Генинг Даниил Константинович
Раздел 1

1.

```
eltex-pg1-v7@eltex-2025-autumn-19:50> ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/eltex-pg1-v7/.ssh/id_rsa):
Created directory '/home/eltex-pg1-v7/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/eltex-pg1-v7/.ssh/id_rsa
Your public key has been saved in /home/eltex-pg1-v7/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:gkmzUeRZJhKe5tc1Vj0Alyo8NbomeMFCUM6qjpFUsWw eltex-pg1-v7@eltex-2025-autum
n
The key's randomart image is:
+---[RSA 3072]----+
|.o..oo+ +.++     |
| oo.o= =oo. o    |
| .oEB.oooo.  .   |
| .++o*=o.o       |
|.. o=.o+S        |
|o.. o.o.         |
|+  . o           |
|o.               |
|..               |
+----[SHA256]-----+
```

```
eltex-pg1-v7@eltex-2025-autumn-19:55> cat /home/eltex-pg1-v7/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDGzoRoJ1RZ90EieL4erG9T1/3b/kVYB16zoySWi
X7oe2NoxwfVL3Ln82salfW3n9hWe0oBZZZQ8kyzGFRMcETf6NYQfbRX2zb7c/mwUR46LtvbcdFlub
oOTT0B1WMBXx0Zf/2E8bxo9XVgOkYTaS8Tm5PqFRjNS9FdQRML2gwV5h52B5OP3gHneZyVHr5DKF7
```

2.

```
eltex-pg1-v7@eltex-2025-autumn-20:39> ssh-copy-id root@172.16.9.181
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/eltex-pg1-v
7/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter
out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompt
ed now it is to install the new keys
root@172.16.9.181's password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'root@172.16.9.181'"
and check to make sure that only the key(s) you wanted were added.
```

3.

```
eltex-pgl-v7@eltex-2025-autumn-20:46> ssh root@172.16.9.181
Enter passphrase for key '/home/eltex-pgl-v7/.ssh/id_rsa':
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-55-generic x86_64)

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

 System information as of Wed Oct 15 01:47:23 PM UTC 2025

  System load:  0.0                 Processes:             112
  Usage of /:   43.2% of 14.66GB    Users logged in:       0
  Memory usage: 5%                  IPv4 address for ens18: 172.16.9.181
  Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

119 updates can be applied immediately.
119 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

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


Last login: Wed Oct 15 13:38:31 2025 from 172.16.8.4
```

```
root@eltex-practice2-pgl-v7:~# cat ~/.ssh/authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDGzoRoJ1RZ90EieL4erG9T1/3b/kVYB16zoySWinFz
UqtFhRn85dUkhATrpAiPRjQwHRozTUp5kaRbVVd/sBa7pT8hZDUnc8XoW7SPfUJUhYYtKe694EMsIRAx
OjDttWCJ3J7c/j3ED3Z0ZcfowJZ26NduOc8fGX7oe2NoxwfVL3Ln82salfW3n9hWe0oBZZZQ8kyzGFRM
cETf6NYQfbRX2zb7c/mwUR46LtvbcdFlubI8lgx9KmwRMtAZPbWs6hHJ8a9bxpMa487xXwY7QqPLFGrM
IQbEfdasIvLQOPddzbPJ1HSVk/CEt3vD12TZigjDsPkA12imnMP1ArgkVR/279PuDRUHpFgX5EoOTT0B
1WMBXx0Zf/2E8bxo9XVgOkYTaS8Tm5PqFRjNS9FdQRML2gwV5h52B5OP3gHneZyVHr5DKF7kV1xgJXnf
Sp4e1dYRXctNBsrUcoAyLAknhREemV4zniX/ajCMkqJ6xIu55d3d9MJ9R1O9TpfHGfBvvB8= eltex-p
gl-v7@eltex-2025-autumn
```

```
root@eltex-practice2-pgl-v7:~# ls -l ~/.ssh/authorized_keys
-rw------- 1 root root 584 Oct 15 13:41 /root/.ssh/authorized_keys
```

```
eltex-pg1-v7@eltex-2025-autumn-20:50> cat ~/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaClyc2EAAAADAQABAAABgQDGzoRoJlRZ90EieL4erG9Tl/3b/kVYBl6zoySWinFz
UqtFhRn85dUkhATrpAiPRjQwHRozTUp5kaRbVVd/sBa7pT8hZDUnc8XoW7SPfUJUhYYtKe694EMsIRAx
OjDttWCJ3J7c/j3ED3Z0ZcfowJZ26NduOc8fGX7oe2NoxwfVL3Ln82salfW3n9hWe0oBZZZQ8kyzGFRM
cETf6NYQfbRX2zb7c/mwUR46LtvbcdFlubI8lgx9KmwRMtAZPbWs6hHJ8a9bxpMa487xXwY7QqPLFGrM
IQbEfdasIvLQOPddzbPJ1HSVk/CEt3vDl2TZigjDsPkAl2imnMPlArgkVR/279PuDRUHpFgX5EoOTT0B
lWMBXx0Zf/2E8bxo9XVgOkYTaS8Tm5PqFRjNS9FdQRML2gwV5h52B5OP3gHneZyVHr5DKF7kVlxgJXnf
Sp4eldYRXctNBsrUcoAyLAknhREemV4zniX/ajCMkqJ6xIu55d3d9MJ9Rl09TpfHGfBvvB8= eltex-p
g1-v7@eltex-2025-autumn
```

```
eltex-pg1-v7@eltex-2025-autumn-21:35> ls -l ~/.ssh/id_rsa.pub
-rw-r--r-- 1 eltex-pg1-v7 eltex-pg1-v7 584 Oct 15 19:54 /home/eltex-pg1-v7/.ssh/
id_rsa.pub
```

4.
```
Команда: ssh root@172.16.9.181 'useradd -m -d /home/user1 -s /bin/bash user1'

eltex-pg1-v7@eltex-2025-autumn-21:45> log_cmd "ssh root@172.16.9.181 'passwd user1'"
Enter passphrase for key '/home/eltex-pg1-v7/.ssh/id_rsa':
New password: f86gZo587hADG01j
Retype new password: f86gZo587hADG01j
passwd: password updated successfully
eltex-pg1-v7@eltex-2025-autumn-21:48>
```

Проверка:
```
root@eltex-practice2-pg1-v7:~# id user1
uid=1001(user1) gid=1001(user1) groups=1001(user1)
root@eltex-practice2-pg1-v7:~# ls -la /home/user1/
total 20
drwxr-x--- 2 user1 user1 4096 Oct 16 14:43 .
drwxr-xr-x 4 root  root  4096 Oct 16 14:43 ..
-rw-r--r-- 1 user1 user1  220 Mar 31  2024 .bash_logout
-rw-r--r-- 1 user1 user1 3771 Mar 31  2024 .bashrc
-rw-r--r-- 1 user1 user1  807 Mar 31  2024 .profile
root@eltex-practice2-pg1-v7:~#
```

5.
```
eltex-pg1-v7@eltex-2025-autumn-21:56> log_cmd "ssh root@172.16.9.181 'adduser user2'"
Enter passphrase for key '/home/eltex-pg1-v7/.ssh/id_rsa':
info: Adding user `user2' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `user2' (1002) ...
info: Adding new user `user2' (1002) with group `user2 (1002)' ...
info: Creating home directory `/home/user2' ...
info: Copying files from `/etc/skel' ...
New password: f86gZo587hADG02j
Retype new password: f86gZo587hADG02j
passwd: password updated successfully
Changing the user information for user2
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:

Is the information correct? [Y/n] info: Adding new user `user2' to supplemental / extra groups `users' ...
info: Adding user `user2' to group `users' ...
```

```
root@eltex-practice2-pgl-v7:~# id user2
uid=1002(user2) gid=1002(user2) groups=1002(user2),100(users)
root@eltex-practice2-pgl-v7:~# ls -la /home/user2/
```

```
eltex-pgl-v7@eltex-2025-autumn-22:08> log_cmd "ssh root@172.16.9.181 'adduser user3'"
Enter passphrase for key '/home/eltex-pgl-v7/.ssh/id_rsa':
info: Adding user `user3' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `user3' (1003) ...
info: Adding new user `user3' (1003) with group `user3 (1003)' ...
info: Creating home directory `/home/user3' ...
info: Copying files from `/etc/skel' ...
New password: f86gZo587hADG03j
Retype new password: f86gZo587hADG03j
passwd: password updated successfully
Changing the user information for user3
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:

Is the information correct? [Y/n] info: Adding new user `user3' to supplemental / extra groups `users' ...
info: Adding user `user3' to group `users' ...
```

6.
```
root@eltex-practice2-pgl-v7:~# id user3
uid=1003(user3) gid=1003(user3) groups=1003(user3),100(users)
root@eltex-practice2-pgl-v7:~# ls -la /home/user3/
```
```
Команда: ssh root@172.16.9.181 'chsh -s /usr/sbin/nologin user3'
        root@eltex-practice2-pgl-v7:~# su -s /bin/bash user3
Командuser3@eltex-practice2-pgl-v7:/root$
This a
-rw-r--r--user3@eltex-practice2-pgl-v7:/root$ exit
root@eltexexit
        root@eltex-practice2-pgl-v7:~#
```

7.
```
Команда: ssh root@172.16.9.181 'groupadd -g 1007 new_group'
```

```
root@eltex-practice2-pgl-v7:~# cat /etc/group | grep new_group
new_group:x:1007:
Команда: ssh root@172.16.9.181 'usermod -a -G new_group user1'
    root@eltex-practice2-pgl-v7:~# groups user1 user2 user3
Ком user1 : user1 new_group                                    r2'
    user2 : user2 users new_group
Ком user3 : user3 users new_group                              r3'
    root@eltex-practice2-pgl-v7:~# getent group new_group
    new_group:x:1007:user1,user2,user3
```

9.
```
Команда: ssh root@172.16.9.181 'mkdir /opt/share'
eltex-pgl-                                                     t/share'"
Enter pas Команда: ssh root@172.16.9.181 'chown :new_group /opt/share'
drwxrws---
        Команда: ssh root@172.16.9.181 'chmod g+s,ug+rwx,o= /opt/share'
    root@eltex-practice2-pgl-v7:~# ls -ld /opt/share
    drwxrws--- 2 root new_group 4096 Oct 16 17:05 /opt/share
```

10.

```
# set umask
umask 007
"./.profile" 30L, 830B written
```

```
root@eltex-practice2-pg1-v7:/# su - user1 -s /bin/bash
user1@eltex-practice2-pg1-v7:~$ cd /home/user1
user1@eltex-practice2-pg1-v7:~$ umask
0007
user1@eltex-practice2-pg1-v7:~$ touch f.txt
user1@eltex-practice2-pg1-v7:~$ ls -l f.txt
-rw-rw---- 1 user1 user1 0 Oct 18 05:23 f.txt
```

```
user1@eltex-practice2-pg1-v7:~$ pwd
/home/user1
user1@eltex-practice2-pg1-v7:~$ ls
user1@eltex-practice2-pg1-v7:~$ mkdir dr
user1@eltex-practice2-pg1-v7:~$ ls -l
total 4
drwxrwx--- 2 user1 user1 4096 Oct 18 05:27 dr
```

11.

```
root@eltex-practice2-pg1-v7:~# su - user1 -s /bin/bash
user1@eltex-practice2-pg1-v7:~$ touch /opt/share/file_user1.txt
user1@eltex-practice2-pg1-v7:~$
logout
root@eltex-practice2-pg1-v7:~# su - user2 -s /bin/bash
user2@eltex-practice2-pg1-v7:~$ touch /opt/share/file_user2.txt
user2@eltex-practice2-pg1-v7:~$
logout
root@eltex-practice2-pg1-v7:~# su - user3 -s /bin/bash
user3@eltex-practice2-pg1-v7:~$ touch /opt/share/file_user3.txt
user3@eltex-practice2-pg1-v7:~$
logout
root@eltex-practice2-pg1-v7:~# ls /opt/share
file_user1.txt  file_user2.txt  _file_user3.txt
```

```
root@eltex-practice2-pg1-v7:/# su - user1 -s /bin/bash
user1@eltex-practice2-pg1-v7:~$ rm /opt/share/file_user2.txt
user1@eltex-practice2-pg1-v7:~$ ls
user1@eltex-practice2-pg1-v7:~$ ls /opt/share
file_user1.txt  file_user3.txt
```

```
root@eltex-practice2-pg1-v7:/# su - user2 -s /bin/bash
user2@eltex-practice2-pg1-v7:~$ rm /opt/share/file_user3.txt
user2@eltex-practice2-pg1-v7:~$ ls /opt/share
file_user1.txt
```

```
root@eltex-practice2-pg1-v7:/# su - user3 -s /bin/bash
user3@eltex-practice2-pg1-v7:~$ rm /opt/share/file_user1.txt
user3@eltex-practice2-pg1-v7:~$ ls /opt/share
user3@eltex-practice2-pg1-v7:~$
```

12.

```
root@eltex-practice2-pg1-v7:/# chmod +t /opt/share
root@eltex-practice2-pg1-v7:/# ls -ld /opt/share
drwxrws--T 2 root new_group 4096 Oct 18 05:36 /opt/share
```

```
root@eltex-practice2-pg1-v7:/# su - user1 -s /bin/bash
user1@eltex-practice2-pg1-v7:~$ touch /opt/share/file_user1.txt
user1@eltex-practice2-pg1-v7:~$
logout
root@eltex-practice2-pg1-v7:/# su - user2 -s /bin/bash
user2@eltex-practice2-pg1-v7:~$ touch /opt/share/file_user2.txt
```

13.

```
root@eltex-practice2-pg1-v7:/# su - user1 -s /bin/bash
user1@eltex-practice2-pg1-v7:~$ rm /opt/share/file_user2.txt
rm: cannot remove '/opt/share/file_user2.txt': Operation not permitted
```

```
# 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

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

user1 ALL=(ALL) /usr/bin/dmesg
@includedir /etc/sudoers.d
```

```
[186612.921149] audit: type=1400 audit(1760701301.728:
eration="mknod" class="file" profile="ubuntu_pro_apt_n
3/dist-packages/uaclient/__pycache__/yaml.cpython-312.
1036 comm="python3" requested_mask="c" denied_mask="c"
[186612.923393] audit: type=1400 audit(1760701301.730:
eration="mknod" class="file" profile="ubuntu_pro_apt_n
3/dist-packages/uaclient/__pycache__/util.cpython-312.
1036 comm="python3" requested_mask="c" denied_mask="c"
user1@eltex-practice2-pg1-v7:~$ sudo dmesg
```

```
root@eltex-practice2-pg1-v7:/# cat > /usr/local/bin/dmesg_for_user2.sh << 'EOF'
> #!/bin/bash
> /usr/bin/dmesg
> EOF
```

```
root@eltex-practice2-pg1-v7:/# chmod u+s /usr/local/bin/dmesg_for_user2.sh
root@eltex-practice2-pg1-v7:/# ls -l /usr/local/bin/dmesg_for_user2.sh
-rwsr-xr-x 1 root root 27 Oct 18 06:55 /usr/local/bin/dmesg_for_user2.sh
```

```
root@eltex-practice2-pg1-v7:/# su - user2 -s /bin/bash
user2@eltex-practice2-pg1-v7:~$ /usr/local/bin/dmesg_for_user2.sh
dmesg: read kernel buffer failed: Operation not permitted
```

14.

```
Команда: ssh root@172.16.9.181 'chage -M 10 user1'

Команда: ssh root@172.16.9.181 'chage -l user1'
Last password change                                : Oct 16, 2025
Password expires                                    : Oct 26, 2025
Password inactive                                   : never
Account expires                                     : never
Minimum number of days between password change      : 0
Maximum number of days between password change      : 10
Number of days of warning before password expires   : 7

Команда: ssh root@172.16.9.181 'chage -M 10 user2'

Команда: ssh root@172.16.9.181 'chage -l user2'
Last password change                                : Oct 16, 2025
Password expires                                    : Oct 26, 2025
Password inactive                                   : never
Account expires                                     : never
Minimum number of days between password change      : 0
Maximum number of days between password change      : 10
Number of days of warning before password expires   : 7

Команда: ssh root@172.16.9.181 'chage -M 10 user3'

Команда: ssh root@172.16.9.181 'chage -l user3'
Last password change                                : Oct 16, 2025
Password expires                                    : Oct 26, 2025
Password inactive                                   : never
Account expires                                     : never
Minimum number of days between password change      : 0
Maximum number of days between password change      : 10
Number of days of warning before password expires   : 7
```

15.

```
'Генинг Даниил'
```

```
root@eltex-practice2-pg1-v7:/#
logout
Connection to 172.16.9.181 closed.
eltex-pg1-v7@eltex-2025-autumn-16:01> ssh root@172.16.9.181
Enter passphrase for key '/home/eltex-pg1-v7/.ssh/id_rsa':
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-55-generic x86_64)

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

 System information as of Sat Oct 18 09:02:13 AM UTC 2025

  System load:  0.0                Processes:             113
  Usage of /:   41.0% of 14.66GB   Users logged in:       0
  Memory usage: 16%                IPv4 address for ens18: 172.16.9.181
  Swap usage:   0%

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   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

83 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

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


*** System restart required ***
'Генинг Даниил'
Last login: Sat Oct 18 05:07:48 2025 from 172.16.8.4
```

16.

```
885  2025-10-18 16:30:31: log "16. Создать копию содержимого каталога /etc в каталог /root/etc_backup при помощи программы rsync."
886  2025-10-18 16:30:33: clear
887  2025-10-18 16:30:36: cat practice2_eltex-pg1-v7_part1.log
888  2025-10-18 16:30:38: clear
889  2025-10-18 16:31:34: log_cmd "ssh root@172.16.9.181 'rsync -av /etc/ /root/etc_backup/'"
890  2025-10-18 16:32:52: log_cmd "ssh root@172.16.9.181 'ls -la /root/etc_backup/'"
891  2025-10-18 16:33:20: vi practice2_eltex-pg1-v7_part1.log
892  2025-10-18 16:34:19: clear
893  2025-10-18 16:35:10: log_cmd "ssh root@172.16.9.181 'find /etc -type f | wc -l'"
894  2025-10-18 16:35:49: log_cmd "ssh root@172.16.9.181 'find /root/etc_backup -type f | wc -l'"
895  2025-10-18 16:36:07: cat practice2_eltex-pg1-v7_part1.log
```

```
Команда: ssh root@172.16.9.181 'find /etc -type f | wc -l'
860

Команда: ssh root@172.16.9.181 'find /root/etc_backup -type f | wc -l'
860
```

17.

```
Команда: ssh root@172.16.9.181 'mkdir /root/backups'

Команда: ssh root@172.16.9.181 'tar -czf /root/backups/archive.tar.gz /root/etc_backup'
tar: Removing leading `/' from member names

Команда: ssh root@172.16.9.181 'tar -cjf /root/backups/archive.tar.bz2 /root/etc_backup'
tar: Removing leading `/' from member names
/bin/sh: 1: bzip2: not found
tar: /root/backups/archive.tar.bz2: Wrote only 4096 of 10240 bytes
tar: Child returned status 127
tar: Error is not recoverable: exiting now

Команда: ssh root@172.16.9.181 'rm /root/backups/archive.tar.bz2'

Команда: ssh root@172.16.9.181 'apt-get install bzip2'
Reading package lists...
Building dependency tree...
Reading state information...
Suggested packages:
```

```
Команда: ssh root@172.16.9.181 'tar -cjf /root/backups/archive.tar.bz2 /root/etc_backup'
tar: Removing leading `/' from member names

Команда: ssh root@172.16.9.181 '7z a /root/backups/archive.7z /root/etc_backup'
bash: line 1: 7z: command not found

Команда: ssh root@172.16.9.181 'sudo apt install p7zip-full p7zip-rar'

WARNING: apt does not have a stable CLI interface. Use with caution in scripts.

Reading package lists...
Building dependency tree...
Reading state information...
The following additional packages will be installed:
  7zip 7zip-rar
```

```
Команда: ssh root@172.16.9.181 '7z a /root/backups/archive.7z /root/etc_backup'

7-Zip 23.01 (x64) : Copyright (c) 1999-2023 Igor Pavlov : 2023-06-20
 64-bit locale=en_US.UTF-8 Threads:2 OPEN_MAX:1024

Scanning the drive:
```

```
root@eltex-practice2-pg1-v7:~/backups# ls
archive.7z   archive.tar.bz2   archive.tar.gz
```

```
-rw-r--r-- 1 root root 4.5M Oct 18 10:53 /root/backups/archive.7z
-rw-r--r-- 1 root root 4.0M Oct 18 11:11 /root/backups/archive_max.7z
-rw-r--r-- 1 root root 554K Oct 18 10:39 /root/backups/archive.tar.bz2
-rw-r--r-- 1 root root 585K Oct 18 10:27 /root/backups/archive.tar.gz
```

18.
```
root@eltex-practice2-pg1-v7:/# echo "$(date '+%d.%m.%Y %H:%M:%S')" >> /etc/motd
root@eltex-practice2-pg1-v7:/# cat /etc/motd
'Генинг Даниил'
18.10.2025 11:30:15
```

```
eltex-pg1-v7@eltex-2025-autumn-18:33> log_cmd "ssh root@172.16.9.181 'rsync -av /etc/ /r
oot/etc_backup/'"
Enter passphrase for key '/home/eltex-pg1-v7/.ssh/id_rsa':
sending incremental file list
motd

sent 70,014 bytes  received 283 bytes  140,594.00 bytes/sec
total size is 2,368,429  speedup is 33.69
```

```
eltex-pg1-v7@eltex-2025-autumn-18:34> log_cmd "ssh root@172.16.9.181 'cp /root/backups/a
rchive.tar.gz /root/backups/archive_with_motd.tar.gz'"
Enter passphrase for key '/home/eltex-pg1-v7/.ssh/id_rsa':
```

```
root@eltex-practice2-pg1-v7:~/backups# ls
archive.7z  archive_max.7z  archive.tar.bz2  archive.tar.gz  archive_with_motd.tar.gz
root@eltex-practice2-pg1-v7:~/backups# ls -lh archive.tar.gz archive_with_motd.tar.gz
-rw-r--r-- 1 root root 585K Oct 18 10:27 archive.tar.gz
-rw-r--r-- 1 root root 585K Oct 18 11:41 archive_with_motd.tar.gz
```

```
eltex-pg1-v7@eltex-2025-autumn-18:58> log_cmd "ssh root@172.16.9.181 'tar -xzOf /root/ba
ckups/archive_with_motd.tar.gz etc/motd'"
Enter passphrase for key '/home/eltex-pg1-v7/.ssh/id_rsa':
'Генинг Даниил'
18.10.2025 11:30:15
```

```
root@eltex-practice2-pg1-v7:~/backups# tar -tzf archive.tar.gz | wc -l
1745
root@eltex-practice2-pg1-v7:~/backups# tar -tzf archive_with_motd.tar.gz | wc -l
1746
root@eltex-practice2-pg1-v7:~/backups# tar -xzOf archive_with_motd.tar.gz etc/motd
'Генинг Даниил'
18.10.2025 11:30:15
```

19.

```
Команда: ssh root@172.16.9.181 'diff /tmp/list_bzip2_normalized.txt /tmp/list_dir_all.txt'
1c1
<
---
> .
```

```
root@eltex-practice2-pg1-v7:/# wc -l /tmp/list_bzip2_normalized.txt /tmp/list_dir_all.txt
 1745 /tmp/list_bzip2_normalized.txt
 1745 /tmp/list_dir_all.txt
 3490 total
```

20.

```
Команда: ssh root@172.16.9.181 'diff /root/etc_backup_gzip/root/etc_backup/motd /root/etc_backup_7zip/root/etc_backup/motd'
diff: /root/etc_backup_7zip/root/etc_backup/motd: No such file or directory

Команда: ssh root@172.16.9.181 'mkdir -p /root/etc_backup_7zip && 7z x /root/backups/archive.7z -o/root/etc_backup_7zip'
```

```
Команда: ssh root@172.16.9.181 'mkdir -p /root/etc_backup_gzip && tar -xzf /root/backups/archive.tar.gz -C /root/etc_backup_gzip'

Команда: ssh root@172.16.9.181 'mkdir -p /root/etc_backup_7zip && 7z x /root/backups/archive.7z -o/root/etc_backup_7.zip'
```

```
root@eltex-practice2-pg1-v7:/# ls -la /root/etc_backup_gzip/root/etc_backup/motd /root/etc_backup_7zip/etc_backup/motd
-rw-r--r-- 1 root root 28 Oct 18 08:57 /root/etc_backup_7zip/etc_backup/motd
-rw-r--r-- 1 root root 28 Oct 18 08:57 /root/etc_backup_gzip/root/etc_backup/motd
```

```
root@eltex-practice2-pg1-v7:/# diff /root/etc_backup_gzip/root/etc_backup/motd /root/etc_backup_7zip/etc_backup/motd
root@eltex-practice2-pg1-v7:/#
```

Раздел 2

1.


```
Oct 15 07:51:44 eltex-practice2-pg1-v7 snapd[703]: daemon.go:550: done waiting for running hooks
Oct 15 07:51:47 eltex-practice2-pg1-v7 snapd[703]: overlord.go:518: Released state lock file
Oct 15 07:51:47 eltex-practice2-pg1-v7 snapd[703]: daemon stop requested to wait for socket activation
Oct 15 07:51:47 eltex-practice2-pg1-v7 systemd[1]: snapd.service: Deactivated successfully.
```

2.

```
1180  2025-10-19 16:58:01: log_cmd "ssh root@172.16.9.181 'awk '\''{source=\$3;
msg=\$0; sub(/^[^ ]+ [^ ]+ [^ ]+ /, \"\", msg); print source\": \"msg}'\'' /var
/log/auth.log | sed '\''s/\\[[0-9]*\\]://g; s/)::/:/g'\'' | sort'"
```

```
eltex-pg1-v7@eltex-2025-autumn-17:02> tail -n 10 practice2_eltex-pg1-v7_part2.lo
g
systemd-logind: Session 769 logged out. Waiting for processes to exit.
systemd-logind: Session 776 logged out. Waiting for processes to exit.
systemd-logind: Session 777 logged out. Waiting for processes to exit.
systemd-logind: Session 778 logged out. Waiting for processes to exit.
systemd-logind: Session 780 logged out. Waiting for processes to exit.
systemd-logind: Session 781 logged out. Waiting for processes to exit.
systemd-logind: Session 784 logged out. Waiting for processes to exit.
(systemd: pam_unix(systemd-user:session): session opened for user root(uid=0) by
 root(uid=0)
(systemd: pam_unix(systemd-user:session): session opened for user root(uid=0) by
 root(uid=0)
```

3.

```
eltex-pg1-v7@eltex-2025-autumn-17:32> log_cmd "ssh root@172.16.9.181 'awk '\''{s
ource=\$3; msg=\$0; sub(/^[^ ]+ [^ ]+ [^ ]+ /, \"\", msg); print source\": \"msg
}'\'' /var/log/auth.log | sed '\''s/\[[0-9]*\]://g; s/)::/:/g; s/(//g'\'' | cut
-d: -f1 | sort | uniq -c | sort -nr'"
Enter passphrase for key '/home/eltex-pg1-v7/.ssh/id_rsa':
    156 CRON
     62 sshd
     37 systemd-logind
      2 systemd
```

4.

```
Команда: ssh root@172.16.9.181 'getent passwd | awk -F: '\''$7 == "/usr/sbin/no
ogin" {print $3"," $1}'\'' | sort -t, -nr -k1 | while IFS=, read uid username;
o groups=$(id -nG "$username" 2>/dev/null | tr " " ","); echo "$uid, $username,
$groups"; done'
65534, nobody, nogroup
1003, user3, user3,users,new_group
998, systemd-network, systemd-network
997, systemd-timesync, systemd-timesync
992, systemd-resolve, systemd-resolve
991, polkitd, polkitd
989, fwupd-refresh, fwupd-refresh
109, sshd, nogroup
108, usbmux, plugdev
107, landscape, landscape
```

```
105, tcpdump, tcpdump
104, uuidd, uuidd
103, syslog, syslog,adm
101, messagebus, messagebus
42, _apt, nogroup
39, irc, irc
38, list, list
34, backup, backup
33, www-data, www-data
13, proxy, proxy
10, uucp, uucp
9, news, news
8, mail, mail
7, lp, lp
6, man, man
5, games, games
3, sys, sys
2, bin, bin
1, daemon, daemon
```

5.

```
Команда: ssh root@172.16.9.181 'dmesg | grep -i "kernel"'
[    0.000000] KERNEL supported cpus:
[    0.047389] Booting paravirtualized kernel on KVM
[    0.048405] Kernel command line: BOOT_IMAGE=/vmlinuz-6.8.0-55-generic root=/dev/mapper/ubuntu--vg-ubuntu--lv ro
[    0.048437] Unknown kernel command line parameters "BOOT_IMAGE=/vmlinuz-6.8.0-55-generic", will be passed to user space.
[    0.109630] Memory: 3933488K/4193760K available (22528K kernel code, 4443K rwdata, 14344K rodata, 4988K init, 4716K bss, 260012K reserved, 0K cma-reserved)
[    0.268339] DMA: preallocated 512 KiB GFP_KERNEL pool for atomic allocations
[    0.268370] DMA: preallocated 512 KiB GFP_KERNEL|GFP_DMA pool for atomic allocations
[    0.268399] DMA: preallocated 512 KiB GFP_KERNEL|GFP_DMA32 pool for atomic allocations
[    0.503530] Loaded X.509 cert 'Build time autogenerated kernel key: e0bedf6fa049a1e09bd65ebab3904f14cdd5bc68'
[    0.507095] Loaded X.509 cert 'Canonical Ltd. Kernel Module Signing: 88f752e560a1e0737e31163a466ad7b70a850c19'
[    0.644010] Loaded X.509 cert 'Build time autogenerated kernel key: e0bedf6fa049a1e09bd65ebab3904f14cdd5bc68'
[    0.663723] Freeing unused kernel image (initmem) memory: 4988K
[    0.664770] Write protecting the kernel read-only data: 38912k
[    0.665629] Freeing unused kernel image (rodata/data gap) memory: 2040K
[    6.002031] systemd[1]: Listening on systemd-udevd-kernel.socket - udev Kernel Socket.
[    6.011239] systemd[1]: Mounting sys-kernel-debug.mount - Kernel Debug File System...
[    6.016761] systemd[1]: Mounting sys-kernel-tracing.mount - Kernel Trace File System...
[    6.040094] systemd[1]: Starting modprobe@configfs.service - Load Kernel Module configfs...
[    6.046061] systemd[1]: Starting modprobe@dm_mod.service - Load Kernel Module dm_mod...
[    6.066771] systemd[1]: Starting modprobe@drm.service - Load Kernel Module drm...
[    6.071670] systemd[1]: Starting modprobe@efi_pstore.service - Load Kernel Module efi_pstore...
[    6.075870] systemd[1]: Starting modprobe@fuse.service - Load Kernel Module fuse...
[    6.081106] systemd[1]: Starting modprobe@loop.service - Load Kernel Module loop...
[    6.087812] systemd[1]: Starting systemd-modules-load.service - Load Kernel Modules..
[    6.089752] systemd[1]: Starting systemd-remount-fs.service - Remount Root and Kernel File Systems...
```

6.

```
2025-10-19 18:11:51 - 6. Подсчитать кол-во строк в файле /var/log/kern.log.
Команда: ssh root@172.16.9.181 'wc -l /var/log/kern.log'
0 /var/log/kern.log
```

7.

```
Команда: ssh root@172.16.9.181 'awk '\''/^Commandline:/{cmd=$0} /^Start-Date:/{start=$0} /^End-Date:/{end=$0; print cmd "; " start "; " end; cmd=start=end=""}'\'' /var/log/apt/history.log'
Commandline: apt-get install --reinstall apt; Start-Date: 2025-02-16  20:51:22; End-Date: 2025-02-16  20:51:24
Commandline: apt-get install --reinstall base-files; Start-Date: 2025-02-16  20:51:26; End-Date: 2025-02-16  20:51:28
Commandline: apt-get install --reinstall base-passwd; Start-Date: 2025-02-16  20:51:31; End-Date: 2025-02-16  20:51:32
Commandline: apt-get install --reinstall bash; Start-Date: 2025-02-16  20:51:35; End-Date: 2025-02-16  20:51:37
Commandline: apt-get install --reinstall bsdutils; Start-Date: 2025-02-16  20:51:39; End-Date: 2025-02-16  20:51:41
Commandline: apt-get install --reinstall coreutils; Start-Date: 2025-02-16  20:51:44; End-Date: 2025-02-16  20:51:45
Commandline: apt-get install --reinstall dash; Start-Date: 2025-02-16  20:51:48; End-Date: 2025-02-16  20:51:49
Commandline: apt-get install --reinstall debconf; Start-Date: 2025-02-16  20:51:52; End-Date: 2025-02-16  20:51:53
Commandline: apt-get install --reinstall debianutils; Start-Date: 2025-02-16  20:51:56; End-Date: 2025-02-16  20:51:58
Commandline: apt-get install --reinstall diffutils; Start-Date: 2025-02-16  20:52:00; End-Date: 2025-02-16  20:52:02
Commandline: apt-get install --reinstall dpkg; Start-Date: 2025-02-16  20:52:04; End-Date: 2025-02-16  20:52:06
Commandline: apt-get install --reinstall e2fsprogs; Start-Date: 2025-02-16  20:52:09; End-Date: 2025-02-16  20:52:10
Commandline: apt-get install --reinstall findutils; Start-Date: 2025-02-16  20:52:13; End-Date: 2025-02-16  20:52:14
Commandline: apt-get install --reinstall gcc-14-base:amd64; Start-Date: 2025-02-16  20:52:17; End-Date: 2025-02-16  20:52:18
Commandline: apt-get install --reinstall gpgv; Start-Date: 2025-02-16  20:52:21; End-Date: 2025-02-16  20:52:23
Commandline: apt-get install --reinstall grep; Start-Date: 2025-02-16  20:52:25; End-Date: 2025-02-16  20:52:27
Commandline: apt-get install --reinstall gzip; Start-Date: 2025-02-16  20:52:29; End-Date: 2025-02-16  20:52:31
Commandline: apt-get install --reinstall hostname; Start-Date: 2025-02-16  20:52:34; End-Date: 2025-02-16  20:52:35
Commandline: apt-get install --reinstall init-system-helpers; Start-Date: 2025-02-16  20:52:38; End-Date: 2025-02-16  20:52:39
Commandline: apt-get install --reinstall libacl1:amd64; Start-Date: 2025-02-16  20:52:42; End-Date: 2025-02-16  20:52:43
Commandline: apt-get install --reinstall libapt-pkg6.0t64:amd64; Start-Date: 2025-02-16  20:52:46; End-Date: 2025-02-16  20:52:47
Commandline: apt-get install --reinstall libassuan0:amd64; Start-Date: 2025-02-16  20:52:50; End-Date: 2025-02-16  20:52:51
Commandline: apt-get install --reinstall libattr1:amd64; Start-Date: 2025-02-16  20:52:54; End-Date: 2025-02-16  20:52:56
Commandline: apt-get install --reinstall libaudit-common; Start-Date: 2025-02-16  20:52:58; End-Date: 2025-02-16  20:53:00
Commandline: apt-get install --reinstall libaudit1:amd64; Start-Date: 2025-02-16  20:53:02; End-Date: 2025-02-16  20:53:04
Commandline: apt-get install --reinstall libblkid1:amd64; Start-Date: 2025-02-16  20:53:06; End-Date: 2025-02-16  20:53:08
Commandline: apt-get install --reinstall libbz2-1.0:amd64; Start-Date: 2025-02-16  20:53:11; End-Date: 2025-02-16  20:53:12
Commandline: apt-get install --reinstall libc-bin; Start-Date: 2025-02-16  20:53:15; End-Date: 2025-02-16  20:53:17
Commandline: apt-get install --reinstall libc6:amd64; Start-Date: 2025-02-16  20:53:19; End-Date: 2025-02-16  20:53:22
Commandline: apt-get install --reinstall libcap-ng0:amd64; Start-Date: 2025-02-16  20:53:25; End-Date: 2025-02-16  20:53:26
Commandline: apt-get install --reinstall libcap2:amd64; Start-Date: 2025-02-16  20:53:29; End-Date: 2025-02-16  20:53:30
Commandline: apt-get install --reinstall libcom-err2:amd64; Start-Date: 2025-02-16  20:53:33; End-Date: 2025-02-16  20:53:34
Commandline: apt-get install --reinstall libcrypt1:amd64; Start-Date: 2025-02-16  20:53:37; End-Date: 2025-02-16  20:53:38
```

Раздел 3

1.

Dan-Gen

2.

2025-10-19 21:17:03 - 2. Установка git и набор утилит для управления github из командной строки gh.

Команда: ssh root@172.16.9.181 'apt update'

WARNING: apt does not have a stable CLI interface. Use with caution in scripts.

Hit:1 http://ru.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ru.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:4 http://ru.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://ru.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,498 kB]
Get:6 http://ru.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:7 http://ru.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:8 http://ru.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1,496 kB]
Get:9 http://ru.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [378 kB]
Get:10 http://ru.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:11 http://ru.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7,140 B]
Get:12 http://ru.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:13 http://ru.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [11.0 kB]
Get:14 http://ru.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:15 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:16 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:17 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.3 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Fetched 4,019 kB in 1s (2,715 kB/s)
Reading package lists...
Building dependency tree...
Reading state information...
83 packages can be upgraded. Run 'apt list --upgradable' to see them.

Команда: ssh root@172.16.9.181 'apt install git gh'

WARNING: apt does not have a stable CLI interface. Use with caution in scripts.

Reading package lists...
Building dependency tree...
Reading state information...
git is already the newest version (1:2.43.0-1ubuntu7.3).
git set to manually installed.
The following NEW packages will be installed:
  gh
0 upgraded, 1 newly installed, 0 to remove and 83 not upgraded.
Need to get 8,836 kB of archives.
After this operation, 45.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] Get:1 http://ru.archive.ubuntu.com/ubuntu noble-updates/universe amd64 gh amd64 2.45.0-1ubuntu0.3 [8,836 kB]
debconf: unable to initialize frontend: Dialog
debconf: (TERM is not set, so the dialog frontend is not usable.)

3.

2025-10-19 22:18:02 - 3. Установить параметры git.
Команда: ssh root@172.16.9.181 'git config --global user.name "Dan-Gen"'

Команда: ssh root@172.16.9.181 'git config --global user.email "gening05@inbox.ru"'

Команда: ssh root@172.16.9.181 'git config --global init.defaultBranch main'

4.

2025-10-19 22:30:33 - 4. Создать ключ ssh.
Команда: ssh root@172.16.9.181 'ssh-keygen -t ed25519 -f ~/.ssh/Dan-Gen'
Enter passphrase (empty for no passphrase): Enter same passphrase again: Generating public/private ed25519 key pair.
Your identification has been saved in /root/.ssh/Dan-Gen
Your public key has been saved in /root/.ssh/Dan-Gen.pub
The key fingerprint is:
SHA256:uPeN8m2BZfNPqjzPTP9QufEhfRlFXRuSr8jPMboStPQ root@eltex-practice2-pg1-v7
The key's randomart image is:
+--[ED25519 256]--+
| ..o*|
| .. =|
| .o |
| . o   + ..+|
| . S ++.+.*o|
| . o.E.+o.B|
| . . . +.==.|
| ..o *o*.o.|
| o=o*++ +|
+----[SHA256]-----+

5.

Congratulations, you're all set!

Your device is now connected.

```
2025-10-19 22:56:17 - 5. Подключить компьютер к github.
Команда: ssh root@172.16.9.181 'gh auth login'

! First copy your one-time code: E238-DF96
Open this URL to continue in your web browser: https://github.com/login/device
✓ Authentication complete.
! Authentication credentials saved in plain text
✓ Logged in as Dan-Gen
```

6.

```
2025-10-19 23:06:46 - 6. Указать автоматическую авторизацию только для сайта git
hub.com.
Команда: ssh root@172.16.9.181 'gh auth setup-git --hostname github.com'
```

7.

```
2025-10-19 23:19:16 - 7. Убедиться, что все создано.
Команда: ssh root@172.16.9.181 'gh auth status'
github.com
  ✓ Logged in to github.com account Dan-Gen (/root/.config/gh/hosts.yml)
  - Active account: true
  - Git operations protocol: ssh
  - Token: gho_****************************************
  - Token scopes: 'admin:public_key', 'gist', 'read:org', 'repo'
```

8.

```
2025-10-19 23:41:32 - 8. Создать репозиторий на сервере github.
Команда: ssh root@172.16.9.181 'gh repo create --public ELTEX-autumn-2025'
```

9.

```
2025-10-19 23:41:32 - 9. Наполнение репозитория.
Команда: ssh root@172.16.9.181 'mkdir ~/ELTEX-autumn-2025 && cd ~/ELTEX-autumn-2
025'
'git init'
'git add README.md'
'git commit -m "first commit"'
'git branch -M main'
'git remote add origin https://github.com/Dan-Gen/ELTEX-autumun-2025.git'

Команда: ssh root@172.16.9.181 'cd ~/ELTEX-autumn-2025 && git status'
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
```

10.
```
2025-10-19 00:09:13 - 10. Клонирование репозитория.
Команда: ssh root@172.16.9.181 'mkdir ~/ELTEX-autumn-2025-clone && cd ~/ELTEX-au
tumn-2025-clone'
'git clone https://github.com/Dan-Gen/ELTEX-autumn-2025.git .'
```

11.
```
2025-10-20 00:28:22 - 11. Внести изменения в основном каталоге и в каталоге с клоном.
Команда: ssh root@172.16.9.181 'cd ~/ELTEX-autumn-2025-clone && git fetch'
'git log origin/main'
'git diff main origin/main'
'git merge'
```

12.
```
2025-10-20 19:36:59 - 12. Оформление 2 практики.

cp /var/log/custom_logs/practice2_eltex-pg1-v7_part1.log /root/ELTEX-autumn-2025/module1/task2
cp /var/log/custom_logs/practice2_eltex-pg1-v7_part2.log /root/ELTEX-autumn-2025/module1/task2
cp /var/log/custom_logs/practice2_eltex-pg1-v7_part3.log /root/ELTEX-autumn-2025/module1/task2
```