D-Link®
Building Networks for People

Manual
Version 1.0

DCS-6620
PTZ Internet Camera

Table of Contents

Package Contents

- D-Link *SECURICAM* **DCS-6620** PTZ Internet Camera
- Remote Control
- 12V AC Power Adapter
- A/V Cables
- Category 5 Ethernet Cable
- Camera Stand
- Quick Installation Guide
- Installation software and manual on CD

If any of the above items are missing, please contact your reseller.

*Note: Using a power supply with a different voltage than the one included with the **DCS-6620** will cause damage and void the warranty for this product.*

Minimum System Requirements

- Internet Explorer 6.0 or above
- CPU: Pentium 4, 2.0GHz plus processor
- Memory Size: 128MB or above
- 32MB AGP Video Card

Introduction

The D-Link *SECURICAM* Network **DCS-6620** PTZ (Pan, Tilt, and Zoom) Internet Camera is a full featured surveillance system that connects to an Ethernet, Fast Ethernet or broadband Internet connection to provide remote high-quality 2-Way Full Duplex audio, and 10x optical and 10x digital zoom[1] for greater clarity and detail from your recordings. The **DCS-6620** is the latest product added to the D-Link *SECURICAM* Network line. The **DCS-6620** PTZ Internet Camera differs from a conventional PC Camera because it is a stand-alone system with a built-in CPU and Web server, capable of solving demanding security and home/office monitoring needs. The PTZ Internet Camera can be accessed remotely, and controlled, from any PC or notebook computer over the Internet from anywhere in the world. Simple installation procedures, along with the built-in Web-based interface offers easy integration to your network environments.

Features and Benefits

The *SECURICAM* Network **DCS-6620** PTZ Internet Camera is a stand-alone system requiring no special hardware or software such as PC frame grabber cards. For remote viewing, all that is required is a computer with Internet Explorer Web browser (version 6.x or above). Just plug in the camera and monitor the site from your PTZ Internet Camera with a valid IP Address.

Motorized Pan and Tilt Operation
The **DCS-6620** has a pan and tilt function that can expand your viewing area to cover a wide 270° angle side-to-side and a 90° angle up and down. This can be controlled with a PC from any location or locally using the included infrared remote control.

CCD Sensor
The **DCS-6620** comes standard with a high quality CCD sensor that is superior to a CMOS type sensor. The variable focus glass lens will facilitate the use of the **DCS-6620** providing crystal clear and sharp images. You can view up to 30 frames[2] per second of live motion video with 380 TV lines of resolution.

Broad Range of Applications
With today's high-speed Internet services, the PTZ Internet Camera can provide the ideal solution for live video images and audio over the Intranet and Internet for remote monitoring. The **DCS-6620** allows remote access from your Internet Explorer Web browser for live image viewing with audio, and allows the administrator to manage and control the PTZ Internet Camera anytime and anywhere in the world. Apply the Internet Camera to monitor various objects and places such as homes, offices, banks, hospitals, child-care centers, amusement parks and other varieties of industrial and public monitoring. The PTZ Internet Camera can also be used for intruder detection with its motion-detection mode, capture still images and video images for archiving, and many more applications such as sending images to an FTP server or configuring for E-mail alerts. The **DCS-6620** features 2-way Full-Duplex audio with a built-in microphone that lets you remotely monitor and record audio with your video. With the addition of optional speakers (not included), you can have 2-way Full-Duplex audio communication with the people you are viewing. The **DCS-6620** also features 10x optical and digital zoom for closer viewing.

[1] 10x digital zoom enlarges an image by magnifying the pixels in a selected portion of the image by 10 times.
[2] Actual frame rate will vary due to network traffic, compression rate, frame rate, and lighting.

D-Link Systems, Inc.   4

Supports a Variety of Protocols

In addition, the **DCS-6620** supports a variety of platforms including FTP, SMTP, NTP, and HTTP. The camera also supports UPnP and DDNS. DDNS allows the camera to use an easier to remember naming format rather than an IP address. UPnP will allow users of Windows® XP to install the camera with the click of a mouse.

A/V Output

The *SECURICAM* Network **DCS-6620** comes with an A/V output allowing you to connect to your TV for local viewing. The **DCS-6620** can also be connected directly to your VCR to record activities.

Web Configuration

Using the Internet Explorer Web browser, administrators can configure and manage the PTZ Internet Camera directly from its own Web page via the Intranet or the Internet. Up to 20 user names and passwords are permitted, with privilege settings controlled by the administrator.

Powerful Surveillance and Remote Monitoring Utility

The powerful **IP surveillance** software application assigns an administrator with a pre-defined user ID and password who can modify the PTZ Internet Camera settings from the remote site via the Intranet or the Internet. Administrators are allowed to monitor the image, record the image to a hard drive, and take snapshots.
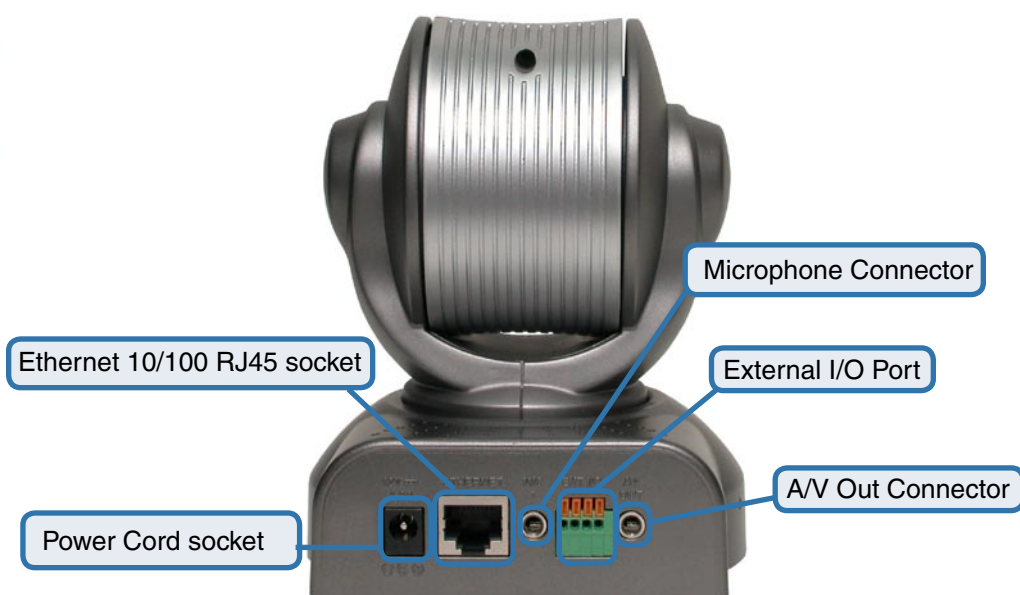
Connection to External Devices

Supporting auxiliary Input/Output connectors, you can connect the PTZ Internet Camera to a variety of external devices such as IR-sensors, switches and alarm relays. Combined with programmable alarming equipments, you can develop a variety of security applications that are triggered on alarm-based events. The PTZ Internet Camera provides an industry standard in/out external connector for connectivity.

Internal/External Microphone

The *SECURICAM* Network **DCS-6620** allows you to monitor video as well as audio through the web browser. You have the option of using the **DCS-6620**'s integrated microphone or your own external microphone using the connection located at the rear of the unit.

Note: Use of audio or video equipment for recording the image or voice of a person without their knowledge and consent is prohibited in certain states or jurisdictions. Nothing herein represents a warranty or representation that the D-Link product provided herein is suitable for the end-user's intended use under the applicable laws of his or her state. D-Link disclaims any liability whatsoever for any end-user use of the D-Link product, which fails to comply with applicable state, local, or federal laws.

Connections

Microphone Connector

Ethernet 10/100 RJ45 socket

External I/O Port

A/V Out Connector

Power Cord socket

Ethernet 10/100 RJ45 socket
The **DCS-6620** back panel features an **RJ-45** connector for connections to 10Base-T Ethernet cabling or 100Base-TX Fast Ethernet cabling. This network port supports the **NWay protocol**, allowing the PTZ Internet Camera to automatically detect or negotiate the transmission speed of the network.

> The Ethernet cable included with the DCS-6620 PTZ Internet Camera is a Category 5 "straight through" cable. This is the recommended cable type when the camera is connected to a 100Mbps Fast Ethernet network router, hub or switch.

Power Cord socket
The DC power input connector is located on the **DCS-6620** PTZ Internet Camera's back panel and is labeled **12V** with a single socket to supply power to the PTZ Internet Camera.

Microphone
The **DCS-6620** PTZ Internet Camera has an internal microphone. However, you have the option of using an external microphone by plugging it into the microphone connector.

A/V Out
Plug the included A/V cable into the A/V out connector to use the **DCS-6620** with a television or VCR.

External I/O Port

The **DCS-6620** provides a terminal block with two pairs of connectors situated on the back panel. One pair is for input and the other is for output. The External I/O Port provides the physical interface to send, and receive, digital signals to a variety of external alarm devices. **Please refer to the appendix in this manual for detailed information (page 131).**

Bottom Panel
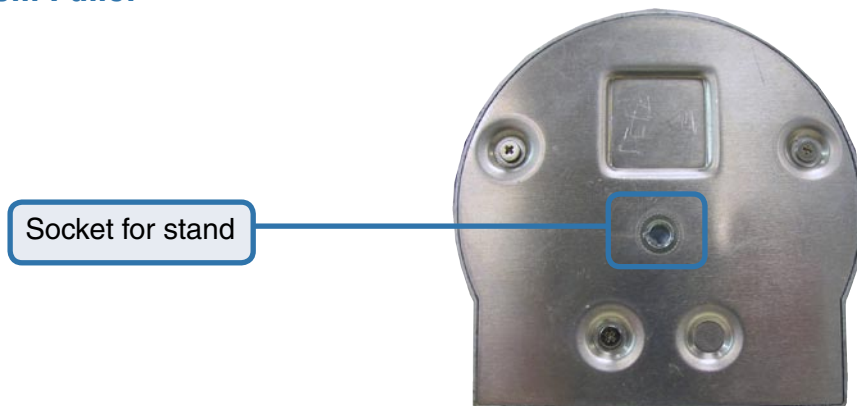
Socket for stand

Attachment socket for the Camera Stand

Located on the bottom panel of the **DCS-6620**, the socket is used to connect the camera stand to the PTZ Internet Camera by attaching the screw head on the camera stand to the PTZ Internet Camera.

Infrared Remote Control

Included with the **DCS-6620** is an infrared remote control. You have the option of controlling the camera via the Pan/Tilt/Zoom Controls using the IP surveillance software, Internet Explorer, or via the infrared remote. To use the remote, make sure that IR Control is enabled on the **Camera Control** page in the Configuration Menu under **Advanced**. **Please refer to the section titled "Using the DCS-6620 with an Internet Browser" in this manual for more information.**

Arrows

Home

Zoom In

Zoom Out

Auto-Pan

Center

Auto-Patrol

Stop
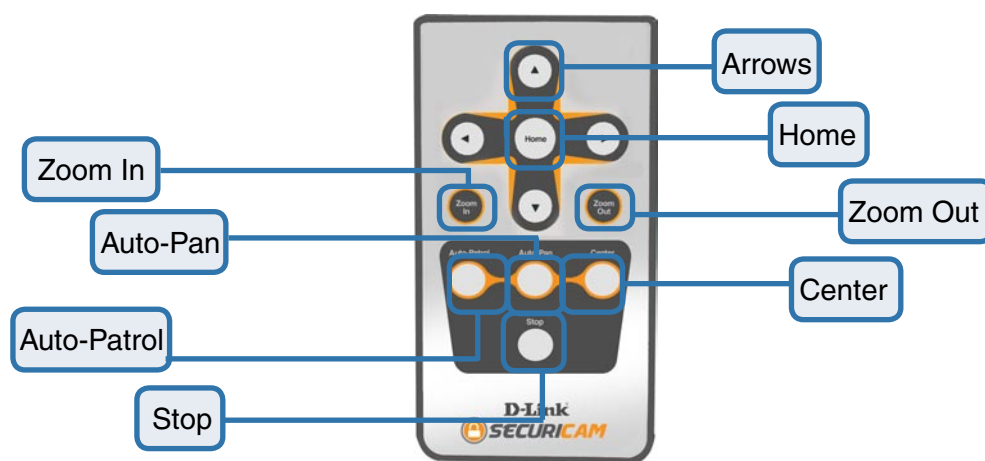
Arrows:	Use the Up, Down, Left and Right arrows to tilt/navigate the camera lens.
Home:	Returns the camera lens to the set home position.
Zoom In:	Zooms in to display a specific area.
Zoom Out:	Zooms out to display a larger area.
Auto-Patrol:	Enables the Auto-Patrol function.
Auto-Pan:	Pans the camera one full cycle.
Center:	Centers the camera lens.
Stop:	Stops the movement of the camera during pan.

D-Link Systems, Inc.   8

Hardware Installation

1 **Connect an Ethernet cable**

Connect an Ethernet cable to the network cable connector located on the **DCS-6620**'s back panel and attach it to the network.

2 **Attach the external power supply**

Attach the external power supply to the DC power input connector located on the **DCS-6620**'s back panel labeled **12V** and connect the other end to your wall outlet.

Power LED

LED stands for **L**ight-**E**mitting **D**iode.

The Power LED is positioned in the center of the PTZ Internet Camera base. As soon as the power adapter is connected to the PTZ Internet Camera, the power and the activity LED will flash **red** and **green** several times. The **DCS-6620** is conducting a self-test. Upon passing the self-test, the **red** LED will be solid and the **green** LED will start to blink to indicate a good connection to an Ethernet port. If you are directly connected to the camera via a crossover cable, the light may cycle on and off and your computer may show an intermittent loss of connectivity. This is normal until you have configured your PTZ Internet Camera. The absence of a blinking **green** LED indicates no connection has been made.

Attaching the PTZ Internet Camera to the Camera Stand

The PTZ Internet Camera comes with a camera stand and a swivel ball screw head that can be attached to the PTZ Internet Camera bottom socket cavity. Attach the camera stand to the PTZ Internet Camera and station it for your application. There is a hole located in the base of the camera stand allowing the PTZ Internet Camera to be mounted to the ceiling, or any wall securely.

Installation Wizard

After you have successfully completed the hardware installation of the **DCS-6620** PTZ Internet Camera, it is necessary to install software to configure and operate the camera. The first step is to install the **Installation Wizard** program from the CD. **Installation Wizard** will allow you to configure the PTZ Internet Camera to your network.

After the **Installation Wizard** software program is completed, you will have an operating and controllable PTZ Internet Camera. From your Internet Explorer Web browser you will be able to access the video and sound from the PTZ Internet Camera. The camera has a built-in Web server. This Web server will allow the camera to access the Internet without being attached to a computer and permits users to view the video and audio remotely.

However, it is necessary to install the **IP surveillance** software from the enclosed CD to create a truly powerful surveillance system. The following section will show in detail the launching of the **Installation Wizard** and installation of the **IP surveillance** software.

Launching the Installation Wizard program

Insert the CD that is included with the **DCS-6620** PTZ Internet Camera into your computer's CD-ROM. The **DCS-6620** installation menu will start up automatically from the CD. If the CD does not start up automatically, (this function may be disabled in the Windows operating system), access the CD from Windows My Computer and click on the autorun.exe program to access the installation menu shown below:
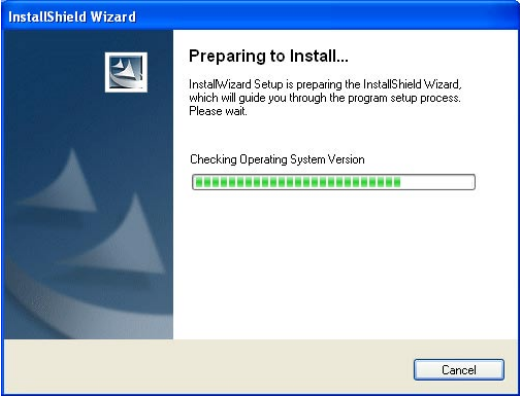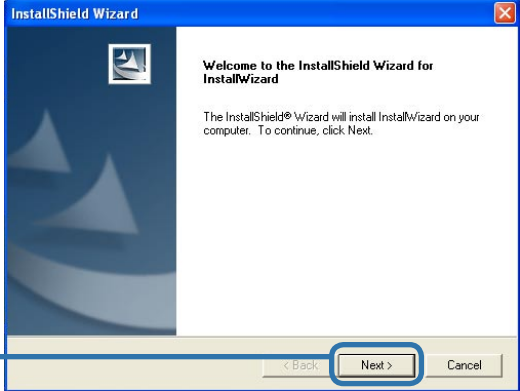
Click **Install Software**

Click **Install Wizard**

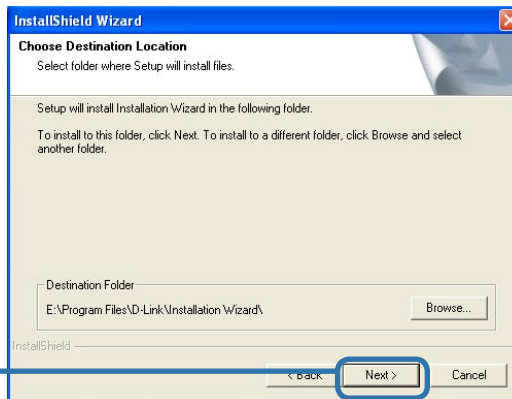Please wait while the InstallShield Wizard prepares to install.

Click **Next**

The InstallShield will install in the following folder. To install into a different folder, click Browse and select another folder.
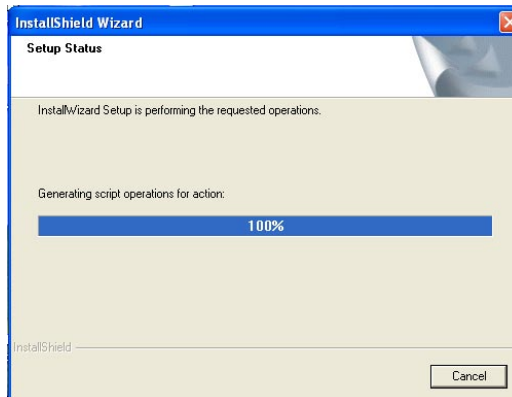
Click **Next**

Select the Program folder that Setup will add program icons to. You may type a new folder name, or select one from the existing folders list.
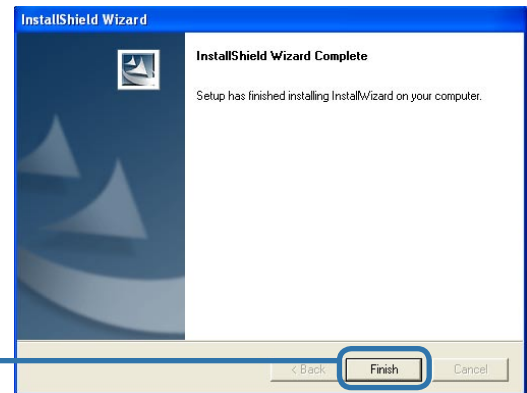
Click **Next**

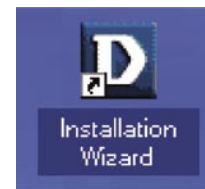Please wait while the Installation Wizard is installed.

Installation is now complete.

Click **Finish**

To access the Installation Wizard screen, click on the Installation Wizard Icon on your desktop.

The opening Installation Wizard screen will appear and show a MAC address of the **DCS-6620** and an IP Address (which may or may not be correct depending on what you have your **DCS-6620** connected to). If you have a DHCP* server on your network, there will be a valid IP Address displayed here, indicated by a "Yes" under the assigned column.

*A DHCP server is a device that supplies IP Addresses to its clients that are on the same network.
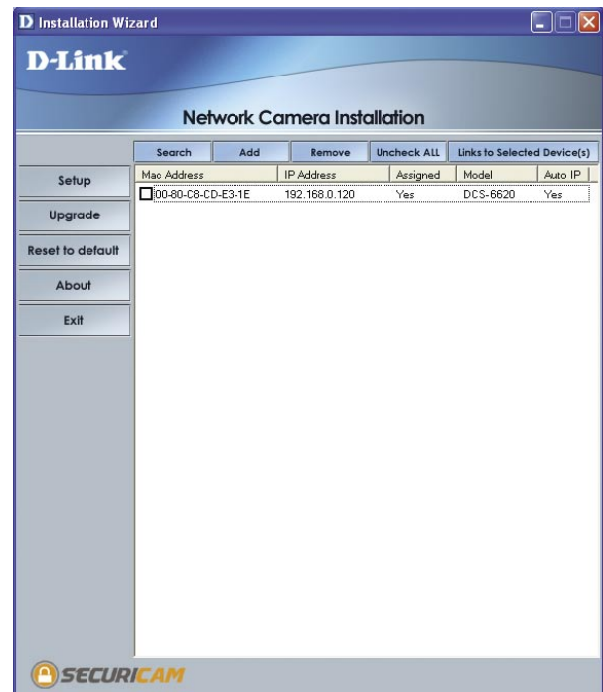
IMPORTANT:
A hardware reset of the PTZ Internet Camera may be required if the **Installation Wizard** cannot find the camera. To accomplish this reset, lightly insert a paper clip (or a similar sized tool) into the reset hole on the side of the camera (see page 130 for the location of the reset hole). The LED on the front of the camera will begin blinking alternately. When it stops the blinking cycle continue to hold in the reset button for about 10 seconds.

D-Link Systems, Inc.   13

The **Installation Wizard** will now show a MAC address for the **DCS-6620** and an IP address. This IP address may not be correct at this step in the installation until you see "Yes" under the assigned column. The camera is now automatically configured with an IP address consistent to the network it is connected to.

Select the MAC address

Click on the **Link to Selected Devices** button
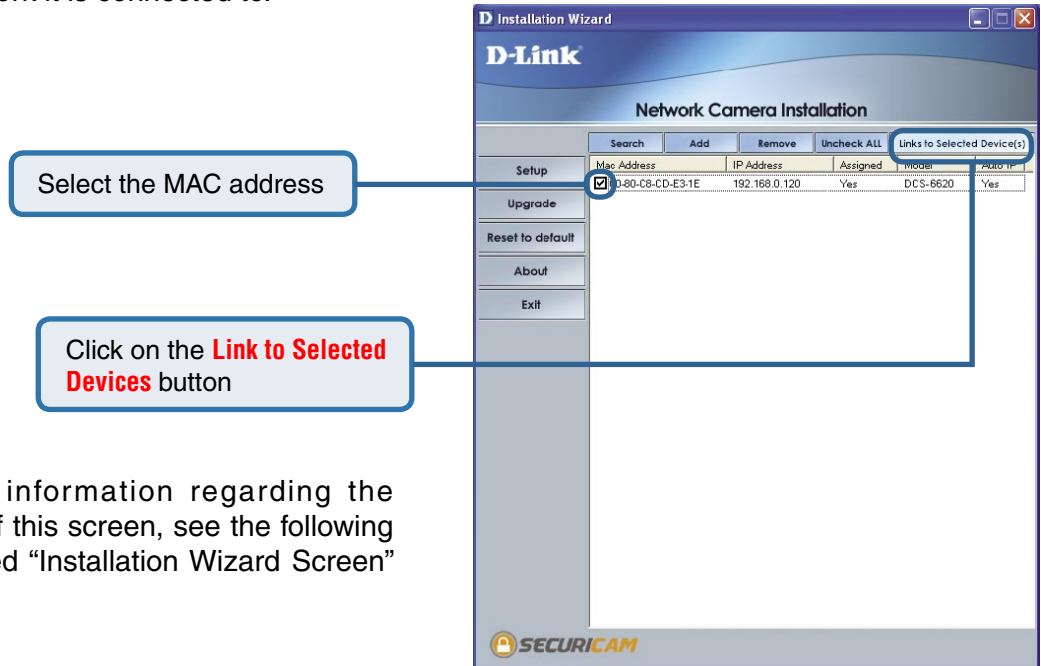
For more information regarding the functions of this screen, see the following section titled "Installation Wizard Screen" (page 15).

After you click on the **Link to Selected Devices** button, **Installation Wizard** will automatically open your Internet browser to the IP Address of the **DCS-6620**, in this example it is: http://192.168.0.120. Your **DCS-6620** may have a different IP Address.

If a window appears asking to install a Verisign certificate for authentication Click **Yes**. This allows the proprietary MPEG-4 video stream to be recognized by Internet Explorer.

D-Link Systems, Inc.   14

After you click "**Yes**" to the Verisign certificate for authentication, you should see an image from your **DCS-6620** PTZ Internet Camera.

You have now completed the Setup Wizard and are ready to use your camera! You can also continue to the section titled "Installing IP surveillance Software" (page 22) to install the IP surveillance software before you begin to use the DCS-6620.

Installation Wizard Screen

The following options are available on the Installation Wizard screen by clicking on the corresponding tab:

Search: Click to search for any available cameras to connect to the network.

Add: Click to manually add a camera to the network. A window will appear, prompting you to enter the camera's IP address or domain name. A second window will appear, prompting you to enter the port number.

Remove: Click to remove the selected camera(s) from the network.

Uncheck All: Click to uncheck all selected cameras.

Links to Selected Devices: Click to view all of the selected cameras. For each individual camera selected, an individual Internet browser will appear.

D-Link Systems, Inc.   15
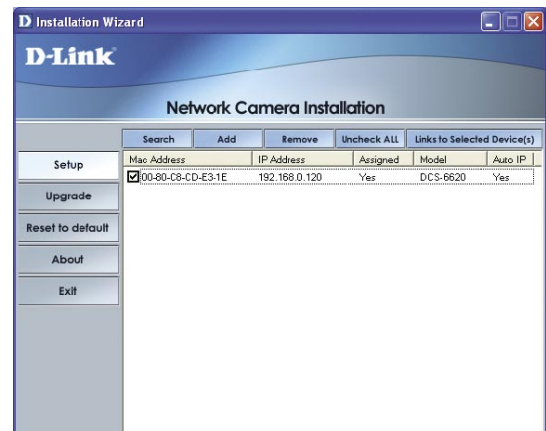
Setup

On the initial Setup Screen you can configure System and Date/Time settings for each camera. Click **Next** to configure Network settings for the camera.

System Settings: Enter a Camera Name and create an Admin password for the camera.

Date/Time Settings: Enter the Date and Time for each camera. These settings can also be configured on the **Tools > System** screen (page 57) when configuring the camera via a Web browser.

Network Settings: Here users can configure the Network Settings for the camera. Enter the IP address, Subnet mask, Default router IP, Primary DNS, and Secondary DNS. Automatically, the option to reset IP address at boot is selected. If you would like to save your IP address settings, make sure to uncheck this box. These settings can also be configured on the **Advanced > Network** screen (page 39) when configuring the camera via a Web Browser.

Click Next and then **Apply** to save the configured settings. Users can click **Previous** to modify changes or mistakes.

D-Link Systems, Inc.   16
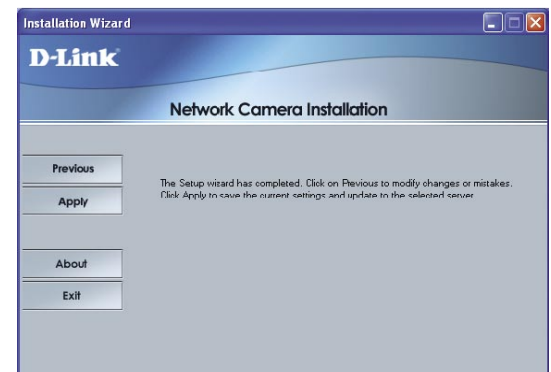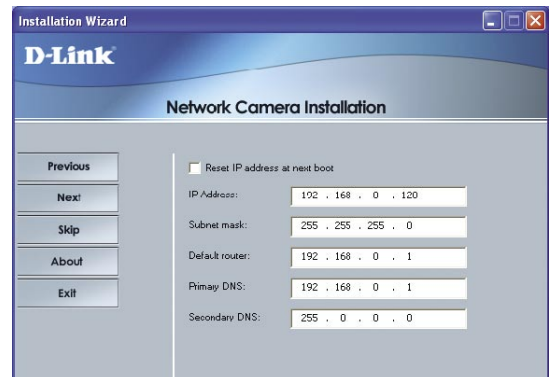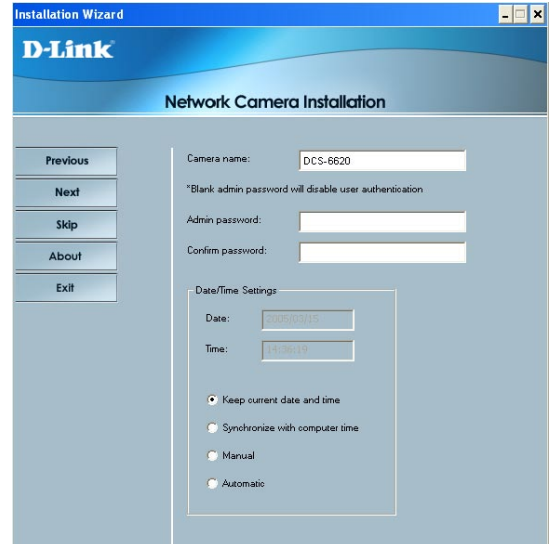
Upgrade

The upgrade window allows users to upload a saved firmware file. If the firmware is older than that currently on the camera, a screen will appear indicating so and prompting the user to confirm the upload.

Package Information: This displays information about the firmware and plugin currently installed on the camera.

Locate the Firmware to Upgrade: Allows you to browse to the location of the firmware to be uploaded to the camera.

Selected Package: This displays the file name of the firmware selected for upload.
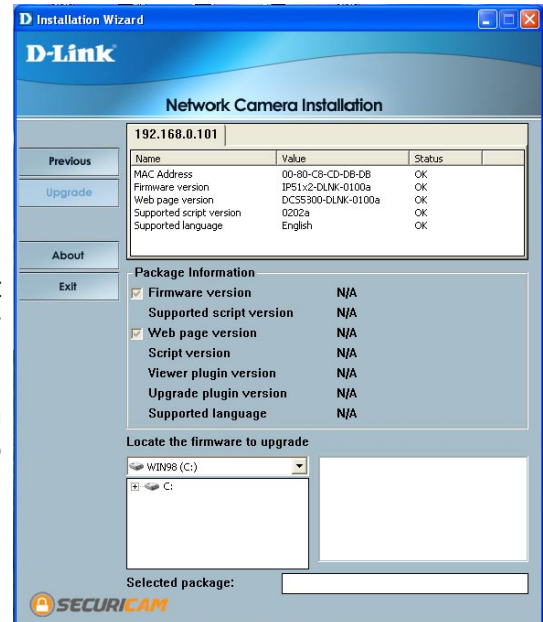
Reset to Default

Click the Reset to Default tab to reset the camera's settings to factory defaults.

About

Click About to display the current version and date of the Installation Wizard.

Exit

Click the Exit tab to exit the Installation Wizard screen.

Enabling UPnP™ for Windows® XP

UPnP™ is short for Universal Plug and Play, which is a networking architecture that provides compatibility among networking equipment, software, and peripherals. The **DCS-6620** is a UPnP enabled PTZ Internet Camera. If your operating system is UPnP enabled, the device will be easier to configure. If you do not want to use the UPnP functionality, it can be disabled by unselecting "**Enabled**" on the DDNS/UPnP settings page under "Advanced" in the configuration menu. Use the following steps to enable UPnP (Universal Plug and Play) settings only if you are running Windows XP. If you are running Windows 2000, UPnP is not available.
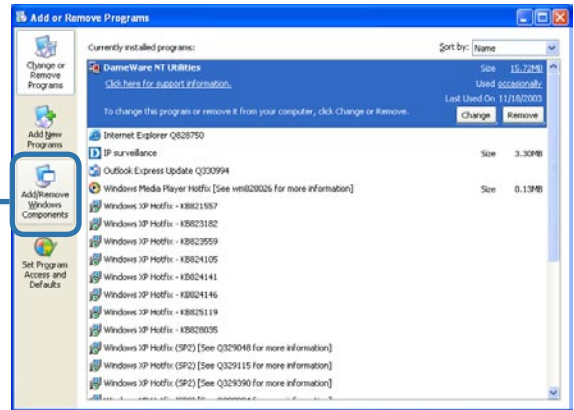
■ Go to **Start >Settings**.

Click **Control Panel**
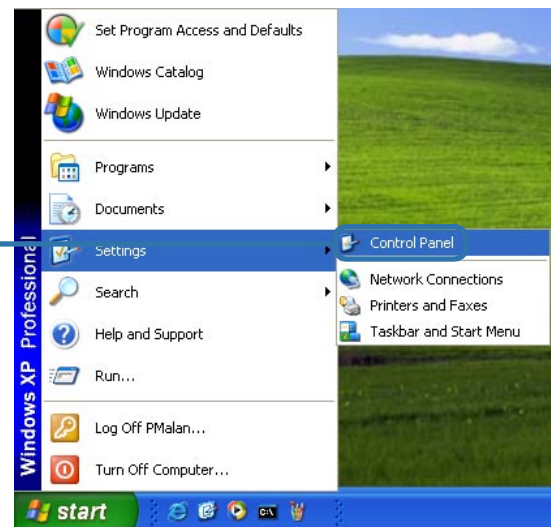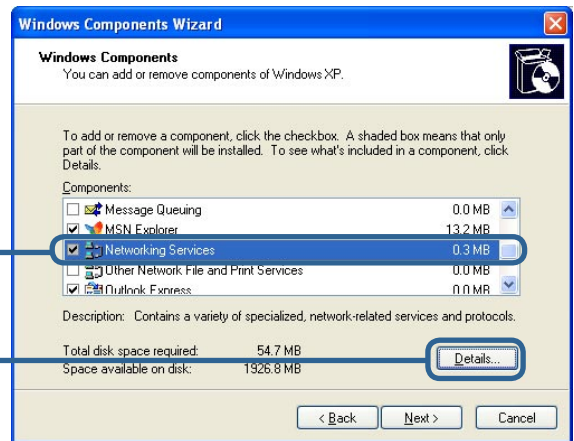
Click **Add or Remove Programs**
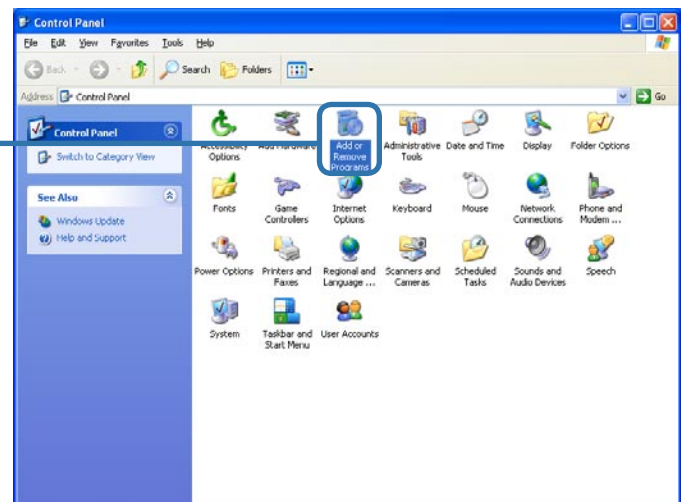
Click **Add/Remove Windows Components**

The following screen will appear:

Select **Networking Services**

Click **Details**

Select **Universal Plug and Play**

Click **Ok**
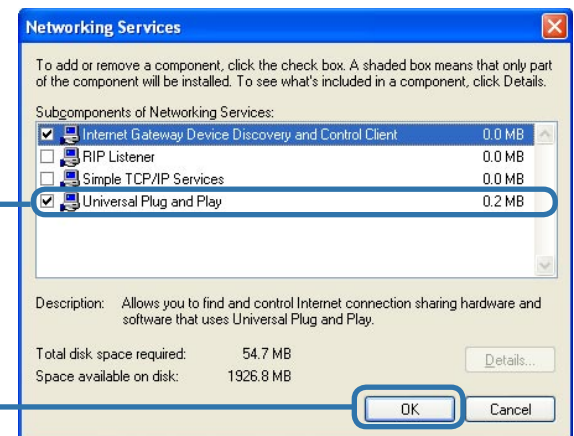
Click **Next**
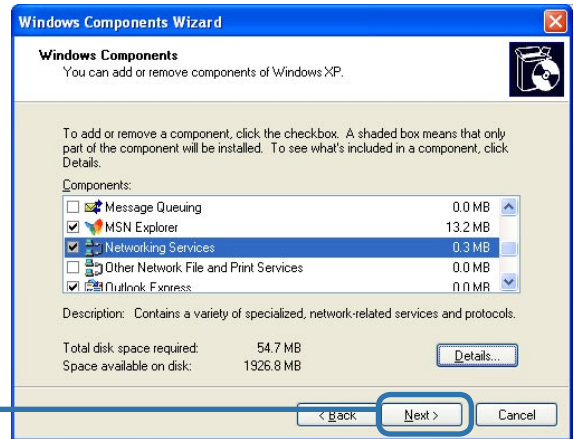
Please wait while Setup configures the components.
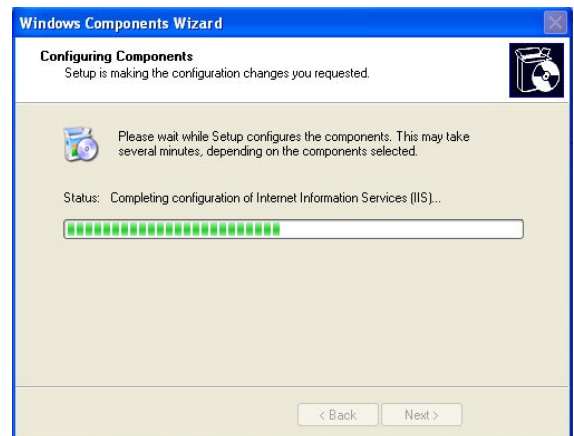
Click **Finish**

To view your **DCS-6620** PTZ Internet Camera in an Internet browser, go to your Desktop and click **My Network Places**.

Click **My Network Places**

Click **DCS-6620-146**

The last three digits (146), represent the fourth octet of your PTZ Internet Camera's IP address (in this example, 198.168.0.146).
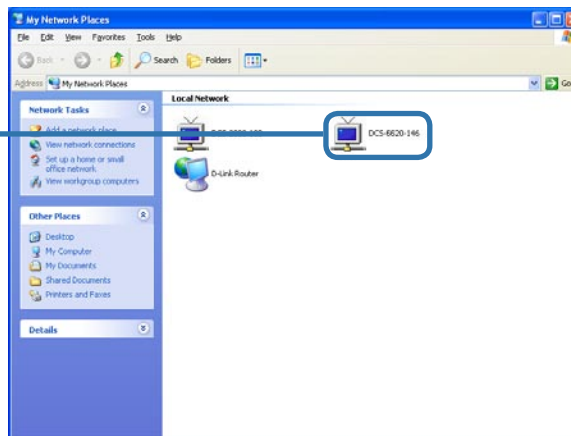
After you click on the **DCS-6620-146** icon, your Internet browser will automatically be opened to the IP Address of the **DCS-6620**, in this example it is: http://192.168.0.120. Your **DCS-6620** may have a different IP Address.

Installing IP Surveillance Software

The IP surveillance Software on the CD included with the **DCS-6620** PTZ Internet Camera converts the **DCS-6620** into a powerful, yet flexible, surveillance system for home or business, with the following features:

- Real-time Monitoring
- Video and Audio Recording to hard disk
- High quality video
- High compression ratio
- Maximum of 16 cameras with different monitor layouts
- Smart playback
- Triggered event browsing
- Fast database searching
- Configurable automated alarms
- Account password protection
- Scheduled recording for each camera
- AVI file export
- Motion detection for each camera

To install the IP surveillance software, click on **Install IP surveillance Software** on the CD included with the PTZ Internet Camera. The **Welcome** screen appears:
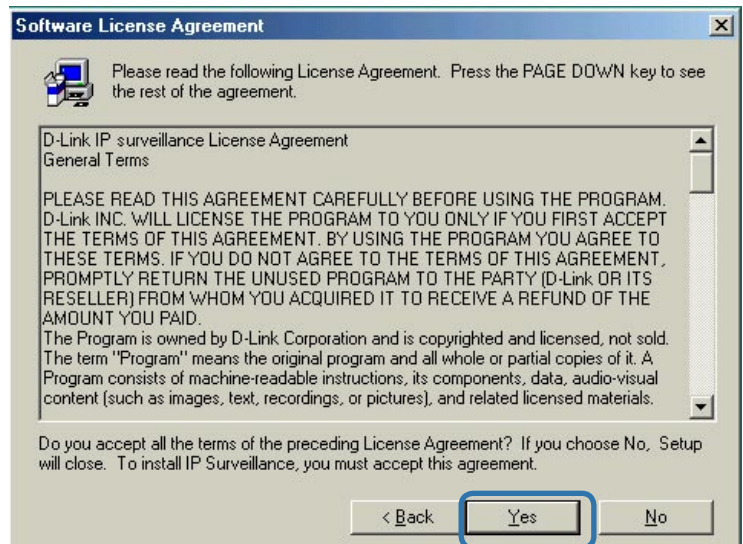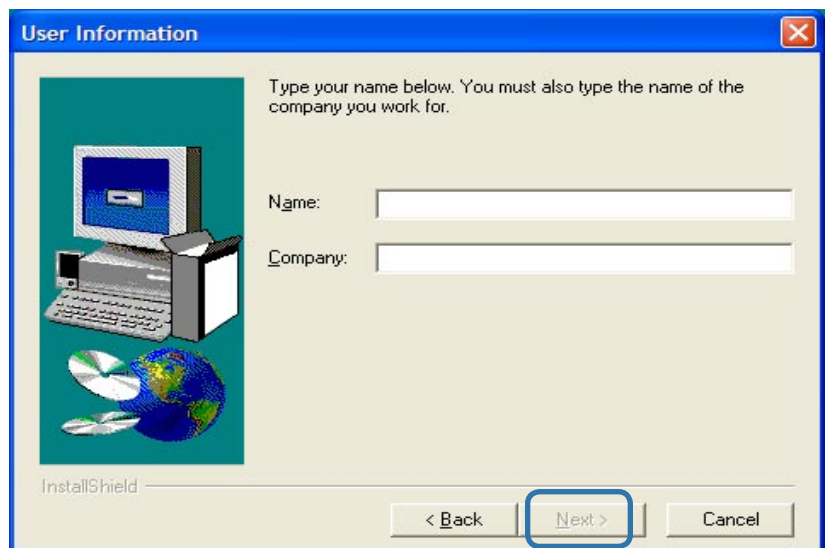
Click **Next**

Click **Yes**

Please read the Software Licensing Agreement and click yes if you wish to accept the agreement. Click "No" to exit the installation.

Click **Next**

Enter your name and company information and then click "Next".

Choose Destination Location

Setup will install IP surveillance in the following directory.

To install to this directory, click Next.

To install to a different directory, click Browse and select another directory.

You can choose not to install IP surveillance by clicking Cancel to exit Setup.

Select the destination directory.

Destination Directory
C:\Program Files\D-Link\IP surveillance   Browse...

InstallShield

< Back   Next >   Cancel

Click **Next**

Select Program Folder

Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing Folders list. Click Next to continue.
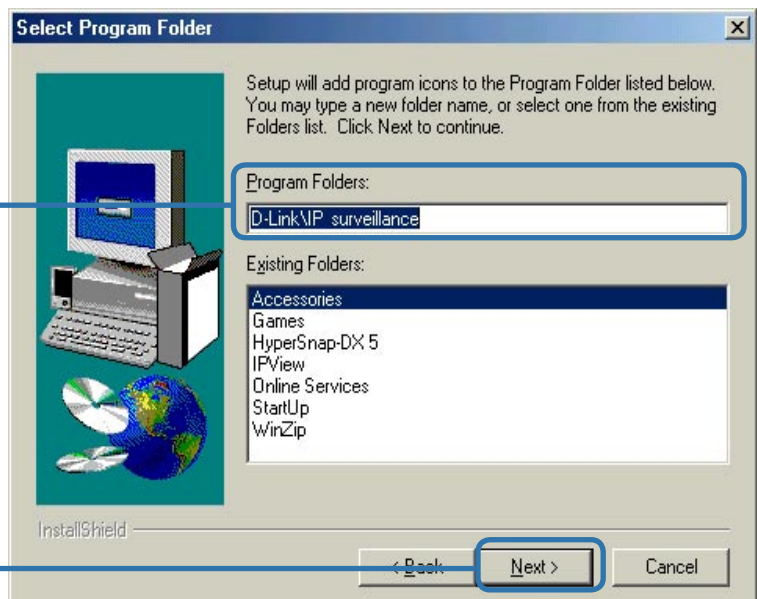
Select the program folder the software will be installed into.

Program Folders:
D-Link\IP surveillance

Existing Folders:
Accessories
Games
HyperSnap-DX 5
IPView
Online Services
StartUp
WinZip

InstallShield

< Back   Next >   Cancel

Click **Next**

D-Link Systems, Inc.   24

Start Copying Files

Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.

Current Settings:

Setup Type:
    Complete

Target Folder
    C:\Program Files\D-Link\IP surveillance

User Information
    Name: PM
    Company: D-Link

InstallShield

Click **Next**   < Back   [Next >]   Cancel

Setup Complete

Setup has finished copying files to your computer. Setup will now launch the program. Select your option below.

☐ Yes, Launch the program file

Click Finish to complete Setup.

InstallShield

Click **Finish**   < Back   [Finish]

The installation is complete.

D-Link Systems, Inc.   25

Testing the DCS-6620

Open your Internet browser and type in the IP address of the **DCS-6620**. In this example the address is: **http://192.168.0.120** (your **DCS-6620** may have a different IP address based on what you found with the **Installation Wizard** program).

The window in the center of your browser is the camera image window. You should now see a video image and hear the audio over your computer speakers from the **DCS-6620**. If you are having problems please consult the **FAQ** section of this manual (page 126).

Security

At this point it is highly recommended that you click on the **Configuration** button on the Home screen, and then the **Tools** tab to bring you to the **Admin** screen. Enter a **password** for security purposes.

To ensure the highest security and prevent unauthorized use of the PTZ Internet Camera, the *Administrator* has the exclusive privilege to access the **System Administration** settings to allow users entry and authorize privileges for all users. The PTZ Internet Camera supports multi-level password protection/access to the PTZ Internet Camera that can be restricted to defined users who have a **User Name** and **User Password,** which is assigned by the Administrator.

The Administrator can release a public user name and password so that when remote users access the PTZ Internet Camera they will have the right to view the image transmitted by the PTZ Internet Camera.

When the PTZ Internet Camera is used for the first time, it is highly recommended that the Administrator set the **Administrator Password** to constrain user access to the PTZ Internet Camera since the Default settings are Null String (no password). Once the Password is defined, only the Administrator has access to the management of the PTZ Internet Camera. This procedure should be done as soon as possible since the security features of the PTZ Internet Camera will not be enabled until the **Administrator Password** is defined.

Using and Configuring the DCS-6620 with a Router

D-Link's **DCS-6620** is a versatile and cost effective PTZ Internet Camera offering both video and audio monitoring. It can also serve as a powerful surveillance system in security applications. The **DCS-6620** can be used with any wired or wireless router. This section explains how to view the camera from either the Internet or from inside your internal network.

Materials Needed:
- 1 **DCS-6620** PTZ Internet Camera
- 1 Ethernet Cable
- A Wired or Wireless router such as the D-Link DI-624 Wireless Router
- Ethernet based PC for system configuration

SETTING UP THE DCS-6620 FOR USE BEHIND A ROUTER

Installing a **DCS-6620** PTZ Internet Camera on your network is an easy 4-step procedure:
① Assign a local IP Address to your PTZ Internet Camera
② View the PTZ Internet Camera Using Your Internet Explorer Web browser
③ Access the Router with Your Web browser
④ Open Virtual Server Ports for Your Router (Enable Remote Viewing)

This section is designed to walk you through the setup process for installing your camera behind a router and enable remote video viewing. For the basic setup of the **DCS-6620**, follow the steps outlined in the **Quick Installation Guide.**

After you have completed the setup of the **DCS-6620** outlined in the **Quick Installation Guide** you will have an operating camera that has an assigned IP Address. Because you are using a router to share the Internet with one or more PCs, the IP Address assigned to the PTZ Internet Camera will be a local IP Address. This allows viewing within your Local Area Network (LAN) until the router is configured to allow remote viewing of the camera over the Internet.

① **Assign a Local IP Address for Your Camera**

Run the Installation Wizard program from the CD included with the **DCS-6620**. Follow the steps in the **Quick Installation Guide** to configure the **DCS-6620**. The camera will be assigned a local IP Address that allows it to be recognized by the router.

This is the IP Address assigned to your camera. Write it down for later use. 192.168.0.120 is only an example. You will probably have a different IP Address.
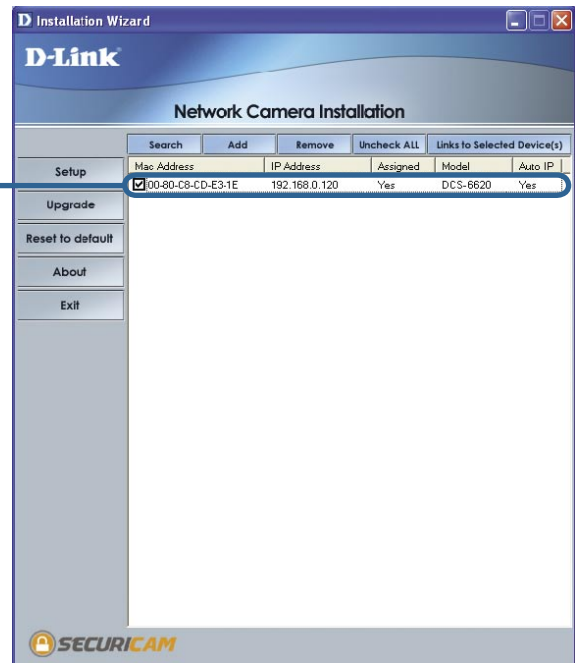
②   **View the PTZ Internet Camera using your Internet Explorer Web browser**

Run your Internet Explorer Web browser. In the address bar, type in the IP Address that was assigned to the PTZ Internet Camera by the **Installation Wizard** program. The **DCS-6620** Home Page appears with a window displaying live video from the camera. You are able to view this screen from any PC running Internet Explorer on your LAN.

Click on the **Configuration** button.

Viewing the Video on the browser to test the connection

Click on the **Configuration** button on the left side of the display. Scroll to the bottom of the Network Configuration page to display the ports used by HTTP and Streaming audio and video.

D-Link Systems, Inc.   29

These are the port settings for your camera. If necessary, these ports can be changed if they are already in use by other devices (e.g. in a multiple camera environment).

Router Set-Up and Installation

The following steps generally apply to any router that you have on your network. The D-Link DI-624 is used as an example to clarify the configuration process. Configure the initial settings of the DI-624 by following the steps outlined in the **DI-624 Quick Installation Guide**.

③ **Access Your Router on Your Web Browser**

If you have cable or DSL service, you will most likely have a dynamically assigned WAN IP Address. 'Dynamic' means that your router's WAN IP address can change from time to time depending on your ISP. A dynamic WAN IP Address identifies your router on the public network and allows it to access the Internet. To find out what your router's WAN IP Address is, go to the **Status** screen on your router and locate the WAN information for your router. As shown on the next page the WAN IP Address will be listed. This will be the address that you will need to type in your web browser to view your camera over the Internet. Be sure to uncheck the **Reset IP address at next boot** button at the top of the screen after modifying the IP address. Failure to do so will reset the IP address when you restart your computer.

Determine Your Router's IP Address (WAN)

Note: Because a dynamic WAN IP can change from time to time depending on your ISP, you may want to obtain a Static IP address from your ISP. A Static IP address is a fixed IP address that will not change over time and will be more convenient for you to use to access your camera from a remote location.

④ **Open Virtual Server Ports to Enable Remote Image Viewing**

The firewall security features built into the DI-624 router prevent users from accessing the video from the **DCS-6620** over the Internet. The router connects to the Internet over a series of numbered ports. The ports normally used by the **DCS-6620** are blocked from access over the Internet. Therefore, these ports need to be made accessible over the Internet. This is accomplished using the **Virtual Server** function on the DI-624 router. The Virtual Server ports used by the camera must be opened through the router for remote access to your camera. Virtual Server is accessed by clicking on the **Advanced** tab of the router screen.

Follow these steps to configure your router's Virtual Server settings

- Click **Enabled**.
- Enter a unique name for each entry.
- Select **Both** under **Protocol Type** (**TCP** and **UDP**)
- Enter your camera's local IP Address (e.g., **192.168.0.120** in the example in step ② on page 29) in the **Private IP** field.
- If you are using the default camera port settings, enter **80** in to the **Public** and **Private Port** section, click **Apply.**
- **Scheduling** should be set to **Always** so that the camera images can be accessed at any time.

Repeat the above steps adding ports **5002** and **5003** to both the **Public** and **Private Port** sections. A check mark appearing before the entry name will indicate that the ports are enabled.

Important: Some ISPs block access to port 80. Be sure to check with your ISP so that you can open the appropriate ports accordingly. Some ISPs block traffic on commonly used ports to conserve bandwidth. If your ISP does not pass traffic on port 80, you will need to change the port the camera uses from 80 to something else, such as 800. Not all routers are the same, so refer to your user manual for specific instructions on how to open ports.

Enter valid ports in the **Virtual Server** section of your router

Please make sure to check the box on this line to enable settings

Viewing Your Camera

After all settings have been entered correctly, a PC user inside or outside your network will have access to the camera through the Internet Explorer Web browser. To access the camera from the Internet, type the IP Address of the router given to you by your ISP, followed by a colon, and the port number that you gave your camera (e.g., **http://205.163.122.96:83**). It is not necessary to enter the colon and port number if you are using the default Web server port 80. To access from a computer on your local (home) network, simply enter the local IP Address of the Camera followed by a colon and the port number (e.g., **http://192.168.0.120:83**).

Viewing the DCS-6620 Remotely

Using the DCS-6620 with an Internet Browser

If you are following this manual in the order it is presented, you should now have an operating **DCS-6620** PTZ Internet Camera configured with the Installer program. You also have installed the **IP surveillance** software from the CD. This section of the manual will deal with using the PTZ Internet Camera in two parts:

- Using the **DCS-6620** with an Internet browser and accessing the screens to control and monitor the camera.

- Using the **IP surveillance** software with the **DCS-6620**.

Open your Internet Explorer Web browser and enter the IP address for your PTZ Internet Camera. An example address is 192.168.0.120, but your address may differ.

Home Page Screen

The image from the **DCS-6620** should be visible from the Home page on your computer monitor. To the right of the image are controls that allow you to pan and tilt the camera. Pan and tilt can also be controlled within the image. Clicking on any part of the image will cause the camera to reposition itself so that the point will be the center of the image.

Digital On/Digital Off controls the I/O port functions.

Take a Snapshot of the image.

Return to home position.

Tilt/navigate camera using arrows.

Digital Zoom

Talk Button

Speaker volume

Microphone volume
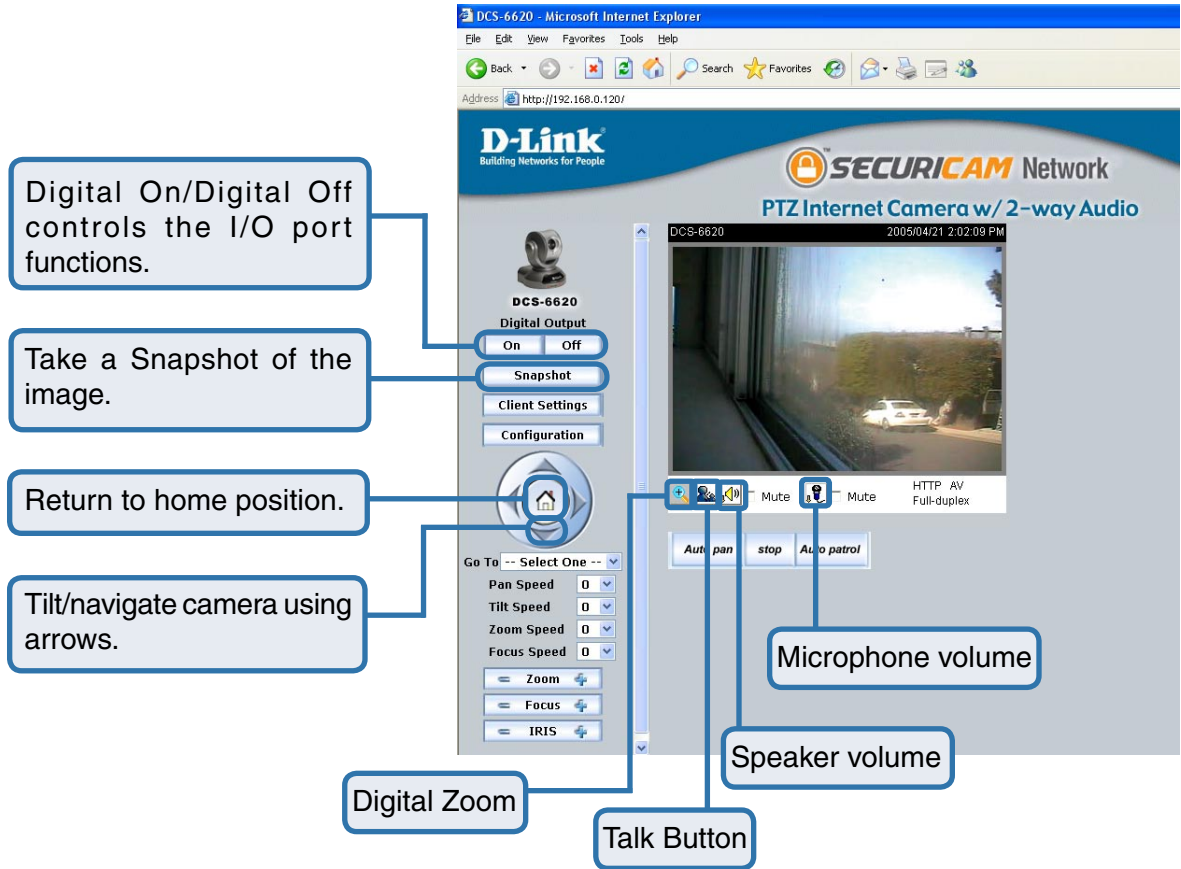
Pull down menu:	Select a preset position to move the camera to.
Pan/Tilt Speed:	Select the speed at which the camera will pan or tilt.
Zoom/Focus Speed:	Select the speed at which the camera will zoom or focus.
Zoom:	"-" zooms out, and "+" zooms in.
Focus:	"-" controls focus near, and "+" controls focus far.
Iris:	"-" sets the aperture smaller, and "+" sets the aperture bigger.
Auto Pan:	Pans the camera one full cycle.
Stop:	Stops movement of the camera during pan.
Auto Patrol:	Enables the Auto Patrol feature, please see page 53.

Home Page Screen *(continued)*

The image from the **DCS-6620** should be visible from the Home page on your computer monitor.

There are two buttons on the left side of the **Home** page: **Client Settings** and **Configuration**.

Click on the **Client Settings** button to change settings related to the connection.

Click **Client Settings**

Home > Client Settings

The following options are available from the
Connections settings screen:

Media Options

Allows the User to determine whether to recieve
Video & Audio, **Video Only**, or **Audio Only**.

Protocol Options

The UDP Protocol should be chosen for most users.
Generally the client computer will automatically try
these protocols in the following order, UDP -> HTTP.
After the client connects to the **DCS-6620** successfully, the working protocol will be displayed
in "**Protocol Option**". The chosen protocol will be recorded in the user's PC and used for the
next connection. If the network environment is changed or users want to let the web browser
automatically detect the protocol, select UDP manually and click **Save** to change the setting
and return **Home** to reconnect with the new setting.

UDP Protocol:	Offers the highest image and video quality.However, packet losses will diminish image quality when bandwidth becomes restricted.
HTTP Protocol:	If the network is protected by a firewall and it opens HTTP port (80) only, HTTP protocol must be selected. In this mode, audio is disabled and only video can be viewed. UDP connections will not be available to remote users if all four ports have not been forwarded (as shown on page 32). Only the HTTP port must be forwarded for remote users to make an HTTP connection (video only).

Streaming Options

Selecting **Streaming Video** will keep the video connection alive and enable you to see
streaming smooth video.

Selecting **Single JPEG** will allow you to see the video in JPEG format. This is done on the
client side, where JPEG images get periodically updated from the server according to the
"**Frame rate**" settings.

Talk Button Control Style

Allows the User to determine whether to "click once and talk" or "push to talk".

Click the **Home** tab to return to the **DCS-6620** Home page.

Home > Configuration

Click on the Configuration button on the Home page:

Click **Configuration**

There are 5 tabs across the top of the **Configuration** screen. From each tab, different elements of the **DCS-6620** can be configured. The **Advanced** tab is the default screen in **Configuration** and **Network** is the default screen under **Advanced**.

Click **Network**
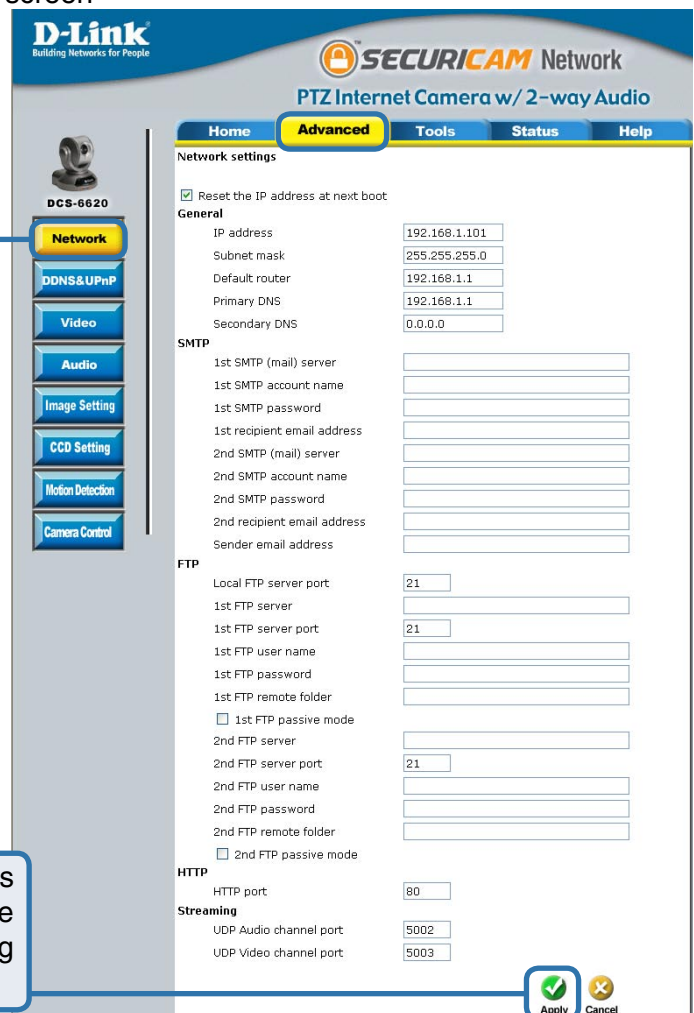
Any changes made to these settings will require the system to restart . Make sure every field is correct before clicking on **Apply**.

Configuration > Advanced > Network

Reset IP Address at next boot

Once the **DCS-6620** is configured, this box should be unchecked at all times. If the box has been checked and the connection is lost, run **Installation Wizard** to find the camera's IP address.

General Settings

IP address:	Necessary for network identification.
Subnet mask:	Used to determine if the destination is in the same subnet. The default value is "255.255.255.0."
Default router:	The router used to forward frames to destinations in a different subnet. Invalid router settings may cause the failure of transmissions to a different subnet.
Primary DNS:	Primary domain name server that translates names to IP addresses.
Secondary DNS:	Secondary domain name server to backup the primary one.

SMTP

1st SMTP (mail) server:	The domain name or IP address of external mail server.
1st SMTP account name:	The user name used to log into your e-mail account (e.g. jdoe or jdoe@yourisp.com depending on your ISP).
1st SMTP password:	The password used to log into your e-mail account. (The password will appear as dots instead of entered characters.)
1st recipient e-mail address:	The e-mail address of recipients for snapshots or a system log file. Multiple recipients must be separated by a semicolon ";"
2nd SMTP(mail) server:	The domain name or IP address of a secondary mail server used only if the primary mail server is unreachable.
2nd SMTP account name:	The user name for the second SMTP server.
2nd SMTP password:	The password used to log into the second e-mail account. (The password will appear as dots instead of entered characters.)

Configuration > Advanced > Network *(continued)*

2nd recipient e-mail address:	The e-mail address of recipients for the secondary server.
Sender e-mail address:	The return e-mail address to use if the snapshot or system log e-mail fails to send. (This address should be within the SMTP server's domain for authentication purposes.)

FTP Settings

Local FTP server port:	Can be other than default port 21. If you find that you want to change the port to a port number other than 21, you will need to specify the port when connecting to the FTP server. For example FTP://68.5.1.81:60 (if you are to use port 60 for your FTP server port)
1st FTP server:	The domain name or IP address of the external FTP server. The following user settings must be correctly configured for remote access.
1st FTP server port:	The port to access the external FTP server.
1st FTP user name:	Granted user name on the external FTP server.
1st FTP password:	Granted password on the external FTP server.
1st FTP remote folder:	Granted folder on the external FTP server. The string must conform to the external FTP server. Some FTP servers cannot accept a preceding slash symbol before the path if there is no virtual path mapping. Refer to the instructions of the external FTP server for details. The folder privilege must be open for upload.
1st FTP passive Mode:	If the **DCS-6620** is located inside a network that is protected by a firewall, a data connection for FTP may be prohibited. Passive mode FTP can bypass this rule and allow the uploading of snapshots. If the passive mode is selected, the **DCS-6620** can automatically attempt to upload in active mode if the external FTP server does not support passive mode.
2nd FTP server:	The domain name or IP address of the external FTP server. Note that the 2nd FTP server will only be used if the 1st FTP is unavailable. If image upload to the 1st FTP is successful, no attempts will be made to connect to the 2nd FTP server.
2nd FTP server port:	The port to access the backup FTP server.

Configuration > Advanced > Network *(continued)*

2nd FTP user name: Granted user name on the backup FTP server.

2nd FTP password: Granted password on the backup FTP server.

2nd FTP remote folder: Granted folder on the backup FTP server.

2nd FTP passive Mode: Passive mode setting for the backup FTP server.

HTTP Settings

HTTP Port: Can be set to other than the default port 80. When the administrator changes the HTTP port of the **DCS-6620** (which has an IP address of **192.168.0.120**) from 80 to 8080, users must type **http://192.168.0.100:8080** in the Web browser bar.

Streaming Settings

UDP Video channel port: Can be set to other than the default port **5002** to correspond with the port opened by the firewall.

UDP Audio channel port: Can be set to other than the default port **5003** to correspond with the port opened by the firewall
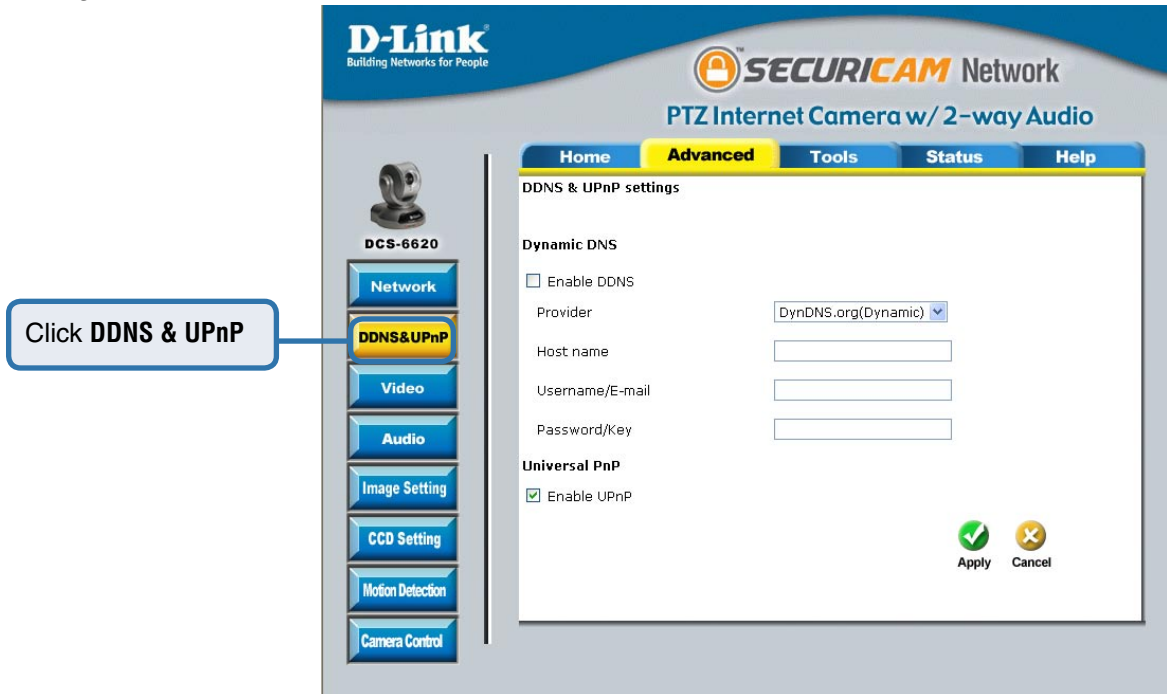
Click **Apply** to make changes effective

Apply

Invalid settings may cause the **DCS-6620** to not respond. Change the configuration settings only if necessary. Consult with your network administrator or your Internet Service Provider (ISP) if you do not have the necessary information. If you cannot connect to the camera, refer to page 130 for camera **reset** and **restore** factory settings procedures.

Configuration > Advanced > DDNS & UPnP

Click the DDNS & UPnP button from the Configuration screen to access DDNS & UPnP settings.

Click **DDNS & UPnP**

Dynamic DNS (DDNS)

Dynamic DNS (Domain Name Service) is a method of keeping a domain name linked to a changing (dynamic) IP address. With most Cable and DSL connections, you are assigned a dynamic IP address and that address is used only for the duration of that specific connection. With the **DCS-6620**, you can setup your DDNS service and the **DCS-6620** will automatically update your DDNS server every time it receives a different IP address. Depending on the service, this update may take a few hours.

Configuration > Advanced > DDNS & UPnP *(continued)*

Enable DDNS: Click to enable the DDNS function.

Provider: Select your Dynamic DNS provider from the pull down menu.

Host name: Enter the host name of the DDNS server.

Username/E-mail: Enter your username or e-mail used to connect to the DDNS server.

Password/Key: Enter your password or key used to connect to the DDNS server.

UPnP

UPnP is short for Universal Plug and Play, which is a networking architecture that provides compatibility among networking equipment, software, and peripherals. The **DCS-6620** is a UPnP enabled PTZ Internet Camera. If your operating system is UPnP enabled, the device will be easier to configure. If you do not want to use the UPnP functionality, it can be disabled by unselecting "**Enable UPnP**".

Click **Apply** to make changes effective

Configuration > Advanced > Video

Click the **Video** button from the Configuration screen to access video settings that affect how the video image appears.

Click **Video**

Color:	Select either for color or monochrome video display
Size:	Three options exist for the sizes of the video display. You can select between **176x120/176x144**, **352x240/352x288**, or **704x480/401x576**. The first value represents the PAL format of video and the second value represents the NTSC format. In **704x480/401x576** mode, the frame rate will be reduced to 15fps and increased to 30fps automatically when it is switched back to a lower image size.
Maximum frame rate:	This limits the maximal refresh frame rate, which can be combined with the "**Video quality control**" to optimize the bandwidth utilization and video quality. If the User wants to fix the bandwidth utilization regardless of the video quality, choose "**Fix bit rate**" and select the desired bandwidth.
Video codec type:	It can be either MJPEG or MPEG4. In MJPEG mode, the video frames are independent. MPEG4 consumes much less network bandwidth than MJPEG.

Configuration > Advanced > Video *(continued)*

Key frame interval: A large "**Key frame interval**" value can reduce the bit rate, but if there is a packet loss during transmission, it will cause image corruption. "**Fix bit rate**" and "**Key frame interval**" are only available in "**MPEG4**" mode. The video quality may be poor due to the sending of maximal frame rate within the limited bandwidth, which is when images are moving rapidly. Consequently, to ensure detailed video quality (quantization rate) regardless of the network, it will utilize more bandwidth to send the maximal frames when images change drastically.

Video quality control: To fix the bandwidth utilization regardless of the video quality, choose **Fix bit rate** and select the desired bandwidth. The video quality may be reduced in order to send maximum frames with limited bandwidth, especially when images change drastically. For higher video detail regardless of the bandwidth selection, select **Fix quality** and select a video quality level. This setting will utilize more bandwidth to send the maximum frames when images change drastically.

Flip: Vertically rotate the video.

Mirror: Horizontally rotate the video. Check options both if the Network Camera is installed upside down.

Improve efficiancy in the multi-user environment: Check this option to improve efficiency in the multi-user environment when running in the low bandwidth environment.

Click **Apply** to make changes effective

Apply

D-Link Systems, Inc.   45

Configuration > Advanced > Audio

Click the **Audio/Video** button from the Configuration screen to access video settings that affect how the video image appears.

Transmission Mode:	There are five options to select. For all the modes, only one client can talk to the server at the same time.
Full Duplex (Talk and listen Simultaneously):	In this mode, the User can talk to the server while listening sound from the server simultaneously.
Half Duplex (Talk or listen, not at the same time):	In this mode, the User can talk to the server or listen from the server, but not at the same time.
Simplex- Talk only:	In this mode, the User can only talk to the server.
Simplex- Listen only:	In this mode, the User can only listen from the server.
Disable:	In this mode, the audio is disabled in both directions.

Configuration > Advanced > Audio *(continued)*

Send audio from the active client to all the other clients:	In half duplex transmission mode, select the option to talk to the server and broadcast your voice to all the other clients.
Improve audio quality in low bandwidth environment:	If the Network Camera works in versatile or low network bandwidth environment, the User can check this option to improving audio quality by sacrificing some real-time synchronization.
Audio source:	Select source from external or built-in microphone.
Acoustic echo cancellation:	If the Network Camera works in versatile or low network bandwidth environment, the User can check this option to improving audio quality by sacrificing some real-time synchronization.
Bit rate:	There are three kinds of bit-rate for audio. 32Kbps and 24Kbps are suitable for both music and speech like audio while 8Kbps are suitable for only speech like audio.

Recommendations for setting video for the best performance:

"Best performance" means the image refresh rate should be the fastest possible and the video quality should be the best possible at the lowest network bandwidth possible. Three factors, **Maximum frame rate**, **Fix bit rate**, and **Fix quality** in the **Video Configuration** page, are related to performance.

Recording settings for real-time motion images

To achieve a real-time visual effect, the network bandwidth should be large enough to transmit 20 image frames per second (fps) or more. If you are on a broadband network over 1Mbps, you can set **Fix bit Rate** to 1000Kbps or 1200Kbps, or set **Fix quality** to achieve the maximum frames. The maximum frame rate is 25 in 50Hz system and 30 in 60Hz system. If your network bandwidth is more than 384Kbps, you can adjust **Fix bit rate** according to your bandwidth and set the maximum frame rate of 25 to 30.

If the images vary dramatically in your environment, you may slow down the maximum frame rate to 20 to decrease the transmitted data for better video quality. Since the human eye could not easily differentiate between 20 and 25 or 30 frames per second, the slower frame rate will not be noticed. If your network bandwidth is below 384 Kbps, you should adjust the bit rate according to your bandwidth and experiment to allow for the best frame rate that can be achieved. The faster frame rate in a slow network will blur the images. You may also try to choose **352x240/352x288** in size option for better images or **704x480/704x576** for larger image size. Because the network has burst constraints and everyone's environment is not the same, any poor connection will impair normal performance.

D-Link Systems, Inc.   47

Recommendations for setting video for the best performance *(continued)*:

Recording settings for clear identification for each image

To have the best video quality, you should set **Fix quality** to **detailed** or **excellent** and tune the **Maximum frame rate** to suit your network bandwidth. If you get some broken pictures in a slow network, you can set **TCP protocol** in **Connection type** for a more accurate transmission but the received images may have a lag. Note that any slow connection with multiple users will impair performance.

Recording settings to compromise between real-time and clear images

If you have a broadband network, set **Fix quality** to **Good** image quality, or higher, instead of setting the **Bit rate**. Otherwise, fix the bit rate according to your actual network speed and set the frame rate to 30. If the image quality is low, select a lower frame rate above 15. If the image quality is still not improved, select a lower bit rate.

Configuration > Advanced > Image Setting

Click **Image Setting**

Click the Image Setting button from the Configuration screen to access additional settings that affect how the video image appears.

Configuration > Advanced > Image Setting *(continued)*

Click the video button from the Configuration screen to access video settings that affect how the video image appears.

From this screen you can fine tune the video image.

Image **Brightness, Contrast, Saturation** and **Hue** are all adjusted in the same manner. For each video compensation you can set from among eleven levels ranged from -5 to +5.

You may press preview to fine-tune the image and see what effect the setting will have on the image. When the image is acceptable, press Save to store the image settings, or restore to recall the original settings. If settings are changed without saving, they will be used until the next system start-up.

Configuration > Advanced > CCD Setting

Click **CCD Setting**

Auto electronic shutter:	Once the shutter is selected as "Auto", the IRIS of the CCD will become fixed.
Low lux mode:	Checking this box will assist in seeing objects in poor illuminative environments.
Auto tracking white balance:	Apply when the **DCS-6620** is aiming outdoors. Adjusting the 9 levels of white levels can help the camera to capture video with correct colors.

D-Link Systems, Inc.   49

Configuration > Advanced > CCD Setting *(continued)*

White balance control: Apply when indoors to adjust video colors. The administrator can set different color temperatures (3200K~9600K) to get correct colors.

Low lux mode: Checking this box will assist in seeing objects in poor illuminative environments.

Auto switch to B/W in low lux mode: Checking this box along with "**Low lux mode**", will convert the video to black and white automatically, if the camera is aiming at a dark environment.

Enable BLC: This option is for back light compensation.

BLC sens level: This option allows objects to be seen more clearly. The BLC sens level is about sensitivity of BLC detection

BLC area selection: Clicking this option will bring up a new window that will allow you to select the areas to enable BLC.
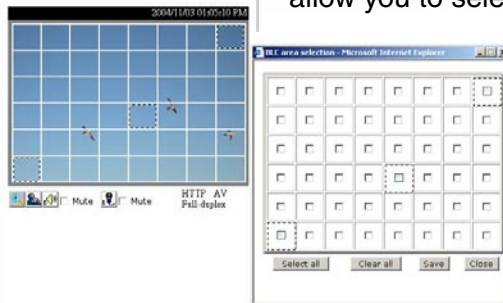
Configuration > Advanced > Motion Detection

Click the **Motion Detection** button from the **Configuration** screen to access settings that effect how the **DCS-6620** PTZ Internet Camera can serve as a security device by recording only when motion is detected.

Click **Motion Detection**

Configuration > Advanced >Motion Detection *(continued)*

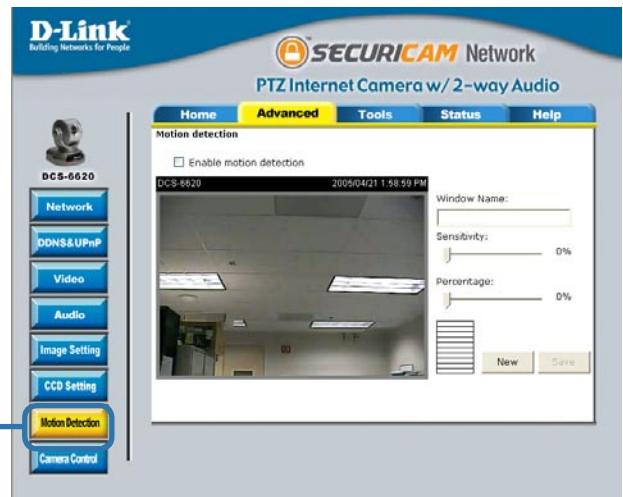|	
Enable motion detection:	Check this option to turn on the motion detection.
Window Name:	The text entered here will show at the top of the motion window.
Sensitivity:	Sets the measurable difference between two sequential images that would indicate motion.
Percentage:	Sets the amount of motion in the window being monitored that is required to initiate a motion detected alert. If this is set to 100%, this means that motion is detected within the whole window to trigger a snapshot.

Note: Setting a higher **sensitivity** and a lower **percentage** will make any motion more easily detected.

New:	Click to add a new window. A maximum of three motion windows can be opened simultaneously. Use your mouse to drag the window frame to resize or the title bar to move. Clicking on the 'x' at the upper right corner of the window will close the window.
Save:	Saves the related settings of that window.

To display motion detection, a graphic bar will rise or fall depending on the image variation.

A green bar means the image variation is under the monitoring level, and no motion detection alert is triggered. A red bar means the image variation is over the monitoring level and a motion detected alert is triggered. When the bar goes red, the window that the motion is detected in will also be outlined in red (note: remember that you can have up to 3 windows selected for motion detection). You can return to the **DCS-6620** Home Page and the monitored window will not be visible, but the red frame will show on the home page when motion is detected.

Configuration > Advanced >Camera Control

Click the **Camera Control** button from the **Configuration** screen to access settings that affect how the **DCS-6620** PTZ Internet Camera can pan and move to preset locations.

Click **Camera Control**
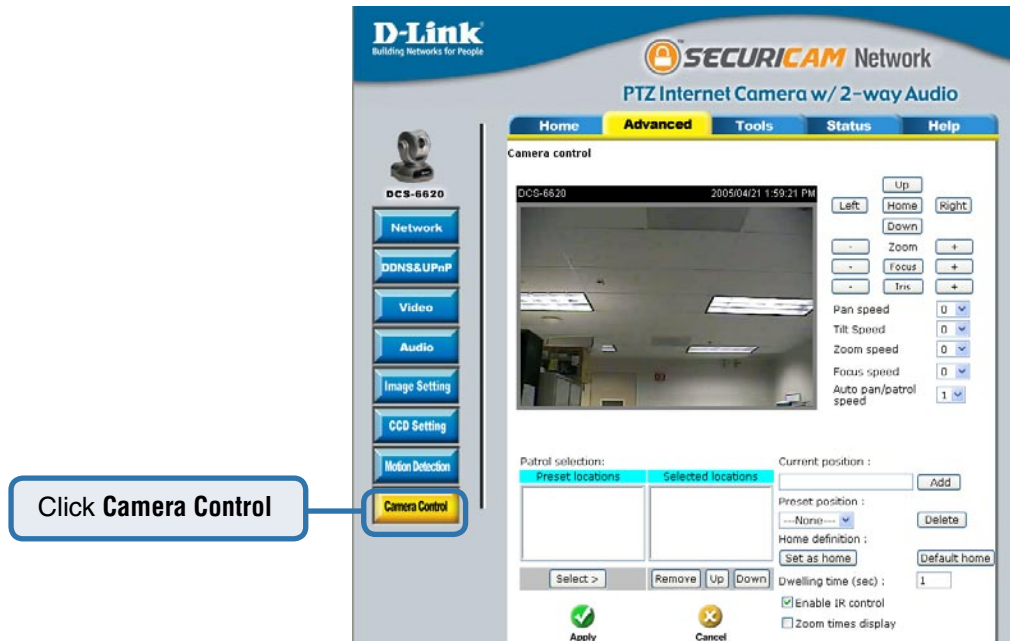
Left, Up, Right, Down, & Home:	"Home" aims the camera to the center, where as the other buttons aim the camera accordingly.
Zoom:	"-" controls the zoom widely function, "Zoom" automatically returns the lens to normal view, "+" controls the zoom telescopically function.
Focus:	"-" controls the focus near function, "Focus" automatically controls the focus normal function, and "+" controls the focus far function.
Iris:	"-" sets the aperture smaller, "Iris" automatically sets the aperture to normal, and "+" sets the aperture bigger.
Pan Speed:	Select the speed at which the camera will pan for a full cycle from the pull down menu. Select a value between -5 and +5, -5 being the slowest setting.
Tilt Speed:	Select the speed at which the camera will tilt for a full cycle from the pull down menu. Select a value between -5 and +5, -5 being the slowest setting.
Zoom Speed:	Select the speed at which the camera will zoom for a full cycle from the pull down menu. Select a value between -5 and +5, -5 being the slowest setting.
Auto Pan/Patrol Speed:	Select the speed at which the camera will pan during auto patrol. Select a value between 1 and 5, 1 being the slowest setting.

D-Link Systems, Inc.   52

## Configuration > Advanced >Camera Control *(continued)*

Current Position:	Enter a name for the position at which you would like to preset the **DCS-6620**. Click **Add** to add the new preset position to the **Preset Locations** list.
Preset Position:	Using the pull down menu, you can delete a preset position by selecting it and clicking **Delete**.
Dwelling Time:	Set the value of time that the camera will remain on each preset position before moving to the next. The dwelling time can be set between 1 and 255 seconds.
Enable IR Control:	Click this to allow the **DCS-6620** to be controlled by the included remote.
Zoom times display:	Checking this box allows the Administrator to display the zoom magnitude on the transmitted video.
Patrol Selection:	To use the Auto Patrol feature, select the desired preset positions from the **Preset Locations** list and add them to the **Selected Locations** list by clicking **Select**. You can then select the order in which the camera will patrol through the preset locations by selecting a location and clicking **UP** or **DN**. Click **Remove** to remove a location from the list.
Save:	The button is valid for "**Pan speed**", "**Tilt speed**", "**Tilt speed**", "**Auto pan/patrol speed**", "**Enable IR control**", "**Dwelling time**" and "**Patrol selection**". In other words, after changing these settings, and the "**Save**" button is not clicked, the new setting of the camera will not take effect.

Click **Apply** to make changes effective

Apply

Configuration > Tools > Admin

Click on the **Tools** tab to access 4 utility screens for controlling and administering the **DCS-6620**. The default screen in **Tools** is the **Admin** screen.
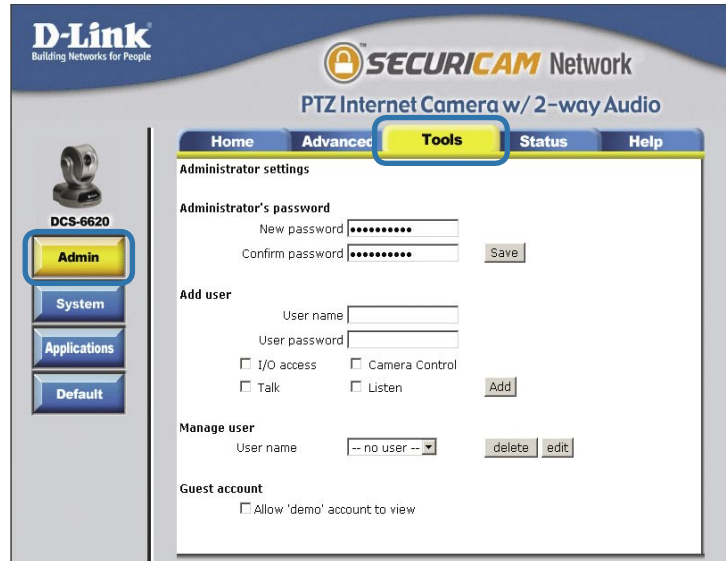
The **DCS-6620** is manufactured without any passwords by default. This allows the ability to access the **DCS-6620** (including the Configuration) by anyone as long as the IP address is known. It is recommended that you enter a password to restrict others from accessing your camera.

Type a password in the **New Password** field to enable protection, and then confirm the password in **Confirm Password** field.

This password is used to identify the administrator. You can add accounts with **User name** and **User Password** for other users in the **Add user** section.

You can provide up to twenty accounts for other users / visitors. Each account identifies the access right. This allows multiple visitors to share the same account of different levels. The options **Permission for I/O Control** (Digital In/Digital Out) and **Permission for PTZ Control** are provided for each account. Some users may need to be prohibited from controlling your attached security devices.

Configuration > Tools > Admin *(continued)*

Guest account: This option allows a user to connect to a camera with view -only privileges. User name is "**demo**". No password is required. This is useful for demonstrations and keeps guests separate from users with accounts.

Configuration > Tools > System

Click on the **System** button to access the System settings from the **Tools** menu.

Camera Name

Click **System**

Camera name: The text will display as the title of the window within the Windows operating system. This name will also appear on the log-in screen (once a password has been set).

Turn off the LED indicator: Check this option to shut off the LED at the base of the camera. This will prevent anyone from observing the operation of the PTZ Internet Camera.

Configuration > Tools > System *(continued)*

Keep current date and time: Click to save the current date and time of **DCS-6620**. An internal real-time clock maintains the date and time even when the power is off.

Sync with computer time: Synchronize the date and time of **DCS-6620** with the local computer. The date and time of the PC is displayed and updated in the **DCS-6620**.

Manual: Adjust the date and time according to what is entered by the administrator. Notice the format in the related field while typing.

Automatic: Synchronize with the NTP server over the Internet whenever the **DCS-6620** starts up. It will fail if the assigned timeserver cannot be reached.

NTP server: Assign the IP address or domain name of the timeserver. Leaving the text box blank will let **DCS-6620** connect to default time servers.

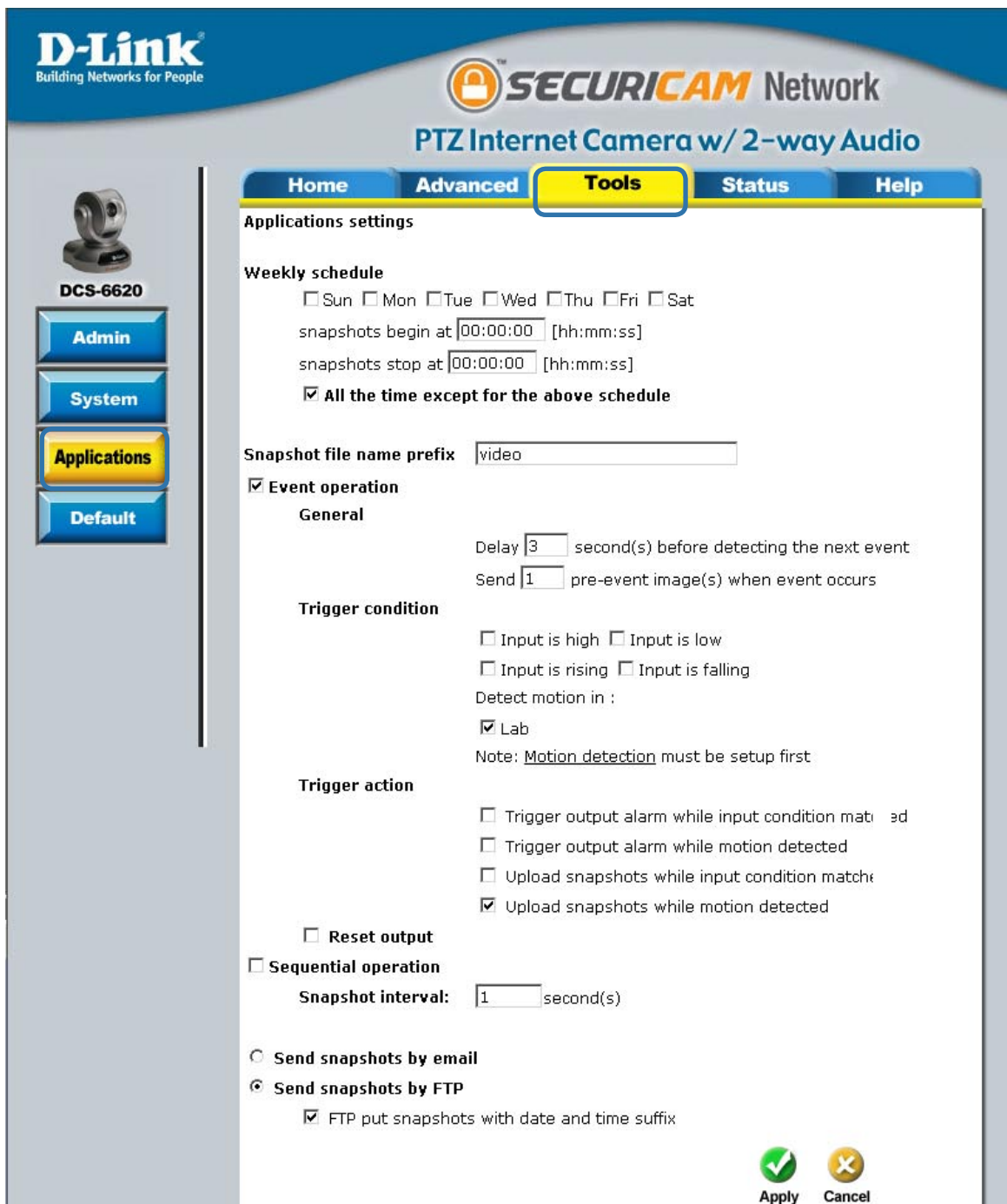**Time zone:** Used to adjust the hour of time servers for local settings.

Click **Apply** to make changes effective

Apply

Configuration > Tools > Applications

Click on the **Applications** button to access the Applications settings from the **Tools** menu.

Configuration > Tools > Applications *(continued)*

Weekly schedule

Sunday through Saturday:	Select the weekdays that should perform the following operations:
Snapshots begin at:	Set the time to start operations. Setting the **begin** time the same as the **stop** time will force the operations to run continuously.
Snapshots stop at:	Sets the time to stop the operations.
All of the time except for the above schedule:	If you do not wish to set a schedule, this box must be checked.

Event operation

Delay second(s) before detecting next event:	Sets the time delay before restarting to check the trigger condition when the current condition is triggered.
Take snapshots at second(s) after event:	After a snapshot is taken because of a trigger, another snapshot will be taken after the configured time in seconds.
Trigger condition:	There are 4 conditions related to the digital input and three windows for motion detection. There can be multiple selections. Select the appropriate digital input condition according to the characteristics of the external device. "High", "low" indicate external voltage input for level trigger, while "rising", "falling" is for edge triggers. There are three windows shown for the names you defined for motion detection. "Undefined" will show instead of the window title if motion detection is not setup yet. An active, named motion window must be checked for motion detection to be possible.
Reset output:	Check and save this option to reset the external device at the digital output back to the original state.

D-Link Systems, Inc.   58

Configuration > Tools > Applications *(continued)*

Trigger action:	There are four options for two actions regarding either trigger condition. They can have multiple selections. While choosing the trigger output alarm, the digital output will short both pins to connect the circuit of the attached external device; otherwise both pins will be open. While choosing to upload snapshots, the method can be either e-mail or FTP. The snapshot names will be "videopre. jpg", videotrg.jpg", and "videopos.jpg" respectively for the snapshots before event, right upon event, and after event. The date and time suffix may be added according to the option. Confirm the external mail or FTP server settings in network configuration.

Sequential Operation

Snapshot every second(s):	The **DCS-6620** will send snapshots at the specified interval to the external server according to the chosen method. Remember this operation is dependent to the weekly schedule.
Send snapshots by e-mail:	Any upload action specified in the options above will use the method chosen here. The captured snapshot named "video.jpg" will be attached in the e-mail with subject "Periodic snapshots."
Send snapshots by FTP:	The captured snapshots will upload to the external FTP server with the file name depending on the next option. It can be used to refresh the captured image stored in the external web server to build creative homepages.
FTP put snapshots with date and time suffix:	If the suffix is added, the captured date and time can be easily differentiated from the snapshot file name in either sequential or event operation. For instance, "video@20020102030405.jpg" means the JPEG image was captured at 4 minutes and 5 seconds after 3 o'clock, January 2nd, A.D. 2002. If the suffix is omitted, the file named "video.jpg" on the external FTP server will be refreshed at the specified interval.

Configuration > Tools > Default

Click **Apply** to make
changes effective

Click on the **Default** button to access the factory setting restoration and camera calibration options from the **Tools** menu.

Click **Default**

Click **Apply** on the screen to restore factory default settings. This means **any** changes made will be lost and the system will be reset to the initial status when shipped from the factory. After confirmation, the system will restart and require the **Installation Wizard** software program to locate the IP address of the **DCS-6620**.

Click **Apply** under **Calibrate** to restore them camera's factory lens position. This means that the camera will be recalibrated to the default center to position to recover from any external forces that may have affected it.

D-Link Systems, Inc.   60

Configuration > Status > Device Info

Click on the **Status** tab to access **Device Info** and a **Log** of **DCS-6620** system activity. The **Device Info** is the default screen when you click on the **Status** tab.

Click **Device Info**
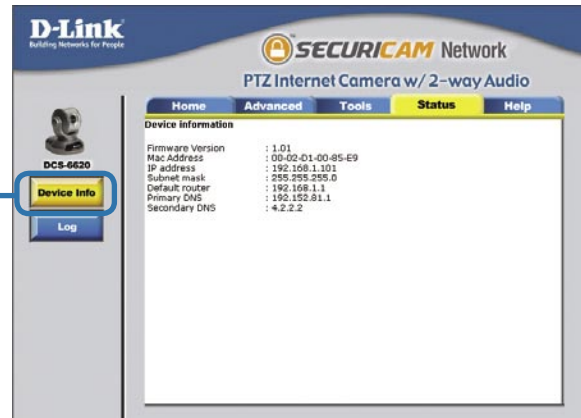
The Device Info screen lists the following important settings that are currently set for the **DCS-6620**

- •   Firmware Version number
- •   Mac Address
- •   IP Address
- •   Subnet Mask
- •   Default router address
- •   Primary DNS Address
- •   Secondary DNS Address

Configuration > Status > Log

Click on the **Log** button to access a system log of system activity from the **Status** menu. The content of the log file reveals useful information about the current configuration and connection logged after the **DCS-6620** boots up.

Click **Log**

Configuration > Help

Click on the **Help tab** to access descriptions of the particular function you need help with. The help screen is organized in the order of the tabs and then each menu item under that tab.
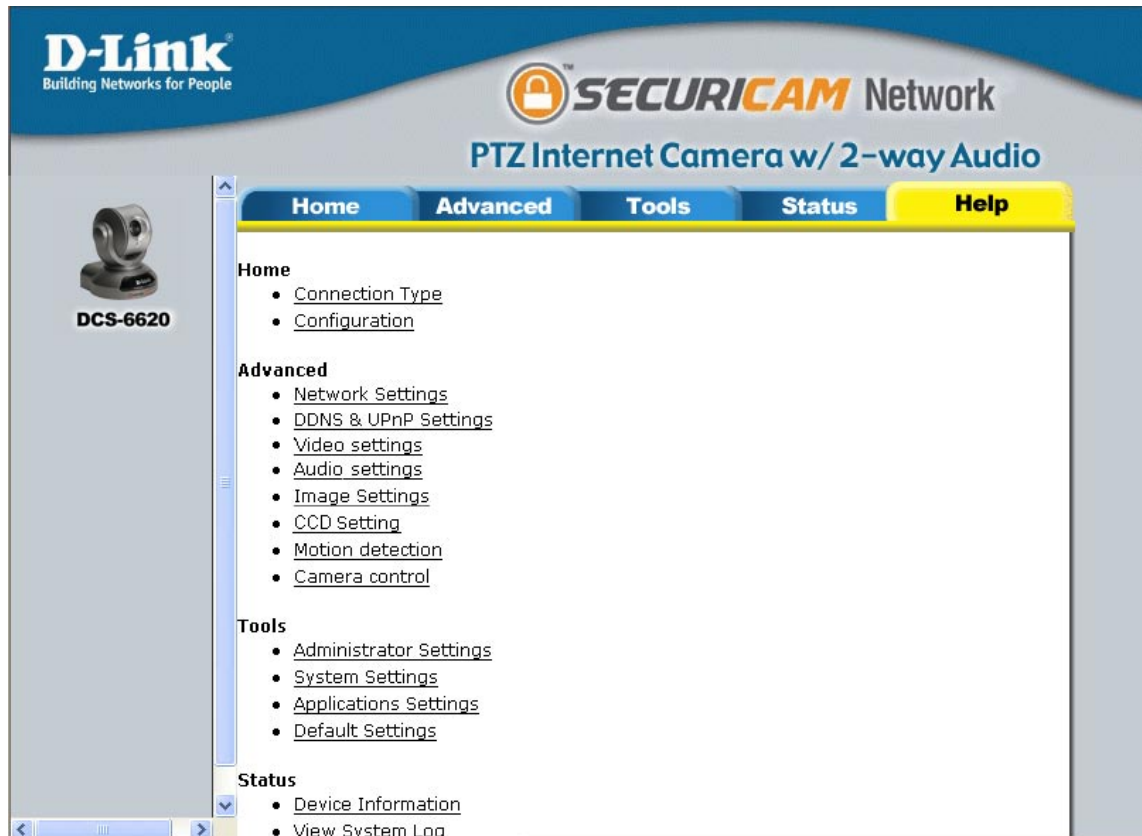
Record Snapshots to your FTP server with Motion Detection

Administrators can combine options on the application page to perform many useful security tasks. There are two trigger sources available: from an external sensor or with built-in motion detection. There are also two kinds of actions that can respond to these events that include uploading snapshots over the internet and driving attached devices. To upload the snapshots, users can choose either e-mail or FTP according to user's needs. Both e-mail and FTP use the network settings on the network page. This section describes how to enable motion detection and record snapshots to an FTP server.

If no external sensor is available, administrators can utilize the built-in motion detection to monitor any abnormal movement and then record the snapshots to an FTP or SMTP server.

Click the **Motion Detection** button under the **Advanced** tab from the **Configuration** screen to access settings that affect how the **DCS-6620** PTZ Internet Camera can serve as a security device by recording only when motion is detected.

Click **Motion Detection**

In this window, follow the steps below to ensure that motion detection is correctly enabled:

① Check "Enable motion detection."
② Click on "New" to have a new window to monitor video.
③ Enter in a window name.
④ Adjust the "Sensitivity" and "Percentage" levels according to the local environment. The highest sensitivity and lowest percentage provides the most sensitive setting.
⑤ Click on save to enable the activity display.

Next, click the **Network** button under the **Advanced** tab to set the FTP server settings for the **DCS-6620**.

Click **Network**
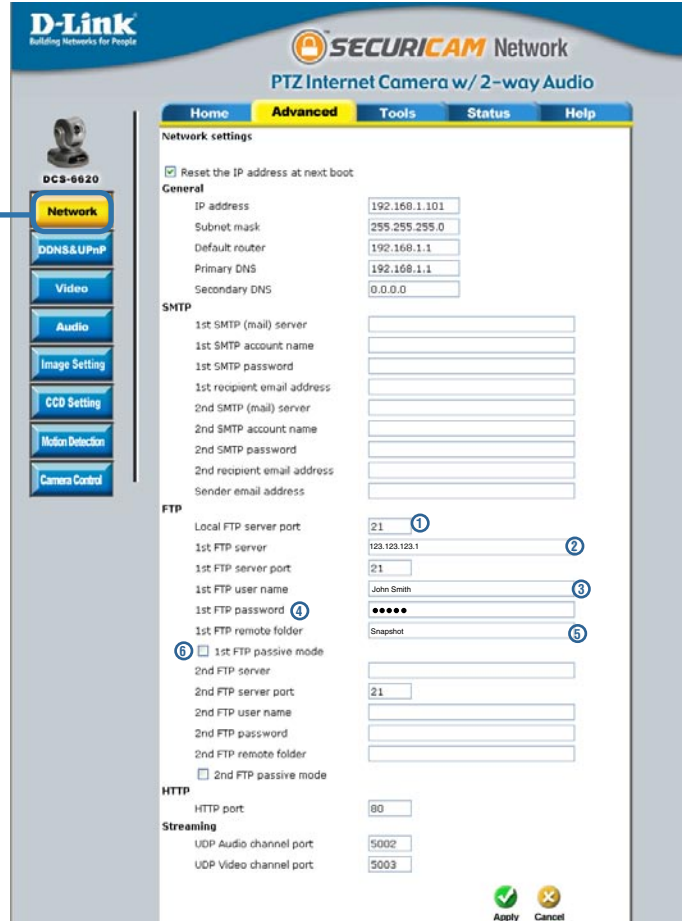
In this window, enter the settings for the FTP server you wish to record to. Optionally, you can enter settings for a secondary backup FTP server.

① **Local FTP server port:**   The Default port is 21. To connect to an FTP server, it is recommended that you do not change the port number unless your camera is behind a router. If your camera is behind a router, you can assign any port number to this field, but you must enable port forwarding on the router. Please refer to your router manual for more information on port forwarding.

② **1st FTP server:**   If you are going to upload snapshots to an FTP server, you will need to fill in the Domain name or IP address of your external FTP server such as ftp://dlink.com or ftp://123.123.123.1. (The server name and IP address will vary depending on the user.) The following user settings must be correctly configured for remote access.

③ **1st FTP user name:**   Specify the user name to access the external FTP server (ex. John Smith).

④ **1st FTP password:**   Specify the password to access the external FTP server (ex. 12345).

⑤ **1st FTP remote folder:**   Specify the destination folder in the external FTP server (ex. snapshot).

⑥ **Primary FTP passive mode:**   Passive mode will allow access to an external FTP server if your camera is behind a router protected by a firewall.

2nd FTP server: Specify the Domain name or IP address of your second external FTP server. This field is optional if you have already filled in the information for the first FTP server.

2nd FTP user name: Specify the user name to access your backup FTP server.

2nd FTP password: Specify the user password to your backup FTP server.

2nd FTP remote folder: Specify the destination folder on your external backup FTP server.

Secondary FTP passive mode: Passive mode will allow access to a second external FTP server if your camera is behind a router protected by a firewall.

For detailed information about each setting, please refer to **Configuration > Advanced > Network** in the section titled "Using the **DCS-6620** With an Internet Browser" (page 39). Click the apply button when finished.

Next, click the **Applications** button under the **Tools** tab to set the application settings for the **DCS-6620**.

Click **Applications**
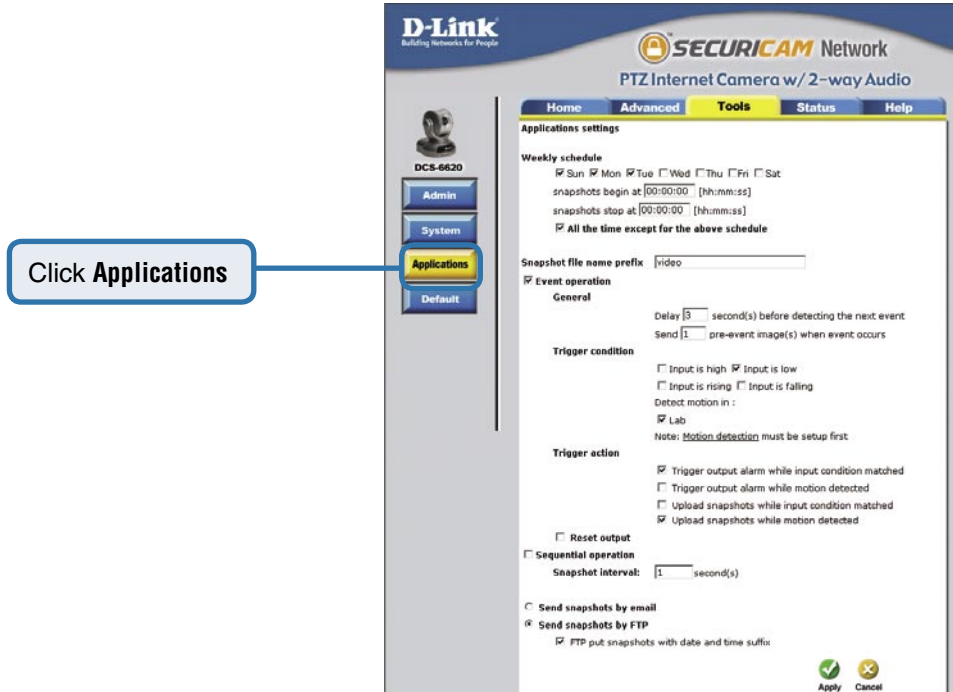
In this window, follow the steps below to set the application settings for snapshots to be recorded to an FTP site:

    ①   Select the weekdays you would like to record and enter the "Snapshots begin" time and "Snapshots end" time for the weekly schedule, or select "All the time except for the above schedule" if you want to enable full time snapshot recording.

    ②   Check "Event operation."

    ③   Set the delay "before detecting next event" to avoid continuous false alarms following the original event.

    ④   Set the delay to "take snapshots after event" to capture the direction of the moving object.

    ⑤   Check the window name (in this case Lab).

    ⑥   Check "Upload snapshots while motion detected."

    ⑦   Click "Send snapshots by FTP" and check "FTP put snapshots with date and time suffix"

    ⑧   Click the "Apply" button to save the settings.

Click the apply button when finished. You are now able to record snapshots to your FTP server when motion detection is triggered.

Using IP surveillance Software

Installing the IP surveillance Software

Before you begin installing this application software, the hardware system requirements must be checked first. The minimum system requirements recommended for this application are as follows:

Browser: Internet Explorer 5.x or above
CPU: Intel Pentium 4 2.4GHz or above
SDRAM: 128MB SDRAM
Hard Disk: 40GB
Display Chip: nVidia, TNT, TNT2, GeForce series with 64MB Display memory
              ATI Radeon series with 128MB Display memory

Put the installation disk into your CD-ROM, and it will run automatically. If it does not, open "My Computer" and double click on the CD-ROM icon. Next the installation menu will appear. Click "Install Software". The following window will appear.

Click **IP surveillance**

Installing the IP surveillance Software *(continued)*

Click **Next**
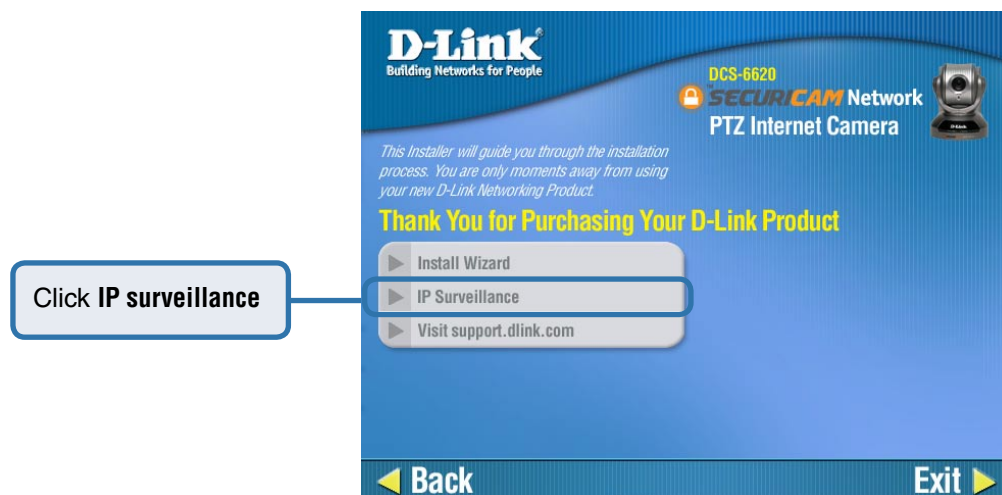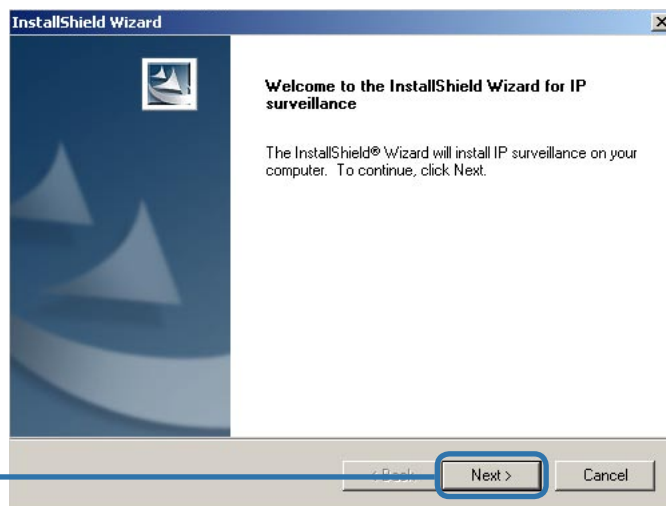
The "License Agreement" window below will appear. Please read the following license agreement carefully. Click "Yes" to accept this agreement and proceed with the installation.

Click **Yes**
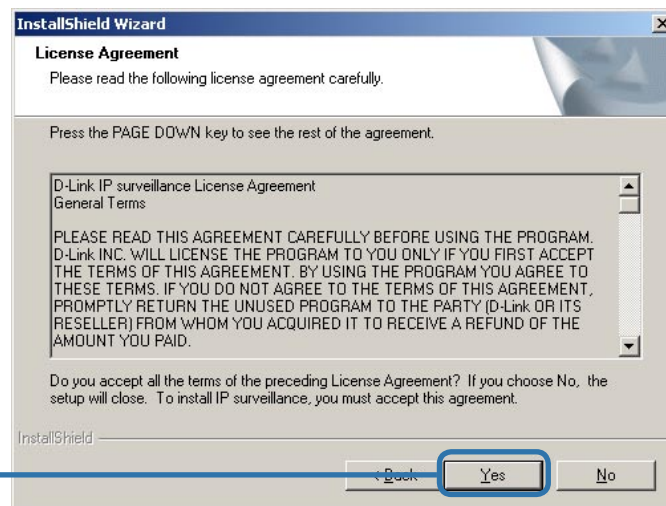
Installing the IP surveillance Software *(continued)*

Next, the "User information" window below will appear. This window will prompt you to enter the user name and company name. Enter your user name and company name and then click "Next" to continue.
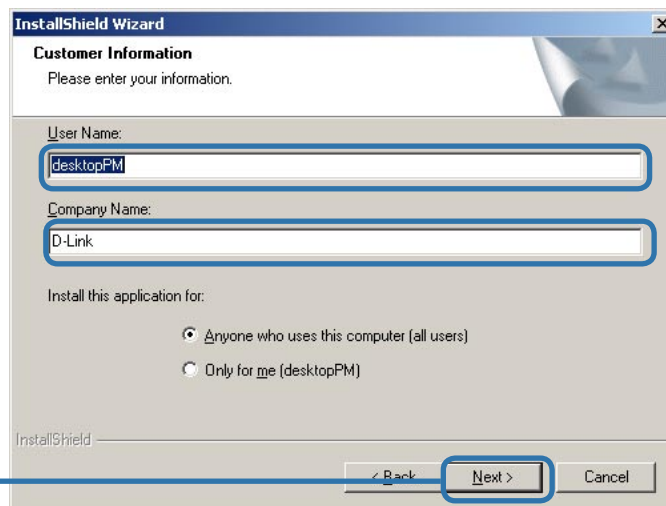
Click **Next**

You must setup the administrator's password in order to proceed. Input and confirm your password in the window shown in below. Click "Next" to continue.
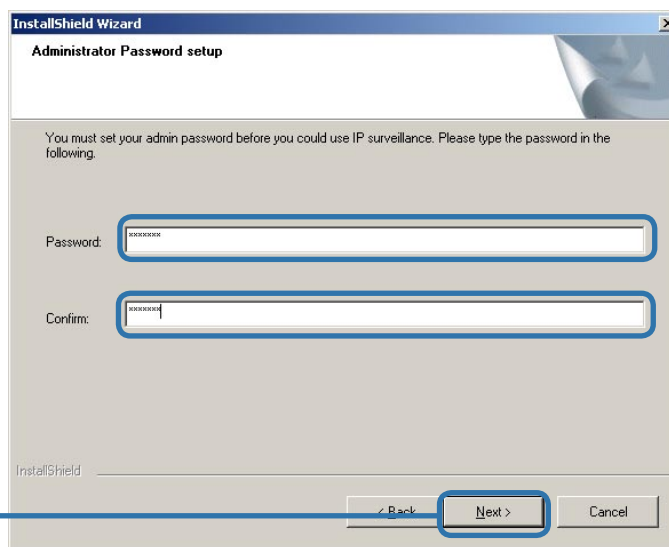
Click **Next**

Installing the IP surveillance Software *(continued)*

Select the installation directory for this application software and click "Next", which is shown in the figure below. You can change the installation directory by clicking "Browse…"
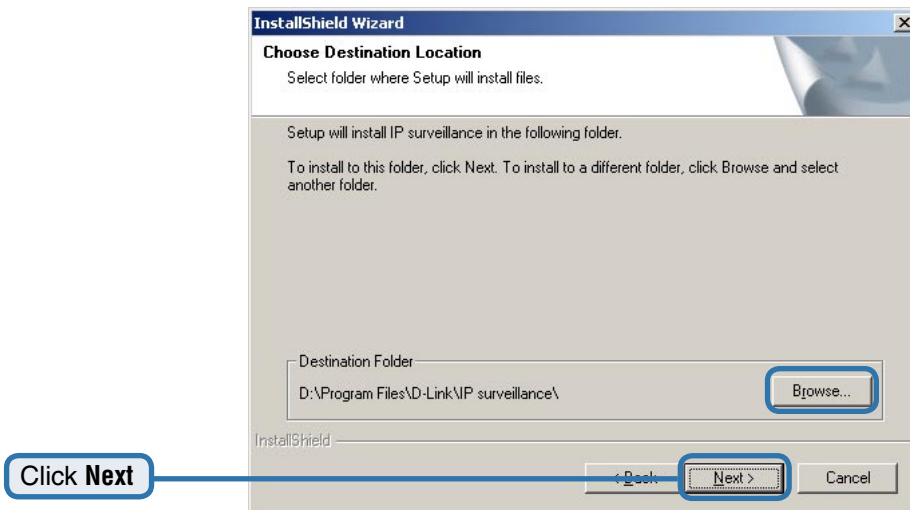
Click **Next**

Select a program folder to install the application software and then click "Next", which is shown in the figure below.
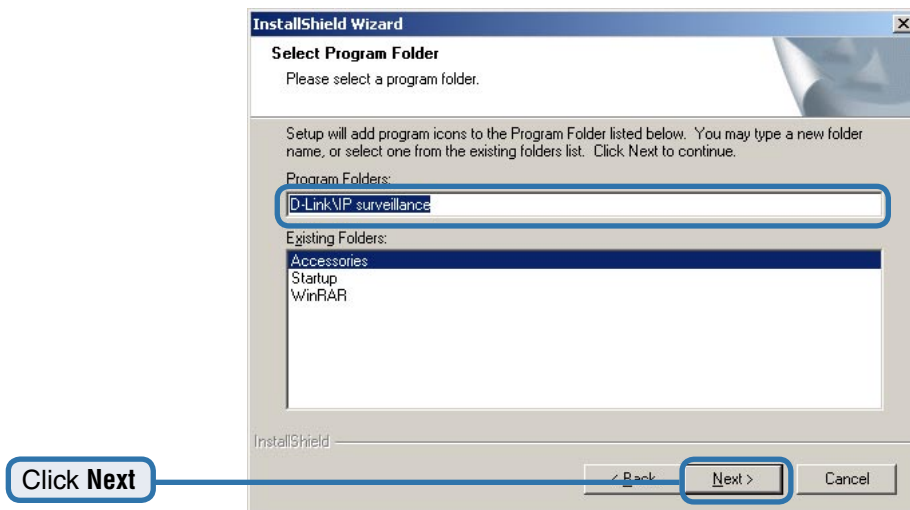
Click **Next**

Installing the IP surveillance Software *(continued)*

After checking all the setup information in the window shown below, click "Next" to start the installation of the application software.

Click **Next**
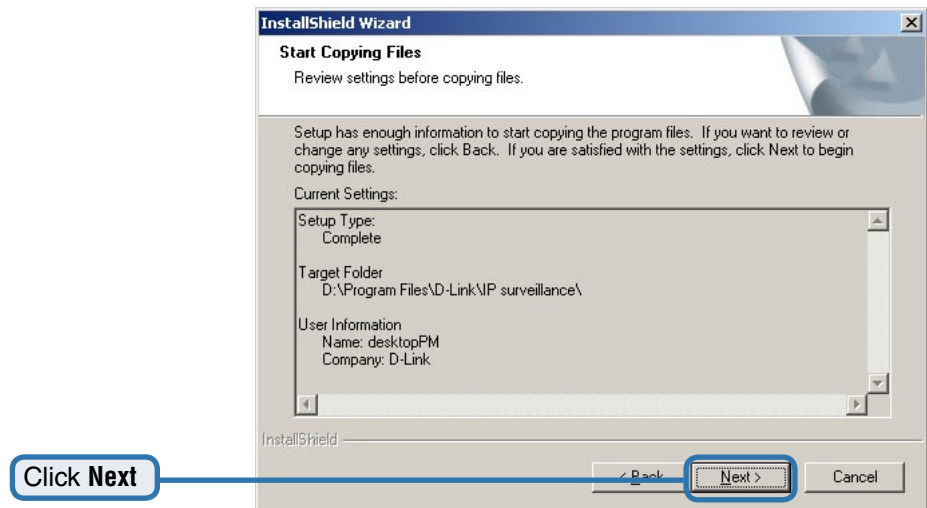
Click "Finish", in the window shown below, to finish installation. The program is now installed on your computer.

Click **Finish**
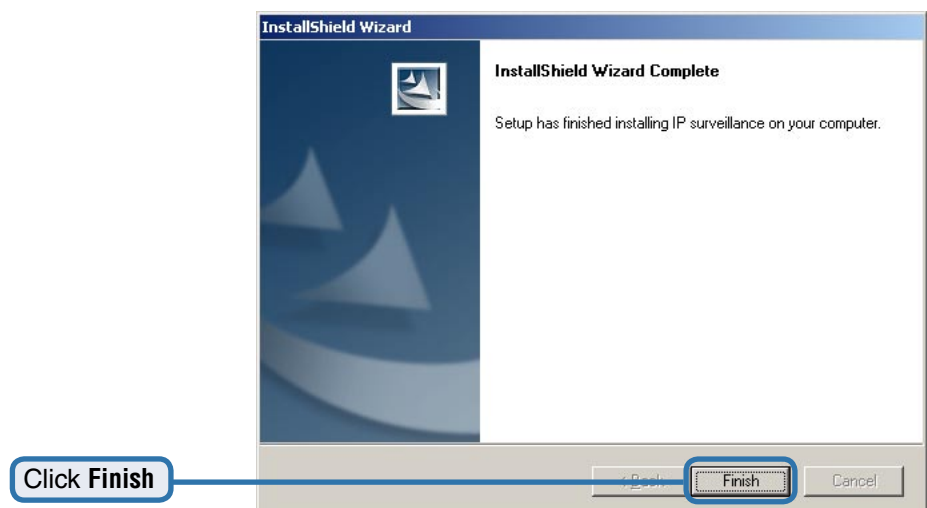
Launcher

Launcher is a controller program that allows users to invoke Monitor or Playback quickly.

System Tray Icon

The Launcher icon reflects current state of IP surveillance. The [icon] icon in the system tray signifies that the IP surveillance Software is currently active on the system.

Security for Launcher

When Launcher starts, there is no need to undergo a username/password check. But when users want to click on the icon of Launcher on system tray, Launcher will popup a username/ password dialog the first time for menu popup or when Launcher is locked. If a user fails to pass the authentication check, no menu will show up. If a user fails 3 consecutive tries he/she will be locked out for a period of 60 seconds.

After passing authentication, users will be able to use all the functions. If users want to leave the computer, it is possible to lock the Launcher for security reason. When Launcher is locked, the user will need to pass authentication again to see the popup menu.

Below is the login window:

Launcher *(continued)*

When Launcher is locked, the unlock window will appear, prompting for the user password in order to unlock.
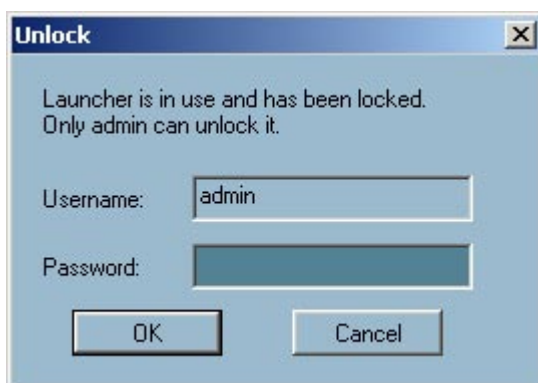
The input area of the dialog will be grayed (disabled) for 60 seconds after 3 consecutive failures.

User Interface

Below is the user interface for Launcher:
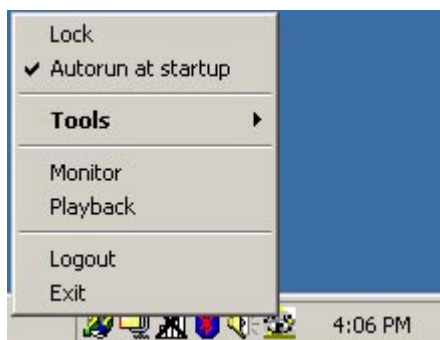
The main user interface for Launcher is an icon on system tray, and the popup menu appears when the user clicks on the icon. The menu items are listed below:

- **Lock Launcher**
  When this item is selected, Launcher will enter lock mode. In lock mode, whenever users want to invoke the menu, a dialog asking for ID and password will appear. The interface for this dialog is covered in the previous section.

Launcher *(continued)*

- **Tools**
  Contains many utilities. Currently only change password is implemented. The change password dialog looks like this:

- **Autorun at Startup**
  Users can select whether or not to autorun Launcher when Window boots up.

- **Monitor**
  Starts up the Monitor program. If the Monitor program is already running, clicking this button will re-open the Monitor window.

- **Playback**
  Starts up the Playback program. If the Playback program is already running, clicking this button will re-open the Playback window.

- **Logout**
  Logs out user from IP surveillance. After logging out, if the user wants to return to the menu, and clicks the Launcher icon, the authentication box will appear prompting for username and password again.

- **Exit**
  Exits Launcher. If users choose this option, Launcher will show a message box prompting to confirm if users really want to exit, and warn users that exiting Launcher will also close Monitor and Playback.

Monitor Program

Features of the Monitor Tool

Traditional Surveillance Features:

- Real-time monitoring
- Pan and Tilt control
- Recording

Special Features:

The digital surveillance system supports not only the features listed above, but also the following features, which make the system more powerful and convenient.

- Simultaneous real-time monitoring and recording audio and
- High quality video up to full screen display
- High compression ratio
- Maximum of 16 cameras with different monitor layouts
- Smart playback
- Triggered event browsing with 9 preview video windows
- Fast database searching
- Auto alarm in multiple modes
- Account-password protection
- Multiple recording modes: Event-driven, Scheduled, and manual recording for each camera.
- Intelligent database index modes: indexing by sharp time tag, time interval, and motion detected events.
- Just-in-time snapshot
- AVI export
- Motion detection with 3 alert windows for each camera

Monitor Program *(continued)*

Application Layout and Functionalities

This section demonstrates a global view of the monitor tool, shown below. The components of the monitor tool will be introduced in detail in the following sections.

Misc. Functions

Channel Area

Layout Area

Hard Disk Status

Common Controls

PTZ, DI/DO and Alert Message

Video Area

Display Frame
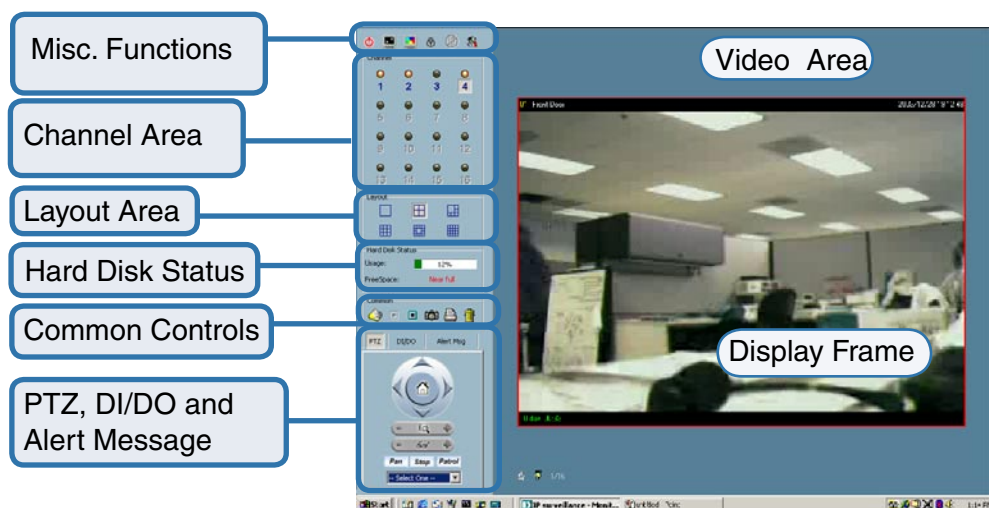
There are several parts in the monitor tool:

■ **Misc. functions:**
These include application exit, minimization, full screen monitoring, lock, stop alert, and configuration menu for camera configurations, global settings, scheduler settings and the user information of this application software. The tips about these operations are provided on-line when you move the mouse cursor over them.

■ **Channel area**
This area displays the status of each video channel. The information indicates the status of connection, recording, selection, and alert-event trigger.

■ **Video area**
In this area, you can see the video of the selected channel in the display frame. The number of the display frames in the video area depends on the layout chosen by the user. You can also use convenient controls to alter the video display.

Monitor Program *(continued)*

■ **Layout area**
You can change the monitoring layout in this area. There are six kinds of layouts: 1, 4, 6, 9, 13, or 16 video display frames in the video area.

■ **Hard disk status**
In this area, you can get the status of the hard disk in which the video database resides in. The status reminds you to arrange the available storage size of the recorded video database.

■ **Common control area**
This area includes volume control, manual recording, video printing, snapshot, and trash can to remove video from display frames.

■ **PTZ control**
This tool allows you to pan, tilt, optical and digital zoom, auto patrol, and move the camera to a preset position.

■ **DI/DO control**
This tool receives the digital input signal and sends digital output signal to the remote Video Server/ PTZ Internet Camera series product associated with the dedicated video channel.

■ **Alert Message**
This tool will display the latest alert messages received by the remote Video Server / PTZ Internet Camera series product associated with the selected video channel.

Logging In

You need to login the first time when you start the Launcher. The authentication window is shown below. If you do not have an account, the monitor tool will not execute. You must log in as admin (administrator) to use this application. Enter the password for the administrator.
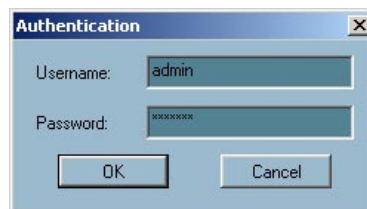
Monitor Program *(continued)*

The Admin Privilege

In the monitor tool system, the admin privilege has the right to access the **DCS-6620** PTZ Internet Camera through this application software and change the local settings as well. But the admin privilege is not the same as the admin privilege as the PTZ Internet Camera. You can change the settings of each selected PTZ Internet Camera in the remote site only if you have the admin privilege of the PTZ Internet Camera.

If you have the admin privilege, you have the right to do the following items:

- Run the configuration tool
- Change the recording schedule
- Change the local settings

Again, if you need to change the settings of the **DCS-6620**, you must have the password of the admin user.

Camera Configurations

When you log in for the first time, you should configure this application software to connect the **DCS-6620** in "Configuration Menu > Camera Configurations", shown in the figure below. You will need the admin (administrator) privilege in order to run the configuration.
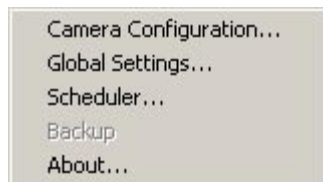
Once you click "**Configuration Menu > Camera Configurations**" for setting each camera, all recording processes will be stopped with a warning window popped up in advance to keep you informed.

Monitor Program *(continued)*

The Layout of the Configuration

This section discusses the local settings for the connection and the functional configuration of each camera. If you are interested in the remote settings for each camera, you can refer to the user's manual that accompanied the hardware.

NOTE: For the location of the selected camera, you should check that the location string does not include prohibited characters such as ""\ / : * ? " < > |". Otherwise, the location string will cause this application program to malfunction. You can change the location string in "Video->Text on Video" of the remote setting webpage.

Local Settings

Remote Settings Webpage

Camera Selections
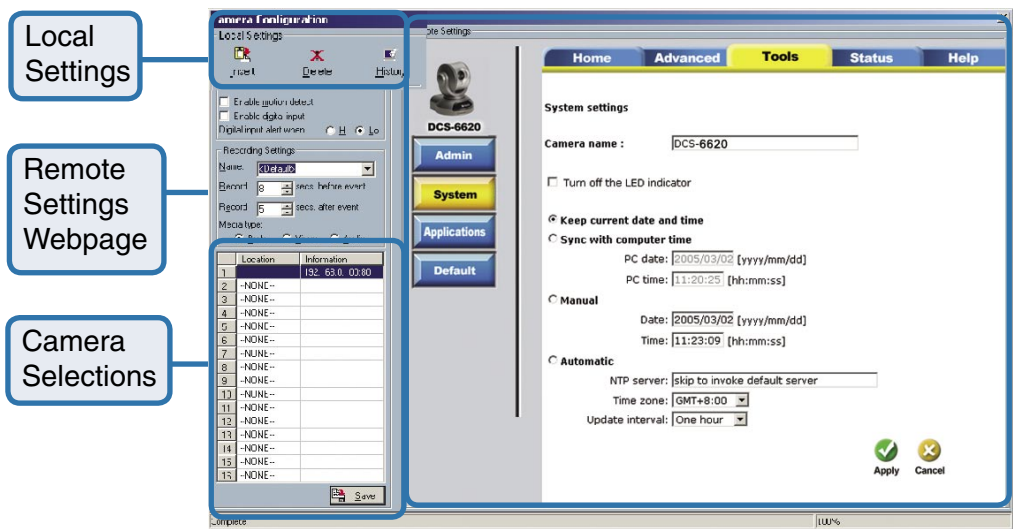
The Layout of the Configuration

In the local settings, shown below, three main functionalities are provided:

Insert new camera to the list

History of all cameras in the list

Delete camera from the list
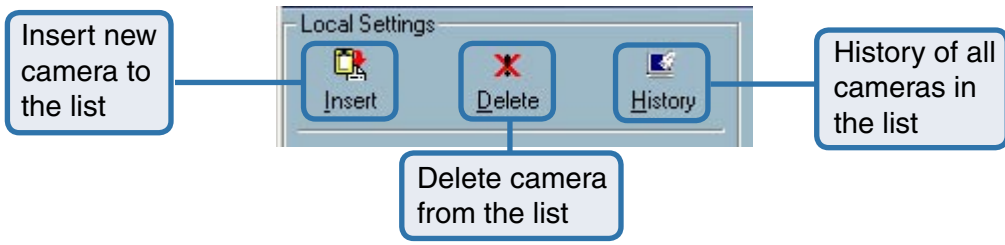
Monitor Program *(continued)*

Insert – To insert a remote PTZ Internet Camera to the camera list. Click the "Insert" button, an "Insert New Channel" dialog will popup, as shown below. Specify the IP address, port, and admin password of the PTZ Internet Camera, click the "Ok" button to close the dialog. Then the system will try to connect to the selected camera. If the connection succeeds, the camera will be inserted to the camera selection list.

Specify the IP address, port, and admin password of the camera.

Click **Ok**

Once added, you will see the IP address of the camera and also the port that is opened on the camera (port 80 in this example), so that the images can be viewed from the browser

The selected camera has been added to the selection list.
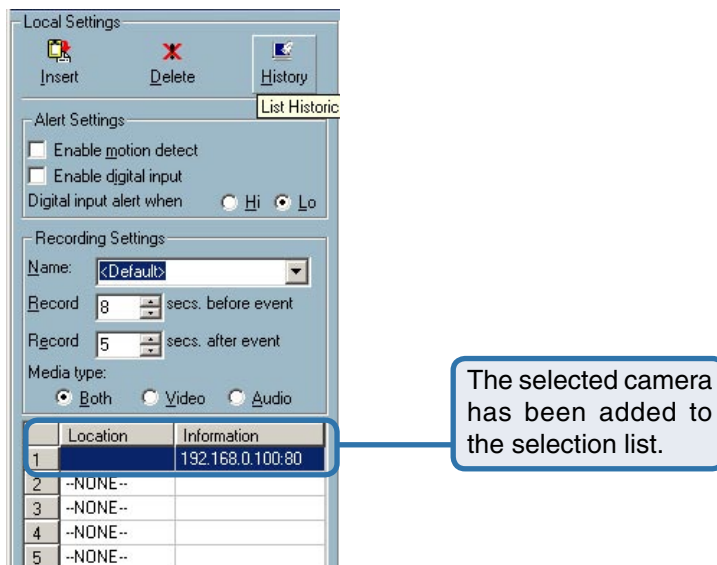
Monitor Program *(continued)*

Delete – Removes the selected PTZ Internet Camera from the camera list. Highlight the camera that you want to delete from the list and click on the "Delete" button.

The selected camera will be deleted.
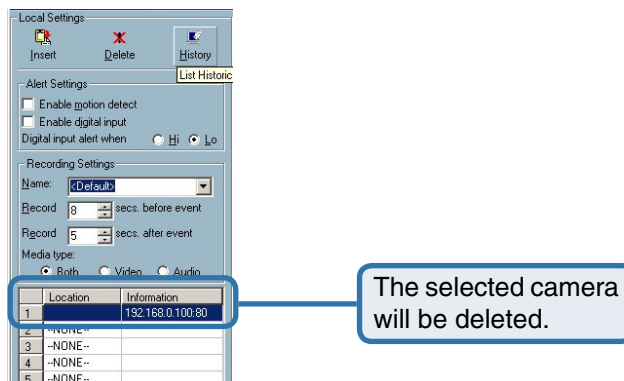
History – Clicking the "History" button will popup a historical camera list, which lists the latest 16 cameras you inserted into the camera list. 16 is the default number; you can change the number of the latest installed cameras you want to keep in the registry. Clicking on one camera in the history list will insert the camera into the camera list. The historical camera list is shown below.

Historical camera list
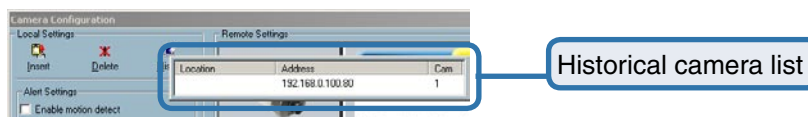
Alert and Recording Settings

Alert Settings

Recording Settings
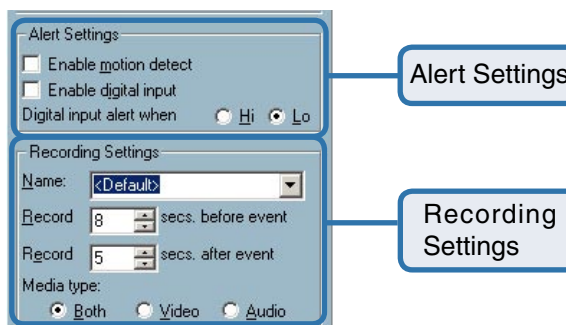
Monitor Program *(continued)*

Alert Settings:

Specific alert actions can be performed by setting the options in this window.

- ■ **Enable motion detect**
  This will trigger an alert sound that has been specified in the section titled "Global Settings \ Alert Sound." Check this option for this video channel to enable audio alert.

- ■ **Enable digital input**
  This function is similar with "Enable Motion Detect" mentioned above. Once this option has been checked, a digital input device will be able to trigger an alert sound and recording.

- ■ **Digital input alert**
  This application software provides options for you to define the triggering criteria for the digital input of the **DCS-6620**. The alert of the digital input can be defined as high-level triggered or low-level triggered.

Recording Settings:

- ■ **Record # secs. before event**
  Once the automatic video recording has been activated, you can apply this setting to regulate the time for recording the triggered event. Recording will start from the limited time before the alert event has been invoked.

- ■ **Record # secs. after event**
  Recording will last for the limited time after the alert event has been invoked.

- ■ **Media Type**
  You can specify which media type you want to record, Video, Audio, or both.

Monitor Program *(continued)*

Changing the Camera Order in the List

You can apply "drag and drop" in the grid area of the camera list to change the sequence of the connected Internet Cameras, which is shown below. This will enable you to rearrange the camera order of your choice. Once the camera is moved to a specified location, the proceeding cameras will then move 1 position up or 1 position down depending on which direction the selected camera was moved.

Step 1:

Step 2:

Press the left mouse button at the gray index field.

Move the mouse to your new selected location and release the mouse button. Then Video 1 will be moved (to the 12th row in this example).

Once you click the "Save" button in the left-bottom corner of this window, the changes for all camera configurations will be saved and will validate immediately in the IP surveillance.

NOTE: If you change the remote settings of the Internet cameras in the right webpage of this window, you need to apply the "**SAVE**" button in each corresponding page in order to save the settings to the cameras. There are different "**SAVE**" buttons for changing the settings of the local IP surveillance system and the remote Video Server / PTZ Internet Camera series product respectively.

Monitor Program *(continued)*

Global Settings

After completing the connection for each remote PTZ Internet Camera, we need to configure some global settings for all the cameras. These include the video database directory, the usage of the Hard disk, and options for video display.
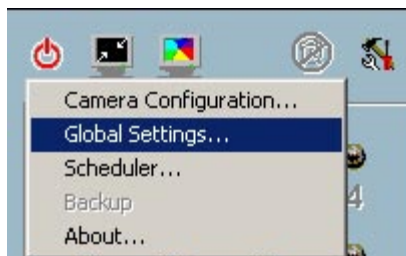
You can activate the global settings window from "Configuration Menu > Global Settings..." shown above.

> All recording processes will be stopped when activating the global settings window, indicated by a warning window popped up in advance to keep you informed.
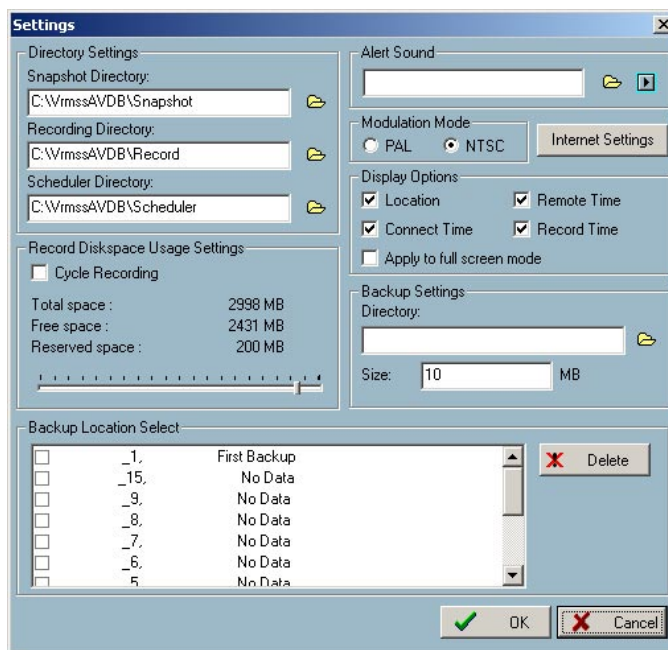
Monitor Program *(continued)*

Directory Settings:

- **Snapshot directory**
  The directory for storing the snapshot in *.bmp format from video channels of the monitor tool and the playback tool, which is shown on page 84.

- **Recording directory**
  The directory for storing the recorded video data from remote video

- **Scheduler directory**
  The directory for storing the default and user-customized plots for the recording schedule of each channel.

Record Diskspace Usage Settings:

- **Cycle Recording**
  When you turn this setting on, the video database system of this application software will overwrite the oldest data if the usage of the database has reached your limitation. That means it will record video data in a loop. If this setting is unchecked, a warning message will pop up when it is approaching the storage space limit. All recording will stop when the limit of the hard disk usage is reached.

- **Reserved space**
  Indicate the size of the hard disk that will be reserved for other Windows applications (at least 15%). The remainder of the hard disk space will be available for recording. The more space you have reserved, the less there will be available for your camera(s) to record to. As you move the bar to the right, more space will be available for your camera(s) and conversely, less space will be available for your other applications. If the recording data exceeds this limitation, the new video data will replace the oldest data (on a First In First Out (FIFO) basis) when "Cycle Recording" has been checked.

- **Alert Sound**
  You can load a custom *.wav file for the sound of alert triggering. You can also select from the sound file in Windows.

D-Link Systems, Inc.   85

Monitor Program *(continued)*

■   **Modulation Mode**
You must select the input signal format (NTSC or PAL) for displaying the original resolution of video stream from **DCS-6620**. If you are not sure which format to select, then leave the input signal format at it's default (NTSC).

NOTE: You need to select the input signal format according to the camera type or CCD module type that is connected to the **DCS-6620**.

Display Options:

In the video displaying frame of each channel, there are two status bars. The upper bar contains "Camera location" and "time of the remote site." The lower bar contains "Connection time" and "Recording time." All of them, shown in the figure below, can be enabled or disabled here individually for the status indication. Apply to full screen mode can also be turned on here. Once it has been checked, the status bar in each channel showing date, location, connection, and recording time will be shown in both display frame mode and full screen mode.

Location (channel number + camera name)   Remote Time

Connection Time (Day:Hour:Min)   Recording Time (Day:Hour:Min)
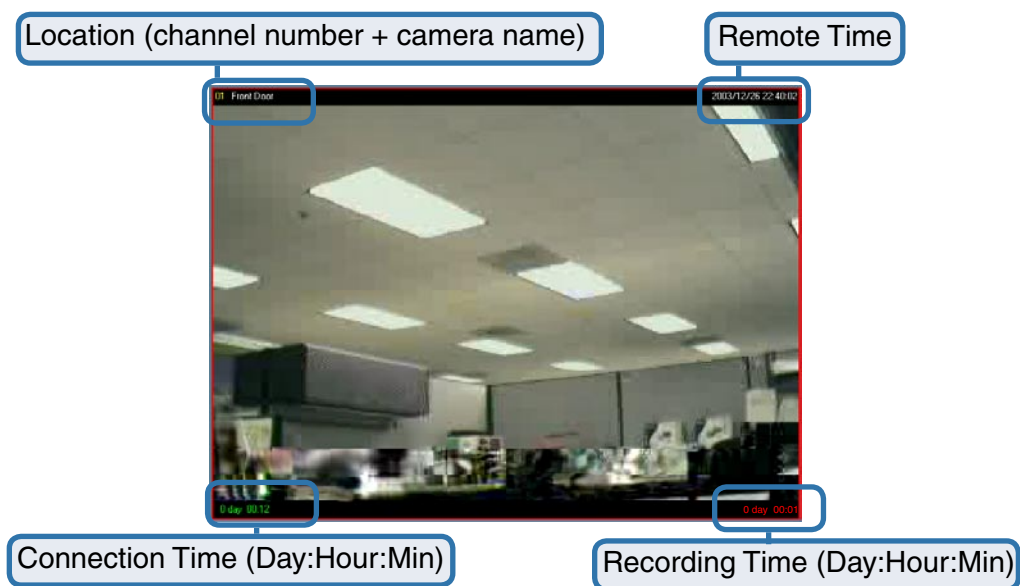
Monitor Program *(continued)*

Backup Settings:

Using Backup Settings in the global settings window, you can backup recorded data from selected cameras to a specified location.

- ■ **Directory**
  This is the directory where backup data will be saved. You can select the location by clicking on the folder icon.

- ■ **Size**
  You can set the size limit of the data that will be backed up. The default size limit is 10MB. The maximum value for this setting depends on the amount of Free Space available on your hard drive. This value can be found under the "Record Disk space Usage Settings" section of the global settings window.

- ■ **Backup Location Select**
  Select the locations to backup by clicking the checkbox next to the location/camera name. To delete a location, select the location and click the "Delete" button to the right of the Backup Location Select window.

After you have set your backup settings in the global settings window, you can backup recorded data by clicking "Backup" in the Configuration Menu, as seen below:

D-Link Systems, Inc.   87

Monitor Program *(continued)*

Using the Monitor Program

This section depicts, in detail, how to manipulate the monitor tool.

Connection of the DCS-6620

Channel:
Once you have the privilege to connect to the **DCS-6620**, the cameras will automatically appear in the video area in the order they are connected. Once you have set up the camera in the video channel, the color of the channel number will turn blue, indicating that the camera has been added to IP surveillance. If you do not set up the camera for the video channel, the color of the channel number will be gray.

There is a unique light signal associated with each channel number. It indicates the status of the dedicated video channel, which is depicted as follows:

- **Off**
  The video channel is not connected with any **DCS-6620** yet.

- **Green**
  The green light means the **DCS-6620** associated with this channel number is connected, and the video is monitored in the video area.

- **Red**
  The red light indicates the video from this channel is recording into the video database. In this mode, you don't have to drag and drop the channel to the video area. This means that this application software supports real-time recording with and without real-time monitoring for the dedicated video channel.

- **Blink**
  With the motion detection mechanism set in the **DCS-6620**, the light of the corresponding channel will blink once the motion event is triggered.

Monitor Program *(continued)*

Selected Channel

Recording

Connected and monitoring

Not configured channel

Configured but not connected (no video)
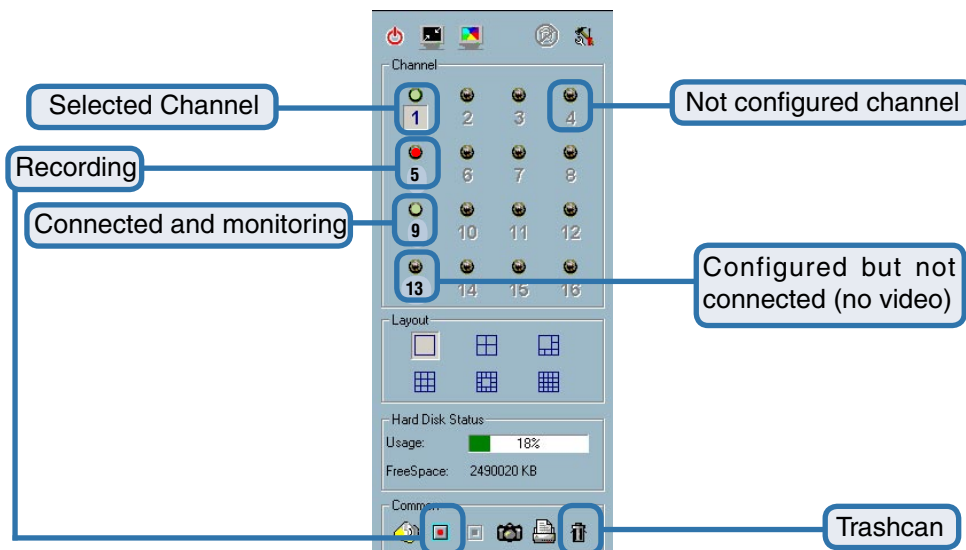
Trashcan

If you do not want to monitor one video, you can drag and drop the video (in the video area) to the trashcan in the common control area of the monitor program. The following section will demonstrate the procedures for "drag and drop" step-by-step.

Show the video of a specified channel

This section depicts the method of how to show the video of a specific channel in a display window.

Step 1: Move the mouse cursor to the display window shown below.

Mouse cursor

Location hint

Video 1

Display window

Monitor Program *(continued)*

Step 2: Press and hold the left mouse button, and then move the cursor to a display window in the video area, which is shown below. Note that the cursor will change according to the area in order to indicate whether the area is droppable or not.
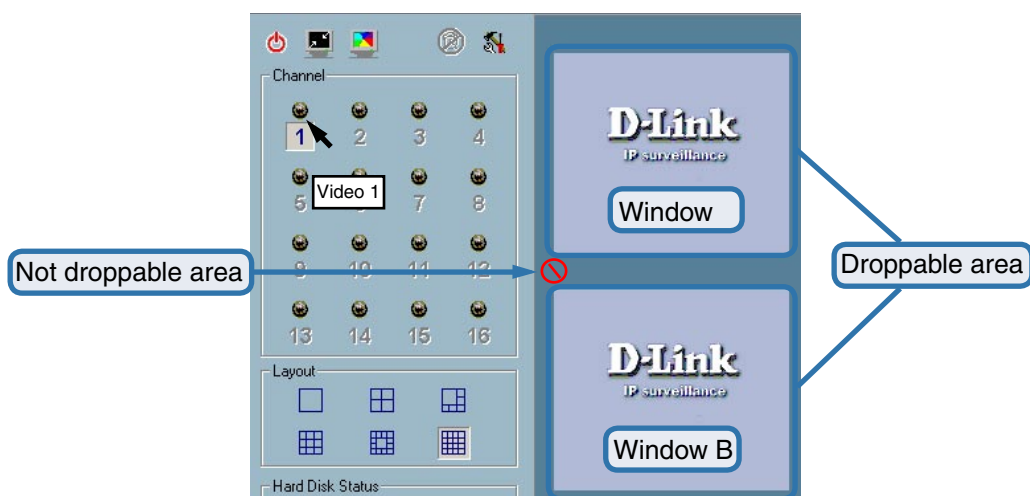
Step 3: Release the left mouse button while on top of a display window. In each display layout, only one window can be assigned to a camera. Also, each camera must have its own separate window when displayed. Once the video is in a display window, it can be dragged and dropped to other windows. If you drag one camera's video to a window that already has its own camera's video, the two cameras will trade display windows. Dragging and Dropping is a very convenient way to manipulate the video channels in the IP surveillance Software.

Monitor Program *(continued)*

Video shown

Empty video box
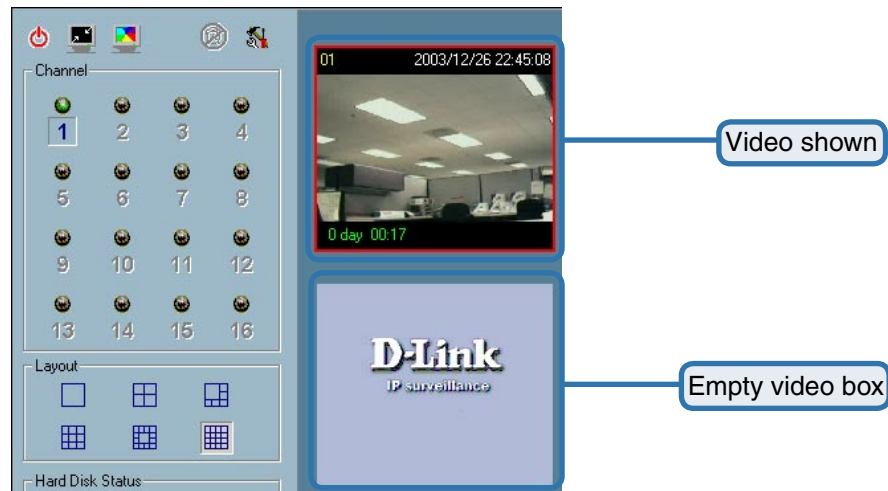
Removing video from a display window

Step 1: Move the mouse cursor to the display window that contains the video channel you wish to remove.

Step 2: Note that the cursor will change to the hand-shape when it has been moved onto the displaying frame. After that, press the left mouse button and hold it.

Step 3: Move the cursor, while still holding the left mouse button, to the trashcan in the common area of the monitor program.

Step 4: When the cursor shape changes to an arrow-shape over the trashcan, release the left mouse button. The video in the corresponding display window will disappear. All operations above are shown in the figure on the following page.

Monitor Program *(continued)*

Press and hold the left mouse button here.

Move the mouse cursor here, and then release the left mouse button.
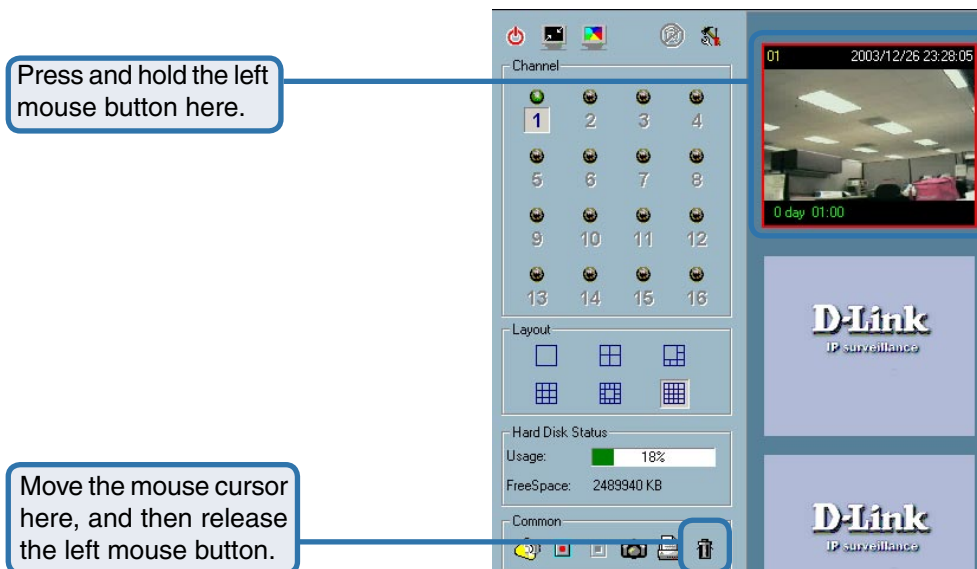
The Layout

There are six different layouts available, as shown below, for the display windows in the monitor program. You can select one of them by clicking on a layout icon. In each layout, you can drag and drop the "channel number" to any display window in the video area. Following the procedures described in the section titled "Show the video of a specified channel", you can add the video channels to display windows within the selected layout one by one. You can also exchange the video between different display windows by dragging and dropping.

4 camera layout

6 camera layout

1 camera layout

16 camera layout

9 camera layout
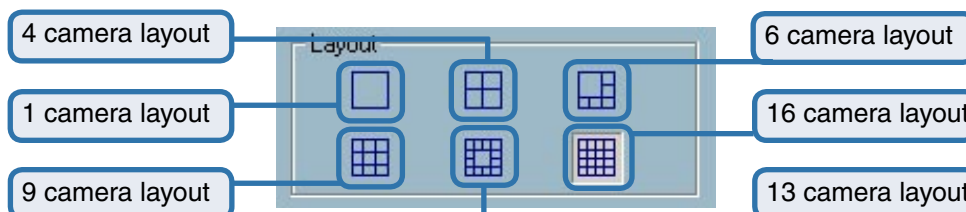
13 camera layout

Monitor Program *(continued)*

Double click a display window to switch to a single channel layout.
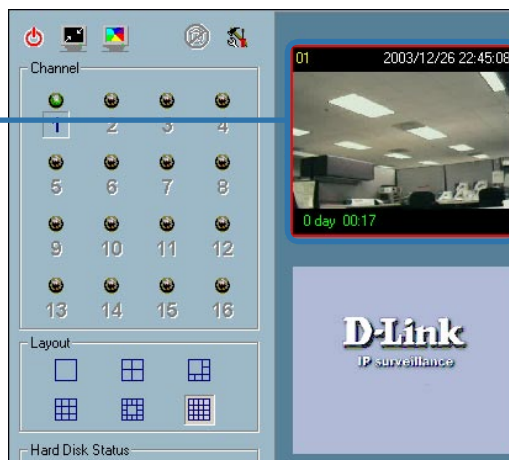
When you choose the one-camera layout or four-camera layout, the "Page up" and "Page down" buttons will be shown in the left-bottom corner of the video area. You can use these two buttons to switch the pages, as shown in the figure below.

Use to switch between cameras.

Monitor Program *(continued)*

To view an individual camera from the multi-camera layout, double-click on the desired display window. You will see that the size of the display window is the same as the one-channel layout. Clicking the "Back" button in the upper-left corner of the video area will switch to the previous selected multi-camera layout.

The position that each video channel is in for every layout will be saved for the next time the layout is selected.

Back to previous layout.
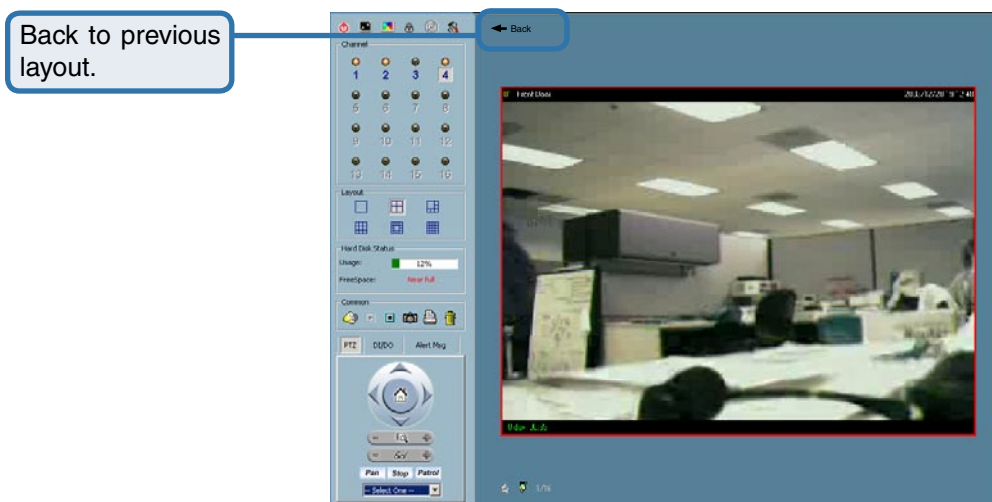
Input/Output Control Tools

Pan/Tilt control

Alert Message

Digital Input/
Digital Output
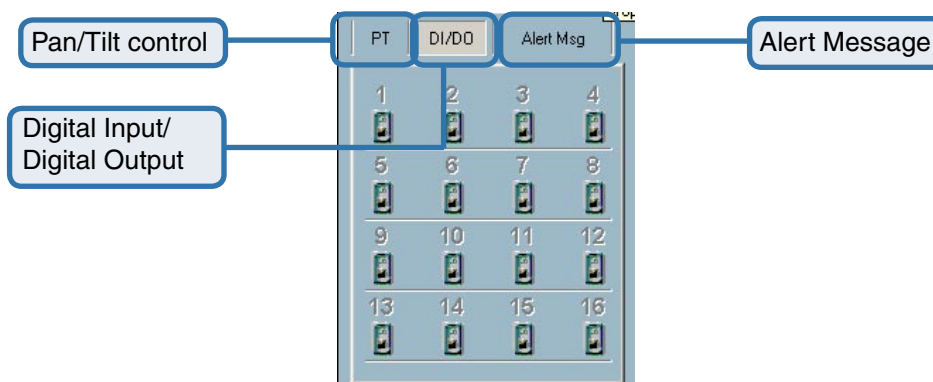
Monitor Program *(continued)*

IP surveillance includes pan/tilt control, DI/DO (Digital Input / Digital Output) control, and an alert message receiver. Each of these are described in detail below.

P/T Control

Refer to the following figure to use the pan and tilt controls.

Return to home position.

Tilt/navigate camera using arrows.
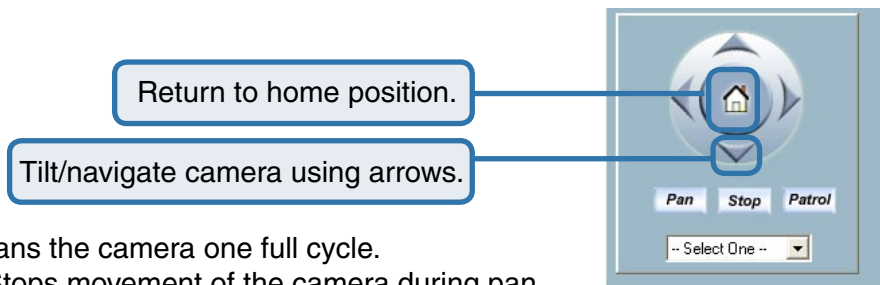
Pan – Pans the camera one full cycle.
Stop – Stops movement of the camera during pan.
Patrol – Enables the Auto Patrol feature.
Pull down menu – Select a preset position to move the camera to.

DI/DO Control

Clicking on the "DI/DO" button shown below, you can switch to the DI/DO controls. The color of the channel number indicates the status of the camera's DI (Digital Input). You can click the "Switch button" to change the HI/LOW state of the DO (Digital Output). With these features, you can monitor the remote sensor input from DI and also trigger the camera by DO switch.

Set digital output to LOW

Set digital output to HIGH

No connection
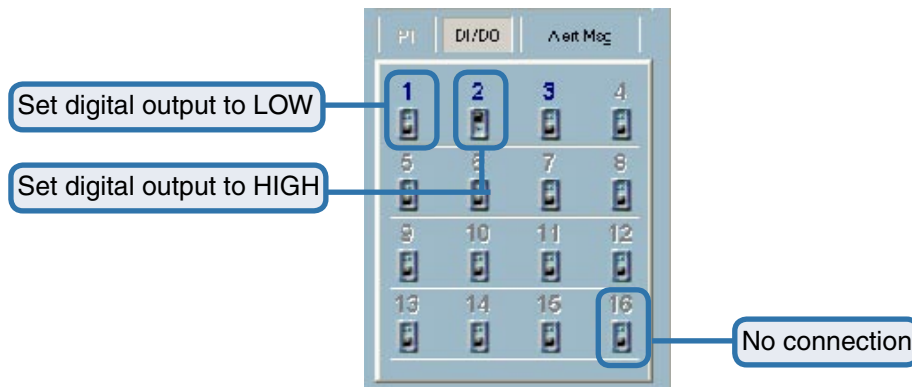
When the color of a DI/DO number is gray, that means the video has not yet been connected to a camera.

D-Link Systems, Inc.   95

Monitor Program *(continued)*

Alert Message

```
12:16:45:dev #1 closed.
Reconnecting ...
12:16:58:dev #1 closed.
Reconnecting ...
12:17:12:dev #1 closed.
Reconnecting ...
12:17:25:dev #1 closed.
Reconnecting ...
12:17:38:dev #1 closed.
Reconnecting ...
12:40:26:dev #1 closed.
Reconnecting ...
12:40:40:dev #1 closed.
Reconnecting ...
12:40:53:dev #1 closed.
Reconnecting ...
```
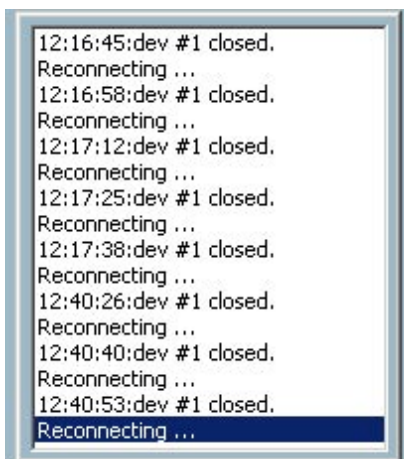
If you have checked the box for "Enable Motion Detect" or "Enable Digital Input" on "Camera Configurations > Alert Settings" screen, the alert message will show in the window shown above. Once the alert, caused by motion detection or a digital input level changer, is triggered, the alert message will be shown in this window. If there are more events than this window can display, a scroll bar will appear.

The message format is described as follows:

"time"=>"alert type" #"channel number"("win1","win2","win3")

For example, the message "PM 02:41:00=>MO #1(0,1,1)" means that this is a motion detection alert occurring at 02:41:00 PM in Motion Window 2 and Motion Window 3, for camera #1. If the message "PM 02:41:56=>DI #1" is listed, that means there is an alert triggered by the DI, for camera #1, at 02:41:56 PM .

Monitor Program *(continued)*

About

By choosing "About", located in the configuration menu shown below, a dialog box will appear and display the information about the installed version of IP surveillance. The information includes the software name, version, user name, and company.

Miscellaneous Functions
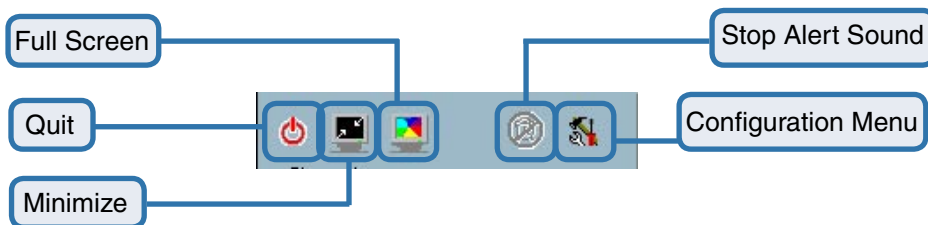
This section will describe some other miscellaneous functions of the icons shown above. These functions are:

Quit
By clicking this button, IP surveillance will be closed with the latest settings saved.

Minimize
Minimize the Monitor application.

Monitor Program *(continued)*

Full Screen
With this function, you can enlarge the selected video channel to a full-screen display. Press the "ESC" key on the keyboard or double-click the mouse on the screen to return to a regular display.

Stop Alert Sound
If an alert is triggered, the alert sound will start to play. After being informed of the situation, you can press this button to stop the alert sound. It will also switch the I\O Control to the Alert Message Receiver, so that the alert messages can be reviewed.

Configuration Menu
The menu includes Camera Configuration, Global Settings, Scheduler, and About options.

Common Control Functions

Stop Record · Volume · Record · Print · Trash can · Snapshot
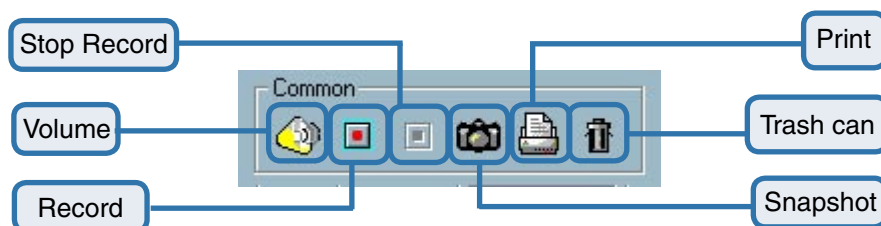
Common

This section will describe the common control functions, shown above, which are depicted by the small icons. These functions only apply to the currently selected channel. These functions are:

Volume Control
Click on this button to adjust your volume settings.

Monitor Program *(continued)*

Record
By clicking on this button, you can record video of the selected channel manually.

Stop
After video recording has been activated, this button allows you to manually stop recording of the selected video channel.

Snapshot
This button will take a snapshot of the selected video channel and save the picture as a bitmap file to the hard disk. You can set the directory for storing these bitmap files at the "Configuration menu > Global Settings" screen. Please refer to the section titled "Global Settings" for more details.

Printer
Click on the printer icon to print the current image to your default printer.

Trashcan
You can drag and drop the video channel to the Trashcan to close the video connection with the **DCS-6620**.

Status Bar

Local time

Software name

| 10:47:48 a.m. | Current user: admin | Logged in when 10:41:47 a.m., Jan 2, 2004 | IP surveillance | 2.10 |

Current login user

Login time

Software version
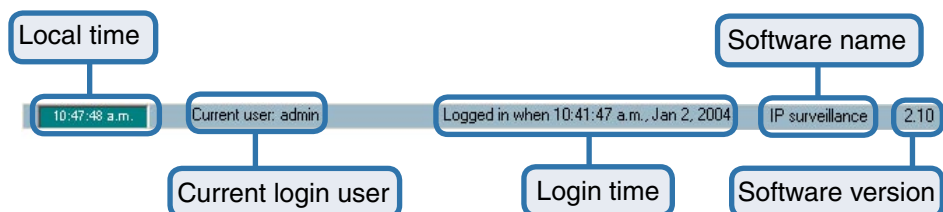
Scheduling

The scheduler allows the user to schedule recordings from the selected video channel of the **DCS-6620**. Through both the graphic user interface and time period selection options, you will be able to easily regulate a schedule for each video channel.

The main features of the scheduler are:

- Friendly graphic user interface for schedule editing

- Flexible schedule scheme suitable for all applications

- Individual schedule for each video channel

- Supports up to 9 preset schedule schemes for each video channel

- Automatic period recording

Invoke Scheduler

This section discusses the method of how to invoke the scheduler.

Start the Scheduler
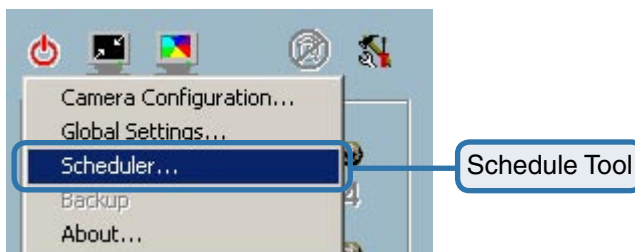
Scheduling *(continued)*

The scheduler will not be accessible until at least one camera has been added to the camera list. Go to the configuration menu and click on "Scheduler" to launch the scheduler.

The Layout and Functionalities

Introduction

The layout of the scheduler and its components, shown below, will be described.
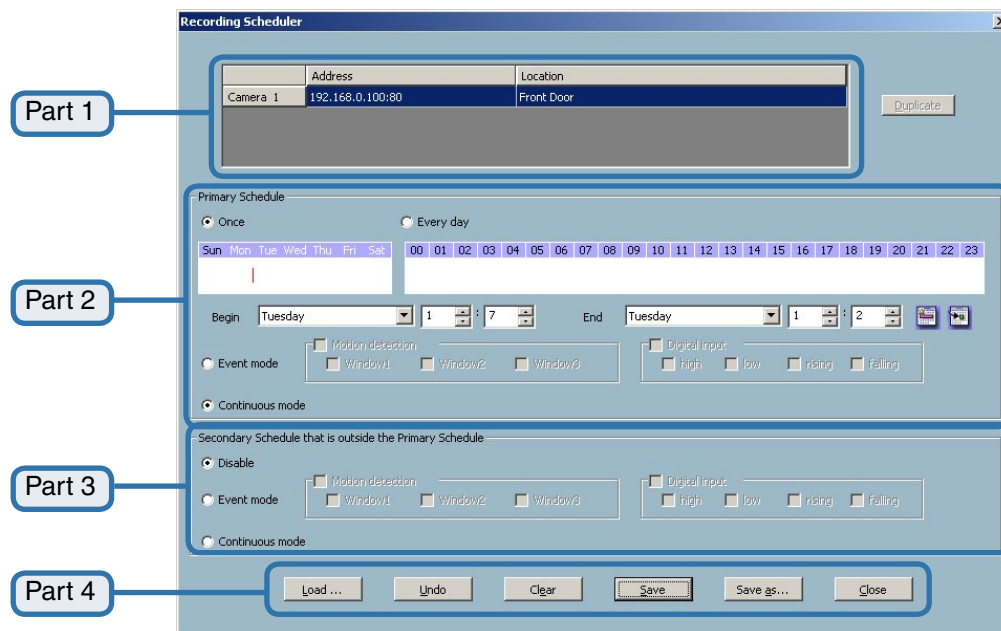
Scheduling *(continued)*

The layout of the scheduler is roughly divided into 4 parts:

- **Part 1**
  The first part of the scheduler is the video channel selection area. It provides the IP addresses and location information of the connected video channels for the user's reference. You can select a video channel in this area and create a schedule for it.

- **Part 2**
  The second part is the Primary schedule settings. It consists of the **day time-line**, **week time-line**, **begin time selector**, **end time selector**, and event mode settings.

- **Part 3**
  The third part is the Secondary schedule, which consists of event mode settings.

- **Part 4**
  The fourth part contains **the operation buttons** for the user to manipulate the edited schedule of the selected video channel. The scheduler can be closed from here.

The Functionalities of Configuration Components

The four main parts of the scheduler have been briefly described in the section above. Parts 1-4 will be described in detail in the following section.
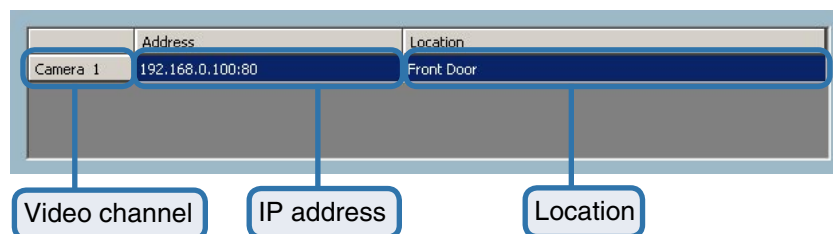
Scheduling *(continued)*

In this area you will select the video channel that you want to set a schedule for. Each video channel will display a name, IP address, and location. Please note that when you switch between video channels in this area, the changes in the schedule of the previous video channel will be saved automatically.

Primary Schedule

Schedule with Time Lines

There are two different time-lines: hour unit time-line and week unit time-line. You can make your own schedule by plotting markers in all time-lines. These two time lines are associated with each other. That is, if you make changes in one time-line, the corresponding changes will be applied with scale to the other three time-lines in the same schedule. Before you begin, make sure that you select "Once" (page 105) if you want to choose the days to record on.

Week Time-Line

In the figure below, Week time-line is displayed. It includes the time-line, schedule information, and the selected day in the week.

Selected Day ——— Sun Mon Tue Wed Thu Fri Sat
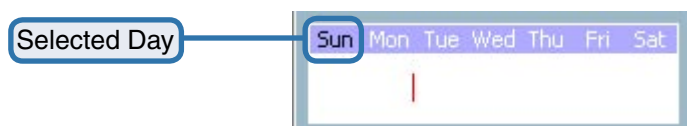
Marking/Unmarking the Recording Time on the Week Time-Line

Sun Mon Tue Wed Thu Fri Sat   00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Click   Result in hour time-line
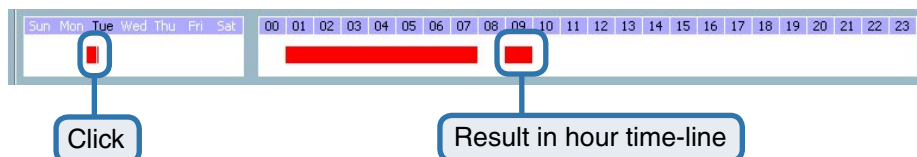
The corresponding changes for the markers on the week time-line will be automatically added to the hour time-lines, which is shown above. You can also mark and unmark the plotted bar by clicking and dragging with the left and the right mouse button.

Scheduling *(continued)*

Hour Time-Line

In the figure below, the Hour time-line is displayed.

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
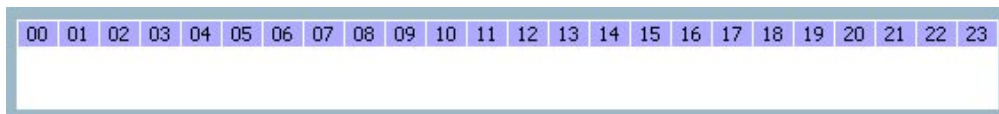
Marking/Unmarking the Recording Time on the Hour Time-Line

You can apply the one-click function by clicking the left mouse button and dragging to mark the time on this time-line. The operating method for the hour time-line is the same as that of the week time-lines. Please refer to the previous section about marking/unmarking on the week time-line for more details.

Schedule with Time Picker

Begin and End Time
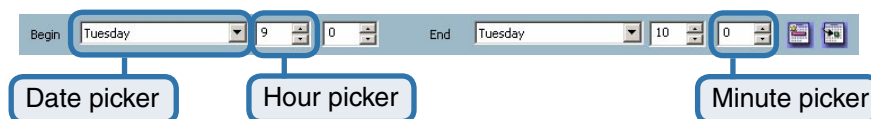
There are three controlling units in both "Begin Time" and "End Time" selectors shown above. The first unit of these two selectors is the date picker. You can select day with it to set the beginning time and the ending time for the recording interval.

The second and third units are the hour picker and the minute picker. You can change the hour and minute settings for the beginning and ending time with them.

NOTE: The time set in "Begin time" must be earlier than that in "End time". Otherwise the settings will not be applied.

Scheduling *(continued)*

Apply and Erase Buttons

After you have selected the time period with "Begin time" and "End time" picker, you can apply the period picker, shown in the figure below, to set the periodical types of the time interval set previously. After the settings in "Begin Time", "End Time" and "Period Picker" are all done, you should click the "Apply" button or "Erase" button to add or clear this scheduling information to the editing schedule scheme. Note that only after you click on the "Apply" button, the scheduling information settings will be written back into the whole editing schedule scheme. That means this edited scheduling time interval is valid only after you "Apply" the changes.

Schedule in event mode

You can select to record in Event mode or Continuous mode by the Schedule mode selector as shown in the figure below. There are two types of event recording. Please refer to the following two sections for more information.
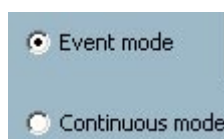
Motion Detection

As shown above, you can check the windows to determine which window(s) will be used to trigger the recording. The motion windows are labeled in the order in which they are added when configuring motion detection for the camera. For example, Window1 is the first window added, regardless of if the name of the window has been changed.

Scheduling *(continued)*

Digital Input

In the figure above, there are four conditions for the digital input. Check the condition that you would like to record while the condition triggers.

■ **high**
Checking this will trigger recording while the digital input is high/ The technical name for this event is line trigger.

■ **low**
Checking this will trigger recording while the digital input is low. The technical name for this event is line trigger.

■ **rising**
Checking this will trigger recording while the digital input is changing from low to high. The technical name for this event is edge trigger.

falling
■ Checking this will trigger recording while the digital input is changing from high to low. The technical name for this event is edge trigger.

Schedule in Continuous mode

If you select Continuous mode in the schedule mode selector, it will record continuously during the schedule that is set up by the user.

Secondary Schedule

Secondary schedule is for recording outside of the primary schedule. The secondary schedule provides options to record without a specified date or time.

Schedule modes
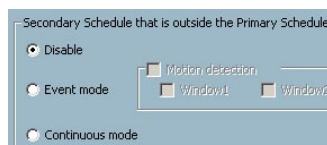
Scheduling *(continued)*

There are three modes in the secondary schedule: Disable, Event mode, and Continuous mode. If event mode is selected in the secondary schedule, the camera will record whenever an event is triggered. If continuous mode is selected, the camera will begin recording continuously after scheduling settings are saved. These two modes are the same as the primary schedule. Please refer to the previous section for more detail.

The Schedule Scheme operations

There are six related buttons. "Load…", "Undo", "Clear", "Save", "Save as…" and "Close" for handling the schedule schemes. These operations are shown in the figure below.

Load …	Undo	Clear	Save	Save as…	Close

- **Load…**
  This button allows you to load pre-edited schedules from the scheduling directory for the selected video channel. Note that you should save the schedule you are currently working on before loading a new one. Otherwise, the current changes will be lost.

- **Clear**
  This button will clear all changes in the current schedule of the selected video channel.

- **Save**
  This button is used for saving changes to the current schedule.

- **Save As…**
  This button is used to save the current schedule as another file name instead of the default name.

- **Undo**
  Click on this button to undo all changes for the current schedule since the last save.

- **Close**
  Click on this button to close the scheduler.

Playback Program

The playback program is a very powerful, convenient, and easy way to browse the recorded video. It has one display mode (normal display mode) and two playback methods (full range and time period). There are several main functions including special features in the Playback program. These functions are depicted as follows.

Features of Playback

Powerful play control tool:

- Play
- Stop
- Pause
- Step forward
- Fast play (from x1 to x16)
- Slow play (from /1 to /16)

Convenient display adjustment tool:

- Zoom in (from 1:1 to 2.25:1)
- Zoom out (from 1:1 to 1:2)
- Full screen

Flexible searching range adjustment tool:

- User input (from full range to 1 second)
- Zoom in (from full range to 10 seconds)
- Zoom out (up to full range)
- Full range

System control tool:

- Window locker
- System settings

Playback Program *(continued)*

Logging In

Before you start the playback program, it is necessary for you to log in to the application software. The figure below shows the login dialog. For security concerns, only the admin account can log in to this program. To change the password of the admin account, please refer to the section titled "Logging In."

Layout
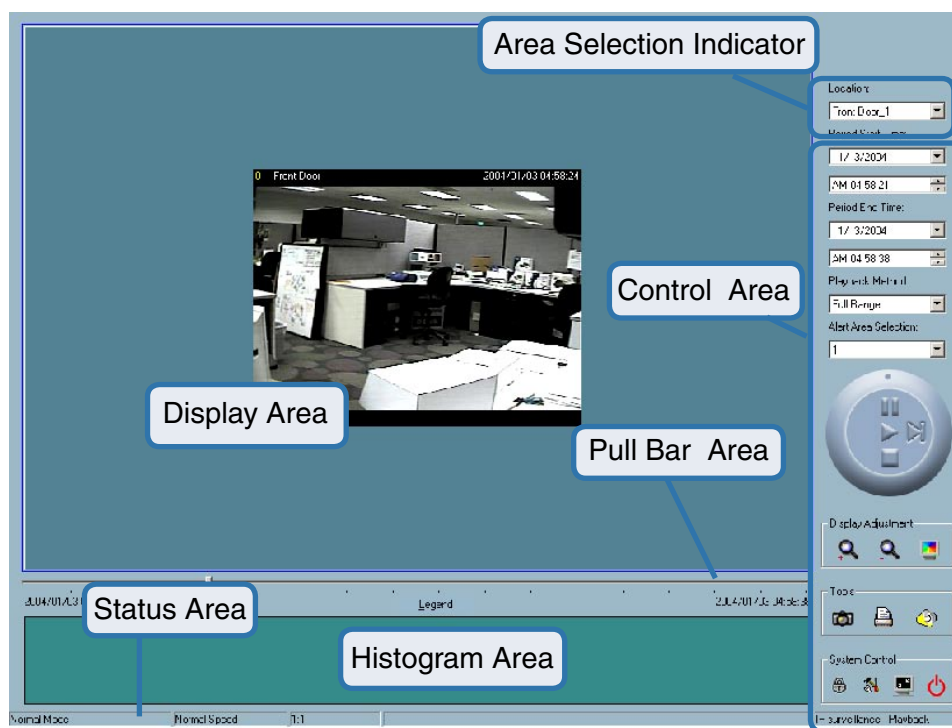
Playback Program *(continued)*

When you successfully log in to the playback system, the main window will be shown on the top of the screen and the display resolution will be changed to 1024x768 automatically (see previous page). There are four main areas , i.e. display area, histogram area, control area, and status area. There are also three visualized controls , i.e. area selection indicator, frame selection indicator, and pull bar. These features provide much more convenience while searching recorded video in the IP surveillance database.

Main Areas

Display Area

The display area is able to show the surveillance database of each camera by time. You can change the video size through the display adjustment tool and the playback method through the play control tool. Under the normal display mode as shown in the figure below, you can just double click on the frame area to change the frame size to 1:1 or 2.25:1.

D-Link Systems, Inc.   110
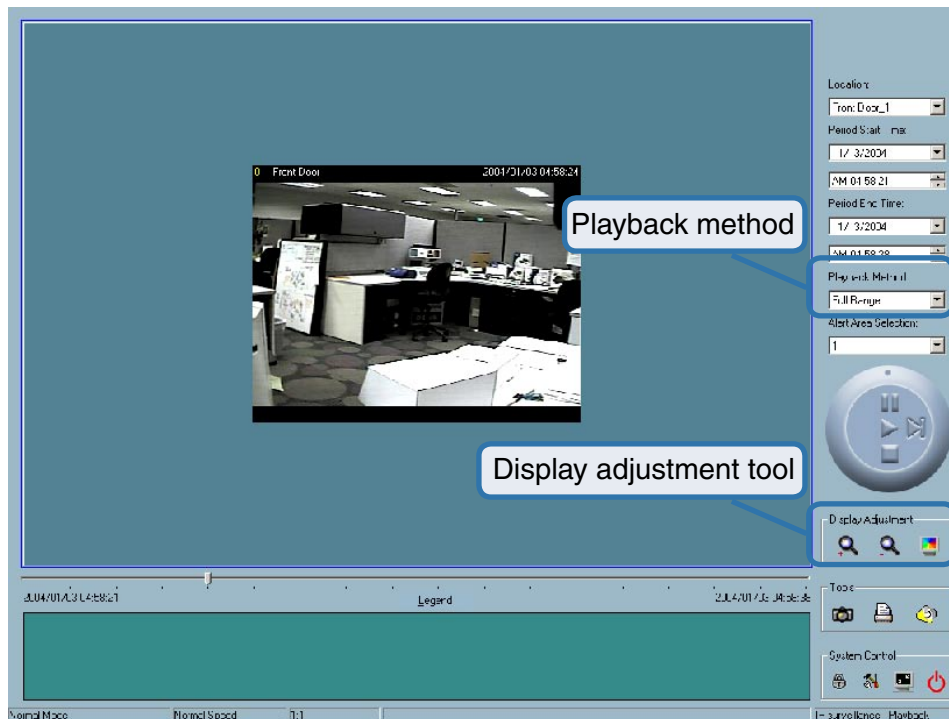
Playback Program *(continued)*

Histogram Area

The histogram is an interactive control. Not only can you get the event's location in time domain and its quantity of the motion percentage, but you can also select a group of events or a period from the event histogram area and show it on the display area.

Control Area

The control area contains almost all the control selectors and toolboxes you need to browse the database. These control tools include location selector, period selector, playback method selector, jog dial, display adjustment tool, searching range adjustment tool, exporting tool, and system control tool. These tools are discussed in more detail in the section titled "Using Tools."

Status Area

The status area is located at the bottom of the main window. It tells you the program status information including display mode, display size, display speed, exporting file format, and exporting file name.

Indicators

Area Selection Indicator

In the main playback window, the display area is surrounded by a blue rectangle. This rectangle is the area selection indicator. This indicator can be set to either display area or histogram area, as long as you move your mouse cursor to the area you intend to select. When you select the display area, the display adjustment tool will appear in the control area. If you select the histogram area, the display adjustment tool will disappear and the searching range adjustment tool will be shown in the same place of the control area.

Playback Program *(continued)*

Pull Bar

The pull bar is a fast, flexible control for seeking data in the selected time period. It represents the total length of time in that period. You can pull the indicator on the pull bar to the specific time-point you would like to view. The displaying video will halt and then restart, playing the video sequence from the point you selected. If the video sequence has been paused, the display area will show the point you selected without playing. Note that the pull bar will only function under the normal display mode.

Settings

After the main window is shown on the screen, you must modify the settings to make it to work properly. Click on the "Settings" button, shown below, in the system control tool, and the setting dialog will appear on the screen.

Lock Windows   Settings   Minimize   Exit
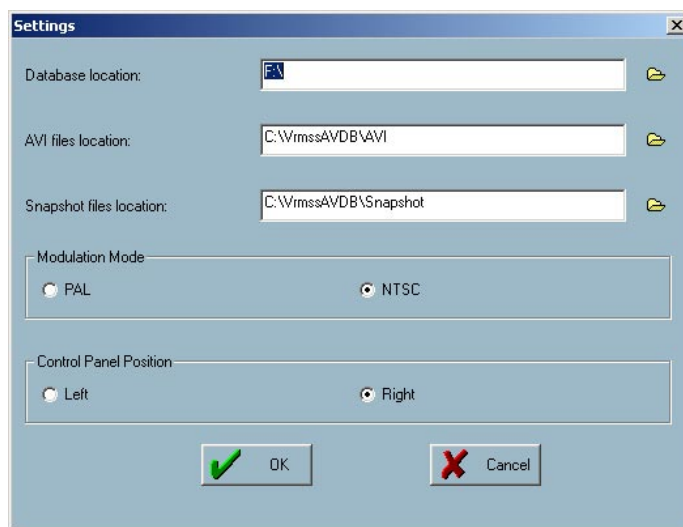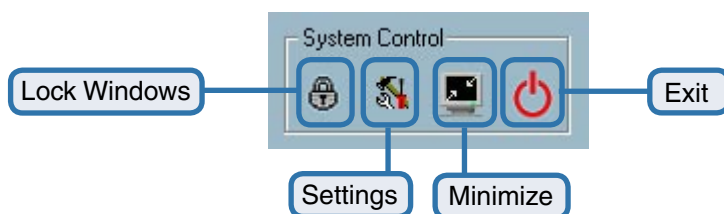
Playback Program *(continued)*

The items in the settings windows are:

■ **Database location**
The most important item in the settings dialog is the database location setting. You must set it to the directory that contains the surveillance database to make the program to work properly.

■ **AVI file location**
This sets the directory where exported AVI files will be stored. Exported AVI files will be stored in the sub-directory (camera name) under the directory you set here.

■ **Snapshot file location**
This sets the directory where bitmap files will be stored when you use the snapshot to export them. Exporting bitmap files will be stored in the sub-directory (camera name) under the directory you set here.

■ **Modulation Mode:**
The modulation mode cannot be changed. This depends on how you recorded the video sequence in the monitor program. If you select the wrong mode, the video shown in the display area will become distorted. If you have chosen the wrong modulation mode, you may open the settings dialog again, change to the correct mode, and restart the playback program. The display will now be normal.

Playback Program *(continued)*

Normal (Single Frame) Mode

While in the normal (single frame) display mode, you can change the video currently displayed by:

(1) Changing the database path for retrieving another one in the settings dialog of "System Control" tool.

(2) Changing the location selector to another location in control area.

(3) Changing the playback method selector to "Full Range."

(4) Changing the playback method selector to "Time Period."

Period Start Time Label   Period End Time Label

Histogram Area
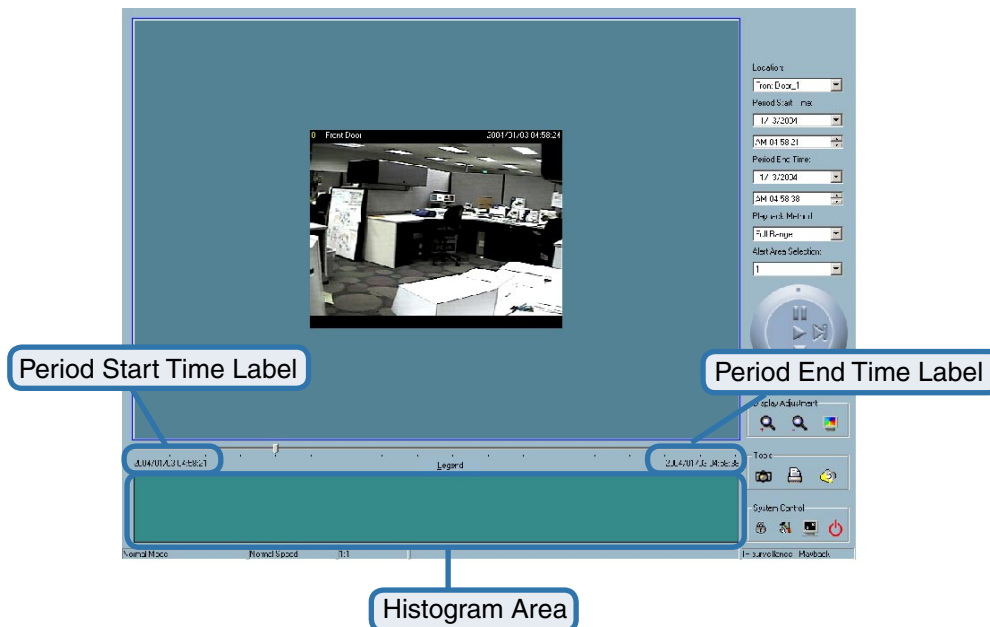
Under the normal display (single frame) mode, you can use all the tools provided with the playback program, except the page control. In this mode, the two labels under the pull bar show the starting and the ending time of the interval individually (as shown above).

Playback Program *(continued)*
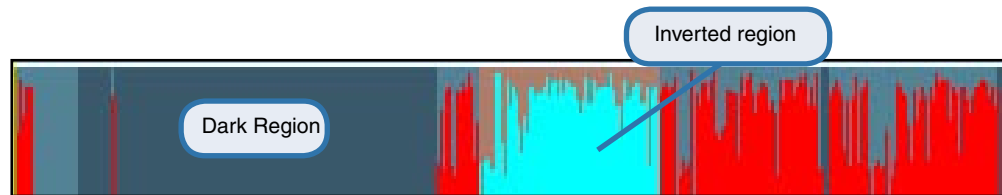
Histogram Area

The histogram area in the normal display (single frame) mode only shows the events' occurred time and the percentage of motion detection with red bars. If you want to access the histogram area, you must change the area selection indicator to the histogram area. You can mark one time interval you want to see with a color-inverted region by dragging your mouse with the left button pressed (as shown above). When you release the left button, the color-inverted region will be enlarged to the whole histogram area. This color-inverted region will be the new period the program is going to display. If you change your mind and don't want to see that period, you can cancel it by just pressing the right button of your mouse with the left button still pressed. If you click on the left button without dragging it, the action will be the same as clicking on the pull bar in the same x-axis position. That means the playback system will shift to the pointed time and show video on the displaying frame. Besides, the dark regions in the histogram area mean there is no existing video data in that interval. If you click on those regions, nothing will happen except a warning message will pop up.

Using Tools

In this section, the method of how to use the tools in the control panel (shown in the main playback window) will be discussed.

Selector Tools

The figure below shows the selector tools. They are location selector, period selector for the selection of the beginning time and the ending time, playback method selector, and alert area selector.

Playback Program *(continued)*

Location selector

Period selector

Playback method selector

Alert area selector

Location Selector

The location selector is a control that lets you select the camera you want to see (refer to the figure above). The location name is the same as the camera name (text on video) unless you have specified otherwise.

Period Selector

Period selector provides you a precise way to choose the start time and the end time of a new period. The end time must be later than the start time. After you provide the correct start and end time, clicking on the "Play" button in the jog dial will play the new period in the display area with changing the period start and end time label. Besides, the pull bar and histogram area will change, too. If the selected period is not present in the database, the data in the period selector will change to the previous correct start and end time, and a warning message will be displayed.

Playback Program *(continued)*

Playback Method Selector

■ **Full Range**
If you select this method, the database will be displayed from the beginning to the end of this location. Any change in the period selector will have no effect except when you change this selector to "Time Period."

■ **Time Period**
If you change the playback method to "Time Period", you can modify the start and end time in the period selector. When you click on the "Play" button in the jog dial, the period you selected will be displayed.

Since the program will record the previous start and end time in "Time Period" and "Events Preview" mode, whenever you want to change the period selector to see the other periods, you must change the playback method selector to the mode you want to use first. Otherwise, the period selector will revert back to the previous period set the last time you changed the playback method selector.

Alert Area Selector

In the preview mode, the playback program can show the information of total events of only one alert window each time. If you want to see the events of the other two alert area windows, you must change the alert area selector to the other window numbers. In the normal display mode, the alert window that the alert area selector indicates will be highlighted with red rectangle if you checked that window in the settings dialog. The alert area selector will be changed to alert window 0 by default settings when you change the location selector to another window.

Play Control

For the play control, the jog dial, shown in the figure below, is used to provide the easiest method of controlling the video sequence display. All buttons can control the displaying frame in the normal display mode.

Playback Program *(continued)*
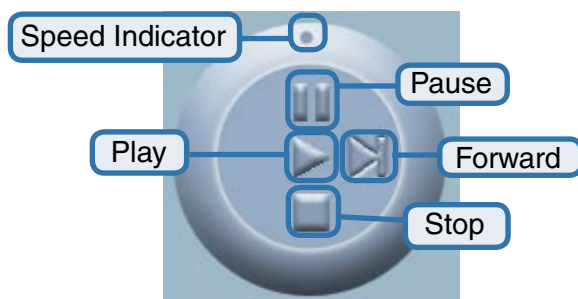
- **Play**
  The supported "Play" button is an intelligent play user-interface. The functionality of this button can vary to fit different circumstances. In the normal display mode, clicking on the "Play" button can restart the displaying video sequence.

- **Stop**
  When you want to stop the displaying video sequence, you can click on the "Stop" button. Note that once you press the "Stop" button, the start point will be reset to the start of the present period.

- **Pause/Resume**
  The "Pause" button provides you a way to pause the video sequence display. When the displaying video is paused, click on the "Pause" button again to resume the video display.

- **Forward**
  This button is only valid when the displaying video sequence is paused. It will display the next frame in that period when you click on the "Forward" button one time.

- **Fast Play and Slow Play**
  The camera supports a maximum of x16 fast forward play and minimum of /16 slow forward play. This function helps you browse the surveillance database with more flexibility. If you want to change the playing speed, you just need to move the speed indicator. To increase playing speed, move the indicator in the clockwise direction. And to decrease playing speed, move it in the counterclockwise direction. The current speed that is set will be shown in the second column of status area.

Playback Program *(continued)*

Display Adjustment Tool

When you move the mouse cursor to the displaying area, the display adjustment toolbox will appear. Using the display adjustment toolbox, you can change the displaying video sequence to the size you want to see in the normal display mode when you move the area selection indicator to the display area. The figure below shows the display adjustment toolbox and its own three elements, i.e. "Zoom In", "Zoom Out", and "Full Screen."

Zoom In

When you click on the "Zoom In" button one time, the image size in the display area will be magnified 12.5 percent to the original size. Due to the limitation of the display area size, the maximum zoom in ratio supported is only 2.25:1 for NTSC modulation mode and 1.875:1 for PAL modulation mode. If you want to see the image in more details, you can use the full screen function that is supported in the same toolbox.

Zoom Out

When you click on the "Zoom Out" button one time, the image size in the display area will be minified 12.5 percent to the original size. To show the location and time information completely, the minimum zoom out ratio is limited in 0.5:1.

D-Link Systems, Inc.   119

Playback Program *(continued)*

Full Screen

When you click on the "Full Screen" button, the video sequence will be enlarged to the whole screen instantly. You can double click on any place or the "ESC" key to return back to the normal screen. When you switch to the full screen display, you can press the "Alt" and "Space" keys together to pop the jog dial to control the displaying video sequence. Press the same keys again to close the jog dial. You can also press the "Alt" and "Enter" keys together to switch between the normal display and full screen display at any time when the program is under the normal display mode.

Searching Range Adjustment Toolbox

When you move the mouse cursor to the alert histogram area, the display adjustment toolbox will change to a range adjustment toolbox. The range adjustment toolbox provides a faster way to change the range of the displayed time period. By using this toolbox, you can browse the database of one location from any 10-second interval of the entire range. The figure below shows the searching range adjustment toolbox composed of its own three elements, i.e. "Zoom In", "Zoom Out", and "Full Range."
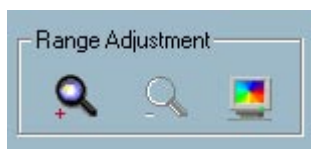
Zoom In

Each time you click on the "Zoom In" button in the searching range adjustment toolbox, the displayed time period will be half in the center of the original time period until the period is equal to 10 seconds. You can see the new interval in more details. The scale of pull bar and alert histogram window change. The period start and end time change as well. The period selector will show the new start and end time. The display area will restart and display the new period from the newly defined start time.

Playback Program *(continued)*

Zoom Out

Each time you click on the "Zoom Out" button in the searching range adjustment toolbox, the displayed time period will be double in the center of the original time period unless the start time or end time exceeds the whole database time-boundary. The scale of the pull bar and alert histogram window change. The period start and end time change as well. The period selector will show the new start and end time. And the display area will restart and display the new period from the newly defined start time.

Full Range

When you click on the "Full Range" button, you will get the same functionality as when you change the playback method selector to "Full Range."

System Control Toolbox

The system control toolbox provides some basic operations for the playback program. The figure below shows the three elements of the system control toolbox, i.e. "Lock Window", "Settings", "Minimize", and "Exit."

Lock Window

If you are away from your computer, for security reasons, we recommend that you to close the playback program or you can just click on the "Lock Window" button to lock the main window. Once you click this button, the main window will be hidden and the login dialog will appear. To return to the main window, you need to re-enter the admin's password again.

Playback Program *(continued)*

Settings

The settings dialog will pop up when you click the "Settings" button. For more information about setting this program, please refer to the section titled "Settings."

Minimize

Click this button in order to minimize the playback program window.

Exit

The playback program will be closed immediately when you click on the "Exit" button.

Schedule Video Recording with Motion Detection

To schedule video recording with motion detection, you must first enable motion detection on the PTZ Internet Camera. Click the **Motion Detection** button under the **Advanced** tab from the **Configuration** screen to access settings that affect how the **DCS-6620** PTZ Internet Camera can serve as a security device by recording only when motion is detected. Note: These settings can be configured in your Web browser and while logged into the **IP surveillance** Program.
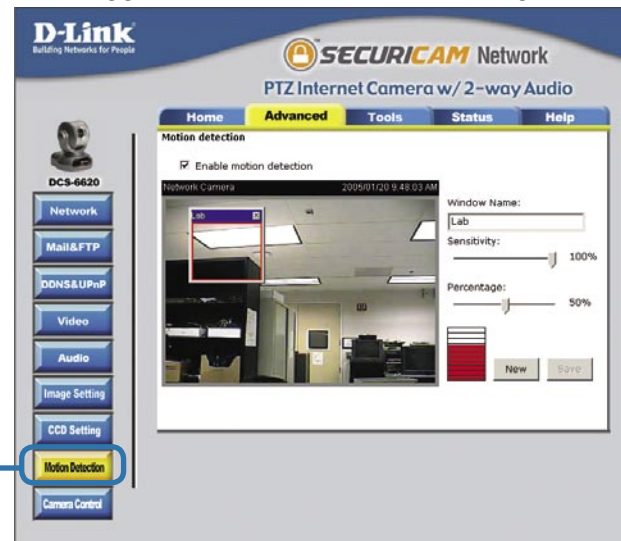
Click **Motion Detection**

In this window, follow the steps below to ensure that motion detection is correctly enabled:

①   Check "Enable motion detection."
②   Click on "New" to have a new window to monitor video.
③   Enter in a window name.
④   Adjust the "Sensitivity" and "Percentage" levels according to the local environment. The highest sensitivity and lowest percentage provides the most sensitive setting.
⑤   After adding the motion window, click on save to enable the activity display. You can add up to 3 motion windows to trigger recording.

For detailed information about each setting, please refer to **Configuration > Advanced > Motion Detection** in the section titled "Using the **DCS-6620** With an Internet Browser" (page 52).

Next, run the **IP surveillance** program. Click on the **Configurations** button and select **Scheduler**.

D-Link Systems, Inc.   123
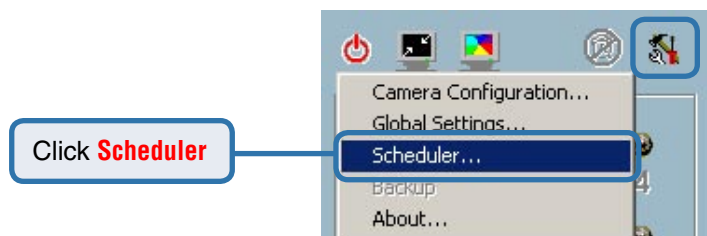
Click **Scheduler**

In the **Primary Schedule** you can choose either **Once** (for one time recording) or **Every Day** (for scheduled recording). For example, if you would like to record events every day during a certain time frame, click on the beginning time and drag your mouse to the ending time. Schedule recording can be configured by minutes, hours, days, weeks, or months.

The **Secondary Schedule** allows you to set a schedule outside the **Primary Schedule**. The **Secondary Schedule** provides two options to record without a specified date or time. You can select **Event Mode**, which will record whenever an event is triggered, or **Continuous Mode**, which will begin continuously after scheduling settings are saved. You do not need to set the **Secondary Schedule** with the **Primary Schedule**. To schedule video recording with motion detection, you can use either the **Primary Schedule** or **Secondary Schedule**, or both.
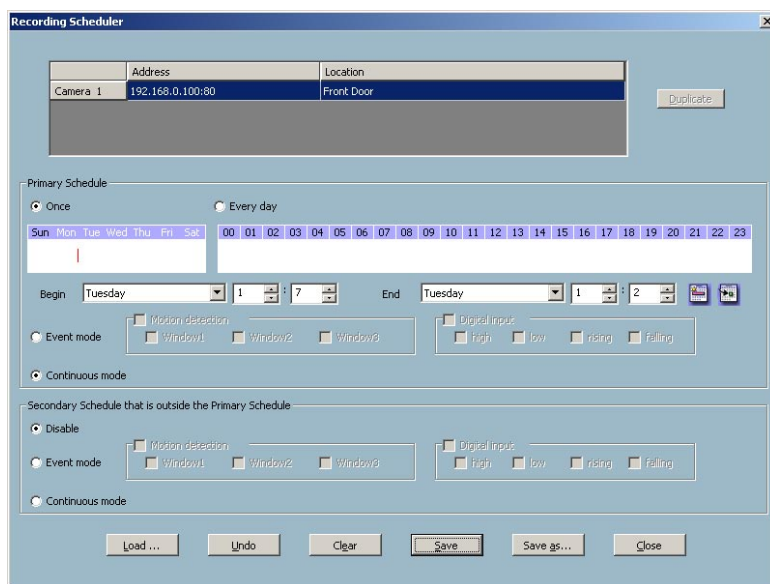
In this window, follow the steps below to schedule video recording with motion detection in the **Primary Schedule**:

①   Check if you want the recording schedule to occur **Once** or **Every day**.
②   Set the date, time-line, and begin and end times for recording.
③   Check **Event Mode**.
④   Select the motion detection window that will be used to trigger motion detection. Note: You must first create motion detection windows in the Web configuration page of the camera. Remember the names of the windows and the order in which you created them, as they are not displayed inside the Scheduler. Instead, they are listed in the order they were added. For example, the first window created is labeled "Window1."
⑤   Click on "Disable" under the **Secondary Schedule**.

Click the **Save** button when finished. You have now set a schedule to record video when motion detection is triggered. If you would like to save this configuration, click **Save As** to save this configuration to a folder in your hard drive. This configuration can be used on another system running IP surveillance or can be used as a backup if you need to re-install the IP surveillance software program.

D-Link Systems, Inc.   125

Frequently Asked Questions

PTZ Internet Camera Features

Q: What is a PTZ Internet Camera?
A: The PTZ Internet Camera is a stand-alone system connecting directly to an Ethernet or Fast Ethernet network. It differs from a conventional PC Camera, the PTZ Internet Camera is an all-in-one system with built-in CPU and web-based solutions, providing a low cost solution that can transmit high quality video images for monitoring. The PTZ Internet Camera can be managed remotely, accessed and controlled from any PC/Notebook over an Intranet or the Internet from a web browser.

Q: **What is the maximum number of users that can be allowed to access DCS-6620 simultaneously?**
A: The maximum number of users that can log onto the PTZ Internet Camera at the same time is 10. Please keep in mind the overall performance of the transmission speed will slow down when many users are logged on.

Q: **What algorithm is used to compress the digital image?**
A: The PTZ Internet Camera utilizes MPEG-4 simple profile or MJPEG Mode image compression technology providing high quality images. MJPEG is a standard for image compression and can be applied to various web browser and application software without the need to install extra software.

Q: Can I capture still images from the PTZ Internet Camera?
A: Yes you are able to capture still images with the snapshot function from the software application CD supplied with the PTZ Internet Camera, or from the Homepage.

PTZ Internet Camera Installation

Q: Can the PTZ Internet Camera be used outdoors?
A: The PTZ Internet Camera is not weatherproof. It needs to be equipped with a weatherproof case to be used outdoors and it is not recommended.

Q: **When physically connecting the PTZ Internet Camera to a network what network cabling is required?**
A: The PTZ Internet Camera uses Category 5 UTP cable allowing 10 Base-T and 100 Base-T networking.

Q: Can the PTZ Internet Camera be setup as a PC-cam on a computer?
A: No, the PTZ Internet Camera is used only on an Ethernet or Fast Ethernet network. The D-Link DSB-C110, DSB-C310, can be used as a PC Camera (Webcam).

Q: **Can the PTZ Internet Camera be connected to the network if it consists of only private IP addresses?**
A: The PTZ Internet Camera can be connected to a LAN with private IP addresses.

Q: Can the PTZ Internet Camera be installed and work if a firewall exists on the network?
A: If a firewall exists on the network, port 80 is open for ordinary data communication. The **DCS-6620** uses port 5002 for streaming audio and port 5003 for streaming video. These ports (or the ports you specify from the **Advanced** Tab in the Configuration screen if you change the default ports) need to be opened on the firewall. Please refer to page 28 for more information.

Q: Why am I unable to access the PTZ Internet Camera from a web browser?
A1: If a router or firewall is used on the network, the correct ports for the **DCS-6620** may not be configured on the router or firewall. To correct the problem, you need to determine if the **DCS-6620** is behind a router or firewall and if the router or firewall is properly configured for the ports the **DCS-6620** is using. Refer to Page 28 for help in opening the correct ports on a router or firewall for use with the **DCS-6620**.
A2: Other possible problems might be due to the network cable. Try replacing your network cable. Test the network interface of the product by connecting a local computer to the unit, utilizing a Ethernet crossover cable. If the problem is not solved the PTZ Internet Camera might be faulty.

Q: Why does the PTZ Internet Camera work locally but not externally?

A1: This might be caused by network firewall protection. The firewall may need to have some settings changed in order for the PTZ Internet Camera to be accessible outside your local LAN. Check with the Network Administrator for your network.
A2: Make sure that the PTZ Internet Camera isn't conflicting with any Web server you may have running on your network.
A3: The default router setting might be a possible reason. Check that the configuration of the router settings allow the PTZ Internet Camera to be accessed outside your local LAN. Please refer to page 31 for more information.

D-Link Systems, Inc.   127

Q: I connected the PTZ Internet Camera directly to a computer with a cross-over cable Ethernet cable and received the following Windows error upon running the Installation Wizard:

A1: This Windows error will occur if the PTZ Internet Camera is connected to a computer that is not properly configured with a valid IP address. Turn off DHCP from the Network Settings in Windows and configure the computer with a valid IP address or connect the camera to a router with DHCP enabled.

A2: This error can also occur if the **Installation Wizard** icon is clicked on more than once from the setup wizard.

Q: Noisy images occur. How can I solve the problem?

A: The video images might be noisy if the PTZ Internet Camera is used in a very low light environment. To solve this issue you need more lighting.

Q: The images appear to be of poor quality, how can I improve the image quality?

A1: Make sure that your computer's display properties are set above 256 colors. Using 16 or 256 colors on your computer will produce dithering artifacts in the image, making the image appear to be of poor quality.

A2: The configuration on the PTZ Internet Camera image display is incorrect. Through the **Advanced>Image Setting** section of the Web management you need to adjust the image related parameters such as brightness, contrast, hue and power line frequency for fluorescent light . Please refer to the **Advanced>Image Setting** section on Page 50 and 51 for detailed information.
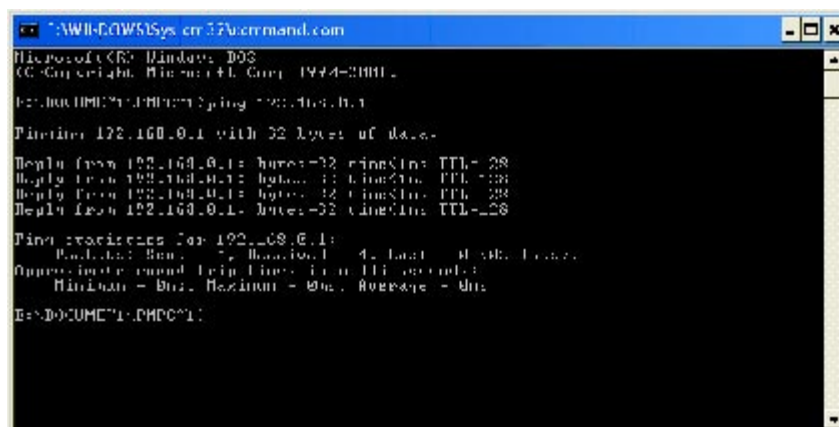
How to PING Your IP Address

The PING (Packet Internet Groper) command can determine whether a specific IP address is accessible by sending a packet to the specific address and waiting for a reply. It can also provide a very useful tool to confirm if the IP address conflicts with the PTZ Internet Camera over the network.

Follow the step-by-step procedure below to utilize the PING command but first you must disconnect the PTZ Internet Camera from the network.

Start a DOS window.
Type ping x.x.x.x, where x.x.x.x is the IP address of the PTZ Internet Camera.

The replies, as illustrated below, will help diagnose any connection problems.

Reset and Restore

There is a button hidden in the pinhole beside the Ethernet socket. It is used to **reset** the system or **restore** the factory default settings. Sometimes resetting the **DCS-6620** will return the system back to a normal state. If the system still has problems after reset, restore the factory settings and install again:

RESET:
1. Lightly insert a paper clip (or a similar sized tool) into the reset hole on the back of the camera, press lightly and then release the button.

2. The LED on the front of the camera will begin blinking red and green.

3. When the LED stops the blinking the reset has completed.

RESTORE:
1. Insert the paperclip or other tool and press on the button continuously.

2. Wait for the LED on the front of the camera to blink red and green and hold the button for 10 seconds.

3. Withdraw the tool after the second cycle of the LED blinking and a factory restore has been completed.

Reset button

Restoring the factory defaults will result in the loss of any previous settings and will require running the Installation Wizard to return the **DCS-6620** to a normal state.

External I/O Port

External I/O Port Definition for the PTZ Internet Camera

The **DCS-6620** provides a general I/O terminal block with one digital input and one relay switch for device control. Pin 1 and pin 2 can be connected to an external sensor and the state of voltage will be monitored from the initial state 'LOW'. The relay switch of pin 3 and pin 4 can be used to turn on or off the external device.

The I/O connector provides the physical interface for digital output (DO) and digital input (DI) that is used for connecting a diversity of external alarm devices to the PTZ Internet Camera such as IR-Sensors and alarm relays.

The digital input is used for connecting external alarm devices and once triggered images will be taken and e-mailed.

External I/O Port

I/O Terminal Block:
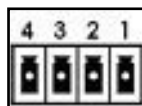
1	DI+	INPUT (Max. 50mA, 12VDC)
2	DI-	INPUT (Initial state of DI is low)
3	SW_COMMON	OUTPUT (open from SW_OPEN at initial state)
		(close with SW_OPEN when set DO to ON)
4	SW_NOPEN	OUTPUT (Max. 1A, 24VDC or 0.5A, 125VAC)

DI/DO Connection Diagram

The above diagram shows a typical wiring configuration for a normally closed PIR motion sensor. Please refer to your specific motion sensor for 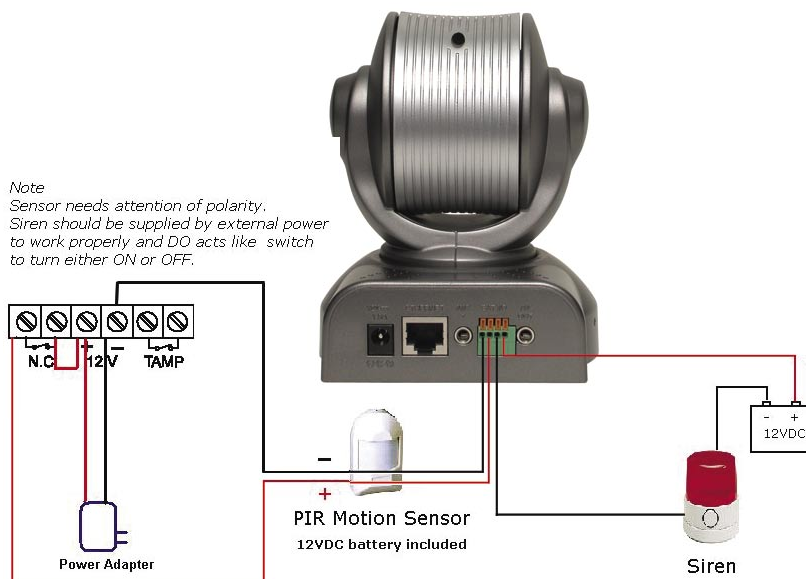the power supply connection to the device since this will be critical to the success of your installation. Note that the positive from the PIR is connected to the D- of the I/O port of the camera and the negative from the PIR is connected to the D+ of the camera I/O port.

Configuring Your Camera for External Trigger Based Recording

To configure your camera to record when triggered by an external device, you must first set your SMTP or FTP settings in order to send snapshots to your e-mail account or FTP server.

Configuring Your Camera for External Trigger Based Recording *(continued)*

Click the **Network** button under the **Advanced** tab to set the SMTP or FTP server settings for the **DCS-6620**.

Click **Network**

In this window, enter the settings for the SMTP or FTP server to which recorded snapshots will be sent. For detailed information about each setting, please refer to **Configuration > Advanced > Network** in the section titled "Using the **DCS-6620** With an Internet Browser" (page 41). Click the apply button when finished.

Configuring Your Camera for External Trigger Based Recording *(continued)*

Next, click the **Applications** button under the **Tools** tab to set the application settings for the **DCS-6620**.

Click **Applications**

In this window, follow the steps below to set the application settings for snapshots to be sent to your e-mail account or FTP server when triggered by a motion sensor or other external device:

① Select the weekdays you would like to record and enter the "Snapshots begin" time and "Snapshots end" time for the weekly schedule, or select "All the time except for the above schedule" if you want to enable full time snapshot recording.

② Check "Event operation."

③ Set the delay "before detecting next event" to avoid continuous false alarms following the original event.

④ Check the trigger condition for input and motion detection (in this case "Input is Low").

⑤ Check "Trigger output alarm while input condition matched" and "Upload snapshots while motion detected."

⑥ Select to either send snapshots by e-mail or by FTP.

Click the apply button when finished. You are now able to send snapshots, based on triggered recording, to your e-mail account or FTP server.

Technical Specifications

Remote management
Configuration and system log can be accessed via Web browser, using Internet Explorer 5.X and above, and FTP application remotely

Networking
Protocol
TCP/IP, HTTP, SMTP, FTP, Telnet, NTP, DNS, and DHCP
Networking Application
DDNS support with several popular DDNS servers, UPnP support, SMTP client, FTP client, FTP server, HTTP server
Ethernet
10BaseT or 100BaseT Fast Ethernet

Video
Algorithm supported
MSPEG and MPEG-4 Simple Profile
Features
Three adjustable image size and quality intelligent motion detection windows with flexible bit rate, MPEG-4 short header mode compression for streaming video, JPEG compression for still image

Audio
24Kbps
Built-in omni-directional microphone

Video resolution
Up to 30 fps at 176x120
Up to 30 fps at 352x240
Up to 10 fps at 704x480

General I/O
1 opto-isolated sensor input (max. 12VDC 50mA)
1 relay output (max. 24VDC 1A, 125VAC 0.5A)

Security
Administrator and user group protected
Password authentication

LED indicator
2 Status indicators: 1) Power, 2) POST, connection, and heartbeat

Camera specification
1/4 inch color CCD sensor
AGC/AWB
Electronic shutter: 1/60 ~ 1/15000 second
Fixed focus glass lens, F2.0, 1 LUX
Auto focus, F2.0, .05 LUX
Auto Iris

Power
12VDC 1.5A, external power supply

Weight
About 12.2 oz.

Dimension
4.0in.L) x 4.1in.(W) x 5.3in.(H)

Viewing system requirement
    Protocol
    ActiveX
    Operating system
    Microsoft Windows® XP or 2000
    Browser
    Internet Explorer 6.x or above

Environmental
    Operating
    40°F to 113°F
    Storage
    -4°F to 158°F
    Humidity
    Max 95% RH

Safety
    FCC class B
    CE

D-Link Systems, Inc.   136

Contacting Technical Support

Technical Support

You can find software updates and user documentation on the D-Link website.

D-Link provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product.

U.S. and Canadian customers can contact D-Link Technical Support through our website, or by phone.

Tech Support for customers within the United States:

D-Link Technical Support over the Telephone:
(877) 453-5465
24 hours a day, seven days a week.

D-Link Technical Support over the Internet:
http://support.dlink.com
e-mail:support@dlink.com

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:
(800) 361-5265
Monday to Friday 7:30am to 12:00am EST

D-Link Technical Support over the Internet:
http://support.dlink.ca
e-mail:support@dlink.ca

Time Zone Table

GMT stands for Greenwich Mean Time, which is the global time that all time zones are measured from.

```
(GMT-12:00) International Date Line West
(GMT-11:00) Midway Island, Samoa
(GMT-10:00) Hawaii
(GMT-09:00) Alaska
(GMT-08:00) Pacific Time (US & Canada); Tijuana
(GMT-07:00) Arizona
(GMT-07:00) Chihuahua, La Paz, Mazatlan
(GMT-07:00) Mountain Time (US & Canada)
(GMT-06:00) Central America
(GMT-06:00) Central Time (US & Canada)
(GMT-06:00) Guadalajara, Mexico City, Monterrey
(GMT-06:00) Saskatchewan
(GMT-05:00) Bogota, Lima, Quito
(GMT-05:00) Eastern Time (US & Canada)
(GMT-05:00) Indiana (East)
(GMT-04:00) Atlantic Time (Canada)
(GMT-04:00) Caracas, La Paz
(GMT-04:00) Santiago
(GMT-03:30) Newfoundland
(GMT-03:00) Brasilia
(GMT-03:00) Buenos Aires, Georgetown
(GMT-03:00) Greenland
(GMT-02:00) Mid-Atlantic
(GMT-01:00) Azores
(GMT-01:00) Cape Verde Is.
(GMT) Casablanca, Monrovia
(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, Lo
(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, V
(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Pr
(GMT+01:00) Brussels, Copenhagen, Madrid, Paris
(GMT+01:00) Sarajevo, Skopje, Warsaw, Zagreb
(GMT+01:00) West Central Africa
(GMT+02:00) Athens, Istanbul, Minsk
(GMT+02:00) Bucharest
(GMT+02:00) Cairo
(GMT+02:00) Harare, Pretoria
(GMT+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
```

```
(GMT+03:30) Tehran
(GMT+04:00) Abu Dhabi, Muscat
(GMT+04:00) Baku, Tbilisi, Yerevan
(GMT+04:30) Kabul
(GMT+05:00) Ekaterinburg
(GMT+05:00) Islamabad, Karachi, Tashkent
(GMT+05:30) Chennai, Kolkata, Mumbai, New Delhi
(GMT+05:45) Kathmandu
(GMT+06:00) Almaty, Novosibirsk
(GMT+06:00) Astana, Dhaka
(GMT+06:00) Sri Jayawardenepura
(GMT+06:30) Rangoon
(GMT+07:00) Bangkok, Hanoi, Jakarta
(GMT+07:00) Krasnoyarsk
(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi
(GMT+08:00) Irkutsk, Ulaan Bataar
(GMT+08:00) Kuala Lumpur, Singapore
(GMT+08:00) Perth
(GMT+08:00) Taipei
(GMT+09:00) Osaka, Sapporo, Tokyo
(GMT+09:00) Seoul
(GMT+09:00) Yakutsk
(GMT+09:30) Adelaide
(GMT+09:30) Darwin
(GMT+10:00) Brisbane
(GMT+10:00) Canberra, Melbourne, Sydney
(GMT+10:00) Guam, Port Moresby
(GMT+10:00) Hobart
(GMT+10:00) Vladivostok
(GMT+11:00) Magadan, Solomon Is., New Caledonia
(GMT+12:00) Auckland, Wellington
(GMT+12:00) Fiji, Kamchatka, Marshall Is.
(GMT+13:00) Nuku'alofa
```

Warranty

D-Link ®
Building Networks for People

Limited Warranty
(USA Only)

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty: D-Link warrants that the hardware portion of the D-Link product described below ("Hardware") will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below ("Warranty Period"), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim: The customer shall return the product to the original purchase point based on its return policy.   In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.

- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.com/.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link.   Products shall be fully insured by the customer and shipped to **D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708**. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer.

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered: The Limited Warranty provided herein by D-Link does not cover: Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties: EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability: TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

Governing Law: This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

Trademarks: D-Link is a registered trademark of D-Link Systems, Inc. Other trademarks or registered trademarks are the property of their respective owners.

Copyright Statement: No part of this publication or documentation accompanying this product may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from D-Link Corporation/D-Link Systems, Inc., as stipulated by the United States Copyright Act of 1976 and any amendments thereto. Contents are subject to change without prior notice. Copyright 2005 by D-Link Corporation/D-Link Systems, Inc. All rights reserved.

CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Registration

Register your product online at:
http://support.dlink.com/register

05/03/05

Free Manuals Download Website

http://myh66.com

http://usermanuals.us

http://www.somanuals.com

http://www.4manuals.cc

http://www.manual-lib.com

http://www.404manual.com

http://www.luxmanual.com

http://aubethermostatmanual.com

Golf course search by state

http://golfingnear.com

Email search by domain

http://emailbydomain.com

Auto manuals search

http://auto.somanuals.com

TV manuals search

http://tv.somanuals.com