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Практическая работа 2-1. Основы Linux
Вариант 13

Направление подготовки/специальность
38.04.05 - Бизнес-информатика
Бизнес-аналитика и большие данные
(очная форма обучения)

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Москва
2024

Введение

Цель: познакомиться с основами работы в Linux, включая установку системы, базовую настройку и конфигурацию SSH.

Задачи

1. Установить Ubuntu 24 в VirtualBox 7.0.x.
2. Выполнить предварительную настройку систему.
3. Настроить SSH-сервер

Основная часть

Задача 1. Установить Ubuntu 24 в VirtualBox 7.0.x.

Описание действий:

1. Скачал и установил VirtualBox 7.0.20
2. Скачал ISO-образ Ubuntu (ubuntu-24.04.1-desktop-amd64)
3. Создал новую виртуальную машину в VirtualBox с параметрами:
 - Тип ОС: Linux, версия: Ubuntu (64-bit)
 - Выделено 8 ГБ оперативной памяти
 - Виртуальный жесткий диск 25 ГБ
4. Выполнил установку Ubuntu, следуя инструкциям мастера установки

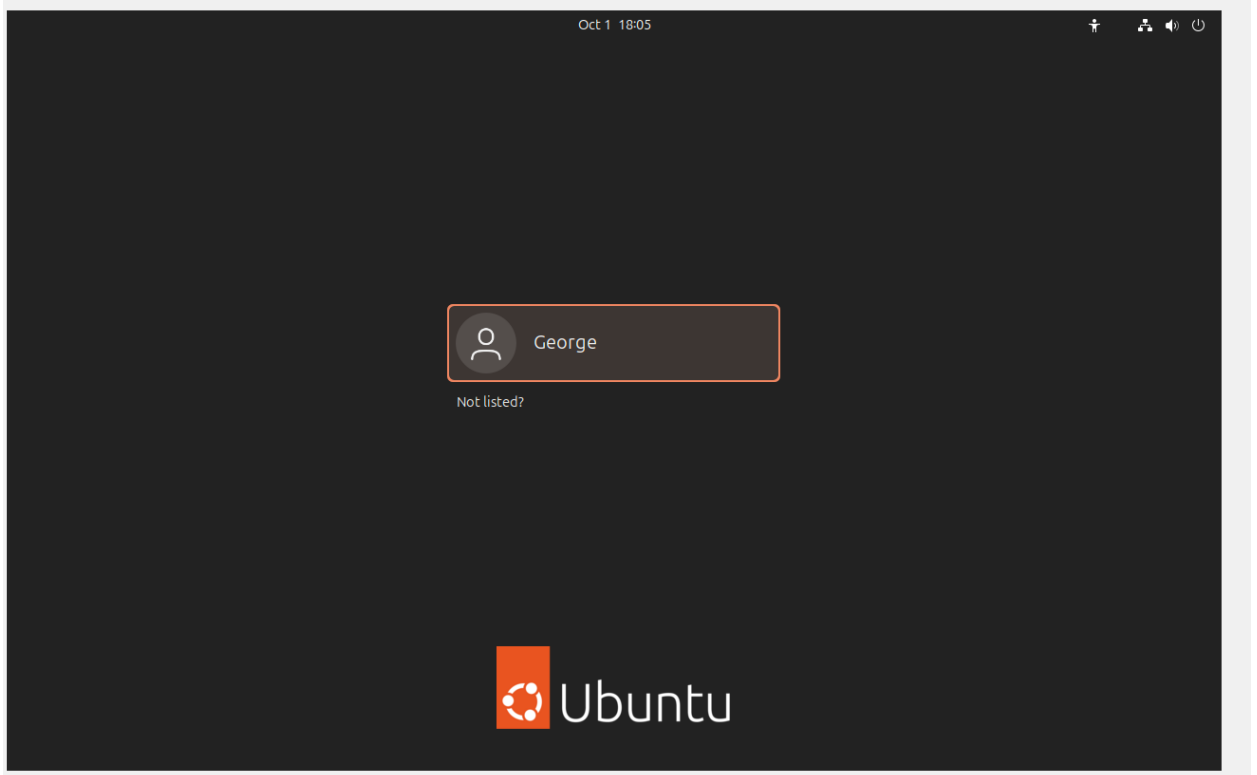


Рисунок 1 Установка Ubuntu 24

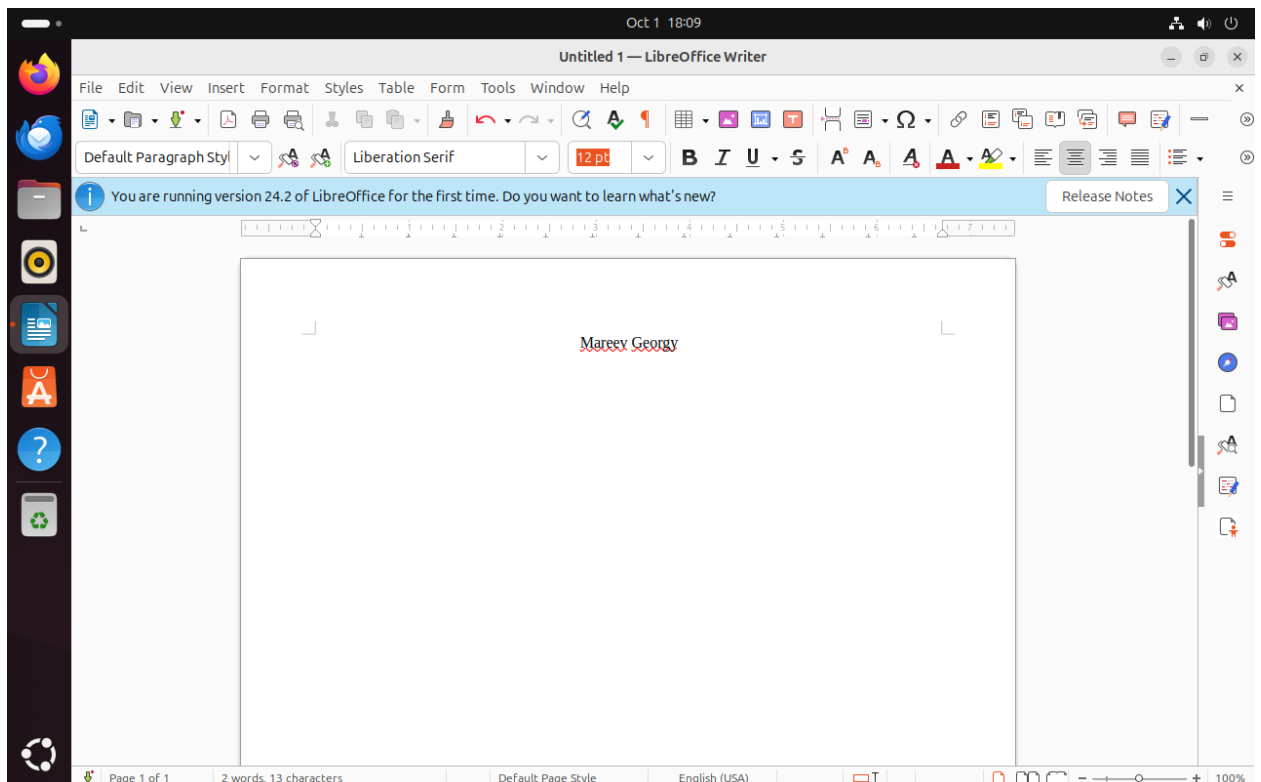


Рисунок 2 Подтверждение установки и проверка работоспособности системы

Задача 2. Предварительная настройка системы

1. Создать нового пользователя ansible с домашней директорией /home/ansible

```
george@george-VirtualBox:~$ sudo adduser ansible --home /home/ansible
```

```
[sudo] password for george:
```

```
info: Adding user `ansible' ...
```

```
info: Selecting UID/GID from range 1000 to 59999 ...
```

```
info: Adding new group `ansible' (1001) ...
```

```
info: Adding new user `ansible' (1001) with group `ansible (1001)' ...
```

```
info: Creating home directory `/home/ansible' ...
```

```
info: Copying files from `/etc/skel' ...
```

```
New password:
```

```
Retype new password:
```

```
passwd: password updated successfully
```

```
Changing the user information for ansible
```

```
Enter the new value, or press ENTER for the default
```

```
Full Name []: Task1
```

```
Room Number []:
```

```
Work Phone []:
```

```
Home Phone []:
```

```
Other []:
```

```
Is the information correct? [Y/n] Y
```

```
info: Adding new user `ansible' to supplemental / extra groups `users' ...
```

```
info: Adding user `ansible' to group `users' ...
```

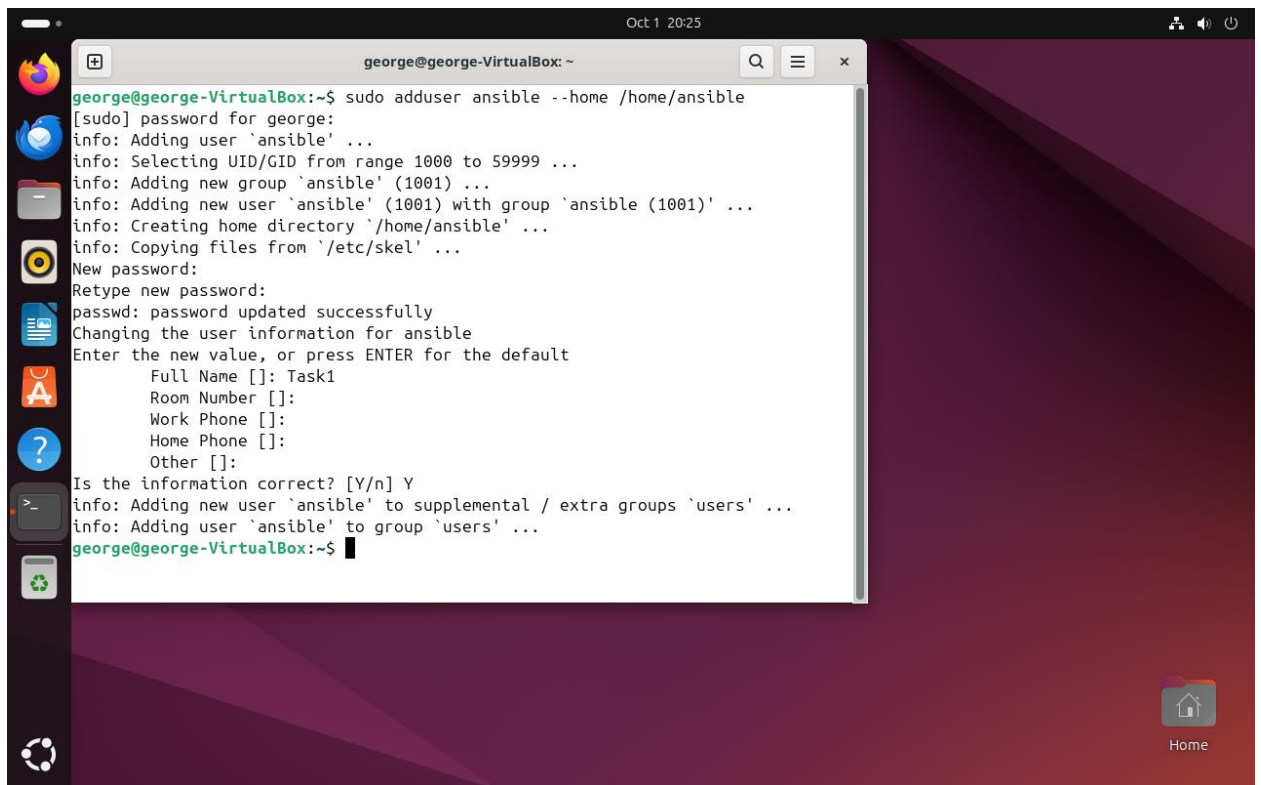


Рисунок 3 Создать нового пользователя ansible с домашней директорией /home/ansible

2. Сменить пользователю ansible пароль

george@george-VirtualBox:~\$ sudo passwd ansible

New password:

Retype new password:

passwd: password updated successfully

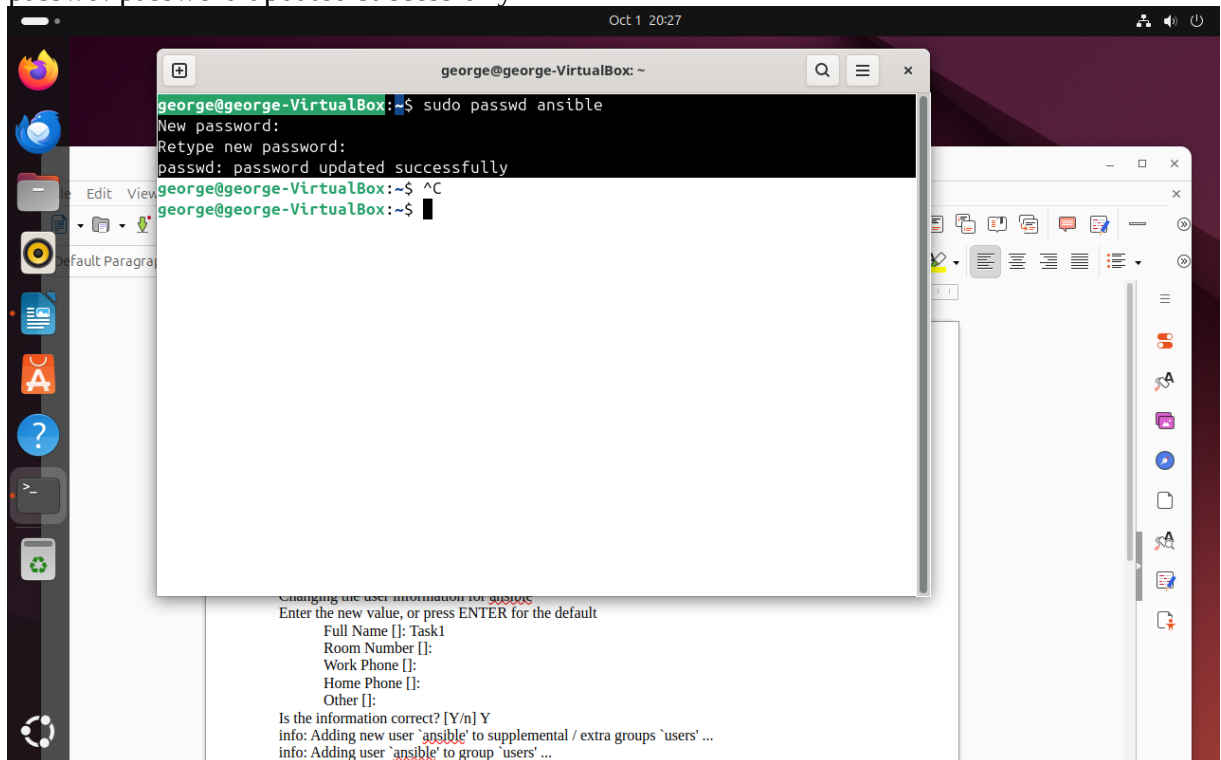


Рисунок 4 Сменить пользователю ansible пароль

3. Сменить root пароль

```
george@george-VirtualBox:~$ sudo -i
root@george-VirtualBox:~# sudo passwd
New password:
Retype new password:
passwd: password updated successfully
root@george-VirtualBox:~#
```

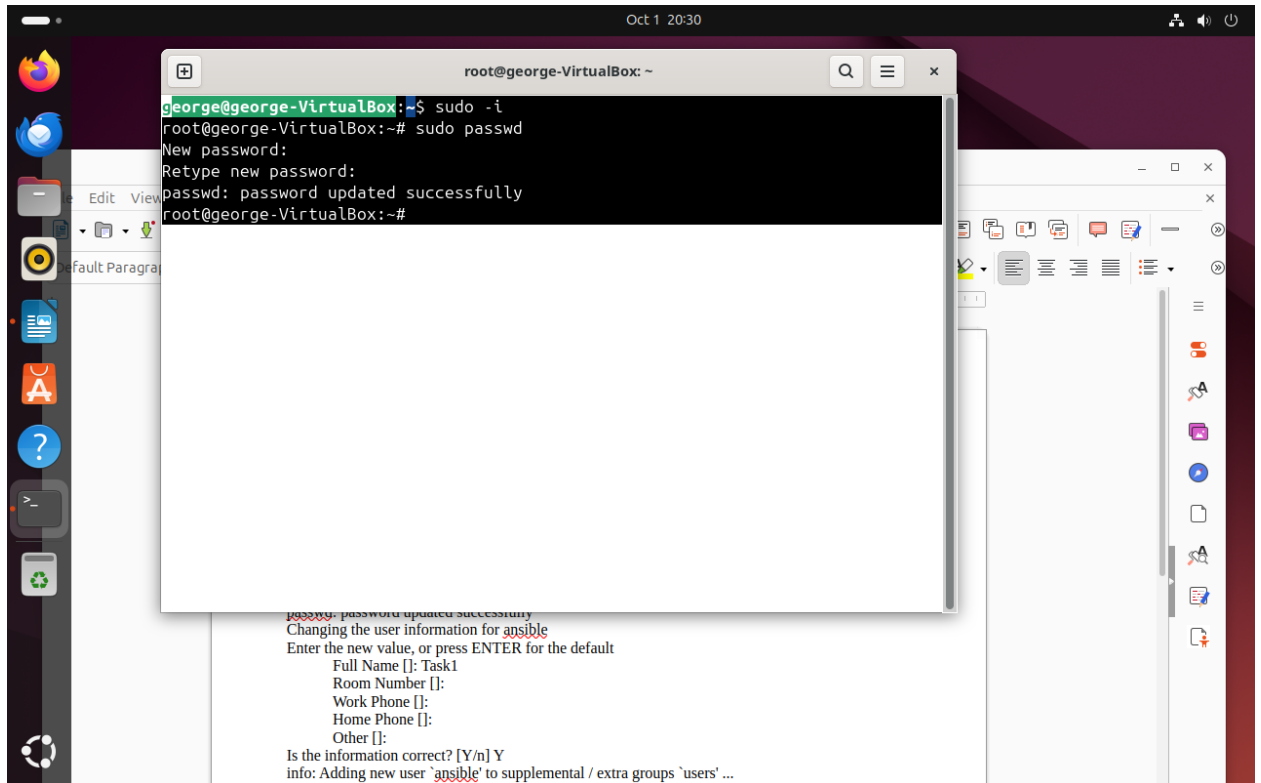


Рисунок 5 Сменить root пароль

4. Создать группу wheel

```
root@george-VirtualBox:~# sudo groupadd wheel
root@george-VirtualBox:~# cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,george
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
```

dialout:x:20:
fax:x:21:
voice:x:22:
cdrom:x:24:george
floppy:x:25:
tape:x:26:
sudo:x:27:george
audio:x:29:
dip:x:30:george
www-data:x:33:
backup:x:34:
operator:x:37:
list:x:38:
irc:x:39:
src:x:40:
shadow:x:42:
utmp:x:43:
video:x:44:
sasl:x:45:
plugdev:x:46:george
staff:x:50:
games:x:60:
users:x:100:george,ansible
nogroup:x:65534:
systemd-journal:x:999:
systemd-network:x:998:
crontab:x:997:
systemd-timesync:x:996:
input:x:995:
sgx:x:994:
kvm:x:993:
render:x:992:
messagebus:x:101:
syslog:x:102:
systemd-resolve:x:991:
uidd:x:103:
_ssh:x:104:
tss:x:105:
ssl-cert:x:106:xrdp
systemd-oom:x:990:
bluetooth:x:107:
rdma:x:108:
whoopsie:x:109:
netdev:x:110:
avahi:x:111:

```
tcpdump:x:112:
sssd:x:113:
lpadmin:x:114:george
fwupd-refresh:x:989:
scanner:x:115:saned
saned:x:116:
geoclue:x:117:
pipewire:x:118:
gnome-remote-desktop:x:988:
polkitd:x:987:
rtkit:x:119:
colord:x:120:
gdm:x:121:
nm-openvpn:x:122:
lxd:x:123:
gamemode:x:986:
gnome-initial-setup:x:985:
george:x:1000:
newgroup:x:1002:
xrdp:x:124:
ansible:x:1001:
wheel:x:1003:
root@george-VirtualBox:~#
```

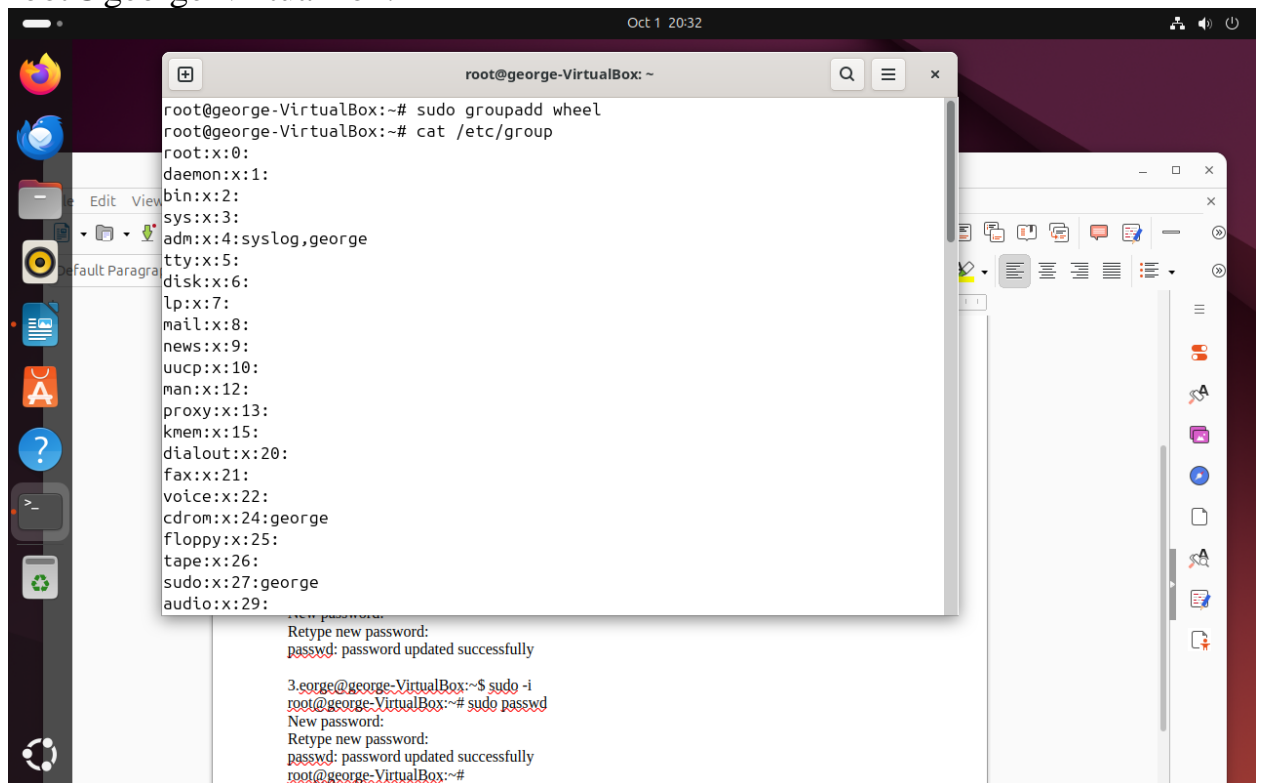


Рисунок 6 Создать группу wheel

5. Создать директорию/admin

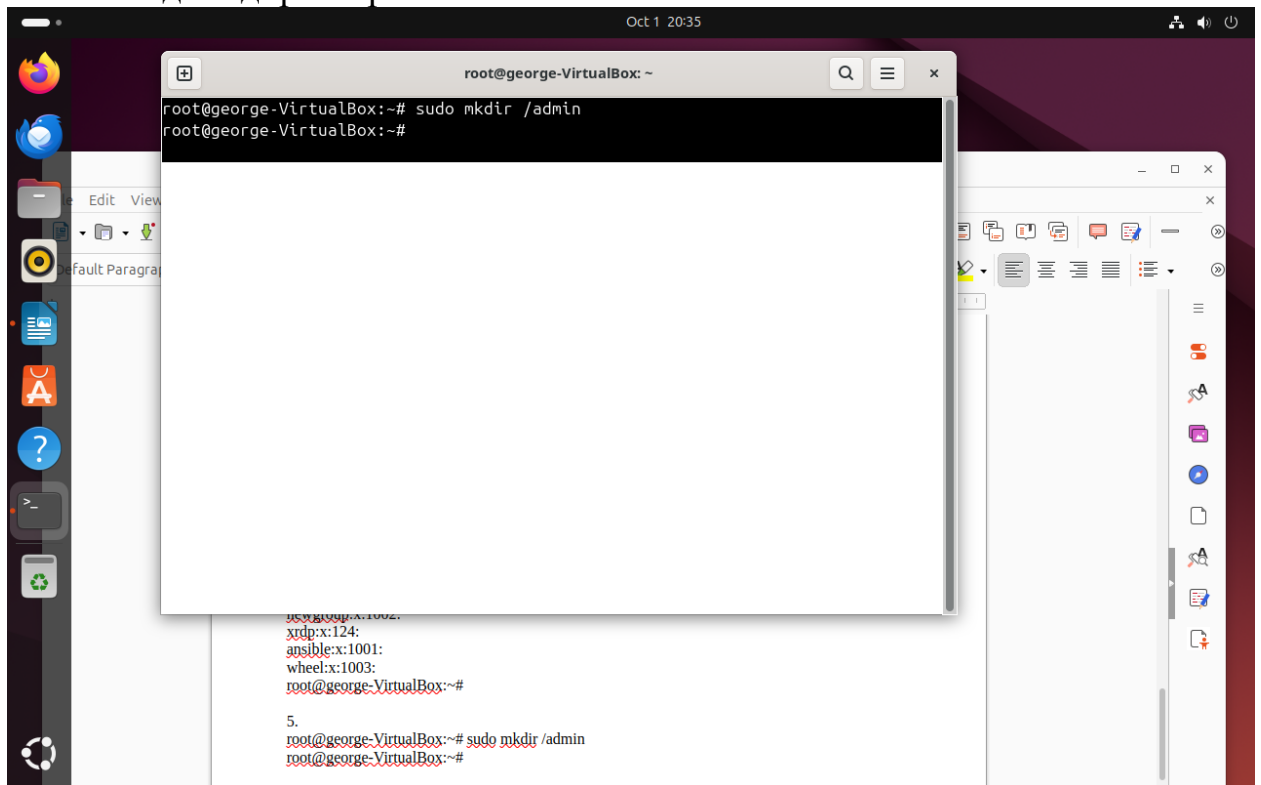


Рисунок 7 Создать директорию/admin

```
root@george-VirtualBox:~# sudo mkdir /admin
root@george-VirtualBox:~#
```

6. Сделать пользователя ansible владельцем директории /admin и назначить группу wheel

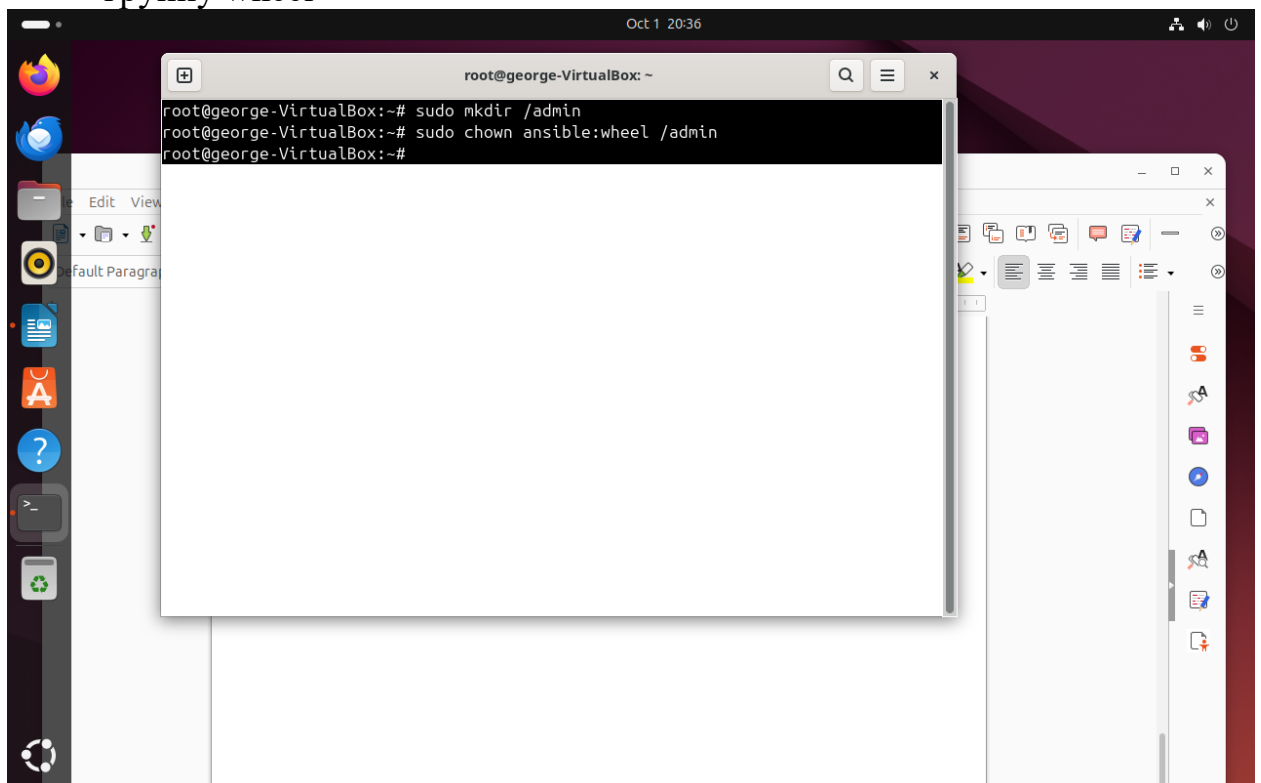


Рисунок 8 Сделать пользователя ansible владельцем директории /admin и назначить группу wheel

```
root@george-VirtualBox:~# sudo chown ansible:wheel /admin
```

7. Установить права на директорию /admin: чтение и запись для пользователя ansible, только чтение для группы wheel

```
root@george-VirtualBox:~# sudo chmod 640 /admin
```

```
root@george-VirtualBox:~# ls -ld /admin
```

```
393219 /admin
```

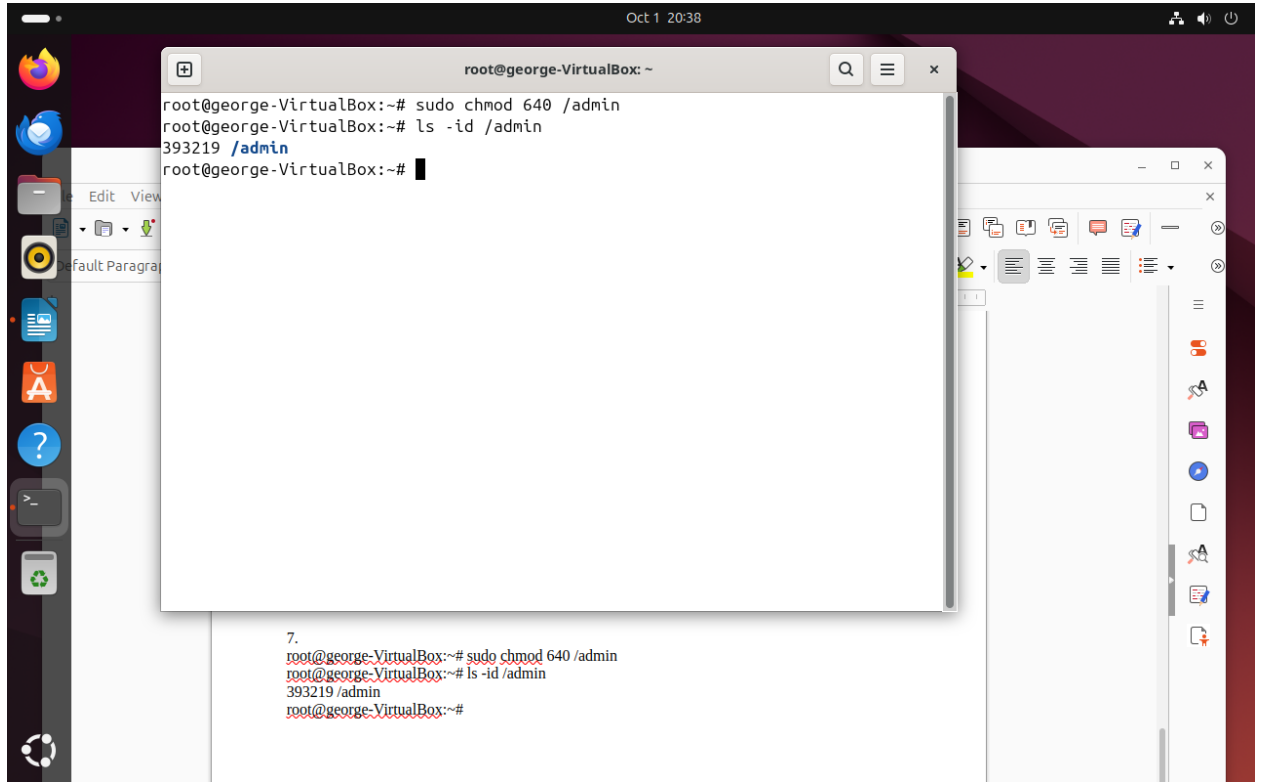


Рисунок 9 Установить права на директорию /admin: чтение и запись для пользователя ansible, только чтение для группы wheel

8. Отредактировать файл /etc/sudoers с помощью утилиты nano, чтобы разрешить группе wheel использовать sudo с паролем

```
george@george-VirtualBox:~$ sudo nano /etc/sudoers
```

```
[sudo] password for george:
```

```
george@george-VirtualBox:~$ sudo nano /etc/sudoers
```

```
george@george-VirtualBox:~$ sudo visudo
```

```
visudo: /etc/sudoers.tmp unchanged
```

```
# This file MUST be edited with the 'visudo' command as root.
```

```
#
```

```
# Please consider adding local content in /etc/sudoers.d/ instead of  
# directly modifying this file.
```

```
#
```

```
# See the man page for details on how to write a sudoers file.
```

```
#
```

```
Defaults    env_reset
```

```
Defaults    mail_badpass
```

```
Defaults    secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/snap/bin"
```

```
# This fixes CVE-2005-4890 and possibly breaks some versions of kdesu
```

```
# (#1011624, https://bugs.kde.org/show\_bug.cgi?id=452532)
Defaults    use_pty

# This preserves proxy settings from user environments of root
# equivalent users (group sudo)
#Defaults:%sudo env_keep += "http_proxy https_proxy ftp_proxy all_proxy no_proxy"

# This allows running arbitrary commands, but so does ALL, and it means
# different sudoers have their choice of editor respected.
#Defaults:%sudo env_keep += "EDITOR"

# Completely harmless preservation of a user preference.
#Defaults:%sudo env_keep += "GREP_COLOR"

# While you shouldn't normally run git as root, you need to with etckeeper
# Per-user preferences; root won't have sensible values for them.
#Defaults:%sudo env_keep += "EMAIL DEBEMAIL DEBFULLNAME"

# "sudo scp" or "sudo rsync" should be able to use your SSH agent.
#Defaults:%sudo env_keep += "SSH_AGENT_PID SSH_AUTH_SOCK"

# Ditto for GPG agent
#Defaults:%sudo env_keep += "GPG_AGENT_INFO"
# Host alias specification

# User alias specification

# Cmnd alias specification

# User privilege specification
root    ALL=(ALL:ALL) ALL

# Members of the admin group may gain root privileges
%admin   ALL=(ALL) ALL

# Allow members of group sudo to execute any command
%sudo   ALL=(ALL:ALL) ALL

#wheel Group
%wheel   ALL=(ALL:ALL) ALL

# See sudoers(5) for more information on "@include" directives:

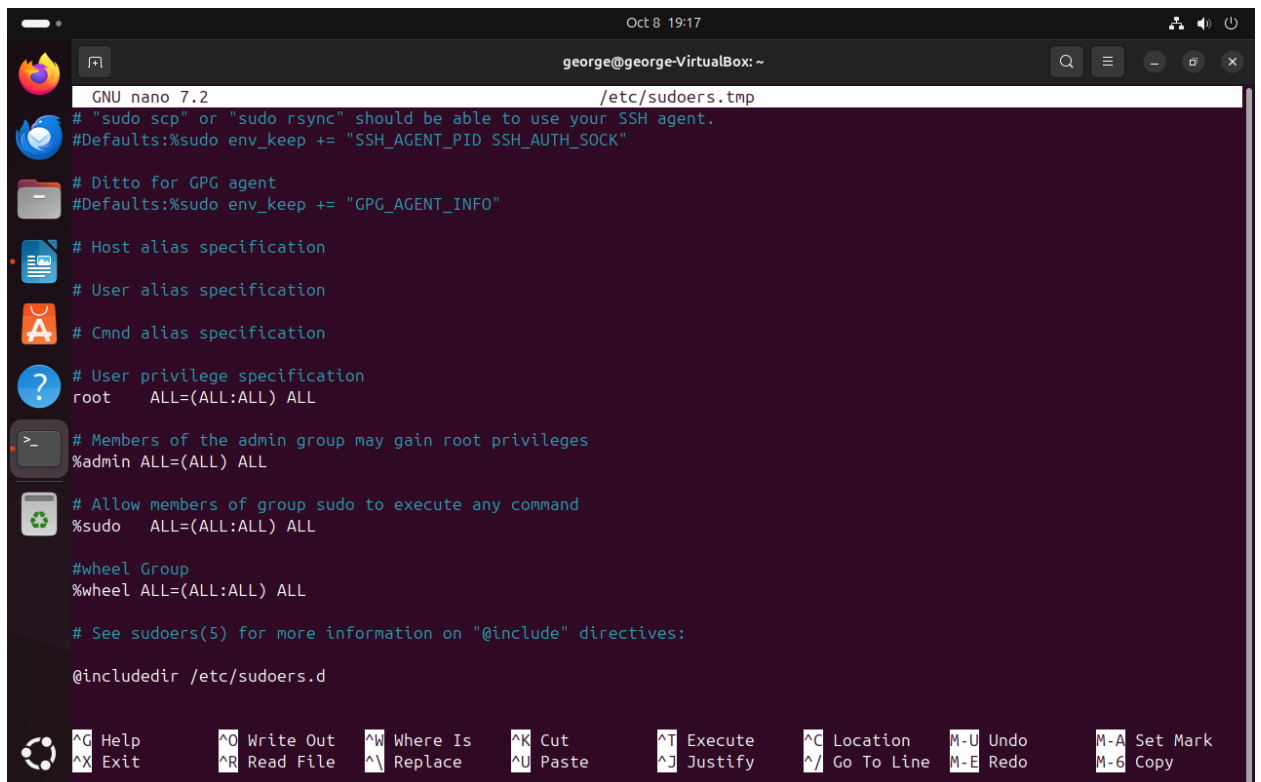
@includedir /etc/sudoers.d
```

```
Oct 8 19:18
george@george-VirtualBox: ~
george@george-VirtualBox:~$ su
Password:
su: Authentication failure
george@george-VirtualBox:~$ su
Password:
su: Authentication failure
george@george-VirtualBox:~$ sudo
usage: sudo -h | -K | -k | -V
usage: sudo -v [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-ABkNnS] [-g group] [-h host] [-p prompt] [-U user]
[-u user] [command [arg ...]]
usage: sudo [-ABbEHKnPS] [-r role] [-t type] [-C num] [-D directory]
[-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
[-u user] [VAR=value] [-i | -s] [command [arg ...]]
usage: sudo -e [-ABkNnS] [-r role] [-t type] [-C num] [-D directory]
[-g group] [-h host] [-p prompt] [-R directory] [-T timeout]
[-u user] file ...
george@george-VirtualBox:~$ su
Password:
su: Authentication failure
george@george-VirtualBox:~$ sudo nano /etc/sudoers
[sudo] password for george:
george@george-VirtualBox:~$ sudo group add wheel
sudo: group: command not found
george@george-VirtualBox:~$ sudo groupadd wheel
groupadd: group 'wheel' already exists
george@george-VirtualBox:~$ sudo nano /etc/sudoers
george@george-VirtualBox:~$ sudo visudo
visudo: /etc/sudoers.tmp unchanged
george@george-VirtualBox:~$
```

Рисунок 10 Отредактировать файл /etc/sudoers с помощью утилиты nano, чтобы разрешить группе wheel использовать sudo с паролем

```
Oct 8 19:17
george@george-VirtualBox: ~
GNU nano 7.2 /etc/sudoers.tmp
#
# This file MUST be edited with the 'visudo' command as root.
#
# Please consider adding local content in /etc/sudoers.d/ instead of
# directly modifying this file.
#
# See the man page for details on how to write a sudoers file.
#
Defaults        env_reset
Defaults        mail_badpass
Defaults        secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/snap/bin"
# This fixes CVE-2005-4890 and possibly breaks some versions of kdesu
# (#1011624, https://bugs.kde.org/show_bug.cgi?id=452532)
Defaults        use_pty
# This preserves proxy settings from user environments of root
# equivalent users (group sudo)
#Defaults:%sudo env_keep += "http_proxy https_proxy ftp_proxy all_proxy no_proxy"
# This allows running arbitrary commands, but so does ALL, and it means
# different sudoers have their choice of editor respected.
#Defaults:%sudo env_keep += "EDITOR"
# Completely harmless preservation of a user preference.
#Defaults:%sudo env_keep += "GREP_COLOR"
# While you shouldn't normally run git as root, you need to with etckeeper
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^C Location M-U Undo     M-A Set Mark
^X Exit      ^R Read File ^_ Replace   ^U Paste     ^J Justify  ^_ Go To Line M-E Redo     M-G Copy
```

Рисунок 11 Отредактировать файл /etc/sudoers с помощью утилиты nano, чтобы разрешить группе wheel использовать sudo с паролем



```
Oct 8 19:17
george@george-VirtualBox: ~
GNU nano 7.2 /etc/sudoers.tmp
# "sudo scp" or "sudo rsync" should be able to use your SSH agent.
#Defaults:%sudo env_keep += "SSH_AGENT_PID SSH_AUTH_SOCK"

# Ditto for GPG agent
#Defaults:%sudo env_keep += "GPG_AGENT_INFO"

# Host alias specification

# User alias specification

# Cmnd alias specification

# User privilege specification
root    ALL=(ALL:ALL) ALL

# Members of the admin group may gain root privileges
%admin   ALL=(ALL) ALL

# Allow members of group sudo to execute any command
%sudo   ALL=(ALL:ALL) ALL

#wheel Group
%wheel  ALL=(ALL:ALL) ALL

# See sudoers(5) for more information on "@include" directives:

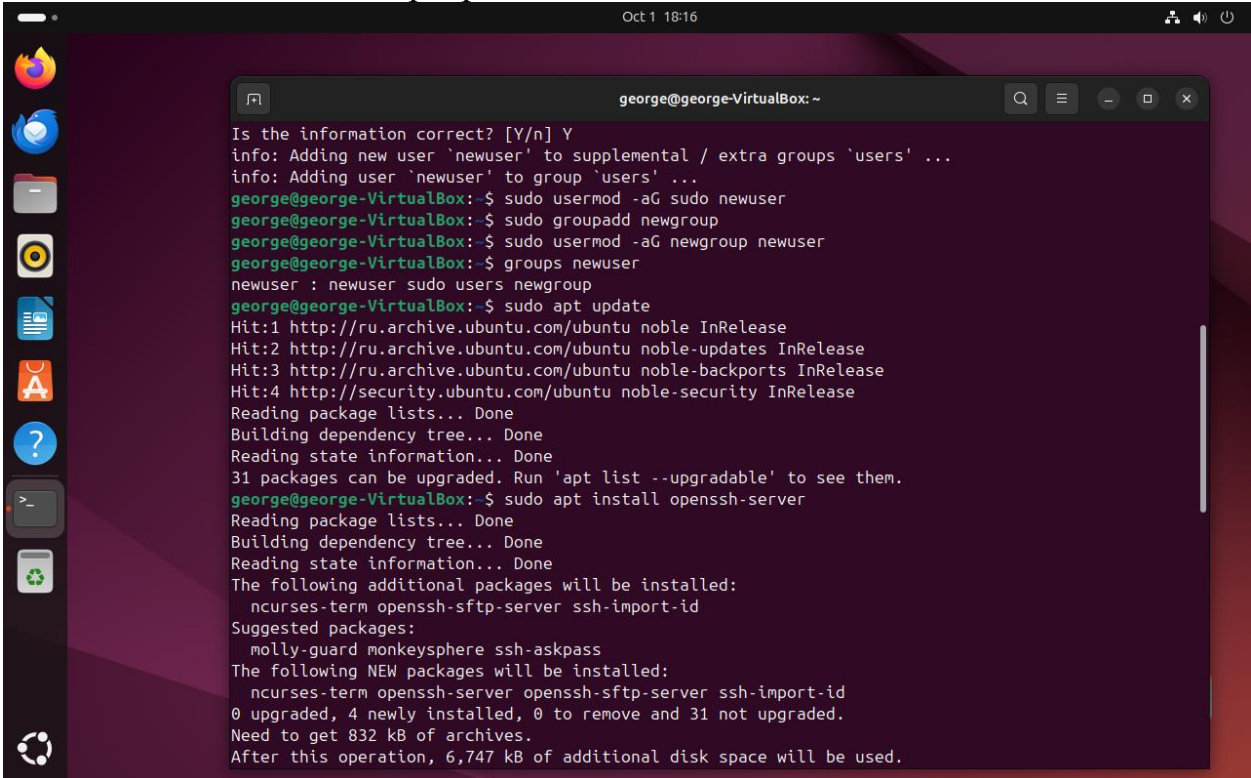
@include /etc/sudoers.d

^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute   ^C Location   M-U Undo      M-A Set Mark
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify   ^_ Go To Line  M-E Redo      M-6 Copy
```

Рисунок 12 Отредактировать файл /etc/sudoers с помощью утилиты nano, чтобы разрешить группе wheel использовать sudo с паролем

Задача 3. Настройка SSH на Ubuntu 24

1. Установить SSH-сервер



```
Oct 1 18:16
george@george-VirtualBox: ~
Is the information correct? [Y/n] Y
info: Adding new user 'newuser' to supplemental / extra groups 'users' ...
info: Adding user 'newuser' to group 'users' ...
george@george-VirtualBox:~$ sudo usermod -aG sudo newuser
george@george-VirtualBox:~$ sudo groupadd newgroup
george@george-VirtualBox:~$ sudo usermod -aG newgroup newuser
george@george-VirtualBox:~$ groups newuser
newuser : newuser sudo users newgroup
george@george-VirtualBox:~$ sudo apt update
Hit:1 http://ru.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://ru.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://ru.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
31 packages can be upgraded. Run 'apt list --upgradable' to see them.
george@george-VirtualBox:~$ sudo apt install openssh-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-sftp-server ssh-import-id
Suggested packages:
  molly-guard monkeysphere ssh-askpass
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
0 upgraded, 4 newly installed, 0 to remove and 31 not upgraded.
Need to get 832 kB of archives.
After this operation, 6,747 kB of additional disk space will be used.
```

Рисунок 13 Установить SSH-сервер

```
george@george-VirtualBox:~$ sudo apt update
```

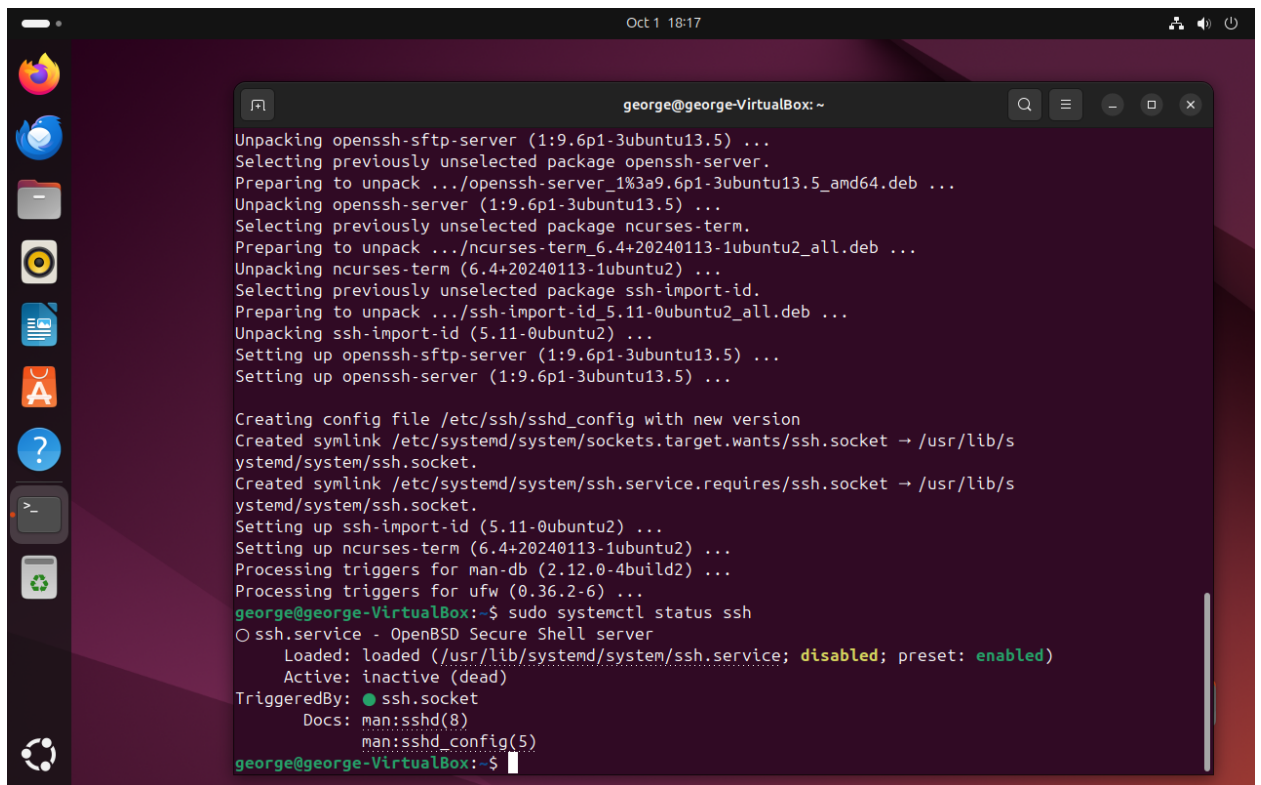
```
george@george-VirtualBox:~$ sudo apt install openssh-server
```

2. Проверить статус службы SSH

```
george@george-VirtualBox:~$ sudo systemctl status ssh
```

и включить ее для автоматического запуска

```
george@george-VirtualBox:~$ sudo systemctl enable ssh
```

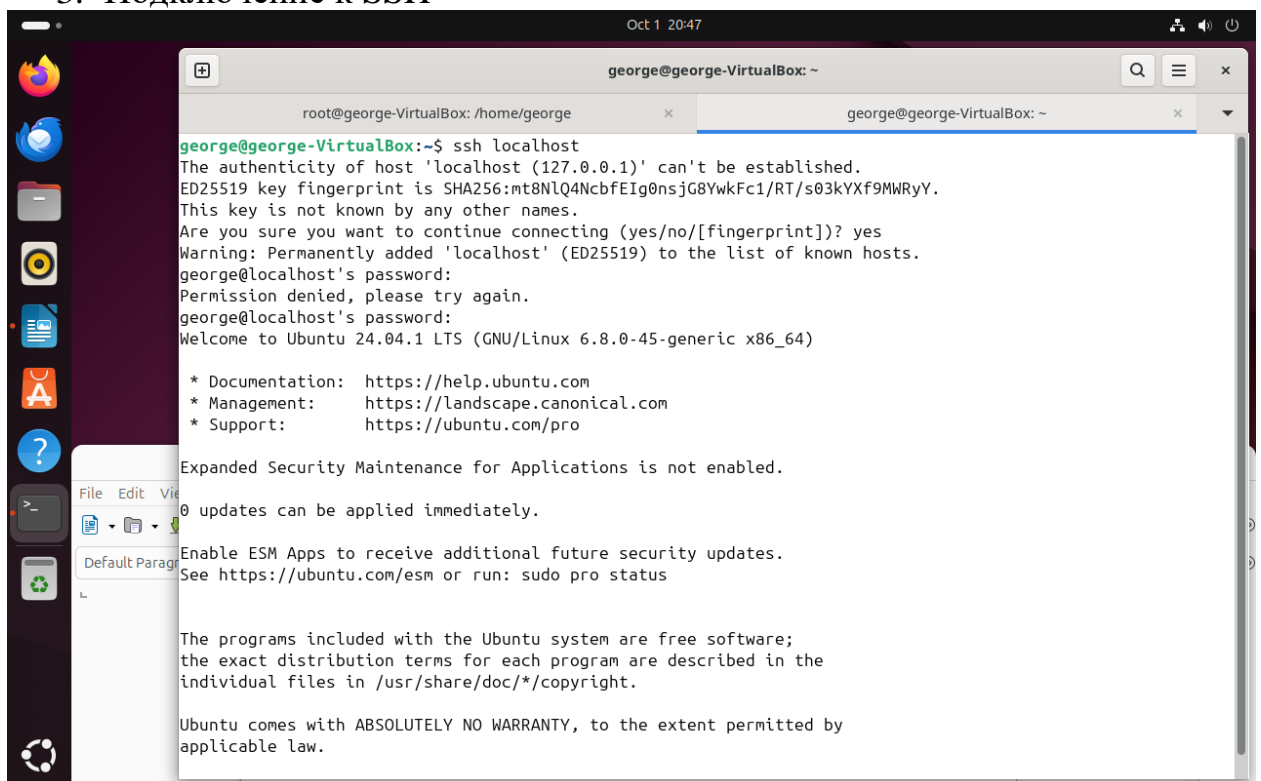


```
Oct 1 18:17
george@george-VirtualBox: ~
Unpacking openssh-sftp-server (1:9.6p1-3ubuntu13.5) ...
Selecting previously unselected package openssh-server.
Preparing to unpack .../openssh-server_1%3a9.6p1-3ubuntu13.5_and64.deb ...
Unpacking openssh-server (1:9.6p1-3ubuntu13.5) ...
Selecting previously unselected package ncurses-term.
Preparing to unpack .../ncurses-term_6.4+20240113-1ubuntu2_all.deb ...
Unpacking ncurses-term (6.4+20240113-1ubuntu2) ...
Selecting previously unselected package ssh-import-id.
Preparing to unpack .../ssh-import-id_5.11-0ubuntu2_all.deb ...
Unpacking ssh-import-id (5.11-0ubuntu2) ...
Setting up openssh-sftp-server (1:9.6p1-3ubuntu13.5) ...
Setting up openssh-server (1:9.6p1-3ubuntu13.5) ...

Creating config file /etc/ssh/sshd_config with new version
Created symlink /etc/systemd/system/sockets.target.wants/ssh.socket → /usr/lib/s
ystemd/system/ssh.socket.
Created symlink /etc/systemd/system/ssh.service.requires/ssh.socket → /usr/lib/s
ystemd/system/ssh.socket.
Setting up ssh-import-id (5.11-0ubuntu2) ...
Setting up ncurses-term (6.4+20240113-1ubuntu2) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for ufw (0.36.2-6) ...
george@george-VirtualBox:~$ sudo systemctl status ssh
○ ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
   Active: inactive (dead)
TriggeredBy: ● ssh.socket
   Docs: man:sshd(8)
        man:sshd_config(5)
george@george-VirtualBox:~$
```

Рисунок 14 Проверить статус службы SSH

3. Подключение к SSH



```
Oct 1 20:47
george@george-VirtualBox: ~
root@george-VirtualBox: /home/george
george@george-VirtualBox:~$ ssh localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ED25519 key fingerprint is SHA256:mt8NlQ4NcbfEIg0nsjG8YwkFc1/RT/s03kYXF9MWRyY.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'localhost' (ED25519) to the list of known hosts.
george@localhost's password:
Permission denied, please try again.
george@localhost's password:
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-45-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
```

Рисунок 15 Подключение к SSH

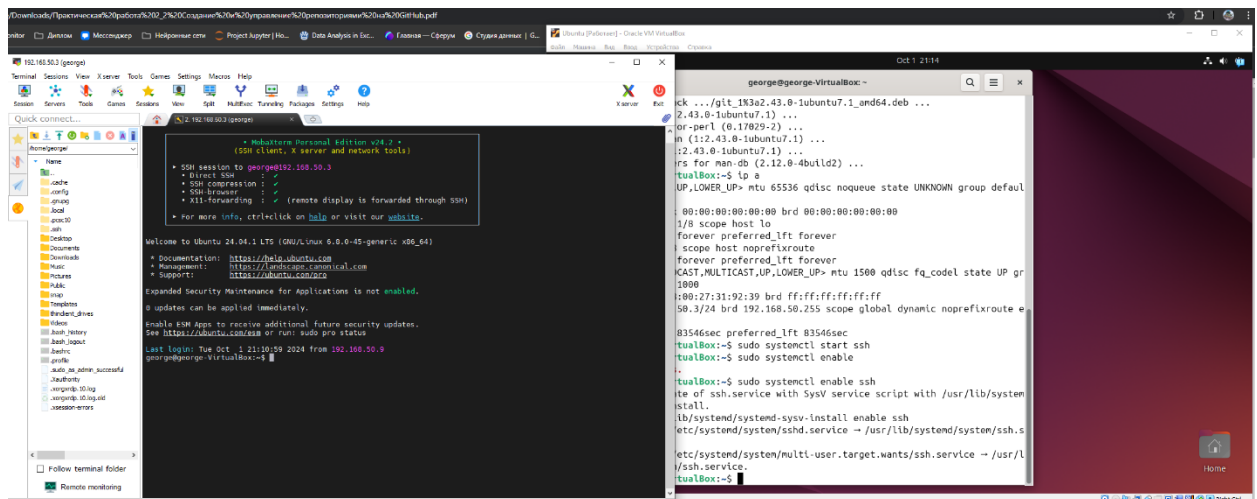


Рисунок 16 Подключение к SSH

Получение ip адреса

george@george-VirtualBox:~\$ ip a

george@george-VirtualBox:~\$ sudo systemctl start ssh

george@george-VirtualBox:~\$ sudo systemctl enable ssh

Установил MobaXterm для подключения к виртуальной машине

Задание по вариантам. Вариант 13

Задание 1. Найдите все файлы в вашем домашнем каталоге, измененные за последние 24 часа

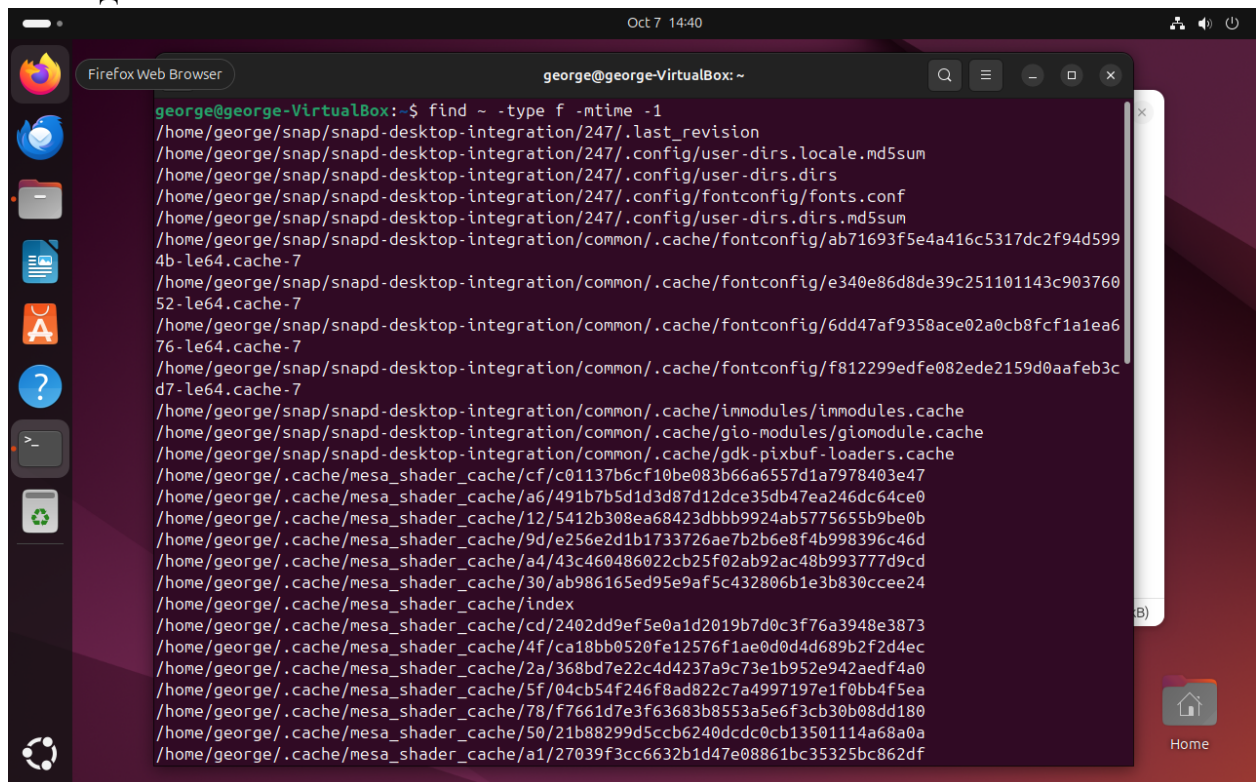


Рисунок 17 Все файлы в домашнем каталоге, измененные за последние 24 часа

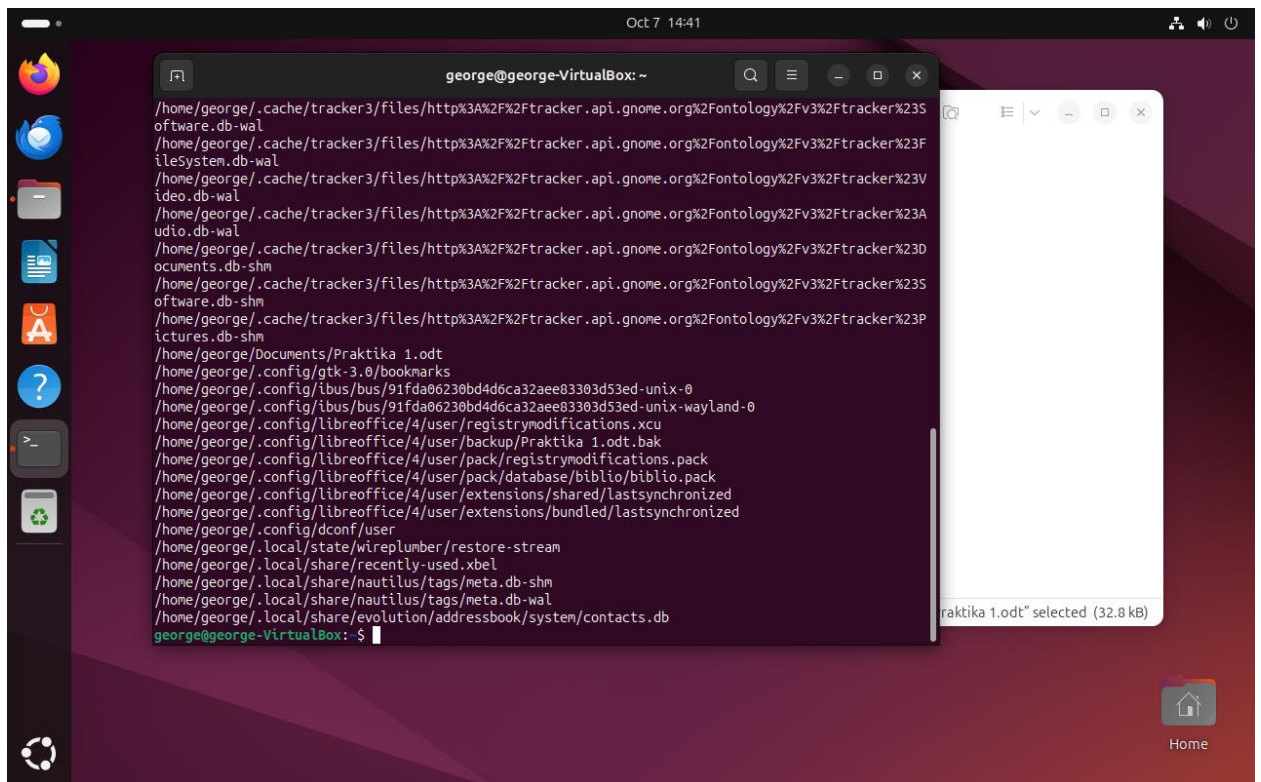


Рисунок 18 Все файлы в домашнем каталоге, измененные за последние 24 часа

```
george@george-VirtualBox:~$ find ~ -type f -mtime -1
/home/george/snap/snapd-desktop-integration/247/.last_revision
/home/george/snap/snapd-desktop-integration/247/.config/user-dirs.locale.md5sum
/home/george/snap/snapd-desktop-integration/247/.config/user-dirs.dirs
/home/george/snap/snapd-desktop-integration/247/.config/fontconfig/fonts.conf
/home/george/snap/snapd-desktop-integration/247/.config/user-dirs.dirs.md5sum
/home/george/snap/snapd-desktop-integration/common/.cache/fontconfig/ab71693f5e4a416c5317dc2f94d5994b-le64.cache-7
/home/george/snap/snapd-desktop-integration/common/.cache/fontconfig/e340e86d8de39c251101143c90376052-le64.cache-7
/home/george/snap/snapd-desktop-integration/common/.cache/fontconfig/6dd47af9358ace02a0cb8fcf1a1ea676-le64.cache-7
/home/george/snap/snapd-desktop-integration/common/.cache/fontconfig/f812299edfe082ede2159d0aafef3cd7-le64.cache-7
/home/george/snap/snapd-desktop-integration/common/.cache/immodules/immodules.cache
/home/george/snap/snapd-desktop-integration/common/.cache/gio-modules/giomodule.cache
/home/george/snap/snapd-desktop-integration/common/.cache/gdk-pixbuf-loaders.cache
/home/george/.cache/mesa_shader_cache/cf/c01137b6cf10be083b66a6557d1a7978403e47
/home/george/.cache/mesa_shader_cache/a6/491b7b5d1d3d87d12dce35db47ea246dc64ce0
/home/george/.cache/mesa_shader_cache/12/5412b308ea68423dbbb9924ab5775655b9be0b
/home/george/.cache/mesa_shader_cache/9d/e256e2d1b1733726ae7b2b6e8f4b998396c46d
/home/george/.cache/mesa_shader_cache/a4/43c460486022cb25f02ab92ac48b993777d9cd
/home/george/.cache/mesa_shader_cache/30/ab986165ed95e9af5c432806b1e3b830ccee24
/home/george/.cache/mesa_shader_cache/index
/home/george/.cache/mesa_shader_cache/cd/2402dd9ef5e0a1d2019b7d0c3f76a3948e3873
/home/george/.cache/mesa_shader_cache/4f/ca18bb0520fe12576f1ae0d0d4d689b2f2d4ec
/home/george/.cache/mesa_shader_cache/2a/368bd7e22c4d4237a9c73e1b952e942aedf4a0
/home/george/.cache/mesa_shader_cache/5f/04cb54f246f8ad822c7a4997197e1f0bb4f5ea
/home/george/.cache/mesa_shader_cache/78/f7661d7e3f63683b8553a5e6f3cb30b08dd180
/home/george/.cache/mesa_shader_cache/50/21b88299d5ccb6240dc0cb13501114a68a0a
```

/home/george/.cache/mesa_shader_cache/a1/27039f3cc6632b1d47e08861bc35325bc862df
/home/george/.cache/mesa_shader_cache/7f/2a9a6b736fcd8eb03ebeb3e30a138e07368172
/home/george/.cache/mesa_shader_cache/bf/41df29aa30adea48bc7338d8691c9b6adbc65f
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Video.db-shm
/home/george/.cache/tracker3/files/last-crawl.txt
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Pictures.db-wal
/home/george/.cache/tracker3/files/meta.db-shm
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Audio.db-shm
/home/george/.cache/tracker3/files/meta.db-wal
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Documents.db-wal
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23FileSystem.db-shm
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Software.db-wal
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23FileSystem.db-wal
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Video.db-wal
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Audio.db-wal
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Documents.db-shm
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Software.db-shm
/home/george/.cache/tracker3/files/http%3A%2F%2Ftracker.api.gnome.org%2Fontology%2Fv3
%2Ftracker%23Pictures.db-shm
/home/george/Documents/Praktika 1.odt
/home/george/.config/gtk-3.0/bookmarks
/home/george/.config/ibus/bus/91fda06230bd4d6ca32aee83303d53ed-unix-0
/home/george/.config/ibus/bus/91fda06230bd4d6ca32aee83303d53ed-unix-wayland-0
/home/george/.config/libreoffice/4/user/registrymodifications.xcu
/home/george/.config/libreoffice/4/user/backup/Praktika 1.odt.bak
/home/george/.config/libreoffice/4/user/pack/registrymodifications.pack
/home/george/.config/libreoffice/4/user/pack/database/biblio/biblio.pack
/home/george/.config/libreoffice/4/user/extensions/shared/lastsynchronized
/home/george/.config/libreoffice/4/user/extensions/bundled/lastsynchronized
/home/george/.config/dconf/user
/home/george/.local/state/wireplumber/restore-stream
/home/george/.local/share/recently-used.xbel
/home/george/.local/share/nautilus/tags/meta.db-shm
/home/george/.local/share/nautilus/tags/meta.db-wal
/home/george/.local/share/evolution/addressbook/system/contacts.db

Задание 2. Выведите список всех скрытых файлов в вашем домашнем каталоге.

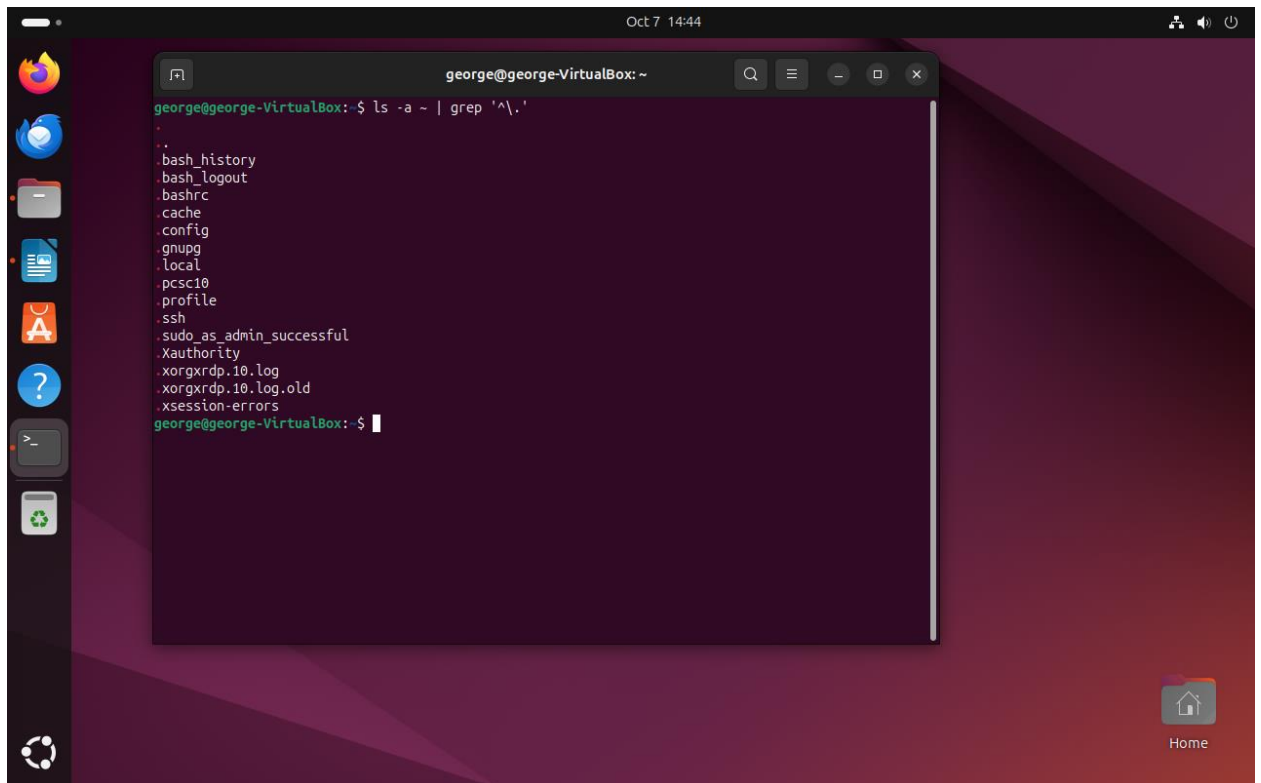


Рисунок 19 Список всех скрытых файлов в домашнем каталоге.

```
george@george-VirtualBox:~$ ls -a ~ | grep '^\.'
```

```
.  
..  
.bash_history  
.bash_logout  
.bashrc  
.cache  
.config  
.gnupg  
.local  
.pcsc10  
.profile  
.ssh  
.sudo_as_admin_successful  
.Xauthority  
.xorgxrdp.10.log  
.xorgxrdp.10.log.old  
.xsession-errors
```

Задание 3. Создайте жесткую ссылку на файл todo.txt с именем todo_link.txt

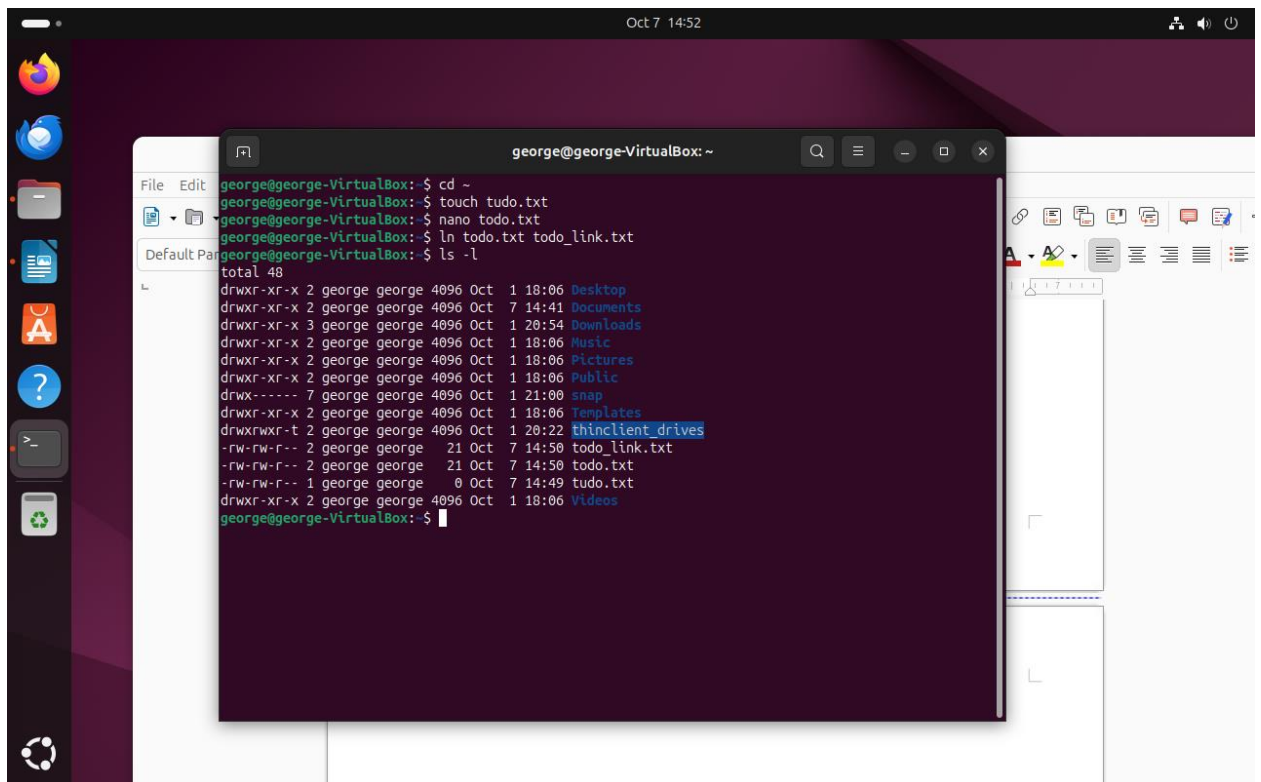


Рисунок 20 Жёсткая ссылка на файл `todo.txt` с именем `todo_link.txt`

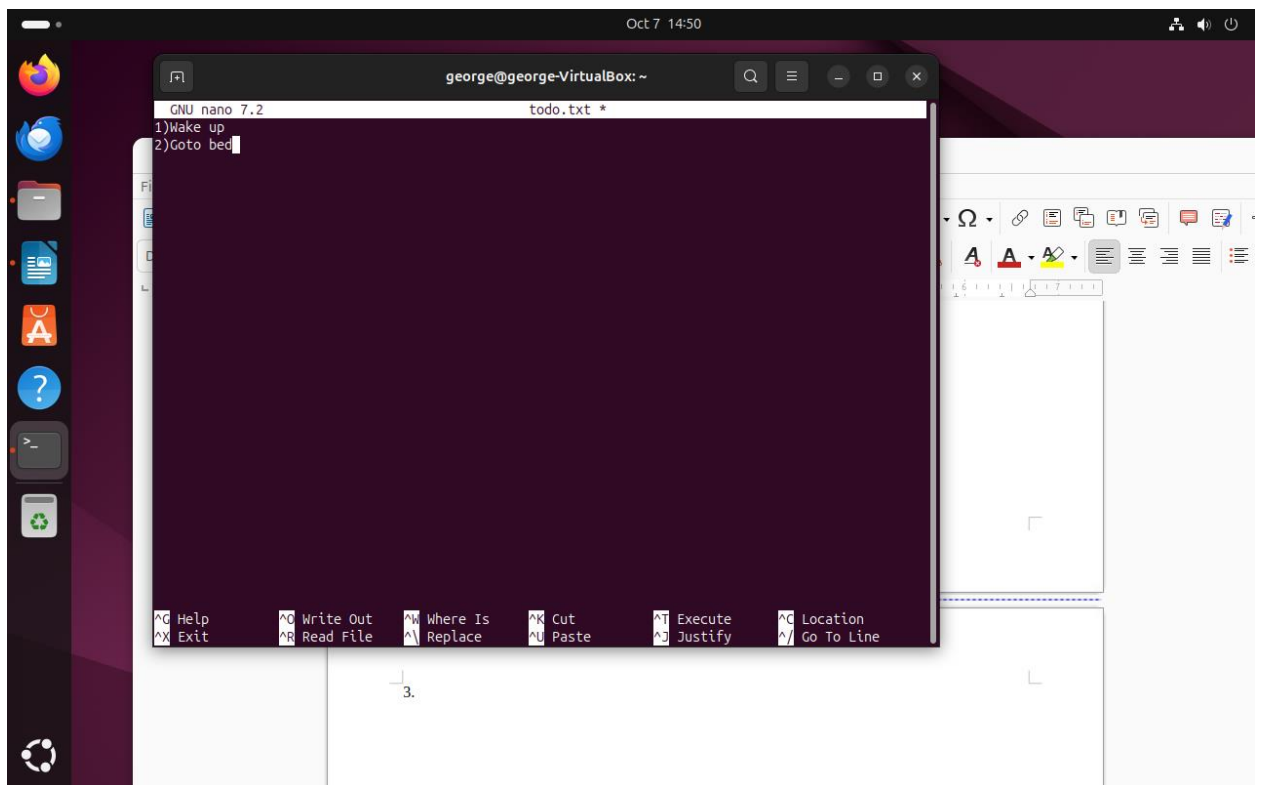


Рисунок 21 Содержание файла `todo.txt`

```

george@george-VirtualBox:~$ cd ~
george@george-VirtualBox:~$ touch tudo.txt
george@george-VirtualBox:~$ nano tudo.txt
george@george-VirtualBox:~$ ln tudo.txt todo_link.txt
george@george-VirtualBox:~$ ls -l
total 48
drwxr-xr-x 2 george george 4096 Oct  1 18:06 Desktop

```

drwxr-xr-x 2 george george 4096 Oct 7 14:41 Documents
drwxr-xr-x 3 george george 4096 Oct 1 20:54 Downloads
drwxr-xr-x 2 george george 4096 Oct 1 18:06 Music
drwxr-xr-x 2 george george 4096 Oct 1 18:06 Pictures
drwxr-xr-x 2 george george 4096 Oct 1 18:06 Public
drwx----- 7 george george 4096 Oct 1 21:00 snap
drwxr-xr-x 2 george george 4096 Oct 1 18:06 Templates
drwxrwxr-t 2 george george 4096 Oct 1 20:22 thinclient_drives
-rw-rw-r-- 2 george george 21 Oct 7 14:50 todo_link.txt
-rw-rw-r-- 2 george george 21 Oct 7 14:50 todo.txt
-rw-rw-r-- 1 george george 0 Oct 7 14:49 tudo.txt
drwxr-xr-x 2 george george 4096 Oct 1 18:06 Videos