

Ход работы.

1) Результат работы (рис.1)

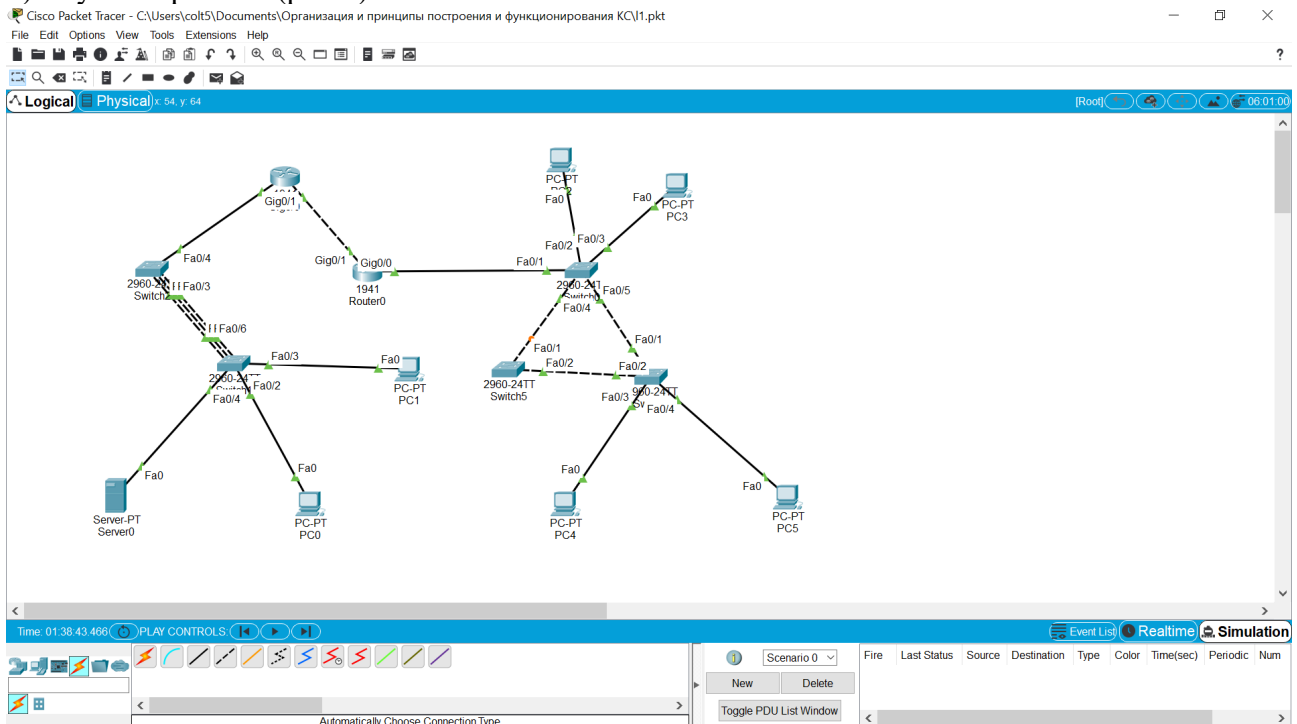


Рис.1-Топология.

2) Настройки (рис.2,рис.3,рис.4) правого маршрутизатора (рис.1 -Router0).

```
ip dhcp excluded-address 192.168.1.1
ip dhcp excluded-address 192.168.2.1
!
ip dhcp pool 10
network 192.168.1.0 255.255.255.0
default-router 192.168.1.1
dns-server 192.168.4.10
ip dhcp pool 20
network 192.168.2.0 255.255.255.0
default-router 192.168.2.1
dns-server 192.168.4.10
.
```

Рис.2-dhcp+dns.

```
interface GigabitEthernet0/0
no ip address
duplex auto
speed auto
!
interface GigabitEthernet0/0.1
encapsulation dot1Q 10
ip address 192.168.1.1 255.255.255.0
!
interface GigabitEthernet0/0.2
encapsulation dot1Q 20
ip address 192.168.2.1 255.255.255.0
!
interface GigabitEthernet0/1
ip address 192.168.3.1 255.255.255.0
duplex auto
speed auto
!
interface Vlan1
no ip address
shutdown
!
```

Рис.3-Интерфейсы.

```

router ospf 1
 log-adjacency-changes
 network 192.168.3.0 0.0.0.255 area 0
 network 192.168.1.0 0.0.0.255 area 0
 network 192.168.2.0 0.0.0.255 area 0
!
```

Рис.4-Ospf.

3)Настройка коммутаторов.

На каждом коммутаторе на интерфейсах связанных с другими интерфейсами других коммутаторов и на интерфейсе связанном с маршрутизатором пишем switchport mode trunk. На интерфейсах с хостами (пк) пишем:

switchport mode access — говорим что дальше нет ветвления сети и порт конечный.

switchport access vlan N — говорим к какому vlan принадлежит порт.

4)Настройки левого маршрутизатора(router1) (рис.5,рис.6,рис7).

```

ip dhcp excluded-address 192.168.4.1
ip dhcp excluded-address 192.168.5.1
!
ip dhcp pool 10
 network 192.168.4.0 255.255.255.0
 default-router 192.168.4.1
 dns-server 192.168.4.10
ip dhcp pool 20
 network 192.168.5.0 255.255.255.0
 default-router 192.168.5.1
 dns-server 192.168.4.10
!
```

Рис.5-Dhcp + dns.

```

interface GigabitEthernet0/0
 ip address 192.168.3.2 255.255.255.0
 duplex auto
 speed auto
!
interface GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
!
interface GigabitEthernet0/1.1
 encapsulation dot1Q 10
 ip address 192.168.4.1 255.255.255.0
 ip access-group 1 out
!
interface GigabitEthernet0/1.2
 encapsulation dot1Q 20
 ip address 192.168.5.1 255.255.255.0
!
```

Рис.6-Интерфейсы.

```

router ospf 1
 log-adjacency-changes
 network 192.168.3.0 0.0.0.255 area 0
 network 192.168.4.0 0.0.0.255 area 0
 network 192.168.5.0 0.0.0.255 area 0
!
ip classless
!
ip flow-export version 9
!
!
access-list 1 deny host 192.168.5.3
access-list 1 permit any
```

Рис.6-OSPF+access list.

Cisco Packet Tracer - C:\Users\colt5\Documents\Организация и принципы построения и функционирования KC\1.pkt

File Edit Options View Tools Extensions Help

Logical Physical x 90, y 36 [Root] 20:28:30

Switch2

Physical Config CLI Attributes

IOS Command Line Interface

```
spanning-tree extend system-id
!
interface Port-channel1
 switchport mode trunk
!
interface FastEthernet0/1
 switchport mode trunk
 channel-group 1 mode on
!
interface FastEthernet0/2
 switchport mode trunk
 channel-group 1 mode on
!
interface FastEthernet0/3
 switchport mode trunk
 channel-group 1 mode on
!
interface FastEthernet0/4
 switchport mode trunk
!
interface FastEthernet0/5
--More--
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

Time: 01:38:43.466 PLAY CONTROLS

Event List Realtime Simulation

Scenario 0

New Delete

Toggle PDU List Window

Fire Last Status Source Destination Type Color Time(sec) Periodic Num

Automatically Choose Connection Type

Cisco Packet Tracer - C:\Users\colt5\Documents\Организация и принципы построения и функционирования КС\1.pkt

File Edit Options View Tools Extensions Help

Logical Physical c: 556, y: 350

Switch1

Physical Config CLI Attributes

IOS Command Line Interface

```
interface Port-channel1
switchport mode trunk
!
interface FastEthernet0/1
switchport mode trunk
channel-group 1 mode on
!
interface FastEthernet0/2
switchport access vlan 20
switchport mode access
!
interface FastEthernet0/3
switchport access vlan 20
switchport mode access
!
interface FastEthernet0/4
switchport access vlan 10
switchport mode access
!
interface FastEthernet0/5
channel-group 1 mode on
!
interface FastEthernet0/6
switchport mode trunk
channel-group 1 mode on
!
interface FastEthernet0/7
!
--More--
```

Ctrl+F6 to exit CLI focus

Copy Paste

Top

Time: 01:38:43.466 PLAY CONTROLS

Event List Realtime Simulation

Scenario 0 New Delete

Toggle PDU List Window

Automatically Choose Connection Type

Cisco Packet Tracer - C:\Users\colt5\Documents\Организация и принципы построения и функционирования КС\1.pkt

File Edit Options View Tools Extensions Help

Logical Physical c: 208, y: 249

Server0

Physical Config Services Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address 192.168.4.10

Subnet Mask 255.255.255.0

Default Gateway 192.168.4.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address

Link Local Address FE80::202:17FF:FE76:9458

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

Top

Time: 01:38:43.466 PLAY CONTROLS

Event List Realtime Simulation

Scenario 0 New Delete

Toggle PDU List Window

Automatically Choose Connection Type

Server0

Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DNS

DNS Service

OnOff

Resource Records

NameType

A Record

Address

Add

Save

Remove

No.	Name	Type	Detail
0	jojo	A Record	192.168.4.10

DNS Cache

Top