ANTAMEDIA

HOTSPOT SOFTWARE

CONTROL WIFI AND ENGAGE YOUR CUSTOMERS

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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.

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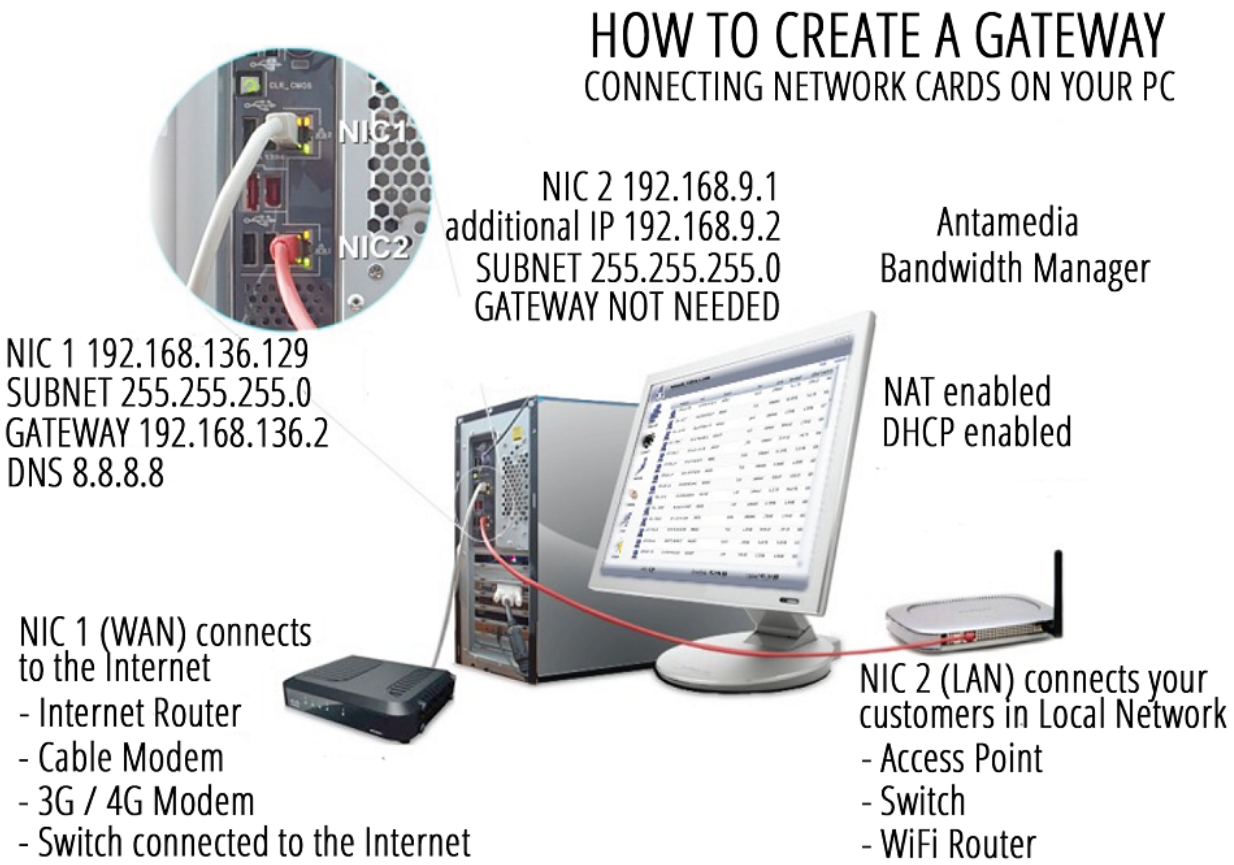
2 Requirements

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.

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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

✓ **Microsoft Security Essentials** should not block it (Windows 7):.

- Go to Windows Control Panel and start Microsoft Security Essentials click on Settings.
- From "Excluded files and locations" panel press on browse and select C:\Antamedia folder.
- Press on Add and Save changes button

✓ Antamedia Bandwidth Manager software can be used to set computer as gateway using Bandwidth Manager NAT.
Beside that, computer may be set as gateway using Windows Connection Sharing and Windows Routing and remote access. For additional information's about the Windows configuration and setup be free to consult our technical support.

✓ 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).

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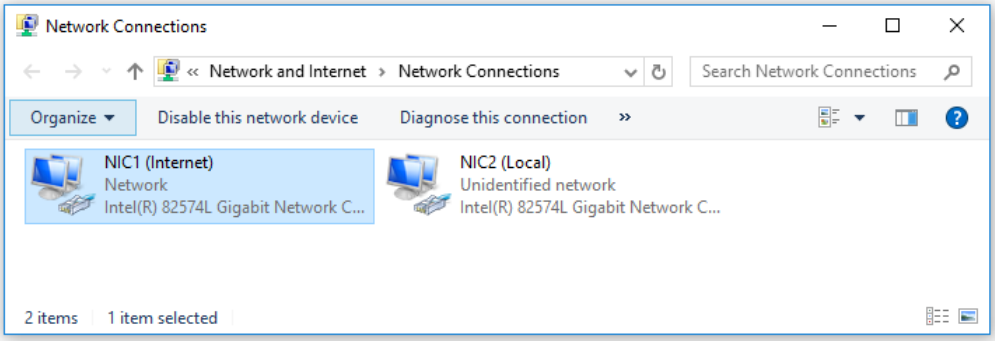
2.2 Network Adapters Setup

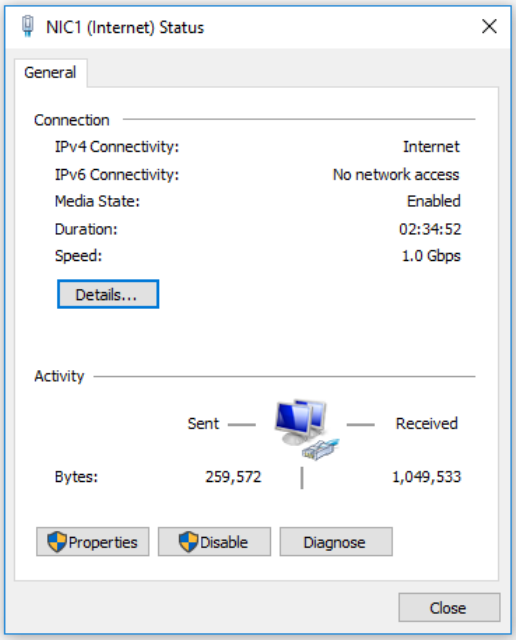
Here are detailed step by step instructions how to set gateway computer network adapters to work with HotSpot NAT and support use of DNS WEB FILTER:

✓ **Static IP addresses** for network connection used for to the Internet router/modem.

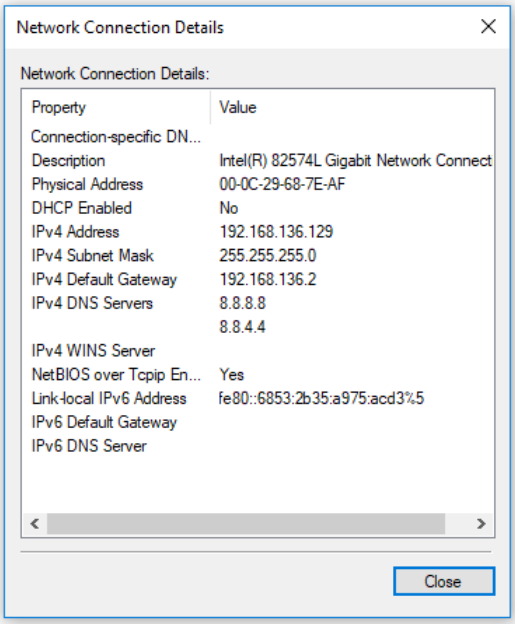
- It is recommended to set same IP address that is already assigned dynamically by router.
- To see which IP NIC1 has currently assigned, go to Windows Control Panel - Network and Sharing Center screen
- Click on Change adapter settings link and double click on the NIC (Internet) network adapter



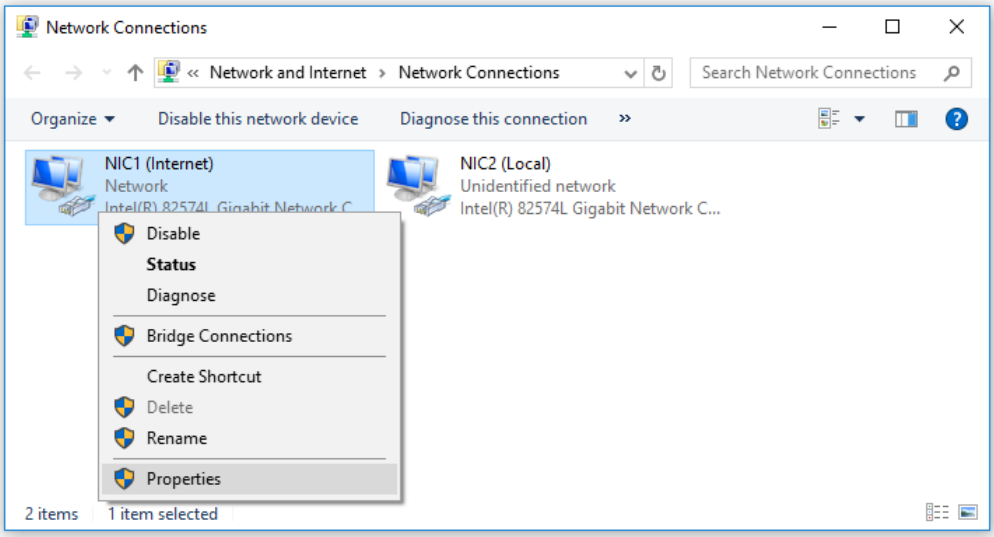
- From General tab press on Details button.



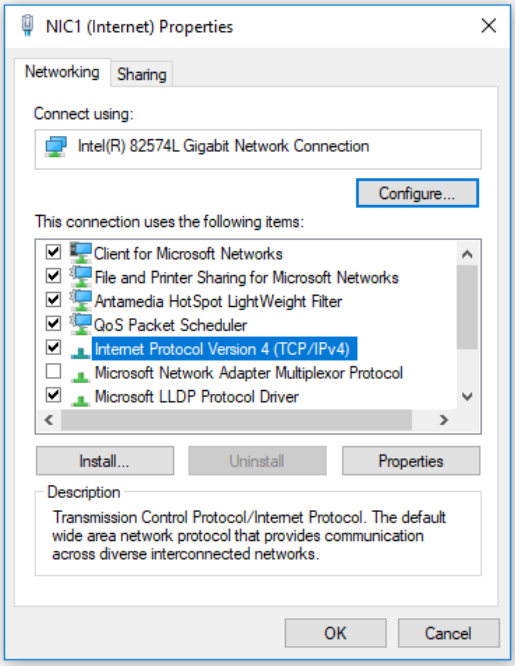
- Here you will see all current network connection details that you need to set as static



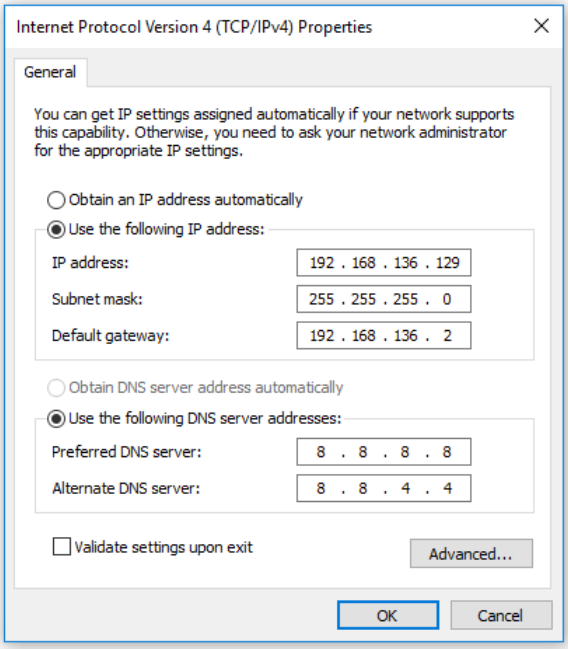
- After that go to Windows Control Panel – Network and Sharing Center screen.
- Click on Change adapter settings link.
- Right-click on NIC1 (Internet) and select Properties from menu.



- Select Internet Protocol Version 4 (TCP/IPv4) and click Properties button.

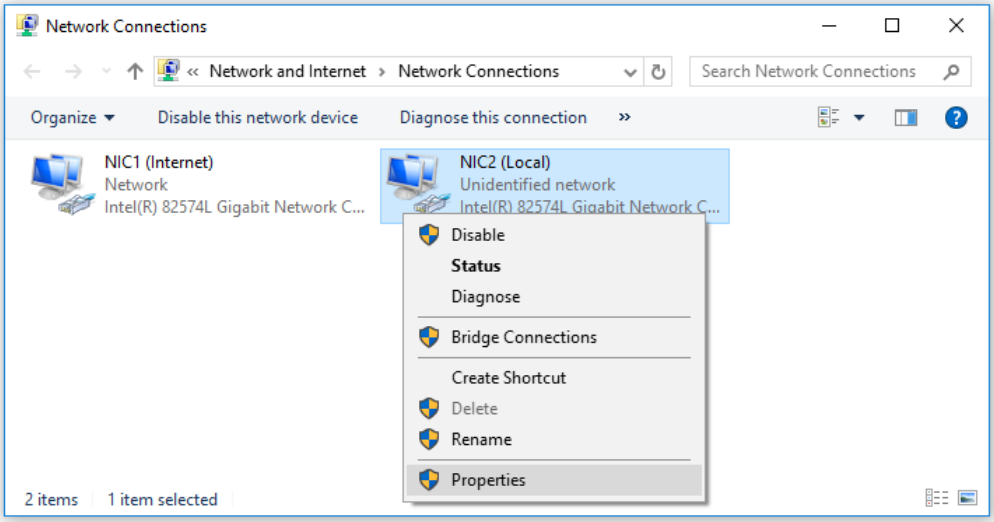


- Click Use the following IP address radio button and enter details that you get from ipconfig previously

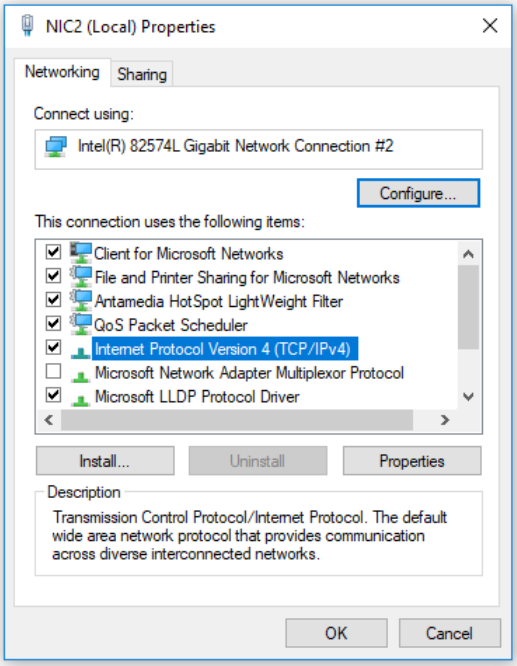


- Enter IP address (e.g. 192.168.136.129), Subnet mask same as in Network Connection Details
- IP address of the default gateway (IP of the Internet router)
- Enter DNS addresses such as Google (8.8.8.8, 8.8.4.4)**Static IP address** is should be set for **NIC2**, the network card used for communication with the client computers.

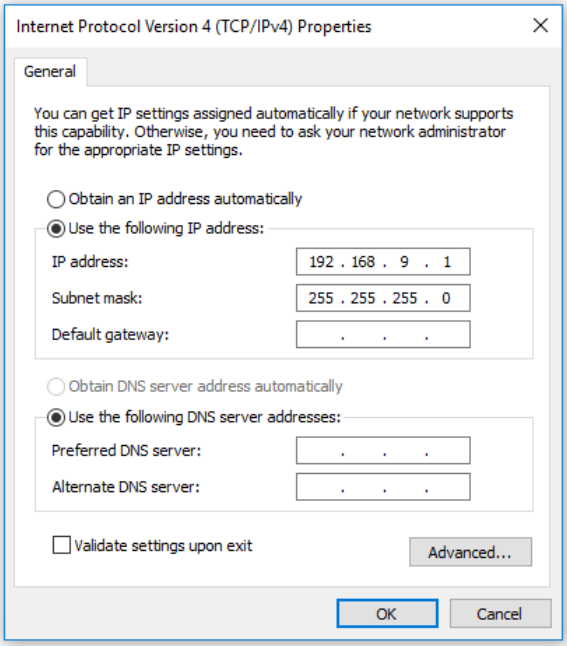
- To set static IP address for NIC2, go to Windows Control Panel - Network and Sharing Center screen
- Click on Change adapter settings link and make right-click on NIC2 (Local) and select Properties from menu.



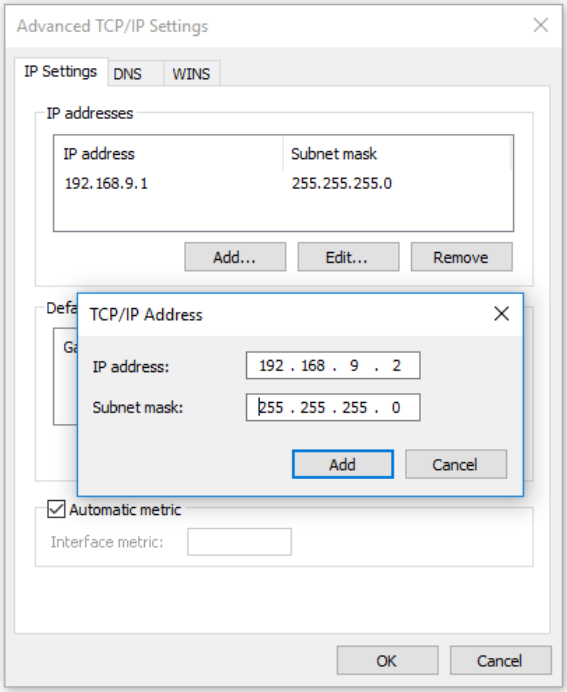
- Select Internet Protocol Version 4 (TCP/IPv4) and click Properties button.



- Click on Use the following IP address and set IP address (e.g. 192.168.9.1) and Subnet mask (e.g. 255.255.255.0) but not Gateway IP. Then press on Advanced ...



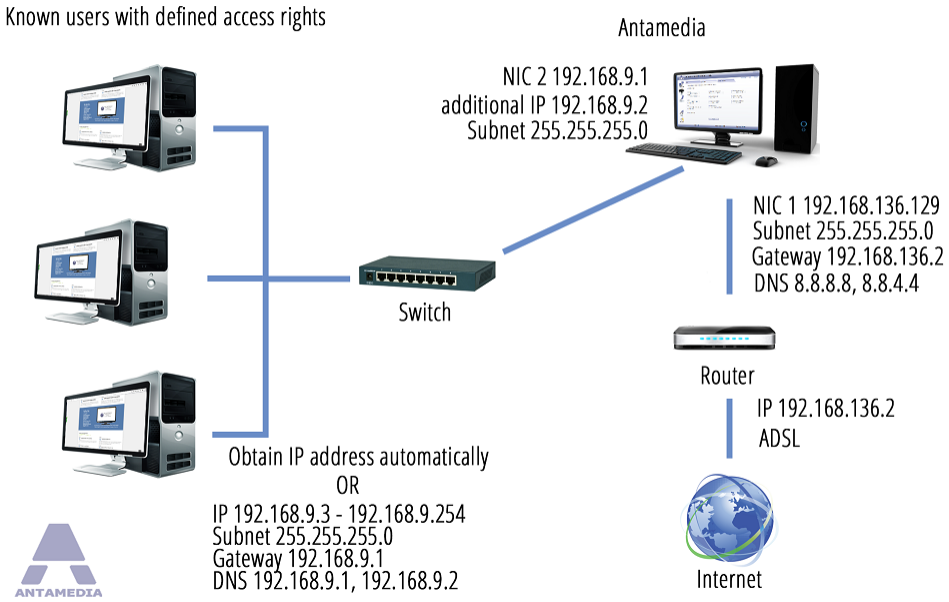
- From Advanced tab press on Add.. and add virtual IP address needed for DNS WEB Filter. Be sure that it is in same IP range with IP address and with same Subnet Mask (e.g. 192.168.9.2) and Subnet mask (e.g. 255.255.255.0)



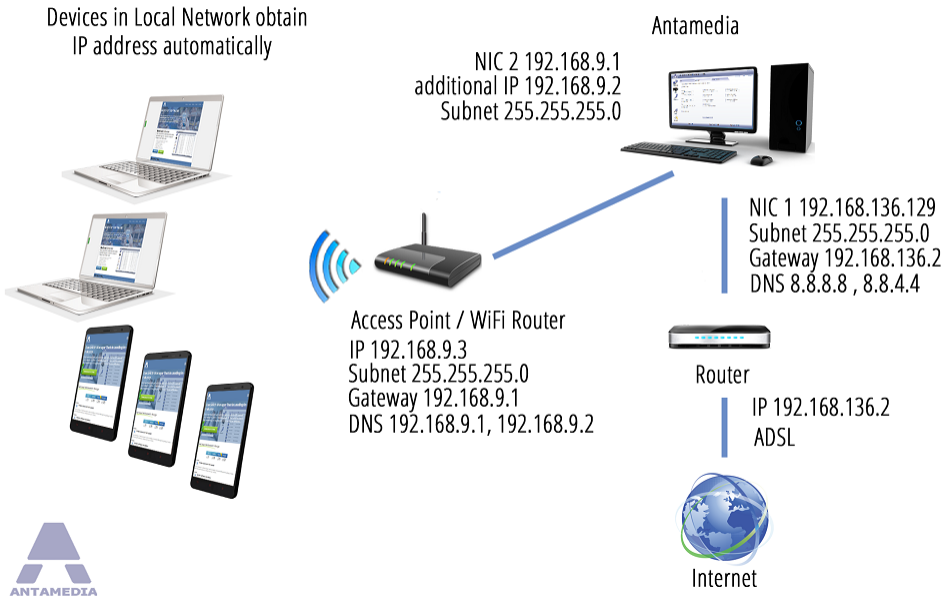
2.3 Network Topology Examples

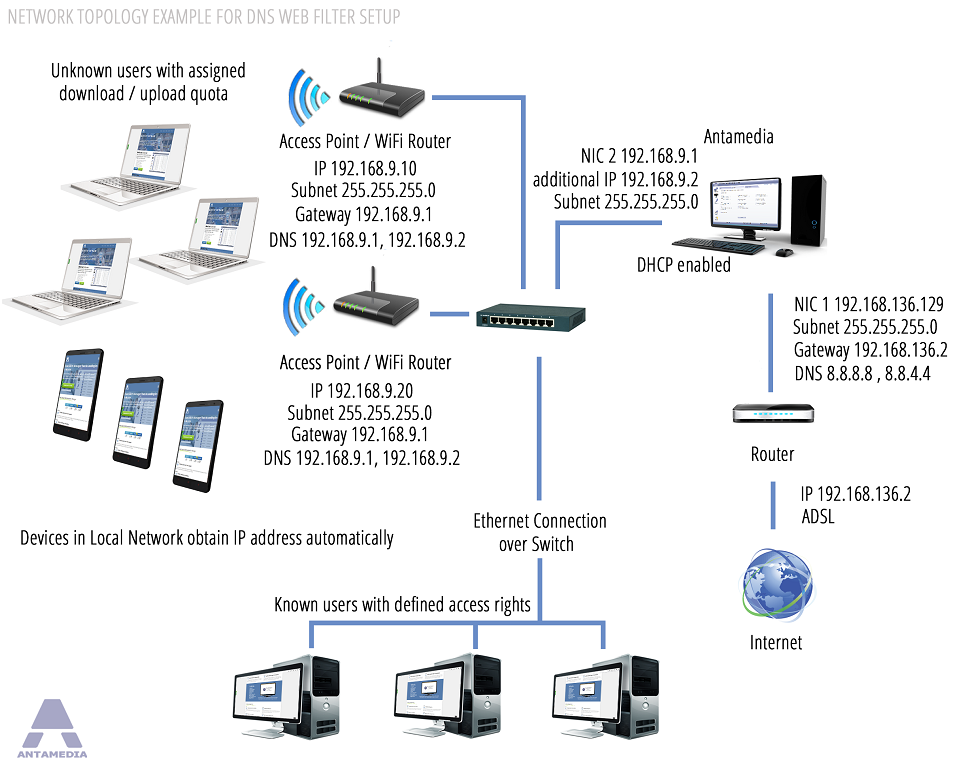
Here you can see several network topology examples that can give you better insight into how you should set switches, access points and routers on a local network in order to control it from HotSpot gateway PC.

NETWORK TOPOLOGY EXAMPLE FOR DNS WEB FILTER SETUP



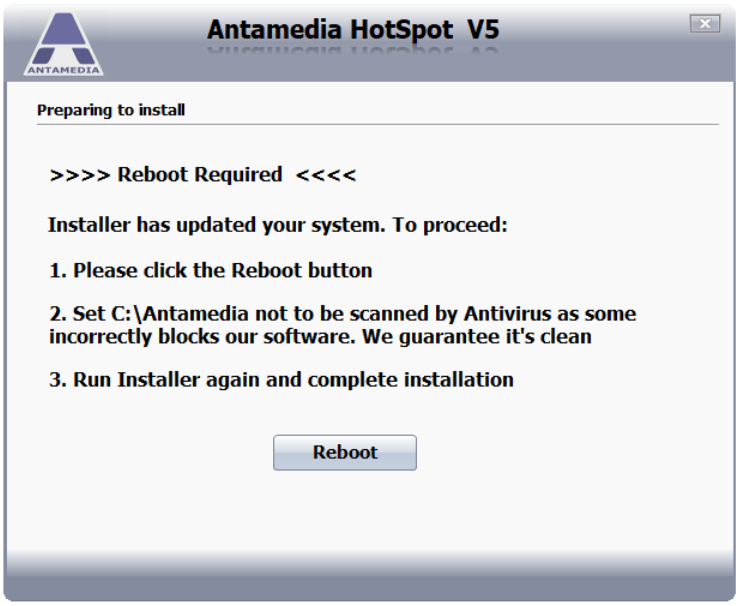
NETWORK TOPOLOGY EXAMPLE FOR DNS WEB FILTER SETUP



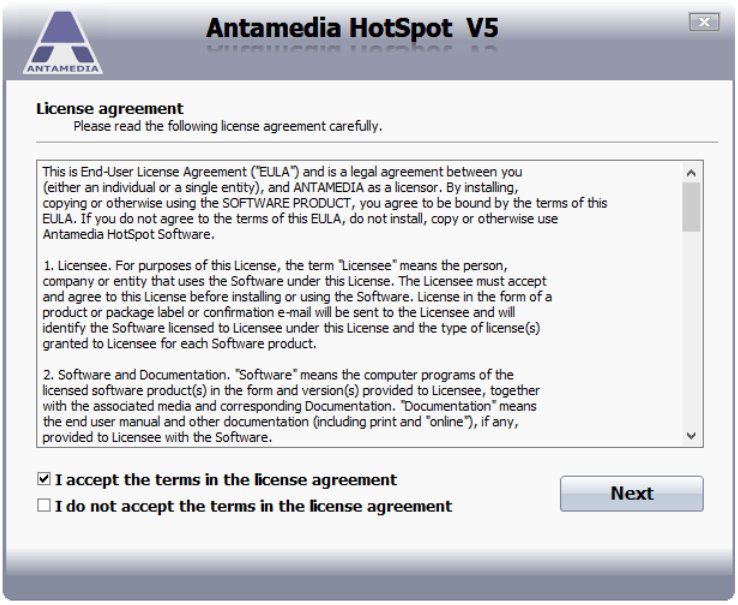

NETWORK TOPOLOGY EXAMPLE FOR DNS WEB FILTER SETUP
Unknown users with assigned download / upload quota
Access Point / WiFi Router
IP 192.168.9.10
Subnet 255.255.255.0
Gateway 192.168.9.1
DNS 192.168.9.1, 192.168.9.2
Antamedia
NIC 2 192.168.9.1
additional IP 192.168.9.2
Subnet 255.255.255.0
DHCP enabled
NIC 1 192.168.136.129
Subnet 255.255.255.0
Gateway 192.168.136.2
DNS 8.8.8.8 , 8.8.4.4
Access Point / WiFi Router
IP 192.168.9.20
Subnet 255.255.255.0
Gateway 192.168.9.1
DNS 192.168.9.1, 192.168.9.2
Router
IP 192.168.136.2
ADSL
Devices in Local Network obtain IP address automatically
Ethernet Connection over Switch
Internet
Known users with defined access rights
ANTAMEDIA

3 HotSpot Installation

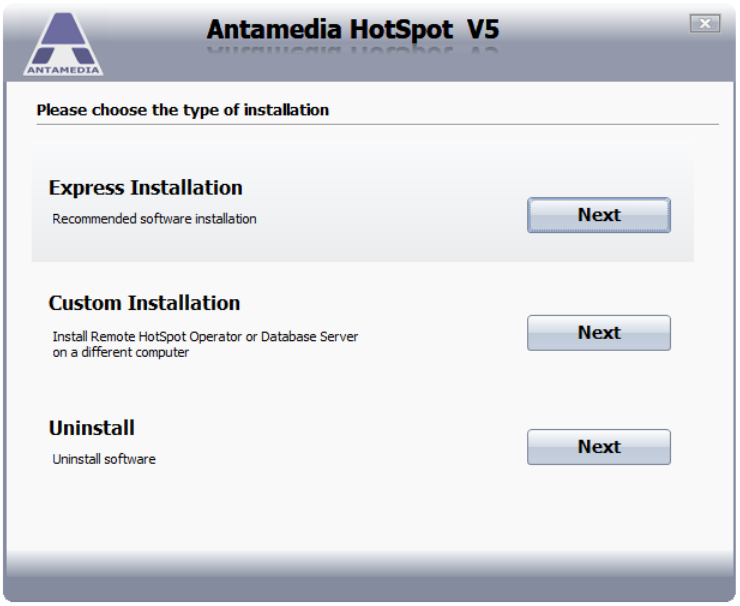
Once when pre-installations steps are done you can proceed with HotSpot software installation. As soon you start HotSpot software installer on computer you will get notification "**Reboot Required**"



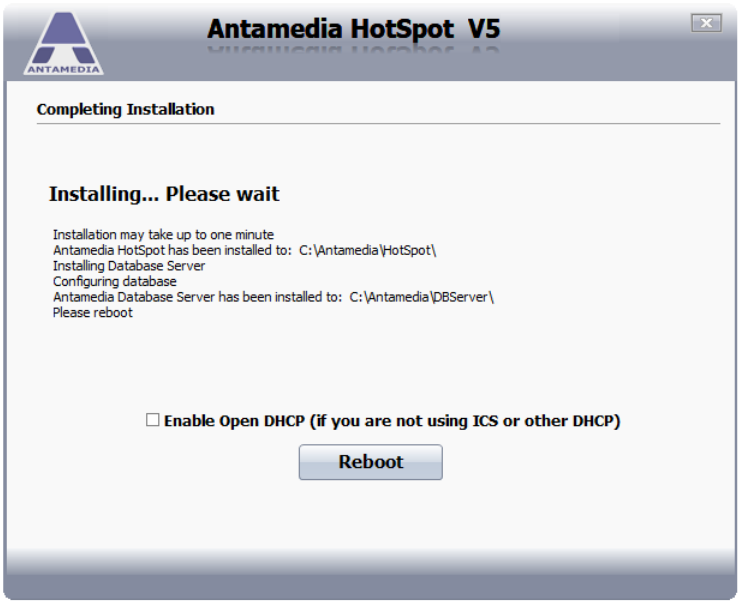
After that start HotSpot installer if it is not started automatically. Select "**I accept terms in the license agreement**" and press on Next



New window will give you option to choose between **Express Install**, **Custom Install** or **Uninstall**. We recommend you to select **Express Install** and press on **Next**.



During **HotSpot installation** process you will be informed about current installation of required drivers, Database Server and creating of required files.
Don't install DHCP Server included in HotSpot.
Reboot is required when process in completed.



4 Windows 7, 8.1 and 10

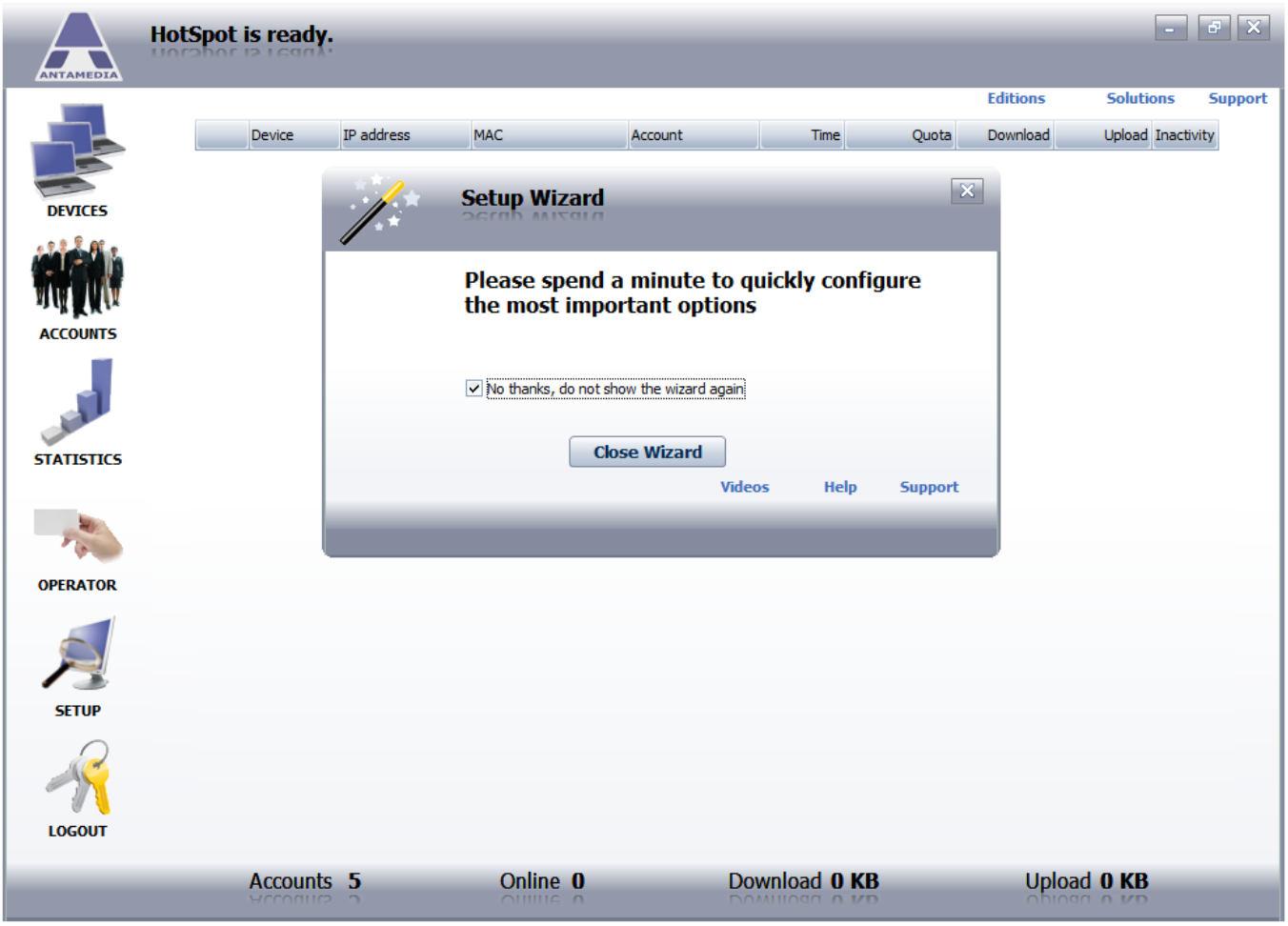
Antamedia DNS Web Filter software can be set on any Windows OS. However, Windows Connection Sharing from Windows 7, Windows 8.1 and Windows 10 can not be used if you plan to setup and configure DNS Web Filter with HotSpot. For this purpose will be used HotSpot software NAT.

To set up properly Antamedia DNS Web Filter with HotSpot on any of those Windows OS, please follow these steps:

1. Complete pre-installation steps 3
2. Install 11 HotSpot software
3. Set computer as gateway on network using HotSpot NAT 14
4. Configure DHCP Server 16
5. Setup DNS Web Filter 44

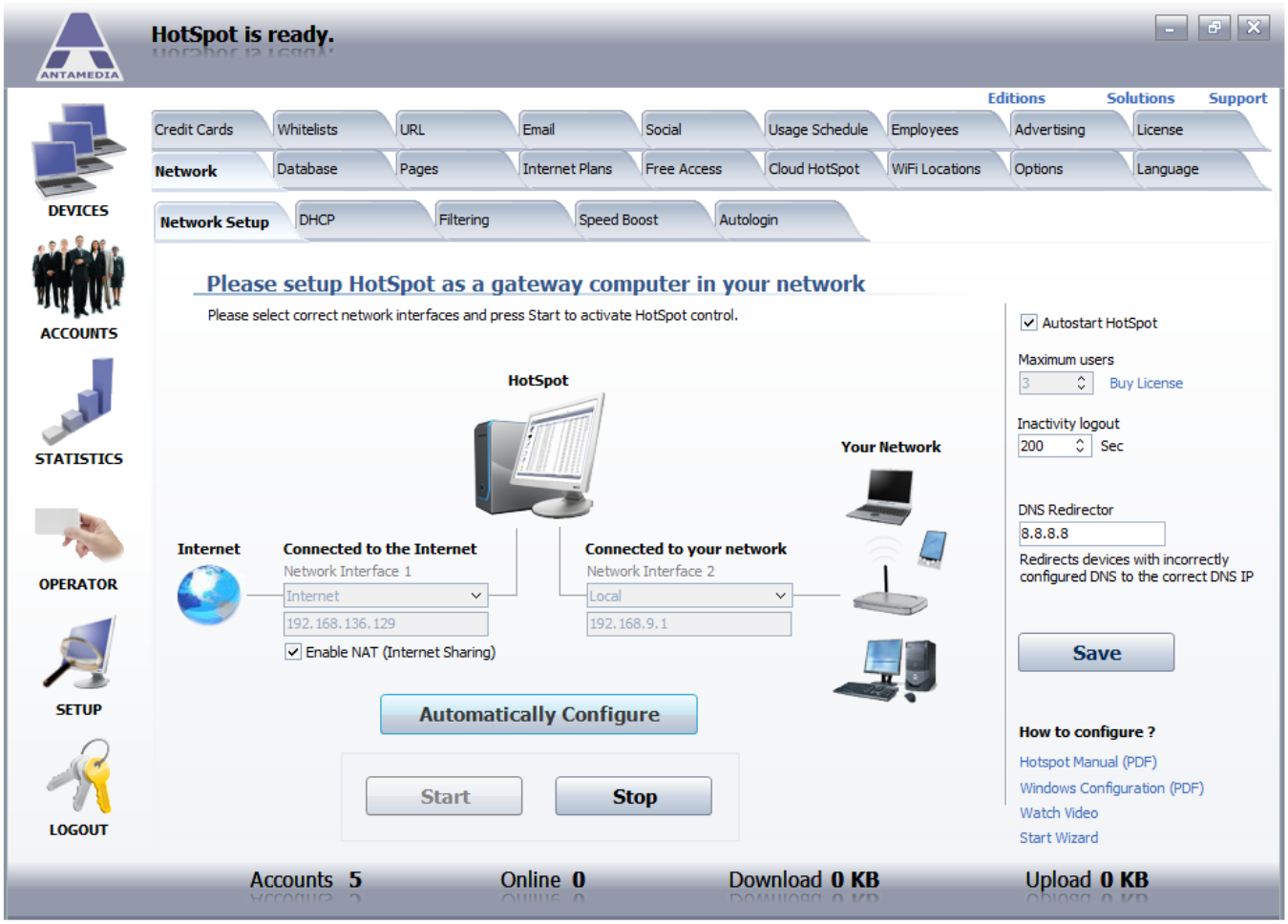
4.1 HotSpot NAT

Please follow these steps to configure computer as gateway on network using HotSpot NAT:
After software installation and computer is rebooted. As soon it is started you will get Setup Wizard with HotSpot.



Select "No thanks, do not show wizard again" and press on Close button.

Go to **Setup - Network** tab. Be sure that network connections are properly selected from Network. Set option "Autostart" and DNS Redirector to DNS 8.8.8.8.
Select "Enable NAT (Internet Connection) and press on **Save** and **Start** button.



4.2 DHCP Server

DHCP Server is required for your local network if you plan to give access and control unknown devices on your local network.

✓ Setup of static IP addresses on local network
Here are detailed instructions what to set on your local network computers in order to connect to your gateway computer with static IP addresses when DHCP Server is not used on local network.

To set static IP addresses for local network computers:
set **IP** in same **IP range** with gateway computer **NIC2 (Local)** (e.g. **192.168.9.3-192.168.9.253**);
same **Subnet mask** (e.g.**255.255.255.0**);
Default Gateway is **IP of the NIC2 (Local)** network adapter (e.g.**192.168.9.1**);
Preferred DNS is **NIC2 (Local) IP address** (**e.g.192.168.9.1**) and as
Alternate DNS use **virtual IP address** that you have **added to NIC2 (Local) adapter** (e.g. **192.168.9.2**)

✓ Setup of DHCP Server and use of dynamic IP addresses on local network
Here are details which you need to set on your DHCP Server application. Configure following:
IP pool is in range of NIC2 (Local) (e.g **192.168.9.3-192.168.9.253**)
Subnet mask should be same as on **NIC2** (**Local**) (e.g. **255.255.255.0**)
Router IP is same as **NIC2** (**Local**) address (e.g. **192.168.9.1**)
Preferred DNS is **NIC2** (**Local**) IP address (e.g.**192.168.9.1**)
Alternate DNS is **virtual IP address** that you have added to **NIC2** (**Local**) adapter (e.g. **192.168.9.2**)

On all client computers go to Network Connection Properties. Go to Internet Protocol Version 4 (TCP/IPv4) Properties.
Select radio button for **Obtain an IP address automatically** and **Obtain DNS server automatically**.

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✓ **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. We recommend use of Windows Server 2003, Windows Server 2008, Windows Server 2012 or Windows Server 2016 DHCP Server role on gateway computer. DHCP Server role can be used for providing more than 253 addresses on local network if it is needed. 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

5 Windows Server OS

Antamedia software can be set on Windows Server OS using HotSpot NAT, 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 DNS Web Filter and HotSpot on Windows Server 2003, 2008, 2012 or 2016 please follow these steps:

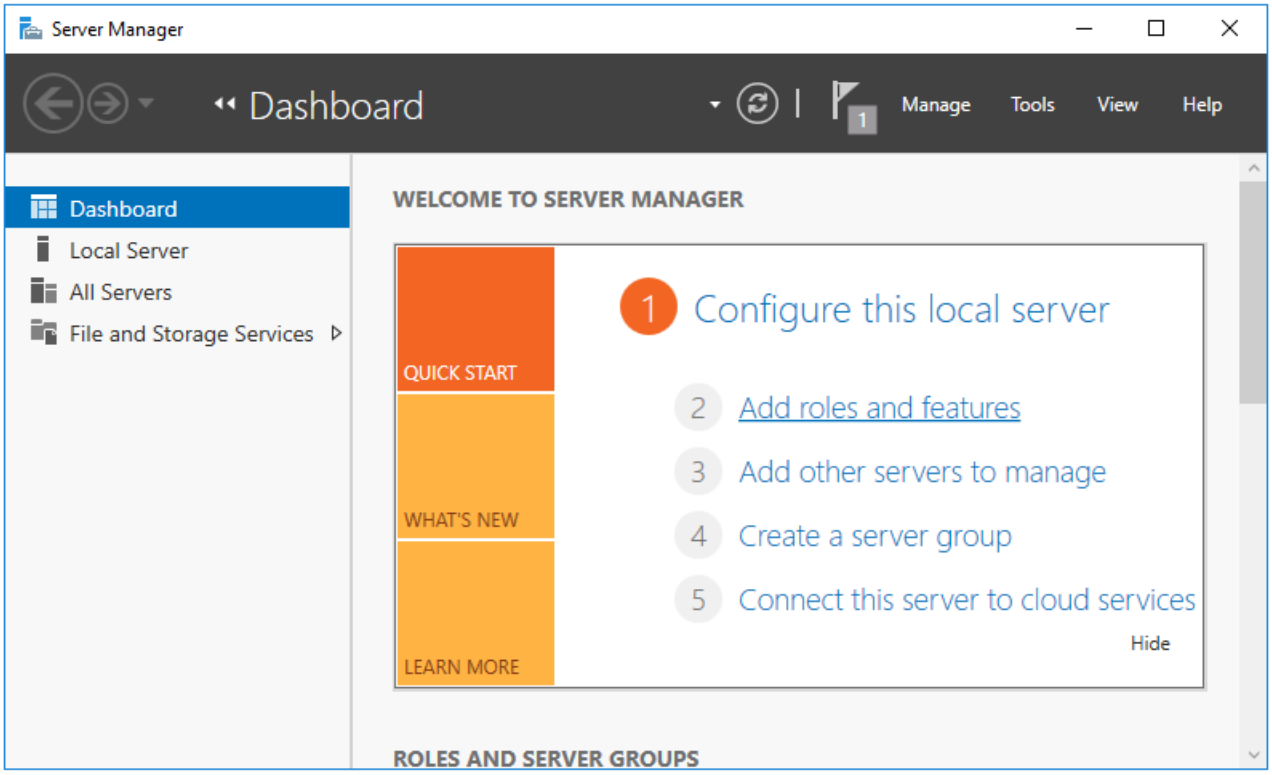
1. Complete pre-installation steps 3
2. Install and configure Windows DHCP 19 server role
3. Install and configure Windows Routing and Remote Access 33 role
4. Change IIS port
5. Install 11 and configure HotSpot
6. Setup DNS Web Filter 44 software

5.1 DHCP Server Installation and Setup

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.

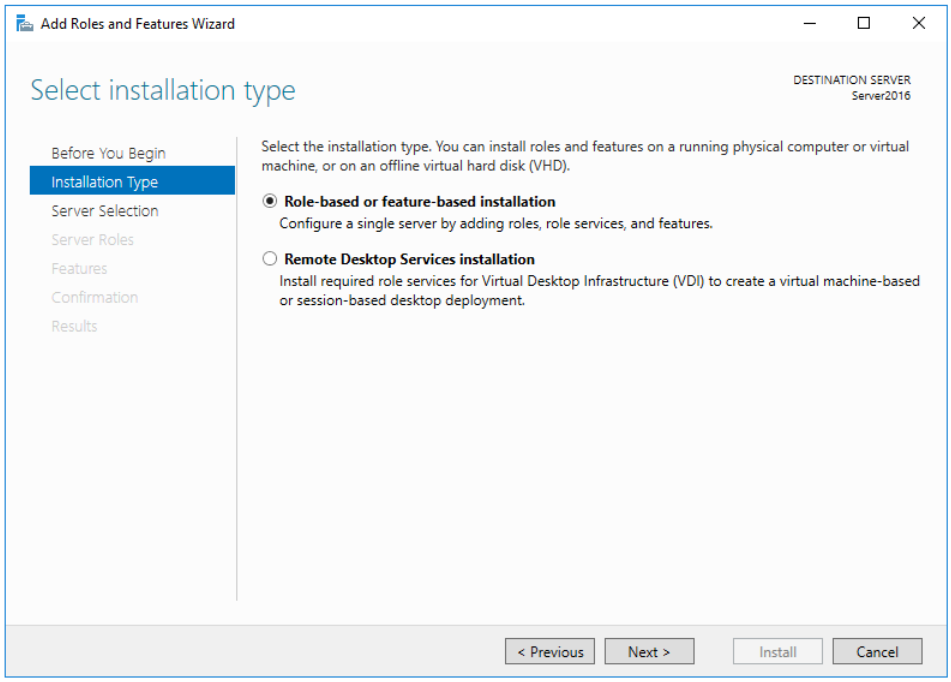
Follow these steps to install and configure DHCP service:

1. To start the DHCP installation process, click **Add Roles and features** from **Server Manager - Roles** screen.

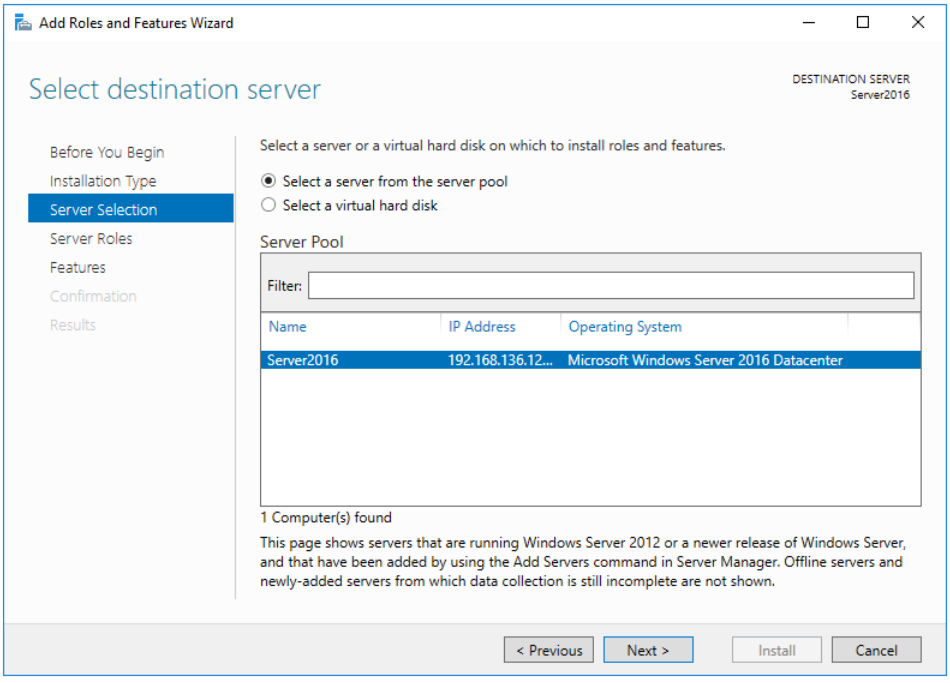


2. When the **Add Roles and Feature Wizard** window opens, click **Next** on that screen.

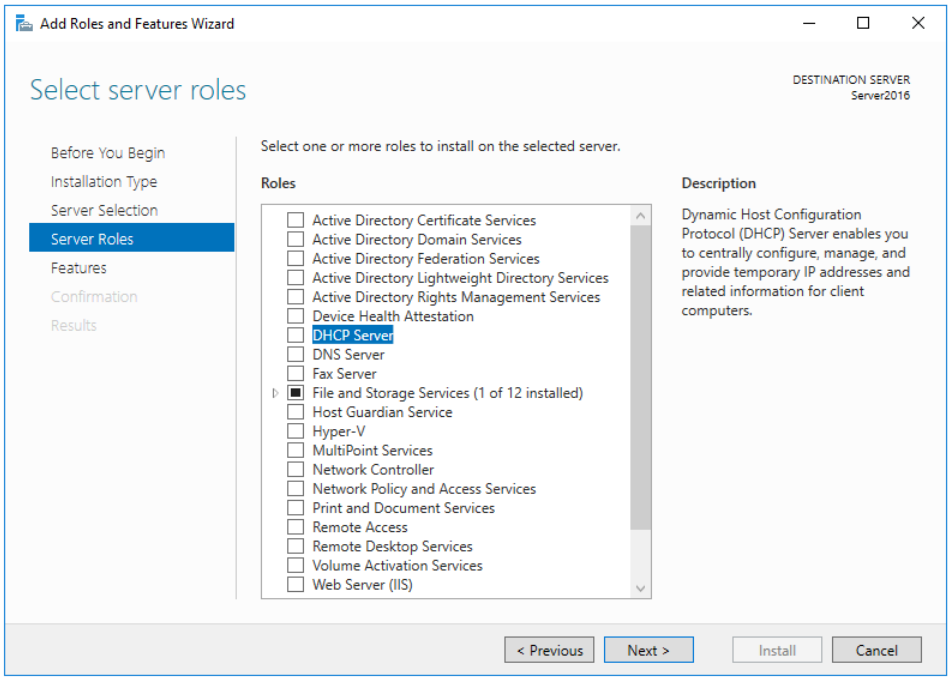
3. From **Installation Type** screen select "**Role-based on feature-based installation**" and click **Next**.



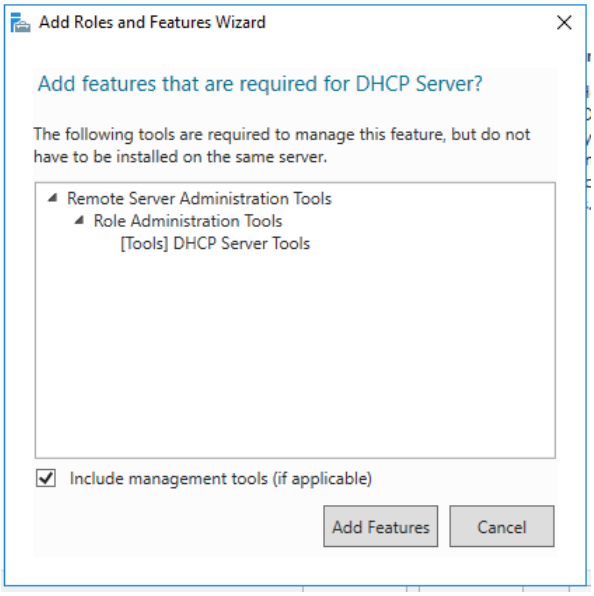
4. From **Server Selection** choose "**Select a server from the server pool**" and select your computer in the list bellow then click on **Next**



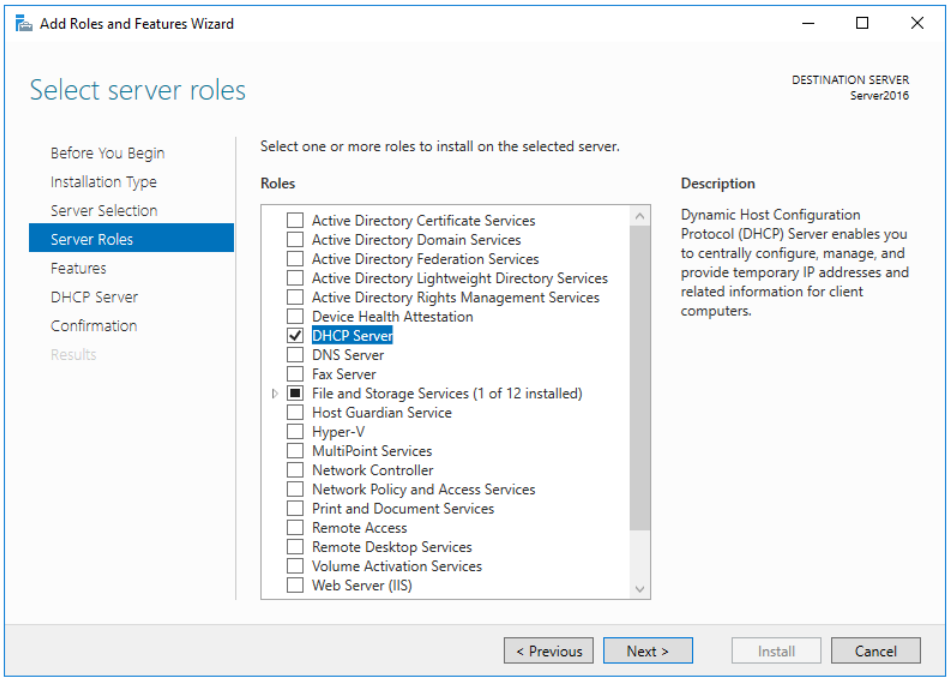
5. At **Server Roles** screen select "**DHCP Server**"



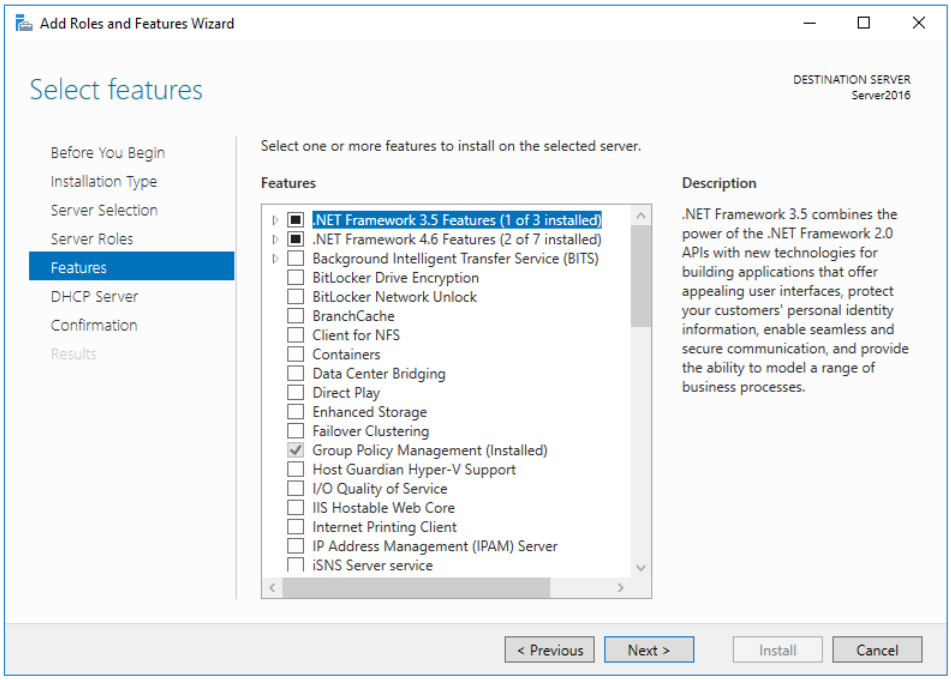
6. **Add Roles and Features Wizard** pop-up window will inform you about the role and features that you add. Click on **Add Features**.



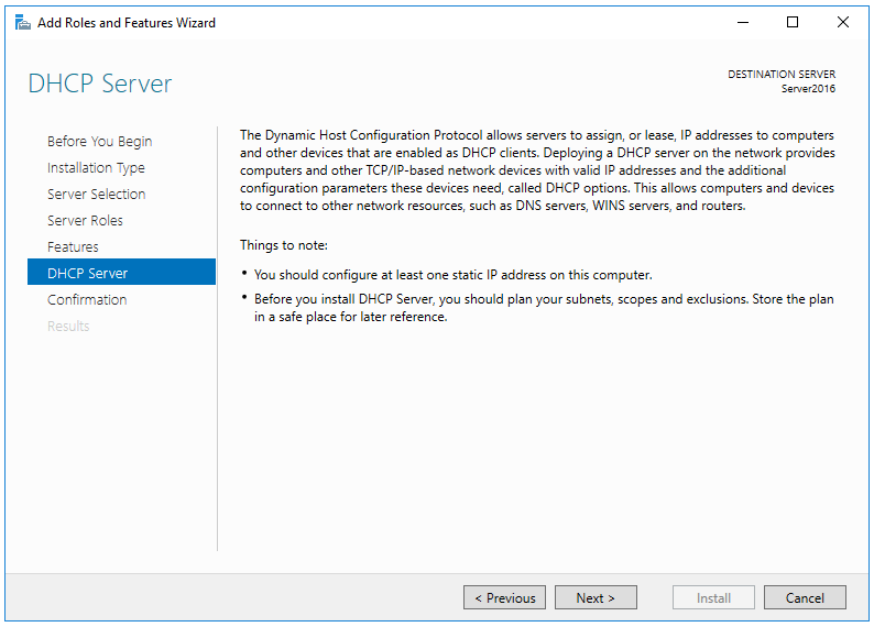
7. **DHCP Server** role is now selected in the list of **Server Roles** and press on **Next**



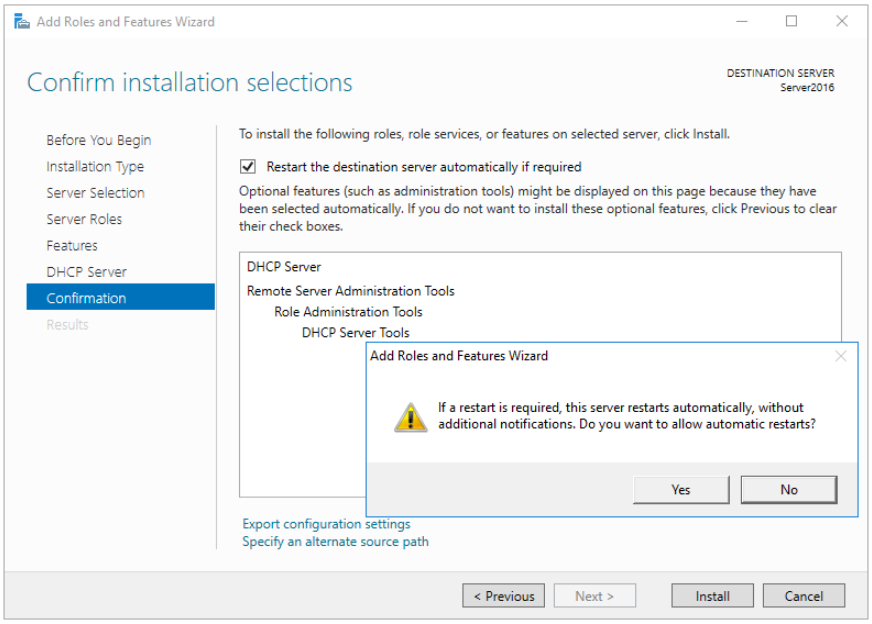
8. On **Features** screen is by default selected all required features for installation of DHCP Server role, click on **Next**



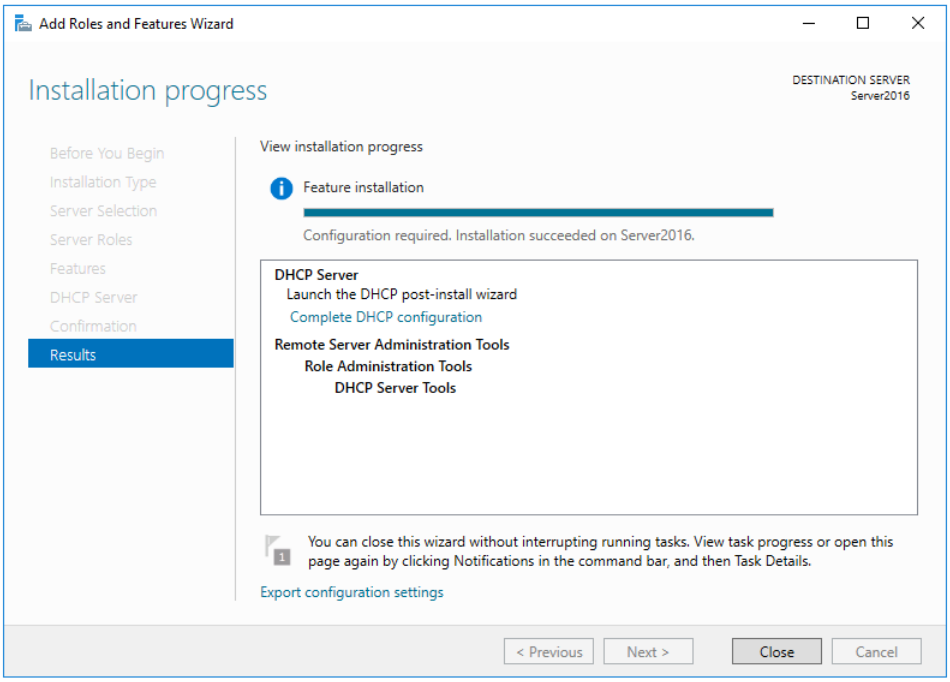
9. At **DHCP Server** screen you will see a **note** which guide you to set static IP addresses on the network connections and that you need carefully to plan subnets, scopes and exclusions before installing DHCP Server. Click on **Next**



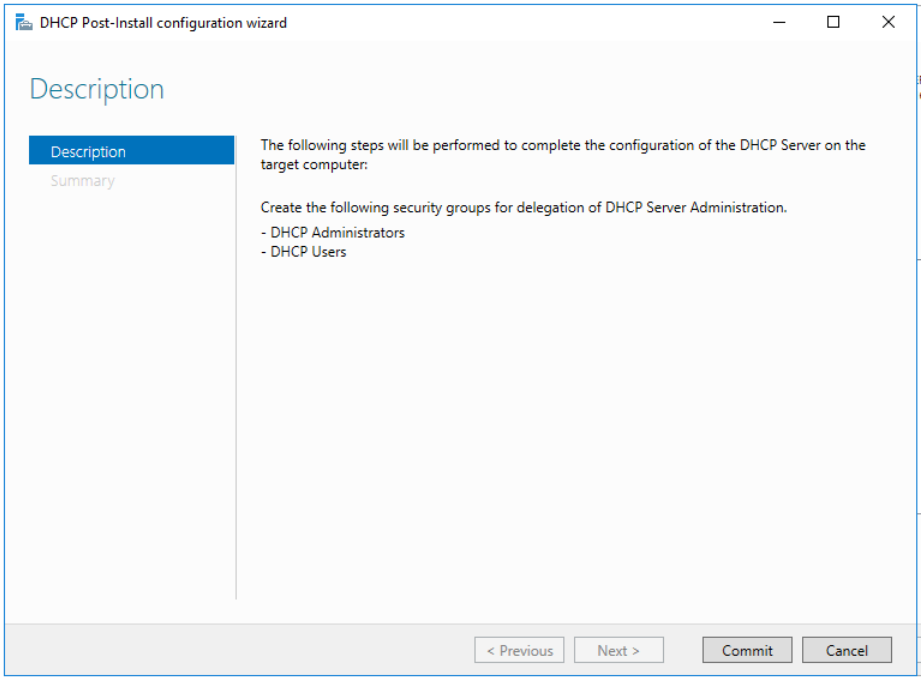
10. From **Confirmation** screen select option "**Restart the destination server automatically if required**" and confirm it by pressing on **Yes** and new pop-up window. Then click on **Install** button.



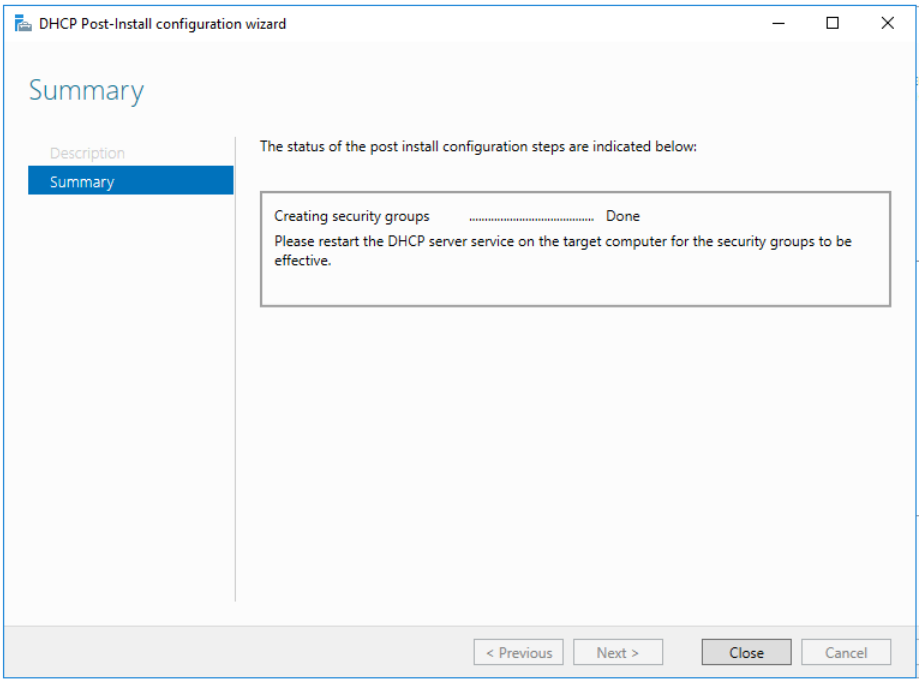
11. When installation is finished you should press on "**Complete DHCP configuration**" link.



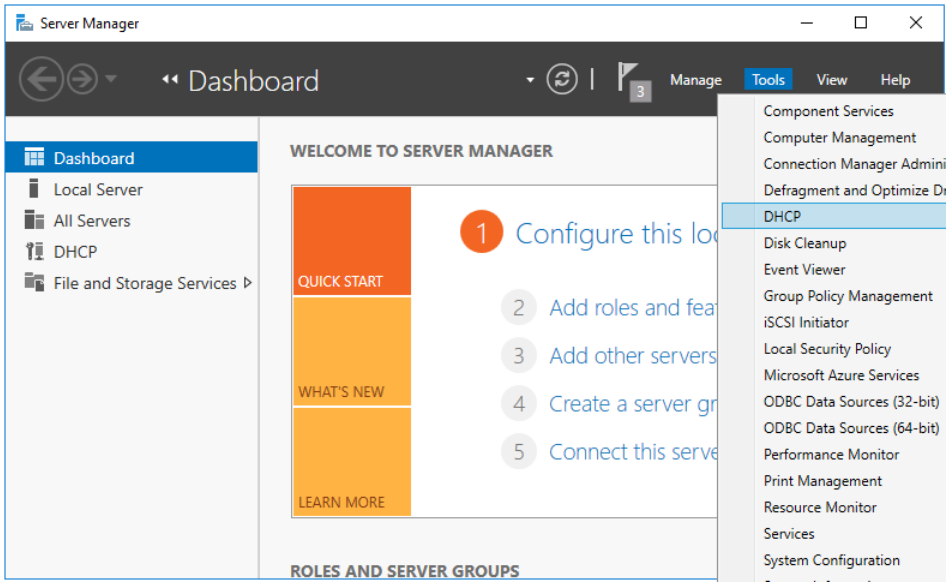
12. **DHCP Post-Install configuration wizard** will start with "**Description**" and instructions about the creation of security groups, here click on **Commit**



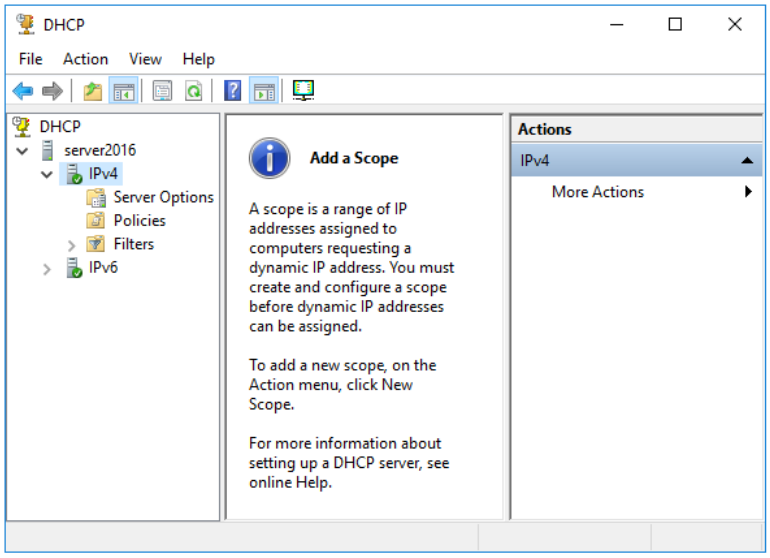
13. From **Summary** screen click on **Close** button.



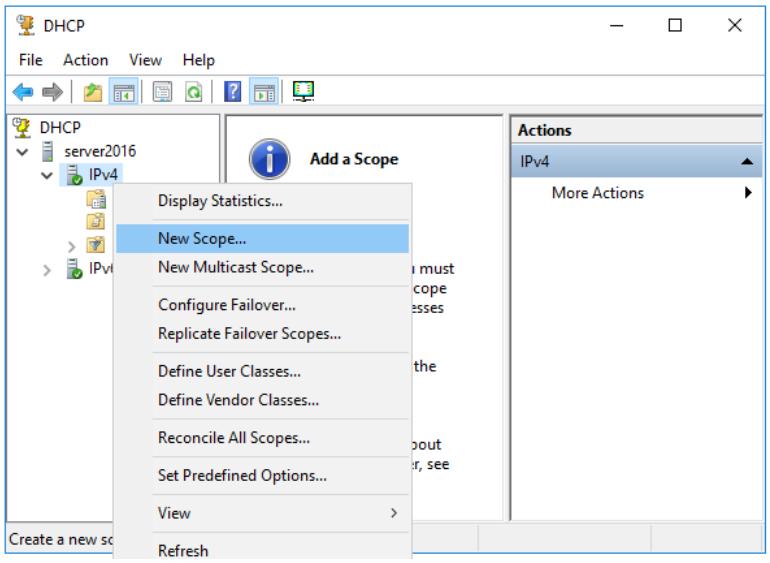
14. Restart computer and from **Server Manager** press on **Tools** and choose **DHCP**.



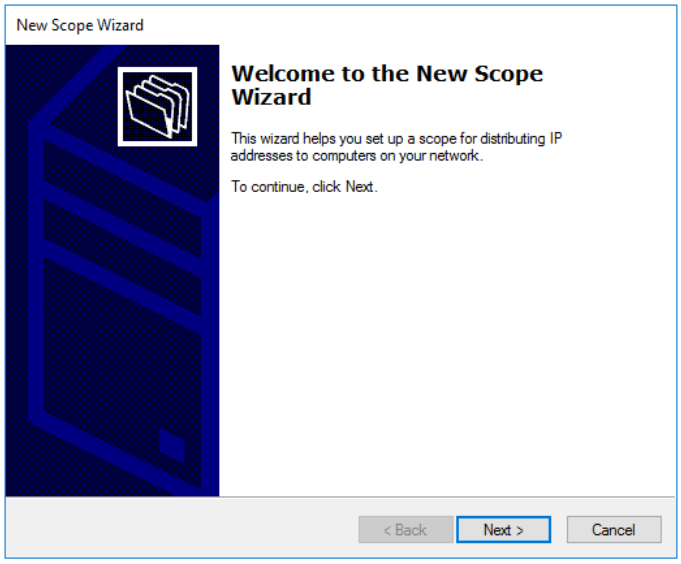
15. From **DHCP** window select your server and click at **IP4v4.**



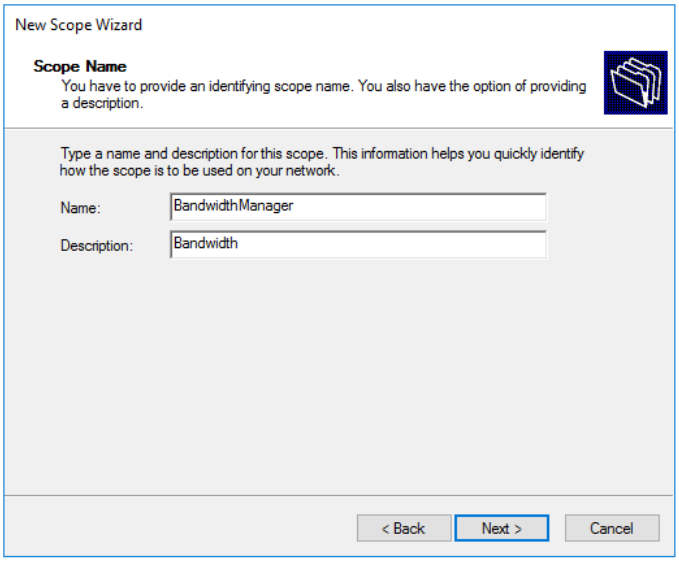
16. From **IP4v4** right-click menu select **New Scope**



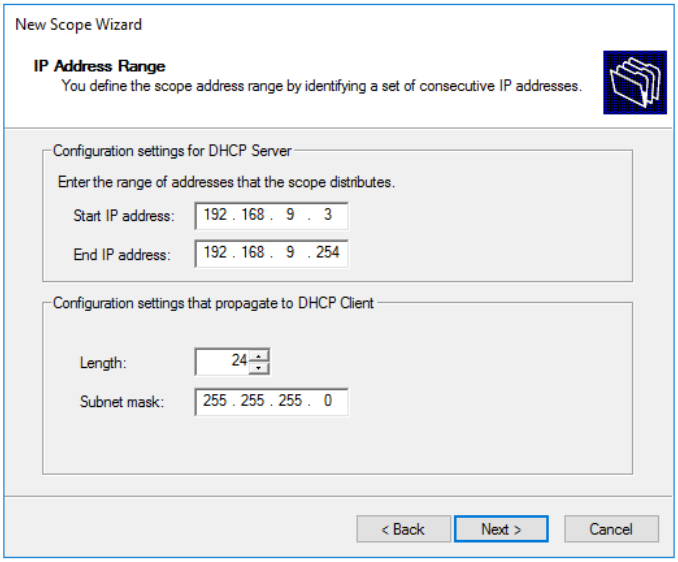
17. From **New Scope Wizard** press on **Next** .



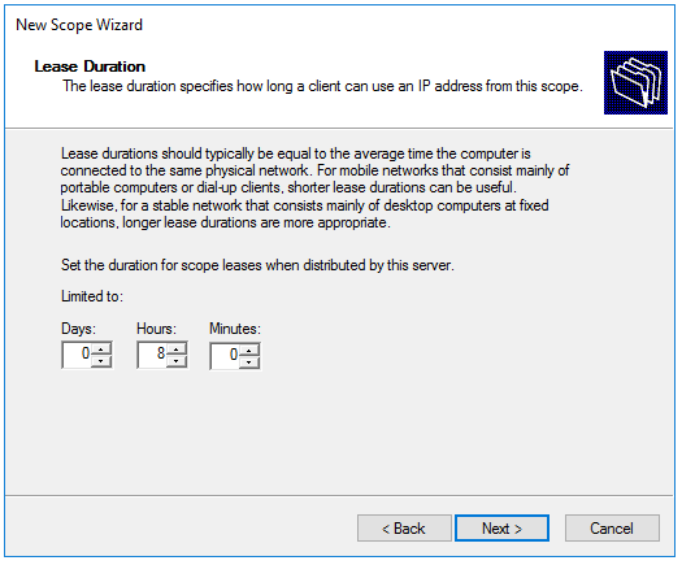
18. Set **Scope Name** and **Description** before you click on **Next**



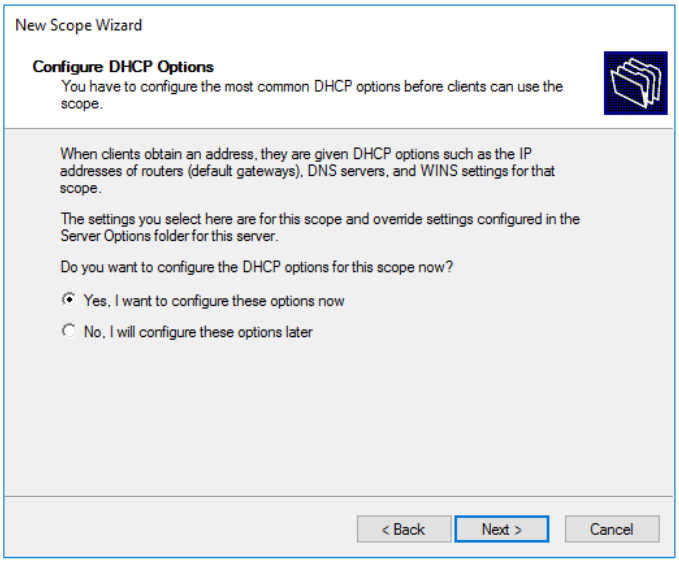
19. From **IP Address Range** screen enter **Start IP address**, **End IP address**, **Length** and **Subnet mask** and click on **Next**



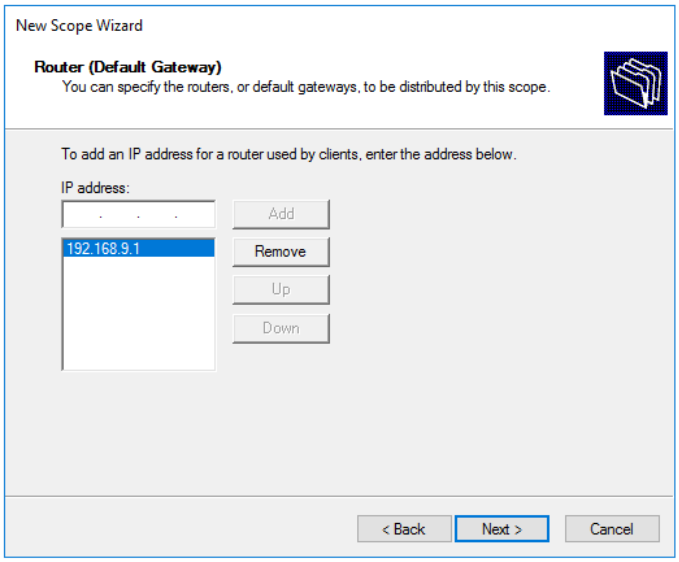
20. From **Add Exclusions and Delay** screen set excluded IP or range of addresses if it is required and press on **Next** to continue with setup.
21. At **Lease Duration** screen set 8 hours as lease time duration. Shorter time interval is recommended for wireless networks with higher number of new users. Click on Next.



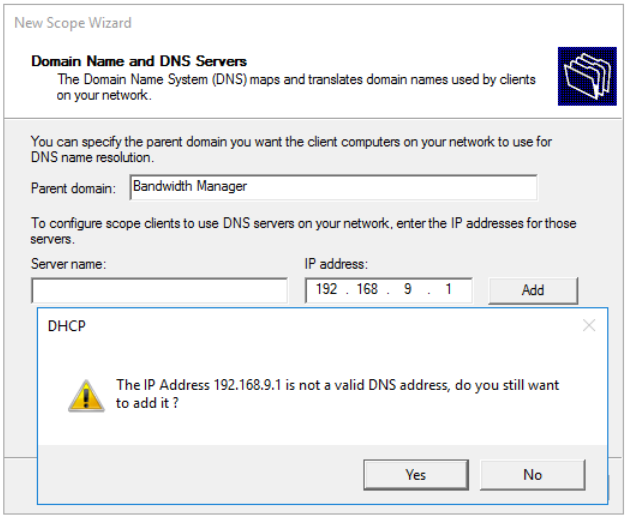
22. From **Configure DHCP Options** select "**Yes, i want to configure these options now**" and click on **Next**



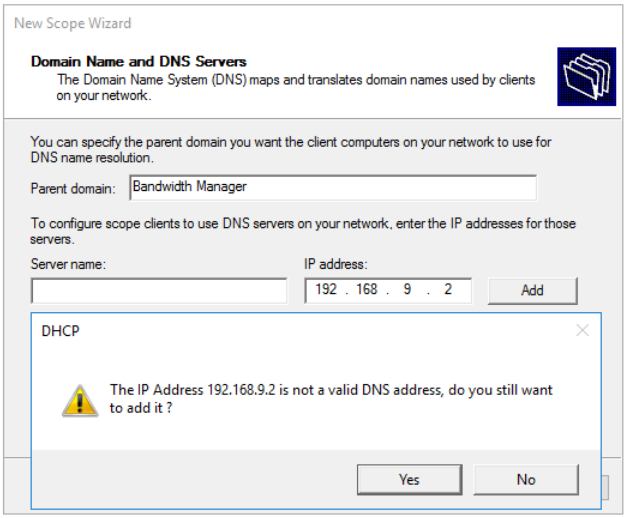
23. On **Router (Default Gateway)** screen type your **NIC2 (Local)** static IP address and press on **Add** button. Then click on **Next**



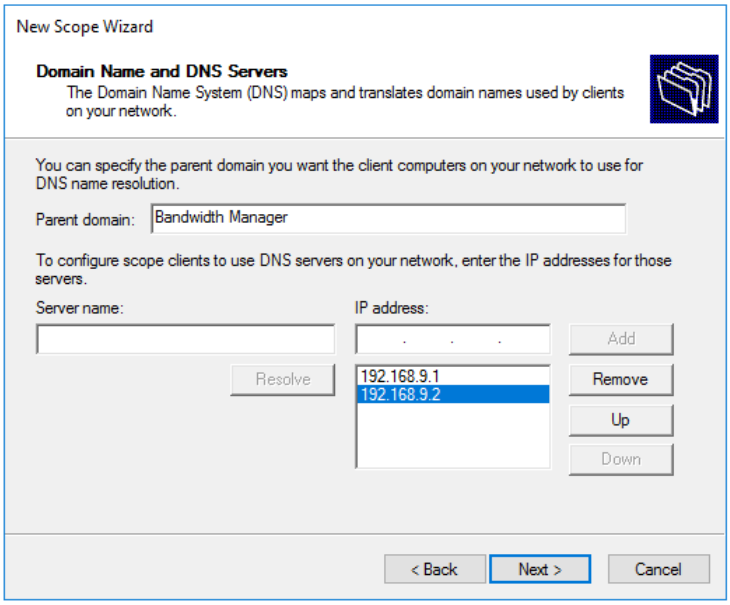
24. From **Domain Name and DNS Servers** you need to specify DNS settings (**Parent domain**, **IP addresses for DNS Servers**). For **Parent Domain** you can enter the name of your Active Directory domain or make up domain name if you don't have one (in this example "Bandwidth Manager" domain is used). Remove any offered DNS and as DNS addresses as your **NIC2 (Local)** Ip address (e.g. **192.168.9.1**). Ignore DHCP Server warning message and press on **Yes**.



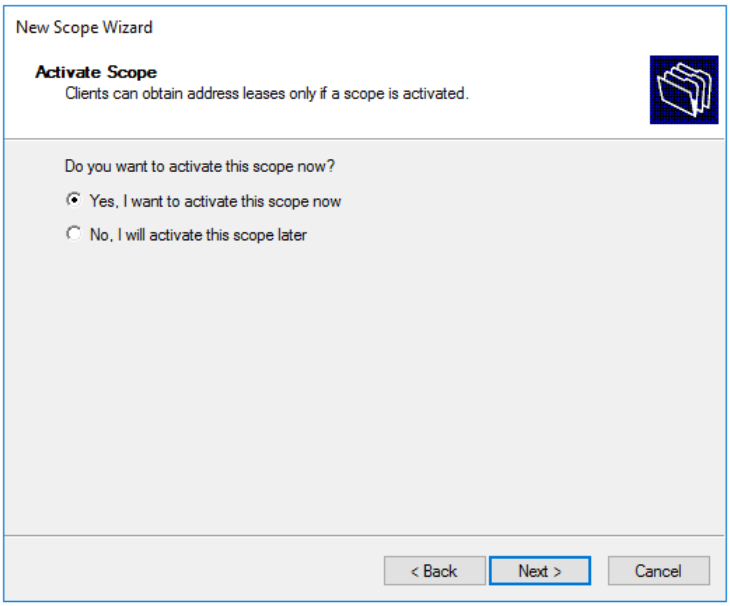
25. Repeat step for adding Virtual IP address added to your **NIC2 (Local)** and add it here also (e.g. **192.168.9.2**) Ignore DHCP Server warning message and press on **Yes**.



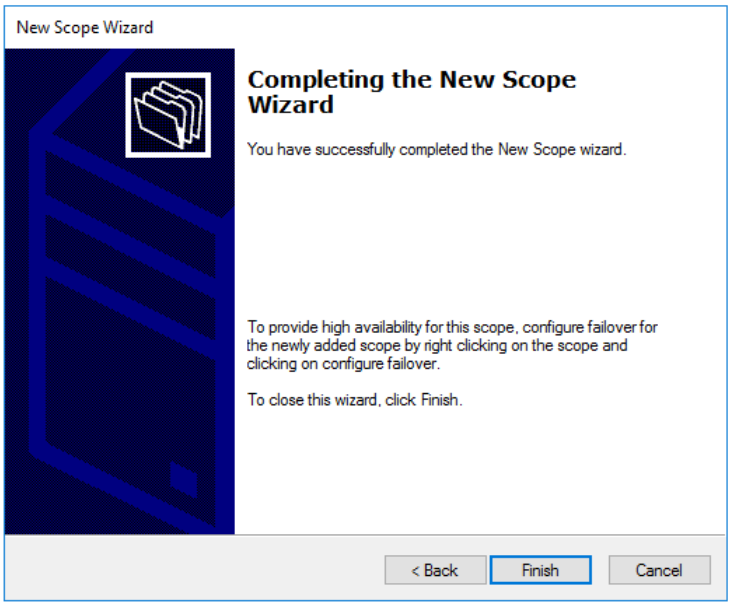
26. When both **NIC2 (Local)** IP addresses are there click on **Next**



27. In **Activate Scope** screen select "**Yes, i want to activate this scope now**" and press on Next.



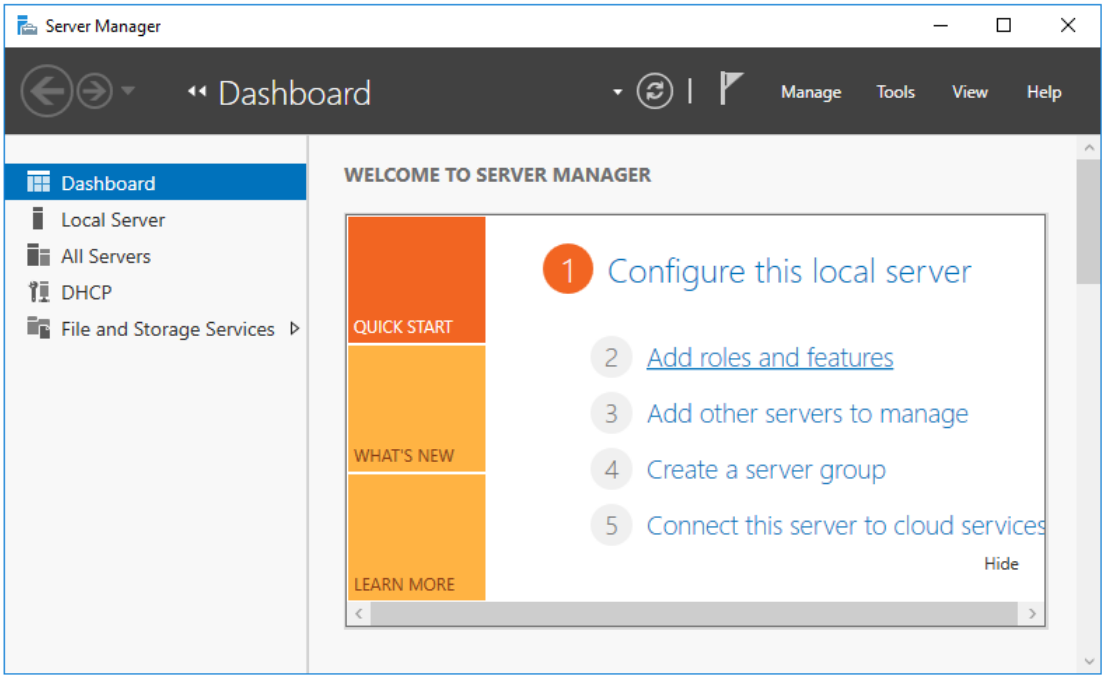
28. On **Completing the New Scope Wizard** click on **Finish**.



5.2 Routing Installation and Setup

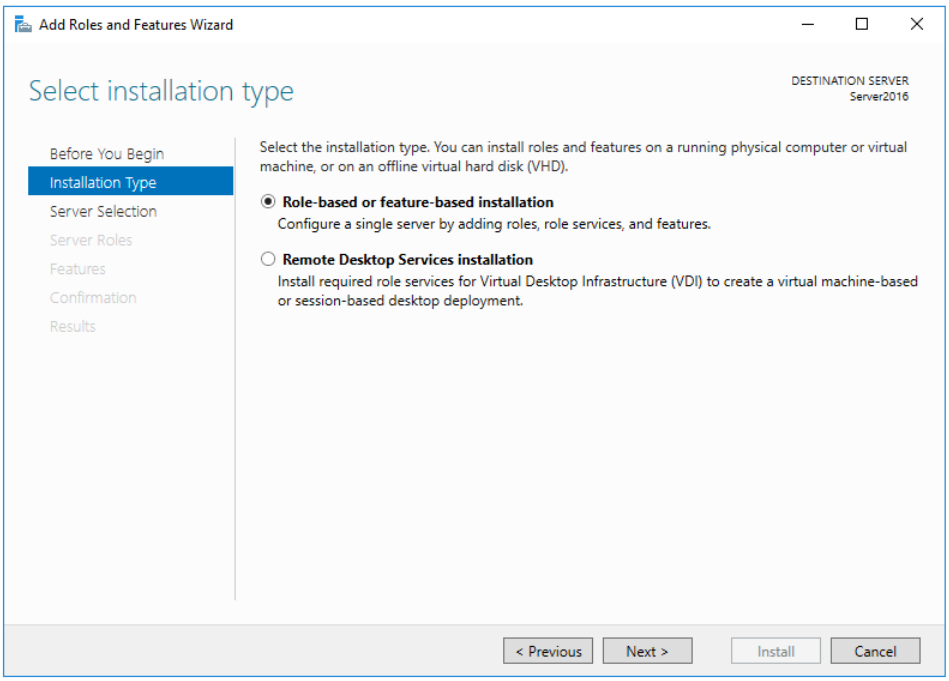
Follow these steps to configure connection sharing by using Routing And Remote Access Services on Windows 2012:

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

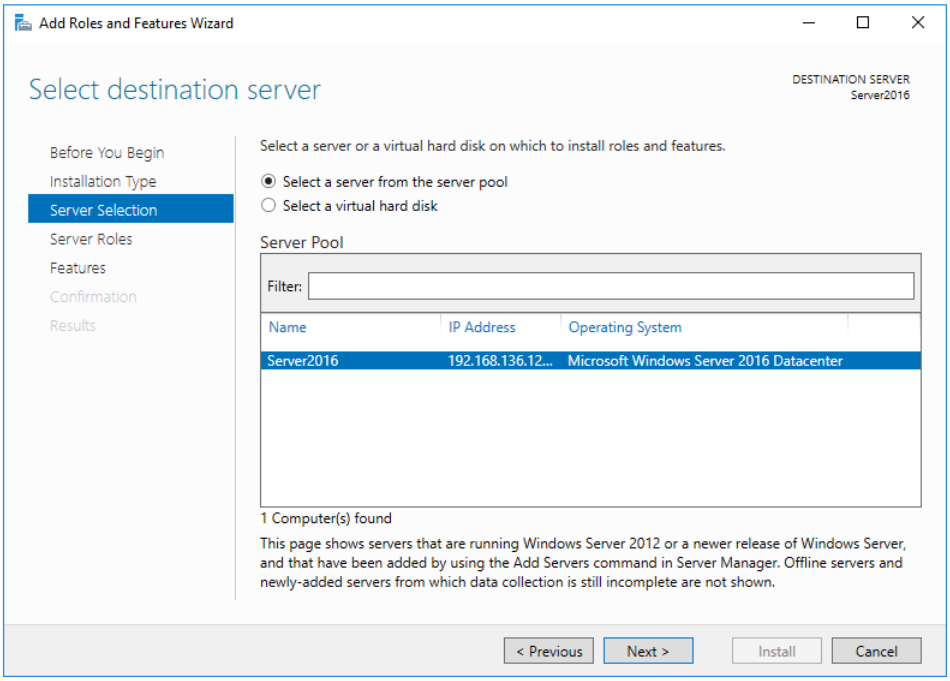


2. In **Add Roles Wizard** window from **Before You Begin** screen click **Next**.

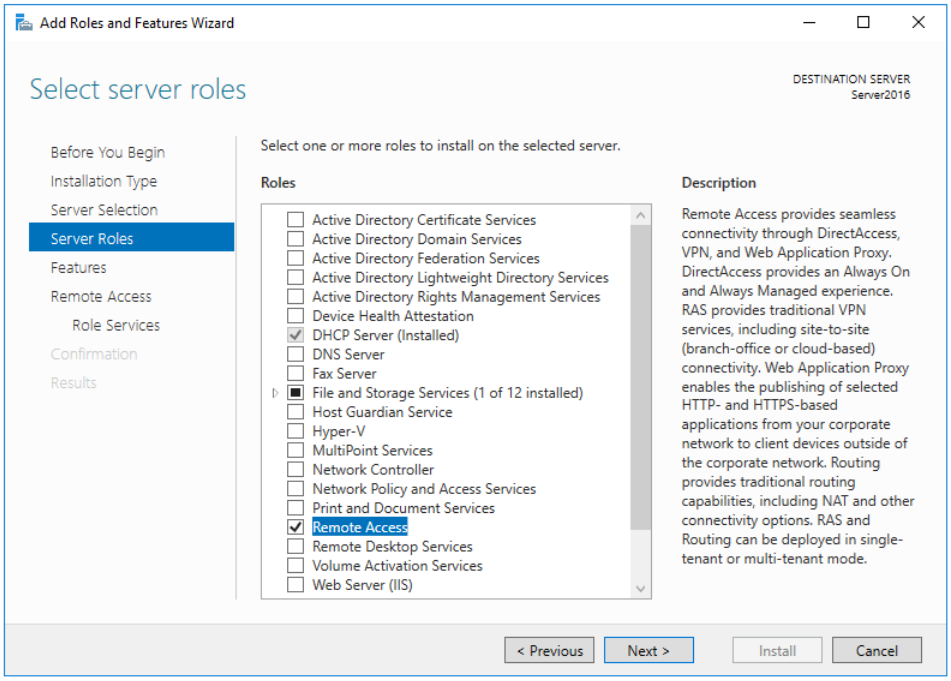
3. From **Installation Type** select "**Role-based or feature-based installation**" and click on **Next**



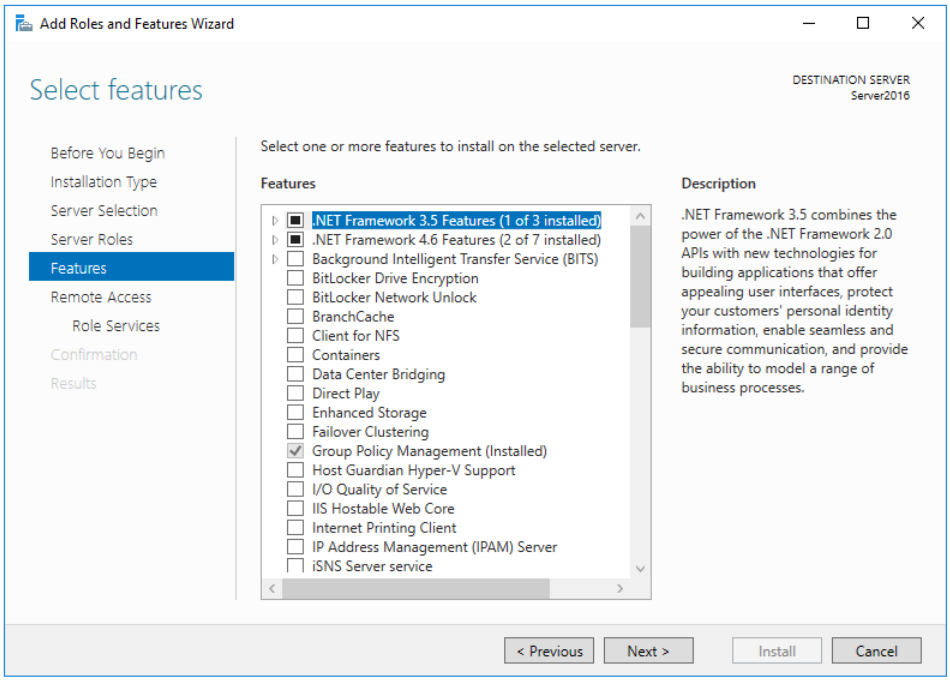
4. From **Server Selection** screen choose "**Select a server from the server pool**", press on your server in the list and click on **Next** button.



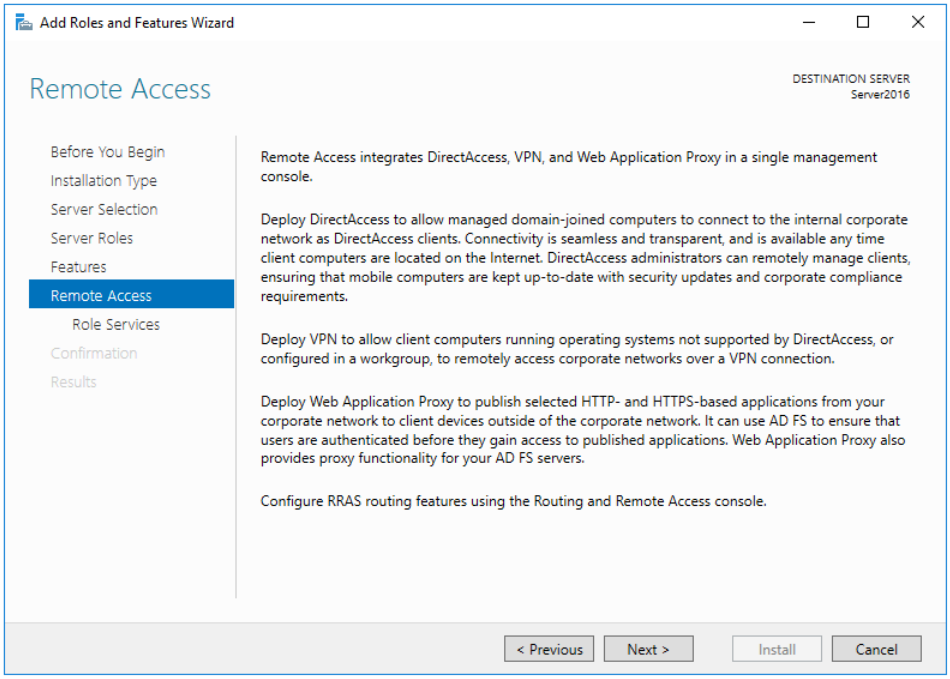
5. On **Server Roles** screen select "**Remote Access**" role and click on **Next**



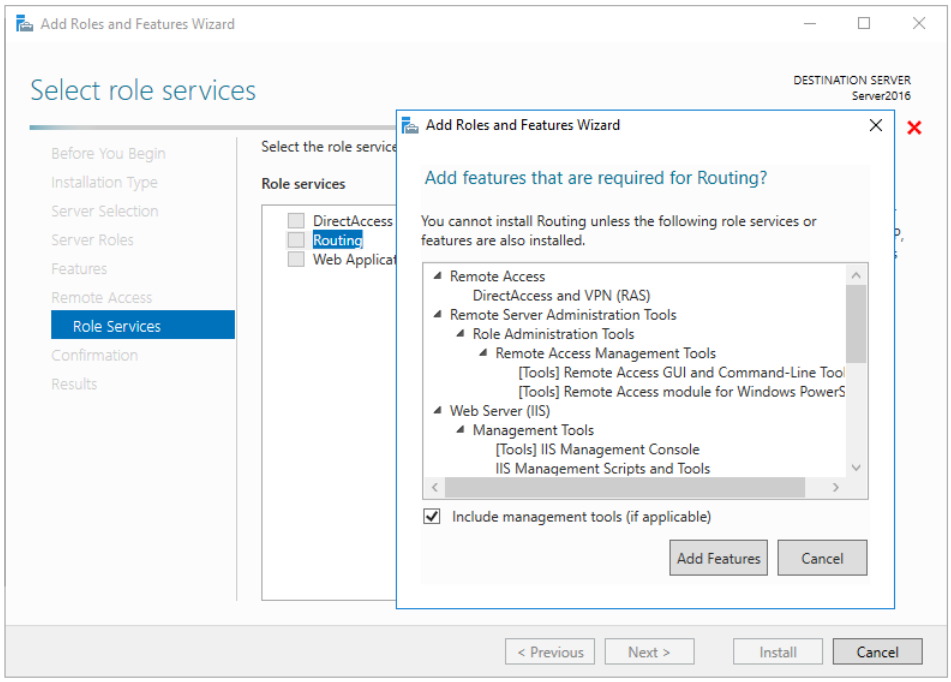
6. From **Features** screen is already selected all required features that should be activated, click on **Next**



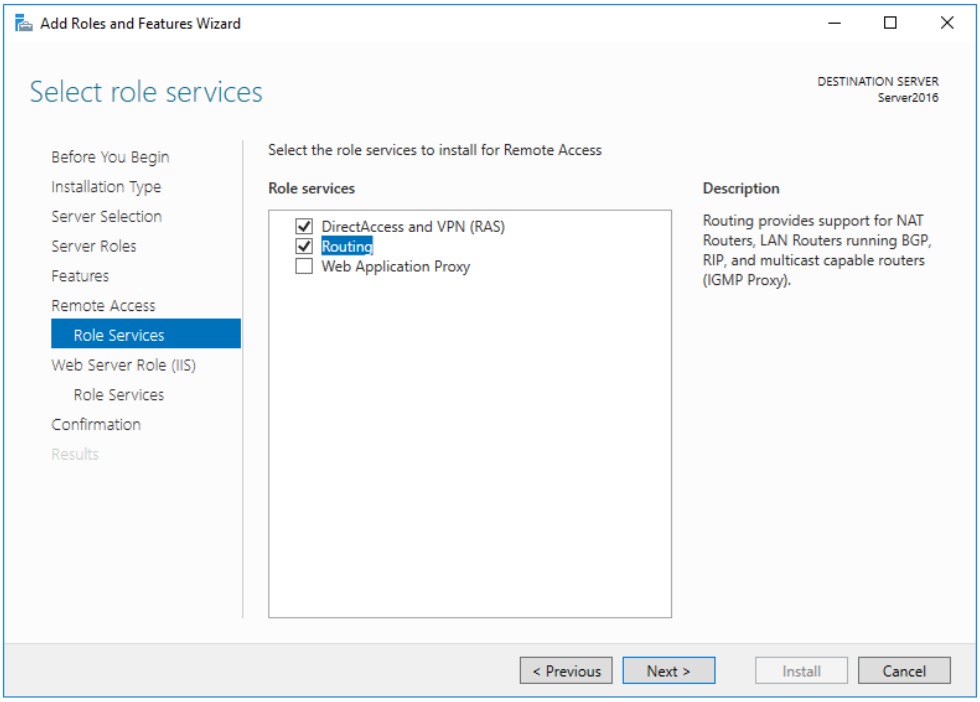
7. On **Remote Access** screen are given information about all available options from the role. Click on **Next** button.



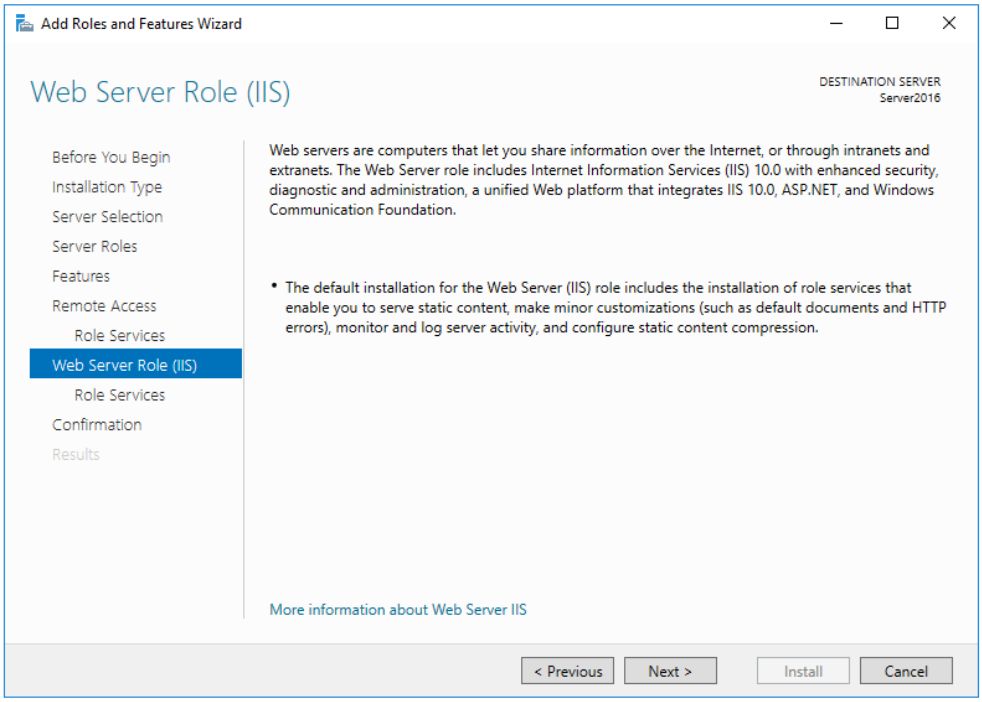
8. From **Role Services** screen select "**Routing**", this will bring you new pop-up window with required features for Routing, click on **Add Features**.



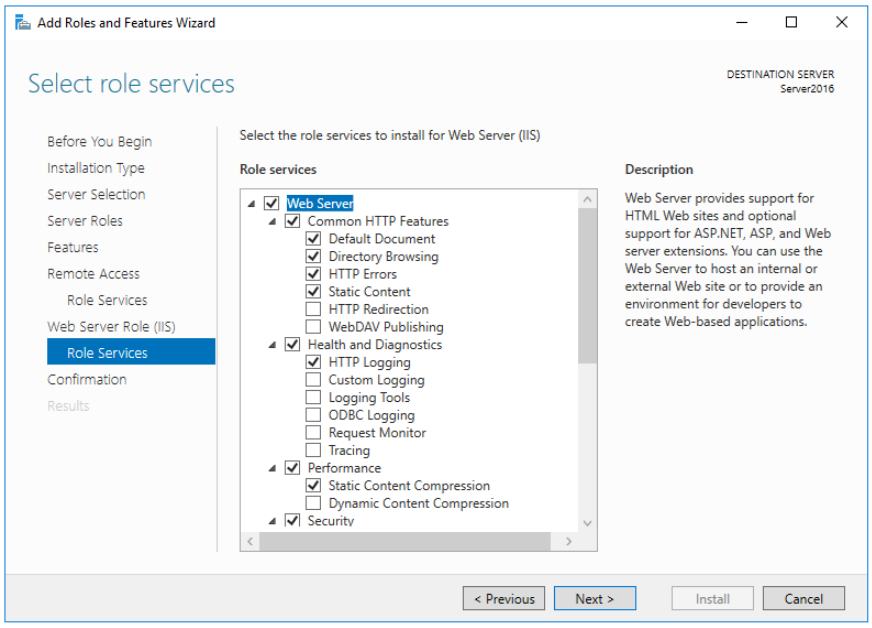
9. This will also activate "**DirectAccess and VPN (RAS)**" by default and click on **Next**.



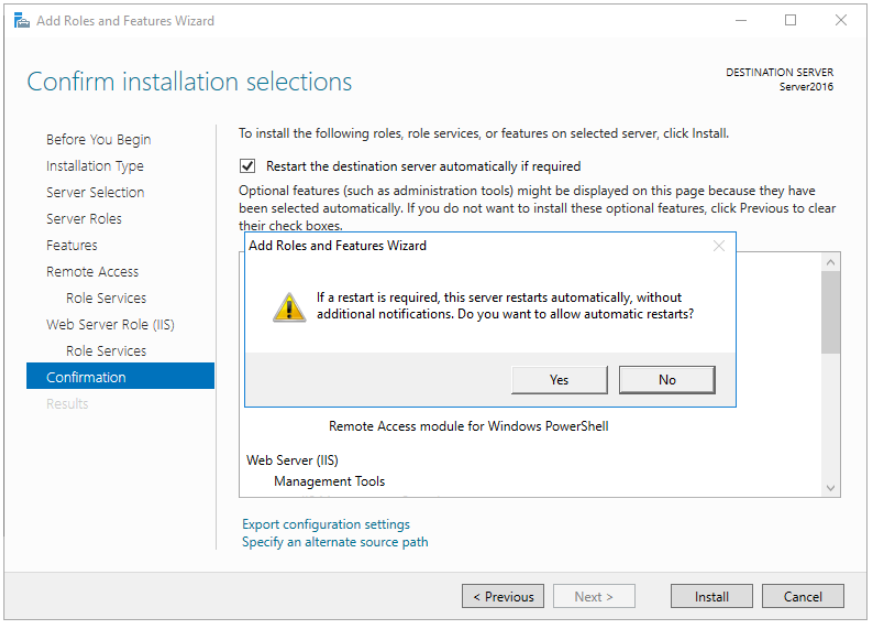
10. It will bring **Web Serve Role (IIS)** screen on which you need to press on **Next**



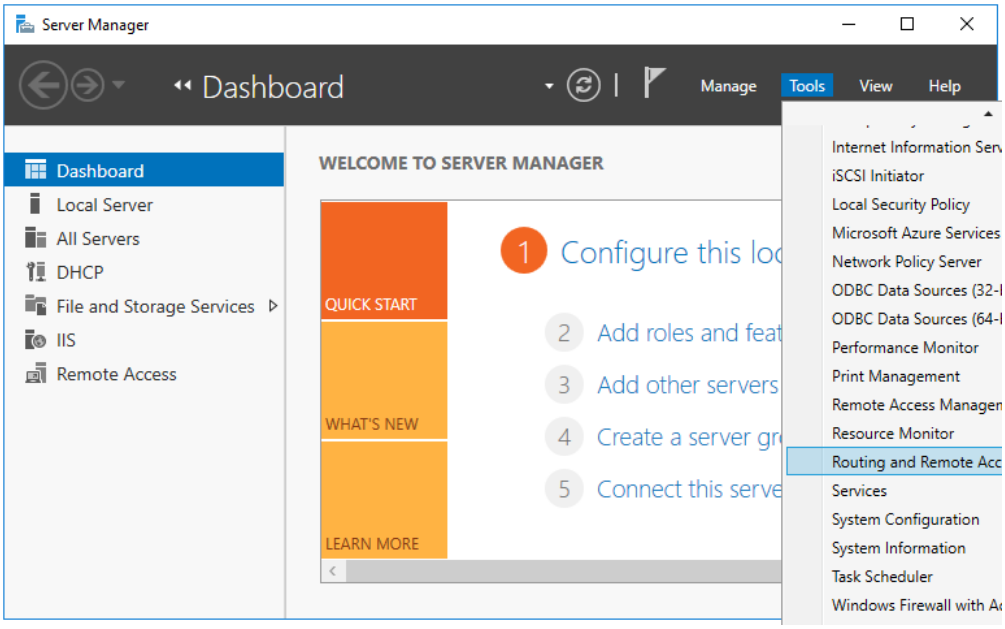
11. **Role Services** screen show list of services required for installation of Web Server (IIS), press on **Next**.



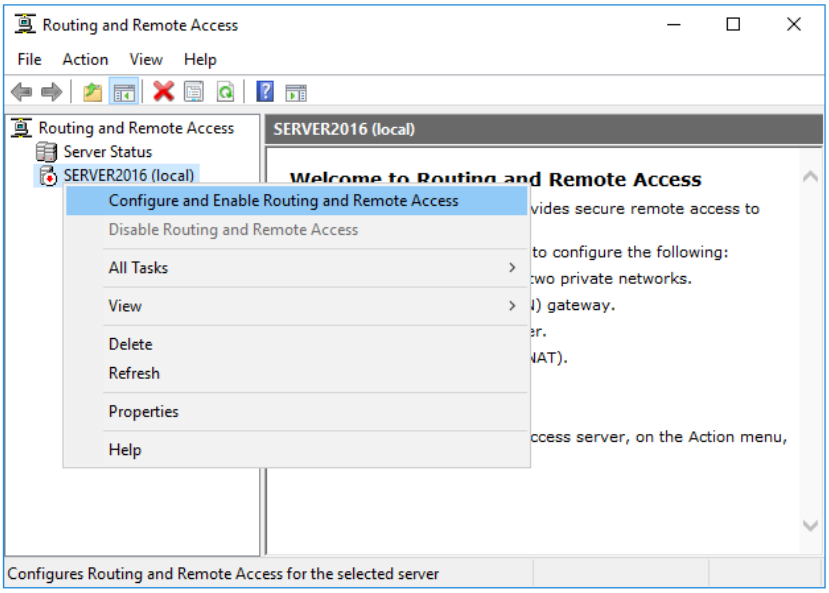
12. From **Confirmation** screen select "**Restart the destination server automatically if required**", from pop-up windows click on **Yes** to allow automatic restart, and press on **Install.**



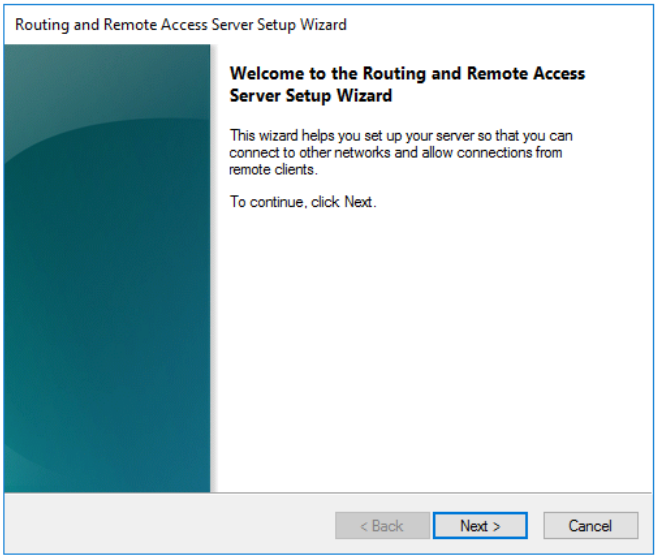
13. When installation is finished, close "**Add roles and Features Wizard**".
14. Go to **Server Manager** and from **Tools** panel click on "**Routing and Remote Access**"



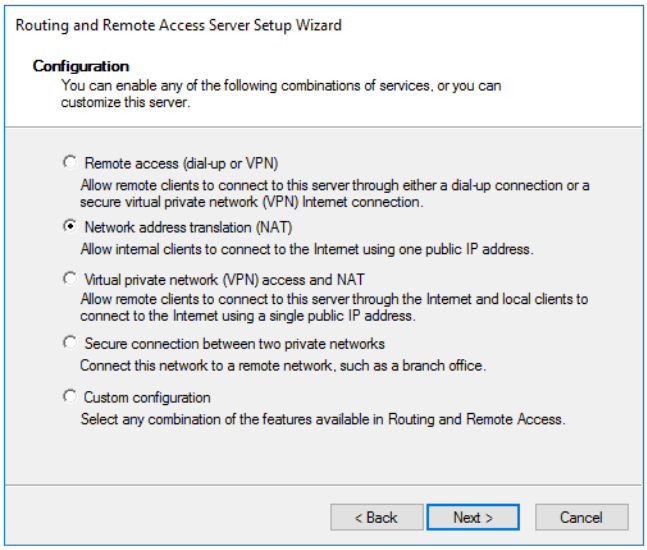
15. From **Routing and Remote Access** windows make right-click on your server and choose "**Configure and Enable Routing and Remote Access**"



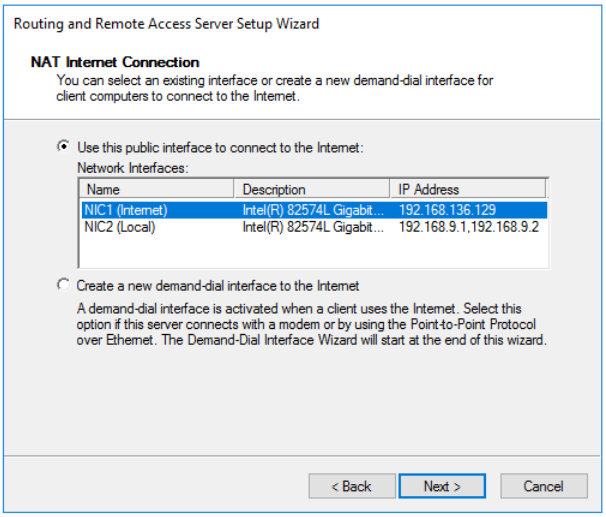
16. From **Routing and Remote Access Server Setup Wizard** screen click on **Next**.



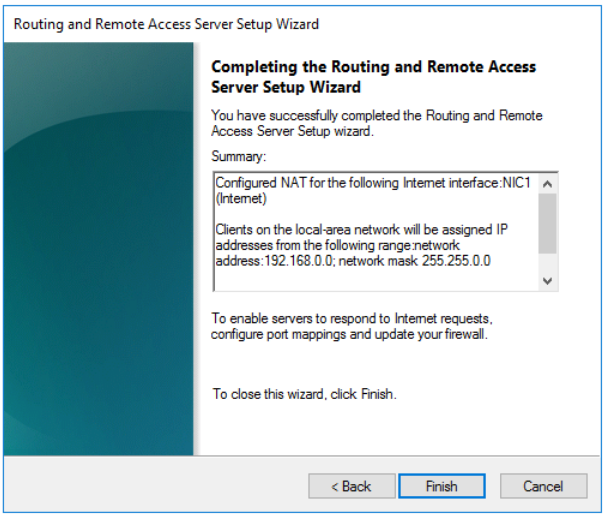
17. From **Configuration** screen select "**Network address translation (NAT)**" and click on **Next**



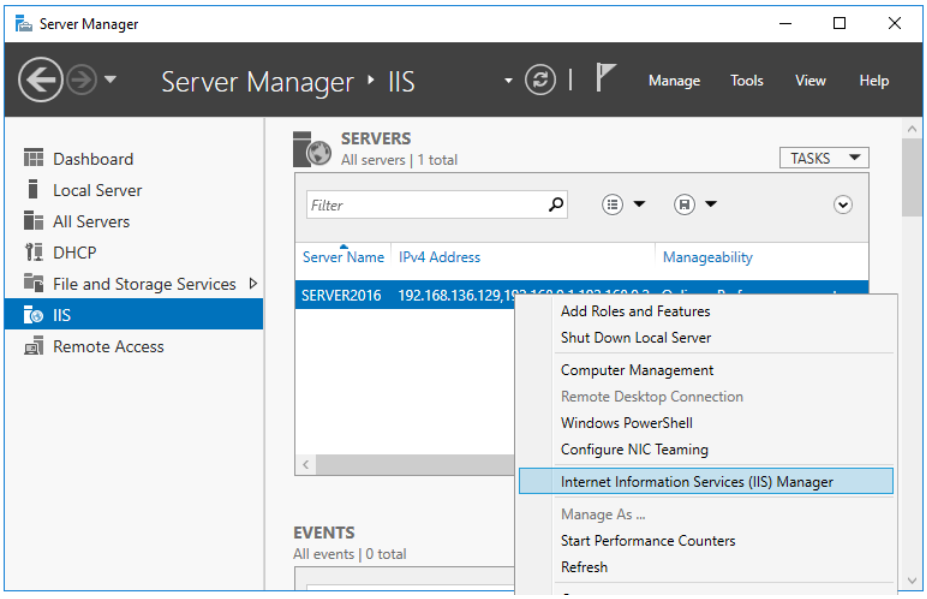
18. On **NAT Internet Connection** select network interface which is used for connecting to Internet and be sure that "**Use this public interface to connect to the Internet**" is used, then click on **Next**



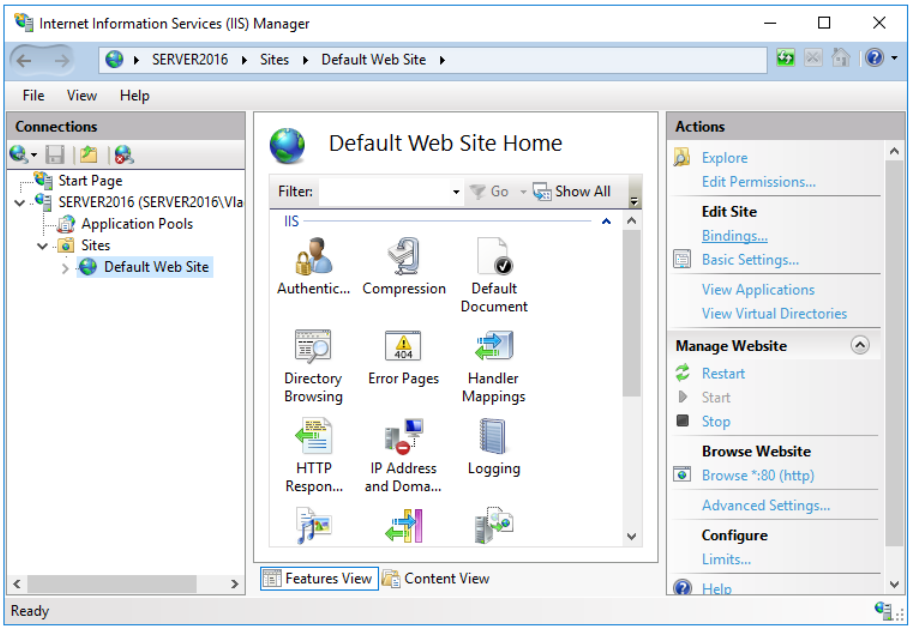
19. At **Completing the Routing and Remote Access Server Setup Wizard** press on **Finish**



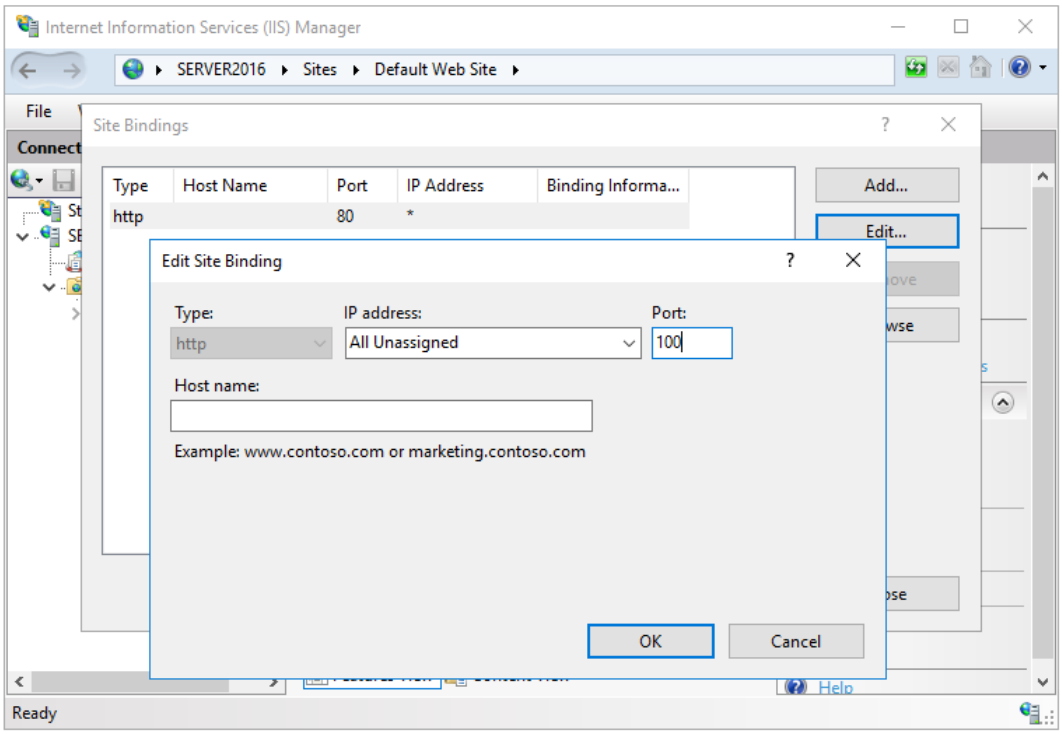
20. It is required to change **IIS** port from default port 80 in order to use Antamedia applications on computer.
21. Go to **Server Manager** and select **IIS panel**. From right click menu on you server select "**Internet Information Services (IIS) Manager**"



22. In **Internet Information Services Manager** select your server.from **Sites** select "**Default Web Site**". In **Actions** panel click on "**Bindings**" link



23. From **Site Bindings** select type http with port 80 and click on **Edit**
24. In **Edit Site Biding** window change **port 80** to some other port, for example **port 100** and click on **OK.** After that close **Site Bindings** and **Internet Information Services Manager** window**.**

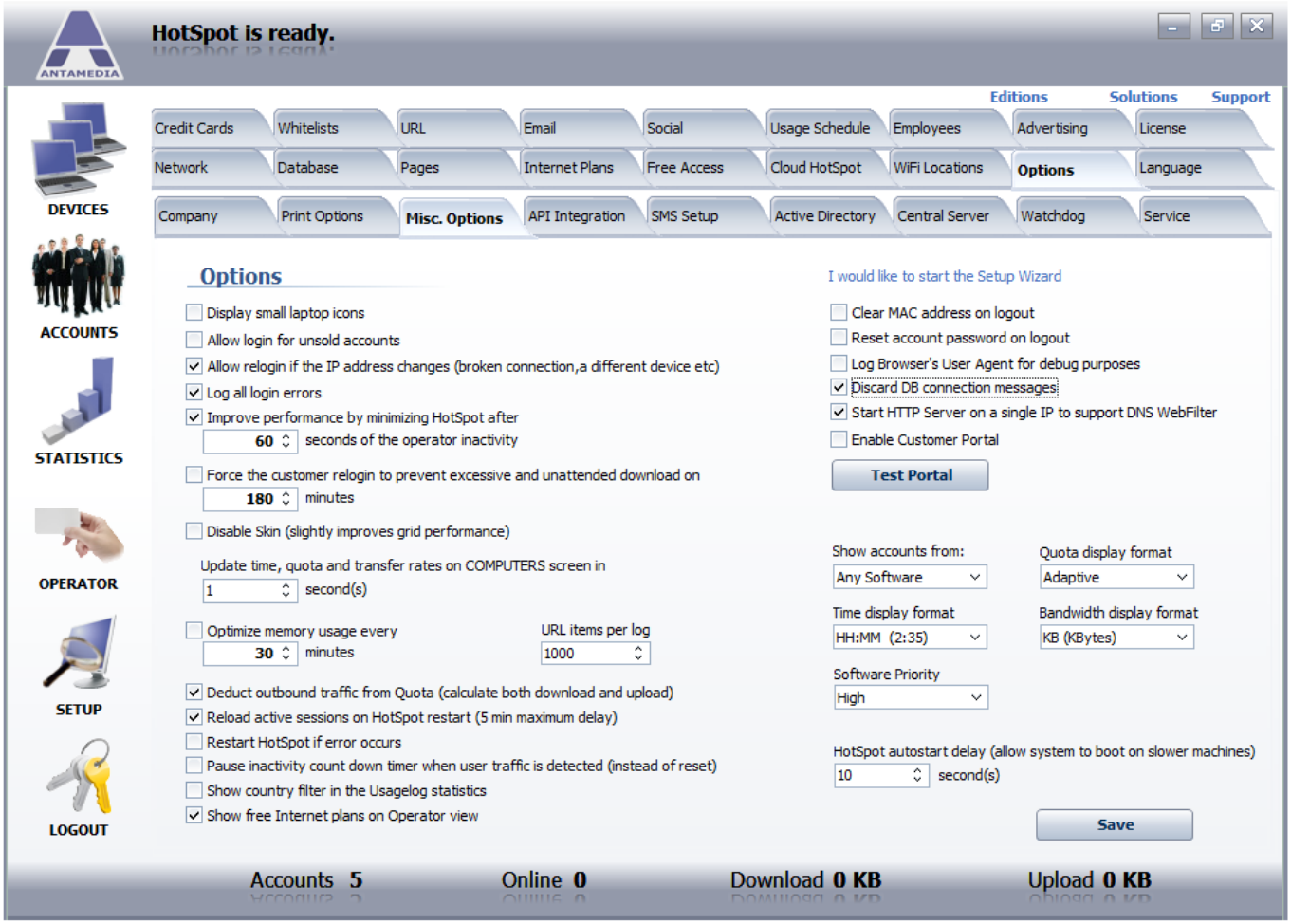


Windows Server is now ready to forward packets from (internal) local network to the Internet when you install and configure Antamedia **Bandwidth Manager** software **with DNS Web Filter tool**.

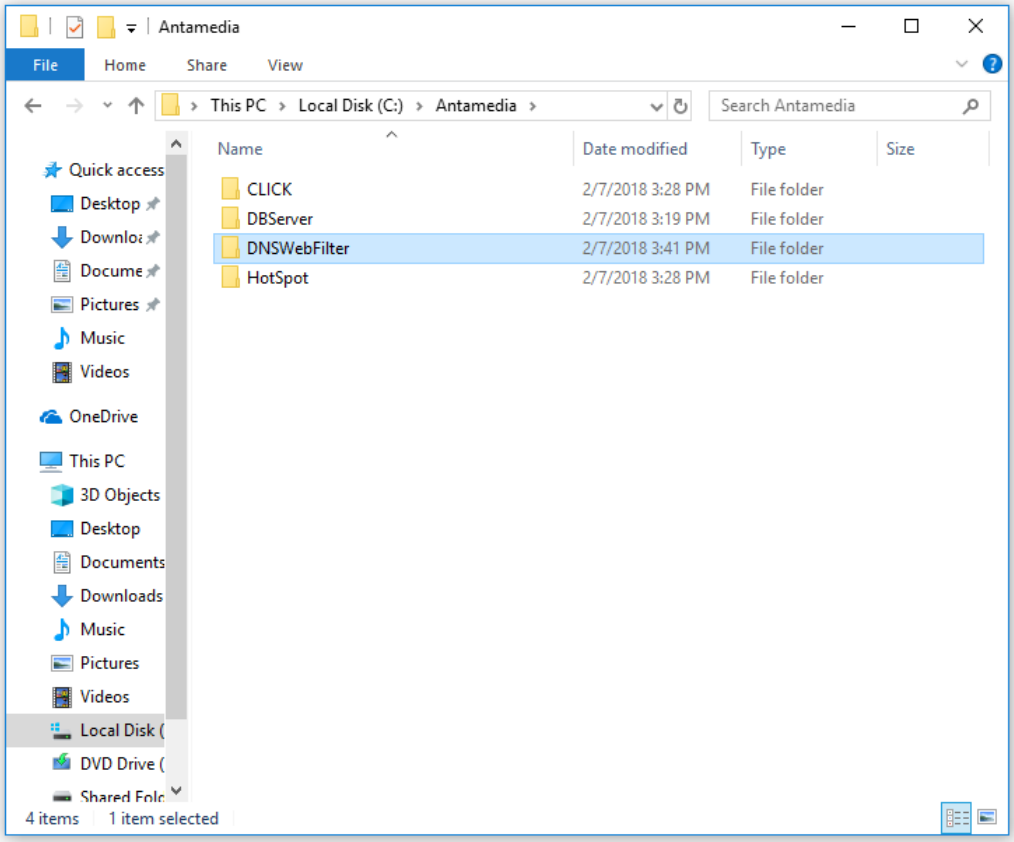
6 DNS Web Filter Setup

After all pre installation steps are done, DHCP Server is properly set and configured to give leases on local network and HotSpot is installed, it is a time to set DNS Web Filter.

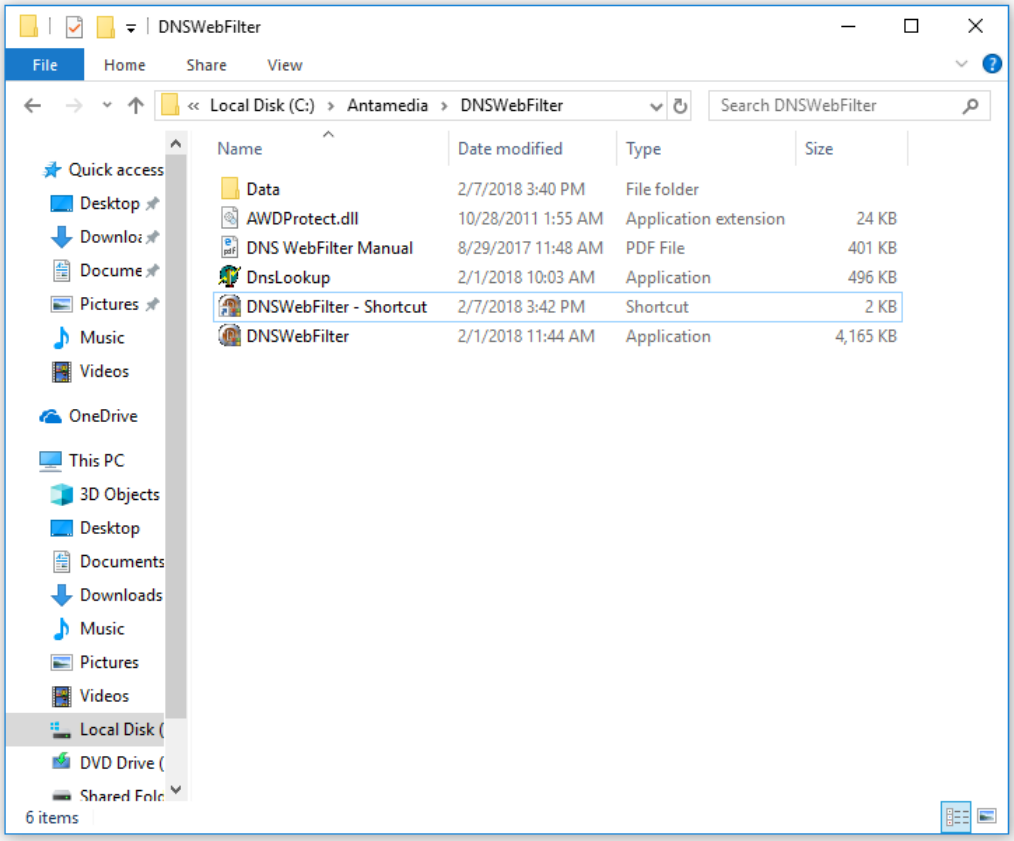
Go to HotSpot **Setup** - **Options** - **Misc Options** tab and enable "**Start HTTP Server on a single IP to support DNS WebFilter**" and save changes.



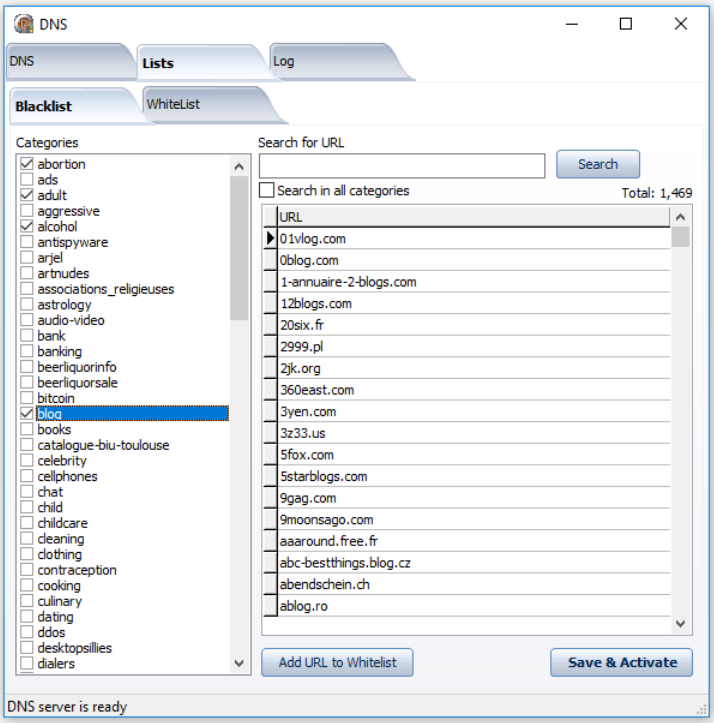
Download DNS Web Filter from http://www.antamedia.com/download/DNSWebFilter.zip on computer. Extract files and copy DNSWebFilter folder to C/Antamedia folder.



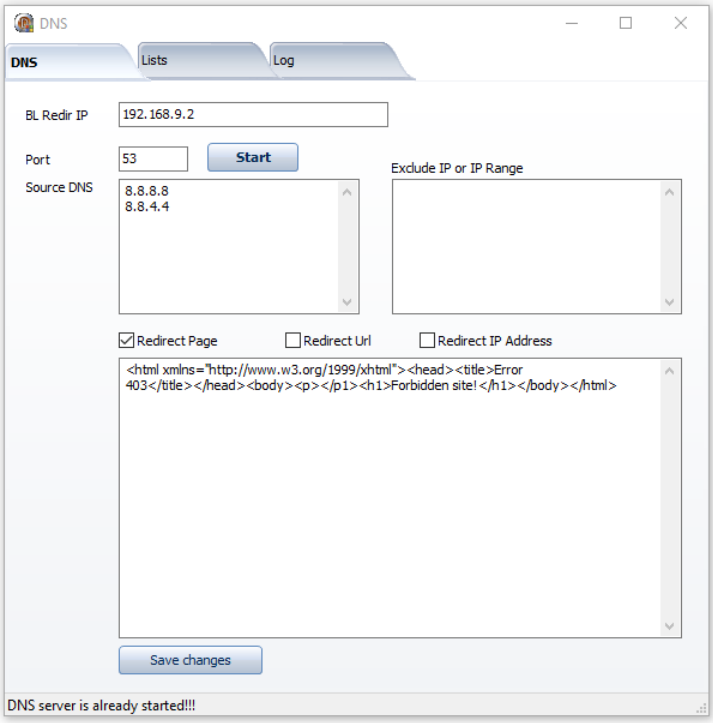
From **DNS Web Filter** folder start **DNSWebFilter - Shortcut**.



From**Blacklist** tab select desired **Category** and press on **Save & Activate** button.



Then go to **DNS** tab and set your **Virtual IP address** (e.g. **192.168.9.2**) then **Enable DNS Web Filter** with pressing on **Start** button.



Since DNSWebFilter solution runs as DNS, DNS requests are cached on clients. When a device from a local network requests HTTP URL, it's DNS is cached for some period of time on the device so in that time frame it's connected automatically without a new DNS request. When a request expires, it will contact the DNS server to resolve domain and get new IPs. This means that from the installation and deployment of DNSWebFilter solution, there will be a time frame in which DNSWebFilter solution settings will not immediately take the action. It will depend on the DNS requests cached on the end user devices. Therefore it will be needed to leave the DNS server running for some time.

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