


Network Configuration

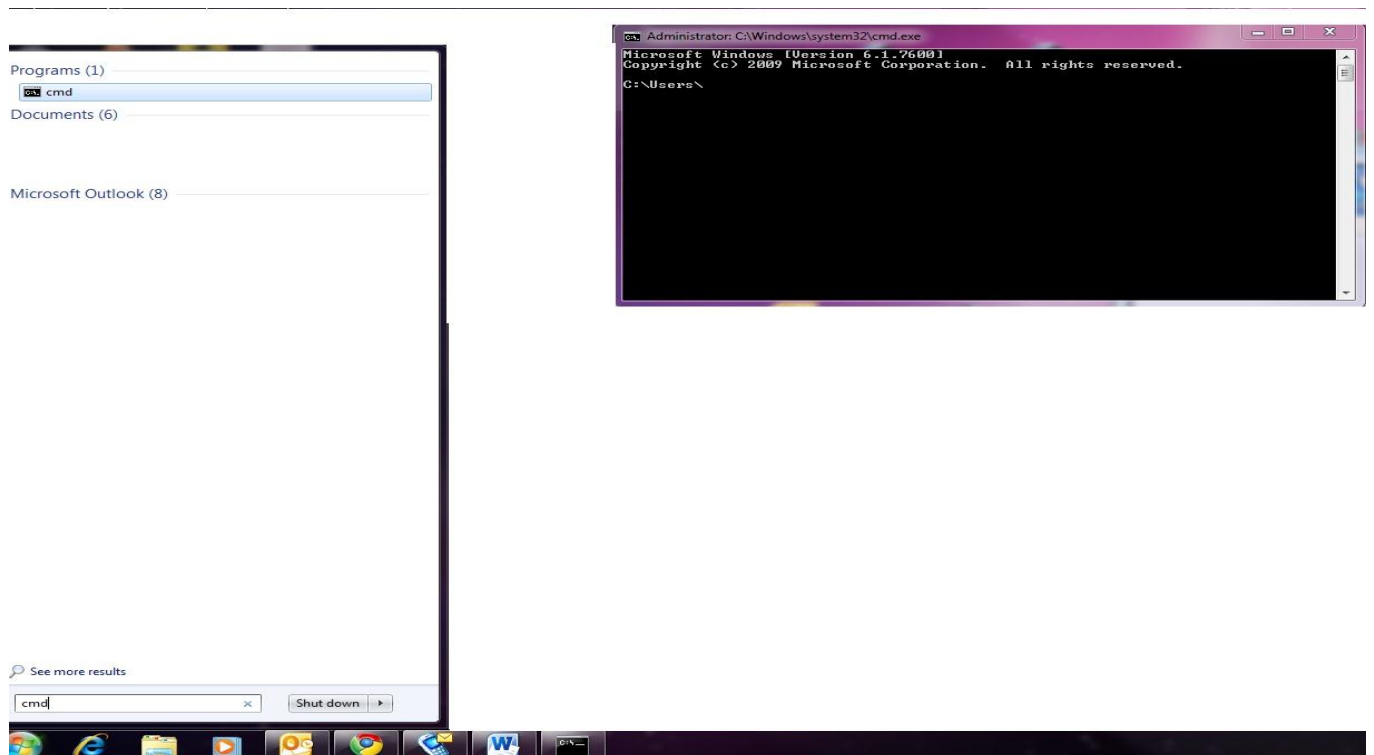
Setting up your Home or Office network to allow your DVR to be accessible externally can be kind of tricky, but I will try to explain basic network concepts to allow you to configure your network.

First, you must review your network scheme to identify if your DVR is within the same network scheme. There are a few ways to identify your network by simply going to the “Command Prompt” in your Windows PC. If you are using MAC (Apple) you can use the application called “Terminal”. See the examples below:

Note: If you are using Windows XP, click  , then Run and type “cmd” without quotes.

For Apple users, go to the top right corner and type in the spotlight  the word “terminal” without quotes and hit return. A little window will open and you can type “ifconfig”, again without quotes.

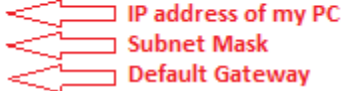
WINDOWS PC (WIN 7 and Vista)



After you have opened the command prompt, you can type “ipconfig” and the result will be displayed as shown below:

```
Ethernet adapter Local Area Connection:

Connection-specific DNS Suffix  . : 
IPv4 Address. . . . . : 192.168.1.105
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.2
```



IP address of my PC
Subnet Mask
Default Gateway

For apple users you can use these steps:

Mac OS X

1. From the Apple menu, select **System Preferences....**
2. In System Preferences, from the **View** menu, select **Network**.
3. Select the appropriate port. For example, choose **Ethernet** for broadband connections, **AirPort** for wireless or **Internal Modem** for dial-up.
4. Click **Advanced...**, and in the sheet that opens, click the **TCP/IP** tab. The number next to "Router:" is your default gateway.

NOTE: The DVR will come with static IP's already, in some cases some routers such as AT&T 2Wire devices, in order to configure port forwarding you must turn DHCP ON in your DVR to show as a connected device in those routers.

Now that you know the scheme of your network, let's proceed to configure the DVR network portion. By default, the DVR will be shipped with these network configurations. See the Picture Below:

The screenshot shows a 'NETWORK' configuration window. The fields are as follows:

Field	Value
IP Address	192 . 168 . 1 . 108
Subnet Mask	255 . 255 . 255 . 0
Gateway	192 . 168 . 1 . 1
TCP Port	37777
HTTP Port	80
UDP Port	37778
Max Connection	10
Transfer Mode	Fluency
LAN Download	<input type="checkbox"/>

Below the main settings is an 'ADVANCED SETTING' section with the following options:

Option	Value
<input type="checkbox"/> DNS	Use the following DNS server address: 192.168.
<input type="checkbox"/> IP FILTER	Trusted Sites: 0
<input type="checkbox"/> NTP	NTPServer : 10
<input type="checkbox"/> MULTICAST	239.255.42.42

At the bottom are buttons for 'Default', 'Save', and 'Cancel'. A red arrow points to the 'HTTP Port' field, which is labeled 'HTTP PORT'.

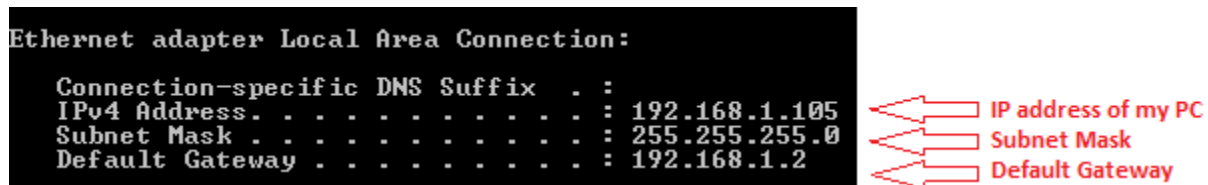
You can easily change these numbers to match your network. We suggest that you change the HTTP port to 88, because most ISP's (Internet Service provider) will block port 80.

Once you have your DVR configured, you have to change some options in your Web Browser (ie. Internet Explorer, Chrome or Mozilla Firefox) in order to access your DVR internally by following these links:

Port forwarding steps

Forwarding ports on a Router can sometimes be challenging, but I will try to explain it as simply as possible to accomplish the task.

First, you must know the router's internal IP; normally this will be what you have as default gateway on your computer. See picture below:



The IP Address in this case is 192.168.1.2 (Default Gateway), so you need to type that information in your web browser.

STEP 1:



Depending on the type of router you have, you may see a similar pop-up window as shown below. Some other routers (ie. Comcast or Verizon) have their own interface and may look different but the information required is the same.

STEP 2:



NOTE: By default the username and password of some routers will be “admin” for the username, and “password” for the password. Consult with your ISP or Router Manufacturer to get the right information.

Once you have clicked “Ok” you will need to look for the Port Forwarding options on your router. For Linksys routers, you should go to “Applications & Gaming” then choose “Port Forwarding”. In that location you will have to open 3 ports and name them; assuming you’re using the default ports in your DVR, these ports are Port 37777, Port 37778 & Ports 80 or 88. You can name them whatever you like, to suite your needs.

The protocols being used for these ports must be TCP and UDP. Depending upon the type of router you have, the option “Both” under Protocol may be available. You can choose this option instead of selecting TCP and UDP separately. If your router does not have “Both” as an option, you **MUST** open the ports individually by selecting TCP and then UDP for each port.

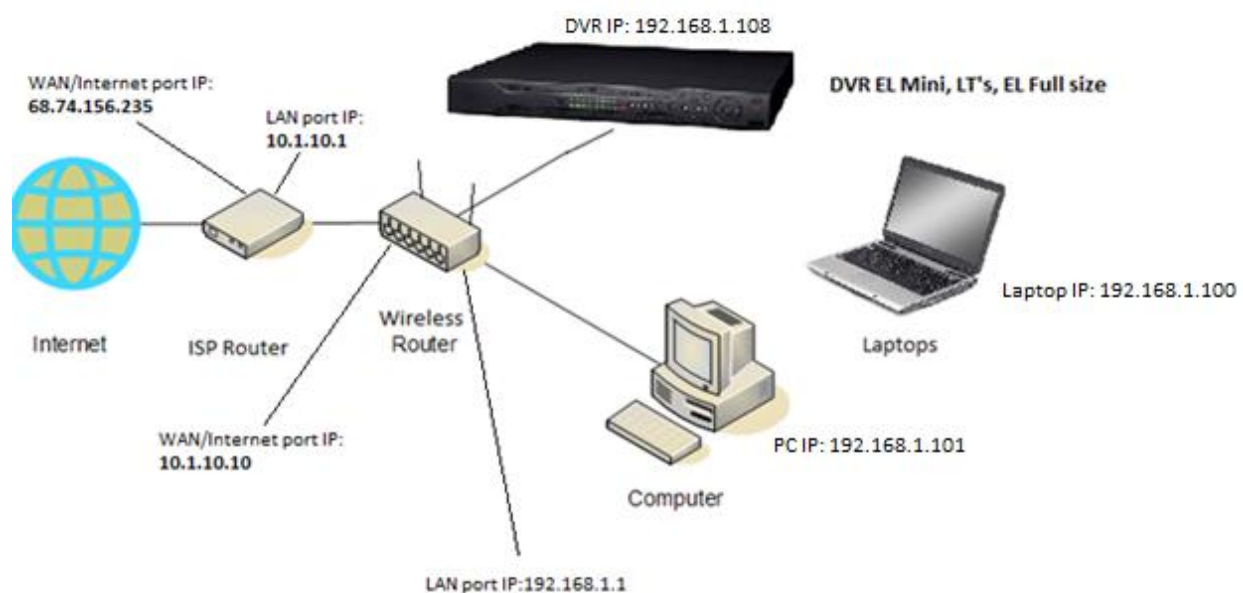
For example: Port name: DVR1 then type Port 37777 and select protocol TCP, then Port name: DVR2 and retype Port 37777 and select UDP. Do the same on each of the remaining two ports which you will be opening. It is important to remember to name each Port something different otherwise you will get an error when you save the configurations.

NOTE: MAKE SURE when opening the ports in your router, the IP address that has to be pointed this ports to is your DVR’s IP address.

Configuring Network with two Routers

Sometimes you will get caught in a situation where you have two routers (ie. Your ISP Router and your Wireless Router); and the configuration for port forwarding could be hard to set. I will explain as much as possible of how to set this up to successfully forward the ports.

Look at the diagram to understand the scenario:



Concepts:

LAN: A **Local Area Network (LAN)** is a computer network that connects computers and devices in a limited geographical area such as a home, school, computer laboratory or office building. This is normally called an ***“Internal Network”***

WAN: A **Wide Area Network (WAN)** is a computer network that covers a broad area (i.e., any network whose communications links cross metropolitan, regional, or national boundaries. WANs are used to connect LANs and other types of networks together, so that users and computers in one location can communicate with users and computers in other locations. This is normally called an ***“External Network”***

The previous diagram shows the ISP’s Router LAN IP Address as 10.1.10.1, and your Wireless Router LAN IP Address is 192.168.1.1. As you see, they are not in the same scheme or in the same network as your wireless router, so when you do port forwarding in your wireless router and try to check if the ports are open by going to www.canyouseeme.org , you will get an error stating that the ports are still closed. To resolve this issue you **MUST** get into the configuration page of you ISP’s router and place the Wireless Router WAN IP assigns by the ISP’s Router to the DMZ of your ISP’s router. You can check the WAN IP assigned by the ISP’s router in your Wireless Router by going to the status link in your router.

Example:

Let’s say that your Wireless Router got an IP from the first router (ISP’s Router) of 10.1.10.10; this has been assigned to the Wireless Router (Second Router) WAN Port through DHCP. So in the first router you go to the DMZ configurations and input that IP Address; save the configurations and you are done. This is what is called ***“Bridging Networks”***.