Лабораторная работа 11

Настройка безопасного удалённого доступа по протоколу SSH

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2025-11-15

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Раздел 1

1. Информация

1.1 Докладчик

- Митрофанов Тимур Александрович

1.1 Докладчик

- Митрофанов Тимур Александрович
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Раздел 2

2. Вводная часть

2.1 Цели и задачи

- Приобретение практических навыков по настройке удалённого доступа к серверу с помощью SSH.

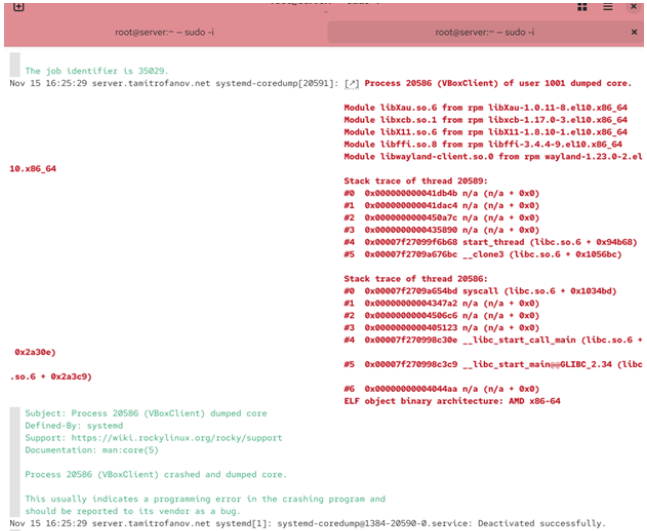
Раздел 3

3. Выполнение заданий

3.1 слайд 1

```
[tamitrofanov@server.tamitrofanov.net ~]$ sudo -i
[sudo] password for tamitrofanov:
[root@server.tamitrofanov.net ~]# passwd root
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
[root@server.tamitrofanov.net ~]# passwd root
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
[root@server.tamitrofanov.net ~]#
[root@server.tamitrofanov.net ~]#
[root@server.tamitrofanov.net ~]# passwd root
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
[root@server.tamitrofanov.net ~]#
```

3.2 слайд 2


root@server:~ — sudo -i
root@server:~ — sudo -i
The job identifier is 35029.
Nov 15 16:25:29 server.tamitrofanov.net systemd-coredump[20591]: [↗] Process 20586 (VBoxClient) of user 1001 dumped core.
Module libXau.so.6 from rpm libXau-1.0.11-8.el10.x86_64
Module libxcb.so.1 from rpm libxcb-1.17.0-3.el10.x86_64
Module libX11.so.6 from rpm libX11-1.8.10-1.el10.x86_64
Module libffi.so.8 from rpm libffi-3.4.4-9.el10.x86_64
Module libwayland-client.so.0 from rpm wayland-1.23.0-2.el
10.x86_64
Stack trace of thread 20589:
#0 0x00000000041db4b n/a (n/a + 0x0)
#1 0x00000000041dac4 n/a (n/a + 0x0)
#2 0x000000000450a7c n/a (n/a + 0x0)
#3 0x0000000000435890 n/a (n/a + 0x0)
#4 0x00007f270999f6b68 start_thread (libc.so.6 + 0x94b68)
#5 0x00007f2709a676bc __clone3 (libc.so.6 + 0x1056bc)
Stack trace of thread 20586:
#0 0x00007f2709a654bd syscall (libc.so.6 + 0x1034bd)
#1 0x00000000004347a2 n/a (n/a + 0x0)
#2 0x000000000450c6 n/a (n/a + 0x0)
#3 0x0000000000405123 n/a (n/a + 0x0)
#4 0x00007f270998c30e __libc_start_call_main (libc.so.6 +
0x2a30e)
#5 0x00007f270998c3c9 __libc_start_main@@GLIBC_2.34 (libc
.so.6 + 0x2a3c9)
#6 0x00000000004044aa n/a (n/a + 0x0)
ELF object binary architecture: AMD x86-64
Subject: Process 20586 (VBoxClient) dumped core
Defined-By: systemd
Support: https://wiki.rockylinux.org/rocky/support
Documentation: man:core(5)
Process 20586 (VBoxClient) crashed and dumped core.
This usually indicates a programming error in the crashing program and
should be reported to its vendor as a bug.
Nov 15 16:25:29 server.tamitrofanov.net systemd[1]: systemd-coredump@1384-20590-0.service: Deactivated successfully.

3.3 слайд 3

```
[root@client.tamitrofanov.net ~]#
[root@client.tamitrofanov.net ~]# ssh root@server.tamitrofanov.net
The authenticity of host 'server.tamitrofanov.net (192.168.1.1)' can't be established.
ED25519 key fingerprint is SHA256:P5dS2DpuJpn/RRQavMAQ5prSyv96seCb42L+n7pX+Iw.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added 'server.tamitrofanov.net' (ED25519) to the list of known hosts.
root@server.tamitrofanov.net's password:
Permission denied, please try again.
root@server.tamitrofanov.net's password:
Permission denied, please try again.
root@server.tamitrofanov.net's password:
root@server.tamitrofanov.net: Permission denied (publickey,gssapi-keyex,gssapi-with-mic,password).
[root@client.tamitrofanov.net ~]#
```

Рисунок 3: попытка входа под рутом

3.4 слайд 4

```
# Authentication:

#LoginGraceTime 2m
PermitRootLogin no
#StrictModes yes
#MaxAuthTries 6
```

Рисунок 4: изменение файла

3.5 слайд 5

```
@server.tamitrofanov.net ~]#
@server.tamitrofanov.net ~]# systemctl restart sshd
@server.tamitrofanov.net ~]#
```

Рисунок 5: перезапуск службы

3.6 слайд 6

```
Last login: Sat Nov 15 16:41:58 2025 from 192.168.1.1
[tamitrofanov@server.tamitrofanov.net ~]$
[tamitrofanov@server.tamitrofanov.net ~]$
[tamitrofanov@server.tamitrofanov.net ~]$
[tamitrofanov@server.tamitrofanov.net ~]$
[tamitrofanov@server.tamitrofanov.net ~]$ ssh root@server.tamitrofanov.net
root@server.tamitrofanov.net's password:
Permission denied, please try again.
root@server.tamitrofanov.net's password:
Permission denied, please try again.
root@server.tamitrofanov.net's password:
root@server.tamitrofanov.net: Permission denied (publickey,gssapi-keyex,gssapi-with-mic,password).
[tamitrofanov@server.tamitrofanov.net ~]$
```

Рисунок 6: повторная попытка зайти под рутом и запрет сервера на это действие

3.7 слайд 7

tamitrofanov@server:~ — ssh tamitrofanov@server.tamitrofanov.net
root@client:~ — sudo -i
tamitrofanov@server:~ — ssh tamitrofanov@server.tamitrofanov.n
[tamitrofanov@client.tamitrofanov.net ~]$ ssh tamitrofanov@server.tamitrofanov.net
The authenticity of host 'server.tamitrofanov.net (192.168.1.1)' can't be established.
ED25519 key fingerprint is SHA256:P5dS2DpuJpn/RRQavMAQ5prSyv96seCb42L+n7pX+Iw.
This host key is known by the following other names/addresses:
~/.ssh/known_hosts:1: [server.tamitrofanov.net]:2022
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added 'server.tamitrofanov.net' (ED25519) to the list of known hosts.
tamitrofanov@server.tamitrofanov.net's password:
Web console: https://server.tamitrofanov.net:9090/ or https://10.0.2.15:9090/
Last login: Sat Nov 15 16:41:58 2025 from 192.168.1.1
[tamitrofanov@server.tamitrofanov.net ~]$

3.8 слайд 8

```
# Authentication:

#LoginGraceTime 2m
PermitRootLogin no
AllowUsers vagrant
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10
```

Рисунок 8: изменение конфига

3.9 слайд 9

```
[tamitrofanov@server.tamitrofanov.net ~]$
[tamitrofanov@server.tamitrofanov.net ~]$
[tamitrofanov@server.tamitrofanov.net ~]$ ssh tamitrofnov@server.tamitrofanov.net
tamitrofnov@server.tamitrofanov.net's password:
Permission denied, please try again.
tamitrofnov@server.tamitrofanov.net's password:
Permission denied, please try again.
tamitrofnov@server.tamitrofanov.net's password:
tamitrofnov@server.tamitrofanov.net: Permission denied (publickey,gssapi-keyex,gssapi-with-mic,password).
[tamitrofanov@server.tamitrofanov.net ~]$
```

Рисунок 9: попытка подключения к серверу

3.10 слайд 10

```
# Logging
#SyslogFacility AUTH
#LogLevel INFO

# Authentication:

#LoginGraceTime 2m
PermitRootLogin no
AllowUsers vagrant tamitrofanov
#StrictModes yes
```

```
^G Help      ^O Write Out  ^F Where Is   ^K Cut       ^T Execute
^X Exit      ^R Read File  ^\ Replace    ^U Paste     ^J Justify
```

3.11 слайд 11

```
[tamitrofanov@client.tamitrofanov.net ~]$ ssh tamitrofanov@server.tamitrofanov.net
tamitrofanov@server.tamitrofanov.net's password:
Web console: https://server.tamitrofanov.net:9090/ or https://10.0.2.15:9090/

Last login: Sat Nov 15 16:49:09 2025 from 192.168.1.30
[tamitrofanov@server.tamitrofanov.net ~]$
```

Рисунок 11: успешное подклбчение к серверу

3.12 слайд 12

```
# semanage port -a -t ssh_port_t -p tcp #PORTNUMBER
#
Port 22

Port 2022
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::

#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
```

Рисунок 12: измениям кофиг

3.13 слайд 13

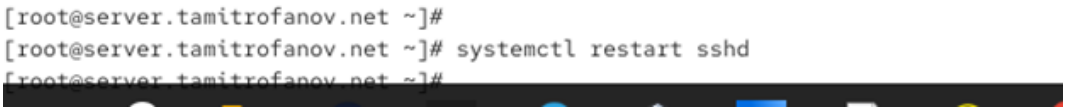
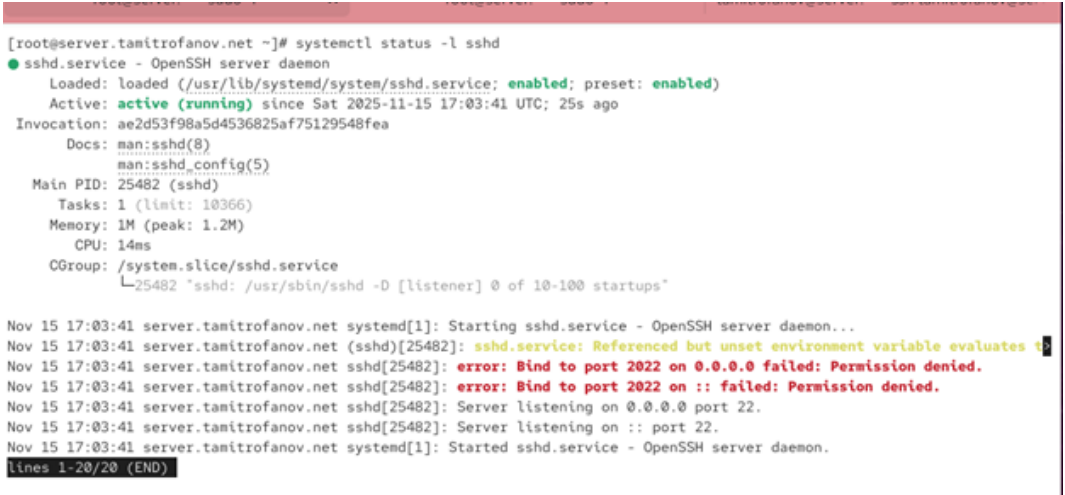


Рисунок 13: перезапуск служб

3.14 слайд 14


[root@server.tamitrofanov.net ~]# systemctl status -l sshd
● sshd.service - OpenSSH server daemon
Loaded: loaded (/usr/lib/systemd/system/sshd.service; enabled; preset: enabled)
Active: active (running) since Sat 2025-11-15 17:03:41 UTC; 25s ago
Invocation: ae2d53f98a5d4536825af75129548fea
Docs: man:sshd(8)
man:sshd_config(5)
Main PID: 25482 (sshd)
Tasks: 1 (limit: 10366)
Memory: 1M (peak: 1.2M)
CPU: 14ms
CGroup: /system.slice/sshd.service
└25482 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"
Nov 15 17:03:41 server.tamitrofanov.net systemd[1]: Starting sshd.service - OpenSSH server daemon...
Nov 15 17:03:41 server.tamitrofanov.net (sshd)[25482]: sshd.service: Referenced but unset environment variable evaluates to
Nov 15 17:03:41 server.tamitrofanov.net sshd[25482]: error: Bind to port 2022 on 0.0.0.0 failed: Permission denied.
Nov 15 17:03:41 server.tamitrofanov.net sshd[25482]: error: Bind to port 2022 on :: failed: Permission denied.
Nov 15 17:03:41 server.tamitrofanov.net sshd[25482]: Server listening on 0.0.0.0 port 22.
Nov 15 17:03:41 server.tamitrofanov.net sshd[25482]: Server listening on :: port 22.
Nov 15 17:03:41 server.tamitrofanov.net systemd[1]: Started sshd.service - OpenSSH server daemon.
lines 1-20/20 (END)

3.15 слайд 15

```
[root@server.tamitrofanov.net ~]#
[root@server.tamitrofanov.net ~]# semanage port -a -t ssh_port_t -p tcp 2022
[root@server.tamitrofanov.net ~]#
[root@server.tamitrofanov.net ~]#
[root@server.tamitrofanov.net ~]# irewall-cmd --add-port=2022/tcp
firewall-cmd --add-port=2022/tcp --permanent
bash: irewall-cmd: command not found...
success
[root@server.tamitrofanov.net ~]# firewall-cmd --add-port=2022/tcp
firewall-cmd --add-port=2022/tcp --permanent
success
Warning: ALREADY_ENABLED: 2022:tcp
success
[root@server.tamitrofanov.net ~]# systemctl restart sshd
[root@server.tamitrofanov.net ~]# systemctl status -l sshd
● sshd.service - OpenSSH server daemon
     Loaded: loaded (/usr/lib/systemd/system/sshd.service; enabled; preset: enabled)
     Active: active (running) since Sat 2025-11-15 17:06:56 UTC; 3s ago
 Invocation: 1a26112aa5e04e5ca03deb19a4ca0b27
       Docs: man:sshd(8)
             man:sshd_config(5)
   Main PID: 25933 (sshd)
      Tasks: 1 (limit: 10366)
     Memory: 1M (peak: 1.3M)
        CPU: 15ms
     CGroup: /system.slice/sshd.service
             └─25933 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Nov 15 17:06:56 server.tamitrofanov.net systemd[1]: Starting sshd.service - OpenSSH server daemon...
Nov 15 17:06:56 server.tamitrofanov.net (sshd)[25933]: sshd.service: Referenced but unset environment variable evaluates t
Nov 15 17:06:56 server.tamitrofanov.net sshd[25933]: Server listening on 0.0.0.0 port 2022.
Nov 15 17:06:56 server.tamitrofanov.net sshd[25933]: Server listening on :: port 2022.
```

3.16 слайд 16

```
[tamitrofanov@client.tamitrofanov.net ~]$
[tamitrofanov@client.tamitrofanov.net ~]$ ssh tamitrofanov@server.tamitrofanov.net
tamitrofanov@server.tamitrofanov.net's password:
Web console: https://server.tamitrofanov.net:9090/ or https://10.0.2.15:9090/

Last login: Sat Nov 15 17:01:23 2025 from 192.168.1.30
[tamitrofanov@server.tamitrofanov.net ~]$ sudo -i
[sudo] password for tamitrofanov:
[root@server.tamitrofanov.net ~]# logout
[tamitrofanov@server.tamitrofanov.net ~]$ logout
Connection to server.tamitrofanov.net closed.
[tamitrofanov@client.tamitrofanov.net ~]$
```

Рисунок 16: обычное подключение к серверу

3.17 слайд 17

```
[tamitrofanov@client.tamitrofanov.net ~]$
[tamitrofanov@client.tamitrofanov.net ~]$ ssh -p2022 tamitrofanov@server.tamitrofanov.net
tamitrofanov@server.tamitrofanov.net's password:
Web console: https://server.tamitrofanov.net:9090/ or https://10.0.2.15:9090/

Last login: Sat Nov 15 17:07:54 2025 from 192.168.1.30
[tamitrofanov@server.tamitrofanov.net ~]$ root
bash: root: command not found...
Install package 'root' to provide command 'root'? [N/y] ^C
[tamitrofanov@server.tamitrofanov.net ~]$ sudo -i
[sudo] password for tamitrofanov:
[root@server.tamitrofanov.net ~]# logout
[tamitrofanov@server.tamitrofanov.net ~]$ logout
Connection to server.tamitrofanov.net closed.
[tamitrofanov@client.tamitrofanov.net ~]$
```

Рисунок 17: поключение через новый порт

3.18 слайд 18

```
#MaxSessions 10

PubkeyAuthentication yes

# The default is to check both .ssh/authorized
# but this is overridden so installations will
AuthorizedKeysFile      .ssh/authorized_keys
```

Рисунок 18: меняем кофигурационный файл

3.19 слайд 19

```
[root@server.tamitrofanov.net ~]#
[root@server.tamitrofanov.net ~]#
[root@server.tamitrofanov.net ~]# systemctl restart sshd
[root@server.tamitrofanov.net ~]#
[root@server.tamitrofanov.net ~]#
```

Рисунок 19: перезапуск служб

3.20 слайд 20

```
[tamitrofanov@client.tamitrofanov.net ~]$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/tamitrofanov/.ssh/id_ed25519):
Enter passphrase for "/home/tamitrofanov/.ssh/id_ed25519" (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/tamitrofanov/.ssh/id_ed25519
Your public key has been saved in /home/tamitrofanov/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:OOm7aNYYT0SBW5ZNk5ETqtFaAvkneY4bCd91RC2gm0A tamitrofanov@client.tamitrofanov.net
The key's randomart image is:
+--[ED25519 256]--+
|    ..E  +*B..   |
|    .o..+o=.o .  |
|     o+**  o .   |
|    . *Xoo. .    |
|     o*XS. .     |
|    ..B.o        |
|     O.o         |
|    *.=.         |
|   o. o.         |
+----[SHA256]-----+
[tamitrofanov@client.tamitrofanov.net ~]$ ssh-copy-id tamitrofanov@server.tamitrofanov.net
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: ssh-add -L
/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 prompted now it is to install the new keys
tamitrofanov@server.tamitrofanov.net's password:

Number of key(s) added: 1

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

[tamitrofanov@client.tamitrofanov.net ~]$ ssh tamitrofanov@server.tamitrofanov.net
Web console: https://server.tamitrofanov.net:9090/ or https://10.0.2.15:9090/

Last login: Sat Nov 15 17:09:17 2025 from 192.168.1.30
[tamitrofanov@server.tamitrofanov.net ~]$
logout
```

3.21 слайд 21

```
[tamitrofanov@client.tamitrofanov.net ~]$ lsof | grep TCP
^C
[tamitrofanov@client.tamitrofanov.net ~]$ sudo lsof | grep TCP
[sudo] password for tamitrofanov:
lsof: WARNING: can't stat() fuse.gvfsd-fuse file system /run/user/1001/gvfs
      Output information may be incomplete.
lsof: WARNING: can't stat() fuse.portal file system /run/user/1001/doc
      Output information may be incomplete.
systemd       1                          root   80u     IPv6              8506       0t0        TCP *:websm (LISTEN
)
cupsd      1219                          root    7u     IPv6              9902       0t0        TCP localhost:ipp (
LISTEN)
cupsd      1219                          root    8u     IPv4              9903       0t0        TCP localhost:ipp (
LISTEN)
sshd       1223                          root    7u     IPv4             10871       0t0        TCP *:ssh (LISTEN)
sshd       1223                          root    8u     IPv6             10873       0t0        TCP *:ssh (LISTEN)
master     1354                          root   13u     IPv4             10183       0t0        TCP localhost:smtp
(LISTEN)
firefox    3352                tamitrofanov   62u     IPv4            341260       0t0        TCP client.tamitrof
anov.net:52192->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352                tamitrofanov   65u     IPv4            340595       0t0        TCP client.tamitrof
anov.net:52206->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352                tamitrofanov   88u     IPv4            340598       0t0        TCP client.tamitrof
anov.net:43278->146.75.117.91:https (ESTABLISHED)
firefox    3352  3372 firefox  tamitrofanov   62u     IPv4            341260       0t0        TCP client.tamitrof
anov.net:52192->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352  3372 firefox  tamitrofanov   65u     IPv4            340595       0t0        TCP client.tamitrof
anov.net:52206->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352  3372 firefox  tamitrofanov   88u     IPv4            340598       0t0        TCP client.tamitrof
anov.net:43278->146.75.117.91:https (ESTABLISHED)
firefox    3352  3373 WaylandPr tamitrofanov   62u     IPv4            341260       0t0        TCP client.tamitrof
anov.net:52192->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352  3373 WaylandPr tamitrofanov   65u     IPv4            340595       0t0        TCP client.tamitrof
anov.net:52206->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352  3373 WaylandPr tamitrofanov   88u     IPv4            340598       0t0        TCP client.tamitrof
anov.net:43278->146.75.117.91:https (ESTABLISHED)
firefox    3352  3374 pool-spaw tamitrofanov   62u     IPv4            341260       0t0        TCP client.tamitrof
```

3.22 слайд 22

```
[tamitrofanov@client.tamitrofanov.net ~]$ ssh -fNL 8080:localhost:80 tamitrofanov@server.tamitrofanov.net
[tamitrofanov@client.tamitrofanov.net ~]$
```

Рисунок 22: перенаправление

3.23 слайд 23

```
[tamitrofanov@client.tamitrofanov.net ~]$ lsof | grep TCP
^C
[tamitrofanov@client.tamitrofanov.net ~]$ sudo lsof | grep TCP
lsof: WARNING: can't stat() fuse.gvfsd-fuse file system /run/user/1001/gvfs
      Output information may be incomplete.
lsof: WARNING: can't stat() fuse.portal file system /run/user/1001/doc
      Output information may be incomplete.
systemd       1                          root   80u     IPv6               8506       0t0        TCP *:websm (LISTEN
)
cupsd      1219                          root    7u     IPv6               9902       0t0        TCP localhost:ipp (
LISTEN)
cupsd      1219                          root    8u     IPv4               9903       0t0        TCP localhost:ipp (
LISTEN)
sshd       1223                          root    7u     IPv4              10871       0t0        TCP *:ssh (LISTEN)
sshd       1223                          root    8u     IPv6              10873       0t0        TCP *:ssh (LISTEN)
master     1354                          root   13u     IPv4              10183       0t0        TCP localhost:smtp
(LISTEN)
firefox    3352                tamitrofanov   65u     IPv4             340595       0t0        TCP client.tamitrof
anov.net:52206->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352  3372 firefox   tamitrofanov   65u     IPv4             340595       0t0        TCP client.tamitrof
anov.net:52206->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352  3373 WaylandPr  tamitrofanov   65u     IPv4             340595       0t0        TCP client.tamitrof
anov.net:52206->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352  3374 pool-spaw  tamitrofanov   65u     IPv4             340595       0t0        TCP client.tamitrof
anov.net:52206->93.243.107.34.bc.googleusercontent.com:https (ESTABLISHED)
firefox    3352  3375 gmain      tamitrofanov   65u     IPv4             340595       0t0        TCP client.tamitrof
```

3.24 слайд 24

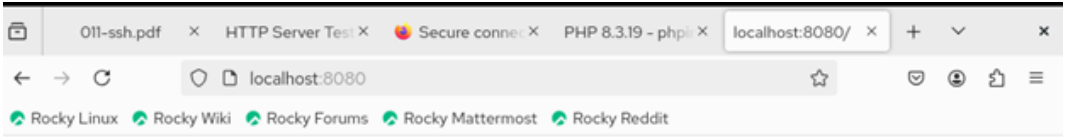


Рисунок 24: проверка работы перенаправления

3.25 слайд 25

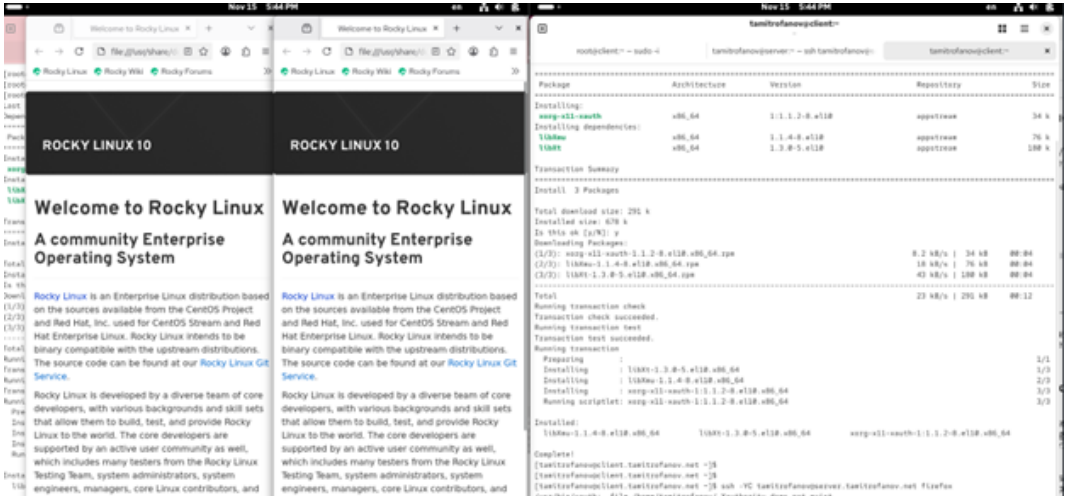
```
[tamitrofanov@client.tamitrofanov.net ~]$ ssh tamitrofanov@server.tamitrofanov.net hostname
server.tamitrofanov.net
[tamitrofanov@client.tamitrofanov.net ~]$ ssh tamitrofanov@server.tamitrofanov.net ls -Al
total 60
-rw-------.  1 tamitrofanov tamitrofanov 1525 Nov 15 17:10 .bash_history
-rw-r--r--.  1 tamitrofanov tamitrofanov   18 Oct 29  2024 .bash_logout
-rw-r--r--.  1 tamitrofanov tamitrofanov  144 Oct 29  2024 .bash_profile
-rw-r--r--.  1 tamitrofanov tamitrofanov  549 Sep 20 18:24 .bashrc
drwx------. 12 tamitrofanov tamitrofanov 4096 Sep 27 18:10 .cache
drwx------. 13 tamitrofanov tamitrofanov 4096 Sep 27 18:10 .config
drwxr-xr-x.  2 tamitrofanov tamitrofanov    6 Sep 27 13:25 Desktop
-rw-r--r--.  1 tamitrofanov tamitrofanov  574 Sep 27 13:29 DiG 9 18 33 www yandex.txt
drwxr-xr-x.  2 tamitrofanov tamitrofanov   78 Sep 27 15:22 Documents
drwxr-xr-x.  2 tamitrofanov tamitrofanov    6 Sep 27 13:25 Downloads
drwx------.  4 tamitrofanov tamitrofanov   32 Sep 27 13:25 .local
drwx------.  5 tamitrofanov tamitrofanov 4096 Nov 15 14:55 Maildir
drwxr-xr-x.  5 tamitrofanov tamitrofanov   54 Sep 27 13:33 .mozilla
drwxr-xr-x.  2 tamitrofanov tamitrofanov    6 Sep 27 13:25 Music
drwxr-xr-x.  2 tamitrofanov tamitrofanov    6 Sep 27 13:25 Pictures
drwxr-xr-x.  2 tamitrofanov tamitrofanov    6 Sep 27 13:25 Public
drwx------.  2 tamitrofanov tamitrofanov   71 Nov 15 17:14 .ssh
drwxr-xr-x.  2 tamitrofanov tamitrofanov    6 Sep 27 13:25 Templates
-rw-r-----.  1 tamitrofanov tamitrofanov    6 Nov 15 14:25 .vboxclient-clipboard-tty2-control.pid
-rw-r-----.  1 tamitrofanov tamitrofanov    6 Nov 15 17:23 .vboxclient-clipboard-tty2-service.pid
-rw-r-----.  1 tamitrofanov tamitrofanov    6 Nov 15 14:25 .vboxclient-draganddrop-tty2-control.pid
-rw-r-----.  1 tamitrofanov tamitrofanov    6 Nov 15 14:25 .vboxclient-hostversion-tty2-control.pid
-rw-r-----.  1 tamitrofanov tamitrofanov    6 Nov 15 14:25 .vboxclient-seamless-tty2-control.pid
-rw-r-----.  1 tamitrofanov tamitrofanov    6 Nov 15 14:25 .vboxclient-vmsvga-session-tty2-control.pid
-rw-r-----.  1 tamitrofanov tamitrofanov    5 Nov 15 14:25 .vboxclient-vmsvga-session-tty2-service.pid
drwxr-xr-x.  2 tamitrofanov tamitrofanov    6 Sep 27 13:25 Videos
[tamitrofanov@client.tamitrofanov.net ~]$ ssh tamitrofanov@server.tamitrofanov.net MAIL=~/Maildir/ mail
s-nail version v14.9.24.  Type `?' for help
/home/tamitrofanov/Maildir: 2 messages 1 new
    1 tamitrofanov@tamitro  2025-11-01 16:26   23/832   "test                        
```

3.26 слайд 26

```
#AllowAgentForwarding yes
#AllowTcpForwarding yes
#GatewayPorts no
X11Forwarding yes
#X11DisplayOffset 10
#X11UseLocalhost yes
#PermitTTY yes
#PrintMotd yes
#PrintLastLog yes
```

Рисунок 26: изменения конф файла

3.27 слайд 27


ROCKY LINUX 10
Welcome to Rocky Linux
A community Enterprise Operating System
ROCKY LINUX 10
Welcome to Rocky Linux
A community Enterprise Operating System
tamitrofanov@client:~
Installing:
xorg-x11-xauth
Installing dependencies:
libXmu
libXt
Transaction Summary
Install 3 Packages
Complete!

3.28 слайд 28

```
[root@server.tamitrofanov.net ~]# cd /vagrant/provision/server
mkdir -p /vagrant/provision/server/ssh/etc/ssh
cp -R /etc/ssh/sshd_config /vagrant/provision/server/ssh/etc/ssh/
[root@server.tamitrofanov.net server]# cd /vagrant/provision/server
touch ssh.sh
chmod +x ssh.sh
[root@server.tamitrofanov.net server]#
```

Рисунок 28: сохранение файлов и их создание

3.29 слайд 29

```
  GNU nano 8.1                                                  ssh.sh
#!/bin/bash
echo "Provisioning script $0"
echo "Copy configuration files"
cp -R /vagrant/provision/server/ssh/etc/* /etc
restorecon -vR /etc
echo "Configure firewall"
firewall-cmd --add-port=2022/tcp
firewall-cmd --add-port=2022/tcp --permanent
echo "Tuning SELinux"
semanage port -a -t ssh_port_t -p tcp 2022
echo "Restart sshd service"
systemctl restart sshd
```

3.30 слайд 30

```
111
112     server.vm.provision "server ssh",
113       type: "shell",
114       preserve_order: true,
115       path: "provision/server/ssh.sh"
116
117
```

Рисунок 30: дополнение скрипта на основной системе

Раздел 4

4. Выводы

4.1 слайд 1

Сегодня я приобрёл практические навыки по настройке удалённого доступа к серверу с помощью SSH.