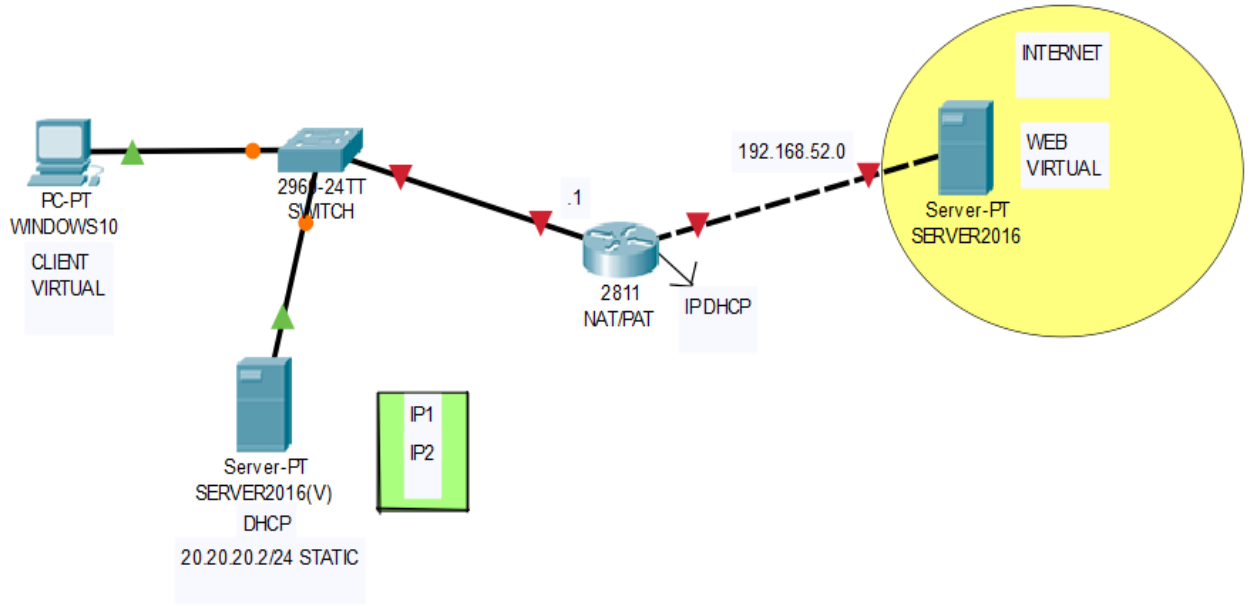


Connect ISS Server with DHCP Server and IP Routing

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.

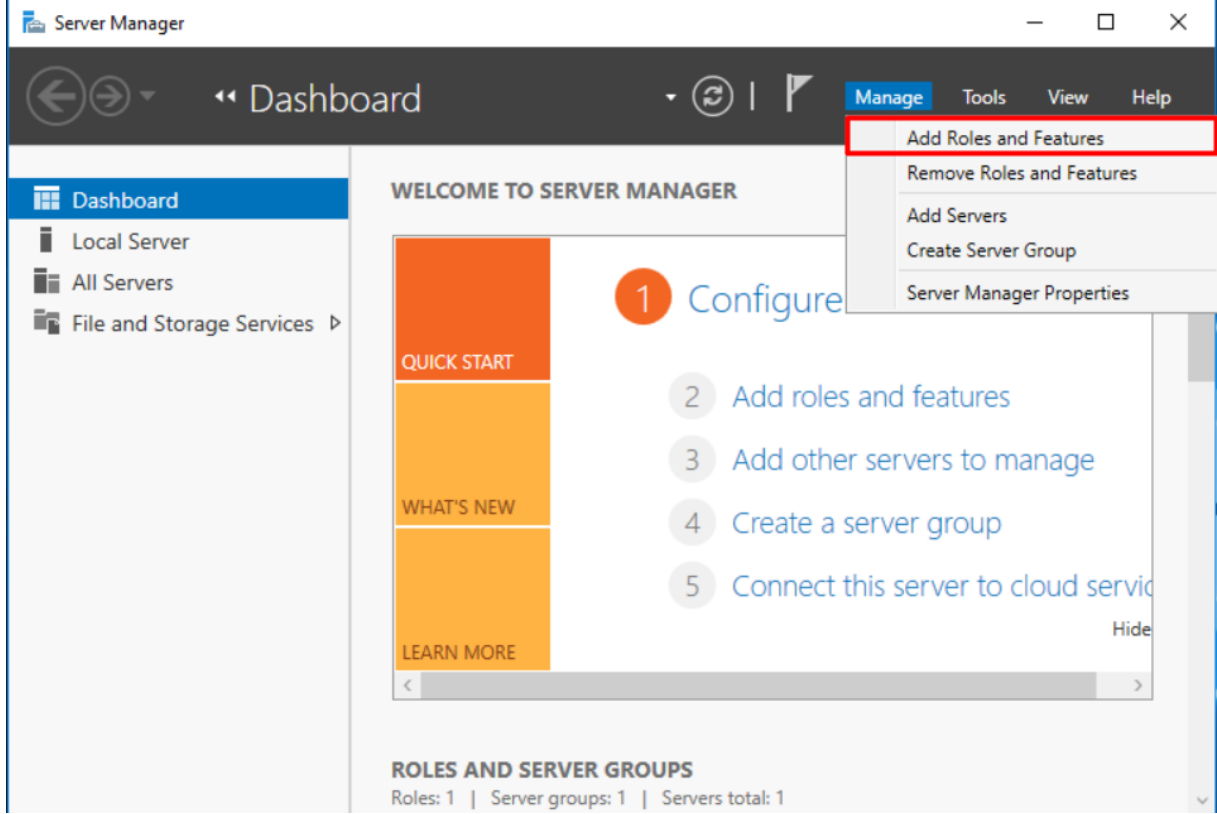
Yaptığımız işlemler şu şekilde sıralanabilir:

- **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.

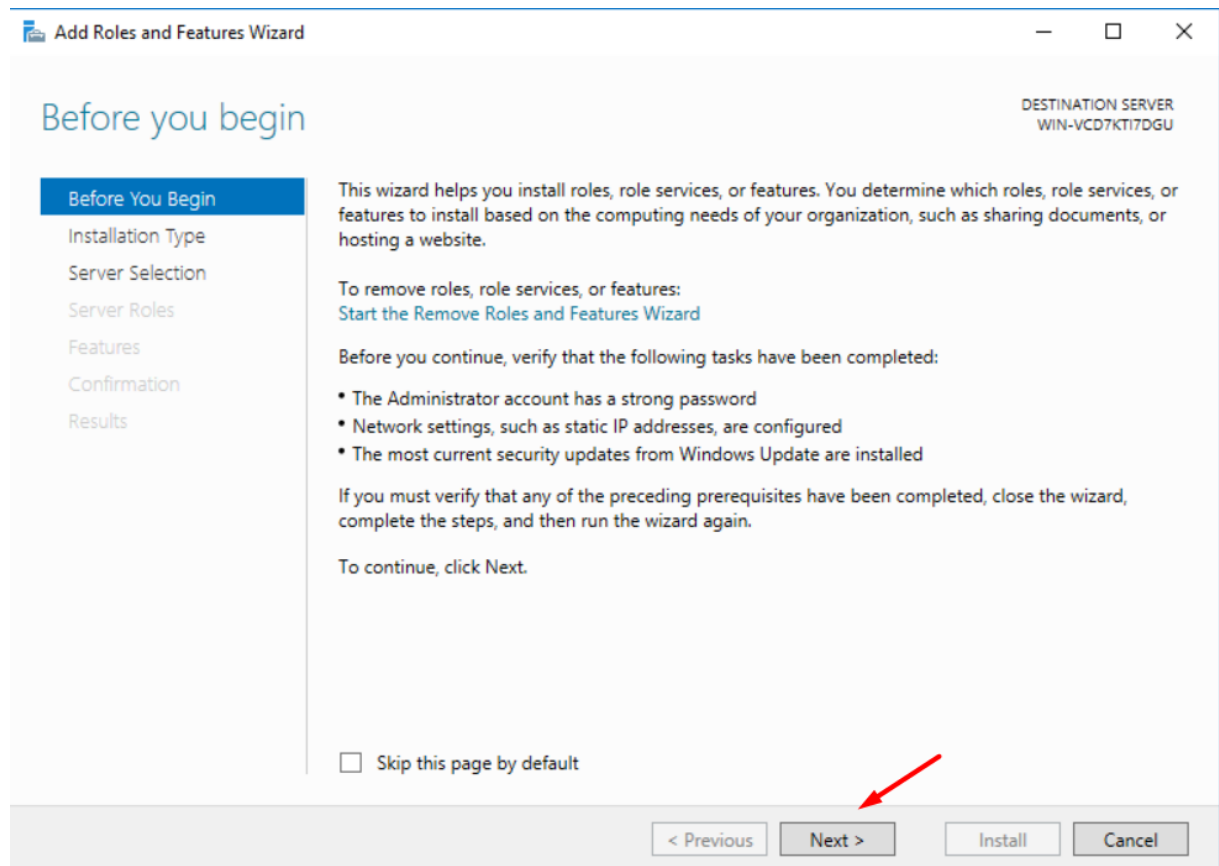
- Web Server doğrudan İnternete bağlandı.

DHCP Server kurulumu

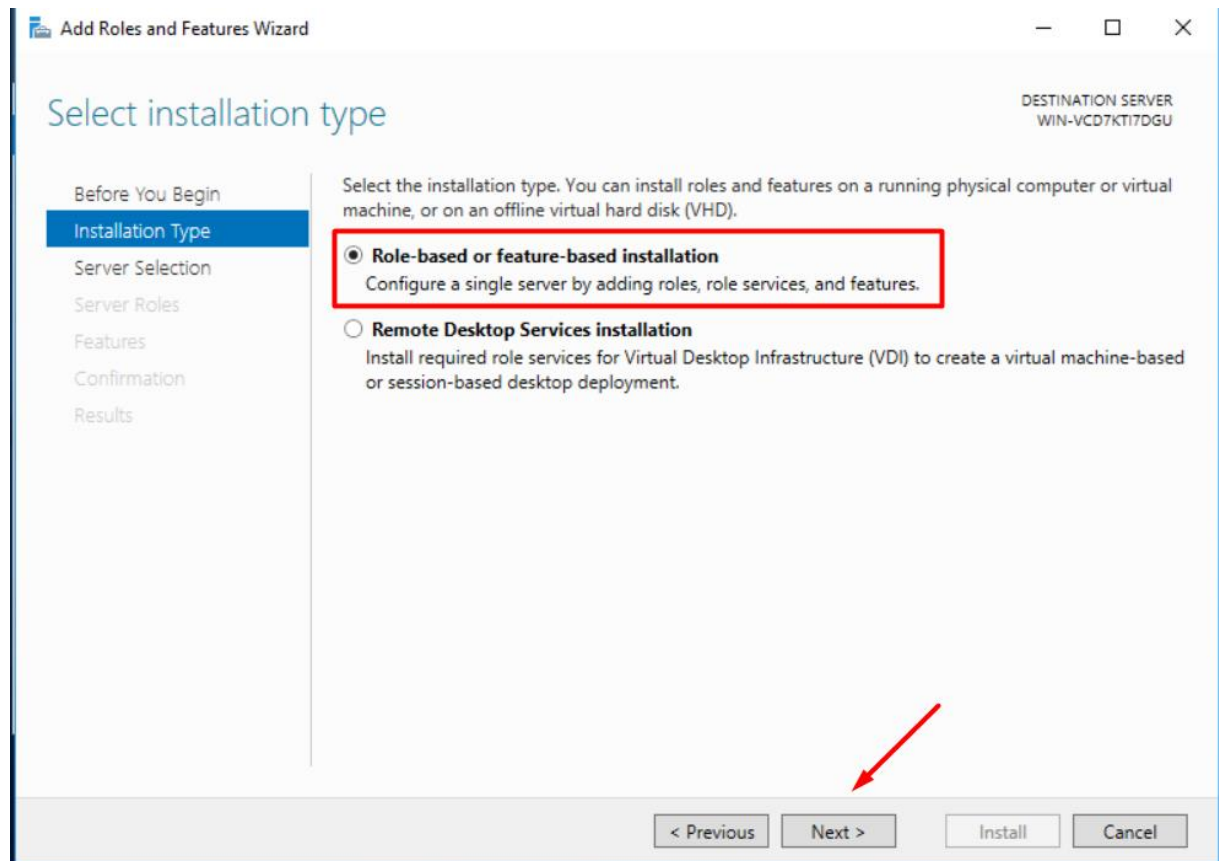
- Add Roles and Features ekleme kısmından işlemlerimize başlıyoruz.



- Next diyoruz.



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



- Select a server from the server pool seçtik.

Add Roles and Features Wizard

Select destination server

DESTINATION SERVER
WIN-VCD7KT17DGU

Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results

Select a server or a virtual hard disk on which to install roles and features.

☒ Select a server from the server pool
☐ Select a virtual hard disk

Server Pool

Filter:

Name	IP Address	Operating System
WIN-VCD7KT17DGU	169.254.242.74	Microsoft Windows Server 2016 Datacenter Evaluation

1 Computer(s) found

This page shows servers that are running Windows Server 2012 or a newer release of Windows Server, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.

< Previous **Next >** Install Cancel

- DHCP Server seçilir.

Add Roles and Features Wizard

DESTINATION SERVER
WIN-VCD7KT17DGU

Select server roles

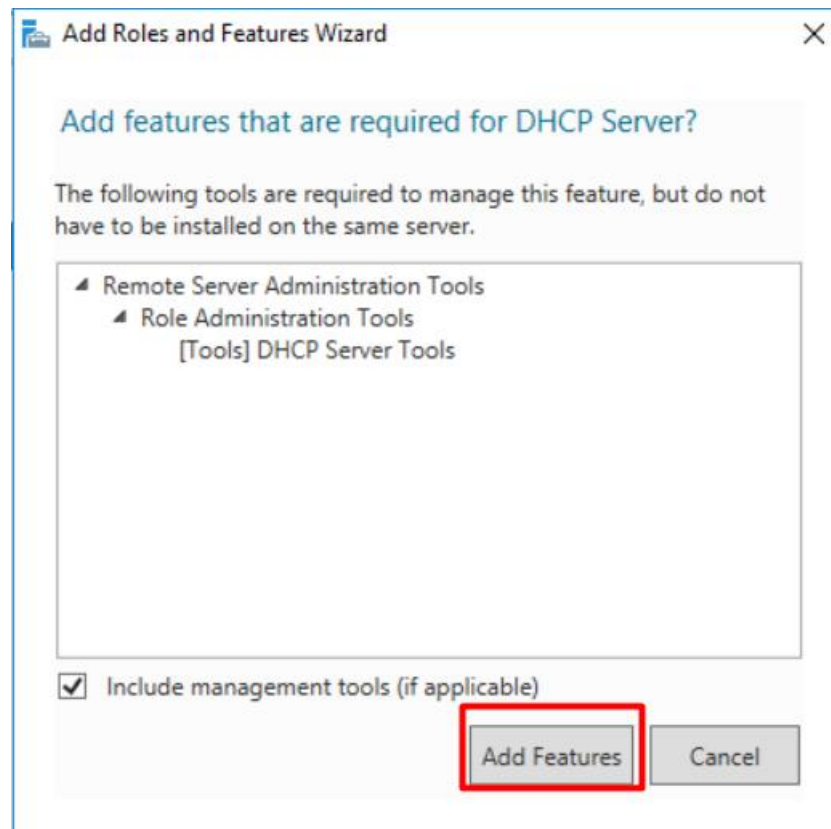
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results

Select one or more roles to install on the selected server.

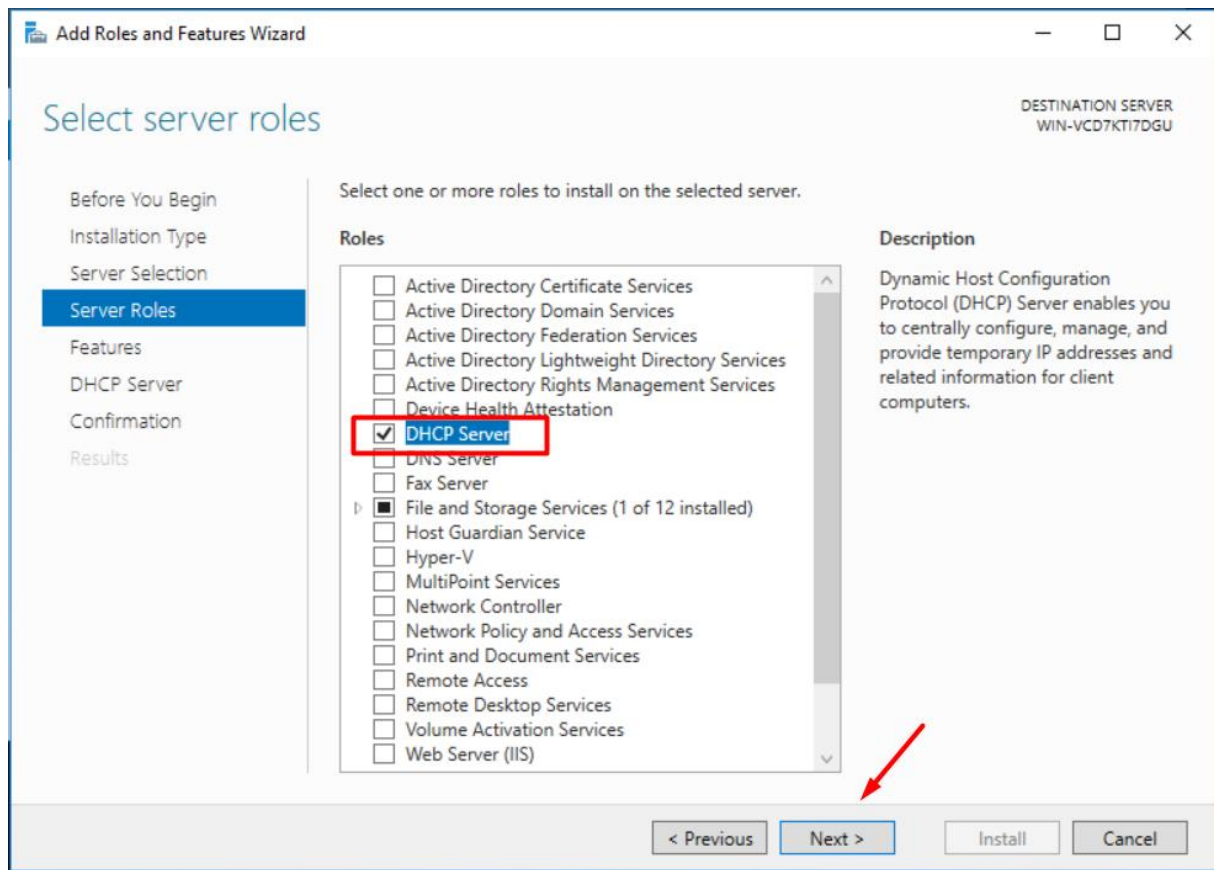
Roles	Description
<input type="checkbox"/> Active Directory Certificate Services	Dynamic Host Configuration Protocol (DHCP) Server enables you to centrally configure, manage, and provide temporary IP addresses and related information for client computers.
<input type="checkbox"/> Active Directory Domain Services	
<input type="checkbox"/> Active Directory Federation Services	
<input type="checkbox"/> Active Directory Lightweight Directory Services	
<input type="checkbox"/> Active Directory Rights Management Services	
<input type="checkbox"/> Device Health Attestation	
<input type="checkbox"/> DHCP Server	
<input type="checkbox"/> DNS Server	
<input type="checkbox"/> Fax Server	
<input checked="" type="checkbox"/> File and Storage Services (1 of 12 installed)	
<input type="checkbox"/> Host Guardian Service	
<input type="checkbox"/> Hyper-V	
<input type="checkbox"/> MultiPoint Services	
<input type="checkbox"/> Network Controller	
<input type="checkbox"/> Network Policy and Access Services	
<input type="checkbox"/> Print and Document Services	
<input type="checkbox"/> Remote Access	
<input type="checkbox"/> Remote Desktop Services	
<input type="checkbox"/> Volume Activation Services	
<input type="checkbox"/> Web Server (IIS)	

< Previous Next > Install Cancel

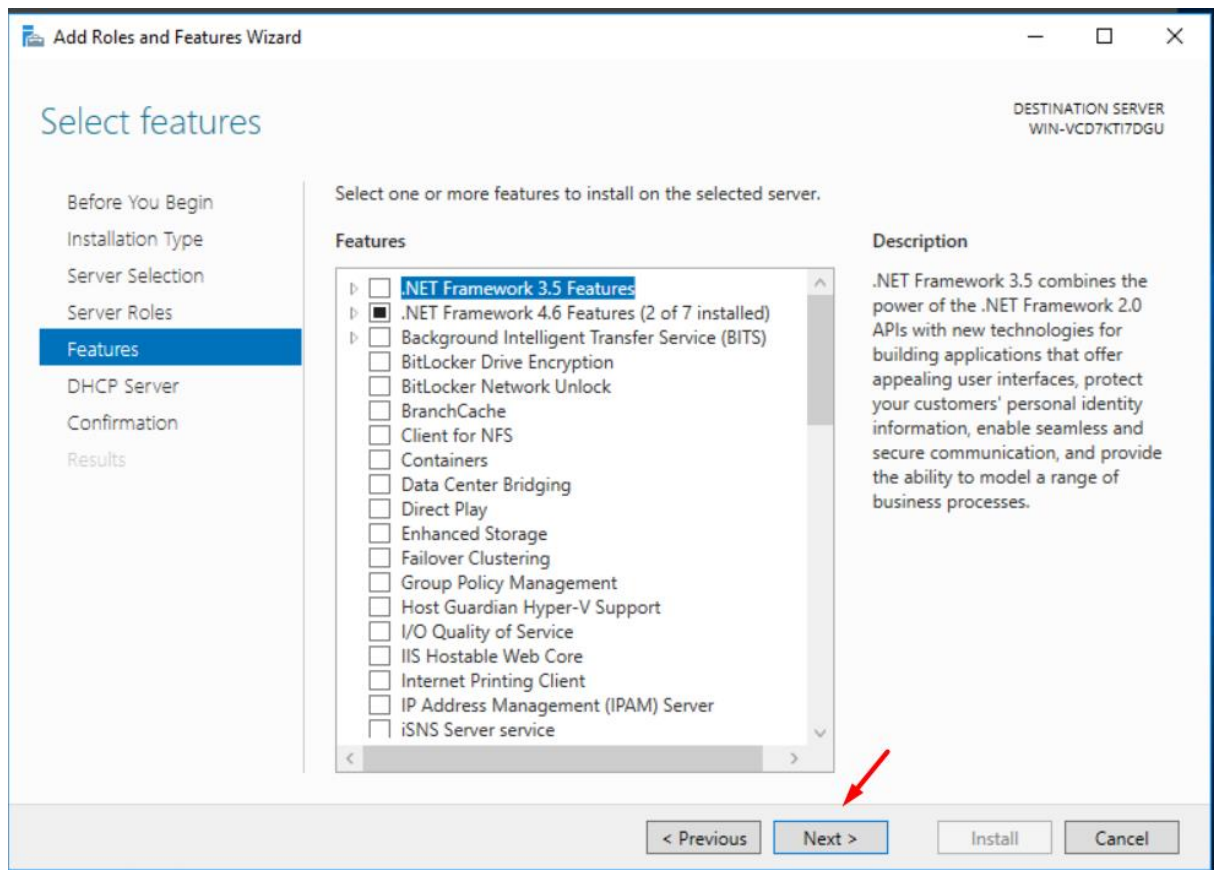
- Add Features diyoruz.



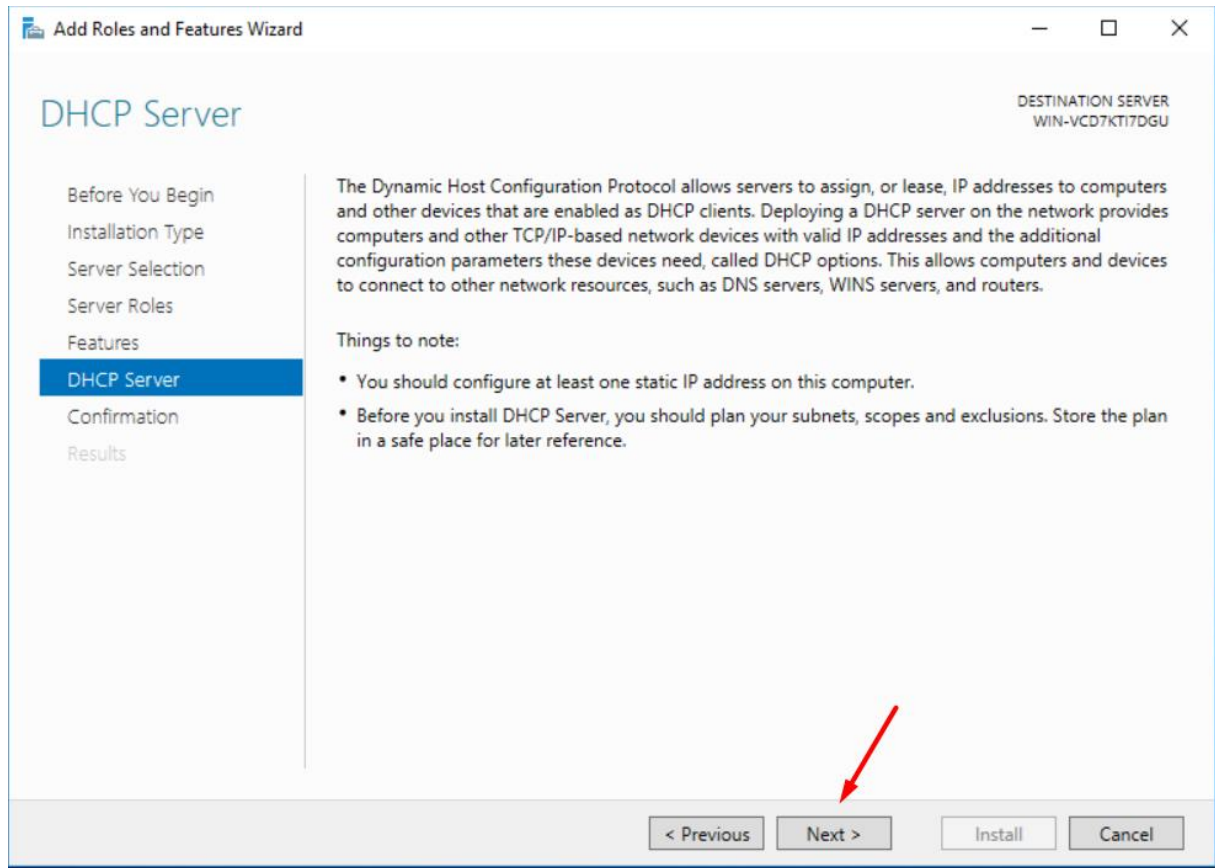
- Seçilen DHCP Server kısmından sonra next diyoruz.



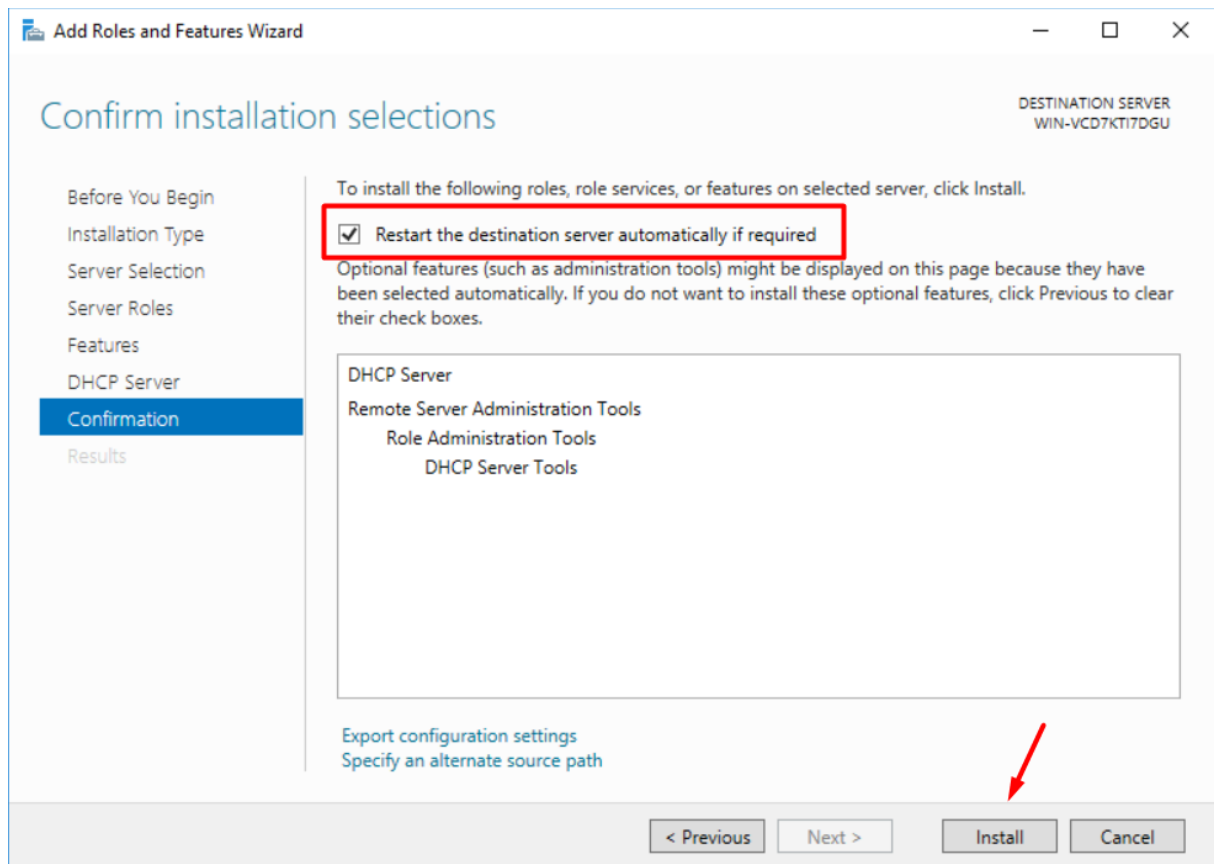
- Herhangi bir Features seçmeden next diyoruz.



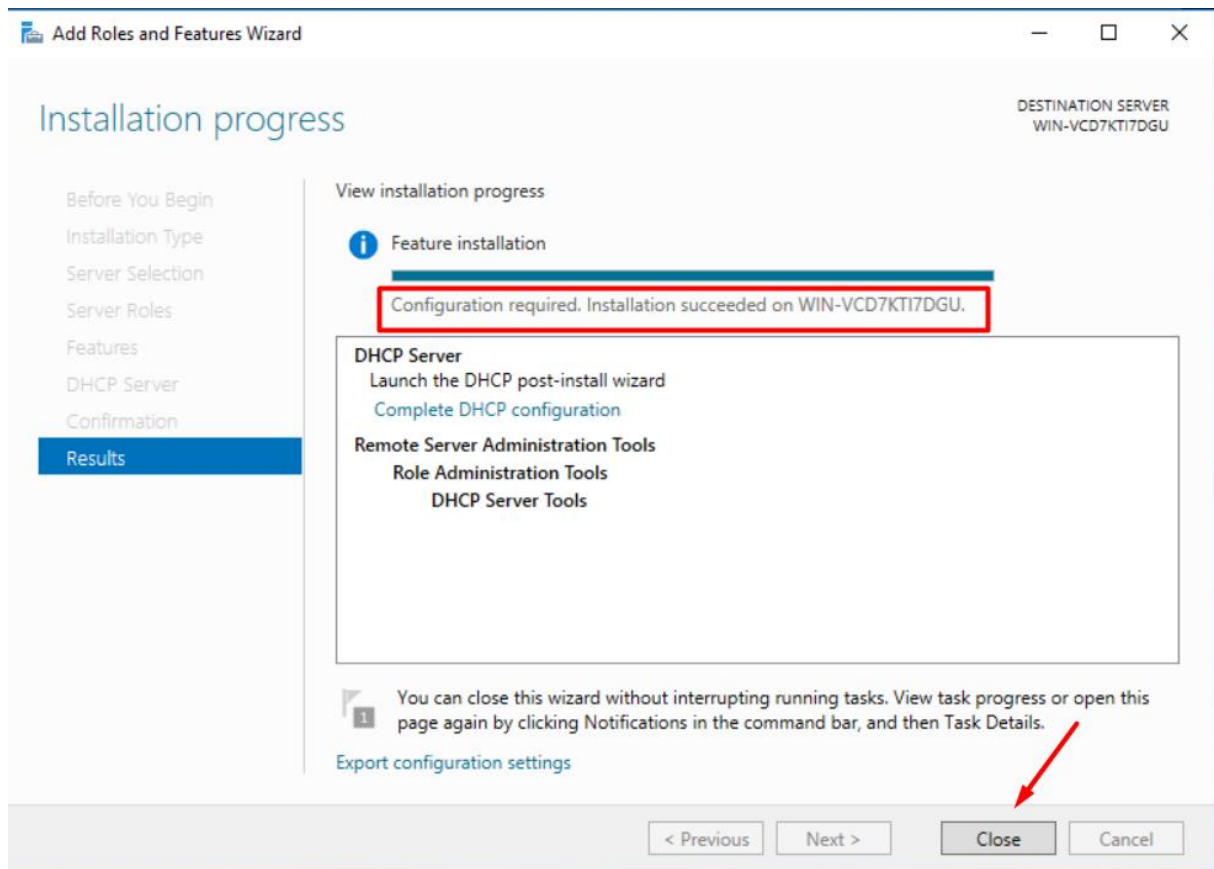
- DHCP Server açıklaması okundu ve next denildi.



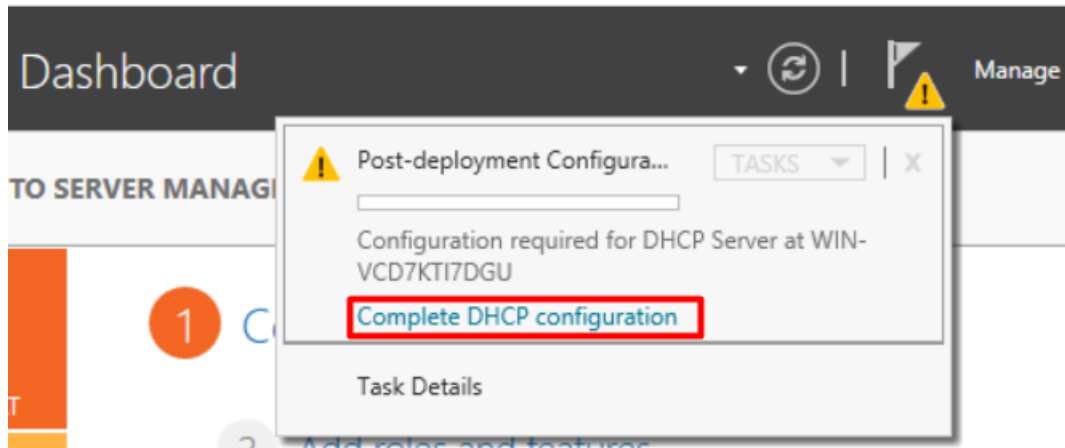
- Restart the destination server automatically if required seçildi ve install yapıldı.



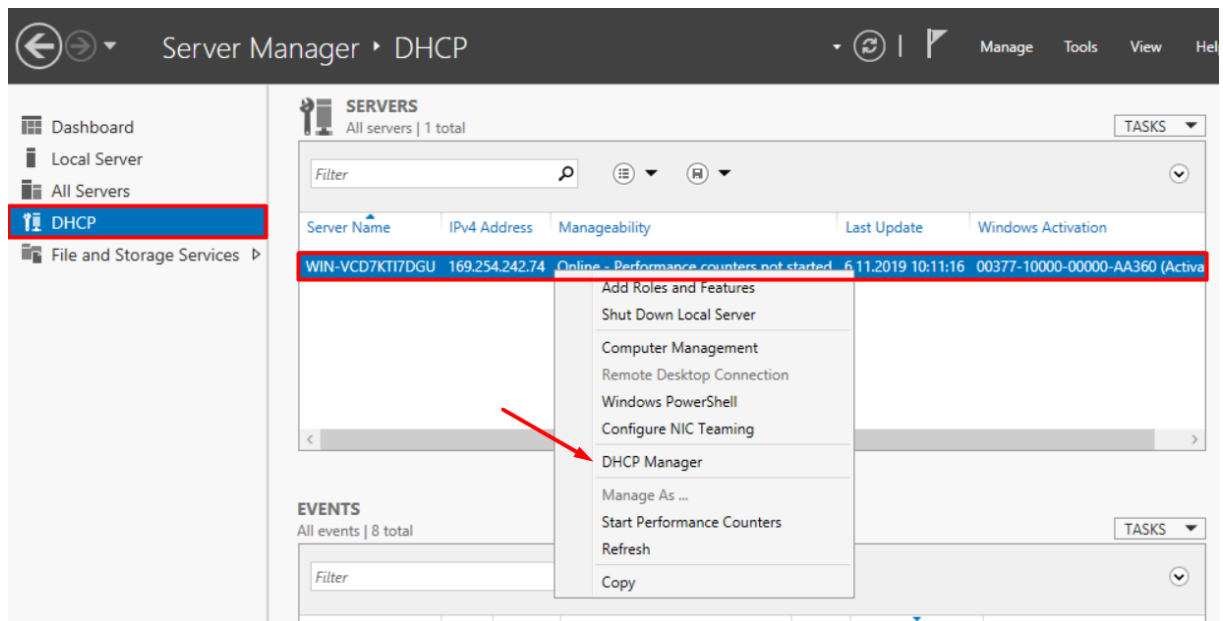
- Complete DHCP configuration 'succeeded' gördükten sonra close yapıyoruz.



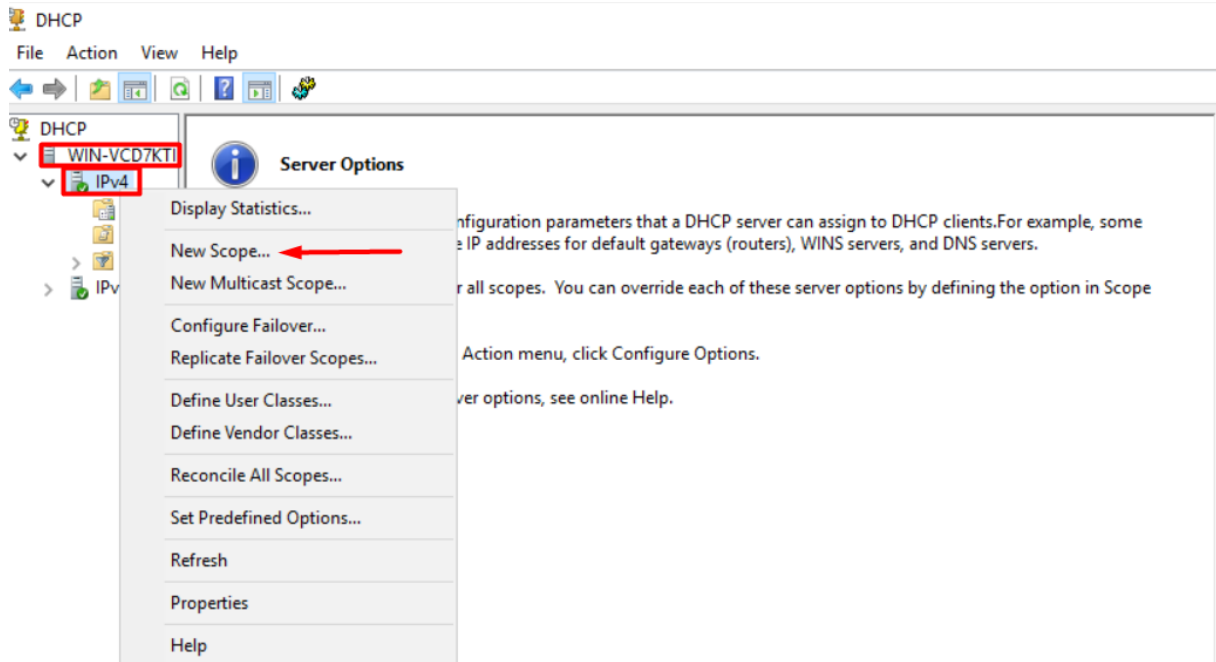
- Complete DHCP configuration tıklanır Flag kısmından.



- DHCP Manager seçilir.



- DHCP>IPv4>New Scope seçilir.



- Scope name belirlenir ve description yazılır.

New Scope Wizard

Scope Name
You have to provide an identifying scope name. You also have the option of providing a description.

Type a name and description for this scope. This information helps you quickly identify how the scope is to be used on your network.

Name: DHCP_Server

Description: DHCP_20_Network

< Back Next > Cancel

- 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,

New Scope Wizard

IP Address Range
You define the scope address range by identifying a set of consecutive IP addresses.

Configuration settings for DHCP Server

Enter the range of addresses that the scope distributes.

Start IP address: 20 . 20 . 20 . 250

End IP address: 20 . 20 . 20 . 254

Configuration settings that propagate to DHCP Client

Length: 8

Subnet mask: 255 . 255 . 255 . 0

< Back Next > Cancel

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

New Scope Wizard

Add Exclusions and Delay

Exclusions are addresses or a range of addresses that are not distributed by the server. A delay is the time duration by which the server will delay the transmission of a DHCP OFFER message.

Type the IP address range that you want to exclude. If you want to exclude a single address, type an address in Start IP address only.

Start IP address: End IP address:

Excluded address range:

Subnet delay in milli second:

< Back Next > Cancel

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

New Scope Wizard

Lease Duration

The lease duration specifies how long a client can use an IP address from this scope.

Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.

Set the duration for scope leases when distributed by this server.

Limited to:

Days: Hours: Minutes:

1 0 0

< Back Next > Cancel

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

New Scope Wizard

Configure DHCP Options

You have to configure the most common DHCP options before clients can use the scope.

When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope.

The settings you select here are for this scope and override settings configured in the Server Options folder for this server.

Do you want to configure the DHCP options for this scope now?

☒ **Yes, I want to configure these options now**

☐ No, I will configure these options later

< Back Next > Cancel

- Router default gateway IP address 20.20.20.1 yazılır.

New Scope Wizard

Router (Default Gateway)
You can specify the routers, or default gateways, to be distributed by this scope.

To add an IP address for a router used by clients, enter the address below.

IP address:

. . .	Add
20.20.20.1	Remove
	Up
	Down

< Back Next > Cancel

- DNS servers olarak IP address 8.8.8.8 eklendi.

New Scope Wizard

Domain Name and DNS Servers
The Domain Name System (DNS) maps and translates domain names used by clients on your network.

You can specify the parent domain you want the client computers on your network to use for DNS name resolution.

Parent domain:

To configure scope clients to use DNS servers on your network, enter the IP addresses for those servers.

Server name:	IP address:	
<input type="text"/>	<input type="text" value=" . . ."/>	<input type="button" value="Add"/>
<input type="button" value="Resolve"/>	<div>8.8.8.8</div>	<input type="button" value="Remove"/>
		<input type="button" value="Up"/>
		<input type="button" value="Down"/>

< Back Next > Cancel

- Herhangi bir WINS Servers eklemeden next diyoruz.

New Scope Wizard

WINS Servers
Computers running Windows can use WINS servers to convert NetBIOS computer names to IP addresses.

Entering server IP addresses here enables Windows clients to query WINS before they use broadcasts to register and resolve NetBIOS names.

Server name: IP address:

To change this behavior for Windows DHCP clients modify option 046, WINS/NBT Node Type, in Scope Options.

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

New Scope Wizard

Activate Scope
Clients can obtain address leases only if a scope is activated.

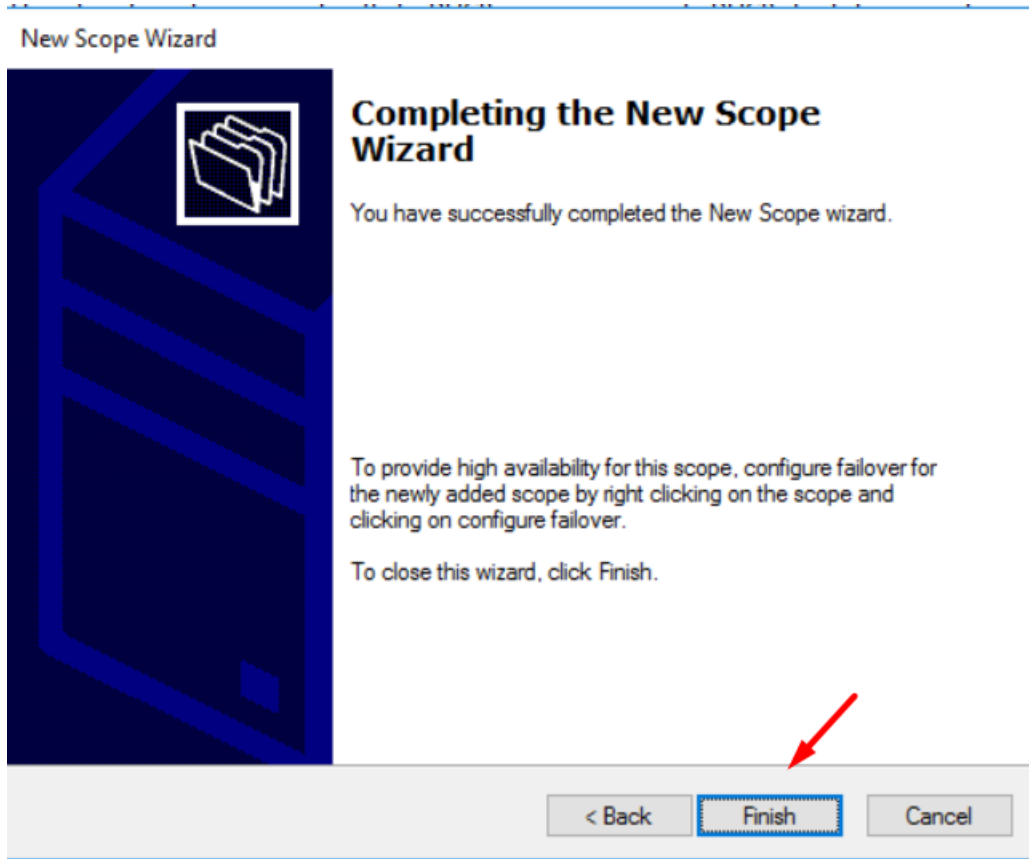
Do you want to activate this scope now?

☒ Yes, I want to activate this scope now

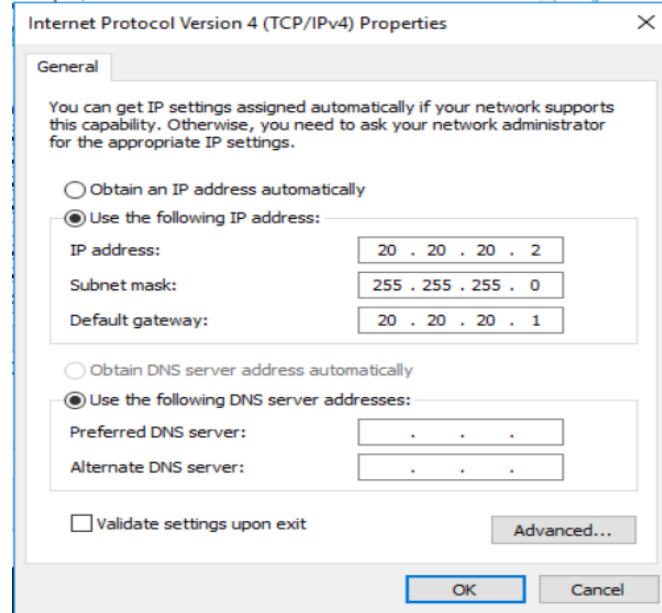
☐ No, I will activate this scope later

< Back Next > Cancel

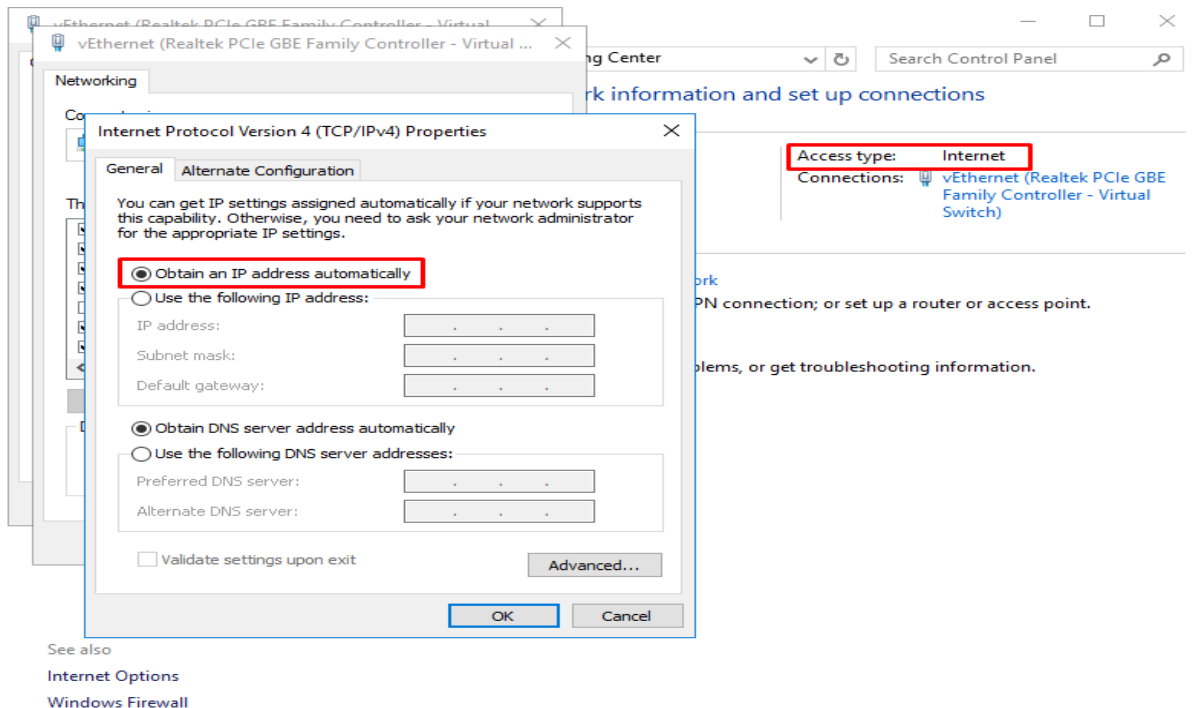
- Yeni scope oluřturma iřlemimiz finish tıklanarak tamamlandı.



- 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.

DHCP	Client IP Address	Name	Lease Expiration	Type	Unique ID	De
WIN-VCD7KTI7DGU	20.20.20.250	OZAN	7.11.2019 10:44:35	DHCP	7427ea3a2...	
IPv4	20.20.20.251	DESKTOP-FSF5PF0	7.11.2019 10:49:16	DHCP	00155d34d...	
Scope [20.20.20.0] DHCP						
Address Pool						
Address Leases						

- 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.

Server Manager Dashboard

WELCOME TO SERVER MANAGER

1 Configure this local server

2 Add roles and features

3 Add other servers to manage

4 Create a server group

5 Connect this server to cloud services

ROLES AND SERVER GROUPS

Roles: 1 | Server groups: 1 | Servers total: 1

File and Storage Services 1

Local Server 1

Manageability

Events

Performance

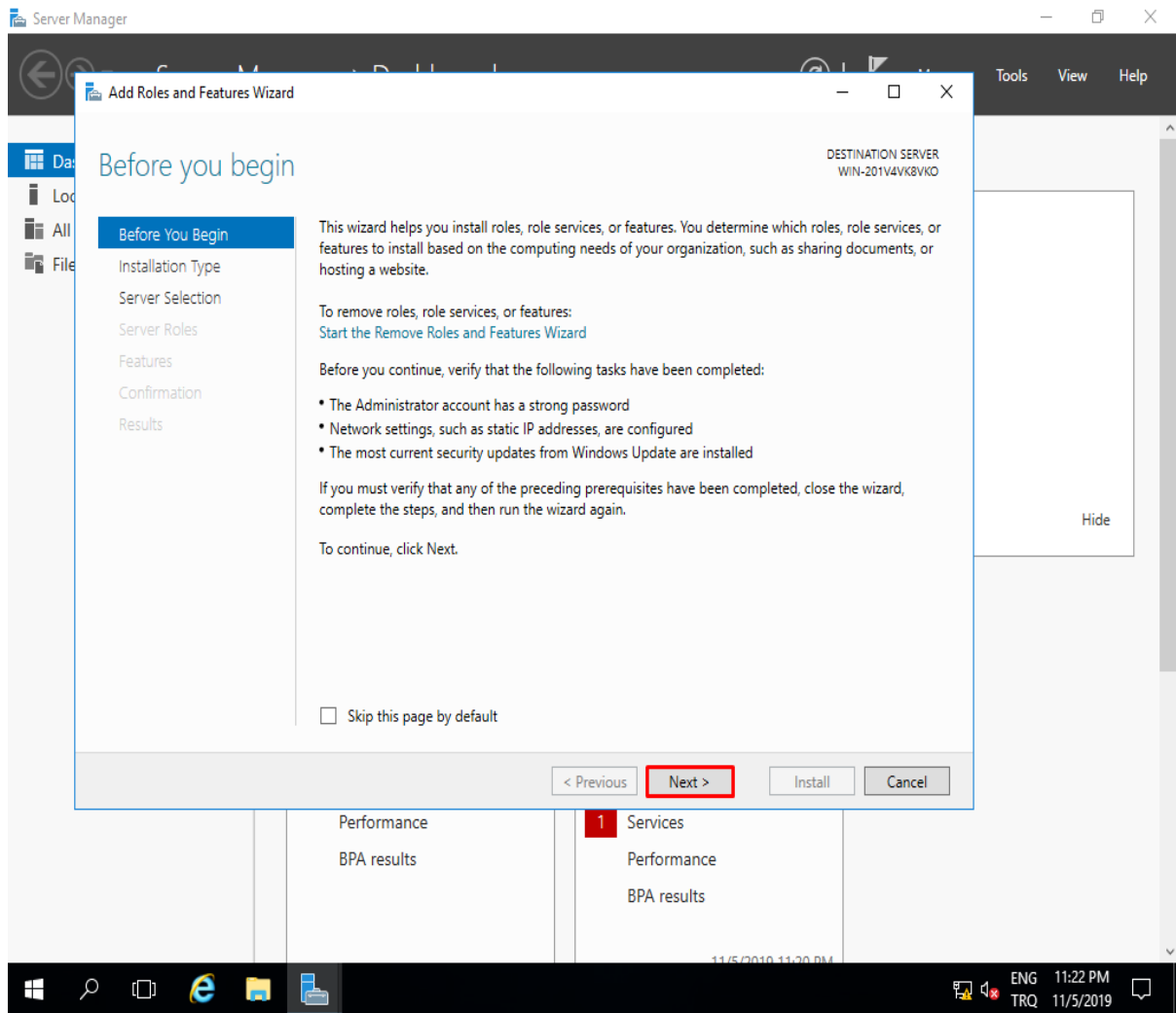
BPA results

Services

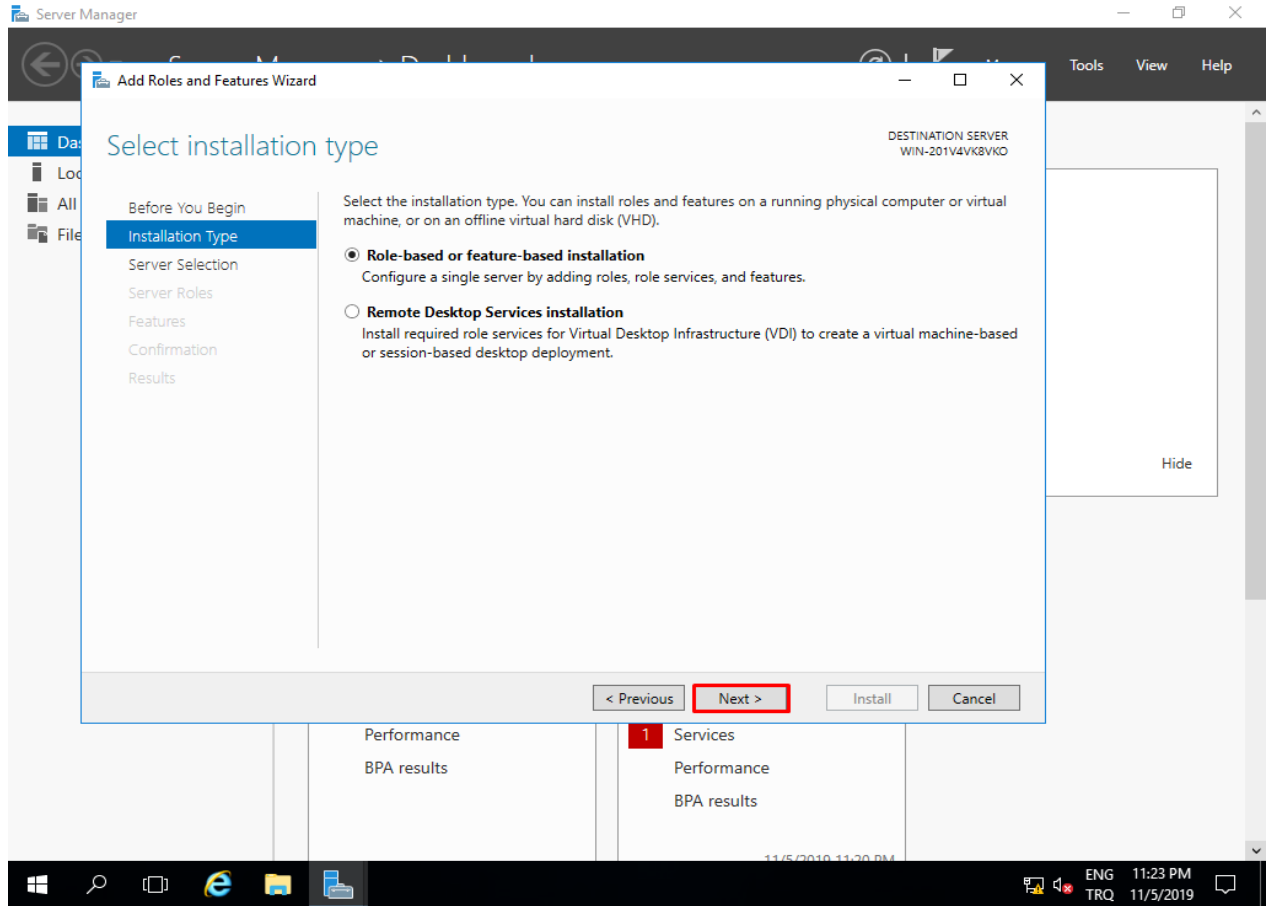
Performance

BPA results

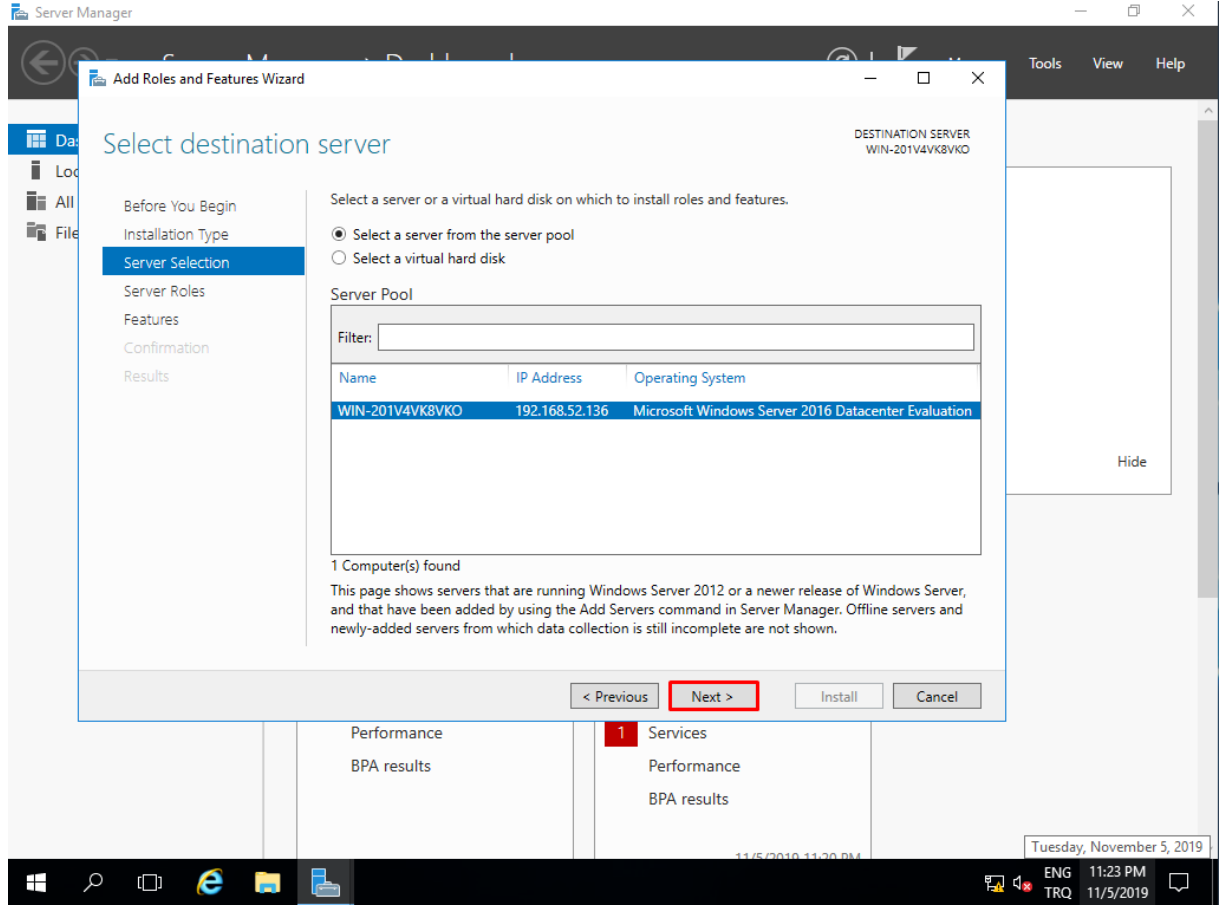
- Next diyoruz ve devam ediyoruz.



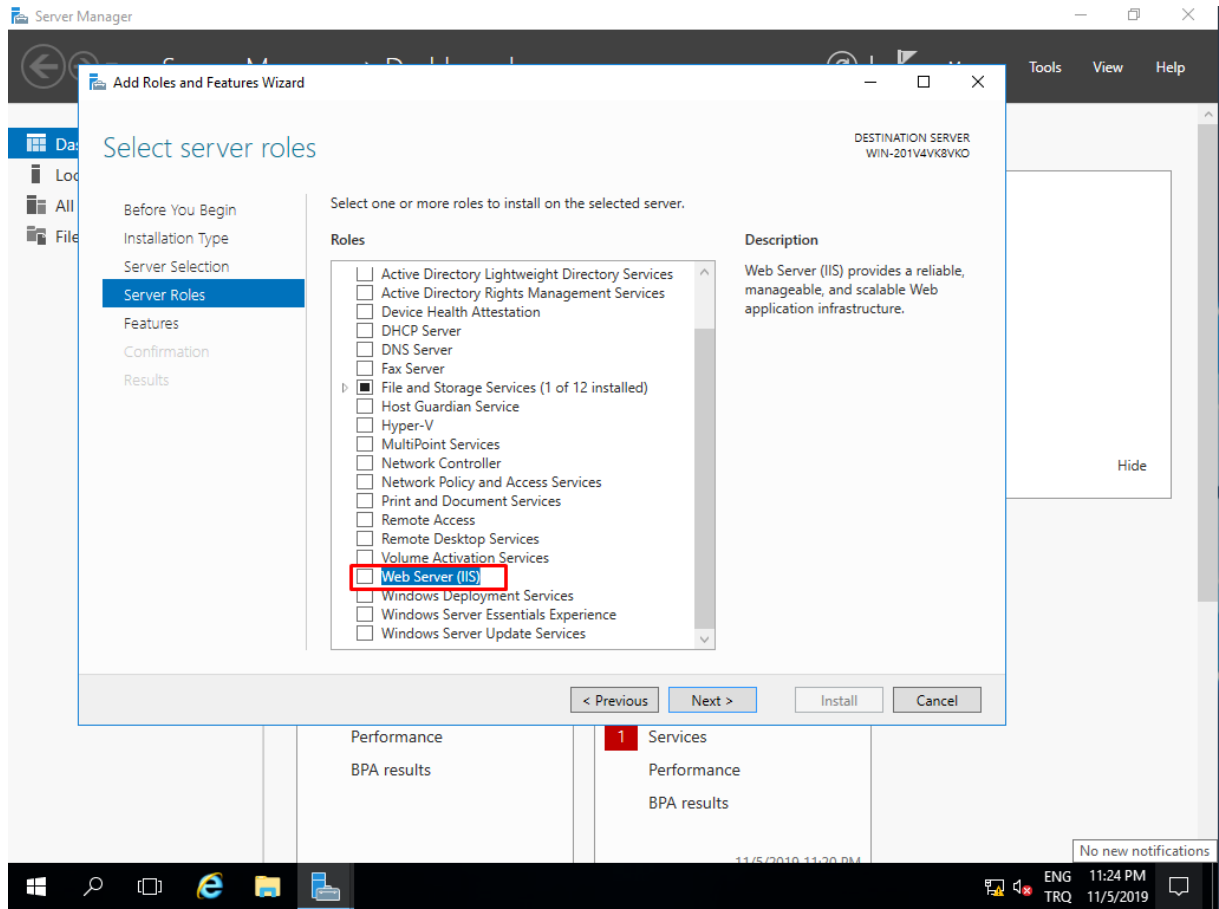
- Role-based or feature-based installation seçilir ve next dedikten sonra devam edilir.



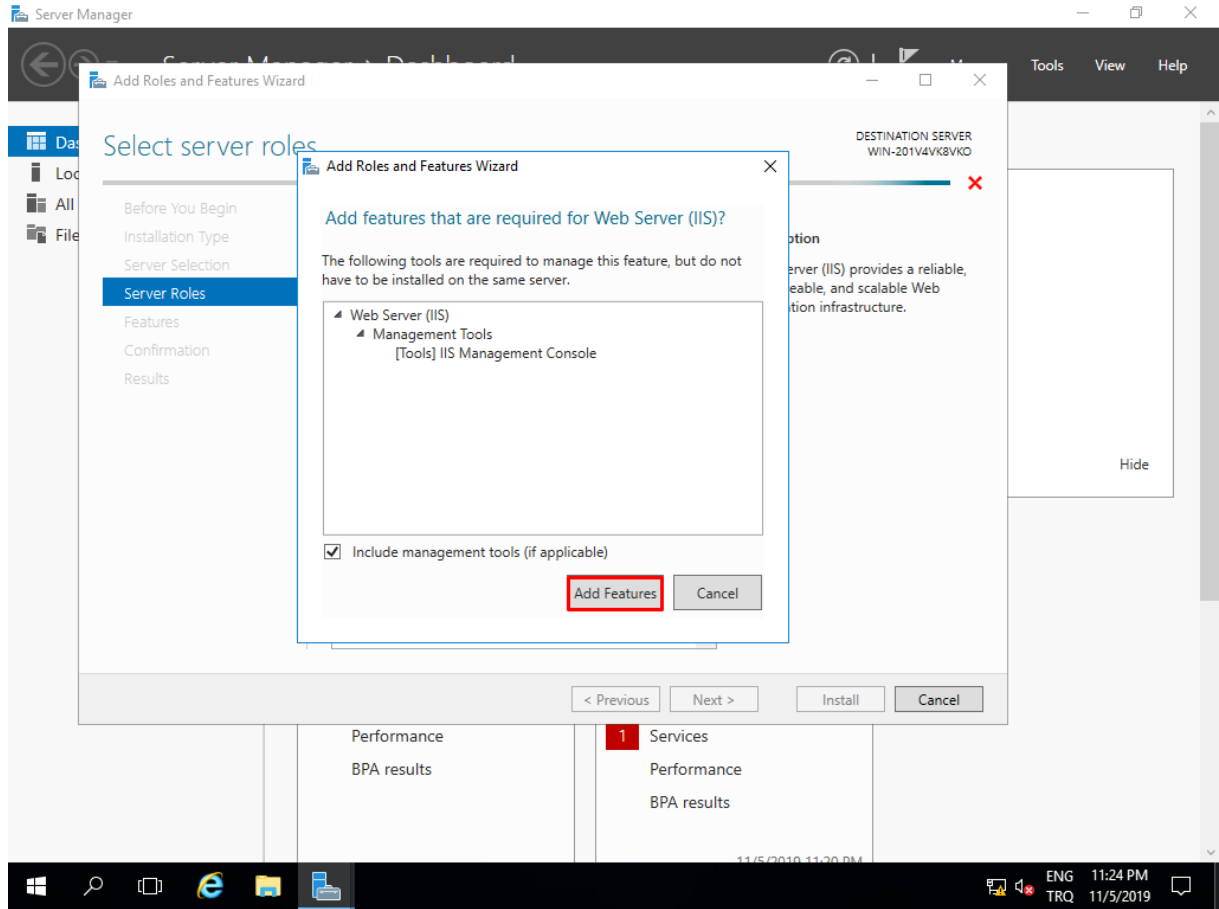
- PC name deęiřtirmeden kalmıř maalesef..řuan ki isim ve IP adresimizi gryoruz.Bu sunucumuza iřlem yapacaęımızı iřaretliyor next diyoruz.



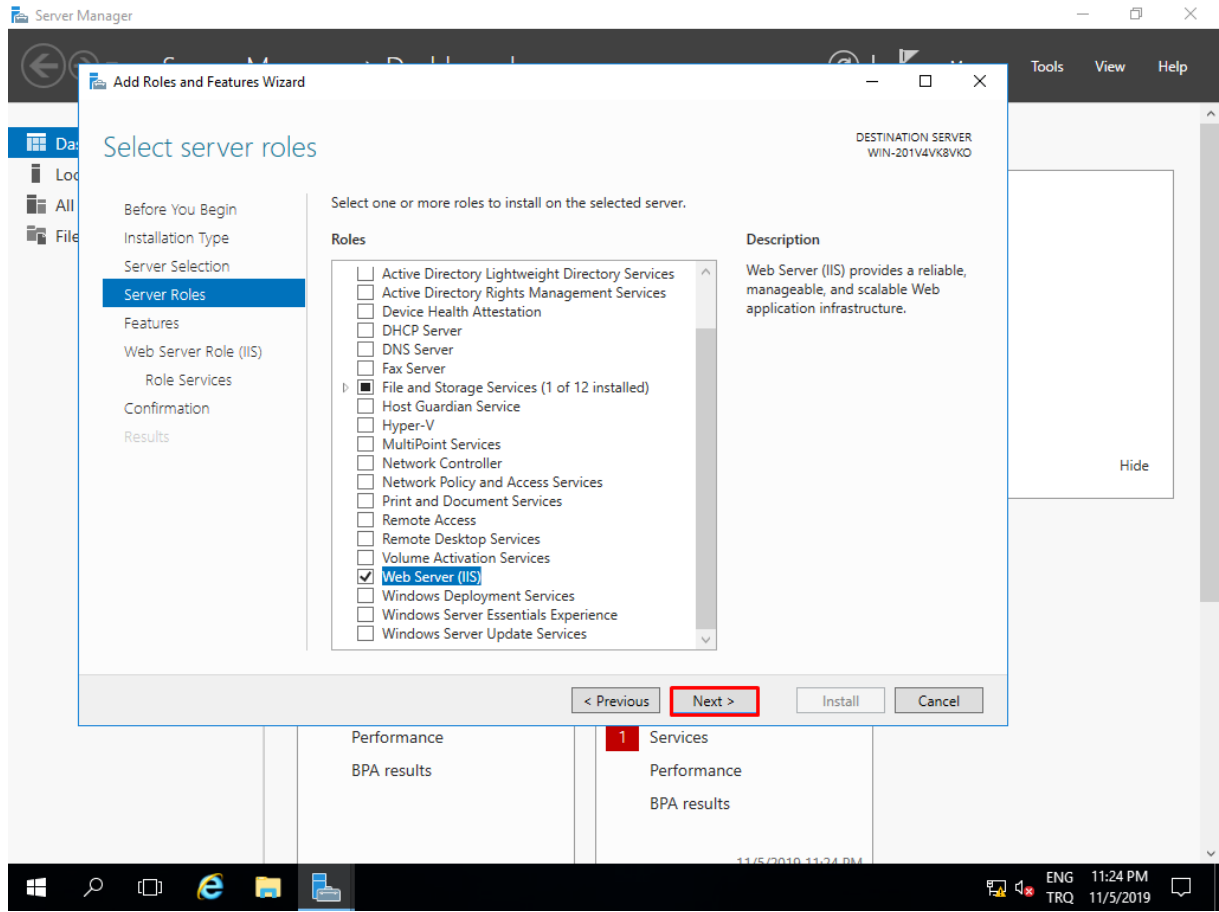
- Server Roles kısmından Web Server(IIS) seçilir ve next tıklanır.



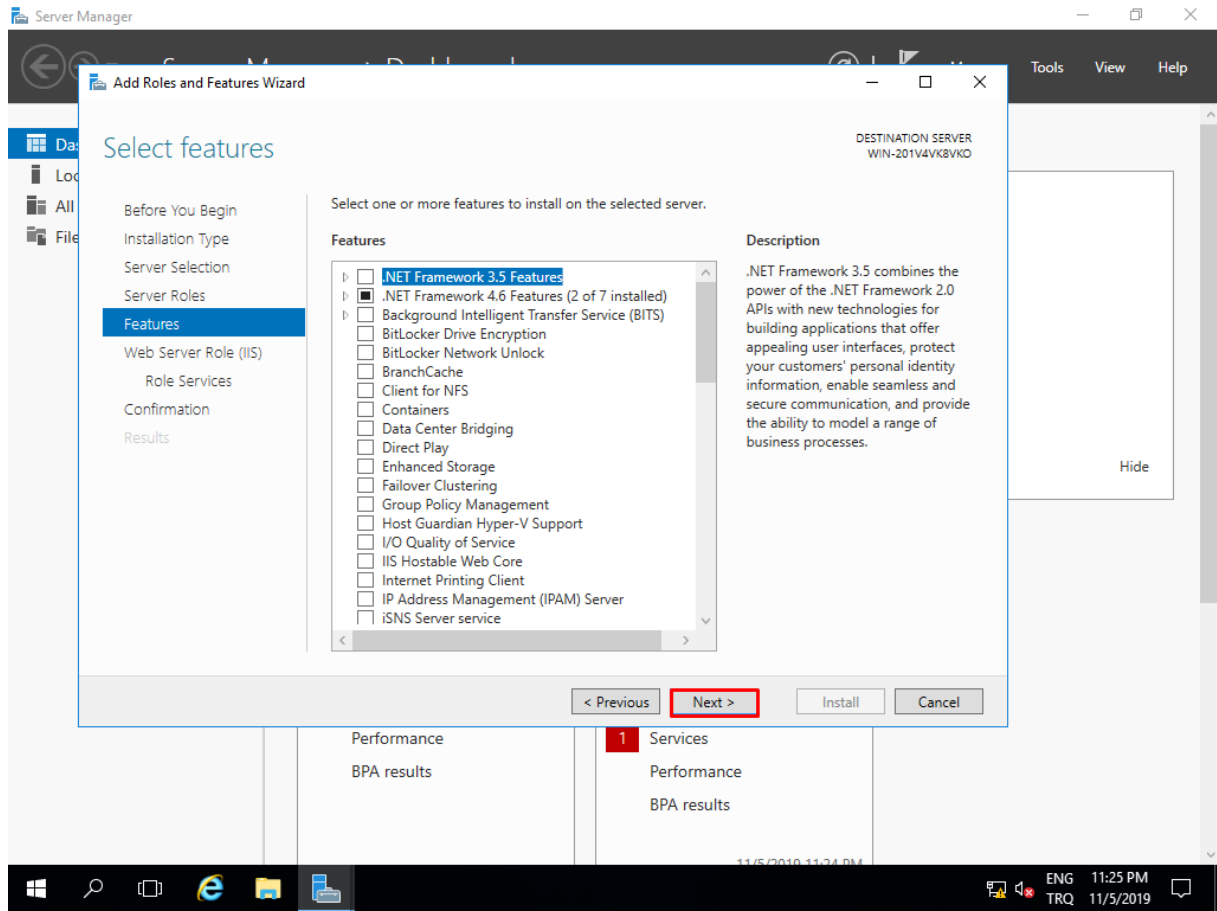
- Add Features **tıklanır** IIS Management Console **ekleneceğini** gösteriyor wizard bize.



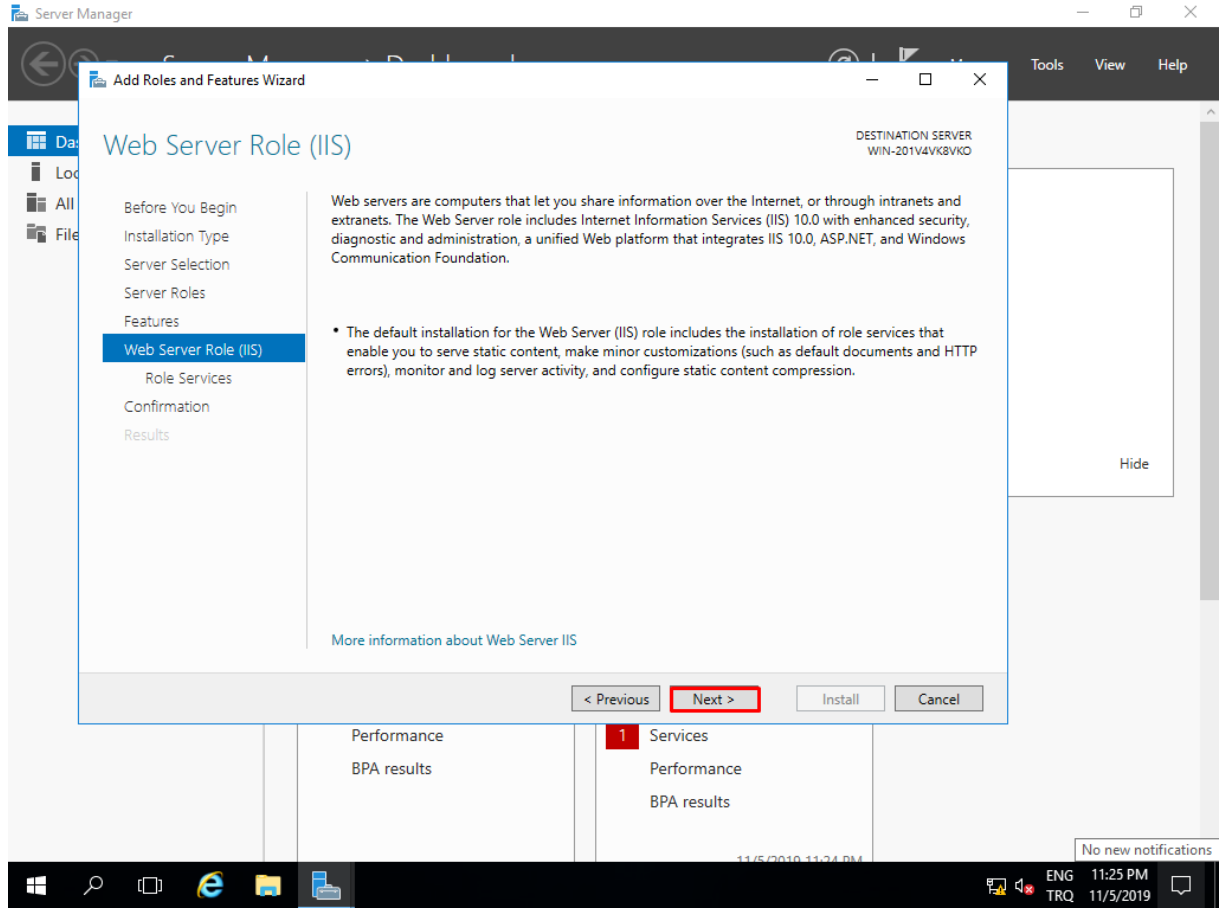
- Web Server (IIS) tıklanmış vaziyette görüyoruz ve next tıklanır devam edilir.



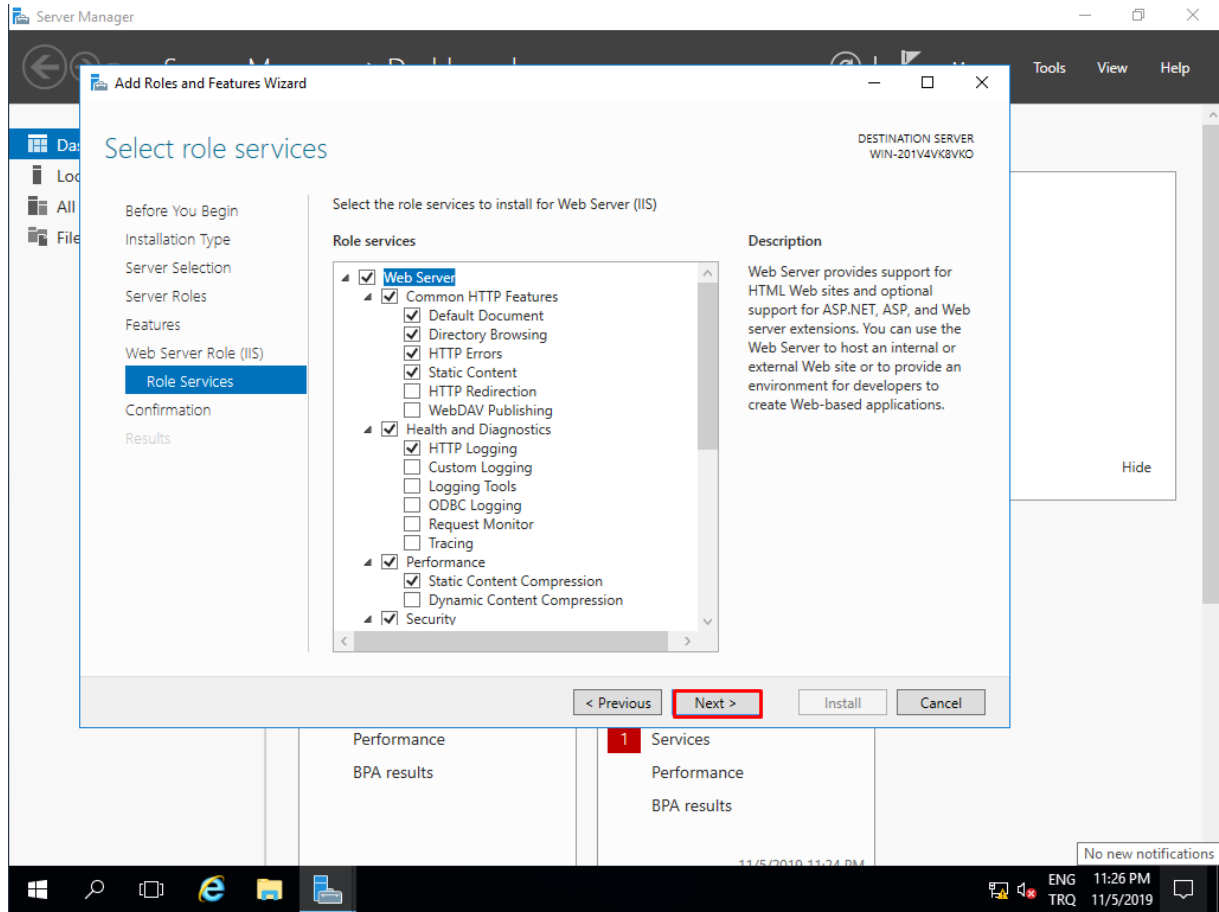
- Herhangi bir Features ekmediğimiz için sadece next demek yeterli olur.



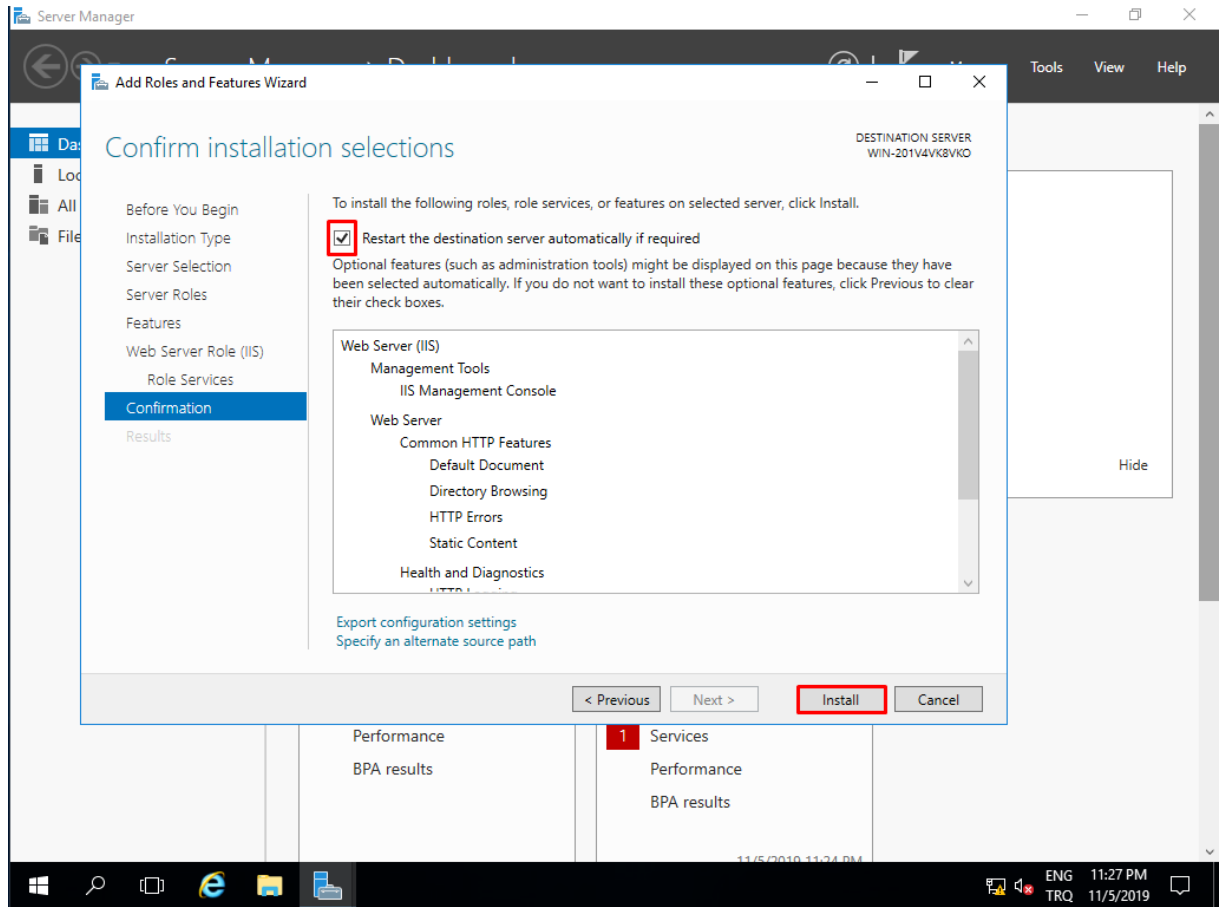
- IIS hakkında özet bilgi verilmiştir.Okuduktan next diyoruz adımlarımıza devam ediyoruz.



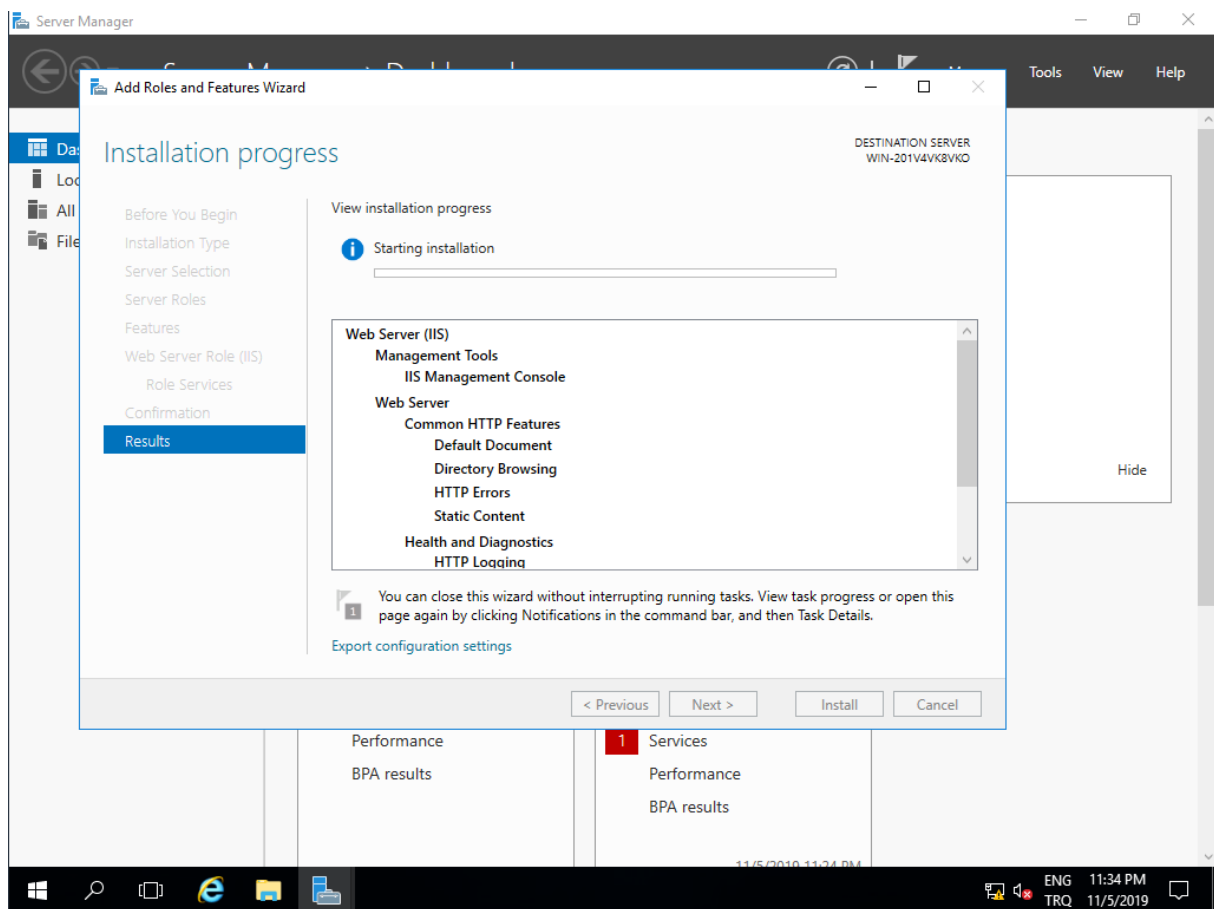
- Role Services kısmında seçili rolleri görüyoruz. Ekstra bir seçim yapmadık burada next dedikten sonra devam ediyoruz.



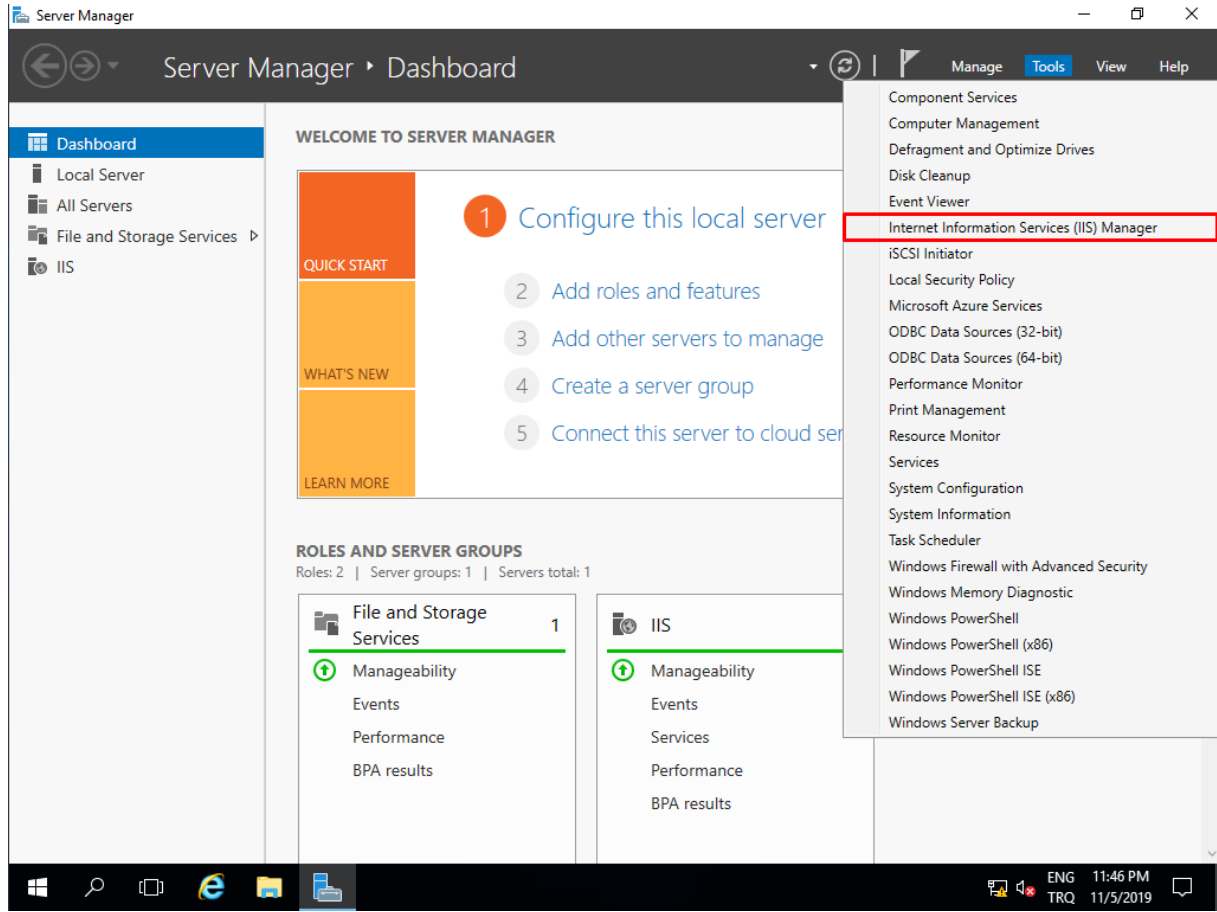
- **Restart the destination server automatically if required** seçildiği zaman eklemek istediğimiz IIS rolünü install ettikten sonra serverımız yeniden başlatılacaktır.



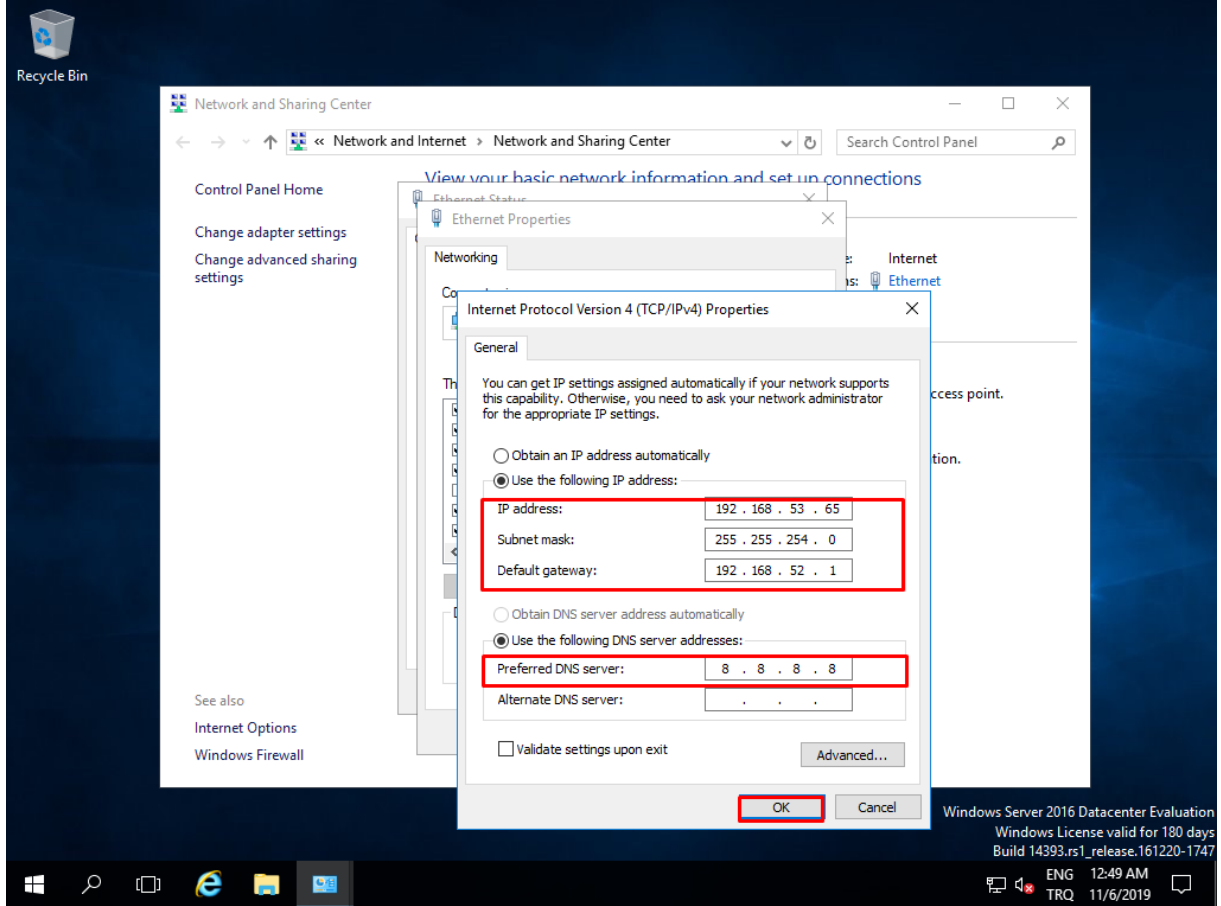
- Starting installation



- 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 deęerler verildi.



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

```
Administrator: Command Prompt
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
C:\Users\Administrator>ipconfig /release

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fe80::e00e:c968:772:ee36%11
    Default Gateway . . . . . :

C:\Users\Administrator>ipconfig /renew

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fe80::e00e:c968:772:ee36%11
    IPv4 Address. . . . . : 192.168.53.65
    Subnet Mask . . . . . : 255.255.254.0
    Default Gateway . . . . . : 192.168.52.1

Tunnel adapter isatap.{DCF89438-D992-44D7-8AAD-E26E26037634}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :

C:\Users\Administrator>
```

- 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 interfacelerin 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 internete 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
Router#
```

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

