BASICS OF PORT FORWARDING ON A ROUTER FOR SECURITY DVRS

Public IP Address
72.248.26.116
Private IP Address
192.168.1.1
Basics of Port Forwarding on a Router for Security DVRs

The basic concept of setting up your router to allow for “Off Site” access to your DVR involves setting up the two necessary ports the Security DVR uses for its “IE” interface to view your cameras online.

The common ports we set up in the DVR network menu are:

- Web Port: Port 2049
- Media Port: Port 9000

It is important that the router is setup properly to allow for “Off Site” remote viewing if you desire to view your DVR over the internet.

The Media Port is also used for the Mobile Phone apps. Your Night Owl DVR has software that you can use instead of Internet Explorer for a remote connection.

When viewing the DVR “locally”, meaning on your Local Area Network it is not required that you do any Port Forwarding on the Router, but it can only be viewed when you are at the DVR’s location.

Assuming that you have the DVR in place with the cameras and the network patch cord plugged into your network we can start the setup of the network needed to get things online.
The Basic Steps to setting up the DVR and Router

Start at your on-site PC connected to the same network your DVR is on. From the “Start” button find the “Run” or “Search” (Windows XP, Vista, and Windows 7). You will type in the command “CMD” to bring up the window as shown below.

The next step is to type in “ipconfig” to bring up the network setting that we need to use to setup the DVR Network Settings.

From these settings you get from your PC, write down the Subnet Mask, and Default Gateway IP address settings.
It is now time to log into your DVR. (Depending on the model you can find more detailed information on the “Setting up...” information pages.) Once logged into the DVR navigate to the icon for the Network setting page.

Make sure the Subnet and Default Gateway setting match up to your Settings that you have written down. The top IP Address is User assigned, make sure the first three groups of the IP address match the gateway. The last group of numbers will be assigned as the Static IP address of the DVR on your network. In this case the IP address of the DVR is 192.168.1.108. The Web Port by default is assigned to port 2049, the Media Port should be assigned to port 9000, and the UDP port should be assigned to port 4001. At the bottom of the screen click on the “Save” button. The DVR will prompt you to restart if the network IP settings have been changed.
Setting up the Router

The next step is to Log into the Router for the port forwarding as outlined below. *(For this example we will be using a Linksys Router.)*

Open a web browser like Internet Explorer or Firefox. Enter the **internal IP address** of your router in the address bar of your browser. The IP address of the Router is the gateway address we have written down from the “ipconfig” information.

You should see a box prompting you for your username and password. Enter your username and password now. By default the username is **admin**, and the password is **admin**. Click the **OK** button to log into your router.

Click the **Applications & Gaming** link near the top of the page.
You should now see a new menu. In this new menu, click **Port Range Forwarding**.

Starting with the first blank box enter:

```
Port Range
Application | Start | End | Protocol | IP Address | Enabled
--- | --- | --- | --- | --- | ---
DVR | 2049 | 2049 | Both | 192.168.1.108 | ✔
```

In the second blank box enter:

```
Port Range
Application | Start | End | Protocol | IP Address | Enabled
--- | --- | --- | --- | --- | ---
DVR1 | 9000 | 9000 | Both | 192.168.1.108 | ✔
```

When you’re finished, click **Save Settings** near the bottom of the screen to save your changes. That’s it, your done with the router setup.
Belkin Router

The port forwarding process is dependent on the brand and model number of the router being used. Port forwarding of a router is required with your system to allow user access to your DVR. Regardless of the Belkin Wired Router being used, the process of port forwarding is similar. You will need to enable the ports by locating the port range forwarding screen. With most Belkin routers the port forwarding screen is located within the Virtual Servers option tab. The set up instruction outlined below is an example of port forwarding using Belkin Model F5D8230-4.

Step 1:
Open your web browser. Enter the router IP address 192.168.2.1 in the address bar, followed by pressing Enter.

Step 2:
In the status page, select the Virtual Servers option located down the left hand side of the page.

Step 3:
In the Administrator’s page, enter your password. The default setting is left blank. Select the Submit button.

Step 4:
In the Virtual Server screen proceed as follows:
– Enable the system by checking the enabled box.
– In the Description column enter a description of your DVR.
– In the Inbound Port entry field enter in the first box the first number of the port you need to port forward and the ending port number in the second box in (e.g. 80 – 80).
– In the Type field, select Both.
– In the Private IP Address field, enter the IP address of the DVR.
– In the Private Ports column re-enter in the first box, the first number of the port you need to port forward and in the second box the ending port number (e.g. 80 – 80).
– Select the Apply Changes button located at the top of the page to save your changes.

Port forwarding is now complete for the Belkin router!
Basics of Port Forwarding on a Router for Security DVRs

D-Link Router

The port forwarding process is dependent on the brand and model number of the router being used. Port forwarding of a router is required with your system to allow user access to your DVR. Regardless of the D-LINK Wireless Router being used, the process of port forwarding is similar. You will need to enable the ports by locating the port range forwarding screen. With some D-LINK routers the port forwarding screen is located within the Applications and Games or Filters tab; in others it is located in the advance tools tab. The set up instruction outlined below is an example of port forwarding using D-Link Model DI-524.

**Step 1:**
Open your web browser. Enter the router IP address 192.168.0.1 in the address bar, followed by pressing Enter.

**Step 2:**
Enter the user name (admin). Leave the password blank followed by pressing the OK button.

**Step 3:**
Select the Advanced tab.

**Step 4:**
- Select the Virtual Server tab.
- In the Name field enter a description of your DVR.
- In the Private IP field enter the DVR IP address.
- In the Protocol field, select Both.
- In the Private port enter the port number you need to port forward (e.g. 80).
- In the Public port re-enter the port number you entered in the private port field (e.g. 80).
- Select the Schedule to Always.

If more ports are required to be port forwarded, repeat the above steps. When complete, select the Apply button located at the bottom of the page to save your changes.

Port forwarding is now complete for the D-Link router!
Basics of Port Forwarding on a Router for Security DVRs

Westell Router

The port forwarding process may vary depending on the brand and model number of the router being used. Port forwarding of a router is required to allow user access to your DVR. Regardless of the Westell Router being used, the process of port forwarding is similar. You will need to enable the ports by locating the port range forwarding screen. The set up instruction outlined below is an example of port forwarding a Westell Router using Westell VERSALINK.

**Step 1:**
Open your web browser. Enter the router IP address 192.168.62.1 in the address bar, followed by pressing Enter.

**Step 2:**
Enter 'admin' in the User Name and 'admin' in the Password dialog box to enter the Westell configuration page.

**Step 3:**
Select ‘Configuration’.

**Step 4:**
Select the Define Custom Service Tab.

**Step 5:**
In the Port Range setting screen, proceed as follows:
- In the Service Name field, type DVR.
- In the Global Port Range field, enter in the first box, the first number of the port you need to port forward (e.g. 80) and in the second box the ending port number (e.g. 80).
- In the Base Host Port enter the first port to be forwarded (80).
- In Protocol, select TCP.
- Select the Next button when complete.

**Step 6:**
A confirmation window will appear on the screen which shows the same information just entered. Select the close button to continue. You should now be in the Configuration Window screen. Select the Define Customer Service button, followed by selecting the Port Forwarding Ranges of Port option. Finally click the Next button.

**Step 7:**
Use the Select a Service drop down box and select the configuration just created. Select the Enable button.

Port forwarding is now complete for the Westell router!
Basics of Port Forwarding on a Router for Security DVRs

The port forwarding process may vary depending on the brand and model number of the router being used. Port forwarding of a router is required to allow user access to your DVR. Regardless of the Netgear router being used, the process of port forwarding is similar. You will need to enable the ports by locating the port range forwarding screen. The set up instruction outlined below is an example of port forwarding a Netgear Router using Netgear Model DG 824M.

**Step 1:**
Open your web browser. Enter the router IP address 192.168.0.1 in the address bar, followed by pressing Enter.

**Step 2:**
Enter ‘admin’ in the User Name and ‘password’ in the Password dialog box to enter the Netgear configuration page.

**Step 3:**
Select the Services button in the Security menu.

**Step 4:**
In the Services menu, select the Add Custom Service button. In the Services screen, proceed as follows:
- In the Name field, select DVR.
- In the Type field, select TCP.
- In the Start Port field, enter the first number of the port you need to port forward (e.g. 80).
- In the Finish Port field, enter the ending port number (e.g. 80).
- Check the Apply button.
- Next, in the Security option, select Rules.
- Next, in the Rules screen select Add in the inbound services.

**Step 5:**
Next, in the Inbound services proceed as follows:
- In the Service drop down list, select the newly created DVR entry.
- In the Action field, select ALLOW always.
- In the Send to LAN Server field, enter your computers IP address.
- In the WAN Users field, set to Any.
- In the Log field, set to Never.
- Click on Apply.

Port forwarding is now complete for the Netgear router!
**Netopia Router**

The port forwarding process may vary depending on the brand and model number of the router being used. Port forwarding of a router is required to allow user access to your DVR. Regardless of the Netopia router being used, the process of port forwarding is similar. You will need to enable the ports by locating the port range forwarding screen. The set up instruction outlined below is an example of port forwarding a Netopia Router using **Netopia Model 3346**.

**Step 1:**
Open your web browser. Enter the router IP address 192.168.62.1 in the address bar, followed by pressing Enter.

**Step 2:**
Enter ‘admin’ in the User Name and ‘1234’ in the Password dialog box followed by ‘OK’ to enter the Netopia configuration page.

**Step 3:**
Select Expert Mode.

**Step 4:**
Select the Yes, enter expert mode button. Select Configure followed by selecting NAT.

**Step 5:**
Select the Define Custom Service button. Select Port Forwarding Range of Ports, followed by Next.
Step 6:
In the Port Range screen, proceed as follows:
– In the Service Name field, type DVR.
– In the Global Port Range field, enter in the first box, the first number of the port you need to port forward (e.g. 80) and in the second box the ending port number (e.g. 80).
– In the Base Host Port enter the first port to be forwarded (e.g. 80).
– In Protocol, select TCP.
– Select the Next button when complete.

Step 7:
In the Nat Configuration Menu, use the Service Name down box and select the configuration just created. Select the Enable button.

Port forwarding is now complete for the Netopia router!
Motorola Router

The port forwarding process may vary depending on the brand and model number of the router being used. Port forwarding of a router is required to allow user access to your DVR. Regardless of the Motorola router being used, the process of port forwarding is similar. You will need to enable the ports by locating the port range forwarding screen. The set up instruction outlined below is an example of port forwarding a Motorola Router using Motorola Model SBG 1000.

Step 1:
Open your web browser. Enter the router IP address 192.168.0.1 in the address bar, followed by pressing Enter.

Step 2:
Enter ‘admin’ in the User ID and ‘motorola’ in the Password dialog box followed by clicking ‘Log In’ to enter the Motorola configuration page.

Step 3:
Select the Gateway button.

Step 4:
Select the Port Forwarding button.
Step 5:
Select In the Add New Port Forward Entry screen, proceed as follows:
– In the Template field, select Custom.
- In the Name field, select DVR.
– In the Port Start field, enter the first number of the port you need to port forward (e.g. 80).
– In the Port End field, enter the ending port number (e.g. 80).
– In the LAN IP Address field enter the IP address (192.168.0.1).
– Check the Enable button.
– Finally click the Add button, followed by selecting the Apply button.

Port forwarding is now complete for the Motorola router!
2Wire Router

The port forwarding process may vary depending on the brand and model number of the router being used. Port forwarding of a router is required to allow user access to your DVR. Regardless of the Two-Wire Router being used, the process of port forwarding is similar. You will need to enable the ports by locating the port range forwarding screen (Note: in many two wire systems, it is located in the firewall setting). The set up instruction outlined below is an example of port forwarding a 2Wire Router using 2Wire Model 1800G.

Step 1:
Open your web browser. Enter the router IP address 192.168.1.254 in the address bar, followed by pressing Enter.

Step 2:
Select the Firewall Tab.

Step 3:
Select Firewall Settings.

Step 4:
In the Edit Firewall Settings tab, select add a new user defined application.
Step 5:
Select the Back button to return to the Edit Firewall Screen. In the Edit Firewall Settings proceed as follows:
– In the Application Name field, type DVR.
– In the Protocol selection, select TCP.
– In the Port field, enter in the first box, the first number of the port you need to port forward (e.g. 80) and in the second box the ending port number (e.g. 80).
– Select the Add Definition button.

Step 6:
In the Edit Firewall Settings proceed as follows:
– In the Select a Computer field, select DVR.
– In the Edit a Firewall Setting, check the Allow Individual Applications box and highlight the DVR application which you just created. Click Add.
– Finally select the Done button at the bottom of the screen.

Port forwarding is now complete for the 2Wire Router!
Check Your Work

You can use any port checking website to verify that the two ports we just set up are working properly. I use a site called “canyouseeme.org” to check to make sure the setup is correct. The site also will report your IP address, which is necessary information to have to setup the Mobile phone apps.

Enter 2049 into the box labeled “What Port” then using the mouse click the “Check”.

Success means you are done with setting up the router.

Failure means something is wrong with the router settings (Make sure the DVR is on and plugged into the network, otherwise you will get failure).

Repeat the process with port 9000 to make sure that is correct and you are done with this part of the setup process.
Registering a Free Domain Name (DDNS)

This option allows you to set up a free website address that will point back to the DVR regardless of whether the IP Address changes. If you do not have a static IP Address, you should use this option.

Follow the steps below to register a free domain name (DDNS)


2. Select the Registration button located at the top left corner of the page.
3. Complete the New User Registration form.

4. Create a domain name.
5. If the domain name that you have chosen is available, you will see a window that tells you that your domain was successfully created. (If the domain name is taken, try again until you find an available name.)

Write this information in the Information Log at the end of the manual.
Adding your New Domain Name to your DVR

Use the DDNS Menu to configure DDNS setup after you have registered for a free domain name.

To access the DDNS Menu, select the Advanced button, select COMM, and then select DDNS from the list on the left side of the screen.

**DDNS:** This should be set to **Enable**.

**Server:** This should be set to **NightOwl**.

**Host Name:** This should be set to the domain name that you created during DDNS registration. An example is shown above.

**Username:** Your user name is the UserID that you created during DDNS registration. An example is shown above.

**Password:** Your password is the password that you created during DDNS registration.

**Test:** Tests the settings to make sure they work correctly.

Be sure to Apply all the changes before selecting Test, or the test will not work.
Internet Login Information

Internal IP Address: ______________________________________________________

Public IP Address: ______________________________________________________

DDNS Name: ____________________________________________________________

DDNS UserID: ____________________________________________________________

DDNS Password: __________________________________________________________

Media Port: _____________________________________________________________

Web Port: _______________________________________________________________