Granvista Plus Series

H.264 2-Megapixel Network Camera

GVP-201 / GVP-201W

User's Manual

Version: 1.21

Revised July, 2011

Contents

Notices

This user manual is intended for administrators and users of the GVP-201/GVP-201W Network Camera, including instructions for using and managing the camera on your network. The use of surveillance devices may be prohibited by law in your country. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

Before the Network Camera is installed, all the safety and operating instructions should be carefully read and followed to avoid damage due to faulty assembly and installation. This also ensures the product is used properly as intended.

Heed all warnings

- **Do not drop or strike this equipment**
  Sensitive electronics inside the camera are vulnerable to excessive strike.
- **Do not install the equipment near any flames or heat sources**
  Excessive heat could damage this equipment.
- **Do not cover cloth or to install this equipment in poorly ventilated places.**
  Overheating could damage this equipment.
- **Do not expose this equipment to rain or moisture. Do not touch the power connection with wet hands**
  Risk of short circuit, electric shock or fire
- **Do not damage the power cord or leave it under pressure**
  Risk of fire or shock circuit
- **To reduce the risk of electric shock, do not remove the Cover (or Back).**
  No user-serviceable parts inside. Misusage, improper, and negligence could damage this equipment. Need to refer servicing to qualified service personnel.
- **Do not continue to operate if it appears to be faulted.**
  If the unit ceases functioning, contact qualified service personnel for help.
- **Any works related to detailed service or repair of this product should be made by qualified personnel only.**
- **We strongly recommend to use the metal mounting stand, and to screw the bracket/spacer tight for optimal heat dissipation.**

Introduction

Both GVP-201 and GVP-201W are of compact and high resolution (1600x1200) Network Cameras featured with superior H.264-AVC performance and multiple functions. They are perfect for indoor applications such as factories, retailer stores, residence, restaurants, hotels, schools and pre-schools, caring centers, etc.

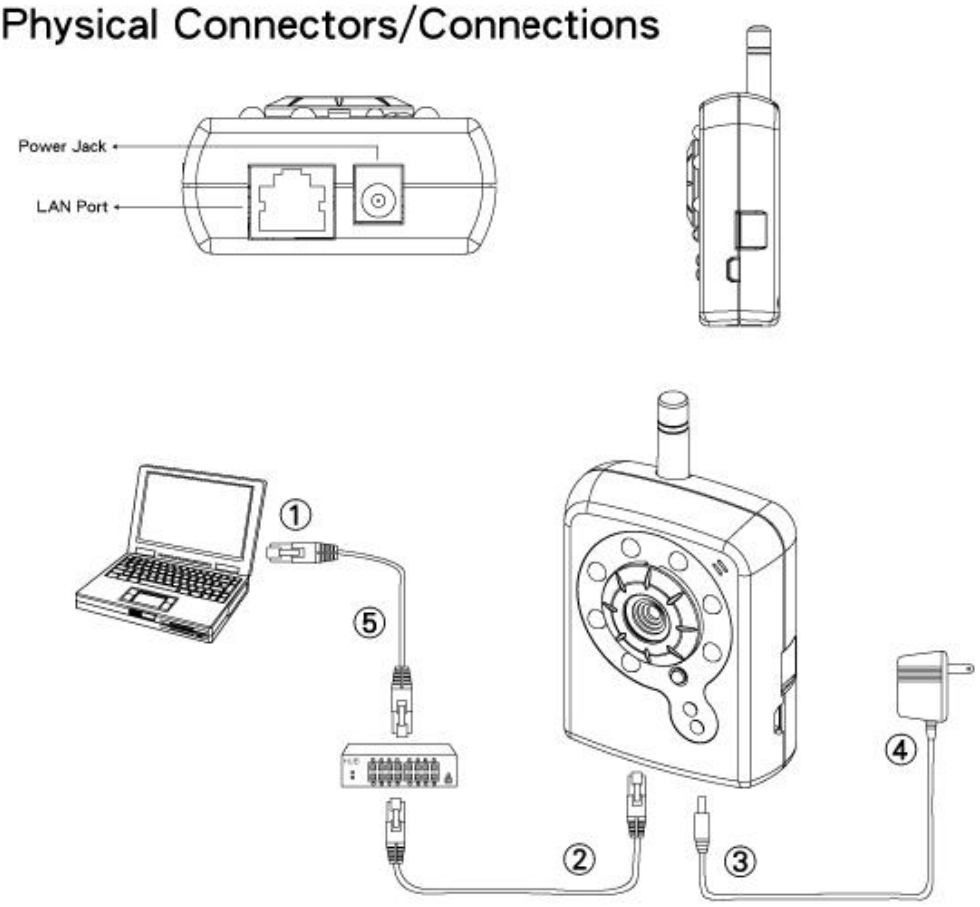
GVP-201's H.264-AVC video compression has significantly lowered down the requirements for bandwidth and storage size without compromising image quality. Motion JPEG and multiple independent video streaming are also supported for even better flexibility.

The camera offers wired Ethernet connection to the network and optional wireless connectivity (IEEE802.11b/g) for flexible installations. It includes 7 IR LEDs for illuminating the scene automatically or when requested by the user. Further functions include two-way audio with integrated high-sensitivity microphone and audio output, Micro SD card support and digital PTZ (4X) to focus any location you would like to highlight in the image.

Installation

1. Hardware Connection

★ Physical Connectors/Connections



① Prepare a PC with Ethernet link to the network
② Connect LAN Port (RJ45) of the camera to a Network Switch/Hub.
③ Connect power jack.
④ Ensure the power adapter specification matches the power system
Connect the adapter to the outlet.
⑤ Check LED status. (Power/Network)

2. Software Installation

The following software is necessary for the proper display and use of the camera from the Web site. The software will be taken from the Software Package CD.

IP Installer

The IP Installer is used to locate and configure Network Cameras and video servers on the LAN. This utility is useful for conveniently configuring the network settings of the device, or for finding a device once the network settings have been modified.

To install the IP Installer, from the Software Package CD UI, select IPInstaller, and then follow the on screen instructions.

VLC

Though not necessary, this can be used for viewing the streaming without a Web browser. Besides, the VLC may be helpful in reviewing the recorded video files in the Micro SD card. Please refer to the appendix II & III for more details on how to install and use the VLC program.

Network Configuration

IPInstaller is a utility that provides an easier, more efficient way to configure the IP address and network settings of the devices. It even provides a convenient way to set the network settings for multiple devices simultaneously using the batch setting function. Moreover, IP Installer can save the network settings for all devices as a backup and restore them when necessary. IPInstaller is able to help non-professional users to quickly setup their network cameras to work in a professional manner.

Preparation before IP Assignment

1. Always consult your network administrator before assigning an IP address to your server in order to avoid using a previously assigned IP address.
2. Ensure the device is powered on and correctly connected to the network. This network can be simply a hub, PC and the network camera; and the network camera may directly connect to the PC too.
3. MAC Address: Each device has a unique Ethernet address (MAC address) shown on the label of the device as the serial number (S/N) with 12 digits (e.g. 000429-XXXXXX).

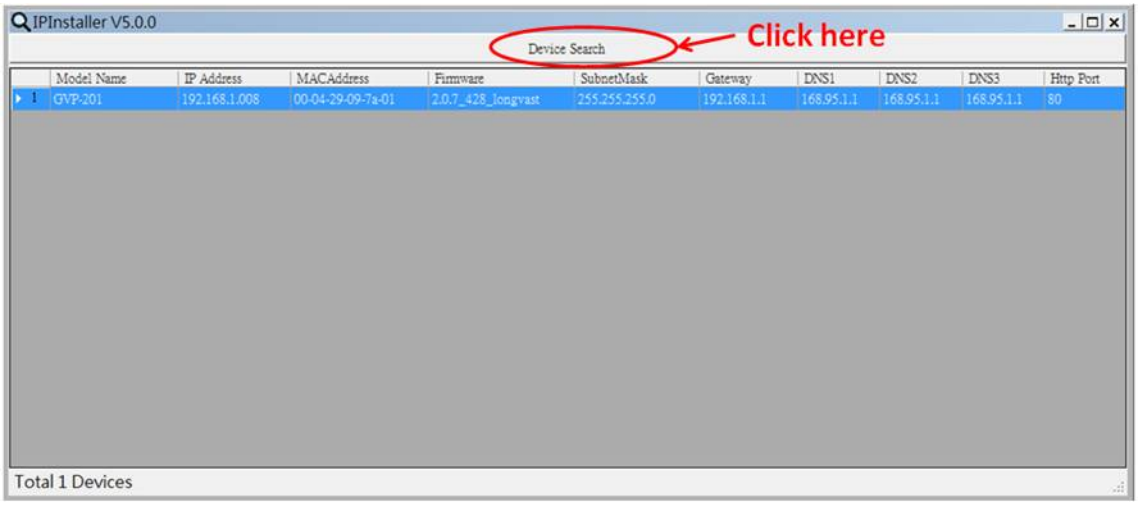
4. Although the IPInstaller is able to find and configure any Network Cameras in the LAN except those that are behind a router, it is a good idea to set the host PC to the same subnet. In order to connect to the Web-based user interface of the camera, the host PC must be in the same subnet. For more information

about subnets, please consult your network administrator.

Using IPInstaller to Assign an IP Address to GVP-201 / GVP-201W

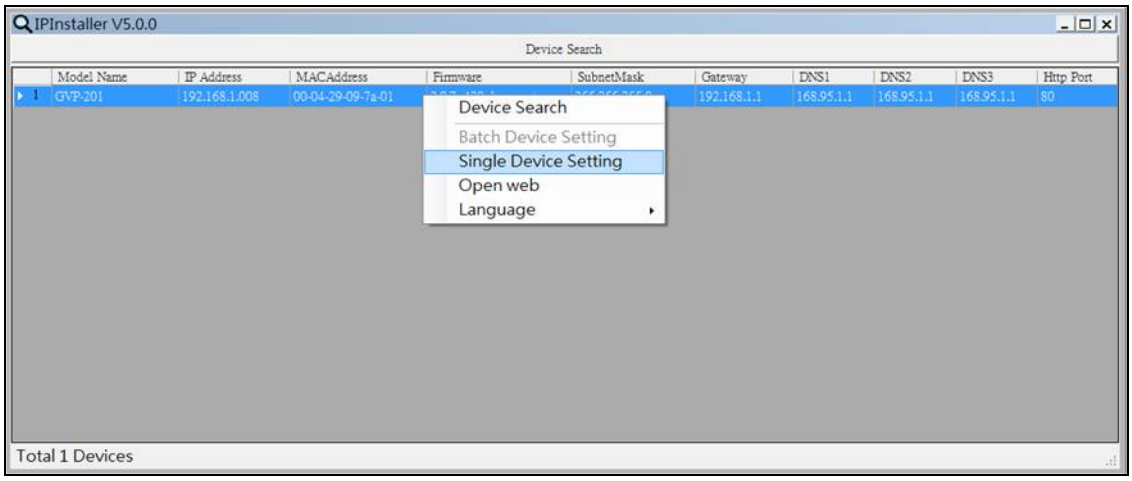
1. Once IP Installer has been successfully installed on the PC, double click the IPInstaller icon on the desktop, or select it from Start > Programs > IP Installer > Launch IP Installer.

2. Click the “Device Search” tool bar and search the device in the LAN.

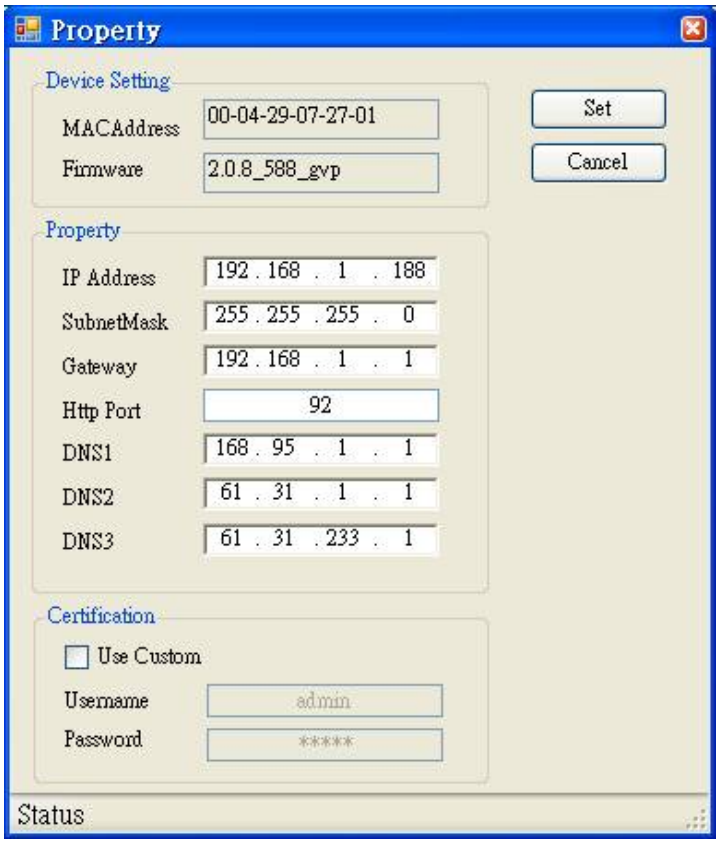


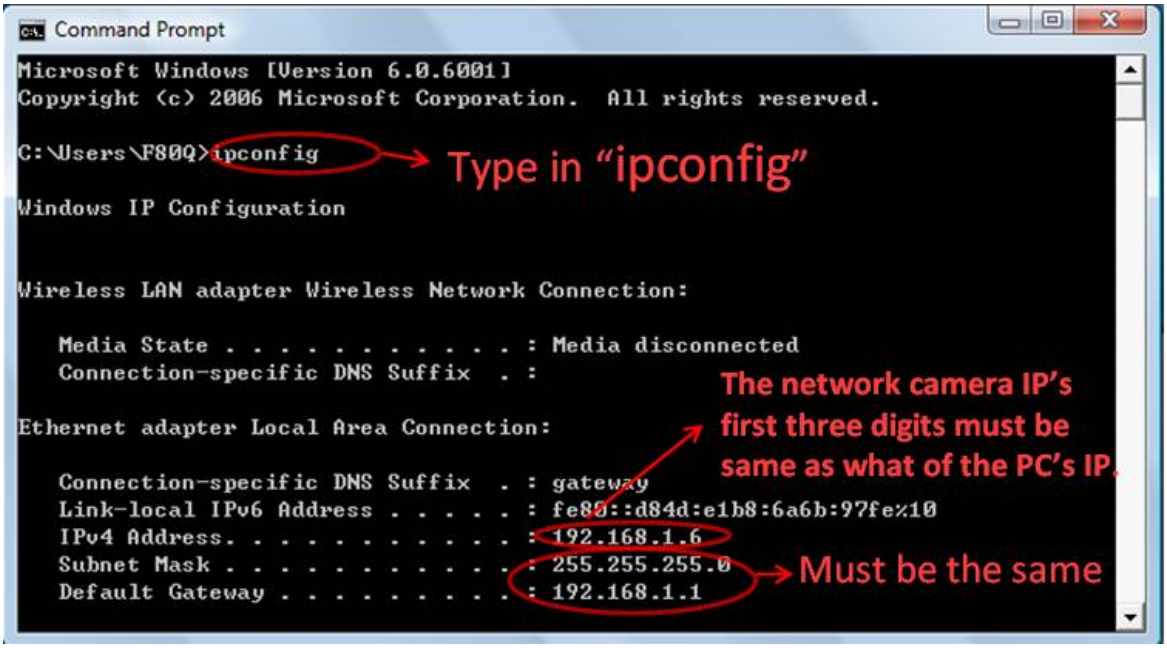
Please note that he firewalls of your Windows or Anti-virus software might block IPInstaller from searching the cameras. In this case you would need to unblock IPInstaller software from the firewalls, or to manually make this IPInstaller software an exception to the firewalls.

3. From the list, select the device with the MAC Address that corresponds to the device which is to be configured. The MAC Address is identical to the unit’s S/N (Serial Number).
4. Select the “Single Device Setting” item to open the Property Page for the selected device.



5. After filling in the properties, click [Set] button to complete the configuration settings in the remote device.



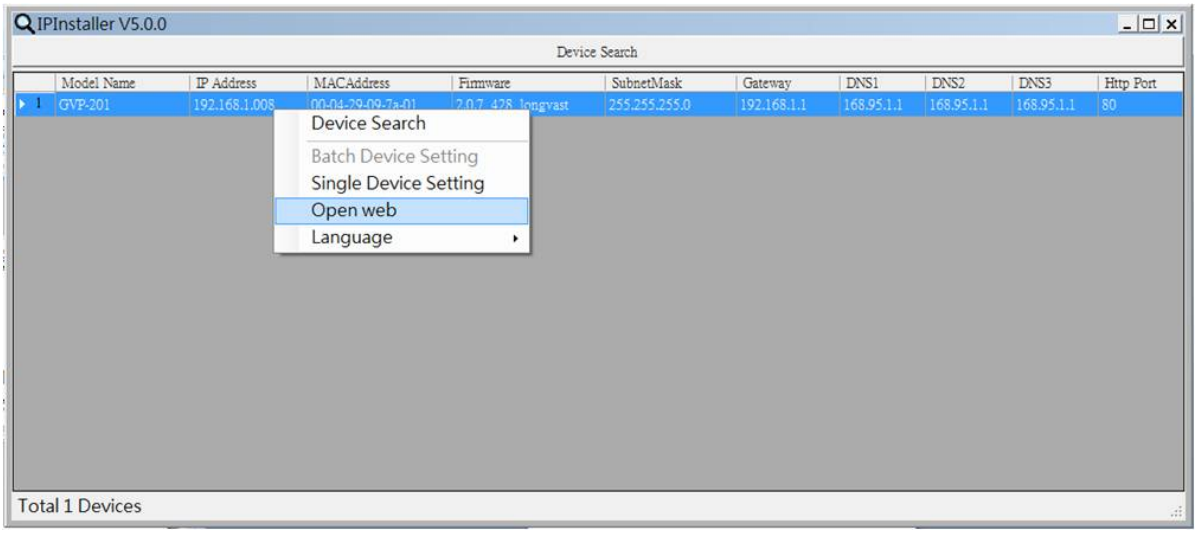


Example about how to know the user's PC and network information from command prompt. Simply type in "**ipconfig**" in the Command Prompt screen, press Enter, and you will see the related information which shows you the PC's IP, Subnet Mask, Default Gateway, etc.

The first three digits of the network camera's IP must be same as the first three digits of the PC's IP address. In the above example the PC's IP address is 192.168.1.6., and we have set the camera's IP to be 192.168.1.188..

Open the Web-based UI of the Selected camera

1. To access the Web-based user interface of the selected unit by selecting “Open web” from the slide-bar.
2. If the device has been configured correctly, the default Web browser, the Internet Explorer, will open to the home page of the selected device.
3. If you find your browser is opened and automatically connected to the camera Home Page, it means you’ve assigned an IP Address to the unit successfully. Now you can close the IP Installer and start to use your camera.
4. Usually the users no longer need to run the IPInstaller software again after configuring the cameras correctly.



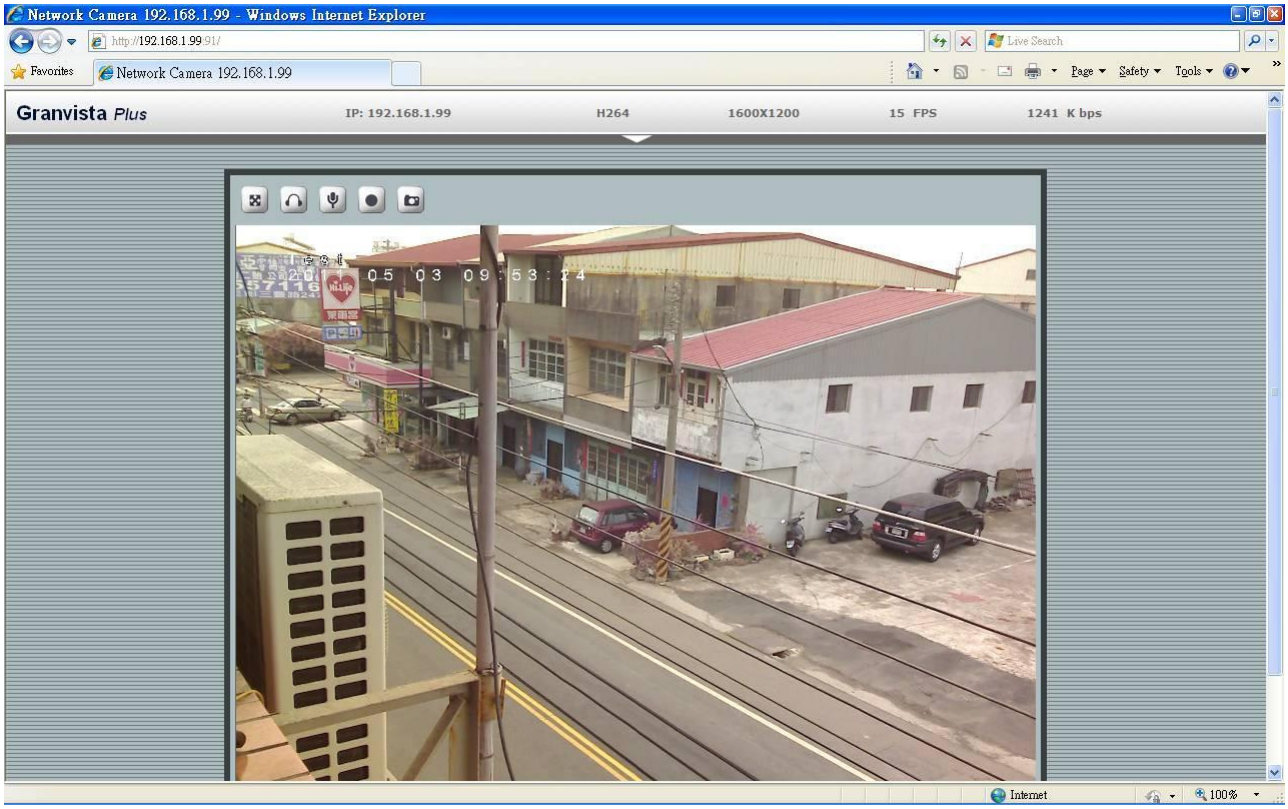
Verify and Complete the Installation from Your Browser

If not able to get the ActiveX downloaded properly, user must temporarily lower the security settings to perform a one-time-only installation of the ActiveX component onto the workstation, as described below:

- From the Tools menu, select [Internet Options] -> [Security] -> [Custom Level]
- Set the security level to Low and click [OK].
- Depends on different versions of browser software used, the users may have to set the individual ActiveX settings from “Disable” to “Prompt” or “Enable” if necessary for completing the ActiveX program downloads.
- Restore the security level after the ActiveX installation.

Using the Web UI

Start your Web browser and enter the URL or IP address in the Address field. The Home page of the camera is now displayed.



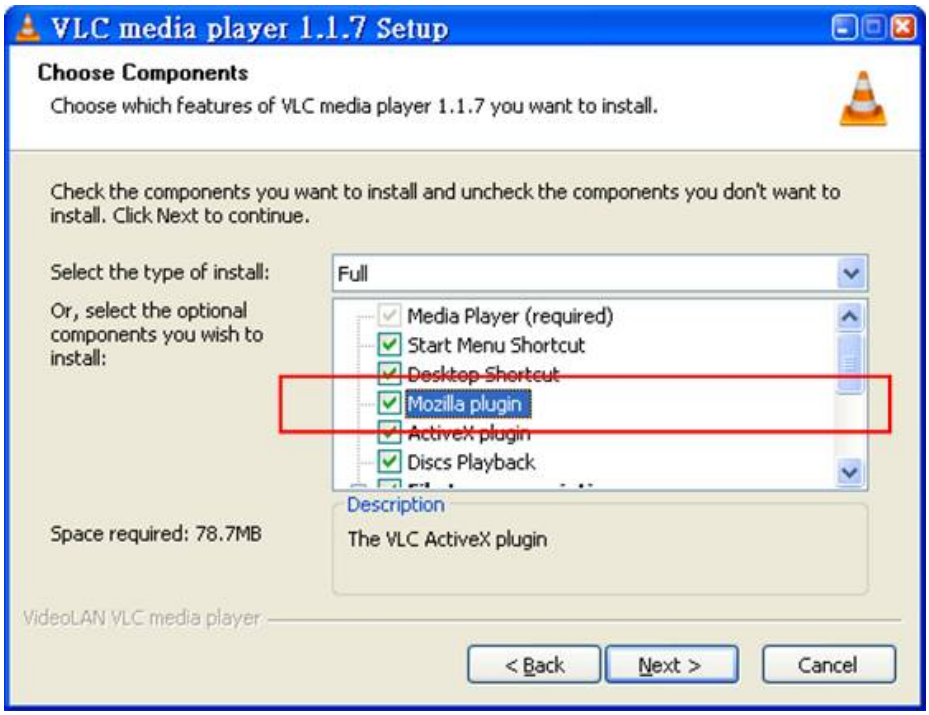
How to make the Mozilla Firefox properly work with the cameras?

Please note that in addition to Microsoft Internet Explorer, Mozilla Firefox browser is also compatible for viewing the screens from Granvista Plus network cameras.

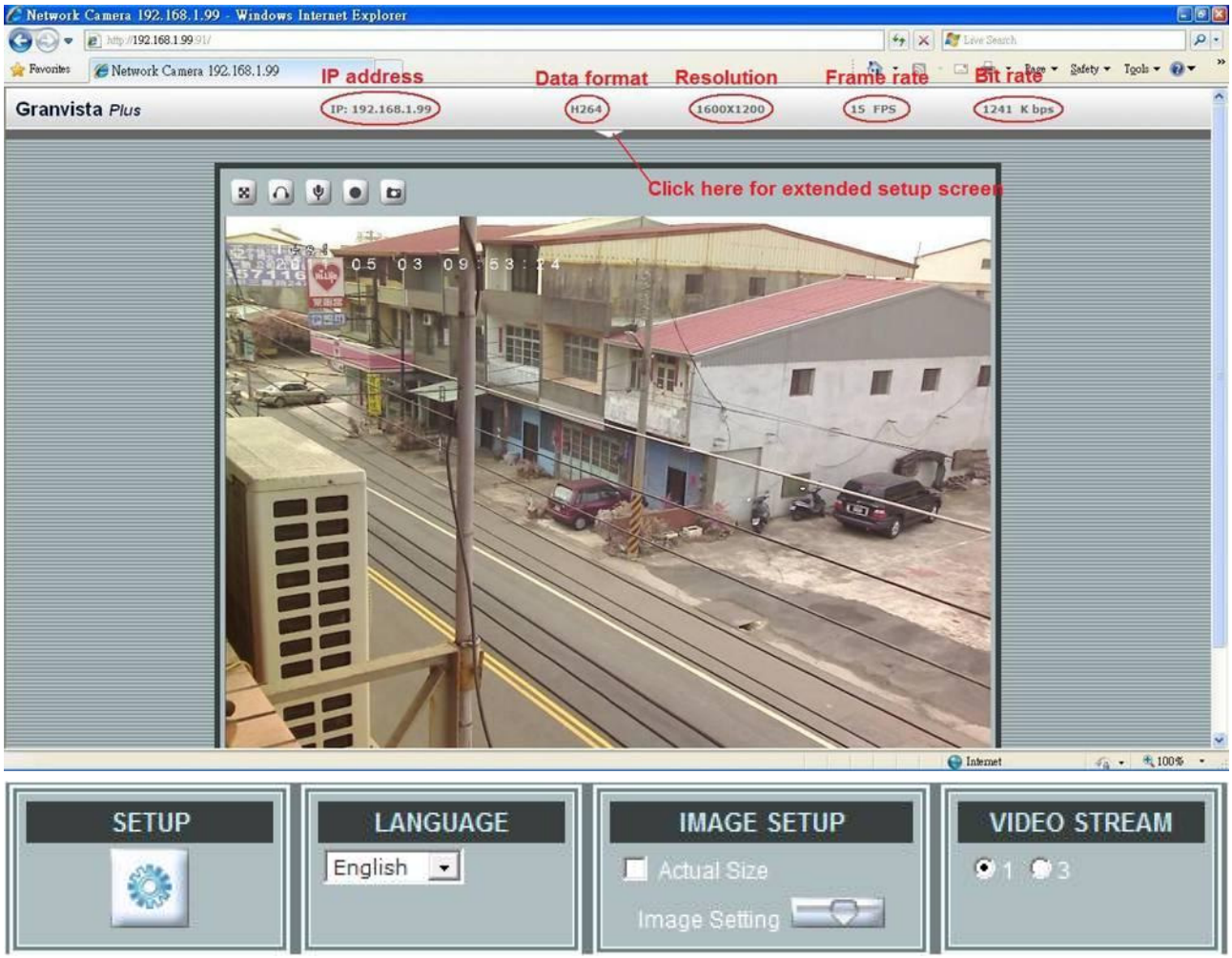
Similar to Internet Explorer which needs to download the needed ActiveX programs, the Firefox browser will guide the users to download and install the VLC program for the needed plug-in the first time when it connects to the network cameras, so that it can work properly.

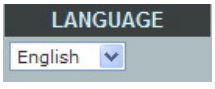
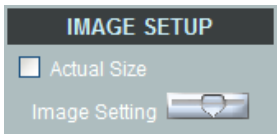
In the process of installing the VLC program, please be sure to check the “Mozilla plugin” option, so that Firefox may work properly with the network cameras.

The VLC program is a very handy shareware that the users will find it helpful when they want to replay the “.mp4” video clips recorded by the cameras. Actually the users may use its streaming function for viewing the camera’s rea-ltime screen directly too. Please refer to the “Video/Advanced” introduction for more details.



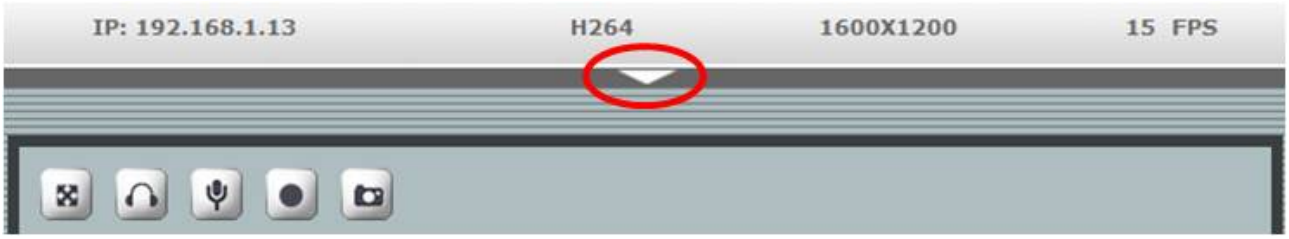
1. Live View



Button	Description
	Click for more general/advanced camera settings
	Select languages among English, traditional Chinese and simplified Chinese
	Check actual size to view the actual size (resolution) of the image Image Setting: To adjust the brightness, hue and saturation
	Choose among the 3 streams for viewing. Due to bandwidth constraints the users may want to choose its 2nd or 3rd video streams which are 640x480 and 320x240 respectively. The 2nd stream supports digital PTZ function which users should find it helpful.

Button	Description
	Full screen
	Listen the audio input from site
	Talk function. An external speaker need to connect to its audio jack for audio output
	Record instant live video
	Snapshot the image

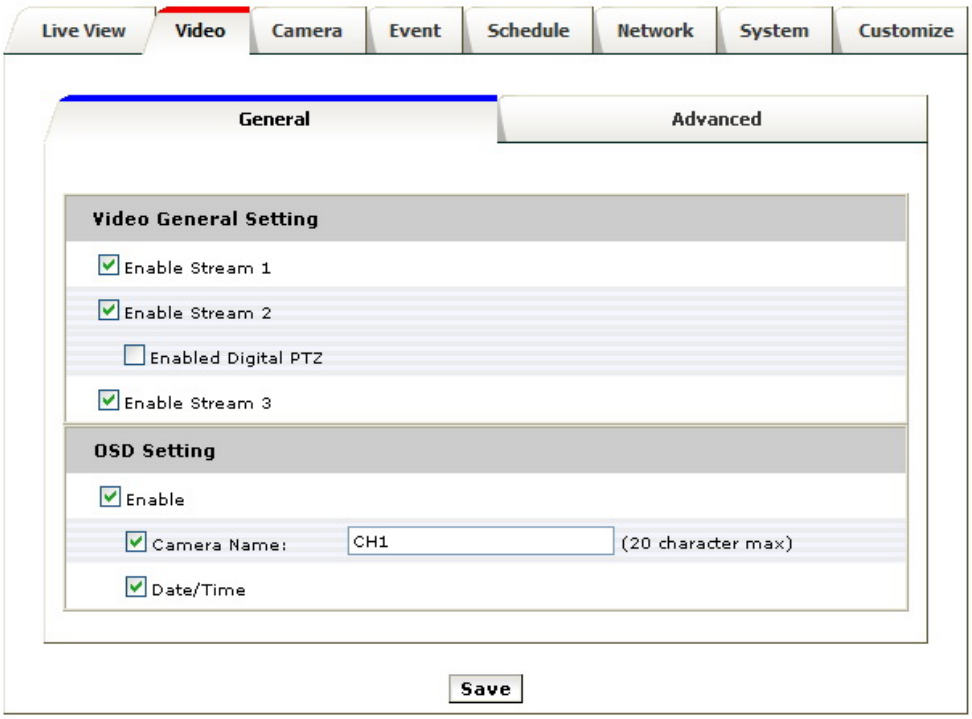
Further configurations and options; a prominent button in between is used to expand the further operations.



Click on the indicated prominent, and more operational options shows up.

2. Video

General

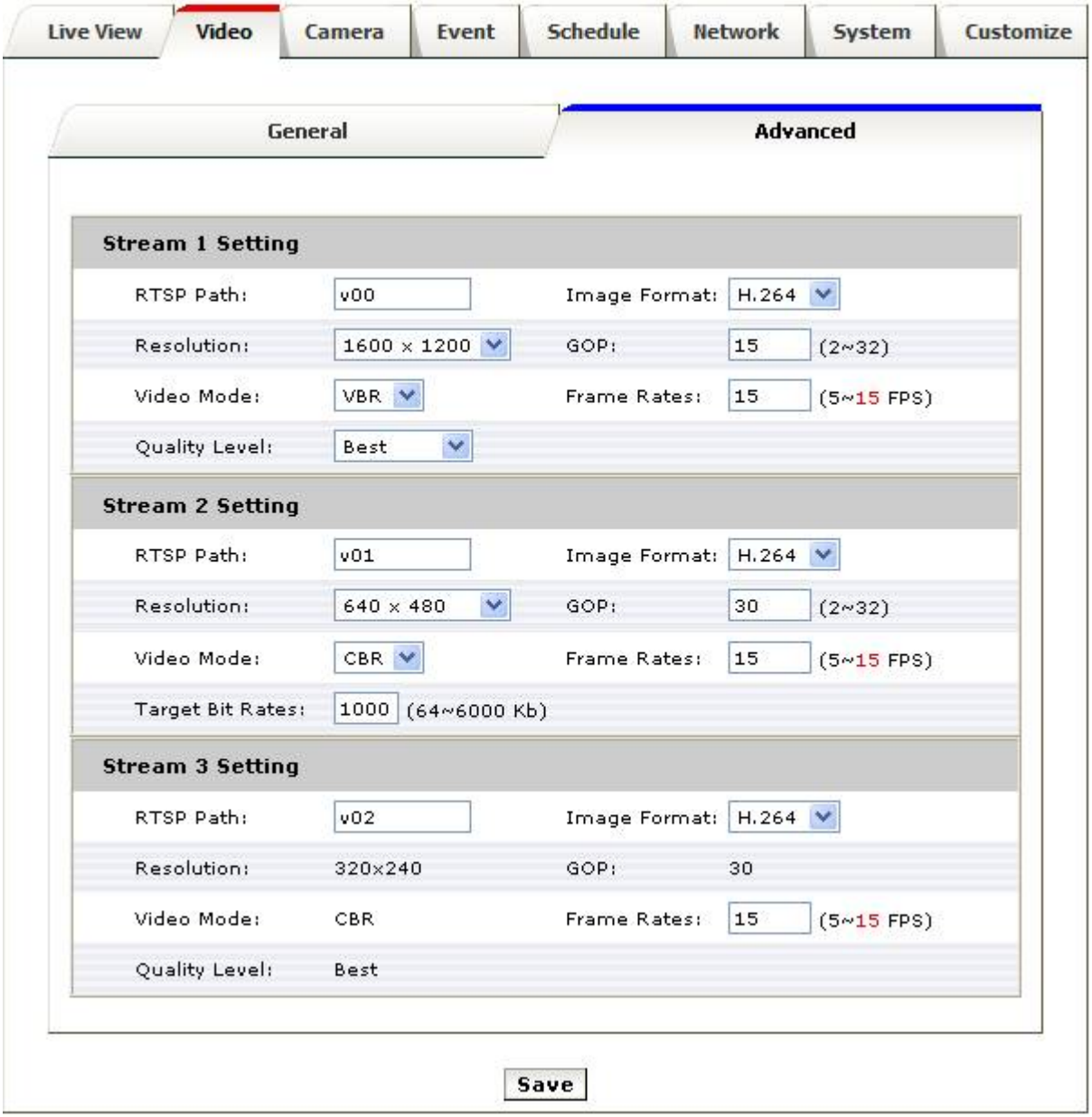


Video General Setting: Check each box to enable needed streams (max 3) for live viewing

Note: Digital PTZ is only available with stream 2. Please select the required video streams only, so that the system can be running at best performance.

OSD Setting: Enable OSD (Over-Screen-Display) to display camera name or date/time on the image, the camera name must be a continual string, for instance “LivingRoom”. This OSD setting may be set from the NVR too if any Granvista Plus series NVR has linked to this network camera.

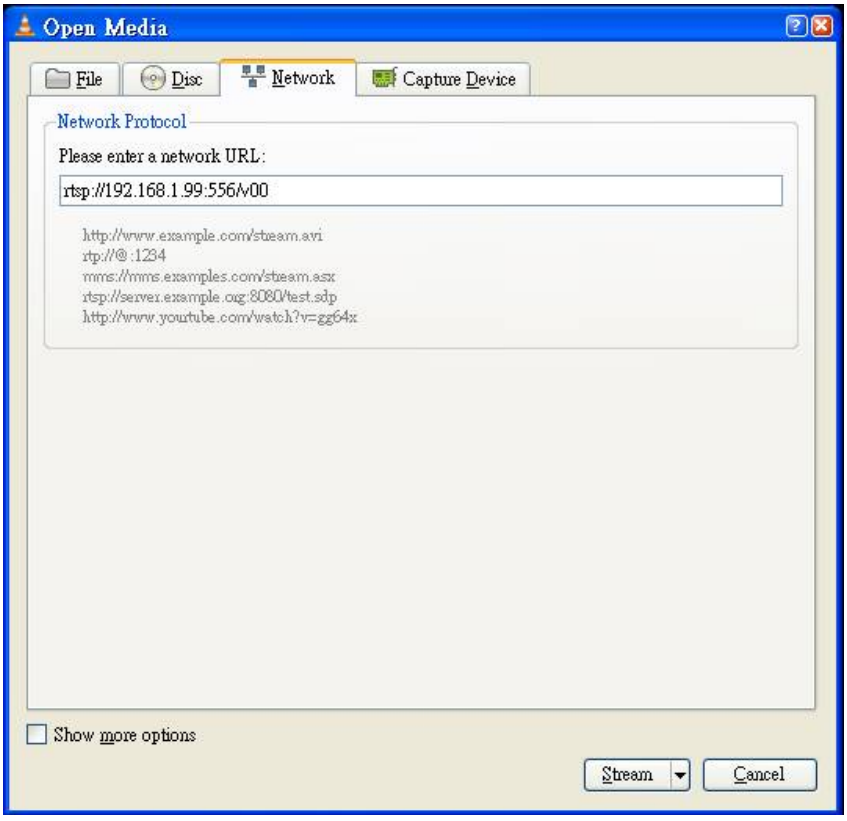
Advanced


Live View
Video
Camera
Event
Schedule
Network
System
Customize
General
Advanced
Stream 1 Setting
RTSP Path: v00
Image Format: H.264
Resolution: 1600 x 1200
GOP: 15 (2~32)
Video Mode: VBR
Frame Rates: 15 (5~15 FPS)
Quality Level: Best
Stream 2 Setting
RTSP Path: v01
Image Format: H.264
Resolution: 640 x 480
GOP: 30 (2~32)
Video Mode: CBR
Frame Rates: 15 (5~15 FPS)
Target Bit Rates: 1000 (64~6000 Kb)
Stream 3 Setting
RTSP Path: v02
Image Format: H.264
Resolution: 320x240
GOP: 30
Video Mode: CBR
Frame Rates: 15 (5~15 FPS)
Quality Level: Best
Save

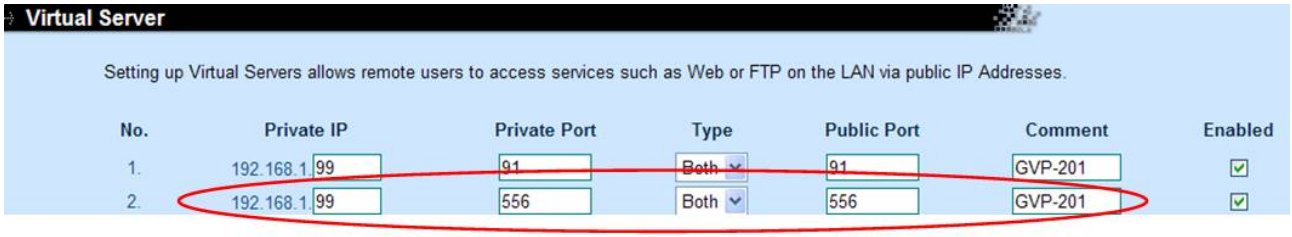
RTSP Path -

The RTSP（Real Time Streaming Protocol）Path is the stream ID used for RTSP client's streaming connection, such as VLC player. The default values are **v00**, **v01** and **v02** for the three streams respectively. The string can be any combination of number or capital/small letters. It can not be empty however.

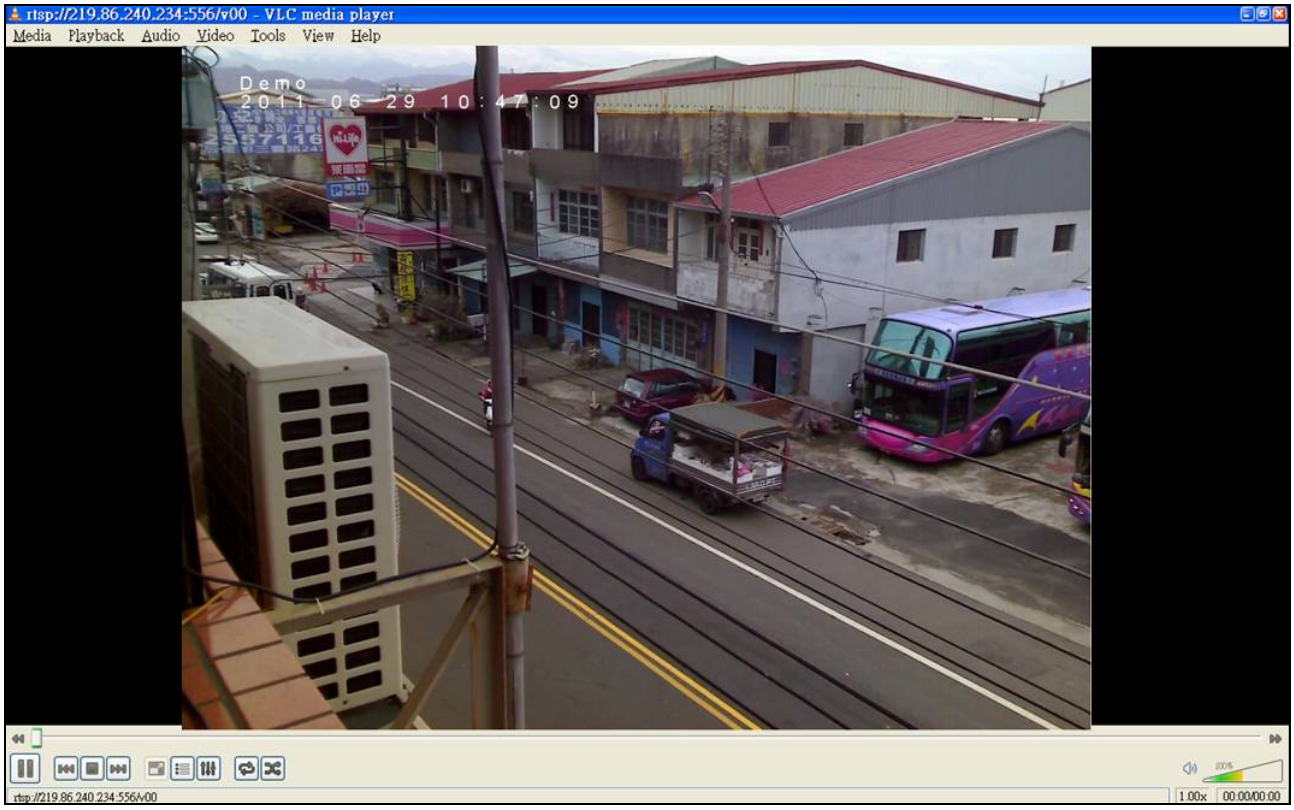
Following is a setting example of RTSP steaming by using VLC program. (The users may access this setup screen from VLC program's Media/Streaming…/Network).



Note: the "port number" of 556 in the example is its RSTP port number which the user has defined for this camera (default value is 554). This port number must be routed in the network router properly if the user likes to receive the video streaming from the web. In other words, if the user likes to use the external web address of rtsp://219.86.240.234:556/v00 in stead of the LAN address of rtsp://192.168.1.99:556/v00.



The above is a setup screen example of an Internet broadband router. In this example the port 90 is for WWW, and the port 556 is for RTSP. These two port numbers must be same as what configured in the camera's Network/Advanced settings.



Note: the users may right-click and choose VLC program's "Full Screen" mode too.

Resolution -

The resolution here describes an image size counted by width and height, e.g. 640x480, referring to **pixel resolution**. The 1st stream can be set from more options of resolution; 1600x1200 (2 megapixels), 1280x720(HD), 800x600(SVGA), 640x480(VGA), 320x240(QVGA). While Stream2 has the options of VGA and QVGA, stream3 is in a fixed resolution, the QVGA. The users need to decide which resolution and frame rate options to be selected according to the requirements and practical constraints from the bandwidth and storage available.

Video Mode -

This option allows the selection of two bit-rate modes, the Constant Bit Rate (CBR) or Variable Bit Rate (VBR). CBR refers to the setting of a fixed **Target Bit Rate** (configuration in the range of 64Kbps to 6Mbps) that would apply in the case of limited bandwidth or/and storage requirement. While CBR concerns a fixed data rate transmitting, the video quality setting is of high priority for VBR mode selected. VBR therefore is configured with the **Quality Level** (Standard, Good, Best). In general, CBR predicts the provided condition; if image activity requires higher bit rates than configured, the frame rate and quality would be affected as not likely to increase bandwidth (bit rate). In spite of the required recording storage estimation, VBR is by way of compensation that adjustable bit rate fits the actual image activity.

Image Format -

H.264 and MJPEG are available for image format selection. The term, "image format", is referring to compression / encoding technique. The selection of image format decides the performance of bandwidth and

storage requirement. In the request of same video quality, H.264 contributes to less bandwidth and storage requirement, which is much more efficient than MJPEG. Therefore it is usually a better selection to select H.264 format if there is no particular reason for MJPEG.

GOP -

In MPEG4/H.264 video coding, GOP (group of pictures) describes how the different types of frames are arranged. The frame types implemented here are **I**-frame (full image information) and **P**-frame (motion-compensated difference information). This setting configures the **GOP length** which is the number of frames before next I-frame appears. Having more I-frames usually increases the stream size, and therefore more bandwidth and storage are required.

Frame Rates -

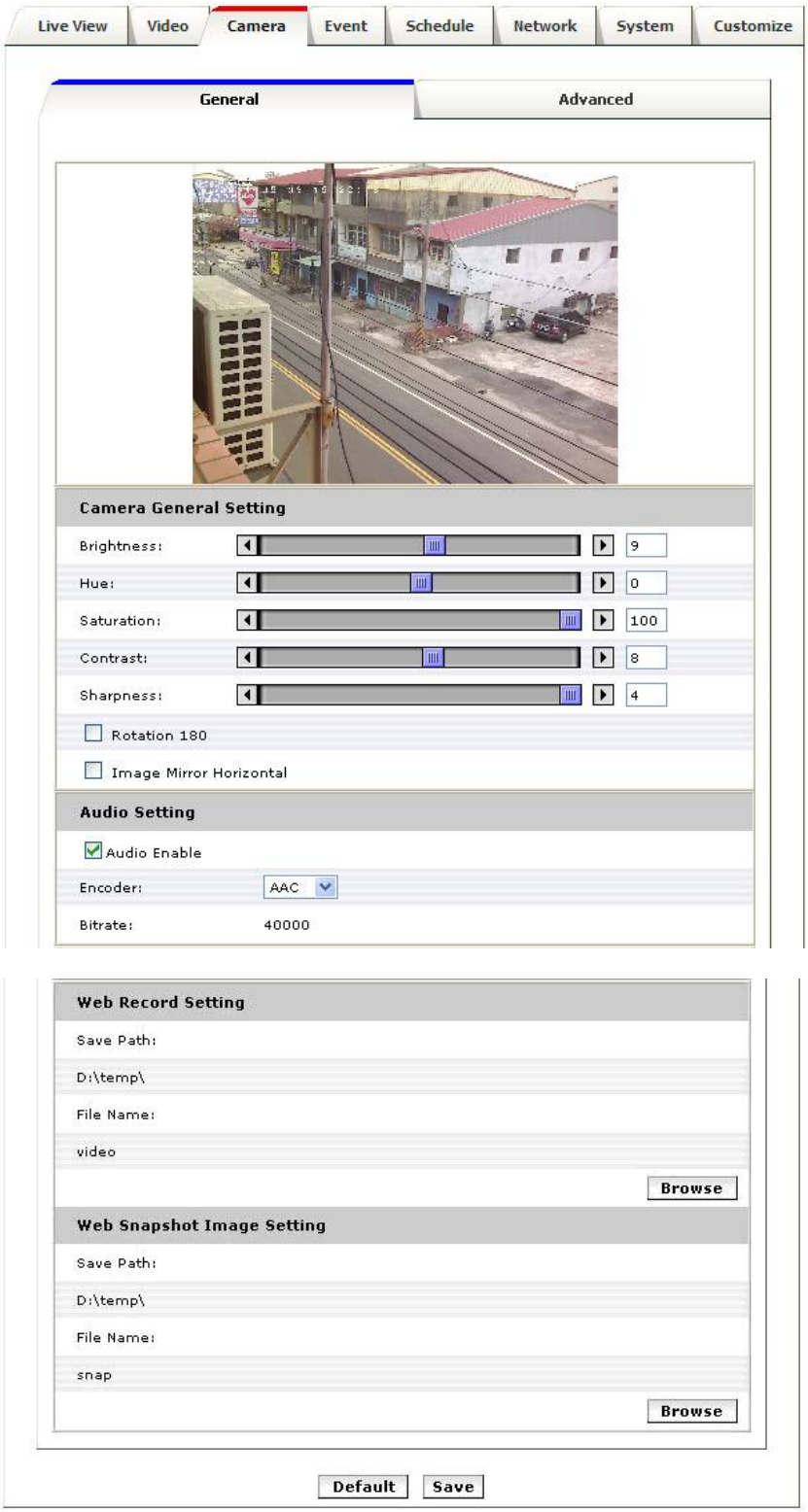
The Frame Rates defines the number of frames that will be displayed per second. The frame rate setting can affect the target bit rate (bandwidth requirement) and storage requirement.

Note:

While multiple streaming is possible, each stream has its limitation and dependency to other stream. See "**Video Stream Specification**".

3. Camera

General



Camera General Setting:

Brightness: the luminance of image view

Hue: refer to pure a pure color, or described by its name, such as red, green or blue.

Saturation: intensity of a specific color

The 3 correlates are referring image appearance in terms of color/vision. These are adjustable from this page.

Rotation 180 degree: rotate the image, so it looks up-side down. This can be applied when camera unit must be mounted up-side down.

Image Mirror Horizontal: to select for horizontally flipped image if necessary.

Audio Setting:

Enable this option, so the video stream will be transferring together with the audio data. There are two types of formats of AAC and G711. AAC takes less bandwidth, while its quality is fairly good already, but the users may still want to choose G711 if they want even better audio quality, and if there is no bandwidth and storage size concern.

AAC format must be selected if the users want audio to be recorded together with the video in Schedule or snapped web recording.

In case there is a Granvista Plus series NVR (network video recorder) available in the network for recording, the NVR will set G711 as its audio default.

Web Record/Snapshot Setting:

Web Record / Snapshot: define the locations where snapshot images and video clips will be stored. The file name is referring to the prefix of the file name of each snapshot image or video clip generated. These two settings' are saved in the Web Browser such as Internet Explorer, thus the settings will be reset if you reset the Web Browser software. Users may find it an easy cure to set it up in Windows's Safe Mode when they encounter problem with Vista platform which is stricter and more complicated in security settings than other platforms.

As to the "Web Recording Setting", if you have chosen D:\TEMP as the path and "video" as the file name prefix then the generated files will be saved into the D:\TEMP directory, and their file names will be in the format of "video" plus time tags, such as "video_20110102_121313_770". The "Web Snapshot Image Setting" is configured in the same way.

Default:

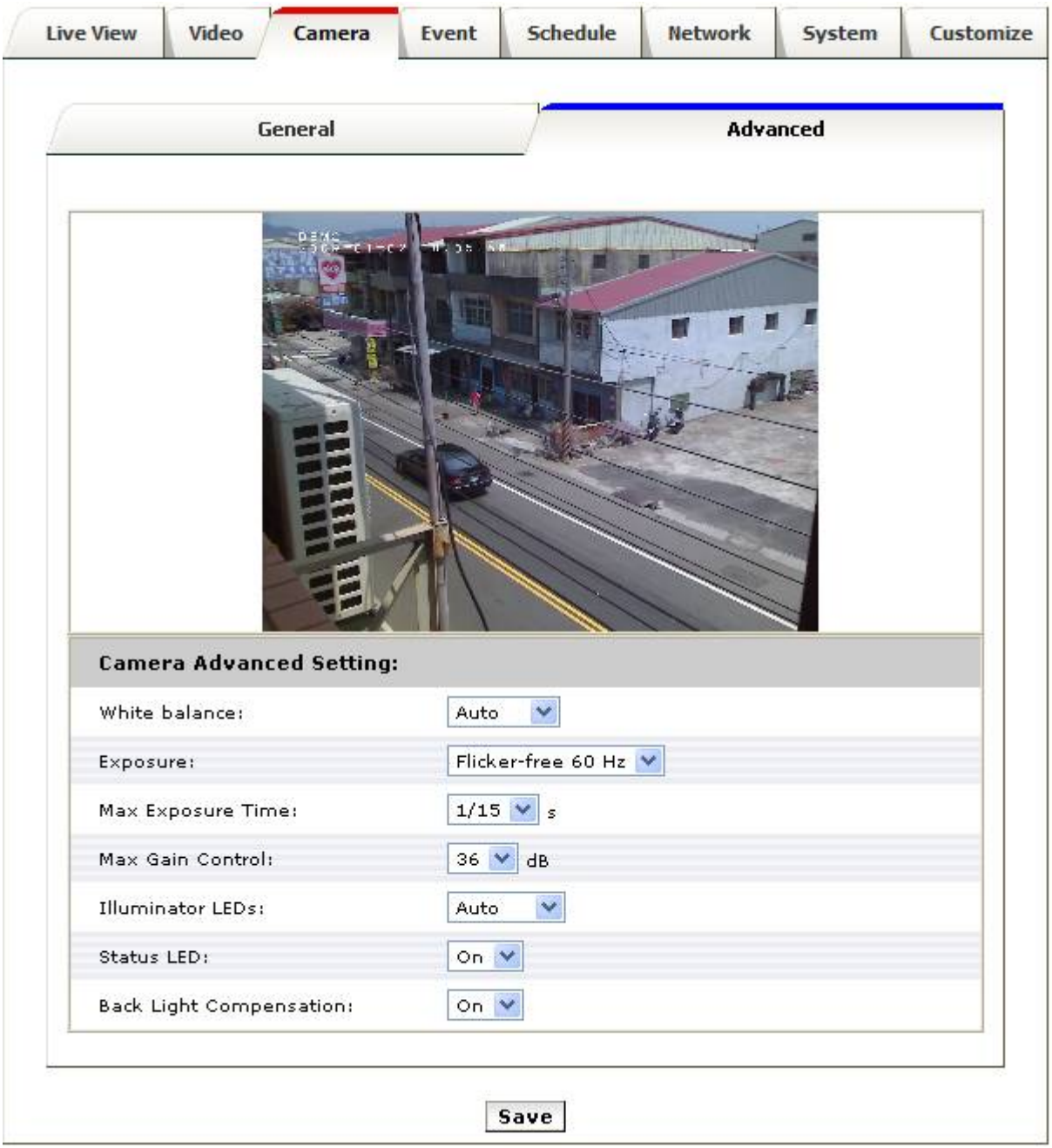
Set **[camera general setting]** and **[audio setting]** back to default

Note: As mentioned above, this Default command will not change the configuration of **[Web Record Setting]** and **[web Snapshot Image Setting]**

Save:

Save the changes which have been made

Advanced



White balance: Adjustment to compensate for different environments in terms of light source.

Exposure: Anti-flicker setting for image sensor to fit the frequency of light (power) source. For instance, the power frequency is 50Hz for most European countries, while 60Hz is typically for US. This setting is therefore regionally different. **Note: Default setting is 50Hz**

Max Exposure Time: Referring to the shutter speed. It is recommended to set to slower shutter speed such as 1/15 second in case dark environment with IR illumination is inevitable.

Max Gain Control: The amplification factor for the incoming light. Similar to the photographic theories, in

case of environment of dim light, increase it for optimal result if necessary. On the contrary, turn it down for environments of stronger light if necessary.

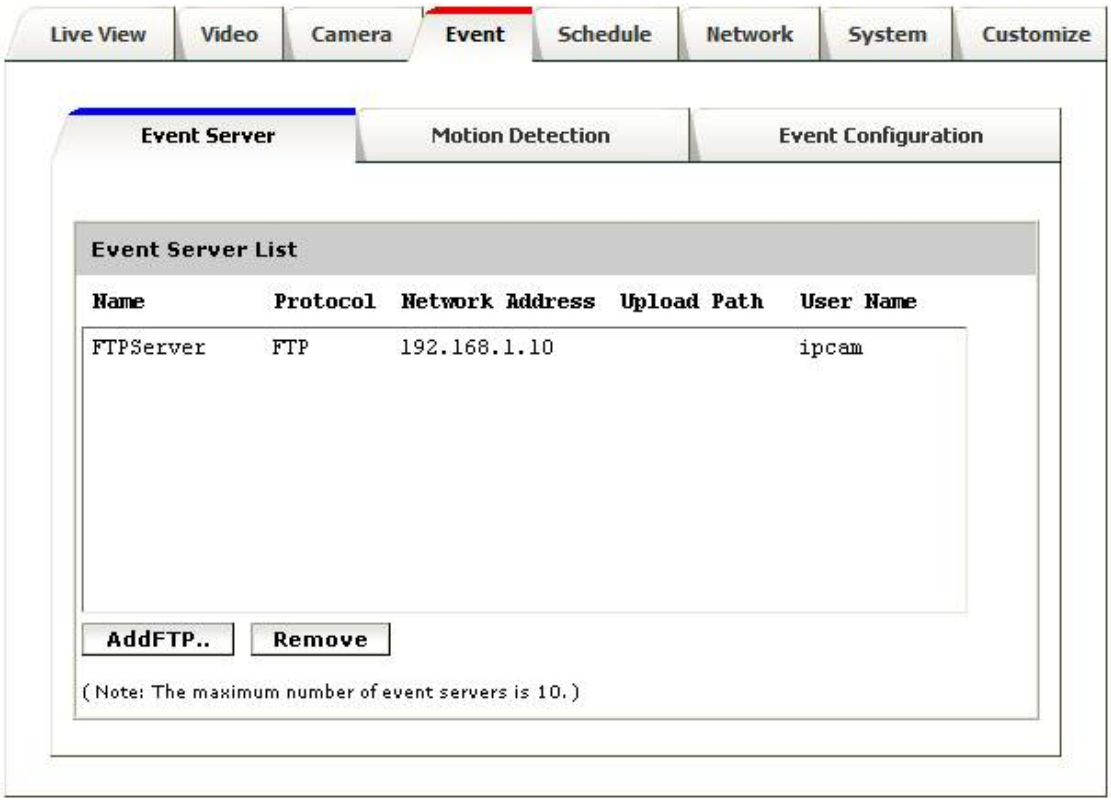
Illuminator LEDs: The default is automatically switched according to site illumination. LED will turn on when there is light deficiency.

Status LED: Turn on/off the camera status LED. You may want to purposely turn it off if you do not want people to tell whether it is operational or not.

Back Light Compensation: Option for automatically making compensation for back light.

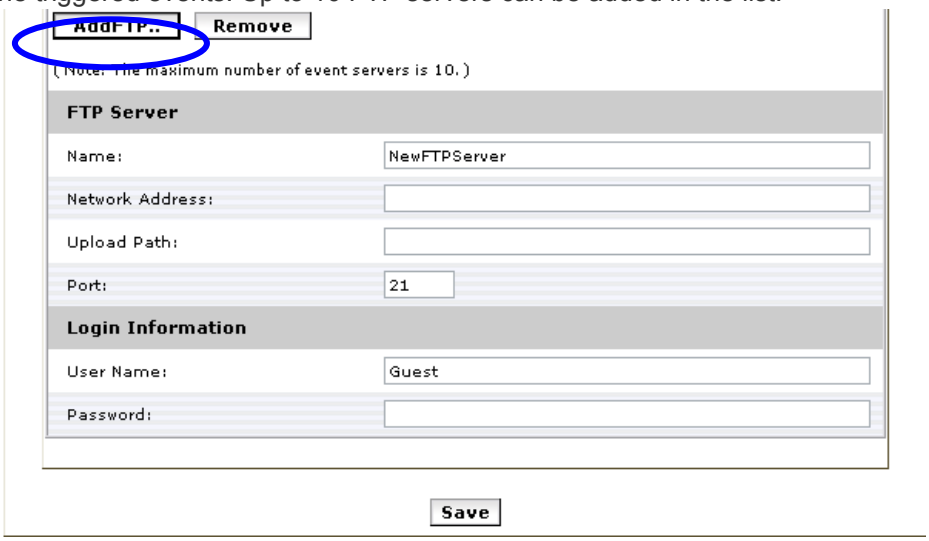
4. Event

Event handling describes the configurations of events and the corresponding actions. To have an insight into this function, a common example can be storing the captured images or video clips to Micro SD card (up to 32GB in storage size) , a remote disk in LAN (SAMBA), FTP server or Email account (images only), when there is an Event (motion or periodic triggering).



Event Server

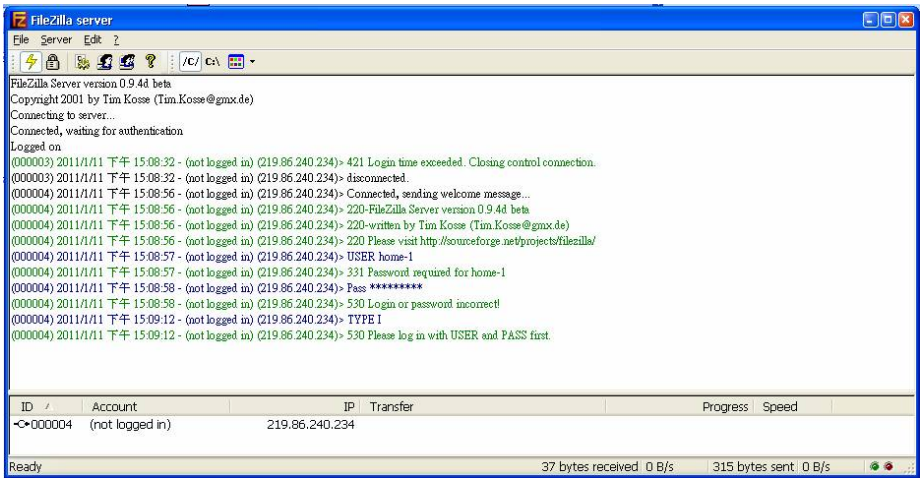
The “Event Server List” lists the configured server(s) that will act as a remote storage or a destination for handling the triggered events. Up to 10 FTP servers can be added in the list.



Click on the **[Add FTP]** to expand FTP server setting

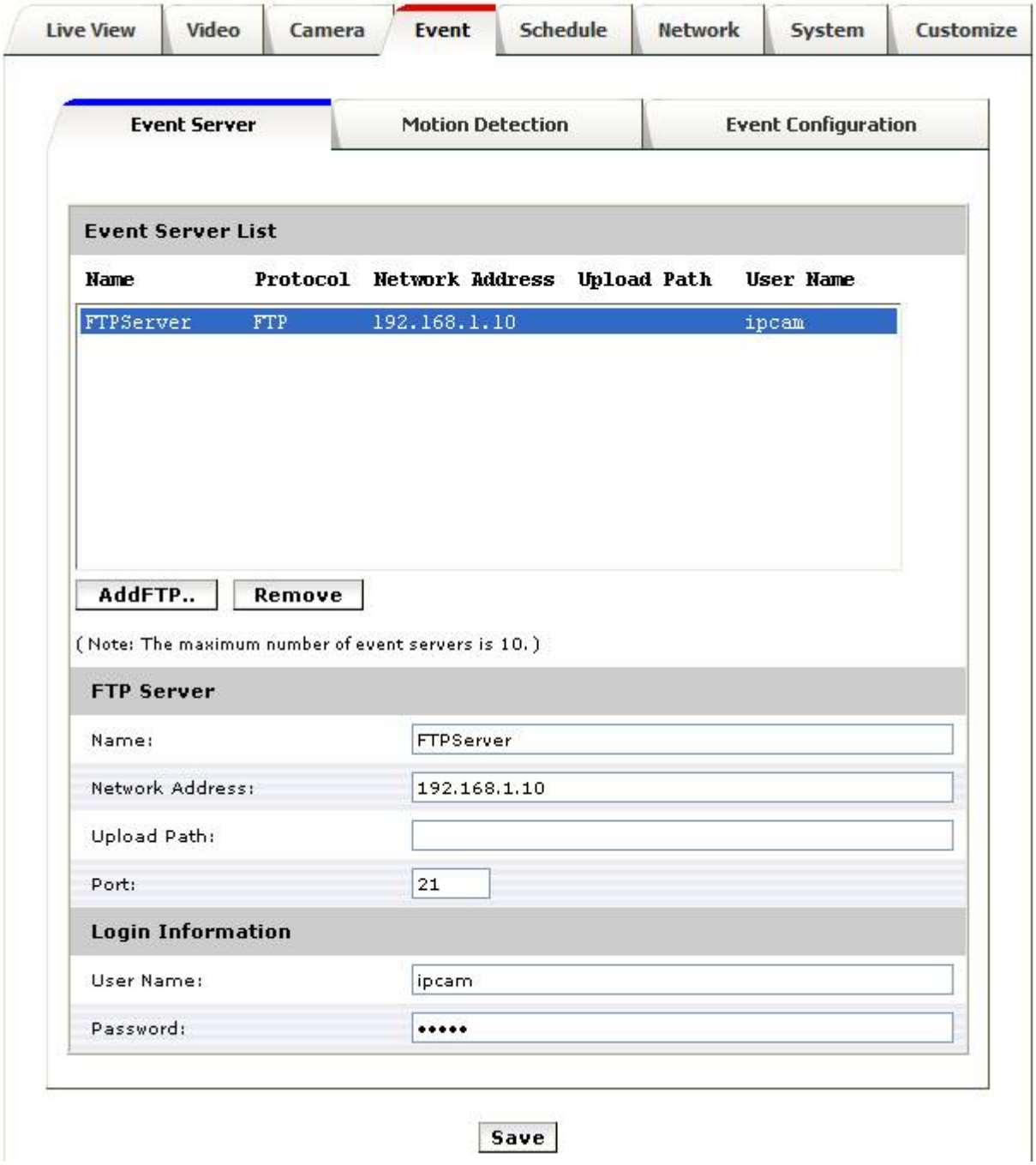
FTP Server:

- Name: Give a name for the FTP server.
- Network Address: Input the network address of the FTP server, which can be located in LAN or external web, for instance “192.168.1.100” or “219.86.240.234” respectively. Please note that such WEB IP such as “219.86.240.234” can be applicable only when the network is connected to Internet, and it is properly configured in the broadband router.
- Upload Path: Choose the desired upload path for events. If not specifically defined, it will be the default folder configured in the FTP system.
- Port: Input the port number of the FTP server, typically 21.
  Remarks: FTP is quite a convenient web application, and it is quite easy to use. Attached below is an example of FTP screen indicates that a Network Camera keeps on talking to the FTP server. In this example the FTP server address can be set as either 192.168.1.3 (LAN) or 219.86.240.234 (WEB) from near end.



Login Information:

- Username / Password: Input the username and password of the FTP

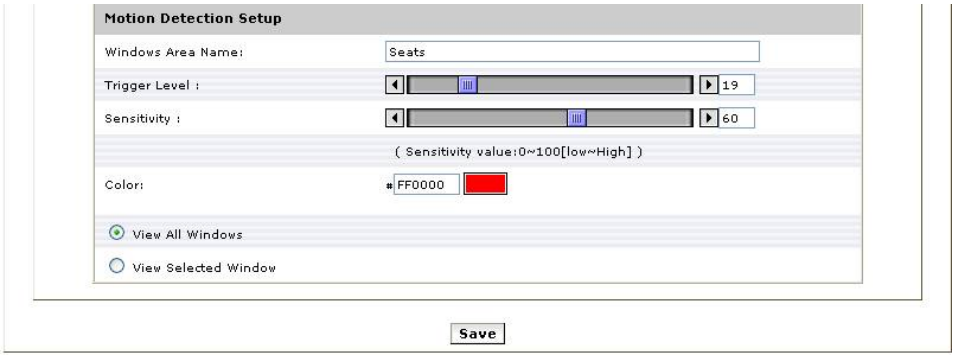


Click **[Remove]** to delete selected event servers

Please refer to Appendix-I for more information on FPT applications.

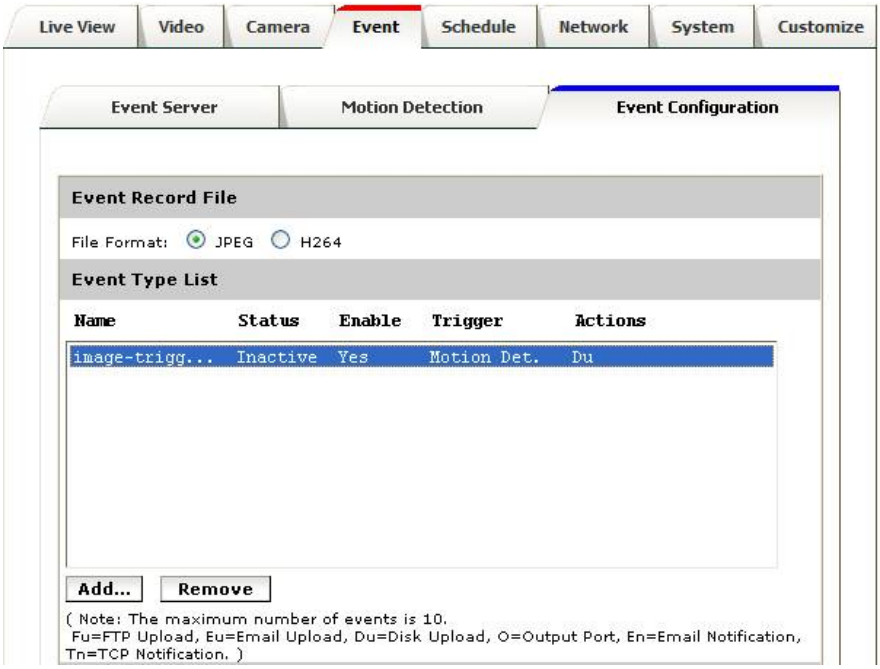
Motion Detection

A snapshot image shows the whole view of the camera covered. To select a motion detection area, click directly on the image, and then change the size and position by dragging and drawing. Up to 10 motion areas (configurations) can be added in the list. Each detection area can be set with its own sensitivity value.



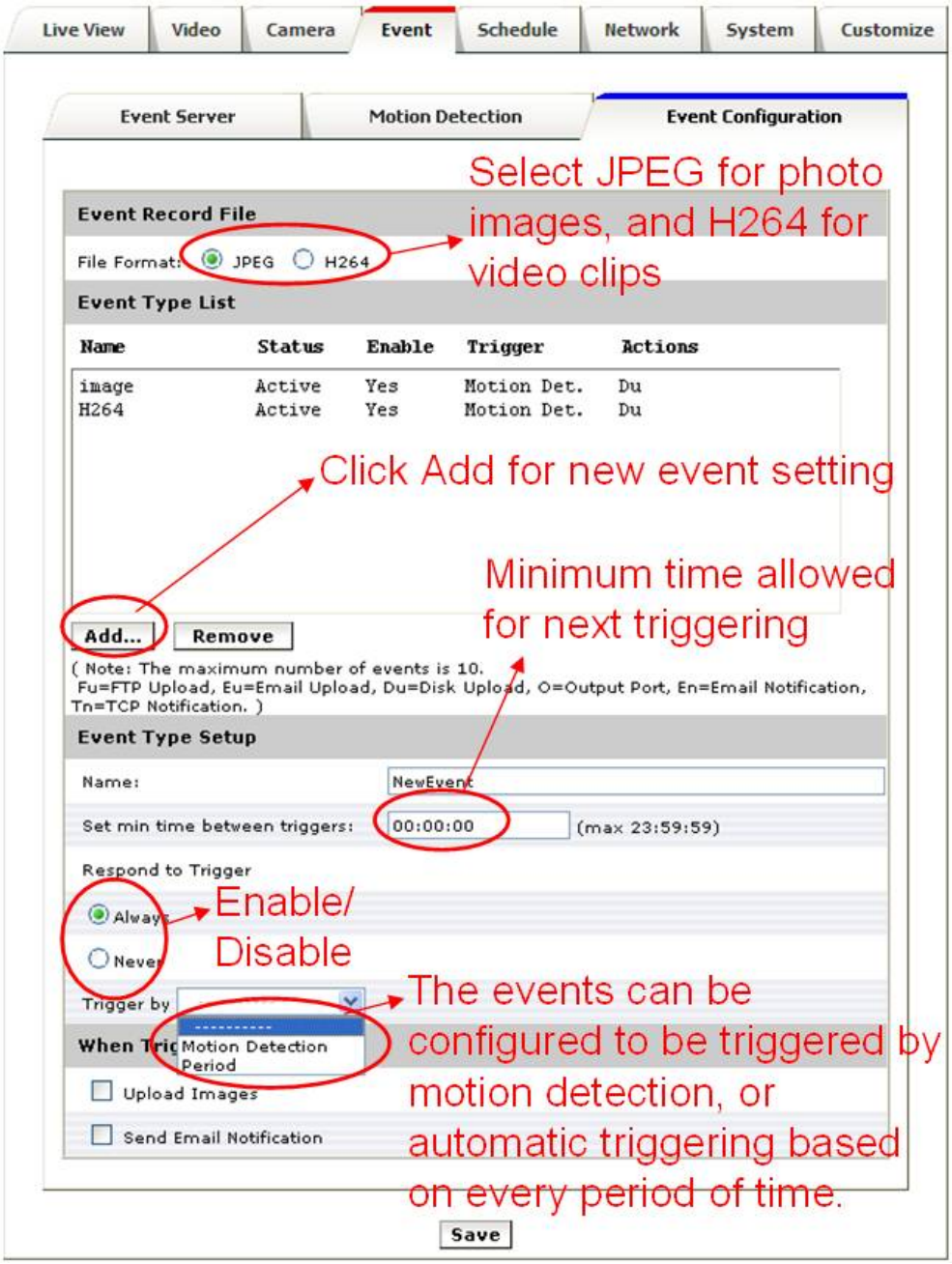
Event Configuration

The Event Configuration is to assign the actions responding to the specified events (Trigger Conditions).



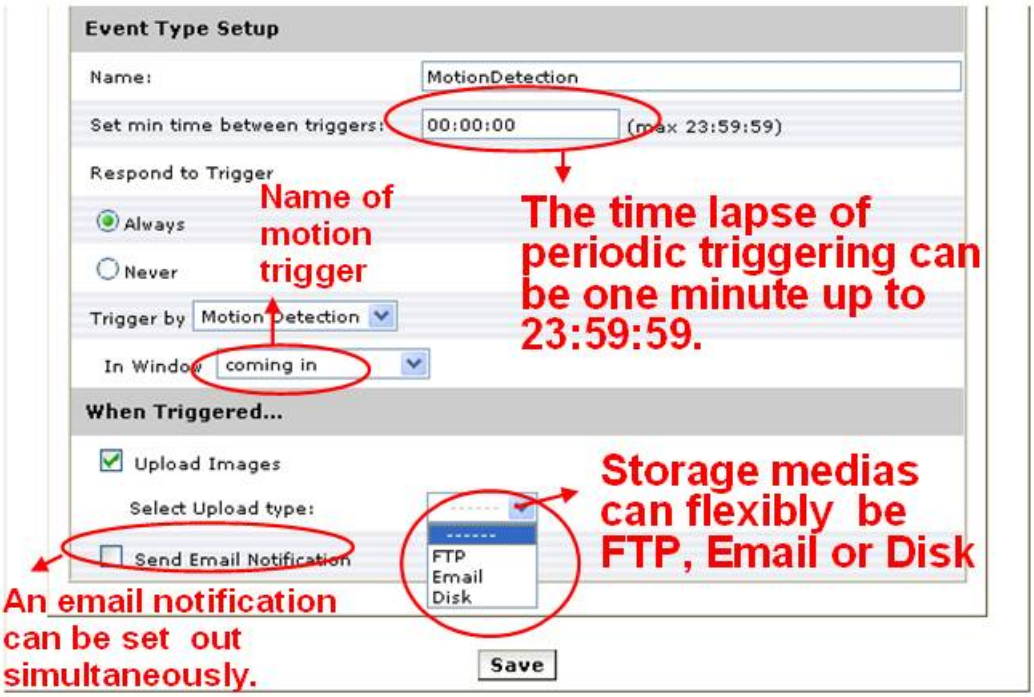
The table lists the configured events. Click on "**Add…**" or choose an event from the list to extend the panel for detail configurations. "**Remove**" is to delete a selected event.

A total of up to 10 event settings with different combinations of motion detections, or automatic triggering based on every period of time can be configured into the system.



Trigger types (conditions)

Motion Detection: The configured detection area(s) for motion events.



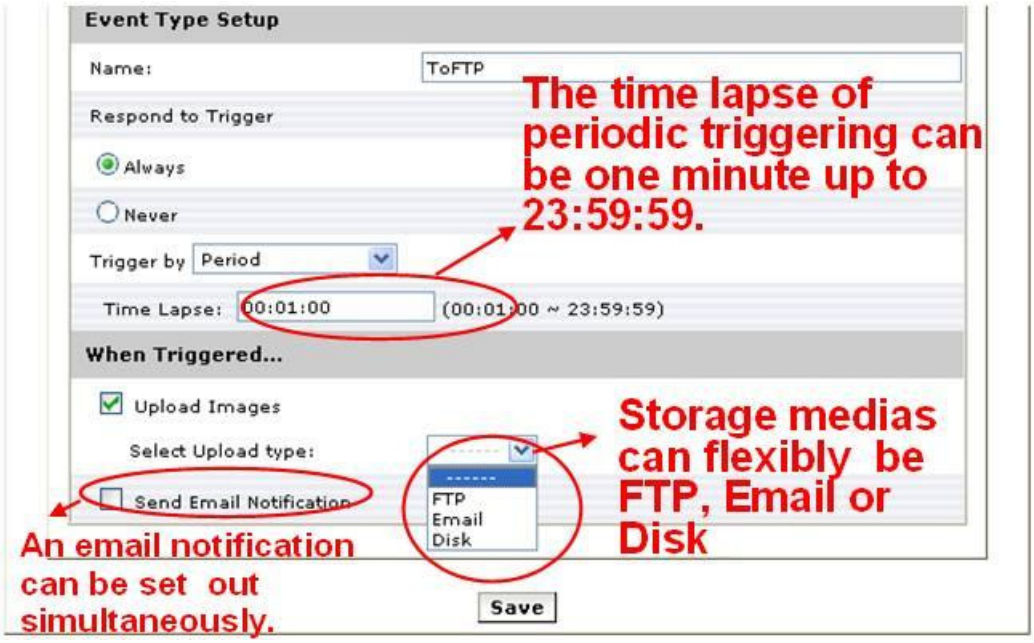
When triggering action activated

Store image to FTP (Remote), Email or SD card (Local)

Time Lapse of Events

Events may come frequently, for instance, a moving object may keep triggering in a detection area, and false alarms may therefore occur. The "**minimum time between triggers**" setting is then for this case. System waits for the given time before the next trigger taken.

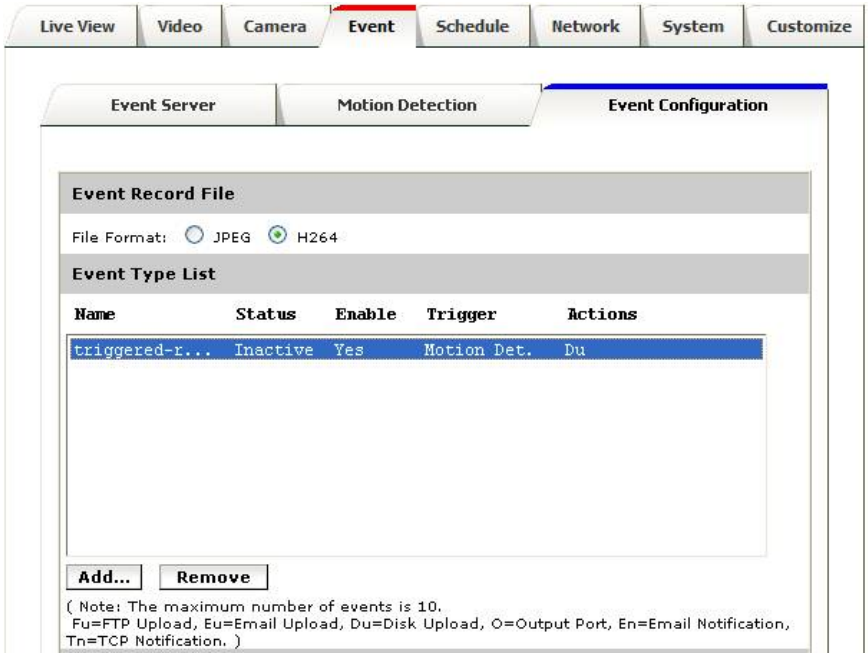
Period: To be triggered every preset period of time. The time lapse of periodic triggering can be one minute up to 23:59:59.

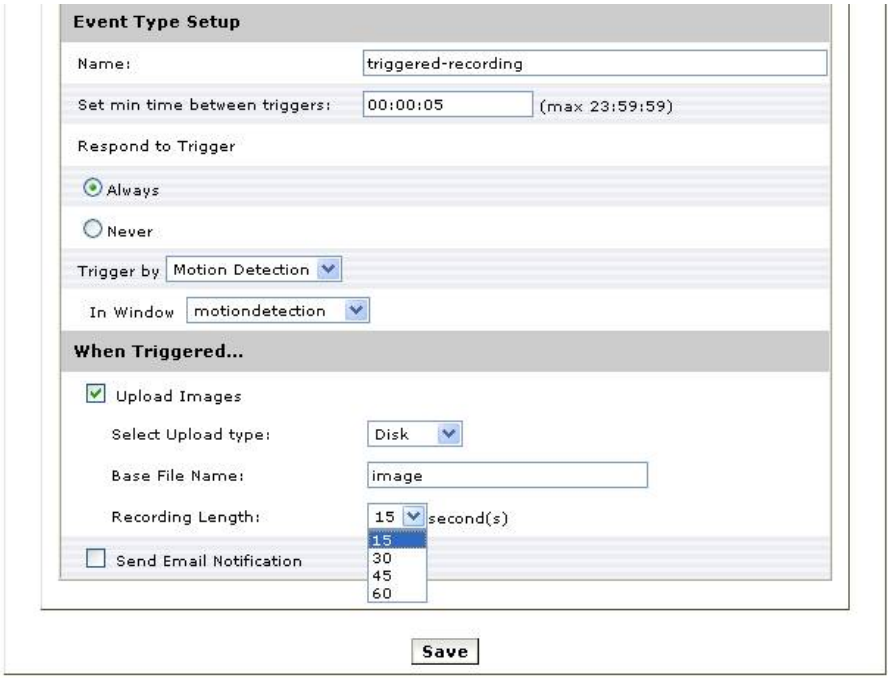


Note: there is another manual trigger functionality available from clicking trigger button embedded on the web main page.

H.264 mode triggered recording:
Not only for triggering images of jpg format, the camera allows users to trigger video clips of H.264 format with pre-defined time lengths of 15, 30 45 or 60 seconds.
This H264 video clip triggering function provides another option in addition to Schedule recording function at pre-defined data size.

Please note that the video clips generated may be sent to SD card, FTP or Email, but due to actual constraints from the availability of the needed network resources and its bandwidth, the FTP and Email options may not work as expected
.



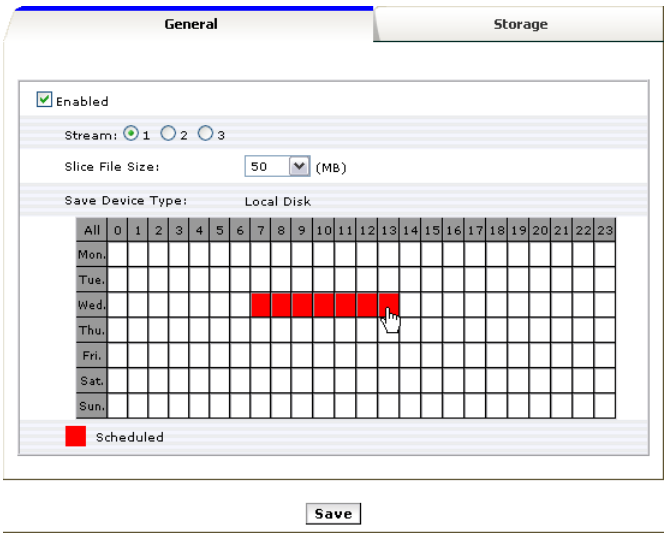


5. Schedule

GVP-201/GVP-201W series models are equipped with a card slot for Micro-SD/SDHC storage. This storage is applied for local video and image recording. The recording function can be launched according to scheduled time frames. The SD card also records the JPEG images responding to an event.
The size of Micro SD card can be up to **32GB**, preferably be at least **Class-4 or even faster grades**.

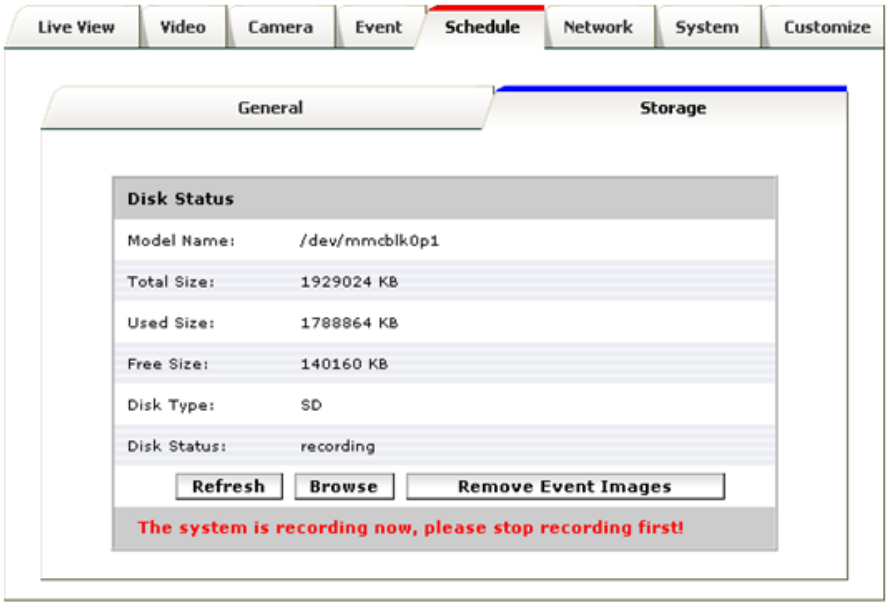
General

Define the day (specified by days of a week) and time (specified by each single hour) for that the video, or even the audio, will be recorded during the scheduled period. User can select which video stream should be recorded, and the size of each sliced file. When the check box is ticked, recording process starts at the scheduled hours (red blocks).

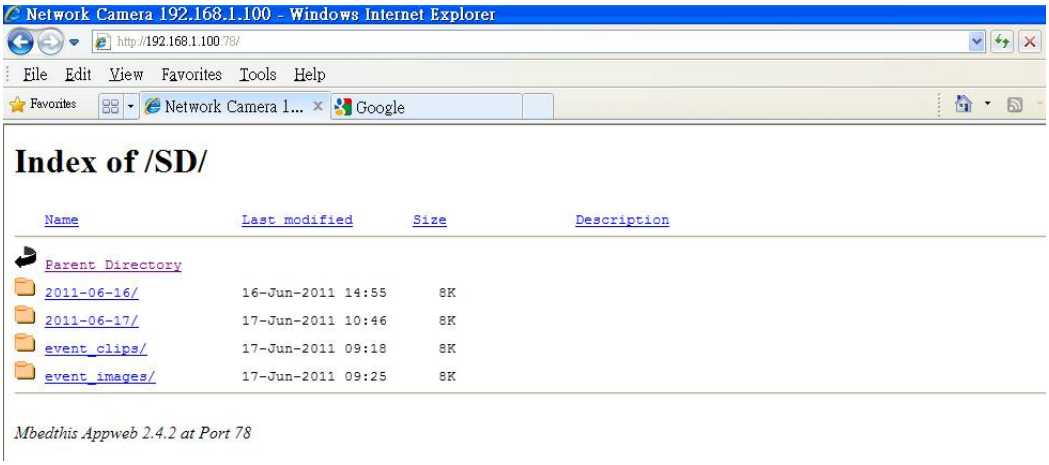


Storage

Display the storage information, includes disk size info, type and status. The warning message (red text) shows when recording is in process; SD card should not be removed during the recording process.



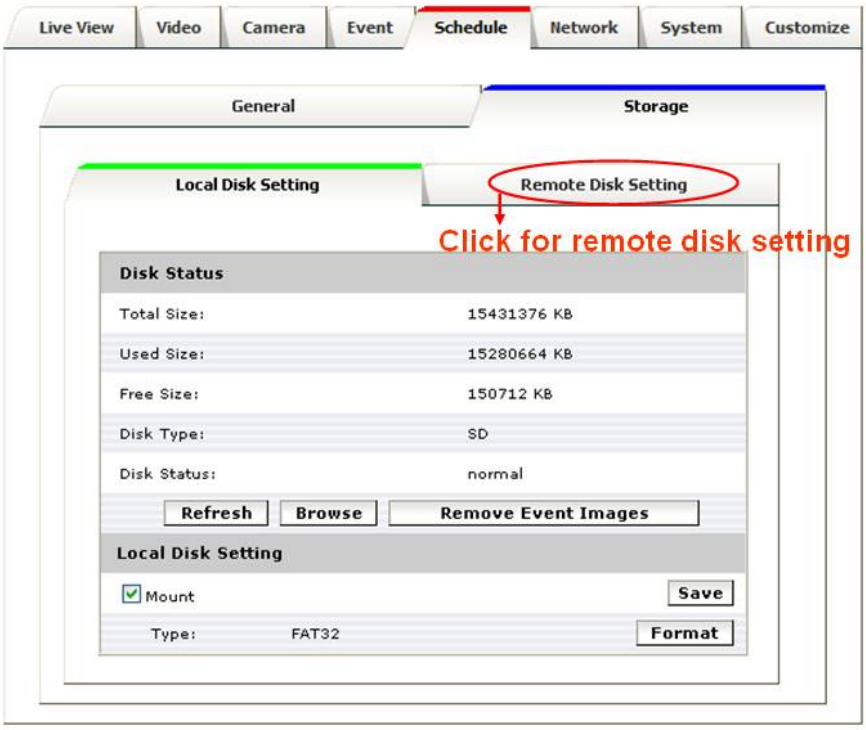
The “**Browse**” button allows viewing the list of recorded files. The web page will then be redirect to the root path of the SD storage (if one is inserted). The list includes couple of folders, the **event_images** which contains all the still images captured by any event trigger, and **folders specified by date** where the recorded video files are located.

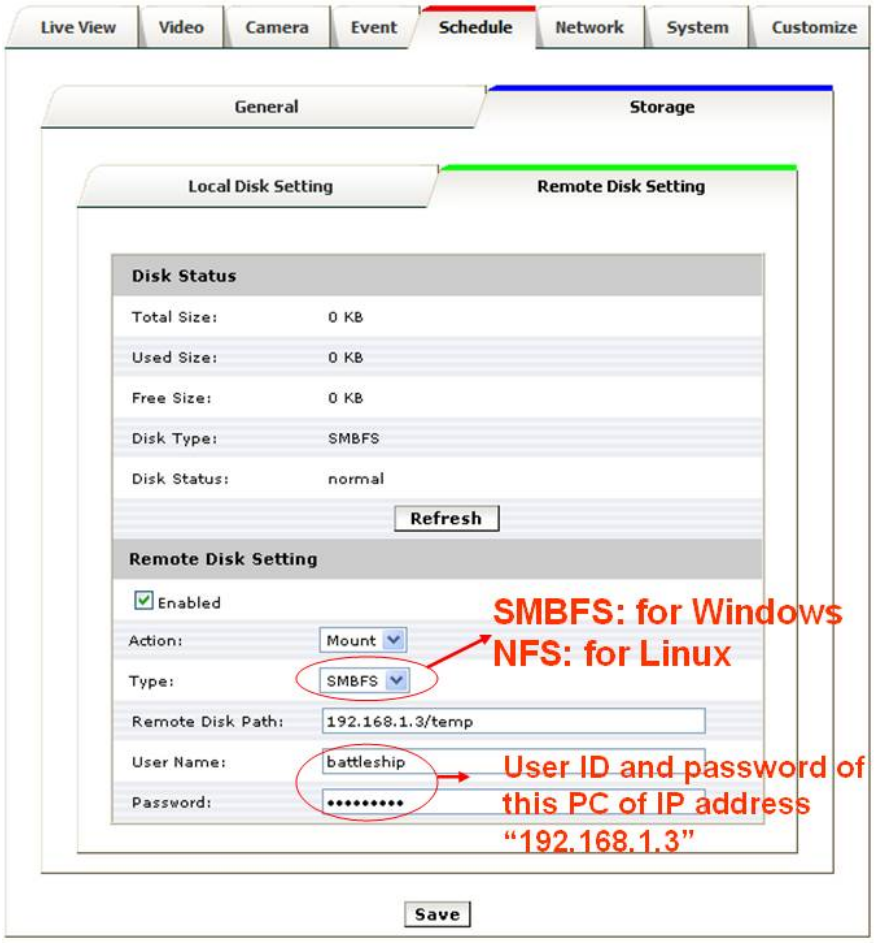


The recorded video files are named in date_time format, and the extension file name is “.mp4”. The recorded files can be re-played with VLC or other application programs. Please note that AAC audio format needs to be selected if audio needs to be recorded into the files as well, and the recoded files will be in MP4 format. If the users have selected G711 as the audio format, video won’t be recoded into the files to save the file spaces, and the recorded files will have the extension file name of H264. The Granvista Plus series NVRs all have much storage spaces which are able to record superior audio into the files thus the NVR will set G711 audio format as default.

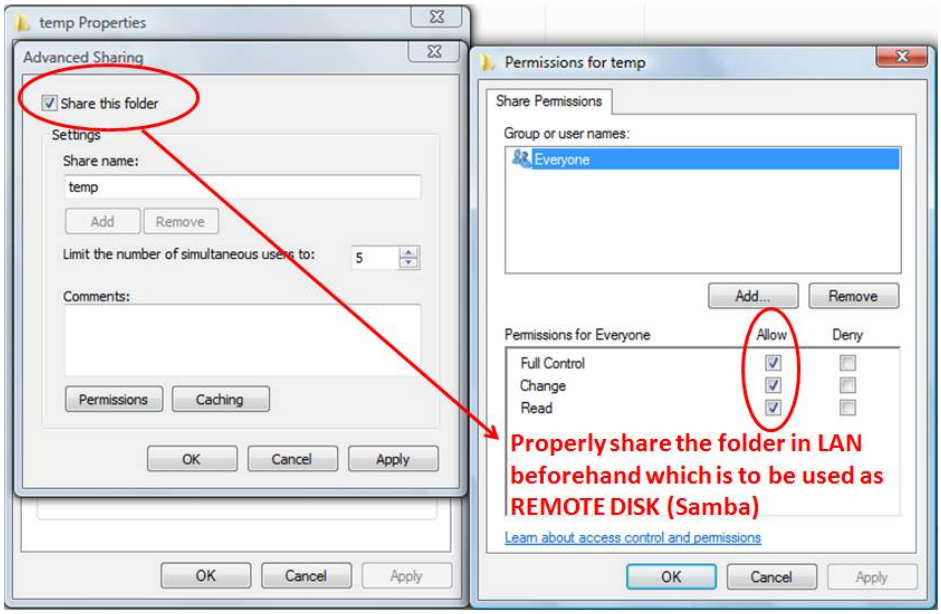
The files generated from the recording process are handled on “first-in-first-out” basis. In other words, the oldest folders/files will be deleted when there is not enough space for the new data.

The recorded files may also be recorded into the remote-disk in LAN (Samba) instead of SD card. Please refer to following setup screens with setup tips for more details.





Please note that the remote disk to be utilized in the LAN PC needs to be shared properly beforehand.

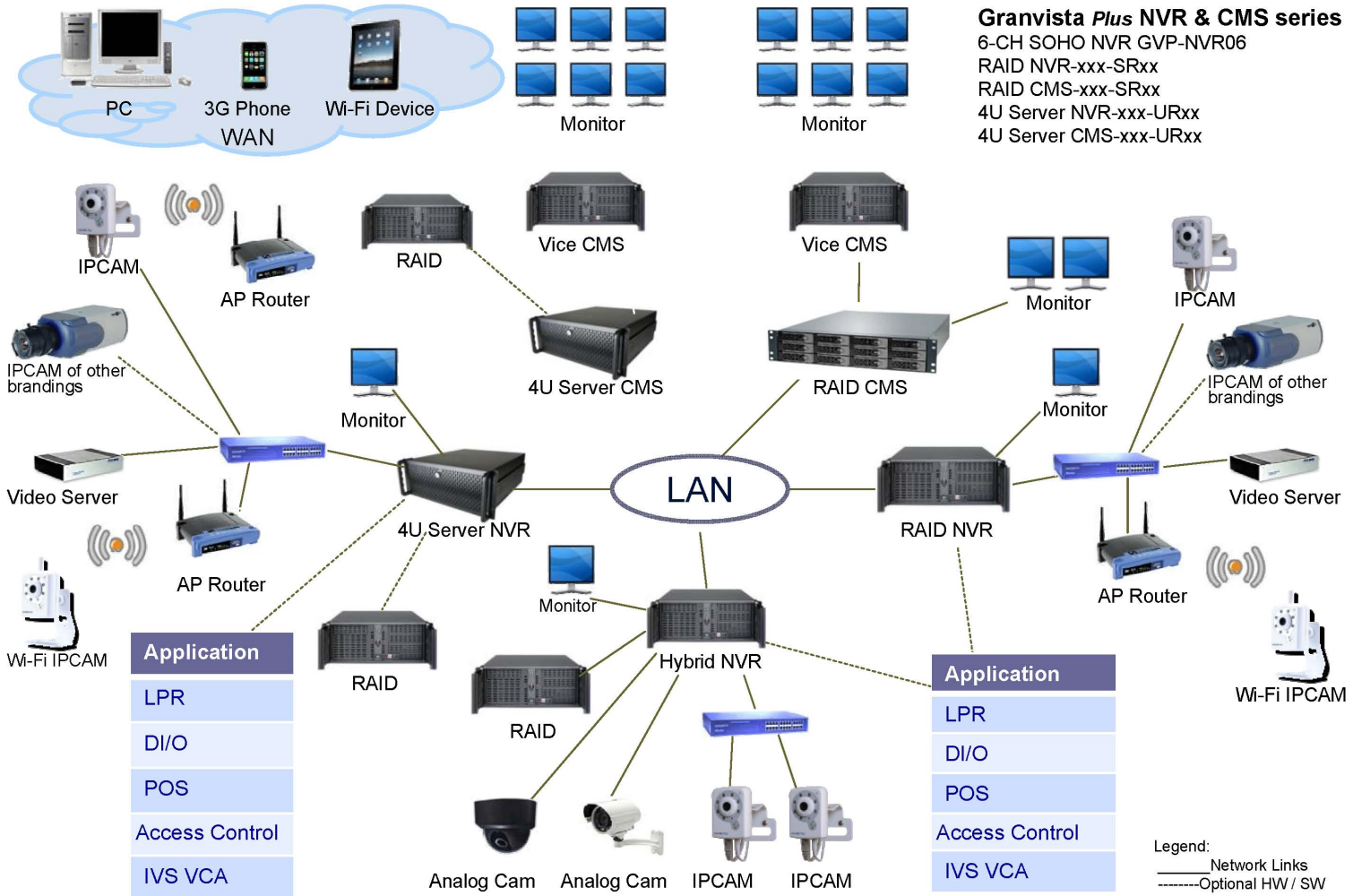


Depends on different resolutions, frame rate, data formats and time frames are configured, a Micro SD of 32GB is able to handle several days of data storage already, and the storage space from Remote-Disk has provided another alternative too. Apparently the camera's recording functionality with Micro SD card or Remote-Disk is able to satisfy users' basic data storage requirements already. Besides, the free-bundled GVD software is also a good option to use for video recording purpose under minimized budget, if the users happen to have spare PCs with relevant hardware compatibility (the PC's screen resolution and CPU performance must be above a decent level to make this NVR software running at optimal performance).
In addition, the users may also take advantages of our Linux-based Granvista Plus NVR for even more advanced and professional applications. Up to 64 connections, or even more, are able to be built into the Granvista Plus series NVRs. Please refer to our web site, or contact us for more details. Attached below is a sample of our SOHO model NVR which may support up to 6 connections.

GVP-NVR06

Up to 6 cameras connectivity capacity / SOHO NVR

Granvista *Plus* NVR / CMS Network Diagram – for users' advanced requirements



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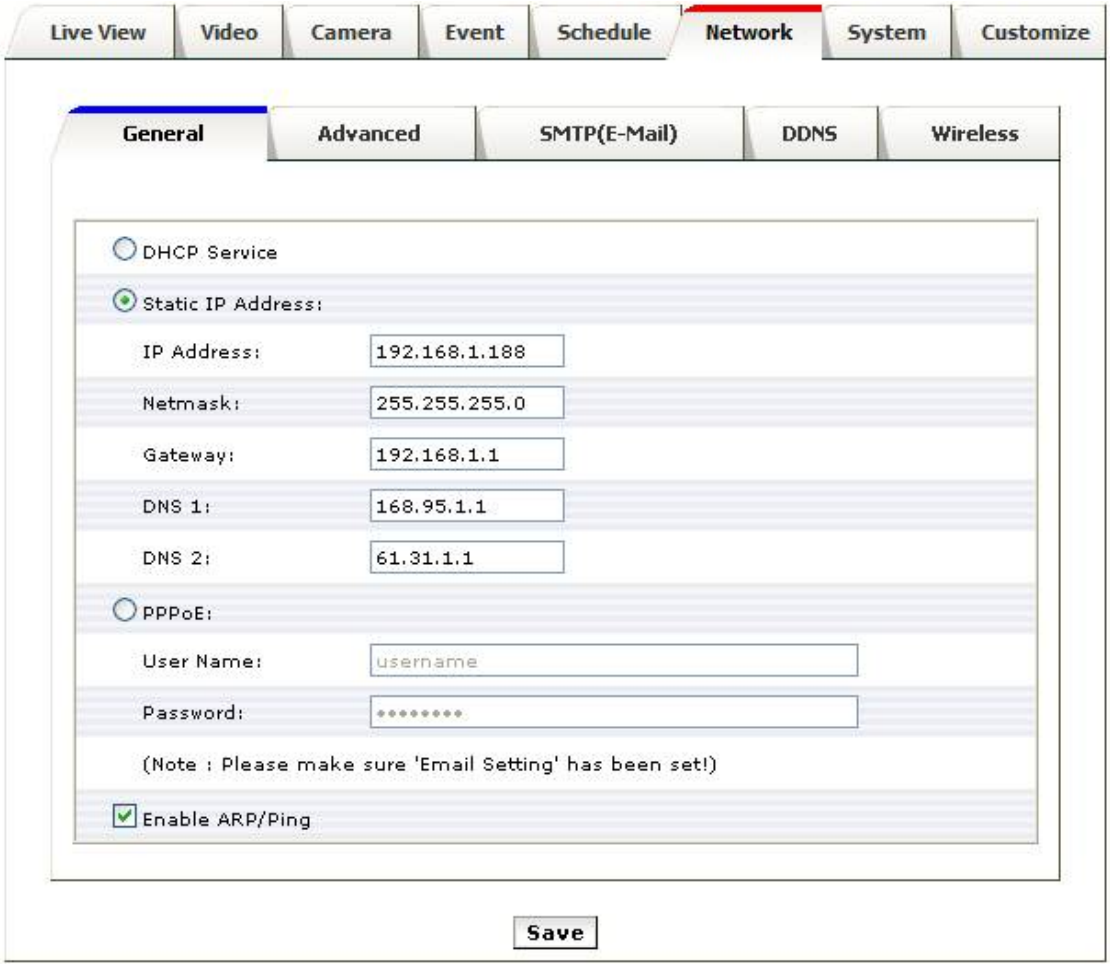
6. Network

Network Camera acts as one of the network devices. It therefore allows its "**IP**" to be assigned, so certain network functionalities can be implementable within this device. This section describes these configurations. Fundamentally, for instance, the IP assignment of the device can be done via **DHCP server**, **manually fixed IP option** or **PPPoE** to obtain IP from service provider.

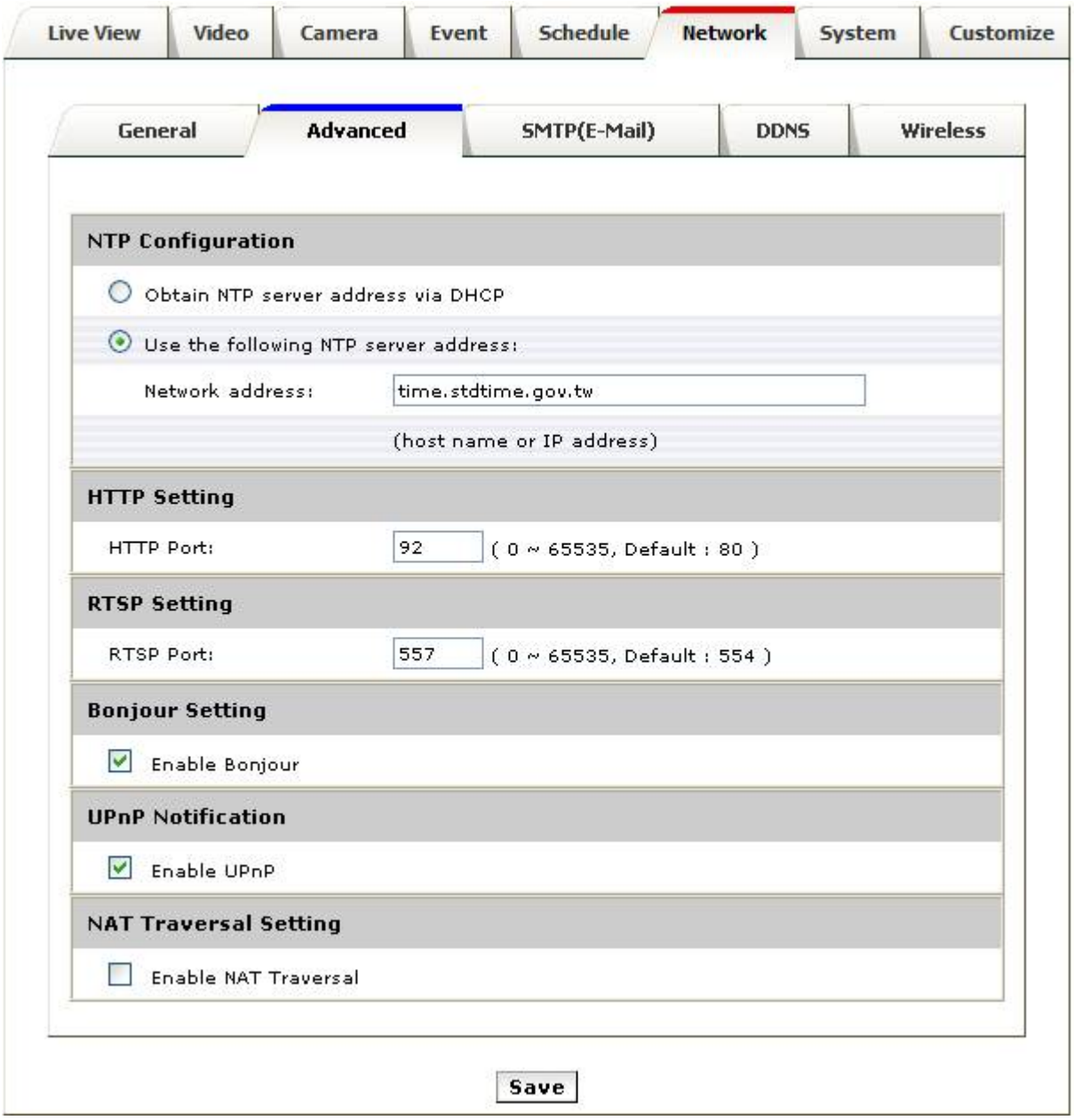
General

Device IP configuration, includes DHCP, Static IP setting and PPPoE. "Enable ARP/Ping" enable device to accept ARP or ping packets from the network. Disable this option may provide extra security from intentional ping.



Advanced

Enable or configure other network functions.



NTP: Configure a NTP (Network Time Protocol) server, so that the device system date and time can be synchronized with a specified Time Server. This configuration is provided for one of the potions of system date/time adjustment. If the camera is located in an isolated LAN, in other words it does not have access to web, the user may set the IP of the PC in LAN as its NTP setting, so that the camera's time will be synchronized with the PC.

HTTP: set the HTTP port that will be applied for Web UI access. The default port number of HTTP is "80", but it can be of other figures.

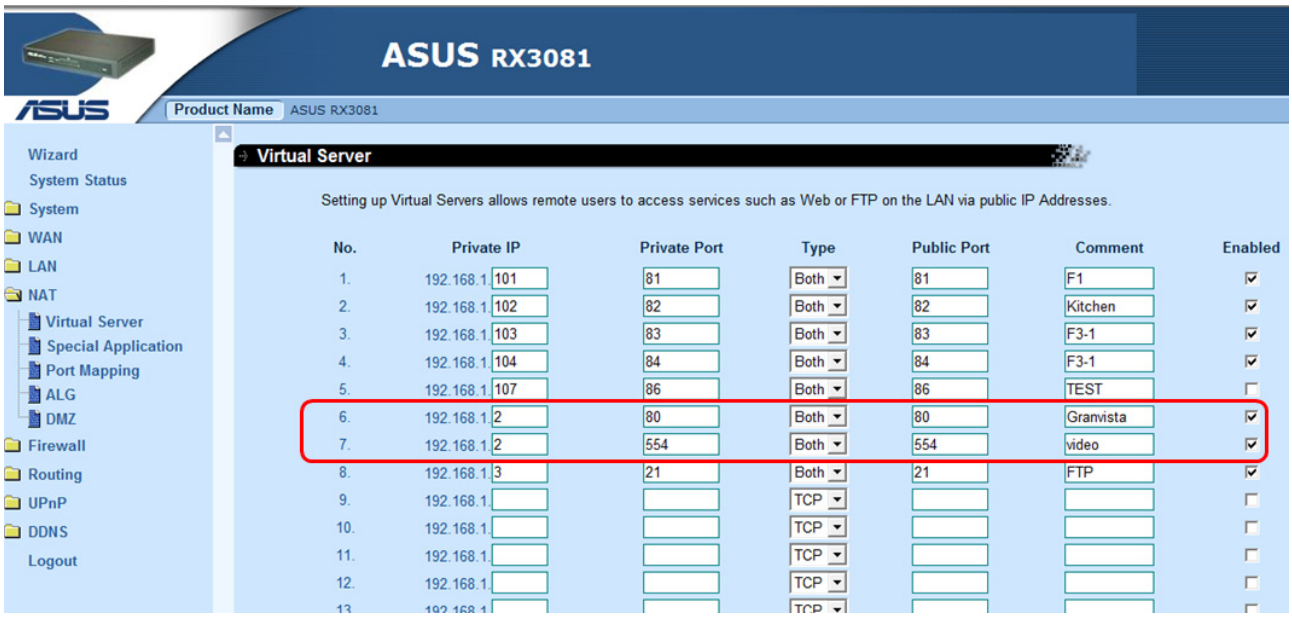
RTSP: set the RTSP (Video) port for video data transmission. The default port number of RTSP is "554", but it can be of other figures.

Bonjour: Enable Bonjour service, so that the device can be discovered with “Bonjour” service applied.

UPnP: Enable UPnP, so that the device can be discovered in an UPnP Compliant Network.

NAT Traversal: Enable NAT traversal, so that client from Internet can have access to the devices behind the Router. If user would like to access the Network Camera from Web externally, be sure to also include the RTSP port by duplicating the same IP.

In the following example this Network Camera’s LAN IP is of 192.168.1.2., thus the user should type in the full address of http://192.168.1.2:80 (as port 80 is WWW’s default port number thus “:80” can be omitted) in the address field of Internet Explorer to access this network camera. If the user wants to access it from web externally, he would have to properly setup its HTTP port (in this case “80”, or other port number), and the RTSP port (in this case “554”, or other port number)) in the NAT setting of the router beforehand, and then he may access it with the web address (in this example it is http://219.86.240.234:80 to access it from anywhere of the world via Internet) if the router has connected to Internet.



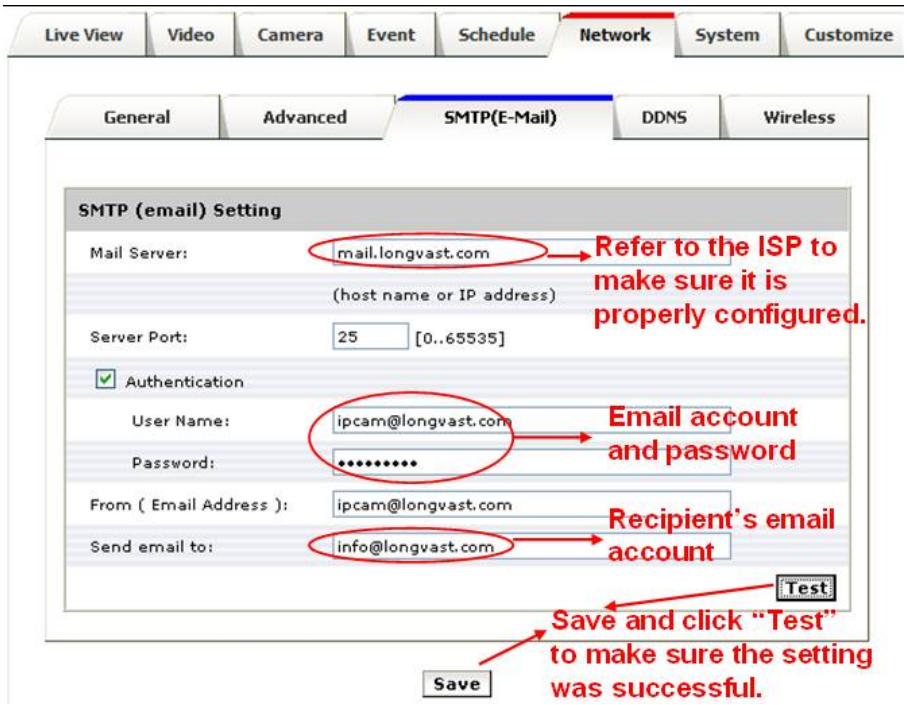
Note: with UPnP enabled, the IP Sharing device (Router) capable of UPnP function will automatically be noticed with the device’s NAT port.

SMTP (E-Mail)

Configure an email host in the device that will send email on behalf of the configured email account in a circumstance like sending an email notice to a specified mail address (Event Configuration), or to send the triggered image. The email settings will be basically same as what used in your email software.

Sender: Complete the Mail Server, Server Port, Authentication information (if required) and the sender's email address.
Receiver: The receiver email address

Following screen shows an example of setting an email account. The users may need to refer to the ISP for more details on the email configuration. In this example the ipcam@longvast.com Email account will be used to send triggered images or notifications to the info@longvast.com account.



If the setting is successful, click on "Test" button, and then an acknowledgement email with "Email Test OK" message should be received by the recipient immediately. Following is an example of such acknowledgement email after clicking "Test" button.

DDNS

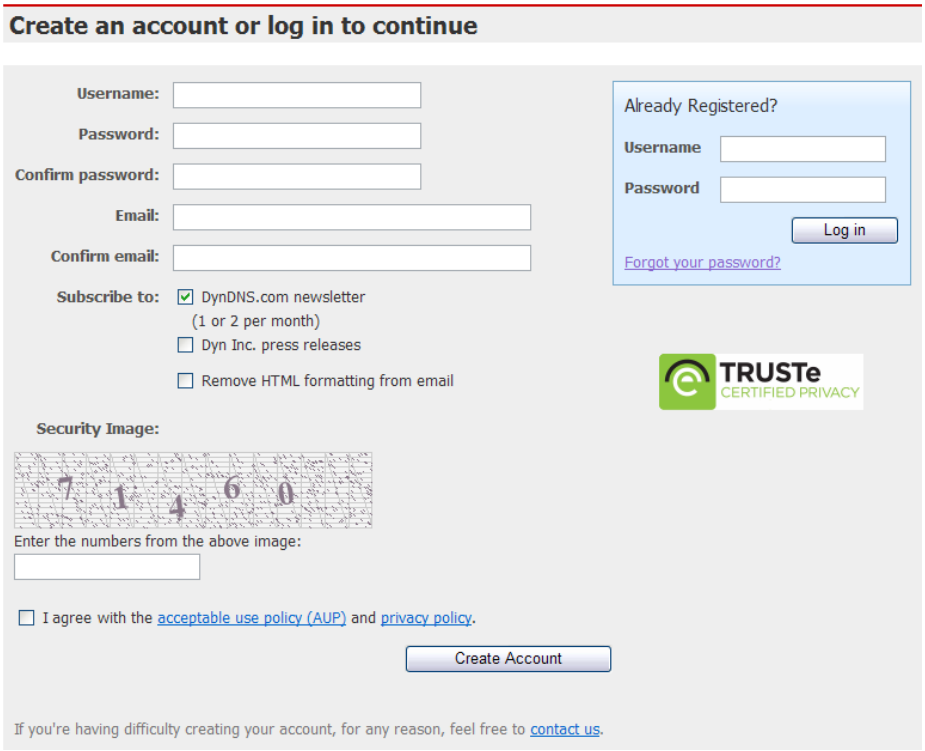
Dynamic DNS configuration; the network device can be assigned and accessed with a host name instead of IP address by registering this service (Internet access required).

Host Name: Assigned name that will be used for access to the device
User Name/Password: Account authentication for logging to this service
Update Time: Periodically, the device updates its access info to sever in the configured time.
Response: the device responds the connection info.

Following illustrative contents show the users some details about applying DynDNS service. Please note that DynDNS is not the only service available in the world market for DDNS services. Besides, DynDNS provides free services, and they also provide advanced services which are non-free.

This series network device support DynDNS (www.dyndns.org). This section describes how to apply this service to the Network Camera.

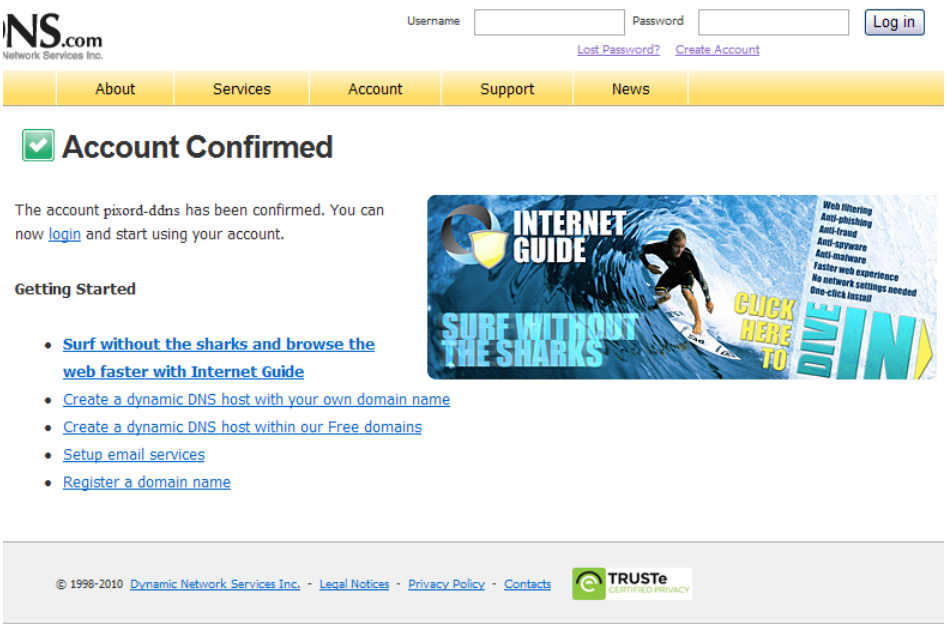
Create Account



Input user name, password and Email that will be created as an account for logging in the service. .

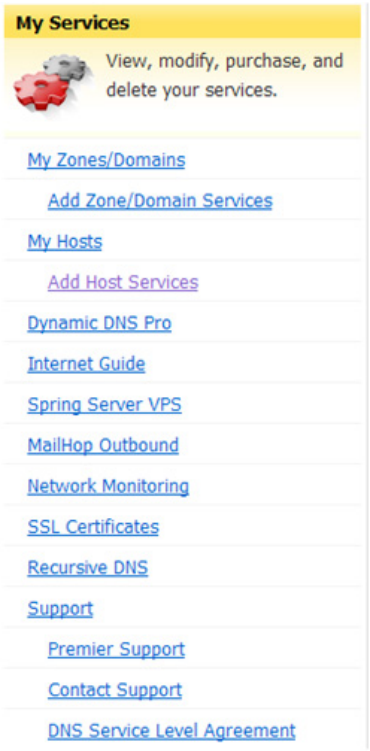
The website has accepted the new account and sent email for verification.

In the received mail from DynDNS, use the link to activate. The account will then be confirmed as the web below shows.



Login and use the service

In the login filed, input username and password as the new account created.



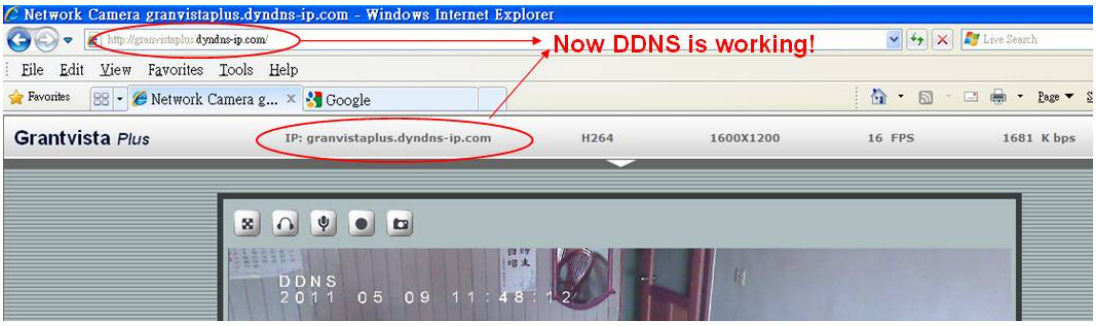
After logged in, in the "**My Services**" column, click on "Add Host Services".

Fill in a host name as it will be applied to the device. The "IP Address" field can be temporally filled with any IP as it will be updated once the device has registered to the service and reported its current IP value. Click on "Add To Cart" for next stage. The Dynamic DNS host service is free. Just click on "Next".
Checkout from the applying service and activate the added host name.

The information of activated host name will be arranged. Click on "Add New Host" if requiring more host names for other Network Cameras.

Apply Host Name to the Camera

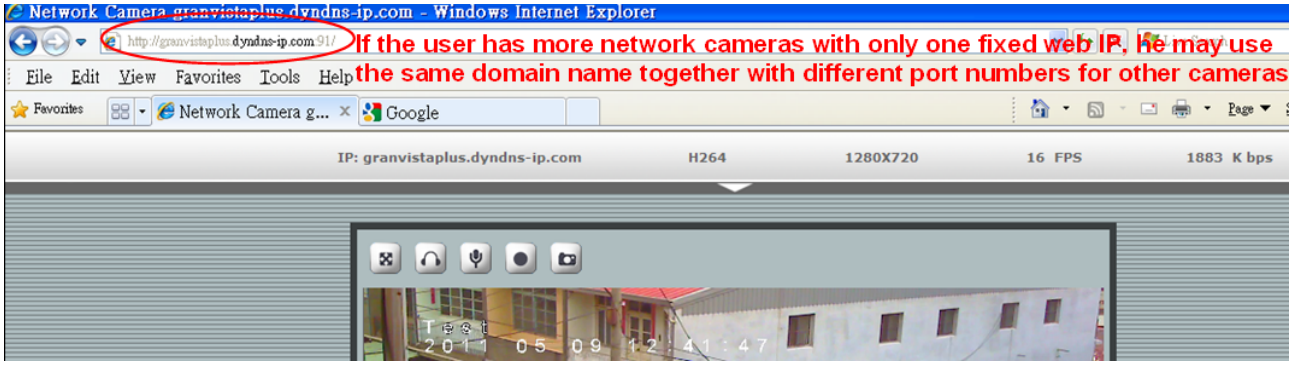
In the device configuration page, Setup -> Network -> DDNS, fill in the applied host name from DynDNS website, the username / password that are for logging in this service. Enable DDNS, and then save the settings. The "Response" will show "yes" message when registering is successful.



Launch IE and type http://granvistaplus.dyndns-ip.com/ (for instance) in the URL filed. The page should be directed to the device's live view page. Please note that the address of http://granvistaplus.dyndns-ip.com/ is equivalent to the address of http://granvistaplus.dyndns-ip.com:80/, because the default WWW port number is 80.

In this example the address of http://granvistaplus.dyndns-ip.com/ is same as http://219.86.240.234/. Please refer to the Network setting paragraph in this manual, the user must properly setup the HTTP and RTSP ports in both camera and broadband router's NAT virtual domain settings to make sure camera can be accessed by the address of http://219.86.240.234/ before the http://granvistaplus.dyndns-ip.com/ address is able to work properly.

How if the user has only one fixed web IP, for instance 219.86.240.234, while he has many network cameras to implement? Just like the user may setup the camera address of http://219.86.240.234:91/, http://219.86.240.234:92/, etc, the address of similar setting of http://granvistaplus.dyndns-ip.com:91/ or http://granvistaplus.dyndns-ip.com:92/ can be configured for other network cameras too. Following figure is an example of such DDNS application by using port number.

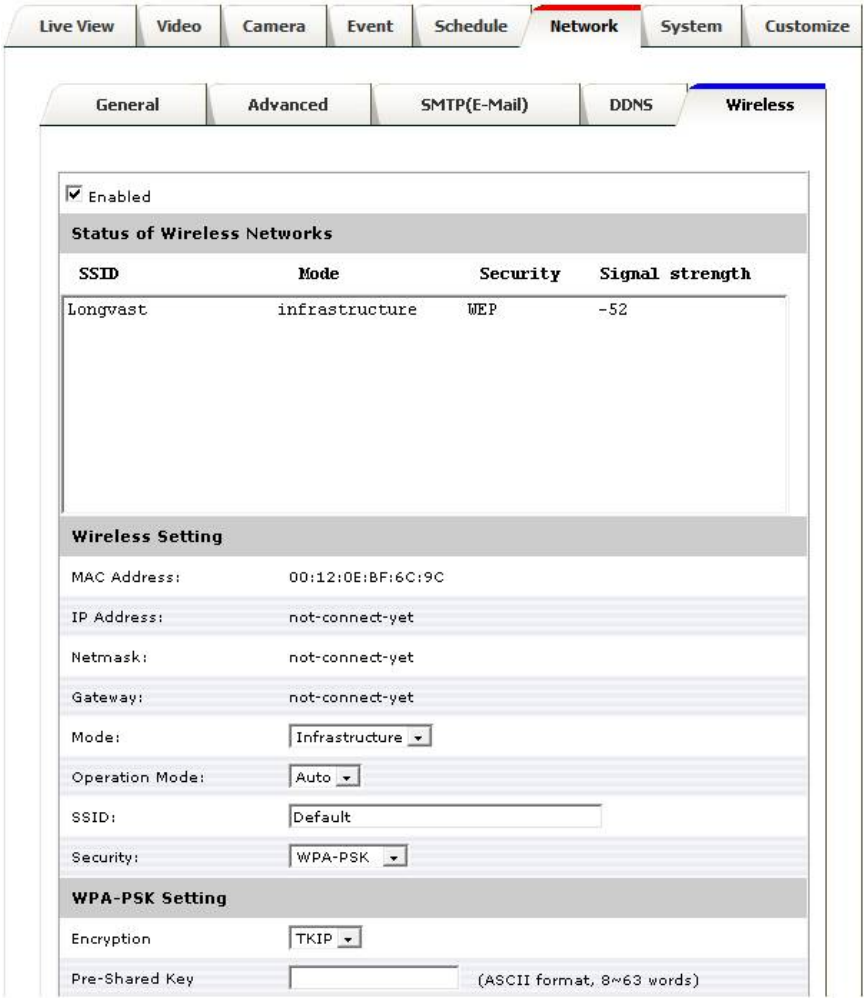


Wireless (GVP-201W)

Wireless network searching and device configuration page

Wireless – List of available wireless networks (Access Points); information includes SSID, Mode, Security and Signal Strength.

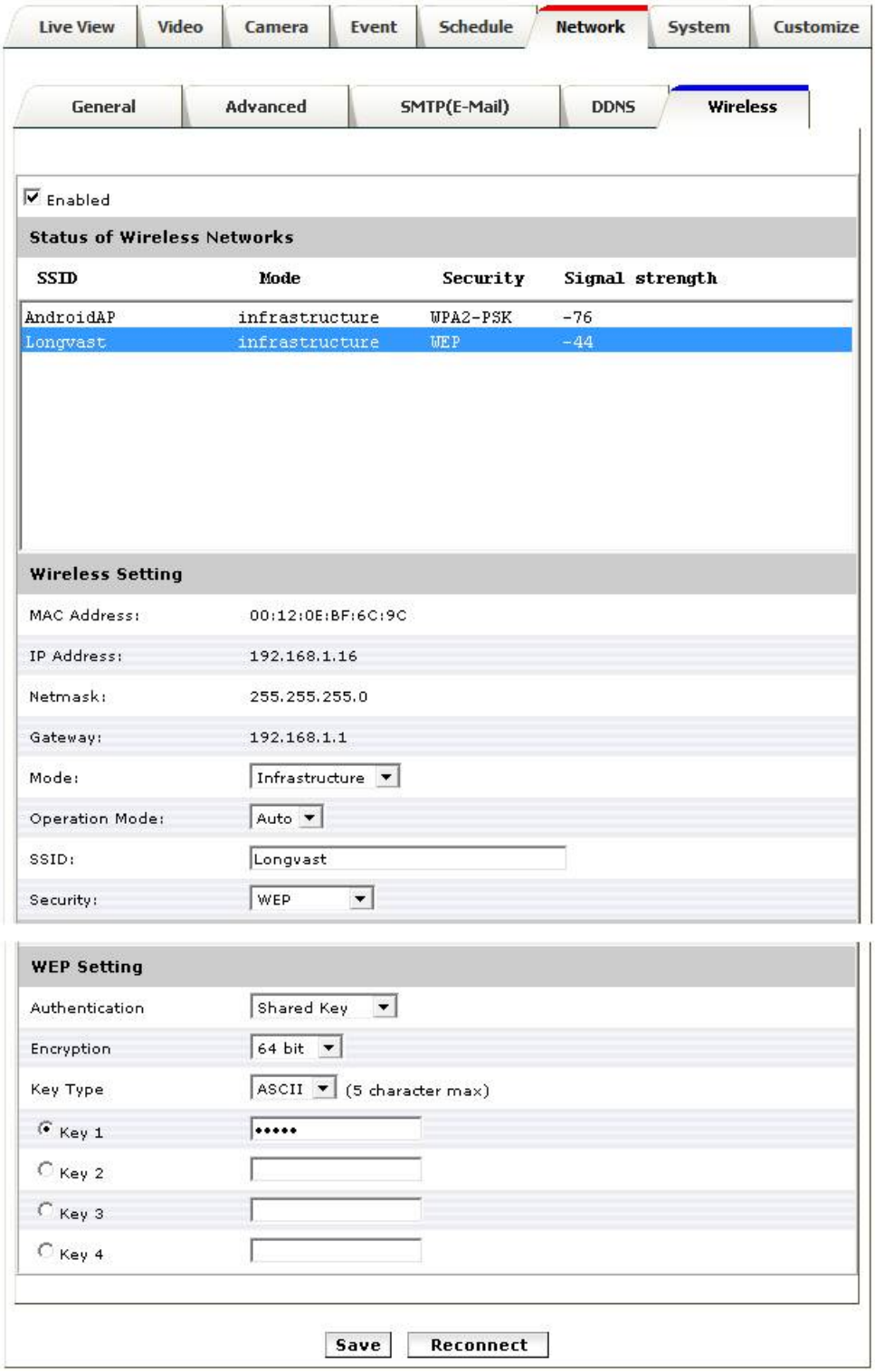
Wireless Setting: configurations for the camera device for its availability to connect to a wireless network. Clients available in the same network or able to connect to this network can then have an access to the camera device with wireless connection.



Properly configure the wireless settings according to actual wireless network, click on Save, and the addressed IP will be shown as below. In this example the “192.168.1.6” IP address was decided by DHCP, while in most of the cases it will be convenient for the user to do necessary setup from the router, so that DHCP will give a fixed IP to this specific MAC address, i.e. in this example the MAC address of 00:12:0E:BF:6C:9C.

After the wireless networking has started to work (the wireless IP has been shown in this screen), the user may access the camera via both the wired or wireless IP addresses. The camera may do without the Ethernet cable right after the wireless network has started to work.

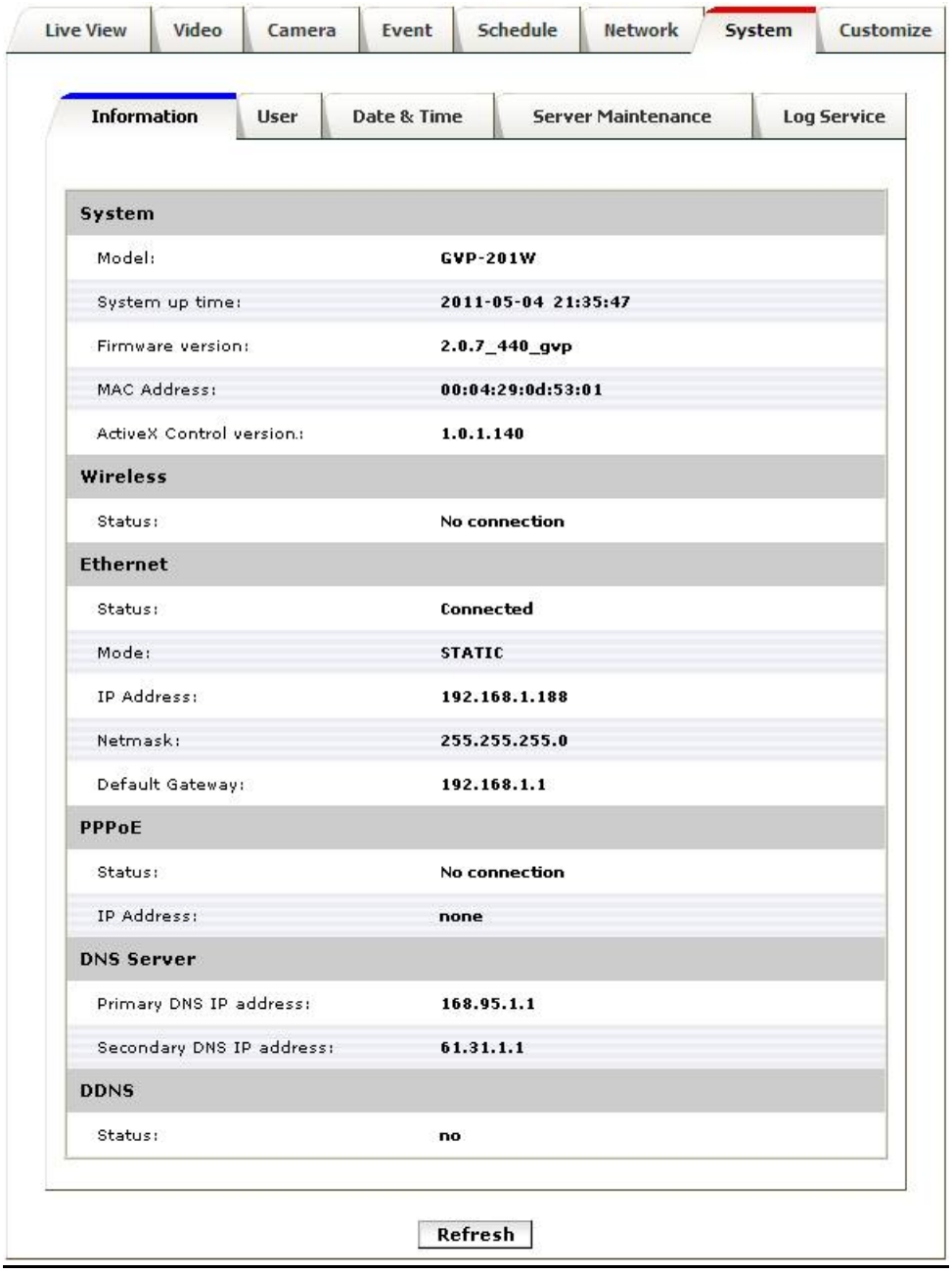
Just like the wired network, the user will need to do some appropriate NAT Virtual Server configurations in the broadband router if he wants to access the camera from web externally.


Live View
Video
Camera
Event
Schedule
Network
System
Customize
General
Advanced
SMTP(E-Mail)
DDNS
Wireless
Enabled
Status of Wireless Networks
SSID
Mode
Security
Signal strength
AndroidAP
infrastructure
WPA2-PSK
-76
Longvast
infrastructure
WEP
-44
Wireless Setting
MAC Address:
00:12:0E:BF:6C:9C
IP Address:
192.168.1.16
Netmask:
255.255.255.0
Gateway:
192.168.1.1
Mode:
Infrastructure
Operation Mode:
Auto
SSID:
Longvast
Security:
WEP
WEP Setting
Authentication
Shared Key
Encryption
64 bit
Key Type
ASCII
(5 character max)
Key 1
Key 2
Key 3
Key 4
Save
Reconnect

7. System

Information

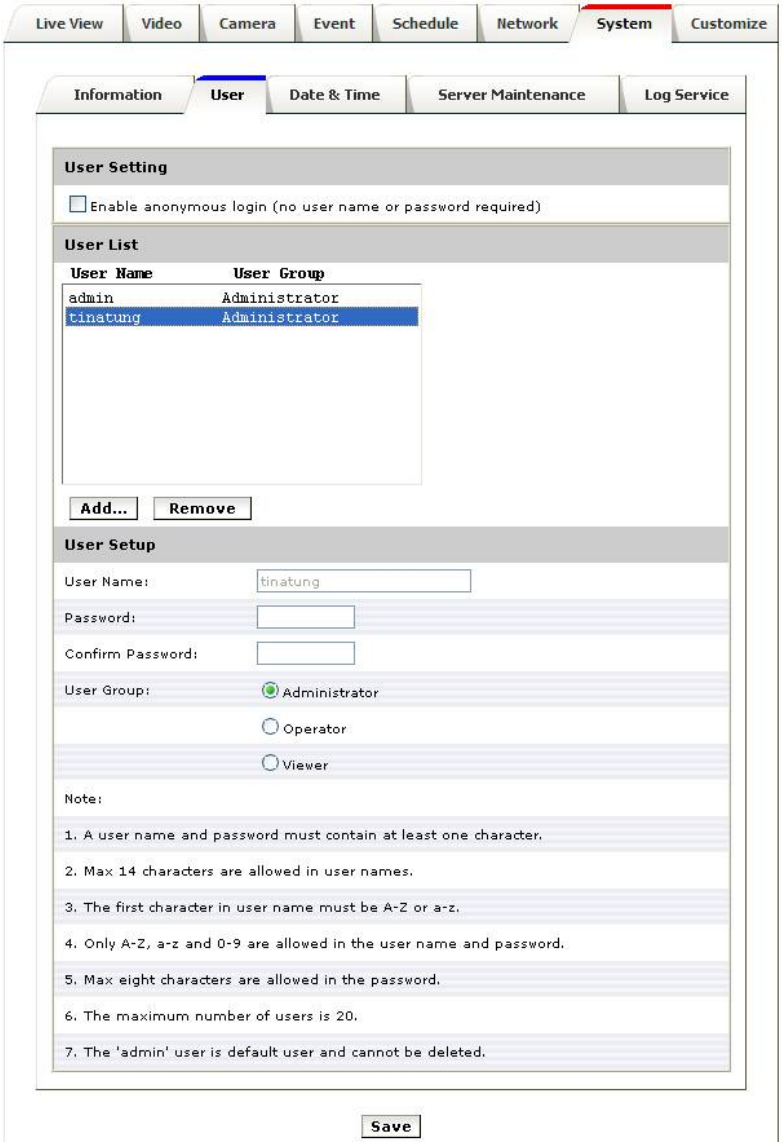
Lists of System and Network configurations



User

Login users for Web access and operations; authentication required. The Check box is for anonymous logging to the live view page.

Please be sure not to select the anonymous login unless convenience is more important than privacy. Logging for further configurations will still require user name and password even if anonymous login has been selected.



The authorities of different levels of users are as follows:

Administrator:

Allowed to do any adjustments in camera, is the default user that this account can't be deleted.

Operator:

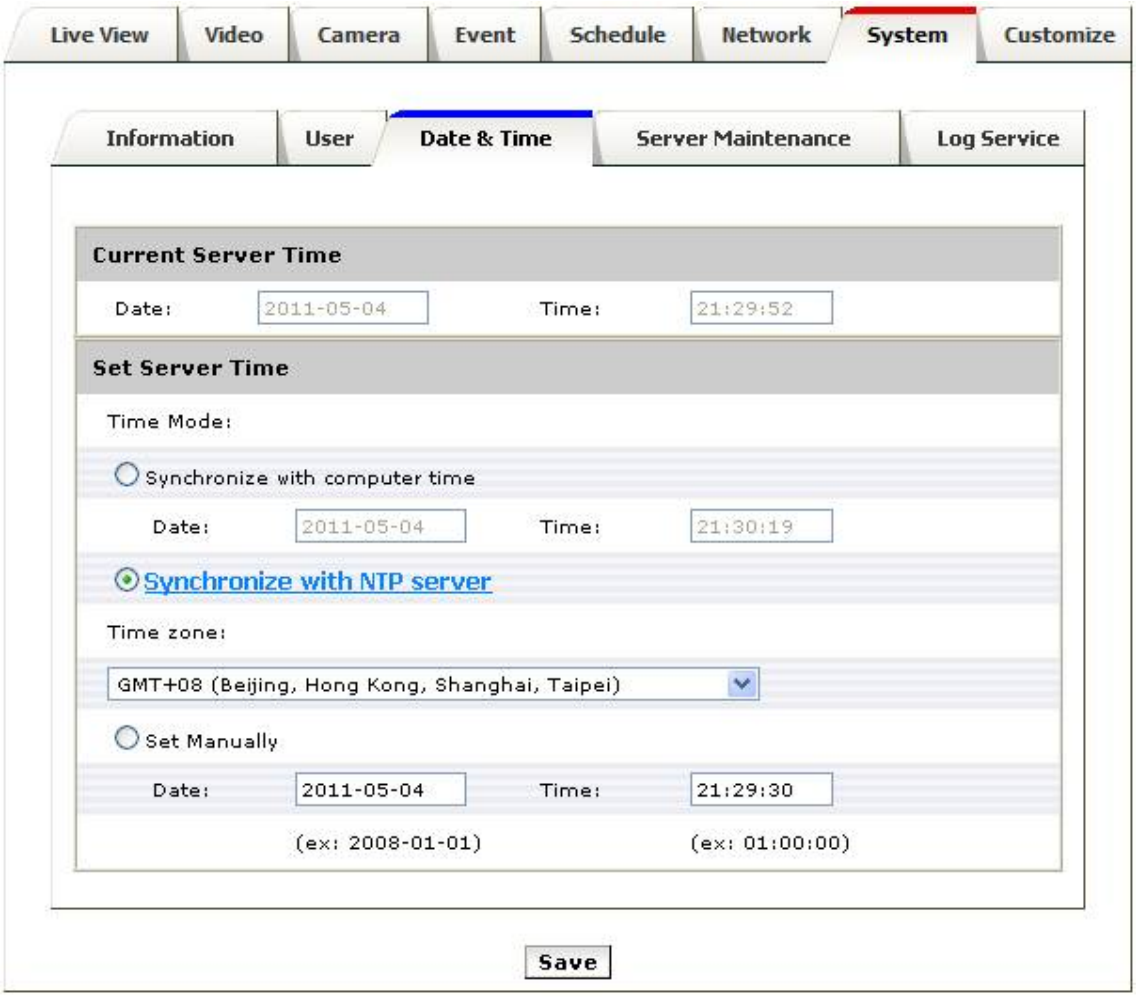
Allowed to view the live video and change Video & Camera settings in Setup Menu only. (Live View, Video & Camera settings in setup menu)

Viewer:

Only permit to watch the live video, can't get into the Setup Menu. (Live View only in setup menu)

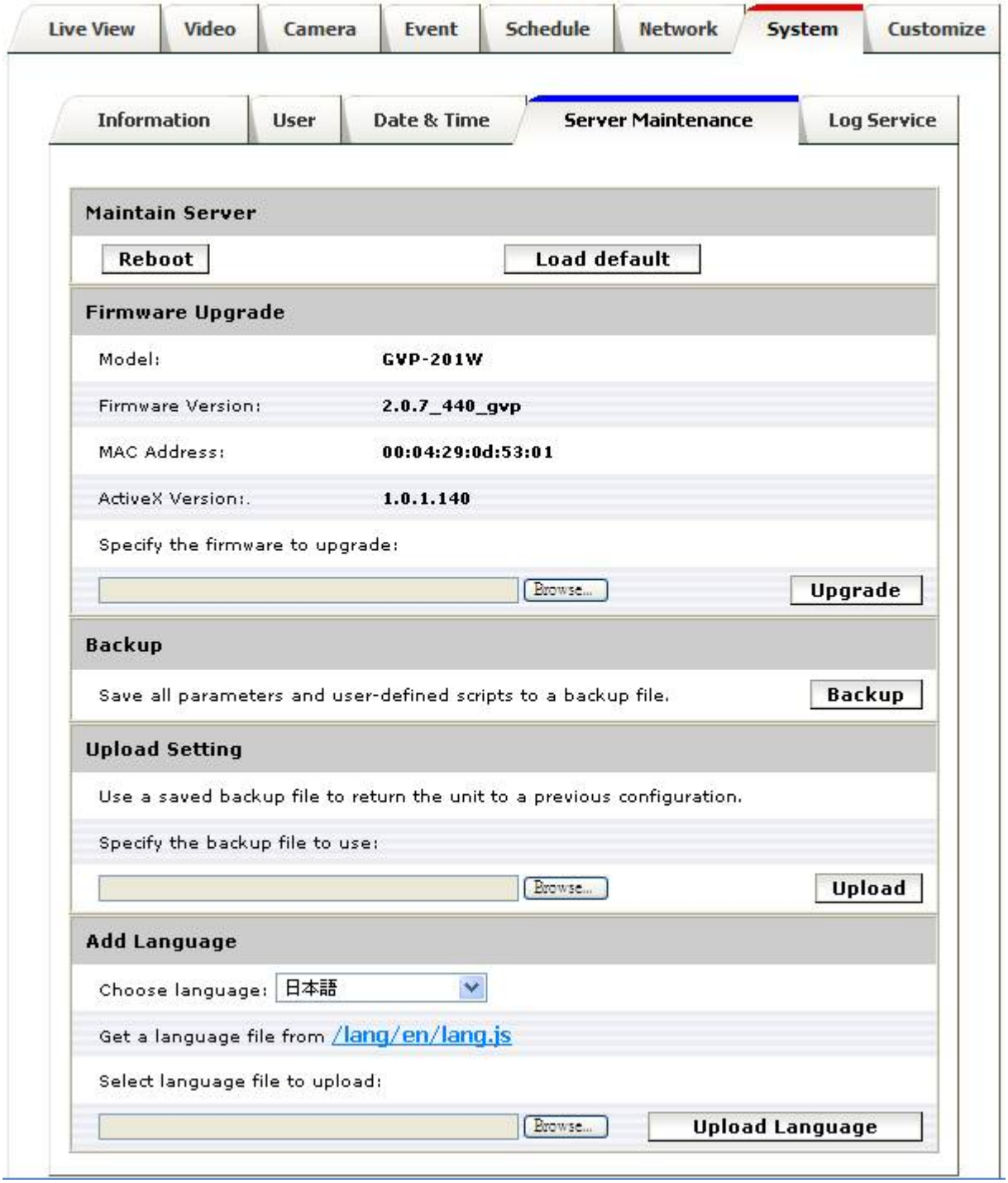
Date & Time

System date/time configuration. Options of synchronizing with PC and NTP server are provided for automatic adjustment in addition to manual setup.



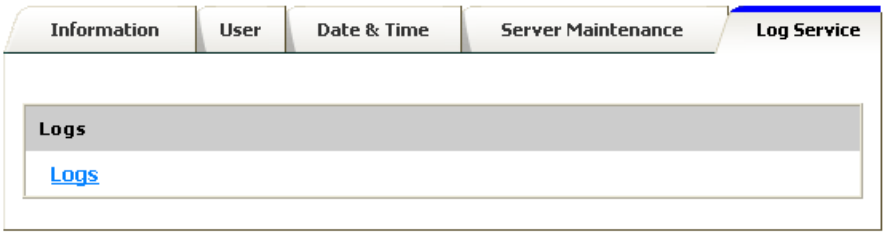
Server Maintenance

This page provides tool for system maintenance; Reboot and Load default settings, as well as functionalities of launching upgrade process, backup/restore user settings and language defines.


Live View
Video
Camera
Event
Schedule
Network
System
Customize
Information
User
Date & Time
Server Maintenance
Log Service
Maintain Server
Reboot
Load default
Firmware Upgrade
Model:
GVP-201W
Firmware Version:
2.0.7_440_gvp
MAC Address:
00:04:29:0d:53:01
ActiveX Version:.
1.0.1.140
Specify the firmware to upgrade:
Browse...
Upgrade
Backup
Save all parameters and user-defined scripts to a backup file.
Backup
Upload Setting
Use a saved backup file to return the unit to a previous configuration.
Specify the backup file to use:
Browse...
Upload
Add Language
Choose language:
日本語
Get a language file from /lang/en/lang.js
Select language file to upload:
Browse...
Upload Language

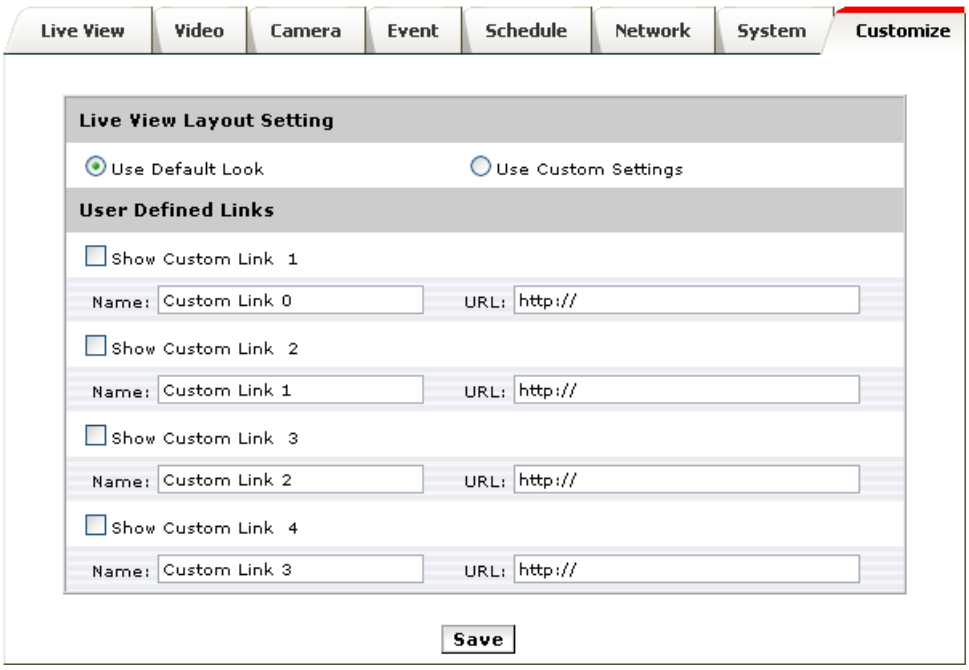
Log Service

Most system operations and / or process will be kept in a log system. The link provides the review of these records.



8. Customize

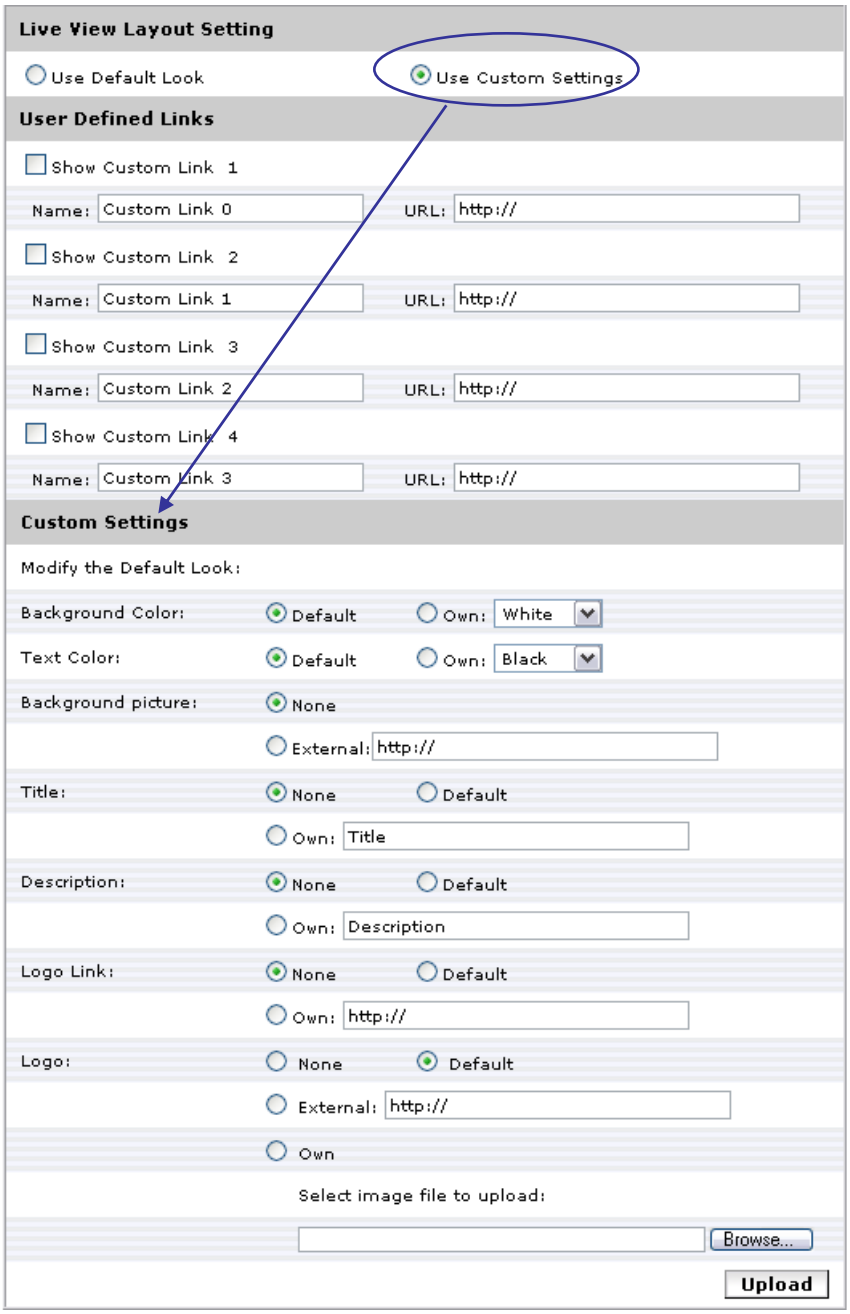
This page provides the function of adjusting the look of live view page. There are two types of layout settings; use default look or use custom settings.



Use Default Look: the default layout of live/configuration pages

Use Defined Links: Web link(s) will be presented on the live page when enabled. It can be a link to another Network Camera for instance, or other preferred web link.

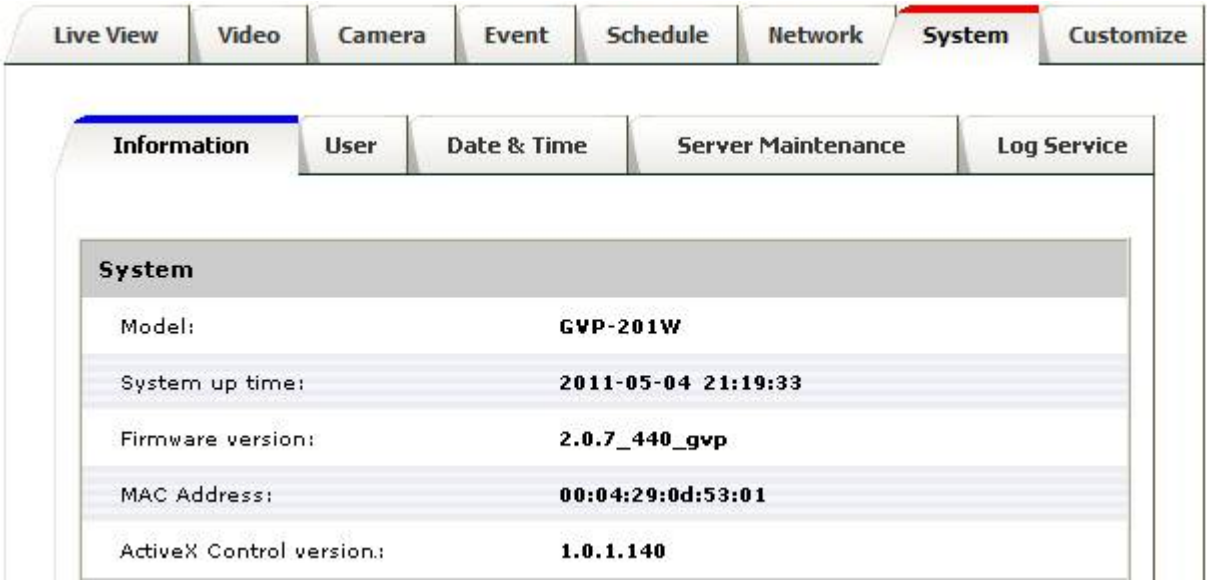
Use Custom Settings: The modifications allowed are changes of Background / Text Color, Background picture, Title, Description, Logo and etc.



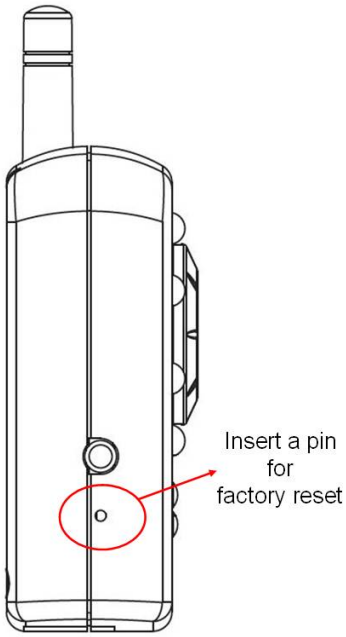
9. FAQ

Check firmware version

The version code can be found in Setup -> System -> Information, or simply type “version.html” after the URL address, e.g. http://192.168.1.188/version.html. Firmware version indicates the functionalities’ updates or availability in the camera system. Therefore, in the first step of troubleshooting and then reporting, it helps to locate the found issues. Newer version firmware may have corrected the current bugs.



Restore to Factory Default



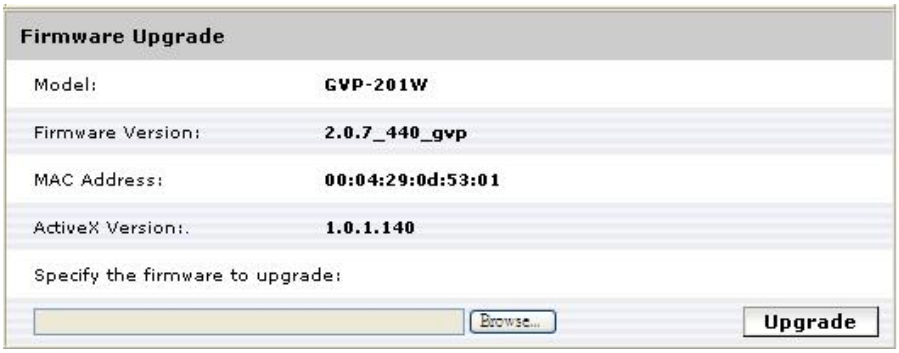
To restore factory default, please follow the steps:

1. Unplug the power jack to turn off the power of the camera.
2. Insert a pin into the reset hole as circled with red in the below figures. Sense a button and keep it pressed.
3. Plug in the power jack to turn on the device, in about few seconds the status LED will be quick flashing
4. Release the button (remove the pin from the reset hole). The camera should now be back to factory default.

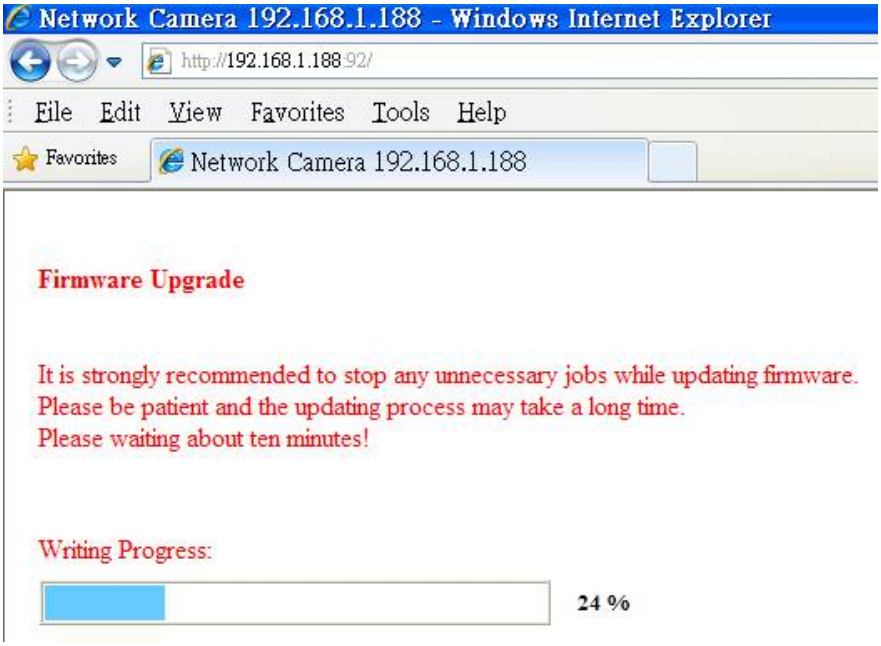
Upgrade device firmware

Firmware upgrade process should be done via the web configuration; **Setup -> Server Maintenance -> Firmware Upgrade**. Before the process, read the instructions and release notes coming with each new released version. For the steps,

1. Check and retrieve the latest firmware bin file.
2. Disconnect all other clients (e.g. streaming requests) to the device.
3. Stop the local (schedule) recording if it was enabled.
4. Go to the Firmware Upgrade page, browse and locate the downloaded firmware bin file, then click on “Upgrade” button.



5. The upgrade should finish in minutes, depending on file transferring status. The web will then be directed to the system writing progress. Overall upgrading process takes about 5~10 minutes. In this period, **DO NOT DISCONECT the power and Ethernet connection** while the upgrade is in progress, otherwise software of the unit can be damaged.



6. The power LED (orange one) will be quick/slow flashing during the upgrading process. When it becomes again steady on, camera is ready to be accessed. Check the firmware version. If somehow system is not upgraded, redo above steps. In this case, restore factory default process may be required.

Video Streams Specification

The availabilities

1. Each stream can be switched to either H.264 or MJPEG mode.
2. Each steam can be configured to either CBR or VBR mode.
3. Stream1 (main stream) is available from all the resolutions listed.
4. The maximum resolution setting for Stream2 is 640x480.
5. Stream3 is fixed in 320x240.
6. The maximum frame rate for transferring 1600x1200 is 15fps. Others can reach up to 30fps.

	STREAM1	STREAM2	STREAM3
Encoding Mode			
H.264 / MJPEG	V	V	V
Transferring Mode			
CBR / VBR	V	V	V
Resolution @ Max. FPS			
1600x1200@15	V		
1280x720@30	V		
800x600@30	V		
640x480@30	V	V	
320x240@30	V	V	V

Dependency

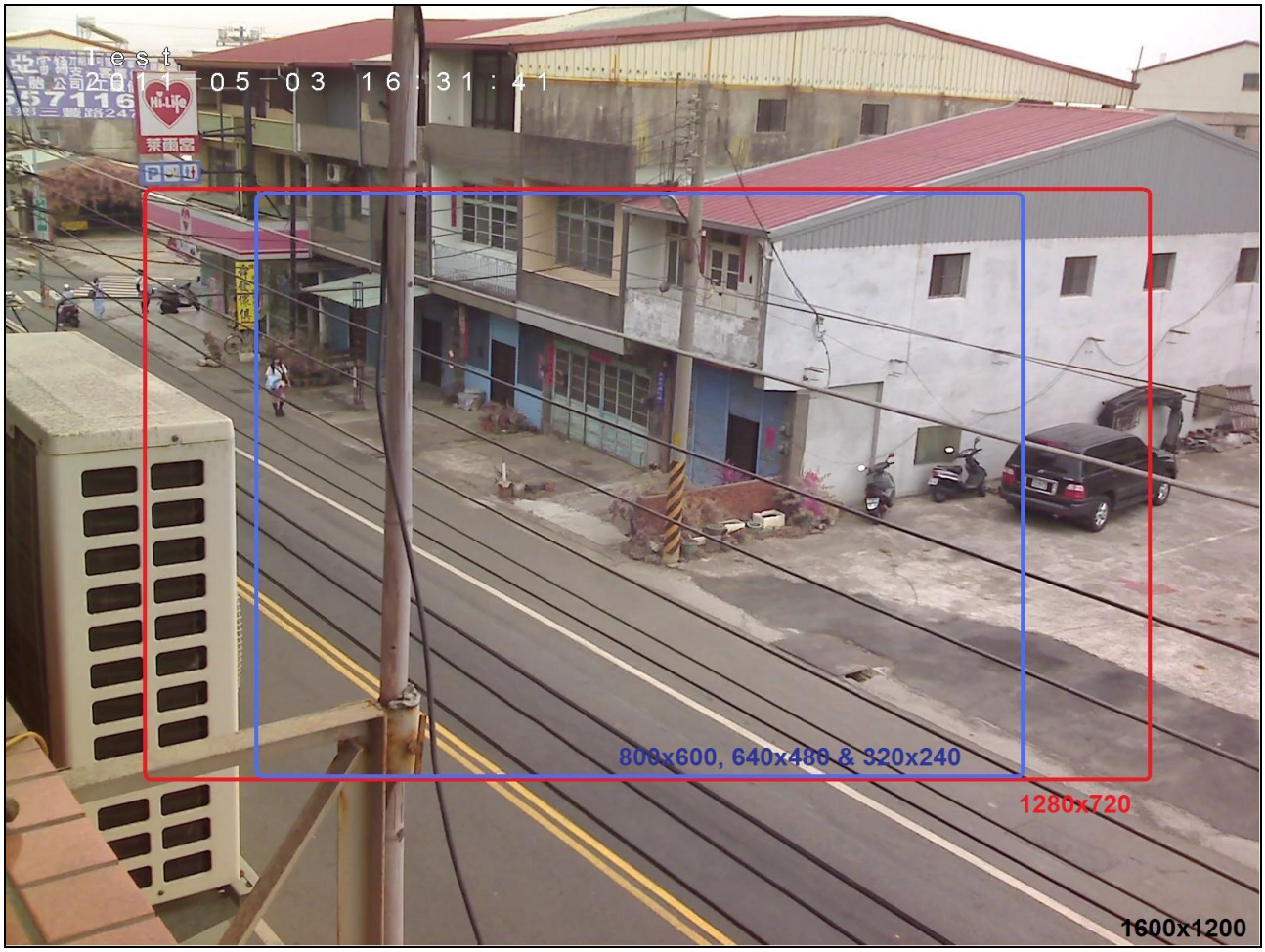
1. **Max. FPS dependency:** when ***Stream1*** is set to ***1600x1200***, the maximum frame rate is ***15fps***. Accordingly, both ***Stream2*** and ***Steram3*** can be configured with the frame rate from 5 to 15 fps.
2. **Resolution dependency:** The maximum resolution of ***Stream2*** is depending on the resolution setting of ***Stream1***. When Stream1 is set to 320x240, Stream 2 is limited in 320x240.
3. **Frame rate independent:** Frame rate setting for each stream can be independent, for instance, ***Stream2*** can be set ***15fps*** and ***Stream3*** is ***30fps*** while ***Stream1*** (1280x720 or below) is set to ***5fps***.

<table>
<tr><th rowspan="2">STREAM1</th><th colspan="2">STREAM2</th><th>STREAM3</th></tr>
<tr><th>640x480</th><th>320x240</th><th>320x240 (fixed)</th></tr>
<tr><td>1600x1200, 5~15 fps</td><td colspan="2">5~15 fps</td><td>5~15 fps</td></tr>
<tr><td>1280x720, 5~30 fps</td><td colspan="2" rowspan="3">5~30 fps</td><td rowspan="4">5~30 fps</td></tr>
<tr><td>800x600, 5~30 fps</td></tr>
<tr><td>640x480, 5~30 fps</td></tr>
<tr><td>320x240, 5~30 fps</td><td></td><td>5~30 fps</td></tr>
</table>

Note the resolution setting must follow the sequence: Stream1 ≧ Stream2 ≧ Stream3.

The Angle of View at different resolutions

The setting of Stream determines the angle of view, therefore the range of image view. The picture below presents the **3 ranges of view,** 1600x1200, 1280x720 & 800x600/640x460/320x240.



Actual Views with different resolutions

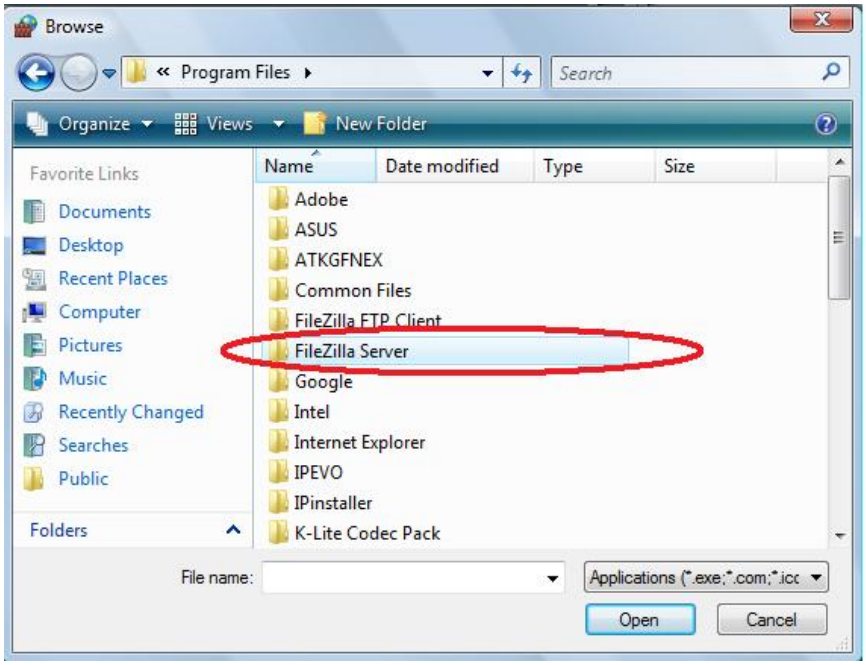
Appendix I: An example of how to set up users' own FTP servers

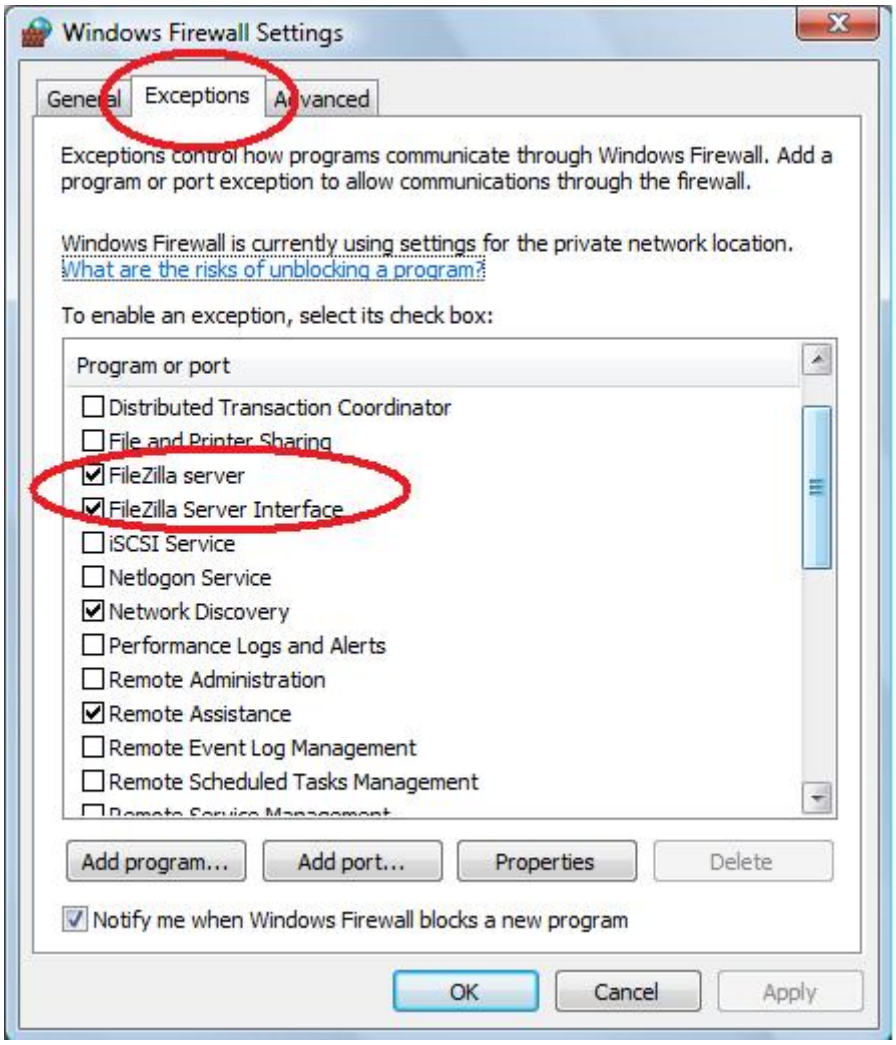
FTP is quite a convenient application. The users may easily set up their own FTP servers. Following is an example of using a shareware named FileZilla. Please note that this FileZilla software's copyright belongs to Tim Kosse, http://filezilla-project.org/ , Longvast International Co., Ltd. has no business relationship with them that users should obey the related copyright laws about using this software.

1, Download the FTP server program from http://filezilla-project.org/download.php?type=server. If the users also like to download the FTP client software, they may refer to http://filezilla-project.org/ for more information.

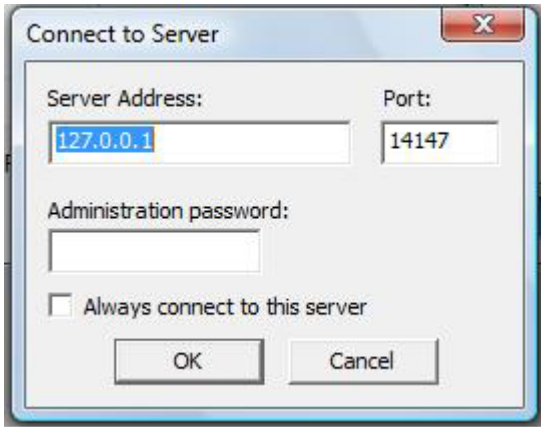
2. Install the FTP server program, and start the program.

3. The Firewall of Windows or anti-virus software will usually try to stop such FTP server application. Please make these two programs exceptions to the firewalls accordingly.

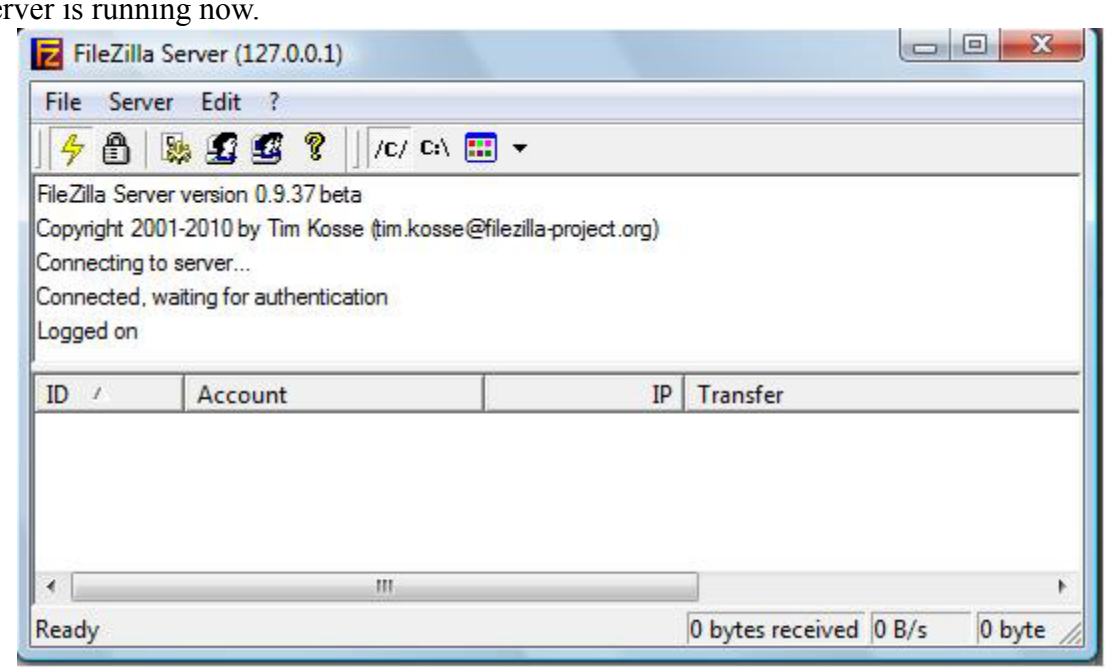




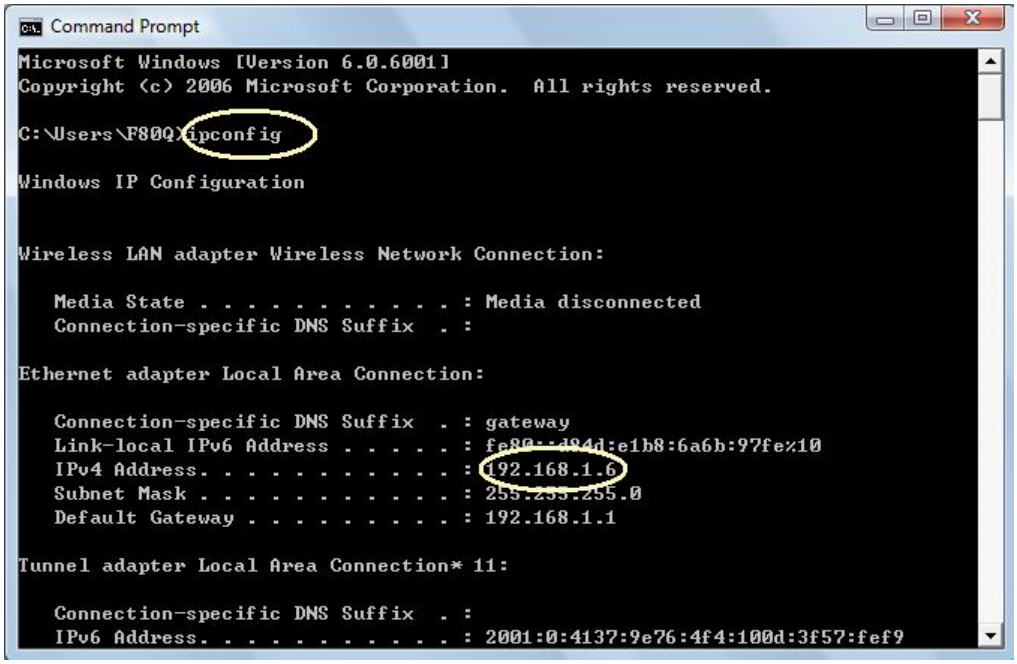
4. Start the FTP server by clicking on the OK button. Do not change any of the original settings.



5. The users should see following screen after clicking OK button. It indicates that this FTP server is running now.

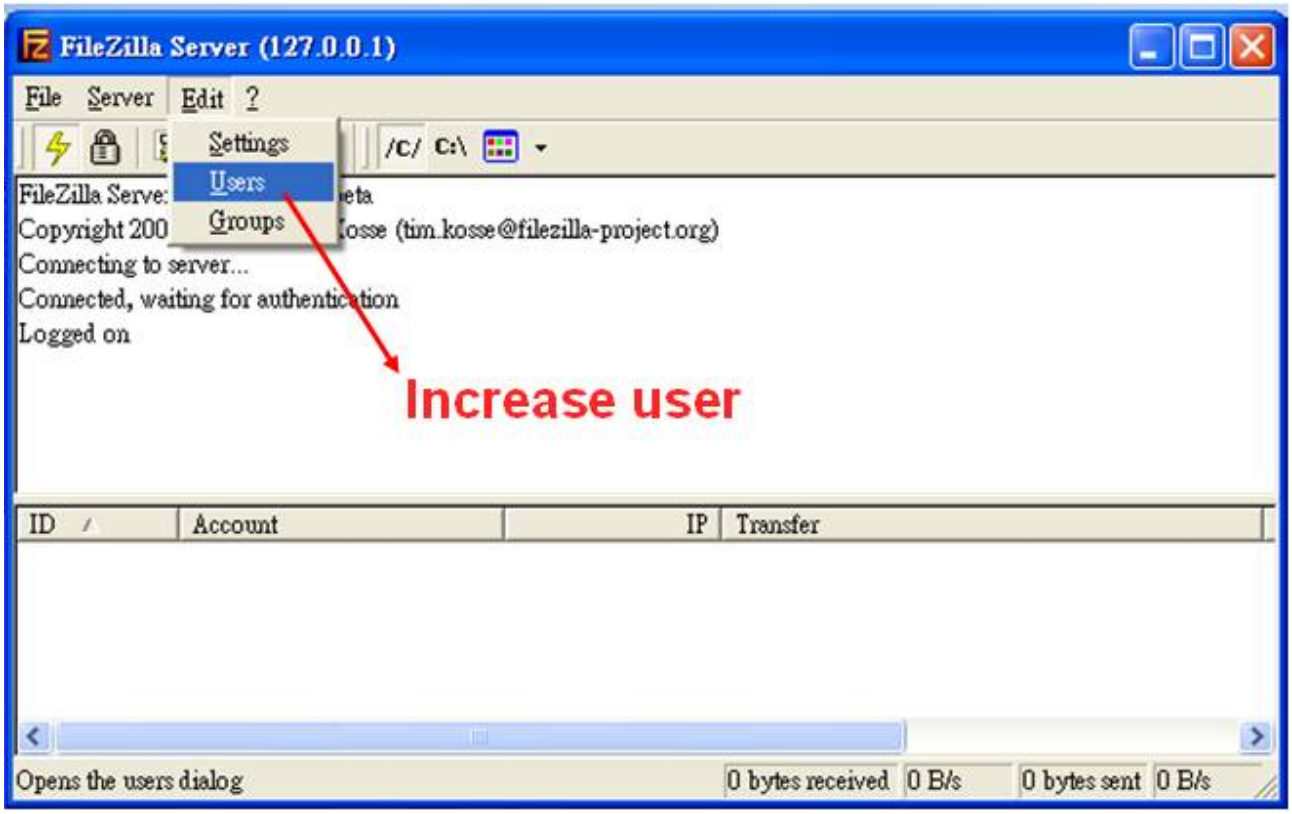


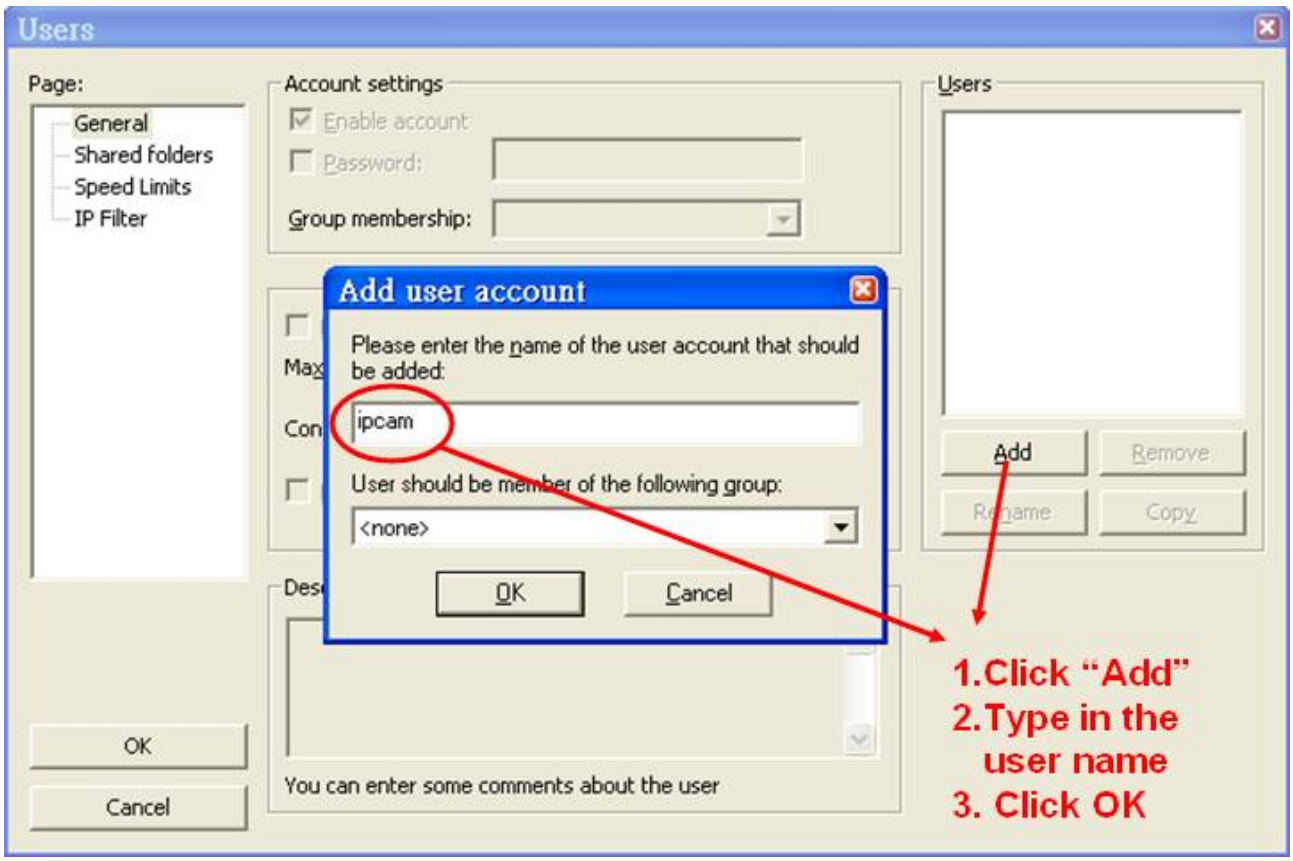
6. Type in “ipconfig” command from the Windows’s command screen.

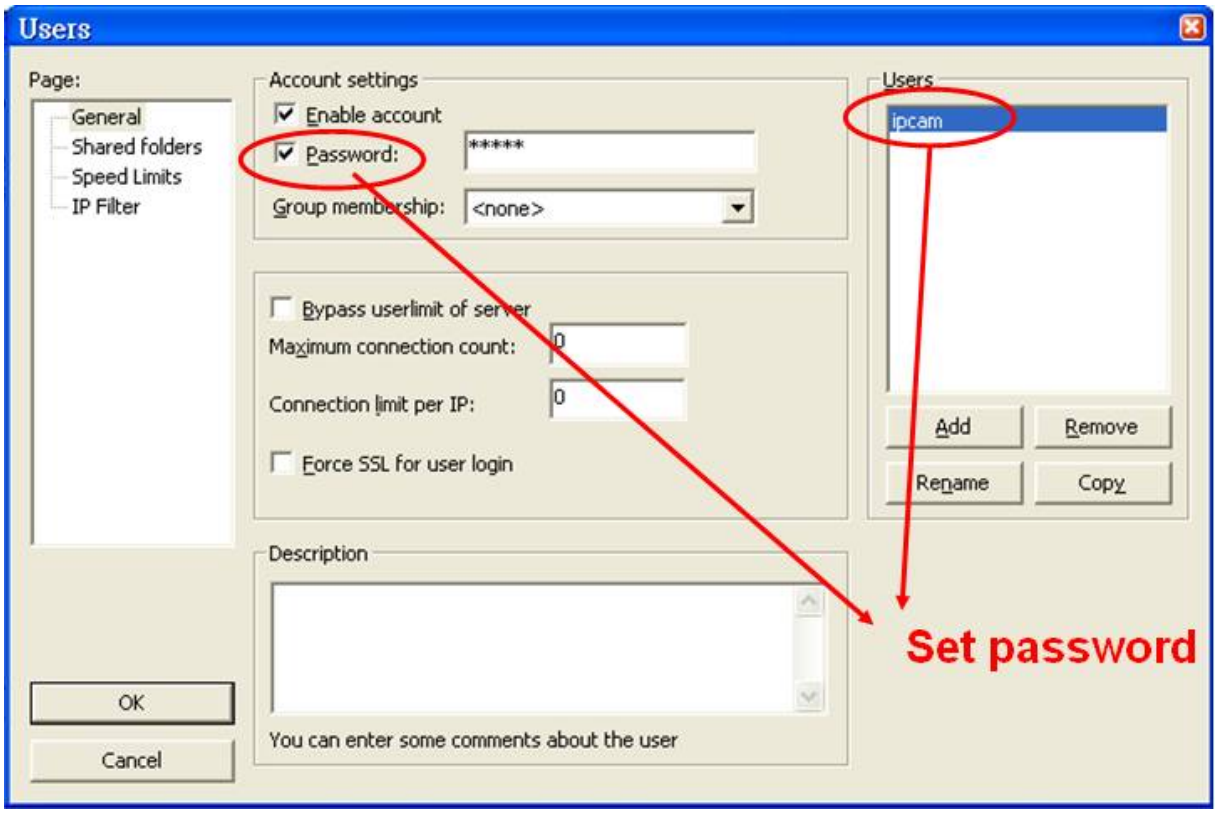


In this command screen, the IP address indicates that the address of PC when FTP server running is of “192.168.1.6”.

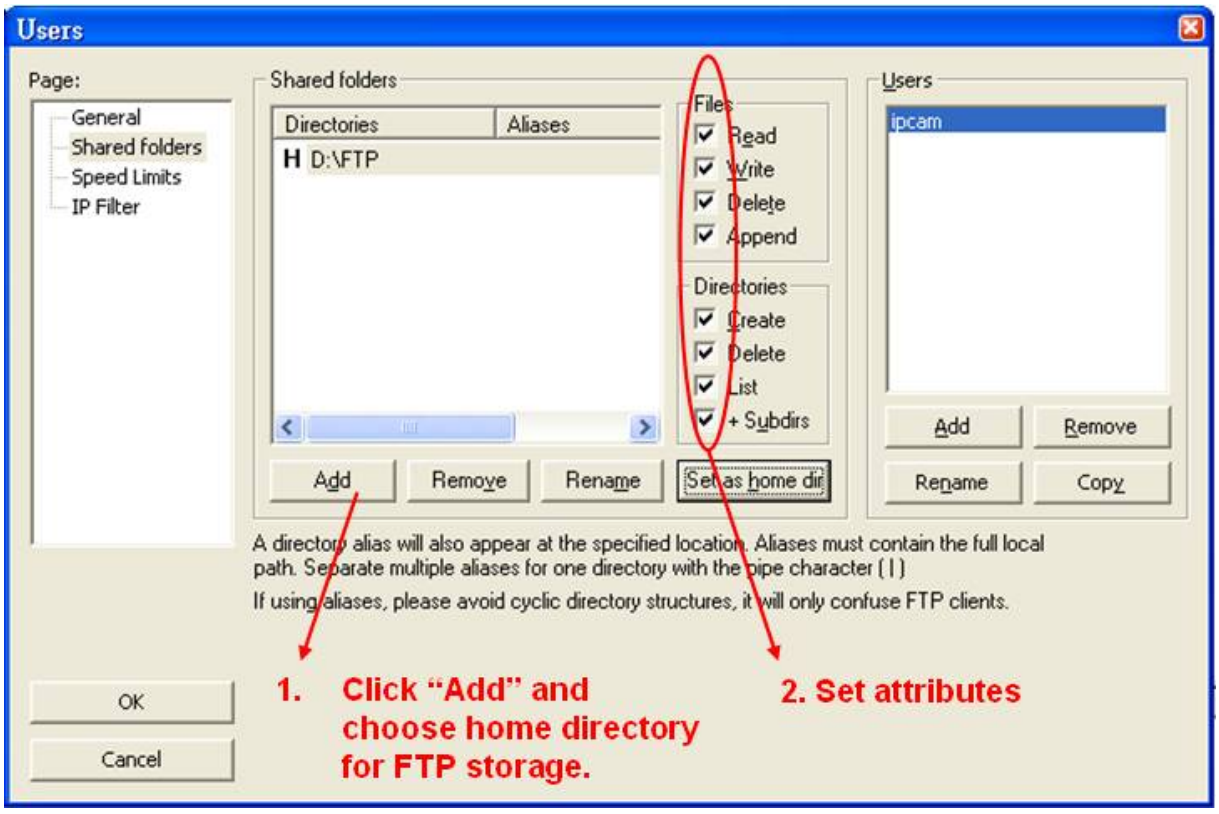
7. Configure the user names and passwords of the users who are allowed to login into this server.



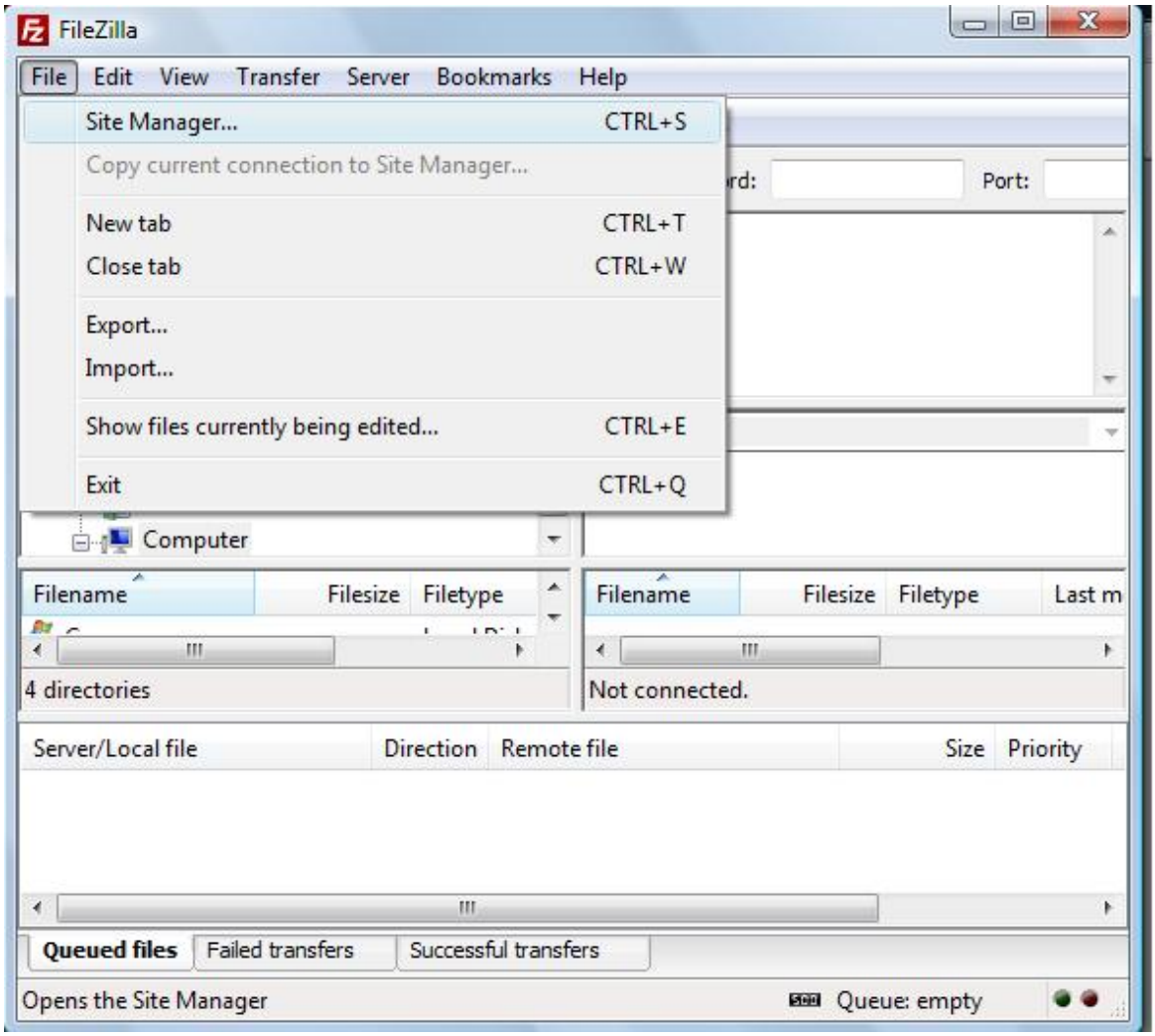


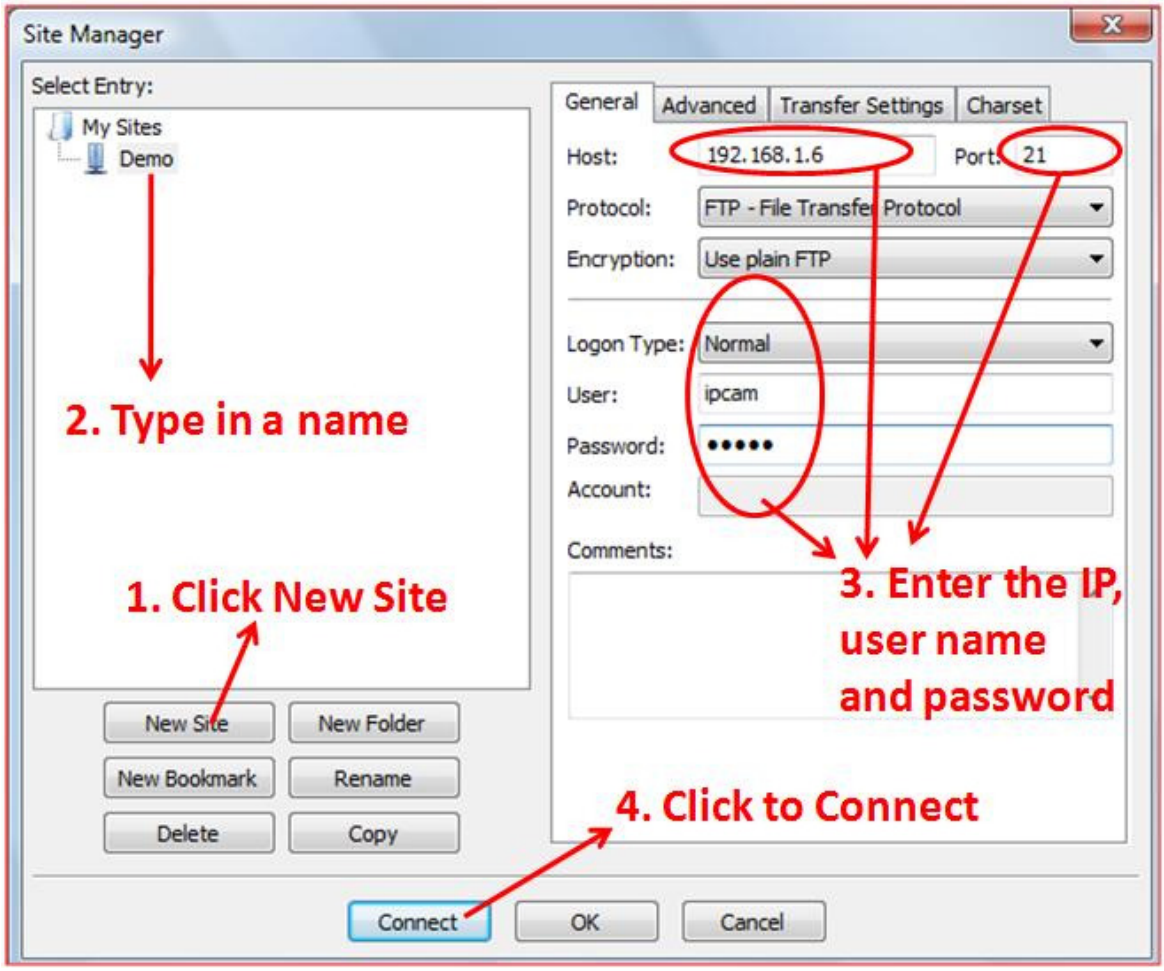


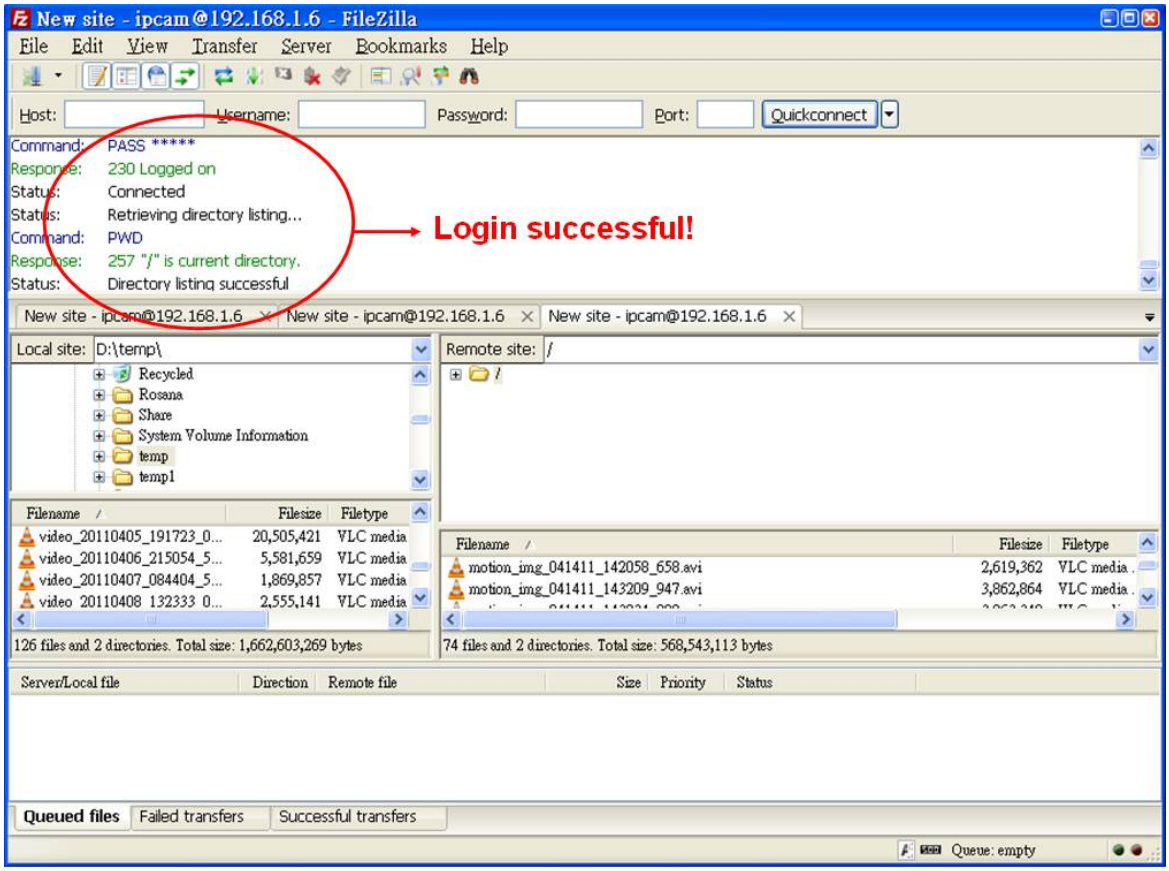
8. Set the default directory of each individual user.



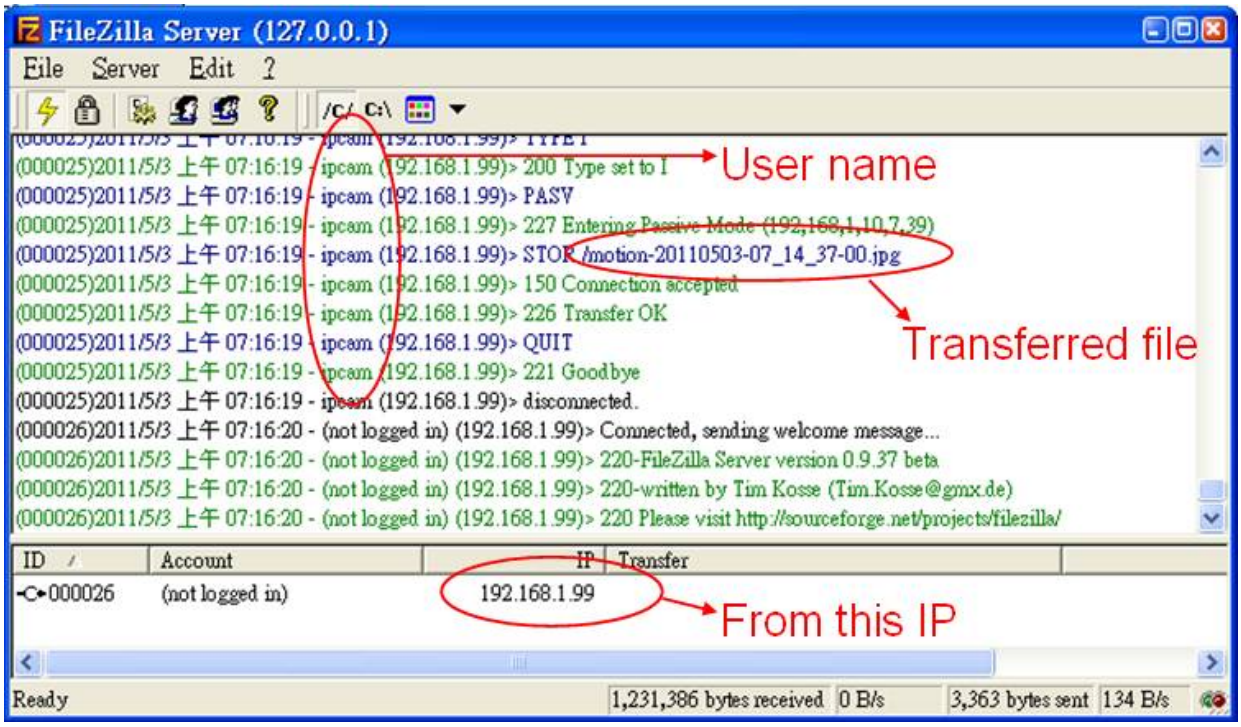
9. Now the FTP server should be ready to go. The users may double-check to see if everything is alright by trying to login by using any FTP client programs with the user IDs and passwords pre-configured. In the following example we use similar Filezilla FTP Client software with the user ID of “ipcam” to login.



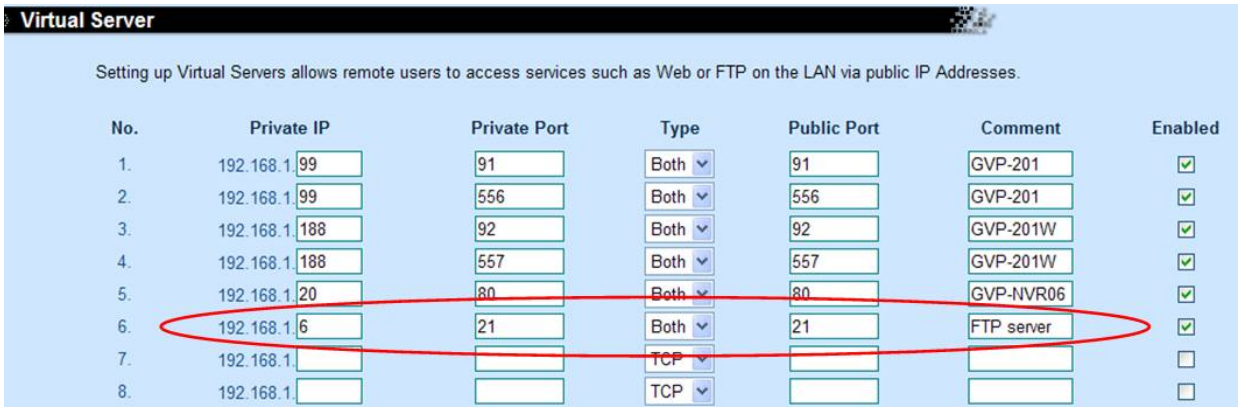

Site Manager
Select Entry:
My Sites
Demo
2. Type in a name
1. Click New Site
New Site
New Folder
New Bookmark
Rename
Delete
Copy
General
Advanced
Transfer Settings
Charset
Host:
192.168.1.6
Port:
21
Protocol:
FTP - File Transfer Protocol
Encryption:
Use plain FTP
Logon Type:
Normal
User:
ipcam
Password:
Account:
Comments:
3. Enter the IP, user name and password
4. Click to Connect
Connect
OK
Cancel


New site - ipcam@192.168.1.6 - FileZilla
File Edit View Transfer Server Bookmarks Help
Host:
Username:
Password:
Port:
Quickconnect
Command: PASS *****
Response: 230 Logged on
Status: Connected
Status: Retrieving directory listing...
Command: PWD
Response: 257 "/" is current directory.
Status: Directory listing successful
Login successful!
Local site: D:\temp\
Remote site: /
Recycled
Rosana
Share
System Volume Information
temp
temp1
Filename
Filesize
Filetype
video_20110405_191723_0... 20,505,421 VLC media
video_20110406_215054_5... 5,581,659 VLC media
video_20110407_084404_5... 1,869,857 VLC media
video_20110408_132333_0... 2,555,141 VLC media
126 files and 2 directories. Total size: 1,662,603,269 bytes
motion_img_041411_142058_658.avi 2,619,362 VLC media
motion_img_041411_143209_947.avi 3,862,864 VLC media
74 files and 2 directories. Total size: 568,543,113 bytes
Server/Local file
Direction
Remote file
Size
Priority
Status
Queued files
Failed transfers
Successful transfers
Queue: empty

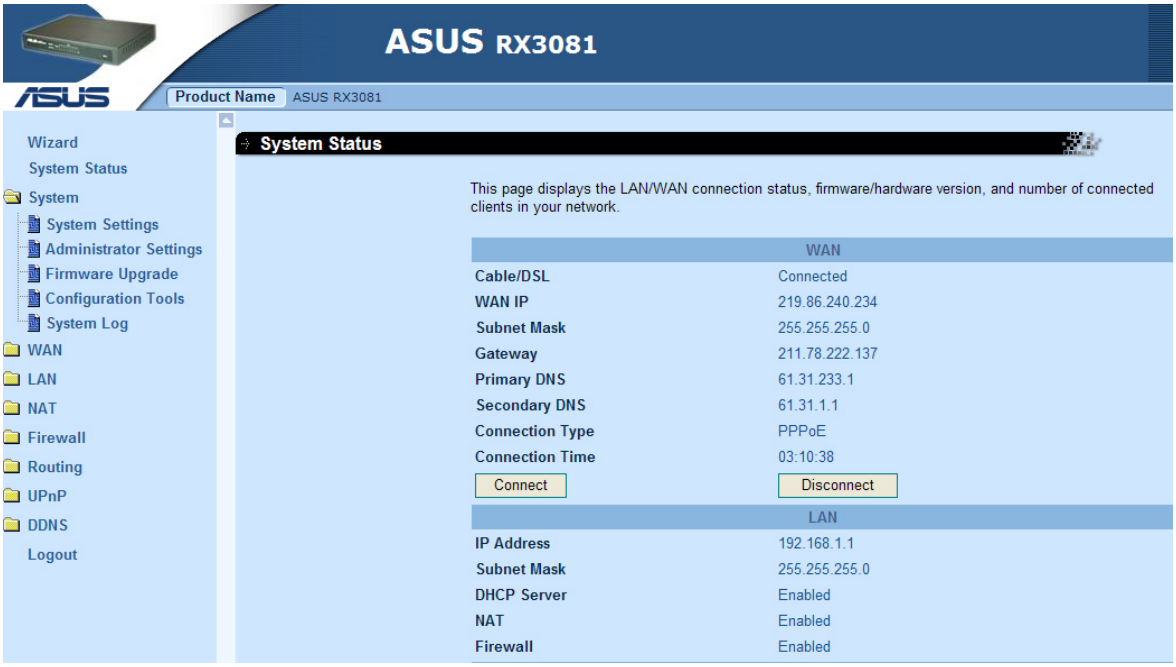
10. Now the FTP server is ready to store the event-triggered photo images from the network cameras. Following is a screen which the users may see on the FTP server software when a network camera is transferring photo image files to the FTP server.



11. Please note that this FTP server may also be accessed through Internet externally. Following screen shows an example of how the user may configure his broadband router to make this FTP server accessible from web externally. In case the fixed web IP of this connection is 219.86.240.235, and then the users from outside may access this FTP server from the web address of FTP://219.86.240.235:21 now. In other words the user can access this FTP server by the IPs of both 192.168.1.6 or 219.86.240.234 from near end after the NAT Virtual Server is properly routed.

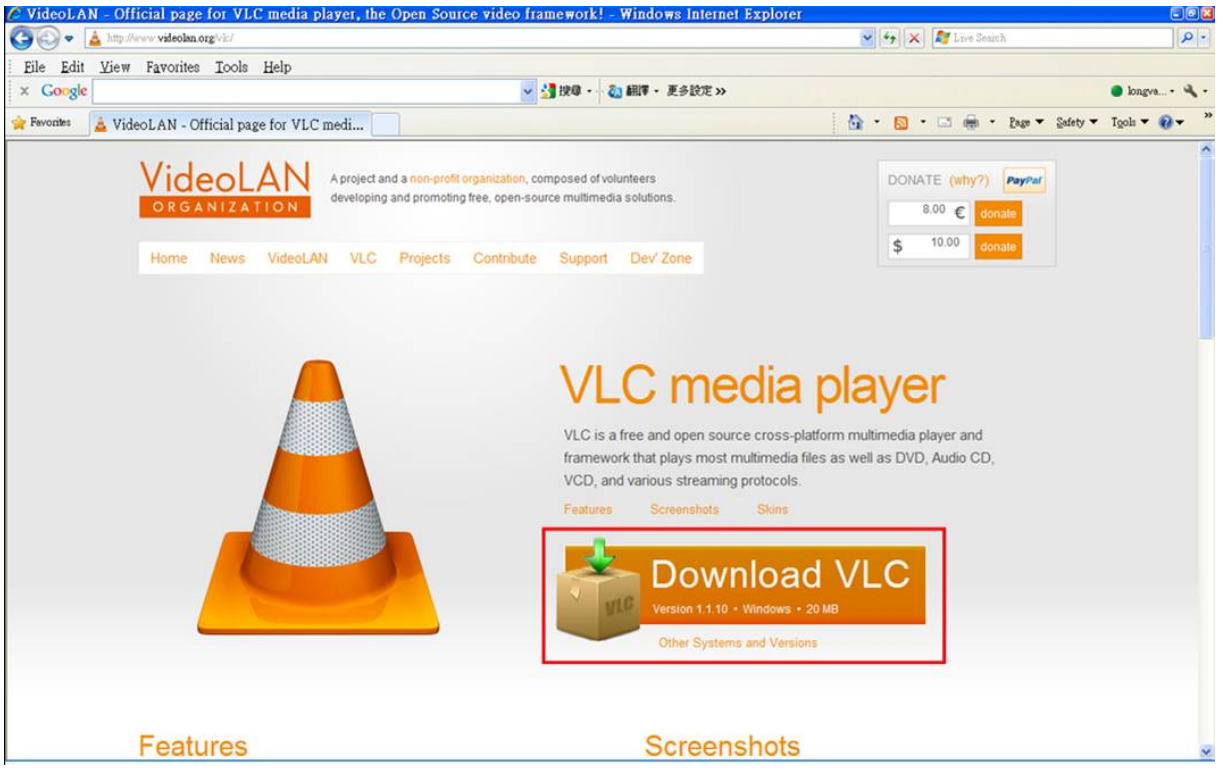


In terms of how to get your fixed web IP address, please refer to your Internet Service Provider for more details. Usually PPPoE is the most common protocol used for getting fixed IP, and following image shows you the setting screen of such PPPoE



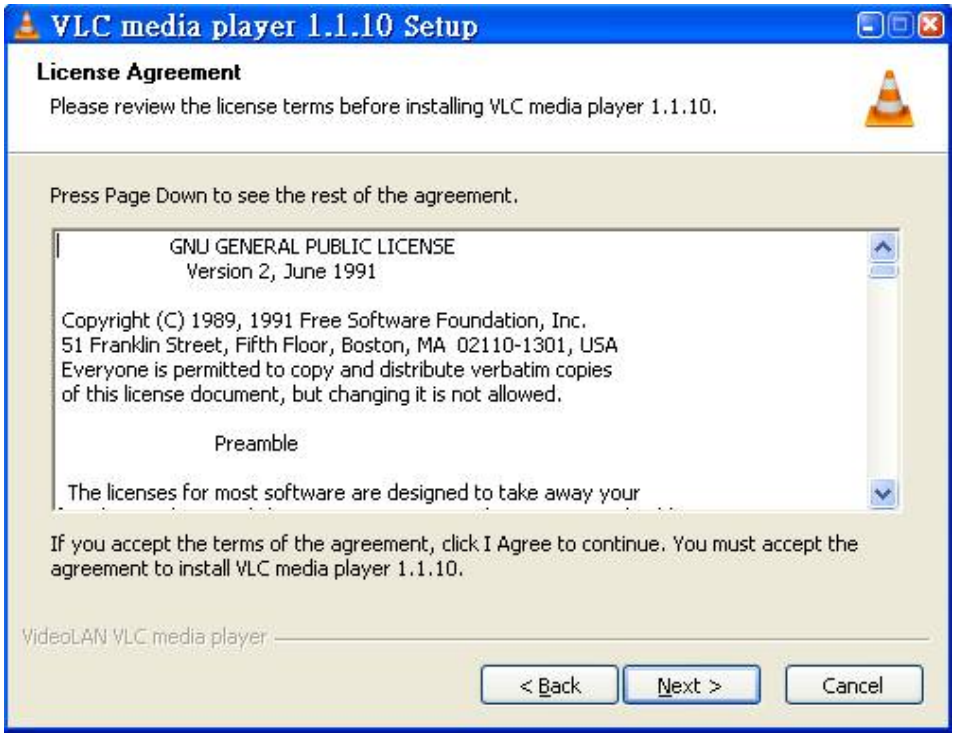
Appendix II: How to install the VLC program

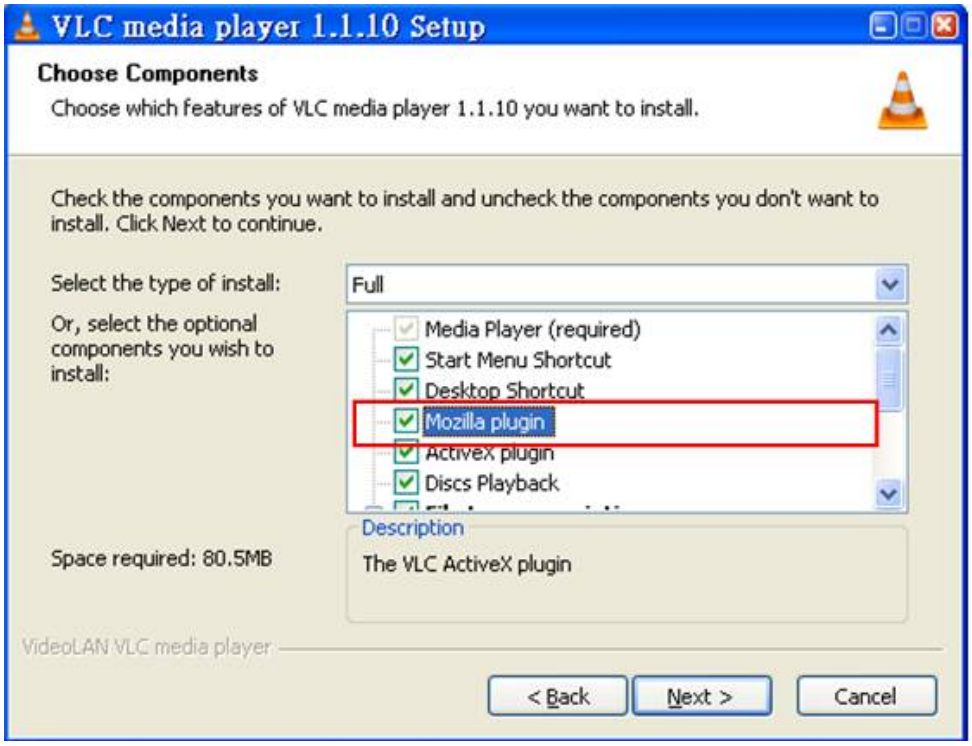
1. Go to http://www.videolan.org/vlc/ and download VLC program. In this page there is a donation field, and it is all up to the users whether they want to donate to this VideoLan non-profit Organization. If the uses do not want to make donation immediately, just ignore and click on the "Download VLC" icon to proceed with the download.



Note: this VLC shareware is proprietary of the VideoLAN non-profit Organization

2. Install VLC 1.1.10 step by step

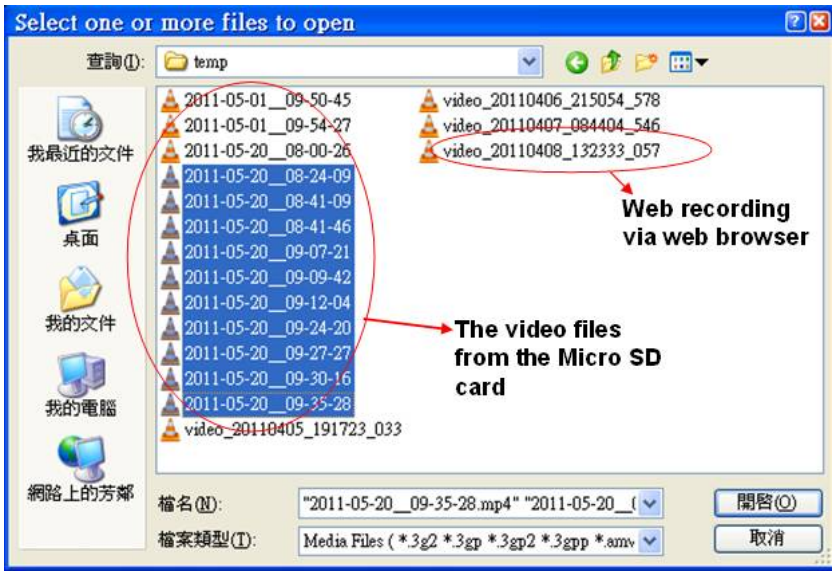




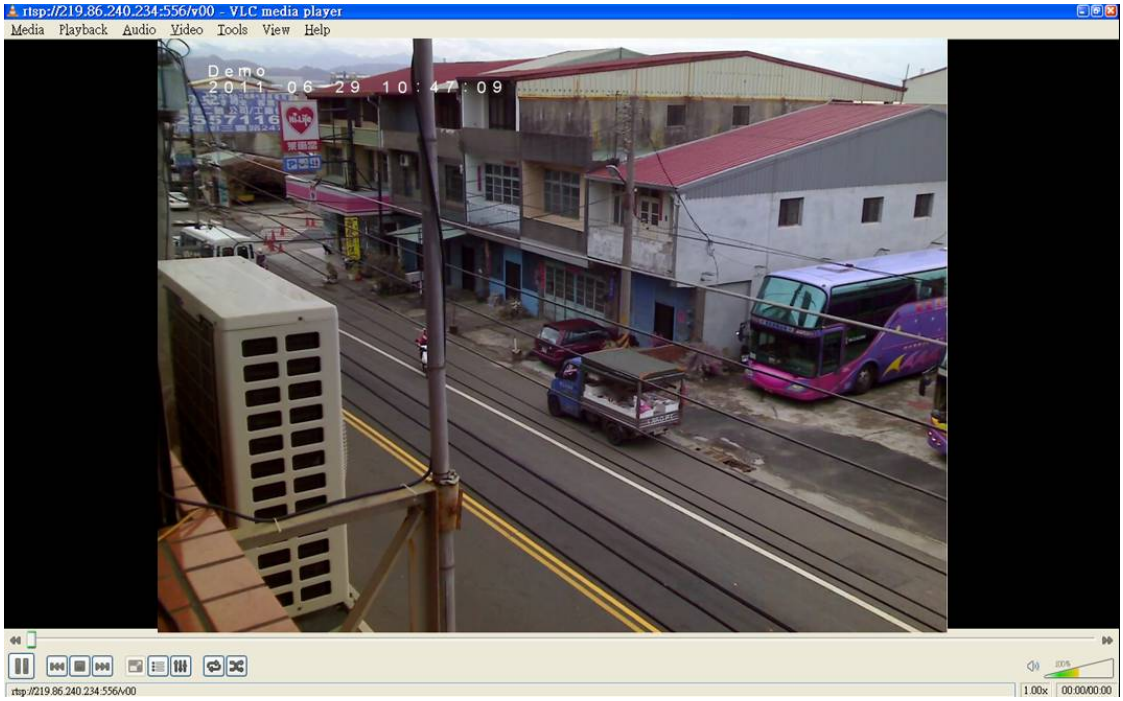
Be sure that the “Mozilla plugin” is selected if the users need to use Firefox as web browser too, in addition to Microsoft Internet Explorer.

Appendix III: How to replay the recorded video clips with VLC program

The following image is an example screen showing the video clip files which a user has collected inside a PC folder named “temp”.
There are two types of files in this example. The files with the file format of “YYYY-MM-DD_TT-TT-TT” format are recorded in the Micro SD card, and the ones in the format of “video_YYYYMMDD_TTTTTT_nnn” format are recorded by the web browser’s Web Recording function.



Select whichever file the user want to replay. If the user has selected more than one file then the VLC will replay sequentially.
The multiple-selection is very useful, because the users may need to replay video data for a long period of time either from the SD card or Web Recording function.



Note: the users may right-click and choose “full screen” mode for full-screen display.