

NVR and IP Cameras

Remote Network Setup

Once you have completed the [Local Network Setup](#), you should have an internal IP address for your DVR.

The next step in the process is to forward ports pertaining to the DVR, so that you can see your cameras remotely.

We recommend that you follow the steps in our network tutorial located at www.zmodo.com/network. This video walks through using our network tutorial:

Forward DVR's Ports

1) Log in to your router by entering the gateway IP, such as 192.168.1.1, in to your browser window. Enter the login information for your router. If you cannot remember this, you can check the default username/password combinations for most routers at <http://www.pcwintech.com/default-router-modem-passwords>. If you are unable to locate this information, please contact your router manufacturer or Internet Service Provider.

2) Once you've logged in to your router, you will need to enter the Port Forwarding section of your router. There, you'll enter the IP address, protocols, and port numbers for your DVR.

IP Address = IP address in your DVR's Network Settings

Protocol = BOTH (TCP/UDP) OR TCP

Service or Application Name can be anything you wish, like DVR1 or DVR2

NVR and IP Cameras

Create 1 rule per port number; Start and End Ports will be the same number

Here are the default ports for Zmodo units (last port # is the mobile port):

H9104, H9108, H9106, H9116: 80, 9000, 18004

H9114, H9118: 80, 5050, 6050, 7050

H9124, H9128, DR-SFN6: 80, 9000, 15961

H8000/H8100 series: 80, 7777, 8888

Note: If you are using a DSL internet service, you may need to use port 81 (instead of 80) as your web port. If so, be sure to change this in your DVR's network settings, and restart the unit. Once the port number is changed, you will need to use it when connecting to the unit (ie. <http://192.168.1.1> becomes <http://192.168.1.140:81>)

3)Below are screenshot samples of common router's Port Forwarding sections. Please note that exact locations may differ depending on your router's model. If your model is not listed, try looking through Advanced, Firewall, or Forwarding sections in your router to find the exact location.

NVR and IP Cameras

Linksys

LINKSYS
A Division of Cisco Systems, Inc.

Wireless-G Broadband Router WRT54GL

Applications & Gaming

Setup Wireless Security Access Restrictions Applications & Gaming Administration Status

Port Range Forward | Port Triggering | DMZ | QoS

Port Range Forward

Application	Start	End	Protocol	IP Address	Enable
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>
	0	to 0	Both	192.168.10.0	<input type="checkbox"/>

Port Range Forwarding :
Certain applications may require to open specific ports in order for it to function correctly. Examples of these applications include servers and certain online games. When a request for a certain port comes in from the Internet, the router will route the data to the computer you specify. Due to security concerns, you may want to limit port forwarding to only those ports you are using, and uncheck the Enable checkbox after you are finished.
[More...](#)

In Linksys routers, you will typically enter Applications & Gaming, then Port Range Forward. Exact names/places will differ depending on model. Be sure to create forward 1 port range per line, and check the 'Enable' box at the end of the line, then save changes.

Netgear

NVR and IP Cameras

NETGEAR settings
108 Mbps Wireless Firewall Router WGT624 v3

108 Mbps
2.4 GHz
802.11g

- Router Status
- Attached Devices
- Backup Settings
- Set Password
- Router Upgrade
- Advanced
 - Wireless Settings
 - Port Forwarding / Port Triggering
 - WAN Setup
 - LAN IP Setup
 - Dynamic DNS
 - Static Routes
 - Remote Management
 - UPnP
- Web Support
 - Knowledge Base
 - Documentation
- Logout

Port Forwarding / Port Triggering

Please select the service type

☒ Port Forwarding
☐ Port Triggering

Service Name: AIM Server IP Address: 192.168.1.1 Add

	#	Service Name	Start Port	End Port	Server IP Address
<input type="radio"/>	1		0	0	0.0.0.0

Edit Service Delete Service Add Custom Service

Port Forwarding / Port Triggering Help

Port Triggering is an advanced feature that can be used for gaming and other internet applications. Port Forwarding can typically be used to enable similar functionality, but it is static and has some limitations.

Port Triggering opens an incoming port temporarily and does not require the server on the internet to track your IP address if it is changed by DHCP, for example.

Port Triggering monitors outbound traffic. When the router detects traffic on the specified outbound port, it remembers the IP address of the computer that sent the data and "triggers" the incoming port. Incoming traffic on the triggered port is then forwarded to the triggering computer.

Using the Port Forwarding / Port Triggering page, you can make local computers or servers available to the Internet for different services (for example, FTP or HTTP), to play Internet games (like Quake III), or to use Internet applications (like CUSeeMe).

Port Forwarding is designed for FTP, Web Server or other server based services. Once port forwarding is set up, requests from the Internet will be forwarded to the proper server.

Port triggering will only allow requests from the Internet after a designated port is "triggered". Port triggering

In Netgear routers, you will typically look under Advanced for Port Forwarding/Triggering. Select Port Forwarding as your service type. Then, select 'Add Custom Service' for each port you forward.

D-Link

NVR and IP Cameras

Product: DSL-2740B Firmware Version: EU_5.17

D-Link

DSL-2740B // SETUP ADVANCED MAINTENANCE STATUS HELP

Port Forwarding
Application Rules
QoS Setup
Outbound Filter
Inbound Filter
Wireless Filter
DNS Setup
Firewall & DMZ
Advanced Internet
Advanced Wireless
Advanced LAN
SNMP Setup
Remote Management
Routing Setup
Wi-Fi Protected Setup
Logout

PORT FORWARDING

This is the ability to open ports in your router and re-direct data through those ports to a single PC on your network.

PORT FORWARDING RULES CONFIGURATION

Remaining number of rules that can be created: 48

Name		External Port	Internal Port
<input type="text"/>	<< Application Name	TCP	TCP
IP Address	<< Computer Name	UDP	UDP
Use Interfaces: pppoa_0/pppoe0			
<div>Add/Apply</div>			

ACTIVE PORT FORWARDING RULES

Name	Address	External Port	Internal Port	Protocol	WAN Interface	Edit	Remove
------	---------	---------------	---------------	----------	---------------	------	--------

Helpful Hints...
Check the Application Name drop down menu for a list of predefined applications. If not you can still easily define a new rule.
[More...](#)

For D-Link Routers, you will enter Advanced, then Port Forwarding. Click 'Add/Apply' when you have finished each rule.

Belkin

NVR and IP Cameras

The screenshot shows the Belkin Router Setup Utility interface. The left sidebar contains navigation links: LAN Setup, Internet WAN, Wireless, Firewall, and Utilities. The main content area is titled 'Firewall > Virtual servers'. It includes a description of the function and a 'More info' link. Below the description are buttons for 'Clear Changes' and 'Apply Changes'. A form for adding a new virtual server is visible, with a dropdown menu set to 'Active Worlds' and an 'Add' button. Below this is a table with 9 rows and 7 columns: Enable, Description, Inbound port, Type, Private IP address, and Private port. The table is currently empty, with each row having an 'Enable' checkbox and a 'Description' field. The 'Inbound port' column shows a range of ports (e.g., 1 - 65535). The 'Type' column has a dropdown menu set to 'BOTH'. The 'Private IP address' column shows the IP address (e.g., 192.168.2.1). The 'Private port' column shows a range of ports (e.g., 1 - 65535).

BELKIN. Router Setup Utility Home | Help | Logout Internet Status: Connected

LAN Setup
LAN Settings
DHCP Client List

Internet WAN
Connection Type
DNS
MAC Address

Wireless
Channel and SSID
Security
WPA Protected Setup
Use as Access Point
MAC Address Control

Firewall
Virtual Servers
Client IP Filters
MAC Address Filtering
DMZ
DDNS
WAN Ping Blocking
Security Log

Utilities

Firewall > Virtual servers

This function will allow you to route external (Internet) calls for services such as a web server (port 80), FTP server (Port 21), or other applications through your Router to your internal network. [More info](#)

Clear Changes Apply Changes

Add Active Worlds Add

Clear entry 1 Clear

	Enable	Description	Inbound port	Type	Private IP address	Private port
1.	<input type="checkbox"/>		-	BOTH	192.168.2.	-
2.	<input type="checkbox"/>		-	BOTH	192.168.2.	-
3.	<input type="checkbox"/>		-	BOTH	192.168.2.	-
4.	<input type="checkbox"/>		-	BOTH	192.168.2.	-
5.	<input type="checkbox"/>		-	BOTH	192.168.2.	-
6.	<input type="checkbox"/>		-	BOTH	192.168.2.	-
7.	<input type="checkbox"/>		-	BOTH	192.168.2.	-
8.	<input type="checkbox"/>		-	BOTH	192.168.2.	-
9.	<input type="checkbox"/>		-	BOTH	192.168.2.	-

For Belkin routers, access port forwarding under Firewall, Virtual Servers. Be sure to check the 'Enable' box, then hit the 'Set' button, and save your changes.

2-Wire

For 2-Wire modems, enter Firewall, then Advanced Settings.

NVR and IP Cameras

To Allow Users Through the Firewall to Hosted Applications...

1 Select a computer
Choose the computer that will host applications through the firewall:

2 Edit firewall settings for this computer:

☒ **Maximum protection – Disallow unsolicited inbound traffic.**

☐ **Allow individual application(s) – Choose the application(s) that will be enabled to pass through the firewall to this computer. Click ADD to add it to the Hosted Applications list.**

All applications

Age of Empires
Age of Kings
Age of Wonders
Aliens vs Predator
Anarchy Online
Asheron's Call
Baldur's Gate
BattleCom
Battlefield Communicator
Black and White

Add

Remove

Hosted Applications:

[Add a new user-defined application](#)

☐ **Allow all applications (DMZplus mode) – Set the selected computer in DMZplus mode. All inbound traffic, except traffic which has been specifically assigned to another computer using the "Allow individual applications" feature, will automatically be directed to this computer. The DMZplus-enabled computer is less secure because all unassigned firewall ports are opened for that computer.**

First, look for the DVR's IP address under (1) Select a computer. If you do not see the DVR's IP address here, you may need to go in to the DVR's Network Settings, and set the DVR to DHCP (instead of Static), then reboot the DVR. Once the unit reboots, check it's IP address in the Network Settings, then go back to your router to select the DVR from the list.

Next, you will need to click on "Add a new user-defined application", to come to the this new screen:

NVR and IP Cameras

Settings

Profile Name

Enter a name for the application profile that you are creating.

Application Name:

Definition

Choose a protocol and enter the port(s) for this application, then click ADD DEFINITION to add the definition to the Definition List. If the application requires multiple ports or both TCP and UDP ports, you will need to add multiple definitions.

Note: In some rare instances, certain application types require specialized firewall changes in addition to simple port forwarding. If the application you are adding appears in the application type menu below, it is recommended that you select it.

Protocol: ☒ TCP ☐ UDP

Port (or Range): From: To:

Protocol Timeout (seconds): TCP default 86400
UDP default 600

Map to Host Port: Default = the same port as defined above.

Application Type:

Create your rule, and click 'Add Definition'. Create a rule for each port. Then, click Back.

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All applications

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Age of Wonders
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Battlefield Communicator
Black and White

Add

Remove

Hosted Applications:

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[Add a new user-defined application](#)

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When done, select each application you have created, and click 'Add', so that you see the desired applications in the Hosted Applications table. When finished, click 'Done' at the bottom of the screen.

Netopia

For Netopia routers, click on the Configure tab at the top of the page.

NVR and IP Cameras

Next, click on Advanced.

NVR and IP Cameras

From the Advanced menu, click on Pinholes.



The screenshot shows the Netopia web interface. At the top, there is a navigation bar with links: Home, Configure, Troubleshoot, Security, Install, Restart, and Help. Below this, a breadcrumb trail reads: Home > Configure > Advanced > Pinholes > Edit Pinhole. On the left side, there is a sidebar with the Netopia logo and links for Quickstart, LAN, WAN, and Advanced. The main content area displays a 'Pinhole Entry' form with the following fields: Pinhole Name (text input), Protocol Select (dropdown menu showing TCP), External Port Start (text input with value 0), External Port End (text input with value 0), Internal IP Address (text input with value 192.168.1.0), and Internal Port (text input with value 0). A Submit button is located at the bottom of the form.

Create your rule, then hit 'Submit', and repeat for each port. When you have completed, click on the yellow triangle with an '!' inside (located at the top righthand corner) to save your changes.

Checking Your Connection

4) Once you have forwarded all ports necessary for your DVR, you'll want to check and make sure each of these ports was successfully opened. To check this, go to <http://www.yougetsignal.com/tools/open-ports/>

Here, you will see fields for **Remote Address** and **Port Number**.

NVR and IP Cameras

To check that your ports are open, enter each port you've forwarded (one at a time) in to the Port Number field, and click 'Check'.

If you see a green flag, and a statement "Port X is open on XXX.XXX.XXX.XXX", you have forwarded your ports correctly. You are now able to view your DVR remotely.

If you see a red flag, the port is not open. Go back in to your router, and double check all information is correct. In some cases, a port may be blocked by your ISP. To find out why, or to request it opened, please contact your ISP.

Important: The Remote Address that you see is **your DVR's external IP address**. This is the address that you will use to access your DVR from a different computer. Write this down!! And remember, ActiveX settings must be changed on each new computer that you are viewing from before you'll be able to bring your DVR up.

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