

**КАФЕДРА ПРОГРАММНОЕ ОБЕСПЕЧЕНИЕ ЭВМ И ИНФОРМАЦИОННЫЕ
ТЕХНОЛОГИИ**

Отчет по лабораторной работе № 4

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1) Присвоение портам устройств ipv4 адресов в соответствии с вариантом

PC0

Physical Config Desktop Programming Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0001.6388.853A

IP Configuration ☐ DHCP ☒ Static

IPv4 Address 10.1.16.1

Subnet Mask 255.255.255.0

IPv6 Configuration ☐ Automatic ☒ Static

IPv6 Address

Link Local Address: FE80::201:63FF:FE88:853A

☐ Top

PC2

Physical Config Desktop Programming Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0001.6413.D1C2

IP Configuration ☐ DHCP ☒ Static

IPv4 Address 10.1.16.3

Subnet Mask 255.255.255.0

IPv6 Configuration ☐ Automatic ☒ Static

IPv6 Address

Link Local Address: FE80::201:64FF:FE13:D1C2

☐ Top

DNS server

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 00E0.F7CE.C728

IP Configuration ☐ DHCP ☒ Static

IPv4 Address 192.168.16.1

Subnet Mask 255.255.255.0

IPv6 Configuration ☐ Automatic ☒ Static

IPv6 Address

Link Local Address: FE80::2E0:F7FF:FECE:C728

☐ Top

HTTP Server

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 000A.F38E.AE8B

IP Configuration ☐ DHCP ☒ Static

IPv4 Address 172.16.16.1

Subnet Mask 255.255.255.0


IPv6 Configuration ☐ Automatic ☒ Static

IPv6 Address

Link Local Address: FE80::20A:F3FF:FE8E:AE8B

☐ Top

2) Настройка безопасного доступа к коммутаторам и маршрутизатору



The screenshot shows a network switch configuration window titled "Switch1". It has four tabs: "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is selected, and the title bar of the CLI window reads "IOS Command Line Interface".

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#enable secret 16
Switch(config)#console line 0
Switch(config)#^
% Invalid input detected at '^' marker.
Switch(config)#line console 0
Switch(config-line)#password 16
Switch(config-line)#login
Switch(config-line)#exit
Switch(config)#line vty 0 4
Switch(config-line)#password 16
Switch(config-line)#login
Switch(config-line)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#exit

Switch con0 is now available

Press RETURN to get started.

User Access Verification

Password:

Switch>enable
Password:
Switch#
```

At the bottom of the CLI window, there is a status bar with the text "Ctrl+F6 to exit CLI focus" on the left and two buttons, "Copy" and "Paste", on the right. Below the CLI window, there is a checkbox labeled "Top".

3) Указание адреса DNS и шлюза по умолчанию

The image displays four screenshots of network configuration windows, each showing the 'Config' tab for a different device. Each window has a sidebar with 'GLOBAL' and 'INTERFACE' sections. The main area is titled 'Global Settings' and contains fields for 'Display Name', 'Interfaces', and 'Gateway/DNS' settings for both IPv4 and IPv6.

PC0 Configuration:

- Display Name: PC0
- Interfaces: FastEthernet0
- Gateway/DNS IPv4: Static (selected), Default Gateway: 10.1.16.254, DNS Server: 192.168.16.1
- Gateway/DNS IPv6: Static (selected), Default Gateway: , DNS Server:

DNS server Configuration:

- Display Name: DNS server
- Gateway/DNS IPv4: Static (selected), Default Gateway: 192.168.16.254, DNS Server: 192.168.16.1
- Gateway/DNS IPv6: Static (selected), Default Gateway: , DNS Server:

HTTP Server Configuration:

- Display Name: HTTP Server
- Gateway/DNS IPv4: Static (selected), Default Gateway: 172.16.16.254, DNS Server: 192.168.16.1
- Gateway/DNS IPv6: Static (selected), Default Gateway: , DNS Server:

Email Server Configuration:

- Display Name: Email Server
- Gateway/DNS IPv4: Static (selected), Default Gateway: 172.16.16.254, DNS Server: 192.168.16.1
- Gateway/DNS IPv6: Static (selected), Default Gateway: , DNS Server:

4) Настройка почтового сервера SMTP и POP3

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL**
- FTP
- IoT
- VM Management
- Radius EAP

EMAIL

SMTP Service ☒ ON ☐ OFF

POP3 Service ☒ ON ☐ OFF

Domain Name:

User Setup

User Password

pc0
pc1
pc2

☐ Top

5) Добавление почтовой записи на DNS-сервер

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 Type

Address

No.	Name	Type	Detail
0	mail.plotnikov.ru	A Record	172.16.16.2

☐ Top

6) Настройка почтового клиента на ПК и проверка работоспособности

PC1

Physical Config Desktop Programming Attributes

Configure Mail X

User Information

Your Name: pc1

Email Address: pc1@mail.plotnikov.ru

Server Information

Incoming Mail Server: mail.plotnikov.ru

Outgoing Mail Server: mail.plotnikov.ru

Logon Information

User Name: pc1

Password: ●●

Save Clear Reset

☐ Top

PC0

Physical Config Desktop Programming Attributes

MAIL BROWSER

Mails

Compose Reply Receive Delete Configure Mail

	From	Subject	Received
1	pc1@mail.plotnikov.ru	pc0	Bc okt 18 2020
2	pc2@mail.plotnikov.ru	pc0	Bc okt 18 2020

Receiving mail from POP3 Server mail.plotnikov.ru
DNS resolving. Resolving name: mail.plotnikov.ru by querying to DNS Server: 192.168.16.1 DNS resolved ip address: 172.16.16.2

☐ Top

PC1

Physical Config Desktop Programming Attributes

MAIL BROWSER

Mails

Compose Reply Receive Delete Configure Mail

	From	Subject	Received
1	pc2@mail.plotnikov.ru	pc1	Bc okt 18 2020
2	pc0@mail.plotnikov.ru	pc1	Bc okt 18 2020

Receiving mail from POP3 Server mail.plotnikov.ru
DNS resolving. Resolving name: mail.plotnikov.ru by querying to DNS Server: 192.168.16.1 DNS resolved ip address: 172.16.16.2

☐ Top

PC2

Physical Config Desktop Programming Attributes

MAIL BROWSER X

Mails

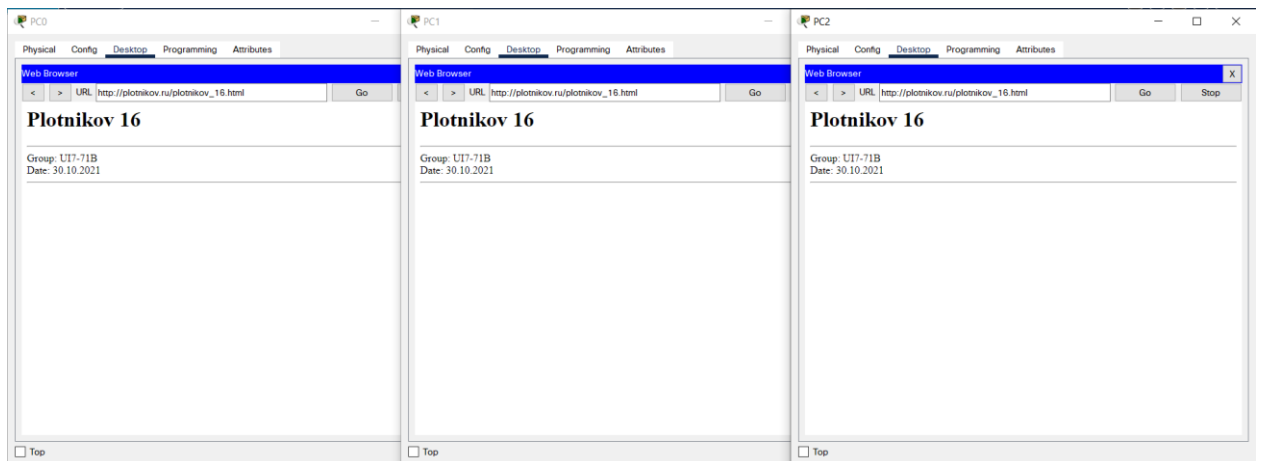
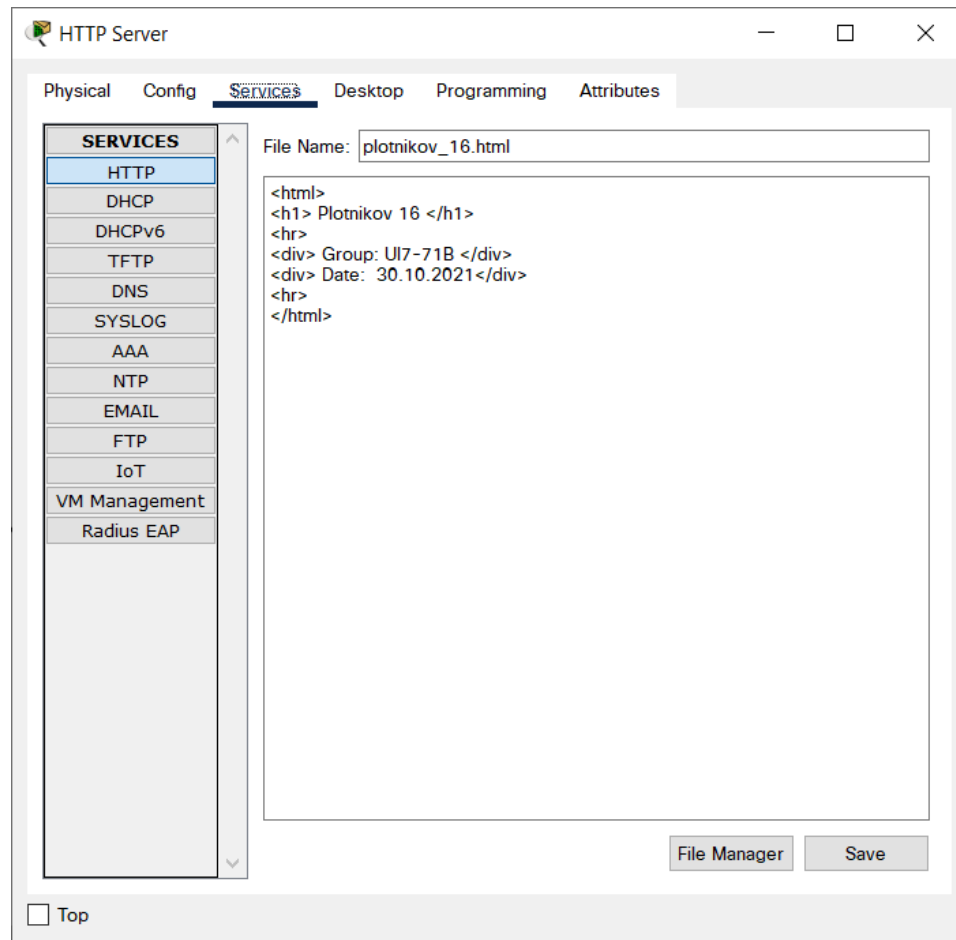
Compose Reply Receive Delete Configure Mail

	From	Subject	Received
1	pc1@mail.plotnikov.ru	pc2	Bc okt 18 2020 15:47:4
2	pc0@mail.plotnikov.ru	pc2	Bc okt 18 2020 15:46:5

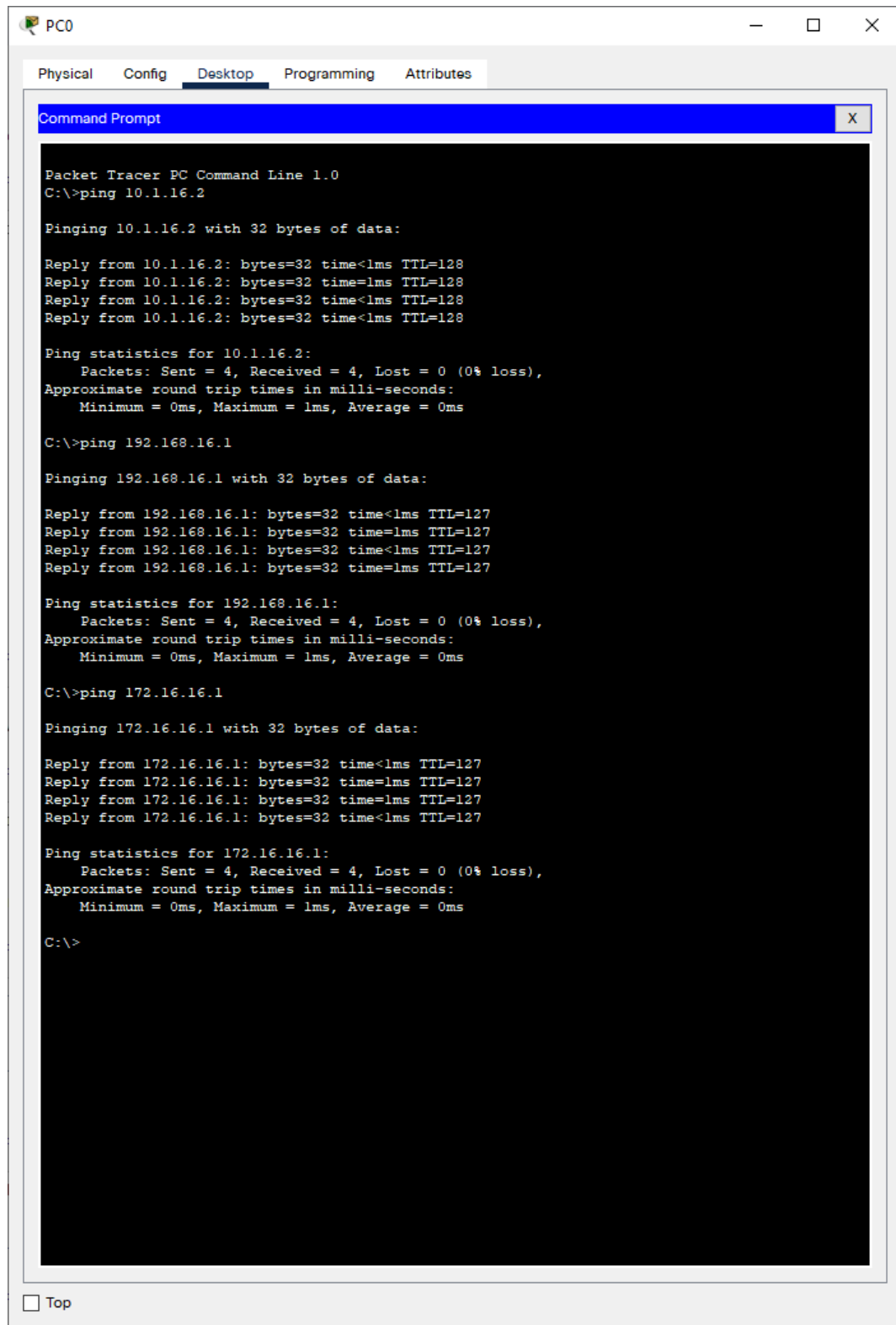
Receiving mail from POP3 Server mail.plotnikov.ru
DNS resolving. Resolving name: mail.plotnikov.ru by querying to DNS Server: 192.168.16.1 DNS resolved ip address: 172.16.16.2

☐ Top

7) Добавление текстовой страницы на HTTP-сервер и проверка работоспособности



8) Проверка прохождения сигнала



The screenshot shows the Packet Tracer interface for PC0. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The window title is 'Command Prompt' with a close button (X). The text inside the window shows the results of three ping commands executed from the PC's command line.

```
Packet Tracer PC Command Line 1.0
C:\>ping 10.1.16.2

Pinging 10.1.16.2 with 32 bytes of data:

Reply from 10.1.16.2: bytes=32 time<1ms TTL=128
Reply from 10.1.16.2: bytes=32 time=1ms TTL=128
Reply from 10.1.16.2: bytes=32 time<1ms TTL=128
Reply from 10.1.16.2: bytes=32 time<1ms TTL=128

Ping statistics for 10.1.16.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.16.1

Pinging 192.168.16.1 with 32 bytes of data:

Reply from 192.168.16.1: bytes=32 time<1ms TTL=127
Reply from 192.168.16.1: bytes=32 time=1ms TTL=127
Reply from 192.168.16.1: bytes=32 time<1ms TTL=127
Reply from 192.168.16.1: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.16.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 172.16.16.1

Pinging 172.16.16.1 with 32 bytes of data:

Reply from 172.16.16.1: bytes=32 time<1ms TTL=127
Reply from 172.16.16.1: bytes=32 time=1ms TTL=127
Reply from 172.16.16.1: bytes=32 time=1ms TTL=127
Reply from 172.16.16.1: bytes=32 time<1ms TTL=127

Ping statistics for 172.16.16.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

At the bottom left of the Packet Tracer window, there is a checkbox labeled 'Top' which is currently unchecked.

9) Отметка широковещательных доменов и доменов коллизий

Прямоугольники - широковещательные домены.

Эллипсы - домены коллизий.

