

ЛАБОРАТОРНАЯ РАБОТА №7

Студент: Талебу Тенке Франк

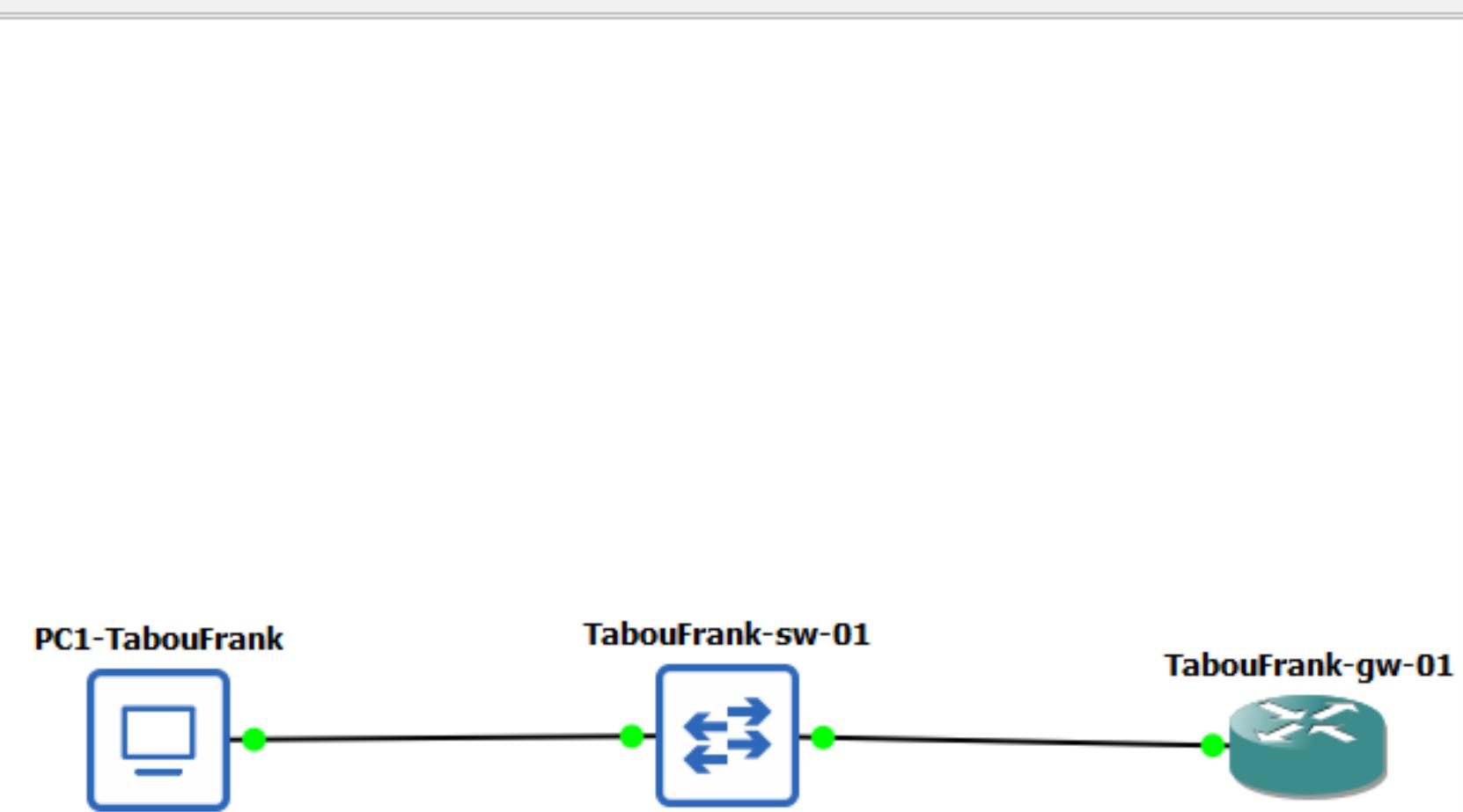
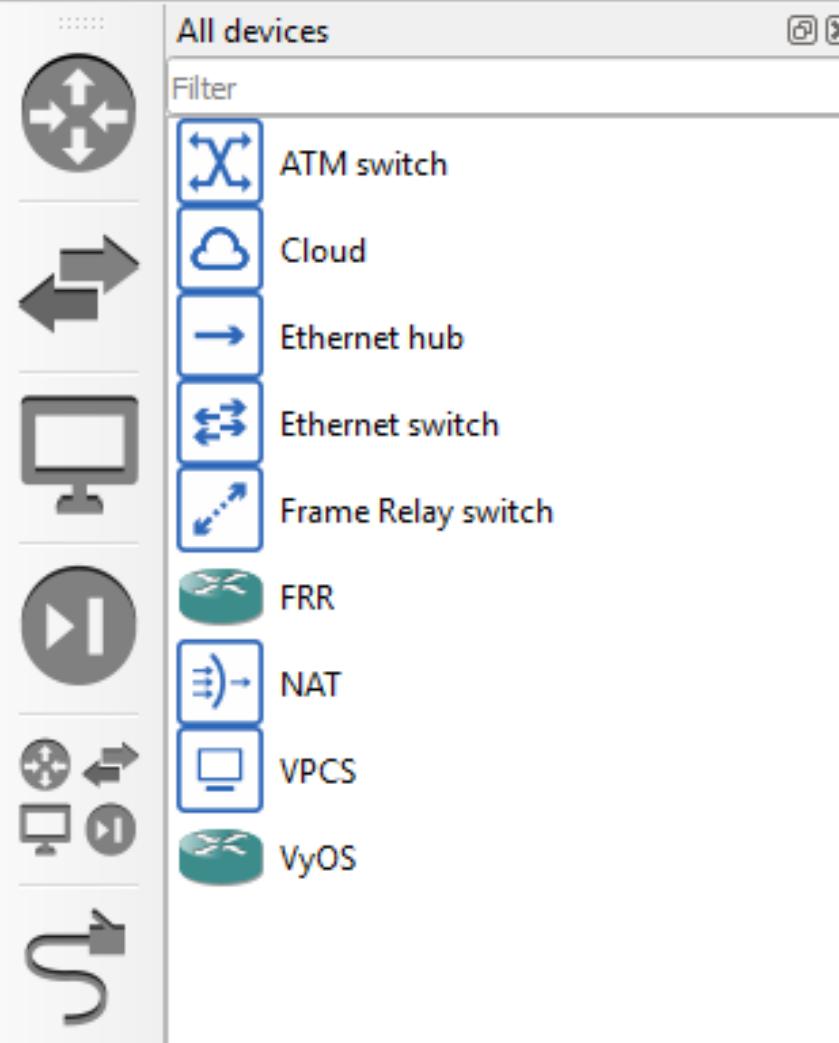
Группа: НФИбд-02-23

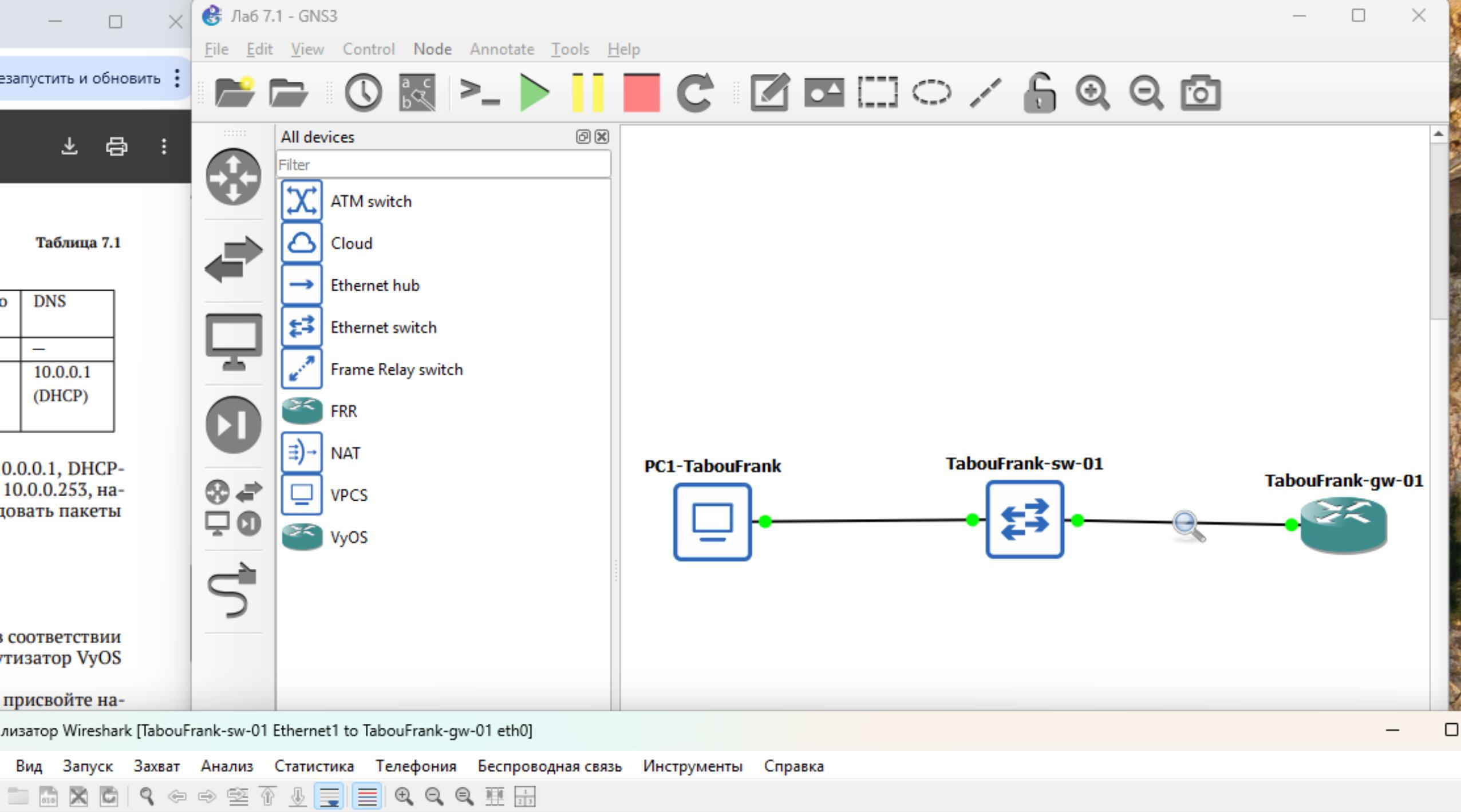
ЦЕЛЬ

Получить навыки настройки службы DHCP на сетевом оборудовании для распределения адресов IPv4 и IPv6.

ЗАДАНИЯ

1. Настройка DHCP в случае IPv4
2. Настройка DHCP в случае IPv6





```
Welcome to VyOS - TabouFrank-gw-01 ttys0
```

```
TabouFrank-gw-01 login: TabouFrank
```

```
Password:
```

```
Welcome to VyOS!
```

```
Check out project news at https://blog.vyos.io
and feel free to report bugs at https://vyos.dev
```

```
You can change this banner using "set system login banner post-login" command.
```

```
VyOS is a free software distribution that includes multiple components,
you can check individual component licenses under /usr/share/doc/*/copyright
```

```
TabouFrank@TabouFrank-gw-01:~$ configure
```

```
[edit]
```

```
TabouFrank@TabouFrank-gw-01# delete system login user vyos
```

```
[edit]
```

```
TabouFrank@TabouFrank-gw-01# commit
```

```
[edit]
```

```
TabouFrank@TabouFrank-gw-01# save
```

```
$ Saving configuration to '/config/config.boot'...
```

```
Done
```

```
[edit]
```

```
TabouFrank@TabouFrank-gw-01# 
```

```
TabouFrank-gw-01 login: TabouFrank
```

```
Password:
```

```
Welcome to VyOS!
```

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Check out project news at https://blog.vyos.io  
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```
TabouFrank@TabouFrank-gw-01:~$ configure
```

```
[edit]
```

```
TabouFrank@TabouFrank-gw-01# delete system login user vyos
```

```
[edit]
```

```
TabouFrank@TabouFrank-gw-01# commit
```

```
[edit]
```

```
TabouFrank@TabouFrank-gw-01# save
```

```
Saving configuration to '/config/config.boot'...
```

```
Done
```

```
[edit]
```

```
TabouFrank@TabouFrank-gw-01# set interfaces ethernet eth0 address 10.0.0.1/24
```

```
[edit]
```

```
nk domain-name TabouFrank.net
```

```
Configuration path: service dhcp-server [shared-network-nae] is not valid
```

```
Set failed
```

```
[edit]
```

```
nk domain-name TabouFrank.net et service dhcp-server shared-network-nae TabouFran
```

```
nk domain-name TabouFrank.net et service dhcp-server shared-network-name TabouFr
```

```
[edit]
```

```
VPCS> save
```

```
Saving startup configuration to startup.vpc
```

```
. done
```

```
VPCS> show ip
```

```
NAME          : VPCS [1]
IP/MASK       : 10.0.0.2/24
GATEWAY      : 10.0.0.1
DNS           : 10.0.0.1
DHCP SERVER   : 10.0.0.1
DHCP LEASE    : 86264, 86400/43200/75600
DOMAIN NAME   : TabouFrank.net
MAC           : 00:50:79:66:68:00
LPORT          : 10054
RHOST:PORT    : 127.0.0.1:10055
MTU           : 1500
```

```
VPCS> ping 10.0.0.1 -c 2
```

```
84 bytes from 10.0.0.1 icmp_seq=1 ttl=64 time=3.137 ms
```

```
84 bytes from 10.0.0.1 icmp_seq=2 ttl=64 time=2.496 ms
```

```
VPCS> █
```

No.	Time	Source	Destination	Protocol	Length	Info
246	4178.347772	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x875e35
247	4183.707185	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x875e35
248	4194.069897	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x875e35
249	4214.976066	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x875e35
250	4233.030940	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x875e35
251	4296.885029	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0xe5701a2f
252	4302.592174	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0xe5701a2f
253	4311.248619	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0xe5701a2f
254	4320.414823	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0xe5701a2f
255	4335.146032	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0xe5701a2f
256	4353.300318	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0xe5701a2f
257	4434.640433	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x461dae55
258	4439.104756	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x461dae55
259	4443.488667	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x461dae55
260	4447.740925	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x461dae55
261	4458.571266	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x461dae55
262	4474.900938	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x461dae55
263	4493.115709	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x461dae55
264	4822.664598	0.0.0.0	255.255.255.255	DHCP	406	DHCP Discover - Transaction ID 0xbd3c0452
265	4822.670141	0c:31:84:6b:00:00	Broadcast	ARP	60	Who has 10.0.0.2? Tell 10.0.0.1

```
Checksum: 0x9234 [unverified]
[Checksum Status: Unverified]
[Stream index: 0]
[Stream Packet Number: 247]
[Timestamps]
```

```
> [Timestamps]
    UDP payload (300 bytes)
Dynamic Host Configuration Protocol (Discover
```

```
Message type: Boot Request (1)
Hardware type: Ethernet (0x01)
Hardware address length: 6
Hops: 0
Transaction ID: 0x461dae55
Seconds elapsed: 23
> Bootp flags: 0x0000 (Unicast)
Client IP address: 0.0.0.0
Your (client) IP address: 0.0.0.0
Next server IP address: 0.0.0.0
Relay agent IP address: 0.0.0.0
```

Required files

Please select one version of Kali Linux and import the required files. Files are searched in your downloads and GNS3 images directories by default



Appliance version and files	Size	Status
▼ Kali Linux version 2021.1	3.4 GB	Missing files
kali-linux-persistence-1gb.qcow2	33.1 MB	Found on gns3vm (controller)
kali-linux-2021.1-live-amd64.iso	3.3 GB	Missing
▶ Kali Linux version 2019.3	2.9 GB	Ready to install
▼ Kali Linux version 2019.2	3.2 GB	Missing files
kali-linux-persistence-1gb.qcow2	33.1 MB	Found on gns3vm (controller)
kali-linux-2019.2-amd64.iso	3.1 GB	Missing
▼ Kali Linux version 2019.2 (MATE)	3.1 GB	Missing files
kali-linux-persistence-1gb.qcow2	33.1 MB	Found on gns3vm (controller)
kali-linux-mate-2019.2-amd64.iso	3.1 GB	Missing
▼ Kali Linux version 2019.1a	3.3 GB	Missing files
kali-linux-persistence-1gb.qcow2	33.1 MB	Found on gns3vm (controller)
kali-linux-2019.1a-amd64.iso	3.2 GB	Missing
▼ Kali Linux version 2018.4	3.0 GB	Missing files
kali-linux-persistence-1ab.qcow2	33.1 MB	Found on gns3vm (controller)

Allow custom files

[Create a new version](#)

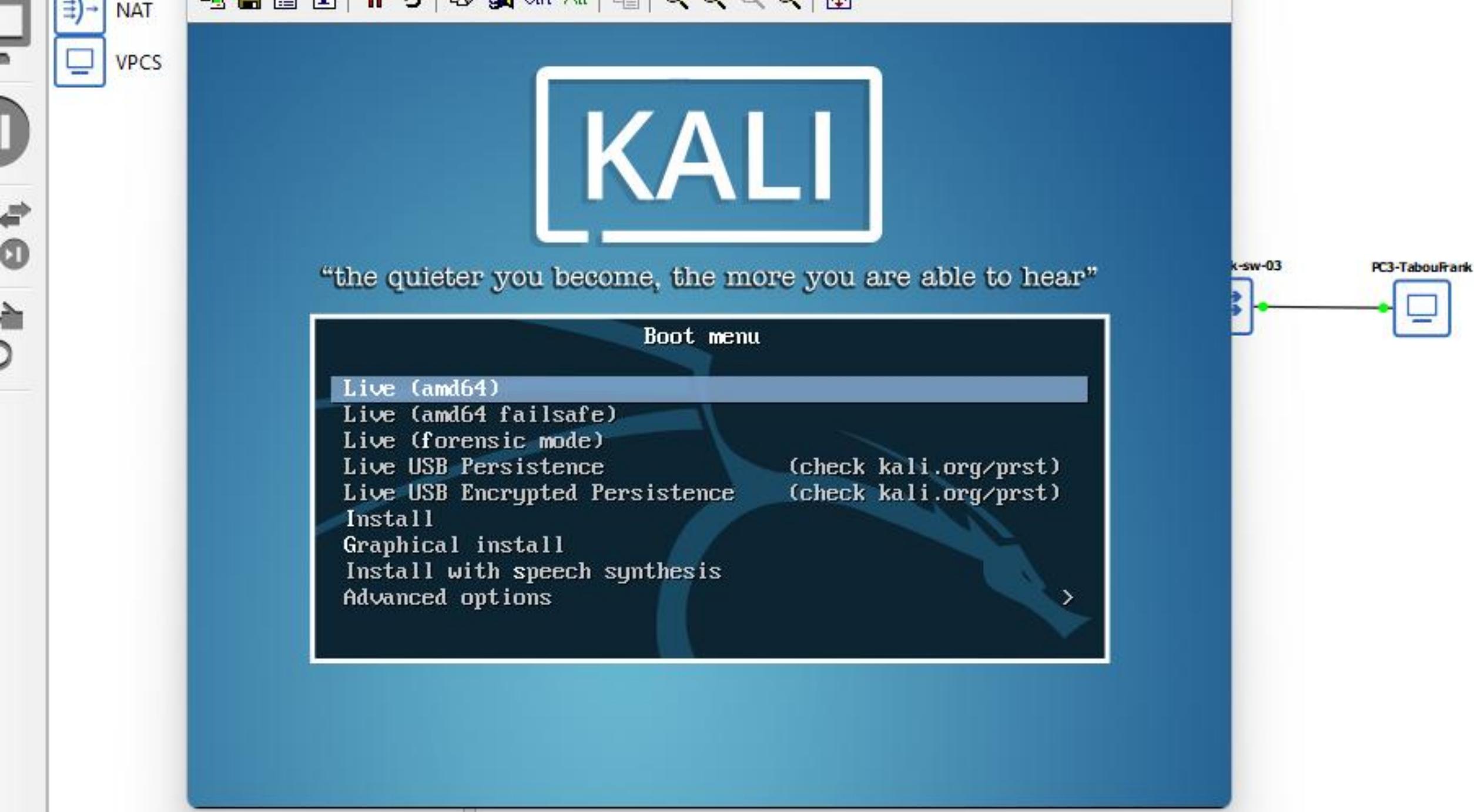
[Refresh](#)

[Appliance info](#)

[< Back](#)

[Next >](#)

[Cancel](#)



“the quieter you become, the more you are able to hear”

Boot menu

Live (amd64)

Live (amd64 failsafe)

Live (forensic mode)

Live USB Persistence

Live USB Encrypted Persistence

(check kali.org/prst)

(check kali.org/prst)

Install

Graphical install

Install with speech synthesis

Advanced options

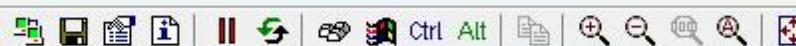




Load installer components from CD

Loading additional components

Retrieving nic-modules-5.2.0-kali2-amd64-dl

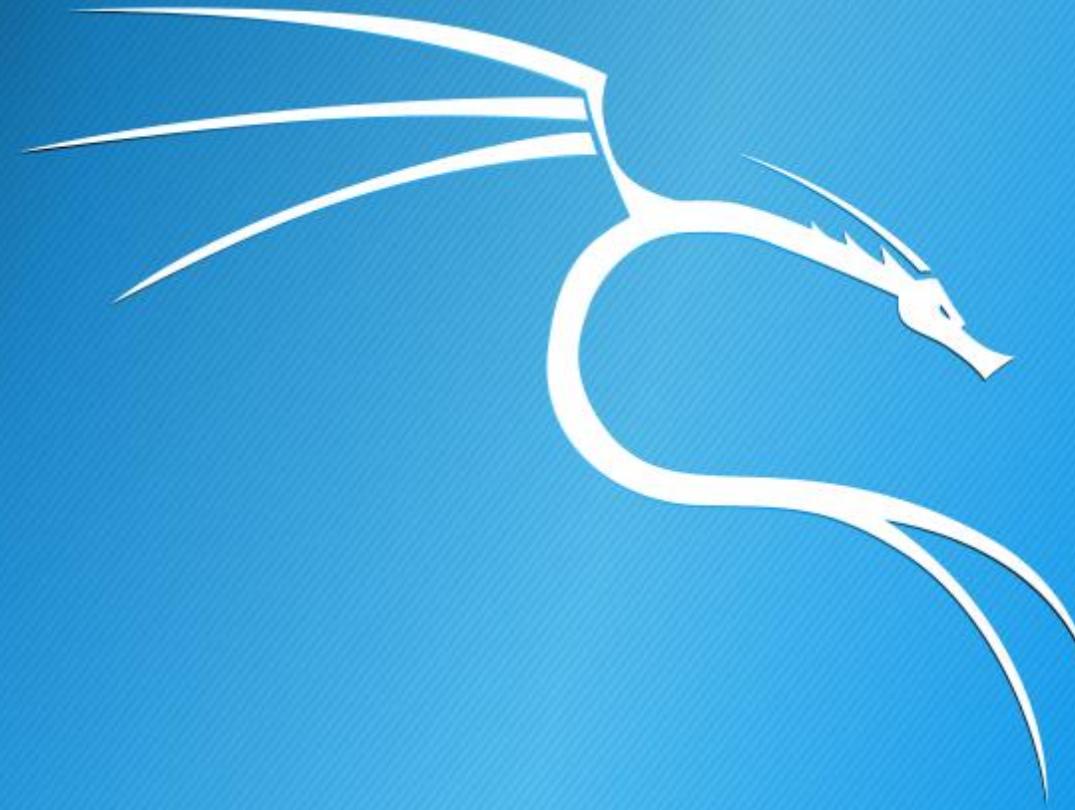
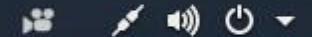


Applications ▾

Places ▾

Sun 15:07

1



root@kali: ~

File Edit View Search Terminal Help

```
root@kali:~# ip address
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 0c:5e:74:8b:00:00 brd ff:ff:ff:ff:ff:ff
    inet6 200::9c82:f116:f5ef:c243/64 scope global dynamic noprefixroute
        valid_lft 2591863sec preferred_lft 14263sec
    inet6 fe80::bb01:ed50:70f4:5a87/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: eth1: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc pfifo_fast state DOWN group default qlen 1000
    link/ether 0c:5e:74:8b:00:01 brd ff:ff:ff:ff:ff:ff
4: eth2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc pfifo_fast state DOWN group default qlen 1000
    link/ether 0c:5e:74:8b:00:02 brd ff:ff:ff:ff:ff:ff
5: eth3: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc pfifo_fast state DOWN group default qlen 1000
    link/ether 0c:5e:74:8b:00:03 brd ff:ff:ff:ff:ff:ff
```

```
root@kali:~# ping 2000::1 -c 2
PING 2000::1(2000::1) 56 data bytes

--- 2000::1 ping statistics ---
2 packets transmitted, 0 received, 100% packet loss, time 1025ms

root@kali:~# ping 2000::1 -c 2
PING 2000::1(2000::1) 56 data bytes

--- 2000::1 ping statistics ---
2 packets transmitted, 0 received, 100% packet loss, time 1005ms
```

```
root@kali:~# ip -6 rout show
::1 dev lo proto kernel metric 256 pref medium
200::/64 dev eth0 proto ra metric 100 pref medium
fe80::/64 dev eth0 proto kernel metric 100 pref medium
default via fe80::e31:84ff:fe6b:1 dev eth0 proto ra metric 100 pref medium
root@kali:~#
```

Welcome to VyOS!

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you can check individual component licenses under /usr/share/doc/*/*copyright

[abouFrank@TabouFrank-gw-01:~\$ configure

[edit]

[abouFrank@TabouFrank-gw-01# set service router-advert interface eth2 managed-flag

[edit]

[abouFrank@TabouFrank-gw-01# set service dhcipv6-server shared-network-name TabouFrank-stateful

[edit]

[abouFrank@TabouFrank-gw-01# set service dhcipv6-server shared-network-name TabouFrank-stateful subnet 2001::0/64

[edit]

[abouFrank@TabouFrank-gw-01# set service dhcipv6-server shared-network-name TabouFrank-stateful subnet 2001::0/64 name-server 2001::1

[edit]

[abouFrank@TabouFrank-gw-01# set service dhcipv6-server shared-network-name TabouFrank-stateful subnet 2001::0/64 domain-search TabouFrank.net

[edit]

[abouFrank@TabouFrank-gw-01# set service dhcipv6-server shared-network-name TabouFrank-stateful subnet 2001::0/64 address-range start 2001::100 stop 2001::199

[edit]

18. Вновь на узле PC3 проверьте настройки сети, пропингу проверьте настройки DNS:

```
root@PC3-username:# ip address  
root@PC3-username:# ip -6 route show  
root@PC3-username:# ping 2001::1 -c 2  
root@PC3-username:# cat /etc/resolv.conf
```

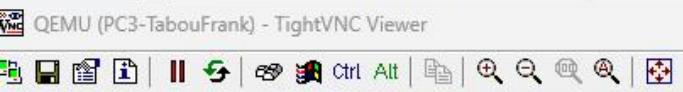
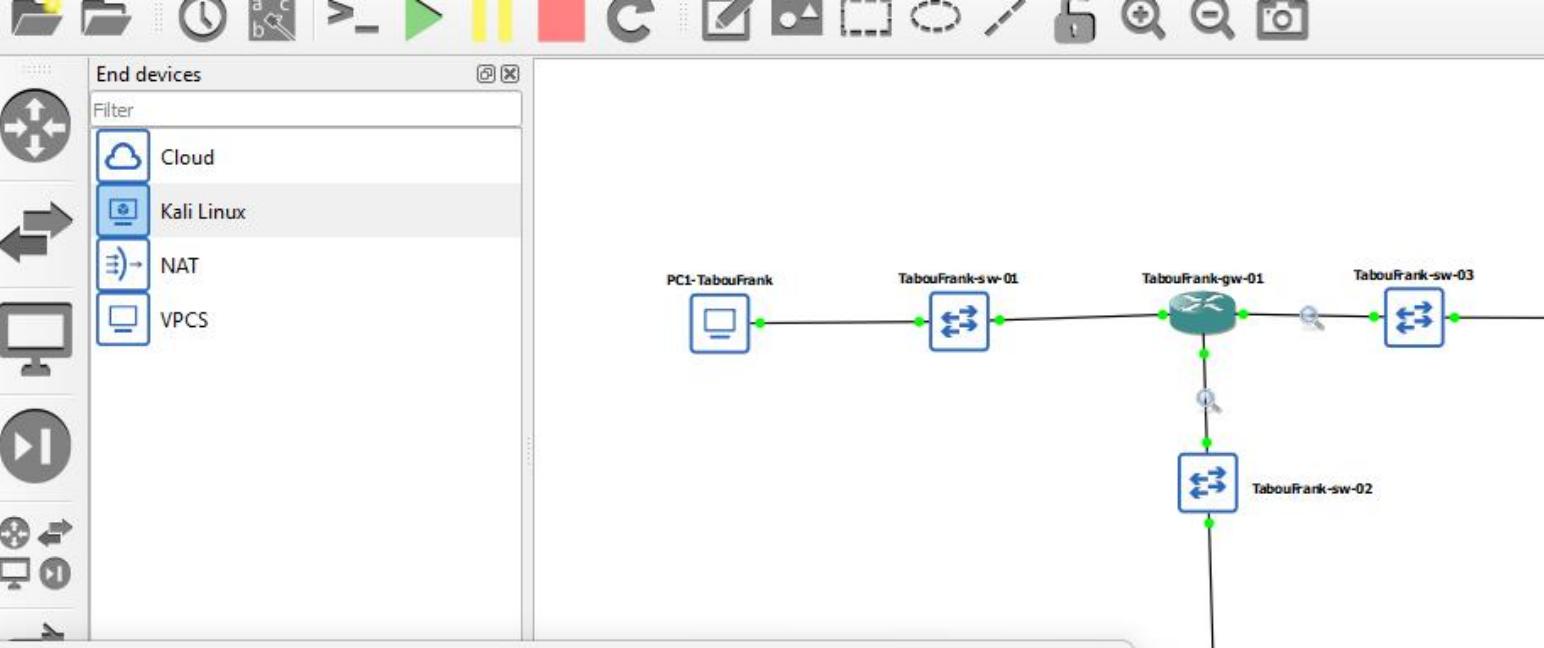
19. На маршрутизаторе посмотрите статистику DHCP-сервера:

```
username@username-gw-01# run show dhcpv6 se
```

20. В отчёте поясните выведенную на маршрутизаторе и а также проанализируйте захваченные анализатором трассы к работе DHCPv6 и назначению адреса устройств

7.4. Содержание отчёта

1. Титульный лист с указанием номера лабораторной работы.
2. Формулировка задания работы.
3. Описание результатов выполнения задания:
 - скриншоты (снимки экрана), фиксирующие выполнение работы;

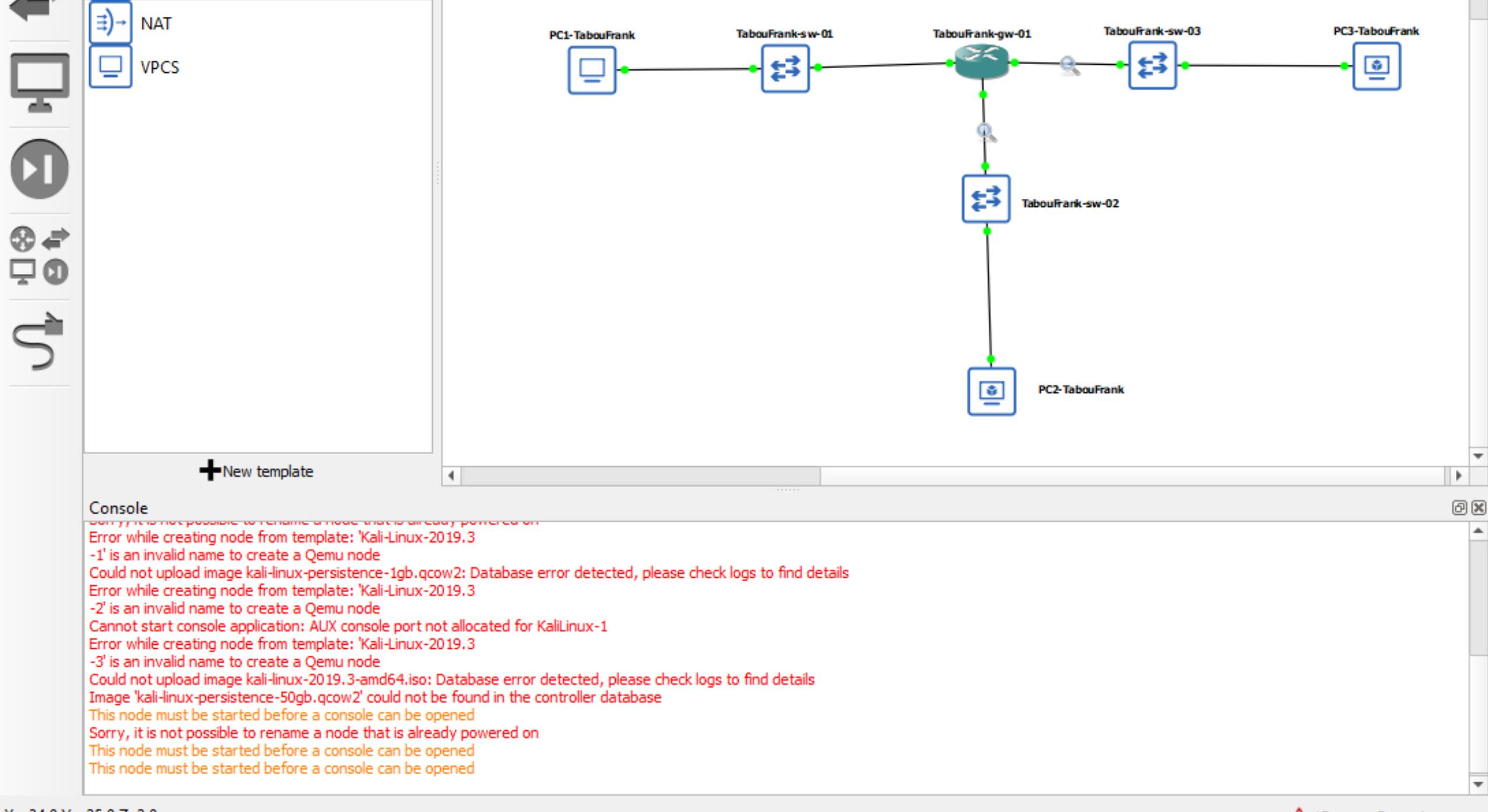


Applications ▾ Places ▾

Sun 15:52

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ВЫВОДЫ

В процессе выполнения лабораторной работы я получил навыки настройки службы DHCP на сетевом оборудовании для распределения адресов IPv4 и IPv6.