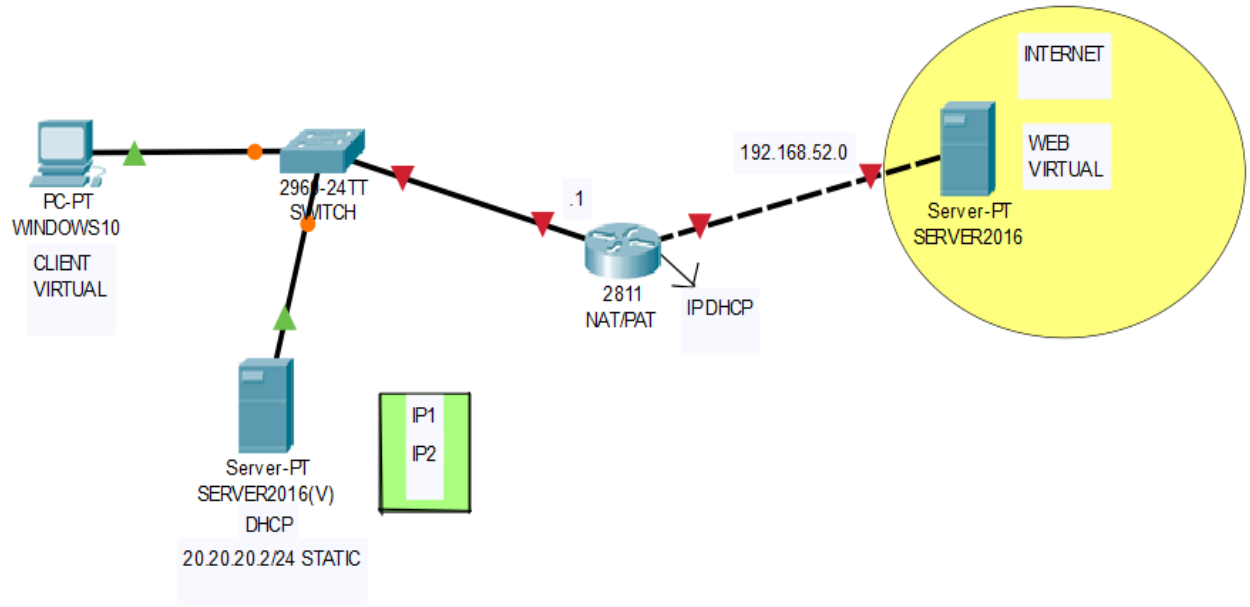
Connect ISS Server with DHCP Server and IP Routing

Bu başlık altındaki ekip çalışmamızda uygulanacak olan topolojimiz aşağıdadır.



AMAÇ:

- Server 2016 Virtual makinemizde oluşturduğumuz DHCP ile Windows10 Virtual Client'ımız IP alıyor havuzdan ve PAT ile İnternet'e çıkmasını hedefliyoruz.

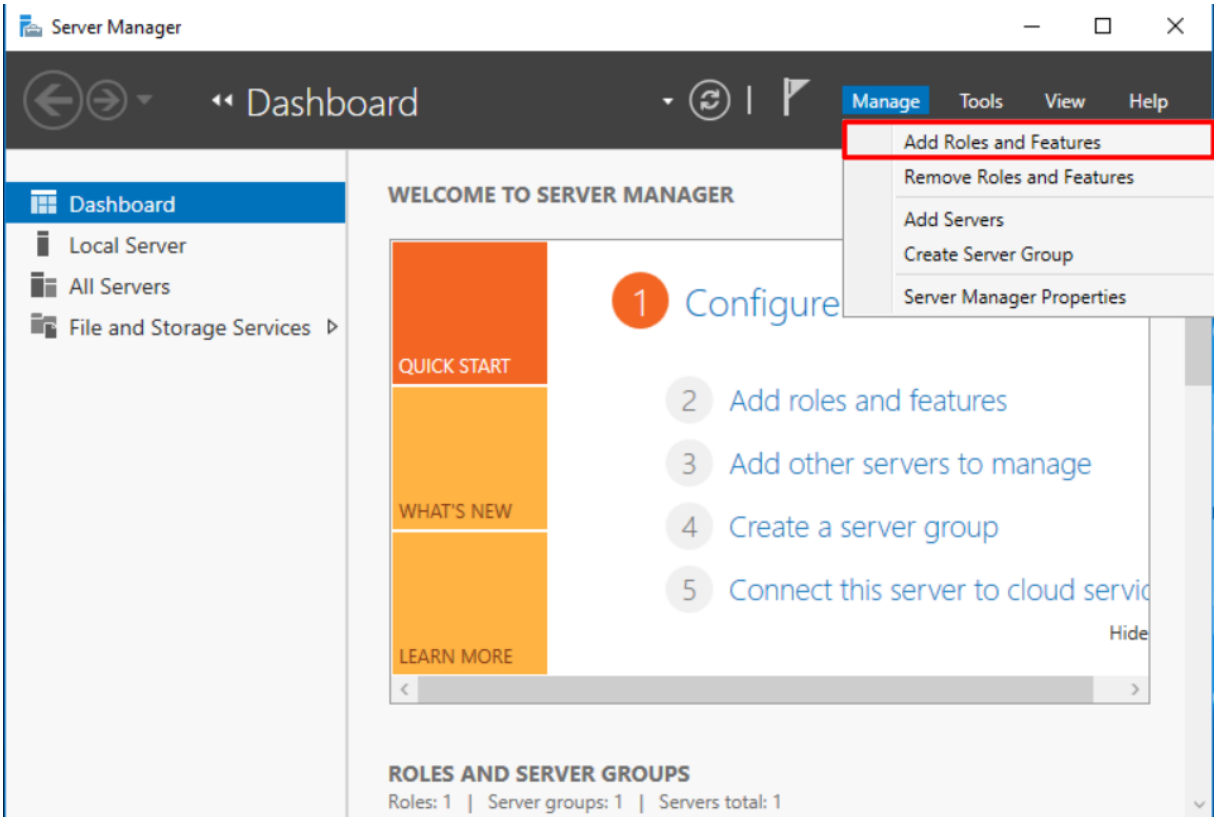
Yaptığımız işlemler şu şekilde sıralanabilir:

- **20.20.20.0 255.255.255.**0 networkümüzün fiziksel bağlantılarını gerçekleştirdik.
- DHCP serverımızdan Hostumuza (Operating Systems:Windows 10) IP atanması,
- Local PING testing,
- Router için PAT (NAT overload) yapıldı.
- Router için internete bağlı interface DHCP havuzundan IP alındı.

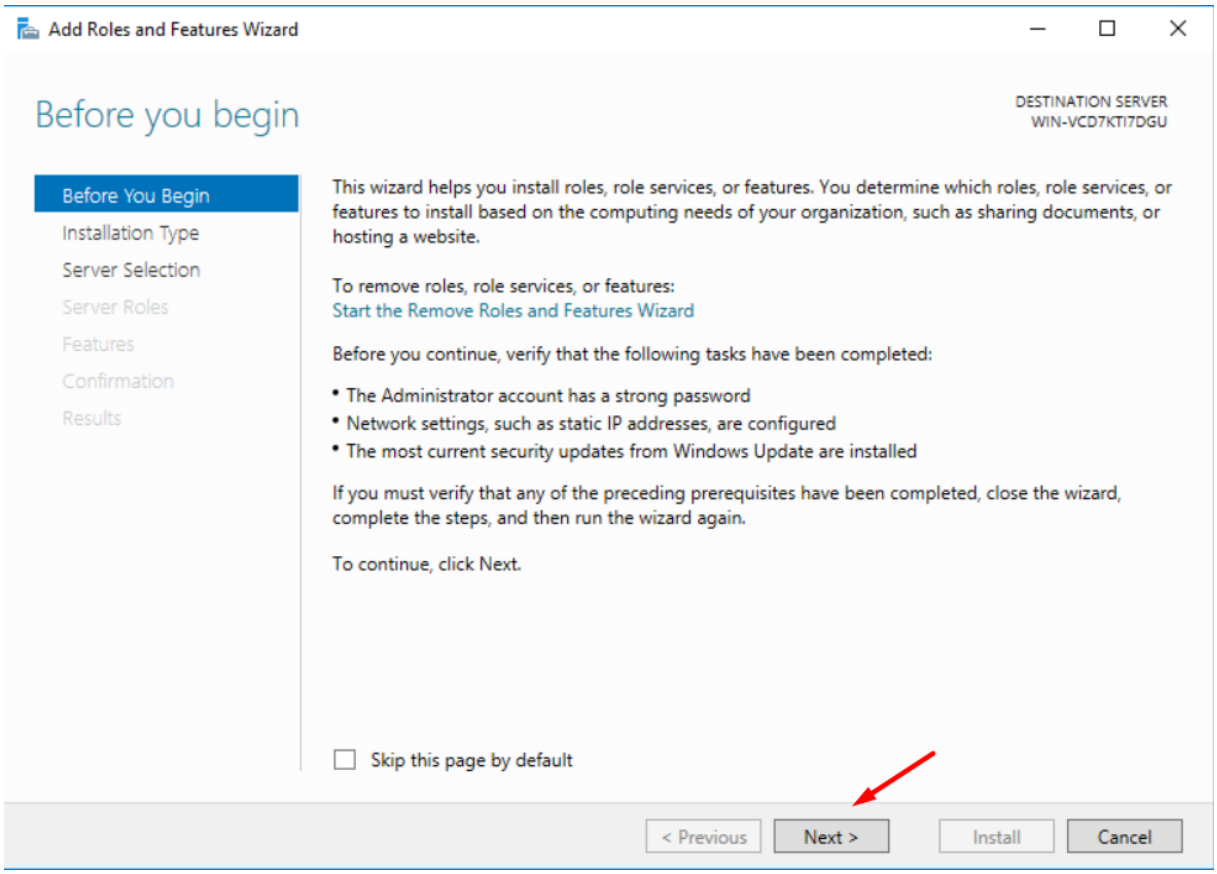
- Web Server doğrudan İnternete bağlandı.

DHCP Server kurulumu

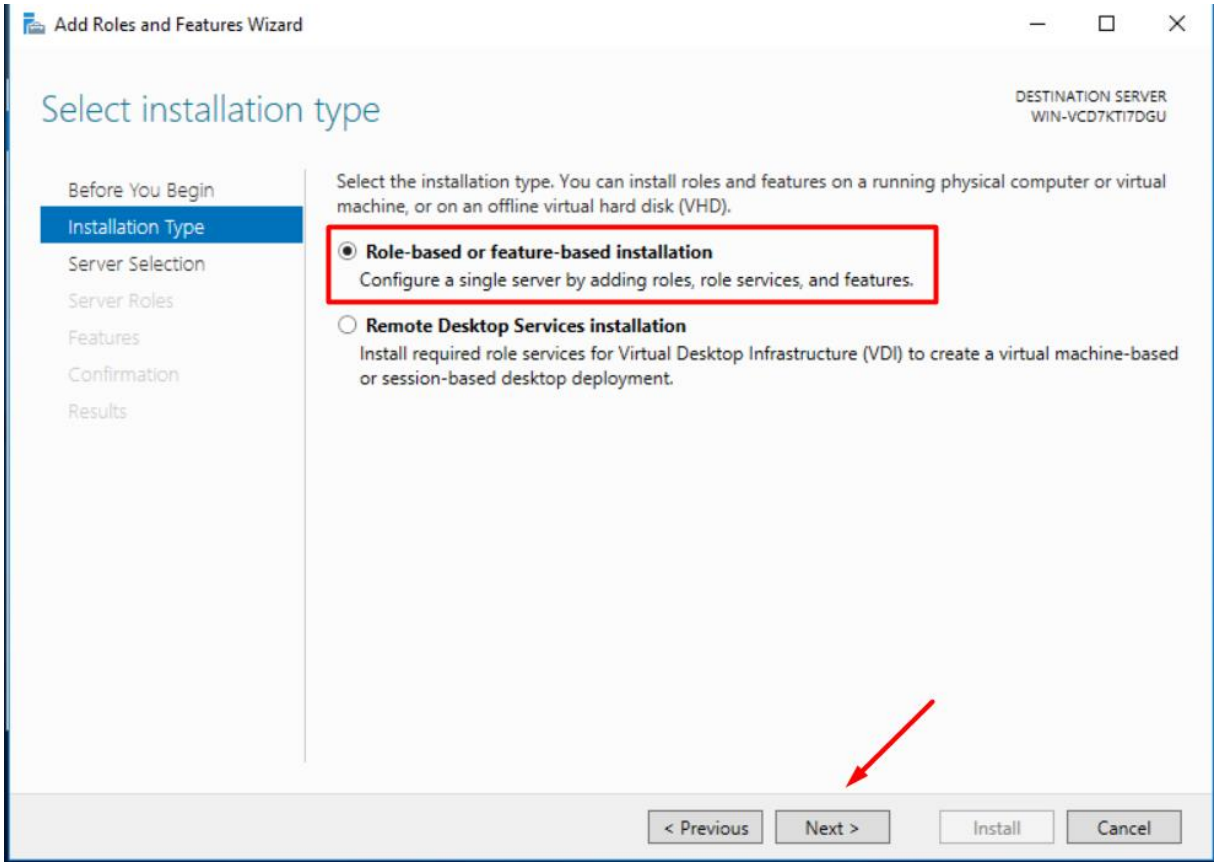
- Add Roles and Features ekleme kısmından işlemlerimize başlıyoruz.



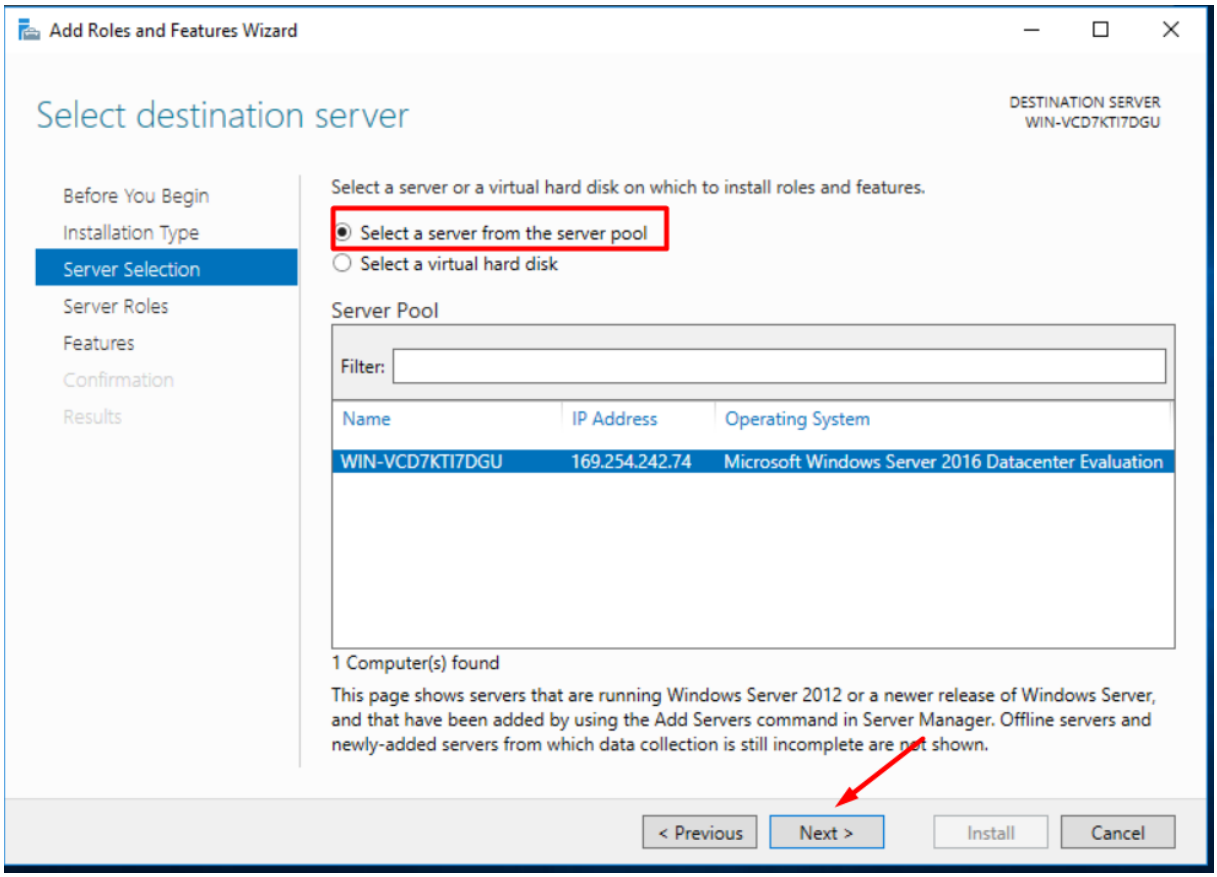
- Next diyoruz.



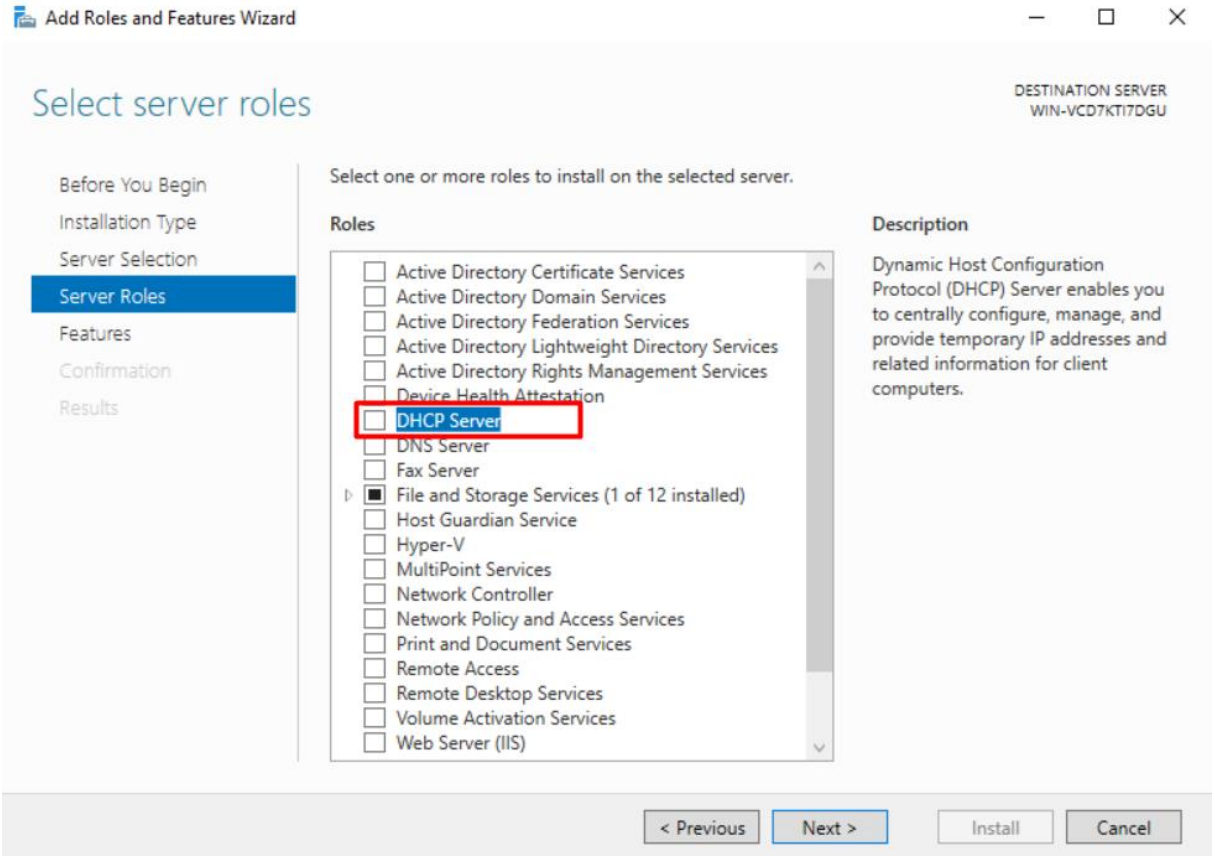
- Role-based or feature-based installation seçip next diyoruz.



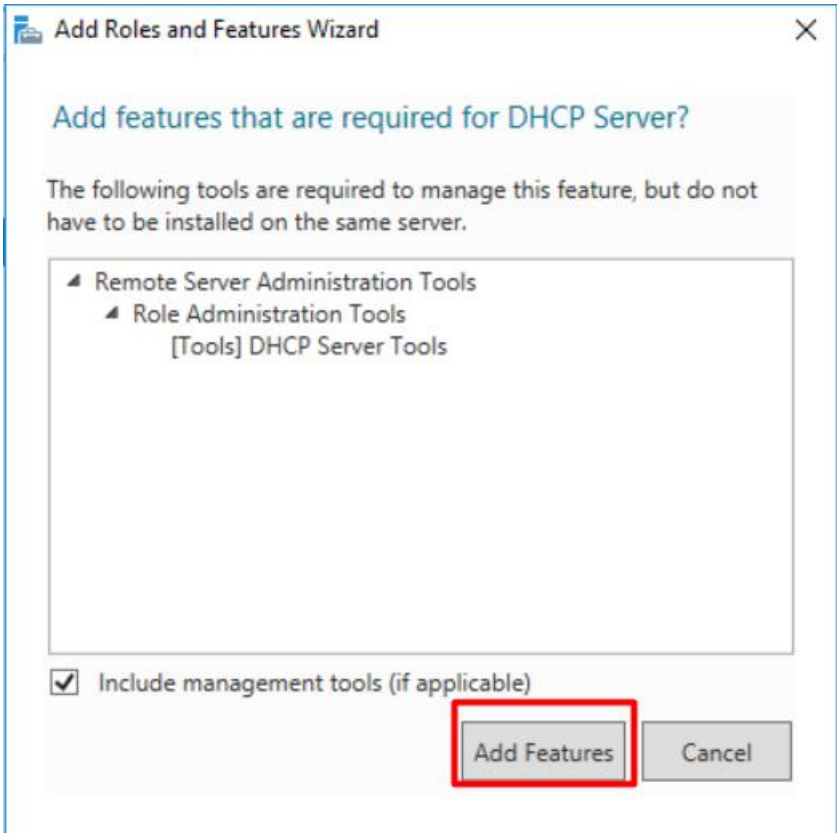
- Select a server from the server pool seçtik.



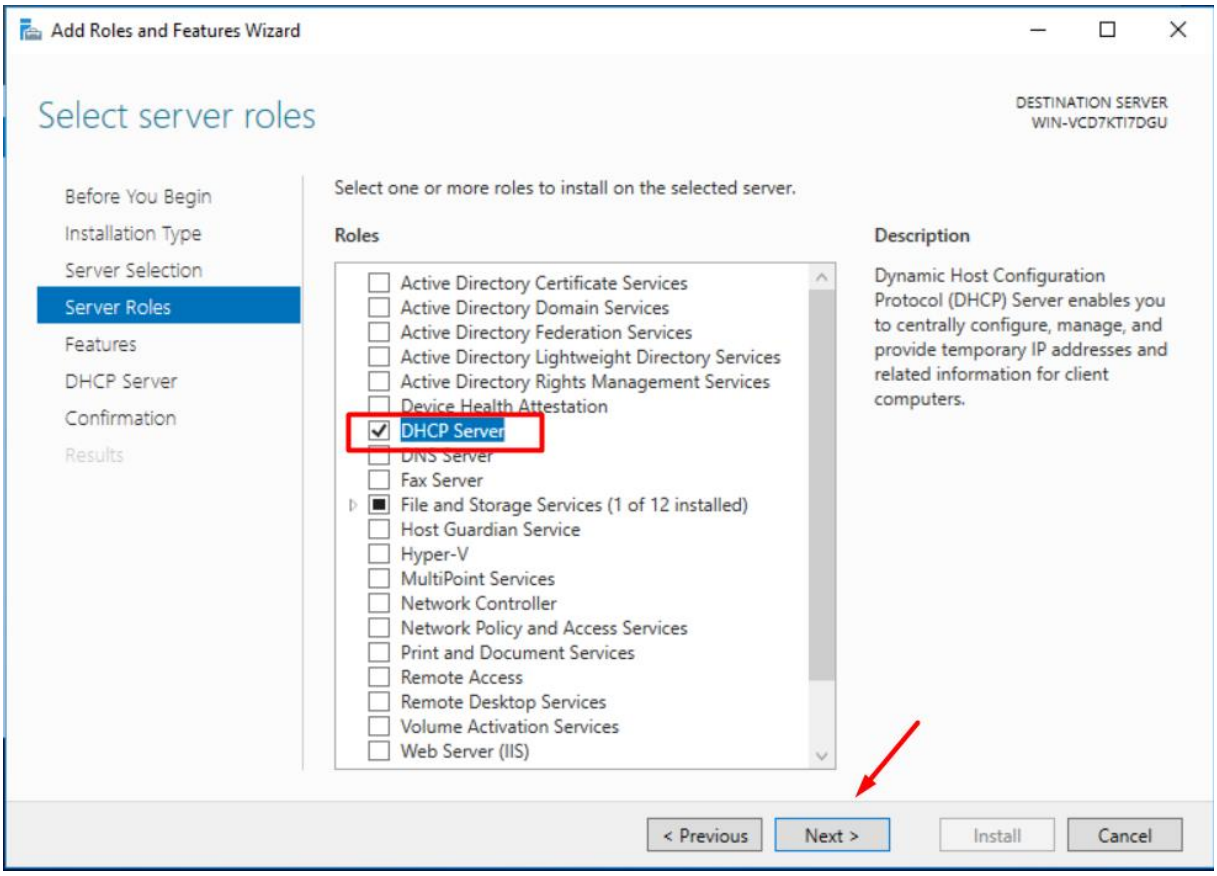
- DHCP Server seçilir.



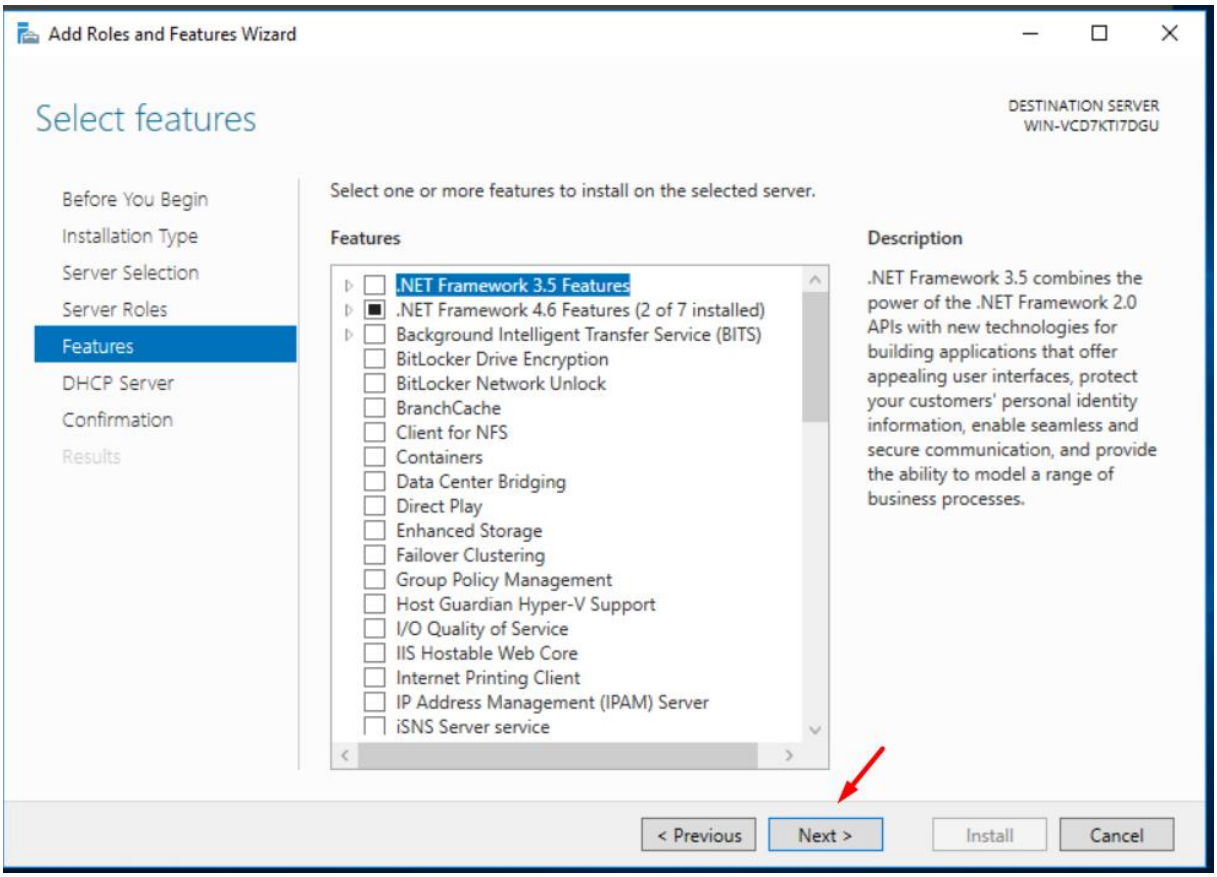
- Add Features diyoruz.



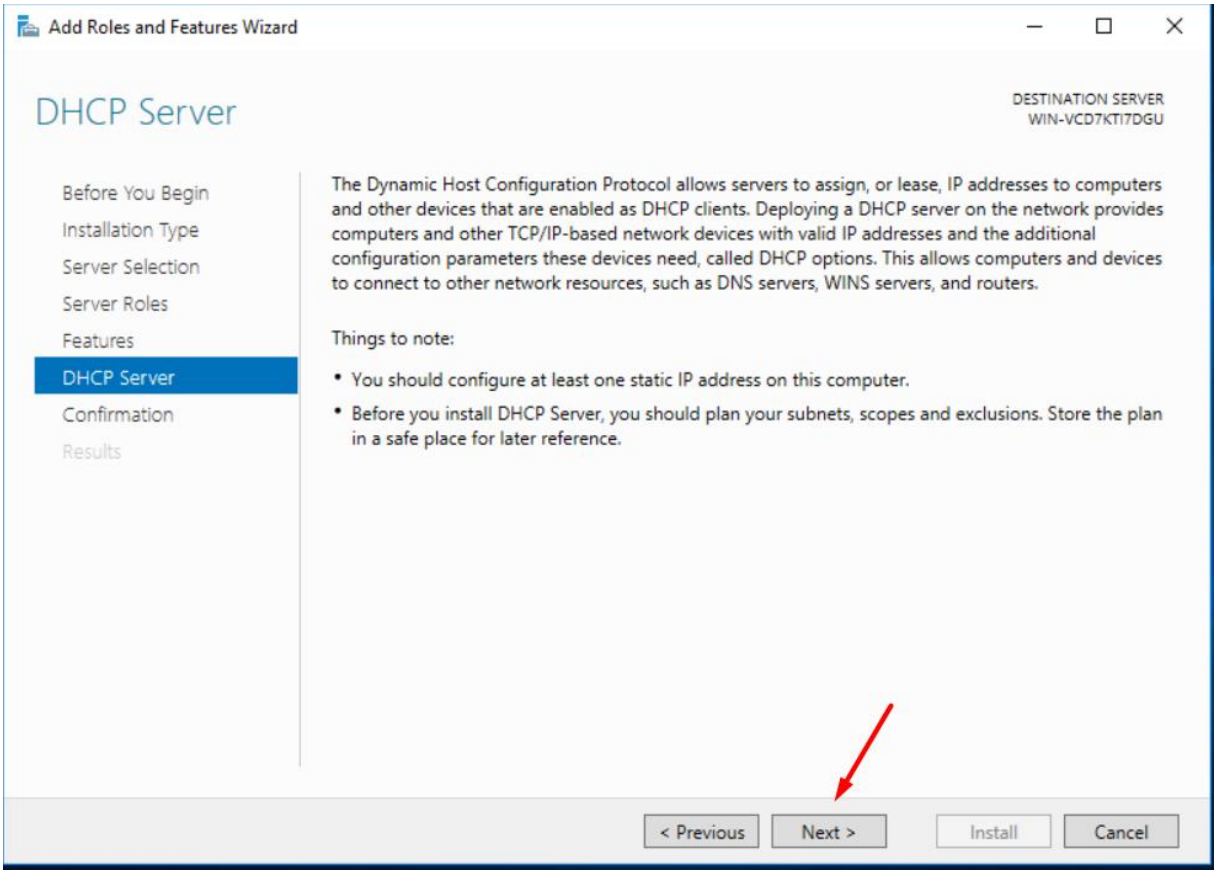
- Seçilen DHCP Server kısmından sonra next diyoruz.



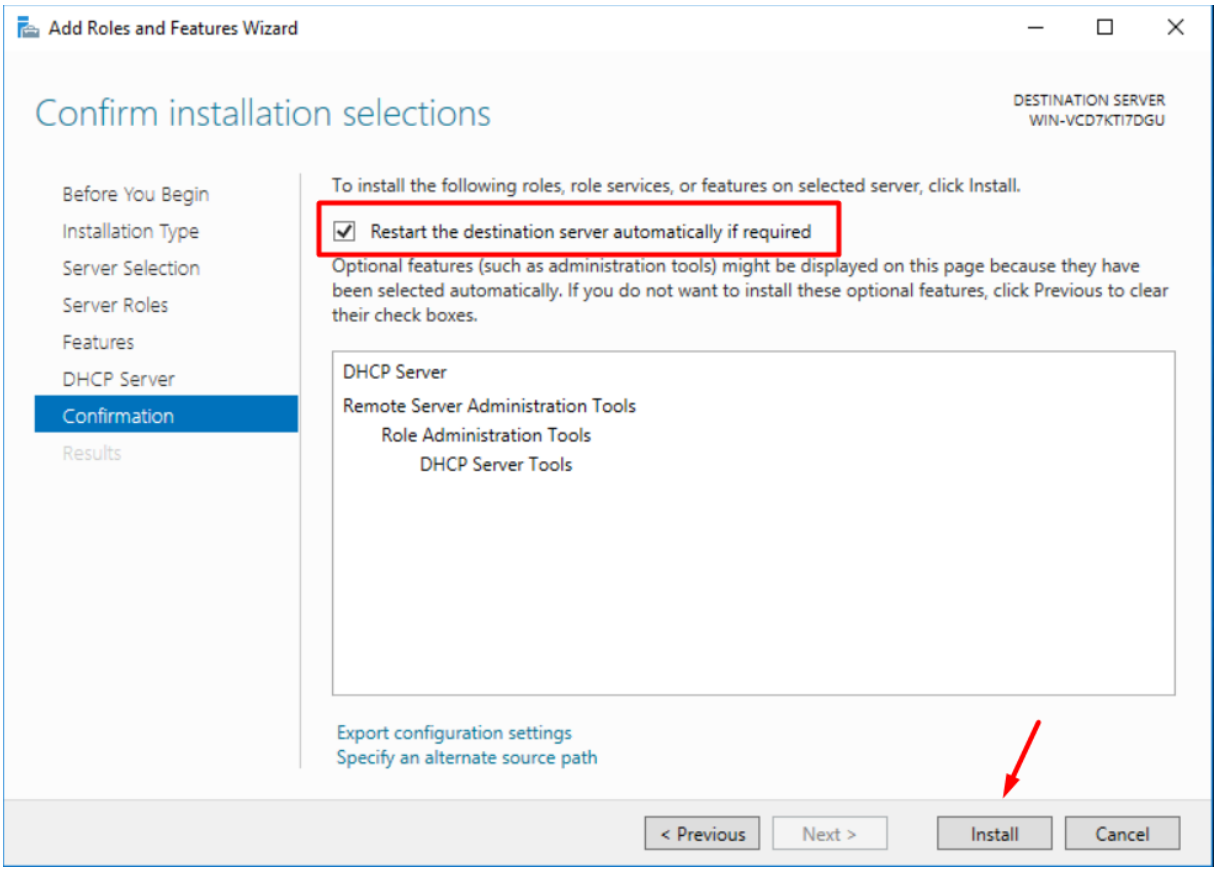
- Herhangi bir Features seçmeden next diyoruz.



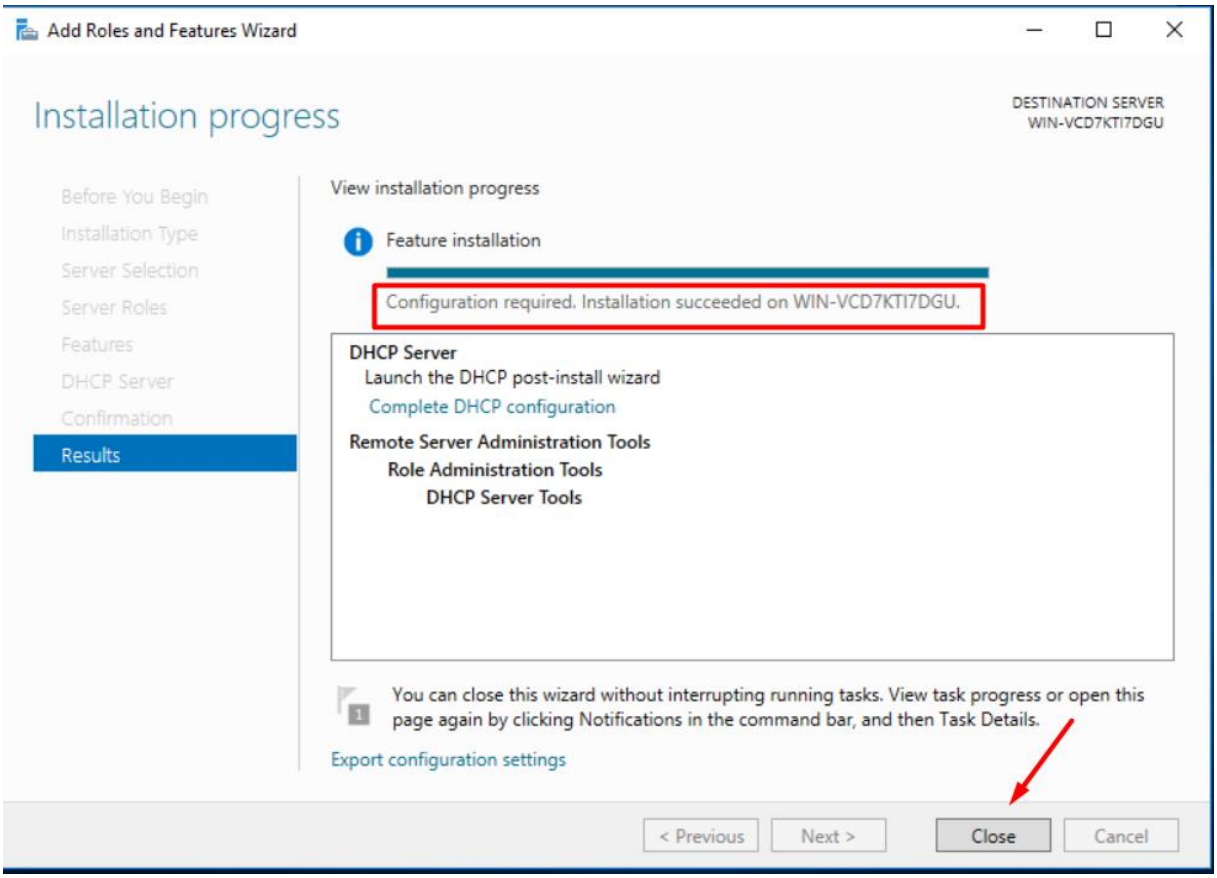
- DHCP Server açıklaması okundu ve next denildi.



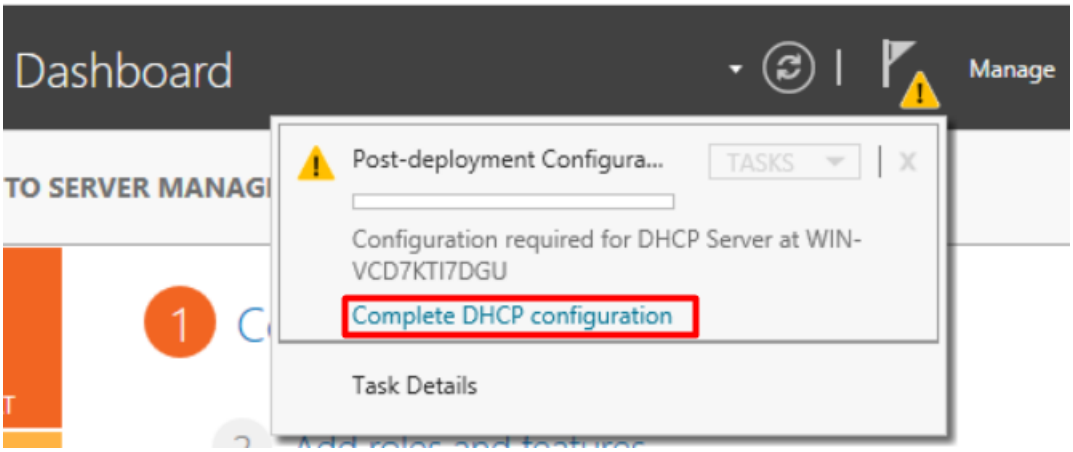
- Restart the destination server automatically if required seçildi ve install yapıldı.



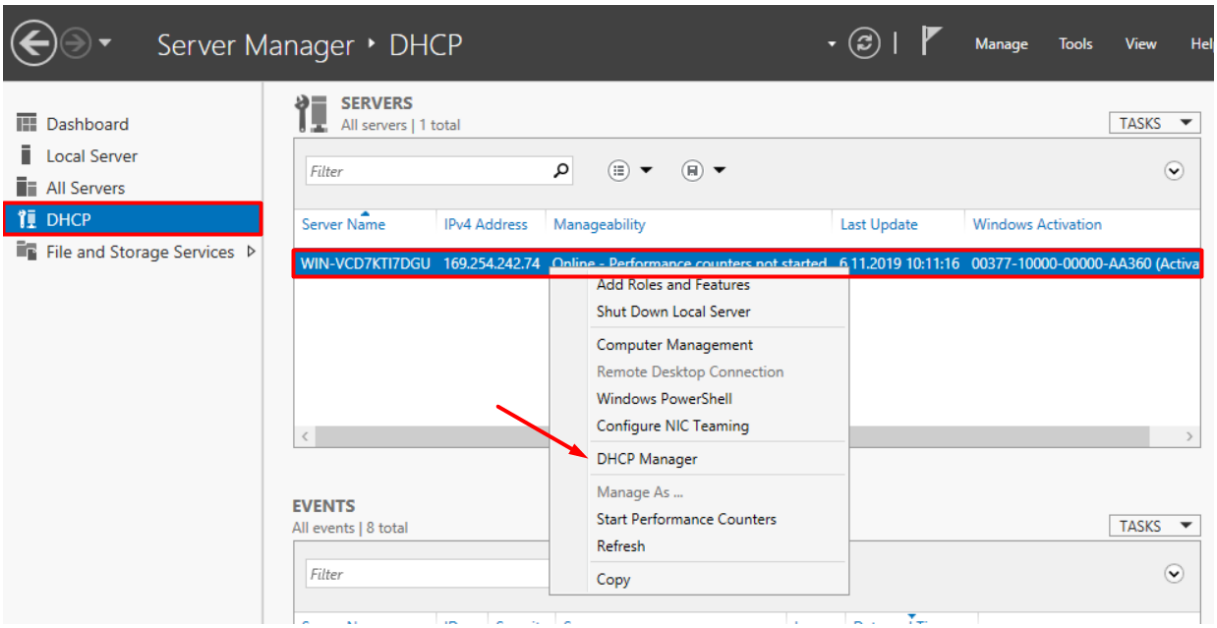
- Complete DHCP configuration ‘succeeded’ gördükten sonra close yapıyoruz.



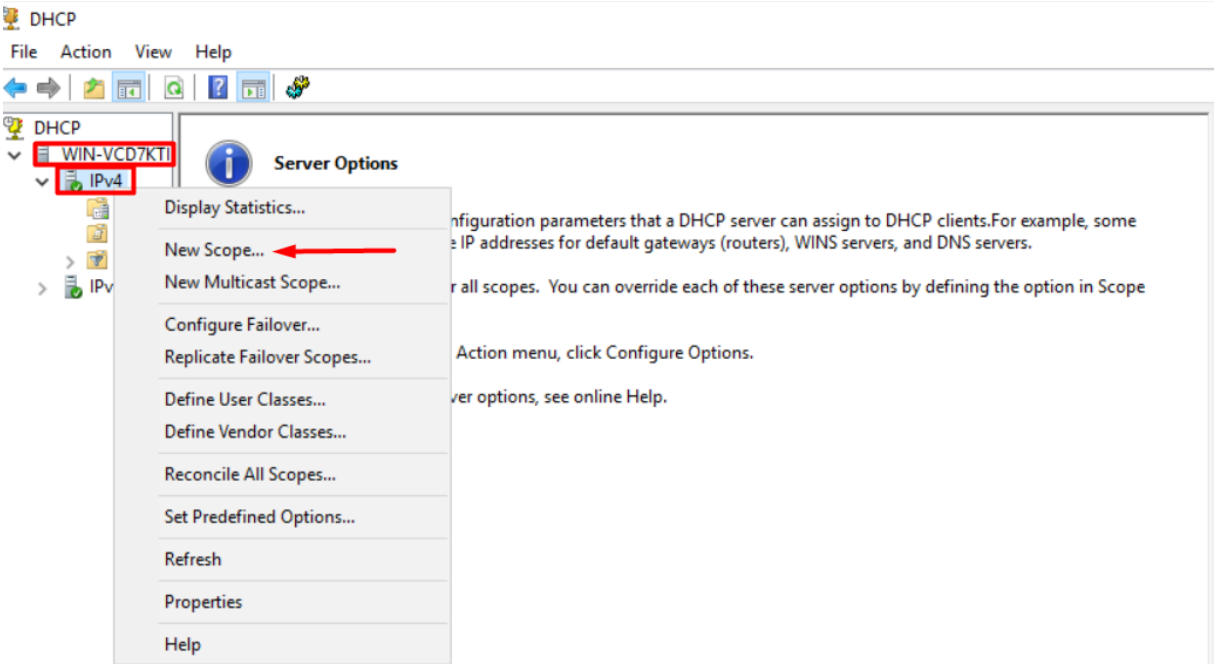
- Complete DHCP configuration tıklanır Flag kısmından.



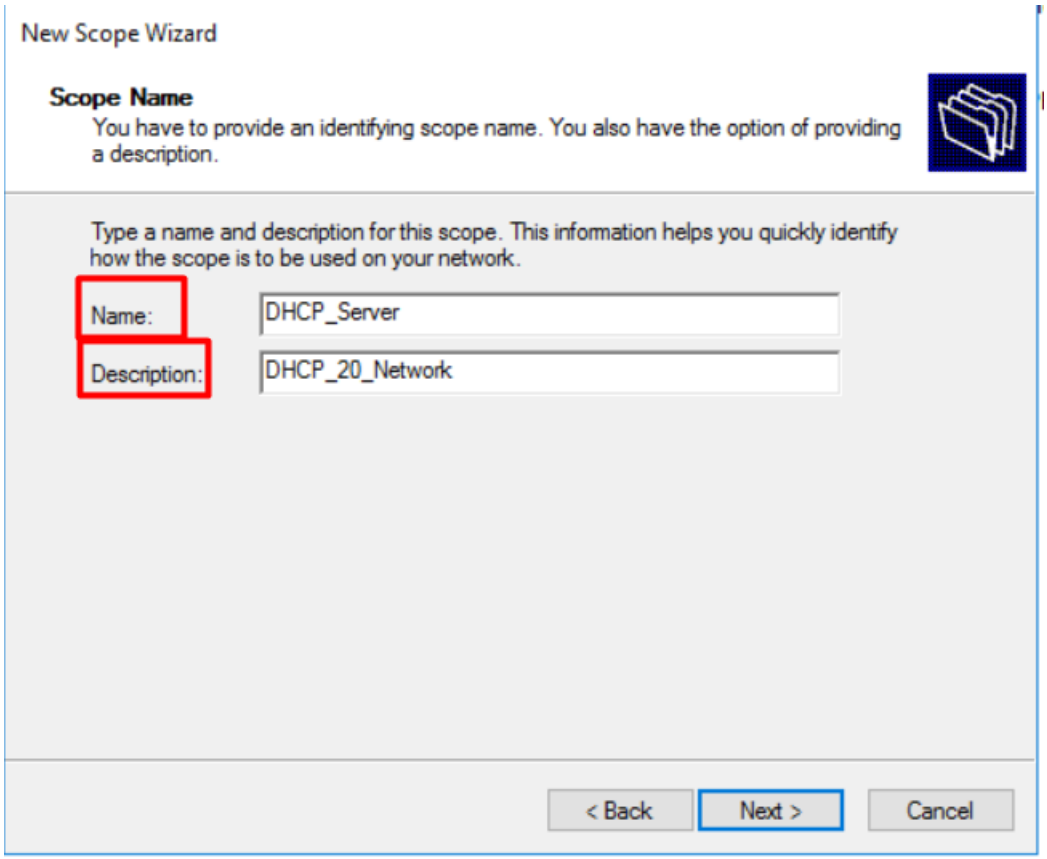
- DHCP Manager seçilir.



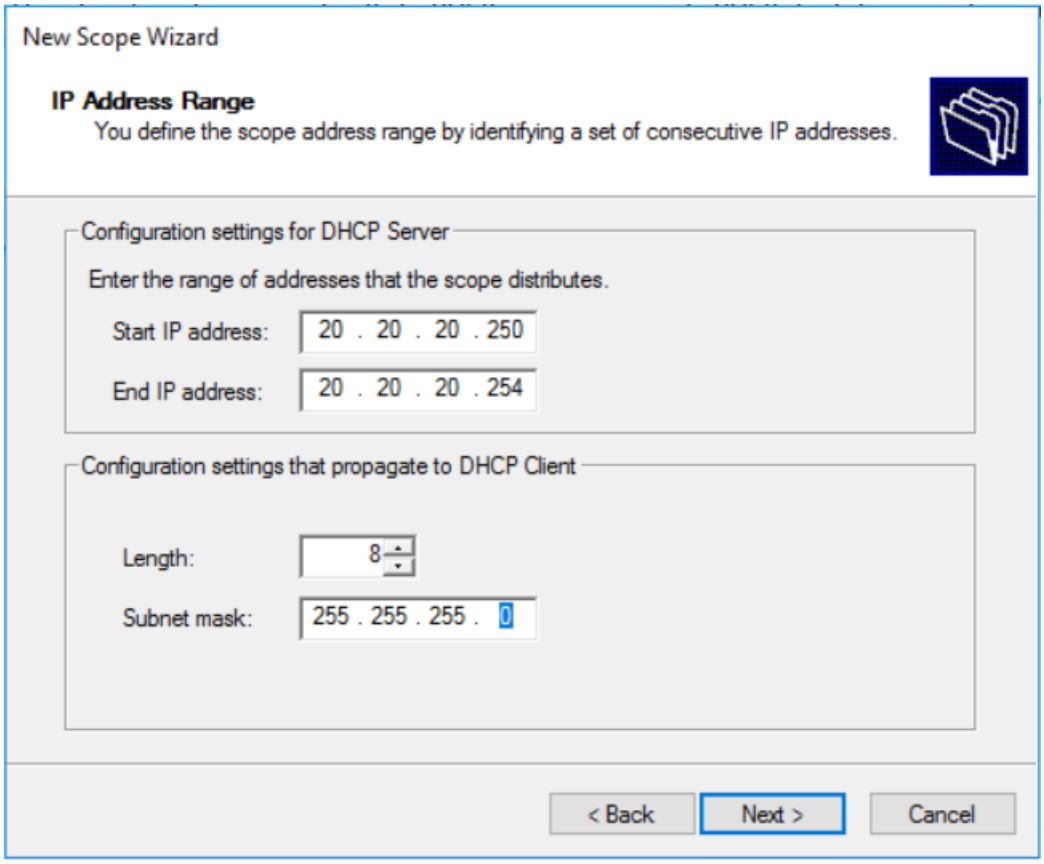
- DHCP>IPV4>New Scope seçilir.



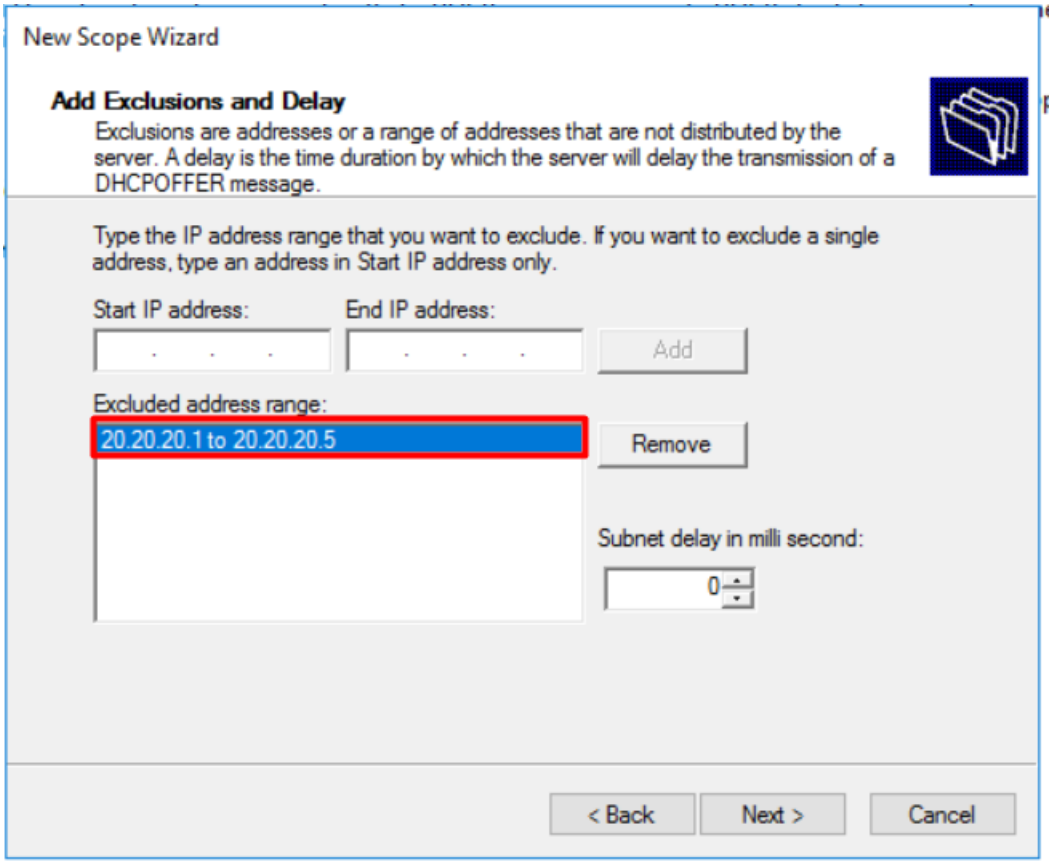
- Scope name belirlenir ve description yazılır.



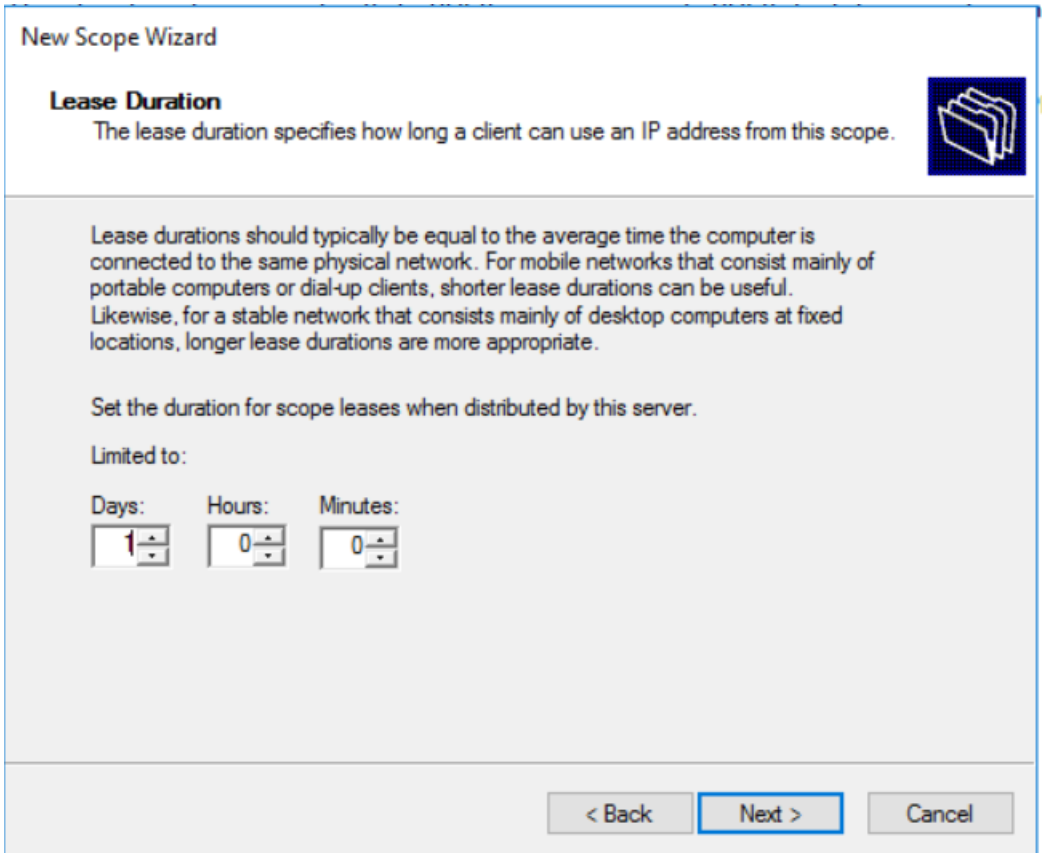
- IP Address Range belirlenir.<20.20.20.250-20.20.20.254> başlangıç ve bitiş IP adreslerimiz olarak girildi.CIDR:24 Subnet:255.255.255.0 şeklinde,



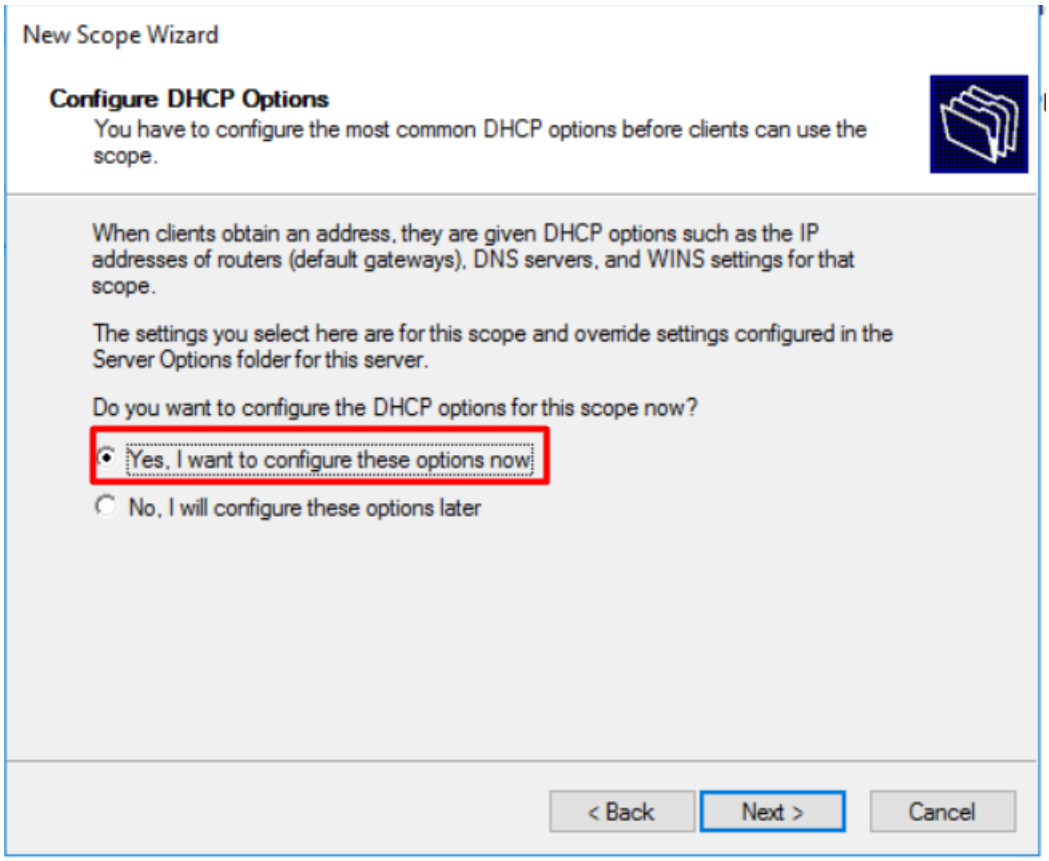
- Excluded address range belirlendi.<20.20.20.1-20.20.20.5> excluded yaptık.**(dahil olmak üzere range başlangıç ve bitiş değerleri)**



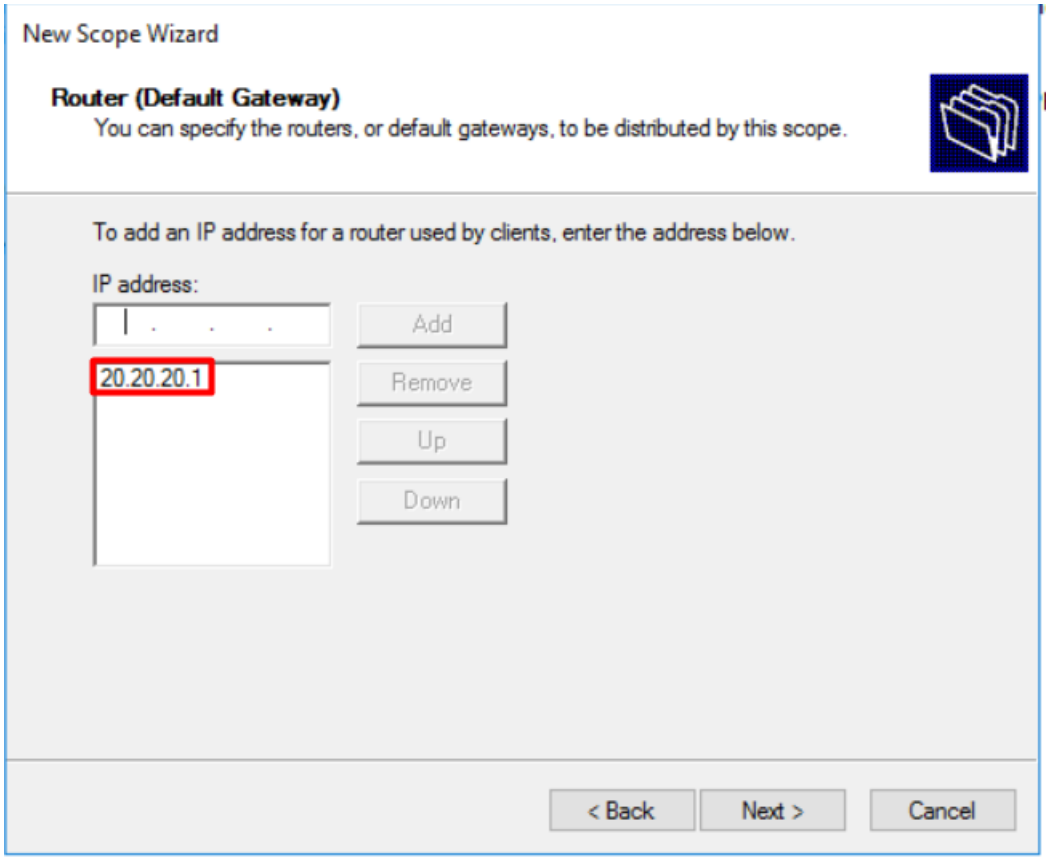
- **Lease Duration** olarak 1 gün seçildi.



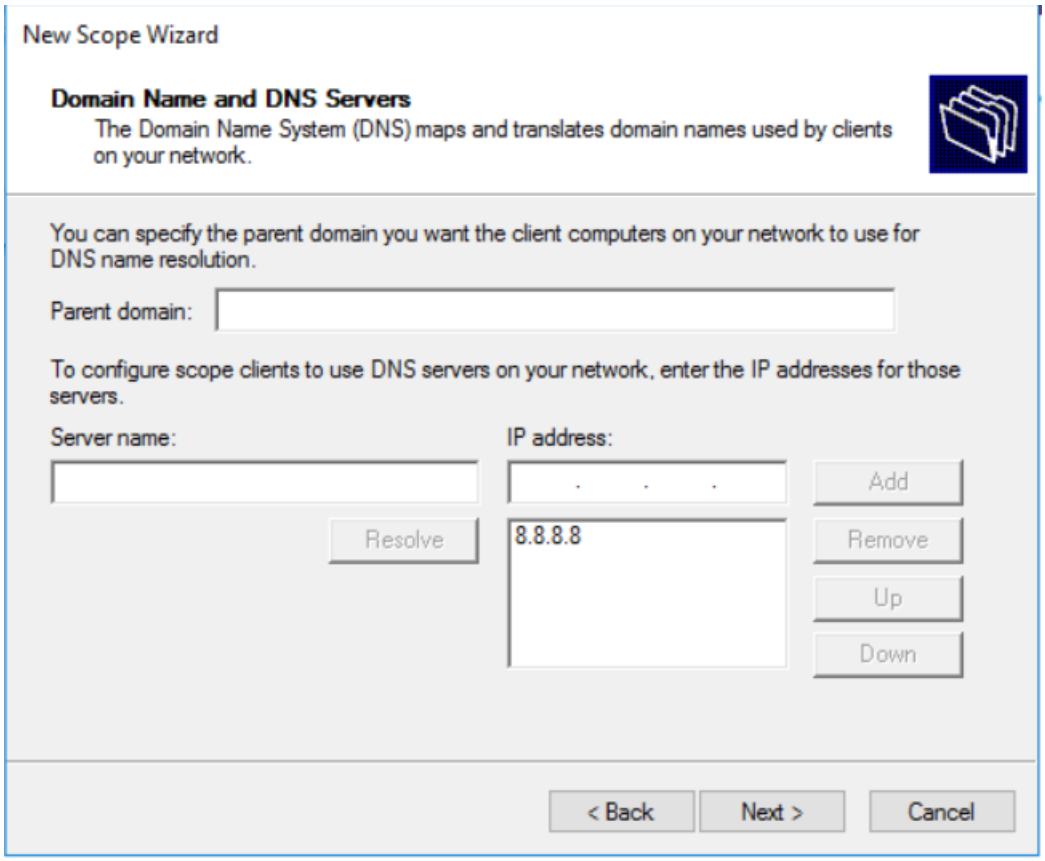
- **Yes, I want to configure these options now** seçtikten sonra next yapılır.



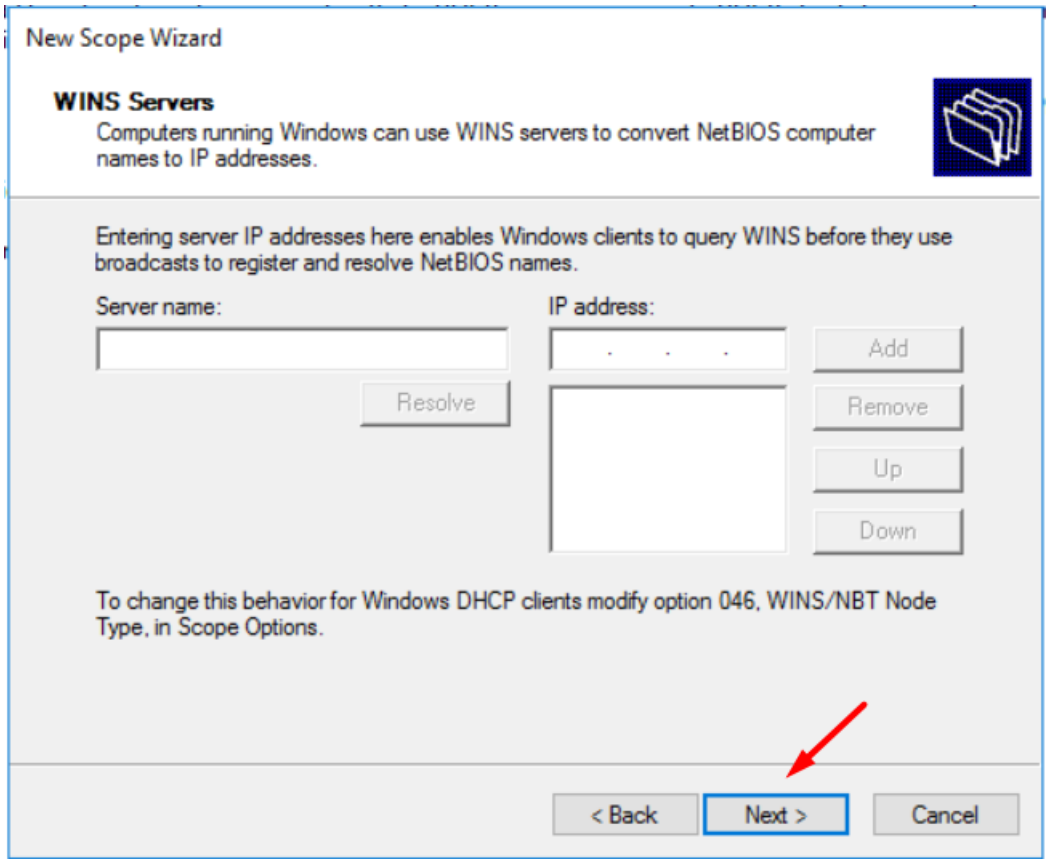
- Router default gateway IP address 20.20.20.1 yazılır.



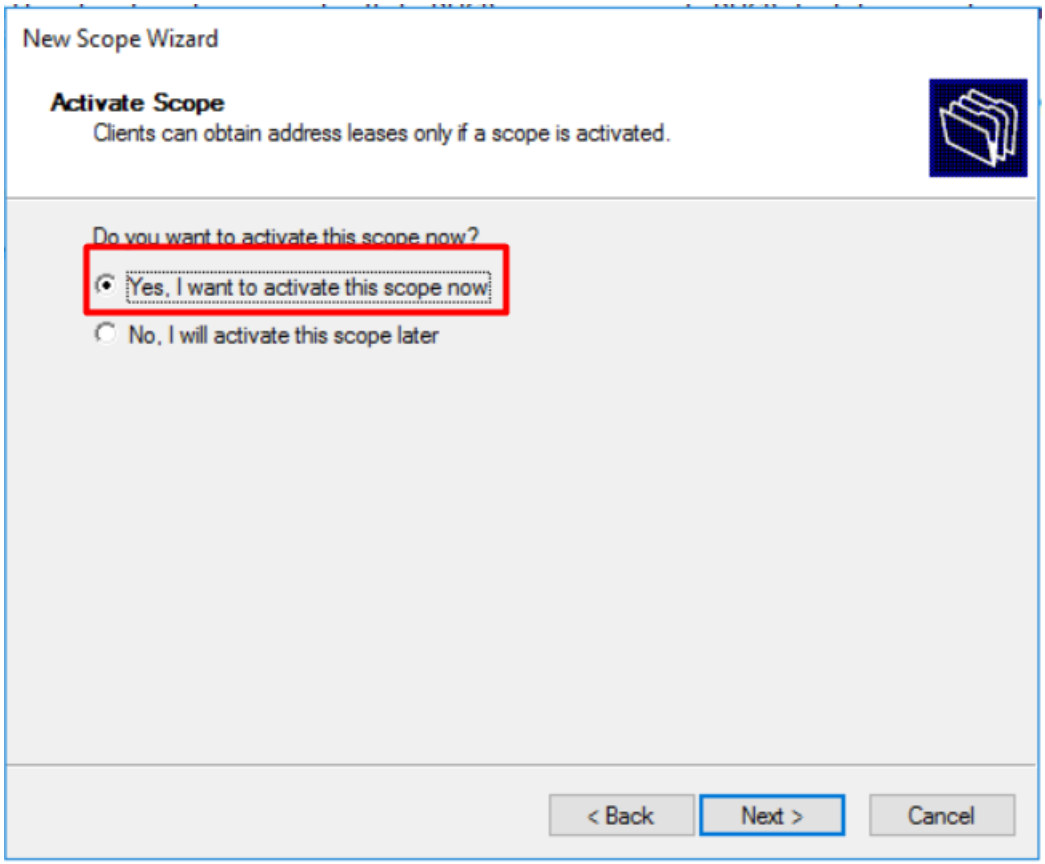
- DNS servers olarak IP address 8.8.8.8 eklendi.



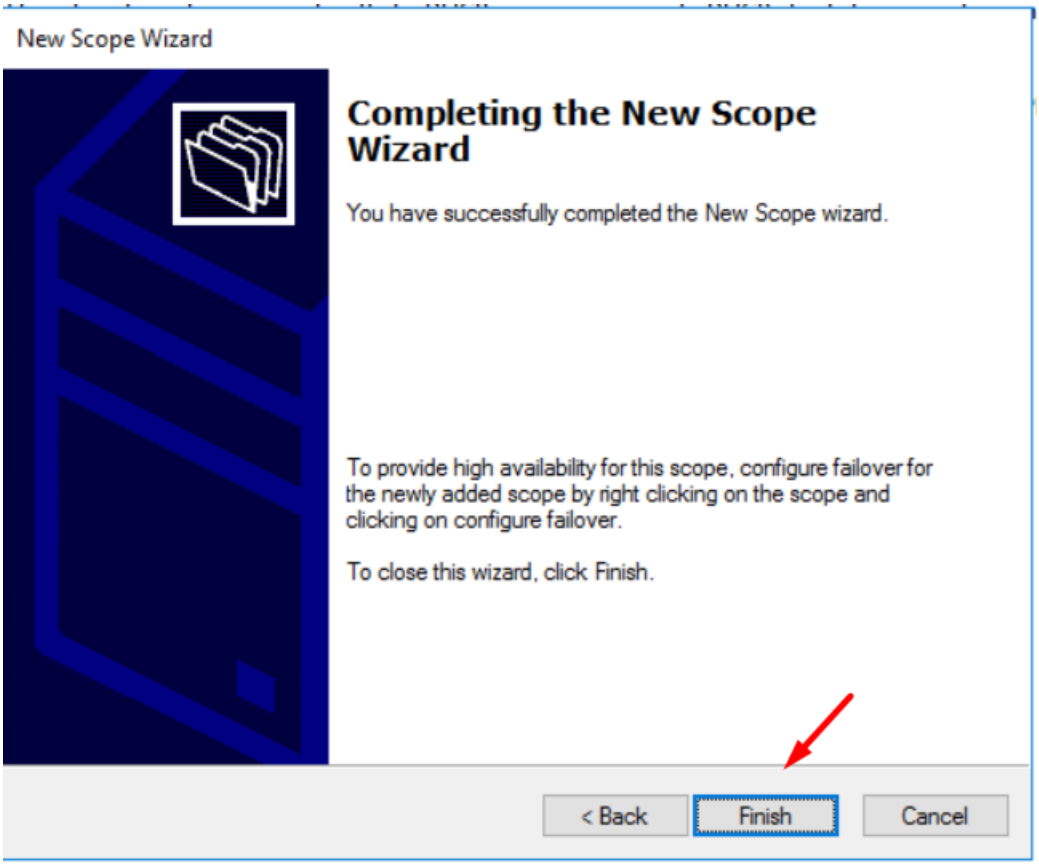
- Herhangi bir WINS Servers eklemeden next diyoruz.



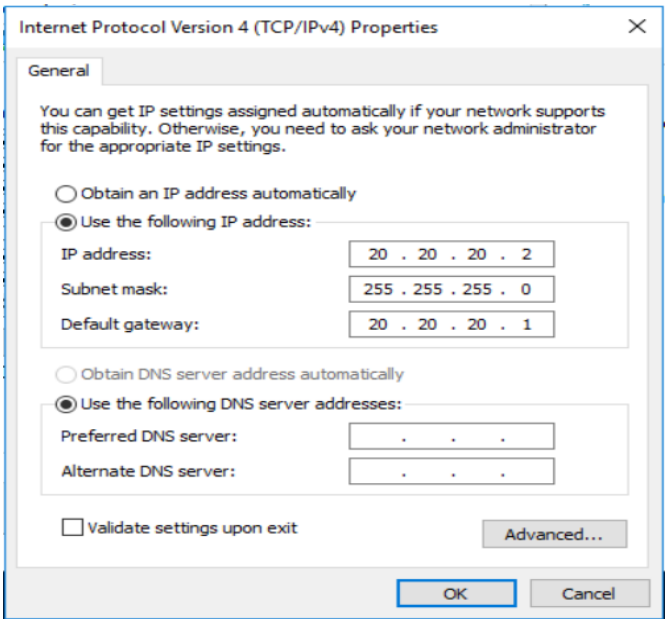
- Yes, I want to active this scope now seçilir ve next tıklanarak devam edilir.



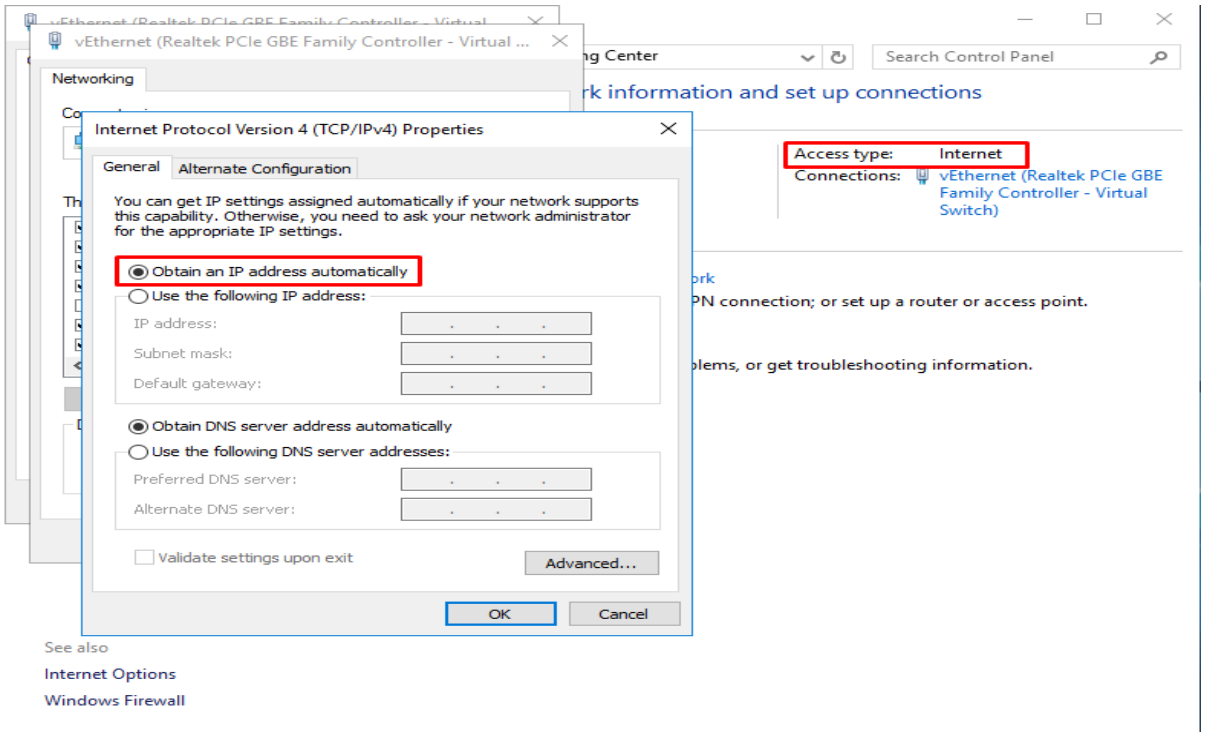
- Yeni scope oluşturma işlemimiz finish tıklanarak tamamlandı.



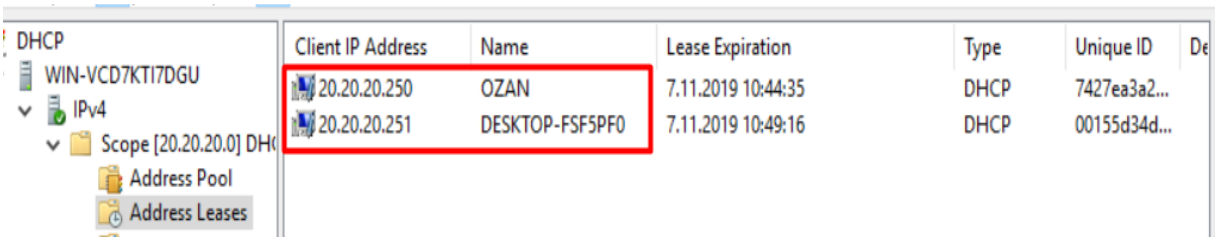
- Server 2016 sanal makinamıza static IP adresi veriyoruz.
- IP address:20.20.20.2
- Subnet mask:CIDR:24, 255.255.255.0
- Default Gateway:20.20.20.1 şeklinde yazılır ve ok denilir.



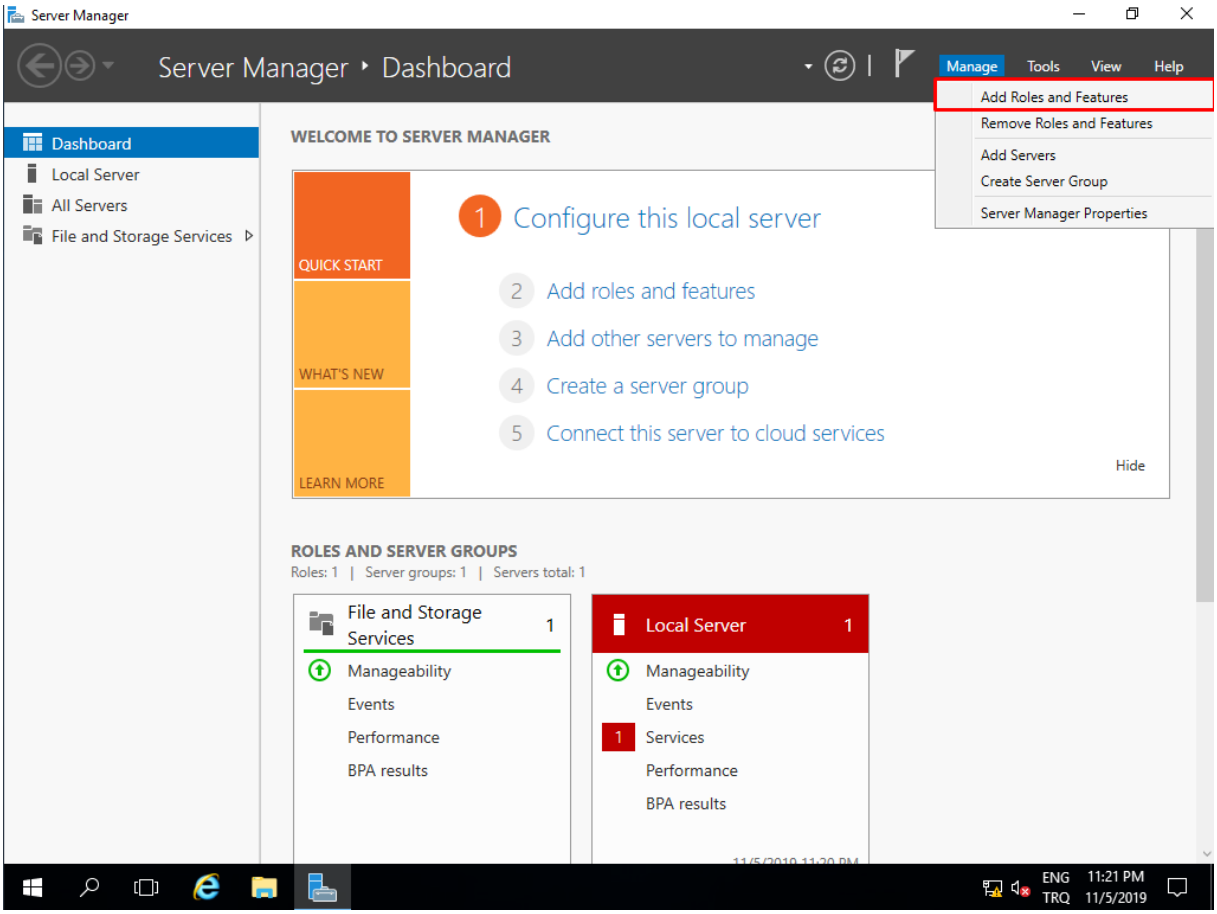
- Bu işlemi normalde ilk başta yapmamız gerekiyorken bu kısımda bir aksama söz konusu şayet scopemuzunda herhangi bir hata olmamıştır.
- Statik IP değerini aldıktan sonra virtual server2016 sunucumuz diğer client olan virtual Windows10'a DHCP Scope'undan IP aldırması isteniyor o yüzden otomatik IP adres seçeneğine tekrar getirilir.



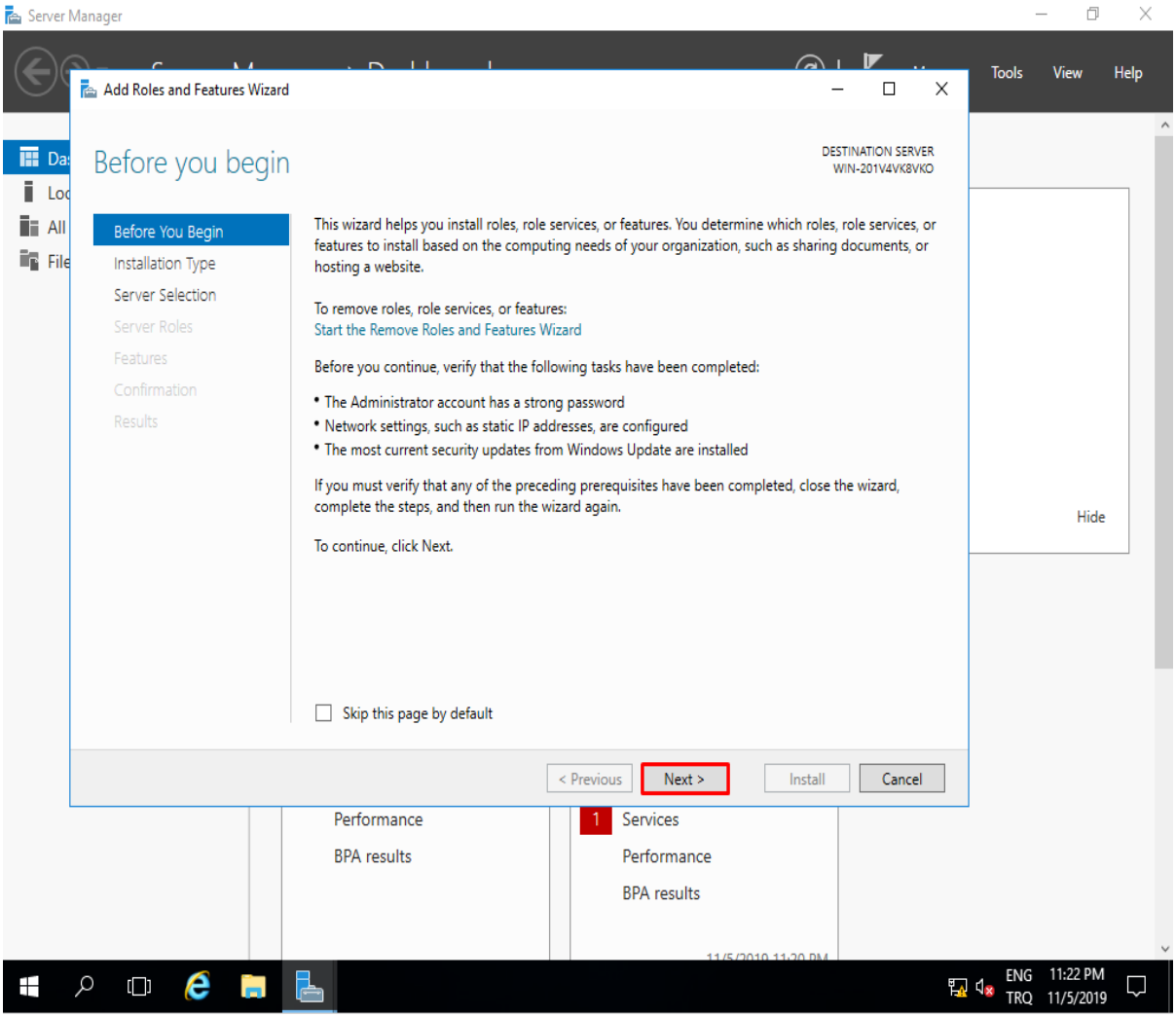
- Client olan OZAN isimli Windows10 virtual sunucumuz DHCP Scope'dan IP almıştır.



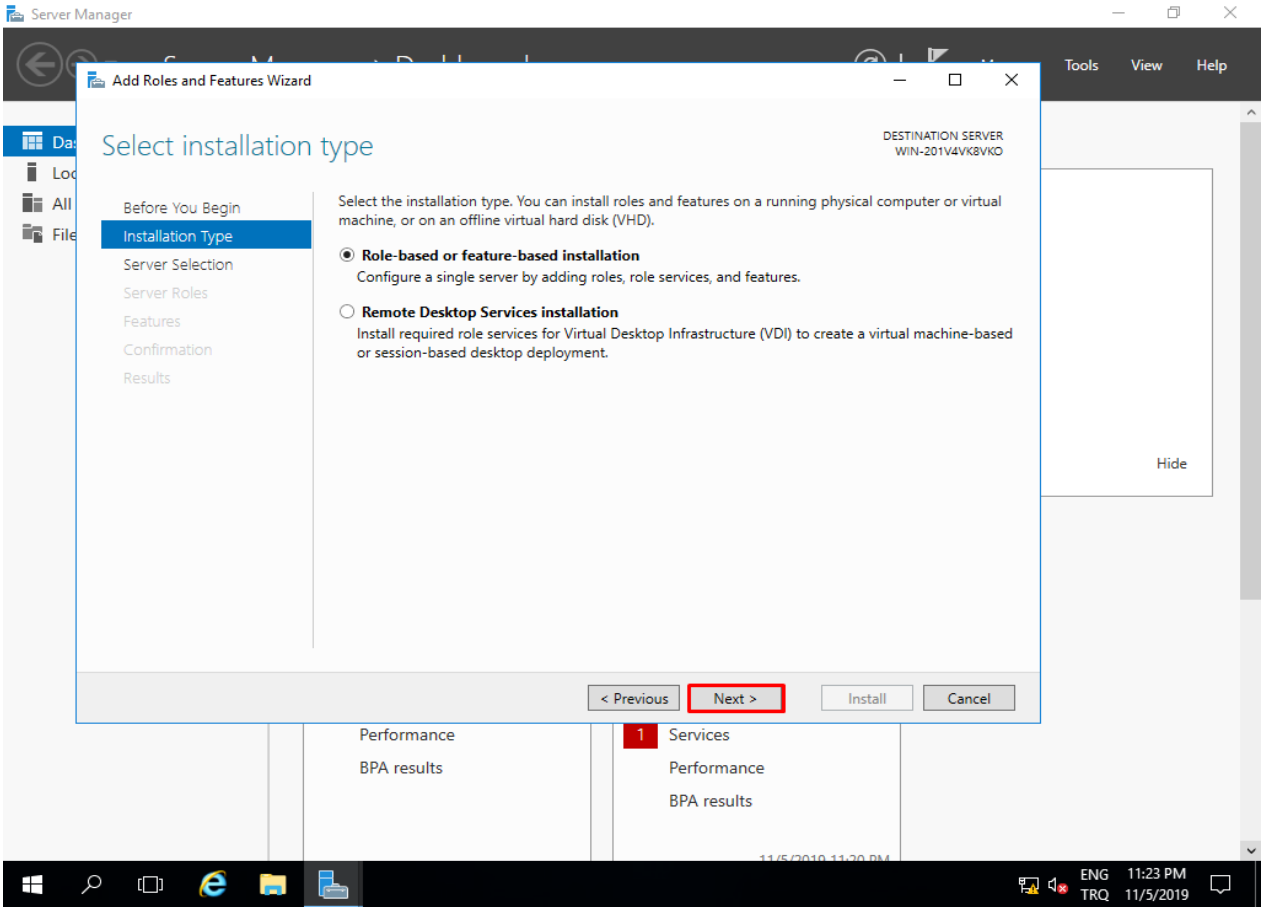
- Internet Information Service, Microsoft firmasının Windows işletim sistemlerinde ve sunucularında kullandığı, Web servisini sunan alt yazılımdır. Güncel sürümü, Windows 8.1 sunucuları için IIS 8.5'tir. Windows 2008 > IIS7 Windows 2003 > IIS6 Windows 2000 > IIS5 Windows XP > IIS5, 5.1 sürümleri kullanılmaktadır.
- Server Manager > Manage > Add Roles and Features seçilerek IIS kurmaya başlıyoruz.



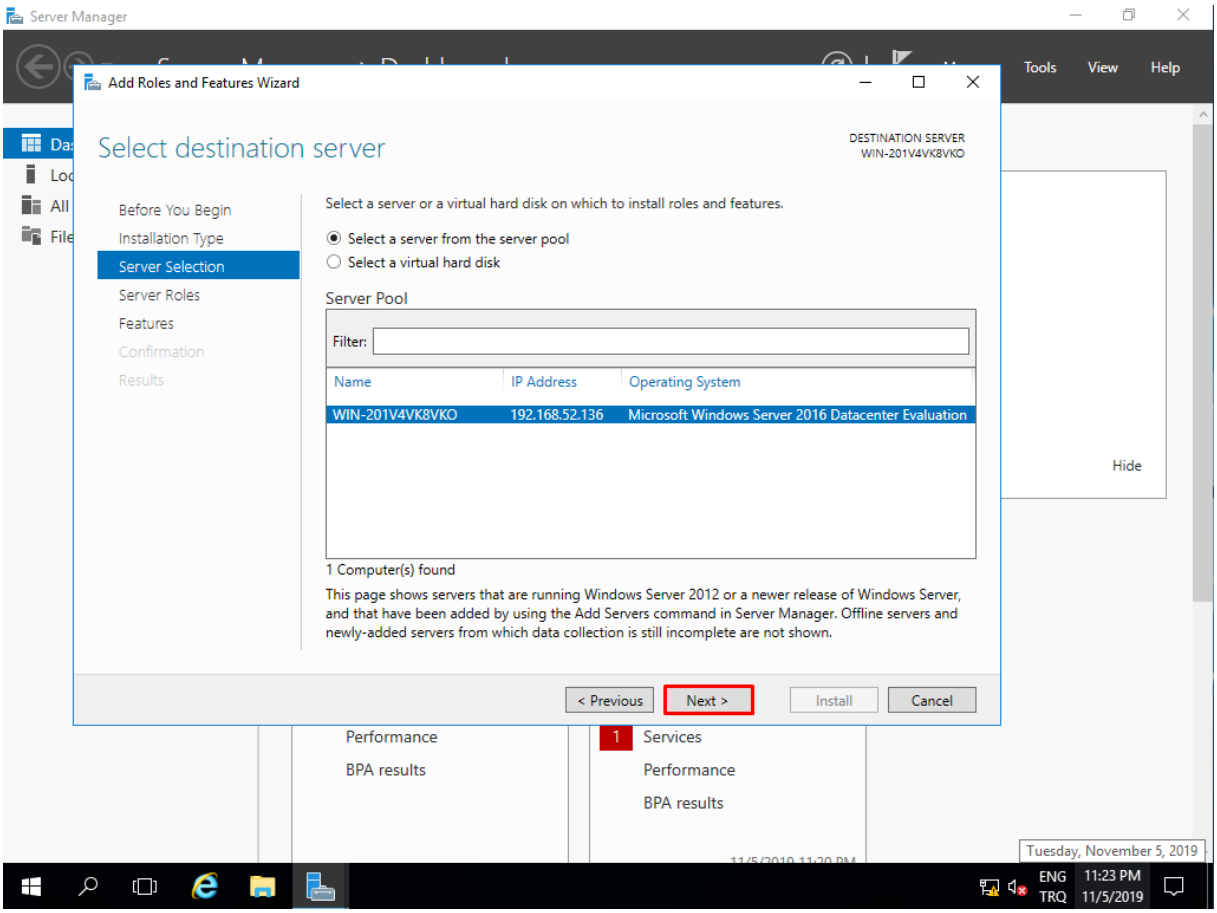
- Next diyoruz ve devam ediyoruz.



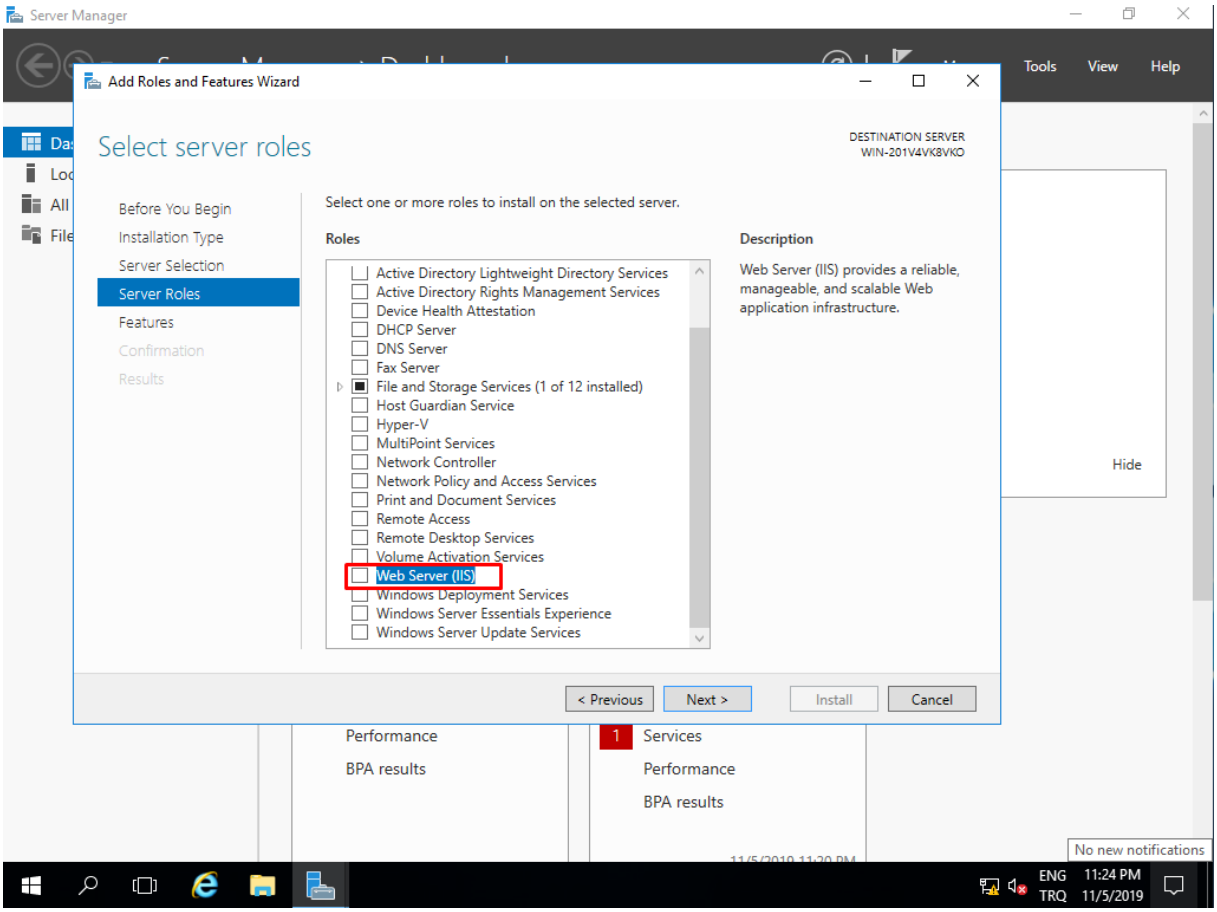
- Role-based or feature-based installation seçilir ve next dedikten sonra devam edilir.



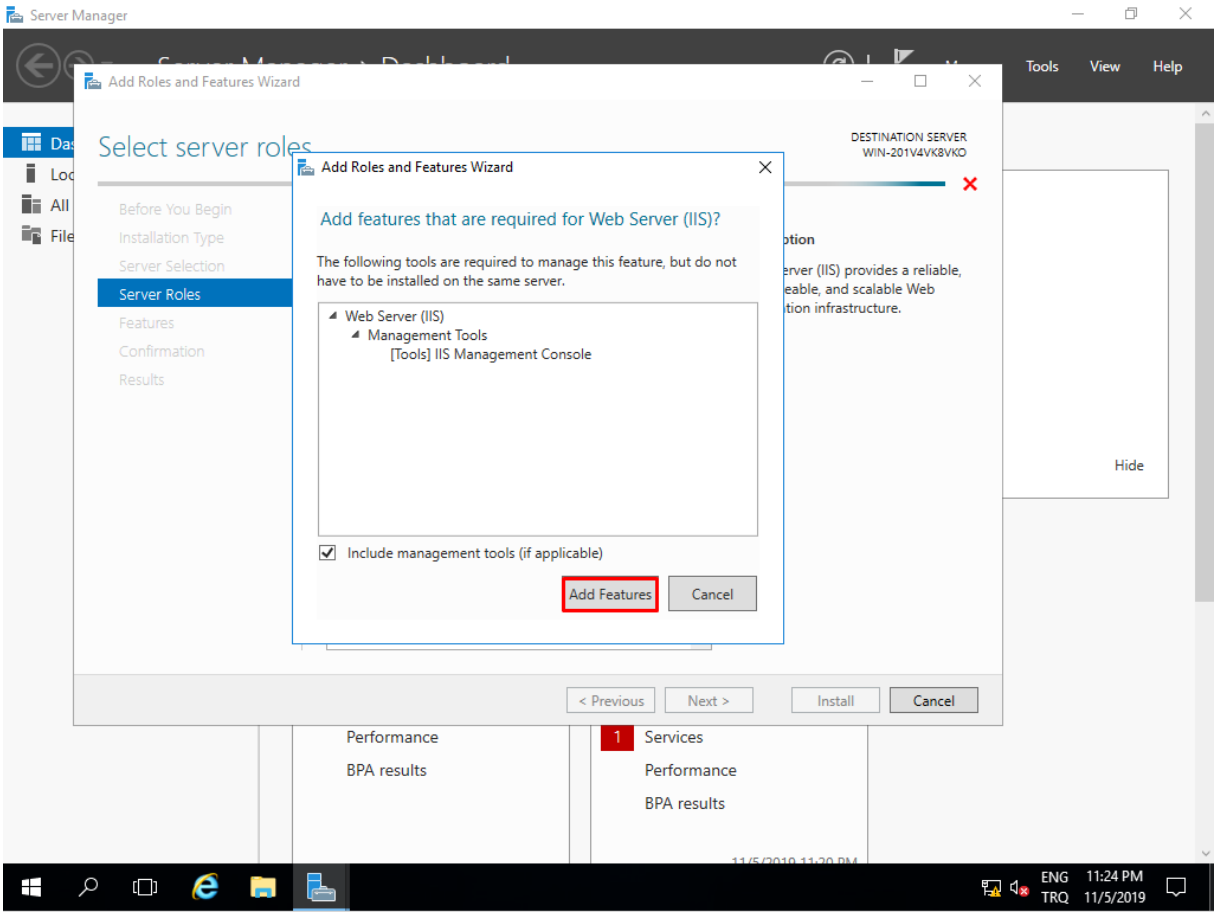
- PC name değiştirmeden kalmış maalesef..Şuan ki isim ve IP adresimizi görüyoruz.Bu sunucumuza işlem yapacağımızı işaretliyor next diyoruz.



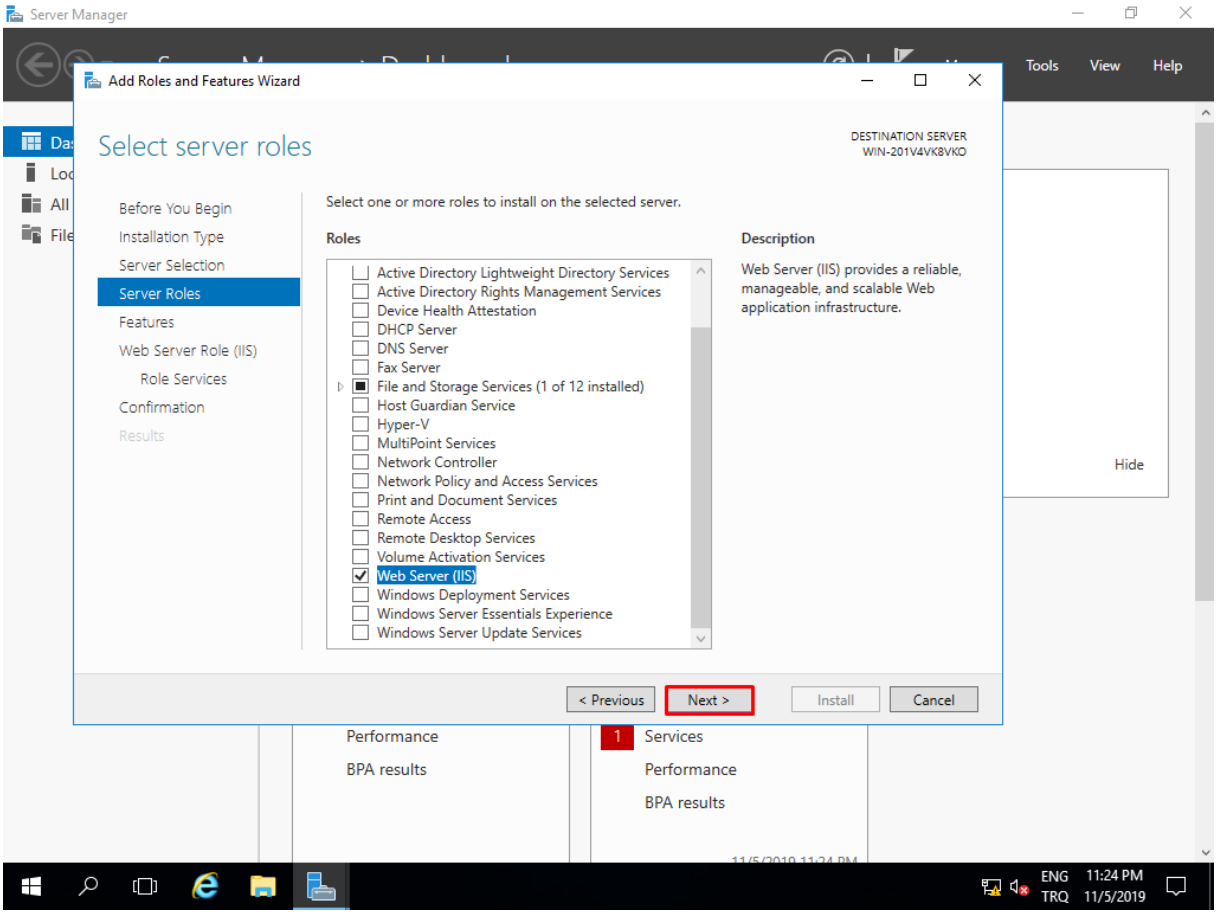
- Server Roles kısımından Web Server(IIS) seçilir ve next tıklanır.



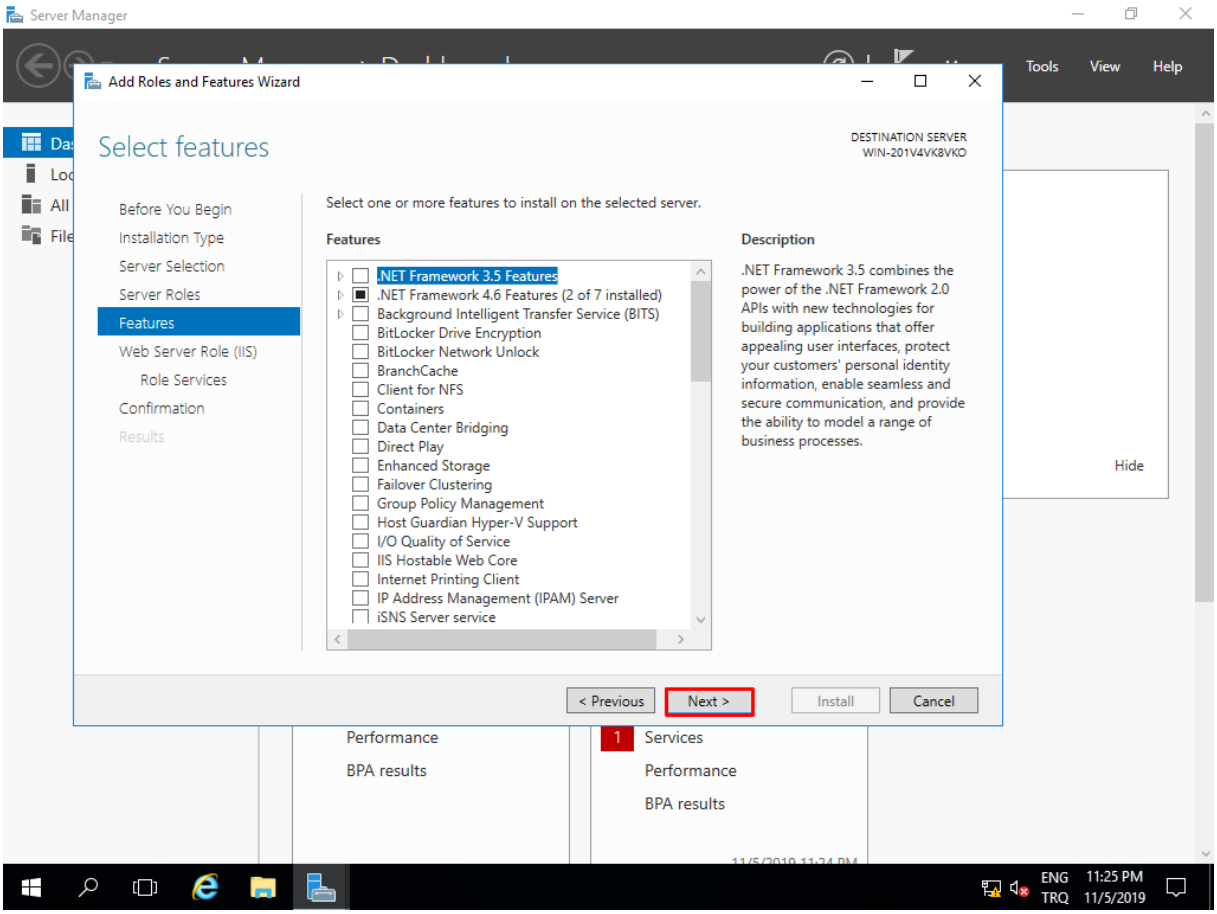
- Add Features tıklanır IIS Management Console ekleneceğini gösteriyor wizard bize.



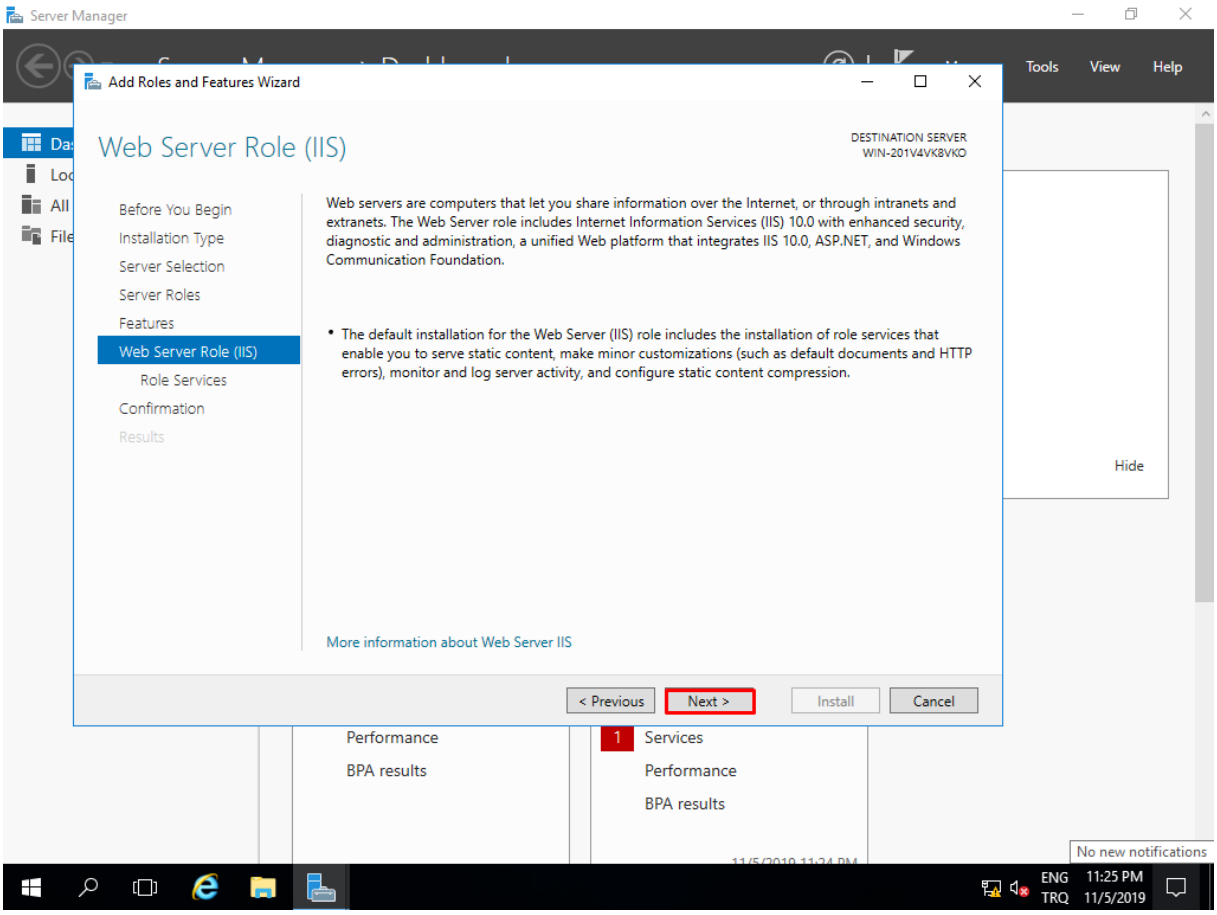
- Web Server (IIS) tıklanmış vaziyette görüyoruz ve next tıklanır devam edilir.



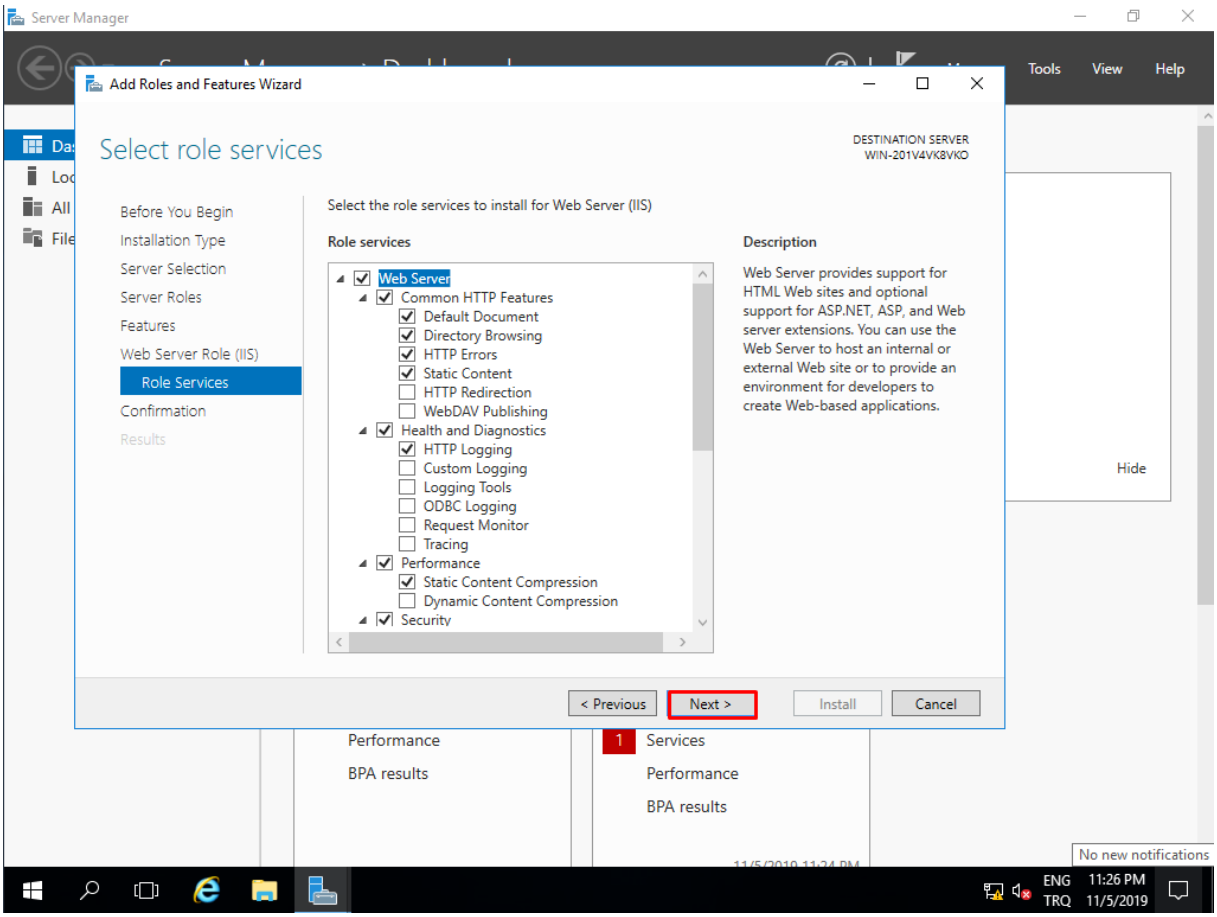
- Herhangi bir Features eklemediğimiz için sadece next demek yeterli olur.



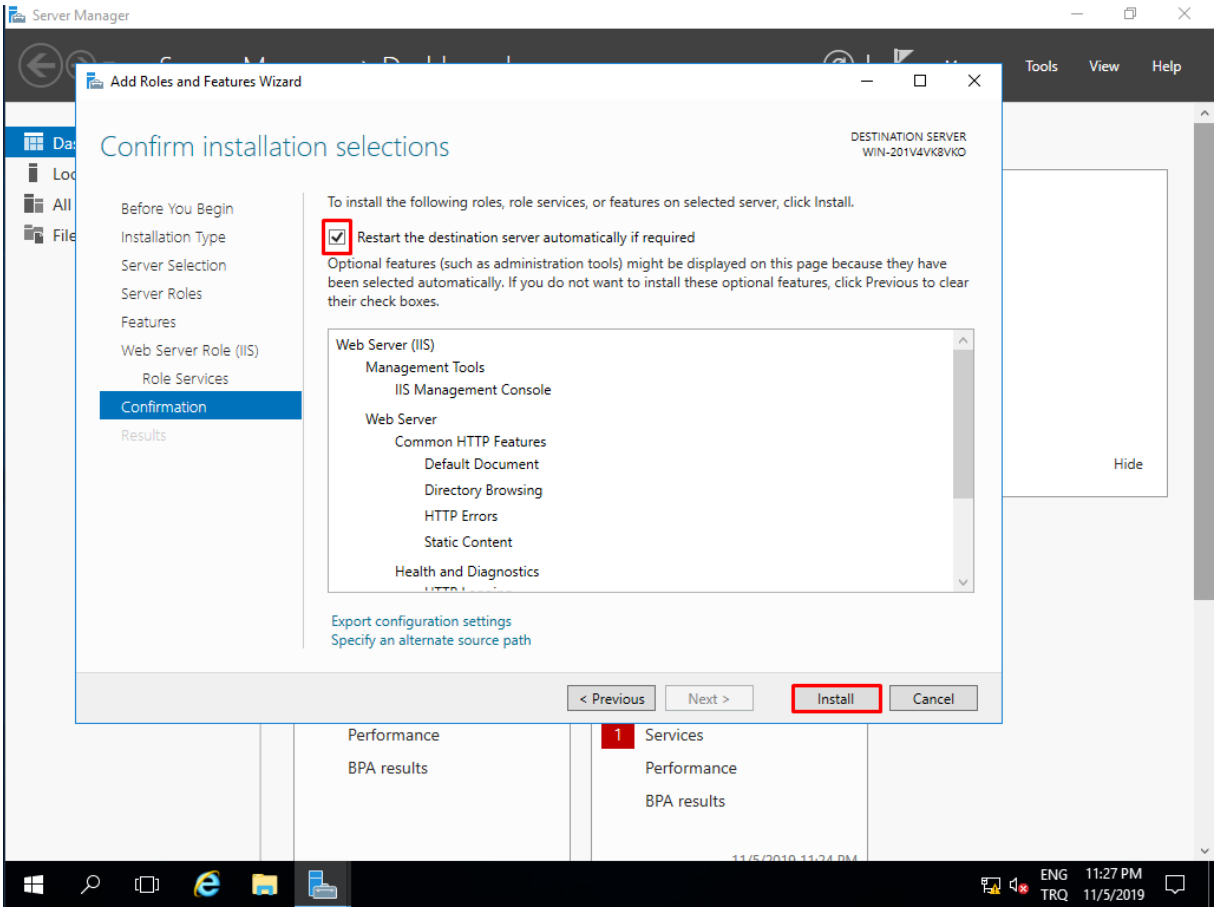
- IIS hakkında özet bilgi verilmiştir.Okuduktan next diyoruz adımlarımıza devam ediyoruz.



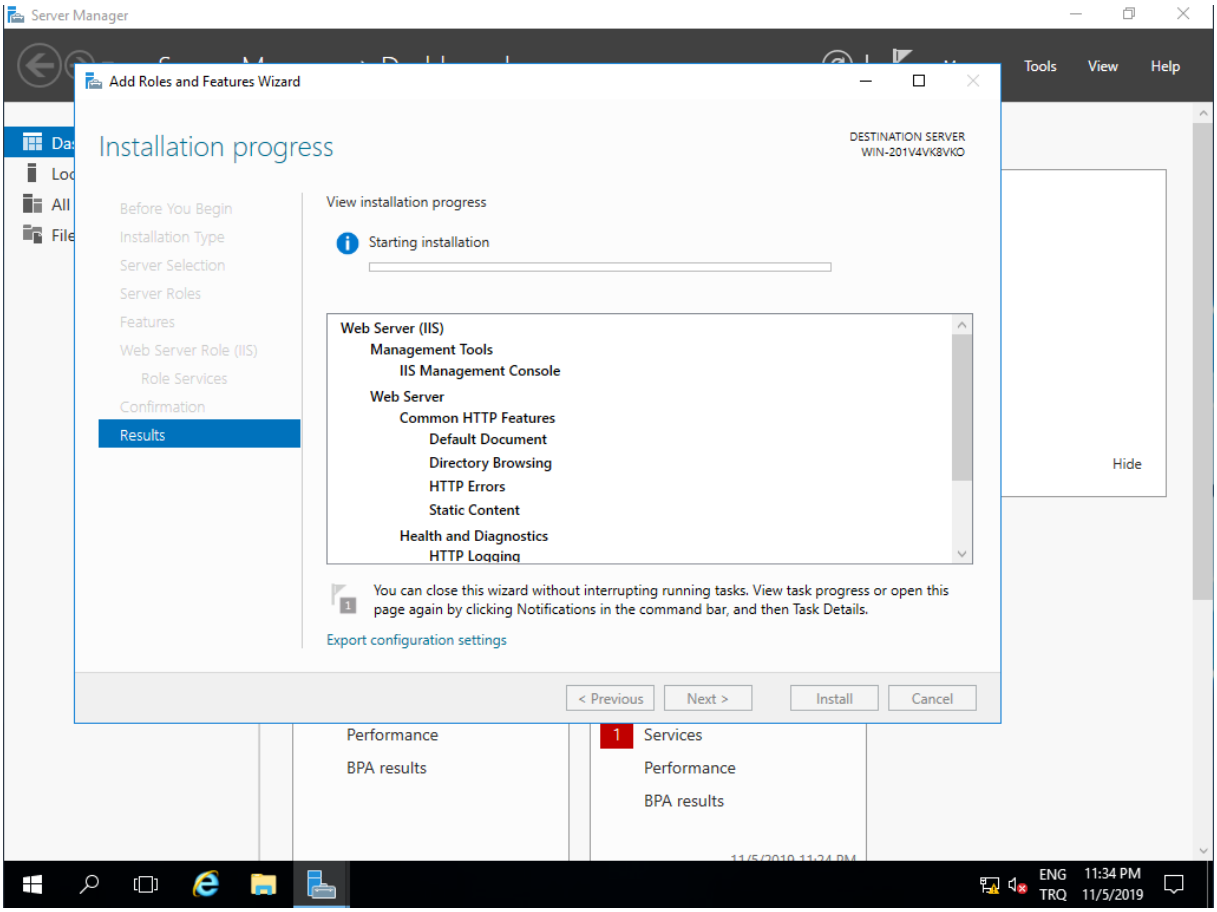
- Role Services kısmında seçili rolleri görüyoruz.Ekstra bir seçim yapmadık burada next dedikten sonra devam ediyoruz.



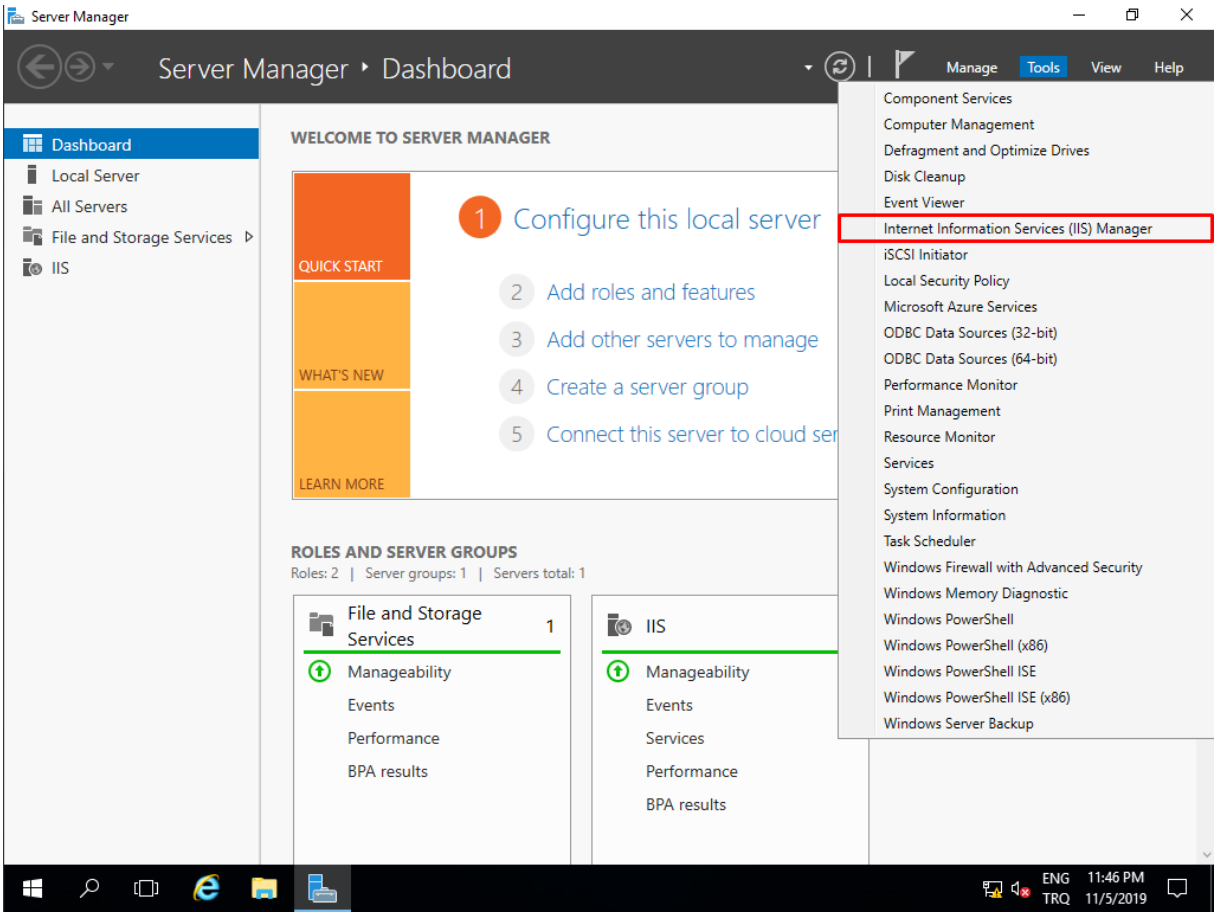
- **Restart the destination server automatically if required** seçildiği zaman eklemek istediğimiz IIS rolünü install ettikten sonra serverımız yeniden başlatılacaktır.



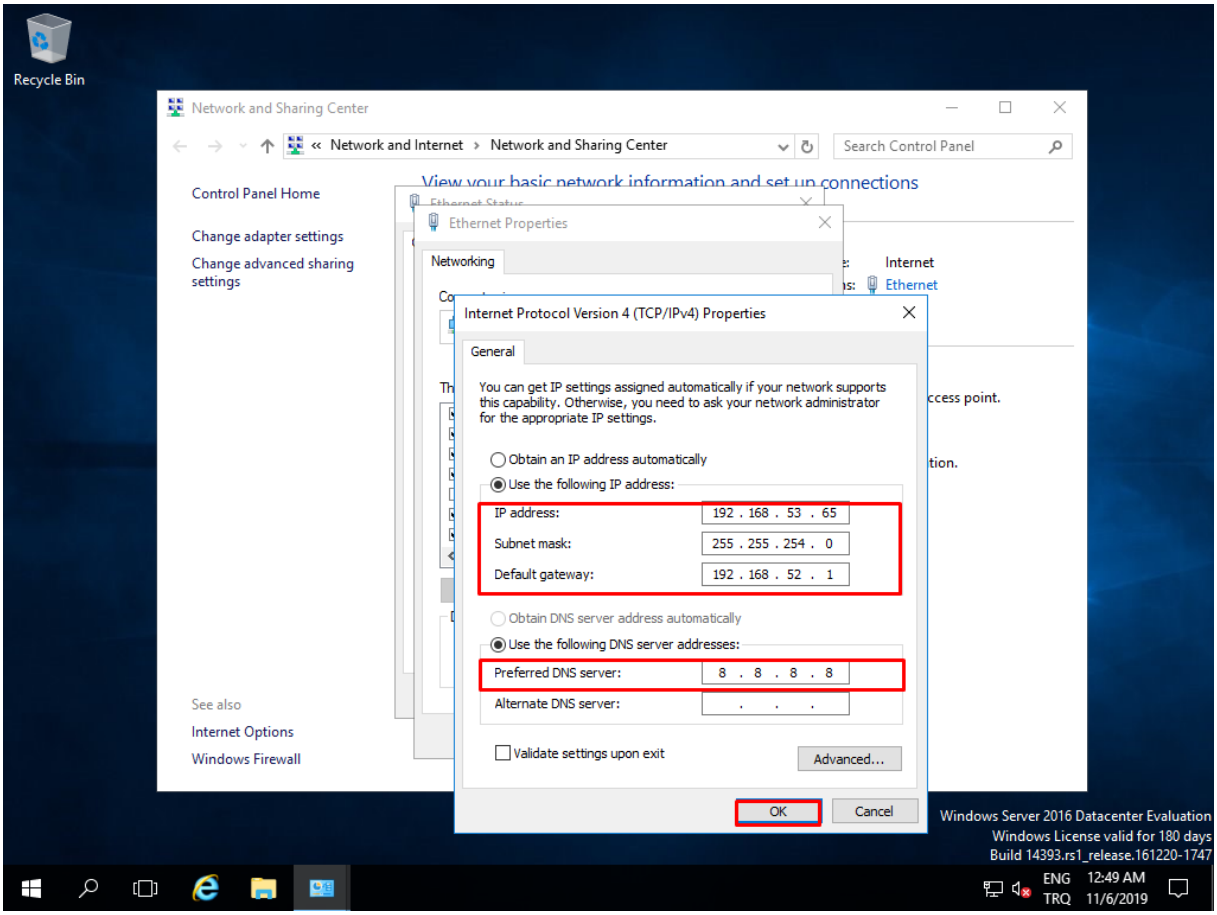
- **Starting installation**



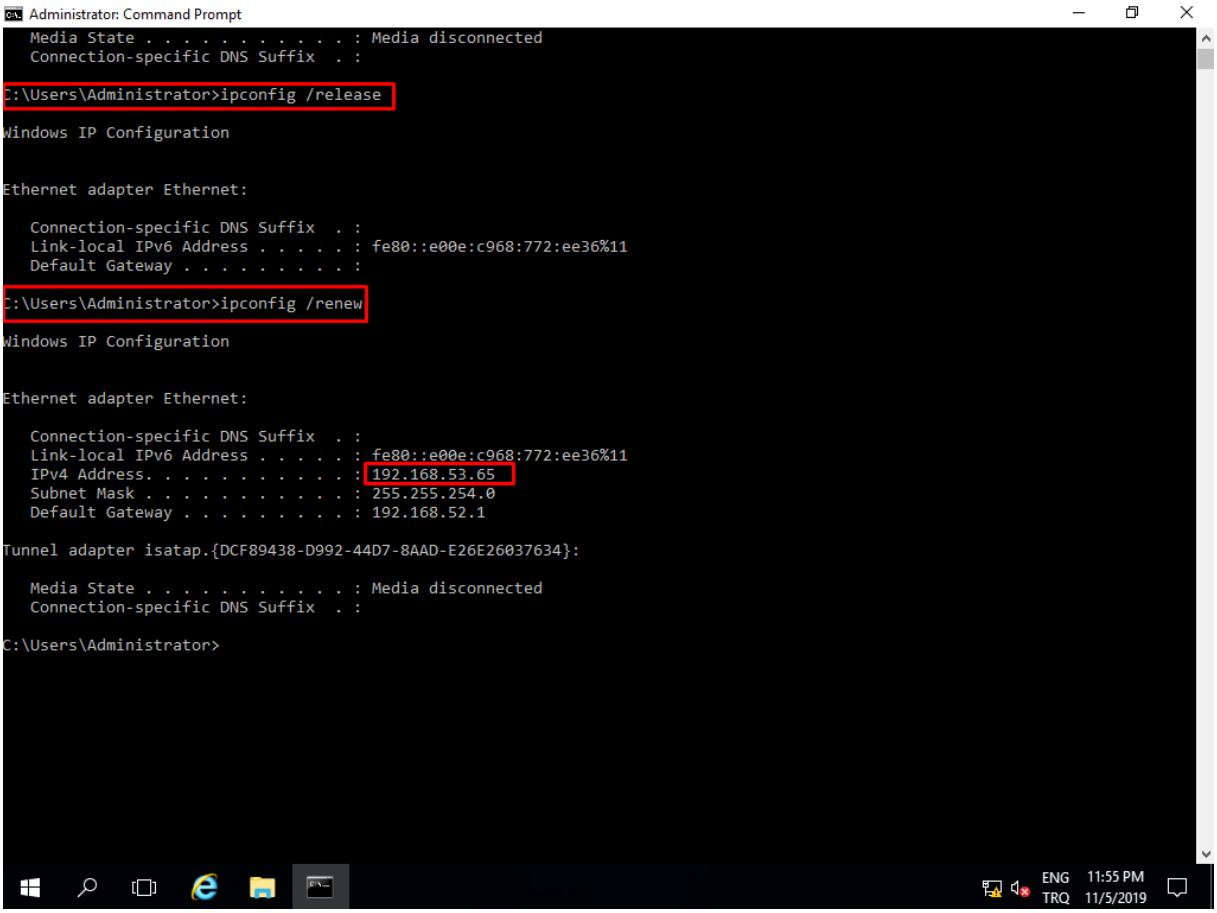
- Kurulum tamamlandıktan **Tools** kısmından **Internet Information Services (IIS) Manager**'a tıklanır.



- Server2016'mıza statik olarak IP veriyoruz.
- IP address:192.168.53.65
- Subnet mask:255.255.254.0
- DNS Server :8.8.8.8 şeklinde değerler verildi.



- **Cmd** kısmında **ipconfig /release** ve **/renew** yaptıktan sonra yazdığımız statik ip değerini görüyoruz.



- Router içerisinde PAT yapıldı.
- Interface FastEthernet0/0'a bağlı olduğu için kablomuz o şekilde yazıldı.

```
ip nat inside source list 1 interface FastEthernet0/0 overload
!
!
access-list 1 permit 20.20.20.0 0.0.0.255
```

- Router içerisinde **show run** yapıldıktan sonra yaptığımız adımları kolaylıkla göz önüne çıkartabiliriz.

```
interface FastEthernet0/0
 ip address dhcp
 ip nat outside
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 20.20.20.1 255.255.255.0
 ip nat inside
 duplex auto
 speed auto
```

- Router global config modunda interface ip adres atama,.

```
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int
Router(config)#interface fa
Router(config)#interface fastEthernet 0/1
Router(config-if)#ip ad
Router(config-if)#ip address 20.20.20.1 255.255.255.248
Router(config-if)#no sh
Router(config-if)#
*Jan  1 00:20:32.535: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state t
o up
*Jan  1 00:20:33.535: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/1, changed state to up
```

- Routerın diğer bacağı yani internete yakın olan interface DHCP'den IP alınması isteğiyle aşağıdaki gibi 192.168.52.159 şeklinde bir IP almıştır.
- Show ip interface brief komutuyla interfacelerinn durumlarını görebiliyoruz.

```
Router#show ip interface brief
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            192.168.52.159  YES DHCP   up                    up
FastEthernet0/1            20.20.20.1      YES manual up                    up
Serial0/0/0                unassigned      YES NVRAM  administratively down down
Serial0/0/1                unassigned      YES NVRAM  administratively down down
Serial0/1/0                unassigned      YES NVRAM  administratively down down
Serial0/1/1                unassigned      YES NVRAM  administratively down down
Router#
```

- Show ip nat translations ile PAT ile interrnete çıkan ip adreslerini port numaralarını görüyoruz.

```
Router#show ip nat translations
Pro Inside global         Inside local       Outside local      Outside global
icmp 192.168.52.159:0     20.20.20.250:0     8.8.8.8:0          8.8.8.8:0
udp 192.168.52.159:123    20.20.20.250:123   40.81.188.85:123   40.81.188.85:123
udp 192.168.52.159:123    20.20.20.250:123   51.145.123.29:123  51.145.123.29:123
tcp 192.168.52.159:49782  20.20.20.250:49782 108.177.127.188:443 108.177.127.188:443
tcp 192.168.52.159:49784  20.20.20.250:49784 52.142.84.61:443   52.142.84.61:443
tcp 192.168.52.159:49785  20.20.20.250:49785 40.67.251.132:443  40.67.251.132:443
tcp 192.168.52.159:49904  20.20.20.250:49904 192.168.53.65:80   192.168.53.65:80
tcp 192.168.52.159:49905  20.20.20.250:49905 192.168.53.65:80   192.168.53.65:80
udp 192.168.52.159:50237  20.20.20.250:50237 8.8.8.8:53         8.8.8.8:53
udp 192.168.52.159:52538  20.20.20.250:52538 172.217.169.100:443 172.217.169.100:443
udp 192.168.52.159:59732  20.20.20.250:59732 172.217.169.131:443 172.217.169.131:443
udp 192.168.52.159:61227  20.20.20.250:61227 40.81.120.44:3544  40.81.120.44:3544
udp 192.168.52.159:61227  20.20.20.250:61227 40.81.120.45:3544  40.81.120.45:3544
udp 192.168.52.159:61227  20.20.20.250:61227 40.81.120.45:65444 40.81.120.45:65444
udp 192.168.52.159:63970  20.20.20.250:63970 8.8.8.8:53         8.8.8.8:53
tcp 192.168.52.159:1108   20.20.20.251:49796 52.142.84.61:443   52.142.84.61:443
tcp 192.168.52.159:49800  20.20.20.251:49800 52.142.84.61:443   52.142.84.61:443
tcp 192.168.52.159:49988  20.20.20.251:49988 13.107.4.50:80     13.107.4.50:80
```

- Client Windows10 virtual sunucumuzdan internete bağlanmak istiyoruz.192.168.53.65 yazıyoruz ve IIS Windows Server anasayfasını birazcık düzenledik☺☺☺