

DIGITAL SURVEILLANCE

TUTORIAL ON SETTING UP A DVR : FOR REMOTE CLIENT ACCESS

Setting up an MPT DVR unit to be accessed from outside the building it is installed at, isn't complicated. Here are the steps :

STEP ONE : SETTING THE DVR TO A STATIC I.P

When you plug a computer (or in this case, a DVR) into a Router, the computer is typically set to get it's I.P number from the DHCP Server automatically. Each time you turn off the computer, and then turn it back on, the I.P number it's given may be different. Today the computer might be 192.168.0.121, but upon reboot tomorrow morning it's now 192.168.0.125.

We need to ensure that the I.P number the DVR has, remains the same forever.

To do this, you need to be at the DVR monitor and have shut down the recording screens so that no surveillance video is being recorded.

In Windows XP, click on the **START** button and then the **CONTROL PANEL** icon. Next, click on the NETWORK CONNECTIONS icon and you should see this :

S Network Connections				
Ele Edit View Favorites Iools Adv	anced Help			<u>ar</u>
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Address 🔇 Network Connections	Mail Mail No.	and all the house the		💌 🄁 Go
Name Type		Status	Device Name	Phone # or Host Addre
LAN or High-Speed Internet				
Local Area Connection 3	LAN or High-Speed Inter	Connected, Firewalled	D-Link DFE-538TX 10/10	
Wizard				
New Connection Wizard	Wizard			
Setwork Setup Wizard	Wizard			

Right-click on the **LOCAL AREA CONNECTION** you see, and choose **PROPERTIES** from the pop-up menu.



Another box will pop up. Notice how this screen shows that the computer is set to obtain it's I.P number automatically.

Internet Protocol (TCP/IP) Properties	
General Alternate Configuration	
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.	
Obtain an IP address automatically	
Use the following IP address:	You need to click on the other
IP address:	checkbox, "Use the following I.P address" which then gives you the opportunity to
Sybnet mask:	assign an I.P of your choosing.
Default gateway:	
⊙ 0 <u>b</u> tain DNS server address automatically	
QUse the following DNS server addresses:	
Preferred DNS server:	Also change the DNS Server
Alternate DNS server.	checkbox down to "Use the following DNS Server addresses"
Ad <u>v</u> anced	
OK Cancel	

In this tutorial, we're using a **D-LINK** brand Router which is set by default to have an I.P number of **192.168.0.1**

The D-LINK Routers normally are set up to assign I.P numbers to any connected computer in the range of **192.168.0.100** to **192.168.0.199**. This means that it will not try to assign anything in the **192.168.0.1** to **192.168.0.99** range to any computer that might be connected.

Internet Protocol (TCP/IP) P	roperties ?	3
General		
You can get IP settings assigned this capability. Otherwise, you ne the appropriate IP settings.	d automatically if your network supports ed to ask your network administrator for	This is the standard Subnet Mask for most Network setups
O <u>O</u> btain an IP address autor	natically	
✓ ● Use the following IP addres	s:	
IP address:	192.168.0.50	
S <u>u</u> bnet mask:	255 . 255 . 255 . 0 🖊	This is the I.P number of the DLINK Router Putting this
Default gateway:	192.168.0.1	number in here tells the DVR which device to use, to get out
🔘 O <u>b</u> tain DNS server address	automatically	on the internet.
→ O Use the following DNS serv	ver addresses:	
Preferred DNS server:	192.168.0.1	Put the DLINK Router LP in the
<u>A</u> lternate DNS server:		"Preferred DNS Server" box too.
	Ad <u>v</u> anced	
	OK Cancel)
		Click on OK when you're done.

So, let's assign the unused I.P of 192.168.0.50 to the DVR :

As you exit out of the TCP-IP setup, you should get a message that Windows now wants to restart the computer, so allow it to do that. When the reboot is complete, the DVR will have a static (never changing) I.P number of **192.168.0.50**.

Okay, let's now move on to the next step, of configuring the DLINK Router

STEP TWO : CONFIGURING THE DLINK ROUTER

Now that the DVR is configured, you'll want to get into the Router configuration screen to change some settings.

To do this, go to **START** and **ALL PROGRAMS** on the DVR and look for the **INTERNET EXPLORER** icon. When Internet Explorer (I.E) opens, click in the Address (URL) window (which places your flashing cursor there.) and type in :

http://192.168.0.1

and press ENTER. You should then see this :



On DLINK Routers, the default User Name is usually "**admin**" (no quotes) and the password is left blank. When you click **OK** after entering in the information, the login screen will vanish, and be replaced with the DLINK configuration screen.

File Edit View Favorites Tools Help	Havorites 🚱	🔗 - 🕹 🧊 -	*				
Address (a) http://192.168.0.1/h_dhcp.html						🗸 🏹 Go	Links »
D-Link Building Networks for People			DI Ethernet Br	-604 coadband Ro	uter		*
	Home	Advanced	Tools	Status	Help		
Wizord	DHCP Server The DI-604 can be network.	e setup as a DHCP	Server to distribu	te IP addresses to t	he LAN		
, Wizuru	DHCP Server	💿 Ena	bled 🔘 Disable	d			
WAN	Starting IP Addres	s 192.16	8.0.100				
WAN	Ending IP Address	s 192.16	8.0.199				
LAN	Lease Time	1 Weel	< 🕶				
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DHCP	Static DHCP is us address.	sed to allow DHCP :	server to assign s	ame IP address to	specific MAC		
		🔘 Ena	bled 💿 Disable	d			
	Name						
	IP	<mark>192 . 16</mark>	8.0.				
	MAC Address	- [
	DHCP Client	bench,	00-0D-88-32-E6-1	8 💙 Clone			
				0	30		
				Apply	Cancel Help		

You can click on the left-side buttons to see how the Router is currently configured, and check to see what range of I.P numbers are being assigned by the DHCP Server.

Looking at the above screen, the DLINK assigns 192.168.0.100 up to 199. We're okay to use any I.P number below 100.

Click on the **ADVANCED** tab at the top of the DLINK screen, and we'll proceed to the area where the required ports must be opened.

(proceed to next page)

DI-604 - Microsoft Internet Explorer		X
🔇 Back 🔹 🕥 - 💌 😰 🏠 🔎 Search	🐈 Favorites 🚱 🔗 - 📚 🥽 🦓	
Address 🕘 http://192.168.0.1/adv_virtual.html	V 🗗 Go Links	»
D-Link Dutifieg Networks for Propte	DI-604 Ethernet Broadband Router	ADVANCED Tab
	Home Advanced Tools Status Help	
	Virtual Server Virtual Server is used to allow Internet users access to LAN services.	
Virtual Server	Enabled Disabled Name Private IP Protocol Type TCP	VIRTUAL SERVER screen
Fiters	Private Port Public Port Schedule Aways	
	○ From time 00 ∨ : 00 ∨ AM ∨ to 00 ∨ : 00 ∨ AM ∨ day Sun ∨ to Sun ∨	
ZoneAlarm	Virtual Servers List Apply Cancel Help	
	Name Private IP Protocol Schedule Virtual Server FTP 0.0.0.0 TCP 21/21 always Image: Comparison of the server HTTP Virtual Server HTTP 0.0.0.0 TCP 80/80 always Image: Comparison of the server HTTP Virtual Server HTTP 0.0.0.0 TCP 40/401 always Image: Comparison of the server HTTP	
Done	Virtual Server INTES 0.00.0 101 440/443 atways Virtual Server DNS 0.0.0 UDP 53/53 atways Virtual Server SMTP 0.0.0 TCP 25/25 atways	

You need to create a configure several ports to allow access to the DVR. Let's start with port # 99. In the below screen, you can see that need to check off the **ENABLED** checkbox, and then give the port a name. Try " **Port 99** " for the name, and then put in **192.168.0.50** for the " Private IP " box. Lastly, put " 99 " in both the Private and Public port boxes. To finish, click on the green " **APPLY** " button.

	Home	Advanced	Tools	Status	Help
	Virtual Server	1911 J. 1919			
	Virtual Server is	s used to allow Interne	t users access to I	LAN services.	
ver		💿 Enabled 🔘 Dis	abled		
	Name	Port 99	X	Clear	
ns	Private IP	192.168.0.50			
_	Protocol Type	TCP			
	Private Port	99			
-1	Public Port	99			
	Schedule	Always			
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		day Sun	🔽 to Sun 🔽		
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				S	3
	Virtual Server	s List		Apply	Cancel Help

The Virtual Server screen will disappear for a few moments while the Router updates it's configuration with the settings you just added. When the Virtual Server screen reappears, you will see this (scroll down) :

Virtual Server FTP 0.0.0.0 TCP 21/21 Virtual Server HTTP 0.0.0.0 TCP 80/80 Virtual Server HTTPS 0.0.0.0 TCP 443/443 Virtual Server DNS 0.0.0.0 UDP 53/53 Virtual Server SMTP 0.0.0.0 TCP 25/25 Virtual Server POP3 0.0.0.0 TCP 110/110 Virtual Server Telnet 0.0.0.0 TCP 23/23 IPSec 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 1720/1720 DCS-1000 0.0.0.0 TCP 800/800 i2eye 0.0.0.0 TCP 1720/1720	Schedule
Virtual Server HTTP 0.0.0.0 TCP 80/80 Virtual Server HTTPS 0.0.0.0 TCP 443/443 Virtual Server DNS 0.0.0.0 UDP 53/53 Virtual Server SMTP 0.0.0.0 TCP 25/25 Virtual Server POP3 0.0.0.0 TCP 110/110 Virtual Server Telnet 0.0.0.0 TCP 23/23 IPSec 0.0.0.0 UDP 500/500 PPTP 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 80/80 DCS-1000 0.0.0.0 TCP 80/800 i2eye 0.0.0.0 TCP 1720/1720	always 🛛 📝 🧃
Virtual Server HTTPS 0.0.0.0 TCP 443/443 Virtual Server DNS 0.0.0.0 UDP 53/53 Virtual Server SMTP 0.0.0.0 TCP 25/25 Virtual Server POP3 0.0.0.0 TCP 110/110 Virtual Server Telnet 0.0.0.0 TCP 23/23 IPSec 0.0.0.0 UDP 500/500 PPTP 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 80/80 DCS-1000 0.0.0.0 TCP 800/800 i2eye 0.0.0.0 TCP 1720/1720	always 🛛 📝 🧃
Virtual Server DNS 0.0.0.0 UDP 53/53 Virtual Server SMTP 0.0.0.0 TCP 25/25 Virtual Server POP3 0.0.0.0 TCP 110/110 Virtual Server Telnet 0.0.0.0 TCP 23/23 IPSec 0.0.0.0 UDP 500/500 PPTP 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 80/80 DCS-1000 0.0.0.0 TCP 800/800 i2eye 0.0.0.0 TCP 1720/1720	always 🛛 📝 🔰
Virtual Server SMTP 0.0.0.0 TCP 25/25 Virtual Server POP3 0.0.0.0 TCP 110/110 Virtual Server Telnet 0.0.0.0 TCP 23/23 IPSec 0.0.0.0 UDP 500/500 PPTP 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 80/80 DCS-1000 0.0.0.0 TCP 80/800 i2eye 0.0.0.0 TCP 1720/1720	always 🛛 📝 🧃
Virtual Server POP3 0.0.0.0 TCP 110/110 Virtual Server Telnet 0.0.0.0 TCP 23/23 IPSec 0.0.0.0 UDP 500/500 PPTP 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 80/80 DCS-1000 0.0.0.0 TCP 80/800 i2eye 0.0.0.0 TCP 1720/1720	always 🛛 📝 🔰
Virtual Server Telnet 0.0.0.0 TCP 23/23 IPSec 0.0.0.0 UDP 500/500 PPTP 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 1720/1720 DCS-1000 0.0.0.0 TCP 80/80 DCS-2000/DCS-5300 0.0.0.0 TCP 1720/1720 i2eye 0.0.0.0 TCP 1720/1720	always 🔤 🕅
IPSec 0.0.0.0 UDP 500/500 PPTP 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 1720/1720 DCS-1000 0.0.0.0 TCP 80/80 DCS-2000/DCS-5300 0.0.0.0 TCP 1720/1720 i2eye 0.0.0.0 TCP 1720/1720	always 🛛 📝 🧃
PPTP 0.0.0.0 TCP 1723/1723 NetMeeting 0.0.0.0 TCP 1720/1720 DCS-1000 0.0.0.0 TCP 80/80 DCS-2000/DCS-5300 0.0.0.0 TCP 1720/1720 i2eye 0.0.0.0 TCP 1720/1720	always 🛛 📝 🧃
NetMeeting 0.0.0.0 TCP 1720/1720 DCS-1000 0.0.0.0 TCP 80/80 DCS-2000/DCS-5300 0.0.0.0 TCP 800/800 i2eye 0.0.0.0 TCP 1720/1720	always 🛛 📝 🧃
DCS-1000 0.0.0.0 TCP 80/80 DCS-2000/DCS-5300 0.0.0.0 TCP 800/800 i2eye 0.0.0.0 TCP 1720/1720	always 🔤 🕅
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에너 성가 있는 것을 많이 있다.	always 🛛 📝 🗎
DCS-3120 0.0.0.0 UDP 3120/3120) always 📑 🕅
Port 99 192.168.0.50 TCP 99/99	always 🛛 📝 🔰

Port 99 has now been added to the Router as a port in which outside traffic can now pass through, to the DVR.

You need to repeat this process <u>four more times</u>, as there are additional ports used by the DVR Remote Client. Following the above directions, create more port entries for the following :

PORT NAME	PORT NUMBER
Port # 3000	3000
Port # 3001	3001
Port # 3003	3003
Port # 8800	8800

Each time you add in the additional port, and click APPLY, you should see the newly created port appear in the Virtual Servers list. When finished, close Internet Explorer which exits you from the DLINK Configuration screen.

The DVR and Router configuration is now complete.