

Лабораторная работы №1.

Установка и конфигурация операционной системы на виртуальную машину

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Целью данной работы является приобретение практических навыков установки операционной системы на виртуальную машину, настройки минимально необходимых для дальнейшей работы сервисов.

Все эти этапы были сделаны в прошлом семестре, результат этих пунктов был показан на видео

После установки

Обновления и повышение
комфорта работы

Обновления и повышение комфорта работы

```
root@fedora:~  
[pcaladi@fedora ~]$ sudo -i  
[sudo] password for pcaladi:  
[root@fedora ~]# dnf -y update  
Fedora 36 - x86_64 - Updates                        8.9 kB/s | 9.9 kB    00:01  
Fedora 36 - x86_64 - Updates                        1.5 MB/s | 3.3 MB    00:02  
Fedora Modular 36 - x86_64 - Updates                56 kB/s | 18 kB     00:00  
Dependencies resolved.  
=====
```

Package	Architecture	Version	Repository	Size
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```
=====
```

Upgrading:

aardvark-dns	x86_64	1.5.0-3.fc36	updates	914 k
exiv2	x86_64	0.27.6-4.fc36	updates	977 k
exiv2-libs	x86_64	0.27.6-4.fc36	updates	798 k

```
=====
```

Transaction Summary

```
=====
```

Upgrade 3 Packages

Total download size: 2.6 M

Downloading Packages:

(1/3): aardvark-dns-1.5.0-3.fc36.x86_64.rpm	4.8 MB/s 914 kB	00:00
(2/3): exiv2-libs-0.27.6-4.fc36.x86_64.rpm	2.3 MB/s 798 kB	00:00
(3/3): exiv2-0.27.6-4.fc36.x86_64.rpm	2.7 MB/s 977 kB	00:00

```
=====
```

Total

	2.8 MB/s 2.6 MB	00:00
--	-------------------	-------

```
=====
```

Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction

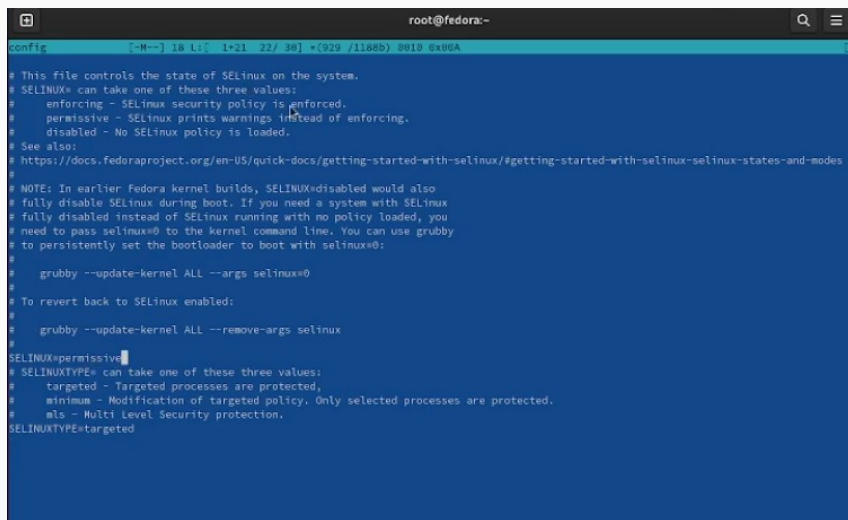
Preparing	:	1/1
Upgrading	: exiv2-libs-0.27.6-4.fc36.x86_64	1/6
Upgrading	: exiv2-0.27.6-4.fc36.x86_64	2/6
Upgrading	: aardvark-dns-1.5.0-3.fc36.x86_64	3/6
Cleanup	: exiv2-0.27.5-2.fc36.x86_64	4/6
Cleanup	: exiv2-libs-0.27.5-2.fc36.x86_64	5/6
Cleanup	: aardvark-dns-1.4.0-1.fc36.x86_64	6/6
Running scriptlet:	aardvark-dns-1.4.0-1.fc36.x86_64	6/6
Verifying	: aardvark-dns-1.5.0-3.fc36.x86_64	1/6
Verifying	: aardvark-dns-1.4.0-1.fc36.x86_64	2/6
Verifying	: exiv2-0.27.6-4.fc36.x86_64	3/6
Verifying	: exiv2-0.27.5-2.fc36.x86_64	4/6


```
[root@fedora ~]# dnf install tmux mc
Last metadata expiration check: 0:00:45 ago on Thu 16 Feb 2023 15:53:23 MSK.
Package tmux-3.3a-1.fc36.x86_64 is already installed.
Package mc-1:4.8.28-2.fc36.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@fedora ~]# dnf install dnf-automatic
Last metadata expiration check: 0:01:06 ago on Thu 16 Feb 2023 15:53:23 MSK.
Package dnf-automatic-4.14.0-1.fc36.noarch is already installed.
Dependencies resolved.
Nothing to do.
Complete!
```

Figure 3: Установил программное обеспечение для автоматических обновлений

```
bash: systemctl: command not found...  
[root@fedora ~]# systemctl enable --now dnf-automatic.timer  
[root@fedora ~]# tmux
```

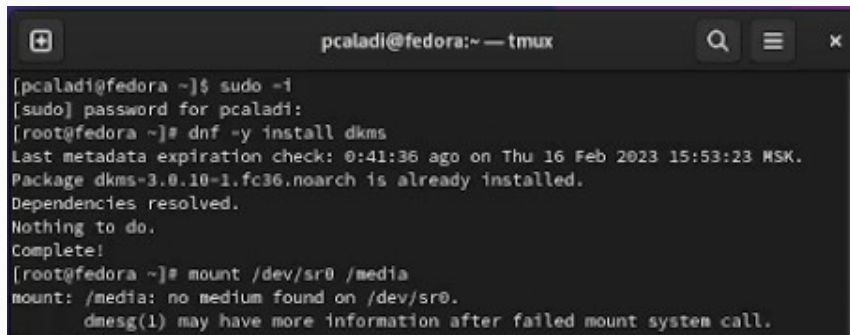
Figure 4: Запустил таймер



```
root@fedora:~  
config [-M--] 18 L: 1+21 22/ 30] *(929 /1188b) @010 @x06A  
# This file controls the state of SELinux on the system.  
# SELINUX can take one of these three values:  
#   enforcing - SELinux security policy is enforced.  
#   permissive - SELinux prints warnings instead of enforcing.  
#   disabled - No SELinux policy is loaded.  
# See also:  
# https://docs.fedoraproject.org/en-US/quick-docs/getting-started-with-selinux/#getting-started-with-selinux-selinux-states-and-modes  
#  
# NOTE: In earlier Fedora kernel builds, SELINUX=disabled would also  
# fully disable SELinux during boot. If you need a system with SELinux  
# fully disabled instead of SELinux running with no policy loaded, you  
# need to pass selinux=0 to the kernel command line. You can use grubby  
# to persistently set the bootloader to boot with selinux=0:  
#  
#   grubby --update-kernel ALL --args selinux=0  
#  
# To revert back to SELinux enabled:  
#  
#   grubby --update-kernel ALL --remove-args selinux  
#  
SELINUX=permissive  
# SELINUXTYPE can take one of these three values:  
#   targeted - Targeted processes are protected,  
#   minimum - Modification of targeted policy. Only selected processes are protected.  
#   mls - Multi Level Security protection.  
SELINUXTYPE=targeted
```

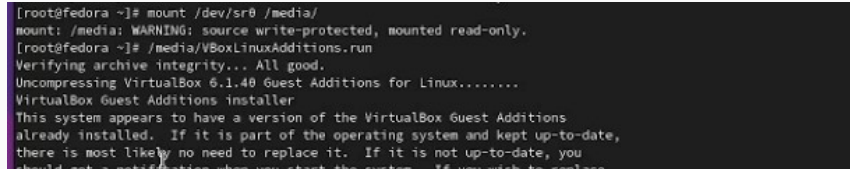
Figure 5: Заменяет значение в config

Установка драйверов для VirtualBox



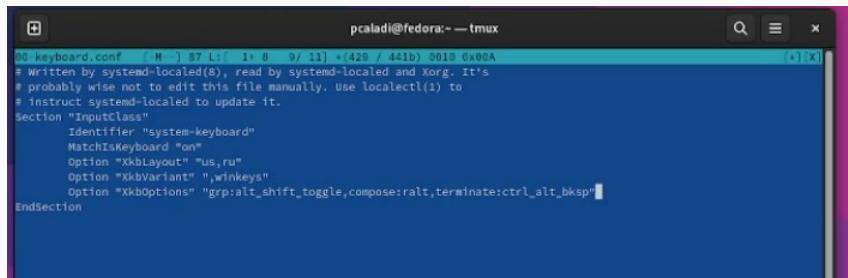
```
pcaladi@fedora:~ — tmux
[pcaladi@fedora ~]$ sudo -i
[sudo] password for pcaladi:
[root@fedora ~]# dnf -y install dkms
Last metadata expiration check: 0:41:36 ago on Thu 16 Feb 2023 15:53:23 MSK.
Package dkms-3.0.10-1.fc36.noarch is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@fedora ~]# mount /dev/sr0 /media
mount: /media: no medium found on /dev/sr0.
       dmesg(1) may have more information after failed mount system call.
```

Figure 6: Установка пакета DKMS



```
[root@fedora ~]# mount /dev/sr0 /media/
mount: /media: WARNING: source write-protected, mounted read-only.
[root@fedora ~]# /media/VBoxLinuxAdditions.run
Verifying archive integrity... All good.
Uncompressing VirtualBox 6.1.40 Guest Additions for Linux.....
VirtualBox Guest Additions installer
This system appears to have a version of the VirtualBox Guest Additions
already installed. If it is part of the operating system and kept up-to-date,
there is most likely no need to replace it. If it is not up-to-date, you
should get a notification when you start the system. If you wish to replace
```

Настройка раскладки клавиатуры

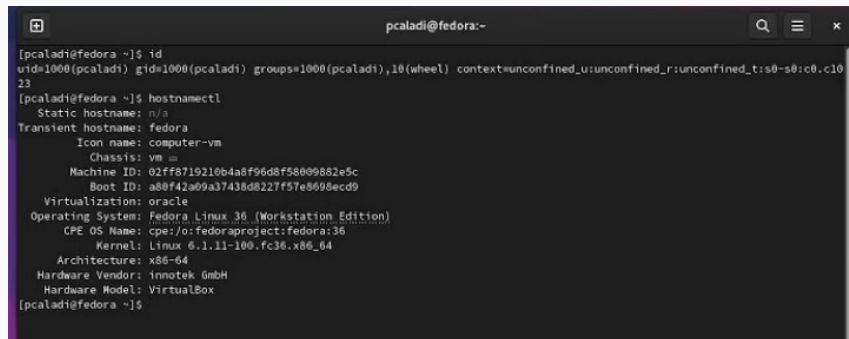


The image shows a terminal window titled "pcaladi@fedora:~ — tmux". The terminal displays the contents of the file `/etc/keyboard.conf`. The file contains comments and configuration options for the system keyboard. The visible text is as follows:

```
00 keyboard.conf [M-] 87 L: [ 1+ 8 9/ 11] + (429 / 441b) 0010 0x00A [*][X]
# Written by systemd-locale(8), read by systemd-locale and Xorg. It's
# probably wise not to edit this file manually. Use localectl(1) to
# instruct systemd-locale to update it.
Section "InputClass"
    Identifier "system-keyboard"
    MatchIsKeyboard "on"
    Option "XkbLayout" "us,ru"
    Option "XkbVariant" ",winkeys"
    Option "XkbOptions" "grp:alt_shift_toggle,compose:ralt,terminate:ctrl_alt_bksp"
EndSection
```

Figure 8: Отредактировал конфигурационный файл

Установка имени пользователя и названия хоста



```
pcaladi@fedora:~  
[pcaladi@fedora ~]$ id  
uid=1000(pcaladi) gid=1000(pcaladi) groups=1000(pcaladi),10(wheel) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
[pcaladi@fedora ~]$ hostnamectl  
Static hostname: n/a  
Transient hostname: fedora  
Icon name: computer-vm  
Chassis: vm  
Machine ID: 02ff8719210b4a8f96d8f58809882e5c  
Boot ID: a80f42a09a37438d8227f57e8698ecd9  
Virtualization: oracle  
Operating System: Fedora Linux 36 (Workstation Edition)  
CPE OS Name: cpe:/o:fedoraproject:fedora:36  
Kernel: Linux 6.1.11-100.fc36.x86_64  
Architecture: x86_64  
Hardware Vendor: innotek GmbH  
Hardware Model: VirtualBox  
[pcaladi@fedora ~]$
```

Все было

установлено сразу правильно

Установка программного обеспечения для создания документации

```
[pcaladi@fedora ~]$ sudo -i
[sudo] password for pcaladi:
[root@fedora ~]# dnf -y install pandoc
Last metadata expiration check: 1:19:39 ago on Thu 16 Feb 2023 15:53:23 MSK.
Dependencies resolved.
=====
Package                        Architecture      Version           Repository        Size
=====
Installing:
pandoc                        x86_64            2.14.0.3-16.fc36 fedora            21 M
Installing dependencies:
pandoc-common                 noarch            2.14.0.3-16.fc36 fedora            435 k
=====
Transaction Summary
=====
Install 2 Packages

Total download size: 21 M
Installed size: 158 M
Downloading Packages:
(1/2): pandoc-common-2.14.0.3-16.fc36.noarch.rpm                297 kB/s | 435 kB    00:01
(2/2): pandoc-2.14.0.3-16.fc36.x86_64.rpm                      ] 365 kB/s | 1.0 MB  00:54 ETA
=====
```

Figure 9: Установил pandoc:

```
[root@fedora ~]# dnf -y install texlive texlive-libs
Last metadata expiration check: 1:25:03 ago on Thu 16 Feb 2023 15:53:23 MSK.
Package texlive-lib-9:20210325-47.fc36.x86_64 is already installed. 1
=====
```

Figure 10: Установил texlive:

```
[pcaladi@fedora ~]$ dmesg | grep -i "linux version"
[    0.000000] Linux version 6.1.11-100.fc36.x86_64 (mockbuild@bkernel02.iad2.fedoraproject.org) (gcc (GCC) 12.2.1 20221
121 (Red Hat 12.2.1-4), GNU ld version 2.37-37.fc36) #1 SMP PREEMPT_DYNAMIC Thu Feb  9 20:36:30 UTC 2023
[pcaladi@fedora ~]$
```

Figure 11: Версия ядра Linux

```
[pcaladi@fedora ~]$ dmesg | grep -i "processor"
[    0.000009] tsc: Detected 2419.198 MHz processor
[    0.227833] smpboot: Total of 4 processors activated (19353.58 BogoMIPS)
[    0.250134] ACPI: Added _OSI(Processor Device)
[    0.250136] ACPI: Added _OSI(Processor Aggregator Device)
[pcaladi@fedora ~]$
```

Figure 12: Частота процессора

```
[pcaladi@fedora ~]$ dmesg | grep -i "CPU0"
[    0.216824] smpboot: CPU0: 11th Gen Intel(R) Core(TM) i5-1135G7 @ 2.40GHz (family: 0x6, model: 0x8c, stepping: 0x1)
[pcaladi@fedora ~]$
```


Контрольные Вопросы

1. Какую информацию содержит учётная запись пользователя?

Имя пользователя, зашифрованный пароль пользователя, идентификационный номер пользователя, идентификационный номер группы пользователя, домашний каталог пользователя, командный интерпретатор пользователя.

2. Укажите команды терминала и приведите примеры: – для получения справки по команде; – для перемещения по файловой системе; – для просмотра содержимого каталога; – для определения объёма каталога; – для создания / удаления каталогов / файлов; – для задания определённых прав на файл / каталог; – для просмотра истории команд.

а) для получения справки по команде: `man`

б) для перемещения по файловой системе: `cd`

с) для просмотра содержимого каталога: `ls`

д) для определения объёма каталога: `du`

Приобрел практические навыки установки операционной системы на виртуальную машину, настройки минимально необходимых для дальнейшей работы сервисов. ...

Спасибо за внимание