └─system.slice
•   ├─sysinit.target
•   ├─dev-hugepages.mount
•   ├─dev-mqueue.mount
•   ├─dracut-shutdown.service
o   ├─iscsi-onboot.service
o   ├─iscsi-starter.service
•   ├─kmod-static-nodes.service
o   ├─ldconfig.service
•   ├─lvm2-lvmpolld.socket
•   ├─lvm2-monitor.service
o   ├─multipathd.service
•   ├─nis-domainname.service
•   └─plymouth-read-write.service
```

## Список юнитов, зависимых от юнита VSFTPD

```
• └── dracut-shutdown.service
o └── iscsi-onboot.service
o └── iscsi-starter.service
• └── kmod-static-nodes.service
o └── ldconfig.service
• └── lvm2-lvmpolld.socket
• └── lvm2-monitor.service
o └── multipathd.service
• └── nis-domainname.service
• └── plymouth-read-write.service
• └── plymouth-start.service
• └── proc-sys-fs-binfmt_misc.automount
o └── selinux-autorelabel-mark.service
• └── sys-fs-fuse-connections.mount
• └── sys-kernel-config.mount
• └── sys-kernel-debug.mount
• └── sys-kernel-tracing.mount
o └── systemd-ask-password-console.path
```

```
[root@aekunaeva ~]# systemctl list-dependencies vsftpd --reverse
```

```
vsftpd.service
• └── multi-user.target
  • └── graphical.target
```

```
[root@aekunaeva ~]#
```

# Установка iptables

```
[root@aekunaeva ~]# dnf -y install iptables\*
Last metadata expiration check: 0:06:00 ago on Sat 04 Oct 2025 09:50:08 PM MSK.
Package iptables-libc-1.8.10-11.el9_5.x86_64 is already installed.
Package iptables-nft-1.8.10-11.el9_5.x86_64 is already installed.
Dependencies resolved.
=====
 Package           Architecture Version      Repository    Size
=====
Installing:
iptables-devel      x86_64        1.8.10-11.el9_5   appstream     16 k
iptables-nft-services noarch       1.8.10-11.el9_5   appstream     19 k
iptables-utils      x86_64        1.8.10-11.el9_5   baseos       41 k

Transaction Summary
=====
Install 3 Packages

Total download size: 76 k
Installed size: 142 k
Downloading Packages:
```

## Включение служб firewalld и iptables

```
[root@aekunaeva ~]# systemctl status firewalld
● firewalld.service - firewalld - dynamic firewall daemon
  Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled; preset: enabled)
  Active: active (running) since Sat 2025-09-27 20:06:01 MSK; 1 week 0 days ago
    Docs: man:firewalld(1)
   Main PID: 852 (firewalld)
     Tasks: 2 (limit: 24613)
    Memory: 37.9M
      CPU: 750ms
     CGroup: /system.slice/firewalld.service
             └─852 /usr/bin/python3 -s /usr/sbin/firewalld --nofork --nopid

Sep 27 20:05:53 aekunaeva.localdomain systemd[1]: Starting firewalld - dynamic firewall...
Sep 27 20:06:01 aekunaeva.localdomain systemd[1]: Started firewalld - dynamic firewall...

[root@aekunaeva ~]# systemctl status iptables
● iptables.service - IPv4 firewall with iptables
  Loaded: loaded (/usr/lib/systemd/system/iptables.service; disabled; preset: disabled)
  Active: inactive (dead)

[root@aekunaeva ~]# systemctl start firewalld
[root@aekunaeva ~]# systemctl start iptables
[root@aekunaeva ~]#
```

## Статус firewalld и iptables

```
[root@aakunaeva ~]# systemctl status firewalld
● firewalld.service - firewalld - dynamic firewall daemon
  Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled; preset: enabled)
  Active: inactive (dead) since Sat 2025-10-04 21:57:01 MSK; 25s ago
    Duration: 1w 1h 50min 59.406s
    Docs: man:firewalld(1)
   Process: 852 ExecStart=/usr/sbin/firewalld --nofork --nrepid $FIREWALLD_ARGS (code=exited, status=0/SUCCESS)
 Main PID: 852 (code=exited, status=0/SUCCESS)
    CPU: 802ms

Sep 27 20:05:53 aakunaeva.localdomain systemd[1]: Starting firewalld - dynamic firewall...
Sep 27 20:06:01 aakunaeva.localdomain systemd[1]: Started firewalld - dynamic firewall.
Oct 04 21:57:01 aakunaeva.localdomain systemd[1]: Stopping firewalld - dynamic firewall...
Oct 04 21:57:01 aakunaeva.localdomain systemd[1]: firewalld.service: Deactivated successfully
Oct 04 21:57:01 aakunaeva.localdomain systemd[1]: Stopped firewalld - dynamic firewall.

[root@aakunaeva ~]# systemctl status iptables
● iptables.service - IPv4 firewall with iptables
  Loaded: loaded (/usr/lib/systemd/system/iptables.service; disabled; preset: disabled)
  Active: active (exited) since Sat 2025-10-04 21:57:01 MSK; 47s ago
    Process: 7552 ExecStart=/usr/libexec/iptables/iptables.init start (code=exited, st...
 Main PID: 7552 (code=exited, status=0/SUCCESS)
```

## Настройки конфликтов firewalld и iptables

```
[root@aekunaeva ~]# cat /usr/lib/systemd/system/firewalld.service
[Unit]
Description=firewalld - dynamic firewall daemon
Before=network-pre.target
Wants=network-pre.target
After=dbus.service
After=polkit.service
Conflicts=iptables.service ip6tables.service ebtables.service ipset.service
Documentation=man:firewalld(1)

[Service]
EnvironmentFile=/etc/sysconfig/firewalld
ExecStart=/usr/sbin/firewalld --nofork --nopid $FIREWALLD_ARGS
ExecReload=/bin/kill -HUP $MAINPID
# suppress to log debug and error output also to /var/log/messages
StandardOutput=null
StandardError=null
Type=dbus
BusName=org.fedoraproject.FirewallD1
KillMode=mixed

[Install]
```

## Блокирование службы iptables

```
WantedBy=multi-user.target
Alias=dbus-org.fedoraproject.FirewallD1.service
[root@aeakunaeva ~]# systemctl stop iptables
[root@aeakunaeva ~]# systemctl start firewalld
[root@aeakunaeva ~]# systemctl mask iptables
Created symlink /etc/systemd/system/iptables.service → /dev/null.
[root@aeakunaeva ~]# systemctl start iptables
Failed to start iptables.service: Unit iptables.service is masked.
[root@aeakunaeva ~]# systemctl enable iptables
Failed to enable unit: Unit file /etc/systemd/system/iptables.service is masked.
[root@aeakunaeva ~]# █
```

## Список доступных для блокировки целей

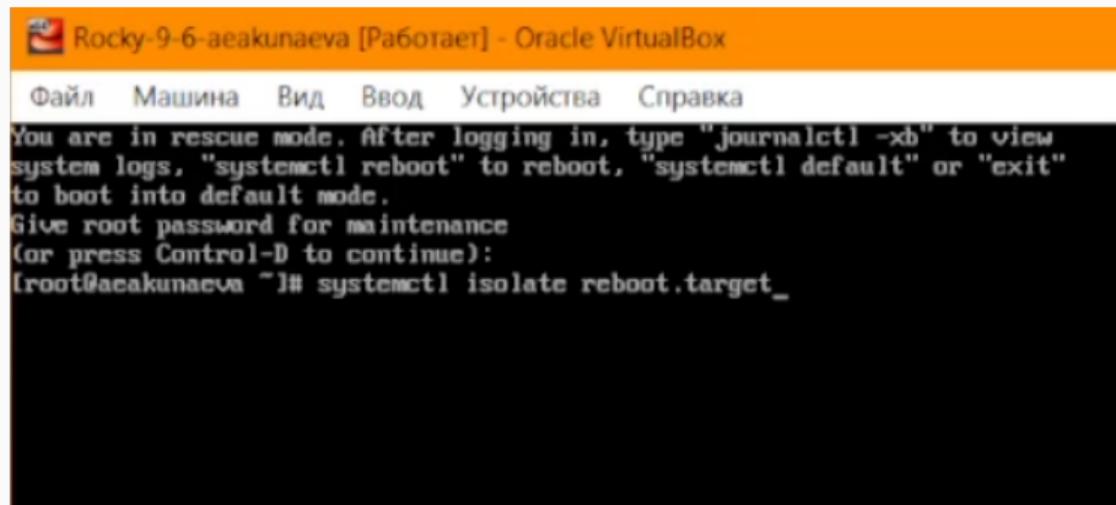
```
[root@aekunaeva ~]# cd /usr/lib/systemd/system
[root@aekunaeva system]# grep Isolate *.target
ctrl-alt-del.target:AllowIsolate=yes
default.target:AllowIsolate=yes
emergency.target:AllowIsolate=yes
exit.target:AllowIsolate=yes
graphical.target:AllowIsolate=yes
halt.target:AllowIsolate=yes
initrd-switch-root.target:AllowIsolate=yes
initrd.target:AllowIsolate=yes
kexec.target:AllowIsolate=yes
multi-user.target:AllowIsolate=yes
poweroff.target:AllowIsolate=yes
reboot.target:AllowIsolate=yes
rescue.target:AllowIsolate=yes
runlevel0.target:AllowIsolate=yes
runlevel1.target:AllowIsolate=yes
runlevel2.target:AllowIsolate=yes
runlevel3.target:AllowIsolate=yes
runlevel4.target:AllowIsolate=yes
runlevel5.target:AllowIsolate=yes
runlevel6.target:AllowIsolate=yes
system-update.target:AllowIsolate=yes
```

## Перевод системы в режим восстановления

---

```
[root@aekunaeva system]# systemctl isolate rescue.target
```

## Перезапуск системы



Rocky-9-6-aeakunaeva [Работает] - Oracle VirtualBox

Файл Машина Вид Ввод Устройства Справка

```
You are in rescue mode. After logging in, type "journalctl -xb" to view
system logs, "systemctl reboot" to reboot, "systemctl default" or "exit"
to boot into default mode.

Give root password for maintenance
(or press Control-D to continue):
[root@aeakunaeva ~]# systemctl isolate reboot.target
```

## Установка текстового режима системы

---

```
[aeakunaeva@aeakunaeva ~]$ systemctl get-default  
graphical.target  
[aeakunaeva@aeakunaeva ~]$ systemctl set-default multi-user.target  
Removed "/etc/systemd/system/default.target".  
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/mul  
ti-user.target.  
[aeakunaeva@aeakunaeva ~]$ reboot
```

# Установка графического режима системы

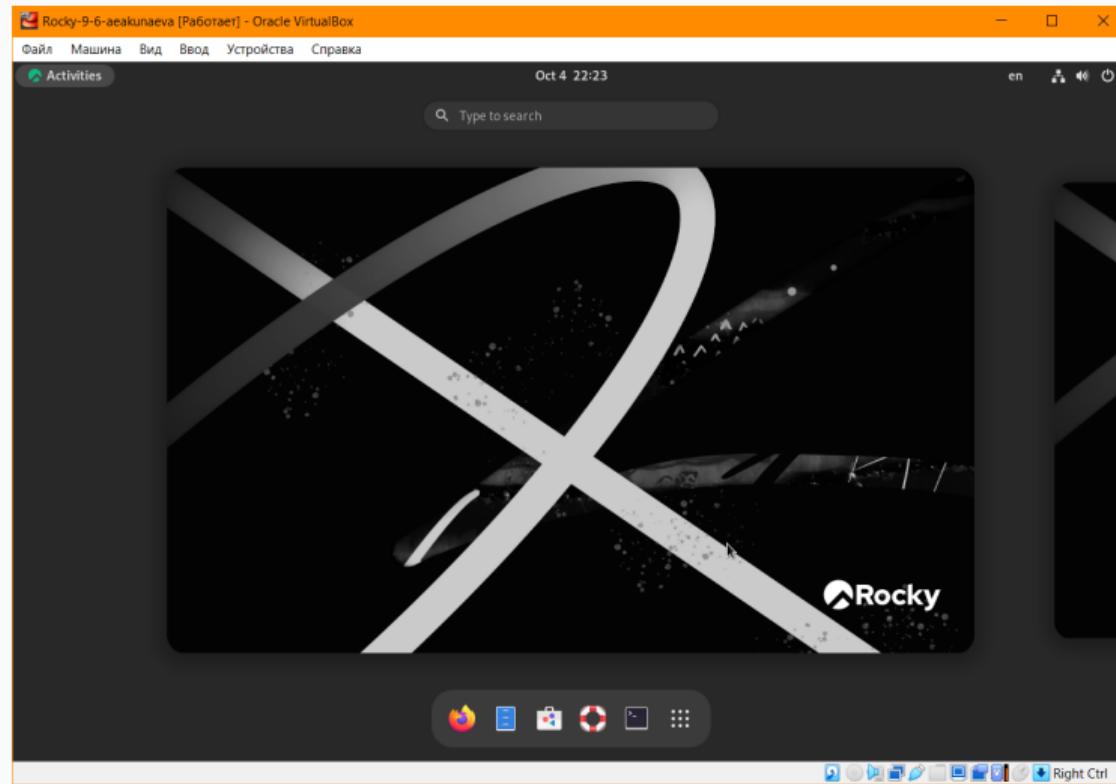
```
Rocky Linux 9.6 (Blue Onyx)
Kernel 5.14.0-570.17.1.el9_6.x86_64 on x86_64

Activate the web console with: systemctl enable --now cockpit.socket

aeakunaeva login: 1
Password:
Login incorrect

aeakunaeva login: root
Password:
Last login: Sat Oct  4 22:06:47 on pts/0
[root@aeakunaeva ~]# systemctl set-default graphical.target
Removed "/etc/systemd/system/default.target".
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/graphical.target.
[root@aeakunaeva ~]# reboot
```

# Графический режим системы



## Выводы

---

## Выводы

---

Я получила навыки управления системными службами операционной системы посредством `systemd`.