

# USER MANUAL

DCS-910/DCS-920

VERSION 1.0



**D-Link**<sup>®</sup>

**SECURITY**

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# Package Contents

- DCS-910/920 Internet Camera
- CAT5 Ethernet Cable
- Power Adapter
- Antenna (available only for the DCS-920)
- Manual and Software on CD
- Quick Install Guide
- Camera Stand

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

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



# System Requirements

- Computer with Windows® Vista or XP
- PC with 1.3GHz or above; at least 128MB RAM
- Internet Explorer 6.0 or Netscape Navigator™ 7.0 and above
- Existing 10/100 Ethernet-based network or wireless 802.11b/g network

# Introduction

Congratulations on your purchase of the **DCS-910/920 Internet Camera!** The DCS-910/920 is a versatile and unique solution for your small office or home. Unlike a PC Camera, the DCS-910/920 is a stand-alone system with a built-in CPU that transmits high quality video images for monitoring. The DCS-910/920 can be remotely accessed, and controlled using a Web browser over the Intranet or Internet. The simple installation procedure and intuitive Web-based interface offer easy integration with your Ethernet/Fast Ethernet or 802.11b/g wireless\* network. The DCS-910/920 also comes with remote monitoring capability for a complete and cost-effective home security solution.

\* Wireless is available only for the DCS-920

# Features

- **Simple to Use:** The DCS-910/920 is a stand-alone system with a built-in CPU, requiring no special hardware or software such as PC frame grabber cards. The DCS-910/920 supports both ActiveX mode for Internet Explorer and Java mode for Internet Explorer and Netscape Navigator™.
- **Supports a Variety of Platforms:** Supporting TCP/IP networking, HTTP, and other Internet related protocols. The DCS-910/920 can also be integrated easily into other Internet/Intranet applications because of its standards-based features.
- **802.11b/g Wireless or Ethernet/Fast Ethernet Support:** The DCS-910/920 offers wireless 802.11b/g\* and Ethernet/Fast Ethernet connectivities, making the DCS-910/920 easy to integrate into your existing network environment. The DCS-910/920 works with a 10Mbps Ethernet based network or 100Mbps Fast Ethernet based network for traditional wired environments, and works with 802.11b/g routers or access points for added flexibility. The Site Survey feature also allows you to view and connect to any available wireless networks.
- **Web Configuration:** Using a standard Web browser, administrators can configure and manage the Internet Camera directly from its own Web page via Intranet or Internet. This means you can access your DCS-910/920 anytime, anywhere in the world!
- **Remote Monitoring Utility:** The D-ViewCam application adds enhanced features and functionalities for the Internet Camera, and allows administrators to configure and access the Internet Camera from a remote site via Intranet or Internet. Other features include monitoring images, recording images to a hard drive, viewing up to 32 cameras on one screen, and taking snapshots.
- **Broad Range of Applications:** With today's high-speed Internet services, the Internet Camera can provide the ideal solution for delivering live video images over the Intranet and Internet for remote monitoring. The Internet Camera allows remote access using a Web browser for live image viewing, and allows the administrator to manage and control the Internet Camera anytime, anywhere in the world. Many applications exist, including industrial and public monitoring of homes, offices, banks, hospitals, child-care centers, and amusement parks.

\* Wireless is available only for the DCS-920

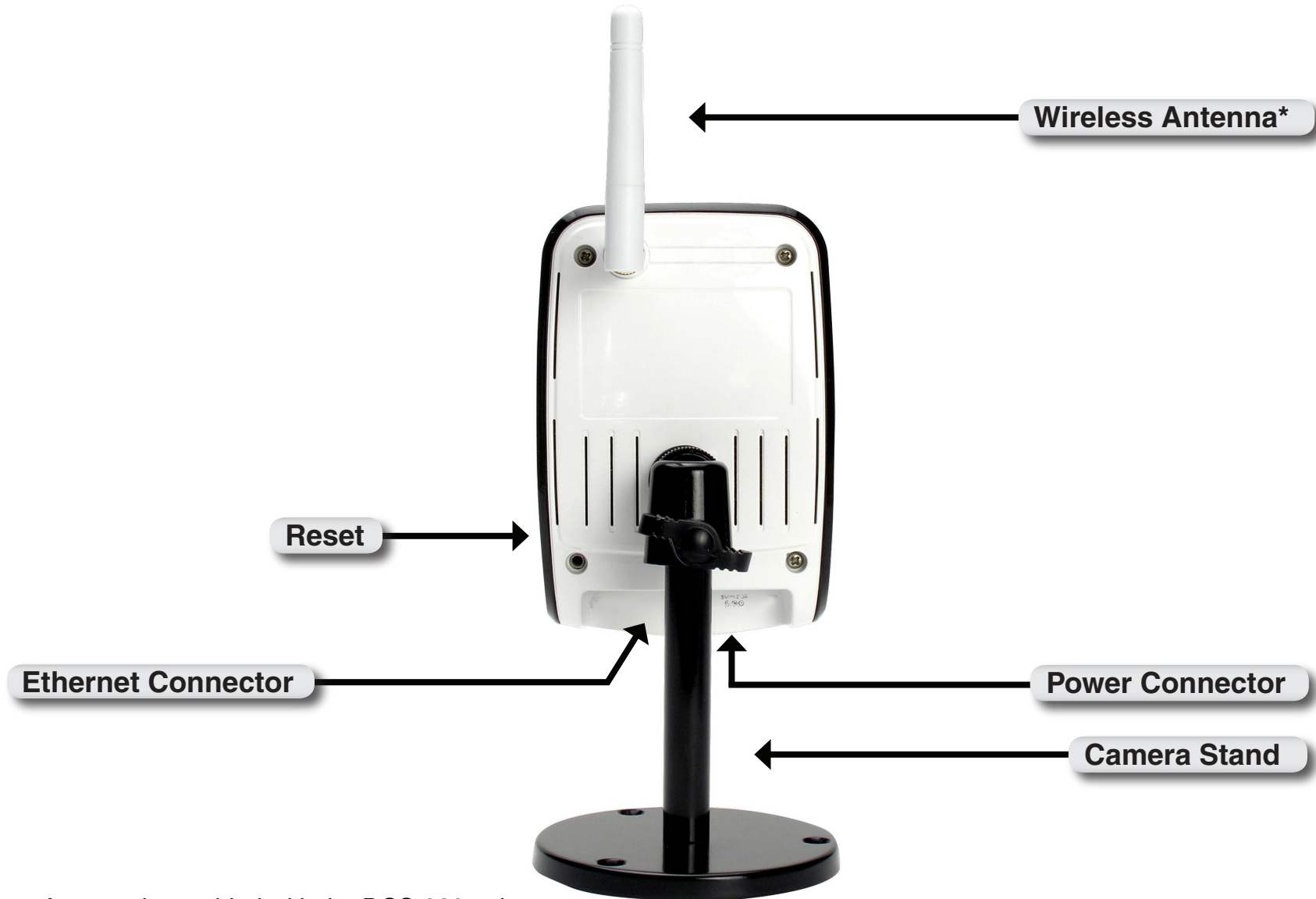
# Hardware Overview

## Front View



\* Wireless Antenna is provided with the DCS-920 only.

## Rear View



\* Wireless Antenna is provided with the DCS-920 only.



# Hardware Installation

## Attach the Antenna\*

Locate the antenna included with your DCS-920 and attach it to the antenna connector located on the back of the DCS-920.

**Note:** It is required that an Ethernet cable is used during initial setup. Once your wireless configuration is set, you may disconnect the Ethernet cable and begin communicating wirelessly with your DCS-920.



## Attach the Swivel Stand

Locate the stand mount on the back panel of the DCS-910/920 and screw on the swivel stand to the DCS-910/920.



## Connect the Ethernet Cable

Connect the included Ethernet cable to the network cable connector located on the bottom panel of the DCS-910/920 and attach it to the network. Network Connectivity is confirmed when the green LED Indicator on the DCS-910/920, located below the Power LED, is illuminated.

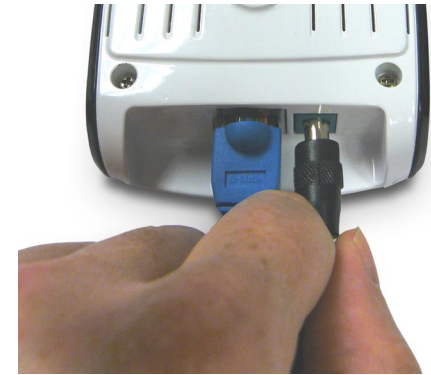


\* Wireless Antenna is provided with the DCS-920 only.

## Attach the External Power Supply

Attach the external power supply to the DC power input connector located on the bottom panel of the DCS-910/920 and connect it to your local power supply.

**Note:** Power source is confirmed when the red LED Power Indicator located below the lens on the DCS-910/920 is illuminated.



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



Socket for camera stand

# Installation

## Wireless Installation Considerations

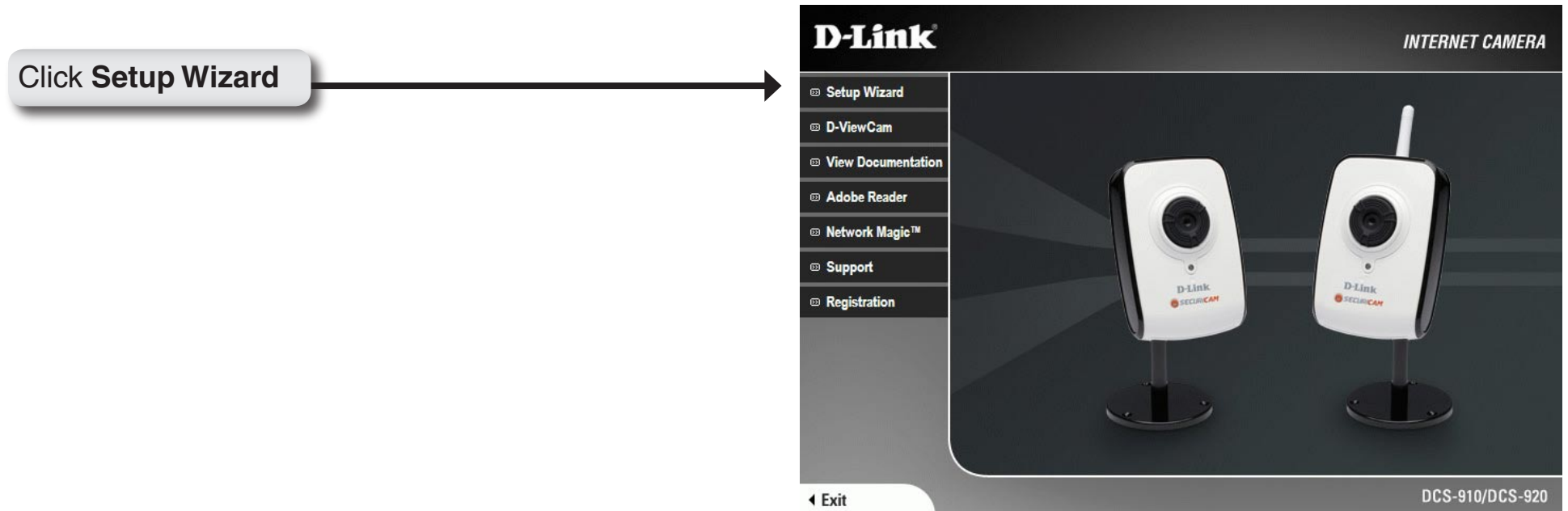
The D-Link Wireless\* Internet Camera lets you access your network using a wireless connection from anywhere within the operating range of your wireless network. However, the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Minimize the number of walls and ceilings between your adapter and other network devices (such as your Internet Camera) - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.)
2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle, it looks over 42 feet (14 meters) thick! Position your devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
3. Building Materials make a difference. A solid metal door or aluminum studs may weaken the wireless signal. Try to position your access points, wireless routers, and other networking devices where the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.
4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
5. If you are using 2.4GHz cordless phones or other radio frequency sources (such as microwave ovens), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone is not in use.

\* Wireless is available only for the DCS-920

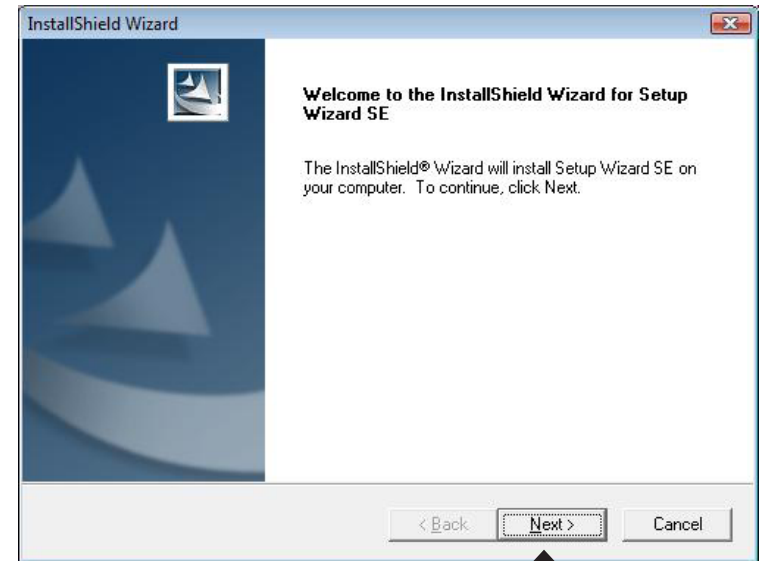
# Software Installation

Turn on the computer and Insert the D-Link DCS-910/920 Driver CD in the CD-ROM drive. The following step-by-step instructions will be shown in Windows® XP. The similar steps and screens will be shown for other Windows operating systems.



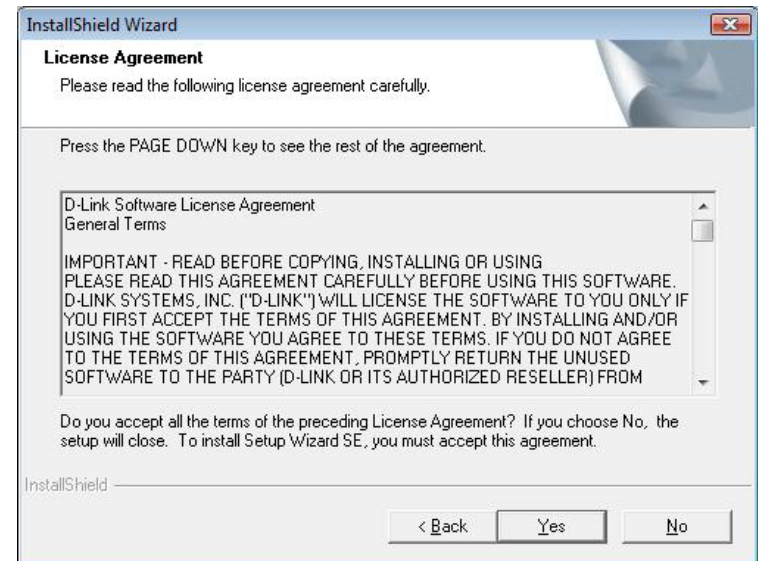
If the CD Autorun function does not automatically start on your computer, click Windows Start > Run. In the Run command box type "**D:\DCS910920.exe**", where D: represents the drive letter of your CD-ROM. If it does start, proceed to the next screen.

Click **Next** to continue.



Click **Next**

Click **Yes** to accept the License Agreement.

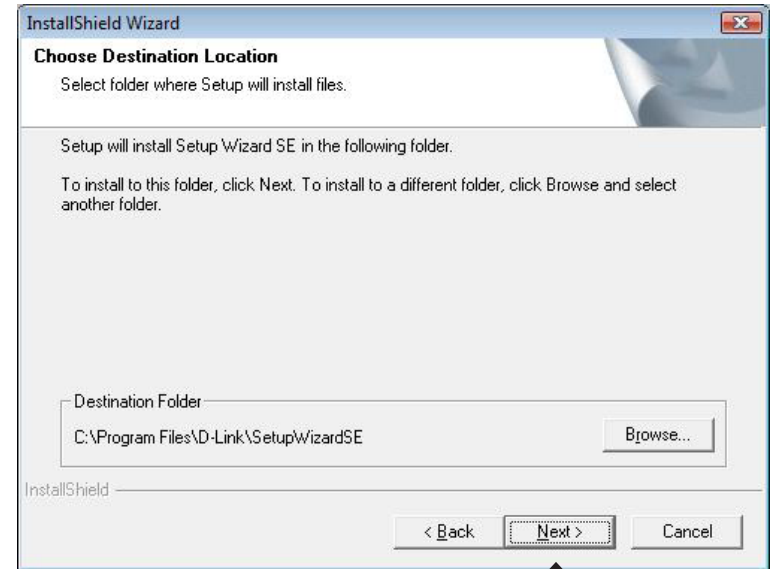


Click **Yes**

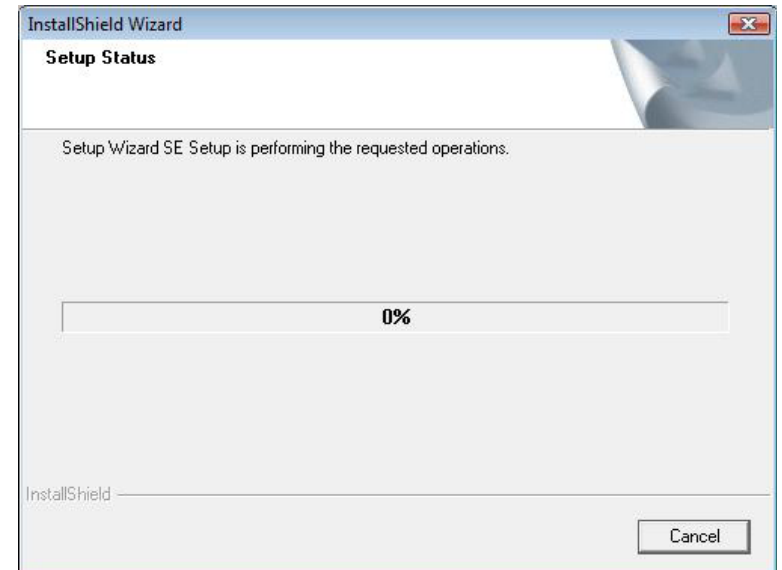
To start the installation click **Next**.

**Note:** *The installation may take several minutes to complete.*

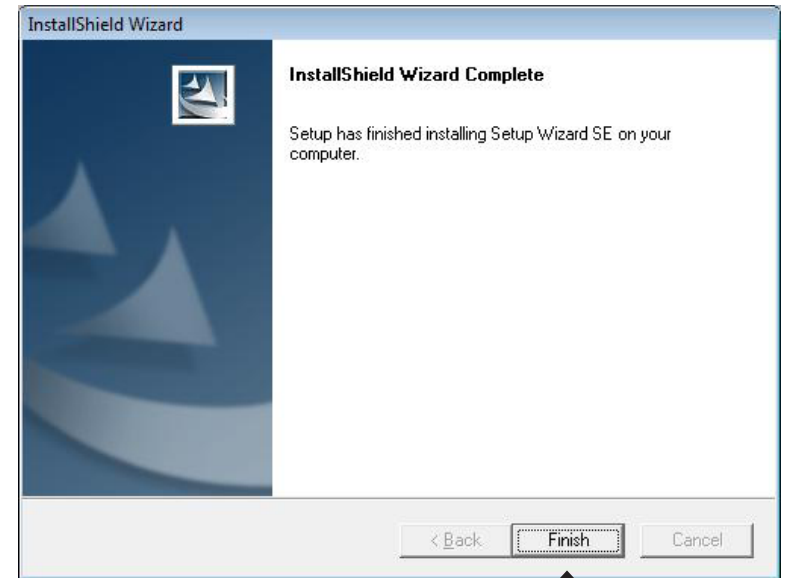
Click **Next**



Please wait while the Setup Wizard is being installed.



Click **Finish** to complete the installation.

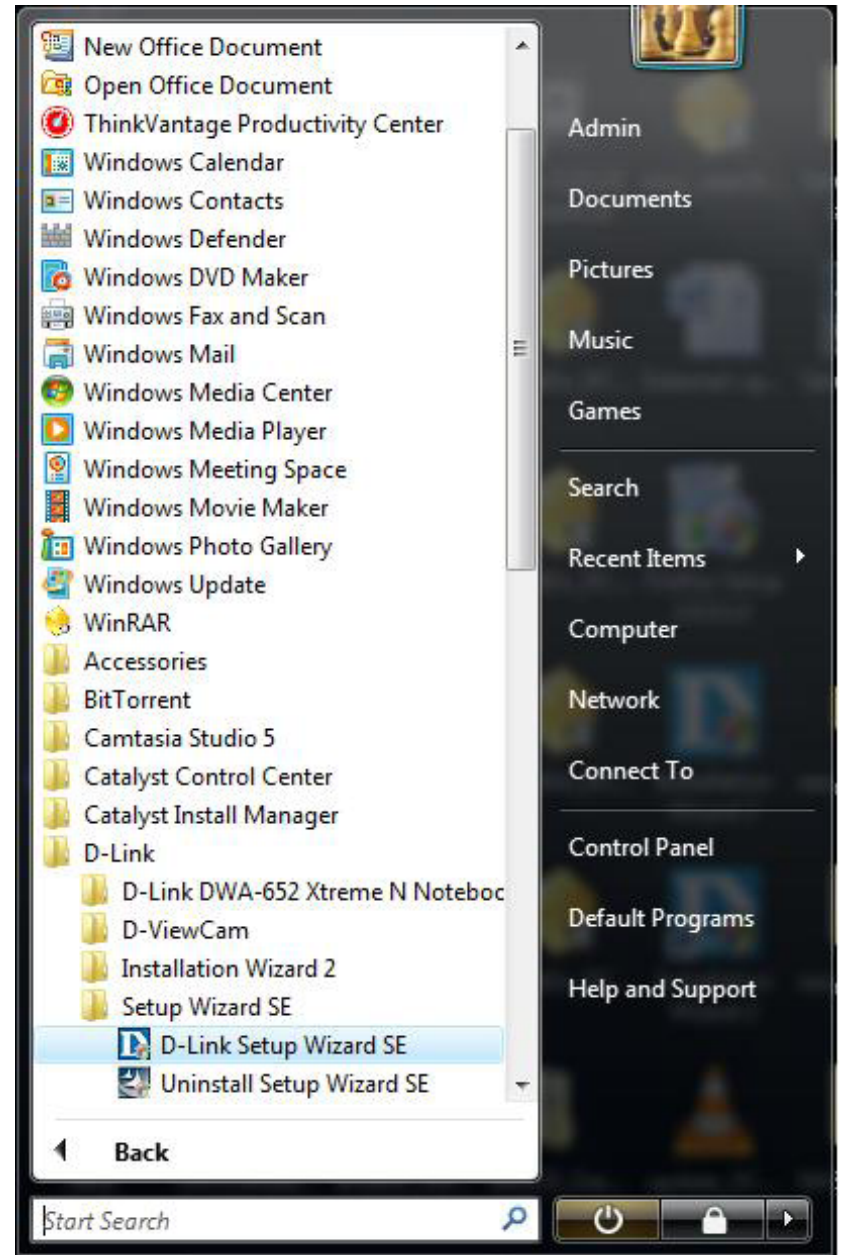


Click **Finish**

Click on the **D-Link Setup Wizard SE** icon that was created in your Windows Start menu.

The Setup Wizard will appear and display the MAC address of the DCS-910/920, and an IP Address (which may or may not be correct depending on what you have your DCS-910/920 connected to). If you have a DHCP server on your network, there will be a valid IP Address displayed here.

**Note:** A DHCP server is a device that supplies IP addresses to your network devices automatically.





# Configuration

This section will show you how to configure your new D-Link Internet camera using the D-Link Setup Wizard SE.

## Setup Wizard

The following options are available on the Installation Wizard screen:

Your camera's IP Address will be displayed along with its corresponding MAC Address here.

The screenshot shows the D-Link Setup Wizard SE interface. The top header includes the D-Link logo and the SECURICAM Network logo. On the left side, there is a vertical sidebar with five buttons: Wizard, Search, Link, About, and Exit. The main content area displays a table with the following data:

MAC Address	Current IP Address	Device Name
00.f.11.11.66.88	192.168.1.169	DCS-920

A callout box with the text "Your camera's IP Address will be displayed here along with its corresponding MAC Address." has an arrow pointing to the first row of the table. A button labeled "Click Wizard" has an arrow pointing to the "Wizard" button in the sidebar.

Enter the admin ID and password.

**Note:** The default Admin ID is **admin** with the password left blank.

Click **Next**

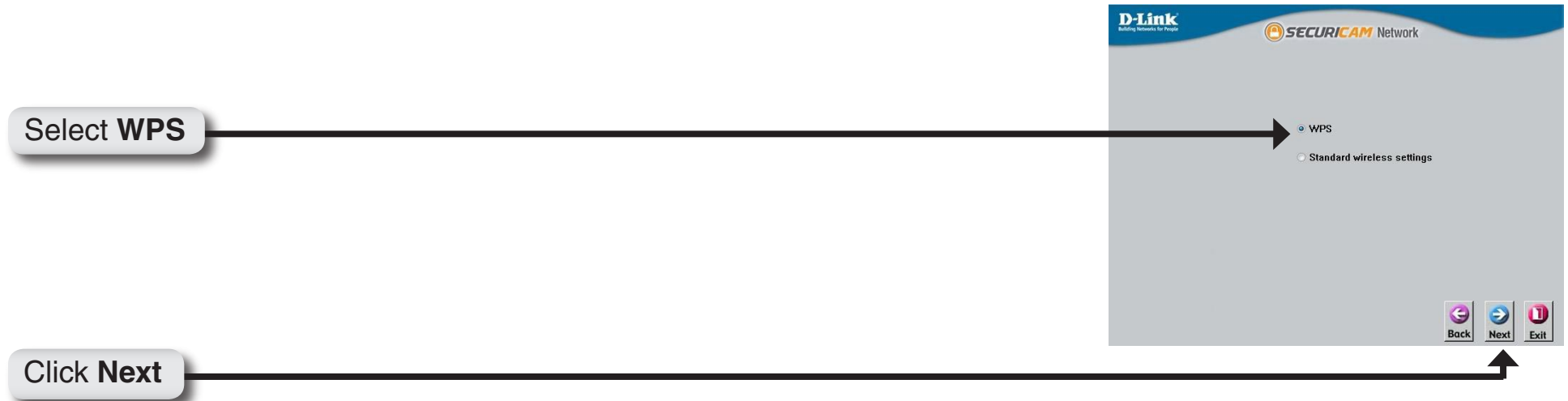
The screenshot shows the 'Set up an Admin ID and Password to secure your camera.' screen. It includes fields for 'Admin ID', 'Password', 'New ID', 'New Password', and 'Reconfirm' for both. There are 'Change' checkboxes for the 'New ID' and 'New Password' sections. At the bottom right, there are 'Back', 'Next', and 'Exit' buttons. An arrow from the 'Click Next' callout points to the 'Next' button.

Select DHCP if you want to obtain a new IP address every time the camera boots up, or select static IP to use the same IP address at each boot up.

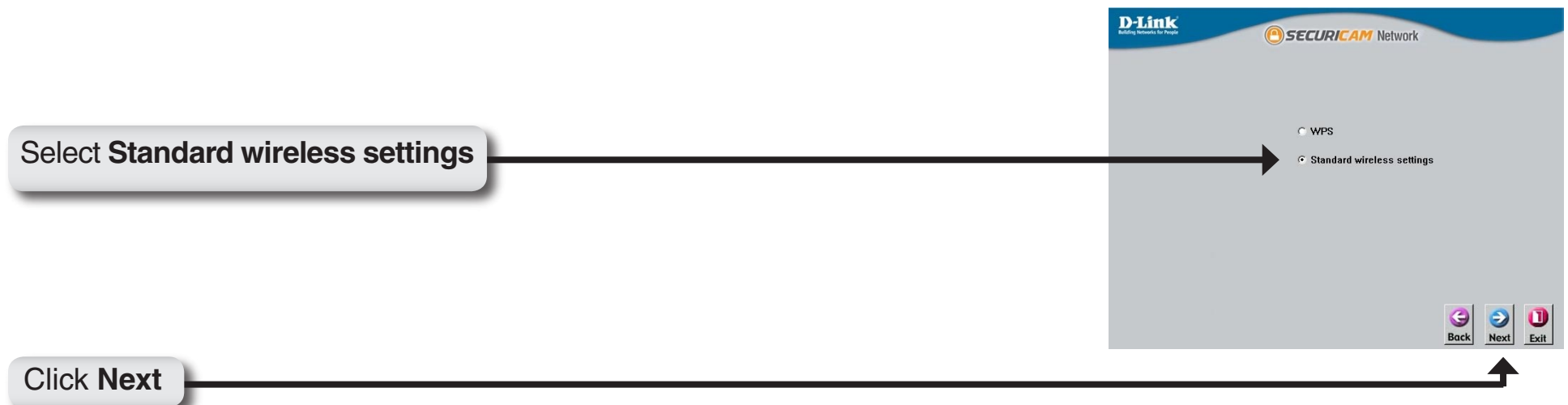
Click **Next**

The screenshot shows the 'Set IP Address' screen. It has radio buttons for 'DHCP' and 'Static IP', with 'Static IP' selected. Below are input fields for 'IP Address' (192.168.1.169), 'Subnet Mask' (255.255.255.0), 'Default Gateway' (192.168.1.1), 'Primary DNS' (0.0.0.0), and 'Secondary DNS' (0.0.0.0). At the bottom right, there are 'Back', 'Next', and 'Exit' buttons. An arrow from the 'Click Next' callout points to the 'Next' button.

The next screen that appears will allow you to use **WPS** or **Standard Wireless Settings** to connect to your router. If you want to use the **WPS - Push Button Option**, please continue to page 20.



If you would like to connect your router with **Standard Wireless Settings**, please continue to page 21.

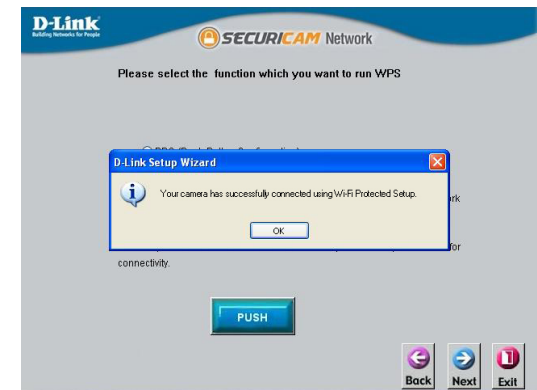
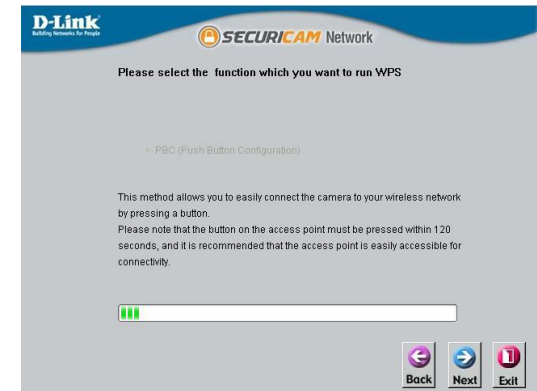


# WPS - Push Button Setup

Note: Click **PUSH** or **Next** to continue.



Once your camera has finished WPS - Push Button Configuration setup, click **OK** and continue to the "Viewing Your Internet Camera" section on page 23.



## Standard Wireless Settings

Enable wireless settings and enter your wireless network information. Select your wireless security settings, and click **Next**.

**Note:** *Wireless is available only for the DCS-920.*

Click **Next**

D-Link Building Networks for People  
SECURICAM Network

### Wireless Interface

Wireless  Enable  Disable

Connection mode  
 Infrastructure  
 Adhoc

Network Name (SSID) m-Lounge2

Wireless Channel 4

Security Mode WPA\_PSK

Authentication  
 Open  
 Shared  
 Both

Back Next Exit

Enter your wireless encryption key and click **Next**.

**Note:** *Wireless is available only for the DCS-920.*

Click **Next**

D-Link Building Networks for People  
SECURICAM Network

### Wireless Interface

Encryption Mode 64bits

Key Format Hex

Default Key WEP Key1

Key1

Key2

Key3

Key4

Pre-Shared Key PSK12345

Back Next Exit

If you need to make any changes, click **Back** to modify your settings. Otherwise, click **Restart** to save and apply your settings.

**Note:** *Wireless is available only for the DCS-920.*

Click **Restart**

D-Link  
Building Networks for People

SECURICAM Network

Admin ID	admin	Wireless	Enable
Password		SSID	m-Lounge2
IP Address	192.168.1.169	Channel	6
Subnet Mask	255.255.255.0	WEP Key1	
Default Gateway	192.168.1.1	WEP Key2	
Primary DNS	0.0.0.0	WEP Key3	
Secondary DNS	0.0.0.0	WEP Key4	
		Pre-Shared Key	PSK12345

The Setup Wizard has completed. Click on 'Back' to modify your settings. Click 'Restart' to save your current settings and reboot the Internet Camera.

Back Restart

# Viewing Your Internet Camera

**Your setup is now completed!**

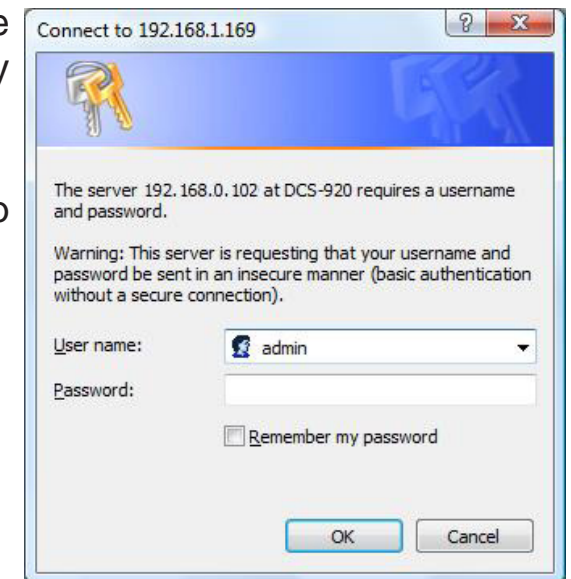
Click **Link** to launch the Web page of your camera, and view the images using your Web browser.

Click **Link**



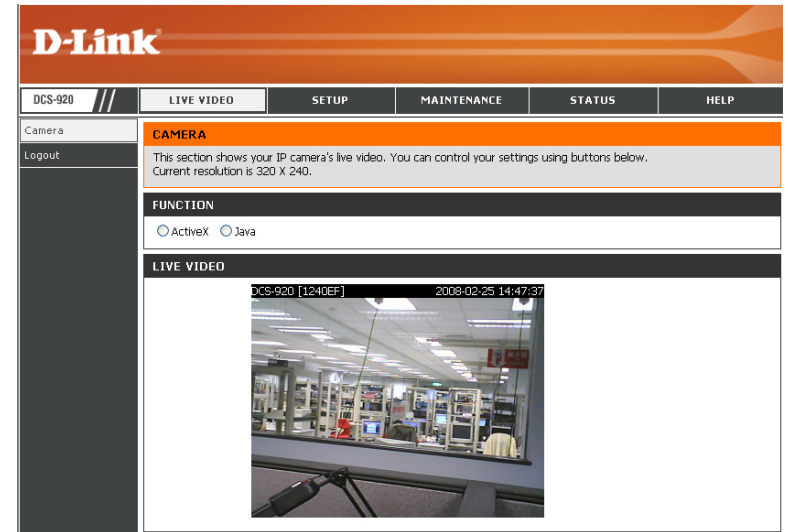
The Setup Wizard will automatically open your web browser to the IP address of the DCS-910/920, in this example it is: `http://192.198.0.102`. Your DCS-910/920 may have a different IP Address.

Enter **admin** as the default username and leave the password blank. Click **OK** to continue.



The Home screen of your camera can be accessed from the Setup Wizard using the **Link** button. You may also use your favorite Web browser, type “<http://address>” in the address box, where **address** is the IP address that you have assigned to your camera in the previous section.

Click **ActiveX** or **Java radio button** to view live video.



- Please make sure that you have the latest version of Java application installed on your computer to ensure proper operation when viewing the video in Java mode. The Java application can be downloaded at no cost from Sun's web site. (<http://www.java.com>)
- When you connect to the home page of your camera, you will be prompted to download ActiveX. If you want to use ActiveX to view your video images instead of Java, then you must download ActiveX.

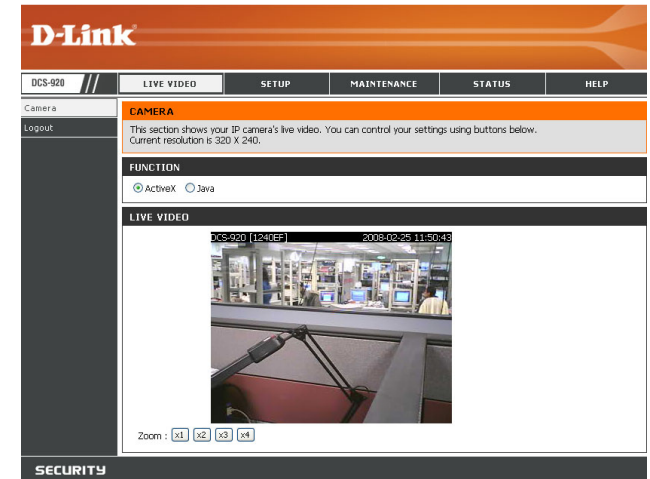


# Configuration

## Live Video

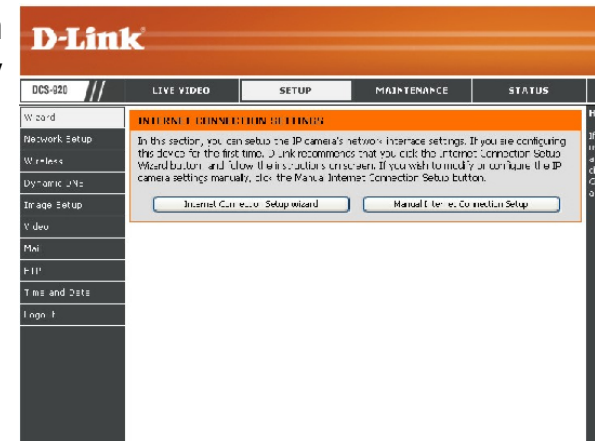
**ActiveX:** For Windows® Users that do not have Java installed, please choose this option to view video streaming on the Home page.

**Java:** For Windows® users that have Java installed, you can also use this for viewing video. Mac users must choose this mode to view video.



## Setup > Wizard

You may choose to configure your network by using the **Internet Connection Setup Wizard** that includes step-by-step instructions. Otherwise, you may manually configure your connection using the **Manual Internet Connection Setup**.



## Internet Connection Setup Wizard

This wizard will guide you through a step-by-step process to configure your new D-Link Camera and connect the camera to the Internet.

Click **Next** to proceed.

Click **Next**

### WELCOME TO D-LINK SETUP WIZARD - INTERNET CONNECTION SETUP

This wizard will guide you through a step-by-step process to configure your new D-Link Camera and connect the camera to the internet.

- **Step 1:** Setup LAN Settings
- **Step 2:** Setup DDNS Settings
- **Step 3:** Server Name Settings
- **Step 4:** Setup Time Zone

Next Cancel

You may configure your camera using

- **DHCP Connection** (by default), where your DHCP server will automatically assign dynamic IP to your device.
  - **Static IP Address**, or
  - **PPPoE connection**, where your camera is directly connected to the Internet through a DSL modem.
- \* Input the DNS information if you have chosen and assigned a Static IP Address for your camera.

Click **Next** to proceed.

Click **Next**

### STEP 1: SETUP LAN SETTINGS

Please select whether your camera will connect to the Internet with a DHCP connection, Static IP address or PPPoE. If your camera is connected to a router, or you are unsure which settings to pick, D-Link recommends that you keep the default selection of DHCP connection. Otherwise, click on Static IP address to manually assign an IP address before clicking on the **Next** button.

DHCP Connection  
 Static IP Address

IP Address   
 Subnet Mask   
 Default Gateway

PPPoE

User ID   
 Password

Primary DNS   
 Secondary DNS

Next Cancel

If you have a Dynamic DNS account and would like the camera to update your IP address automatically, enable **DDNS** and enter your host information.

Click **Next** to proceed.

Click **Next**

#### STEP 2: SETUP DDNS SETTINGS

If you have a Dynamic DNS account and would like your camera to update the IP address automatically, enable DDNS and enter your host information below. Click on the **Next** button to continue.

- Enable  
 Disable

Server Address  << Select Dynamic DNS Server

Host Name

User Name or Key

Password or Key

Timeout  hours

Enter a name for your camera.  
Then, click **Next** to proceed.

Click **Next**

#### STEP 3: SERVER NAME SETTINGS

D-Link recommends that you rename your camera for easy accessibility. Please assign a name of your choice before clicking on the **Next** button.

Camera Name

Configure the correct time to ensure that all events triggered, captured and scheduled at the right time.  
Then, click **Next** to proceed.

Click **Next**

#### STEP 4: SETUP TIME ZONE

Please configure the correct time to ensure that all events are triggered, captured and scheduled at the correct time and day and then click on the **Next** button.

Current Time 06 Mar 2008 4:28:27 P.M.

TimeZone  Hours

This page displays your configured settings. Click **Apply** to save and activate the setting, or **Back** to change your settings.

Click **Apply**

#### STEP 5: SETUP COMPLETE

Here is a summary of your camera settings. Click **Back** to review or modify the settings, or click **Apply** if all settings are correct. It is recommended to note down this information for future access or reference.

IP Address	10.4.4.4
IP Camera Name	DCS-920 [1240EF]
Time Zone	+8 Hours
DDNS	Disable

## Network Setup

In this section, you can configure your network settings.

**DHCP:** Select this connection if you have a DHCP server running on your network and would like a dynamic IP address to be updated to your camera automatically.

**Static IP Client:** You may obtain a static or fixed IP address and other network information from your network administrator for your camera. A static IP address will ease you for accessing your camera in the future.

**IP Address:** The fixed IP address

**Subnet Mask:** The default value is “255.255.255.0.” Used to determine if the destination is the same subnet.

**Default Gateway:** The gateway used to forward frames to destinations in a different subnet. Invalid gateway 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 DNS.

**PPPoE Settings:** You may configure a Second HTTP port that will allow you to connect to the camera via a standard web browser. The port can be set to a number other than the default TCP ports 80. A corresponding port must be opened on the router. For example, if the port is changed to 1010, users must type in the web browser “http://192.168.0.100:1010” instead of “http://192.168.0.100”.

**Port Settings:** You may configure a Second HTTP port that will allow you to connect to the camera via a standard web browser. The port can be set to a number other than the default TCP ports 80. A corresponding port must be opened on the router. For example, if the port is changed to 1010, users must type in the web browser “http://192.168.0.100:1010” instead of “http://192.168.0.100”.

**UPnP Settings:** Enable this setting to configure your camera as an UPnP device in the network.

**NETWORK SETUP**

You can configure your LAN and Internet settings here.

**LAN SETTINGS**

DHCP Connection
  Static IP Address
  PPPoE

IP Address: 
 User ID:

Subnet Mask: 
 Password:

Default Gateway:

Primary DNS:

Secondary DNS:

**PORT SETTINGS**

Second HTTP Port:  Enable  Disable

Port Number:

**UPnP SETTINGS**

Enable  Disable

## Setup > Wireless

In this section, you can setup and configure the wireless settings on your camera.

**Note:** *Wireless is available only for the DCS-920.*

### Wireless Interface

**SSID:** Service Set Identifier, an identifier for your wireless network.

**Channel:** The default setting is channel 6. Select the same channel that is using by other wireless devices within your network. When there is interference from the wireless networks that overlap with one another, you may change the channel to obtain maximum performance for your connection.

**Connection Mode:** **Infrastructure** is a wireless connection using an access point as a transmission point of all wireless devices. **Ad-Hoc** is a wireless connection used without an access point, where your DCS-920 is directly connecting to your PC. This is done using the on-board wireless adapter on the DCS-920 connected to a wireless adapter on the PC.

**Site Survey:** This page will allow you to select a wireless network that the DCS-920 was able to detect upon booting up.

**WPS:** This option will allow you to run the Wi-Fi Protected Setup directly from your DCS-920 Web GUI.

**Wireless Security Mode:** For security, there are three choices; **None**, **WEP**, and **WPA-PSK / WPA2-PSK**. Select the same encryption method that is being used by your wireless device/ router.

**WPA-PSK / WPA2PSK Settings:** An appropriate **Preshared Key**, which is needed in order to connect to the wireless network..

## Setup > DDNS

In this section, you can configure the DDNS setting for your camera. DDNS will allow all users to access your camera using a domain name instead of an IP address.

**DYNAMIC DNS**

The Dynamic DNS feature allows you to host a server (Web, FTP, Camera , etc...) using a domain name that you have purchased (www.whateveryournameis.com) from your broadband Internet Service Provider (ISP). Using a DDNS service, your friends can enter your host name to connect to your IP Camera regardless of your IP address.

**DYNAMIC DNS SETTING**

Enable
  Disable

Server Address  <<

Host Name

User Name or Key

Password or Key

Timeout  hours

**DDNS:** (Dynamic Domain Name Server) will hold a DNS host name and synchronize the public IP address of the modem when it has been modified. The username and password are required when using the DDNS service.

**Enable:** Click to enable the DDNS function.

**Server Address:** Select your Dynamic DNS Server from the pull down menu.

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

**User Name:** Enter your username or e-mail used to connect to the DDNS.

**Password:** Enter your password used to connect to the DDNS server.

## Setup > Image Setup

In this section, you can configure the image settings for your camera.

**IMAGE SETUP**

In this section, you can configure the camera Anti Flicker, Flip Image, Mirror, Brightness Control, etc....

Save Settings Don't Save Settings

**IMAGE SETTINGS**

Enable Anti Flicker

Flip Image

Mirror

Brightness Control +0 ▾

Contrast Control +0 ▾

Saturation Control +0 ▾

Save Settings Don't Save Settings

### Image Settings

**Enable Antiflicker:** Check to enable antiflicker.

**Flip Image:** Vertically rotates the video. If the camera is installed upside down, **Flip Image** and **Mirror** should both be checked.

**Mirror:** Horizontally rotates the video.

**Brightness Control:** Allows you to adjust the brightness level.

**Contrast Control:** Allows you to adjust the contrast level.

**Saturation Control:** Allows you to adjust the saturation level. .

## Setup > Video

In this section, you can configure the video settings for your camera.

**VIDEO**

In this section, you can configure the camera video quality, resolution, and frame rate.

---

**VIDEO PROFILE**

Encode Type	Resolution	FPS	Jpeg Quality
JPEG	320 x 240 <input type="button" value="v"/>	Auto <input type="button" value="v"/>	Medium <input type="button" value="v"/>

---

**LIGHT FREQUENCY**

50 Hz
  60 Hz

### Video Configuration

**Video Profile:** This section allows you to change the **Encode Type**, **Resolution**, **FPS**, and **Quality**.

**Encode Type:** The compression format used when viewing your camera.

**Resolution:** Select the desired video resolution from three formats: 640x480, 320x240, and 160x120. The higher setting can obtain better quality. However, it will use more resource within your network.

**FPS:** Select the optimal setting depending on your network status. Please note that the higher setting can obtain better quality. However, it will use more resource within your network.

**Quality:** Select the desired image quality from five levels: Highest, High, Medium, Low, and Lowest.

**Light Frequency:** Select the proper frequency (50Hz or 60Hz) to reduce image flicker.



# Setup > Mail

## Email Account

In this section, you can configure the email notification settings for your camera.

**SMTP Server Address:** This is the domain name or IP address of your external e-mail server.

**Sender e-mail Address:** This is the e-mail address of the person sending the camera snapshots.

**Receiver e-mail Address:** This is the e-mail address of recipient for the SMTP server.

**User Name:** If the SMTP server uses authentication, you must enter your user name here.

**Password:** This is the password that you use with your user name to connect to the SMTP server.

**MAIL**

This section allows you to setup and configure the email notification settings for your camera. If your details change or you are experiencing issues with alert notifications, you may need to modify these settings.

**E-MAIL ACCOUNT**

SMTP Server Address

Sender e-mail Address

Receiver e-mail Address

User Name

Password

**TIME SCHEDULE**

Enable emailing images to email account:

Always

Schedule

Day  Mon  Tue  Wed  Thu  Fri  Sat  Sun

Time Period Start :  (Example : 06:30:00)

Stop :  (Example : 22:30:00)

Interval  Seconds

**TEST E-MAIL ACCOUNT**

A test email will be sent to the e-mail account listed above.

## Time Schedule

**Enable e-mail image to e-mail account:** Choosing **Always** will start sending snapshots to the recipient's e-mail account right away. Choosing **Schedule** will allow you to schedule when to start and stop the sending of snapshots to the recipient's e-mail account.

**Interval:** The frequency of the snapshot interval can also be configured from 1 to 65535 seconds.

**Test E-mail Account:** This will send a snapshot to the e-mail account that you have configured in the **E-mail** section. If you have configured the SMTP account correctly, you will be able to send a test file to the e-mail account of the recipient.

## Setup > FTP FTP Server

In this section, you can configure a FTP server to receive the images.

**Host Address:** This is the IP address of the FTP server that you will be connecting to.

**Port Number:** Default is port 21. If changed, external FTP client program must change the server connection port accordingly.

**User Name:** Specifies the user name to access the external FTP server. If you are to upload snapshots to an FTP server you will need to fill in the Domain name or IP address of your external FTP server. The following user settings must be correctly configured for remote access.

**Password:** Specifies the password to access the external FTP server.

**Directory Path:** Specifies the destination folder in the external FTP server.

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

**FTP**

In this section, you may configure a FTP server to receive the images .

**FTP SERVER**

Host Name

Port  (Default is 21)

Username

Password

Path

Passive Mode  Yes  No

**TIME SCHEDULE**

Enable uploading images to the FTP server

Always

Schedule

Day  Mon  Tue  Wed  Thu  Fri  Sat  Sun

Time Period Start :  (Example : 06:30:00)

Stop :  (Example : 22:30:00)

Video Frequency  1 Frames/Second

1 Seconds/Frame

Base File Name

File  Overwrite

Date/Time Suffix

Sequence Number Suffix Up to

**TEST FTP SERVER**

A JPEG file will be sent to the above FTP server for testing. (File name: test\_date\_time.jpg)

## Time Schedule

**Enable upload image to FTP server:** Checking this box will enable video upload to the FTP server you have selected.

**Always:** Selecting this option allows snapshots to be uploaded to your FTP as soon as you click **Apply**.

**Schedule:** Selecting this option allows you to configure the times that you want the snapshots to be uploaded to your FTP server.

**Video Frequency:** User can select in frames per second (1, 2, 3 or auto, in auto this could go to 4). The user can also select how many seconds for each frame, this is configurable from 1 to 65535 seconds.

**Base File Name:** This will be the name that precedes the time, for example DCS9202008072116425101.jpg. This means that the camera took a snapshot in the year 2008, July 21 at 16th hour (4 o'clock), 42 minutes and 51 seconds and it is picture number one.

**File:** Select **Overwrite** and there will only be a few images that are constantly refreshed depending on how many snapshots you choose to have sent. Select **Date/Time Suffix** and the pictures will be named with a date and time also. An example of this can be seen above under the **Base file name** category. Select **Sequence Number Suffix** up to 1024 and all the pictures will be numbered from 1-1024. The total amount of pictures can be configured up to 1024 pictures. Picture number 1025 will be 1 again.

**Test FTP Server:** This will send a snapshot to the FTP server that you have configured in the **Upload** section. If you have configured the FTP correctly, you will be able to see a test file in your FTP server.

## Setup > Time and Date

In this section, you can configure the settings of the internal system clocks for your camera.

**Test FTP Server:** Select the time zone for your region from the pull-down menu.

**Synchronize NTP Server:** Network Time Protocol will synchronize your camera with an Internet time server. Choose the one that is closest to your camera,

**Copy your Computer's Time Settings:** Click to synchronize the time information from your PC.

**Set the Date and Time Manually:** Select this to set the time manually.

### TIME AND DATE

The Time Configuration option allows you to configure, update, and maintain the internal system clock. From this section you can set the time zone that you are in, and set the NTP (Network Time Protocol) Server.

Save Settings

Don't Save Settings

### TIME CONFIGURATION

Current Time 06 Mar 2008 4:55:04 P.M.  
Time Zone + 8 Hours

### AUTOMATIC TIME CONFIGURATION

Synchronize NTP Server   
NTP Server Used << Select NTP Server

### SET THE DATE AND TIME MANUALLY

Year 2008 Month 3 Day 6  
Hour 16 Minute 55 Second 3

Copy Your Computer's Time Settings

Save Settings

Don't Save Settings

## Maintenance > Device Management

In this section, you can change the administrator's password and configure the server settings for your camera. You can also manage the user account(s) that access to your camera.

### DEVICE MANAGEMENT

Here you can change the administrator's password and configure the server setting for your camera. You can also add, modify and/or delete the user account(s).

#### ADMIN PASSWORD SETTING

Old Password	<input type="text"/>
New Password	<input type="text"/>
Retype Password	<input type="text"/>
	<input type="button" value="Apply"/> <input type="button" value="Cancel"/>

#### SERVER SETTING

Camera Name	<input type="text" value="DCS-920 [1240EF]"/>
LED Control	<input checked="" type="radio"/> On <input type="radio"/> Off
User Access Control	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
	<input type="button" value="Apply"/> <input type="button" value="Cancel"/>

#### ADD USER ACCOUNT

User Name	<input type="text"/>
Password	<input type="text"/>
Retype Password	<input type="text"/>
	<input type="button" value="Add"/> <input type="button" value="Cancel"/>

#### USER LIST

no.	name	modify	delete

## Maintenance > Backup and Restore

In this section, you can save and restore your configuration, restore the factory settings, and/or restart the camera.

### BACKUP AND RESTORE

You can save and restore configuration, restore factory settings and restart the camera.

#### SYSTEM

Save To Local Hard Drive	<input type="button" value="Save Configuration"/>
Load From Local Hard Drive	<input type="text"/> <input type="button" value="Browse..."/>
	<input type="button" value="Restore Configuration From File"/>
Restore To Factory Default	<input type="button" value="Restore Factory Defaults"/>
Reboot The Device	<input type="button" value="Reboot the Device"/>

## Maintenance > Firmware Upgrade

Your current firmware version and date will be displayed on your screen. You may go to the D-Link Support Page to check for the latest firmware versions available.

To upgrade the firmware on your DCS-910/920, please download and save the latest firmware version from the D-Link Support Page to your local hard drive. Locate the file on your local hard drive by using the **Browse** button. Then, open the file and click the **Upload** button to start the firmware upgrade.

### FIRMWARE UPGRADE

A new firmware upgrade may be available for your camera. It is recommended to keep your camera firmware up-to-date to maintain and improve the functionality and performance of your internet camera. Click here [D-Link Support Page](#) to check for the latest firmware version available.

To upgrade the firmware on your IP camera, please download and save the latest firmware version from the D-Link Support Page to your local hard drive. Locate the file on your local hard drive by clicking the Browse button. Once you have found and opened the file using the browse button, click the **Upload** button to start the firmware upgrade.

### FIRMWARE INFORMATION

Current Firmware Version : 1.00  
Current Firmware Date : 2008-02-26

### FIRMWARE UPGRADE

File Path :



## Status > System

This section displays all the details information about your device and network settings.

### DEVICE INFO

All of your network connection details are displayed on this page. The firmware version is also displayed here.

### BASIC INFORMATION

Camera Name	DCS-920 [1240EF]
Time & Date	22 Feb 2008 5:01:41 P.M.
Firmware Version	1.00 (2008-01-25)
IP Address	10.4.4.4
Subnet Mask	255.0.0.0
Default Gateway	10.1.1.254
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
DDNS	Disable
FTP Server Test	No test conducted
E-mail Test	No test conducted

### WIRELESS STATUS

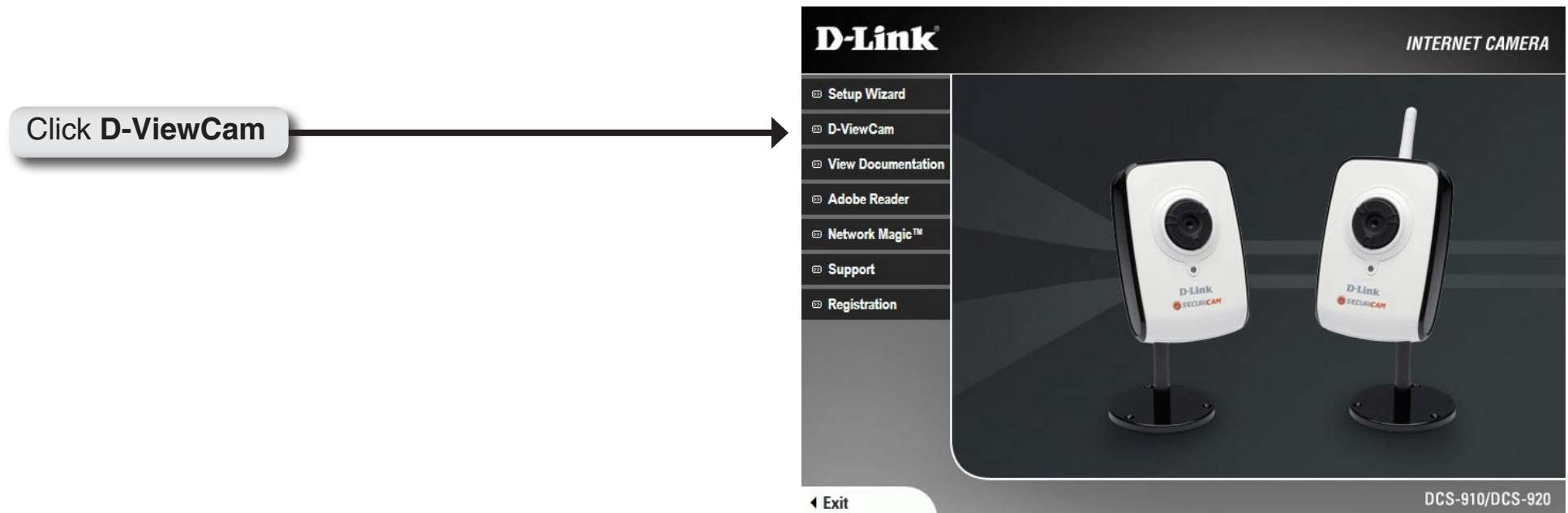
Connection Mode	Infrastructure
Link	No
SSID	default (MAC : 00 00 00 00 00 00)
Channel	6
Transmission Rate	54M bps
Encryption	No

Refresh

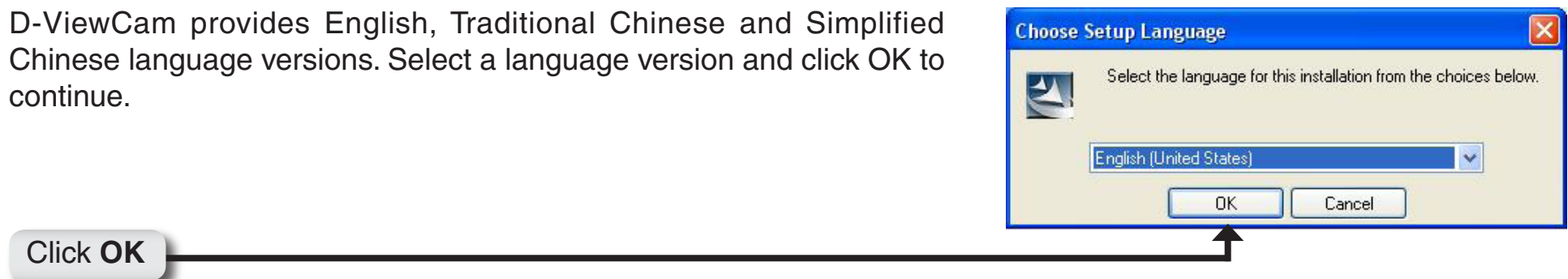
# D-ViewCam Installation

D-ViewCam software is included for the administrator to manage up to 32 D-Link IP cameras remotely. You may now use the software to configure all the advanced settings for your cameras. D-ViewCam is a comprehensive management tool for IP surveillance.

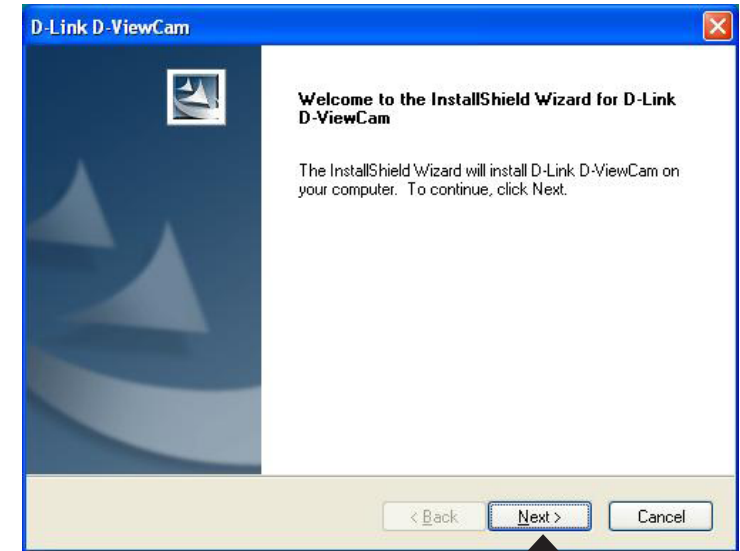
Insert the CD-ROM into the CD-ROM drive. A menu screen will appear as shown below.



D-ViewCam provides English, Traditional Chinese and Simplified Chinese language versions. Select a language version and click OK to continue.

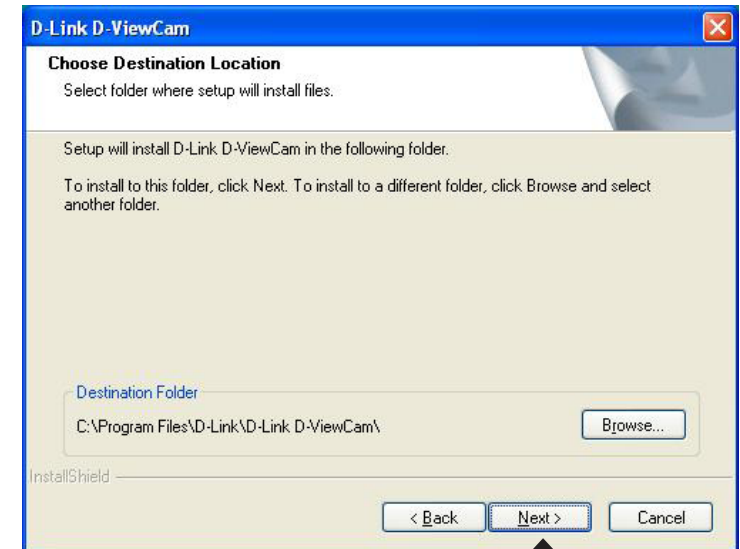


Click **Next** to continue.



Click **Next**

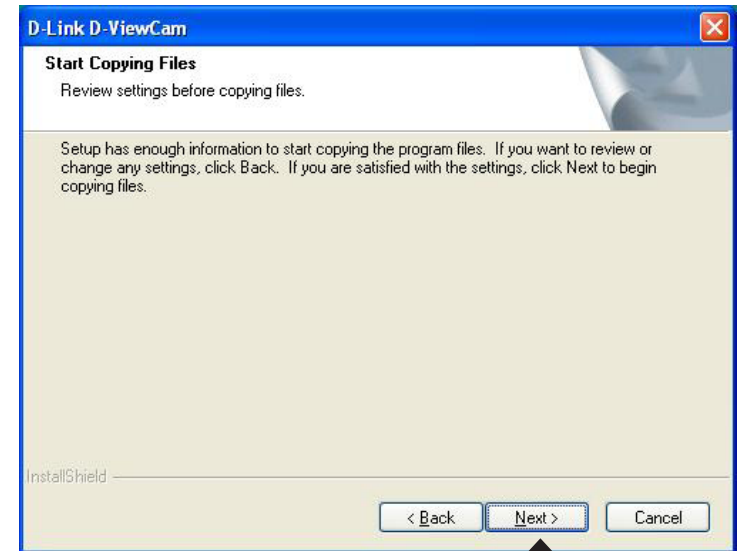
Click **Browse** if you would like to choose a specific folder for the installation, otherwise click **Next** to continue.



Click **Next**

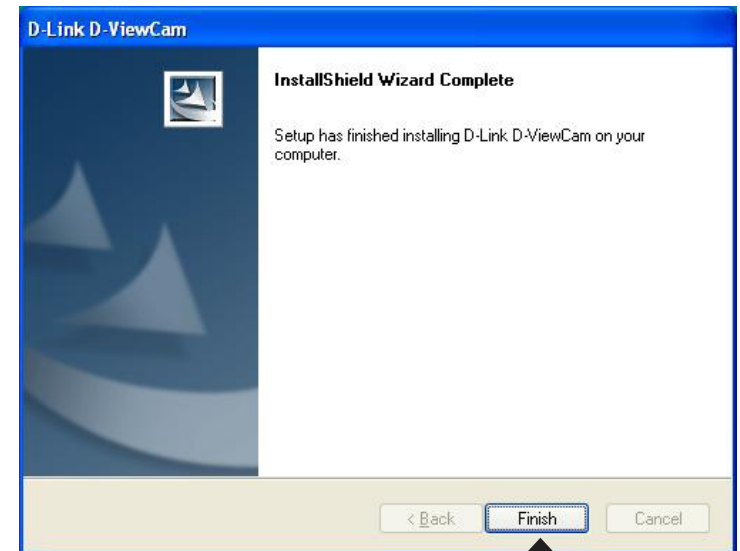
Click **Next** to start the installation.

**Note:** The D-ViewCam installation process may take several minutes to complete.



Click **Next**

Click **Finish** to complete the installation.




Click **Finish**

# Add a Camera

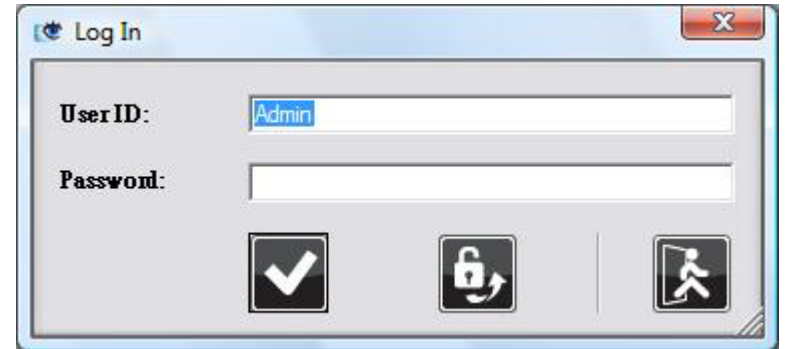
This section will show you how to start and add a camera to the D-ViewCam system.

To start D-ViewCam, select **Start > All Programs > D-Link > D-Link D-ViewCam**.



Enter **Admin** as the default user name and leave the password blank. Click  / OK to log into the system and access the Add Camera Wizard.

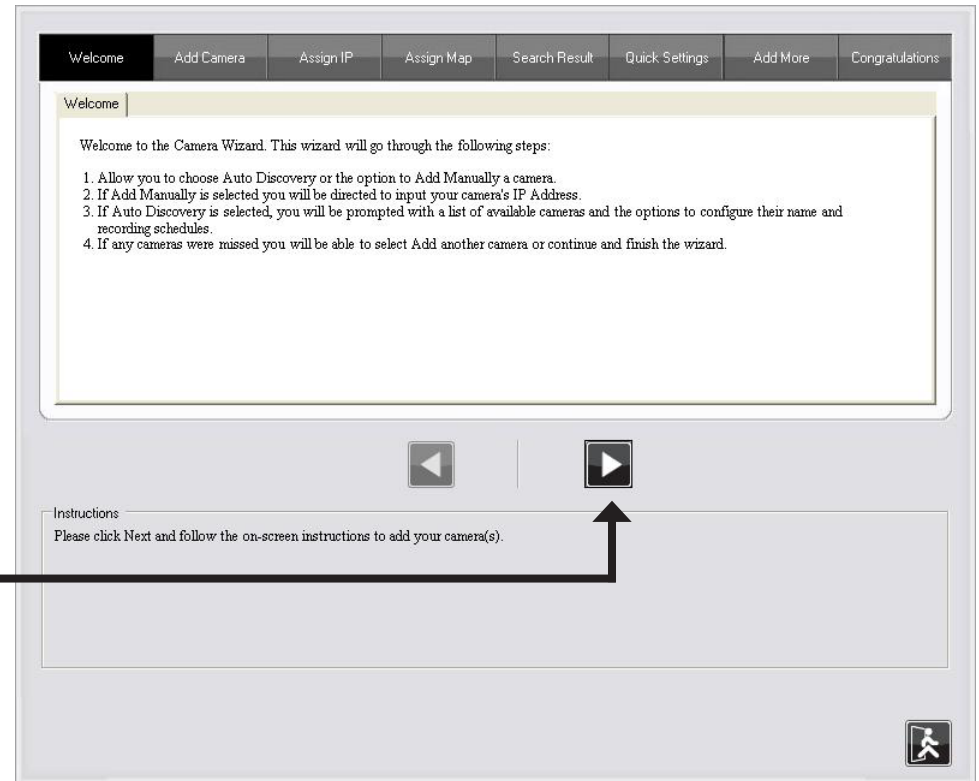
**Note:** Please refer to page 51 in the D-ViewCam user manual to change your password.



Welcome to the Add Camera Wizard. Use this wizard to add your cameras to the D-ViewCam system.

**Note:** Use the left or right arrow to navigate the wizard.

Click  / **Next** to continue.

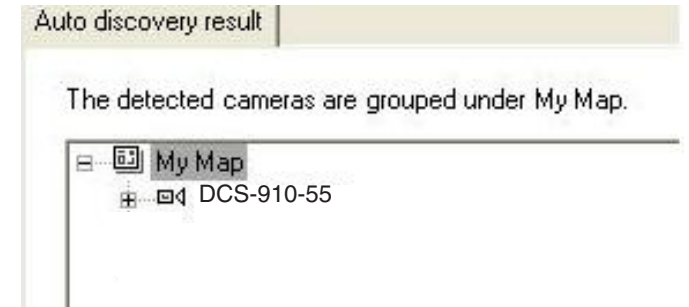
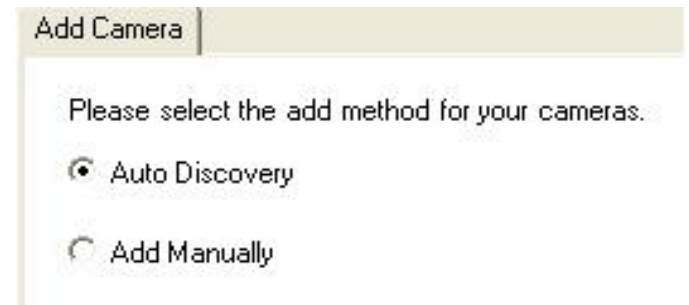


Click **Next**

Choose which method to add your camera(s). You can choose **Auto Discovery** to automatically search for your camera(s), or choose **Add Manually** to add your camera(s) via the camera's IP address. Click **Next** to continue.

If you choose **Auto Discovery**, the system will search all available cameras that are located on the same LAN with same subnet. The system will place all of the cameras under the default map called My Map. Click **Next** to continue.

If you choose **Add Manually**, you will need to enter the IP address of the camera(s). Click **Next** to continue.



D-ViewCam shows the detected IP camera(s) information. You can choose and schedule the recording for each camera.

- **24/7 Continuous Recording:** Continuously recording 24 hours a day, 7 days a week.
- **24/7 Motion Detection Recording:** Continuously monitoring but ONLY recording when motion is detected.
- **Office Hours Only:** Continuously monitoring during office hours (08:00 AM to 06:00 PM) and ONLY recording when motion is detected.
- **Non-Office Hours Only:** Continuously monitoring during non-office hours (06:00 PM to 08:00 AM) and ONLY recording when motion is detected.

**Note:** Excluding 24/7 Continuous Recording, other schedule recording types can ONLY do recording when motion is detected.

Click **Next** to continue.

Quick Settings

The discovered cameras information showed as below:

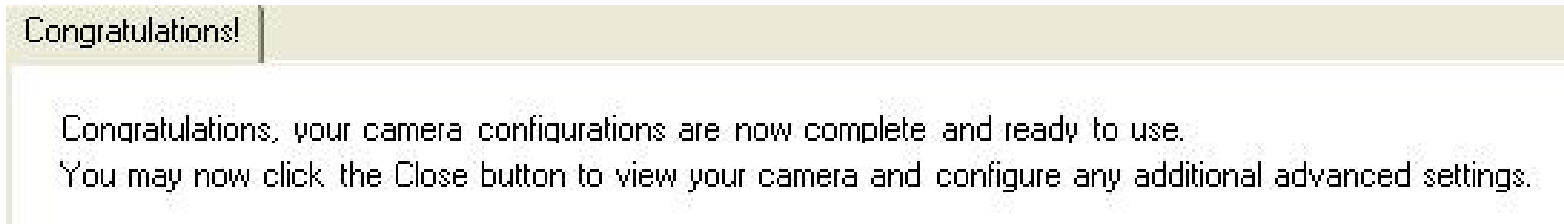
Camera Name	Model	Schedule Recording Type	Status	IP Address	MAC Address
DCS-910-55	DCS-910	None	Active	10.129.1.55	000D887D6DC4



Select **Yes** to add other camera(s), or select **No** if you have no additional camera(s) to be added. Click **Next** to continue.

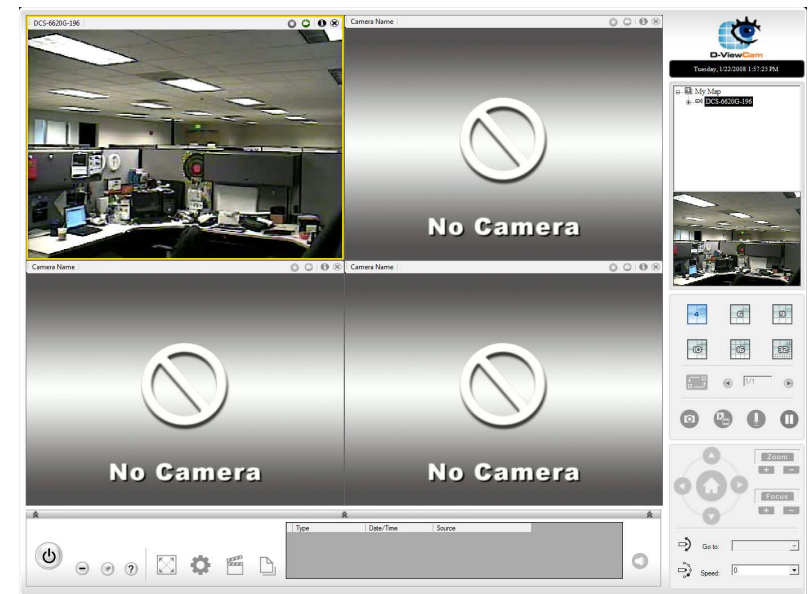


The **Add Camera wizard** is now complete. Click **Close** to access the D-ViewCam's main screen.



## Your D-ViewCam Installation is Complete!

**Note:** Please refer to the *D-ViewCam user manual* for information about using D-ViewCam.



# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DCS-920 offers the following types of security:

- WPA-PSK (Pre-Shared Key)
- WEP (Wired Equivalent Privacy)

## What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

## What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard instead of TKIP.
- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?\*&\_) and spaces. This key must be the exact same key entered on your wireless router or access point.

# Using & Configuring the DCS-910/920

D-Link's DCS-910/920 is a versatile and cost effective Internet Camera offering both video and audio monitoring. It can also serve as a powerful surveillance system in security applications. The DCS-910/920 can be used with any wired or 802.11b/g wireless router (applicable only for the DCS-920). This section explains how to view the camera from either the Internet or from inside your internal network.

Materials Needed:

- 1 DCS-910/920 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-910/920 For Use Behind a Router

Installing a DCS-910/920 Internet Camera on your network is an easy 4–step procedure:

- 1 Assign a Local IP Address to Your Internet Camera
- 2 View the Internet Camera Using Your Internet Explorer Web Browser
- 3 Access the Router with Your Web Browser
- 4 Open Virtual Server Ports to Enable Remote Image 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-910/920, follow the steps outlined in the Quick Installation Guide.

After you have completed the setup of the DCS-910/920 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 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 to Your Camera

Run the Setup Wizard program from the CD included with the DCS-910/920. Follow the steps in the Quick Installation Guide to configure the DCS-910/920. The camera will be assigned a local IP Address that allows it to be recognized by the router. Write down this IP Address for future reference.

This is the IP Address assigned to your camera (192.168.0.120 is only an example). You will probably have a different IP Address.



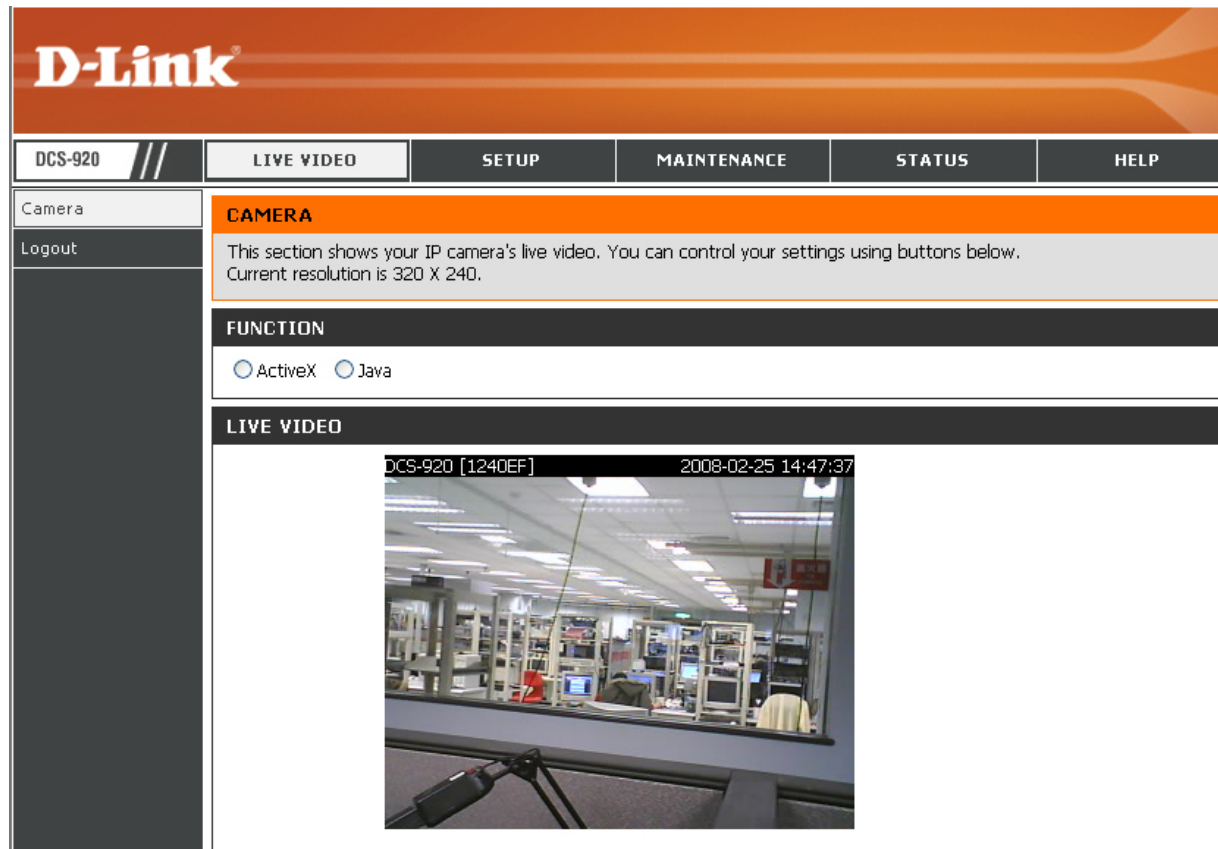
The screenshot shows the D-Link Securicam Network interface. On the left side, there is a vertical menu with five buttons: Wizard, Search, Link, About, and Exit. The main area displays a table with three columns: MAC Address, Current IP Address, and Device Name. The first row of the table is highlighted in blue and contains the following data: MAC Address: 00.03.1b.66.66.5c, Current IP Address: 192.168.0.120, and Device Name: DCS-910.

MAC Address	Current IP Address	Device Name
00.03.1b.66.66.5c	192.168.0.120	DCS-910

## 2 View the 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 Internet Camera by the Installation Wizard program. The DCS-910/920 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 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.



The screenshot displays the D-Link web interface for the DCS-920 camera. At the top, the D-Link logo is visible. Below it is a navigation menu with tabs for DCS-920, LIVE VIDEO, SETUP, MAINTENANCE, STATUS, and HELP. The main content area is divided into sections: 'CAMERA' with a description of the live video and resolution (320 X 240), 'FUNCTION' with radio buttons for ActiveX and Java, and 'LIVE VIDEO' which shows a real-time video feed of a retail store interior. The video feed includes a timestamp 'DCS-920 [1240EF] 2008-02-25 14:47:37'.

# 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 the Router with Your Web Browser

If you have cable or DSL Internet 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 menu 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.

Your WAN IP Address will be listed on the router's Status > Device Info page.



The screenshot shows the D-Link DI-624 web interface. The top navigation bar includes Home, Advanced, Tools, Status (selected), and Help. The main content area is titled "Device Information" and shows the following details:

- Device Information:** Firmware Version: 1.00, Tue, 24 Dec 2002
- LAN:**
  - MAC Address: 00-03-2F-FF-F0-85
  - IP Address: 192.168.0.1
  - Subnet Mask: 255.255.255.0
  - DHCP Server: Enabled
- WAN:**
  - MAC Address: 00-03-2F-FF-F0-86
  - Connection: DHCP Client Connected (with DHCP Release and DHCP Renew buttons)
  - IP Address: 10.80.1.94
  - Subnet Mask: 255.0.0.0
  - Default Gateway: 10.10.10.100
  - DNS: 10.10.10.41, 10.10.10.45, 192.152.81.1
- Wireless 802.11g:**
  - MAC Address: 00-60-B3-06-00-32
  - SSID: GiGi

**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. The Static IP Address will also allow you to access your camera attached to your router over the Internet.*

## 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-910/920 over the Internet. The router connects to the Internet over a series of numbered ports. The ports normally used by the DCS-910/920 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:

- 1 Click Enabled.
- 2 Enter a different name for each entry.
- 3 Enter your camera's local IP Address (e.g., 192.168.0.120 in the example in step 2) in the Private IP field.
- 4 Select TCP for HTTP port and both (TCP and UDP) for Audio and Video channel port.
- 5 If you are using the default camera port settings, enter 80 into the Public and Private Port section, click Apply.
- 6 Scheduling should be set to Always so that the camera images can be accessed at any time.



Repeat the above steps adding the port 80 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 and other commonly used Internet ports to conserve bandwidth. Check with your ISP so that you can open the appropriate ports accordingly. 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 next to the camera name on the Virtual Server List to enable your settings.

**D-Link**  
Building Networks for People

**AirPlus Xtreme G™**  
High-Speed 2.4GHz Wireless Router

DI-624

Virtual Server

Applications

Filters

Firewall

DMZ

Performance

Home Advanced Tools Status Help

Virtual Server

Virtual Server is used to allow Internet users access to LAN services.

Enabled  Disabled

Name: DCS-910/920 [Clear]

Private IP: 192.168.0.120

Protocol Type: Both

Private Port: 80

Public Port: 80

Schedule:  Always

From time 00 : 00 AM to 00 : 00 AM day Sun to Sun

Virtual Servers List

Name	Private IP	Protocol	Schedule	
<input type="checkbox"/> Virtual Server FTP	0.0.0.0	TCP 21/21	always	[Apply] [Cancel] [Help]
<input type="checkbox"/> Virtual Server HTTP	0.0.0.0	TCP 80/80	always	[Apply] [Cancel] [Help]
<input type="checkbox"/> Virtual Server HTTPS	0.0.0.0	TCP 443/443	always	[Apply] [Cancel] [Help]
<input type="checkbox"/> Virtual Server DNS	0.0.0.0	UDP 53/53	always	[Apply] [Cancel] [Help]

# Troubleshooting

## **1. Why does the Power LED not light up constantly?**

The power supply used might be at fault. Confirm that you are using the provided power supply, which is DC 5V, for the Internet Camera. Also verify that the power supply is well connected, and/or the option to turn off the LED is enabled.

## **2. Why does the LAN LED not light up properly?**

There might be a problem with the network cable. To confirm that the cables are working, PING the address of a known device on the network. If the cabling is OK and your network is reachable, you should receive a reply similar to the following (...bytes = 32 time = 2 ms).

Another possible problem may be that the network device utilized by the Internet Camera is not functioning properly, such as hubs or switches. Confirm the power for the devices are well connected and functioning properly, and/or the option to turn off the LED is enabled.

## **3. Why does the Internet Camera work locally but not remotely?**

This might be caused by the firewall protection. Check the Internet firewall with your system administrator. The firewall may need to have some settings changed in order for the Internet Camera to be accessible outside your local LAN. For more information, please refer to the section about installing your camera behind a router.

Make sure that the Internet Camera isn't conflicting with any Web server you may have running on your network.

The default router setting might be a possible reason. Check that the configuration of the router settings allow the Internet Camera to be accessed outside your local LAN.

## **4. Why does a series of broad vertical white lines appear through out the image?**

It could be that the CMOS sensor (a square panel situated behind the lens that measures the light signals and changes it into a digital format so your computer can present it into an image that you are familiar with) has become overloaded when it has been exposed to bright lights such as direct exposure to sunlight or halogen lights. Reposition the Internet Camera into a more shaded area immediately as prolonged exposure to bright lights will damage the CMOS sensor.

**5. Noisy images occur. How can I solve the problem?**

The video images might be noisy if the Internet Camera is used in a very low light environment.

**6. The images are poor quality, how can I improve the image quality?**

Make sure that your computers display properties are set to at least 6-bit color. Using 16 or 256 colors on your computer will produce dithering artifacts in the image, making the image look as if it is of poor quality.

The configuration on the Internet Camera image display is incorrect. Through the Web Configuration Video section of the Web management you need to adjust the image related parameters for improved images such as: brightness, contrast, hue and light frequency. Please refer to the Web Configuration section for detailed information.

**7. Why are no images available through the Web browser?**

The ActiveX might be disabled. If you are viewing the images from Internet Explorer make sure ActiveX has been enabled in the Internet Options menu. You may also need to change the security settings on your browser to allow the ActiveX plug-in to be installed.

If you are using Internet Explorer with a version number of lower than 5, then you will need to upgrade your Web browser software in order to view the streaming video transmitted by the Internet Camera.

# Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless\* connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

\* Wireless is available only for the DCS-920

## **What is Wireless?**

Wireless or WiFi technology is another way of connecting your computer to the network without using wires. WiFi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

## **Why D-Link Wireless?**

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

## **How does wireless work?**

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

### **Wireless Local Area Network (WLAN)**

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

## **Who uses wireless?**

Wireless technology has become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

### **Home**

- Gives everyone at home broadband access
- Surf the Web, check email, instant message, and etc
- Gets rid of the cables around the house
- Simple and easy to use

### **Small Office and Home Office**

- Stay on top of everything at home as you would at office
- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

## **Where is wireless used?**

Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

## **Tips**

Here are a few things to keep in mind, when you install a wireless network.

### **Centralize your router or Access Point**

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

### **Eliminate Interference**

Place home appliances such as cordless telephones, microwaves, and televisions as away as possible from the router/access point. This would significantly reduce any interfere that the appliances might cause since they operate on same frequency.

## Security

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail information on how to set it up.

# Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless\* clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DCS-920 wireless network Cardbus adapters.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

\* Applicable only for the DCS-920



# Networking Basics

## Check your IP address

After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

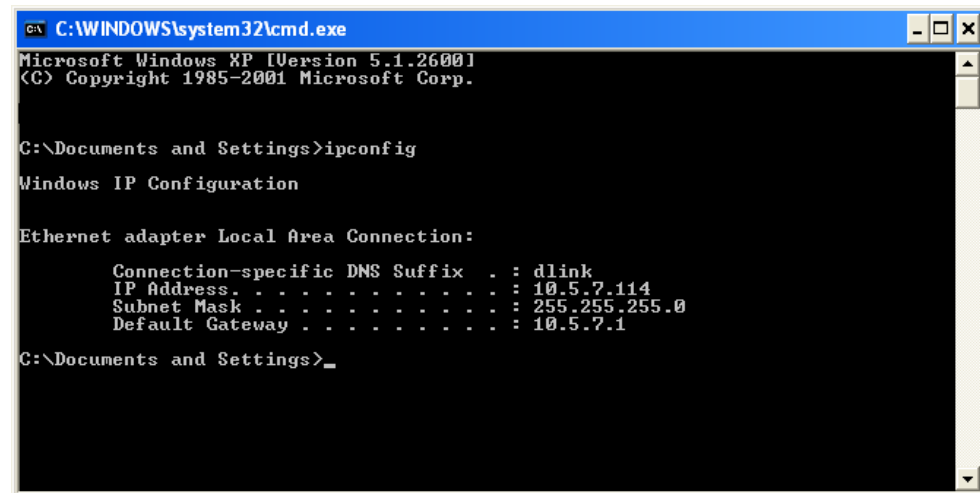
Click on **Start > Run**. In the run box type **cmd** and click **OK**.

At the prompt, type **ipconfig** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : dlink
    IP Address. . . . .                : 10.5.7.114
    Subnet Mask . . . . .              : 255.255.255.0
    Default Gateway . . . . .          : 10.5.7.1

C:\Documents and Settings>_
```

## Statically Assign an IP address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

### Step 1

Windows® Vista - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections**.

Windows XP - Click on **Start > Control Panel > Network Connections**.

### Step 2

Right-click on the **Local Area Connection** which represents your D-Link network adapter and select **Properties**.

### Step 3

Highlight **Internet Protocol (TCP/IP)** and click **Properties**.

### Step 4

Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

### Step 5

Click OK twice to save your settings.

