

WebCAM

User Manual

Version 4.0

**For models:
iCV-01a / iCV-03a / iCV-08**



CONTENTS

Chapter 1: Introduction	1
Section 1. Features	1
Section 2. WebCAM as a Remote Surveillance System	1
Section 3. Package Contents	2
Chapter 2: Hardware Installation	4
Chapter 3: Web Interface	5
Section 1. Introduction	5
Section 2. Using the Web Interface	6
2.1 To View Video	7
2.2 Information	12
2.2.1 System Status	12
2.2.2 Current Connections	13
2.2.3 Event Log	13
2.3 Basic Settings	15
2.3.1 Camera Settings	15
2.3.2 Network	16
2.3.3 Account Settings	23
2.4 Advanced Settings	26
2.4.1 Event Notification	26
2.4.2 Motion Detection	30
2.4.3 Image Recording	33
2.4.4 E-mail / FTP	34
2.4.5 System Settings	37
2.4.6 Image Server	40
2.4.7 Language	44
2.4.8 About	45
Chapter 4: View Images Using PDA / PPC / mobile	46
Chapter 5: Using the Utility	48
Section 1. Installation	48
Section 2. Using the Utility Program	49
2.1 Setup Wizard	49
2.2 Launch Mimic	53
2.3 IP Configuration	55
2.3.1 IP Address	55

2.3.2 Advanced (for password and HTTP configuration)	56
2.5 About	58
2.6 Refresh	58
Chapter 6: MultiMonitor	60
Section 1. Installing MultiMonitor	60
Section 2. Using MultiMonitor	60
2.1 Device	63
2.2 View	74
2.3 System	74
2.4 User	75
2.5 Help	76
2.6 Drag-and-Drop Feature	77
Appendix A: Router Configuration	79
Appendix B: Methods to Update WebCAM Firmware	97
Appendix C: IP Address, Subnet and Gateway	98
Appendix D: Glossary	100

Chapter 1: Introduction

Section 1. Features

WebCAM is a compact stand-alone web-server capable of remote video surveillance. It can be accessed from anywhere in the world via a standard browser by entering the IP Address, account and password. Each system can support two types of USB PC cameras. This can be regular USB camera, or one that has infra-red built-in or even with Pan-Tilt. The server function allows WebCAM to stream video images directly to the Internet without having to go through a computer.

WebCAM features a Windows-based software that allows the user to archive streaming video directly to the viewer's hard-drive. The same software also allows the user to monitor multiple cameras on one screen.

Features:

- LCD display.
- Built-in Web Server with 32-Bit RISC CPU
- TWO USB Port for USB PC Camera
- Support USB PC Camera with VIMICRO ZC0301 Plus processor built-in
- Support Pan/Tilt and Infrared USB PC Camera (sold separately)
- 10/100Mbps Fast Ethernet Network Access
- Support Java-Enabled Web Browser
- LCD display shows; IP address, Subnet Mask and Gateway
- Support Up to 30 Remote Viewers for each camera
- Up to 8 User Accounts and Passwords
- 5.3VDC 1A Maximum
- Operating Temperature: 0°C ~ 60°C; Operating Humidity: 10% ~ 90%
- Dimensions: 48mm x 63mm x 21mm
- Weight: 75g
- For Indoor Use. Protective housing required for outdoor use.
- Network Protocol: HTTP, TCP/IP, UDP, SMTP, PPPoE, Dynamic DNS, DNS Client, SNTP, BOOTP, DHCP, FTP, SNMP
- Resolution available: 640x480 (VGA), 352x288 (CIF), 320x240 (QVGA), 176x144 (QCIF), 160x120 (QQVGA).
- Frame Rate: Up to 15fps in 640x480, Up to 20fps in 320 x 240.
- Motion JPEG video stream.

Section 2. WebCAM as a Remote Surveillance System

Once WebCAM is installed, the user can check any of the connected PC cameras using a standard web browser. The user can monitor and control these cameras simply by entering the IP address shown on the LCD into a Browser.

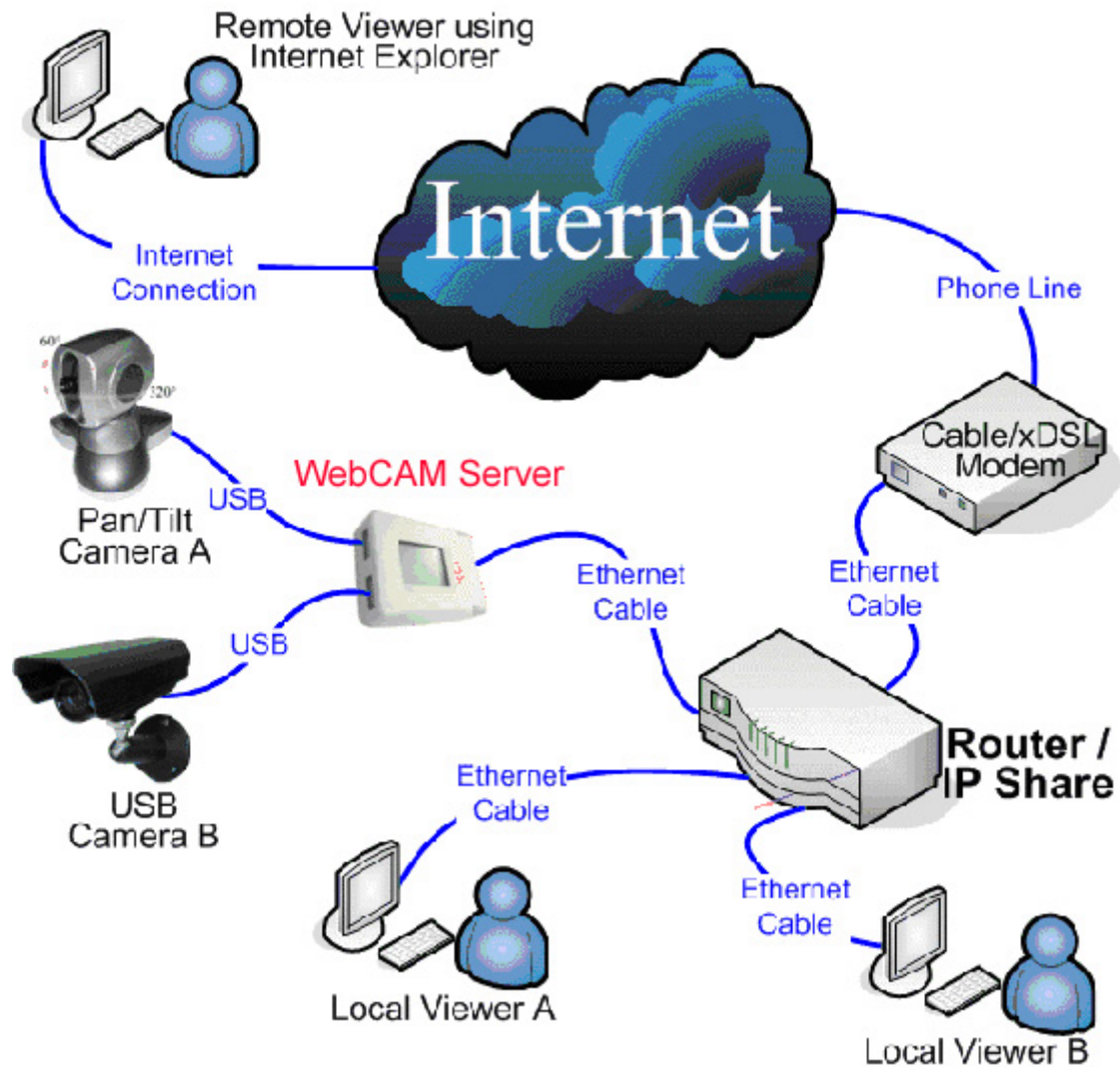


Fig.1 WebCAM Network Diagram

Section 3. Package Contents

WebCAM package contain the following items;

1. WebCAM server.
2. USB Camera.
3. Quick Installation Guide.
4. Utility CD containing;
 - a. Utility: to configure IP address, update the firmware, etc.
 - b. MultiMonitor: to monitor multiple WebCAM cameras.
 - c. Time Server: Time adjustment utility.
 - d. Adobe Acrobat 5.0 Reader.
 - e. WebCAM User Manual, and
 - f. Camera Windows Driver.
5. Slim Ethernet cable.
6. Power adaptor.

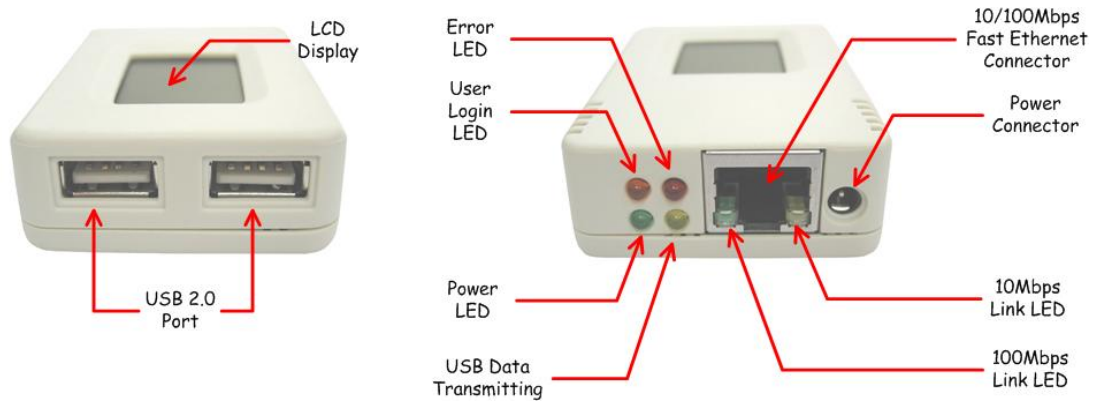


Fig.2 WebCAM Front and Back view

LED Status Indicators on WebCAM		
Light color	Signal definition	Condition description
Green	Power state	On: Normal power
Red	Error Condition	Flashing: Error condition occurred
Orange	Logon state	On: When there is user logon and receive the image.
Yellow	USB data activity	Flashing: When data is being transmitted / received.

Fig.3 WebCAM Status LED Indicator

Light indicators on WebCAM LAN Port LED	
Light color	Condition description
Green	When On: Internet speed is at 100M When flashing: Data transmitting/receiving
Yellow	On: Internet correspond speed is 10M Flash: Data transmitting/receiving

Fig.4 WebCAM LAN LED Indicators

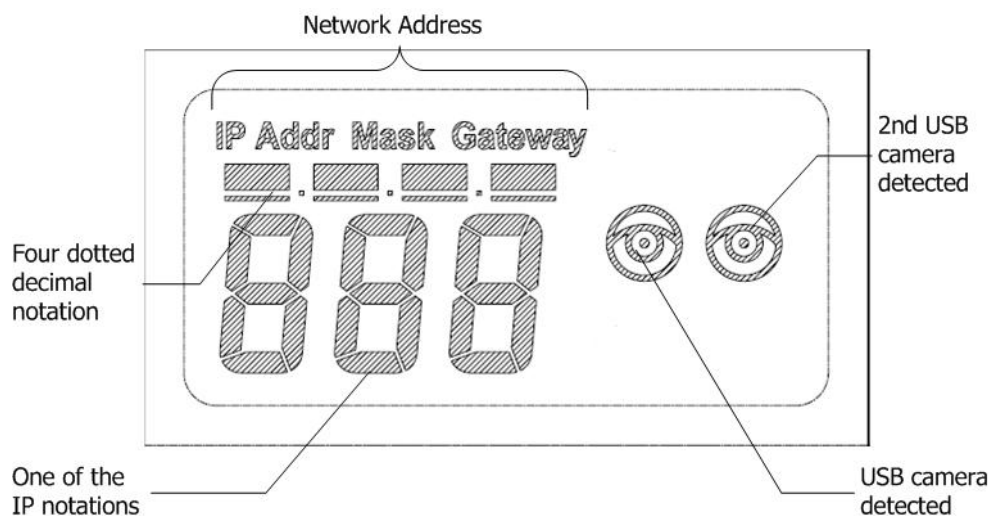


Fig.5 WebCAM LCD displayed info

Chapter 2: Hardware Installation

The following details the hardware installation procedure for WebCAM IP camera.

Step 1:

Connect the PC camera into the USB port of WebCAM.



Step 2:

Connect the WebCAM to LAN by using the Ethernet UTP port.




Step 3:

Connect DC power adapter output into WebCAM socket, and plug the DC power input into the wall socket



Step 4:

Wait a moment and the LCD will display the IP Address, Subnet and Gateway. Use a Browser to log into WebCAM Web Interface

The  icon on the LCD shows that a USB camera is connected.

The LCD display shows that two USB cameras are attached to the WebCAM.



Chapter 3: Web Interface

Section 1. Introduction

WebCAM is designed to work without having to install any software. All the necessary functions are built-into the unit.

1. Once you have finished the hardware setup shown in Chapter 2, note down the IP address shown on the LCD
2. On a PC (located in the same LAN), open a Web Browser (eg.: Internet Explorer, Netscape, Mozilla Firefox or Opera)
3. Enter the IP Address as shown on the WebCAM LCD display and press **ENTER**

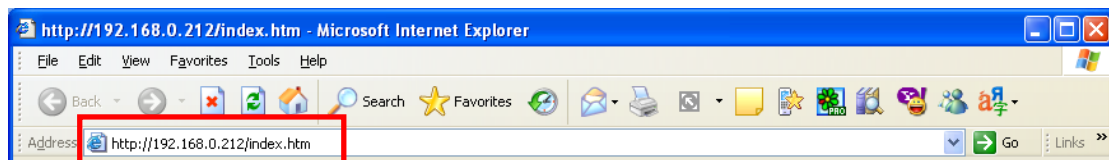


Fig.6 Enter WebCAM IP address

4. A login screen will appear. Click **Apply** to login.

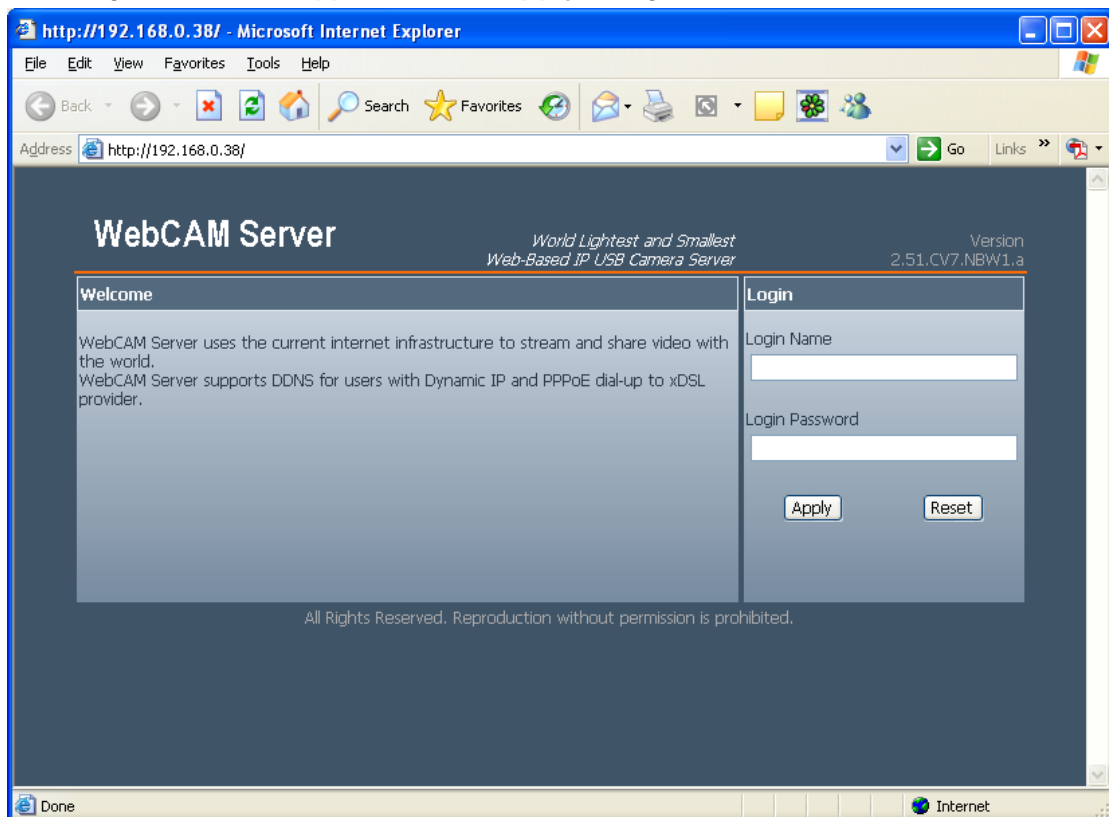


Fig.7 WebCAM Login screen

Section 2. Using the Web Interface

The WebCAM webpage main menu is divided into two sections. The selection menu on the left and display menu on the right. The selection menu consists of the following options:

2.1 View Video

2.2 Information

2.3 Basic Settings

2.4 Advanced Settings

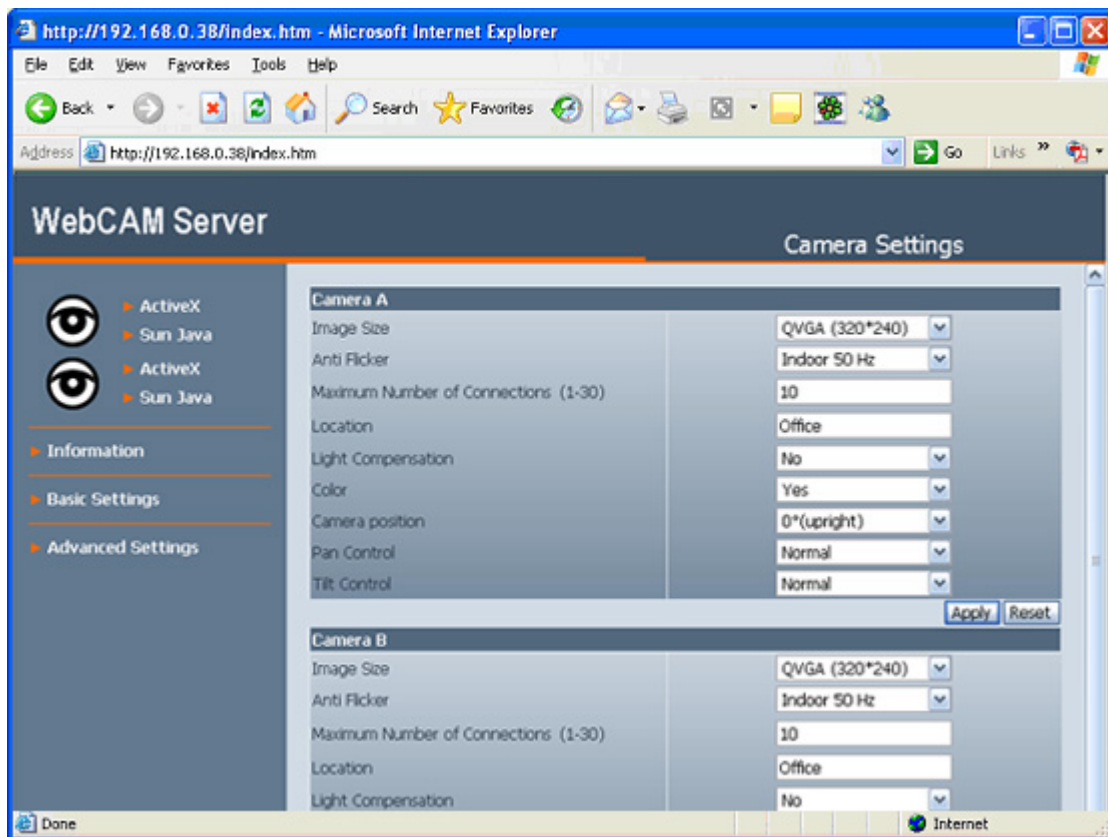


Fig.8 WebCAM Main Menu

When using WebCAM for the first time, check the following settings;

- a. **Basic Settings → Camera Settings → Anti Flicker** Check that this is set to the correct lighting frequency. Change this to **Outdoor** if you intend to point the camera outside. Click **Apply** to save the configuration.
- b. Manually adjust the camera lens for best results.

2.1 To View Video

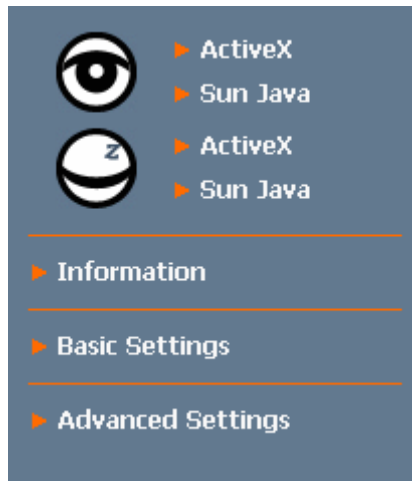
To view video from the connected camera, click on either **ActiveX** or **Sun Java**. Choose either Camera **A** or **B** to view the video.

By default the first USB camera connected to WebCAM will be Camera **A**



Note:

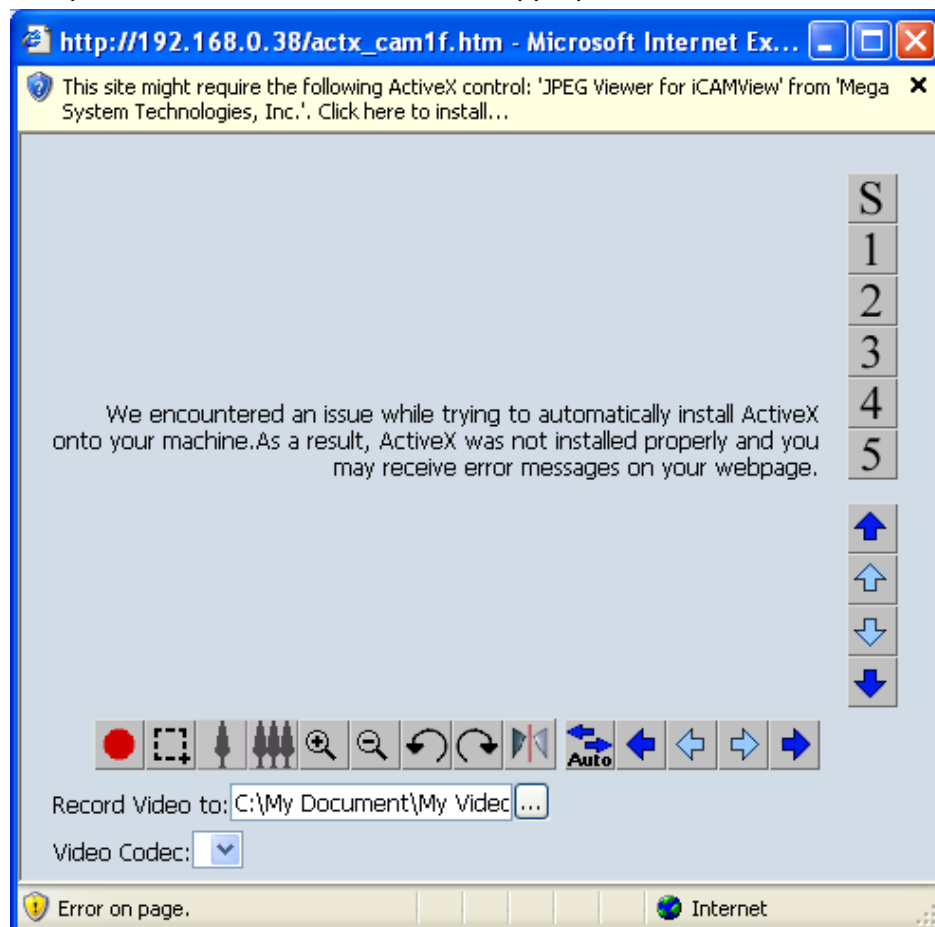
ActiveX can only function in Windows platform and a plug-in has to be installed on the client's computer. If this cannot be installed you will have to use **Sun Java** to view the video feed. Users who are not using Windows based Operating System to view the video feed by clicking **Sun Java**.



Using ActiveX Controls:

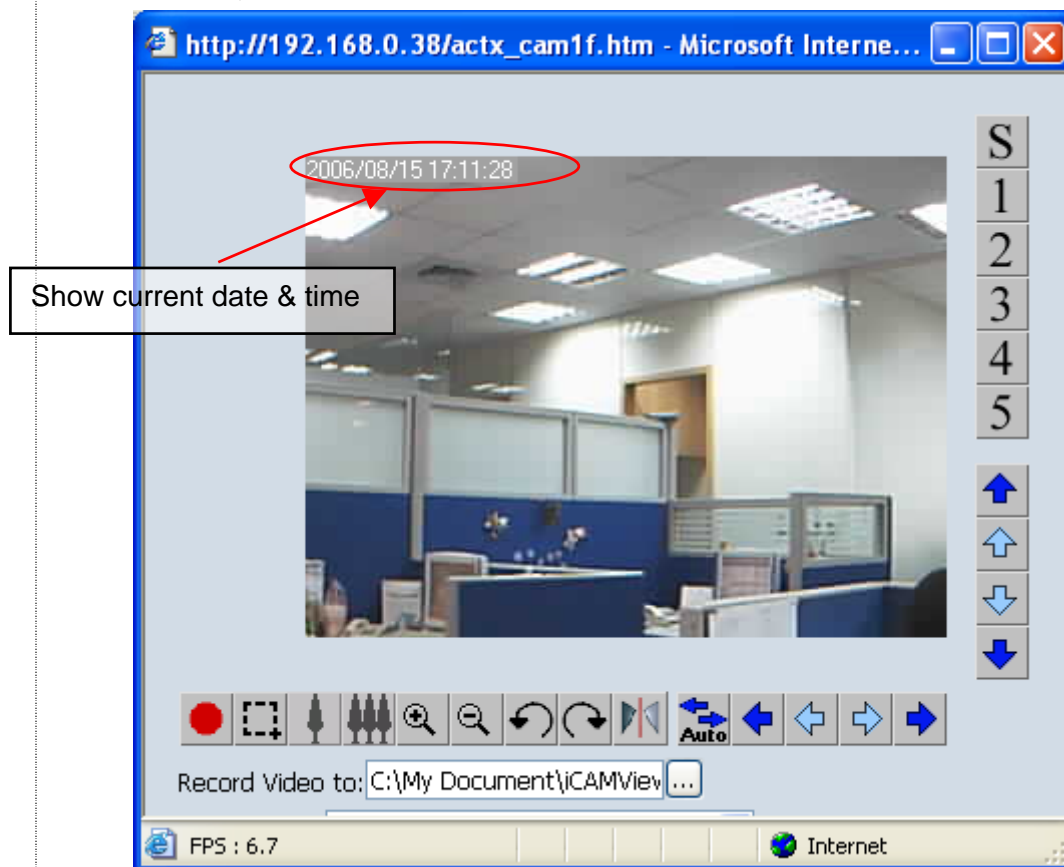
When using ActiveX for the first time, Windows will ask you to download the ActiveX Controls.

Click the top bar to download and install the appropriate ActiveX controls.





Once installed, the video will stream.



Note:


Make sure to adjust the USB camera lens for best picture quality.

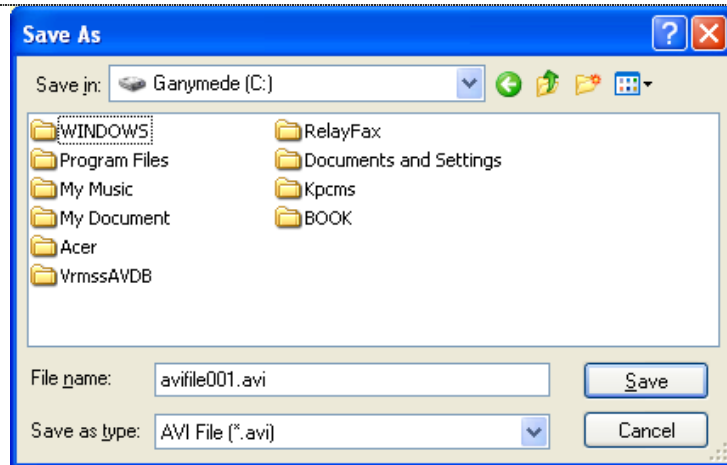


Click the record button to start video recording.

The default directory is; **C:\Windows\Temp**




The video will be saved in the following format;
CMV20060710123058.avi [CMV] [yyyy] [mm] [dd] [tmmss].avi

To change the saved location and filename. Click  and the **Save As** window will pop up. Choose an alternate location or filename.



To change Video Codec, click  Click **Save** to confirm changes.

Note: The availability of Codec depends on whether the individual user has it installed on the PC or not. Download and install Windows Media Player 10 to enable MPEG4 codec.

	Digital Zoom In, Digital Zoom Out
	Rotate Left, Rotate Right
	Flip the image vertically.



HotSpot icon. Each item corresponds to HotSpot location set in **Basic Setting → Patrol Settings → Hotspot Setting**. Click to jump to the pre-set location.

Click **S** to recalibrate and center the camera.

Note:

These icons will not show if you do not have either, (1) a CM03a Pan Tilt camera, (2) administrator permission or (3) operator permission.



Directional Tool. Click to move the camera 1 degree in the direction of the arrow.



Directional Tool. Click to move the camera 5 degrees in the direction of the arrow.

Auto Patrol icon. Click to enable auto patrolling.

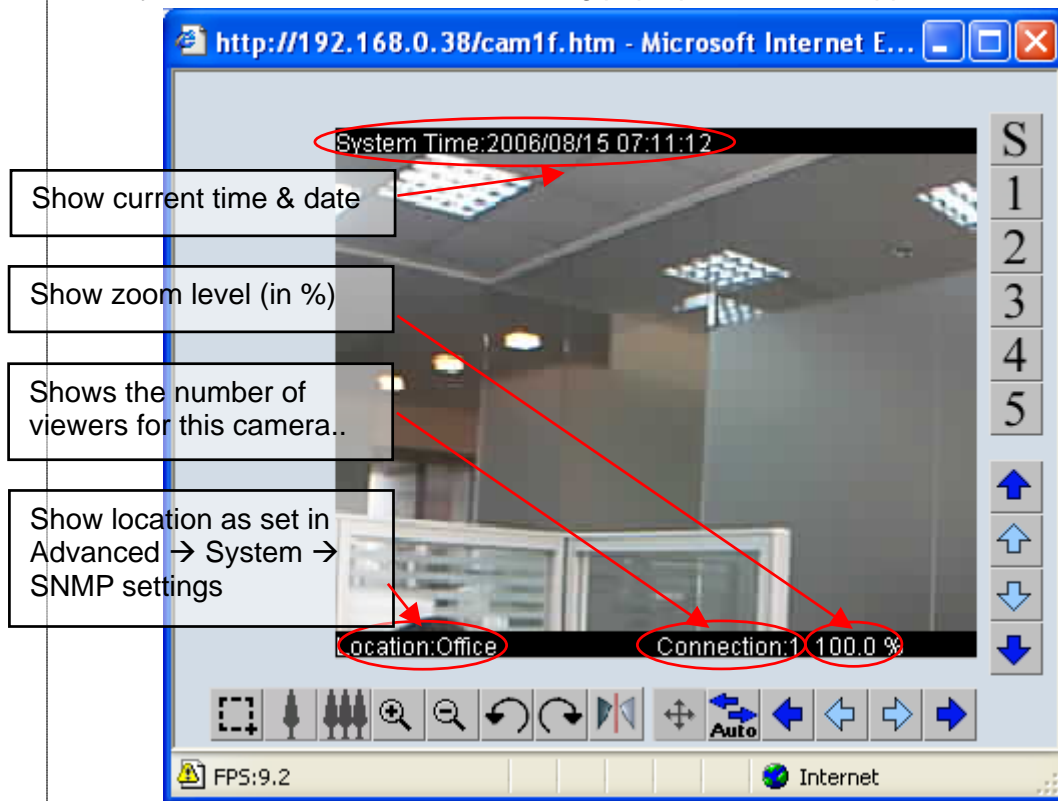


Note:

If the account permission is **Viewer**, then the **HotSpot icon**, **Directional Tool** and **Auto Patrol icon** will not be available.

Using Sun Java Controls:

Once you click on Sun Java the following pop-up window will appear.



Show current time & date

Show zoom level (in %)

Shows the number of viewers for this camera..

Show location as set in
Advanced → System →
SNMP settings



Click this to Marquee an area and zoom into that area.



Click this to reduce the image resolution.



Click this to increase the image's resolution.



Click to digitally zoom in or out.



Click to rotate the image.

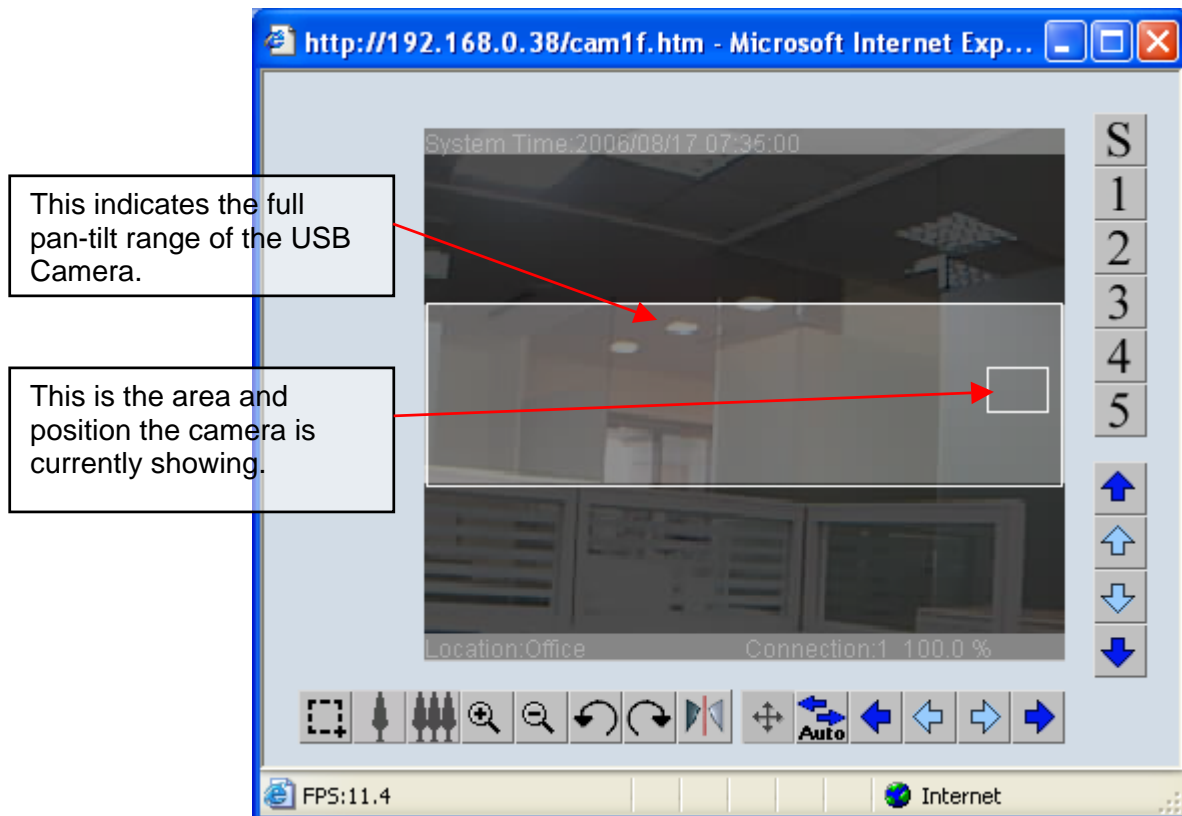


Flip the image vertically.

Click this to bring up the on screen PanTilt Controls. Click within the full pan-tilt range of the camera and it will jump to the location.

**Note:**

This icon will not show if you do not have either, (1) CM03a Pan Tilt camera, (2) administrator permission or (3) operator permission.



2.2 Information

The **Information** tab contains the following subsections;

- 2.2.1 System Status,
- 2.2.2 Current Connections, and
- 2.2.3 Event Log.

2.2.1 System Status

This webpage displays all the information relating to WebCAM. This page is viewable by viewers of all permission levels.

i. System Information

This section shows general hardware information such as the Hardware and Firmware Version, the serial number, current / local System Time, the system name, contact, location and uptime.

ii. Network Status

This section shows the network information. The MAC Address is unique to each WebCAM system.

iii. Camera A / B Information

This section shows the Vendor ID, Product ID and Sensor type used by the camera. These information are essential in determining if the 3rd party USB camera is WebCAM compatible. Check with your vendor for compatibility.

WebCAM Server

System Status

System Information

Hardware Version	HCV72	System Name	WebCAM Server
Firmware Version	2.53.CV7.WST1.alpha1	System Contact	Administrator
Serial Number	3926103950	Location	My Office
System Time	2006/12/12 06:16:52	Uptime	6 day(s) 01:51:05

Network Status

MAC Address	00:03:EA:03:97:8E	Primary DNS Server	168.95.1.1
Connection Type	Auto Sense	Secondary DNS Server	192.168.0.1
IP Address	192.168.0.201	Time Server	time.windows.com
Subnet Mask	255.255.255.0	PPPoE IP	
Gateway	192.168.0.1	STUN Connection Status	online
Email Server		Default Domain Name	

Camera A Information

VendorID	0xAC8	ProductID	0x301B
Sensor Type	HV7131B		

Camera B Information

VendorID		ProductID	
Sensor Type			

Fig.9 WebCAM System Status page

2.2.2 Current Connections

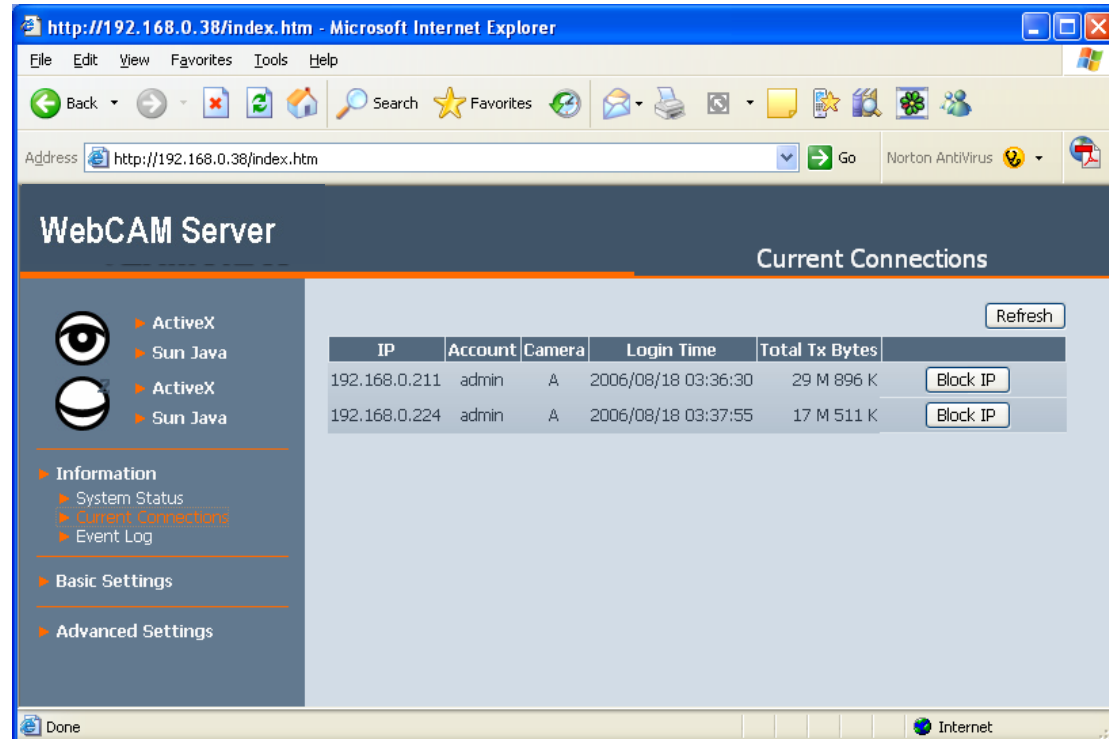


Fig.10 WebCAM Current Connections

The **Current Connections** page shows all the users currently viewing either Camera **A** or Camera **B** (First icon denotes Camera A). It also lists the login time and total bytes received.



Note: Administrator privilege is required to view and use **Block IP**. Otherwise, the **IP** and **Account** details will be hidden and **Block IP** function disabled.

IP	Account	Camera	Login Time	Total Tx Bytes	
* * * *	*****	A	2006/08/18 03:55:32	17 M 369 K	Block IP

Fig.11 WebCAM Current Connections: Operator Permission

Click **Block IP** to block or disable the account of any errant viewer.

To unblock the IP goto **Basic Settings** → **Account Settings** → **Blocked IP List** and delete the blocked IP Address from the **Blocked IP List**.

2.2.3 Event Log

This section will keep a record of all events that occurred in WebCAM. The user can Refresh, Clear or Save the log file. There is also an option to sort the logs according to "Level" or "Type". WebCAM can log up to 2,000 events.

Once the number of events has reached the maximum limit, the oldest event will be removed for each new event logged.



Note: If you do not have Administrator privilege, the **User Name** and **IP Address** will be hidden. Example: Camera A: user ***** connected from IP: *.*.*

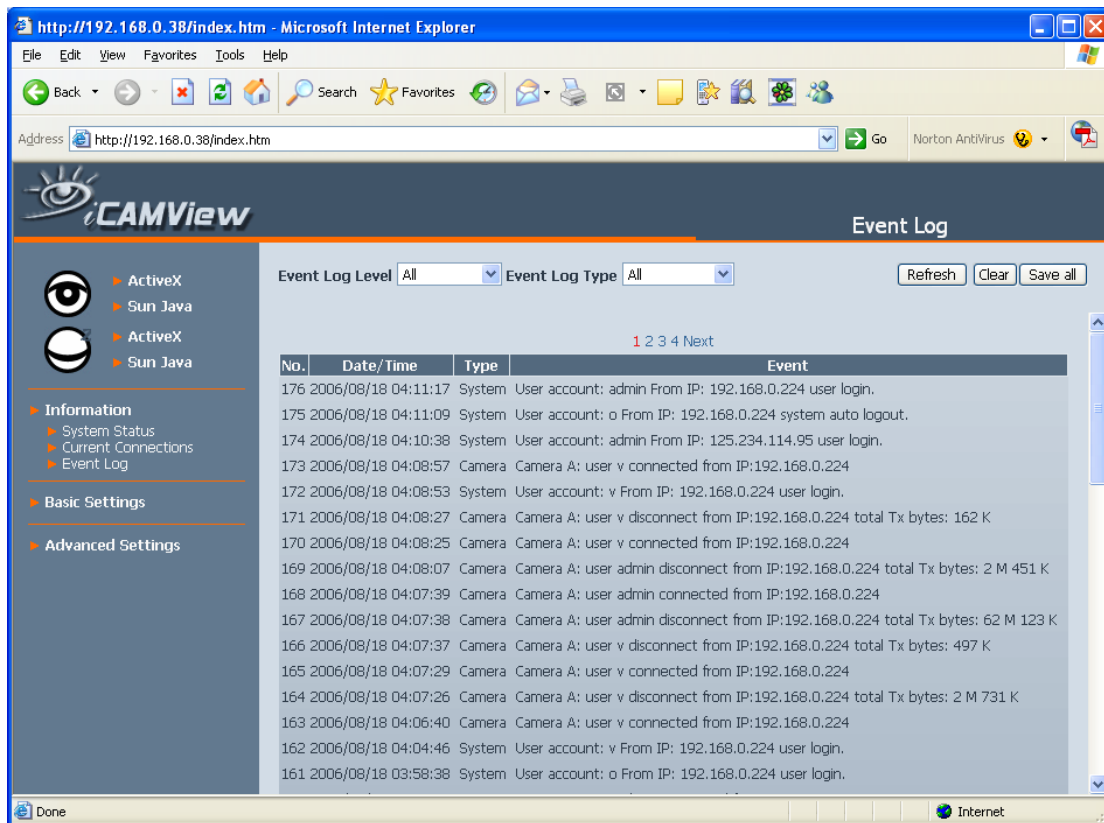


Fig.12 WebCAM Event Log: Administrator privilege.

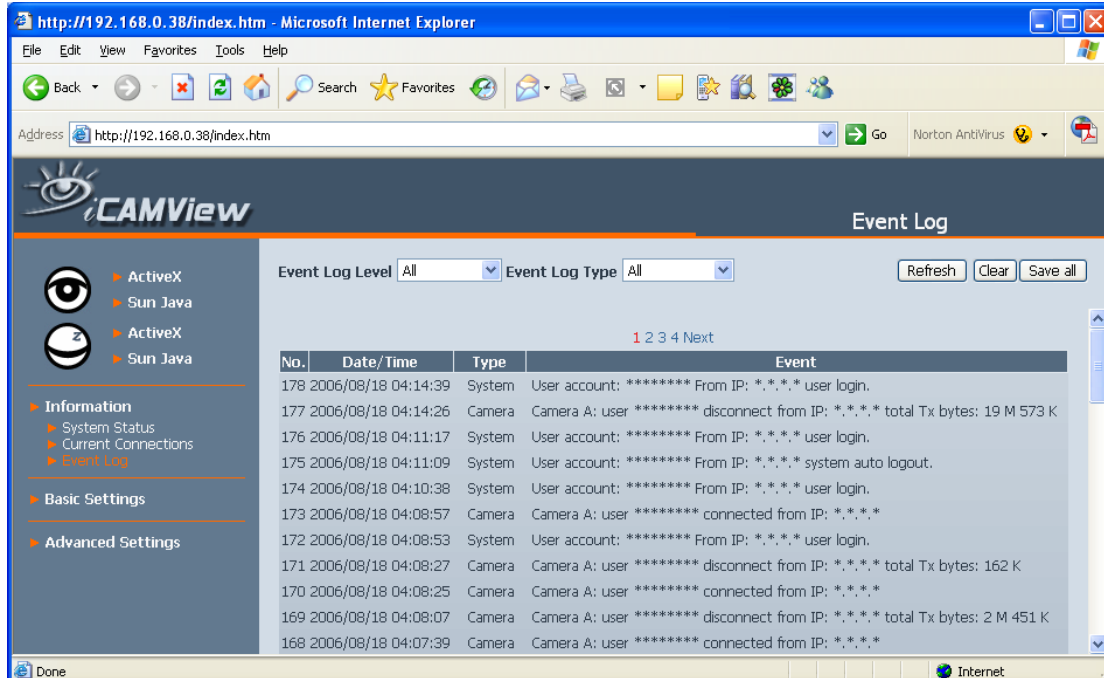


Fig.13 WebCAM Event Log: Operator privilege.

2.3 Basic Settings

The following option allows the user to customize their unit.

2.3.1 Camera Settings

2.3.2 Patrol Settings

2.3.3 Network

2.3.4 Account Settings

2.3.1 Camera Settings

Use this section to set up the USB camera.

i. Setting up Camera A (or Camera B)

Camera A	
Image Size	QVGA (320*240) ▼
Anti Flicker	Indoor 60 Hz ▼
Maximum Number of Connections (1-30)	10
Location	Office
Light Compensation	No ▼
Color	Yes ▼
Camera position	0° (upright) ▼
Pan Control	Normal ▼
Tilt Control	Normal ▼

Fig.14 Individual Camera Configuration

Image Size

User can select the following image size;

- QQVGA (160*120),
- QCIF (176*144),
- QVGA (320*240),
- CIF (352*288),
- VGA (640*480).

Anti Flicker

Choose between Indoors 50Hz, 60Hz or Outdoors. For best results when directing the camera to bright sources / windows, select **Outdoors**.



Note:

If you do not choose the right frequency, the image will flicker or lines will appear on the images.

Maximum Number of Connections (1-30)

Use this to limit the total number of users that can view this camera at the same time.

Location

Enter a suitable location / name for the camera.

Light Compensation

Choose **Yes** and WebCAM will increase the lighting of the image. This is useful when monitoring indoors.

Choose **No** if you do not want WebCAM to compensate for bright indoor lighting and view the images as is.

Color

Choose **Yes** for color and **No** for black and white display. Black and White display results in slightly faster FPS (Frames Per Second) video.

Camera Position

Use this option to right the image when WebCAM is installed on the ceiling or wall. Select either; 0 degree (upright), 90, 180 (upside down), or 270 degree.

Pan Control

Use this function to reverse the Pan direction.

Tilt Control

Use this function to reverse the Tilt controls, if necessary.



Note:

Always click **Apply** to save any changes made. Otherwise, the changes will be lost.

2.3.2 Patrol Settings

This option is only available if a CM03a USB PanTilt Camera is used. Otherwise the function remains hidden.

Patrol Settings

Camera A
Patrol Setting

Max boundary { 3409 , 737 }

{ 0 , 0 } Mouse Location { 0 , 0 } Camera Location { 1699 , 360 }

Hotspot Setting	
Hotspot Location	Coordinates
On Start-up	(1700, 361)
Hot spot 1	(1, 379)
Hot spot 2	(716, 556)
Hot spot 3	(2213, 578)
Hot spot 4	(1284, 578)
Hot spot 5	(2790, 508)

Patrol Setting

Boundary (corner) (500, 162)

Boundary (opposing corner) (3903, 523)

Auto patrolling ☐ No

Pan speed 10(fastest)

Format Oscillating

Tilt speed 10(fastest)

Re-calibrate Start

i. Patrol Setting

This section allows the user to define hotspots, required patrol boundary, and see where the current camera position.

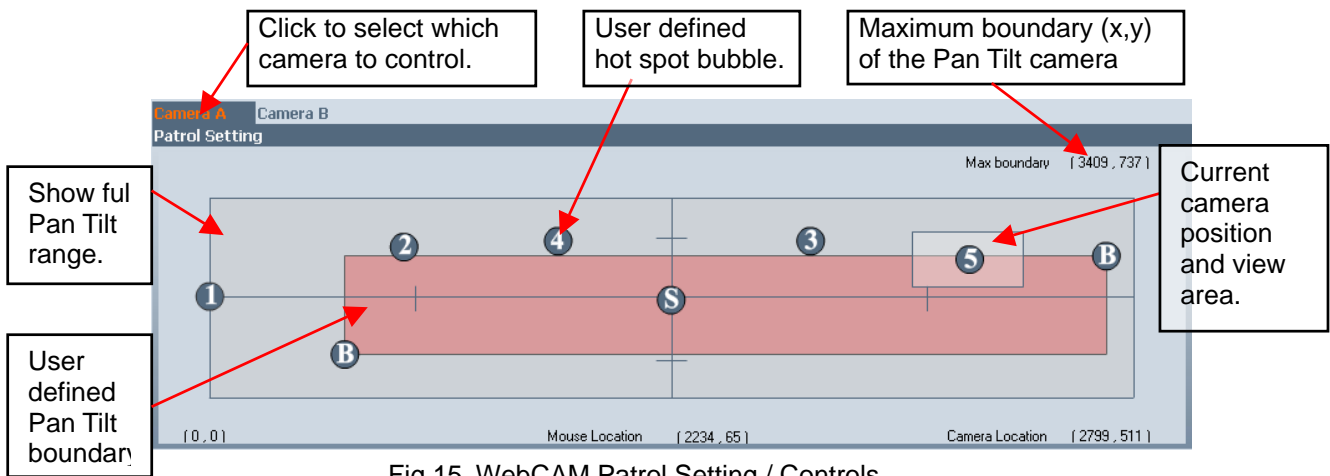


Fig.15 WebCAM Patrol Setting / Controls

HotSpot Settings

This part shows the hotspot coordinates and the Administrator can give each location a name. Click and hold on the Hotspot bubble in the above patrol control to re-define the coordinates.

Hotspot Setting	
Hotspot Location	Coordinates
On Start-up	(1700, 361)
Hot spot 1	(1, 379)
Hot spot 2	(716, 556)
Hot spot 3	(2213, 578)
Hot spot 4	(1284, 578)
Hot spot 5	(2798, 510)

Enter a name for the selected hotspot

Patrol Setting

Boundary (corner)	(500, 162)	<input type="text"/>
Boundary (opposing corner)	(3303, 523)	<input type="text"/>
Auto patrolling	<input type="button" value="No"/>	Format <input type="button" value="Oscillating"/>
Pan speed	<input type="button" value="10(fastest)"/>	Tilt speed <input type="button" value="10(fastest)"/>

Enter a name for the selected hotspot

Boundary

This defines the camera patrol boundary. Click and hold on either one of the two boundary bubble to redefine the boundary.

Auto Patrolling

Select **Yes** to start auto patrolling function.

Select **No** to stop the patrolling function.

Format

Choose from 5 different patrolling formats:

- a. Oscillating – The camera will pan and tilt at the same time within the user defined boundary. Camera will oscillate from left to right and back.

- b. Square – The camera will patrol along the user defined boundary in a clock wise manner.
- c. Pan only – The camera will perform Pan function only.
- d. Tilt only – The camera will perform tilt function only.
- e. In sequence (1-5) – The camera will jump to each Hotspot location in sequence and wait for 10 seconds in each spot.

Pan speed / Tilt Speed

Use this to define the Pan and Tilt speed. By default this is set to 10, the fastest setting. The administrator can further customize by choosing different Pan / Tilt speed.

2.3.3 Network

This option determines WebCAM **Network** settings.

ii. IP Address

By default, the IP address acquisition is set to **using DHCP**.

IP Address	
IP Address	192.168.50.6
Subnet Mask	255.255.255.0
Gateway	192.168.50.1
Obtain an IP address*	Using DHCP <input type="button" value="v"/>

Fig.16 WebCAM IP Address Settings

IP Address

This determines WebCAM LAN IP address.

Subnet Mask

Enter WebCAM **Subnet Mask**. The value is normally 255.255.255.0

Gateway

This item is to set WebCAM Gateway.



To learn more about the above, see **Appendix C: IP address, Subnet and Gateway**

Obtain an IP address

This allows the user to choose either to set WebCAM LAN IP address; manually, using DHCP (default) or using Bootp protocol.



Note:

Click **Apply** to confirm. WebCAM will reboot. You **MUST** manually enter the NEW IP address in your Browser in order to open the Web Interface.

iii. DNS Server IP

DNS Server IP	
Primary DNS Server IP	168.95.1.1
Secondary DNS Server IP	

Fig.17 WebCAM DNS Server IP

Primary DNS Server IP

This item sets WebCAM primary DNS Server IP address. This is the default DNS and cannot be edited.

Secondary DNS Server IP

Use this to set WebCAM **Secondary DNS Server IP** address. WebCAM will use the **Secondary DNS Server IP** address if the **Primary DNS Server IP** address is not working.

iv. Port Number

Port Number	
Http Port number*	80
Communication to Camera Port number*	9001

Fig.18 WebCAM Port Settings

HTTP Port Number

This determines the LAN port from which the webpage (using HTTP protocol) is accessible thru your Router. By default the LAN port number is **80**.

If this port is changed, say to 82, then `http://xxx.xxx.xxx.xxx:82` (where xxx.xxx.xxx.xxx is WebCAM LAN IP address as shown on the LCD) must be used in order to access WebCAM web interface in LAN.

Communication to Camera Port Number

This determines the LAN port from which the video image (using UDP protocol) is streamed thru your Router. By default the LAN port number is **9001**.

v. Ethernet

Ethernet	
Connection Type*	Auto Sense

Fig.19 WebCAM Ethernet Settings

Connection Type

This sets WebCAM communication speed. By default, it is set to **Auto Sense**. WebCAM will reboot, if this setting is changed.

i. WebCAM Dynamic DNS

This free service allows the user to alias a dynamic IP address to a static hostname. No matter how many times your ISP change the IP, you will be able to locate WebCAM.

Each WebCAM unit is shipped with a default domain name *****.icv99.net**, where *** is the unique 10 digit serial number located at the back of WebCAM.

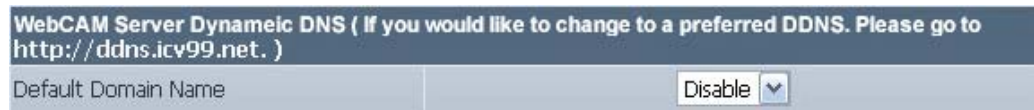
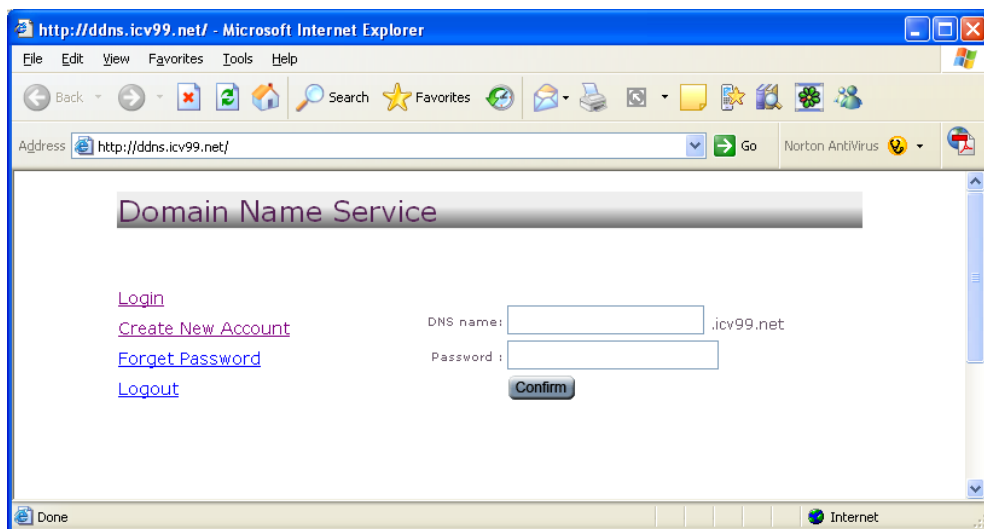


Fig.20 WebCAM Default Dynamic DNS

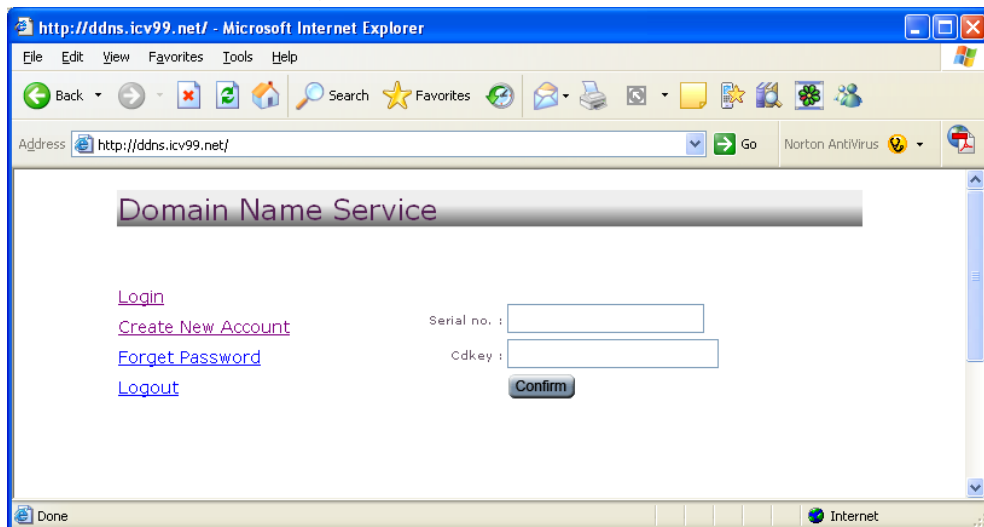
Use Default Domain Name

Each unit of WebCAM is shipped with a default Domain Name. To activate this feature;

1. Select **Enable** from the drop-down menu and click **Apply**.
2. Activate the feature by logging on to <http://ddns.iCV99.net> and click **Create New Account**.



3. Register by entering the **Serial Number** and **Master Password** (as shown at the back of WebCAM) and click **Confirm**.



4. Once registered, user can change either, the default domain name, DNS password or Email address. Click **Confirm** to save changes.

**Note:**

Enter a valid Email address. In the event you have forgotten the password to your DNS account, a new password will be sent to this email address upon request.

5. Registration complete. Account details shown as follows;

**Note:**

In order to view from remote, Port Forwarding must be configured at your Router. See Appendix A for more information.

6. With the registration complete, the following additional information can be seen under **Information** → **System Status** → **Network Status**.

Network Status			
MAC Address	00:03:EA:03:97:8E	Primary DNS Server	168.95.1.1
Connection Type	Auto Sense	Secondary DNS Server	192.168.0.1
IP Address	192.168.0.201	Time Server	time.windows.com
Subnet Mask	255.255.255.0	PPPoE IP	
Gateway	192.168.0.1	STUN Connection Status	online
Email Server		Default Domain Name	3926103950.icv99.net

ii. Other Dynamic DNS

Other Dynamic DNS	
Services Provider	<div>None</div> <div>Update</div>
Domain Name	<input type="text"/>
Login Name	<input type="text"/>
Login Password	<input type="password"/>
Use Public IP to register	<div>Yes</div>

Fig.21 Dynamic DNS from other Service Providers

Service Provider

In addition to <http://ddns.iCV99.net>, WebCAM can be configured to register with other Dynamic DNS providers. The following free DDNS service providers are supported;

- dhs.org
- dyndns.org
- myddns.com
- zive.org
- 88IP.cn
- myneteyes.com

Click **Update** to get latest list of Service Providers.



Note:

The number of available DDNS service providers depends on the region WebCAM is purchased.

In general, to register a Domain Name;

- Go to the DDNS provider website listed above.
- Register a new user account and password with the DDNS provider.
- Choose a Domain Name to point to your current Dynamic IP
- Enter information obtained in (b) and (c) into WebCAM DDNS fields.

Domain Name

This is the Domain Name you have created from the above selected DDNS provider.

Login Name

This is the Login / Account name that you have created with the selected DDNS provider.

Login Password

Enter the Password you have assigned to your DDNS Account.

Use Public IP to register

Choose **Yes** to ensure that WebCAM uses the WAN / Public IP to register with the selected DDNS server.

iii. PPPoE

Use this option to allow WebCAM to connect to the internet directly using your xDSL modem. Once set-up, WebCAM will connect directly to the Internet without going through a router. The LCD will display the current WAN / Public IP instead of the LAN IP Address.

PPPoE

When Connection should be made: Disabled

Login Name:

Login Password:

Fig.22 WebCAM PPPoE setting

When Connection should be made

- Disabled : Default setting.
- Connect always : WebCAM will automatically dial up and maintain continuous connection.

Login Name

Enter the login name assigned by your ISP.

Login Password

Enter the password assigned by your ISP.

2.3.3 Account Settings

This webpage allows you to set up to Eight (8) different user accounts with different access permission level to WebCAM. This section can only be edited by an administrator.

i. User Account

User Name	Password	Permission	IP Filter	Max. FPS	Viewing Hour
<input type="text"/>	<input type="password"/>	Administrator	*,*,*,*	Unlimited	Configure
<input type="text"/>	<input type="password"/>	Operator	*,*,*,*	20	Configure
<input type="text"/>	<input type="password"/>	Viewer	*,*,*,*	10	Configure
<input type="text"/>	<input type="password"/>	No Access	*,*,*,*	10	Configure
<input type="text"/>	<input type="password"/>	No Access	*,*,*,*	10	Configure
<input type="text"/>	<input type="password"/>	No Access	*,*,*,*	10	Configure
<input type="text"/>	<input type="password"/>	No Access	*,*,*,*	10	Configure
<input type="text"/>	<input type="password"/>	No Access	*,*,*,*	10	Configure

Fig.23 User Account Settings

User Name

Assign a **User Name** / Account. The administrator can set up to 32 case sensitive character names.

Password

Assign a password to the account. The administrator can set up to 32 case sensitive passwords.

Permission

This sets the access level to individual user accounts.

Administrator: An Administrator has full access including write permission to all menus and sub-sections. Only an Administrator can see the **User Name** and **IP address** fields or set the camera access **Permit Hours** to Operator or Viewer accounts.

Operator: The user can access all menus, but does not have permission to amend the data fields.

Viewer: The user can only view camera within the time specified in **Permit Hours**. The user does not have write permission, can only view **Camera A/B** and read the **Information** section.

No Access: This disables either of the above two permission levels given to a user.

**Note:**

An **Administrator** account must be set before setting up either an **Operator** or **Viewer** account.

IP Filter

Use this feature to ensure that the user only login from the IP address specified here. Leave it as *.*.* to allow the user to login from any place.

*Example:*

Entering **192.168.1.*** will only allow User to access from **192.168.1.xxx** IP addresses.

Max FPS

This allows the Administrator to limit the bandwidth allocated to each account. The Administrator can set a figure of **1** to **Unlimited** FPS ("frames per second").

Viewing Hours

When the Permission level is set to either **Operator** or **Viewer**, the Administrator can set the time to which the camera can be viewed.

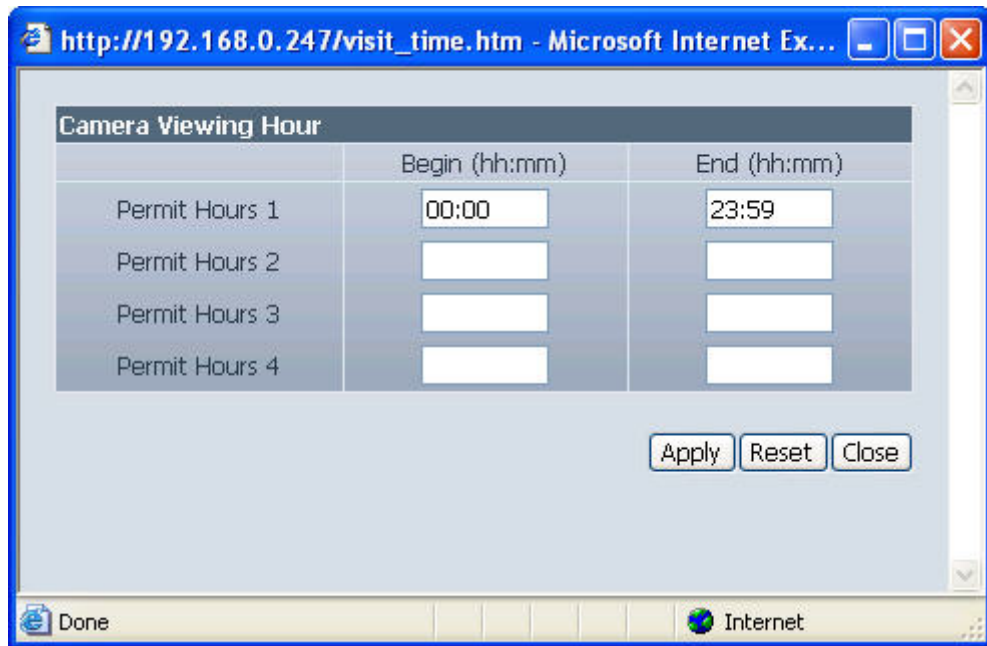


Fig.24 WebCAM Permit Hours Configuration

Click **Configure** to set the hours. The Administrator can set up to 4 different **Permit Hours** (in 24hr format). Click **Apply** to save. Click **Close** to exit without saving.

**Note:**

The **Reset** button only revert the fields to initial values prior to any changes being made. If **Apply** has been clicked, it will not undo the changes.

ii. Block IP address

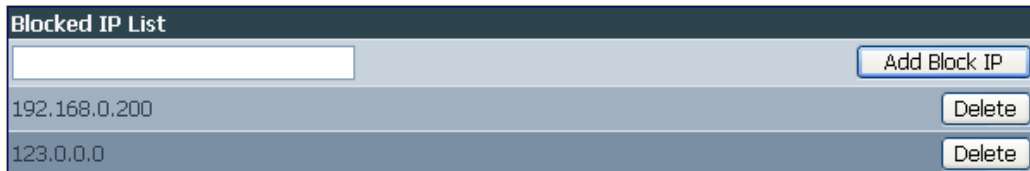


Fig.25 Blocking LAN IP address

Blocked IP List

This allows the Administrator to block specific LAN IP address from accessing WebCAM. Enter the IP address in dotted decimal notation and click **Add Block IP**. The blocked LAN IP address will be listed at the bottom.

Click **Delete** to remove it from the list.

2.4 Advanced Settings

This section allows the Administrator to set up some of the features available in the server.

2.4.1 Event Notification

2.4.2 Motion Detection

2.4.3 Image Recording

2.4.4 Email / FTP

2.4.5 System Settings

2.4.6 Image Server

2.4.7 Language

2.4.8 About

2.4.1 Event Notification

This section determines the type of event that will be included if an email notification is sent by WebCAM.



Note:

Administrator privilege is required to configure this section.

i. Event Notification

A total of 8 email recipients can be assigned to receive notification.

Fig.26 WebCAM Event Notification Page

Send Email

Select **Yes** to activate this feature. Default is **No**.

Email Server

A valid **Email Server**, User name and password must be setup for this feature to work. If this has not been setup, click **Edit** and to go to **Email / FTP** setup page. (see Section 2.4.4)



Note:

Email function can only work using standard Email Server and not Web based Email Server, such as yahoo.com

Email Address Book

The available Email addresses are listed here. See Section 2.4.4 on how to enter an Email address to the **Address Book**.

To add an email address click **Edit**. WebCAM will ask you to save your configuration prior to leaving this page.

Recipients

Up to 8 valid email accounts can receive **Email Notification**. To add an email address to the recipient list, click **<**. To remove, click **>**.


**Note:**

Only Email addresses that are listed in the **Email Address Book** can be added.

Events

This section determines the events that the selected recipient/s will receive by email. There are three types of events; Information, Warning and Error. Click **Select** to select the list of events the recipients will be notified.

By default, all the events are selected but not confirmed. Click **Apply** to activate and confirm selection.

Click  to close the window and return to the **Event Notification** page.

Information	Yes	No
Start up	<input checked="" type="radio"/>	<input type="radio"/>
PPPoE connection successful	<input checked="" type="radio"/>	<input type="radio"/>
Registration with DDNS server completed	<input checked="" type="radio"/>	<input type="radio"/>
User logged in to view camera	<input checked="" type="radio"/>	<input type="radio"/>
User logged out from camera	<input checked="" type="radio"/>	<input type="radio"/>
Image recording of camera A	<input checked="" type="radio"/>	<input type="radio"/>
Image recording of camera B	<input checked="" type="radio"/>	<input type="radio"/>

Warning	Yes	No
Server address can not be resolved	<input checked="" type="radio"/>	<input type="radio"/>
Connection with Email server failed	<input checked="" type="radio"/>	<input type="radio"/>
Connection with FTP server failed	<input checked="" type="radio"/>	<input type="radio"/>
FTP server has no response	<input checked="" type="radio"/>	<input type="radio"/>
FTP server connection closed abnormally	<input checked="" type="radio"/>	<input type="radio"/>
Connection with DDNS server failed	<input checked="" type="radio"/>	<input type="radio"/>
DDNS server has no response	<input checked="" type="radio"/>	<input type="radio"/>
DDNS server connection closed abnormally	<input checked="" type="radio"/>	<input type="radio"/>
Connection with time server failed	<input checked="" type="radio"/>	<input type="radio"/>
Motion detect camera A	<input checked="" type="radio"/>	<input type="radio"/>
Motion detect camera B	<input checked="" type="radio"/>	<input type="radio"/>

Error	Yes	No
Server address was not specified	<input checked="" type="radio"/>	<input type="radio"/>
Authorization failed, cannot login to Email server	<input checked="" type="radio"/>	<input type="radio"/>
Invalid username or password entered for FTP server	<input checked="" type="radio"/>	<input type="radio"/>
FTP server no such file or directory	<input checked="" type="radio"/>	<input type="radio"/>
Invalid username or password entered for DDNS server	<input checked="" type="radio"/>	<input type="radio"/>
Registration with DDNS server failed	<input checked="" type="radio"/>	<input type="radio"/>
DDNS domain name does not exist	<input checked="" type="radio"/>	<input type="radio"/>

Select All Clear All Apply

Fig.27 Event Selection List

**Note:**

The Image Recording and Motion Detection notification function here will only send an email notification WITHOUT any picture attached. For email notification with images, the Administrator has to setup the **Motion Detection** page (see Section 2.4.2) and **Image Recording** page (see Section 2.4.3)

WebCAM will email the following notification depending on which event was selected.

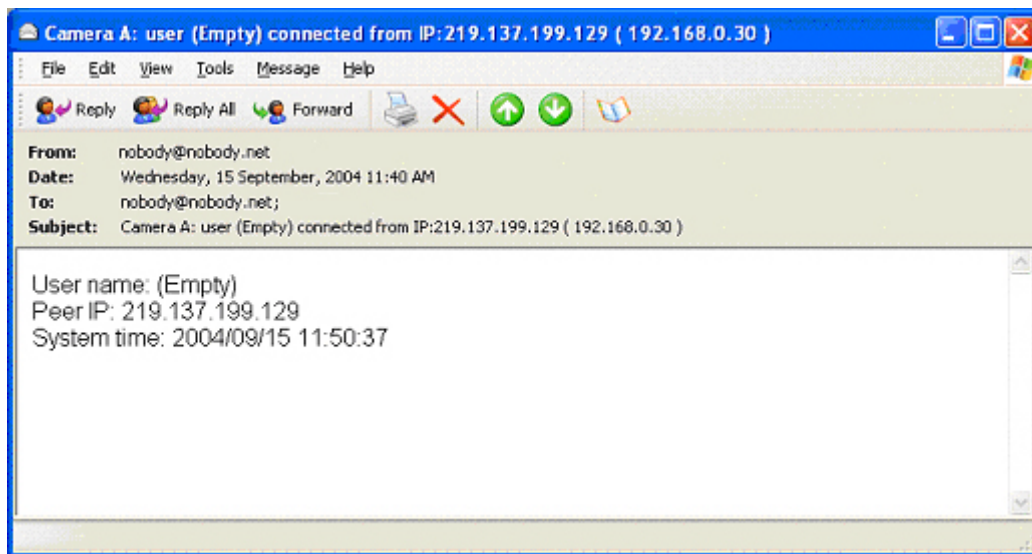


Fig.28 Event Notification: User Login Details (Date, Time, Camera & IP)

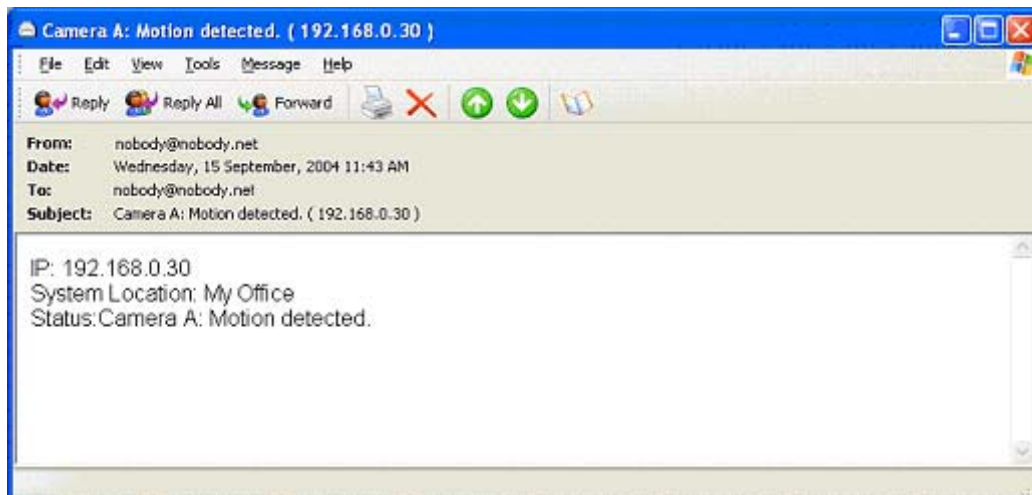


Fig.29 Event Notification: Camera A Motion Detected

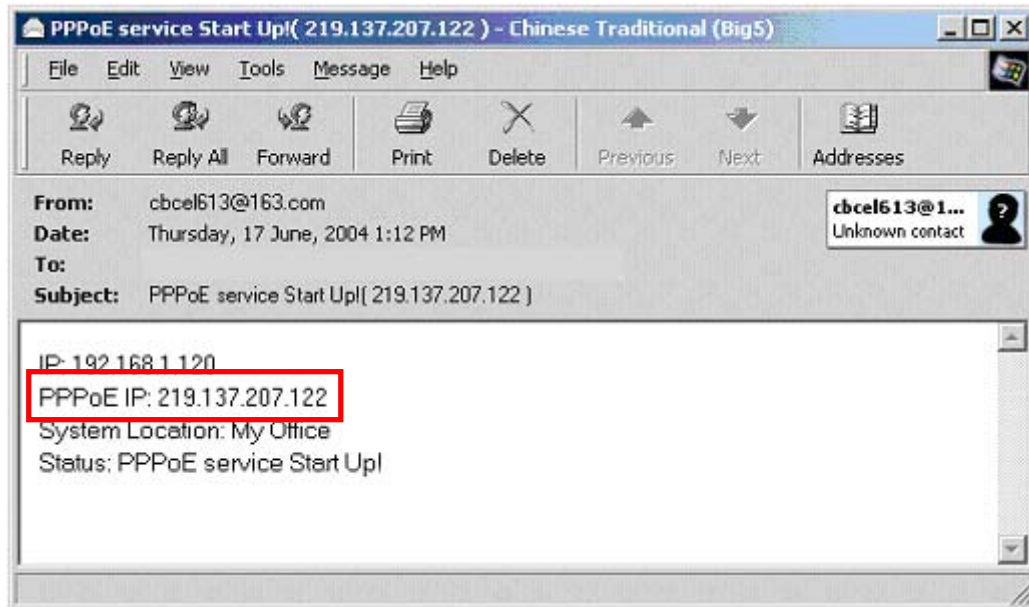


Fig.30 Event Notification: PPPoE Connect Successful with Public IP shown

2.4.2 Motion Detection

This page allows the Administrator to set Motion Detection functions for the cameras.

i. Camera A (or Camera B)

Fig.31 Motion Detection page

Enable

The Administrator has two options for Motion Detection;

- Always On** or
- On Schedule**, the Administrator can set up to 4 different time slots for motion detection.

**Note:**

Check that you have setup valid **Email / FTP** accounts first before proceeding with the rest of the configuration.

To setup **Email / FTP**, see Section 2.4.4

Detection Sensitivity

This will determines the level of change before motion capture is triggered. A high percentage means a small change will trigger motion capture.

Send image every ... second(s)

Select either; 0.5, 1, 2, 3, 4 or 5 seconds.

Stop sending after ... email(s) or image idle for ... second(s)

WebCAM will stop sending emails on the lower of the two conditions. The Administrator can set between 1, 3, 5, 7 and 10 seconds. Emails can be set from 1 to 99999 pieces or 0 for stop sending email only when image idle occurred.

Schedule

When the unit is set to **On Schedule**, the Administrator can configure the four preferred schedule time slots for motion detection. Time must be entered in 24hr format.

Send to FTP Server

Click **Yes** to activate. This option allows the administrator to send and store the motion detected images on a FTP site. This is useful for future reference and recording purpose.

ftp://<empty>/<folder>

This allows the Administrator to determine the folder where the Motion Detected files are stored. Enter a folder name in **<folder>**. Click **Apply** when done.

**Note:**

The folder name must be valid and has appropriate upload permissions.

You must first enter a valid FTP address in **Email / FTP** page. Otherwise the ftp address field will be left **<empty>**.

To setup the FTP server, see Section 2.4.4

System Defined / User Defined

The administrator can also determine to either have the system automatically assign the filenames for the pictures saved. Or manually assign the filename.

Filename ...


Specify a prefix filename for the motion detected JPG images. The default prefix is **image_**

Loop from ... to ...

This will determine the number of files in the sequence. Once the last file number is reached, it'll loop and replace the first file in the sequence with the most current image.

Digits ...

This will determine the number of digits assignable for the above sequence. The Administrator can choose to assign between **1** to **6** digits.

Click  for an example.

Send Email

Select **Yes** to send an email when motion is detected.

**Note:**

The image size received by email / FTP depends on the resolution set in **Basic Settings → Camera Settings → Image Size**

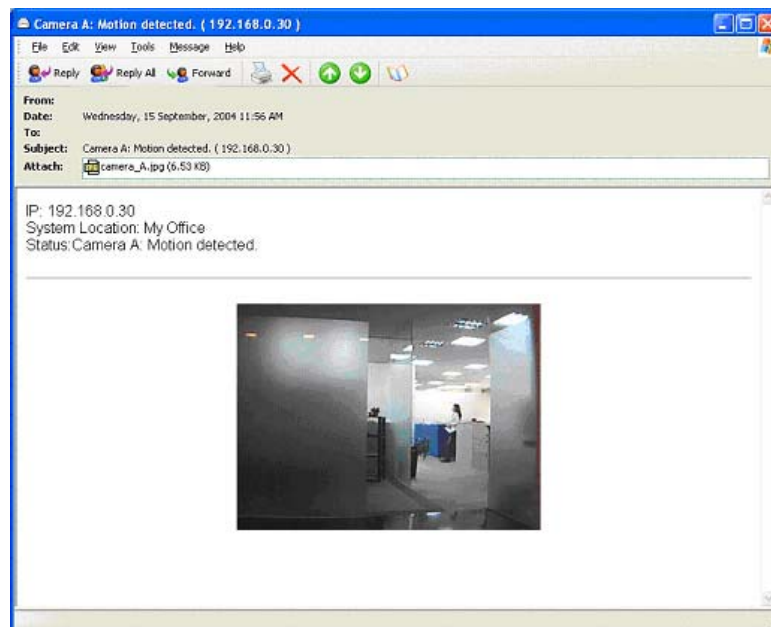


Fig.32 Motion Detect Email Notification

Email Server: ...

The Email server will be shown here. If not, click **Edit** to go to the **Email / FTP** configuration page. Click on **Motion Detection** to return here. (See Section 2.4.4 on Email / FTP configuration)

Email Address Book

The available Email addresses are listed here. See Section 2.4.4 on how to add an Email address to the **Address Book**.

Recipient

The Administrator can determine who will receive email notification.

To add a recipient to the list, click **<**

To add all the recipients to the list, click **<<**

To remove a recipient from the list, click >

To remove all the recipients from the list, click >>

Click **Apply** to confirm and save the settings.

2.4.3 Image Recording

Image recording allows the user to receive a string of JPG images to either their email account or FTP account. The images will be sent over a predetermined interval.

i. Camera A (or Camera B)

The screenshot shows the 'Camera A' configuration page for image recording. It has a dark blue header. Below it, there are several rows of settings: 'Enable' with a 'No' dropdown; 'Begin - End (hh:mm)' with two time input fields (00:00 and 23:59); 'Send image every' with a numeric input (1) and 'minute(s)'; 'Send to FTP Server' with a 'No' dropdown, a text field for the FTP path (ftp:// <Empty> /), and an 'Edit' button; 'filename' with a dropdown set to 'System defined', a text field 'image_', a note '(*).jpg', a 'loop from' range (0 to 9), 'digits' (2), and a help icon; 'Send Email' with a 'No' dropdown, a text field for 'Email Server : <Empty>', and an 'Edit' button; and a section for 'Recipients' and 'Email Address Book' with an 'Edit' button. Below these are two large empty boxes for the recipient lists, with navigation buttons (<<, <, >, >>) between them.

Fig.33 Image Recording webpage

Enable

Click **Yes** to activate this feature.

Begin – End (hh:mm)

The Administrator can determine up to 2 different time slots for Image Recording. The time is in 24hrs format.

Send image every ... minute(s)

The Administrator can determine the interval (between 1 to 99 minutes) at which WebCAM capture and send an image.

Send to FTP Server & Send Email

This is similar to the function available in **Motion Detection** page. Please refer to section 2.4.2 above for details.



Note:

The image size received by email / FTP from depends on the resolution set in **Basic Settings → Camera Settings → Image Size**

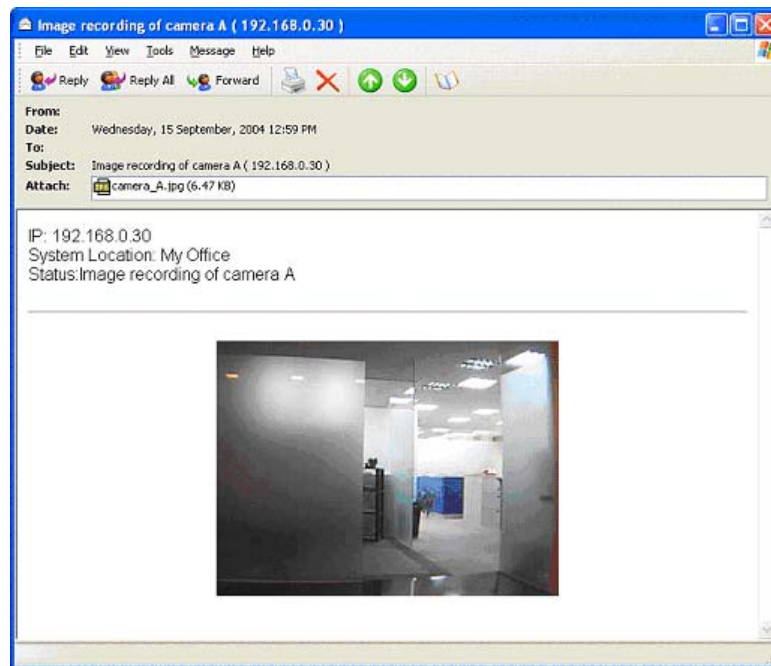


Fig.34 Email of Image Recorded

2.4.4 E-mail / FTP

This webpage sets up the necessary Email and FTP server information. The Administrator will have to enter a valid Account Name and Password to the Email server and/or FTP server. These information has to be setup in order for Event Notification, Motion Detection and Image Recording function to work.

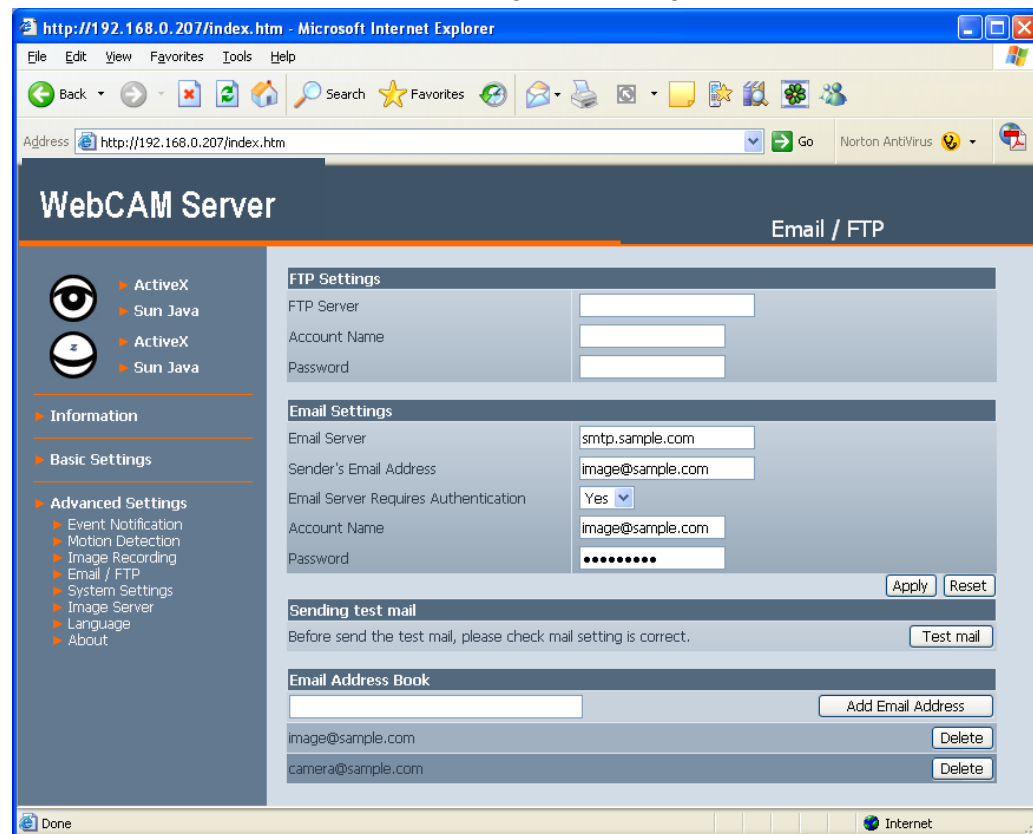
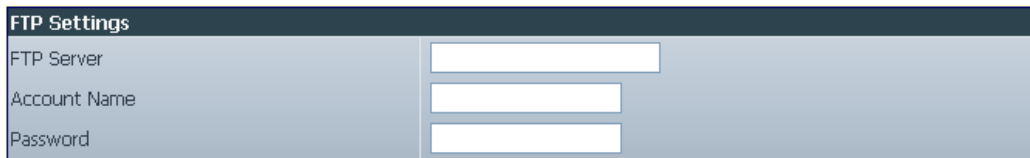


Fig.35 Email / FTP settings page

i. FTP Settings



FTP Settings	
FTP Server	<input type="text"/>
Account Name	<input type="text"/>
Password	<input type="text"/>

Fig.36 FTP settings

FTP Server

The Administrator will have to enter the full FTP server address here.

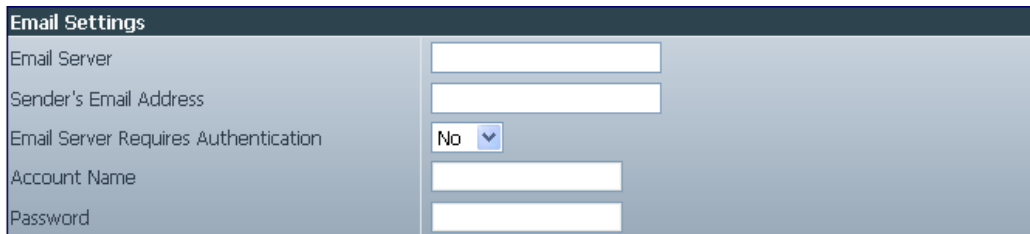
Account Name

Enter the FTP login account name here.

Password

Enter the account password. Click **Apply** to save the above settings.

ii. Email Settings



Email Settings	
Email Server	<input type="text"/>
Sender's Email Address	<input type="text"/>
Email Server Requires Authentication	No <input type="button" value="v"/>
Account Name	<input type="text"/>
Password	<input type="text"/>

Fig.37 Email settings

E-mail Server

The Administrator will have to enter the Email server address here.



Note:

Email function can only work using standard Email Server and not Web based Email Server, such as yahoo.com

Sender's Email Address

Enter a valid email address where the Email will be sent from. Enter the full email address, example: image@asus.com

Email Server Requires Authentication

Select **Yes** to enter the Account name and Password field below.

Account Name

Enter the full account name, example; image@asus.com.



Note:

In most cases, **Sender's Email Address** and **Account Name** field is the same.

Password

Enter the password for the above account name. Click **Apply** to save the changes.

iii. Sending Test Mail

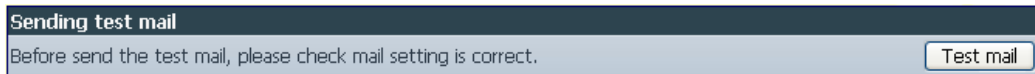


Fig.38 Sending a test mail

- a. Click **Test Mail** to check that the **Email Setting** has been correctly configured.

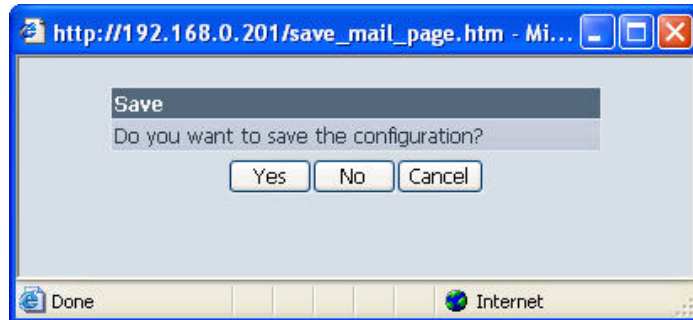


Fig.39 Saving configuration before sending a test mail

- b. Click **Yes** to save configurations and proceed to the following window.

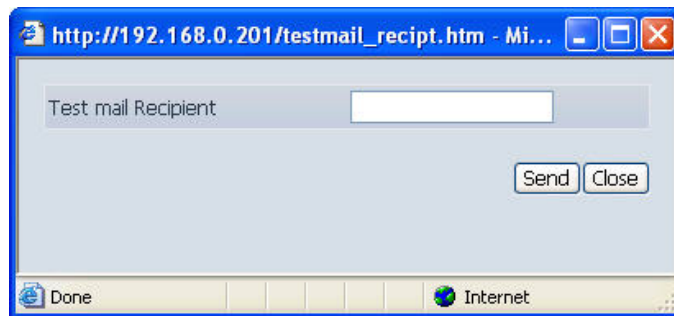


Fig.40 Test mail recipient email address

- c. Enter the Test mail Recipient email address and click Send.
- d. If the **Test Mail** is successful, the Recipient will receive the following email message.

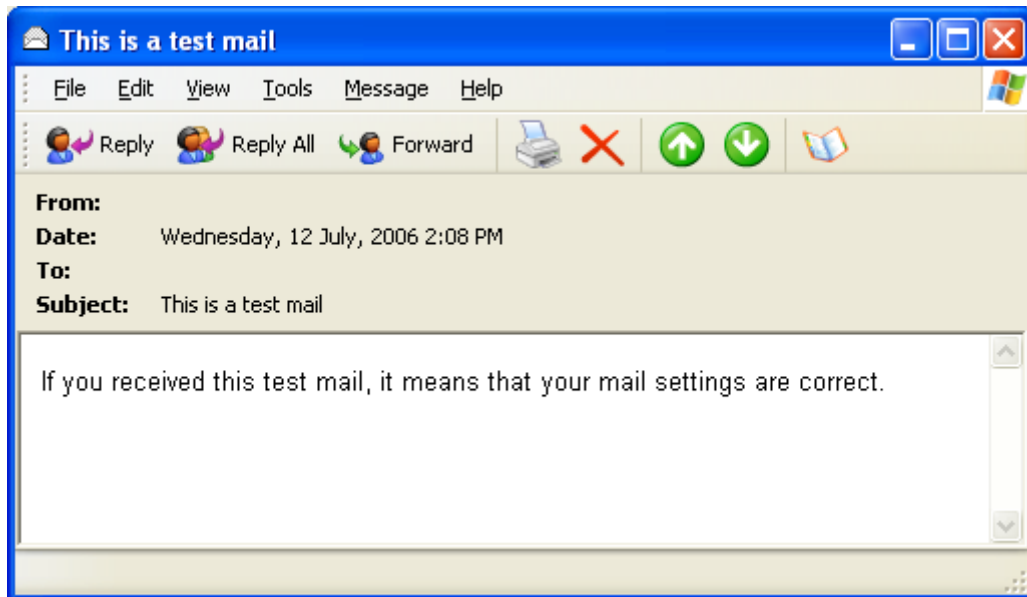


Fig.41 Confirmation email

The administrator can also check **Information → Event Log** for confirmation or failure.

No.	Date/Time	Type	Event
50	2006/07/12 06:13:09	Email	Test Mail has been sent.

Fig.42 Event Log: Test mail successful

No.	Date/Time	Type	Event
51	2006/07/12 06:16:41	Email	Failed to send test mail.

Fig.43 Event Log: Test mail failed

iv. Email Address Book

Fig.44 E-mail Address Book Entry

Enter an Email address in the box provided and click **Add Email Address**. The listed emails will be available for use in Event Notification, Motion Detection and Image Recording webpage.

Up to 20 email addresses can be stored.

Click **Delete** to remove an Email address.

2.4.5 System Settings

This page allows the Administrator to set WebCAM SNMP settings so it can be used by a NMS (Network Management System).

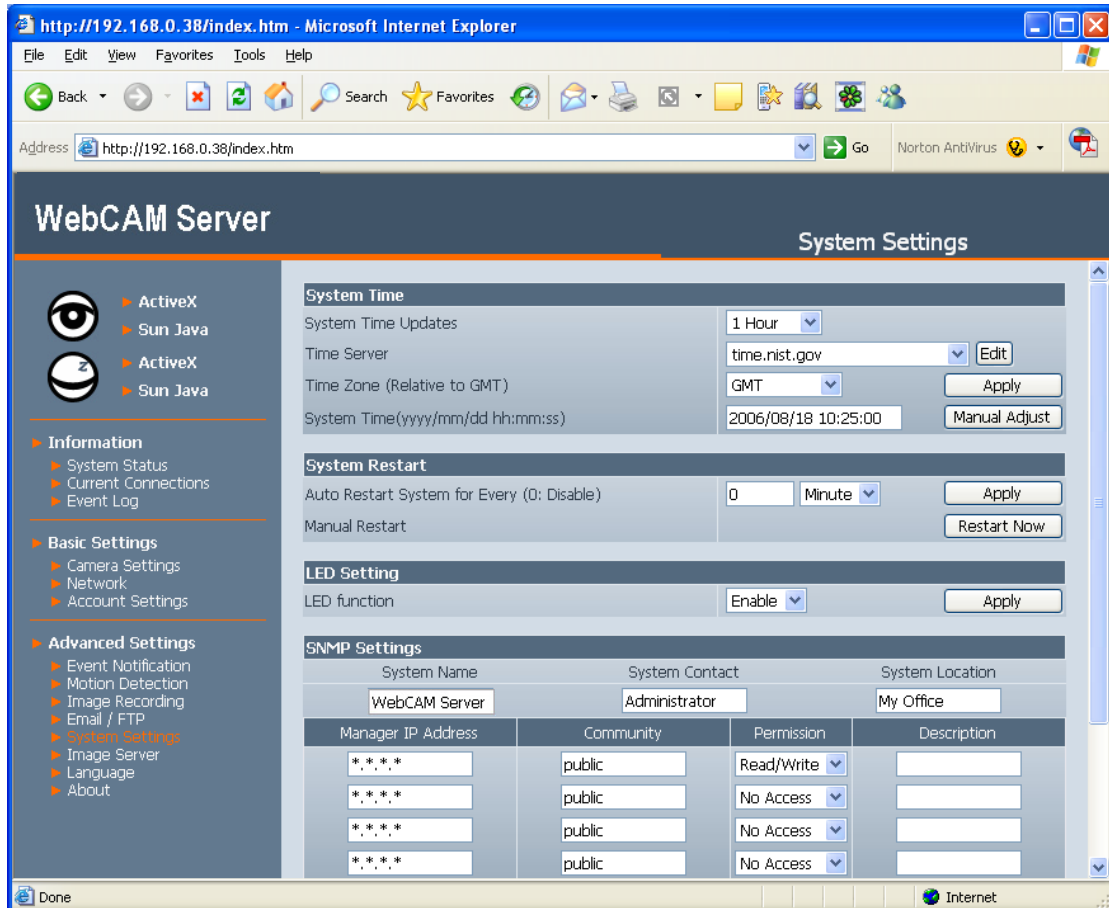


Fig.45 System Settings page

i. System Time

System Time	
System Time Updates	1 Hour
Time Server	time.nist.gov
Time Zone (Relative to GMT)	GMT+8:00
System Time(yyyy/mm/dd hh:mm:ss)	2006/07/12 14:31:37

Fig.46 System Time

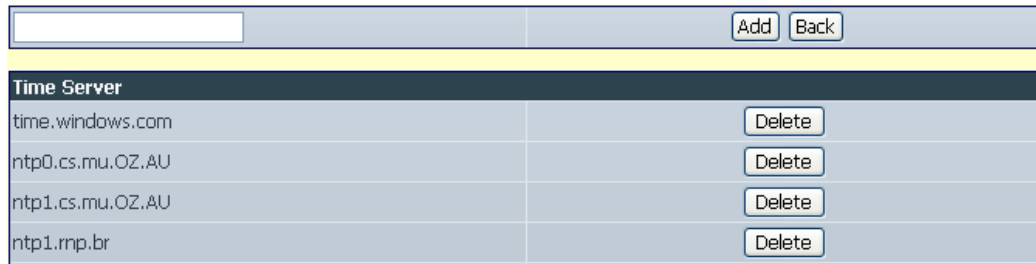
System Time Updates

The administrator can set an interval for time synchronization. Select either; 1, 3, 12 hours or 1, 10 & 30 days.

Time Server

Choose the nearest **Time Server** to your WebCAM location. The Administrator can choose from the list of a maximum of 30 Time Servers.

To add a new **Time Server** the Administrator must first make space by deleting existing **Time Servers** from the list. Once this is done, the **Add** dialog box will appear as below. Click **Back** to return to the System Settings webpage.



The dialog box has a title bar with an 'Add' button and a 'Back' button. Below the title bar is a table with the following content:

Time Server	
time.windows.com	Delete
ntp0.cs.mu.OZ.AU	Delete
ntp1.cs.mu.OZ.AU	Delete
ntp1.rnp.br	Delete

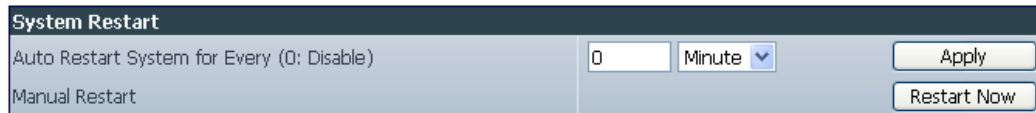
Fig.47 Add Time Server dialog box

Time Zone (Relative to GMT)

Select the appropriate time zone. Click **Apply** to save changes.

System Time (yyyy/mm/dd hh:mm:ss)

This section is to manually set WebCAM **System Time**. The format is pre-determined to: yyyy/mm/dd hh:mm:ss (in 24hr format). Click **Manual Adjust** to save the changes.

ii. System Restart


The dialog box has a title bar 'System Restart'. Below the title bar are two sections:

Auto Restart System for Every (0: Disable) [0] Minute [v] [Apply]

Manual Restart [Restart Now]

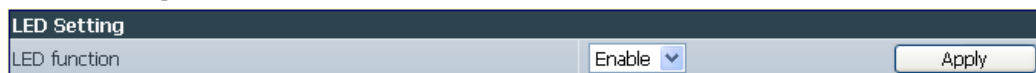
Fig.48 Auto Restart setting

Auto Restart System Every ...

The Administrator can choose to restart WebCAM at certain intervals (choose between minutes and hours only). Click **Apply** to save any changes.

Manual Restart

Click **Restart Now** to restart the system immediately.

iii. LED Settings


The dialog box has a title bar 'LED Setting'. Below the title bar is a single row:

LED function [Enable v] [Apply]

Fig.49 LED Settings

LED function

This function is not applicable.

iv. SNMP Settings

SNMP Settings			
System Name		System Contact	System Location
<input type="text" value="iCAMView"/>		<input type="text" value="Administrator"/>	<input type="text" value="My Office"/>
Manager IP Address	Community	Permission	Description
<input type="text" value="*.*.*"/>	<input type="text" value="public"/>	<input type="text" value="Read/Write"/>	<input type="text"/>
<input type="text" value="*.*.*"/>	<input type="text" value="public"/>	<input type="text" value="No Access"/>	<input type="text"/>
<input type="text" value="*.*.*"/>	<input type="text" value="public"/>	<input type="text" value="No Access"/>	<input type="text"/>
<input type="text" value="*.*.*"/>	<input type="text" value="public"/>	<input type="text" value="No Access"/>	<input type="text"/>
<input type="text" value="*.*.*"/>	<input type="text" value="public"/>	<input type="text" value="No Access"/>	<input type="text"/>
<input type="text" value="*.*.*"/>	<input type="text" value="public"/>	<input type="text" value="No Access"/>	<input type="text"/>
<input type="text" value="*.*.*"/>	<input type="text" value="public"/>	<input type="text" value="No Access"/>	<input type="text"/>
<input type="text" value="*.*.*"/>	<input type="text" value="public"/>	<input type="text" value="No Access"/>	<input type="text"/>

Fig.50 SNMP Settings

System Name

This is to give WebCAM a name identifiable in a SNMP network.

System Contact

This is to give the Administrator an identity in the SNMP network.

System Location

This is to set WebCAM SNMP location.

Manager IP Address

This set the LAN IP address where the administrator can manage WebCAM from. It is valid for up to 8 different LAN IP addresses. To manage WebCAM from any LAN IP addresses leave the field as *.*.*.

Community

This is to set a Community name for NMS. The community name has to be the same as that set in NMS.

Permission

This is to set the Administrator's authority. Options are Read, Read/Write, and No Access.

Description

This is for an Administrator to make notes.

2.4.6 Image Server

The Image Server allows the user to view his camera directly from the internet without having to set-up DDNS or Router's NAT. All the user has to do is log on to the Server's webpage and register for free.

Once a username and password is registered and confirmed. The user can log into this Server from anywhere in the world and access his camera.

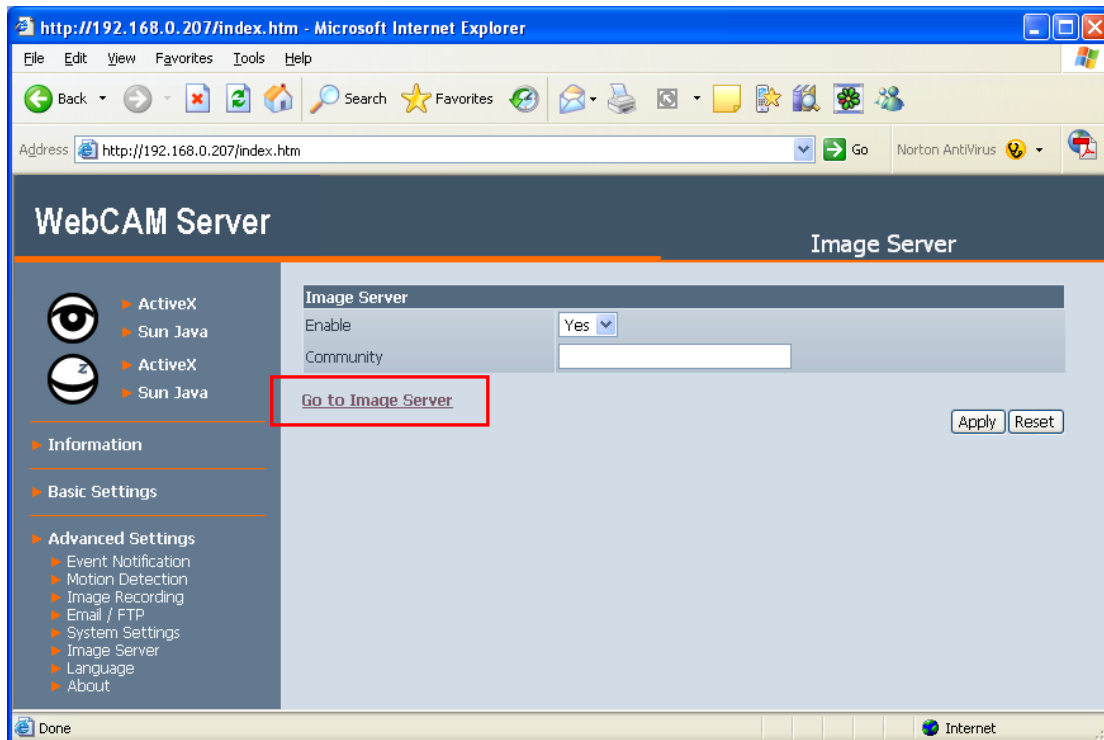


Fig.51 Image Server settings page

Enable

Choose **Yes** to enable this feature or **No** to disable.

Community

This is a security feature. Set a Community password to add an extra level of internet security to WebCAM. Community password is left blank by default.

Click **Apply** to confirm settings.

To activate the iMage Server account;

1. Click **Goto iMage Server**. Browser will redirect you to **www.iCV99.net** the iMage Server site.
2. For first time login, click on **Don't have an iMage account? Click to register a free account** (see Figure 53). Be sure to have the following information at hand;
 - i. WebCAM Serial Number,
 - ii. WebCAM Master Password (both information are located on the label behind WebCAM)

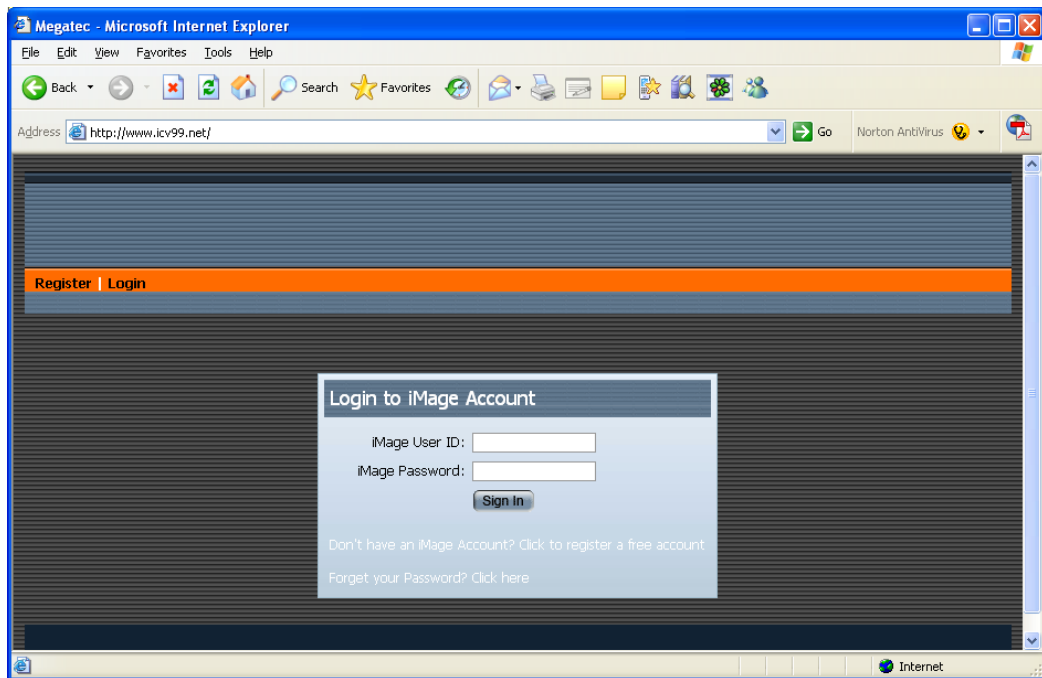
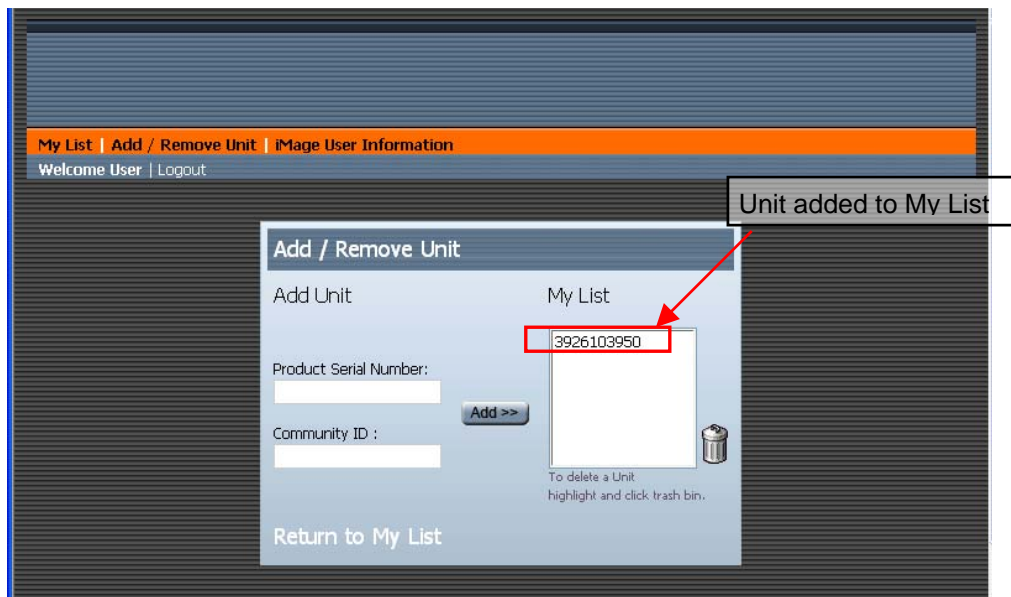


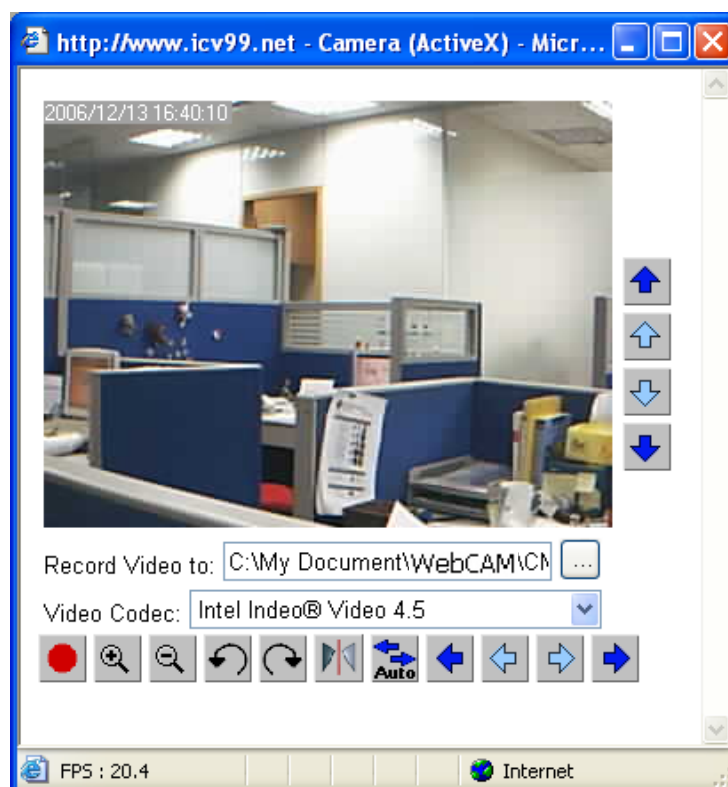
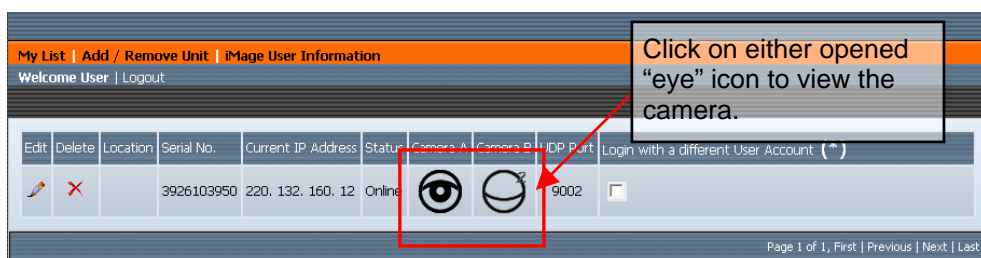
Fig.52 iImage Server login page

Fig.53 iImage account Registration page

3. Once registered, a confirmation email will be sent to your email address. You can now sign in to your account using your new iImage User ID.
4. Goto **Add / Remove Unit**, and enter the Serial Number and Community ID (if one has been set under **Advanced Settings** → **iImage Server** → **Community**). Click **Add >>** to add WebCAM to My List.

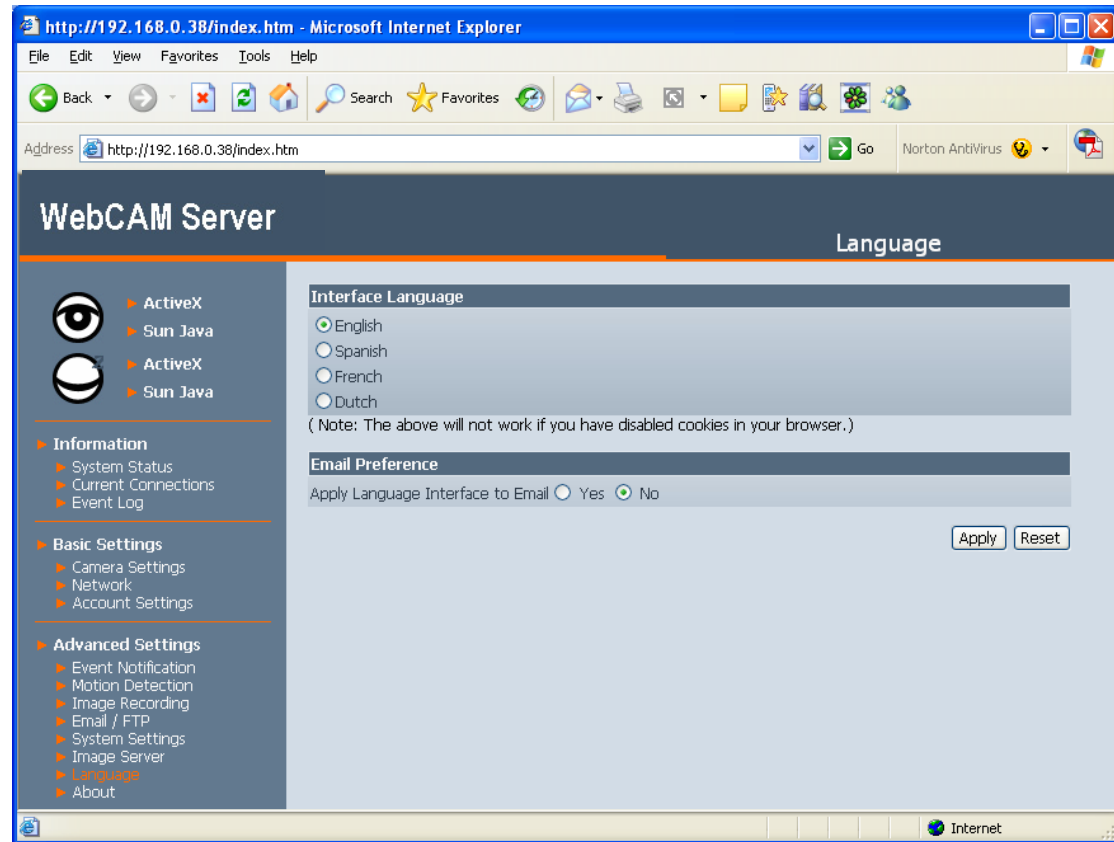


5. Next click **Return to My List**, and click on the “eye” icon to view the camera.



2.4.7 Language

Use this section to set WebCAM Interface language.



i. Interface Language

At the moment, the user can choose the following versions;

a. Western version for;

- English,
- Spanish,
- French,
- Dutch, and
- Portuguese.

b. Eastern version for;

- English,
- Traditional Chinese,
- Simplified Chinese,
- Japanese, and
- Korean.

ii. Email Preference

Check **Yes** to apply the language preference to emails sent from WebCAM.

2.4.8 About

The administrator can use this section to check firmware information, save/restore settings, upgrade firmware and see manufacturer's details.

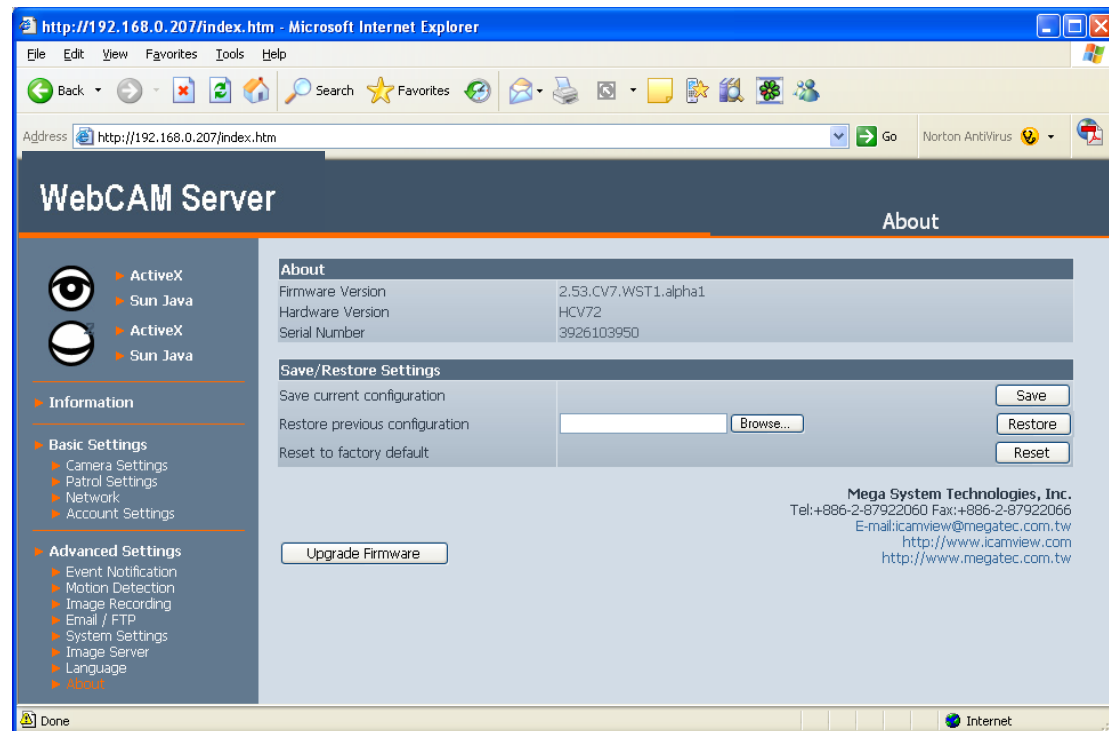


Fig.54 About page

i. About

This shows the Firmware Version, Hardware Version and Serial Number.

ii. Save / Restore Settings

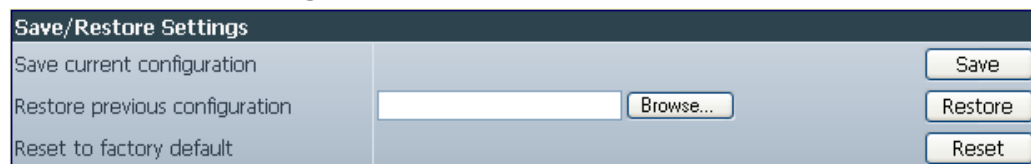


Fig.55 About page

Save Current Configuration

Click **Save** to save the configuration to your PC. The text file will have a default format of YYYY_MMDD_####.cfg. Administrator permission required.

Restore Previous Configuration

Use this function to restore a *.cfg configuration that has been saved earlier. Click **Browse...** to the location of the file and click **Restore**.

Reset to factory default

This function will reset all settings to its default value.



Note: WebCAM will request for the master login and password. This is printed at the back of the unit.

Chapter 4: View Images Using PDA / PPC / mobile

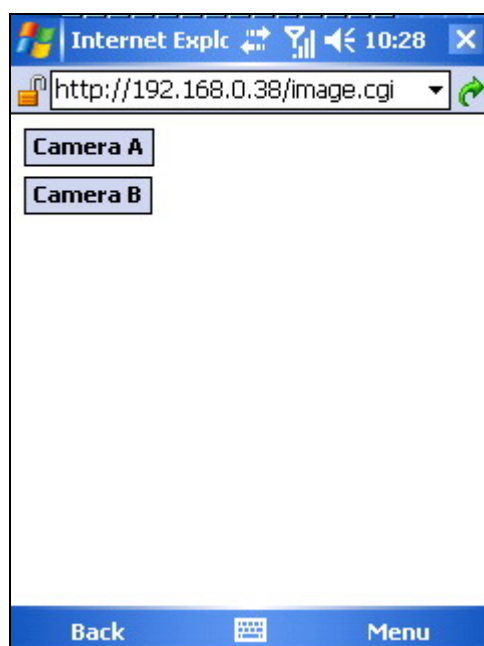
WebCAM supports image viewing from a GRPS / WiFi enabled PDA / PPC / Symbian mobile device. To view the images;

- Make sure that the PDA / PPC / Mobile unit is connected to LAN or Internet.
- Enter **http://xxx.xxx.xxx.xxx/image.cgi** in the web address (where **xxx** is either the LAN IP, WAN IP address or Domain Name of WebCAM)
- The following login page will appear. Enter the **Login Name** and **Login Password** if applicable. Otherwise, click **Apply** to proceed.



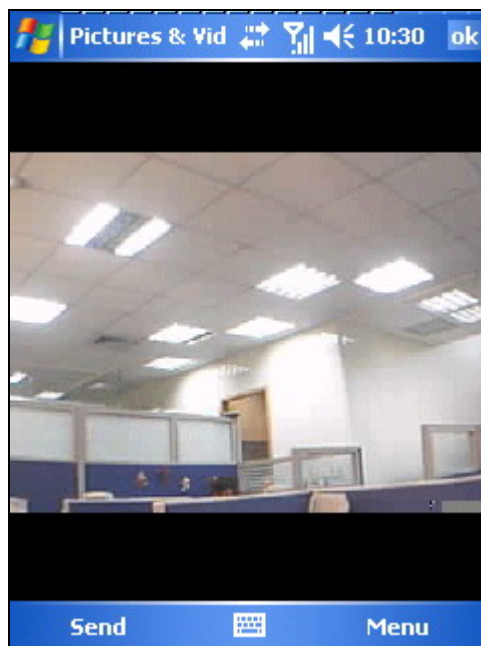
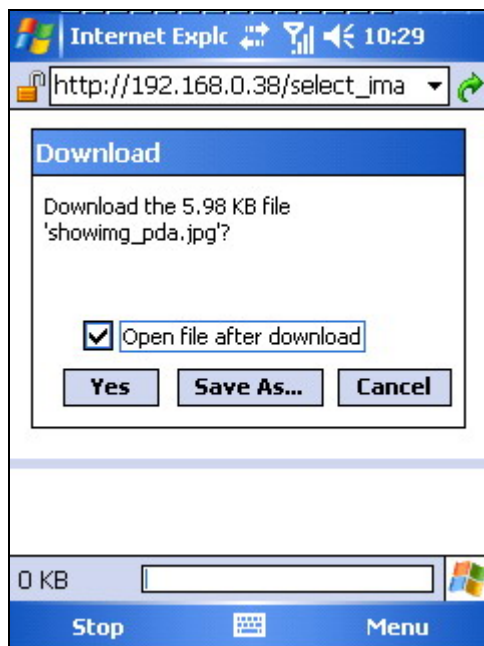
The screenshot shows a mobile browser window titled "Internet Explc" with a status bar at the top showing signal strength, battery, and time 10:27. The address bar contains "http://192.168.0.38/image.cgi". The main content area has two text input fields labeled "Login Name" and "Login Password". Below these fields are two buttons: "Apply" and "Reset". At the bottom of the screen is a blue navigation bar with "Back" and "Menu" buttons.

- The following Camera Selection will appear. Click on either **Camera A** or **Camera B**.



The screenshot shows the same mobile browser window as before, but the main content area now displays two buttons: "Camera A" and "Camera B". The navigation bar at the bottom remains the same with "Back" and "Menu" buttons.

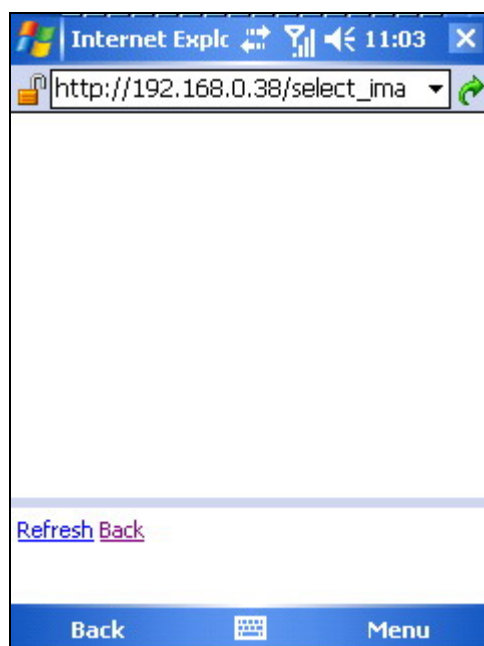
- e. The default file name is **showing_pda.jpg**, click **Save As...** to change the file name or save location.

**Note:**

The downloaded image size depends on the resolution set in **Basic Settings → Camera Settings → Image Size**.

Approximately, 6KB @ 320x240 vs. 17KB @ 640x480 resolution.

- f. The images are downloaded and displayed one at a time. Click **Refresh** to download the next image. Click **Back** to go to the camera page to select a different camera.



Chapter 5: Using the Utility

Section 1. Installation

1. Insert the enclosed Utility CD into the CD-ROM drive. The following menu will show up. Click on the buttons on the left to install the programs you want.



- ☑ **Utility** - This is a program that helps the user perform quick installation. It will detect the current configuration and take the user through the necessary network setup.
 - a. Click the **Utility** button to commence installation.
 - b. After the installation is completed, the Utility program will appear in Windows **Start** → **Utility**. Click this to start the program.



Fig.56 Utility Group

- ☑ **MultiMonitor** - This is a windows based program designed to allow user to control a large number of WebCAM IP camera located either in a LAN or WAN.
- ☑ **Read User's Manual** - Click to read WebCAM's User Manual. You will need Adobe Acrobat Reader v5.0 or higher.
- ☑ **Adobe Acrobat Reader v5.0** - This will install Acrobat Reader v5.0 on your local hard drive.
- ☑ **Sun Java / ActiveX** - Install Sun Java for viewing the video image by Java, or install the OCX for viewing by ActiveX

Section 2. Using the Utility Program

The Utility main menu is shown below. The selection menu is located on the left. The Serial Number, current Firmware and IP Address of every WebCAM connected to the LAN will be displayed on the table to the right.

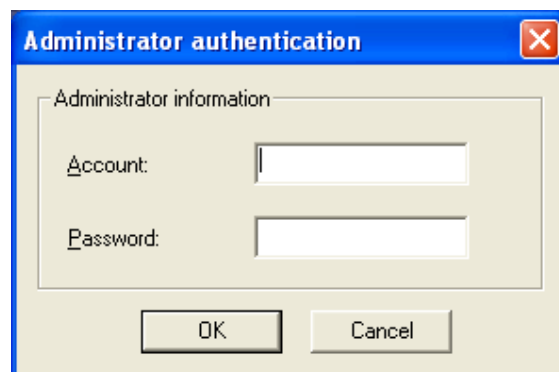


Fig.57 Utility Main Menu

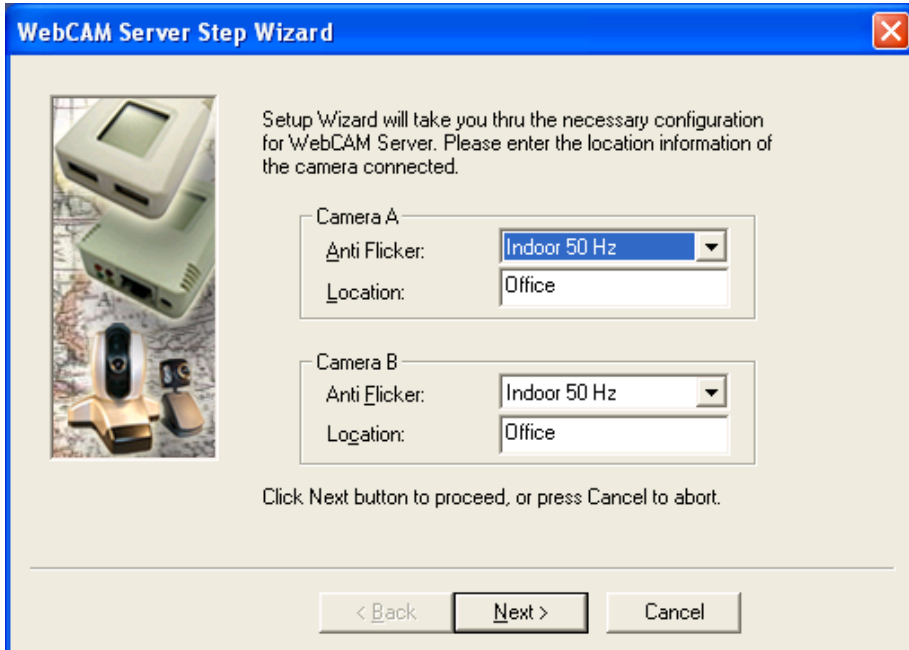
2.1 Setup Wizard

Click **Setup Wizard** to take you through the setup process.

1. Click to select the WebCAM you want to configure on the right.
2. Click on **Setup Wizard**.
3. The **Administrator Authentication** login window will appear. Enter the administrator account info you set in **Basic Settings → Account Settings** (refer to section 2.3.4). The default information is printed behind WebCAM box.



4. Enter the necessary camera configurations. Choose the appropriate frequency (Indoor 60 Hz, Indoor 50 Hz or Outdoor) to prevent flickering on the video feed. Enter a name for the camera in the **Location:** box to identify the camera.



WebCAM Server Step Wizard

Setup Wizard will take you thru the necessary configuration for WebCAM Server. Please enter the location information of the camera connected.

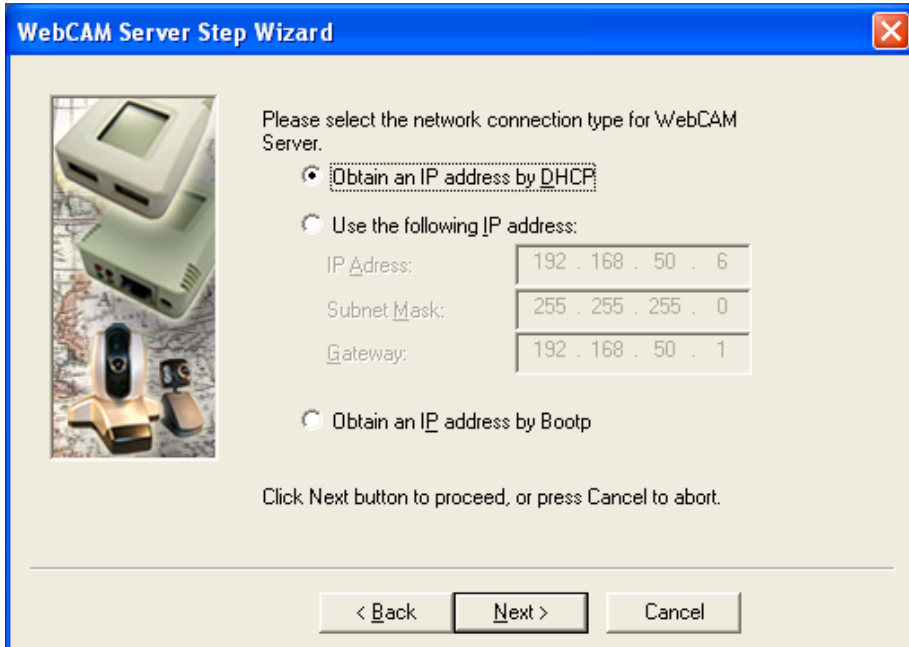
Camera A:
 Anti Flicker: Indoor 50 Hz
 Location: Office

Camera B:
 Anti Flicker: Indoor 50 Hz
 Location: Office

Click Next button to proceed, or press Cancel to abort.

< Back Next > Cancel

5. Click **Next >** to configure the Network Connection.



WebCAM Server Step Wizard

Please select the network connection type for WebCAM Server.

☒ Obtain an IP address by DHCP

☐ Use the following IP address:

IP Address: 192 . 168 . 50 . 6
 Subnet Mask: 255 . 255 . 255 . 0
 Gateway: 192 . 168 . 50 . 1

☐ Obtain an IP address by Bootp

Click Next button to proceed, or press Cancel to abort.

< Back Next > Cancel

Obtain an IP address by DHCP

Choose this if you want your Router to assign an IP address to WebCAM.

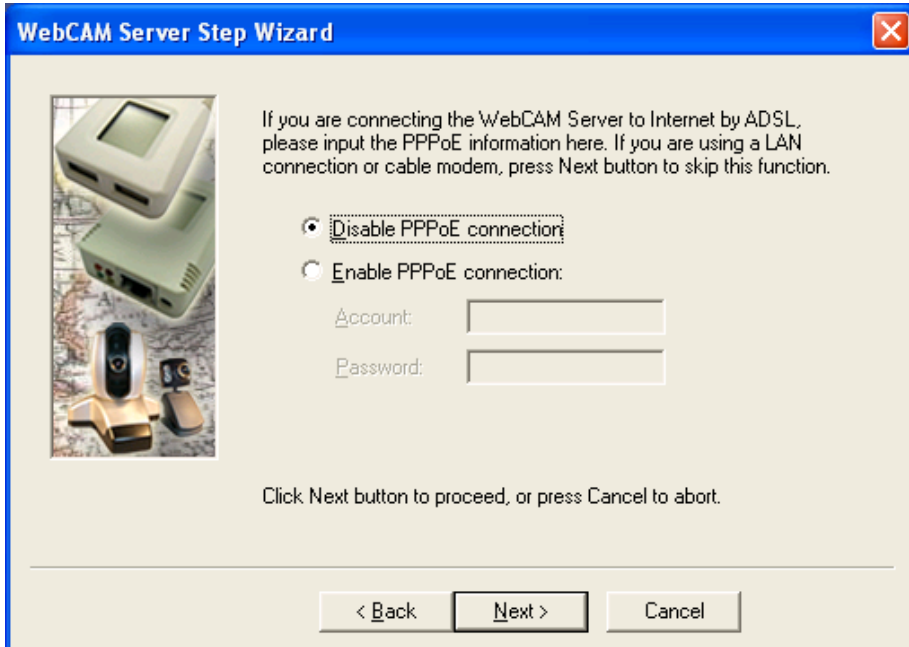
Use the following IP Address

Choose this if you want to enter a fix IP address, Subnet Mask and Gateway for WebCAM. (Refer to Appendix C for explanation on IP Addresses)

Obtain an IP address by Bootp

Choose this if you want to allow WebCAM to obtain an IP address using Bootp protocol.

6. Click **Next >** to proceed to xDSL/Cable modem setup.



WebCAM Server Step Wizard

If you are connecting the WebCAM Server to Internet by ADSL, please input the PPPoE information here. If you are using a LAN connection or cable modem, press Next button to skip this function.

☒ **Disable PPPoE connection**
☐ **Enable PPPoE connection:**

Account:

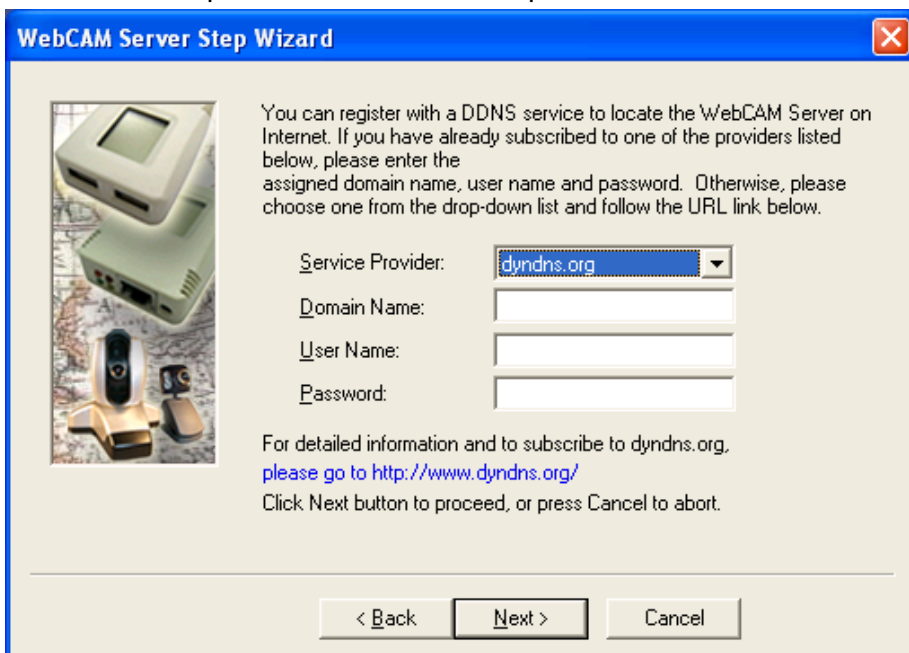
Password:

Click Next button to proceed, or press Cancel to abort.

< Back **Next >** Cancel

Choose this if you want WebCAM to connect directly to your xDSL line.

- a. Select **Enable PPPoE connection**
 - b. Enter your account and password details as provided by your internet service provider ("ISP").
 - c. WebCAM will be able to dial-up automatically once setup is completed.
7. Click **Next >** to proceed with DDNS setup



WebCAM Server Step Wizard

You can register with a DDNS service to locate the WebCAM Server on Internet. If you have already subscribed to one of the providers listed below, please enter the assigned domain name, user name and password. Otherwise, please choose one from the drop-down list and follow the URL link below.

Service Provider:

Domain Name:

User Name:

Password:

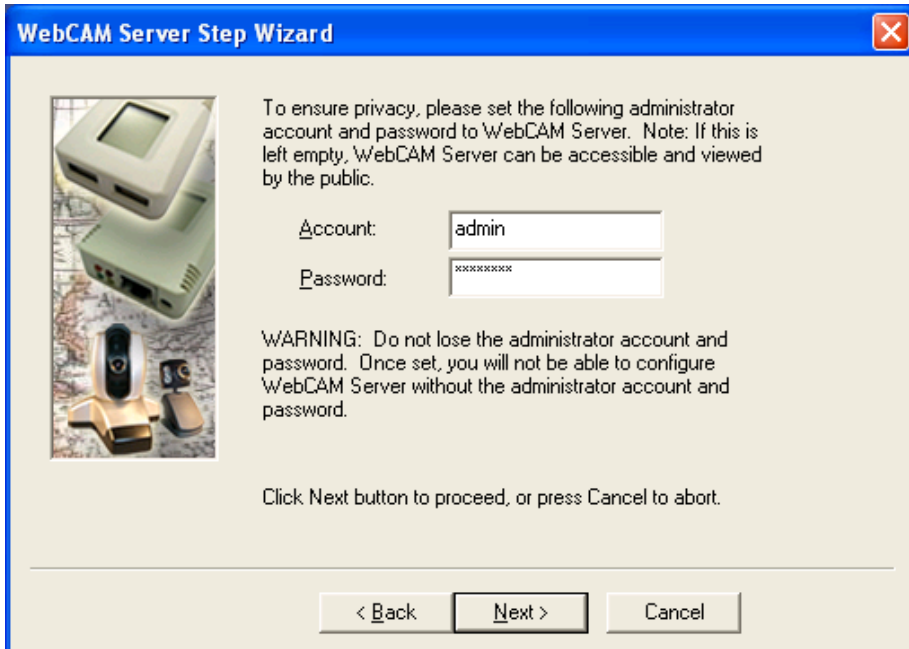
For detailed information and to subscribe to dyndns.org, please go to <http://www.dyndns.org/>

Click Next button to proceed, or press Cancel to abort.

< Back **Next >** Cancel

DDNS service allows you to assign a Domain Name to your Dynamic IP. This way, you will always be able to locate your device over the internet. (For more details see Chapter 4, Section 2.3.2, part v)

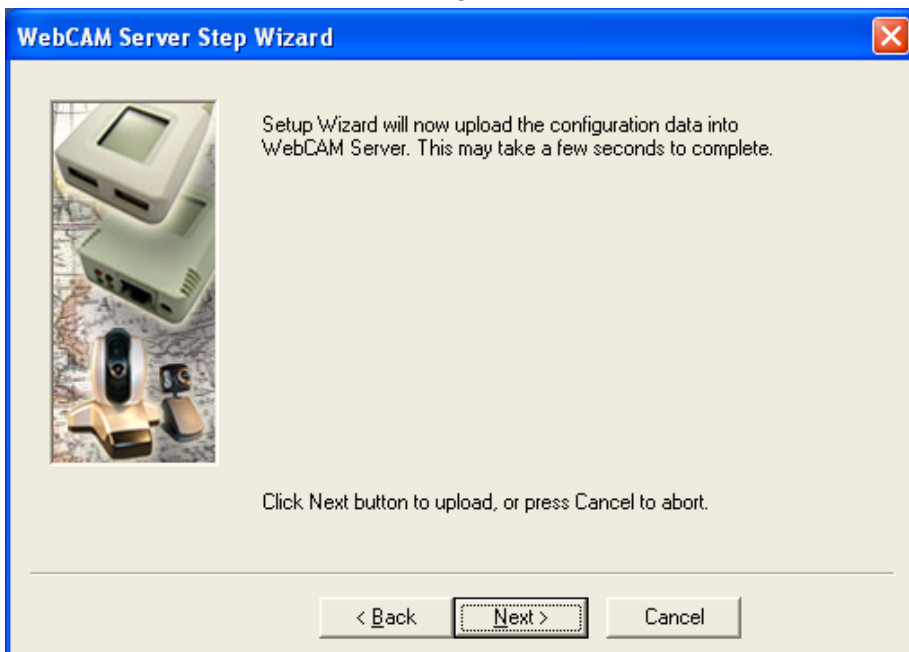
8. Click **Next >** to change your administrator account and password information.



The image shows a Windows-style dialog box titled "WebCAM Server Step Wizard". On the left is an illustration of a computer monitor and a webcam. The main text area contains the following: "To ensure privacy, please set the following administrator account and password to WebCAM Server. Note: If this is left empty, WebCAM Server can be accessible and viewed by the public." Below this are two input fields: "Account:" with the text "admin" and "Password:" with masked characters "xxxxxxxx". A "WARNING:" message follows: "Do not lose the administrator account and password. Once set, you will not be able to configure WebCAM Server without the administrator account and password." Below the warning is the instruction: "Click Next button to proceed, or press Cancel to abort." At the bottom are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

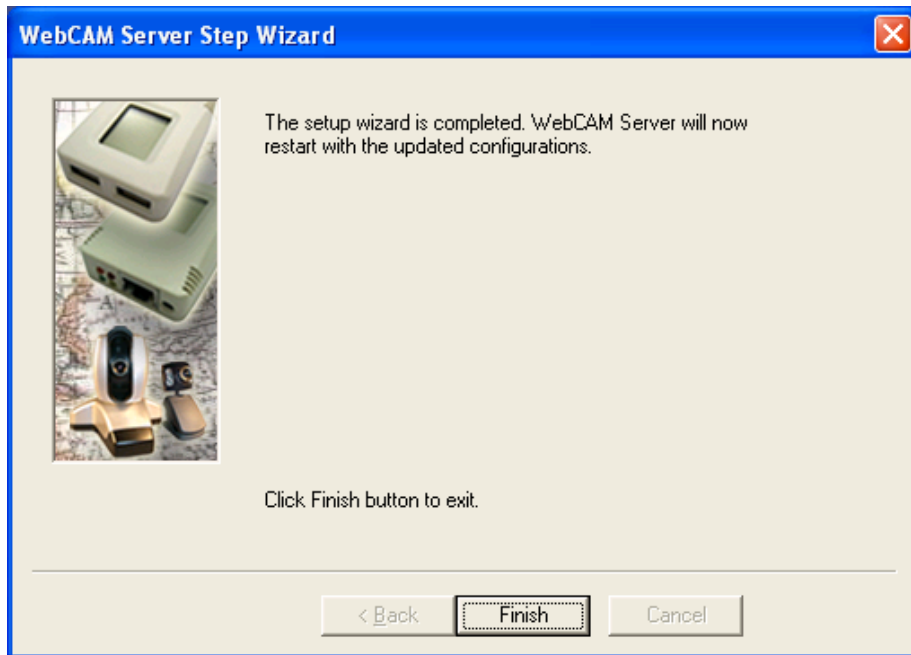
An **administrator account** is necessary to ensure privacy. If you do not want to set one, clear the data in both fields. The fields are case sensitive.

9. Click **Next >** to confirm these configuration.



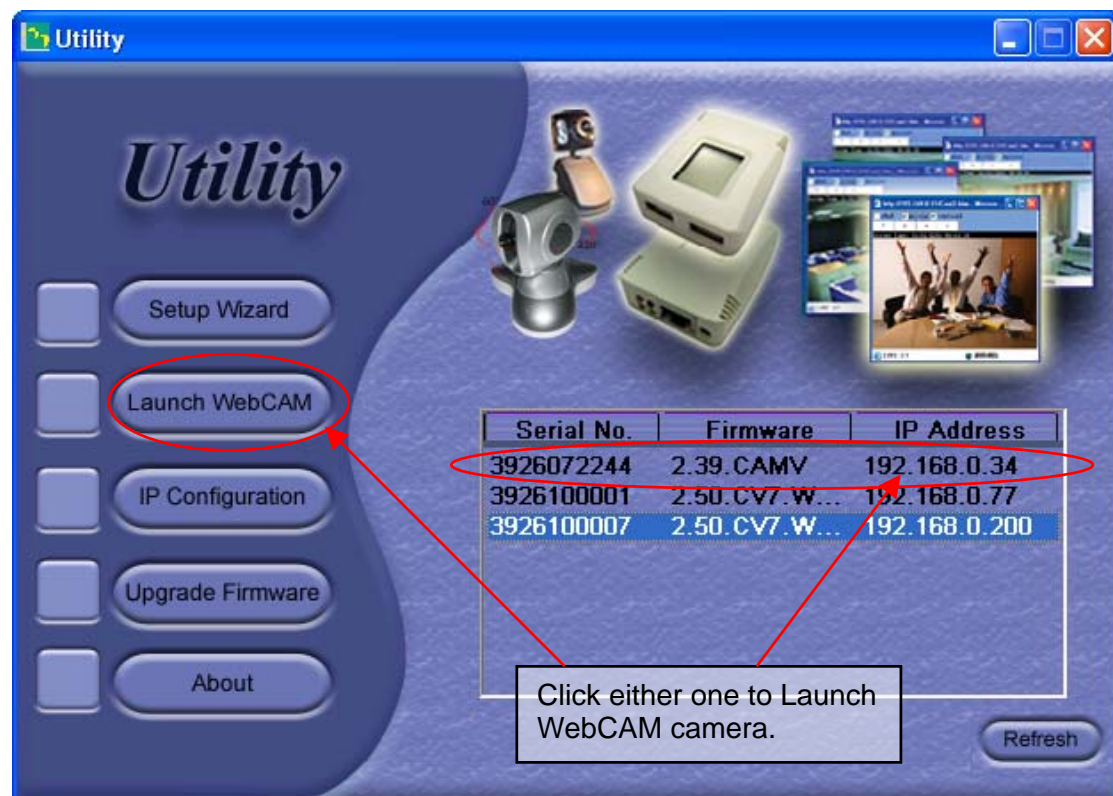
The image shows the same "WebCAM Server Step Wizard" dialog box. The main text area now contains: "Setup Wizard will now upload the configuration data into WebCAM Server. This may take a few seconds to complete." Below this is the instruction: "Click Next button to upload, or press Cancel to abort." The "Next >" button remains highlighted with a dashed border.

10. Click **Next >** to save and restart WebCAM with the new configurations.

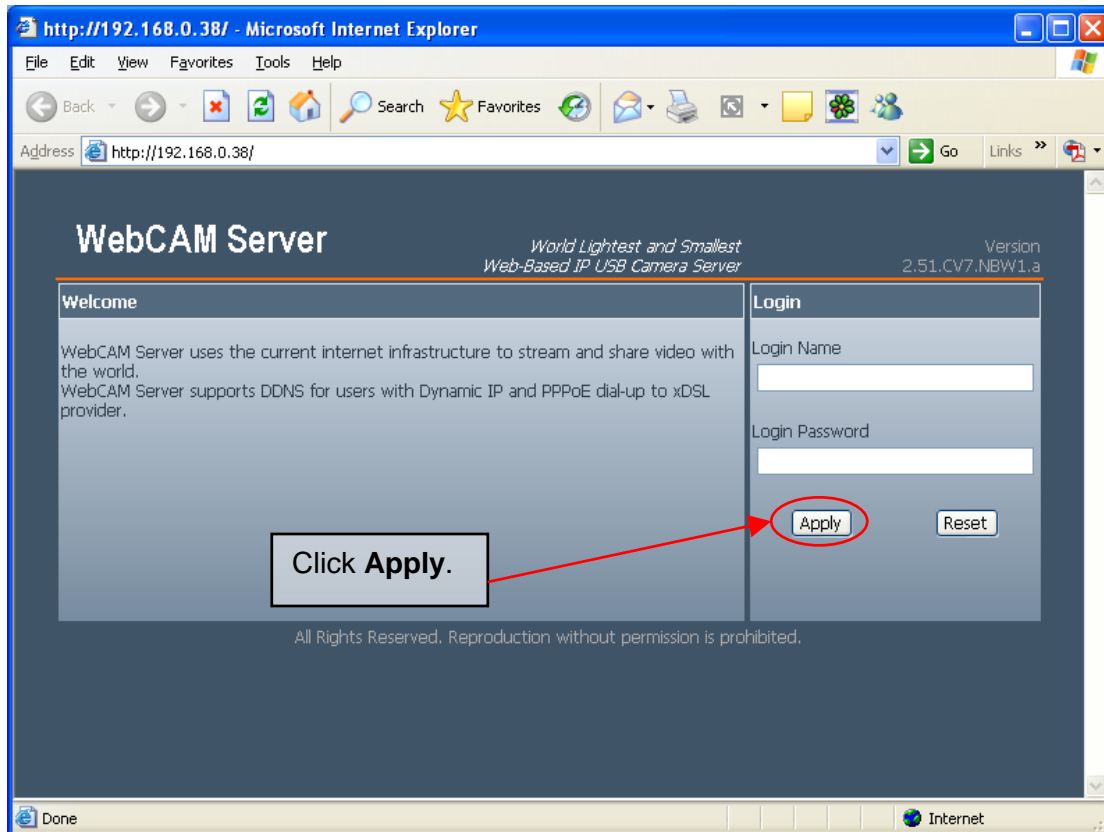


2.2 Launch WebCAM

Click **Launch WebCAM** or double click the WebCAM listed in the table to launch it.

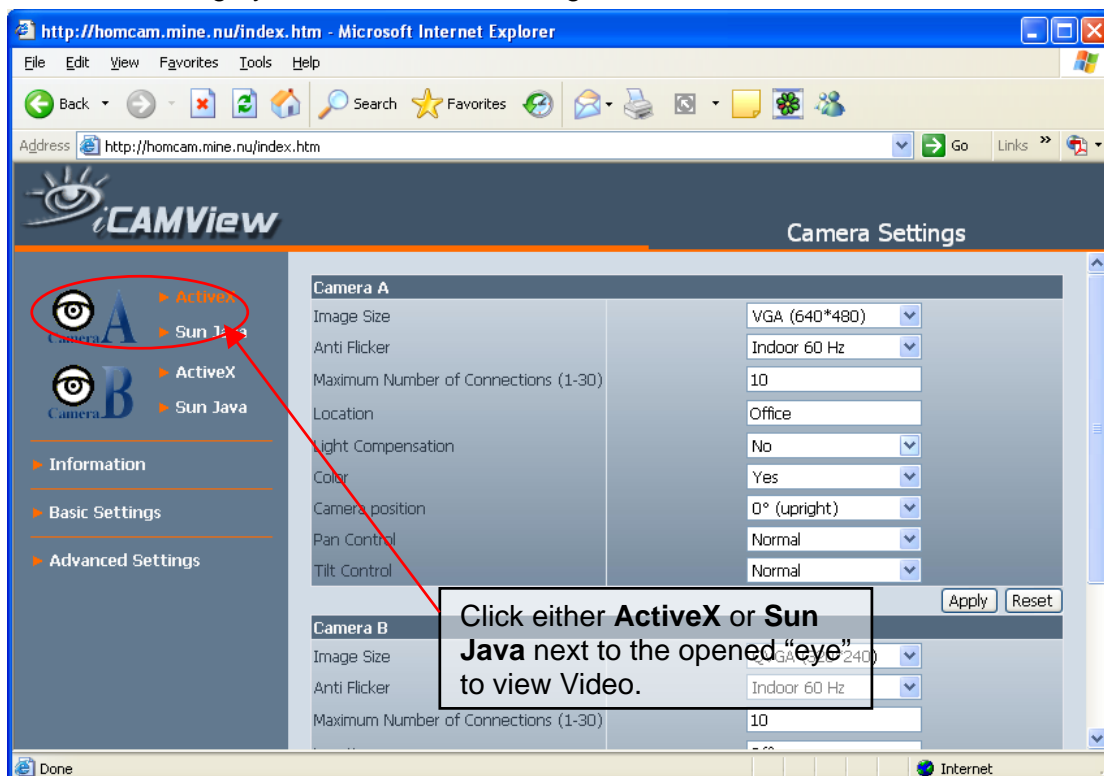


WebCAM login screen will appear.



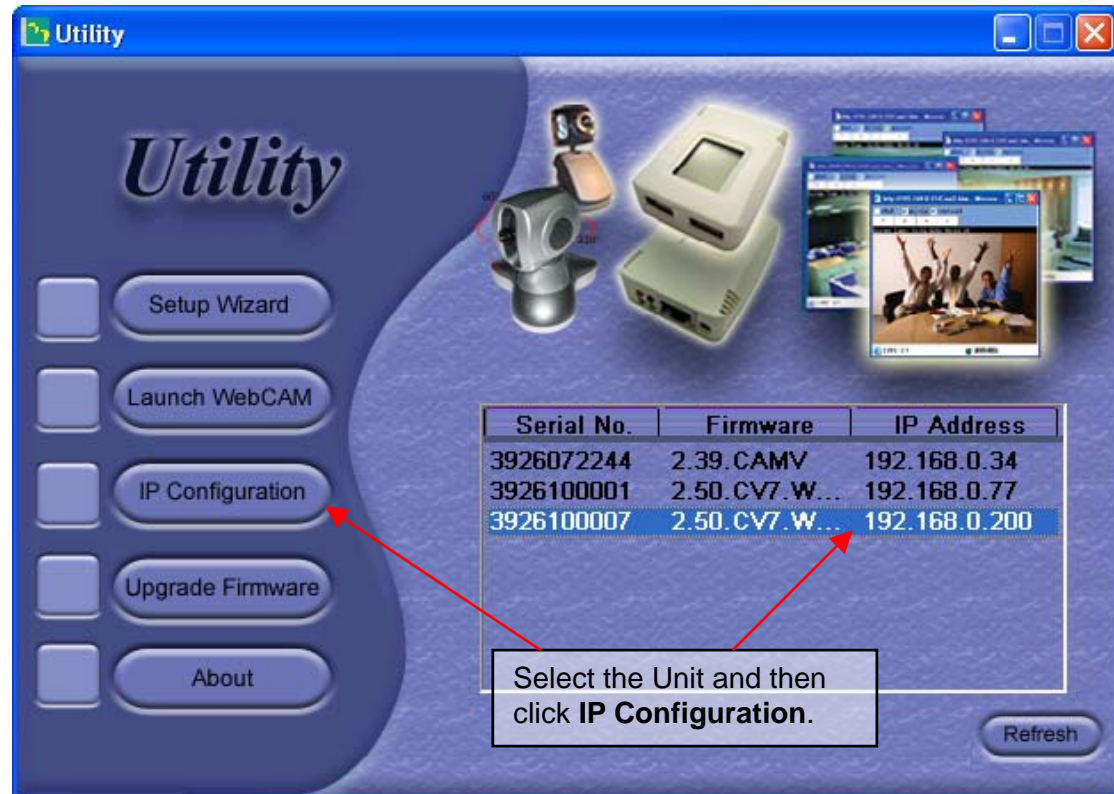
Enter the **Account (Login Name)** and **Password (Login Password)** set earlier. Otherwise, use the default login and password at the back of WebCAM unit. If you did not configure one, then just click **Apply** to login.

WebCAM User Interface webpage will appear. Click either **ActiveX** or **Sun Java** next to a blinking eye to view the video images.



2.3 IP Configuration

This section allows you to configure the IP address for WebCAM. You do not have to edit this section if you have gone thru **Setup Wizard** earlier.



Select the WebCAM unit on the right display screen, and click **IP Configuration**. This will bring up the following configuration window.

2.3.1 IP Address

Use this section to configure the IP Address of WebCAM.

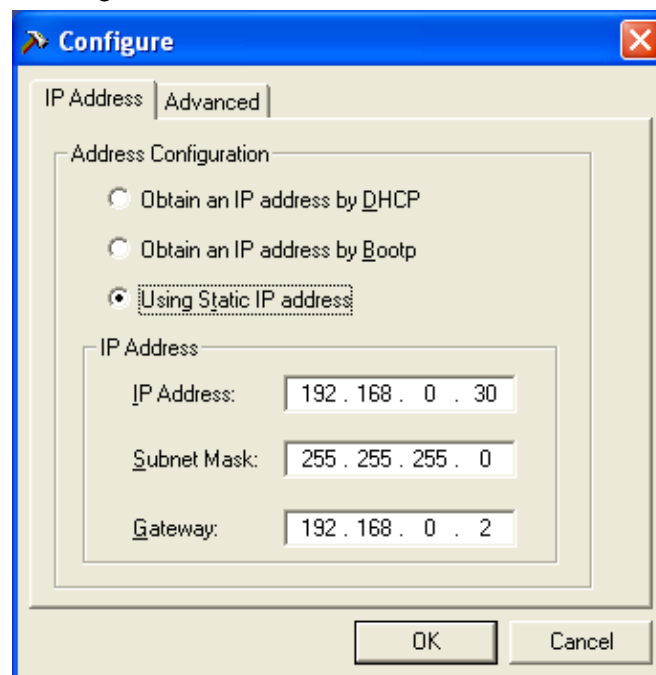


Fig.58 IP Configuration: IP Address

Obtain an IP address by DHCP

Choose this if you want your Router to assign an IP address to WebCAM. This is the default setting.

Obtain an IP address by Bootp

Choose this if you want to allow WebCAM to obtain an IP address using Bootp protocol.

Use the following IP Address

Choose this if you want to assign a fix IP address, Subnet Mask and Gateway for WebCAM. (Refer to Appendix C for explanation on IP Addresses)

2.3.2 Advanced (for password and HTTP configuration)

This section sets security password against unauthorised access to devices through this Utility.

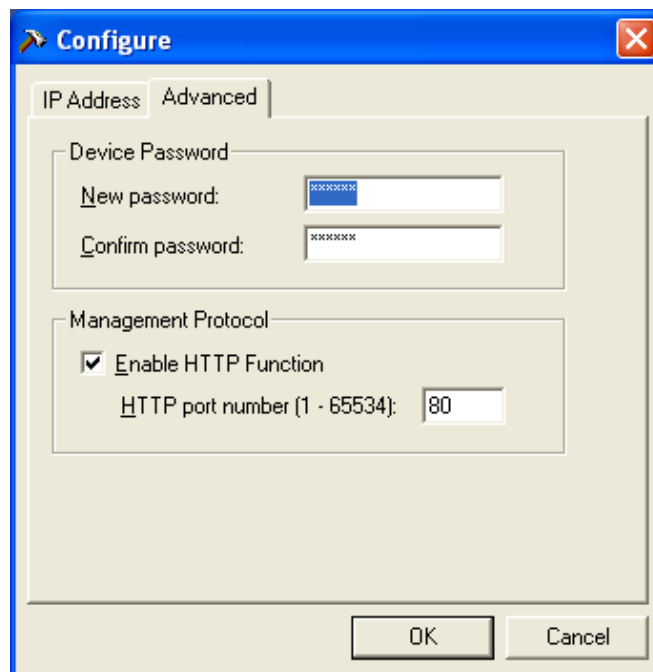


Fig.59 IP Configuration: Advanced settings

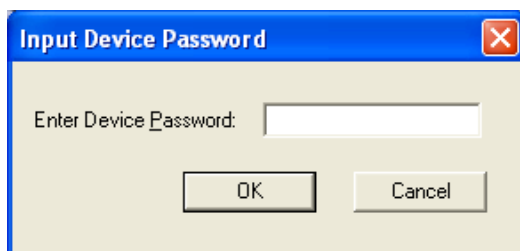
i. **Device Password (when accessing from Utility)**

Use this to set an access password to WebCAM Utility. Once set, the IP Address will not be shown on the right display panel (see below).

Device Password can only be set for WebCAM from within the same LAN by an Administrator.



Once set, Utility will request for the **Device Password** when you try to click on either, **Setup Wizard**, **Launch WebCAM** or **IP Configuration** button.



To remove the password,

- Select the WebCAM unit from the Utility list.
- Click **IP Configuration**.
- Enter the unit's **Device Password**
- Go to **Advanced** → **Device Password** and delete both the entries.
- Click **OK** to confirm.



NOTE:

If the password is lost, you must use the Master Password to reset the Password field

ii. Management Protocol

This setting allows the administrator to determine the LAN HTTP access (web) to WebCAM IP camera. To limit access, the administrator can choose to use either the default open port 80 or other ports (between 1 to 65534).

Once the HTTP port number is set to another port (other than 80), the full LAN IP address must be entered in order to access the WebCAM web interface.

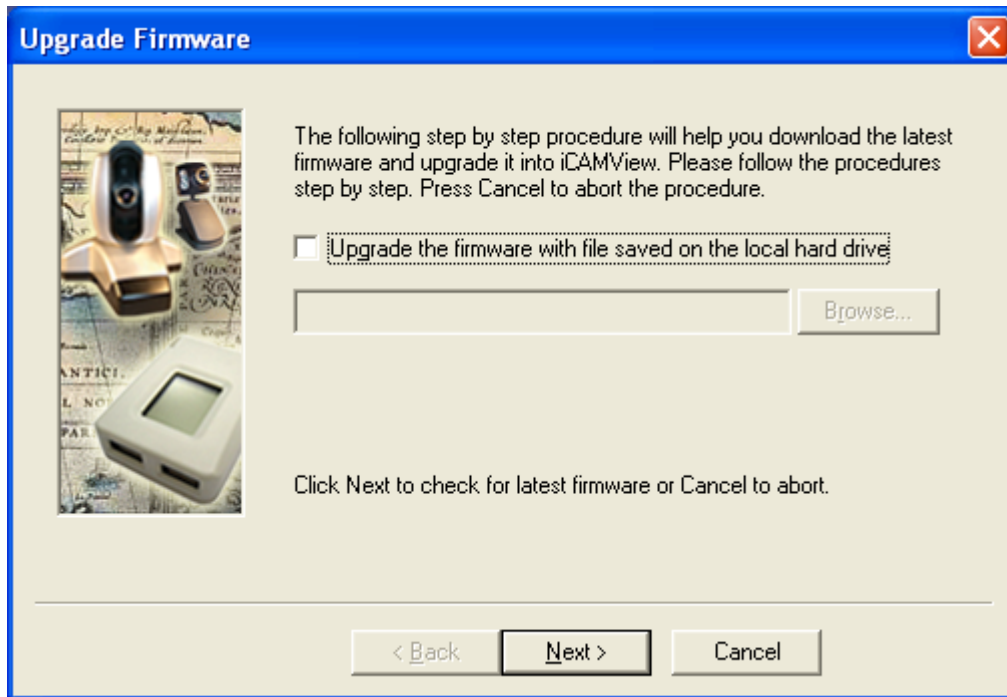
**Example:**

If a value of say, 8080 is set as the **HTTP port number**, then enter `http://192.168.0.177:8080` in order to access WebCAM web interface.

Uncheck to disable this function.

2.5 Upgrade Firmware

Click this to bring up the upgrade firmware dialog box.



To check the internet for the latest firmware, click **Next**

Otherwise, check **Upgrade the firmware with file saved on the local hard drive**.

Click **Browse** to choose the location where the *.bin file is located.

2.6 About

Click this button to show the software and version details.

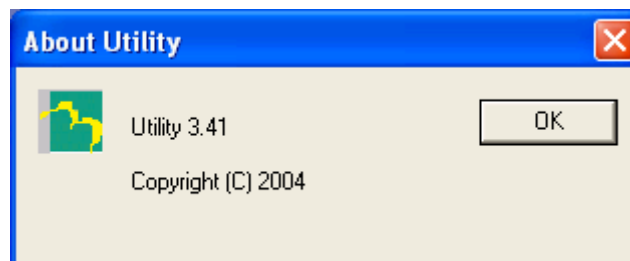


Fig.60 About Utility

2.7 Refresh

Utility will automatically search for any WebCAM IP cameras that are connected in the same LAN. It will periodically refresh this list to show the latest status.

The user can do a manual search by clicking the **Refresh**.

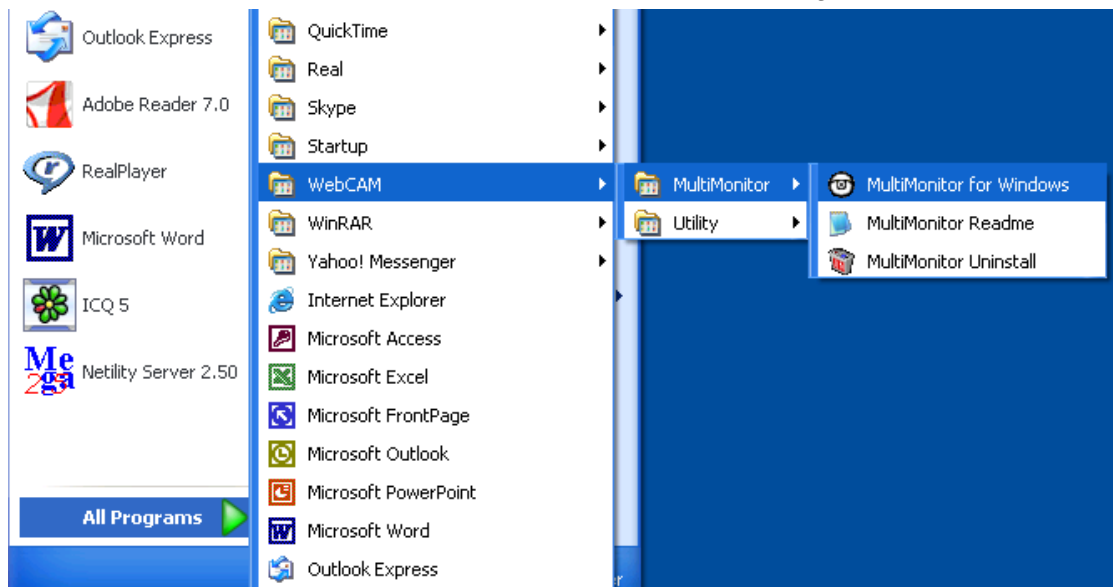


Chapter 6: MultiMonitor

MultiMonitor is a program to manage multiple WebCAM. It is able to detect the IP address of all WebCAM installed in LAN and list them for easy management.

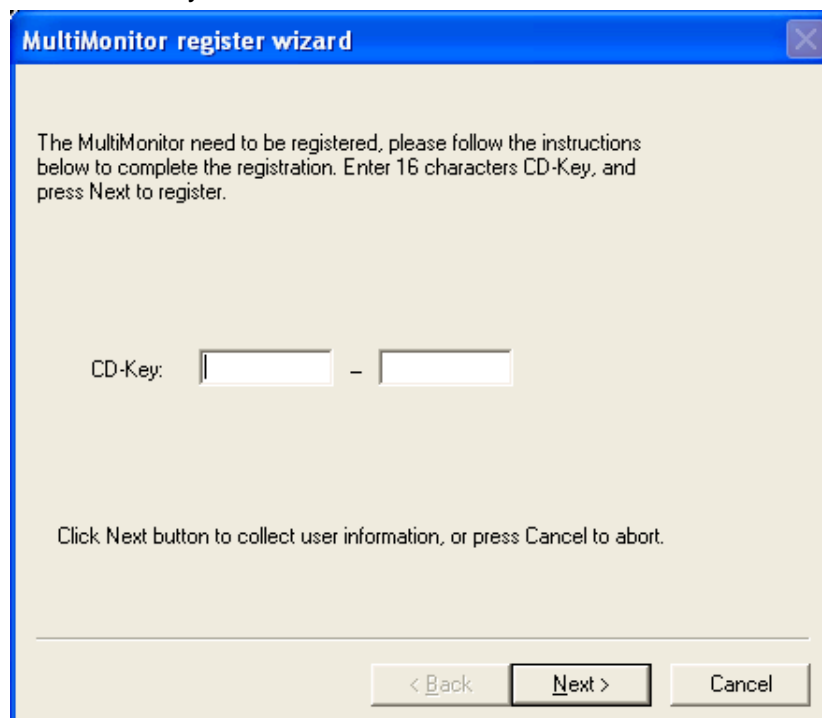
Section 1. Installing MultiMonitor

- ❶ Click on setup.exe and follow the installation wizard
- ❷ After installation, there will be a WebCAM group in the Windows Start group
- ❸ Click "MultiMonitor" → "MultiMonitor for Windows" to start using MultiMonitor.




Section 2. Using MultiMonitor

When using MultiMonitor for the first time, it will ask you to enter the CD-Key. This can be found on the utility CD.



Fill out the necessary information shown below and click **Next >**.



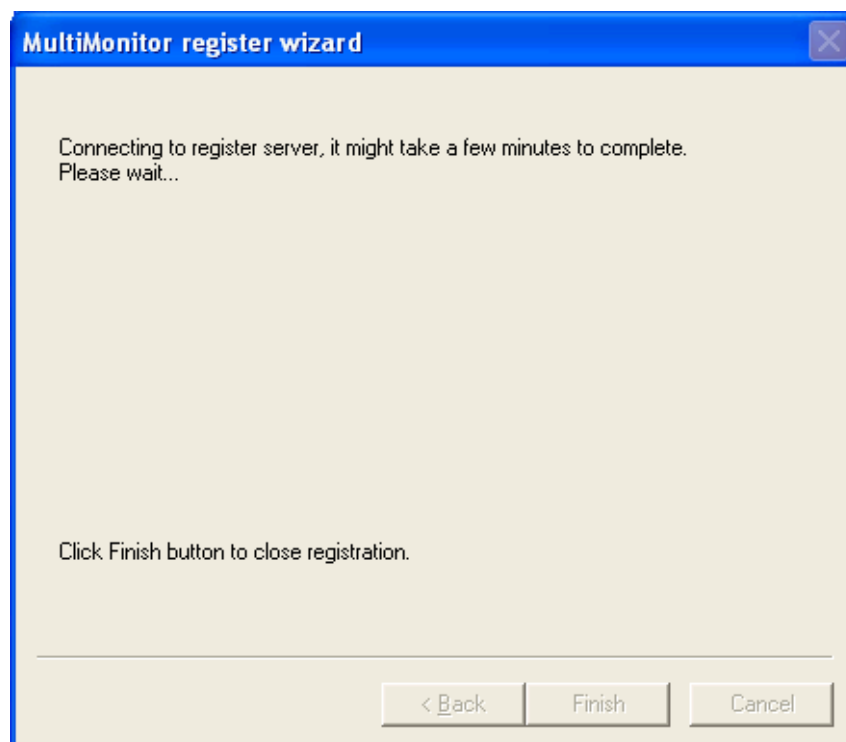
MultiMonitor register wizard

Please provide the following information for registration:

1. Your Name/Company:	\\abc factory
2. Country:	select from list
3. Email Address:	
4. Product Name:	MultiMonitor
5. Serial Number:	XXXXXXXX-XXXXXXXX
6. Firmware version:	3.20
7. Comment:	

Click Back to return to CD-Key page, click Next button to send registration, or press Cancel to abort.

< Back Next > Cancel

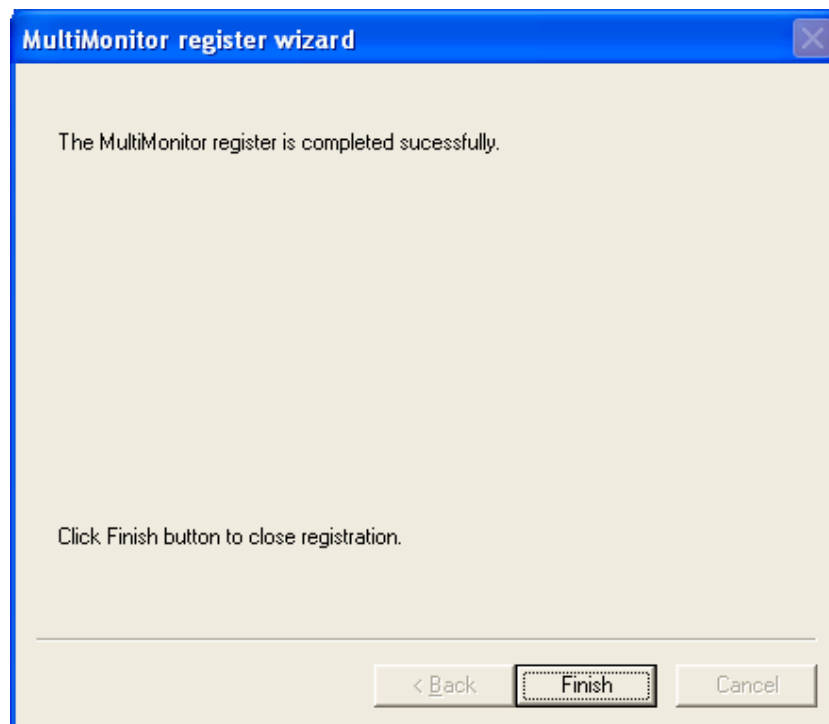


MultiMonitor register wizard

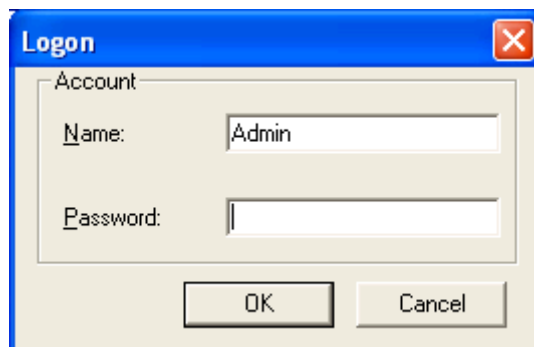
Connecting to register server, it might take a few minutes to complete.
Please wait...

Click Finish button to close registration.

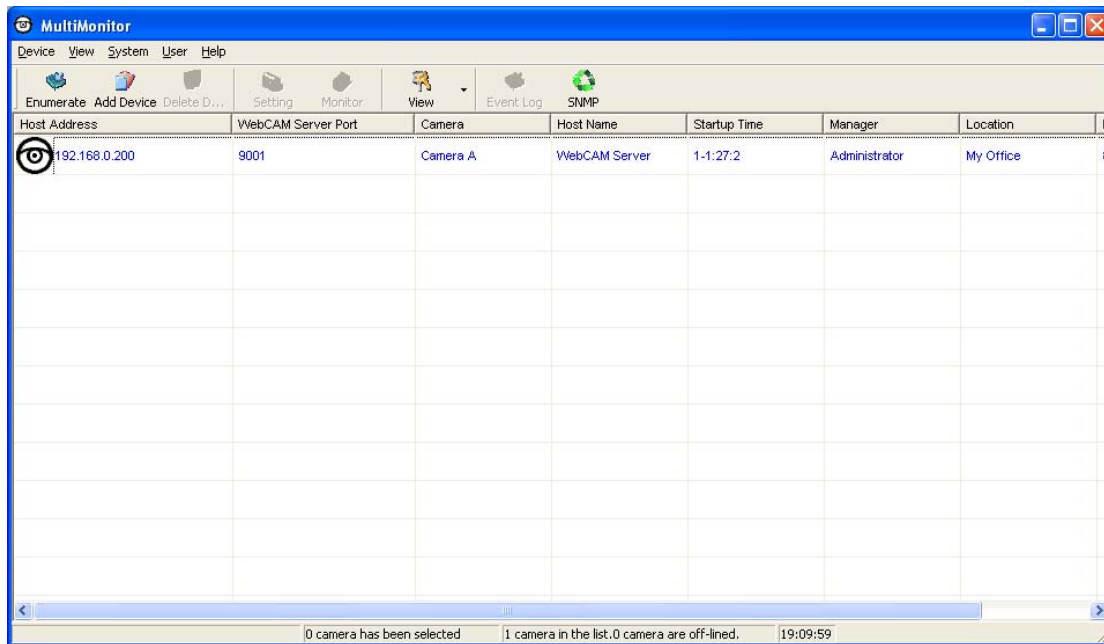
< Back Finish Cancel



Click **Finish** and the MultiMonitor **Logon** window below will pop up. Just click **OK** to start using MultiMonitor



Note: The default security Logon name is **Admin**, no password is set. To set a password, click **User → Change Password ... → New Password**

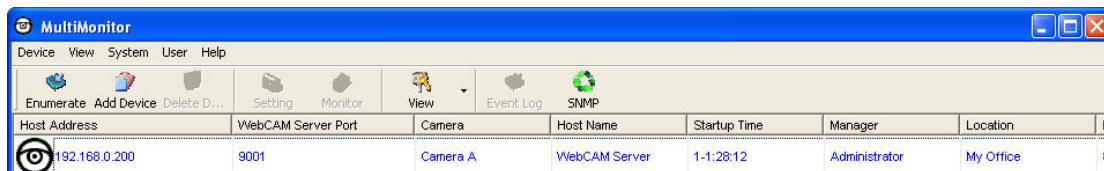


2.1 Device



: Start MultiMonitor and press the “Enumerate” button, MultiMonitor will start a search for all the WebCAM units on the network and list them in the main window.

Once detected, the following will show in the main window:



This shows that the camera is online and active.

Host Address	WebCAM Server Port	Camera	Host Name	Startup Time	Manager	Location
192.168.0.200	9001	Camera A	WebCAM Server		Administrator	My Office

This shows that the camera is off-line



 A dialog box titled "Add WebCAM Server" with a blue header bar and a red close button. It contains several tabs: "General", "Camera", "Motion Detect", "Email", and "SNMP". The "General" tab is selected. Inside the tab, there are two radio buttons. The first, "Access by WebCAM Server Address", is selected. Below it are two text boxes: "Host Address:" and "Remote Port:" with the value "9001" entered. The second radio button, "Access by Image Server", is unselected. Below it are five text boxes: "Image Server Address:", "Image Server port:" with the value "9001" entered, "WebCAM Server Name:", "User Account:", and "User Password:". At the bottom right of the dialog are "OK" and "Cancel" buttons.

Manually adds the WebCAM camera to be monitored.

a. Access by WebCAM Address

Host Address:

Enter either the WEB address (without the www eg: webcam.myddns.com) or LAN IP of WebCAM (eg: 192.168.0.30)

Remote Port:

This is WebCAM UDP port.

b. Access by Image Server

Image Server Address:

Enter the Image Server Address if available.

Image Server Port:

Enter the Image Server UDP port, if available.

WebCAM Server Name:

Enter a unique name for the server.

User Account

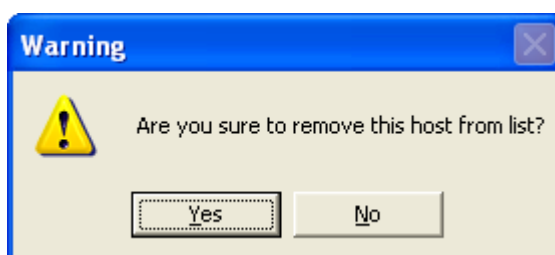
Enter the Image Server User account.

User Password

Enter the Image Server account password.



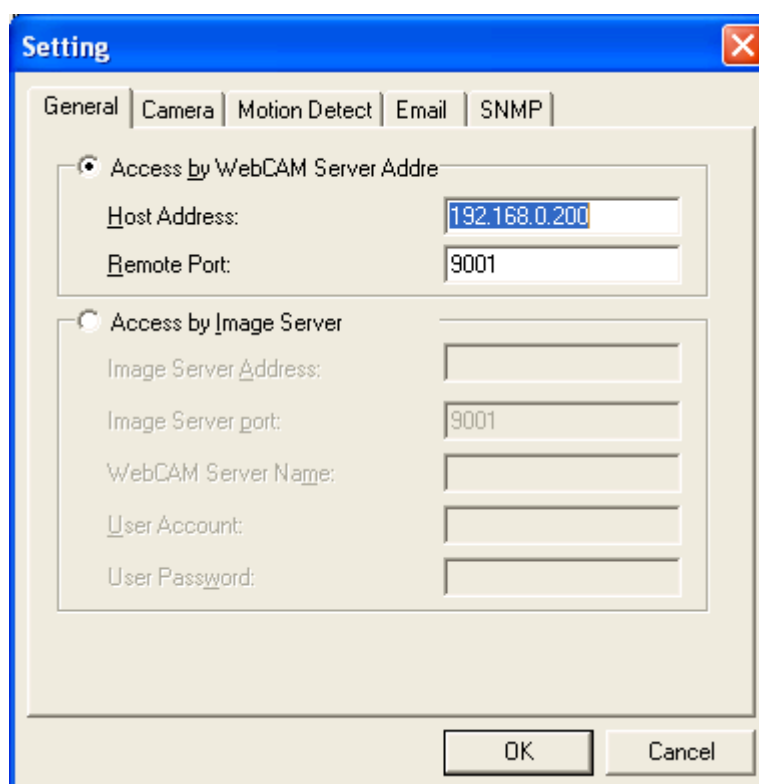
:



Highlight the WebCAM to be deleted from MultiMonitor's list. Click **Yes** to confirm deletion.

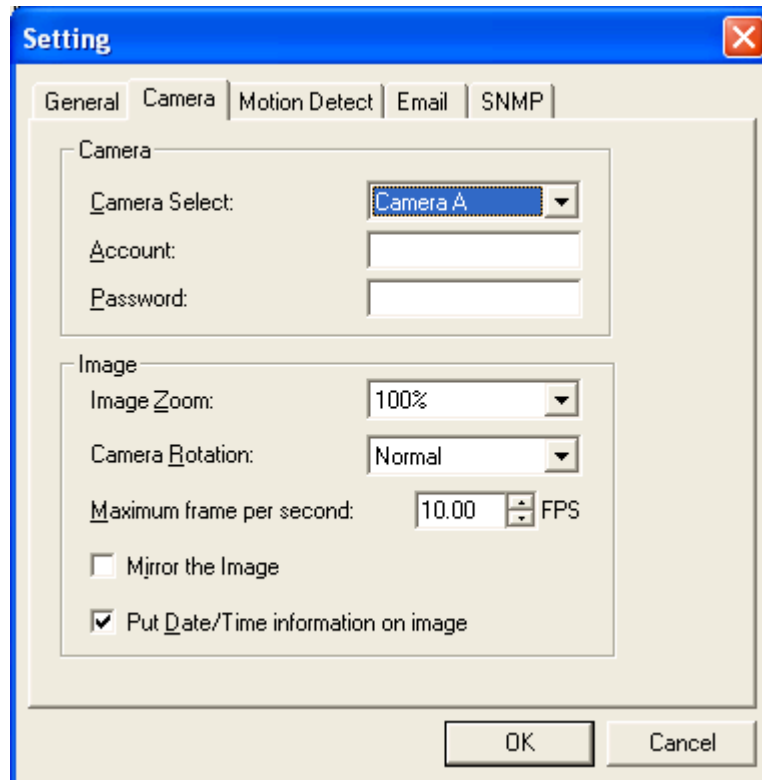


:

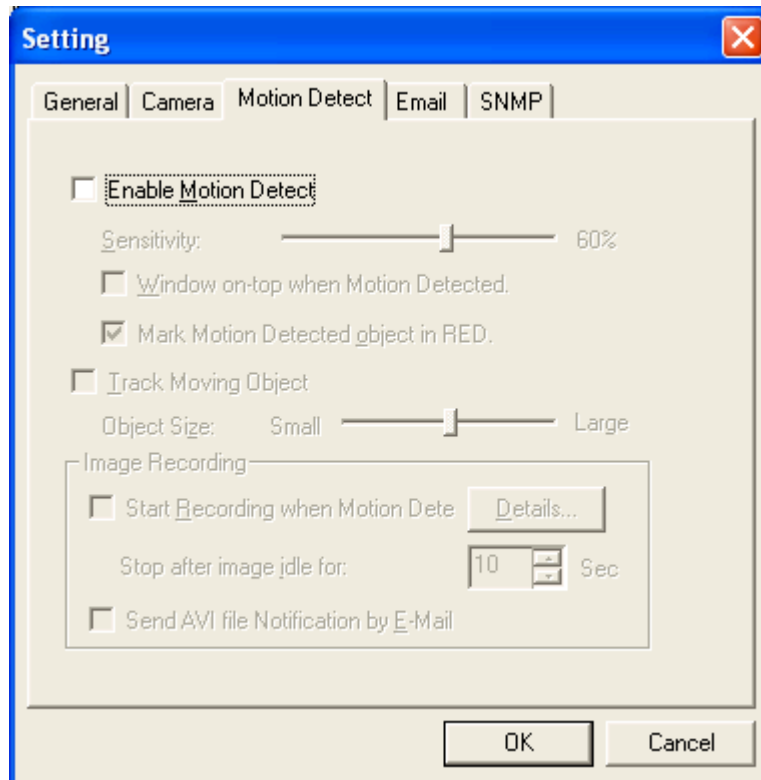


Use this function to change WebCAM IP Address & Port Number.

Display the current Camera settings.



- Camera Select:** Select either camera A or B
- Account:** If you have setup user account, the information must be entered here. Otherwise access will be denied.
- Password:** Enter the above account password.
- Image Zoom:** Resize the window to between 25% and 200%
- Camera Rotation:** Use this function to keep the camera up-right.
- Mirror the Image:** To mirror the image.
- Maximum frame per second:** Select from 0.01 fps to a maximum of 30.00 fps.
- Put Date/Time information on image** To have the date and time displayed on captured images.

Display the Motion Detection Settings.**Enable Motion Detect:**

Click the checkbox to enable Motion Detection.

Note: This feature requires the Camera Window be active to work. Click “Monitor” to activate the Window.

Sensitivity:

Choose from 0% to 100% (very sensitive)

Window on-top when Motion Detected

Automatically displays camera window on top of all other windows/applications once motion is detected.

Mark Motion Detected object in RED

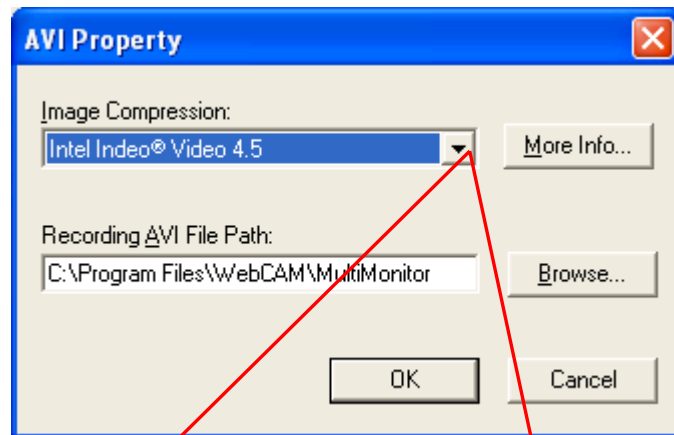
Choose this option to highlight in RED which object is being tracked.

Track Moving Object

Choose this option to calibrate approximate size of object to be tracked.

Image Recording

Click “Start Recording when Motion Detected” to enable the feature. Click the “Details..” button for the following options;



**Image
Compression:**

Choose from the list of available compressions.

Note: This list is dependent on the Codec that is available or already installed on the local PC. To record in MPEC-4, make sure you install or upgrade to Windows Media Player v10.

**Recording AVI File
Path**

Location where the file will be recorded to. By default, it is recorded to C:\Program Files\WebCAM\MultiMonitor.

Click **Browse** to change the file location.

Recorded files are save using the following file extension;
avifile[three digit numerical sequence].

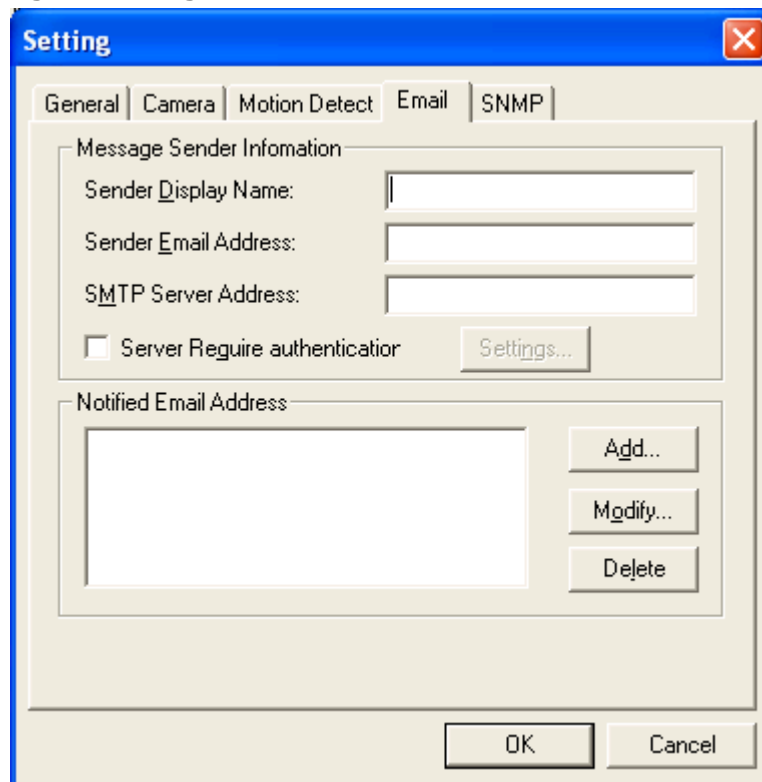
Note: Use the **Detail View** to check the stop time. You can change the display view or add a new folder here.

Stop after idle for: Set the value between 1 to 100 seconds

**Send AVI file
Notification by
Email:**

Send an AVI file via email in the event any motion is detected.

Configure Settings for Email Notification



The 'Setting' dialog box has a blue title bar with a close button. It contains five tabs: 'General', 'Camera', 'Motion Detect', 'Email' (selected), and 'SNMP'. The 'Email' tab is active, showing two sections. The 'Message Sender Information' section has three text input fields: 'Sender Display Name:', 'Sender Email Address:', and 'SMTP Server Address:'. Below these is a checkbox labeled 'Server Require authentication' and a 'Settings...' button. The 'Notified Email Address' section features a large empty list box on the left and three buttons ('Add...', 'Modify...', 'Delete') on the right. At the bottom are 'OK' and 'Cancel' buttons.

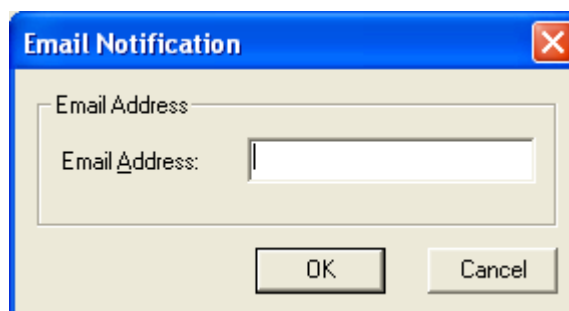
You will need to enter the correct **Message Sender Information** in order for WebCAM to send emails.

Server Require Authentication

Click **Settings...** then enter your **Account Name** and **Account Password**.

Notified Email Address

Click **Add...** and enter a new Email address below

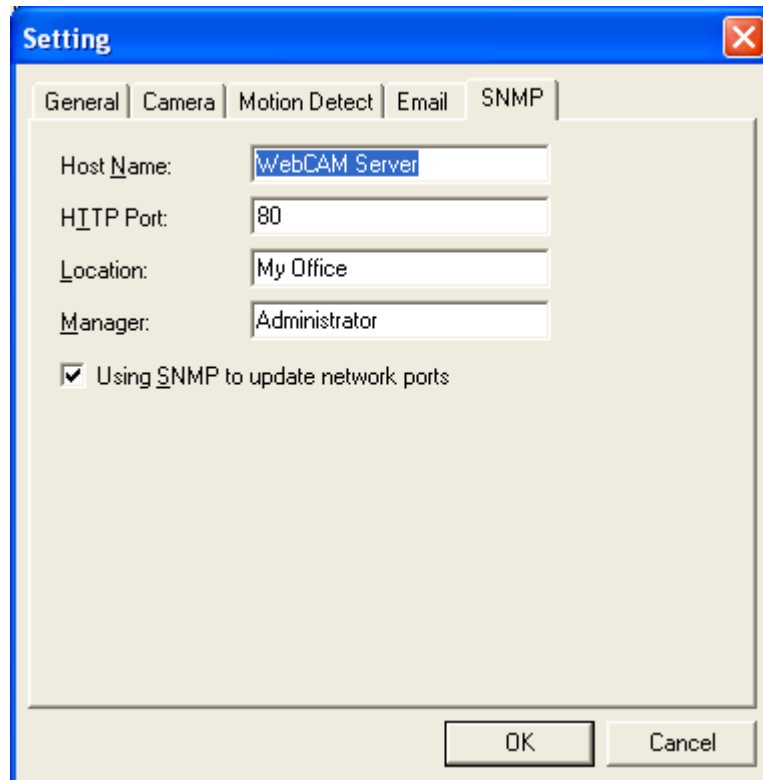


The 'Email Notification' dialog box has a blue title bar with a close button. It contains a single text input field labeled 'Email Address:'. At the bottom are 'OK' and 'Cancel' buttons.

Click **Modify...** to modify the entered Email Address

Click **Delete** to remove an email address from the notification list.

SNMP Settings



The image shows a 'Setting' dialog box with a blue title bar and a red close button. It has five tabs: 'General', 'Camera', 'Motion Detect', 'Email', and 'SNMP'. The 'SNMP' tab is selected. Inside the dialog, there are four text input fields: 'Host Name' (containing 'WebCAM Server'), 'HTTP Port' (containing '80'), 'Location' (containing 'My Office'), and 'Manager' (containing 'Administrator'). Below these fields is a checked checkbox labeled 'Using SNMP to update network ports'. At the bottom right are 'OK' and 'Cancel' buttons.

Host Name: Provide a Name to identify this device.

HTTP Port: Enter the HTTP port assigned for WebCAM.

Location: Provide a location for SNMP manager to track device.

Manager: Enter a manager's name for identification.

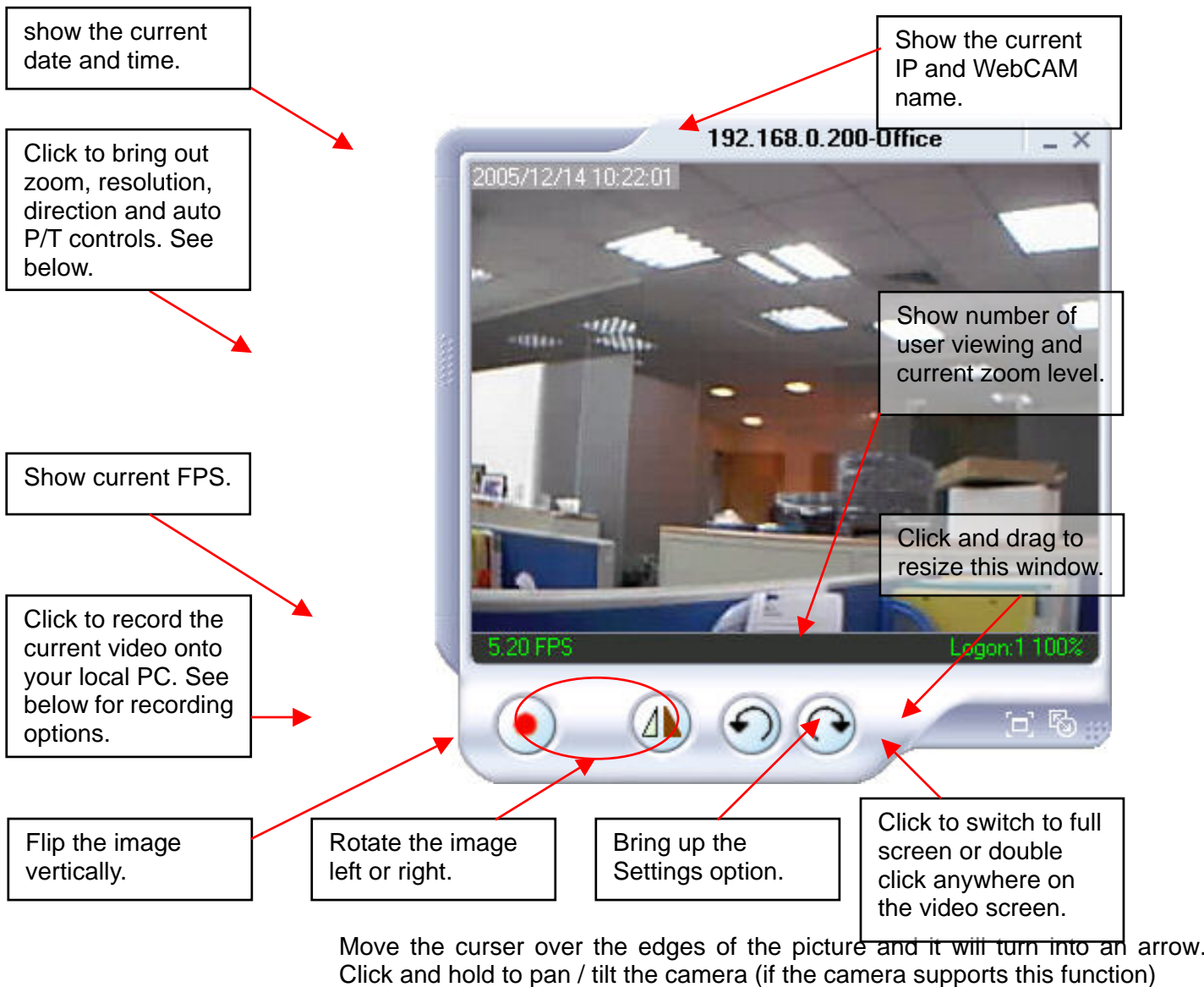
Using SNMP to update network ports

Check this box if you want MultiMonitor to automatically update the HTTP port as set in;

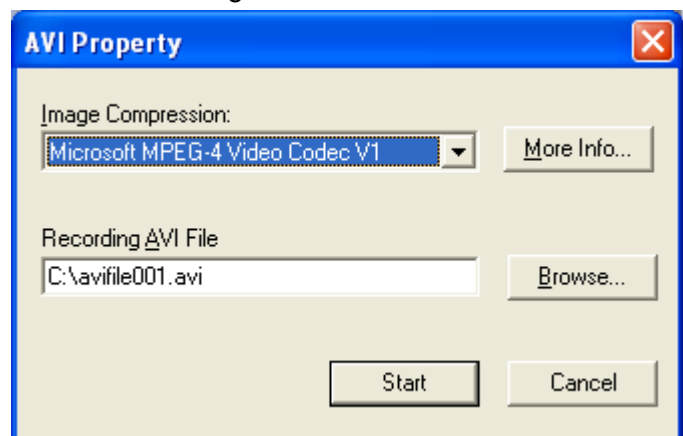
- a. Web Interface, **Basic Settings** → **Network** → **Port Number** → **HTTP port number** or in
- b. Utility, **IP Configuration** → **Advanced** → **Management Protocol**



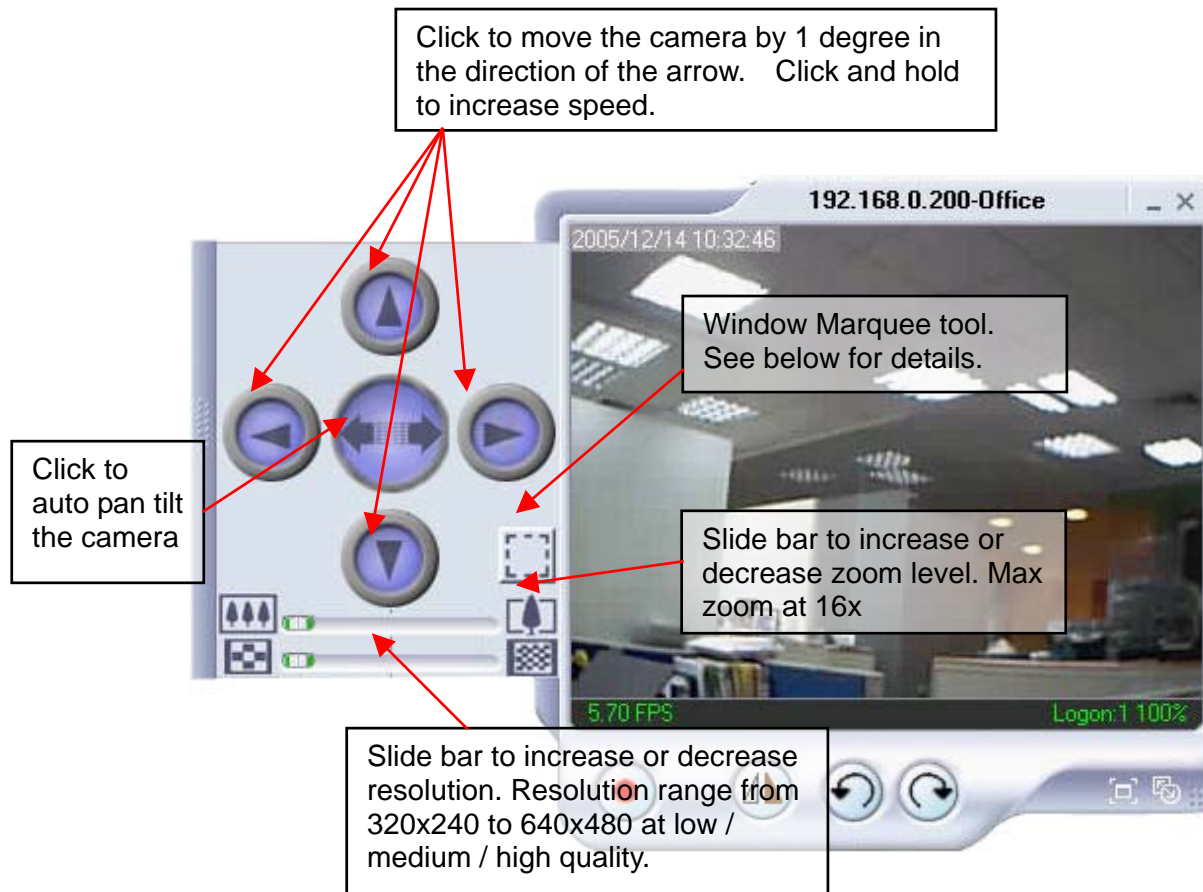
: Highlight the WebCAM unit in the main windows display, and click **Monitor** to view the video stream.



Click this button to record the current image on screen. A window will come up, click **Start** to start recording to the default file and location.



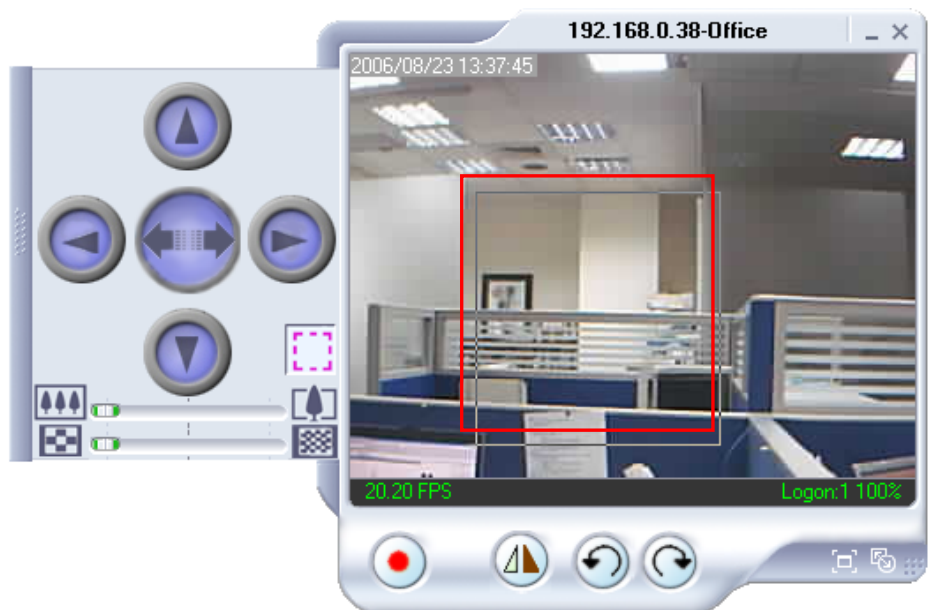
Click the left side of the viewing window to bring out more control features.



Click on this icon to active two functions;

a. Custom window zoom – use this to zoom to your chosen window size.

On the video window, **LEFT** click, hold and drag to the desired window zoom size. A thin line will outline the chosen window size.



Release and the program will zoom to the marquee area. Increase the resolution for a better image quality.



While zoomed in, the user can digitally pan or tilt the camera window. Even if it is a static camera!



Click the depressed button to go back to the original window size or slide the zoom bar to the left.

Note: Allow a few seconds for the camera to readjust and compensate for brightness.

b. Custom update Window -- use this if you want to monitor only a specific area within the viewing window.


On the video window, **RIGHT** click, hold and drag to the desired window zoom size. A thin line will outline the chosen window zoom size.



Release to set the window frame. Video in this custom window will be updated while those outside are 'frozen'.



You can digitally pan and tilt the smaller window in this state. Only video in the custom window will be updated. This feature works with Static or Pan Tilt Camera.

Click the depressed  button to go back to the original window size or slide the zoom bar to the left.

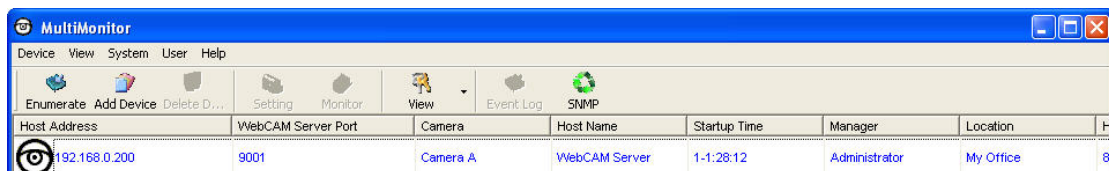
2.2 View



: Switch between Large or Small icon view



Large icon display

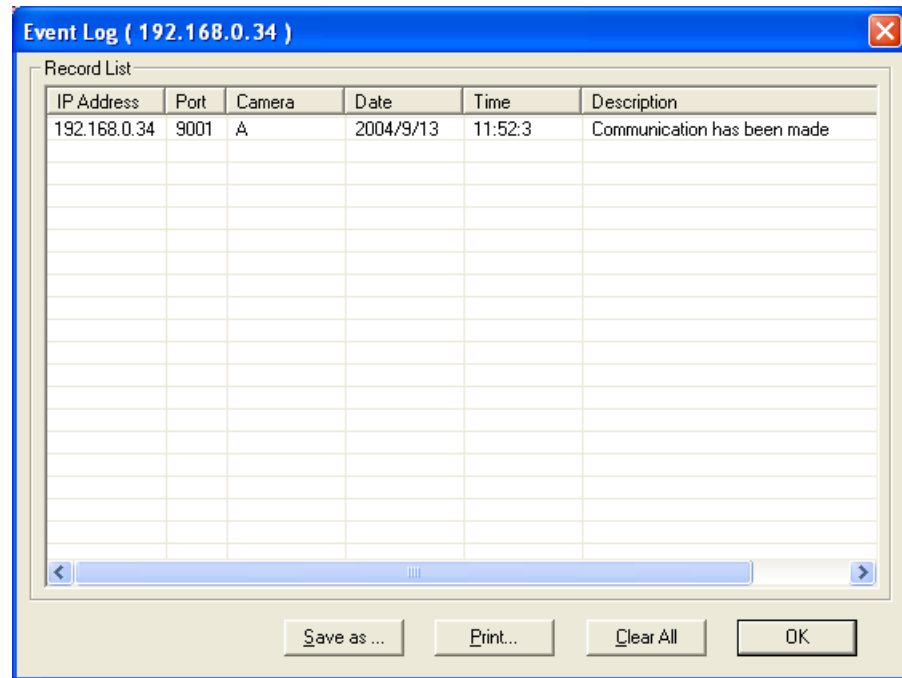


Small icon display

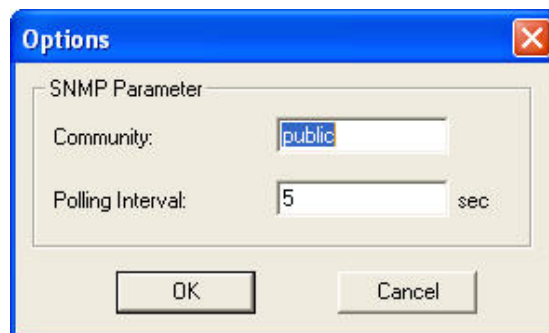
2.3 System



: Display the Event Log (IP address, Port, date, Time, description of event) of the selected WebCAM unit.



: Set the SNMP Parameter.



2.4 User

Change
Password

Change Password ...

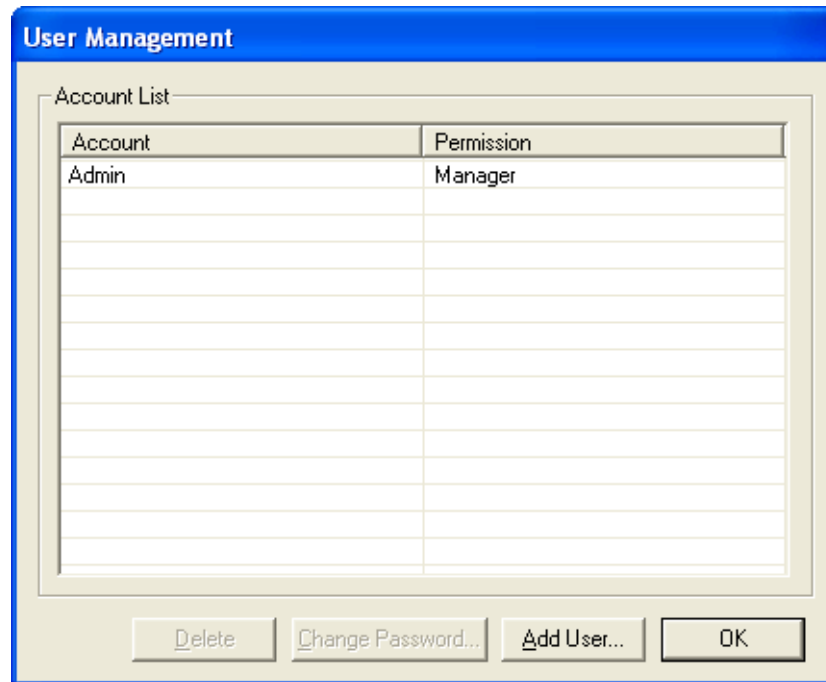
Use this feature to change the User's login password to iMultiView. Either

Administrator or **User** can change their Account passwords.



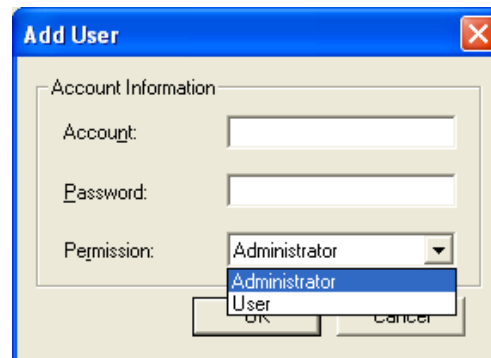
Account Management...

Use this section to Add, Delete or Change the Password of an Account.



Add User...

There is no limit to the number of Account that can be added.



Note: The first account is set to **Administrator** permission. This cannot be changed or deleted.

Account: Enter the preferred account name (max of 10 characters). The Account name cannot be edited.

Password: Enter a password (max of 10 characters). The password is case sensitive and can be left blank.

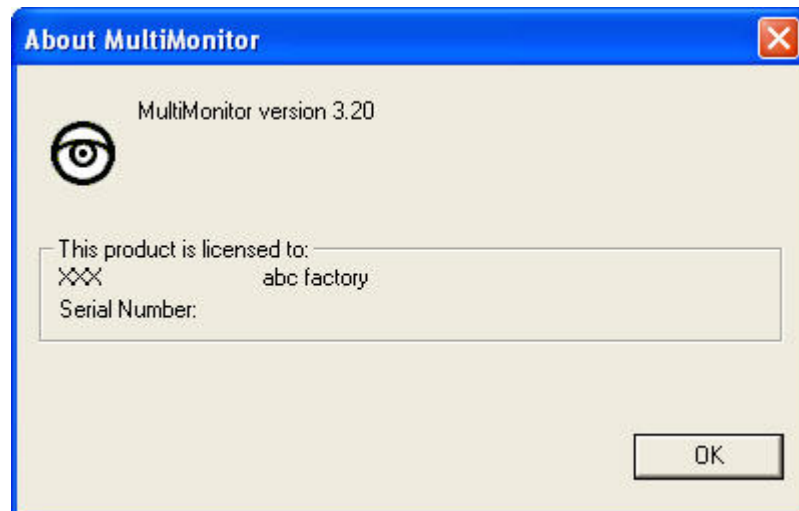
Permission: Choose **Manager** or **User**.

A **Manager** can change, see, add or delete any of the information in iMultiView.

A **User** is not able to Add, Delete or Change Settings of a camera.

2.5 Help

Help : Display MultiMonitor version, Copyright information and product service contact.



2.6 Drag-and-Drop Feature

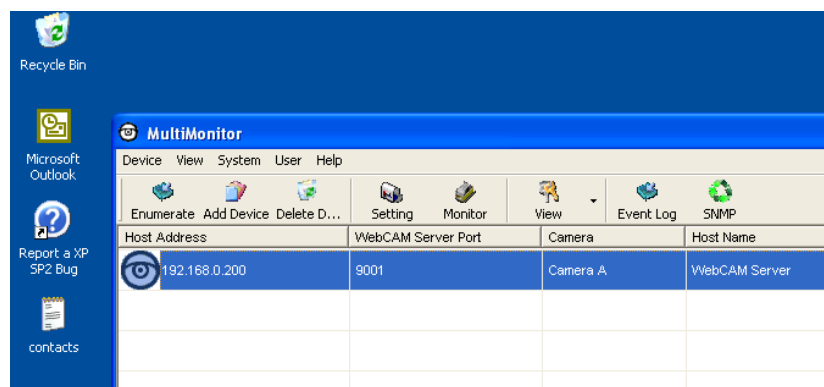
MultiMonitor feature a “Drag-and-Drop to Desktop” function. Double click the icon on your desktop to immediately view the video. Useful when monitoring multiple cameras at a time.

Step 1:

Select the camera location of your choice.

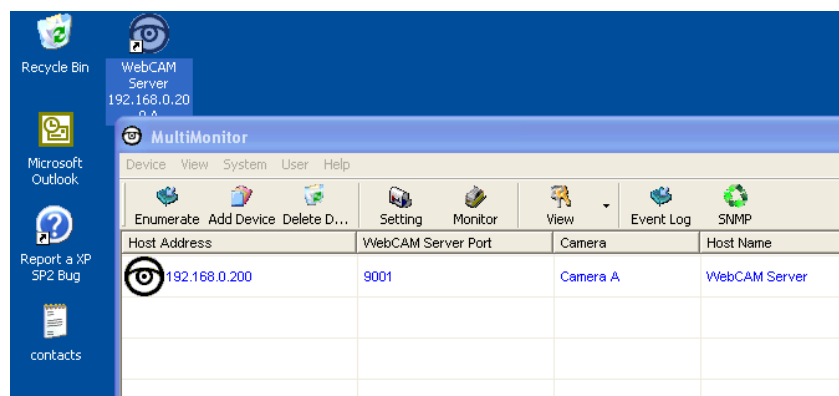
Step 2:

Left click, hold and drag it onto the desktop.



Step 3:

Release the mouse button anywhere on the desktop and a new desktop icon is created there.



Step 4:

Double click on the icon on the desktop, to view the images.



Appendix A: Router Configuration

The following section describes the initial configuration of the router and port forwarding for your router. If your router is not listed here, please refer to the manufacturer's website for assistance with configuring your router to work with WebCAM.

Port Forwarding for WebCAM

WebCAM requires certain ports to be open on your router to allow other computers on the Internet to "see" it on your internal network. Normally, your router will have the less common ports disabled or blocked by the router's built-in firewall. In order for the WebCAM applications to work properly and not be blocked, the firewall settings need to be configured. In each instance there will be a trigger port and incoming port(s), where traffic on the trigger port tells the Firewall to open the incoming ports. The WebCAM require that TCP Port 80 and UDP 9001 (default settings) be opened to the Internet. TCP Port 80 is used for accessing the camera's homepage and UDP Port 9001 is used for authentication and video streaming.

If your Internet service Provider blocks port 80/9001, you'll need to reconfigure your camera and router to other ports such as 81/9002, 82/9003, etc. To change the port settings on the camera, you'll need to use Utility.

Follow the steps below to configure your router, depending on the router manufacturer and model. If your particular router manufacturer or model is not listed below, please contact your router manufacturer for further assistance in configuring the router.

The Following Router manufacturers and models are included in this document:

Brand	Model	Description
3Com	3C857-US	OfficeConnect Cable/DSL Gateway
	3CRWE52196	OfficeConnect Wireless Cable/DSL Gateway
Belkin	F5D6230-3	Wireless Cable/DSL Gateway Router
	F5D7230-4- 54g	Wireless DSL/Cable gateway Router
D-Link	DI-604/DI-614+/DI-624	-
	DI-704/704P	-
	DI714	-
	DI-714P+	-
Dell	TrueMobile 2300	-
	Wireless Broadband Router	
Linksys	BEFSR41	EtherFast Cable/DSL Router
	BEFSX41	Instant Broadband EtherFast Cable/DSL Firewall Router with 4-Port Switch/VPN EndPoint
	BEFW11S4	Wireless Access Point Router with 4-Port Switch – Version 2
Microsoft	MN-100	Wired Base Station

	MN-500	Wireless Base Station
NETGEAR	RP614	Web Safe Router
	MR814	Wireless Router
	MR314	Cable/DSL Wireless Router
	FVS318	ProSafe VPN Firewall
Proxim	ORiNOCO BG-2000	-
	Broadband Gateway	
Siemens	SpeedStream 2602	2-Port DSL/Cable Router
	SpeedStream 2623	Wireless DSL/Cable Router
	SpeedStream 2604	4-port DSL/Cable Router
	SpeedStream 2624	Wireless DSL/Cable Router
SMC	SMC2404WBR	Barricada Turbo 11/22 Mbps Wireless Cable/DSL Broadband Router
	SMC7004VBR	Barricada Cable/DSL Broadband Router
	SMC7004CWBR	Barricada Wireless Cable/DSL Broadband Router
	SMC7004AWBR	Barricade 4-port 11Mbps Wireless Broadband Router

3Com (<http://www.3com.com>)

3C857-US – OfficeConnect Cable/DSL Gateway

3CRWE52196 – OfficeConnect Wireless Cable/DSL Gateway

1. Log into your router using your router IP.
2. On the main page, select **Firewalls** on the left side of the page.
3. Select the **Virtual Servers** tab at the top of the page.
4. Click **New** on the right side of the page to open the Virtual Server Settings dialog box.
5. Type in the camera's IP address in the Server IP address text box. (Look on the WebCAM IP address LCD display for the last 3 digits of the camera's IP address.)
6. Under Local Service, select **Custom**.
7. Under Custom Service Name, type in: **WebCAM**.
8. Under Specify Custom Service Ports, type in: **80, 9001**.
9. Click **Add** to save the settings. WebCAM should now be configured to work with your router and be accessible from the internet.

Belkin (<http://www.belkin.com>)

F5D6230-3 – Wireless Cable/DSL Gateway Router

1. Log into your router using your router IP.
2. On the main page, select **Virtual Server** on the left side of the page under the Security section.

3. Enter the following information on the page:

Line #1:

Private IP: Type in the **camera's IP address**. (Look at WebCAM IP Address LCD display for the last 3 digits of the camera's IP address)

Private Port: 80

Type: TCP

Public Port: 80

Line #2

Private IP: Type in the **camera's IP address**. (Look at WebCAM IP Address LCD display for the last 3 digits of the camera's IP address)

Private Port: 9001

Type: UDP

Public Port: 9001

4. Click **Enter** to save the settings. WebCAM should now be configured to work with your router and be accessible from the internet.

F5D7230-4 – 54g Wireless DSL/Cable gateway Router

1. Log into your router using your router IP.
2. On the main page, select **Firewall** on the left side of the page.
3. Under Firewall, select **Virtual Servers**.

4. Enter the following information on the page:

Line #1

Enable: Checked in

Description: WebCAM - Webpage

Internet Port: 80 to 80

Type: TCP

Private IP address: Type in the **camera's IP address**. (Look on the WebCAM Address LCD display for the last 3 digits of the camera's IP address)

Private Port 80 to 80

Line #2

Enable: Checked in

Description: WebCAM – Camera

Internet Port: 9001 to 9001

Type: UDP

Private IP address: Type in the **camera's IP address**. (Look on the WebCAM Address LCD display for the last 3 digits of the camera's IP address)

Private Port 9001 to 9001

5. Click **Apply Changes** to save the settings. The WebCAM should now be configured o work with your router and be accessible from the internet.

D-Link (<http://www.dlink.com>)

DI-604/DI – 614+/DI-624

1. Log into your router using your router IP.
2. On the main page, click on **Advanced** at the top of the page.
3. On the left side of the page, click on **Virtual Server**. Note: Make sure DMZ host is disabled. If DMZ is enabled, it will disable all Virtual Server entries.

4. Enter the following information on the page:

Enable/Disable:	Enabled
Name:	WebCAM - Webpage
Private IP:	Type in the camera's IP address , for example: 192.168.0.5
Protocol Type:	TCP
Private Port:	80
Public Port:	80
Schedule:	Always

5. Click **Apply** to save the settings.

6. Enter the following information on the page:

Enable/Disable:	Enabled
Name:	WebCAM - Webpage
Private IP:	Type in the camera's IP address , for example: 192.168.0.5
Protocol Type:	UDP
Private Port:	9001
Public Port:	9001
Schedule:	Always

7. Click **Apply** o save the settings. WebCAM should now be configured to work with your router and be accessible from the internet.

DI-704/704P

1. Log into your router using your router IP.
2. On the main page, click on **Advanced** at the top of the page.
3. On the **Virtual Server** page, enter the following information;

For ID#1:

Service Port:	80
Service IP:	Type in the camera's IP address , for example: 192.168.0.5

Enabled/Disabled: Enabled

For ID#2

Service Port: 9001

Service IP: Type in the **camera's IP address**, for example: 192.168.0.5

Enabled/Disabled: Enabled

4. Save your settings. WebCAM should now be configured to work with your router and be accessible from the internet.

DI714

1. Log into your router using your router IP.
2. On the main page, click on **Advanced** at the top of the page.
3. Click on **Virtual Server Settings** on the left side of the page.
4. Enter the camera's IP address into the Internal IP field. Under Service, select **All** and then click **Submit** to save your settings. WebCAM should now be configured to work with your router and be accessible from the internet.

DI-714P+

1. Log into your router using your router IP.
2. On the main page, click on **Advanced** at the top of the page.
3. On the left side of the page, click **Virtual Server**.
4. Enter the following information on the page:

For ID#1:

Service Port: 80

Service IP: Type in the **camera's IP address**, for example: 192.168.0.5

Enabled/Disabled: Enabled

For ID#2

Service Port: 9001

Service IP: Type in the **camera's IP address**, for example: 192.168.0.5

Enabled/Disabled: Enabled

5. Click **Apply** to save your settings. WebCAM should now be configured to work with your router and be accessible from the internet.

Dell (<http://www.dell.com>)

TrueMobile 2300 Wireless Broadband Router

1. Log into your router using your router IP.
2. On the main page, click on **Advanced Settings** at the top of the page.
3. Go to the Port Forwarding section and select Custom Port Forwarding Settings.
4. Check the **Enable** box.
5. Enter the desired name or description in the **Service Name** field such as **WebCAM Web**.
6. In the **Incoming Ports** field, specify port **80** in both boxes.
7. In the **Destination IP Address** field, enter the IP address of WebCAM
8. In the **Destination MAC Address** field, enter the MAC address of WebCAM. You can find the camera's MAC address by either looking at the MAC address sticker on the bottom of the camera or by utilizing setup utility to display the MAC address.

Linksys (<http://www.linksys.com>)

BEFSR41 – EtherFast Cable/DSL Router

BEFSX41 – Instant Broadband EtherFast Cable/DSL Firewall Router with 4-Port Switch/VPN EndPoint

BEFW11S4 – Wireless Access Point Router with 4-Port Switch – Version 2

1. Log into your router using your router IP.
2. On the router's main page, click on **Advanced** at the top of the page.
3. On the next page, click on **Forwarding**.
4. Enter the following information on the page:
Line #1:
Customized Applications: WebCAM – Webpage
Ext. Port: 80 to 80
Protocol: TCP
IP Address: Type in the **camera's IP address**, for example:
192.168.0.5
Enable: Checked in

Line #2:
Customized Applications: WebCAM – Camera
Ext. Port: 9001 to 9001
Protocol: UDP
IP Address: Type in the **camera's IP address**, for example:
192.168.0.5
Enable: Checked in
5. Click on **Apply** to save the settings. WebCAM should now be configured to work with your router and be accessible from the internet.

Microsoft (<http://www.microsoft.com/hardware/broadbandnetworking>)

MN-100 – Wired Base Station

MN-500 – Wireless Base Station

1. Log into your router using your router IP.
2. Open the Bass Station Management Tool, and then click **Security**.
3. On the Security menu, click **Port Forwarding**, and then click **Set up persistent port forwarding**.
4. In the Enable checkbox, check in the checkbox.
5. In the Description box, type a description of the server field such as: **WebCAM Web**.
6. In the Inbound port boxes, type in: **80 – 80**. (i.e. from Port 80 to Port 80)
7. In the Type box, select the protocol as **TCP**.
8. In the Private IP address box, type in the **IP Address** of the WebCAM network camera. For example, type in: 192.168.0.5.
9. In the Private port boxes, these values are automatically filled in from Step 6 and should already show **80 – 80**.
10. On the next empty line, repeat steps 4-9, except this time the Description should be **WebCAM Cam** and the Inbound/Private port boxes should be **9001 – 9001** (UDP). The protocol and private IP address should be the same.
11. Click **Apply** to save the changes you have made. WebCAM should now be configured to work with your router and be accessible from the internet.

NETGEAR (<http://www.netgear.com>)

RP614 – Web Safe Router

MR814 – Wireless Router

1. Log into your router using your router IP.
2. Click **Advanced -> Port Forwarding** on the left side of the page.
3. Click Add Customer Service.
4. Enter the following information on the page:
Service Name: WebCAM – Web
Starting Port: 80
Ending Port: 80
Server IP Address: Type in the **camera's IP address**, for example:
192.168.0.5
5. Click **Apply** to save the settings.
6. Enter the following information on the page:
Service Name: WebCAM – Cam
Starting Port: 9001
Ending Port: 9001
Server IP Address: Type in the **camera's IP address**, for example:
192.168.0.5
7. Click **Apply** to save the settings. WebCAM should now be configured to work with your router and be accessible from the internet.

MR314 – Cable/DSL Wireless Router

1. Log into your router using your router IP.
2. Click **Advanced** on the left side of the page.
3. Click **Ports**.
4. Enter the following information on the page:
Line #1:
Starting Port: 80
Ending Port: 80
Server IP Address: Type in the **camera's IP address**, for example:
192.168.0.5

Line #2:

Starting Port: 9001

Ending Port: 9001

Server IP Address: Type in the **camera's IP address**, for example:
192.168.0.5

5. Click **Apply** to save the settings. WebCAM should now be configured to work with your router and be accessible from the internet.

FVS318 – ProSafe VPN Firewall

1. Log into your router using your router IP.

2. On the main page, click on **Add Service** on the left side of the screen.

3. Click Add Customer Service.

4. In the **Name** field enter a name for the camera, for example: **WebCAM Web**:

Type: TCP

Start Port: 81

Finish Port: 81

5. Click **Apply** to save the settings.

6. There is a bug in the NETGEAR FVS318 1.4 firmware that does not record any entry that uses port 80. If you intend to use port 80, you will initially need to enter 81 for the Start and Finish port, and then edit the entry to port back to 80. Click on **Add Service** on the left side of the screen.

7. In the **Service Table** window select WebCAM Web and click **Edit Service**.

8. Change the **Start** and **Finish** port to **80**. Click **Apply**.

9. On the main page, click on **Add Service** on the left side of the screen and then click **Add Custom Service**. In the **Name** field enter a name for the camera, for example: **WebCAM Cam**.

Type: UDP

Start Port: 9001

Finish Port: 9001

10. Click **Apply** to save the settings.

11. On the main page, click on **Ports** at the side of the screen.

A. Click **Add**.

B. For Service Name select: WebCAM Web

C. Action: **ALLOW always**

- D. Local Server Address: Enter the IP address of the camera
- E. WAN Users Address: **Any**
- F. Click **Apply**.

12. Click Add again.

- A. For Service name select: **WebCAM Cam**
- B. Action: ALLOW always
- C. Local Server Address: Enter the IP address of the camera
- D. WAN Users Address: **Any**
- E. Click **Apply**.

13. Exit the router setup program. WebCAM should now be configured to work with your router and be accessible from the internet.

Proxim (<http://www.proxim.com>)

ORiNOCO BG-2000 Broadband Gateway

1. Log into your router using your router IP.
2. On the router's main page, click on **Setup** at the top of the page.
3. On the left side of the page, click on **Advanced settings -> Port Forwarding**.
4. Check in the checkbox for **Enable Port Forwarding**.
5. Click **New** on the right side of the page.
6. Enter the following information on the page:

Global Port:	80
Local Address:	Type in the camera's IP address , for example: 192.168.0.5
Local Port:	80
Type:	TCP
7. Click **Save** to save the settings.
8. Click **New** on the right side of the page.
9. Enter the following information on the page.

Global Port:	9001
Local Address:	Type in the camera's IP address , for example: 192.168.0.5
Local Port:	9001
Type:	UDP
10. Click **Save** to save the settings.
11. Click **Restart** on the left side of the page to restart your router. WebCAM should now be configured to work with your router and be accessible from the internet.

Siemens (<http://www.speedstream.com>)

SpeedStream 2602 – 2-Port DSL/Cable Router

SpeedStream 2623 – Wireless DSL/Cable Router

SpeedStream 2624 – Wireless DSL/Cable Router

1. Log into your router using your router IP.
2. After you are logged in, click on **Advanced Setup -> Virtual Servers**.
3. Enter the following information on the page:

Line #1:

Private IP:	Type in the camera's IP address , for example: 192.168.0.5 (Look at WebCAM's IP Address LCD display for the last 3 digits of the camera's IP address)
Private Port:	80
Type:	TCP
Public Port:	80

Line #2

Private IP:	Type in the camera's IP address , for example: 192.168.0.5 (Look at WebCAM's IP Address LCD display for the last 3 digits of the camera's IP address)
Private Port:	9001
Type:	UDP
Public Port:	9001

4. Click **Enter** to save the settings. WebCAM should now be configured to work with your router and be accessible from the internet.

SpeedStream 2604 – 4-port DSL/Cable Router

1. Log into your router using your router IP.
2. After you are logged in, click on **Advanced Setup -> Virtual Servers**.
3. Under the Properties section, there are a few entries you'll need to add. Check in the checkbox for **Enable**.
4. Under the first box, next to the Enable checkbox, type in: **WebCAM Web**.
5. Under PC (Server), select your camera or the camera's IP address from the list. If the camera is not listed, select the link titled "My PC is not listed."
6. Leave Protocol as **TCP**.

7. Under Internal Port No type in: **80**
8. Under External Port No type in: **80**
9. Click on **Add** to save these settings.
10. Under the first box, next to the Enable checkbox, type in: **WebCAM Cam**.
11. Under PC (Server), select your camera or the camera's IP address from the list. If the camera is not listed, select the link titled "My PC is not listed."
12. Leave Protocol as **TCP**.
13. Under Internal Port No type in: **9001**
14. Under External Port No type in: **9001**
15. Click on **Add** to save these settings. WebCAM should now be configured to work with your router and be accessible from the Internet.

SMC (<http://www.smc.com>)

SMC2404WBR – Barricada Turbo 11/22 Mbps Wireless Cable/DSL Broadband Router

SMC7004VBR – Barricada Cable/DSL Broadband Router

SMC7004CWBR – Barricada Wireless Cable/DSL Broadband Router

1. Log into your router using your router IP.
2. After you are logged in, click **NAT** on the left side of the page.
3. Click on **Virtual Server** on the left side of the page.

4. Enter the following information on the page:

Line #1:

Private IP: Type in the **camera's IP address**, for example:
192.168.0.5 (Look at WebCAM's IP Address LCD
display for the last 3 digits of the camera's IP address)

Private Port: 80

Type: TCP

Public Port: 80

Line #2

Private IP: Type in the **camera's IP address**, for example:
192.168.0.5 (Look at WebCAM's IP Address LCD
display for the last 3 digits of the camera's IP address)

Private Port: 9001

Type: UDP

Public Port: 9001

5. Click **Apply** to save the settings. WebCAM should now be configured to work with your router and be accessible from the Internet.

SMC7004AWBR – Barricade 4-port 11Mbps Wireless Broadband Router

1. Log into your router using your router IP.
2. Click on **Virtual Server** on the left side of the page.
3. Enter the following information on the page:

For ID #1:

Service Port: 80

Private IP: Type in the **camera's IP address**, for example:
192.168.0.5 (Look at WebCAM's IP Address LCD
display for the last 3 digits of the camera's IP address)

Enable: Checked in

For ID #2:

Service Port: 9001

Private IP: Type in the **camera's IP address**, for example:
192.168.0.5 (Look at WebCAM's IP Address LCD
display for the last 3 digits of the camera's IP address)

Enable: Checked in

4. Click **Save** to save the settings. WebCAM should now be configured to work with your router and be accessible from the Internet.

Appendix B: Methods to Update WebCAM Firmware

You can update WebCAM firmware using any of the following methods.

Method 1: Through WebCAM Web Page

- (1) Enter the WebCAM Web Page
- (2) Go to “About”, click “update software” and you will be automatically linked for update.

Method 2: Using the Utility software

Appendix C: IP Address, Subnet and Gateway

This section discusses Communities, Gateways, IP Addresses and Subnet masking

Communities

A community is a string of printable ASCII characters that identifies a user group with the same access privileges. For example, a common community name is "public". For security purposes, the SNMP agent validates requests before responding. The agent can be configured so that only trap managers that are members of a community can send requests and receive responses from a particular community. This prevents unauthorized managers from viewing or changing the configuration of a device.

Gateways

Gateway, also referred to as a router, is any computer with two or more network adapters connecting to different physical networks. Gateways allow for transmission of IP packets among networks on an Internet.

IP Addresses

Every device on an Internet must be assigned a unique IP (Internet Protocol) address. An IP address is a 32-bit value comprised of a network ID and a host ID. The network ID identifies the logical network to which a particular device belongs. The host ID identifies the particular device within the logical network. IP addresses distinguish devices on an Internet from one another so that IP packets are properly transmitted.

IP addresses appear in dotted decimal (rather than in binary) notation. Dotted decimal notation divides the 32-bit value into four 8-bit groups, or octets, and separates each octet with a period. For example, 199.217.132.1 is an IP address in dotted decimal notation.

To accommodate networks of different sizes, the IP address has three divisions – Classes A for large, B for medium and C for small. The difference among the network classes is the number of octets reserved for the network ID and the number of octets reserved for the host ID.

Class	Value of First Octet	Network ID	Host ID	Number of Hosts
A	1-126	First octet	Last three octets	16,387,064
B	128-191	First two octets	Last two octets	64,516
C	192-223	First tree octets	Last octet	254

Any value between 0 and 255 is valid as a host ID octet except for those values the InterNIC reserves for other purposes

Value	Purpose
0, 255	Subnet masking
127	Loopback testing and interprocess communication on local devices
224-254	IGMP multicast and other special protocols.

Subnetting and Subnet Masks

Subnetting divides a network address into sub-network addresses to accommodate more than one physical network on a logical network.

For example:

A Class B company has 100 LANs (Local Area Networks) with 100 to 200 nodes on each LAN. To classify the nodes by its LANs on one main network, this company segments the network address into 100 sub-network addresses. If the Class B network address is 150.1.x.x, the address can be segmented further from 150.1.1.x through 150.1.100.x

A subnet mask is a 32-bit value that distinguishes the network ID from the host ID for different sub-networks on the same logical network. Like IP addresses, subnet masks consist of four octets in dotted decimal notation. You can use subnet masks to route and filter the transmission of IP packets among your sub-networks. The value "255" is assigned to octets that belong to the network ID, and the value "0" is assigned to octets that belong to the host ID.

For the example above, if you want all the devices on the sub-networks to receive each other's IP packets, set the subnet mask to 255.255.0.0. If you want the devices on a single sub-network only to receive IP packets from other devices on its own sub-network, set the subnet mask to 255.255.255.0 for the devices on the sub-network.

Subnet Mask	Routing and Filtering
0.0.0.0	IP packets are transmitted to all devices.
255.0.0.0	IP packets are only transmitted to devices that are IP that's first octet matches the sender's IP address's first octet.
255.255.0.0	IP packets are only transmitted to devices that are IP that's first two octets match the sender's IP address's first two octets.
255.255.255.0	IP packets are only transmitted to devices that are IP that's first three octets match the sender's IP address's first three octets.

Appendix D: Glossary

The Glossary section defines the terms used in this User Manual

Term	Definition
Ethernet	Local Area Network technology, originally developed by Xerox Corporation, can link up to 1,024 nodes in a bus network. Ethernet provides raw data transfer in a rate of 10 megabits/sec. with actual throughputs in 2 to 3 megabits/sec. using a baseband (single-channel) communication technique. Ethernet uses carrier sense multiple access collision detection (CSMA/CD) that prevents network failures when two devices attempt to access the network at the same time. LAN hardware manufacturers use Ethernet protocol; their products may not be compatible.
Gateway	A computer that attaches to a number of networks and routes packets between them. The packets can be different protocols at the higher levels.
IP	Internet Protocol – The TCP/IP standard protocol defines the IP datagram as the unit of information passed across a network.
IP Address	Internet Protocol Address – A 32-bit address assigned to hosts participating in a TCP/IP network. The IP address consists of network and host portions. It is assigned to an interconnection of a host to a physical network.
MAC	Medium Access Control - The network layer between the physical and the data link layers. Specifically, the physical (hardware) address exists in this layer.
MIB	Management Information Base – The database, i.e. set of variables maintained by a gateway running SNMP
NMS	Network Management Station
OID	Object Identifier – The variables defined in a MIB
Router	A computer that manages traffic between different network segments or different network topologies. It directs the destination IP address. The network media can be different, but the higher-level protocols must be the same.
SNMP	Simple Network Management Protocol – A standard protocol used to monitor IP hosts, networks, and gateways. SNMP defines a set of simple operations that can be performed on the OIDs of the MIBs managed by the monitored Agents. It employs the UDP/IP transport layer to move its object between the Agents and the NMS
TCP/IP	Transmission Control Protocol/ Internet Protocol – A protocol suite used by more than 15 million users with a UNIX association and widely used to link computers of different kinds.