

Защита по лабораторной работе №3

pf

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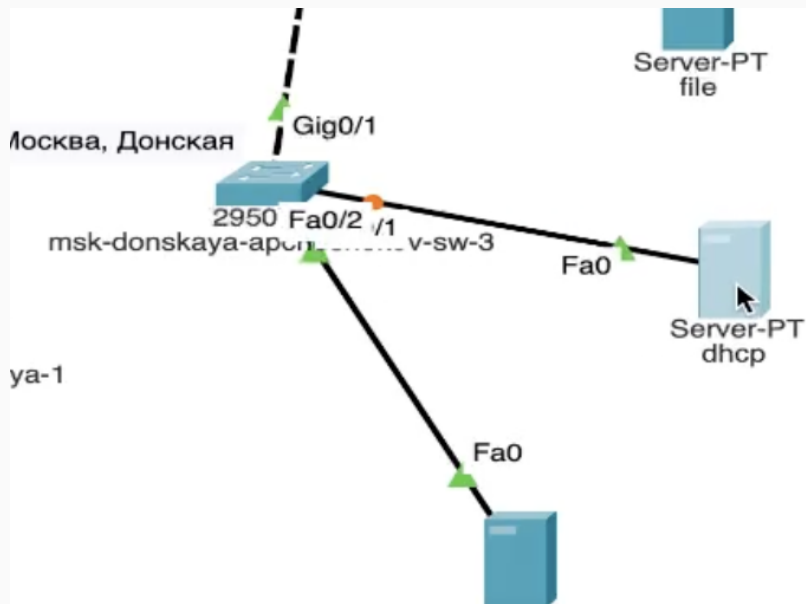
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Информация

Приобретение практических навыков по настройке динамического распределения IP-адресов посредством протокола DHCP (Dynamic Host Configuration Protocol) [5] в локальной сети.

Разместим и подключим сервер .



Подключаем коммутатор и активируем порт.

```
msk-donskaya-apchesnokov-sw-3>ena
msk-donskaya-apchesnokov-sw-3>enable
Password:
msk-donskaya-apchesnokov-sw-3#inte
msk-donskaya-apchesnokov-sw-3#confr
msk-donskaya-apchesnokov-sw-3#conf
msk-donskaya-apchesnokov-sw-3#configure ter
msk-donskaya-apchesnokov-sw-3#configure terminal I
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-apchesnokov-sw-3(config)#inter
msk-donskaya-apchesnokov-sw-3(config)#interface fa
msk-donskaya-apchesnokov-sw-3(config)#interface fastEthernet 0/2
msk-donskaya-apchesnokov-sw-3(config-if)#swit
msk-donskaya-apchesnokov-sw-3(config-if)#swit
msk-donskaya-apchesnokov-sw-3(config-if)#switchport mo
msk-donskaya-apchesnokov-sw-3(config-if)#switchport mode acc
msk-donskaya-apchesnokov-sw-3(config-if)#switchport mode access
msk-donskaya-apchesnokov-sw-3(config-if)#sw
msk-donskaya-apchesnokov-sw-3(config-if)#switchport acc
msk-donskaya-apchesnokov-sw-3(config-if)#switchport access vla
msk-donskaya-apchesnokov-sw-3(config-if)#switchport access vlan 3
msk-donskaya-apchesnokov-sw-3(config-if)#ex
msk-donskaya-apchesnokov-sw-3(config-if)#exit
msk-donskaya-apchesnokov-sw-3(config)#ex
msk-donskaya-apchesnokov-sw-3#
%SYS-5-CONFIG_I: Configured from console by console
```

Присваиваем статический адрес .

The screenshot shows the WinBox interface for configuring a DHCP server. The 'Config' tab is selected, and the 'FastEthernet0' interface is chosen from the left sidebar. The configuration is set to static IP addressing with the address 10.128.0.5 and subnet mask 255.255.255.0. The IPv6 configuration is also set to static with a link-local address.

dhcpc

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 0001.42AC.E512

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::201:42FF:FEAC:E512

Настроим сервис DNS по нашим нуждам .

dhcP

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 ☒ On ☐ Off

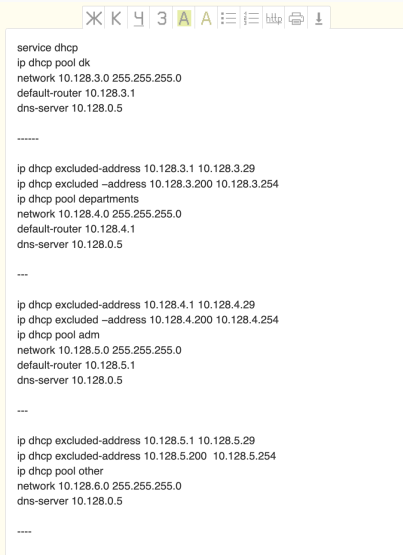
Resource Records

Name dns.donskaya.rudn.ru, Type A Record

Address 10.128.0.5

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

В целях экономии времени переписываем все команды на блокнот и вставляем в наш маршрутизатор .



```
service dhcp
ip dhcp pool dk
network 10.128.3.0 255.255.255.0
default-router 10.128.3.1
dns-server 10.128.0.5

-----

ip dhcp excluded-address 10.128.3.1 10.128.3.29
ip dhcp excluded -address 10.128.3.200 10.128.3.254
ip dhcp pool departments
network 10.128.4.0 255.255.255.0
default-router 10.128.4.1
dns-server 10.128.0.5

---

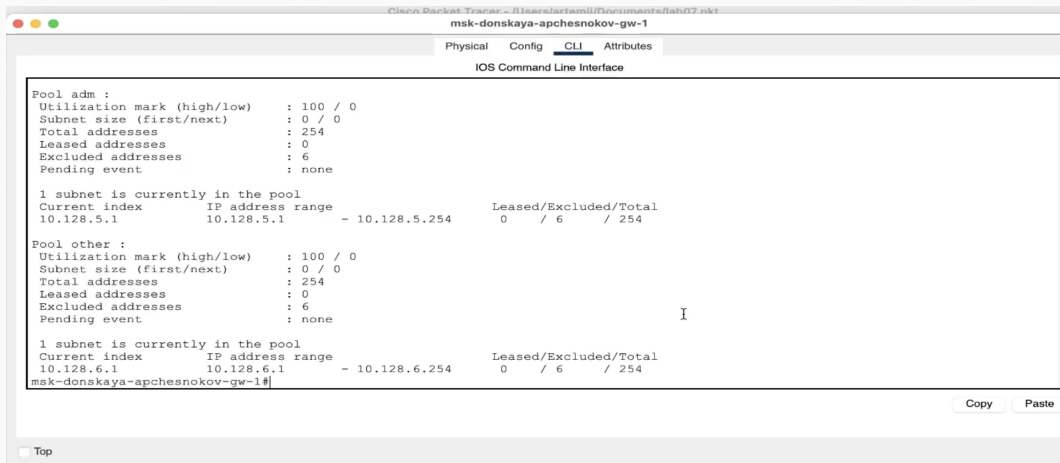
ip dhcp excluded-address 10.128.4.1 10.128.4.29
ip dhcp excluded -address 10.128.4.200 10.128.4.254
ip dhcp pool adm
network 10.128.5.0 255.255.255.0
default-router 10.128.5.1
dns-server 10.128.0.5

---

ip dhcp excluded-address 10.128.5.1 10.128.5.29
ip dhcp excluded-address 10.128.5.200 10.128.5.254
ip dhcp pool other
network 10.128.6.0 255.255.255.0
dns-server 10.128.0.5

-----
```


Информация о пулах DHCP.



The screenshot shows the Cisco Packet Tracer interface with the CLI tab selected for the router 'msk-donskaya-apchesnokov-gw-1'. The CLI displays the output of the 'show ip dhcp pool' command, showing details for two DHCP pools: 'adm' and 'other'. Both pools are configured with a utilization mark of 100 / 0, a subnet size of 0 / 0, and a total of 254 addresses. The 'adm' pool has 0 leased addresses and 6 excluded addresses, while the 'other' pool also has 0 leased addresses and 6 excluded addresses. The CLI shows that 1 subnet is currently in the pool for both, with the current index being 10.128.5.1 for 'adm' and 10.128.6.1 for 'other'. The leased/excluded/total counts are 0 / 6 / 254 for both pools.

```
Cisco Packet Tracer - /Users/artemii/Documents/lsh07.nkt
msk-donskaya-apchesnokov-gw-1
Physical Config CLI Attributes
IOS Command Line Interface

Pool adm :
Utilization mark (high/low)      : 100 / 0
Subnet size (first/next)         : 0 / 0
Total addresses                   : 254
Leased addresses                  : 0
Excluded addresses                : 6
Pending event                     : none

1 subnet is currently in the pool
Current index      IP address range      Leased/Excluded/Total
10.128.5.1         10.128.5.1 - 10.128.5.254  0 / 6 / 254

Pool other :
Utilization mark (high/low)      : 100 / 0
Subnet size (first/next)         : 0 / 0
Total addresses                   : 254
Leased addresses                  : 0
Excluded addresses                : 6
Pending event                     : none

1 subnet is currently in the pool
Current index      IP address range      Leased/Excluded/Total
10.128.6.1         10.128.6.1 - 10.128.6.254  0 / 6 / 254
msk-donskaya-apchesnokov-gw-1#
```

☐ Top

Copy Paste

Рис. 6: такими командами

Информация об привязках выданных адресов .

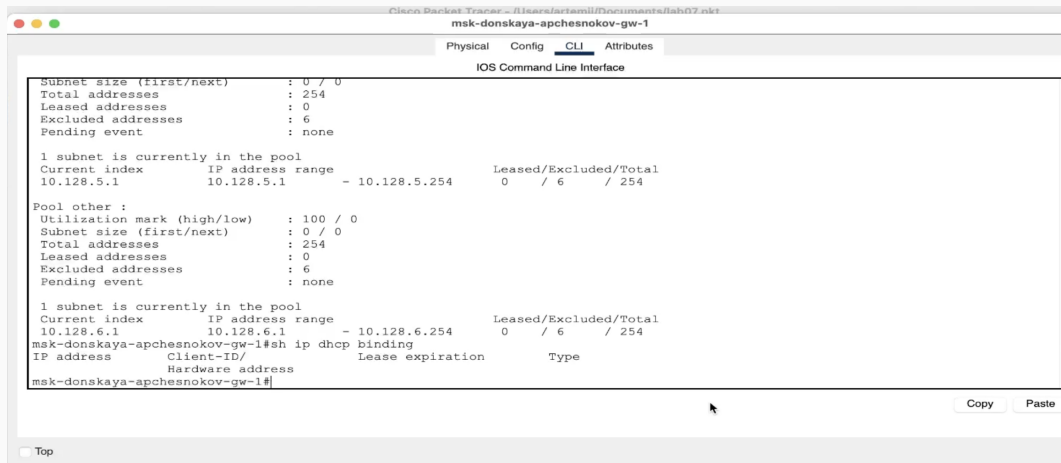


Рис. 7: такими командами

Меняем всем устройствам статическую адресацию на динамическую .

The screenshot shows the Mikrotik WinBox configuration window for a device named 'dk-pavlovskaya-1'. The 'Config' tab is selected, showing the 'Global Settings' section. On the left, a sidebar menu has 'INTERFACE' selected, with 'FastEthernet0' and 'Bluetooth' sub-items. In the main area, the 'Interfaces' dropdown is set to 'FastEthernet0'. Under 'Gateway/DNS IPv4', the 'DHCP' radio button is selected, and the 'Static' option is highlighted by a mouse cursor. The 'Default Gateway' is set to '10.128.3.1' and the 'DNS Server' is '10.128.0.5'. The 'Gateway/DNS IPv6' section shows 'Automatic' selected, with 'Static' also available. The 'Default Gateway' and 'DNS Server' fields for IPv6 are currently empty.

dk-pavlovskaya-1	
Physical	Config
Desktop	Programming
Attributes	

GLOBAL
Settings
Algorithm Settings

INTERFACE
FastEthernet0
Bluetooth

Global Settings

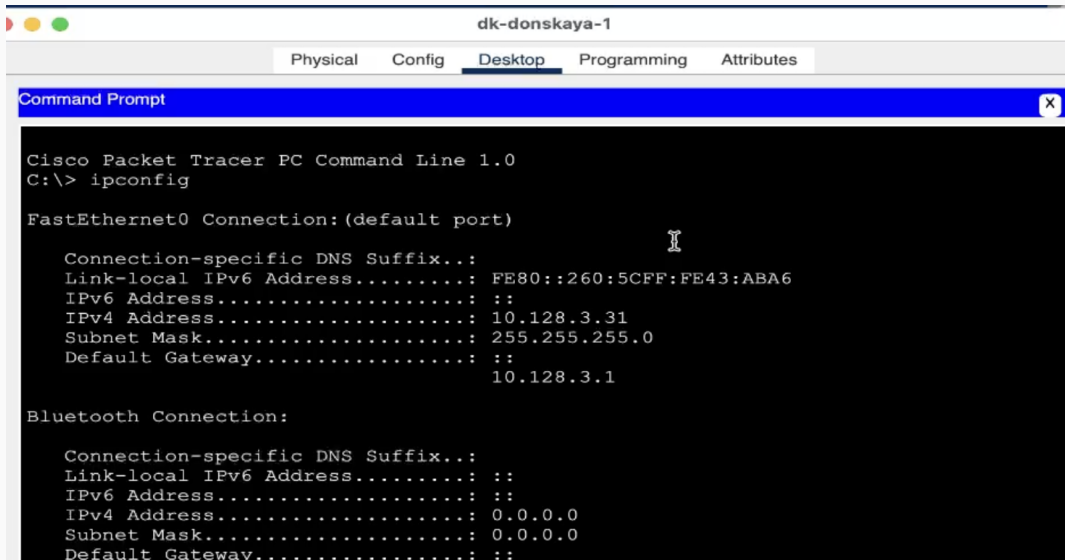
Display Name dk-pavlovskaya-1

Interfaces FastEthernet0

Gateway/DNS IPv4
☒ DHCP
☐ Static
Default Gateway 10.128.3.1
DNS Server 10.128.0.5

Gateway/DNS IPv6
☐ Automatic
☒ Static
Default Gateway
DNS Server

Наблюдаем за присвоением адреса ДК на донской .



The screenshot shows a Cisco Packet Tracer window titled "dk-donskaya-1" with the "Desktop" tab selected. A "Command Prompt" window is open, displaying the output of the "ipconfig" command. The output shows the configuration for "FastEthernet0 Connection: (default port)" and "Bluetooth Connection".

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ipconfig

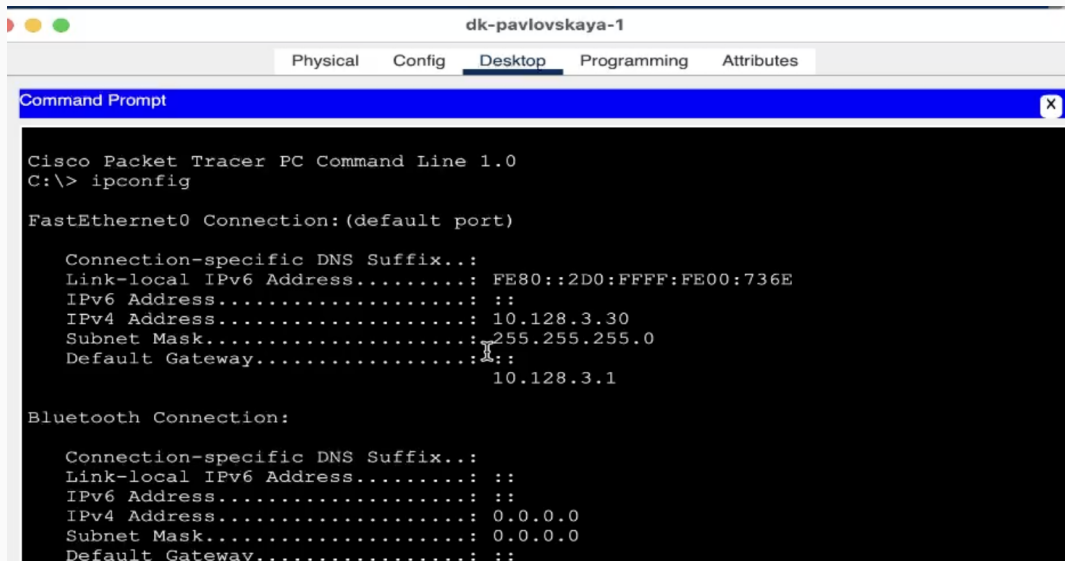
FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::260:5CFF:FE43:ABA6
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 10.128.3.31
    Subnet Mask . . . . .: 255.255.255.0
    Default Gateway . . . . .: ::
                                   10.128.3.1

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway . . . . .: ::
```

Наблюдаем за присвоением адреса ДК на павловской .



The screenshot shows a Cisco Packet Tracer desktop environment. At the top, a window titled 'dk-pavlovskaya-1' has tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the output of the 'ipconfig' command, detailing network settings for 'FastEthernet0' and 'Bluetooth' connections. The FastEthernet0 settings include a link-local IPv6 address, an IPv4 address of 10.128.3.30, a subnet mask of 255.255.255.0, and a default gateway of 10.128.3.1. The Bluetooth connection shows default settings with 0.0.0.0 for IPv4 and 0.0.0.0 for the subnet mask.

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ipconfig

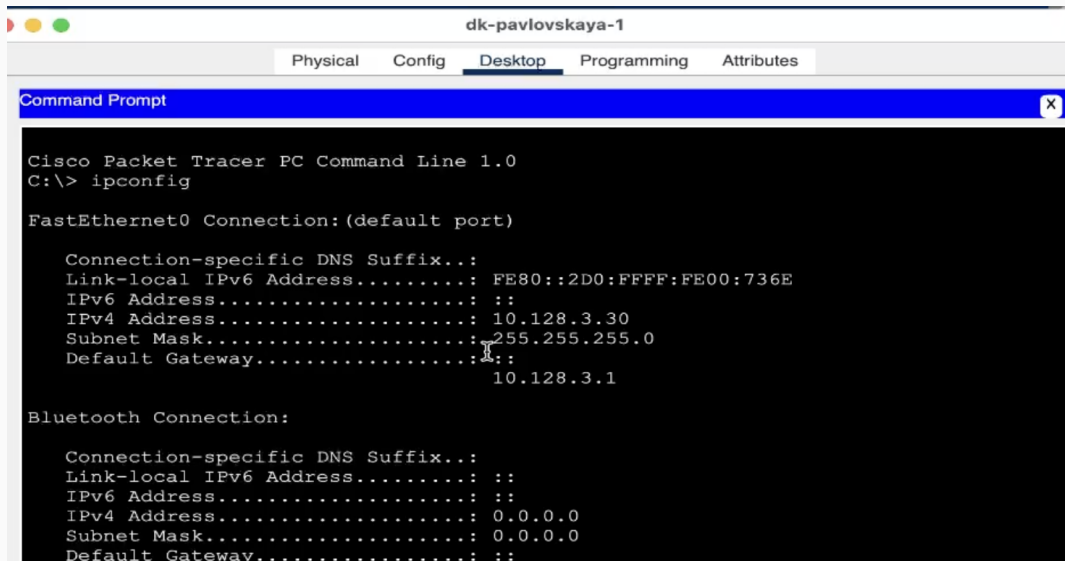
FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::2D0:FFFF:FE00:736E
    IPv6 Address.....: ::
    IPv4 Address.....: 10.128.3.30
    Subnet Mask.....: 255.255.255.0
    Default Gateway.....: 10.128.3.1

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
```

Отправляем тестовые пакеты .



The screenshot shows a Cisco Packet Tracer window titled "dk-pavlovskaya-1" with the "Desktop" tab selected. A "Command Prompt" window is open, displaying the output of the "ipconfig" command. The output shows the configuration for the FastEthernet0 interface, including IPv4 and IPv6 addresses, subnet masks, and default gateways. It also shows the configuration for the Bluetooth connection.

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ipconfig

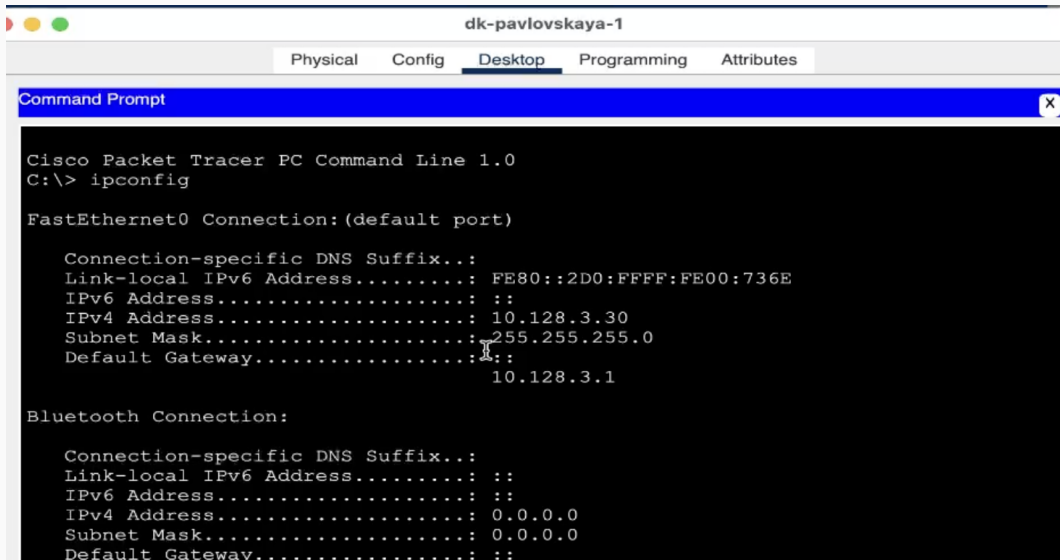
FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::2D0:FFFF:FE00:736E
    IPv6 Address.....: ::
    IPv4 Address.....: 10.128.3.30
    Subnet Mask.....: 255.255.255.0
    Default Gateway.....: 10.128.3.1

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
```

В содержимом пакета наблюдаем конкретные значения адресов .



```
dk-pavlovskaya-1
Physical  Config  Desktop  Programming  Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\> ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: FE80::2D0:FFFF:FE00:736E
    IPv6 Address.....: ::
    IPv4 Address.....: 10.128.3.30
    Subnet Mask.....: 255.255.255.0
    Default Gateway.....: 10.128.3.1

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address.....: ::
    IPv6 Address.....: ::
    IPv4 Address.....: 0.0.0.0
    Subnet Mask.....: 0.0.0.0
    Default Gateway.....: ::
```

Спасибо за внимание.