ANTAMEDIA

HOTSPOT SOFTWARE

CONTROL WIFI AND ENGAGE YOUR CUSTOMERS

ANTAMEDIA

Table of Contents

1 Introduction

1.1 What is Antamedia HotSpot ?

Antamedia HotSpot is gateway 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 show login page in customer browser. Upon connecting to your network (using wireless cards or UTP cable), customer will be prompted to enter valid username and password to get 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 account 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 WiFi, WiMax, LAN, Cable, DSL, Satellite and other type of network connections.

1.2 How Can It Help You ?

Become Internet Service Provider
Antamedia HotSpot has advanced architecture which allows both simple and very large networks. You can start offering WiFi services and grow slowly by adding new access points, connect different city areas, one step a time. However, HotSpot can be used to control wide area networks, cities, making you a Internet Service Provider. You can easily integrate several separate HotSpot networks in one large network, where all accounts are served from central database (included free of charge). Your customers will be able to connect to any HotSpot with their account.

Create Paid or Free WiFi HotSpot
Antamedia WiFi HotSpot software helps you to create free or paid WiFi HotSpot. Advantage of our solution is very high customization of user accounts which allows creating limited or unlimited accounts. Among classic features like time and bandwidth quota limits, you can configure daily time limit, number of daily logins, number of simultaneous logins with aggregation, usage schedule (happy hour, nighttime, daytime, weekends …), which is very practical when offering free WiFi Internet. In addition, it's very easy to offer paid Internet access with higher speeds, quota or unlimited daily or monthly access.

Offer WiFi Services in Your Hotel, Coffee Shop, Restaurant
Offering high-speed wireless Internet services in one hotel will only help you increase occupancy and improve tenant and guest satisfaction. Furthermore, it will also represent additional source of revenue for your business. With the use of Antamedia WiFi HotSpot software in your WiFi Hotel, you will be able to:
- control and monitor access to the Internet for all computers, both wired and wireless in your guest rooms
- provide reliable wireless Internet access in your restaurant, lobby and conference rooms, which makes it ideal for seminars and meetings
- maintain secure access to the Internet resources outside the hotel, like on golf courses or by the hotel pools.

Serve Walk-in Laptop Customers in Your Cyber Cafe
If you run an Internet Café or Gaming Center, a great profit booster can be a wireless network. Many people use their own laptop for everyday job or on vacation to stay in touch with their family and friends. Even in non-working hours of your primary business, your customers will be able to use your services and generate profit. Best of all, it is automated, there are no maintenance fee for computers, licenses for software and OS. Your cafe, showing your WiFi logo, will be more professional and will differentiate you in high cybercafe competition.

Can be used in Various Locations
Flexible architecture makes it suitable for different locations like Airports, Cruise Ships, Train Stations, Motels... Customers can sign-in online and pay using credit card or tickets can be printed in advance and sold by front desk staff, receptionist, bartender, cybercafe operator, or by a vending machine. In case of credit card payment, the amount is collected from customer by your Credit Card processing company and stored to your merchant account. A payment gateway company transfers collected money to your bank account usually at the end of the month. Antamedia does not collect any fees. Full revenue goes to you.

2 Requirements

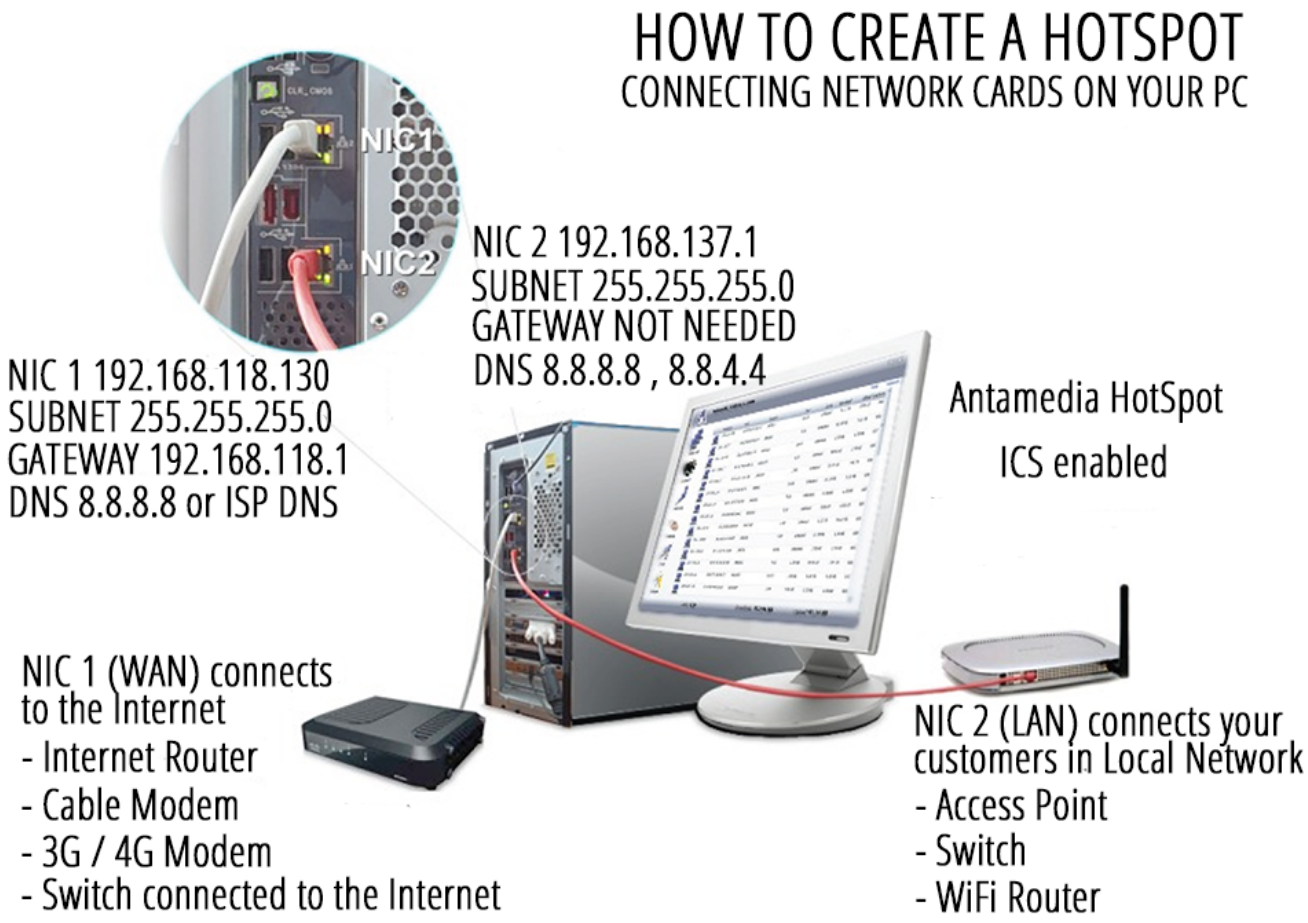
In order to control wireless users, Hotspot software has to be set up on a gateway computer in your network. For minimal Hotspot configuration you need 3 devices:
- Hotspot gateway PC
- Internet modem/router
- Wi-fi device for providing access to users (wi-fi router or access point)

System requirements for Hotspot gateway PC:

We strongly encourage you to install HotSpot on SSD drive because it can significantly improve software performance.
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

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.



Note that 2 network cards on the Hotspot server cannot be bridged, the Hotspot (Internal) network has to operate in different IP range than 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.

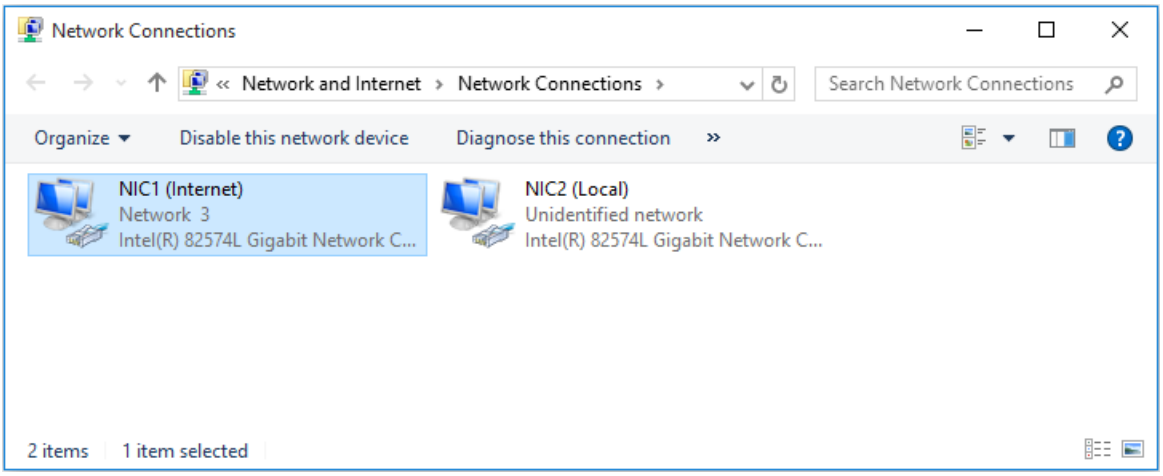
- Go to Windows Control Panel - Security and Maintenance screen.
- Click on Change Windows Smart Screen settings
- In new window select "Don't do anything (turn off Windows Smart Screen)" and press on OK
- Restart the computer to apply changes

✓ Windows **Defender exclusions** are set.

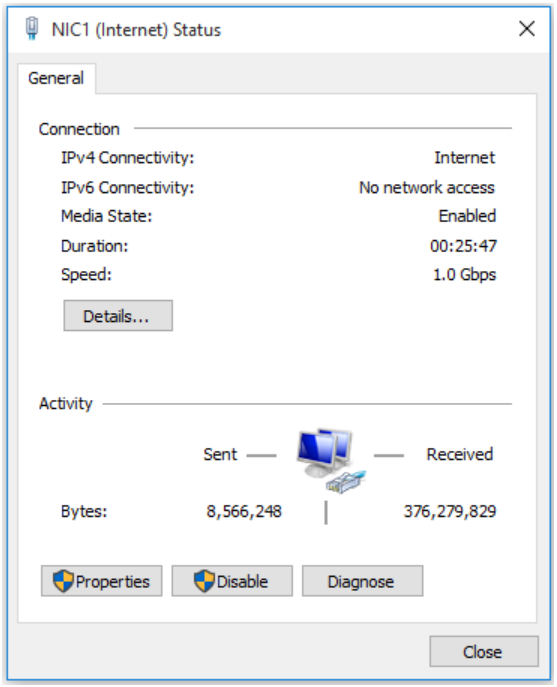
- Go to Windows Control Panel - Windows Defender and click on Settings.
- Exclusion section press on "Add an exclusion" to exclude C:\Antamedia folder.
- Restart the computer to apply changes

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

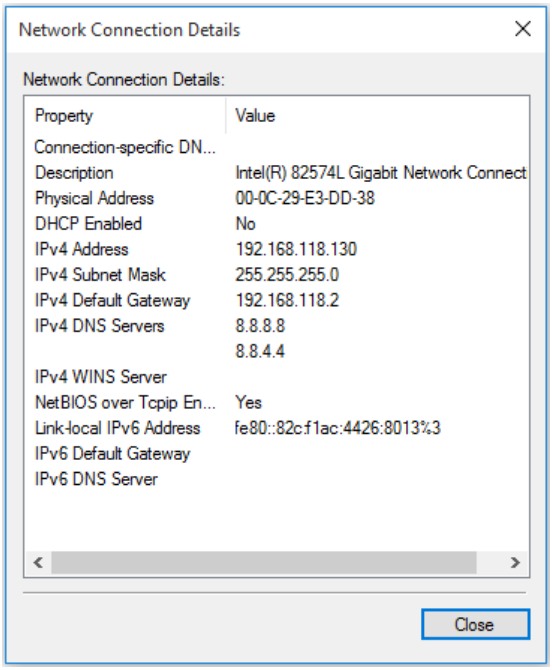
- It is recommended to set same IP address that is already assigned dynamically by router.
- To see which IP NIC1 has currently assigned, go to Windows Control Panel - Network and Sharing Center screen
- Click on Change adapter settings link and double click on the NIC1 (Internet) network adapter



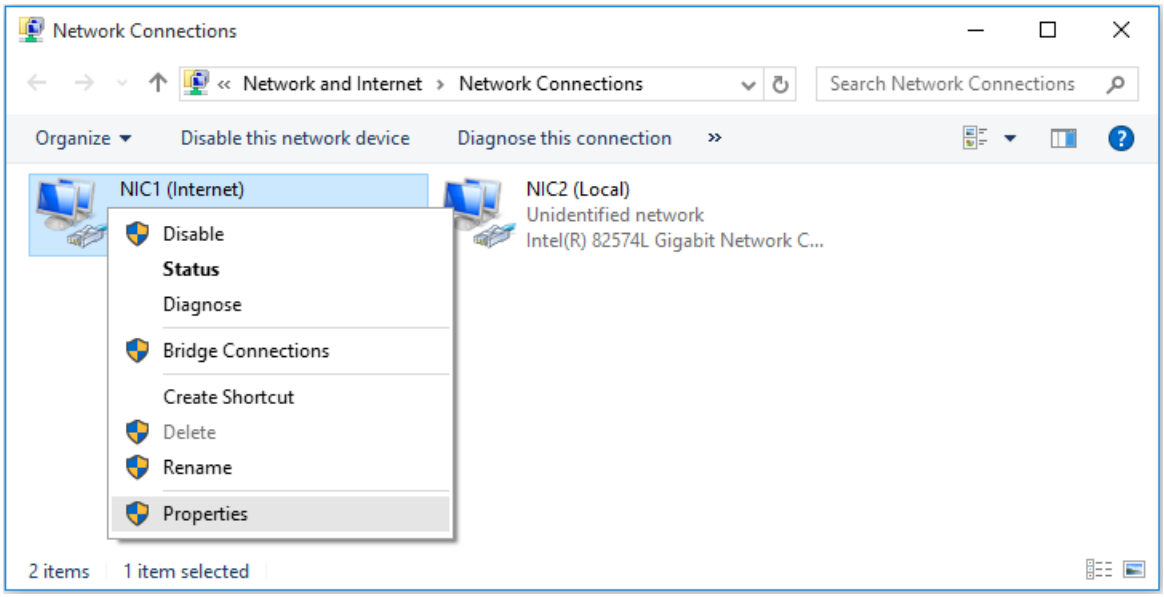
- From General tab press on Details button.



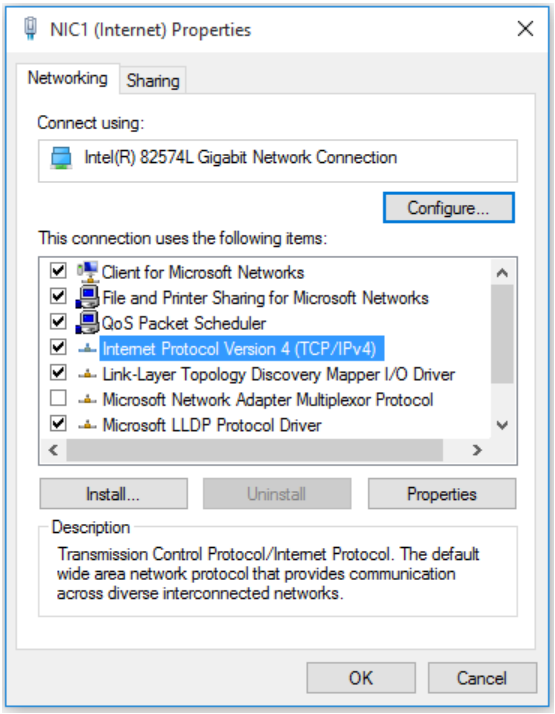
- Here you will see all current network connection details that you need to set as static



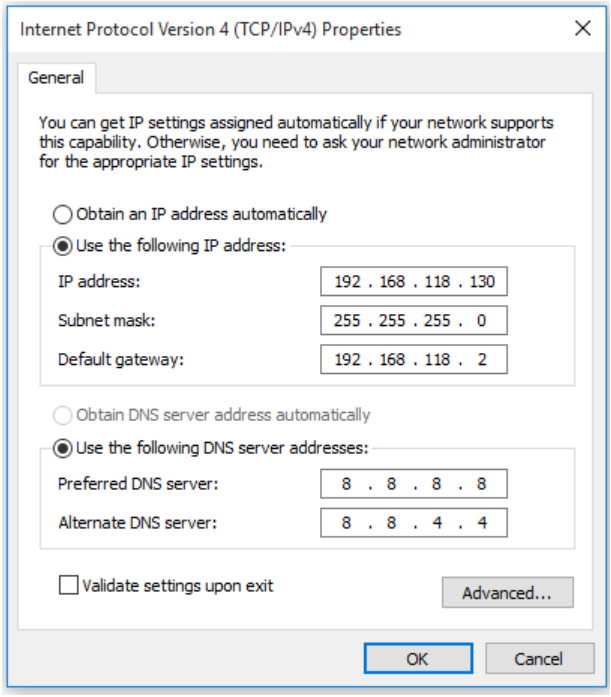
- After that go to Windows Control Panel – Network and Sharing Center screen.
- Click on Change adapter settings link.
- Right-click on NIC1 (Internet) and select Properties from menu.



- 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).

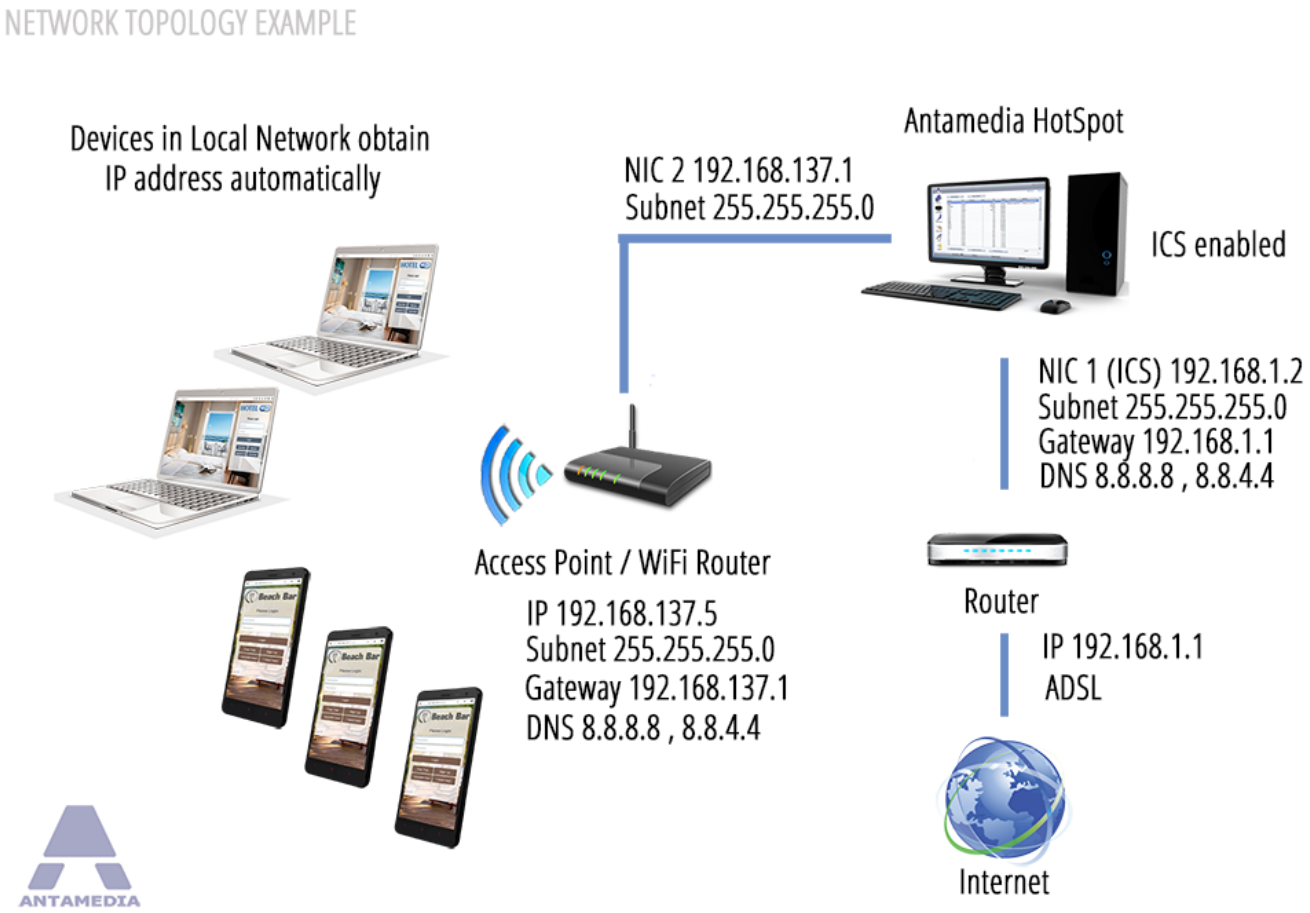
✓ Set computer to act as gateway on network using Windows Internet Connection Sharing / Routing and Remote Access with DHCP Server role or with HotSpot NAT.

- ✓ **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

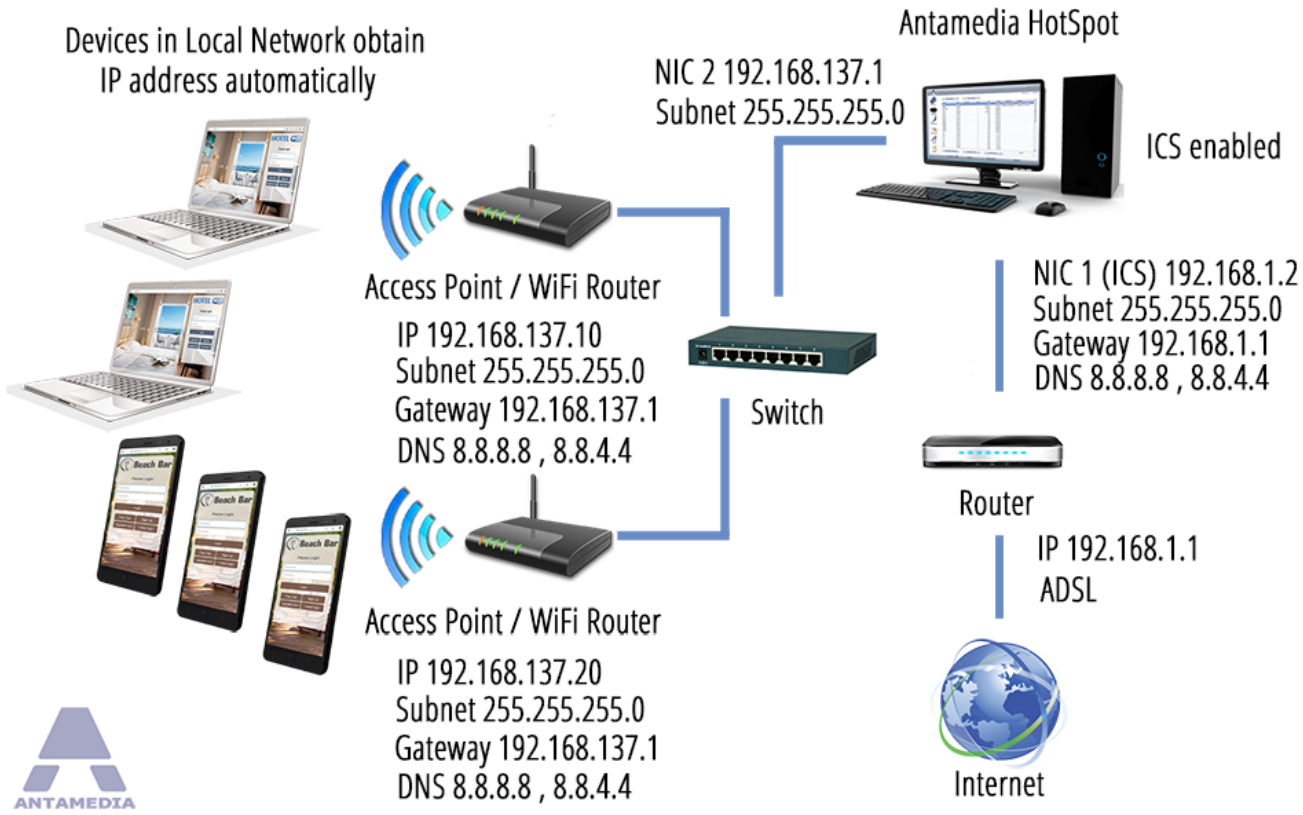
IP range (network - broadcast)	Subnet Mask	IP Quantity
192.168.137.0 - 192.168.137.255	255.255.255.0	256
192.168.136.0 - 192.168.137.255	255.255.254.0	512
192.168.136.0 - 192.168.139.255	255.255.252.0	1024
192.168.136.0 - 192.168.143.255	255.255.248.0	2048
192.168.128.0 - 192.168.143.255	255.255.240.0	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

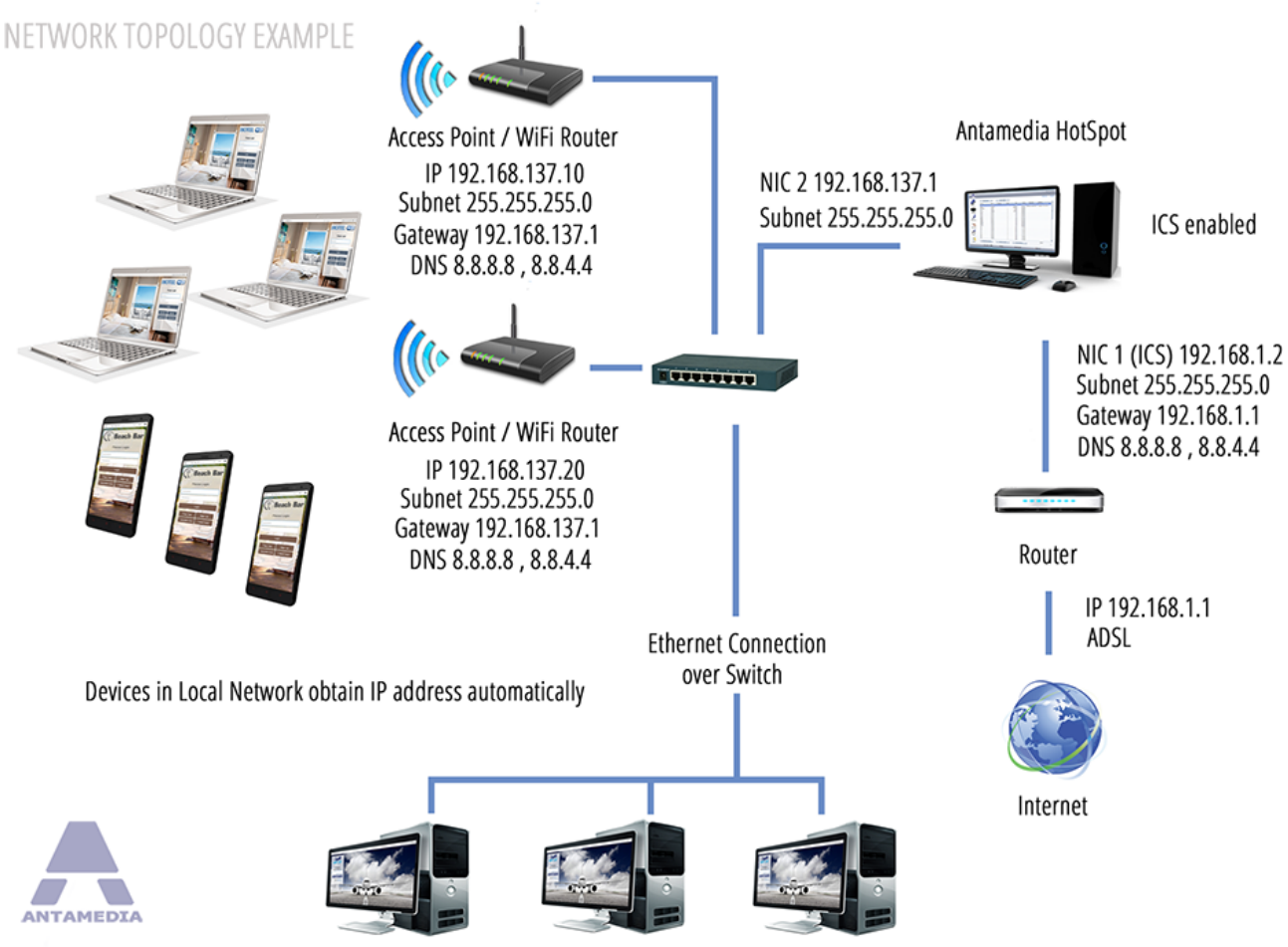
2.2 Network Topology Examples

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



NETWORK TOPOLOGY EXAMPLE



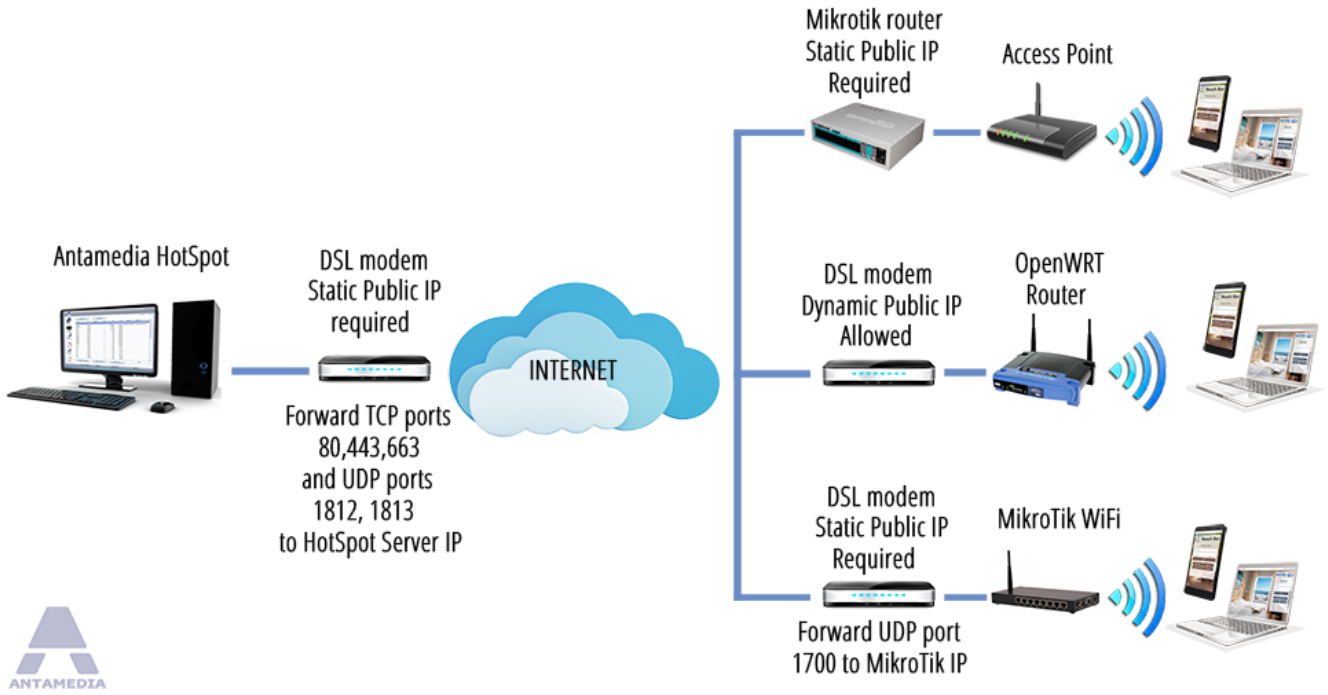

NETWORK TOPOLOGY EXAMPLE
Access Point / WiFi Router
IP 192.168.137.10
Subnet 255.255.255.0
Gateway 192.168.137.1
DNS 8.8.8.8 , 8.8.4.4
Antamedia HotSpot
NIC 2 192.168.137.1
Subnet 255.255.255.0
ICS enabled
NIC 1 (ICS) 192.168.1.2
Subnet 255.255.255.0
Gateway 192.168.1.1
DNS 8.8.8.8 , 8.8.4.4
Access Point / 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
ANTAMEDIA

3 HotSpot Cloud

Antamedia HotSpot software is portal gateway application and it is used for control and limiting access to Internet over gateway computer from local network.

To set up properly Antamedia HotSpot on Windows OS, please follow these steps:
1. Complete pre-installation steps 5
2. Set computer as gateway on network as explained at http://www.antamedia.com/download/hotspot-setup-guide.pdf
3. Install Antamedia HotSpot software using Express installation and reboot gateway computer.
4. After Windows restart HotSpot will start automatically. Login as Administrator and close Setup Wizard guide.
5. Go to Setup - Network - Network Setup tab and select properly network adapters.
6. After that you will be able to set and configure additional options in HotSpot software as HotSpot Cloud.

Following the global IT industry trends, from version 4 of Antamedia HotSpot is implemented new, HotSpot Cloud feature.
Cloud HotSpot allows you to control multiple remote locations over the Internet using centralized HotSpot server, and this option also includes Radius server feature which provides easy and secure user authentication and billing. This is accomplished by connecting remote MikroTik or OpenWRT routers to HotSpot.



Routers can be installed in different places like restaurants, coffee shops, retail stores, shopping malls. Routers are using their own Internet connection to provide Internet access to users, and to communicate with HotSpot server in order to authenticate users and control their usage. Users are limited by download, upload, time, quota and other login parameters. Each router can have its own branded pages and theme. This can be configured from HotSpot - Setup - Locations page by specifying router's LAN range of IP addresses.

Requirements:

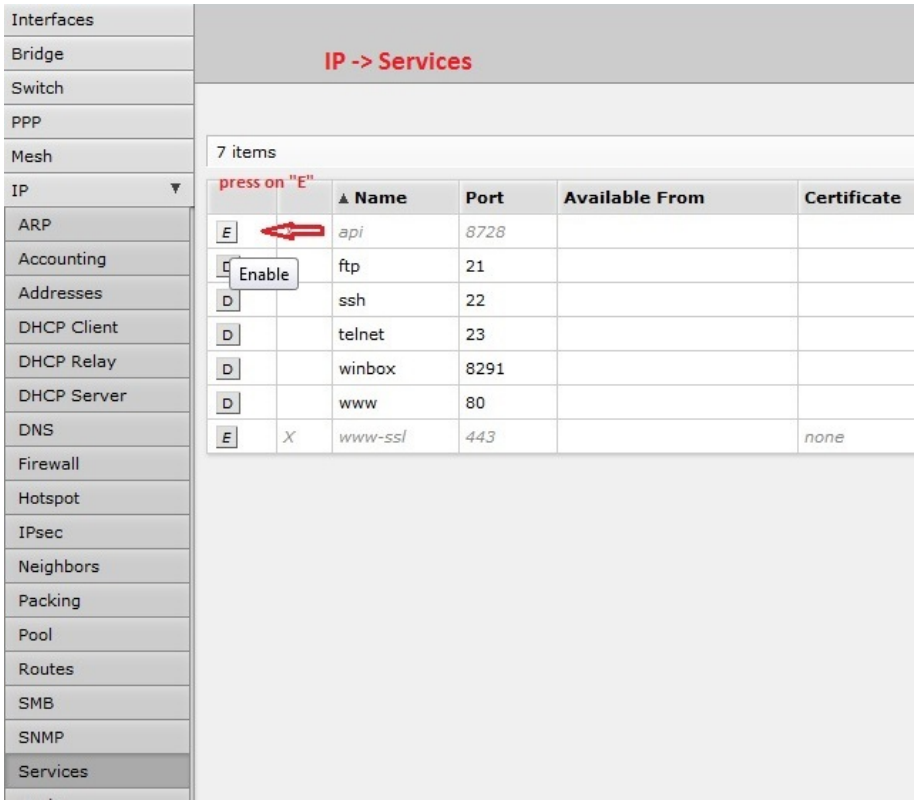
- MikroTik routers starting from RouterBOARD 750 / RouterBOARD 951 series with OS level 4 and/or OpenWRT router, as in example where is used Linksys WRT54G model
- If remote MikroTik/OpenWRT router also acts as Internet modem/router, it must have static public IP address configured on its WAN port.
- If you have separate Internet modem/router on remote site, forward UDP ports 1700 and 8728 to MikroTik/OpenWRT router.

3.1 MikroTik Router Configuration

The following example illustrates how to connect remote **MikroTik** router:

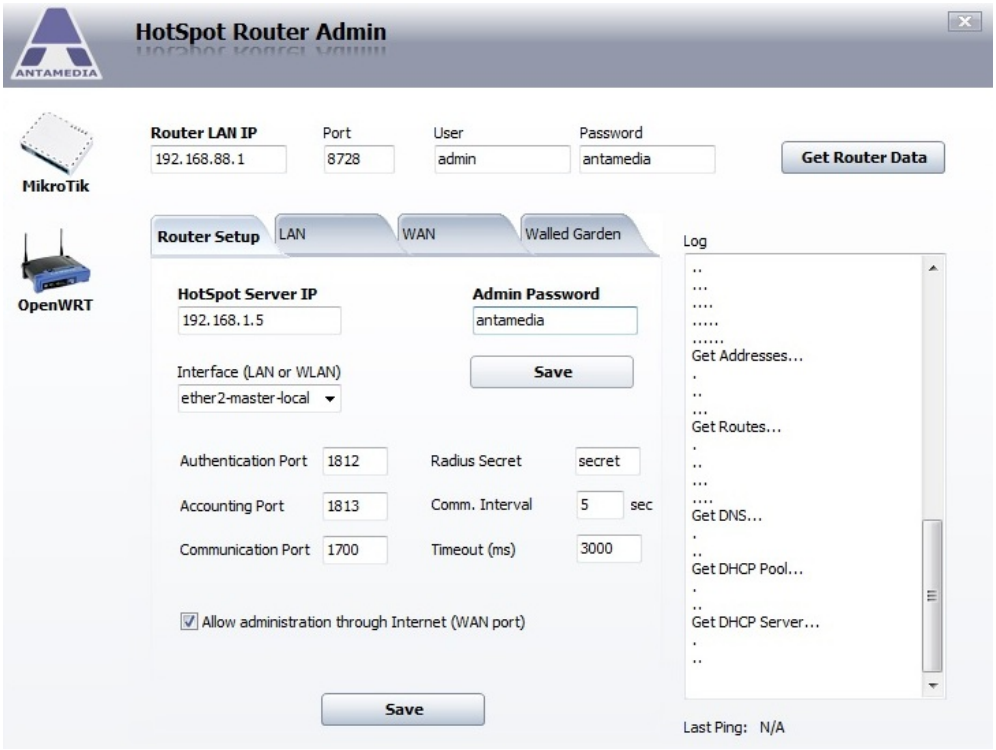
It is recommended to reset the router to factory settings before connecting it to Hotspot server.

1. Make sure that MikroTik router is already set up and operating as gateway for its local network.
2. Open MikroTik router settings in web browser from a Windows computer located in local network, the pc should be set to automatically obtain IP address.
3. Click on the **IP** section and select **Services**, click on letter **E** that is displayed next to **api** entry.



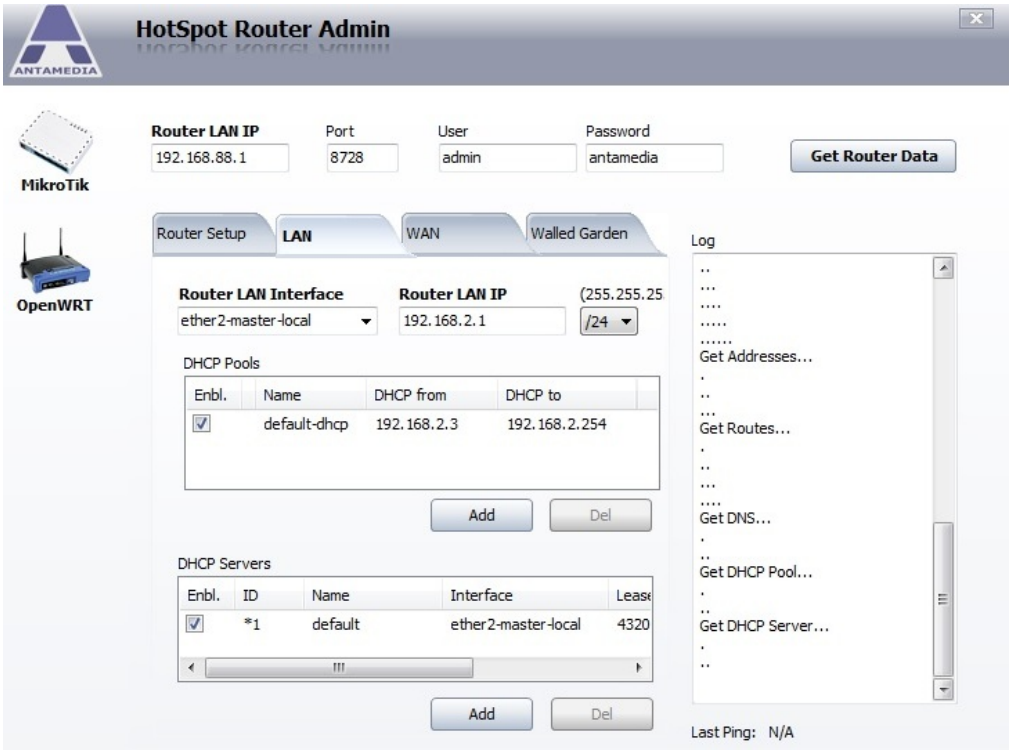
4. **Download** and **extract** [RouterAdmin] to the desktop of this PC
5. **Run as administrator** RouterAdmin.exe from the folder and click on **MikroTik** button
6. Enter **Router LAN IP** address and **Password** for admin user, click on **Get Router Data** button

7. First on the **Router Setup** tab enter remote **HotSpot Server IP** address
8. (Optional) Set new **Admin Password** for MikroTik and click **Save** button.

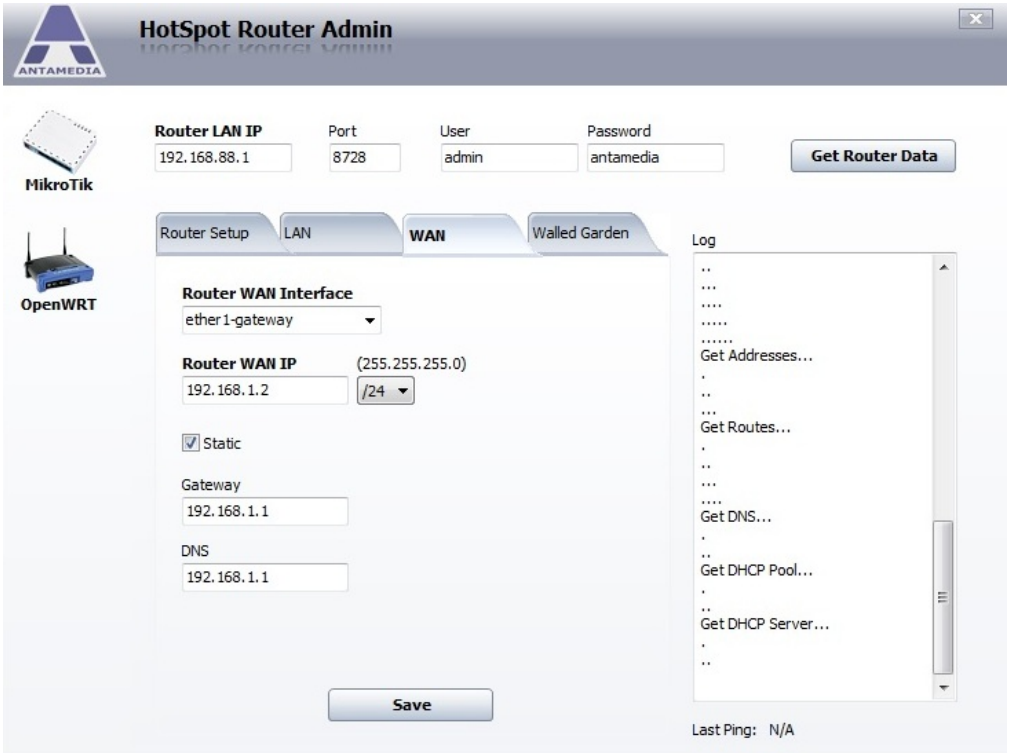


9. Select the **Interface** that is connected to local network which will be controlled by HotSpot software
10. Make sure that **Allow administration through Internet (WAN port)** is checked
11. It is recommended to leave other options under **Router Setup** tab on default values
12. (Optional) Change **Router LAN IP** address from **LAN** tab.

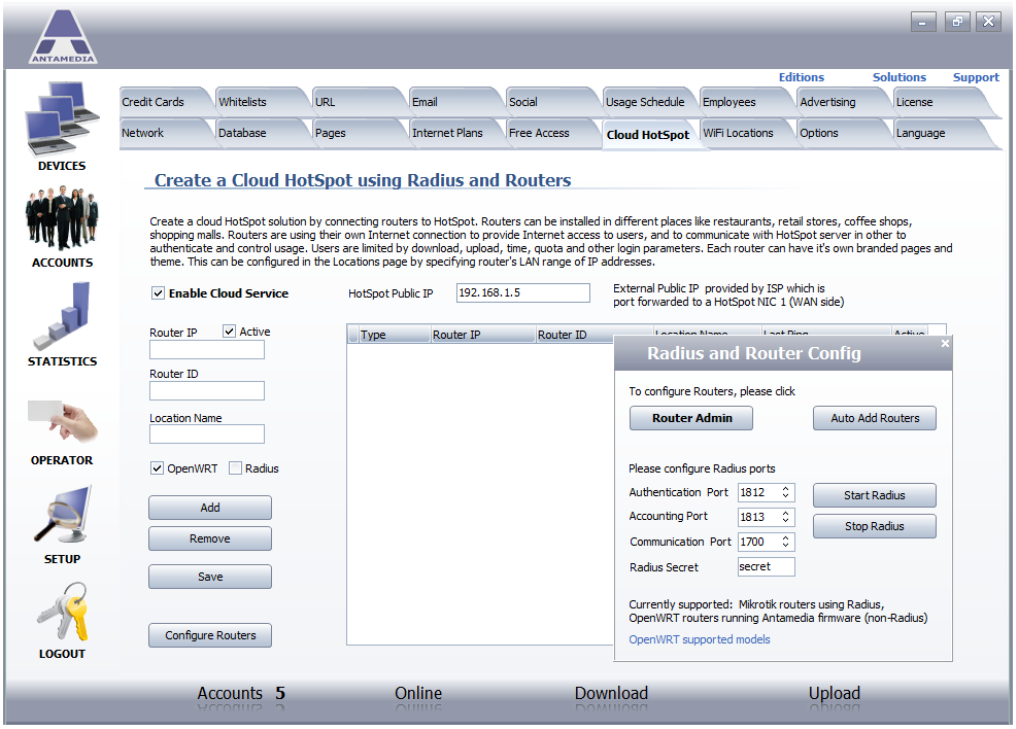
13. Create a **DHCP pool** that matches IP range of **Router LAN IP** address, delete all others
14. Go to **WAN** tab and in **Router WAN Interface** field select interface that is connected to the Internet
15. Set **Router WAN IP** address and appropriate **NetMask**
16. Set the default **Gateway** address and **DNS** server (Internet router IP, ISP DNS or public like 8.8.8.8)



17. **Important!** Make sure that **Static** box is ticked
18. (Optional) Configure a list of websites accessible without user authentication under **Walled Garden** tab.
19. Click **Save** button to apply the settings for both LAN and WAN router interfaces.
20. After saving, disable and re-enable network card on the pc and restart **HotSpot Router Admin** application



After these procedures remote MikroTik router will be ready to be added inside HotSpot software. Go to HotSpot - Setup - Cloud HotSpot page and click **Configure Routers** button. Click **Start Radius** and then **Auto Add Routers** button. Check **Enable Cloud Service** box and click **Save**, after that routers will be controlled by HotSpot software.

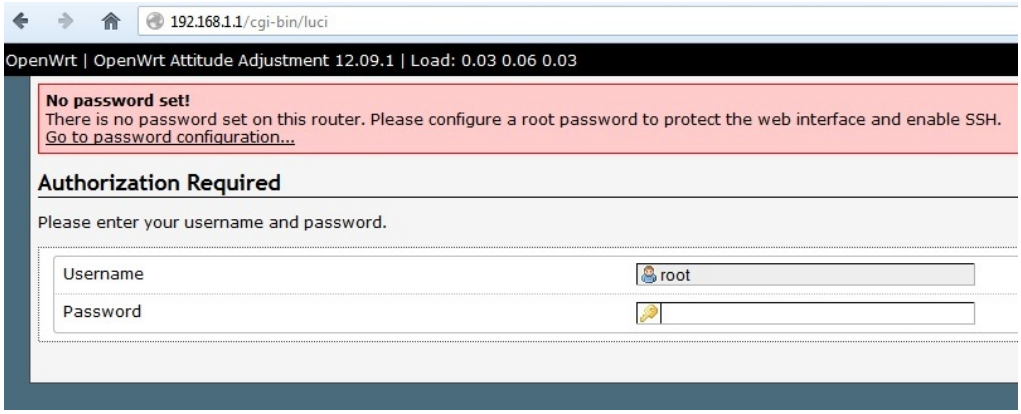


3.2 OpenWRT Router Configuration

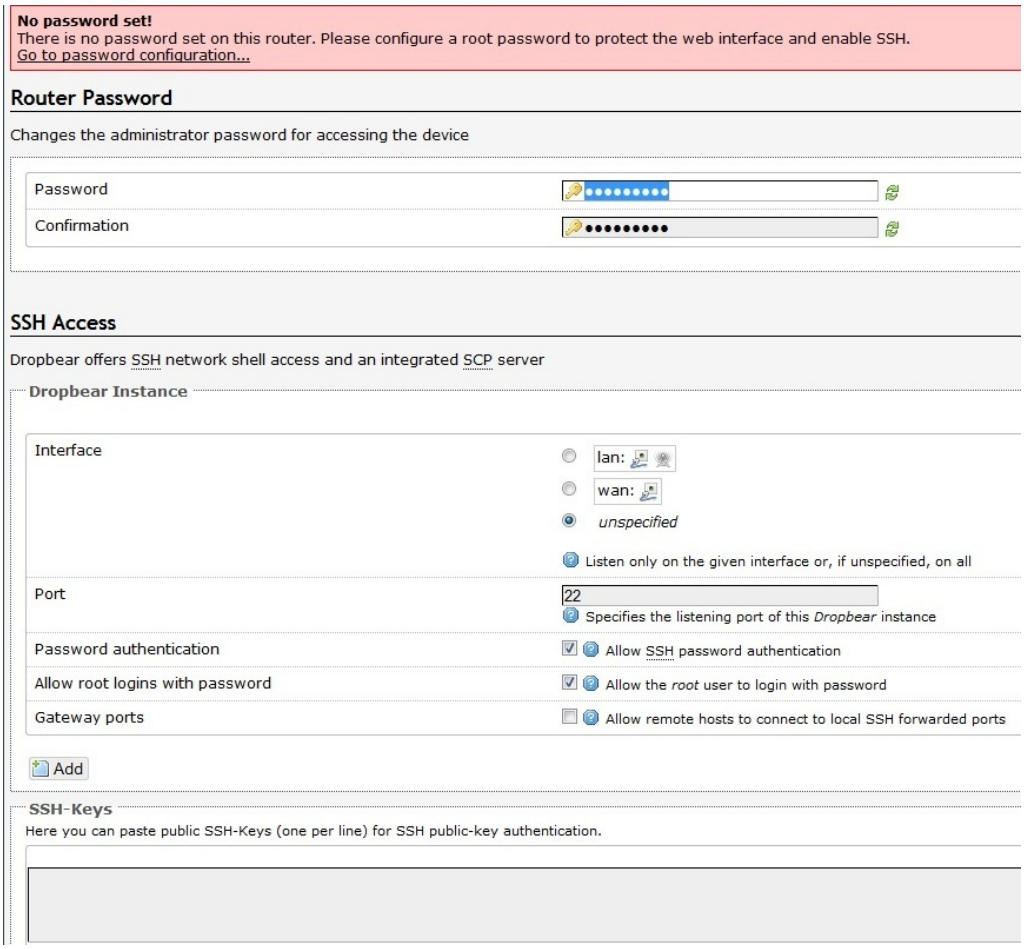
This example will show how to connect remote **OpenWRT** router, example uses **Linksys WRT54G** model:

- If router runs factory firmware, you need to install **Antamedia OpenWRT:**
  - Download the openwrt-wrt54g-squashfs.bin firmware image to a PC connected to router's LAN port: www.antamedia.com/download/openwrt-wrt54g-squashfs.bin
  - Open http://192.168.1.1/ (other IP if you changed router LAN IP address) in the browser and go to **Administration-Firmware Upgrade** page
  - Upload openwrt-wrt54g-squashfs.bin file. Wait 2 minutes. The router will reboot itself automatically after the upgrade is complete.
- If router already has other version of **OpenWRT** firmware, update it with this version: www.antamedia.com/download/openwrt-brcm-2.4-squashfs.trx Follow the same above steps for installation.
- If router runs DD-WRT firmware, update it with www.antamedia.com/download/openwrt-wrt54g-squashfs.bin

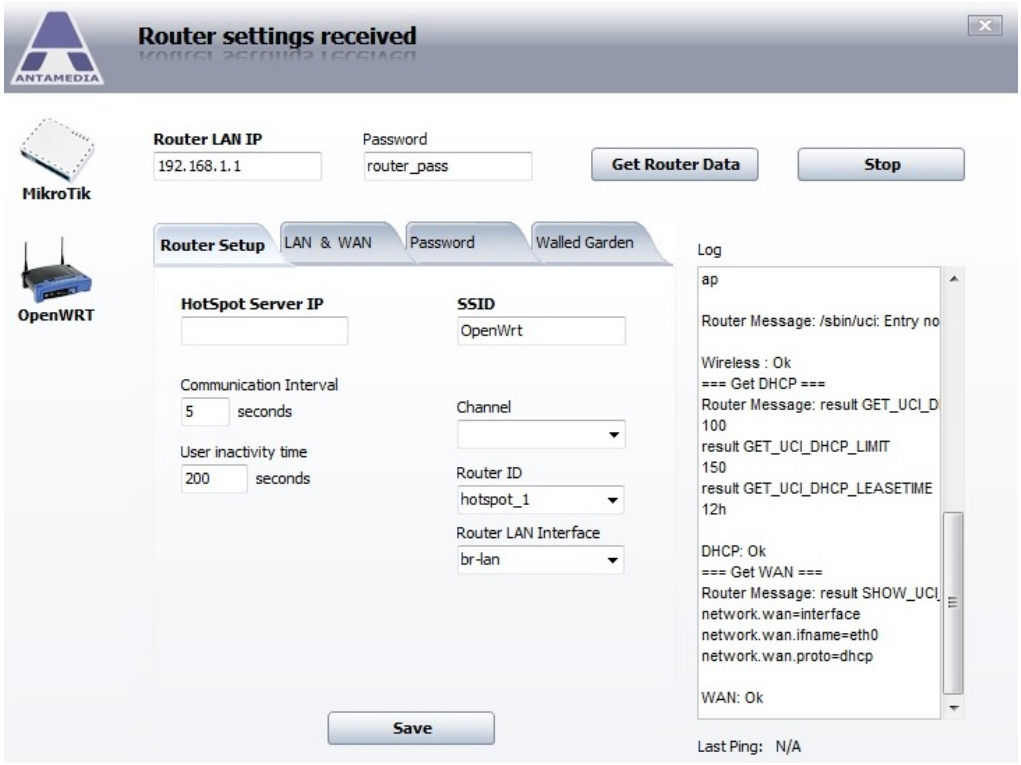
1. Make sure that the router is already set up and operating as gateway for its local network.
2. Open router settings in web browser from a Windows PC connected to router's LAN port, the PC should be set to automatically obtain IP address.
3. Login to the router using **root** username and blank password.



4. Set the **Router Password**, leave **SSH Access** setting at default values and click **Save & Apply** button.

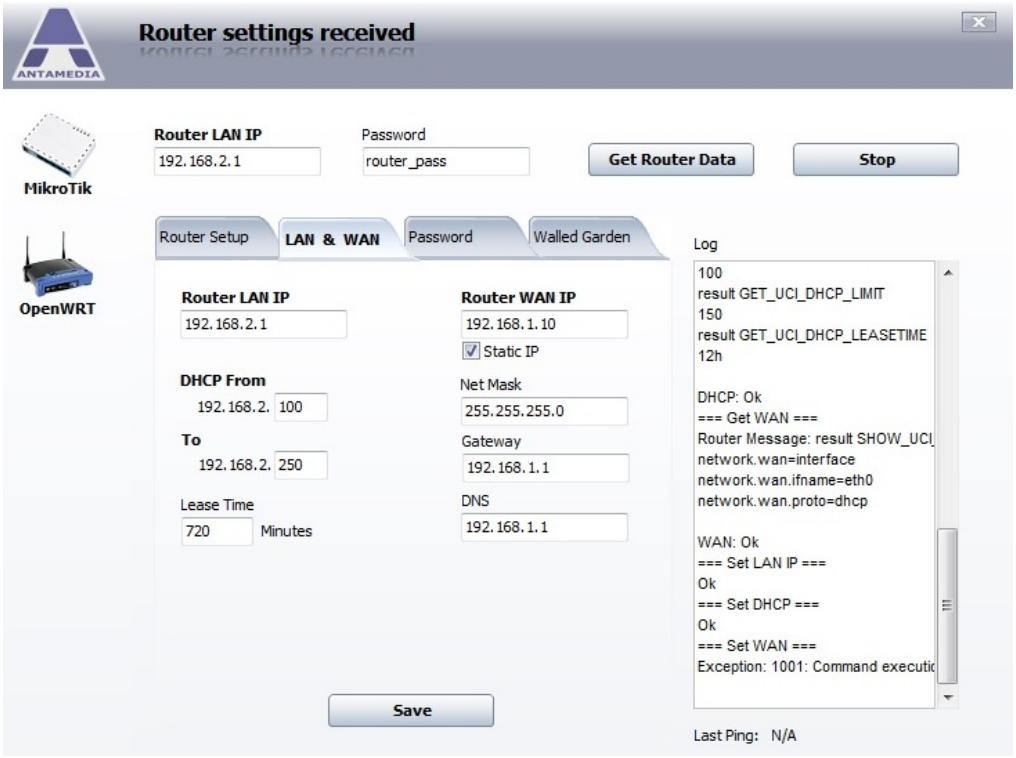


5. **Download** and **extract** [RouterAdmin] to the desktop of this PC
6. **Run as administrator** RouterAdmin.exe from and click on **OpenWRT** button
7. Enter **Router LAN IP** address and **Password** for the **root** user, click on **Get Router Data** button.



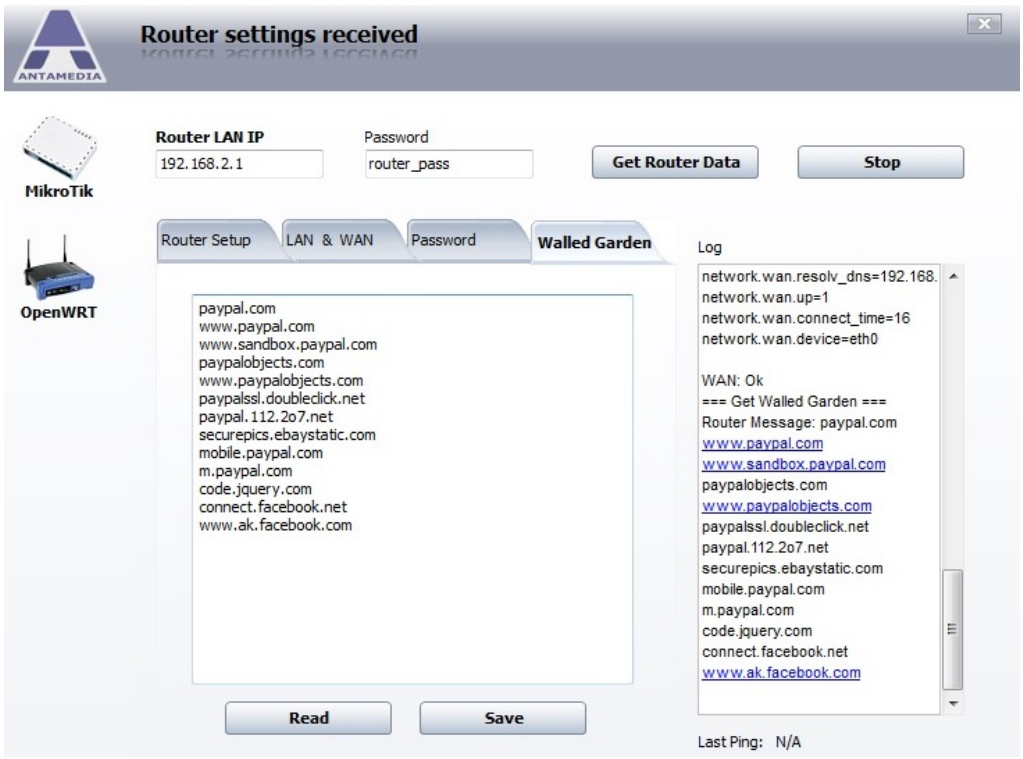
8. On the **Router Setup** tab set desired **SSID** for WiFi network, **do not enter HotSpot Server IP yet.**
9. If this is a first router you are connecting to HotSpot, set **Router ID** to **hotspot_1**, increase the number for every next **OpenWRT** router you add.
10. Make sure that **Router LAN Interface** is set to **br-lan** value.

11. Go to the **LAN & WAN** tab, optionally change **Router LAN IP** address.



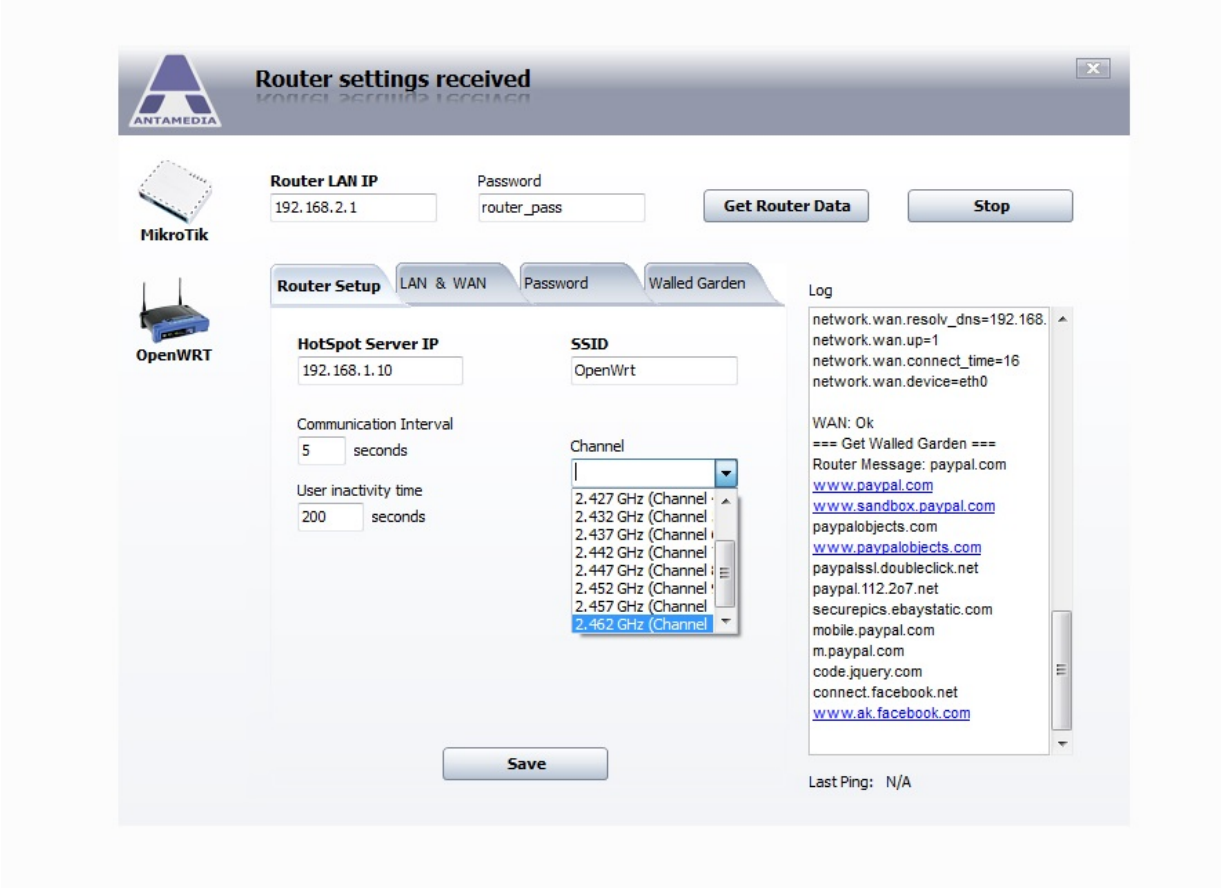
12. Set DHCP pool options (**From, To and Lease**).
13. Set **Router WAN IP** address and appropriate **NetMask.**
14. Set the default **Gateway** address and **DNS** server (Internet router IP, ISP DNS or public like 8.8.8.8)
15. **Important!** Make sure that **Static** box is ticked.
16. Click **Save** button to apply the settings for both LAN and WAN router interfaces.

17. (Optional) Configure a list of websites accessible without user authentication under **Walled Garden** tab.

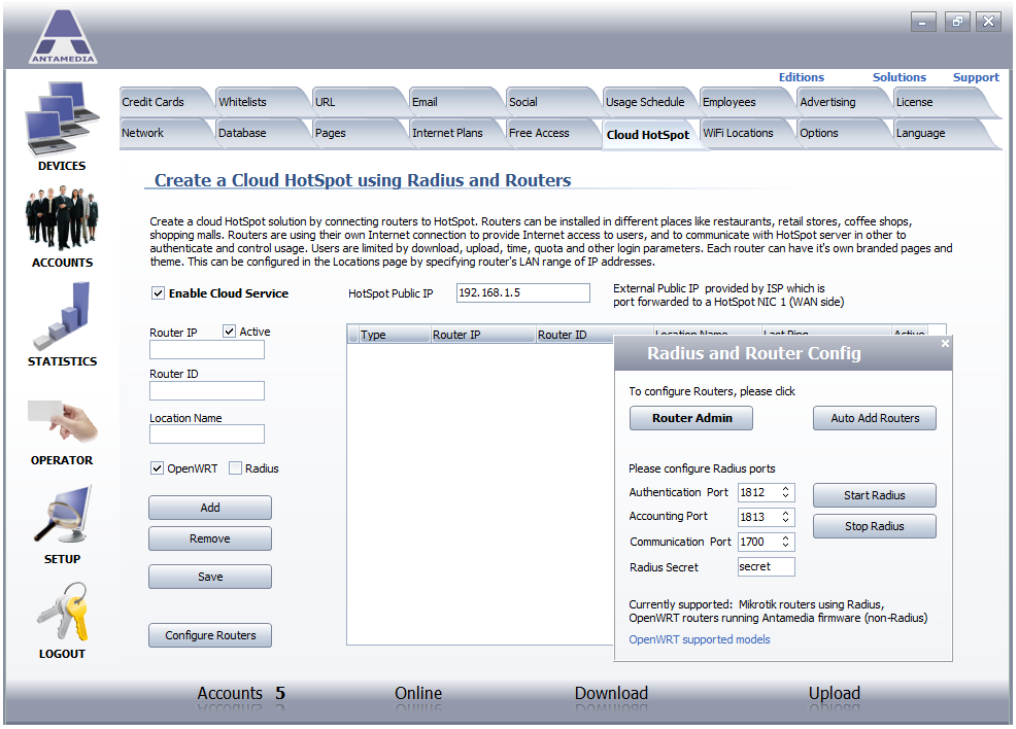


18. After saving, disable network card on the PC.
19. Physically turn off the router and wait 3 minutes.
20. After 3 minutes, enable network card on the PC.
21. Close **RouterAdmin** application.

22. Re-plug the network cable from **LAN** to **WAN** port of the router.
23. Start **RouterAdmin** application and go to **OpenWRT**, click on **Get Router Data** button.
24. Go to **Router Setup** tab and now enter remote **HotSpot Server IP** address.
25. Select one of the options from **Channel** drop-down menu, if you are unsure which, select the last one.
26. Click **Save** button.



After these procedures remote OpenWRT router will be ready to be added inside HotSpot software. Go to HotSpot - Setup - Cloud HotSpot page and click **Configure Routers** button. Click **Start Radius** and then **Auto Add Routers** button. Check **Enable Cloud Service** box and click **Save**, after that routers will be controlled by HotSpot software.



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