



**TC**

**Düzce Üniversitesi  
Mühendislik Fakültesi**

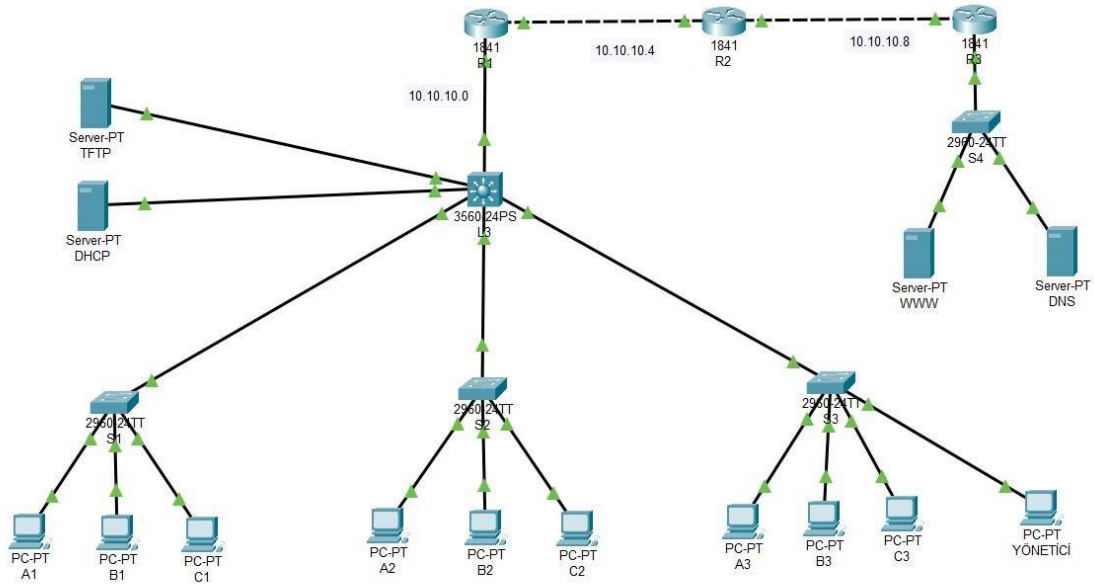
**Bilgisayar Mühendisliği Bölümü**

**BM 302 – Bilgisayar Ağları II**

**Teslim Eden;**

**191002023 Esmanur ERDEM İÖ.**

## TOPOLOJİ



1-) Tüm ağ cihazlarının konsol, telnet, enable mod yapılandırması yapıldı.

### Console Yapılandırılması

R1 (config) # line console 0

R1 (config-line) # login

R1 (config-line) # password esma

R1 (config-line) # exit

### Telnet Yapılandırılması

R1 (config) # line vty 0 4

R1 (config-line) # login

R1 (config-line) # password erdem

R1 (config-line) # exit

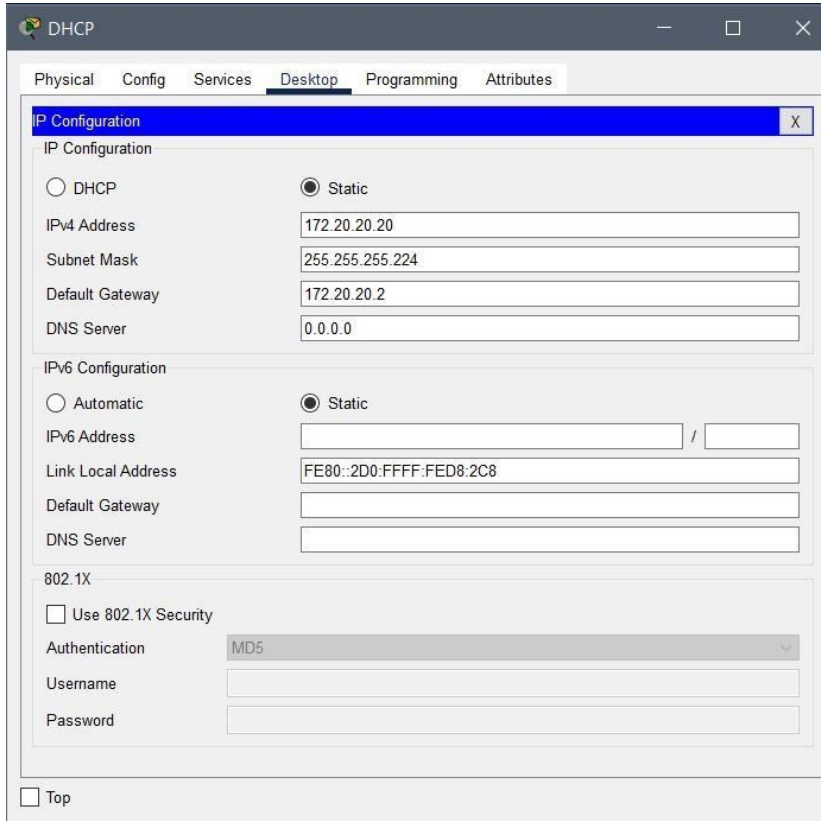
### Enable Mod

R1 (config) #service password -encryption

R1 (config) # enable secret esmaerdem

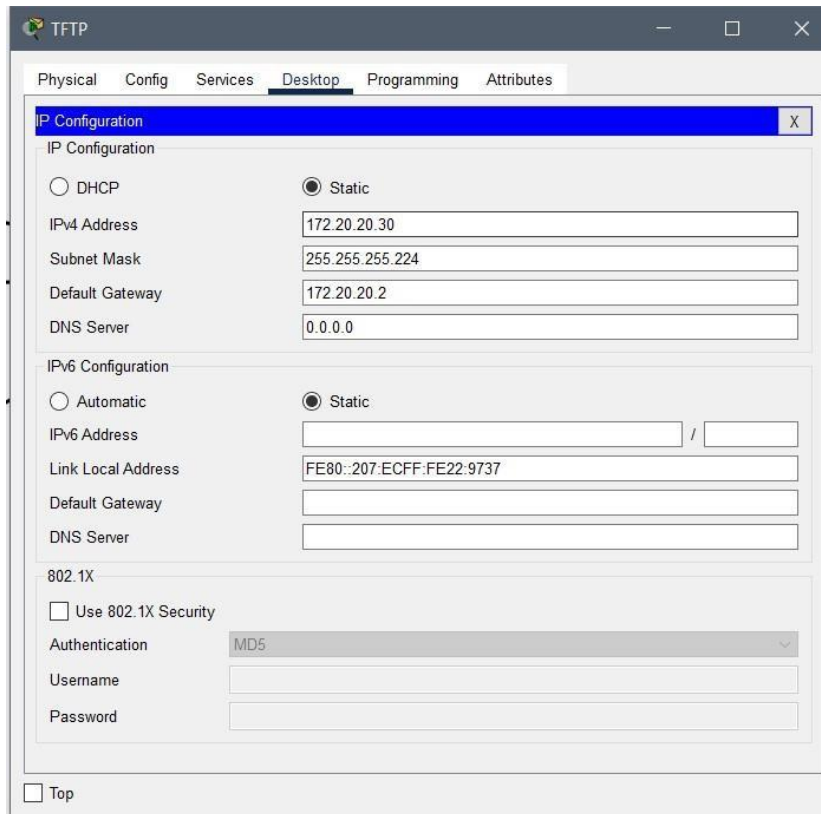
## 2-Sunucu Adresleri

Sunucuların adresleri girildi.



The DHCP Configuration window is shown with the 'Desktop' tab selected. It contains three main sections: IP Configuration, IPv6 Configuration, and 802.1X. The IP Configuration section has 'Static' selected, with fields for IPv4 Address (172.20.20.20), Subnet Mask (255.255.255.224), Default Gateway (172.20.20.2), and DNS Server (0.0.0.0). The IPv6 Configuration section has 'Static' selected, with fields for IPv6 Address, Link Local Address (FE80::2D0:FFFF:FE08:2C8), Default Gateway, and DNS Server. The 802.1X section has 'Use 802.1X Security' unchecked, with a dropdown for Authentication (MD5) and fields for Username and Password. A 'Top' button is at the bottom left.

Section	Option	Value
IP Configuration	DHCP	<input type="radio"/>
	Static	<input checked="" type="radio"/>
	IPv4 Address	172.20.20.20
	Subnet Mask	255.255.255.224
IPv6 Configuration	Automatic	<input type="radio"/>
	Static	<input checked="" type="radio"/>
	IPv6 Address	
	Link Local Address	FE80::2D0:FFFF:FE08:2C8
802.1X	Use 802.1X Security	<input type="checkbox"/>
	Authentication	MD5
	Username	
	Password	



The TFTP Configuration window is shown with the 'Desktop' tab selected. It contains three main sections: IP Configuration, IPv6 Configuration, and 802.1X. The IP Configuration section has 'Static' selected, with fields for IPv4 Address (172.20.20.30), Subnet Mask (255.255.255.224), Default Gateway (172.20.20.2), and DNS Server (0.0.0.0). The IPv6 Configuration section has 'Static' selected, with fields for IPv6 Address, Link Local Address (FE80::207:ECFF:FE22:9737), Default Gateway, and DNS Server. The 802.1X section has 'Use 802.1X Security' unchecked, with a dropdown for Authentication (MD5) and fields for Username and Password. A 'Top' button is at the bottom left.

Section	Option	Value
IP Configuration	DHCP	<input type="radio"/>
	Static	<input checked="" type="radio"/>
	IPv4 Address	172.20.20.30
	Subnet Mask	255.255.255.224
IPv6 Configuration	Automatic	<input type="radio"/>
	Static	<input checked="" type="radio"/>
	IPv6 Address	
	Link Local Address	FE80::207:ECFF:FE22:9737
802.1X	Use 802.1X Security	<input type="checkbox"/>
	Authentication	MD5
	Username	
	Password	

WWW

PhysicalConfigServicesDesktopProgrammingAttributes

IP ConfigurationX

IP Configuration

DHCP

Static

IPv4 Address212.30.30.100

Subnet Mask255.255.255.0

Default Gateway212.30.30.1

DNS Server0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

Link Local AddressFE80::2E0:A3FF:FE83:8B23

Default Gateway

DNS Server

802.1X

Use 802.1X Security

AuthenticationMD5

Username

Password

Top

DNS

PhysicalConfigServicesDesktopProgrammingAttributes

IP ConfigurationX

IP Configuration

DHCP

Static

IPv4 Address212.30.30.101

Subnet Mask255.255.255.0

Default Gateway212.30.30.1

DNS Server0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

Link Local AddressFE80::20D:BDFF:FE7B:B07C

Default Gateway

DNS Server

802.1X

Use 802.1X Security

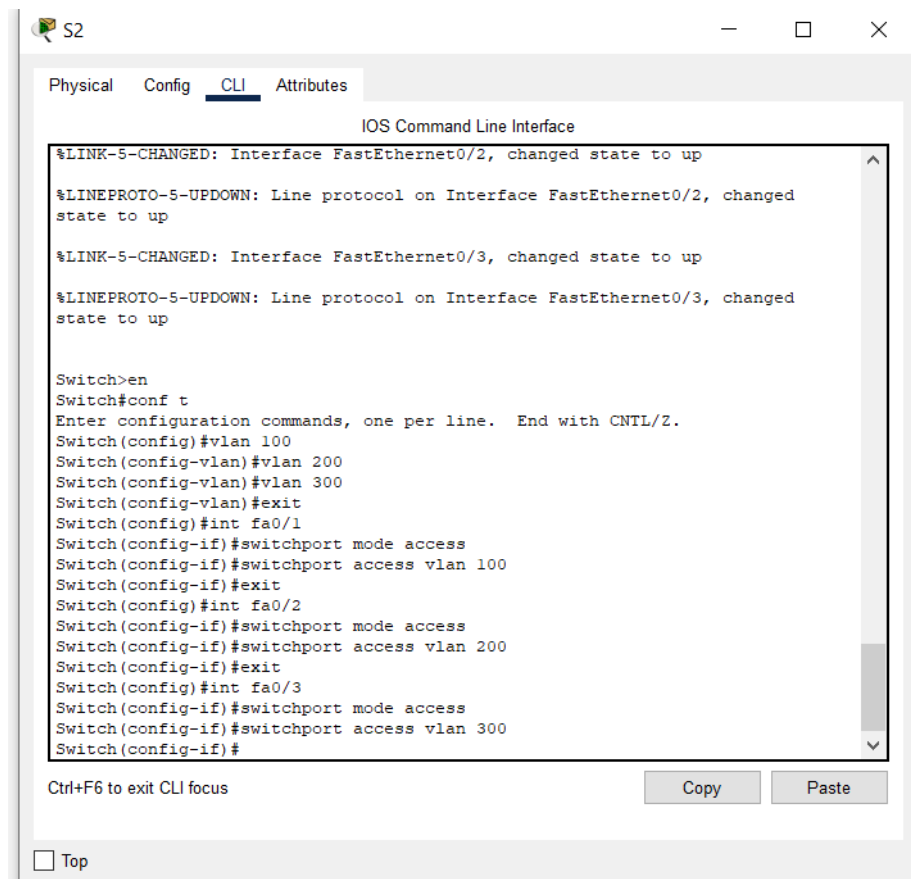
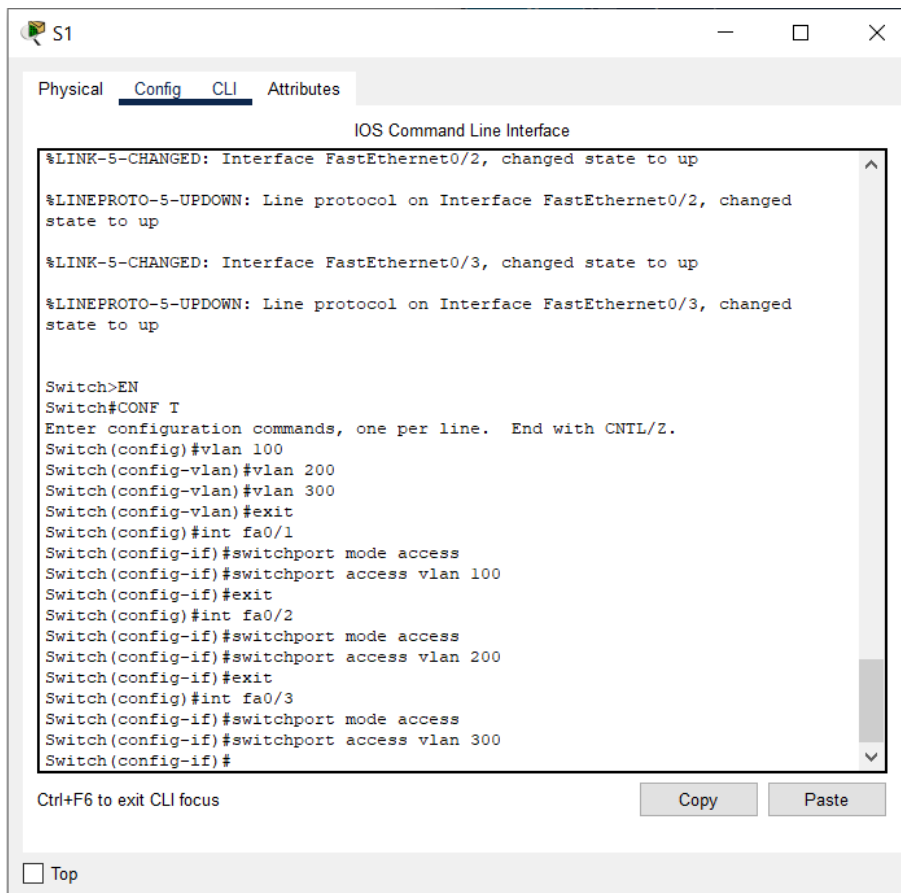
AuthenticationMD5

Username

Password

Top

### 3-Ağ Cihazlarının arayüz adresleri verildi.



S1

Physical Config CLI Attributes

IOS Command Line Interface

```
Switch(config)#int fa0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 300
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan brief
```

VLAN Name	Status	Ports
1 default	active	Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2
100 VLAN0100	active	Fa0/1
200 VLAN0200	active	Fa0/2
300 VLAN0300	active	Fa0/3
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

Switch#

Ctrl+F6 to exit CLI focus

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R1

Physical Config CLI Attributes

IOS Command Line Interface

```
Compiled Wed 18-Jul-07 04:52 By pt_team

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fa0/0
Router(config-if)#ip address 10.10.10.1 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up

Router(config-if)#exit
Router(config)#interface fa0/1
Router(config-if)#ip address 10.10.10.5 255.255.255.252
Router(config-if)#no shutdown

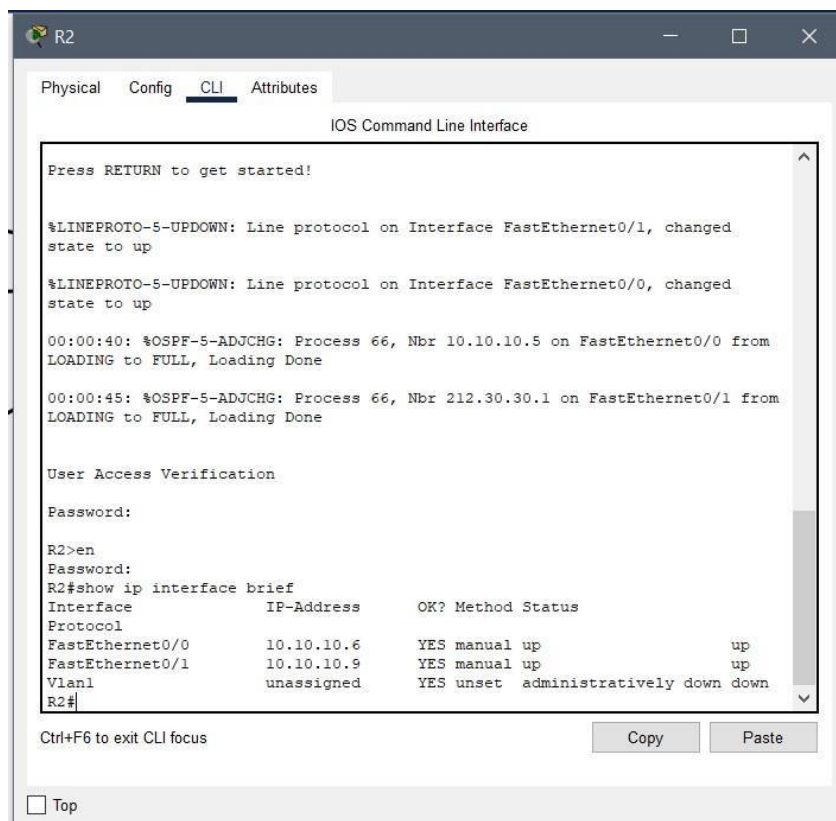
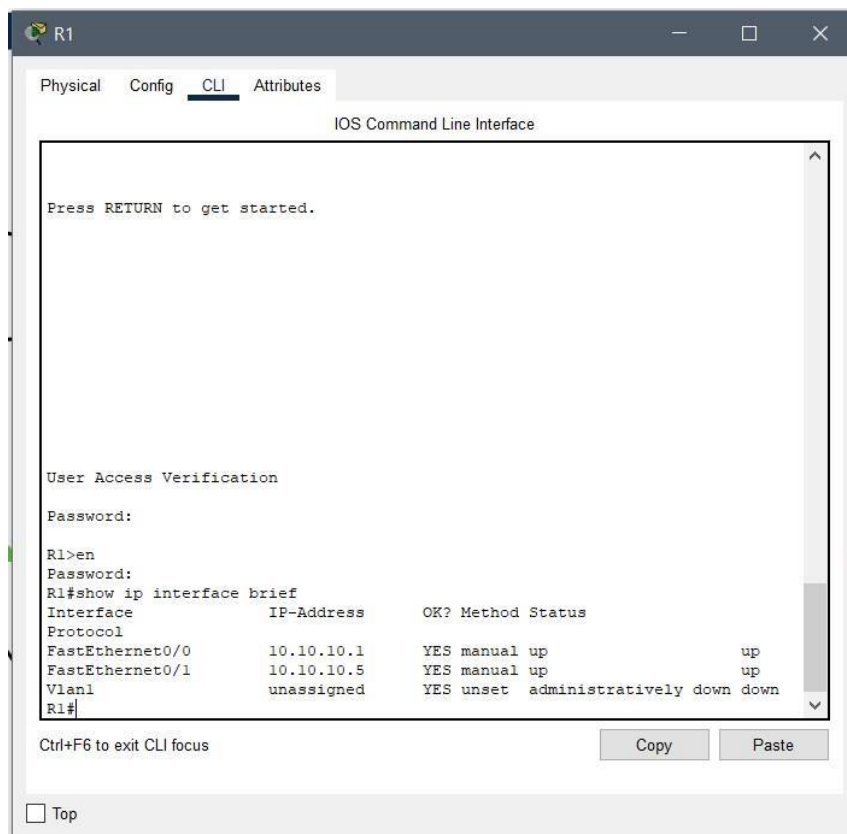
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

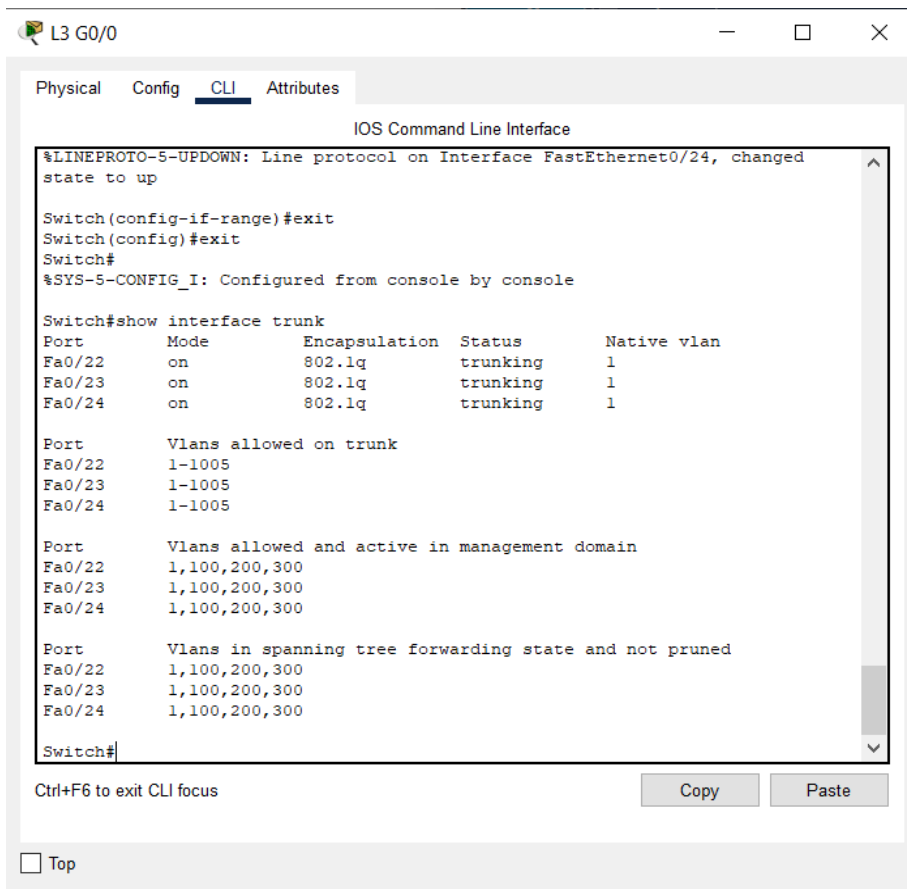
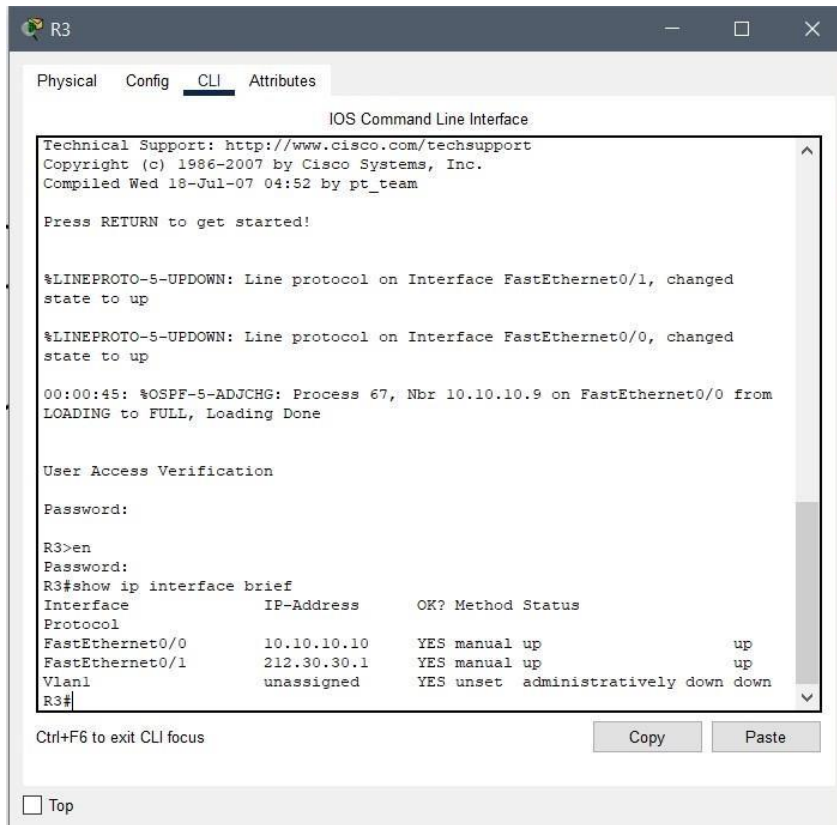
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to up
|
```

Ctrl+F6 to exit CLI focus

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Aynı şekilde ağda bulunan diğer cihazların arayüzleri de yapılandırılmıştır.



#### 4-Ağ cihazları üzerinde oluşturulan vlan'lar.

S1

Physical Config CLI Attributes

IOS Command Line Interface

```
S1#show vlan
```

VLAN Name	Status	Ports
1 default	active	Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/23, Fa0/24 Gig0/1, Gig0/2
100 A	active	Fa0/1
200 B	active	Fa0/2
300 C	active	Fa0/3
900 Sunucular	active	
999 Yonetim	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

VLAN Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Transl
1 enet	100001	1500	-	-	-	-	-	0

--More--

Ctrl+F6 to exit CLI focus

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S2

Physical Config CLI Attributes

IOS Command Line Interface

```
S2#show vlan
```

VLAN Name	Status	Ports
1 default	active	Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/24 Gig0/1, Gig0/2
100 A	active	Fa0/1
200 B	active	Fa0/2
300 C	active	Fa0/3
900 Sunucular	active	
999 Yonetim	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

VLAN Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Transl
1 enet	100001	1500	-	-	-	-	-	0

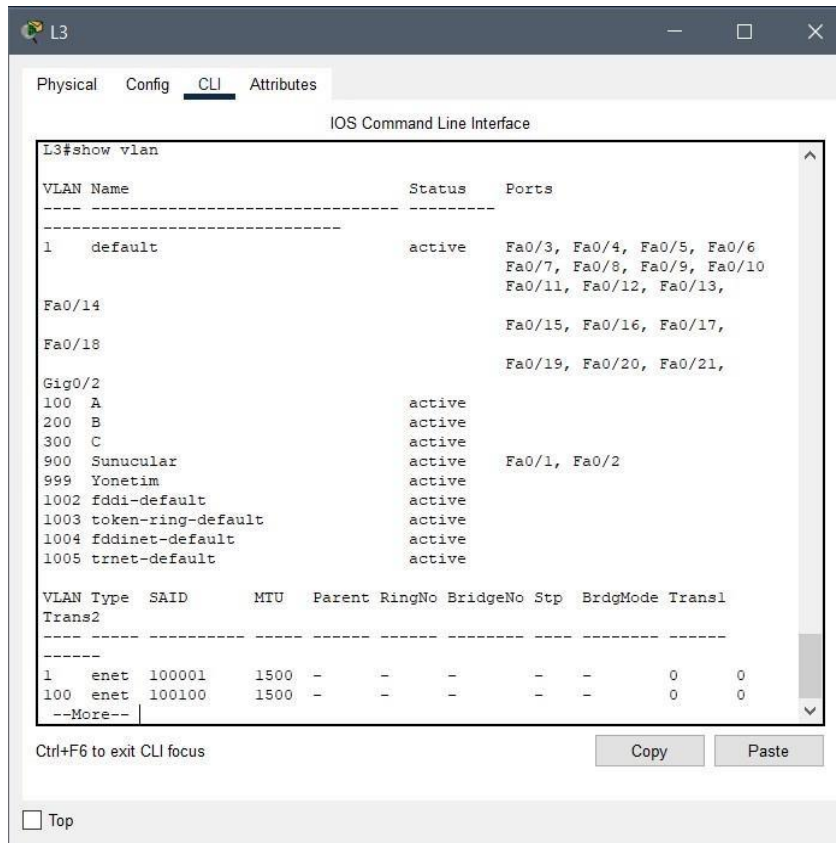
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Ctrl+F6 to exit CLI focus

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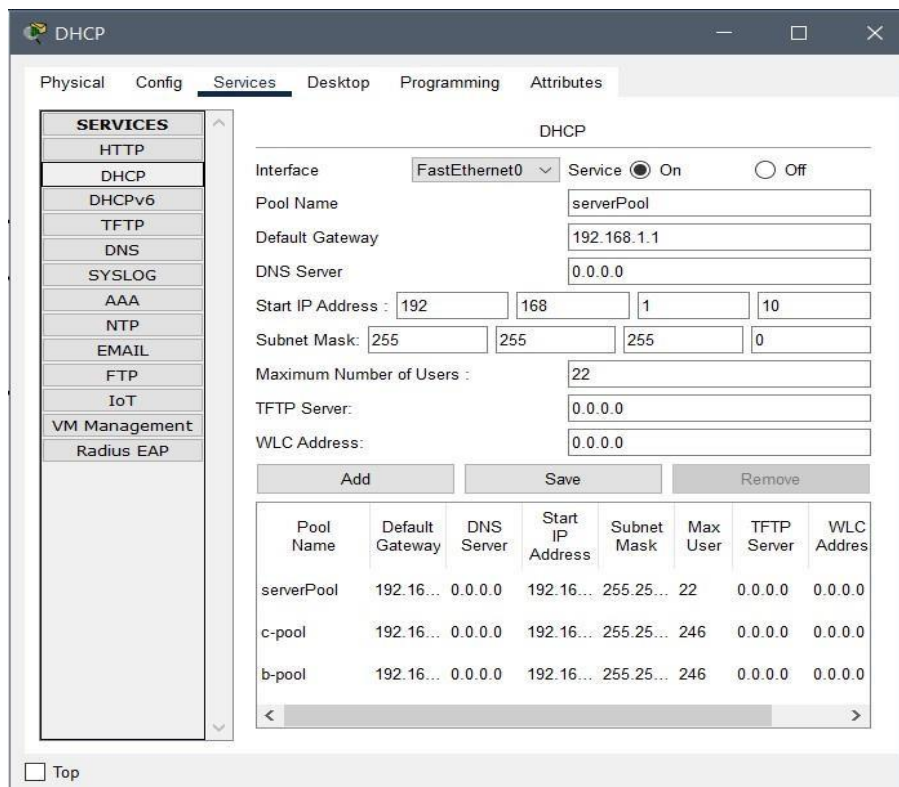
☐ Top



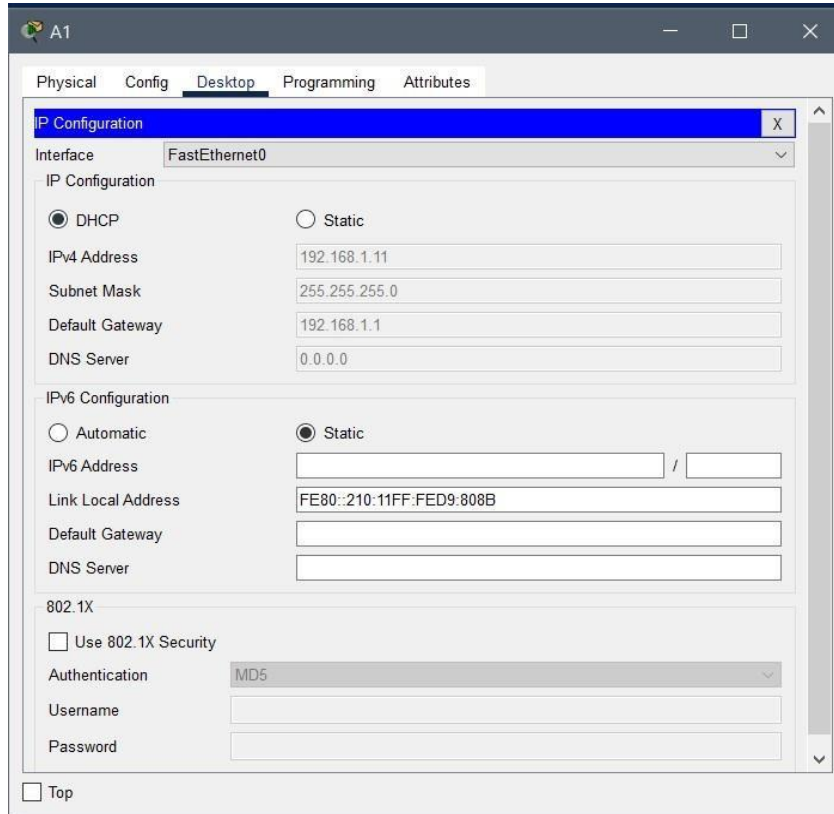


## 5-DHCP

DHCP Server üzerinden ip havuzları oluşturuldu.



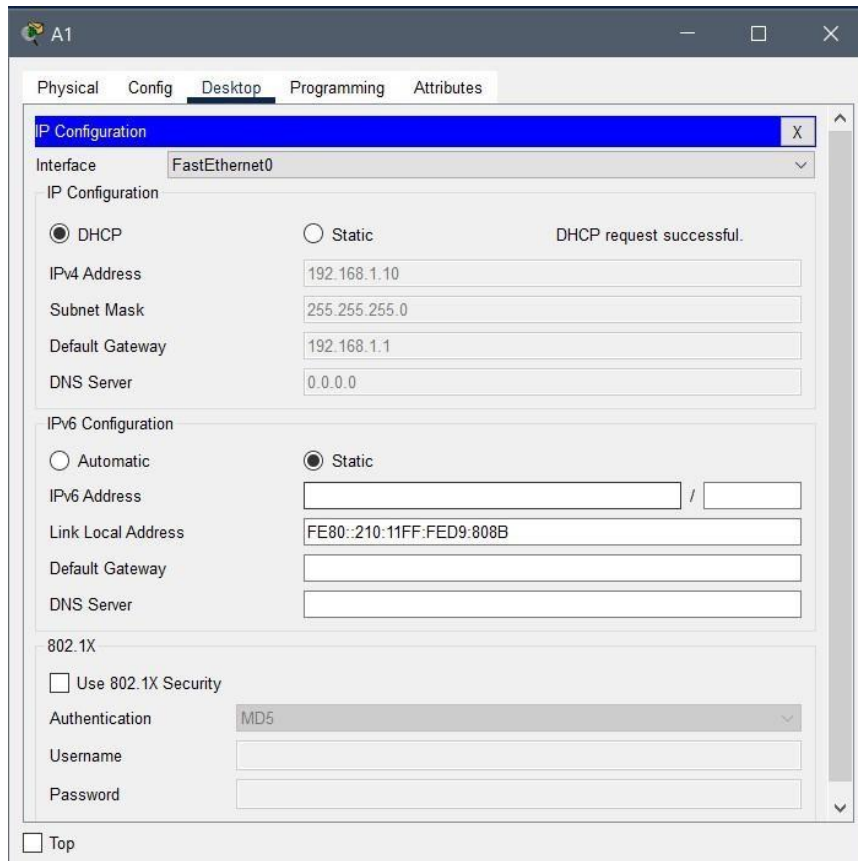
DHCP serverPool seçildikten sonra A bilgisayarına havuzdan ip adresi atandı.



The screenshot shows the 'IP Configuration' window for the 'FastEthernet0' interface. The 'DHCP' radio button is selected, and the 'Static' radio button is unselected. The IPv4 Address is 192.168.1.11, Subnet Mask is 255.255.255.0, Default Gateway is 192.168.1.1, and DNS Server is 0.0.0.0. The IPv6 Configuration section shows 'Automatic' unselected and 'Static' selected. The IPv6 Address is empty, Link Local Address is FE80::210:11FF:FED9:808B, Default Gateway is empty, and DNS Server is empty. The 802.1X section shows 'Use 802.1X Security' unselected, Authentication is MD5, Username is empty, and Password is empty. A 'Top' button is at the bottom left.

Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
IPv4 Address	192.168.1.11
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::210:11FF:FED9:808B
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5
Username	
Password	

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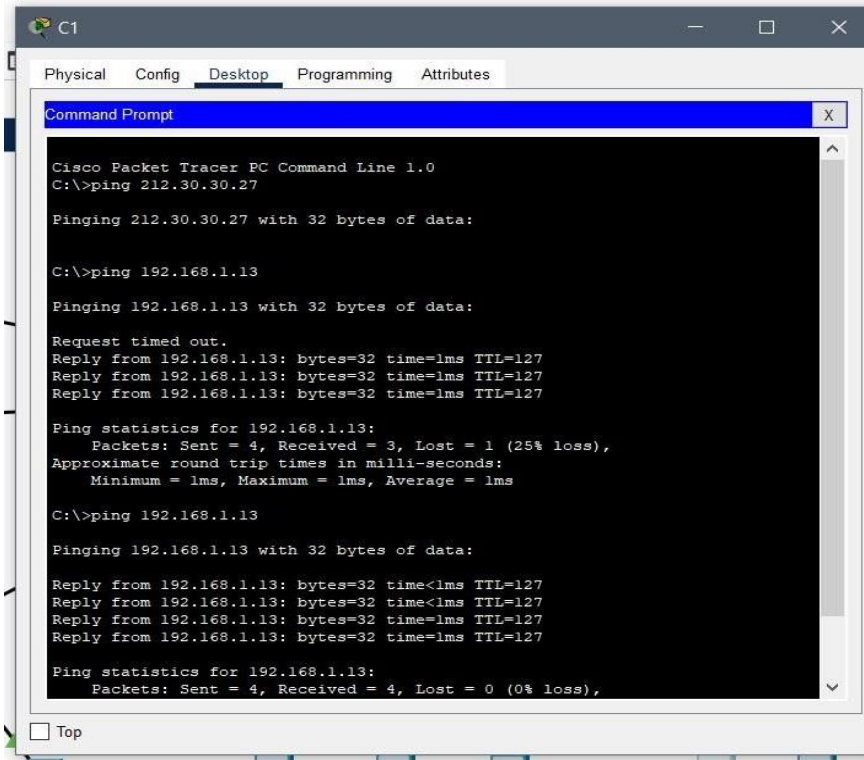


The screenshot shows the 'IP Configuration' window for the 'FastEthernet0' interface. The 'DHCP' radio button is selected, and the 'Static' radio button is unselected. The IPv4 Address is 192.168.1.10, Subnet Mask is 255.255.255.0, Default Gateway is 192.168.1.1, and DNS Server is 0.0.0.0. The IPv6 Configuration section shows 'Automatic' unselected and 'Static' selected. The IPv6 Address is empty, Link Local Address is FE80::210:11FF:FED9:808B, Default Gateway is empty, and DNS Server is empty. The 802.1X section shows 'Use 802.1X Security' unselected, Authentication is MD5, Username is empty, and Password is empty. A 'Top' button is at the bottom left. A message 'DHCP request successful.' is displayed in the top right corner.

Interface	FastEthernet0	
IP Configuration		
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static	DHCP request successful.
IPv4 Address	192.168.1.10	
Subnet Mask	255.255.255.0	
Default Gateway	192.168.1.1	
DNS Server	0.0.0.0	
IPv6 Configuration		
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static	
IPv6 Address		
Link Local Address	FE80::210:11FF:FED9:808B	
Default Gateway		
DNS Server		
802.1X		
<input type="checkbox"/> Use 802.1X Security		
Authentication	MD5	
Username		
Password		

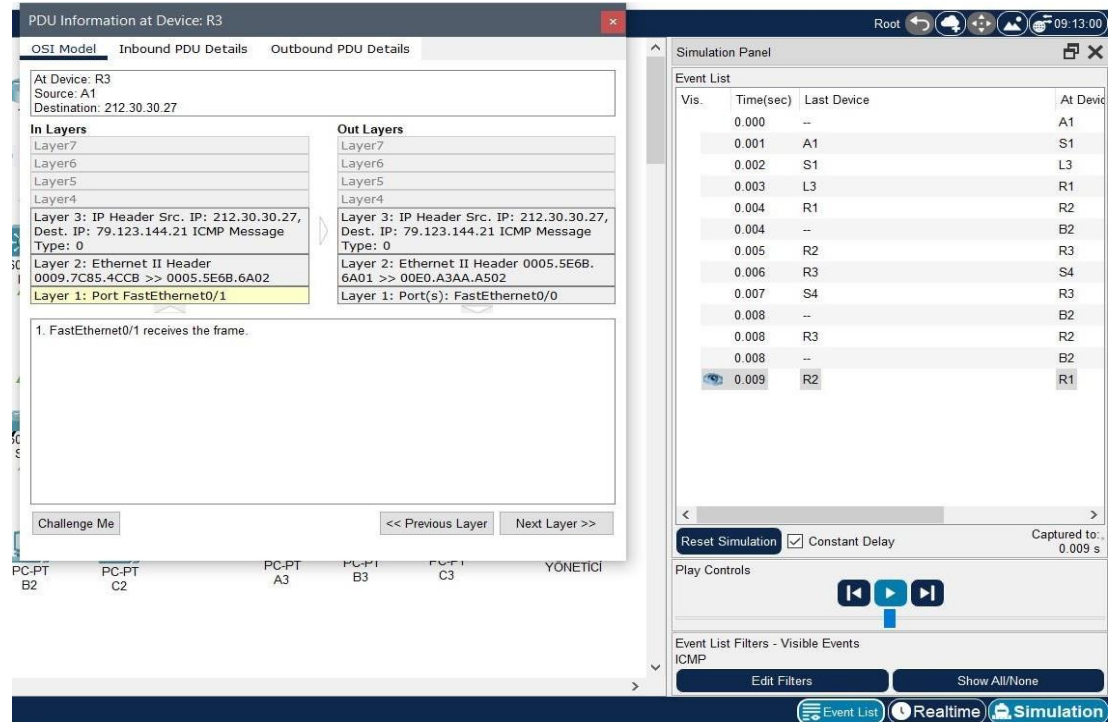
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## 7- Farklı Vlan'lar arası haberleşme



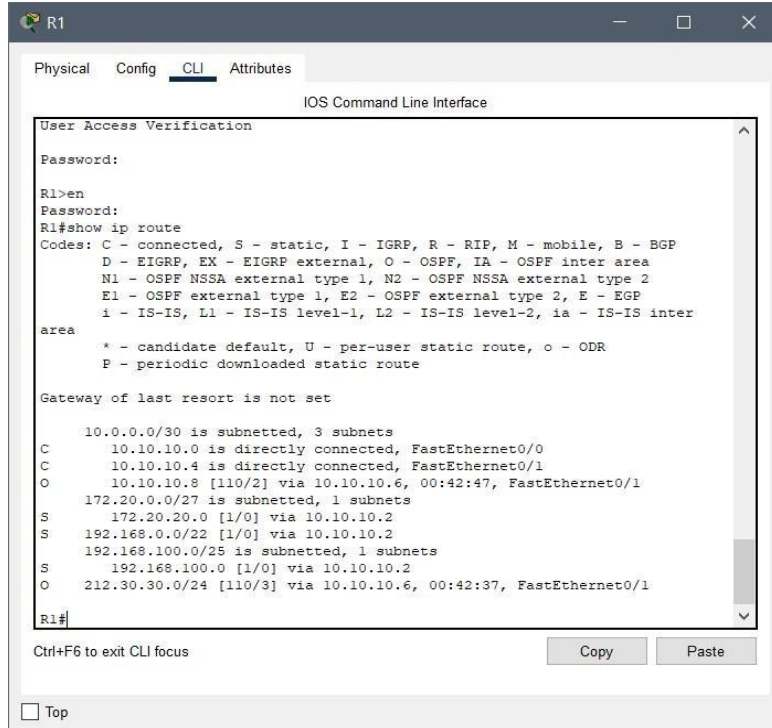
## 8- NAT

Nat cihazı ile internet erişimi sağlandı.



## 9-OSPF

R1,R2,R3 cihazlarına ospf yönlendirmesi yapıldı.



```
R1
Physical Config CLI Attributes
IOS Command Line Interface
User Access Verification
Password:
R1>en
Password:
R1#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
       area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route
Gateway of last resort is not set

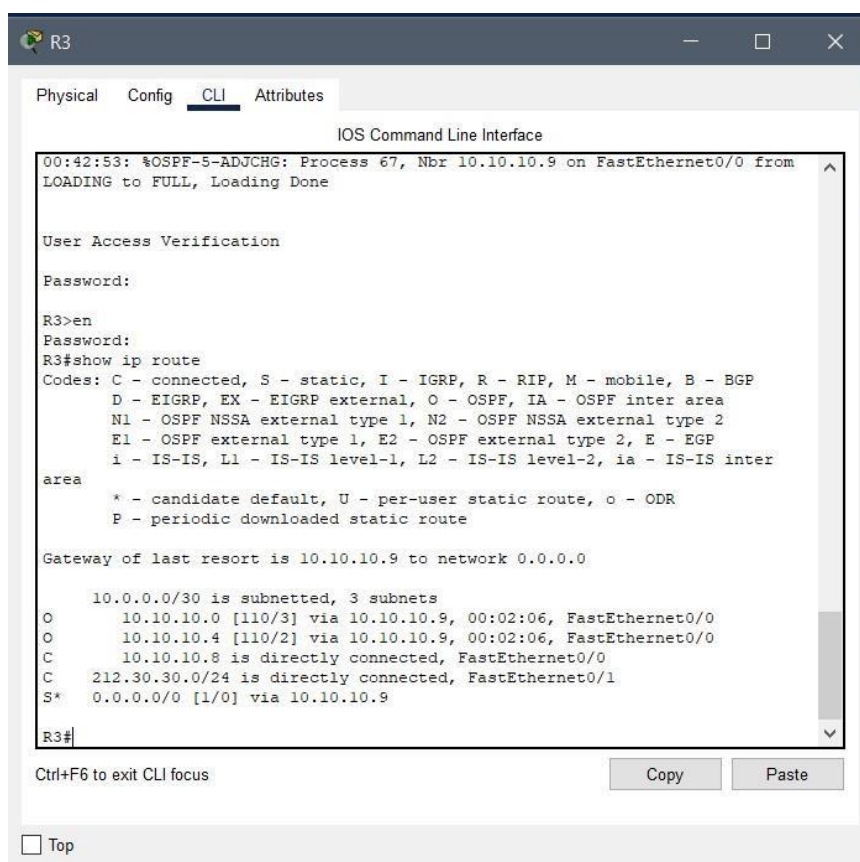
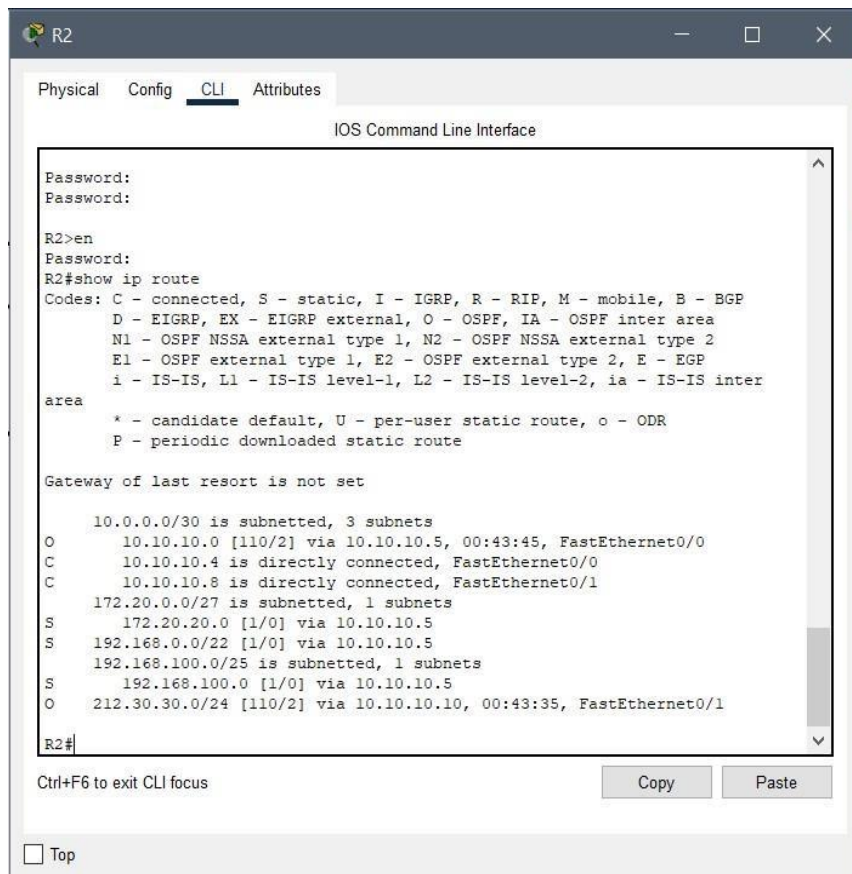
    10.0.0.0/30 is subnetted, 3 subnets
C      10.10.10.0 is directly connected, FastEthernet0/0
C      10.10.10.4 is directly connected, FastEthernet0/1
O      10.10.10.8 [110/2] via 10.10.10.6, 00:42:47, FastEthernet0/1
    172.20.0.0/27 is subnetted, 1 subnets
S      172.20.20.0 [1/0] via 10.10.10.2
S      192.168.0.0/22 [1/0] via 10.10.10.2
    192.168.100.0/25 is subnetted, 1 subnets
S      192.168.100.0 [1/0] via 10.10.10.2
O      212.30.30.0/24 [110/3] via 10.10.10.6, 00:42:37, FastEthernet0/1
R1#
```

Ctrl+F6 to exit CLI focus

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## 10-Telnet Yapılandırmaları

### S1 Telnet

```
C:\>telnet 192.168.100.1
Trying 192.168.100.1 ...Open

User Access Verification

Password:
S1>en
Password:
S1#
```

### S2 Telnet

```
C:\>telnet 192.168.100.2
Trying 192.168.100.2 ...Open

User Access Verification

Password:
Password:
S2>en
Password:
S2#
```

### S3 Telnet

```
C:\>telnet 192.168.100.3
Trying 192.168.100.3 ...Open

User Access Verification

Password:
S3>en
Password:
S3#
```

### S4 Telnet

```
C:\>telnet 212.30.30.27
Trying 212.30.30.27 ...Open

User Access Verification

Password:
S4>en
Password:
S4#
```



### L3 Telnet

```
Connection to 192.168.100.5 closed by foreign host
C:\>telnet 192.168.100.5
Trying 192.168.100.5 ...Open

User Access Verification

Password:
Password:
L3>en
Password:
L3#
```

### R1 Telnet

```
C:\>telnet 10.10.10.5
Trying 10.10.10.5 ...Open

User Access Verification

Password:
R1>en
Password:
R1#
```

### R2 Telnet

```
C:\>telnet 10.10.10.6
Trying 10.10.10.6 ...Open

User Access Verification

Password:
R2>en
Password:
R2#
```

### R3 Telnet

```
C:\>telnet 10.10.10.10
Trying 10.10.10.10 ...Open

User Access Verification

Password:
R3>en
Password:
R3#
```

## TFTP Sunucusundaki Yedekler

