INSTALLATION MANUAL

1) PRECONDITIONS
2) KEY WORDS
3) VERSION
4) ANALYSIS OF EXISTING CONFIGURATION
5) BASIC SETTINGS
6) MAKE CONFIGURATION USING WWW-INSTALLATION INTERFACE
7) ADDING IP ADDRESS FOR MIX OF CLIENTS
8) UPLOAD A LAUNCH CONFIGURATION SCRIPT
9) LAUNCH HOTSPOT and TEST

1. IT IS PRESUMED THAT THE TECHNICIAN HAS:

    a. BASIC KNOWLEDGE OF ROUTING:

        I. A basic knowledge of IP address and network mask setting is required.
        II. How to test your basic knowledge in combination of MikroTik System? Use the system training manual at training.mikrotik.com
        III. Basis materials will shortly be available also at TNC Dealer Support.

    b. VALID DEALER CONTRACT

        I. Initial registration at www.travelnetcon.com
        II. Send the signed copies of contract to TNC. These will be signed upon verification of applicant's integrity.

    c. ACTIVATION OF DEALER'S ACCOUNT AT WWW. TRAVELNETCON.COM

        I. With the signed contract the dealer will receive an activated dealer account. The dealer account will be used for adding a HotSpot in the TNC Network and for testing of the connection.

d. APPROPRIATE HARDWARE A SOFTWARE

I. To select an appropriate combination of hardware and software you will be assisted at www.travelnetcon.com

Why Should I Be a TNCspot Operator? | You already own a WiFi? | Why the MikroTik Routerboard? | **Registration**

1. During the testing period it demonstrated the **best results** in the development of a robust, homogeneous, secure and reliable global wireless network.
2. It is **inexpensive** when price and performance is compared with other devices.
3. It enables a **simple on-line access** for programming, upgrade and service.
4. It **minimizes the involvement** of the TNC hotspot operator in programming, technical and operational matters.
5. Enables **active monitoring** of each TNCspot 24 hour a day, 7 days a week for highest reliability.
6. It has a standardized **shaping option**, which distributes evenly internet access to the connected end users and prevents jamming and bottlenecks in internet traffic.
7. It enables **central implementation** and management of targeted advertising strategies.
8. All TNC Hotspots can be operated through a **central radius server**. This technology provides reliable and secure solution for registration and authentication of TNC clients.

Depending upon the anticipated volume of Internet users (clients) at specific hotspot site, TNC offers three types of MikroTik Routerboards.

Type	No. of users	Type of operation	Price in EUR *** (devise+installation)
MikroTik RB133 Routerboard	Max **15 - 20** Internet users connected at the same time	Cafes, Fast food, Restaurants, Bed & Breakfast, etc...	90 + 100 = **190**
MikroTik RB333,RB532 Routerboard	Max **40 - 50** Internet users connected at the same time	Small Hotels, Shopping Malls, Conference Rooms, etc...	160 + 100 = **260**
MikroTik RB600,RB1000 Routerboard	Max **100** Internet users connected at the same time	Large Hotels, Resorts, Convention Centers, etc...	200 + 100 = **300**

II. For the basic OS-Operation System choose MikroTik OS

III. MikroTik uses HW platform RouterBoard, where every router already includes a certain version – level of OS.

IV. MINIMUM CONFIGURATION - License level - L4 and higher

V. Software included in the routers is already activated.

VI. Hardware configuration.
1. Router as recommended (except RB133C a RB411)
2. Box
3. Power Supply 18-24V
4. Wireless card – in case of direct installation on Routerboard
   a. Pigtail
   b. Interior antenna. Min 5db recommended.

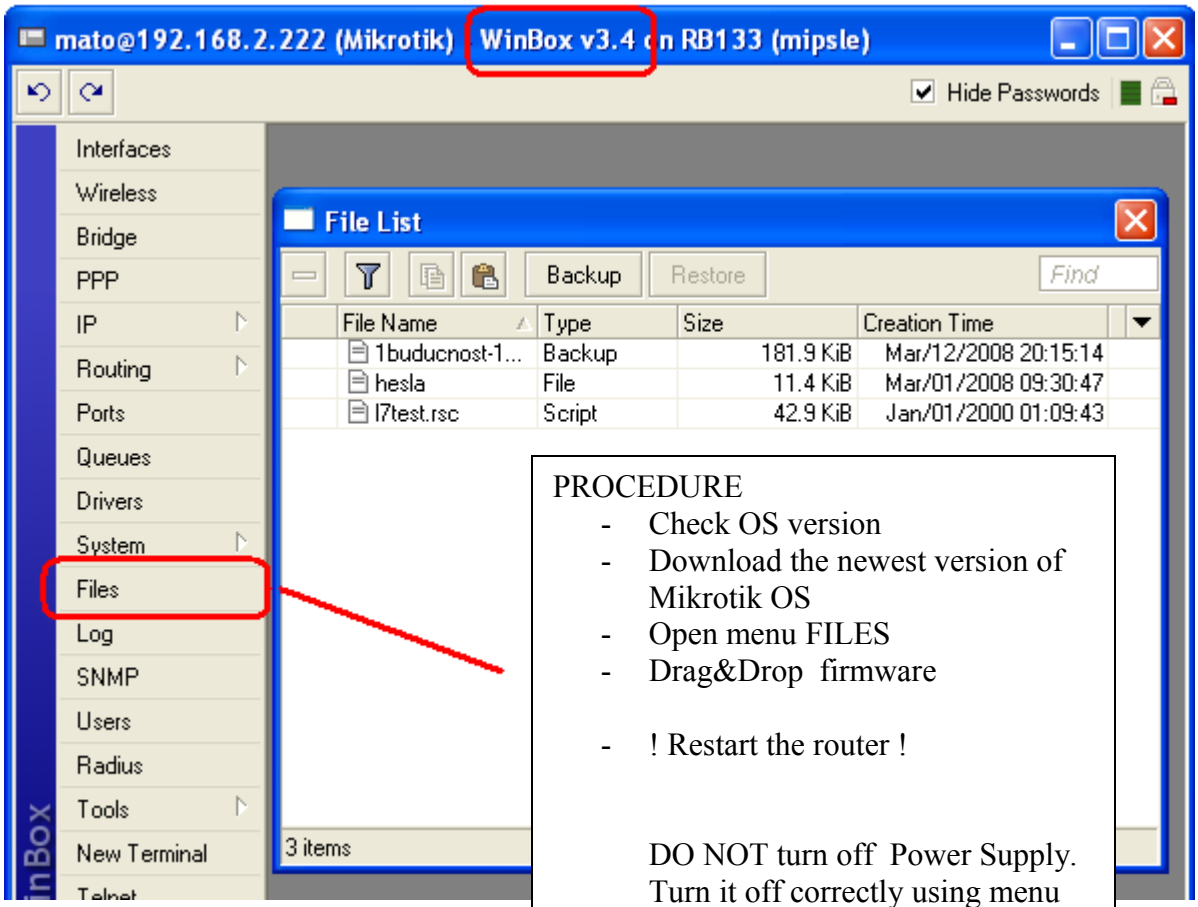
VII. Drivers (software)
1. WINBOX – all configurations and examples are in winbox.
2. Download it from www.mikrotik.com DOWNLOAD menu and save it to your computer. You will need it.
3. WINBOX control program is in the winbox publication on www.travelnetcon.com in the SUPPORT menu.

2. KEY WORDS

   a. INTERFACE =
      I. Interface means all interfaces – Ethernet,WiFi, Anny Virtual-Etheret – PPPoE-aDSL
   b. WAN =
      I. Entry interface to the Internet
   c. LAN =
      I. Entry interface for the existing network.
   d. HOTSPOT =
      I. Entry interface for the new network with verification.
   e. VPN =
      I. Secured connection for configuration.

3. VERSION

a. CHECK THE VERSION OF EXISTING - OS



PROCEDURE
- Check OS version
- Download the newest version of Mikrotik OS
- Open menu FILES
- Drag&Drop firmware
- ! Restart the router !

DO NOT turn off Power Supply. Turn it off correctly using menu
- SYSTEM – RESET

b. WHICH FILE SHOULD YOU DOWNLOAD?
   I. According to CPU and Routerbord tipe – PC
      1. For instance for BR532 the appropriate version is mipsle – see upper line script in WINBOX
      2. Even if you download and incorrect version nothing happens.

c. WHY DO YOU NEED THE UPDATE FOR THE NEWEST VERSION?

   I. Because of compatibility of applied update system configuration, which is running through the TNC Authorization Center.
   II. Advertising and reservation systems are included in periodical updates.

d. SYSTEM SECURITY?

   I. System is secured through dynamic user name and password bound to the actual HotSpot through the database of the Radius Server.

e. CONFLICT WITH THE ACTUAL VERSIONS KONFLIKT

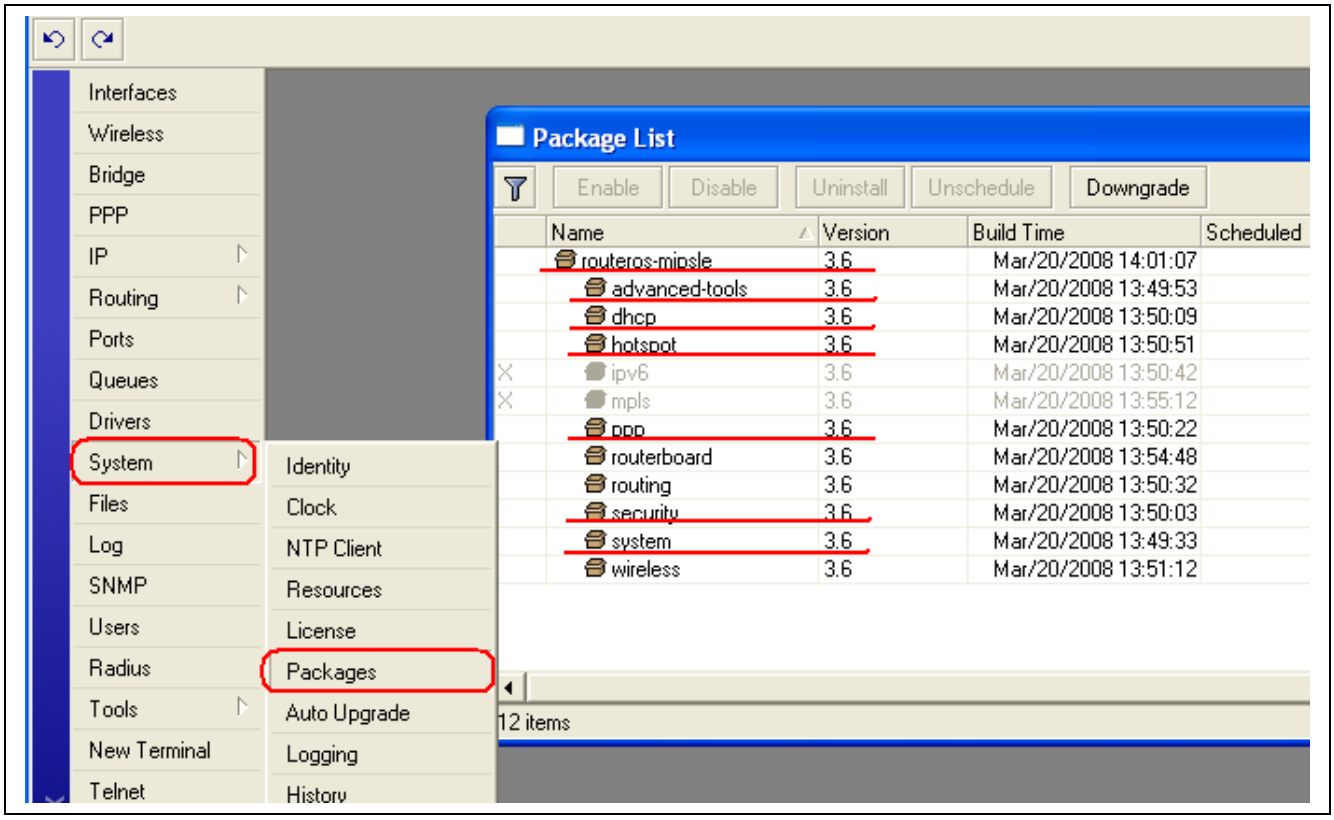
   I. If the system shows an ERROR message during manual launch of the configuration script this can be caused by the wrong version of the OS.
   II. If the ERROR message appears during the automatic upgrade this incident is automatically recorded and analyzed. Should an on site service be required, our local partner will be sent out.

f. PACKAGES

I. Before you would download the script and start to work around the MikroTik device, check the installed packages. All installed packages have to be the same version.

II. For the correct function the MINIMAL requirement is:

1. ROUTER-OS - basic system
2. ADVANCED-TOOLS
3. DHCP
4. HOTSPOT
5. PPP
6. SECURITY
7. SYSTEM
8. WIRELESS – should it be Wireless



III. In case that all packages are black, it means that they are active. In case a particular package is NOT included you need to download it from www.mikrotik.com and upload it similarly as an UPDATE. After a reset of the device the PATCH will be applied.

IV. In case a packet has a grey color it has to be activated with the “Enable” button.

V. !! THE PACKETS ARE NECESSARY for the correct operation of the router !!

4. ANALYSIS OF ACTUAL CONFIGURATION

a. In the following steps we will pass through individual configuration possibilities.

b. ACCORDING TO THE MODEL INTERFACES NEED TO BE MARKED using WINBOX described in point 4.

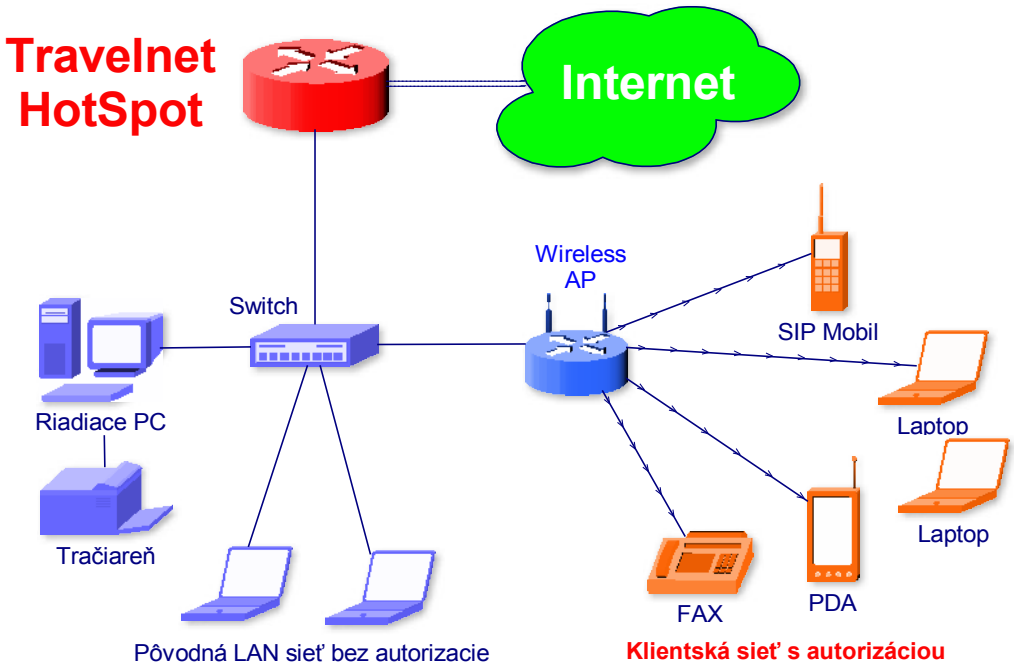
c. POSSIBILITY NO. 1.

I. HotSpot router can separate your network from Internet.

II. In this configuration Internet is delivered through the interface = which has to be marked as WAN

and through the second interface is solved the connection of customers = this interface has to be marked as HOTSPOT

III. WARNING! Should you need to ad an IP range which will require no authorization, it has to be added manually as subscribed in point 7.



1. Example 1: Your network does not have to be bridged only. Your HotSpot router can be integrated into a routed network – also behind NAT. Router can connect clients directly through the Wireless interface.

2. Example 2: Utilization of WDS Access points as an extension of the Wireless rout.

3. Example 3: 1 HotSpot router for a large network and for the main router at the same time.

d. POSSIBILITY NO. 2 = this is the most common one

I. HotSpot router has divided interfaces

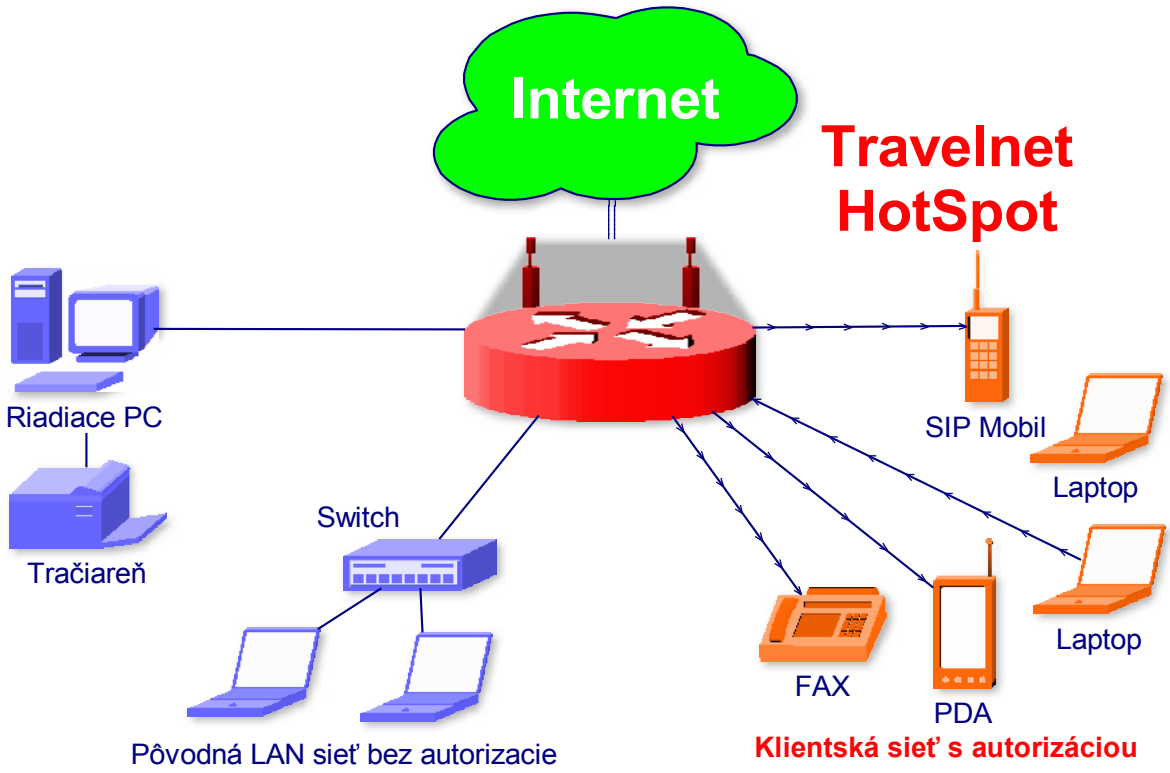
II. Using this configuration Internet is connected through one interface

III. = which has to be marked as WAN

and through the second interface is solved the connection of HOTSPOT and MIX clients = this interface has to be marked as HOTSPOT

1. and through the third interface marked as LAN will pass all clients without authorization.

IV. WARNING! Should you need to ad an IP range which for MIX clients which will require no authorization, it has to be added manually as subscribed in point 7.



e. It is required to set properly manual settings according to the possibilities. After the HotSpot is created on the web site the proper configuration is created automatically and it is possible to download the configuration folder manually into the installed HotSpot. The functionality of the device should be checked afterwards.

5. BASIC SETTINGS

a. BASIC ACCESS INTO THE ROUTER

I. Let us assume that the dealer is familiar with the basic functions of the device.
   1. On www.travelnetcon.com in support section you will find a document describing basic handling.

II. Router has no IP address, basic Login Name: admin with no password

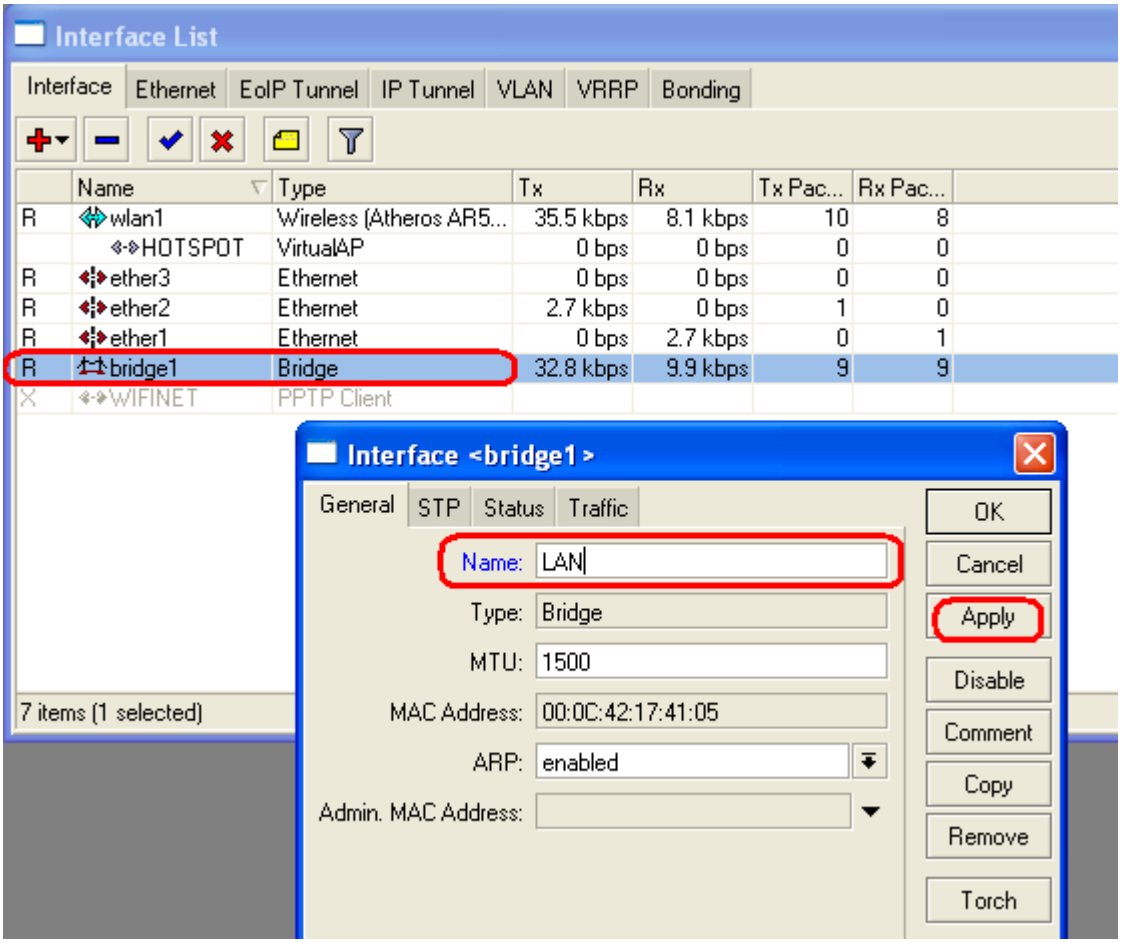
III. For connection use program Winbox which you can find on www.mikrotik.com

b. SETTING UP INTERFACES DURING MANUAL SETUP

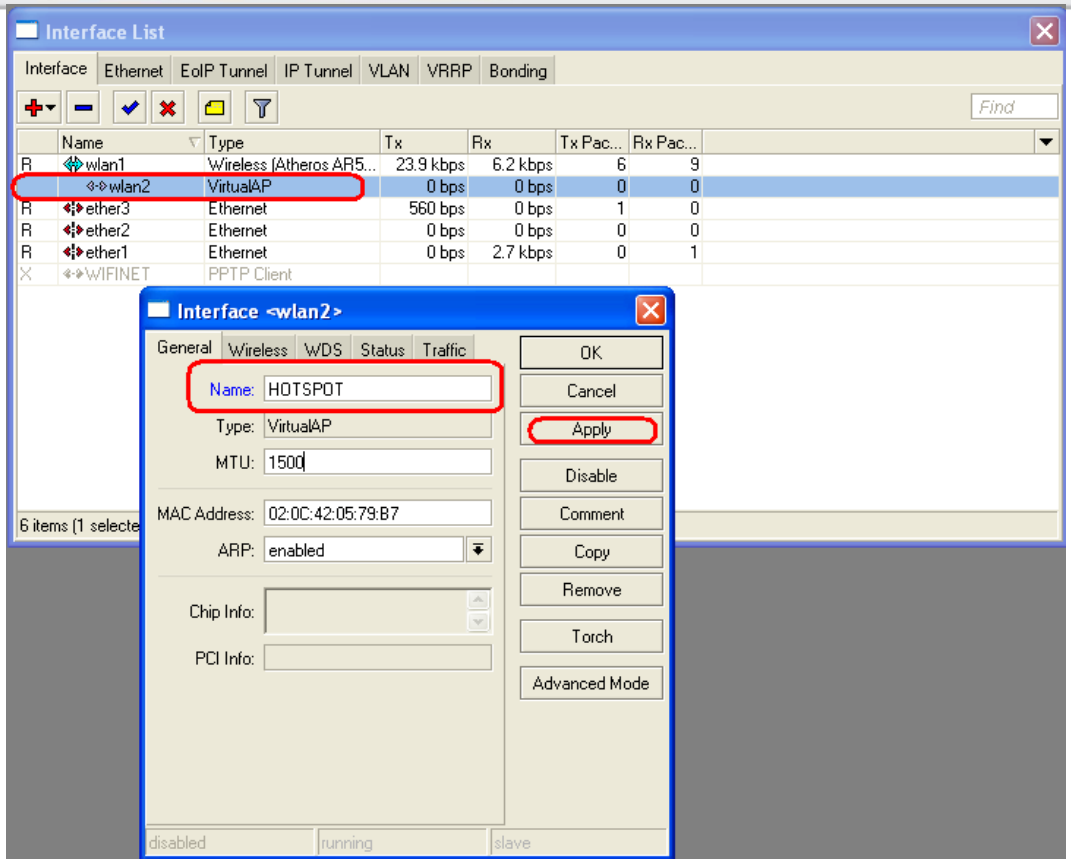
I. For the correct function of automatic scripts it is necessary to identify the individual interfaces of the router which we decided to use.

II. Such an identification will be achieved by renaming the specific – either physical, or virtual interface. Practically, it means that if you have connected all local ports into "Bridge1" of the interface and you rename him, for instance, as "HOTSPOT," then the script will correctly identify and utilize it. Among the virtual interfaces are included also all PPP, which can be used for instance for aDSL dialing where a PPPoE interface renamed as WAN will be correctly identified.

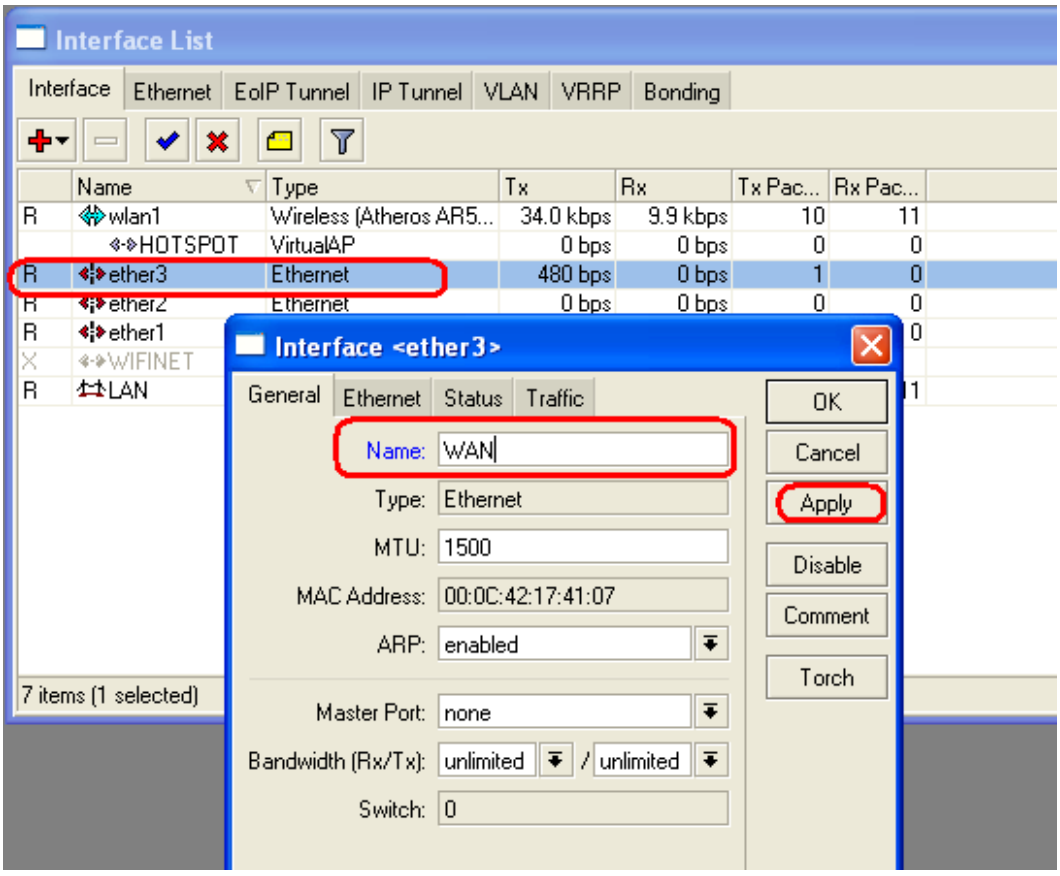
   1. LAN – AN INTERFACE IN WHICH THE NETWORK CAN BE CONNECTED WITHOUT AUTHORIZATION OR ANY LIMITATIONS.



   2. HOTSPOT – AN INTERFACE IN WHICH WILL BE USED ONLY HOT-SPOT AUTHORIZATION, OR A MIXED NETWORK



3. WAN – AN INTERFACE FOR INTERNET ENTRANCE



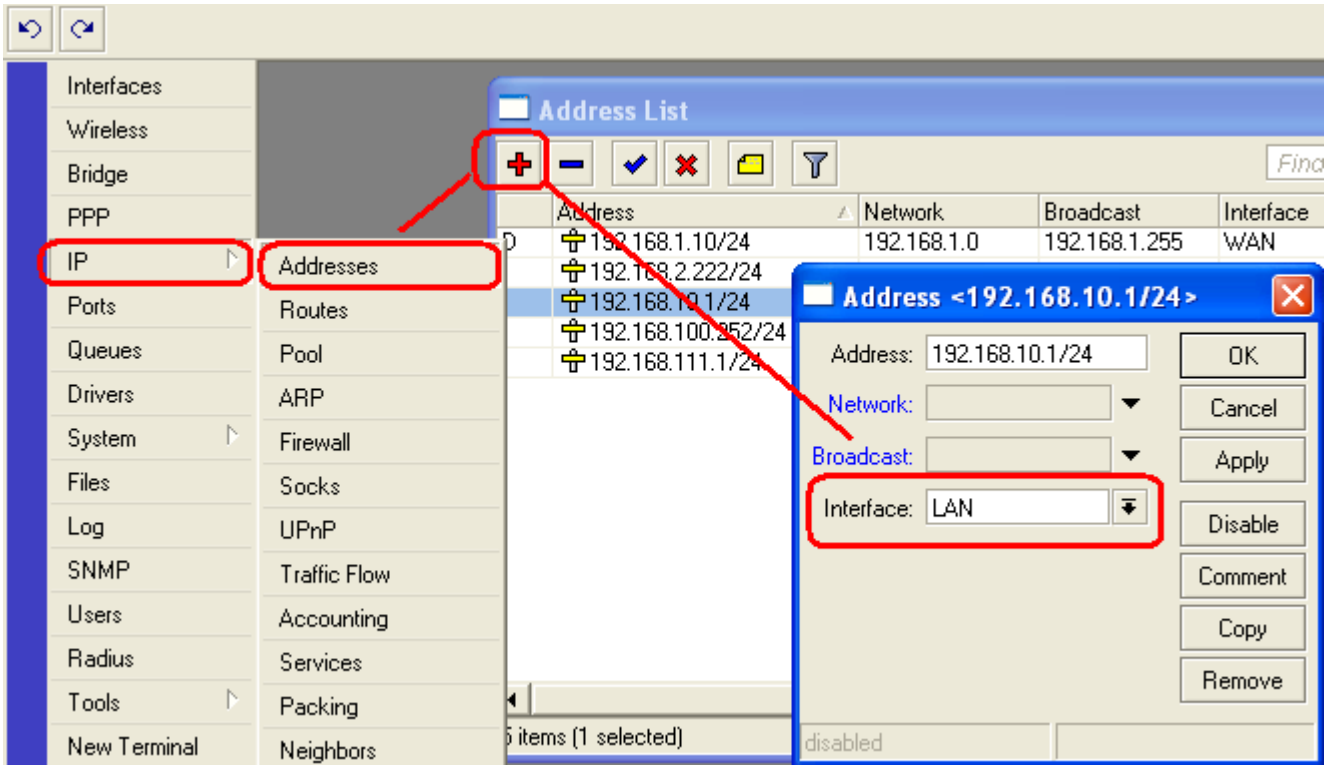
c. CONNECTING THE ROUTER TO INTERNET

I. Before the router is connected into the TNC Network, it needs to be connected to Internet and check his functionality – quality and speed of connection.

d. SETTING IP ADDRESSES

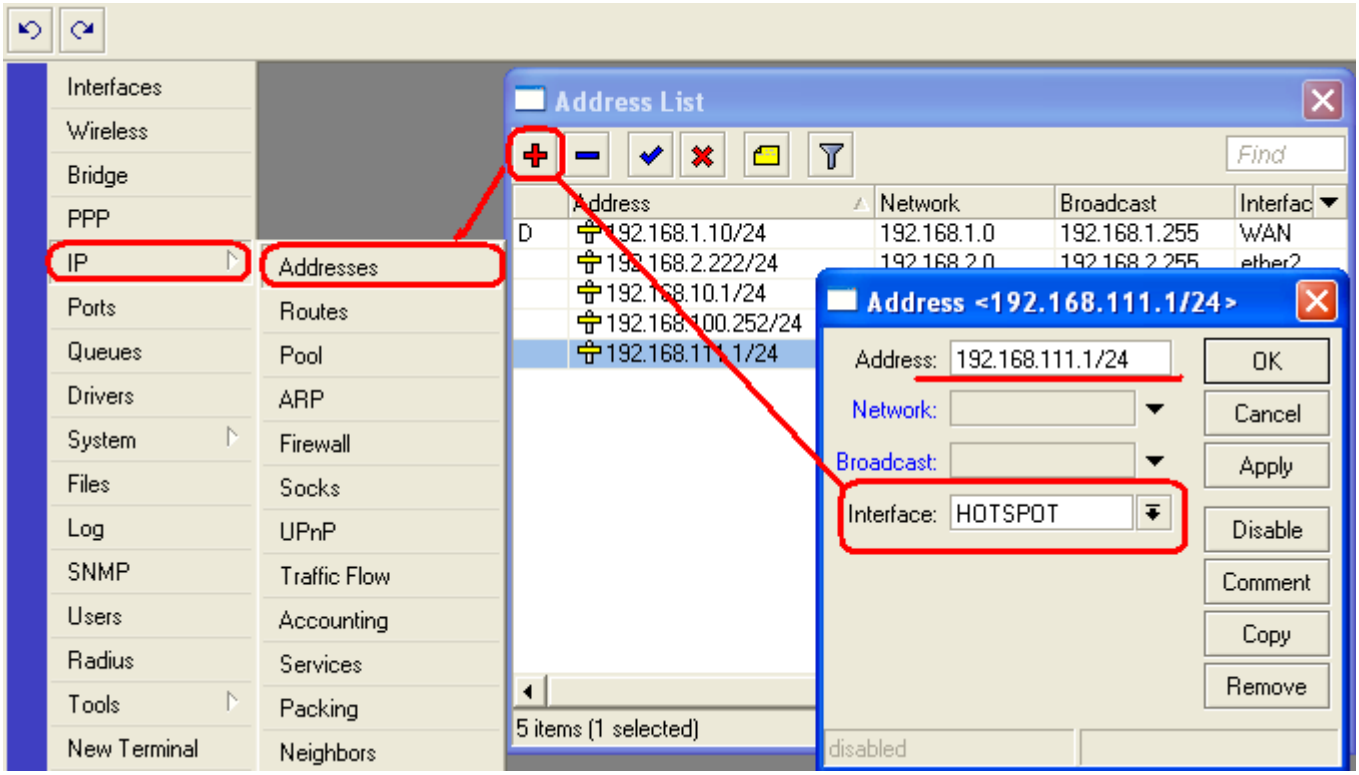
I. Configuration requires three steps

1. Step No.1 – Setting IP addresses for LOCAL – LAN interface



e. For adding the IP address you can either use network MASK in format 255.255.255.0 or "/24" Both are correct. LAN is describing the existing network and therefore it is possible to use not only local IP addresses, but also public IP addresses no matter whether you decide to use NAT, or not.

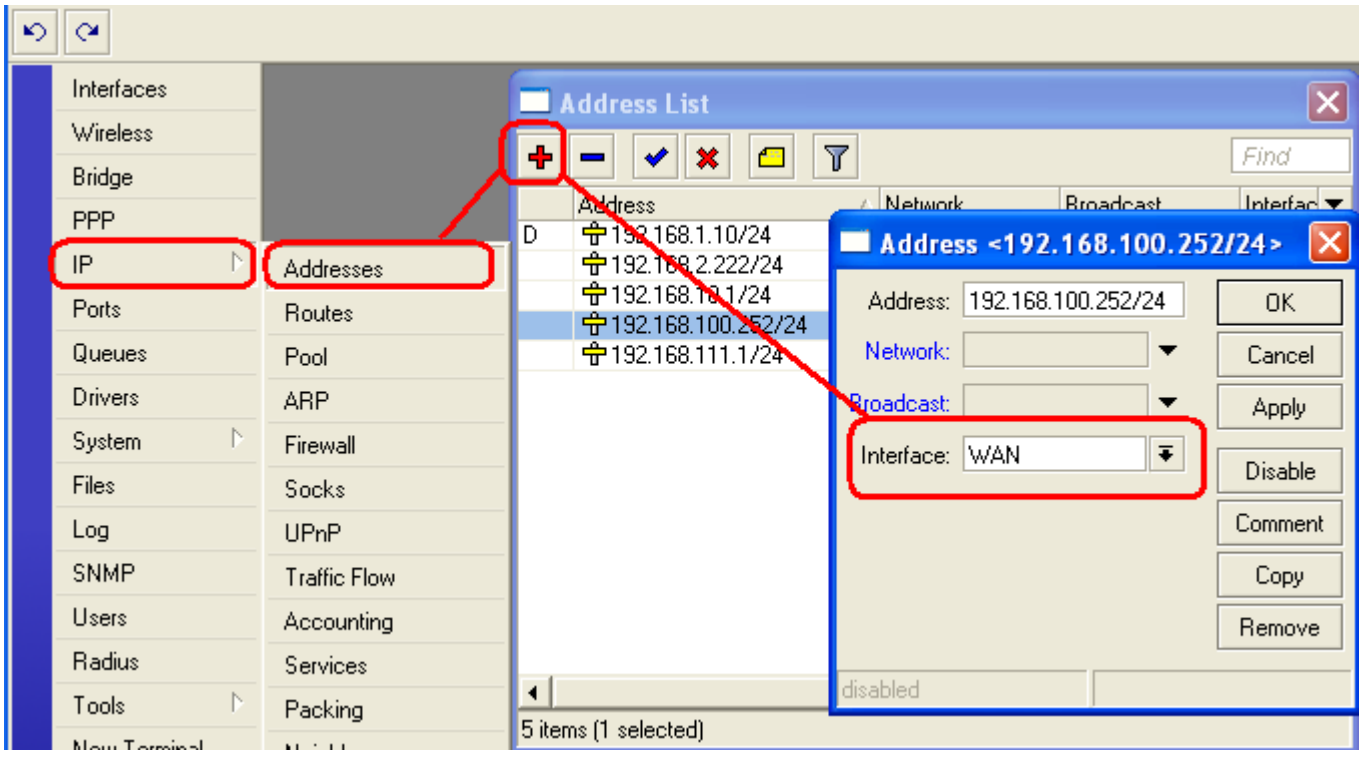
1. Step No.2 - Setting IP address for HOTSPOT interface



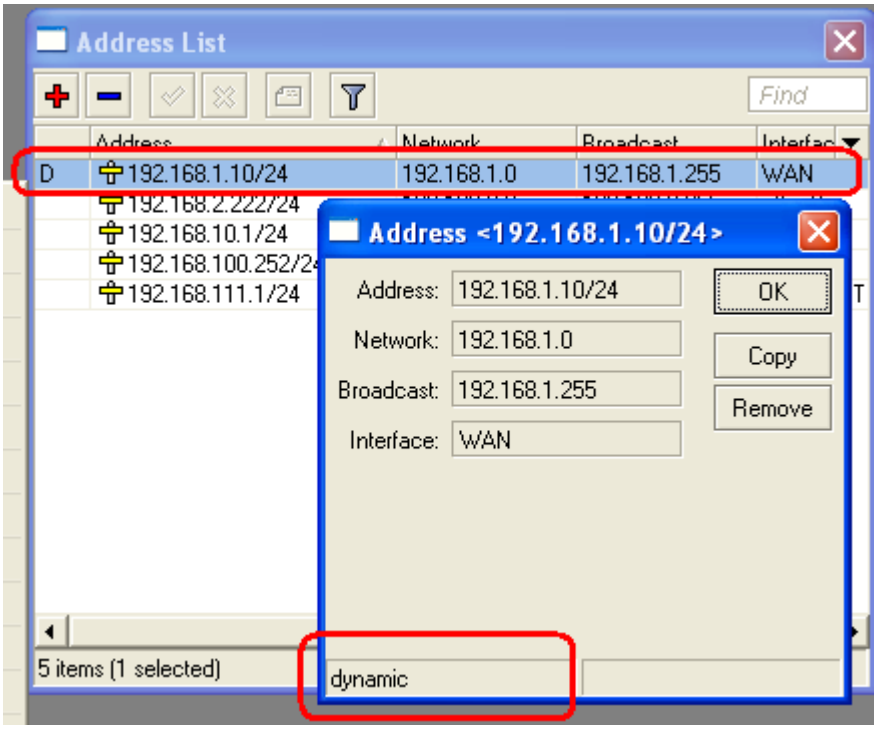
f. For the HOTSPOT interface it is recommended to use IP address 192.168.111.1/24. This is the recommended value mentioned in customer's manuals.

g. In some cases, or in case a conflict might emerge, it is possible to chose another IP address, which is 10.10.50.1/24

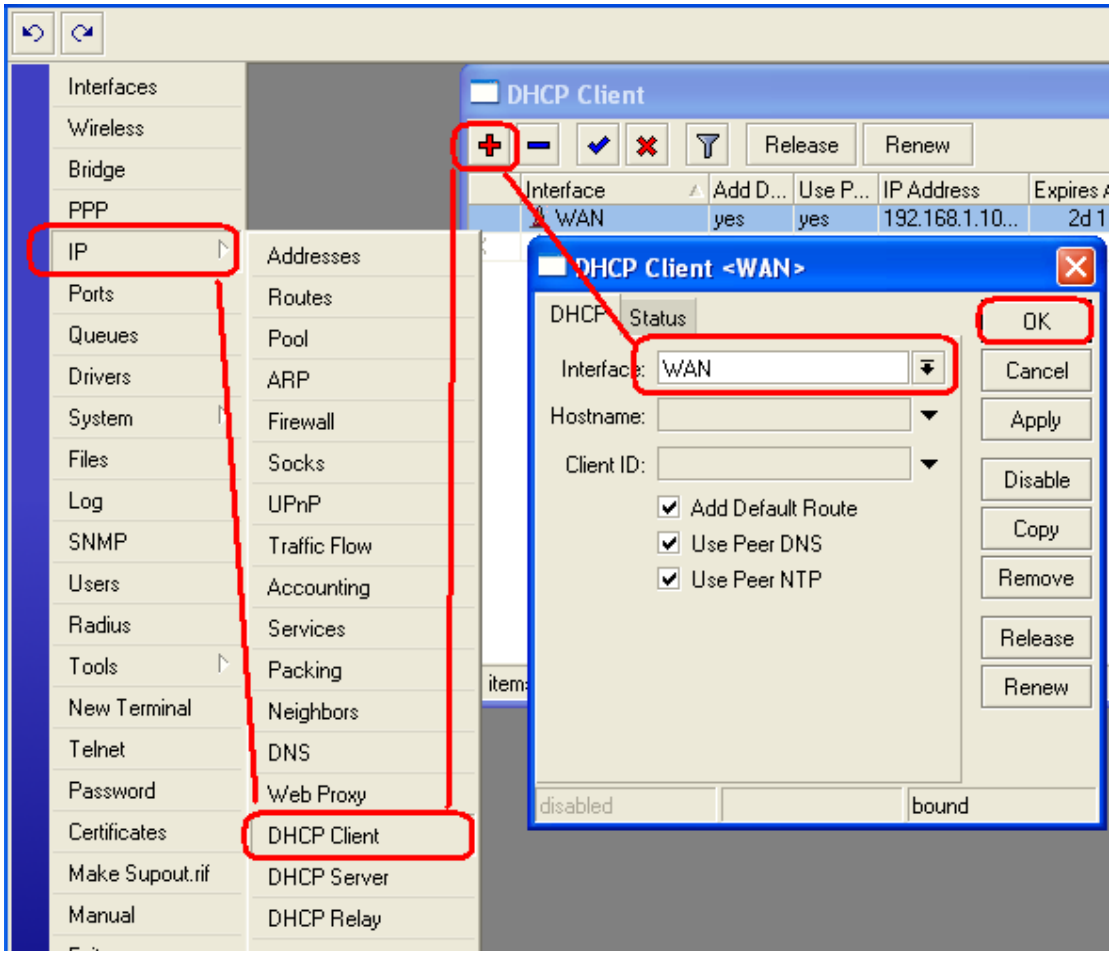
1. Step No.3 – Setting IP addresses for WAN interface



h. For WAN interface we know several different forms. For instance static local IP, public IP, or dynamic IP added to ISP. For WAN it is also possible to use a tunnel such as PPPoE or VPN.



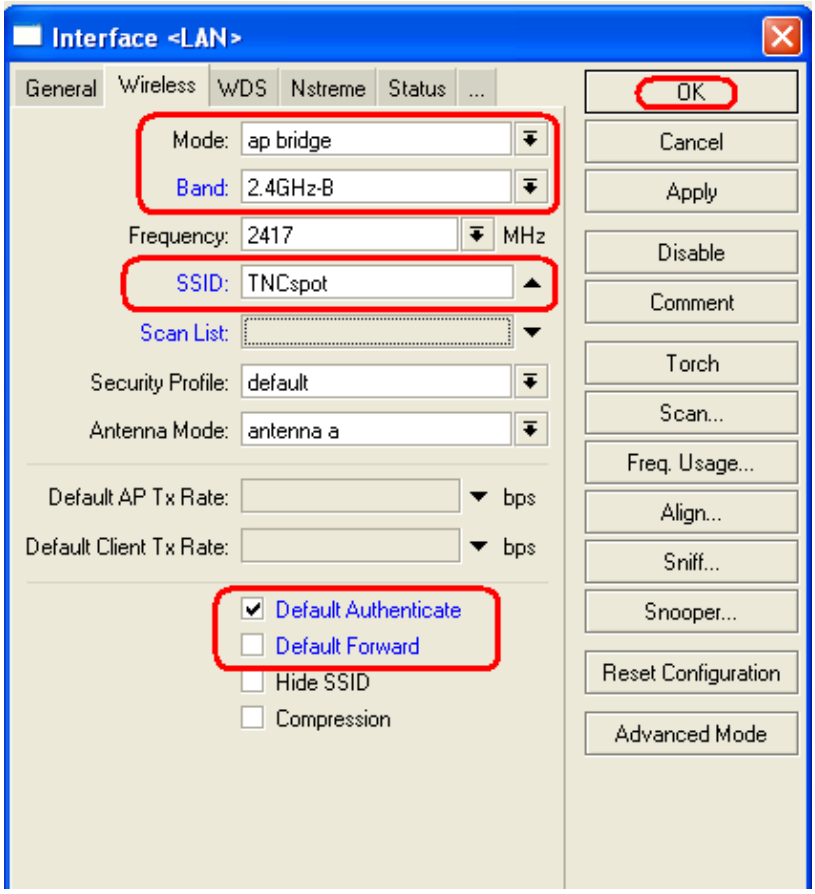
i. Example of a dynamic = automatic setup of IP address for WAN interface



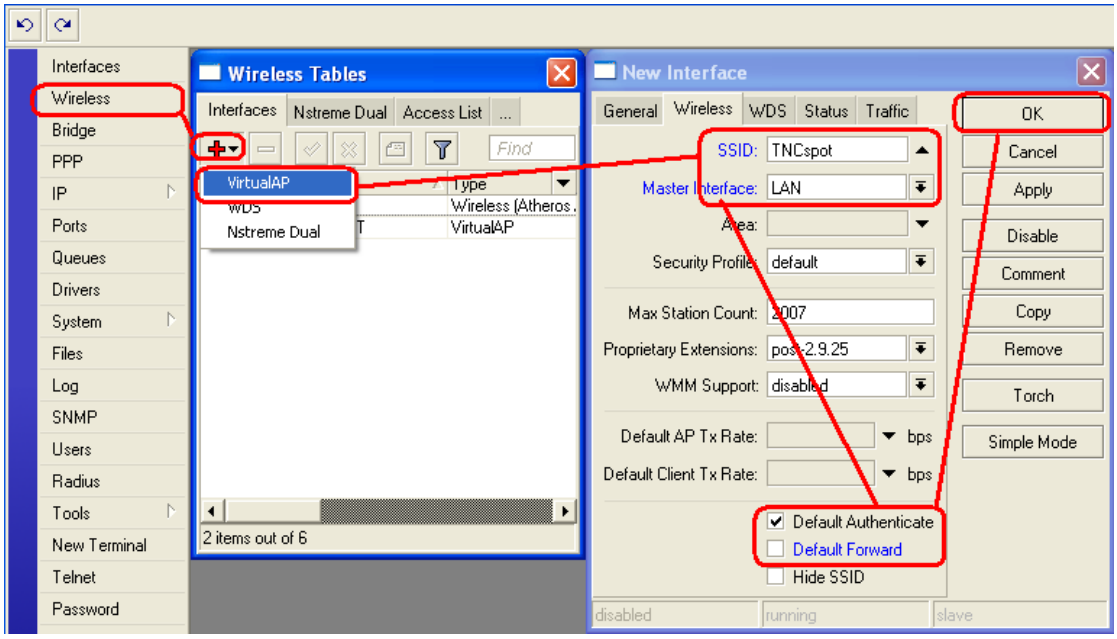
j. SETUP WIRELESS

I. For a Wireless interface in case it is used as a HOTSPOT interface, the following settings are required:

1. MODE = ap bridge
2. SSID = TNCspot
3. BAND = it depends, mostly 2,4 GHz-B
4. Default Authenticate = ON
5. Default Forward = OFF



II. In the case of existing AP we might not want to do any changes in SSID and here we can create VIRTUAL AP

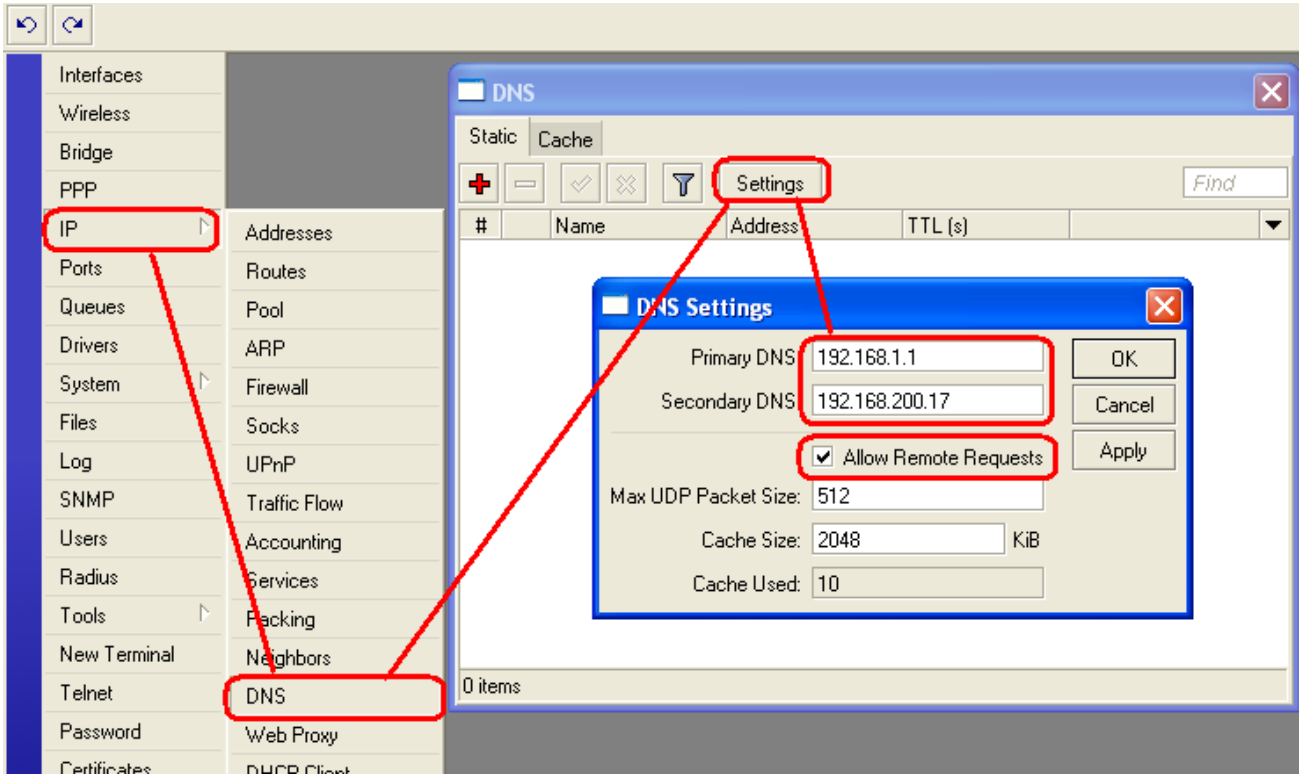


k. SETTING DNS

I. Setting DNS is an important element concerning functionality of AP and TNC HotSpots.

II. Usually the IP address and DNS server are provided by the ISP, or they are assigned automatically through a DHCP client on WAN.

III. About the correct setup of DNS we find out:

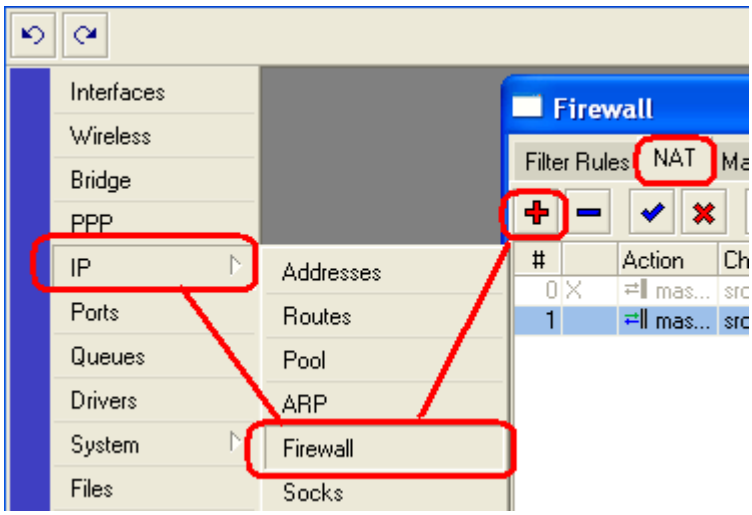


1. At least one DNS server has to be filled in and FUNCTIONAL

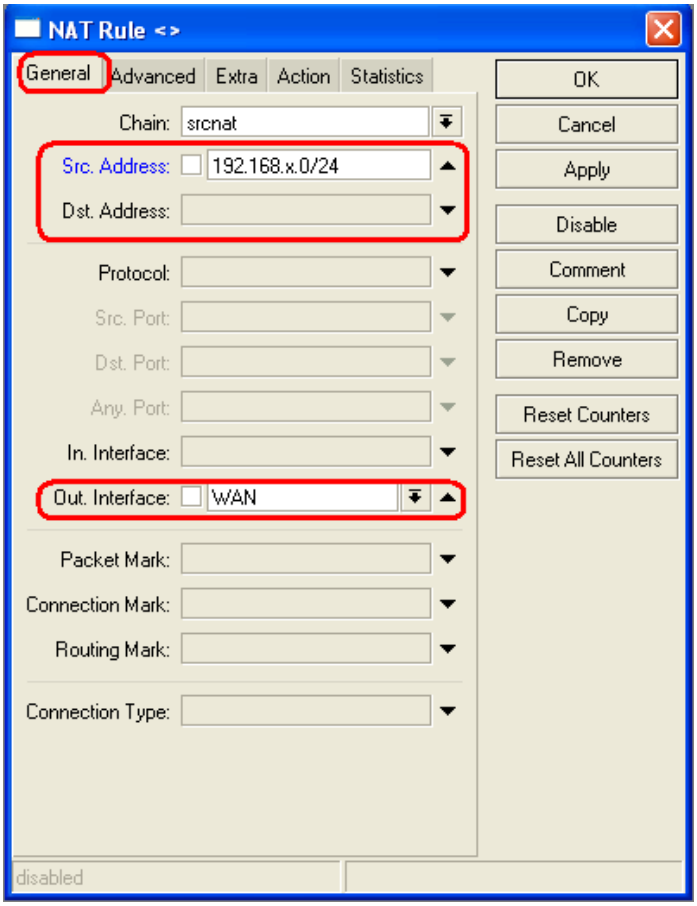
2. Turn on the option “Allow Remote Request”

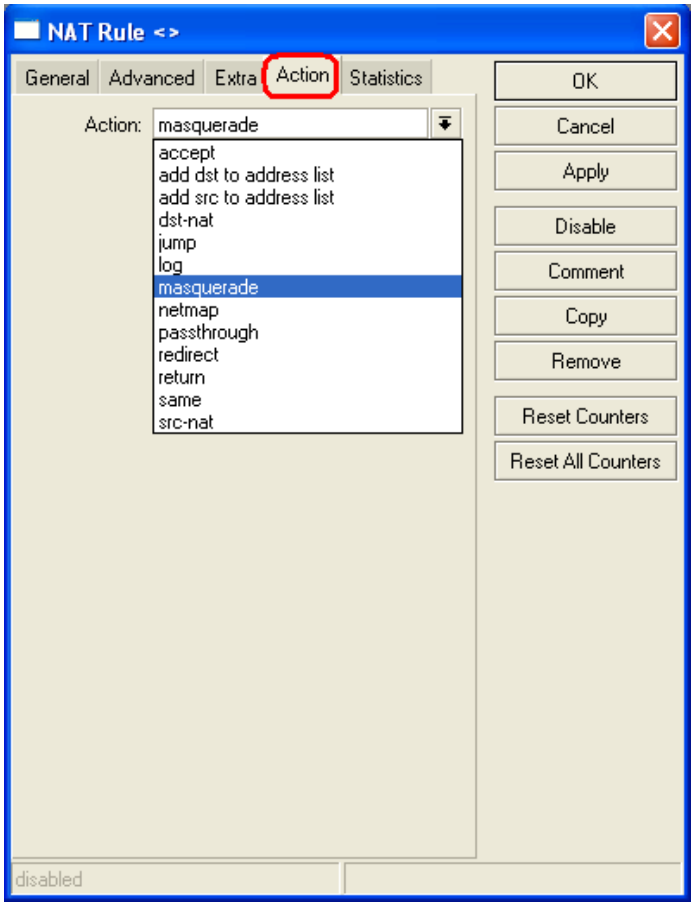
3. The checkout of functionality of DNS server is possible through Tools-PING, where in the testing field you type in for instance www.travelnetcon.com. In case the DNS is functional, an automatic transposition into the IP address takes place.

1. NAT SETTING
   I. Basic setting of NAT – masquerade in case we use local IP addresses, NAT does not have to be set up for the HOTSPOT interface. It will be set up automatically by a configuration script.



   II. To set up NAT you need to make adequate adjustments.





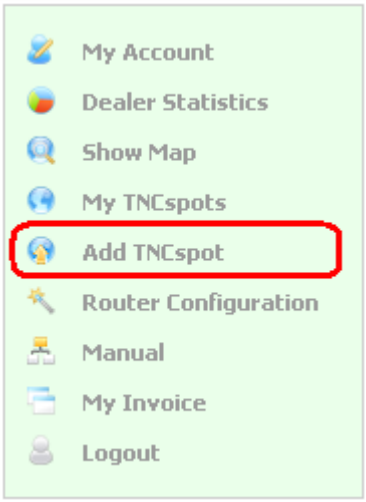
   III. After confirmation you have to have access from the local LAN side to the Internet.

6. CREATING CONFIGURATION USING WWW- INSTALLATION INTERFACE

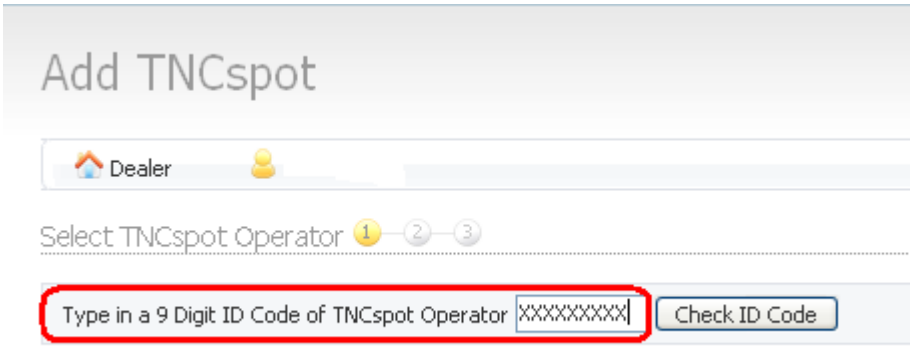
a. Sign up on www.travelnetcon.com using your name and password.

b. WWW configuration – Adding a new TNCspot

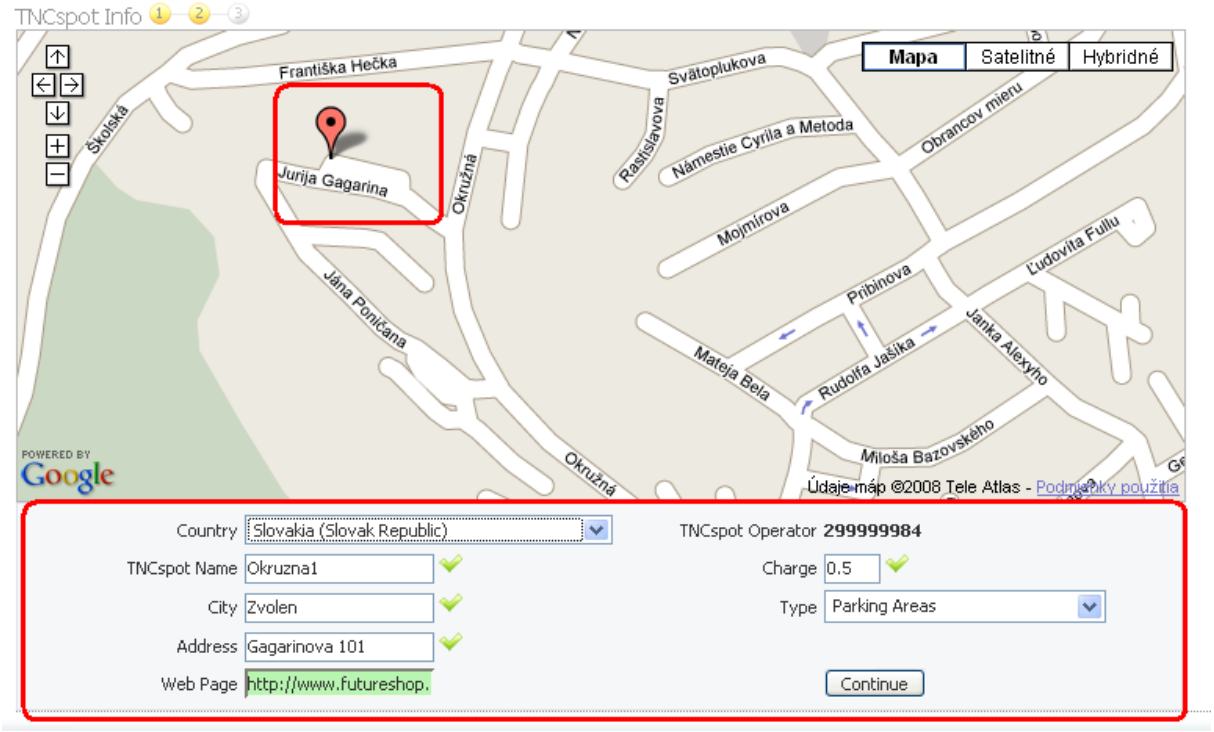
I. In menu click on “Add TNCspot”



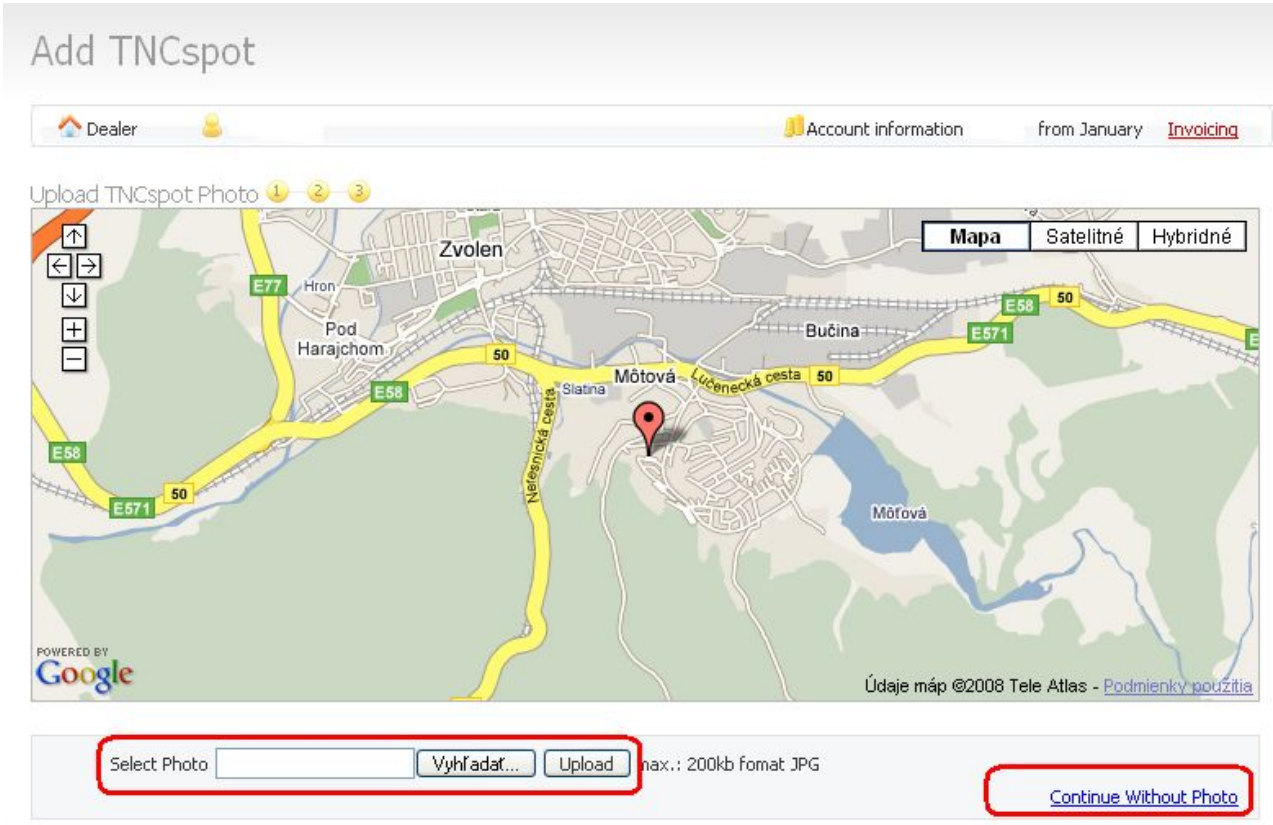
II. TNC operator has allocated a TNC ID 9 digit No.



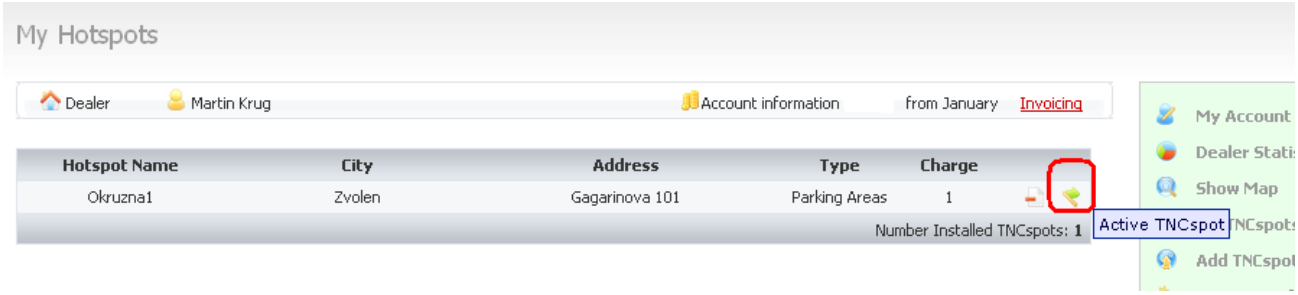
III. Find the address on the map and fill out the required information. You can post, for instance, your www address which will be displayed on Google Map next to the TNCSpot.



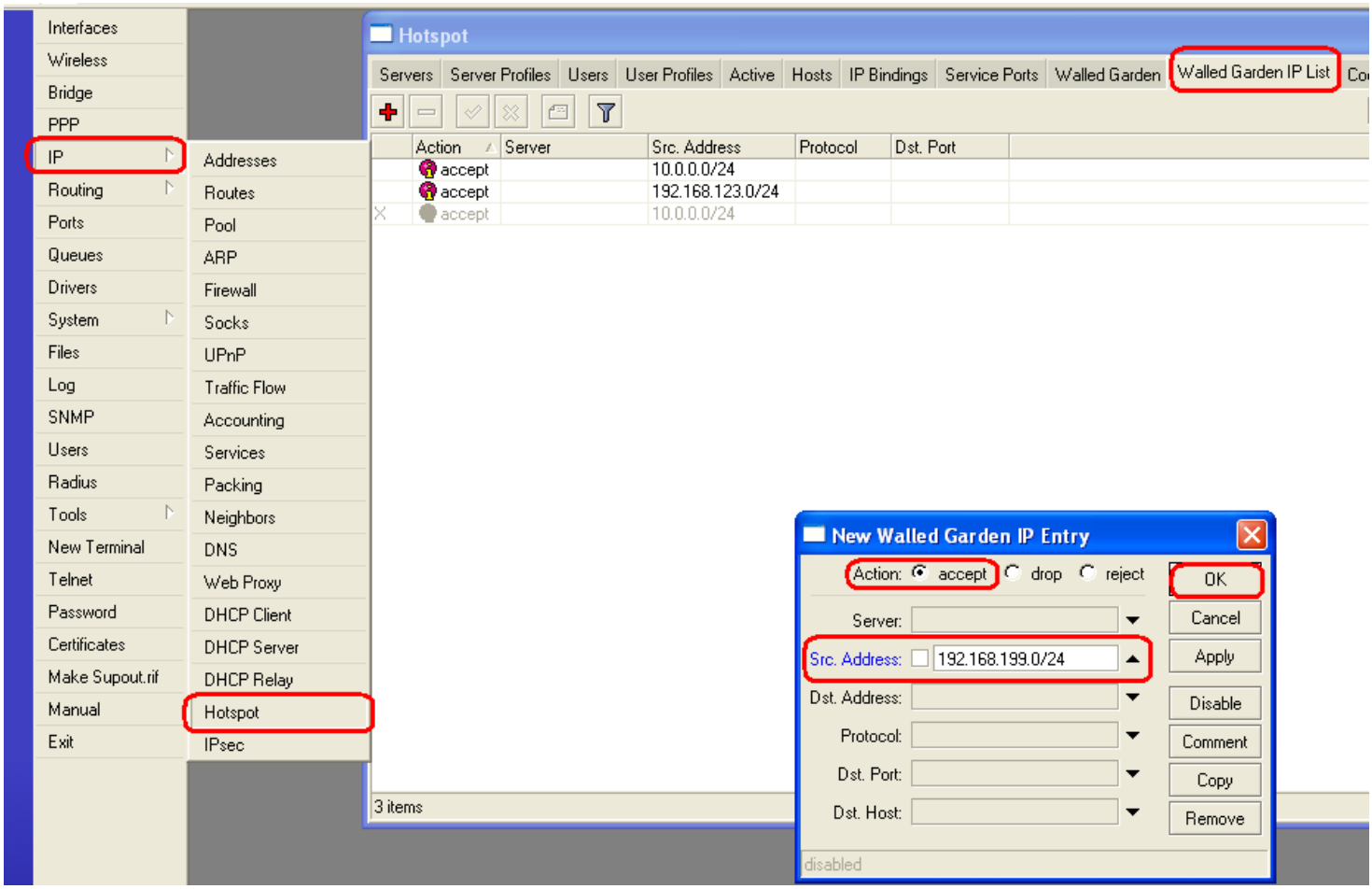
IV. Before you finish, you can insert a picture – icon – logo, or you might choose to go on and continue without posting a picture.



c. With the key “ACTIVATE HotSpot” a universal configuration script will be offered for download and you can download it according to the instruction in the next point



7. ADDING IP ADDRESSES FOR MIX CUSTOMERS
    a. In case you need to add an IP address for existing customers you have to take into account the HOTSPOT IP address to avoid a collision.
    b. IP addresses are added in the IP / MASK format.



8. UPLOAD AND LAUNCH CONFIGURATION SCRIPT

a. For the scripter it is necessary to choose properly the interfaces you are going to use, their connection into the bridge and the following setting of the IP addresses as it is described in the preceding example.

b. In case a certain interface cannot be found on your router and you leave the setup unchanged, the setup either will take place by default according to the pre set value, or will not take place at all!

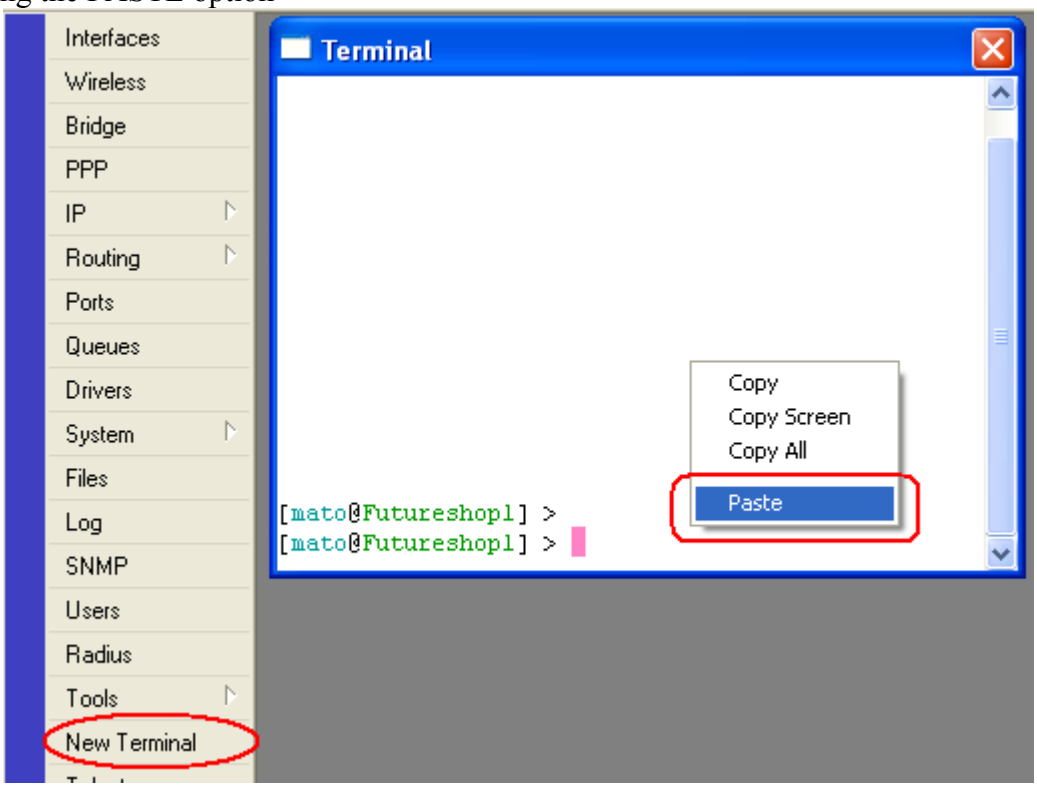
c. CHECK WHETHER ALL INTERFACES ARE SET UP ACCORDING TO OUR NEEDS

   I. LAN
   II. WAN
   III. HOTSPOT

d. Consequently, you can launch the script in your router.
   I. Open the text file of the script
   II. Mark the text CTRL+A
   III. Copy in the box CTRL+C

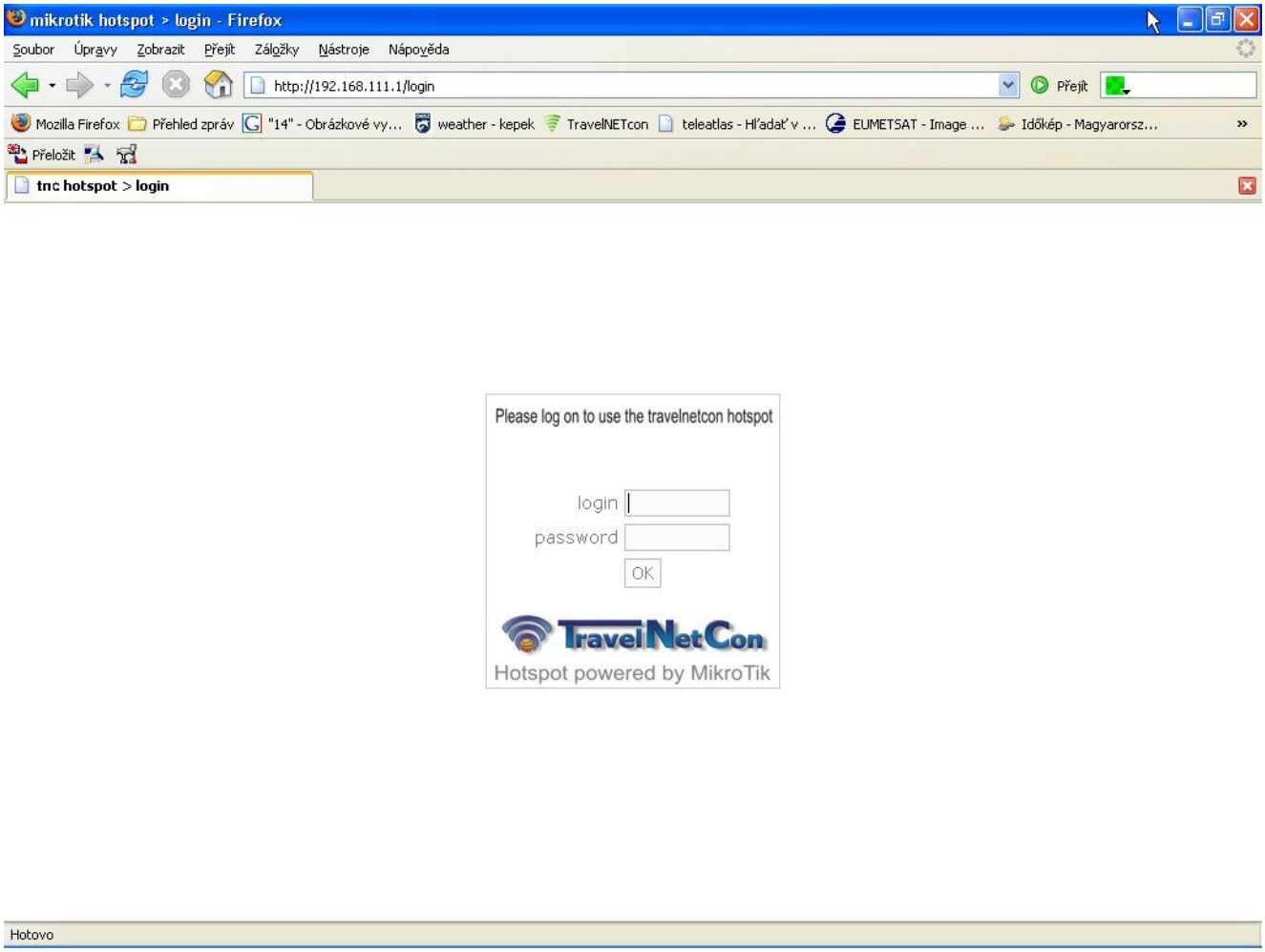
e. In Mikrotik WinBox open “NewTerminal”
   I. Insert configuration by pressing the right hand button and the “Paste” option.
   II. Check the running script and in a case of a problem select and mark the entire text and use again the right hand button and the “Copy” option and send it via e-mail to support@travelnetcon.com

f. LAUNCHING THE SCRIPT
   I. Using the PASTE option



   II. After a successful conclusion of steps described above, your TNC-HotSpot is ready to be operated

9. CHECKING
    I. To check the functionality of your installation you have to connect – using your notebook or PDA – to the SSID “TNCspot” and after you type in your installation name and password you actually can check and test the functionality of the installed HOTSPOT.



b. CHANGING CONFIGURATION
    I. In your account you will find all previously installed TNCspots. Consequently, you simply press the “CORRECT” button and you create a new configuration. This configuration can be sent automatically to the router, or you can continue manually following instructions in point 8.a.

c. LAUNCHING THE HOTSPOT

    I. CHECKING THE CORRECT FUNCTIONS, DELIVERY
        1. After testing the setup, it is necessary to make a short demonstration to the operator and hand over the TNC marketing materials.

    II. THE TNC ID STICKER
        1. The operator has to post on a proper place a TNC Sticker identifying the TNCspot.

    III. INSTRUCTIONS TO THE OPERATOR
        1. Dealer is obliged to give instructions concerning the TNCspot operation to staff members.