

# Лабораторная Работа №8. Настройка сетевых сервисов. DHCP.

Администрирование локальных сетей

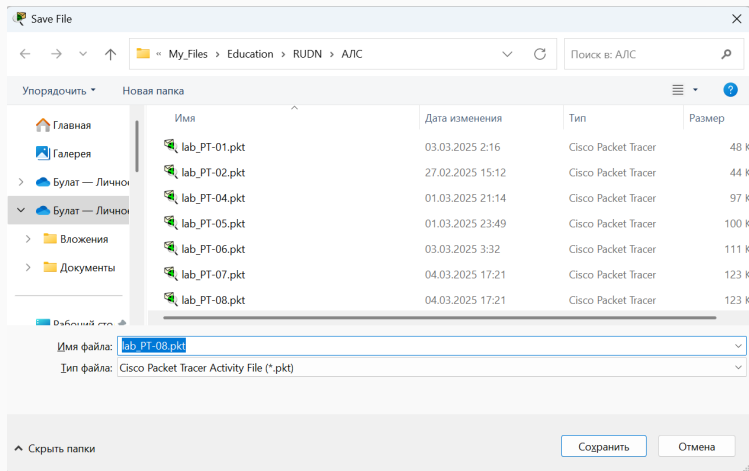
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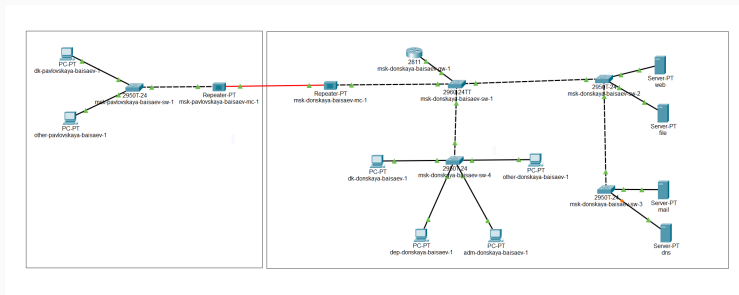
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# Новый проект



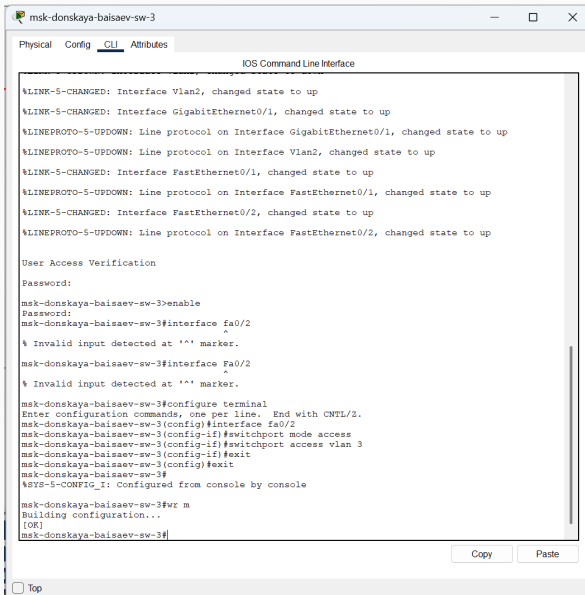
**Figure 1:** Открытие проекта lab\_PT-08.pkt.

# Добавление сервера dns



**Figure 2:** Добавление сервера dns в логическую рабочую область проекта и подключение его к коммутатору msk-donskaya-baisaev-sw-3.

# Активация порта



The screenshot shows a network device CLI window titled "msk-donskaya-baisaev-sw-3". The window has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" selected. The main area displays the "IOS Command Line Interface" output. The output shows several status messages indicating that various interfaces (Vlan2, GigabitEthernet0/1, FastEthernet0/1, FastEthernet0/2) have changed state to up, and line protocols have also changed state to up. This is followed by a "User Access Verification" section where the user is prompted for a password. The user then enters "enable" and is prompted for a password again. The user then enters "msk-donskaya-baisaev-sw-3#interface fa0/2", which results in an "Invalid input detected at '^' marker." error. The user then enters "msk-donskaya-baisaev-sw-3#interface Fa0/2", which also results in an "Invalid input detected at '^' marker." error. The user then enters "msk-donskaya-baisaev-sw-3#configure terminal", which enters configuration mode. The user then enters "msk-donskaya-baisaev-sw-3(config)#interface fa0/2", "msk-donskaya-baisaev-sw-3(config-if)#switchport mode access", "msk-donskaya-baisaev-sw-3(config-if)#switchport access vlan 3", "msk-donskaya-baisaev-sw-3(config-if)#exit", "msk-donskaya-baisaev-sw-3(config)#exit", and "msk-donskaya-baisaev-sw-3#". The output then shows "%SYS-5-CONFIG\_I: Configured from console by console". The user then enters "msk-donskaya-baisaev-sw-3#wr m", which results in "Building configuration..." and "[OK]". The user then enters "msk-donskaya-baisaev-sw-3#". At the bottom of the window, there are "Copy" and "Paste" buttons, and a "Top" button.

```
msk-donskaya-baisaev-sw-3
Physical Config CLI Attributes
IOS Command Line Interface

%LINK-5-CHANGED: Interface Vlan2, changed state to up
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

User Access Verification
Password:
msk-donskaya-baisaev-sw-3>enable
Password:
msk-donskaya-baisaev-sw-3#interface fa0/2
^
% Invalid input detected at '^' marker.
msk-donskaya-baisaev-sw-3#interface Fa0/2
^
% Invalid input detected at '^' marker.
msk-donskaya-baisaev-sw-3#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-baisaev-sw-3(config)#interface fa0/2
msk-donskaya-baisaev-sw-3(config-if)#switchport mode access
msk-donskaya-baisaev-sw-3(config-if)#switchport access vlan 3
msk-donskaya-baisaev-sw-3(config-if)#exit
msk-donskaya-baisaev-sw-3(config)#exit
msk-donskaya-baisaev-sw-3#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-baisaev-sw-3#wr m
Building configuration...
[OK]
msk-donskaya-baisaev-sw-3#
```

Copy Paste

☐ Top

# Настройка конфигурации сервера

dns

Physical Config Services Desktop Programming Attributes

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0002.4A63.17AC

IP Configuration

☐ DHCP

☒ Static

IPv4 Address 10.128.0.5

Subnet Mask 255.255.255.0

IPv6 Configuration

☐ Automatic

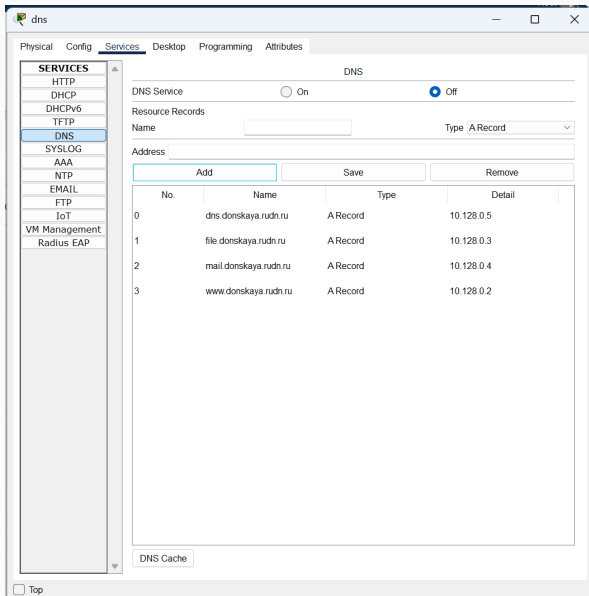
☒ Static

IPv6 Address

Link Local Address: FE80::202:4AFF:FE63:17AC

☐ Top

# Настройка сервиса DNS

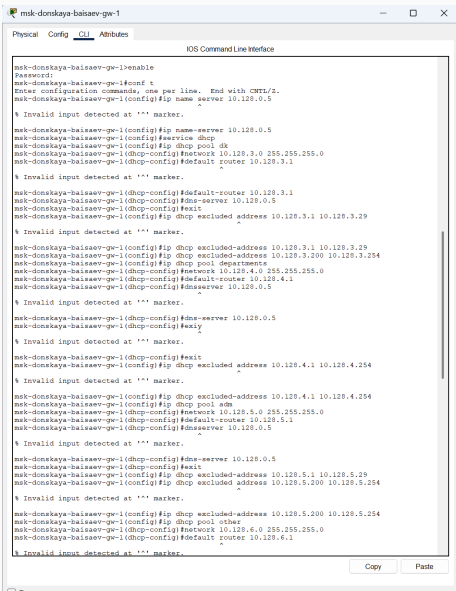


The screenshot shows the 'dnsmasq' configuration window with the 'Services' tab selected. The 'DNS' service is highlighted in the left sidebar. The main panel shows the 'DNS' configuration section with the 'DNS Service' toggle set to 'Off'. Below this, the 'Resource Records' section is visible, showing a list of records with columns for 'No.', 'Name', 'Type', and 'Detail'. The records listed are:

No.	Name	Type	Detail
0	dns.donskaya.rudn.ru	A Record	10.128.0.5
1	file.donskaya.rudn.ru	A Record	10.128.0.3
2	mail.donskaya.rudn.ru	A Record	10.128.0.4
3	www.donskaya.rudn.ru	A Record	10.128.0.2

At the bottom of the window, there is a 'DNS Cache' button and a 'Top' link.

# Настройка DHCP-сервиса на маршрутизаторе



```
msk-donskaya-baisaev-gw-1
Physical Config CLI Attributes
IOS Command Line Interface

msk-donskaya-baisaev-gw-1>enable
Password:
msk-donskaya-baisaev-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-baisaev-gw-1(config)#ip name server 10.128.0.5
^
% Invalid input detected at '^' marker.

msk-donskaya-baisaev-gw-1(config)#ip name-server 10.128.0.5
msk-donskaya-baisaev-gw-1(config)#service dhcp
msk-donskaya-baisaev-gw-1(config)#ip dhcp pool dx
msk-donskaya-baisaev-gw-1(dhcp-config)#network 10.128.3.0 255.255.255.0
msk-donskaya-baisaev-gw-1(dhcp-config)#default-router 10.128.3.1
^
% Invalid input detected at '^' marker.

msk-donskaya-baisaev-gw-1(dhcp-config)#default-router 10.128.3.1
msk-donskaya-baisaev-gw-1(dhcp-config)#dns-server 10.128.0.5
msk-donskaya-baisaev-gw-1(dhcp-config)#exit
msk-donskaya-baisaev-gw-1(config)#ip dhcp excluded address 10.128.3.1 10.128.3.29
^
% Invalid input detected at '^' marker.

msk-donskaya-baisaev-gw-1(config)#ip dhcp excluded-address 10.128.3.1 10.128.3.29
msk-donskaya-baisaev-gw-1(config)#ip dhcp excluded-address 10.128.3.200 10.128.3.254
msk-donskaya-baisaev-gw-1(config)#ip dhcp pool departments
msk-donskaya-baisaev-gw-1(dhcp-config)#network 10.128.4.0 255.255.255.0
msk-donskaya-baisaev-gw-1(dhcp-config)#default-router 10.128.4.1
msk-donskaya-baisaev-gw-1(dhcp-config)#dns-server 10.128.0.5
^
% Invalid input detected at '^' marker.

msk-donskaya-baisaev-gw-1(dhcp-config)#dns-server 10.128.0.5
msk-donskaya-baisaev-gw-1(dhcp-config)#exit
msk-donskaya-baisaev-gw-1(dhcp-config)#ip dhcp excluded address 10.128.4.1 10.128.4.254
^
% Invalid input detected at '^' marker.

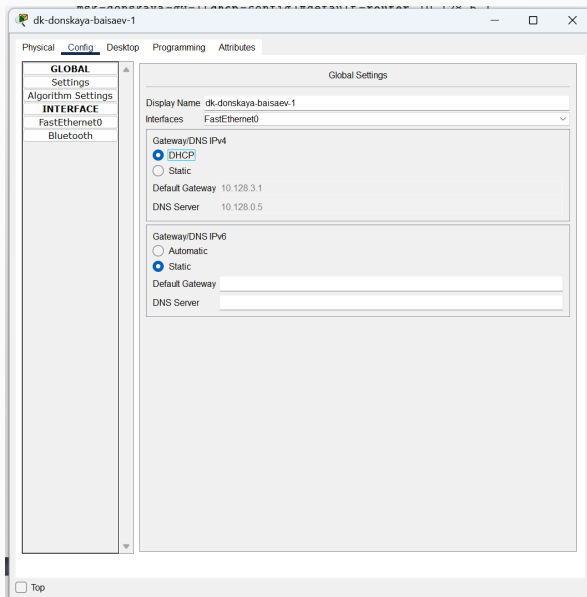
msk-donskaya-baisaev-gw-1(dhcp-config)#ip dhcp excluded-address 10.128.4.1 10.128.4.254
msk-donskaya-baisaev-gw-1(dhcp-config)#ip dhcp pool adm
msk-donskaya-baisaev-gw-1(dhcp-config)#network 10.128.5.0 255.255.255.0
msk-donskaya-baisaev-gw-1(dhcp-config)#default-router 10.128.5.1
msk-donskaya-baisaev-gw-1(dhcp-config)#dns-server 10.128.0.5
^
% Invalid input detected at '^' marker.

msk-donskaya-baisaev-gw-1(dhcp-config)#dns-server 10.128.0.5
msk-donskaya-baisaev-gw-1(dhcp-config)#exit
msk-donskaya-baisaev-gw-1(config)#ip dhcp excluded-address 10.128.5.1 10.128.5.29
msk-donskaya-baisaev-gw-1(config)#ip dhcp excluded address 10.128.5.200 10.128.5.254
^
% Invalid input detected at '^' marker.

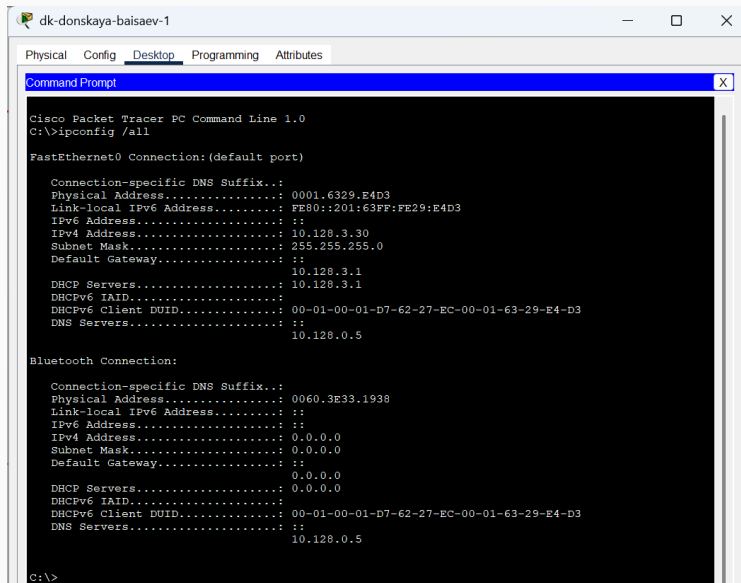
msk-donskaya-baisaev-gw-1(config)#ip dhcp excluded-address 10.128.5.200 10.128.5.254
msk-donskaya-baisaev-gw-1(dhcp-config)#ip dhcp pool other
msk-donskaya-baisaev-gw-1(dhcp-config)#network 10.128.6.0 255.255.255.0
msk-donskaya-baisaev-gw-1(dhcp-config)#default-router 10.128.6.1
^
% Invalid input detected at '^' marker.
```



# Замена статического распределение



# Проверка выделения адресов



The screenshot shows a Cisco Packet Tracer PC Command Line window for a device named 'dk-donskaya-baisaev-1'. The 'Desktop' tab is selected. A 'Command Prompt' window is open, displaying the output of the 'ipconfig /all' command. The output shows configuration for two interfaces: 'FastEthernet0' and 'Bluetooth Connection'. Both interfaces have the same DNS servers (10.128.0.5) and DHCP servers (10.128.3.1). The FastEthernet0 interface has a physical address of 0001.6329.E4D3, a link-local IPv6 address of FE80::201:63FF:FE29:E4D3, and an IPv4 address of 10.128.3.30. The Bluetooth Connection interface has a physical address of 0060.3E33.1938 and an IPv4 address of 0.0.0.0.

```
dk-donskaya-baisaev-1
Physical Config Desktop Programming Attributes
Command Prompt X
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix.:
    Physical Address.....: 0001.6329.E4D3
    Link-local IPv6 Address.....: FE80::201:63FF:FE29:E4D3
    IPv6 Address.....: ::
    IPv4 Address.....: 10.128.3.30
    Subnet Mask.....: 255.255.255.0
    Default Gateway.....: ::
                        10.128.3.1
    DHCP Servers.....: 10.128.3.1
    DHCPv6 IAID.....:
    DHCPv6 Client DUID.....: 00-01-00-01-D7-62-27-EC-00-01-63-29-E4-D3
    DNS Servers.....: ::
                        10.128.0.5

Bluetooth Connection:

    Connection-specific DNS Suffix.:
    Physical Address.....: 0060.3E33.1938
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
                        0.0.0.0
    DHCP Servers.....: 0.0.0.0
    DHCPv6 IAID.....:
    DHCPv6 Client DUID.....: 00-01-00-01-D7-62-27-EC-00-01-63-29-E4-D3
    DNS Servers.....: ::
                        10.128.0.5

C:\>
```

# Изучение запроса

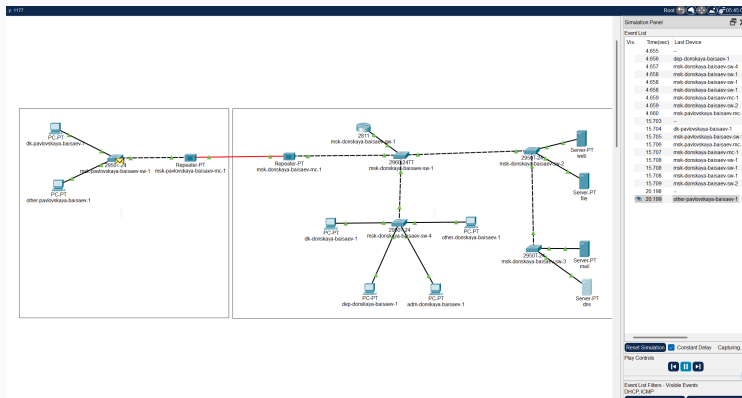


Figure 9: Изучение запроса адреса по протоколу DHCP в режиме симуляции.

В ходе выполнения лабораторной работы мы получили навыки работы с физической рабочей областью Packet Tracer, а также научились учитывать физические параметры сети.