

Отчет по лабораторной работе №5

Простейший вариант

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Содержание

1	Цель работы	5
2	Конфликты юнитов	9

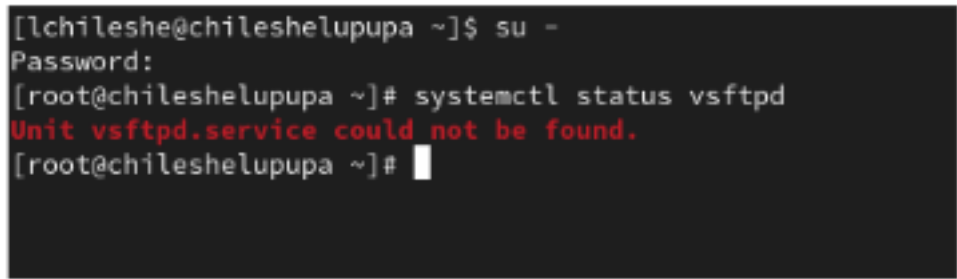
Список иллюстраций

Список таблиц

1 Цель работы

Получить навыки управления системными службами операционной системы посредством systemd.

1. Получите полномочия администратора su –
2. Проверьте статус службы Very Secure FTP: `systemctl status vsftpd`



```
[lchileshe@chileshelupupa ~]$ su -  
Password:  
[root@chileshelupupa ~]# systemctl status vsftpd  
Unit vsftpd.service could not be found.  
[root@chileshelupupa ~]#
```

3. Установите службу Very Secure FTP: `dnf -y install vsftpd`

```
[root@chilshelupupa ~]# dnf -y install vsftpd
```

Rocky Linux 9 - BaseOS	820 B/s	4.1 kB	00:05
Rocky Linux 9 - BaseOS	227 kB/s	2.3 MB	00:10
Rocky Linux 9 - AppStream	5.3 kB/s	4.5 kB	00:00
Rocky Linux 9 - AppStream	395 kB/s	8.0 MB	00:20
Rocky Linux 9 - Extras	1.0 kB/s	2.9 kB	00:02

Dependencies resolved.

Package	Architecture	Version	Repository	Size
Installing: vsftpd	x86_64	3.0.5-5.el9	appstream	157 k

Transaction Summary

Install 1 Package

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

vsftpd-3.0.5-5.el9.x86_64.rpm	349 kB/s	157 kB	00:00
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Total

	31 kB/s	157 kB	00:05
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Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction

Preparing	:	1/1
Installing	: vsftpd-3.0.5-5.el9.x86_64	1/1
Running scriptlet:	vsftpd-3.0.5-5.el9.x86_64	1/1
Verifying	: vsftpd-3.0.5-5.el9.x86_64	1/1

4. Запустите службу Very Secure FTP: `systemctl start vsftpd`

```
[root@chilshelupupa ~]# systemctl start vsftpd
[root@chilshelupupa ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; disabled; preset: disabled)
   Active: active (running) since Sat 2024-10-05 18:08:44 MSK; 21s ago
     Process: 3454 ExecStart=/usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf (code=exited, status=0/SUCCESS)
    Main PID: 3455 (vsftpd)
       Tasks: 1 (limit: 24674)
      Memory: 712.0K
         CPU: 6ms
    CGroup: /system.slice/vsftpd.service
            └─3455 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Oct 05 18:08:44 chilshelupupa.localdomain systemd[1]: Starting Vsftpd ftp daemon...
Oct 05 18:08:44 chilshelupupa.localdomain systemd[1]: Started Vsftpd ftp daemon.
[root@chilshelupupa ~]#
```

5. Проверьте статус службы Very Secure FTP: `systemctl status vsftpd`

```
[root@chilshelupupa ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; enabled; preset: disabled)
   Active: active (running) since Sat 2024-10-05 18:08:44 MSK; 6min ago
     Process: 3455 (vsftpd)
       Tasks: 1 (limit: 24674)
      Memory: 712.0K
         CPU: 6ms
    CGroup: /system.slice/vsftpd.service
            └─3455 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Oct 05 18:08:44 chilshelupupa.localdomain systemd[1]: Starting Vsftpd ftp daemon...
Oct 05 18:08:44 chilshelupupa.localdomain systemd[1]: Started Vsftpd ftp daemon.
[root@chilshelupupa ~]#
```

6. Добавьте службу Very Secure FTP в автозапуск при загрузке операционной системы, используя команду `systemctl enable`. Затем проверьте статус службы. Удалите службу из автозапуска, используя команду `systemctl disable`, и снова проверьте её статус.
7. Выведите на экран символические ссылки, ответственные за запуск различных сервисов: `ls /etc/systemd/system/multi-user.target.wants`

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

8. Снова добавьте службу Very Secure FTP в автозапуск: `systemctl enable vsftpd`

```
[root@chilshelupupa ~]# systemctl enable vsftpd
Created symlink /etc/systemd/system/multi-user.target.wants/vsftpd.service → /usr/lib/systemd/system/vsftpd.service.
[root@chilshelupupa ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; enabled; preset: disabled)
   Active: active (running) since Sat 2024-10-05 18:08:44 MSK; 2min 34s ago
     Main PID: 3455 (vsftpd)
       Tasks: 1 (limit: 24674)
      Memory: 712.0K
         CPU: 6ms
    CGroup: /system.slice/vsftpd.service
            └─3455 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Oct 05 18:08:44 chilshelupupa.localdomain systemd[1]: Starting Vsftpd ftp daemon...
Oct 05 18:08:44 chilshelupupa.localdomain systemd[1]: Started Vsftpd ftp daemon.
```

9. Снова проверьте статус службы Very Secure FTP: `systemctl status vsftpd`

```
[root@chilshelupupa ~]# systemctl status vsftpd
● vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; enabled; preset: disabled)
   Active: active (running) since Sat 2024-10-05 18:08:44 MSK; 6min ago
     Main PID: 3455 (vsftpd)
       Tasks: 1 (limit: 24674)
      Memory: 712.0K
         CPU: 6ms
    CGroup: /system.slice/vsftpd.service
            └─3455 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Oct 05 18:08:44 chilshelupupa.localdomain systemd[1]: Starting Vsftpd ftp daemon...
Oct 05 18:08:44 chilshelupupa.localdomain systemd[1]: Started Vsftpd ftp daemon.
[root@chilshelupupa ~]#
```

10. Выведите на экран список зависимостей юнита: `systemctl list-dependencies vsftpd`

```
[root@chileshelupupa ~]# systemctl list-dependencies vsftpd
vsftpd.service
├─system.slice
├─sysinit.target
├─dev-hugepages.mount
├─dev-mqueue.mount
├─dracut-shutdown.service
├─iscsi-onboot.service
├─iscsi-starter.service
├─kmod-static-nodes.service
├─ldconfig.service
├─lvm2-lvmpolld.socket
├─lvm2-monitor.service
├─multipathd.service
├─nis-domainname.service
├─plymouth-read-write.service
├─plymouth-start.service
├─proc-sys-fs-binfmt_misc.automount
├─selinux-autorelabel-mark.service
├─sys-fs-fuse-connections.mount
├─sys-kernel-config.mount
├─sys-kernel-debug.mount
├─sys-kernel-tracing.mount
├─systemd-ask-password-console.path
├─systemd-binfmt.service
├─systemd-boot-random-seed.service
├─systemd-boot-update.service
├─systemd-firstboot.service
├─systemd-hwdb-update.service
├─systemd-journal-catalog-update.service
├─systemd-journal-flush.service
├─systemd-journald.service
├─systemd-machine-id-commit.service
├─systemd-modules-load.service
└─systemd-network-generator.service
```

11. Выведите на экран список юнитов, которые зависят от данного юнита:

`systemctl list-dependencies vsftpd --reverse`

```
[root@chileshelupupa ~]# systemctl list-dependencies vsftpd --reverse
vsftpd.service
├─multi-user.target
└─graphical.target
[root@chileshelupupa ~]#
```


2 Конфликты юнитов

1. Получите полномочия администратора. Установите iptables: `dnf -y install iptables*`

```
[root@chilesheelupupa ~]# dnf -y install iptables*
Last metadata expiration check: 0:11:25 ago on Sat 05 Oct 2024 06:07:46 PM MSK.
Package iptables-libs-1.8.10-2.el9.x86_64 is already installed.
Package iptables-nft-1.8.10-2.el9.x86_64 is already installed.
Dependencies resolved.

=====
Package                                Architecture      Version           Repository        Size
=====
Installing:
iptables-devel                         x86_64            1.8.10-4.el9_4    appstream         14 k
iptables-nft-services                 noarch            1.8.10-4.el9_4    appstream         17 k
iptables-utils                         x86_64            1.8.10-4.el9_4    baseos            40 k
Upgrading:
iptables-libs                         x86_64            1.8.10-4.el9_4    baseos            396 k
iptables-nft                          x86_64            1.8.10-4.el9_4    baseos            186 k
=====
Transaction Summary
=====
Install  3 Packages
Upgrade  2 Packages

Total download size: 654 k
Downloading Packages:
(1/5): iptables-utils-1.8.10-4.el9_4.x86_64.rpm                87 kB/s | 40 kB      00:00
(2/5): iptables-devel-1.8.10-4.el9_4.x86_64.rpm               28 kB/s | 14 kB      00:00
(3/5): iptables-nft-1.8.10-4.el9_4.x86_64.rpm                 774 kB/s | 186 kB    00:00
(4/5): iptables-libs-1.8.10-4.el9_4.x86_64.rpm                1.0 MB/s | 396 kB    00:00
(5/5): iptables-nft-services-1.8.10-4.el9_4.noarch.rpm        2.8 kB/s | 17 kB     00:06
=====
Total                                50 kB/s | 654 kB     00:13
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing                : iptables-libs-1.8.10-4.el9_4.x86_64                1/1
  Upgrading                : iptables-nft-1.8.10-4.el9_4.x86_64                1/7
  Upgrading                : iptables-nft-1.8.10-4.el9_4.x86_64                2/7
  Running scriptlet        : iptables-nft-1.8.10-4.el9_4.x86_64                2/7
```

- ## 2. Проверьте статус firewalld и iptables: `systemctl status firewalld`

```
[root@chilshelupupa ~]# 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 2024-10-05 18:01:36 MSK; 18min ago
     Docs: man:firewalld(1)
    Main PID: 786 (firewalld)
      Tasks: 2 (limit: 24674)
     Memory: 44.2M
        CPU: 988ms
    CGroup: /system.slice/firewalld.service
            └─786 /usr/bin/python3 -s /usr/sbin/firewalld --nofork --nopid

Oct 05 18:01:35 chilshelupupa.localdomain systemd[1]: Starting firewalld - dynamic firewall daemon...
Oct 05 18:01:36 chilshelupupa.localdomain systemd[1]: Started firewalld - dynamic firewall daemon.
[root@chilshelupupa ~]# systemctl status iptables
● iptables.service - IPv4 firewall with iptables
   Loaded: loaded (/usr/lib/systemd/system/iptables.service; disabled; preset: disabled)
   Active: inactive (dead)
[root@chilshelupupa ~]#
```

3. Попробуйте запустить firewalld и iptables: systemctl start firewalld systemctl start iptables

```
[root@chilshelupupa ~]# systemctl start firewalld
[root@chilshelupupa ~]# systemctl start iptables
[root@chilshelupupa ~]# 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 2024-10-05 18:21:31 MSK; 21s ago
     Duration: 19min 54.957s
     Docs: man:firewalld(1)
    Process: 786 ExecStart=/usr/sbin/firewalld --nofork --nopid $FIREWALLD_ARGS (code=exited, status=0/SUCCESS)
    Main PID: 786 (code=exited, status=0/SUCCESS)
       CPU: 1.052s

Oct 05 18:01:35 chilshelupupa.localdomain systemd[1]: Starting firewalld - dynamic firewall daemon...
Oct 05 18:01:36 chilshelupupa.localdomain systemd[1]: Started firewalld - dynamic firewall daemon.
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: Stopping firewalld - dynamic firewall daemon...
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: firewalld.service: Deactivated successfully.
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: Stopped firewalld - dynamic firewall daemon.
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: firewalld.service: Consumed 1.052s CPU time.
[root@chilshelupupa ~]# 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 2024-10-05 18:21:31 MSK; 52s ago
     Duration: 19min 54.957s
     Docs: man:firewalld(1)
    Process: 786 ExecStart=/usr/sbin/firewalld --nofork --nopid $FIREWALLD_ARGS (code=exited, status=0/SUCCESS)
    Main PID: 786 (code=exited, status=0/SUCCESS)
       CPU: 1.052s

Oct 05 18:01:35 chilshelupupa.localdomain systemd[1]: Starting firewalld - dynamic firewall daemon...
Oct 05 18:01:36 chilshelupupa.localdomain systemd[1]: Started firewalld - dynamic firewall daemon.
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: Stopping firewalld - dynamic firewall daemon...
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: firewalld.service: Deactivated successfully.
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: Stopped firewalld - dynamic firewall daemon.
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: firewalld.service: Consumed 1.052s CPU time.
[root@chilshelupupa ~]# 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 2024-10-05 18:21:31 MSK; 58s ago
     Process: 3941 ExecStart=/usr/libexec/iptables/iptables.init start (code=exited, status=0/SUCCESS)
    Main PID: 3941 (code=exited, status=0/SUCCESS)
       CPU: 21ms

Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: Starting IPv4 firewall with iptables...
Oct 05 18:21:31 chilshelupupa.localdomain iptables.init[3941]: iptables: Applying firewall rules: [ OK ]
Oct 05 18:21:31 chilshelupupa.localdomain systemd[1]: Finished IPv4 firewall with iptables.
[root@chilshelupupa ~]#
```

4. Введите cat /usr/lib/systemd/system/firewalld.service

```
[root@chilshelupupa ~]# 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 nftables.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]
WantedBy=multi-user.target
Alias=dbus-org.fedoraproject.FirewallD1.service
```

5. Введите `cat /usr/lib/systemd/system/iptables.service`

```
[root@chilshelupupa ~]# cat /usr/lib/systemd/system/iptables.service
[Unit]
Description=IPv4 firewall with iptables
AssertPathExists=/etc/sysconfig/iptables
Before=network-pre.target
Wants=network-pre.target

[Service]
Type=oneshot
RemainAfterExit=yes
ExecStart=/usr/libexec/iptables/iptables.init start
ExecReload=/usr/libexec/iptables/iptables.init reload
ExecStop=/usr/libexec/iptables/iptables.init stop
Environment=BOOTUP=serial
Environment=CONSOLETYPE=serial

[Install]
WantedBy=multi-user.target
[root@chilshelupupa ~]#
```

6. Выгрузите службу `iptables` (на всякий случай, чтобы убедиться, что данная служба не загружена в систему): `systemctl stop iptables` и загрузите службу `firewalld` `systemctl start firewalld`

```
[root@chilshelupupa ~]# systemctl stop iptables
[root@chilshelupupa ~]# systemctl start firewalld
[root@chilshelupupa ~]#
```

7. Заблокируйте запуск `iptables`, введя: `systemctl mask iptables`

```
[root@chileshelupupa ~]# systemctl mask iptables
Created symlink /etc/systemd/system/iptables.service → /dev/null.
[root@chileshelupupa ~]# systemctl start iptables
Failed to start iptables.service: Unit iptables.service is masked.
[root@chileshelupupa ~]#
```

8. Попробуйте запустить iptables: `systemctl start iptables`

```
[root@chileshelupupa ~]# systemctl enable iptables
Failed to enable unit: Unit file /etc/systemd/system/iptables.service is masked.
[root@chileshelupupa ~]#
```

9. Попробуйте добавить iptables в автозапуск: `systemctl enable iptables`

```
[root@chileshelupupa ~]# systemctl enable iptables
Failed to enable unit: Unit file /etc/systemd/system/iptables.service is masked.
[root@chileshelupupa ~]#
```