ANTAMEDIA
HOTSPOT SOFTWARE

CONTROL WIFI AND ENGAGE YOUR CUSTOMERS

ANTAMEDIA

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1   Introduction

1.1   What is Antamedia HotSpot ?

Antamedia HotSpot is a WiFi Hotspot management software which helps you in controlling and billing your customers for the Internet usage. Antamedia HotSpot does not require any client software installations. It uses captive portal technology to display login page in the customer browser. Upon connecting to your network (using WiFi or cable), customer will be prompted to enter valid username and password to get the Internet access. After successful login, your customer will see the remaining time and bandwidth quota, expiration date and other relevant info. HotSpot keeps track of customer usage and shows warning message when the account is due to expire, helping a customer to refill the account and continue using your service without interruption. Software includes billing, statistics and reporting with many useful features. It is hardware independent and you can use any type of access points, routers, switches and other equipment to control your Internet.

2   Requirements

In order to control wireless users, Hotspot software has to be set up on a gateway computer in your network. For minimal Hotspot configuration you need 3 devices:
- Hotspot gateway PC
- Internet modem/router
- Wi-Fi device for providing access to users (Wi-Fi router or access point)

System requirements for Hotspot gateway PC:
**CPU**: 2 gigahertz (GHz) or faster 64-bit (x64) processor
RAM: 4 gigabyte (GB)
NIC: 2 network interface cards, for maximum performance we recommend using Intel PRO/1000 (EXPI9400PTBLK) network adapters
OS: Windows Server 2003, Server 2008, Server 2012, XP, Vista, Windows 7, Windows 8.1, Windows 10. We recommend Windows Server OS with DHCP and RRAS roles configured within OS.
We strongly encourage you to install HotSpot on SSD drive because it can significantly improve software performance. Most modern computers have one network card built in, the other one you will need to purchase and install to computer's PCI slot. Please connect one network card to the Internet router and other one to Wi-Fi device that your customers will use to access Hotspot. If you plan to use a Wi-Fi router to provide access for customers, please connect it to Hotspot server PC using LAN (not WAN) port.
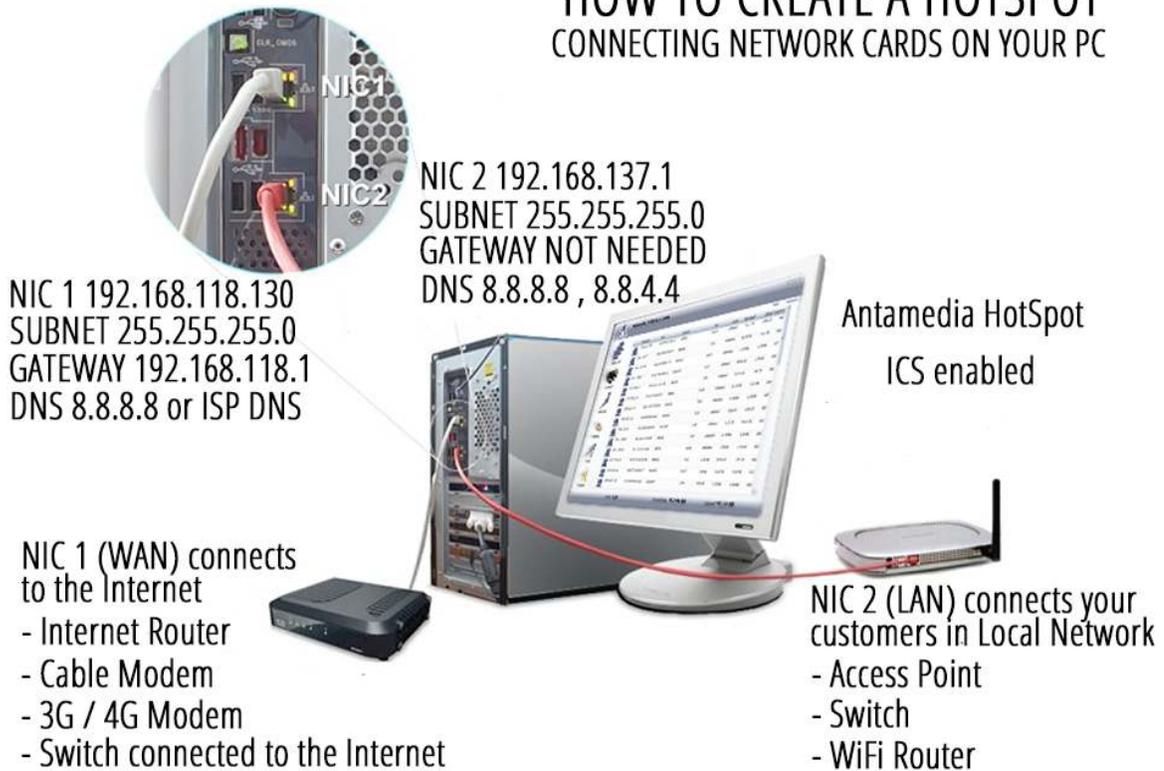

Please note that the Hotspot server network cards cannot be bridged. Hotspot (Internal) network should work in a different IP range than the External network. Please refer to the diagrams for the example IP settings.

2.1 Pre-installation Steps

Before installing Antamedia HotSpot software, please ensure that following conditions are met:

✓ Windows account on which software will be installed and used must has **administrative** privileges.

✓ Windows **User Account Control** is set to Never Notify level.

- Go to Windows Control Panel – User Accounts screen
- Click on Change User Account Control settings link
- Move the slider to Never Notify level and click OK
- Restart the computer to apply changes

✓ Windows **Smart Screen** is turned off.

- Go to Windows Control Panel - Security and Maintenance screen.
- Click on Change Windows Smart Screen settings
- In new window select "Don't do anything (turn off Windows Smart Screen)" and press on OK
- Restart the computer to apply changes

✓ Windows **Defender exclusions** are set.

- Go to Windows Control Panel - Windows Defender and click on Settings.
- Exclusion section press on "Add an exclusion" to exclude C:\Antamedia folder.
- Restart the computer to apply changes

✓ **Static IP address** is configured **on NIC1**, the network card connected to the Internet router/modem.

- It is recommended to set same IP address that is already assigned dynamically by router.
- To see which IP NIC1 has currently assigned, go to Windows Control Panel - Network and Sharing Center screen
- Click on Change adapter settings link and double click on the NIC1 (Internet) network adapter
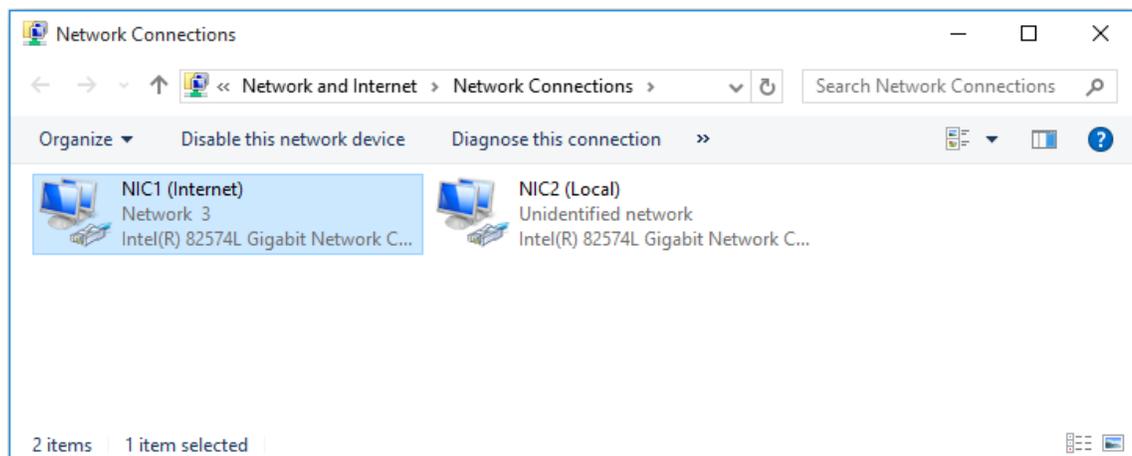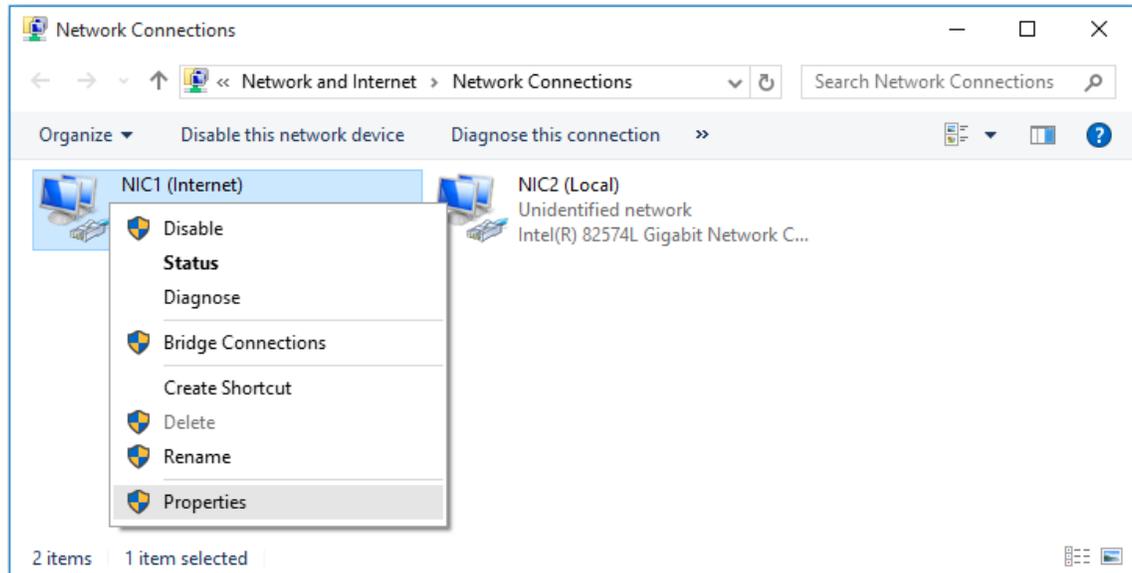
- From General tab press on Details button.
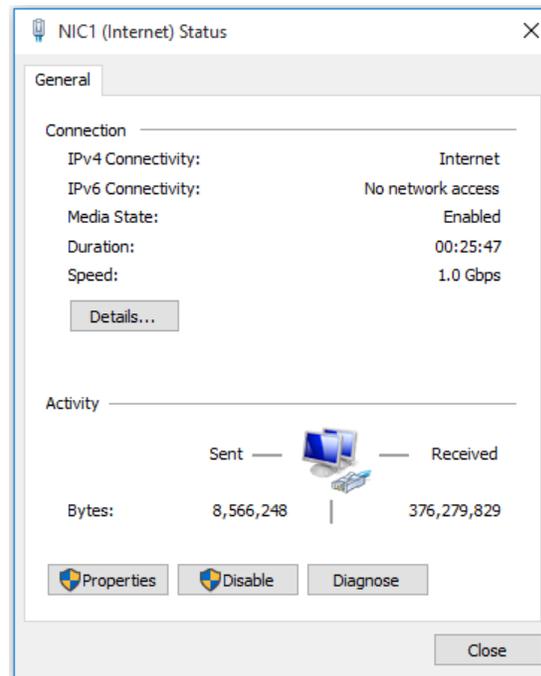
- Here you will see all current network connection details that you need to set as static
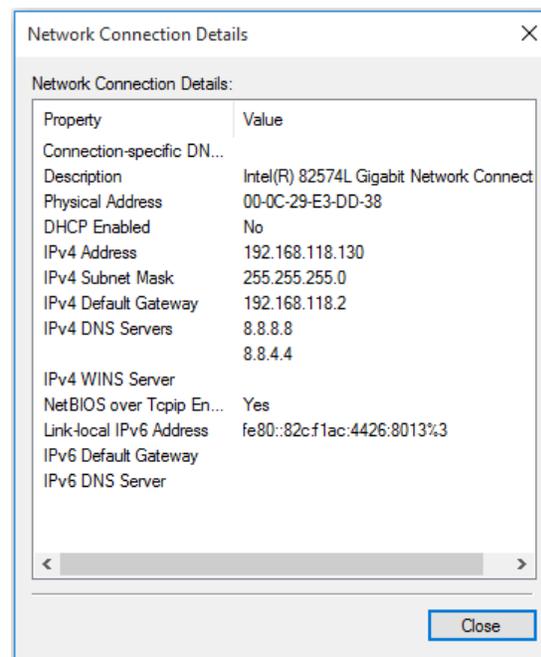
- After that go to Windows Control Panel – Network and Sharing Center screen.
- Click on Change adapter settings link.
- Right-click on NIC1 (Internet) and select Properties from menu.

- Select Internet Protocol Version 4 (TCP/IPv4) and click Properties button.
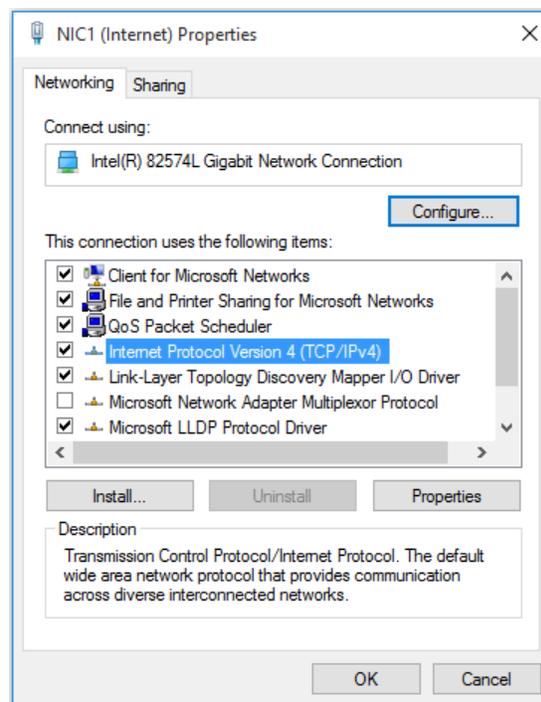
- Click Use the following IP address radio button and enter details that you get from ipconfig previously
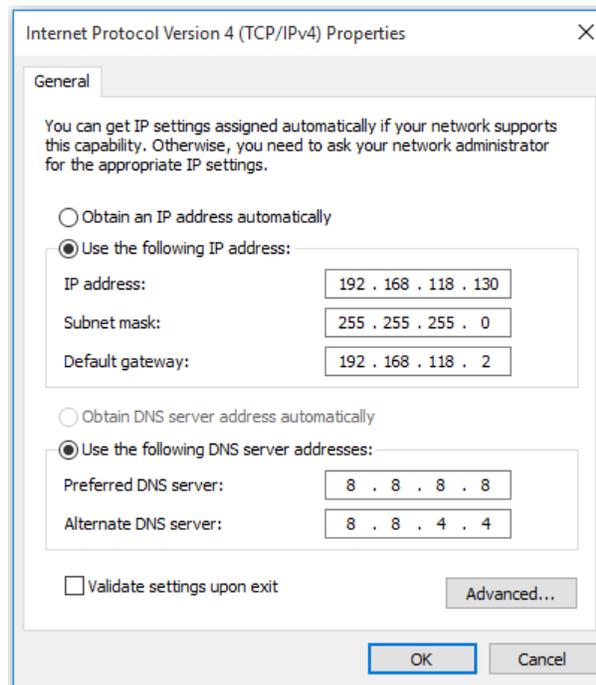
- Enter IP address (e.g. 192.168.118.130)
- Click in Subnet Mask field, value will be set automatically based on IP address, be sure that is same as in Network Connection Details
- IP address of the default gateway (IP of the Internet router).
- Enter DNS addresses, it is recommended to use DNS addresses of your ISP or public DNS service such as Google (8.8.8.8, 8.8.4.4).
- Click OK and close all dialog windows

✓ **Static IP address** is configured on **NIC2**, the network card connected to your internal network.

  Please note that for this card you need to configure IP address (e.g. 192.168.9.1) and subnet mask (e.g. 255.255.255.0) but not Gateway IP

✓ There are no applications running on gateway PC that are using port 78, 80, 81, 82, 443, 463, 614, 12010, 1700, 1812, 1813 (IIS, proxy software).

✓ Set computer to act as gateway on network using Windows Internet Connection Sharing / Routing and Remote Access with DHCP Server role or with HotSpot NAT.

✓ **Note:** that Internet modem/router cannot be used as DHCP server for your local network clients. DHCP server must be configured only for the local network. Windows 7, Windows 8.1 and Windows 10 DHCP Server can not provide more than 253 IP addresses for local network. If you want to use more than 253 addresses you can set it from Windows Server 2003, Windows Server 2008 or Windows Server 2012 DHCP Server role. Also, you will need to set subnet mask which will give you this ability. Be sure that you prepare all network devices on local network to use same subnet mask. Bellow are some of examples

IP range (network - broadcast)	Subnet Mask	IP Quantity
192.168.137.0 - 192.168.137.255	255.255.255.0	256
192.168.136.0 - 192.168.137.255	255.255.254.0	512
192.168.136.0 - 192.168.139.255	255.255.252.0	1024
192.168.136.0 - 192.168.143.255	255.255.248.0	2048
192.168.128.0 - 192.168.143.255	255.255.240.0	4096
192.168.128.0 - 192.168.159.255	255.255.224.0	8192
192.168.128.0 - 192.168.191.255	255.255.192.0	16384
192.168.128.0 - 192.168.255.255	255.255.128.0	32768
192.168.0.0 - 192.168.255.255	255.255.0.0	65536

2.2   Network Topology Examples

Here you can see several network topology examples that can give you better insight into how you should set switches, access points and routers on a local network in order to control it from HotSpot gateway PC.
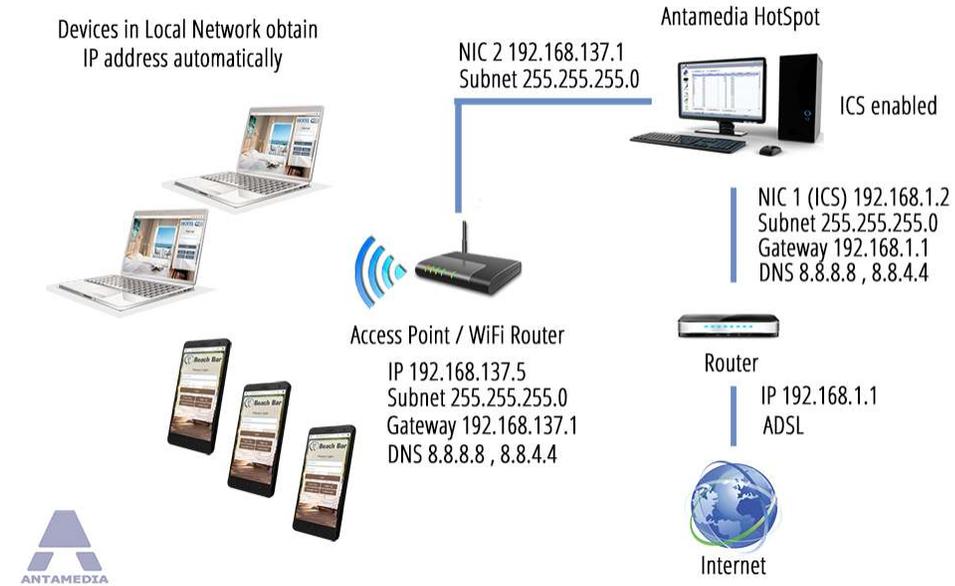
NETWORK TOPOLOGY EXAMPLE

NETWORK TOPOLOGY EXAMPLE

Devices in Local Network obtain
IP address automatically

Antamedia HotSpot

NIC 2 192.168.137.1
Subnet 255.255.255.0

ICS enabled

Access Point / WiFi Router

IP 192.168.137.10
Subnet 255.255.255.0
Gateway 192.168.137.1
DNS 8.8.8.8 , 8.8.4.4

Switch

NIC 1 (ICS) 192.168.1.2
Subnet 255.255.255.0
Gateway 192.168.1.1
DNS 8.8.8.8 , 8.8.4.4

Router

IP 192.168.1.1
ADSL

Access Point / WiFi Router

IP 192.168.137.20
Subnet 255.255.255.0
Gateway 192.168.137.1
DNS 8.8.8.8 , 8.8.4.4

Internet

NETWORK TOPOLOGY EXAMPLE

Access Point / WiFi Router
IP 192.168.137.10
Subnet 255.255.255.0
Gateway 192.168.137.1
DNS 8.8.8.8 , 8.8.4.4

Antamedia HotSpot

NIC 2 192.168.137.1
Subnet 255.255.255.0

ICS enabled

NIC 1 (ICS) 192.168.1.2
Subnet 255.255.255.0
Gateway 192.168.1.1
DNS 8.8.8.8 , 8.8.4.4

Access Point / WiFi Router
IP 192.168.137.20
Subnet 255.255.255.0
Gateway 192.168.137.1
DNS 8.8.8.8 , 8.8.4.4

Router

IP 192.168.1.1
ADSL

Ethernet Connection
over Switch

Devices in Local Network obtain IP address automatically

Internet

3   Windows 7, 8.1 and 10

Antamedia software can be set on any Windows OS. Here will be given instructions for configuration of Windows Connection Sharing that apply to Windows 7, Windows 8.1 and Windows 10.

To set up properly Antamedia HotSpot on any of those Windows OS, please follow these steps:
1. Complete pre-installation steps ⌐3¬
2. Set computer as gateway on network using Windows Connection Sharing or HotSpot NAT
3. Install and configure HotSpot software

3.1   Windows Connection Sharing with DHCP

Please follow these steps to configure computer as gateway on network using Windows Connection Sharing on Windows 7, Windows 8.1 and Windows 10:

1. Go to Windows **Control Panel** – **Network and Sharing Center** screen.
2. Click on Change adapter settings link. **Right-click** on **NIC1 (Internet)** and select **Properties** from menu
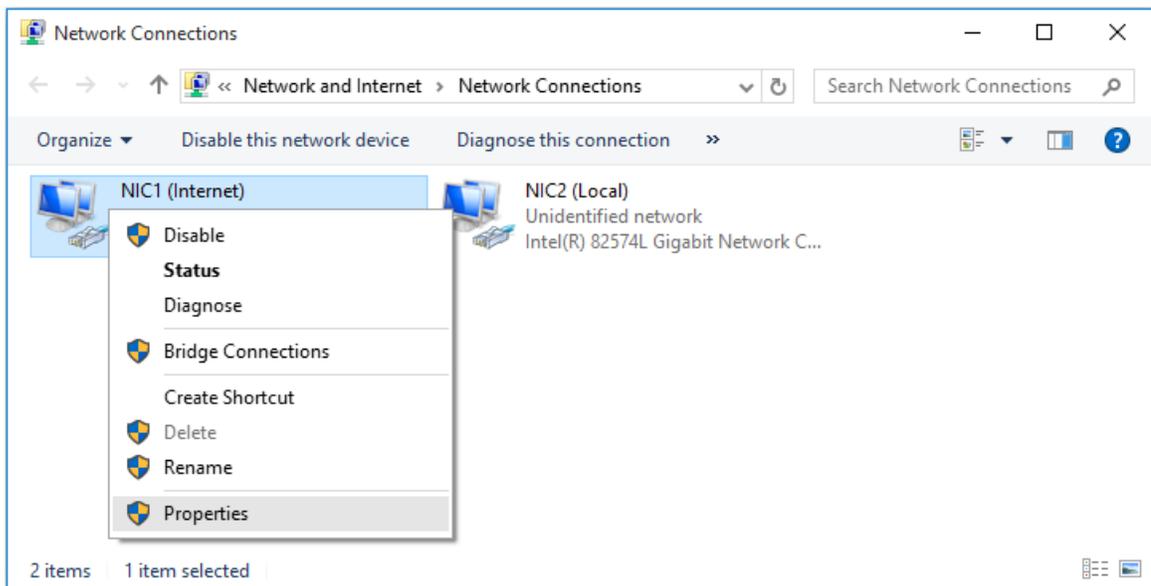
3. From **Properties** menu go to **Sharing** tab.
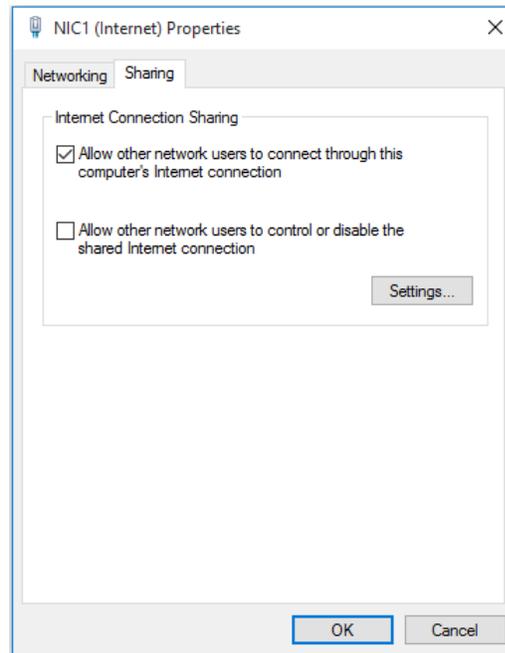
4. Select only first option "**Allow other network users to connect through this computer's Internet connection**" and press on **OK**.
5. Windows will give **Local Network** pop-up window with notification what actually is set and what you can expect. Here you need to press on **Yes**.
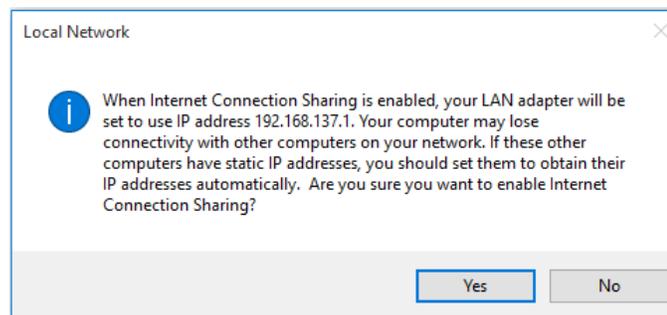
6. After that your **NIC2 (Local)** network adapter will have static IP address set to **Windows default values**, **192.168.137.1** and subnet mask **255.255.255.0**.
Windows DHCP Server is activated and DHCP leases are given in 192.168.137.x range

7. You can check **NIC2 (Local)** network adapter settings. Make Right-click menu on **NIC2 (Local)** and go to **Properties**.
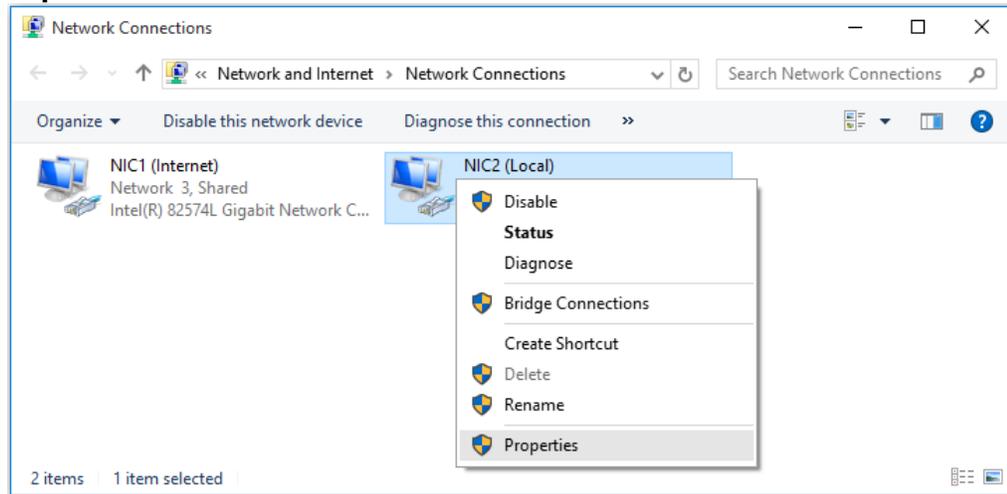
8.

9. From NIC2 (Local) network adapter Properties find **Internet Protocol Version 4 (TCP/IPv4)** select it and press on **Properties** button.

10. From New window you will see current configuration for **NIC2 (Local)** network adapter.
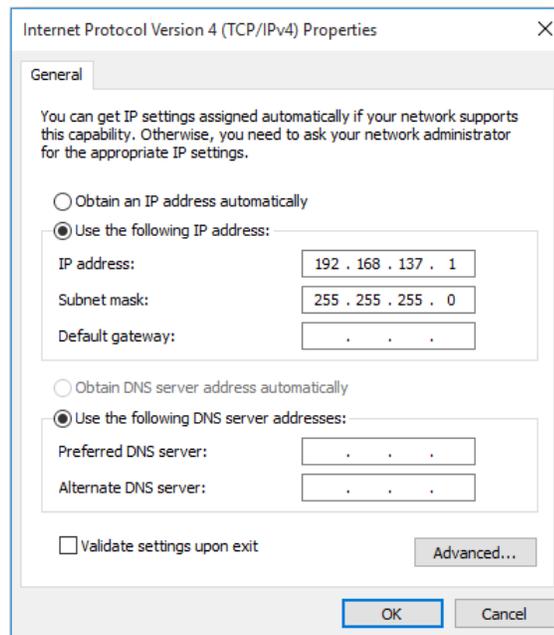
3.2   Disabling of Windows DHCP

Windows DHCP Server is enabled by default when Windows Connection sharing is activated on **NIC1 (Internet)** network adapter.

Only one DHCP Server can be used on local network. If you plan to use DHCP Server from your Router/ Access Point for local computers on network, you will need to disable Windows DHCP Server first.

Disabling of Windows DHCP Server which is activated with Windows Connection Sharing can be done easy.
All you need to do is to change **NIC2 (Local)** network adapter IP address to some other IP address.
Here is example where instead of default Windows IP address **192.168.137.1** and subnet mask **255.255.255.0** is set IP address **192.168.10.1** with Subnet mask **255.255.255.0**
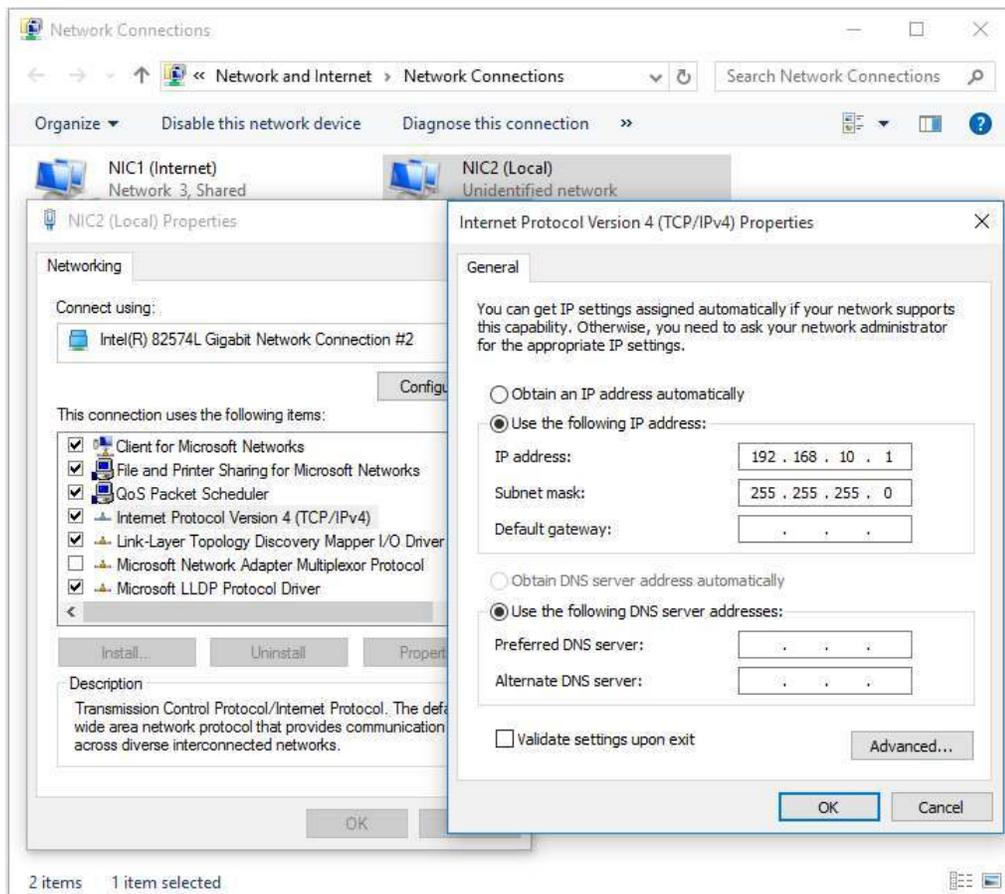
Client computers now don't receive DHCP leases from Windows on gateway computer. DHCP Server should be set and configured from the Router/Access Point on local network.

4   Windows Server 2003

Antamedia software can be set on Windows Server 2003 the same way as on Windows 7, Windows 8.1 or Windows 10. However, for medium to large sized networks (more than 200 users), we recommend using Windows Server's DHCP service to provide IP addressing and Windows Routing and Remote Access to share the connection.

To set up Antamedia HotSpot on Windows Server 2003, please follow these steps:
1. Complete pre-installation steps ⌐3⌐
2. Install and configure Windows DHCP server service
3. Install and configure Windows Routing and Remote Access service
4. Install and configure HotSpot software

4.1   Configuring DHCP service

Note: If you configure a DHCP server on computer, you have to disable DHCP server option on all other devices (Wi-Fi routers, Access Points etc.) in the same subnet. Follow these steps to install and configure DHCP service:

1. To start DHCP server installation, go to **Start Menu**, select **Manage Your Server** and click **Add Or Remove A Role** link in the window.
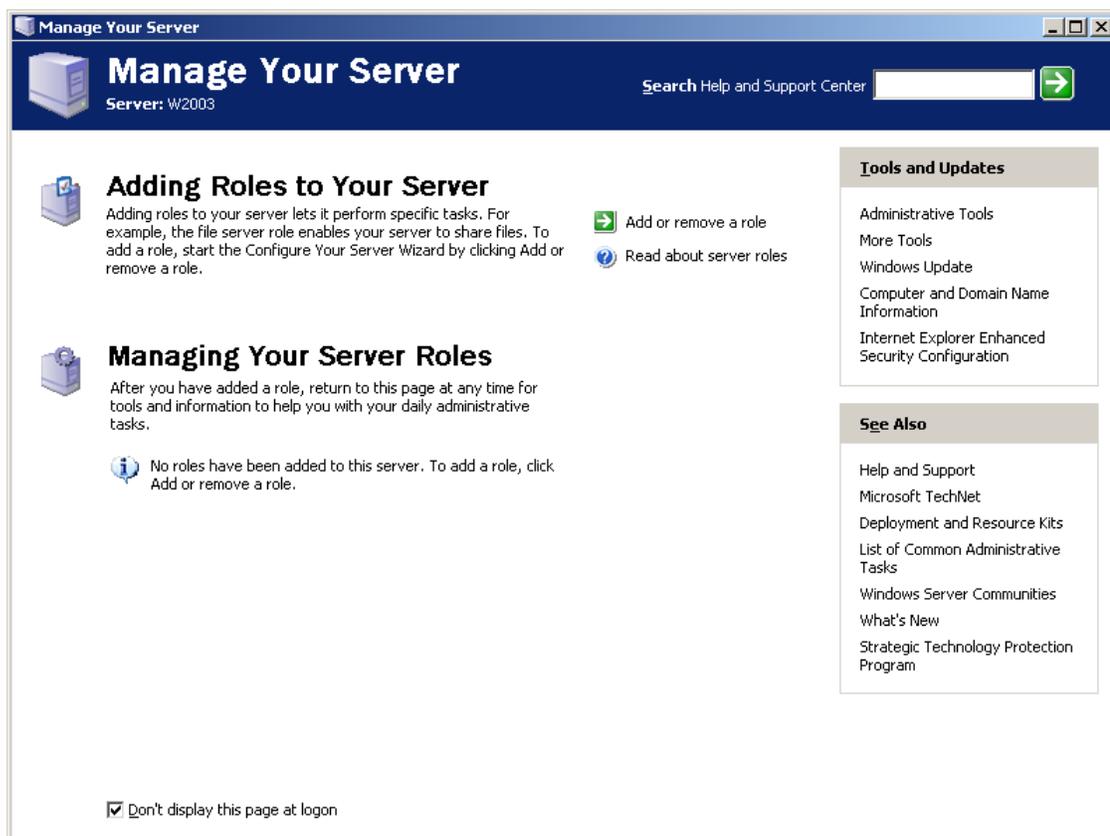
2. Click **Next** in the first screen and wait while Windows analyzes network connections.
3. On the "Configuration options" page select **Custom configuration** and click **Next**.
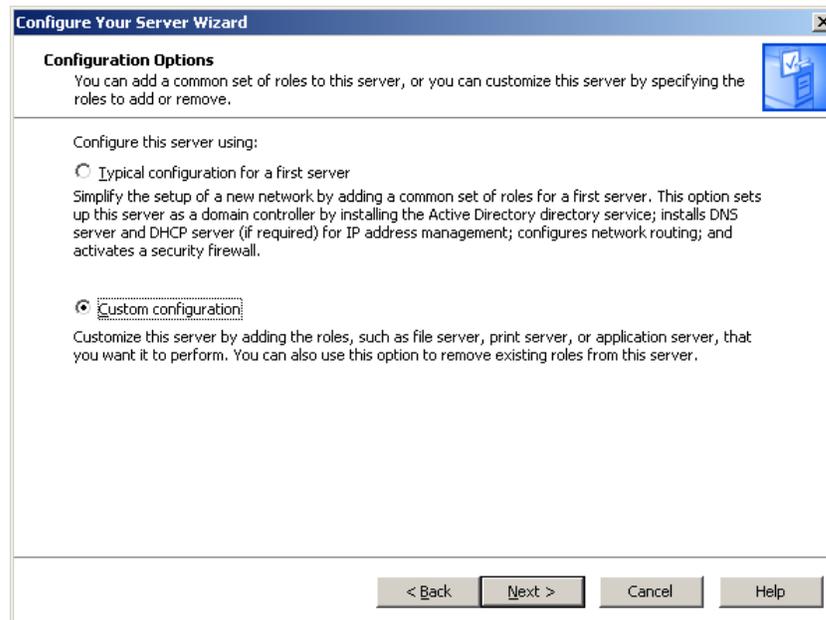
4. In the list select **DHCP server** and click **Next**.
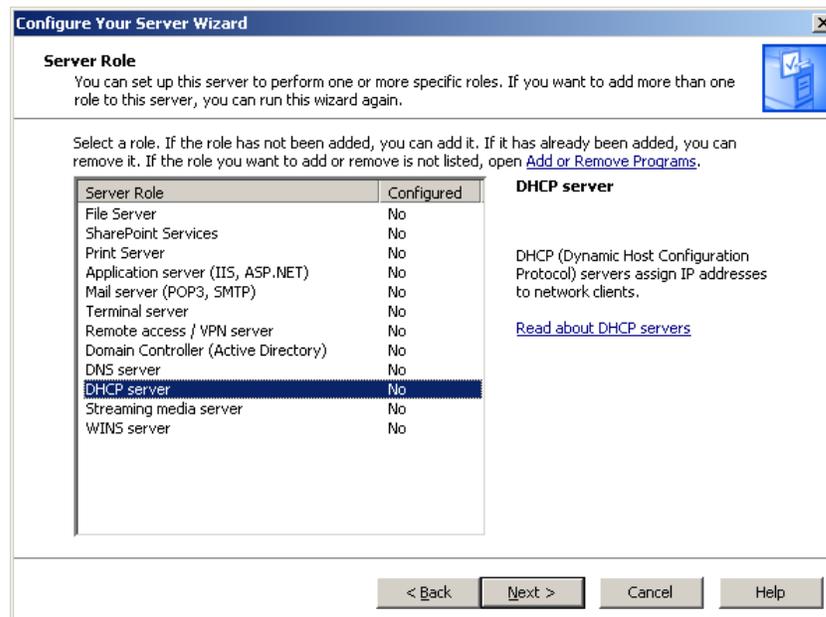
5. Click **Next** on the summary page, after a few moments **New Scope Wizard** window will open, click **Next** button.
6. Enter the name and description for the scope.
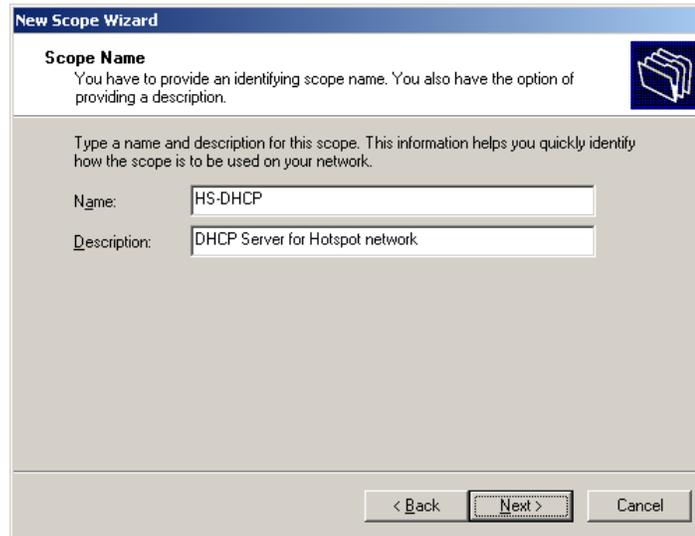
New Scope Wizard

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: HS-DHCP

Description: DHCP Server for Hotspot network

< Back   Next >   Cancel

7. Enter the range of IP addresses and subnet mask that will be distributed to clients.
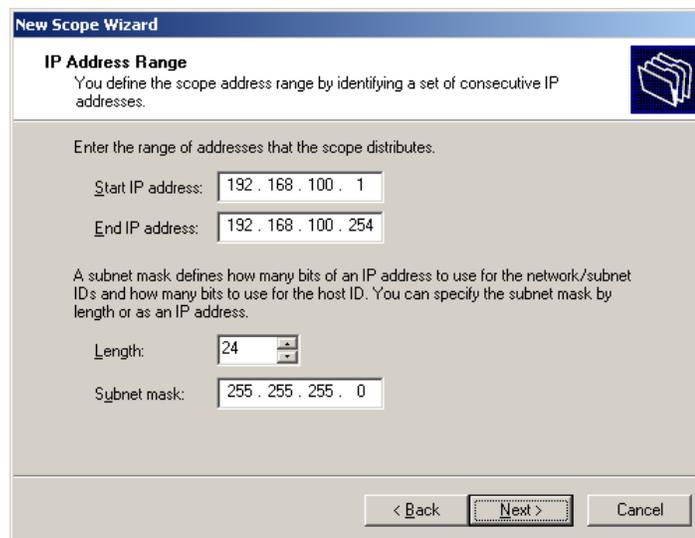
New Scope Wizard

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

Enter the range of addresses that the scope distributes.

Start IP address: 192 . 168 . 100 . 1

End IP address: 192 . 168 . 100 . 254

A subnet mask defines how many bits of an IP address to use for the network/subnet IDs and how many bits to use for the host ID. You can specify the subnet mask by length or as an IP address.

Length: 24

Subnet mask: 255 . 255 . 255 . 0

< Back   Next >   Cancel

8. Add the range of IP addresses to be excluded from distribution to clients. You will need to exclude static IPs in the network (Wi-Fi routers, Access Points, other servers etc.).

9. Specify **Lease Duration** for the scope. For wireless networks we recommend setting duration to 8 hours.

10. On the "Configure DHCP Options" page select **Yes, I want to configure these options now** and click **Next**.

11. Enter the Default Gateway's IP address that will be distributed to clients, click **Add** and then **Next**.
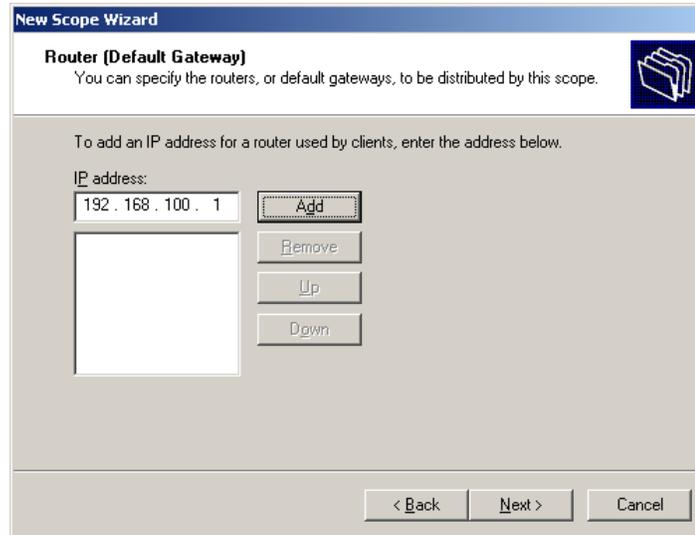
12. Enter the DNS server IP addresses that will be distributed by the DHCP server and given to the client. We recommend using DNS addresses of your ISP or free public DNS servers.
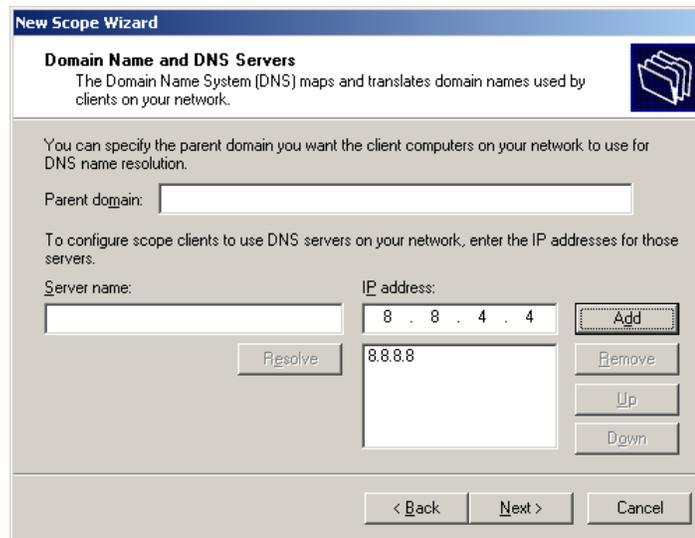
13. You can set IP addresses of the WINS servers on the "WINS Server" page if needed.

14. On the "Activate Scope" page select **Yes, I want to activate this scope now** and click **Next**.

15. Click **Finish** in both dialog windows.

4.2 Configuring Routing

Follow these steps to configure connection sharing by using Routing And Remote Access Services on Windows 2003:

1. Go to **Start Menu** and open **Administrative Tools - Routing And Remote Access** window. Right-click server name and select **Configure and Enable Routing and Remote Access**.
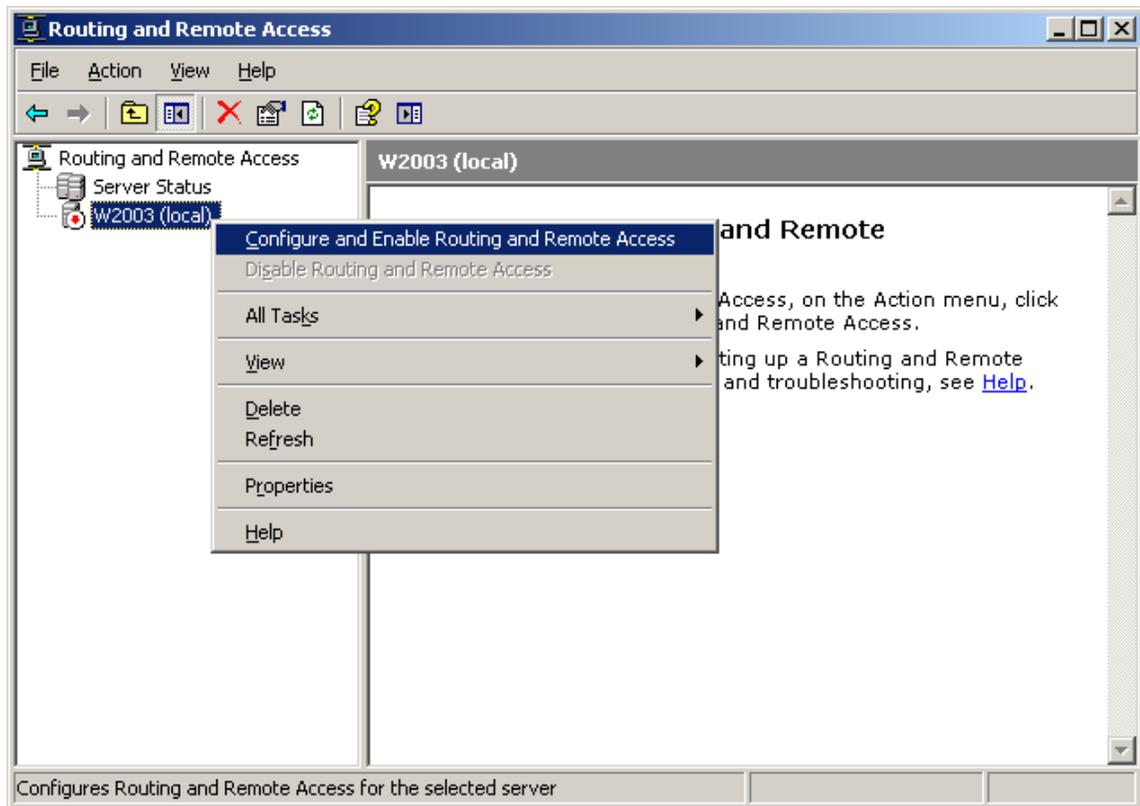
2. On the Welcome To The Routing And Remote Access Server Setup Wizard page, click **Next**.
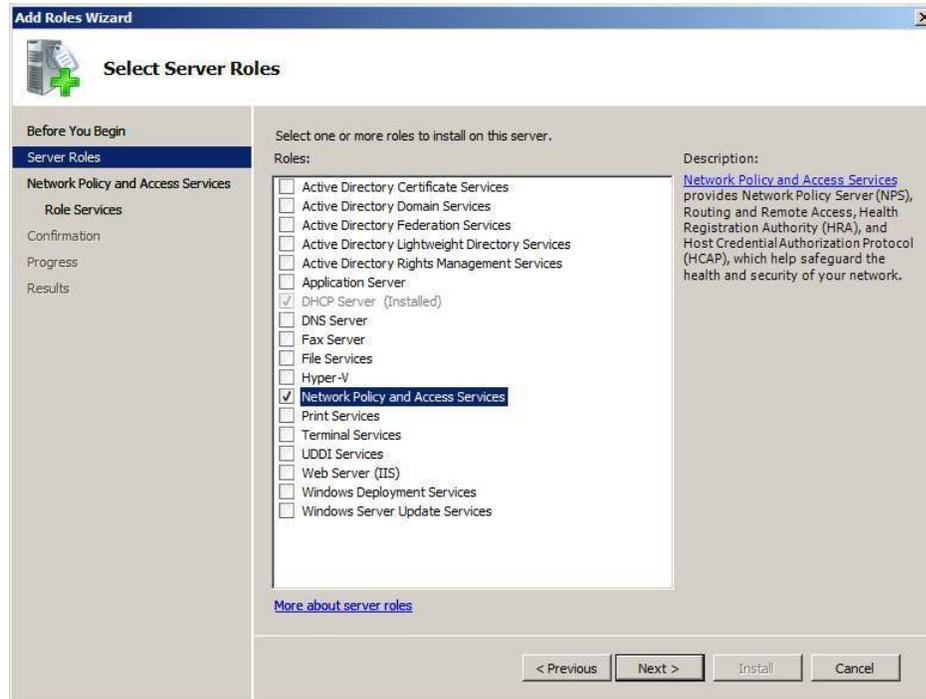
3. On the Configuration page, select **Network Address Translation (NAT)**, and then click **Next**.
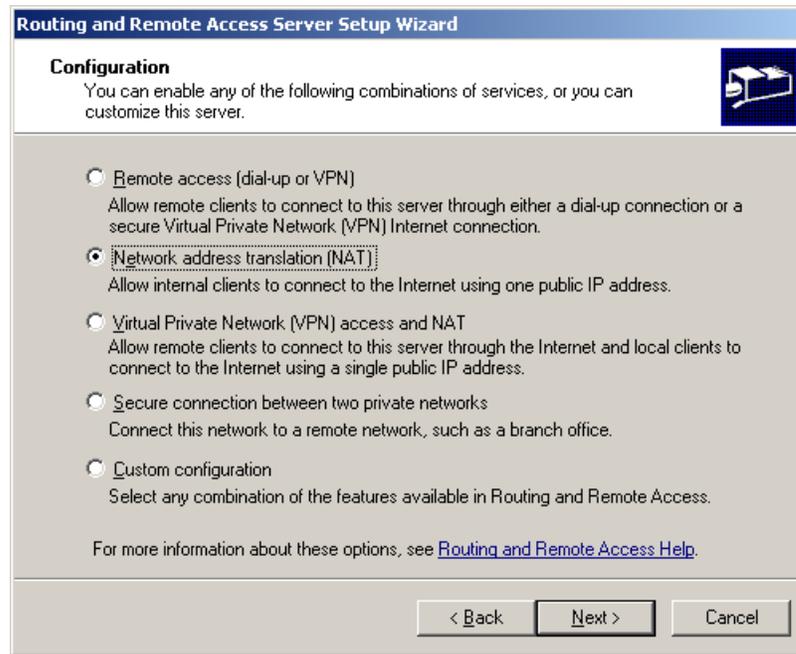
4. On the NAT Internet Connection page, select the interface that connects the server to the Internet. Then click **Next**.
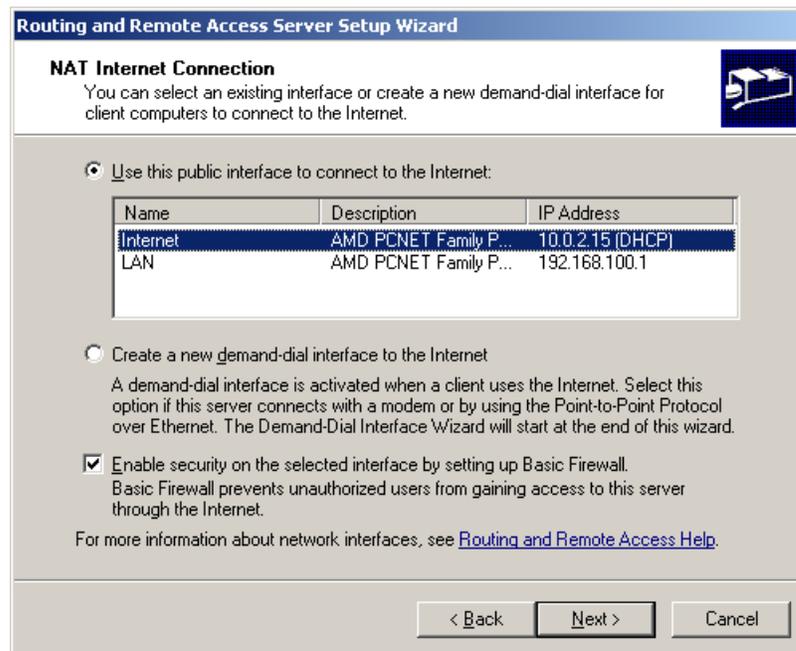
5. On the Completing The Routing And Remote Access Server Setup Wizard page, click **Finish**.

5 Windows Server 2008

Antamedia software can be set on Windows Server 2008 the same way as on Windows 7, Windows 8.1 or Windows 10. However, we recommend using Windows Server's DHCP service to provide IP addressing and Windows Routing and Remote Access to share the connection.

To set up Antamedia HotSpot on Windows Server 2008, please follow these steps:
1. Complete pre-installation steps 3
2. Install and configure Windows DHCP server service
3. Install and configure Windows Routing and Remote Access service
4. Install and configure HotSpot software

5.1 Configuring DHCP service

Follow these steps to install and configure DHCP service:

1. To start the DHCP installation process, click **Add Roles** from **Server Manager - Roles** screen.
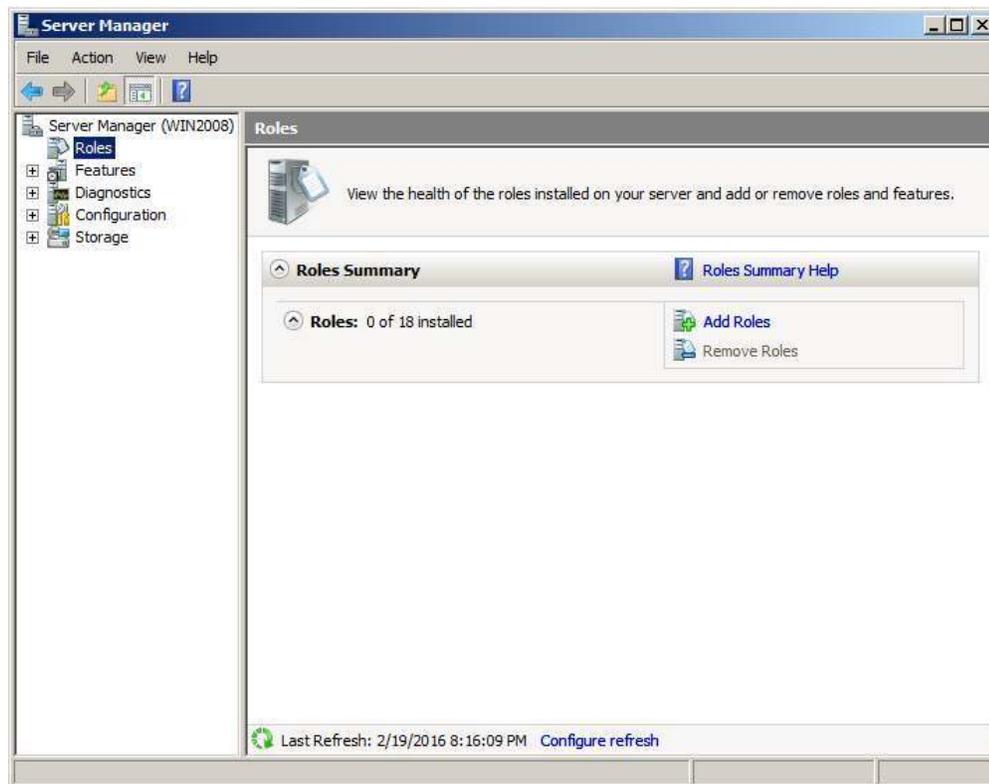
2. When the **Add Roles Wizard** window opens, click **Next** on that screen. From the next screen select that you want to add the **DHCP Server** Role, and click **Next**.
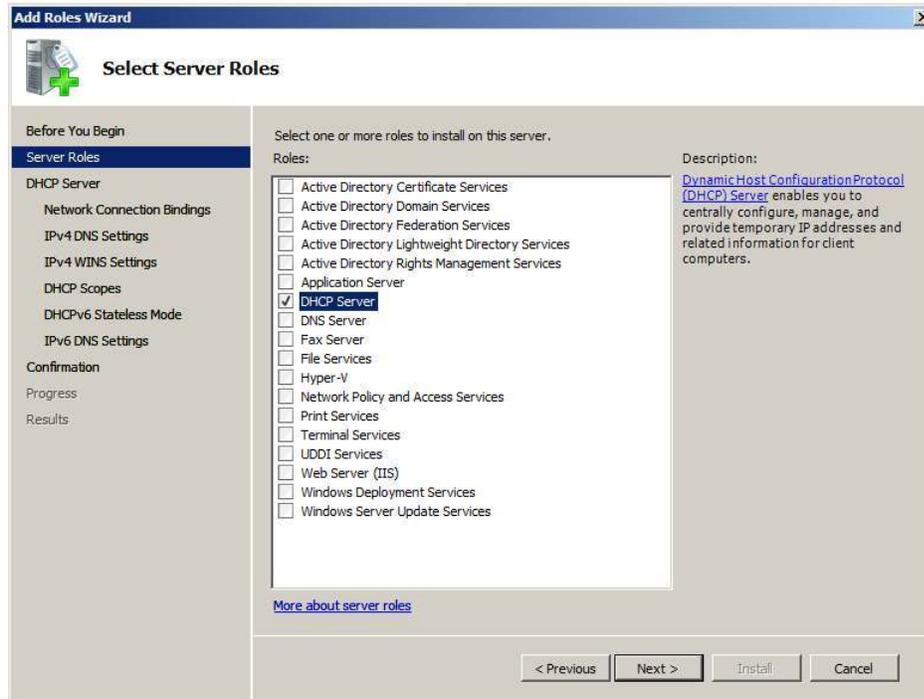
3. In the "**Network Connection Bindings**" screen leave checked only the network card that faces your client network.
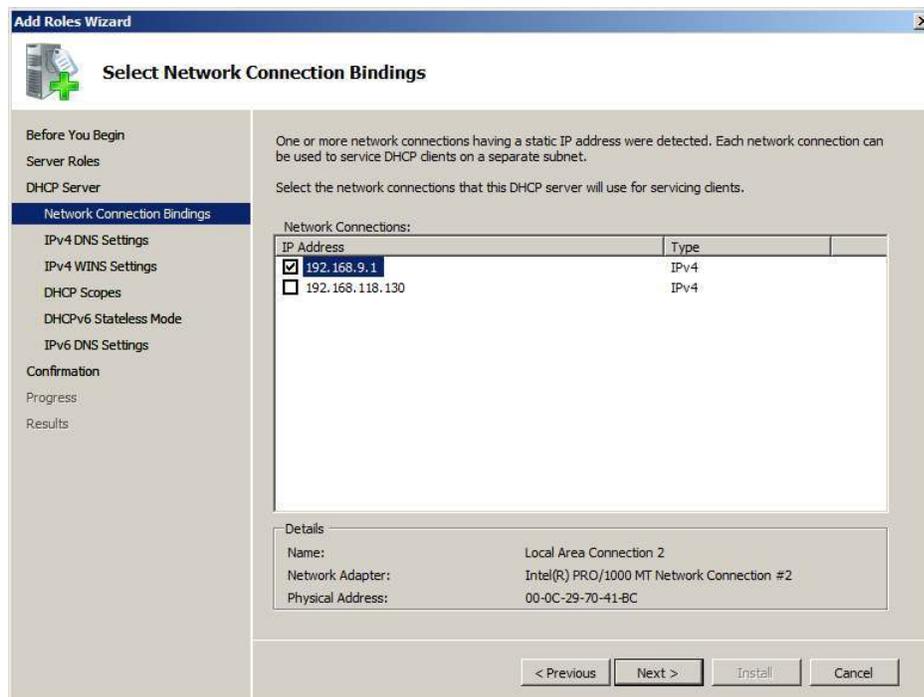
4. Next, you need to specify DNS settings (**Parent Domain**, **Primary DNS Server**, and **Alternate DNS Server**). For **Parent Domain** you can enter the name of your Active Directory domain or make up domain name if you don't have one (in this example "hotspot.local" domain is used). We recommend using DNS addresses of your ISP or free public DNS servers for **Primary** and **Alternate DNS Servers**.

5. You can set IP addresses of the WINS servers on the "IPv4 WINS settings" screen if needed.
6. In the "DHCP Scopes" screen click **Add** and the options for new scope.
7. Give **name** for the scope. Set **Starting** and **Ending IP address** and **Subnet mask** that will be distributed to clients.
   Specify **Default gateway** IP address and set **Lease Duration** for the scope. For wireless networks we recommend setting duration to 8 hours.
   Make sure that "**Activate this scope**" option is ticked.
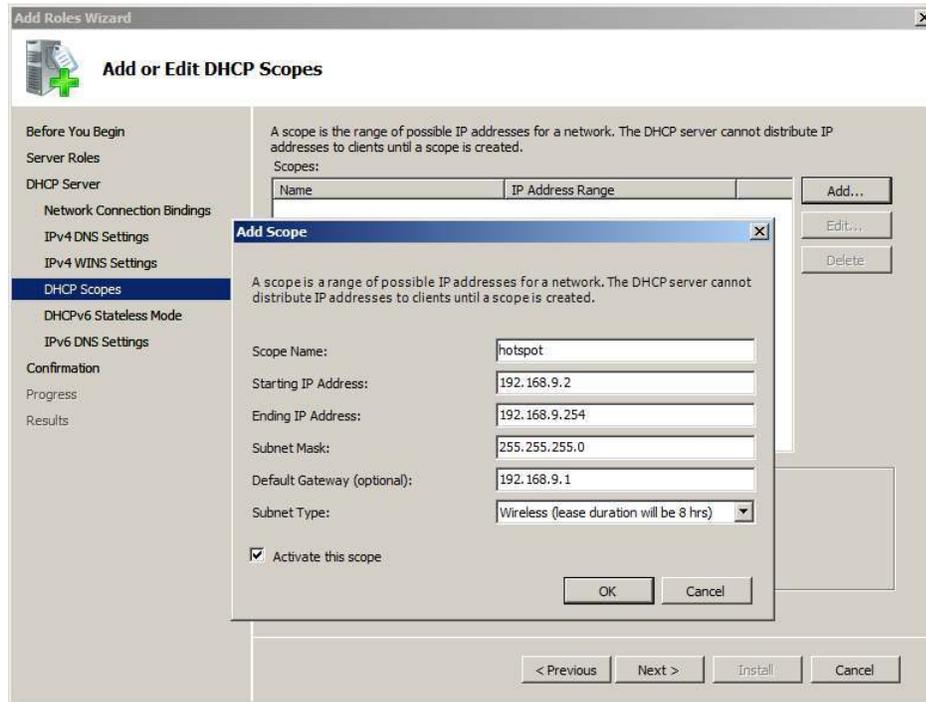
8. We recommend disabling DHCPv6 mode if you don't require this function. From DHCPv6 screen click **Disable DHCPv6** mode and click **Next**.
    After clicking Next, you will see summary page, click **Install** button. Restart the PC after installation.
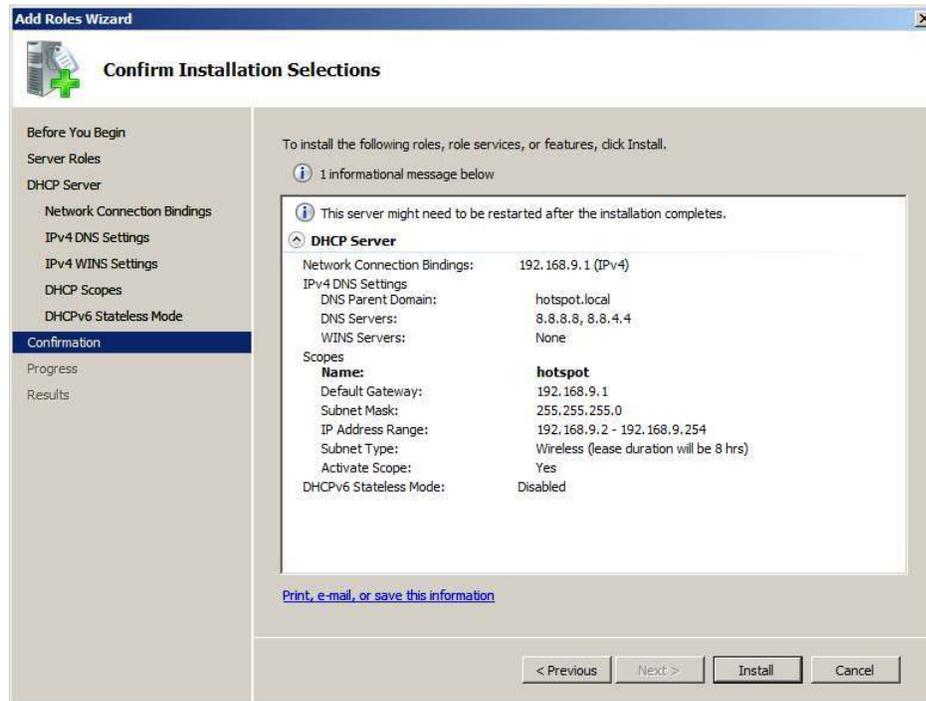
5.2 Configuring Routing

Please follow these steps to configure connection sharing by using Routing And Remote Access Services on Windows 2008:

1. Go to **Server Manager - Roles** screen and click **Add Roles**.
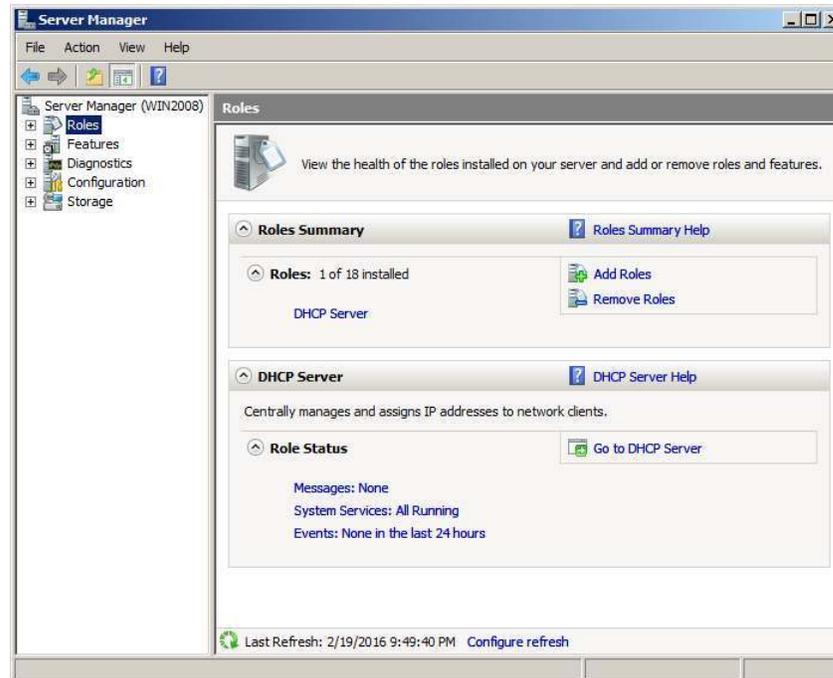
2. In **Add Roles Wizard** window click **Next**. From the "**Select Server Roles**" screen select that you want to add the **Network Policy And Access Services** role, and click **Next**.

3. Read the information about this service and click **Next**.
4. On the "**Select Role Services**" page select **Routing And Remote Access Services** in the list and click **Next**.
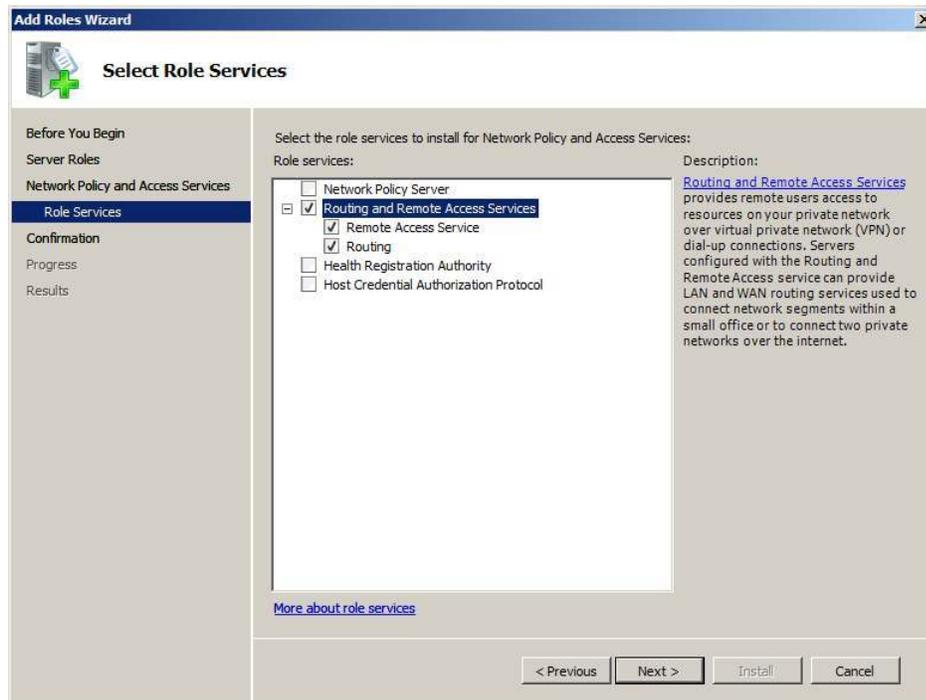
5. Click **Install** on Confirmation page.
6. Click **Close** after installation is finished and go to **Server Manager - Roles - Network Policy And Access Services**. Right-click **Routing and Remote Access** and select **Configure and Enable Routing and Remote Access**.
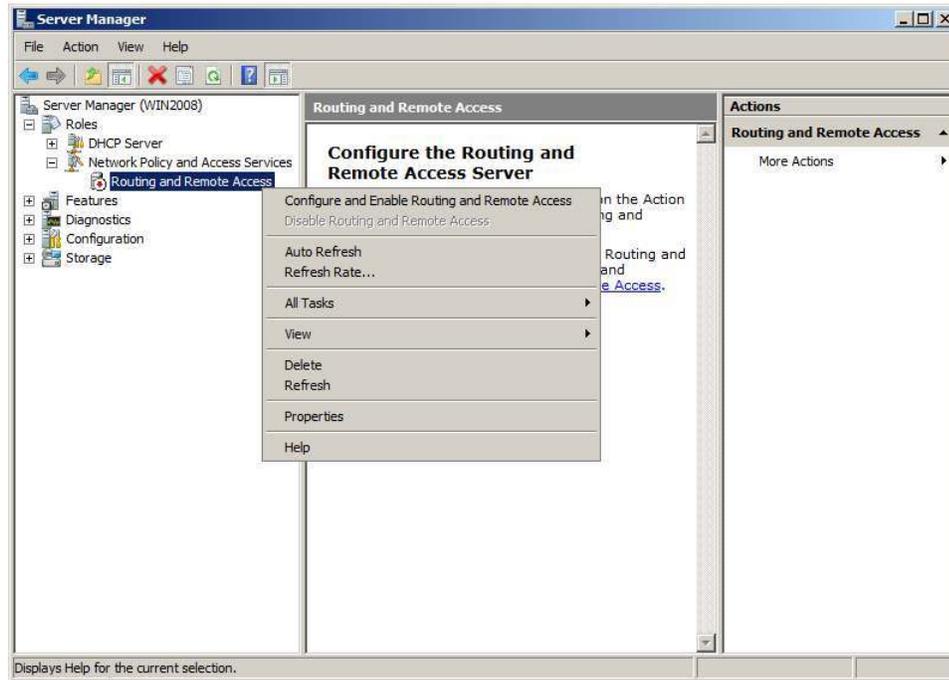
7. On the Welcome To The Routing And Remote Access Server Setup Wizard page, click **Next**.

8. On the Configuration page, select **Network Address Translation (NAT)**, and then click **Next**.
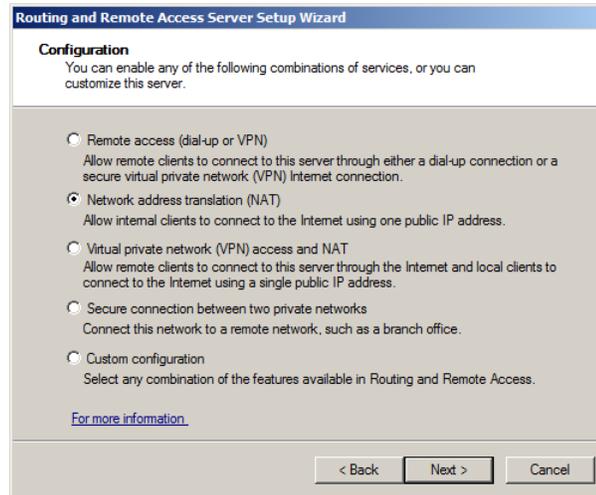
9. On the NAT Internet Connection page, select the interface that connects the server to the Internet. Then click **Next**.
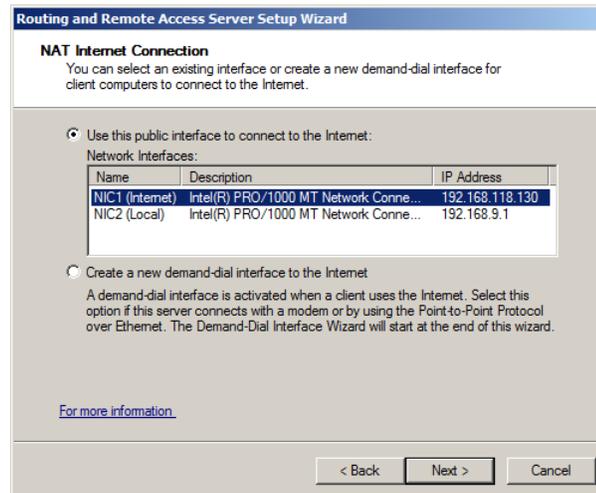
10. On the Completing The Routing And Remote Access Server Setup Wizard page, click **Finish**.
11. Click **OK** when prompted.

The server is now ready to forward packets from the Local network to the Internet.

6   Windows Server 2012

Antamedia HotSpot software can be set on Windows Server 2012 the same way as on Windows 7, Windows 8.1 or Windows 10. However, we recommend using Windows Server's DHCP service to provide IP addressing and Windows Routing and Remote Access to share the connection.

To set up Antamedia HotSpot on Windows Server 2012, please follow these steps:
1. Complete pre-installation steps 3
2. Install and configure Windows DHCP server service
3. Install and configure Windows Routing and Remote Access service
4. Change IIS port
5. Install and configure HotSpot software

6.1   Configuring DHCP service

Note: If you configure a DHCP server on gateway computer, you have to disable DHCP server option on all other devices (Wi-Fi routers, Access Points etc.) in the same subnet.

Follow these steps to install and configure DHCP service:

1. To start the DHCP installation process, click **Add Roles and features** from **Server Manager - Roles** screen.
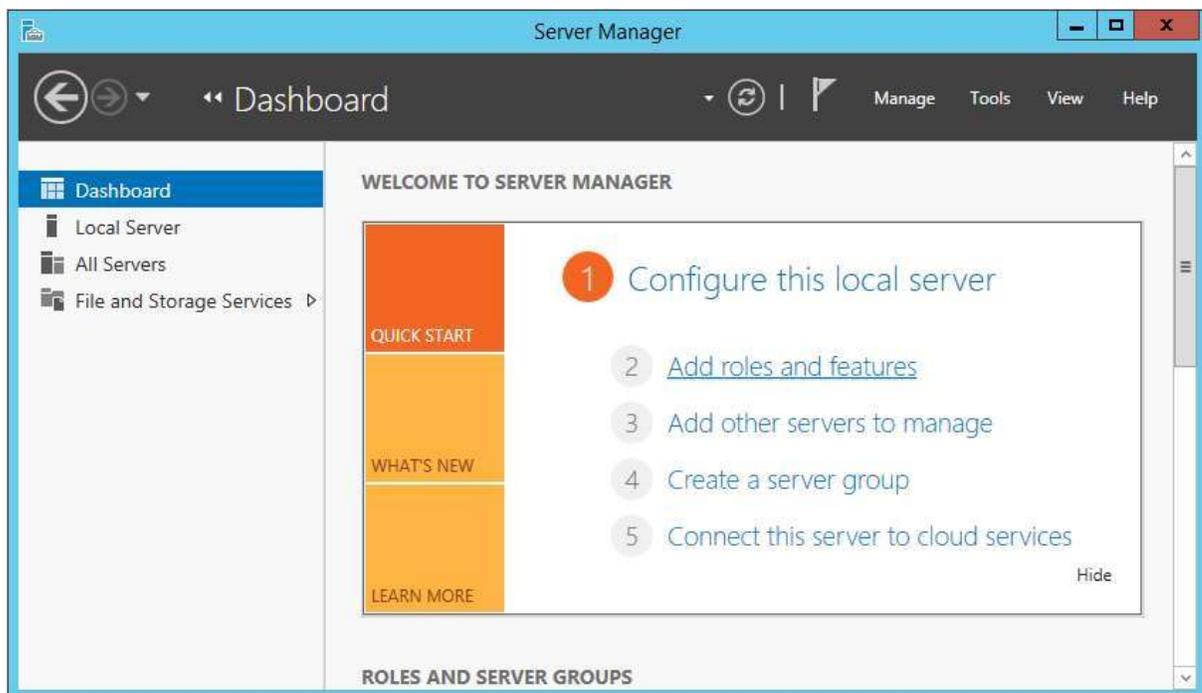
2. When the **Add Roles and Feature Wizard** window opens, click **Next** on that screen.

3. From **Installation Type** screen select "**Role-based on feature-based installation**" and click **Next**.
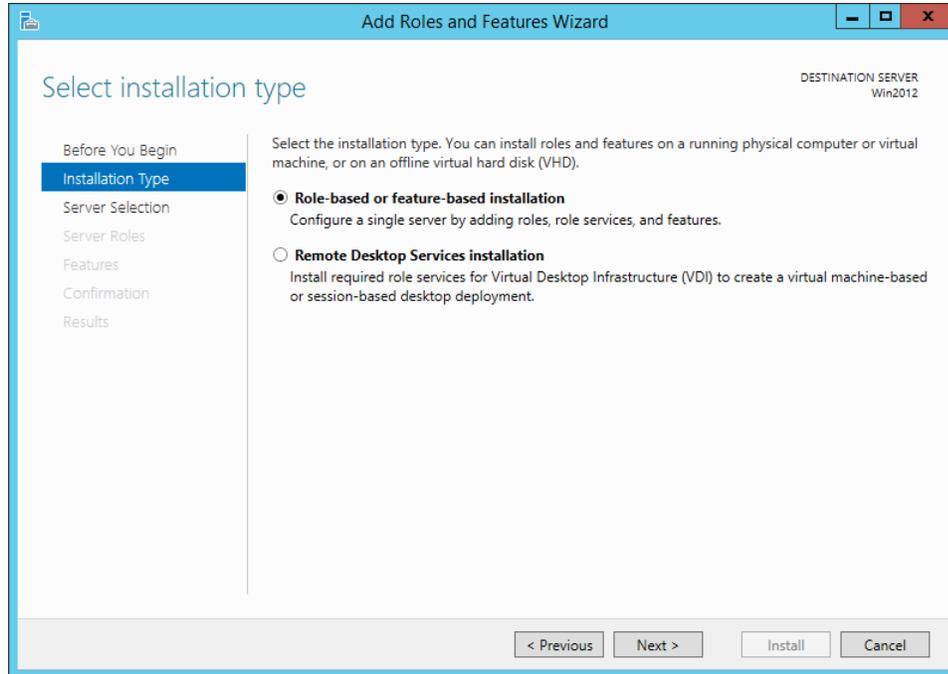
4. From **Server Selection** choose "**Select a server from the server pool**" and select your computer in the list bellow then click on **Next**
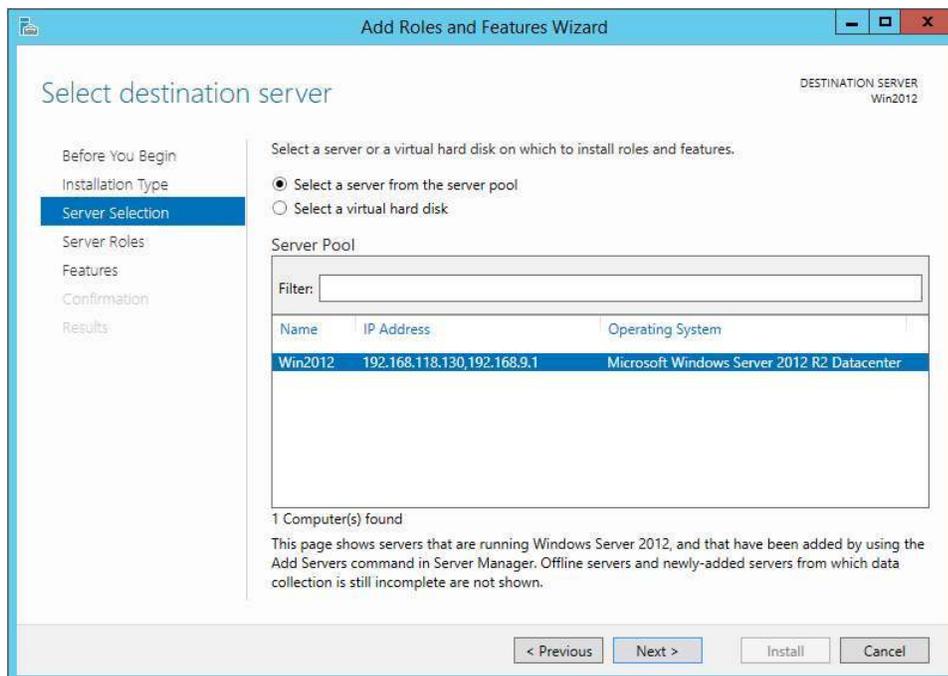
5. At **Server Roles** screen select "**DHCP Server**"
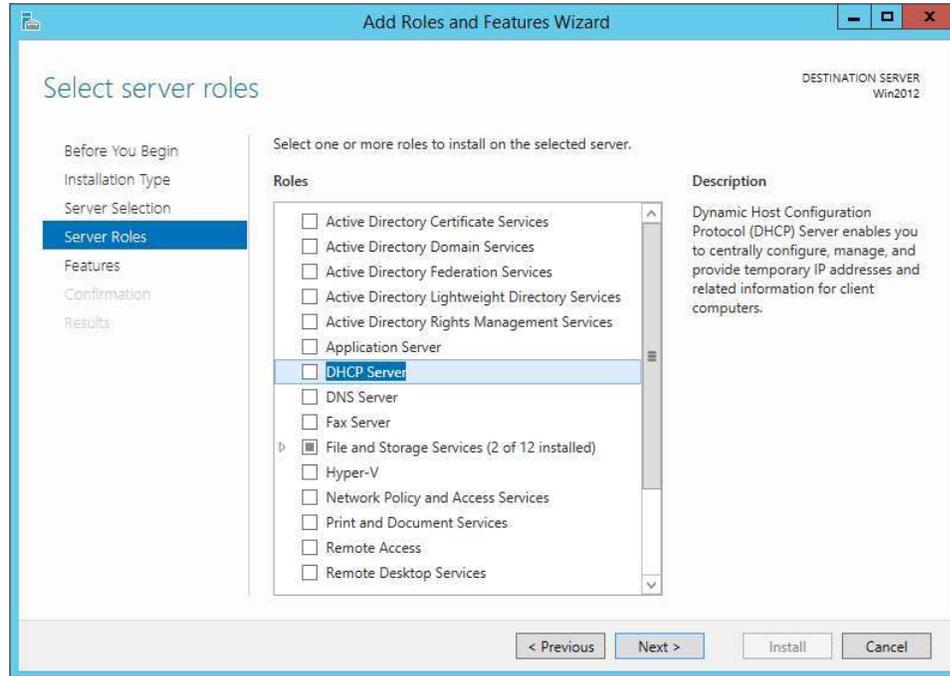
6. **Add Roles and Features Wizard** pop-up window will inform you about the role and features that you add. Click on **Add Features**.
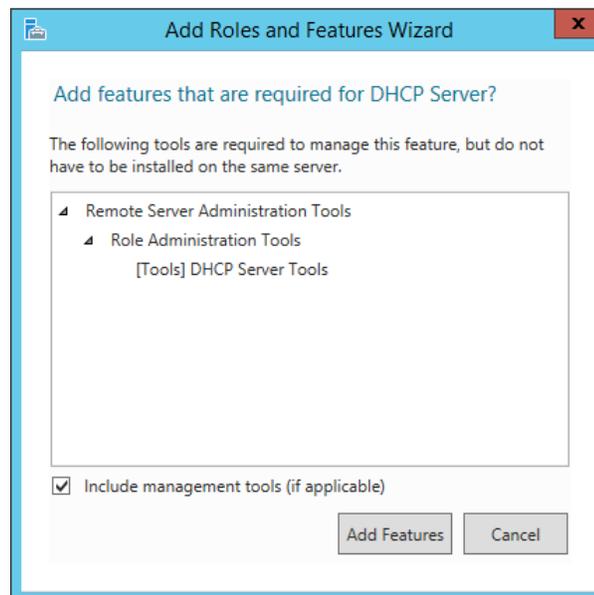
7. **DHCP Server** role is now selected in the list of **Server Roles** and press on **Next**
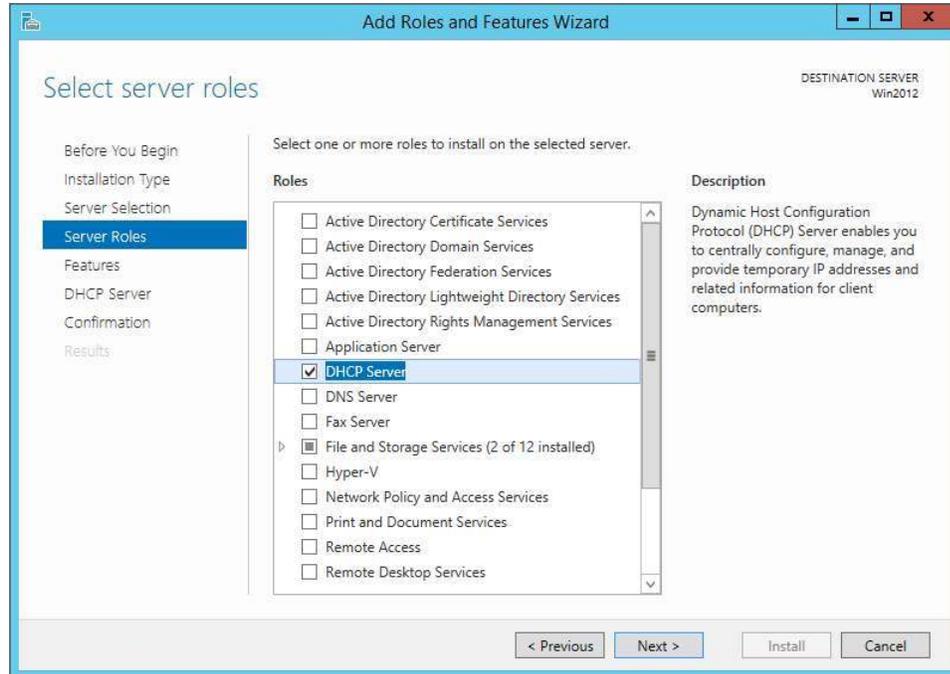
8. On **Features** screen is by default selected all required features for installation of DHCP Server role, click on **Next**
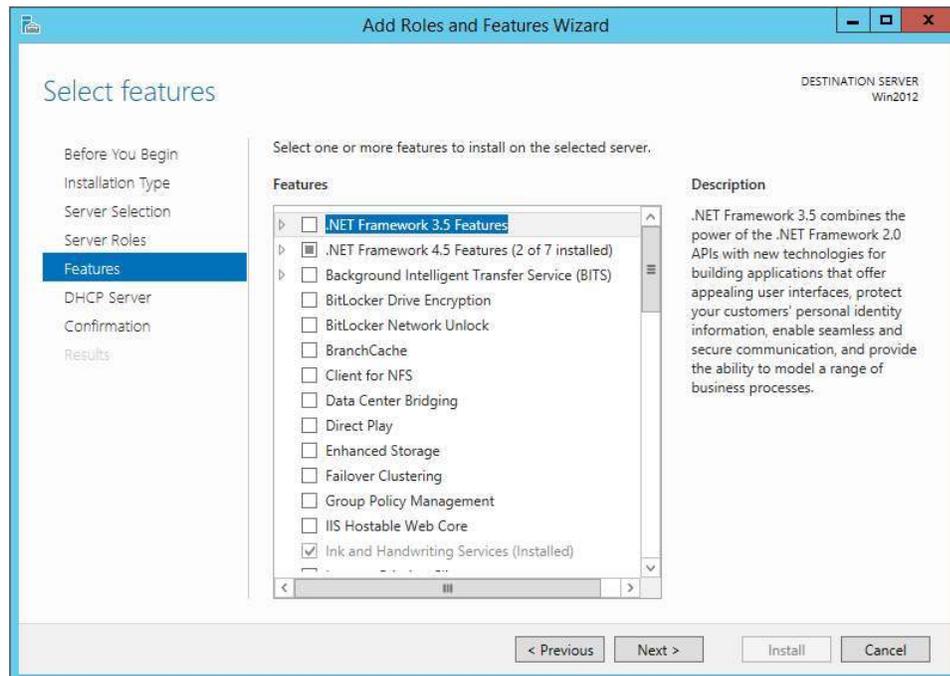
9. At **DHCP Server** screen you will see a **note** which guide you to set static IP addresses on the network connections and that you need carefully to plan subnets, scopes and exclusions before installing DHCP Server. Click on **Next**
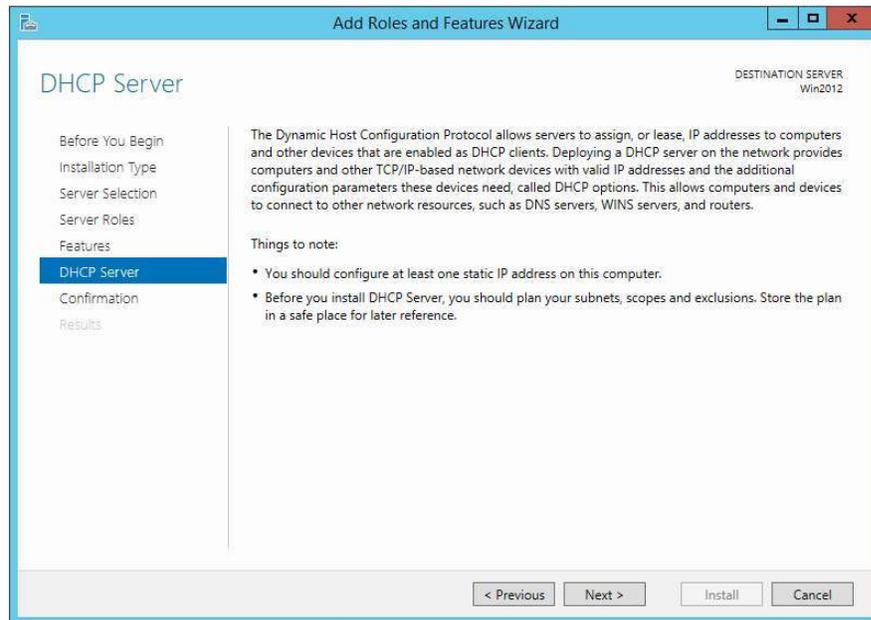
10. From **Confirmation** screen select option "**Restart the destination server automatically if required**" and confirm it by pressing on **Yes** and new pop-up window. Then click on **Install** button.
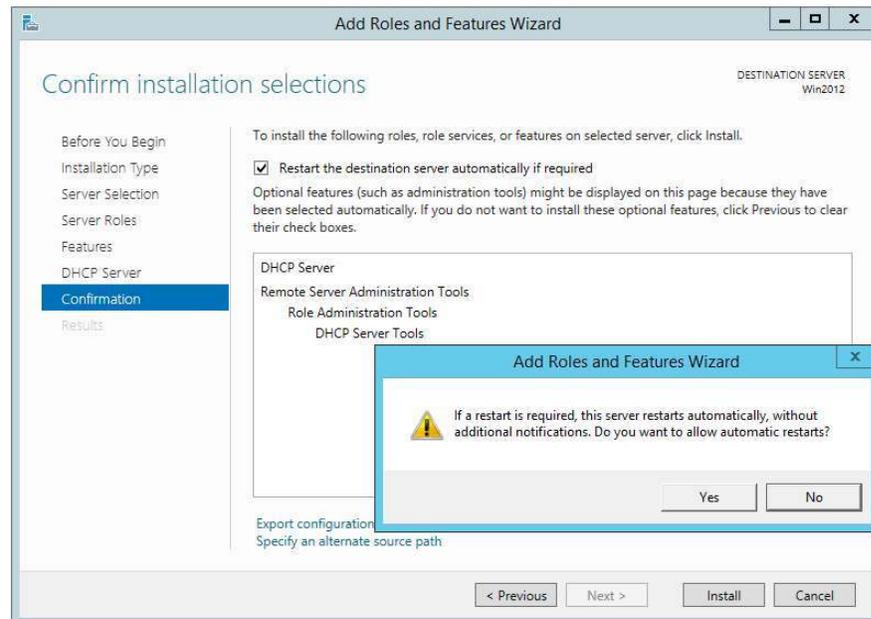
11. When installation is finished you should press on "**Complete DHCP configuration**" link.
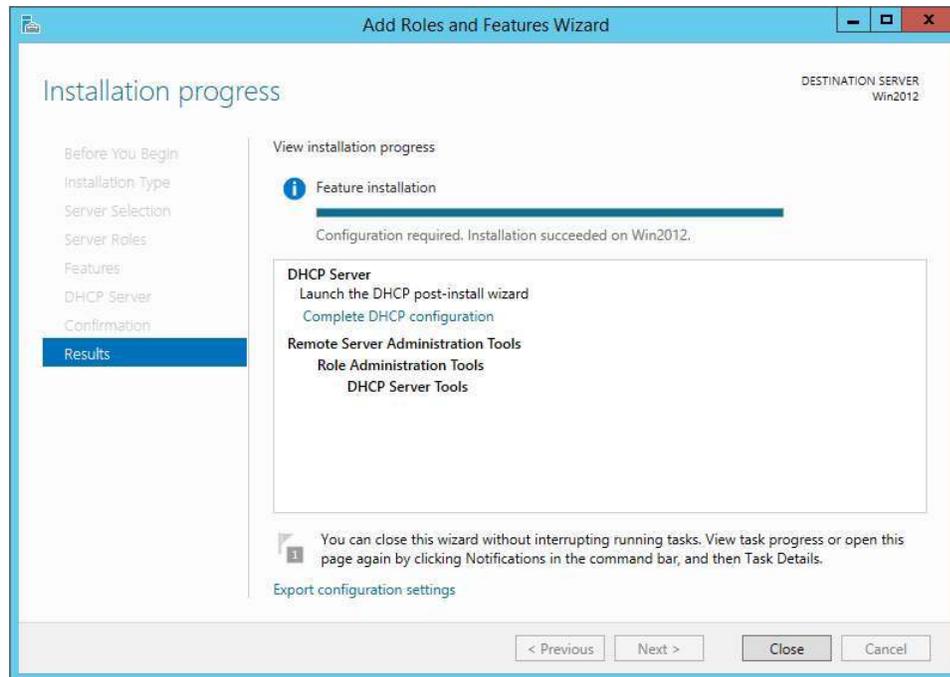
12. **DHCP Post-Install configuration wizard** will start with "**Description**" and instructions about the creation of security groups, here click on **Commit**
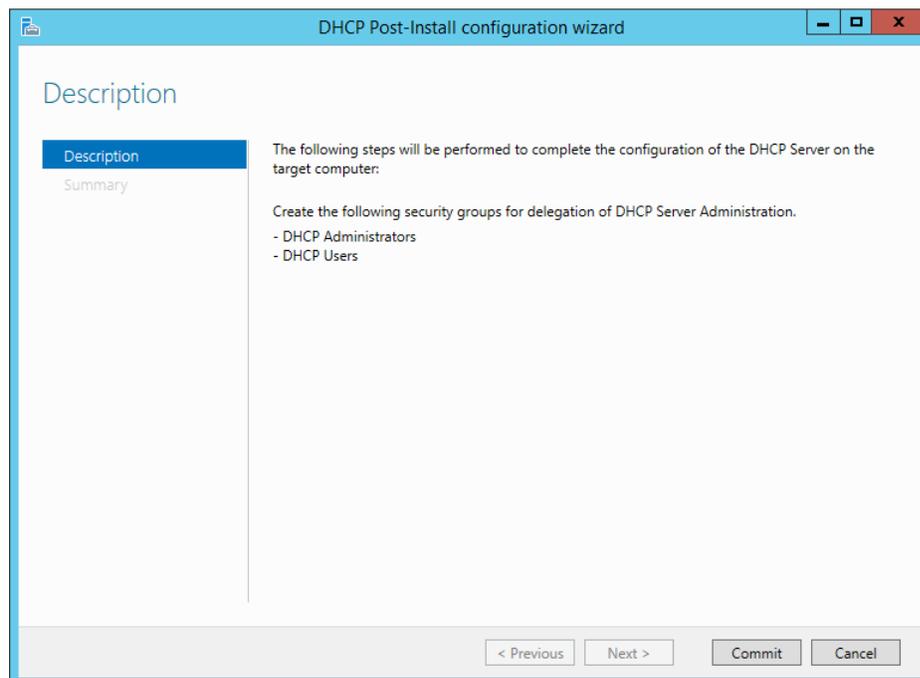
13. From **Summary** screen click on **Close** button.
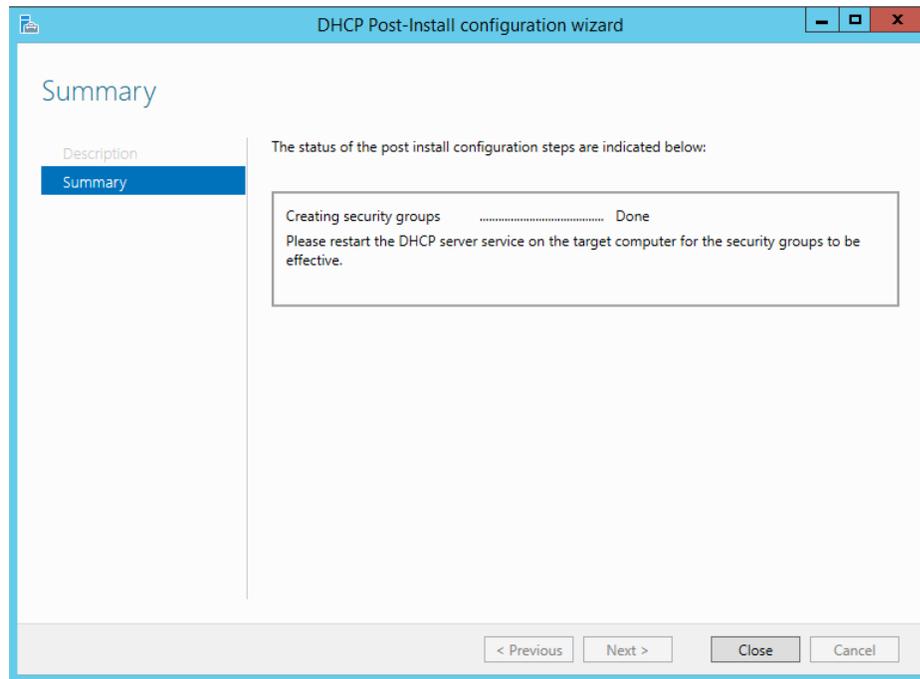
14. Restart computer and from **Server Manager** press on **Tools** and choose **DHCP**.
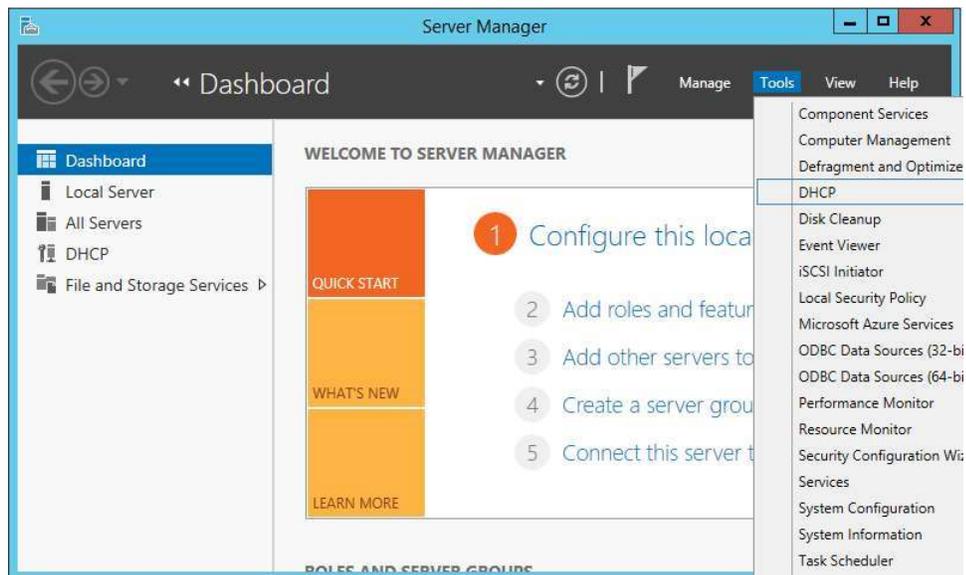
15. From **DHCP** window select your server and click at **IP4v4.**
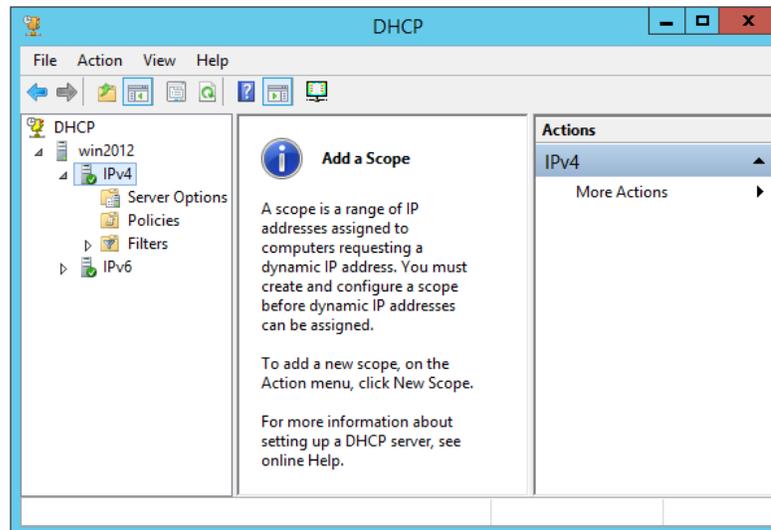
16. From **IP4v4** right-click menu select **New Scope**
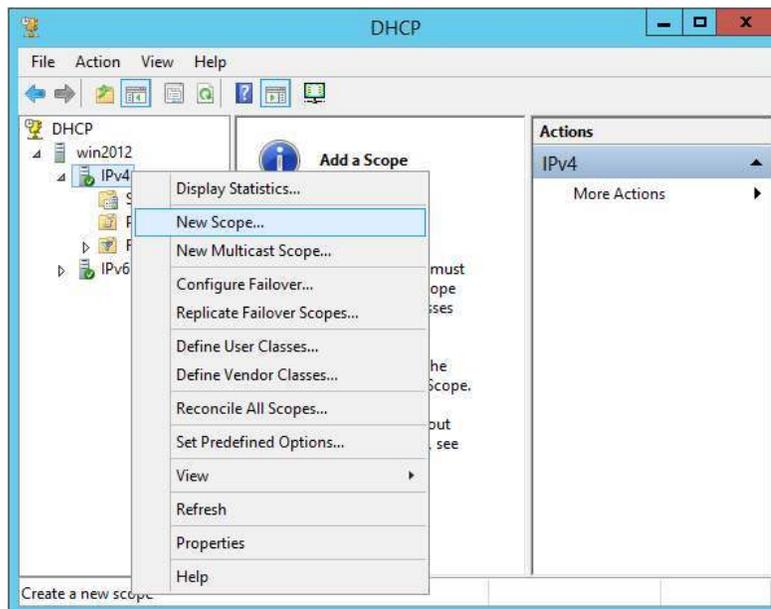
17. From **New Scope Wizard** press on **Next** .
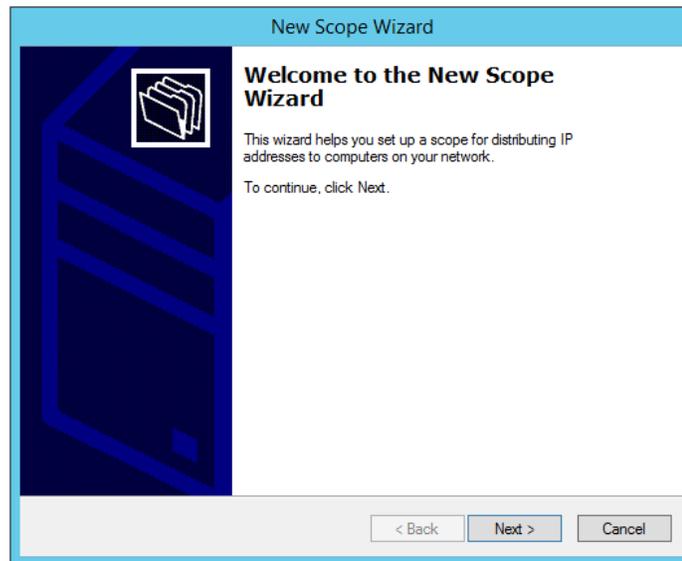
18. Set **Scope Name** and **Description** before you click on **Next**

19. From **IP Address Range** screen enter **Start IP address**, **End IP address**, **Length** and **Subnet mask** and click on **Next**
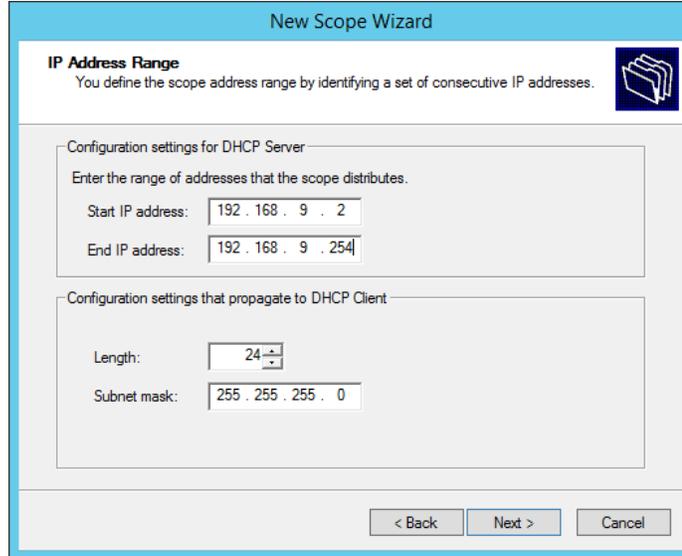
20. From **Add Exclusions and Delay** screen set excluded IP or range of addresses if it is required and press on **Next** to continue with setup.
21. At **Lease Duration** screen set 8 hours as lease time duration. Shorter time interval is recommended for wireless networks with higher number of new users. Click on Next.
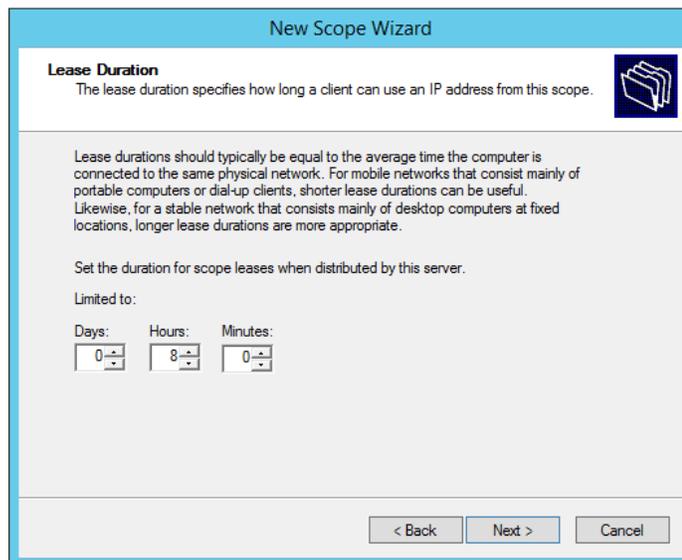
22. From **Configure DHCP Options** select "**Yes, i want to configure these options now**" and click on **Next**

23. On **Router (Default Gateway)** screen type your **NIC2 (Local)** static IP address and press on **Add** button. Then click on **Next**
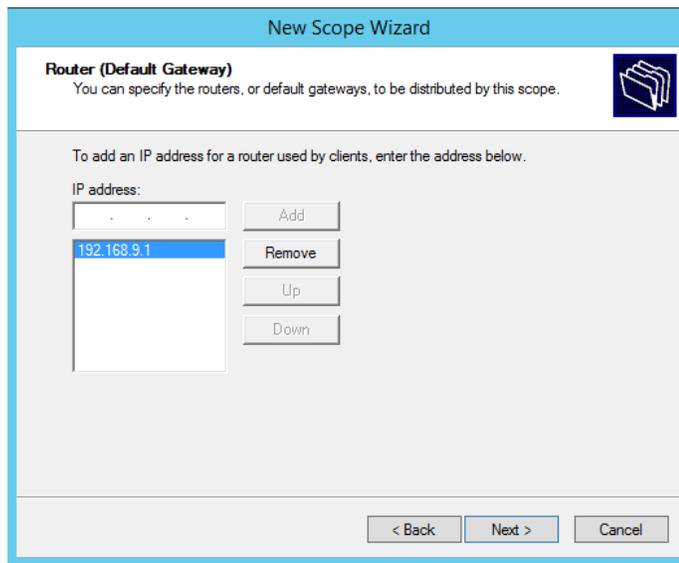
24. From **Domain Name and DNS Servers** you need to specify DNS settings (**Parent domain**, **IP addresses for DNS Servers**). For **Parent Domain** you can enter the name of your Active Directory domain or make up domain name if you don't have one (in this example "**hotspot.local**" domain is used). We recommend using DNS addresses of your ISP or free public DNS servers as Google DNS **8.8.8.8** and **8.8.4.4**. **Add** DNS in list and click on **Next**.
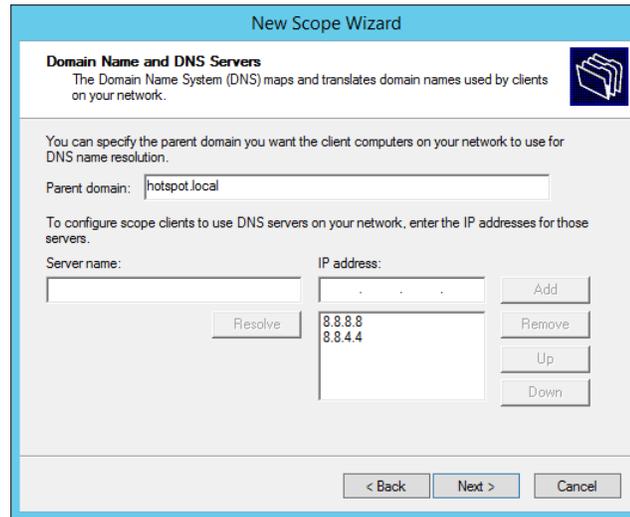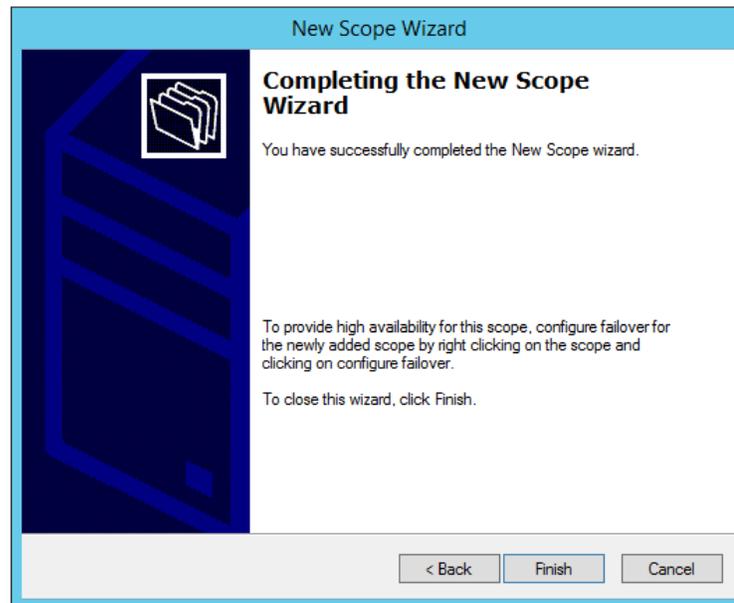

25. You can set IP addresses of the WINS servers on the "WINS Servers" screen if needed and click on **Next**

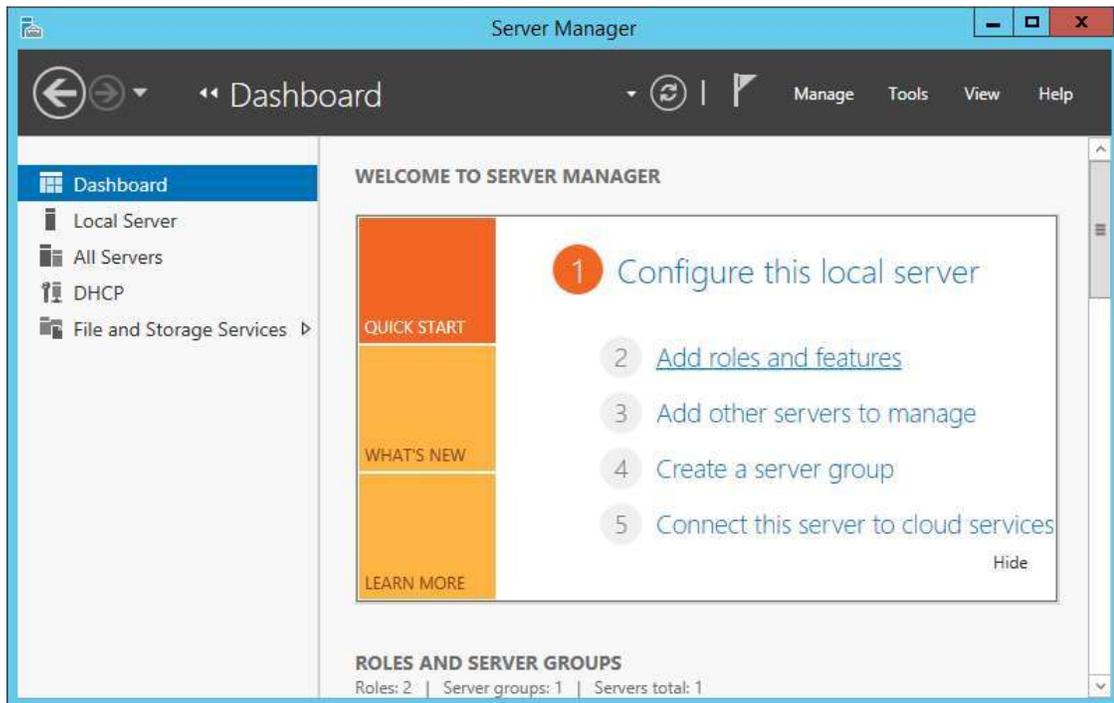26. In **Activate Scope** screen select "**Yes, i want to activate this scope now**" and press on Next.
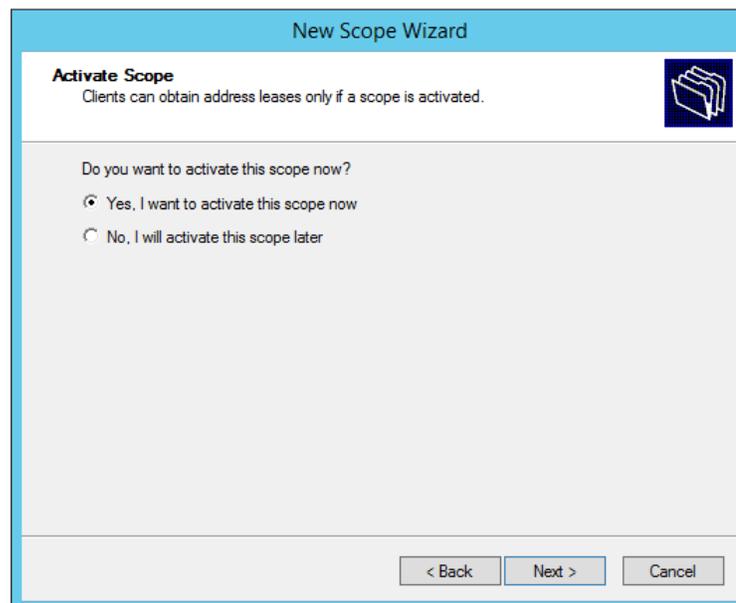
27. On **Completing the New Scope Wizard** click on **Finish**.

6.2 Configuring Routing

Follow these steps to configure connection sharing by using Routing And Remote Access Services on Windows 2012:

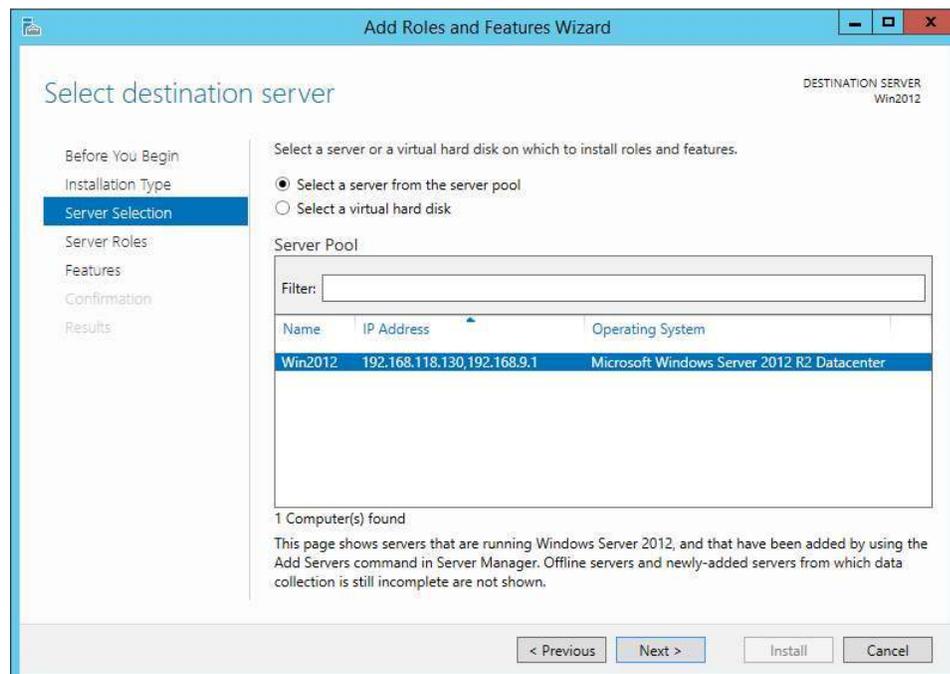1. Go to **Server Manager - Roles** screen and click **Add roles and features**.

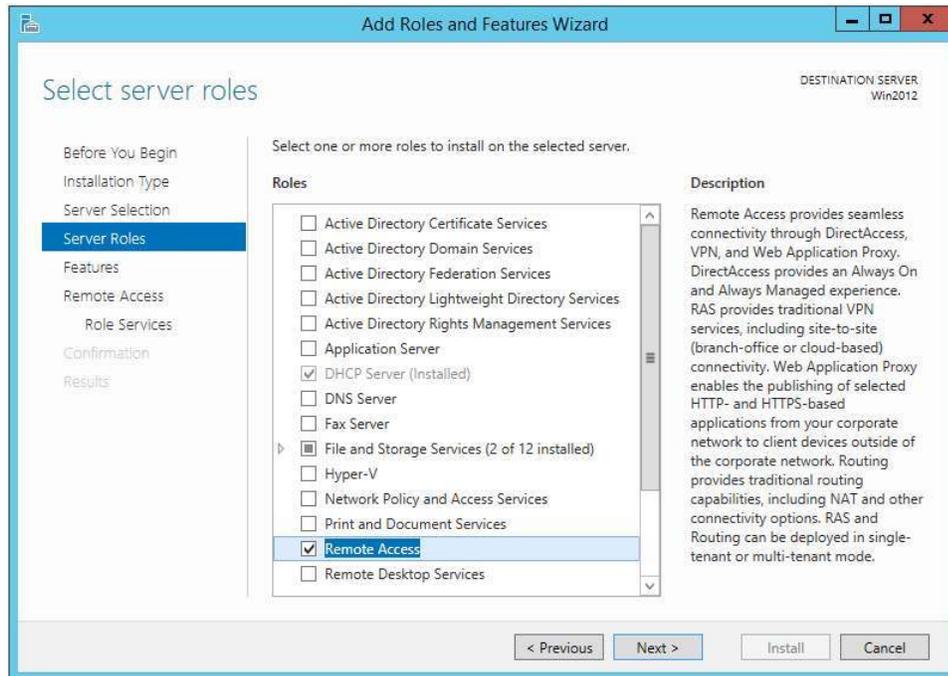2. In **Add Roles Wizard** window from **Before You Begin** screen click **Next**.

3. From **Installation Type** select "**Role-based or feature-based installation**" and click on **Next**
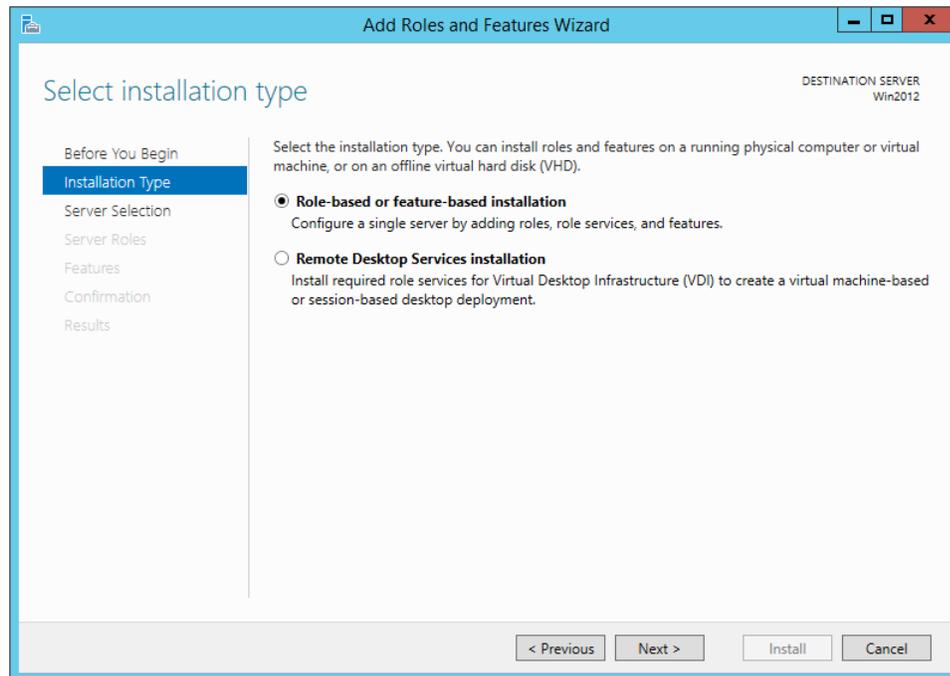
4. From **Server Selection** screen choose "**Select a server from the server pool**", press on your server in the list and click on **Next** button.
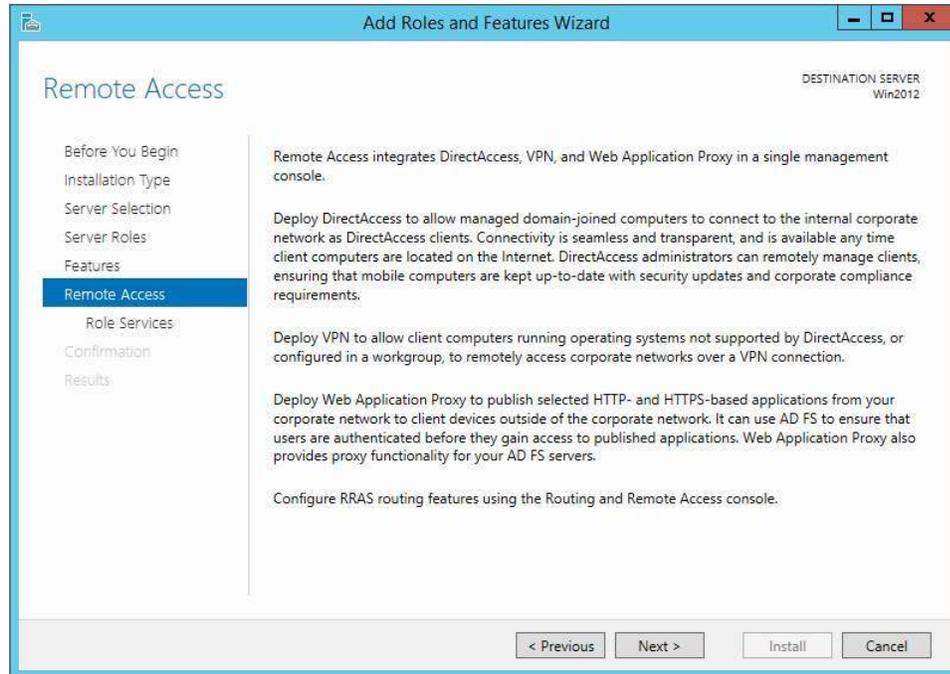
5. On **Server Roles** screen select "**Remote Access**" role and click on **Next**
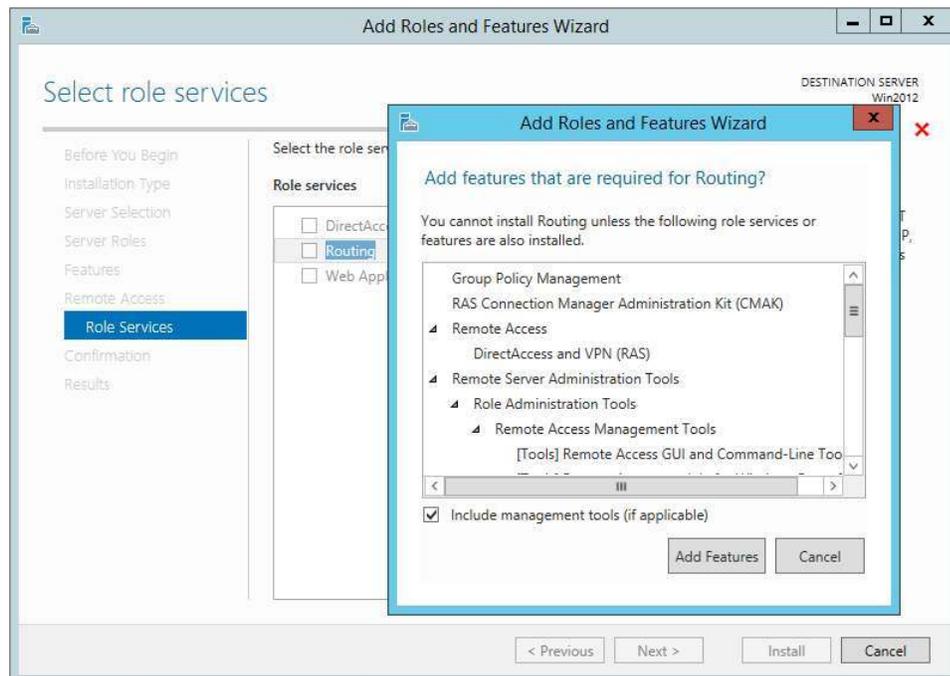

6. From **Features** screen is already selected all required features that should be activated, click on **Next**
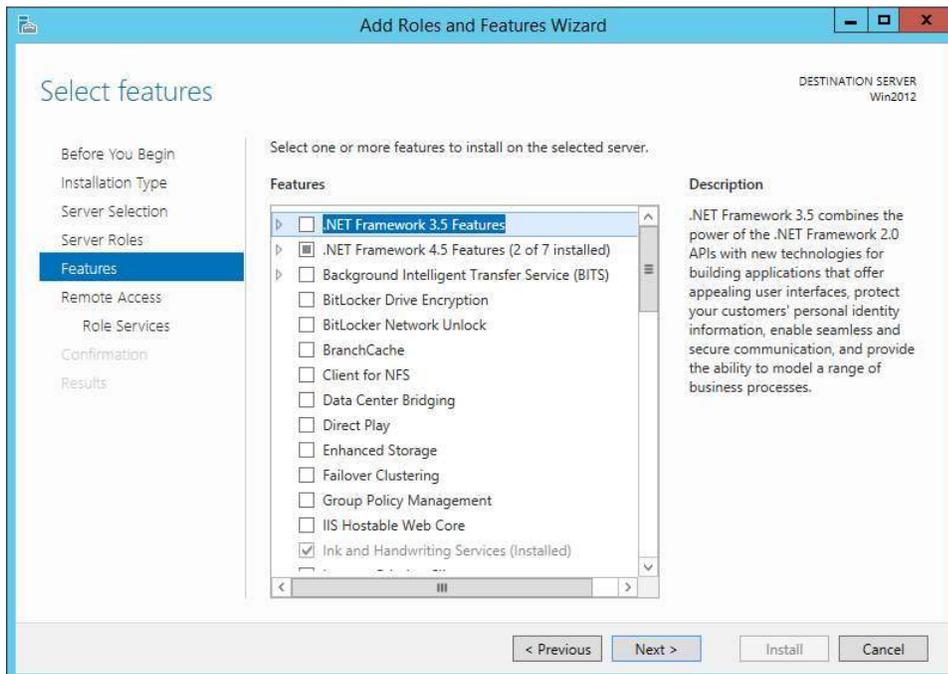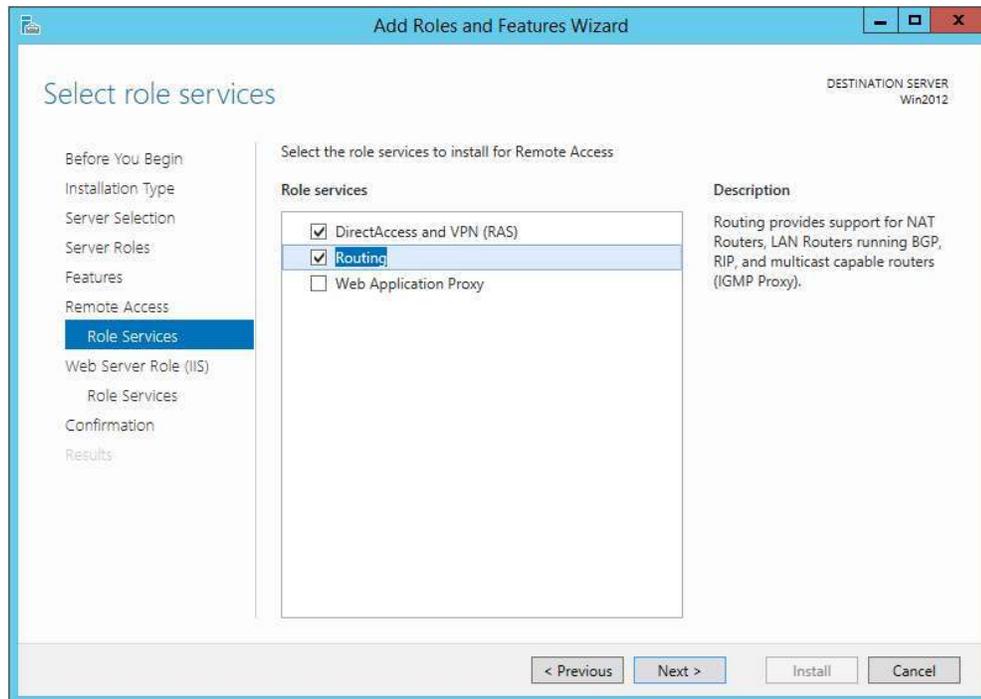
7. On **Remote Access** screen are given information about all available options from the role. Click on **Next** button.
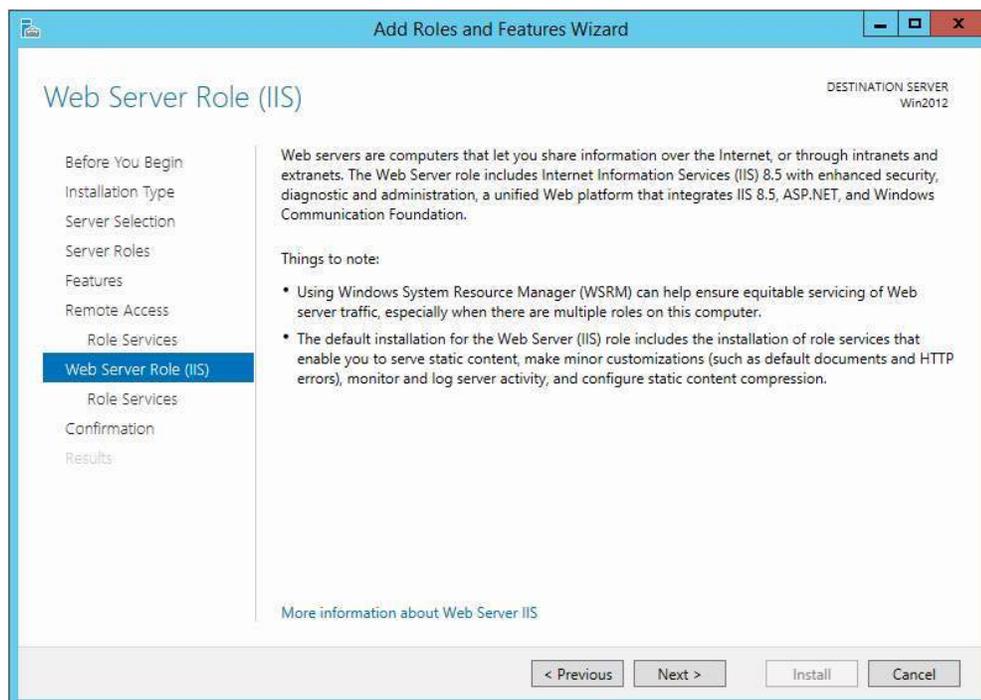

8. From **Role Services** screen select "**Routing**", this will bring you new pop-up window with required features for Routing, click on **Add Features**.
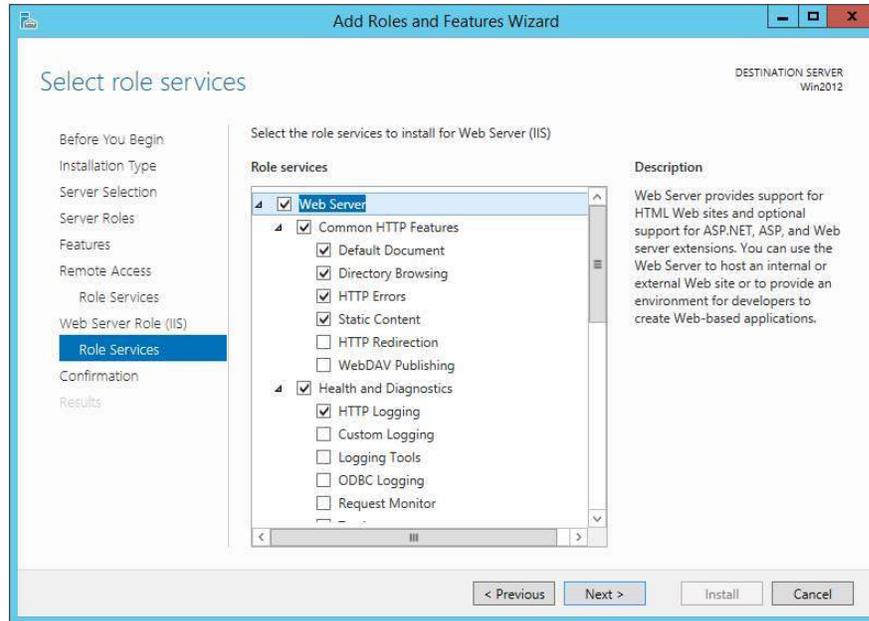
9. This will also activate "**DirectAccess and VPN (RAS)**" by default and click on **Next**.
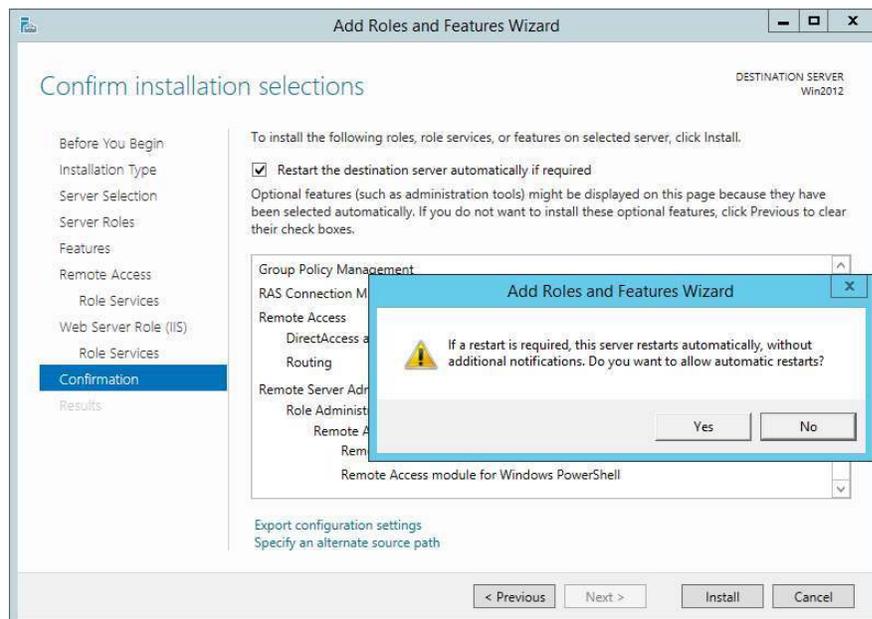

10. It will bring **Web Serve Role (IIS)** screen on which you need to press on **Next**

11. **Role Services** screen show list of services required for installation of Web Server (IIS), press on **Next**.


12. From **Confirmation** screen select "**Restart the destination server automatically if required**", from pop-up windows click on **Yes** to allow automatic restart, and press on **Install.**

13. When installation is finished, close "**Add roles and Features Wizard**".
14. Go to **Server Manager** and from **Tools** panel click on "**Routing and Remote Access**"
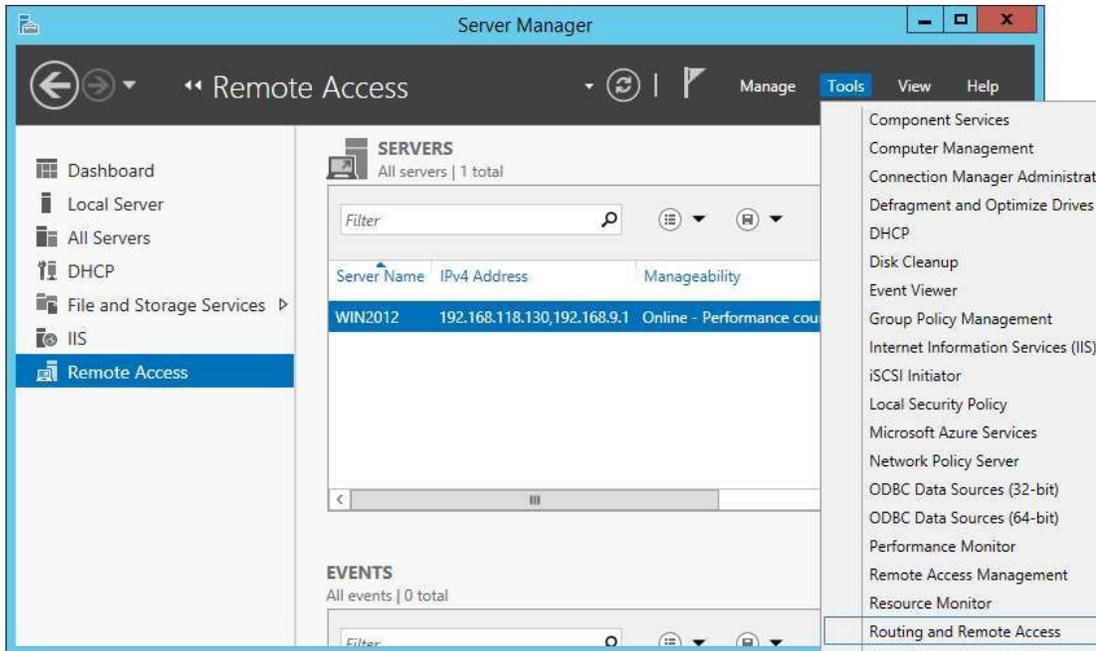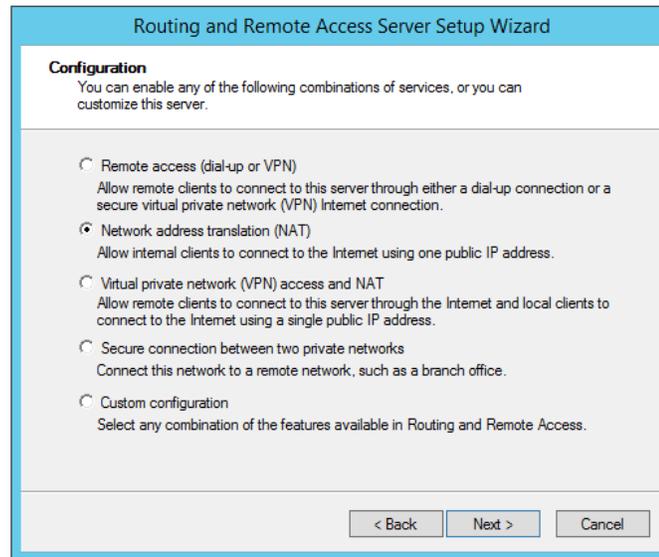

15. From **Routing and Remote Access** windows make right-click on your server and choose "**Configure and Enable Routing and Remote Access**"
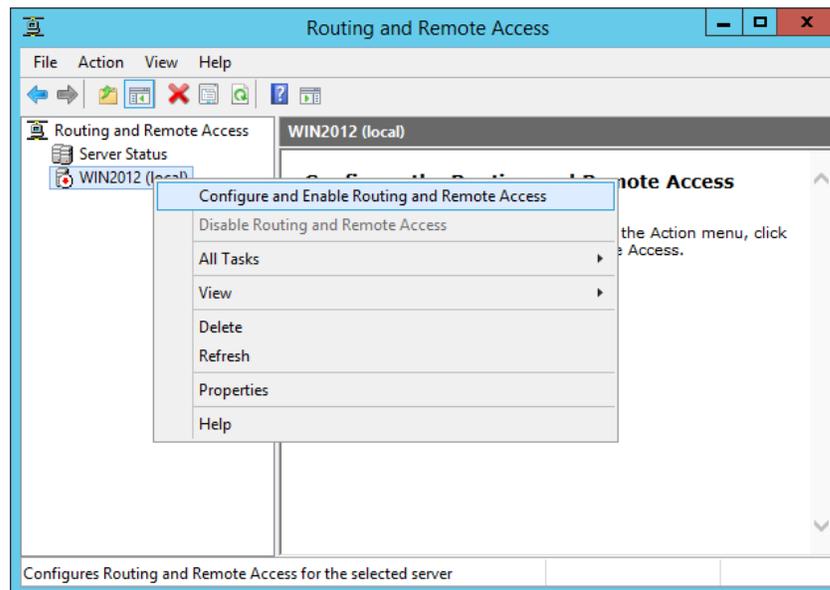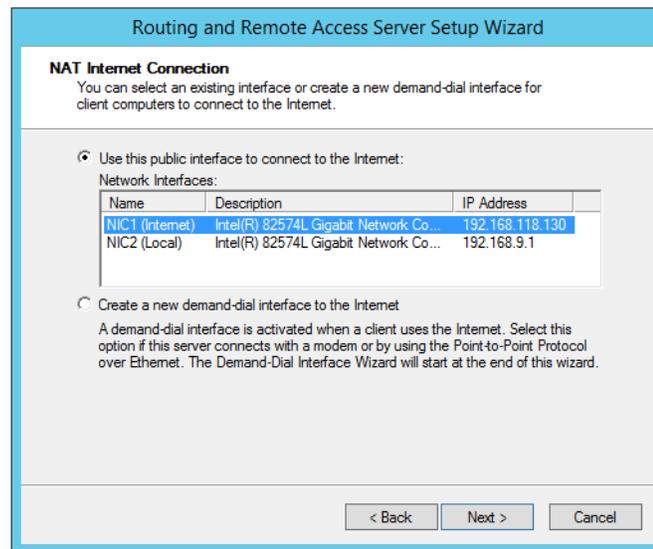

16. From **Routing and Remote Access Server Setup Wizard** screen click on **Next**.

17. From **Configuration** screen select "**Network address translation (NAT)**" and click on **Next**

18. On **NAT Internet Connection** select network interface which is used for connecting to Internet and be sure that "**Use this public interface to connect to the Internet**" is used, then click on **Next**
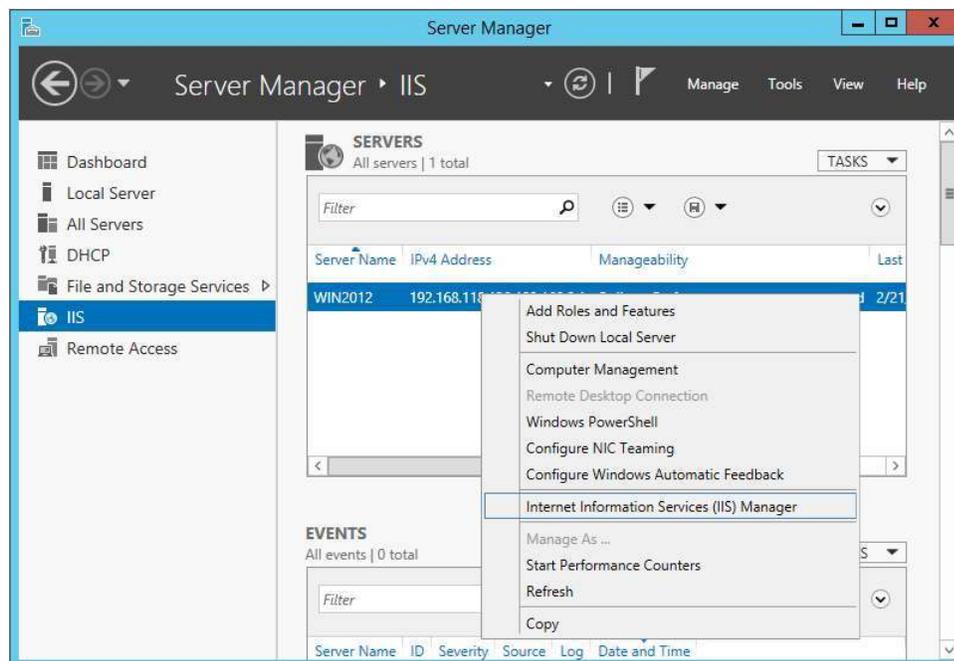
19. At **Completing the Routing and Remote Access Server Setup Wizard** press on **Finish**

20. It is required to change **IIS** port from default port 80 in order to use Antamedia applications on computer.
21. Go to **Server Manager** and select **IIS panel**. From right click menu on you server select "**Internet Information Services (IIS) Manager**"
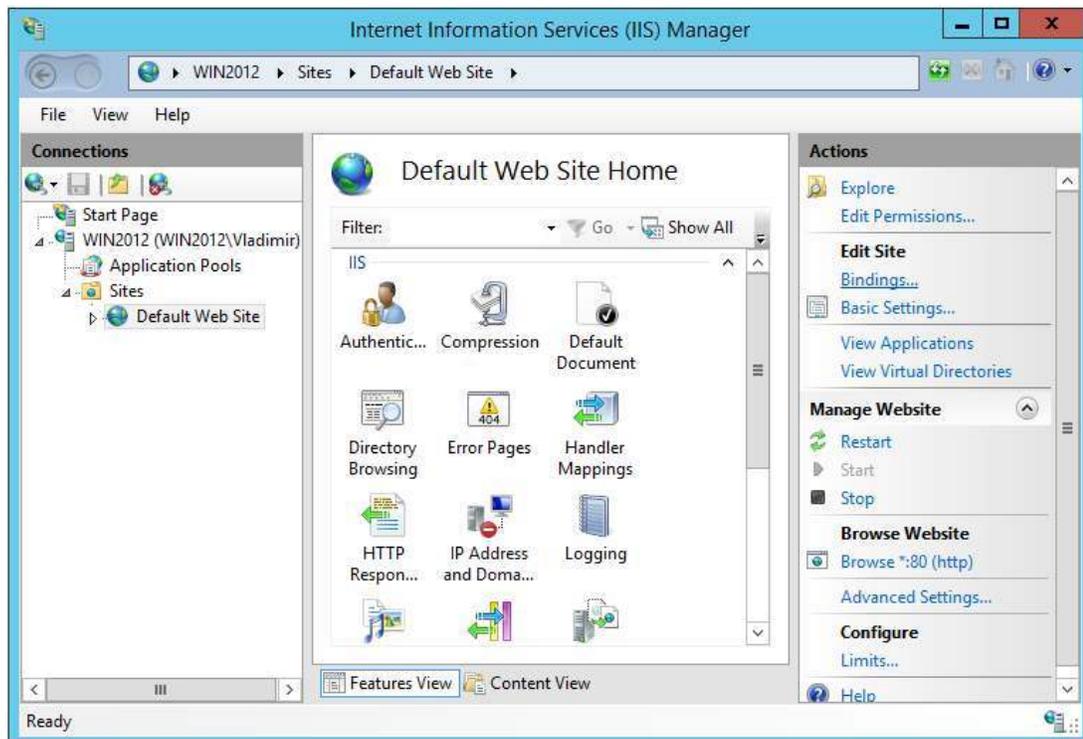
22. In **Internet Information Services Manager** select your server and from new pop-up set to stay connected to latest Web Platform Components with click on **Yes**
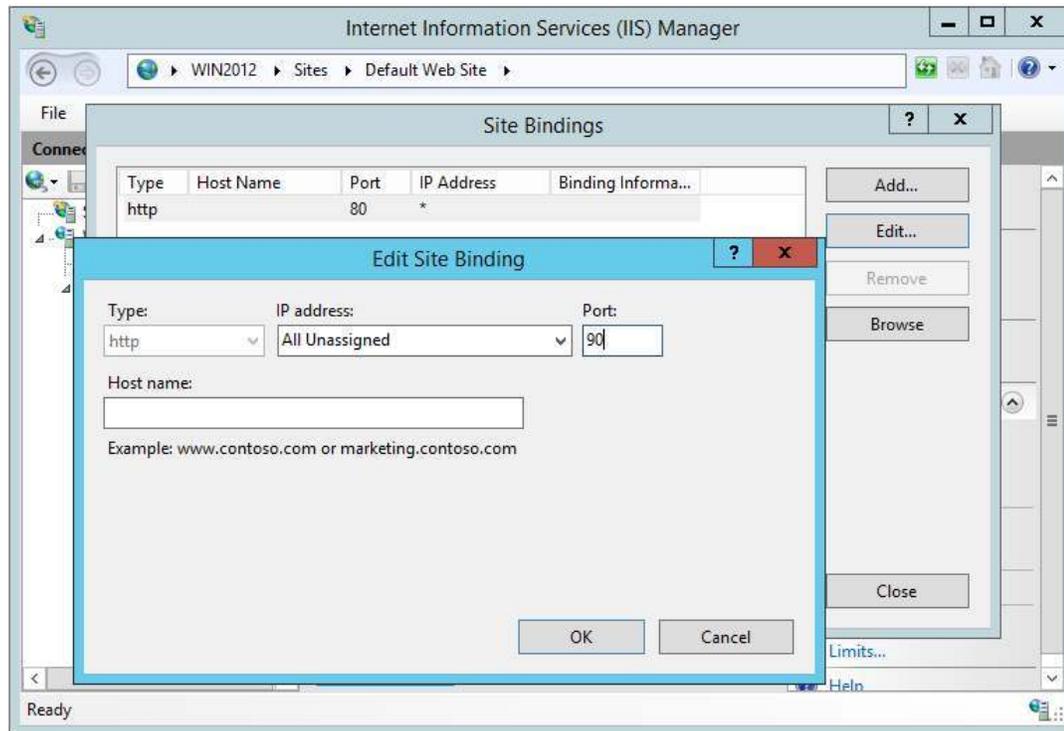

23. Click again on your server and from **Sites** select "**Default Web Site**".
24. In **Actions** panel click on "**Bindings**" link

25. From **Site Bindings** select type http with port 80 and click on **Edit**
26. In **Edit Site Biding** window change **port 80** to some other port, for example **port 90** and click on **OK.** After that close **Site Bindings** and **Internet Information Services Manager** window**.**

Windows Server 2012 is now ready to forward packets from (internal) local network to the Internet and to install Antamedia HotSpot.

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