

## Отчет по лабораторной работе 11

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### 1. Построил сеть:

- Добавил роутер, коммутатор, три ПК, сервер и сетевой принтер.
- Соединил устройства кабелями.

### 2. Настроил интерфейсы на роутере:

- Включил порт fast ethernet.
- Задал IP-адрес 192.168.0.1.

### 3. Настроил DHCP на роутере:

- Исключил из пула 192.168.0.1 - 192.168.0.5.
- Создал DHCP-пул, указав:
  - Сеть: 192.168.0.0/24
  - Шлюз: 192.168.0.1
  - DNS: 192.168.0.2 (IP-адрес сервера)
- Проверил командой `show ip dhcp binding` — ПК получили IP-адреса автоматически.

### 4. Настроил сервер:

- Прописал IP-адрес 192.168.0.2 вручную.
- Включил DNS и добавил домен `mycompany.com` - 192.168.0.2.

### 5. Настроил сетевой принтер:

- Включил DHCP, принтер получил IP-адрес автоматически.
- Проверил связь `ping 192.168.0.9` — принтер отвечает.

### 6. Проверил работу сети:

- PC1, PC2, PC3 получили IP-адреса через DHCP.
- В web browser открыл <http://mycompany.com>, сайт загрузился.
- Ping до принтера успешный.

## Скрины:

The first screenshot shows a network topology in Cisco Packet Tracer. A central 2811 Router0 is connected to a 2811 Router1. Router0 is also connected to a 2811 Switch1. Switch1 is connected to a 2811 Server0, a 2811 PC0, a 2811 PC1, and a 2811 PC2. The interface is 'Logical' and the physical interface is 'Physical'. The time is 00:12:52.

The second screenshot shows the same network topology, but with the CLI window open for Router0. The CLI shows the configuration of the FastEthernet0/0 interface, including IP address assignment, DHCP pool configuration, and the status of the interface.

```
Router0
Physical Config CLI Attributes
IOS Command Line Interface
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.0.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#
%LINE-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
show ip interface brief
% Invalid input detected at '^' marker.

Router(config)#exit
Router#
ASYS-5-CONFIG-I: Configured from console by console
show ip interface brief
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 192.168.0.1 YES manual up
FastEthernet0/1 unassigned YES unset administratively down down
Vlan1 unassigned YES unset administratively down down
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp excluded-address 192.168.0.1 192.168.0.5
Router(config)#ip dhcp pool MYPOOL
Router(dhcp-config)#network 192.168.0.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.0.1
Router(dhcp-config)#dns-server 192.168.0.2
Router(dhcp-config)#exit
Router(config)#exit
Router#
ASYS-5-CONFIG-I: Configured from console by console
show ip dhcp binding
IP address Client-ID/ Lease expiration Type
Hardware address
Router#show ip dhcp binding
IP address Client-ID/ Lease expiration Type
Hardware address
192.168.0.6 0030.F332.B935 -- Automatic
192.168.0.7 00E0.F9A2.5ACD -- Automatic
192.168.0.8 0002.4ADD.A212 -- Automatic
Router#
```

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical 430 / 250

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 ☒ On ☐ Off

Resource Records

Name mycompany.com Type A Record

Address 192.168.0.2

Add Save Remove

No.	Name	Type	Detail
0	mycompany.com	A Record	192.168.0.2

DNS Cache

Printer-PT Printer0

PC-PT PC0

PC-PT PC1

PC-PT PC2

Time: 00:13:56

Realtime Simulation

17:10 22.02.2025

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical 436 / 277

PC0

Physical Config Desktop Programming Attributes

Configuration

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.0.6

Subnet Mask 255.255.255.0

Default Gateway 192.168.0.1

DNS Server 192.168.0.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address

Link Local Address FE80:230:F2FF:FE32:B935

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

Printer-PT Printer0

PC-PT PC0

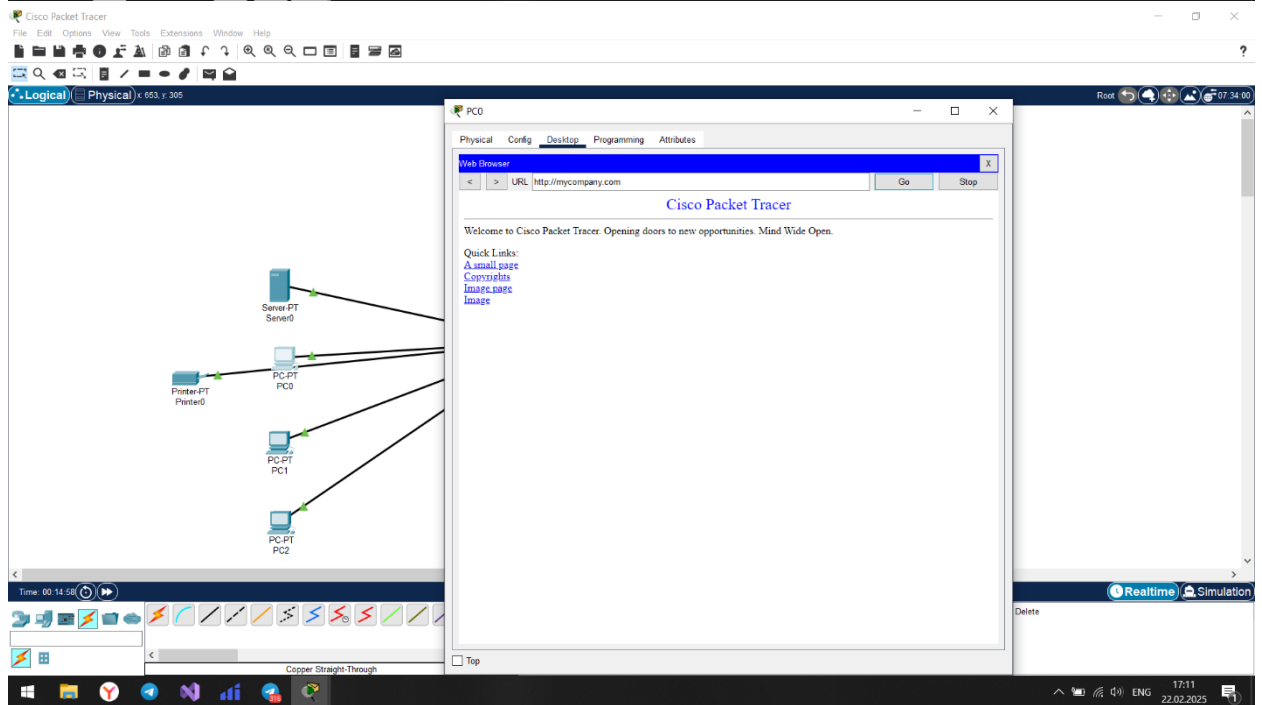
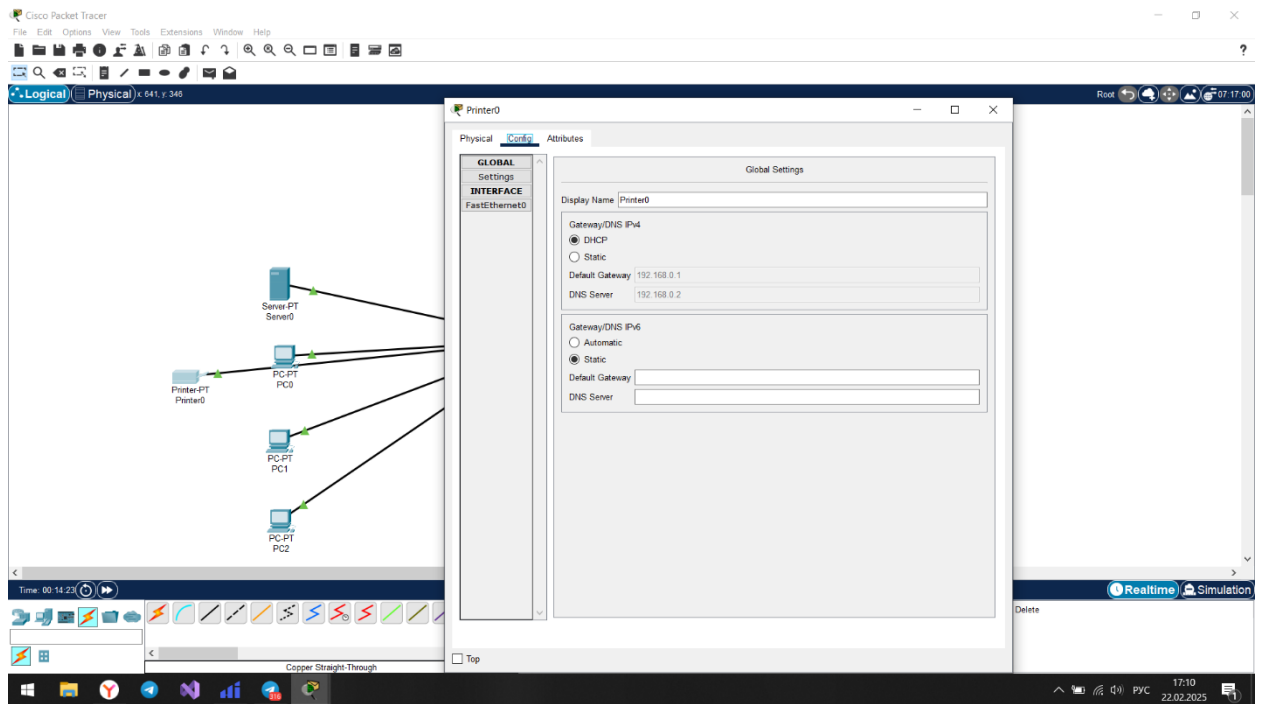
PC-PT PC1

PC-PT PC2

Time: 00:14:04

Realtime Simulation

17:10 22.02.2025



Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 012 r 453

Simulation Panel

Event List

Vis	Time(sec)	Last Device
0.000	-	-
0.001	0.001	PC0
0.002	0.002	Switch1
0.003	0.003	Printer0
0.004	0.004	Switch1
0.938	-	-
0.939	0.939	Switch1
0.939	0.939	Switch1
0.939	0.939	Switch1
0.939	0.939	Switch1
0.939	0.939	Switch1
1.006	1.006	Switch1

Reset Simulation Constant Delay Captured to: 1.005 s

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, iSCSI, L2TP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPv2, RIPv3, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Scenario 0

New Delete

Toggle PDU List Window

Copper Straight-Through

Time: 00:15:22.079 PLAY CONTROLS

17:12 22.02.2025

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 1051 r 327

Simulation Panel

Event List

Vis	Time(sec)	Last Device
0.000	-	-
0.001	0.001	PC0
0.002	0.002	Switch1
0.003	0.003	Printer0
0.004	0.004	Switch1
0.938	-	-
0.939	0.939	Switch1
0.939	0.939	Switch1
0.939	0.939	Switch1
0.939	0.939	Switch1
0.939	0.939	Switch1
1.006	1.006	Switch1

Reset Simulation Constant Delay Captured to: 1.005 s

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, iSCSI, L2TP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPv2, RIPv3, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Scenario 0

New Delete

Toggle PDU List Window

Copper Straight-Through

Time: 00:15:22.079 PLAY CONTROLS

17:12 22.02.2025

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 1542 y 451

Simulation Panel

Vis	Time(sec)	Last Device
0.000	-	-
0.001	PC0	
0.002	Switch1	
0.003	Printer0	
0.004	Switch1	
0.938	-	
0.939	Switch1	
0.939	Switch1	
0.939	Switch1	
0.939	Switch1	
0.939	Switch1	
0.939	Switch1	
1.006	-	

Reset Simulation Constant Delay Captured to: 1.005 s

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, iSCSI, L2TP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPv2, RIPv3, SCCP, SMTP, SNMP, SSH, SIP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Scenario 0

New Delete

Toggle PDU List Window

Copper Straight-Through

Time: 00:15:22.079 PLAY CONTROLS

17:13 22.02.2025

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x 1553 y 319

Simulation Panel

Vis	Time(sec)	Last Device
0.000	-	-
0.001	PC0	
0.002	Switch1	
0.003	Printer0	
0.004	Switch1	
0.938	-	
0.939	Switch1	
0.939	Switch1	
0.939	Switch1	
0.939	Switch1	
0.939	Switch1	
0.939	Switch1	
1.006	-	

Reset Simulation Constant Delay Captured to: 1.005 s

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, iSCSI, L2TP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPv2, RIPv3, SCCP, SMTP, SNMP, SSH, SIP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Scenario 0

New Delete

Toggle PDU List Window

Copper Straight-Through

Time: 00:15:22.079 PLAY CONTROLS

17:13 22.02.2025