
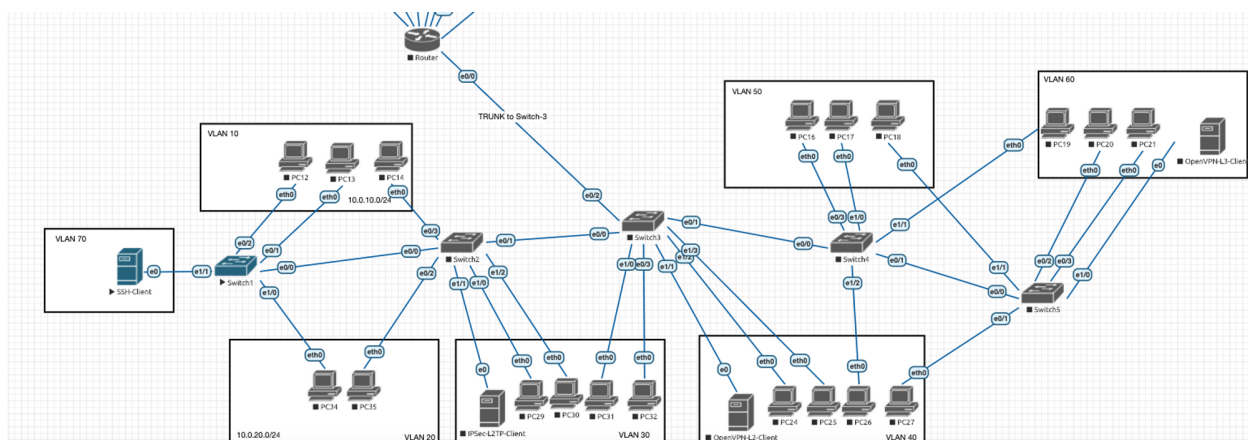




Практика 1, конфигурация VLAN

Owner	 sl4sh73r
Verification	Verified
Tags	Network



Switch settings

1

▼ Switch-1

```
enable
configure terminal
hostname LMyshivets-Switch-1
vlan 10,20,30,40,50,60,70,777
vlan 10
name LMyshivets-VLAN-10
vlan 20
name LMyshivets-VLAN-20
vlan 30
name LMyshivets-VLAN-30
vlan 40
name LMyshivets-VLAN-40
vlan 50
name LMyshivets-VLAN-50
vlan 60
name LMyshivets-VLAN-60
vlan 70
name LMyshivets-Managment
vlan 777
name DUMMY

interface e0/0
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMyshivets-Switch-2"

interface e0/2
switchport mode access
switchport access vlan 10
description "LMyshivets-PC-12"
```

```
interface e0/1
switchport mode access
switchport access vlan 10
description "LMyslivets-PC-13"

interface e1/0
switchport mode access
switchport access vlan 20
description "LMyslivets-PC-34"

interface e1/1
switchport mode access
switchport access vlan 70
description "LMyslivets-SSH-Client"

interface range e0/3,e1/2-3
switchport mode access
switchport access vlan 777
description "Useless-Int"

do write
vtp domain LMyslivets-Server
vtp version 3
exit
vtp primary vlan
```

▼ Switch-2

```
enable
configure terminal
hostname LMyslivets-Switch-2

vtp domain LMyslivets-Server
vtp mode client
```

```
interface e0/0
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMySlivets-Switch-1"
```

```
interface e0/1
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMySlivets-Switch-2"
```

```
interface e0/2
switchport mode access
switchport access vlan 20
description "LMySlivets-PC-35"
```

```
interface e0/3
switchport mode access
switchport access vlan 10
description "LMySlivets-14"
```

```
interface e1/0
switchport mode access
switchport access vlan 30
description "IPSev-L2TP-Client"
```

```
interface e1/1
switchport mode access
switchport access vlan 30
description "LMySlivets-PC-29"
```

```
interface e1/2
switchport mode access
switchport access vlan 30
description "LMySlivets-PC-30"
```

```
interface e1/3
switchport mode access
switchport access vlan 777
description "Useless-Int"

do write
vtp mode client
vtp domain LMyshivets-Server
exit
```

▼ Switch-3

```
enable
configure terminal
hostname LMyshivets-Switch-3

vtp domain LMyshivets-Server
vtp mode client

interface e0/0
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMyshivets-Switch-2"

interface e0/1
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMyshivets-Switch-4"

interface e0/2
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMyshivets-Main-Router"

interface e0/3
```

```
switchport mode access
switchport access vlan 30
description "LMyslivets-PC-32"

interface e1/0
switchport mode access
switchport access vlan 30
description "LMyslivets-PC-31"

interface e1/1
switchport mode access
switchport access vlan 40
description "OpenVPN-L2-Client"

interface e1/2
switchport mode access
switchport access vlan 40
description "LMyslivets-PC-24"

interface e1/3
switchport mode access
switchport access vlan 40
description "LMyslivets-PC-25"

do write

exit
```

▼ Switch-4

```
enable
configure terminal
hostname LMyslivets-Switch-4

vtp domain LMyslivets-Server
```

```
vtp mode client

interface e0/0
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMyshivets-Switch-3"

interface e0/1
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMyshivets-Switch-5"

interface e0/3
switchport mode access
switchport access vlan 50
description "LMyshivets-PC-16"

interface e1/0
switchport mode access
switchport access vlan 50
description "LMyshivets-PC-17"

interface e1/1
switchport mode access
switchport access vlan 60
description "LMyshivets-PC-19"

interface e1/2
switchport mode access
switchport access vlan 40
description "LMyshivets-PC-26"

interface range e0/2, e1/3
switchport mode access
switchport access vlan 777
description "Useless-Int"
```

```
do write
exit
```

▼ Switch-5

```
enable
configure terminal
hostname LMyshivets-Switch-5

vtp domain LMyshivets-Server
vtp mode client

interface e0/0
switchport trunk encapsulation dot1q
switchport mode trunk
description "to LMyshivets-Switch-4"

interface e0/1
switchport mode access
switchport access vlan 40
description "LMyshivets-PC-27"

interface e0/2
switchport mode access
switchport access vlan 60
description "LMyshivets-PC-20"

interface e0/3
switchport mode access
switchport access vlan 60
description "LMyshivets-PC-21"

interface e1/0
switchport mode access
```



```

switchport access vlan 60
description "OpenVPN-L3-Client"

interface e1/1
switchport mode access
switchport access vlan 50
description "LMyslivets-PC-18"

interface range e1/2-3
switchport mode access
switchport access vlan 777
description "Useless-Int"

do write

exit

```

DHCP+Static Address

2

▼ Расчет второго октета IP

1. Прибавляем 10 к второму октету:
 $0 + 10 = 10$
2. Умножаем на порядковый номер в списке группы в гугл-таблице (19) и делим на порядковый номер группы (01):
 $(10 * 19) / 01 = 190 / 01 = 190$

IP VLAN Switch

3

▼ Switch 1

```

conf t
int vlan 70
descr "LMyslivets-MG
MT"
ip address 10.190.7
0.1 255.255.255.0
no shutdown

```

3. Округляем вниз: Округленное значение 190 = 190.

4. Проверяем, если 190 больше 254:

- Проверяем, если 190 меньше или равно 0:
 - Нет, 190 больше 0

Таким образом, второй октет IP-адреса будет 190

▼ Для Main-Router

```
configure terminal
hostname LMySlivets-Main-Router

int e0/0
no shutdown

int e0/0.10
encapsulation dot1q 10
ip address 10.190.10.254 255.255.255.0
ip dhcp pool LMySlivets-VLAN10
network 10.190.10.0 255.255.255.0
default-router 10.190.10.254
domain-name
dns-server 8.8.8.8 8.8.4.4
exit
ip dhcp excluded-address 10.190.10.1
ip dhcp excluded-address 10.190.10.2

int e0/0.20
encapsulation dot1q 20
ip address 10.190.20.254 255.255.255.0
ip dhcp pool LMySlivets-VLAN20
network 10.190.20.0 255.255.255.0
```

```
exit
ip route 0.0.0.0 0.0.0.0 10.190.70.254
exit
write
```

▼ Switch 2

```
conf t
int vlan 70
descr "LMySlivets-MGMT"
ip address 10.190.70.2 255.255.255.0
no shutdown
exit
ip route 0.0.0.0 0.0.0.0 10.190.70.254
exit
write
```

▼ Switch 3

```
conf t
int vlan 70
descr "LMySlivets-MGMT"
ip address 10.190.70.3 255.255.255.0
no shutdown
exit
ip route 0.0.0.0 0.0.0.0 10.190.70.254
exit
write
```

```

default-router 10.190.20.254
dns-server 8.8.8.8 8.8.4.4
exit
ip dhcp excluded-address 10.190.20.1 10.190.20.10
ip dhcp excluded-address 10.190.20.11 10.190.20.20

int e0/0.30
encapsulation dot1q 30
ip address 10.190.30.254 255.255.255.0
ip dhcp pool LMySlivets-VLAN30
network 10.190.30.0 255.255.255.0
default-router 10.190.30.254
dns-server 8.8.8.8 8.8.4.4
exit
ip dhcp excluded-address 10.190.30.1 10.190.30.10
ip dhcp excluded-address 10.190.30.11 10.190.30.20

int e0/0.40
encapsulation dot1q 40
ip address 10.190.40.254 255.255.255.0
ip dhcp pool LMySlivets-VLAN40
network 10.190.40.0 255.255.255.0
default-router 10.190.40.254
dns-server 8.8.8.8 8.8.4.4
exit
ip dhcp excluded-address 10.190.40.1 10.190.40.10
ip dhcp excluded-address 10.190.40.11 10.190.40.20

int e0/0.50
encapsulation dot1q 50
ip address 10.190.50.254 255.255.255.0
ip dhcp pool LMySlivets-VLAN50
network 10.190.50.0 255.255.255.0
default-router 10.190.50.254
dns-server 8.8.8.8 8.8.4.4
exit

```

▼ Switch 4

```

conf t
int vlan 70
descr "LMySlivets-MGMT"
ip address 10.190.70.4 255.255.255.0
no shutdown
exit
ip route 0.0.0.0 0.0.0.0 10.190.70.254
exit
write

```

▼ Switch 5

```

conf t
int vlan 70
descr "LMySlivets-MGMT"
ip address 10.190.70.5 255.255.255.0
no shutdown
exit
ip route 0.0.0.0 0.0.0.0 10.190.70.254
exit
write

```

```

ip dhcp excluded-address 10.190.60.1
ip dhcp excluded-address 10.190.60.2

int e0/0.60
encapsulation dot1q 60
ip address 10.190.60.254 255.255.255.0
ip dhcp pool LMySlivets-VLAN60
network 10.190.60.0 255.255.255.0
default-router 10.190.60.254
dns-server 8.8.8.8 8.8.4.4
exit
ip dhcp excluded-address 10.190.70.1
ip dhcp excluded-address 10.190.70.2

int e0/0.70
encapsulation dot1q 70
ip address 10.190.70.254 255.255.255.0
end
wr

```

▼ Настройка SSH-Client

- Нужно в настройках SSH-Client зайти в `/etc/network/Interfaces`

```
nano /etc/network/Interfaces
```

- Меняем в нем настройки следующим образом:


```
# This file describes the network interface
# and how to activate them. For more information see the
# manpage of the /etc/network/interfaces file.

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
allow-hotplug ens3
iface ens3 inet static
    address 10.190.70.200/24
    gateway 10.190.70.254
```

Рекомендую также сразу настроить ssh(см. практика 5)

 Network БББ0-01-

21 (КБ-2) Myslivets Leonid 19 Лабораторная-1 МИРЭА-2023