User's Guide

TRENDNET®

TRENDnetView Pro

Contents

Chapter 1

Network IP Cameras

What is a network (IP) camera?

Network camera, IP addressable camera, IP Camera, all referring to the same type of cameras, is a digital camera that can be directly connected to the Internet through a network cable or Wireless connection. Network cameras send already digitized and compressed video streams. Network Cameras are the fastest growing trend in the Surveillance industry. Here are some of the benefits of IP cameras:

- Existing local network infrastructure could be used for the installation.
- Comparably less cabling required compared with an analog CCTV installation.
- Network cameras have built-in motion detectors and compression engines, which enable the DVR Server to use a minimum of its computer resources; therefore, the same computer can also be used for other tasks.
- There are Network (IP) cameras with very high resolution (1.3 Mega pixels and more). Analog cameras are incapable of achieving such resolution.
- Network (IP) camera installations are highly scalable and upgradeable. There is no need to buy and install additional video capture boards for the DVR system in the event you want to add a camera or increase performance of the system.
- Any analog camera can be converted to a network camera by using a Network (IP) server.
- There is no geographical limitation for the installation.
- Effective off site recording (either by itself or in addition to onside recording) eliminates the possibility of destruction of the video medium due to deliberate actions or an accident (fire, flooding, etc.).
- Some of the network cameras also can be used as a webcam to serve as an advertising engine for a business.

MPEG4/H.264 IP cameras:

Without compromising image quality, an H.264 encoder can reduce the size of a digital video file by more than 75% compared with the Motion JPEG format. This means that much less network bandwidth and storage space are required for a video frame. A higher video quality can be achieved with less bit rate.

- Better Average Bandwidth and Storage Reduction over MJPEG

- High-quality megapixel video stream at 20fps can be as low as 2 Mbps

- High resolution and bandwidth efficiency

PTZ Cameras

What are PTZ Cameras?

PTZ camera is the camera with the mechanical assembly for Panning, Tilting and Zooming the camera. There are many types of PTZ cameras available and their cost varies based on Speed, Zoom capacity, Manufacturer, etc. Network PTZ cameras does not require any addition wiring or devices, since PTZ commands are being send over TCP/IP network; therefore, making installation process much simpler and eliminating a lot of compatibility and configuration issues.

- Through the software, 32 cameras can be managed, configured, and adjusted, without the need to be at the server site.
- Right mouse click on any camera to show a list of various options like camera setup, recording settings, user management, and etc.
- Right mouse click on any camera to access archive playback, freeze function, digital PTZ, screen arrangement, video transfer options and more.

- Use the wizards for easy navigation and step-by-step setup.
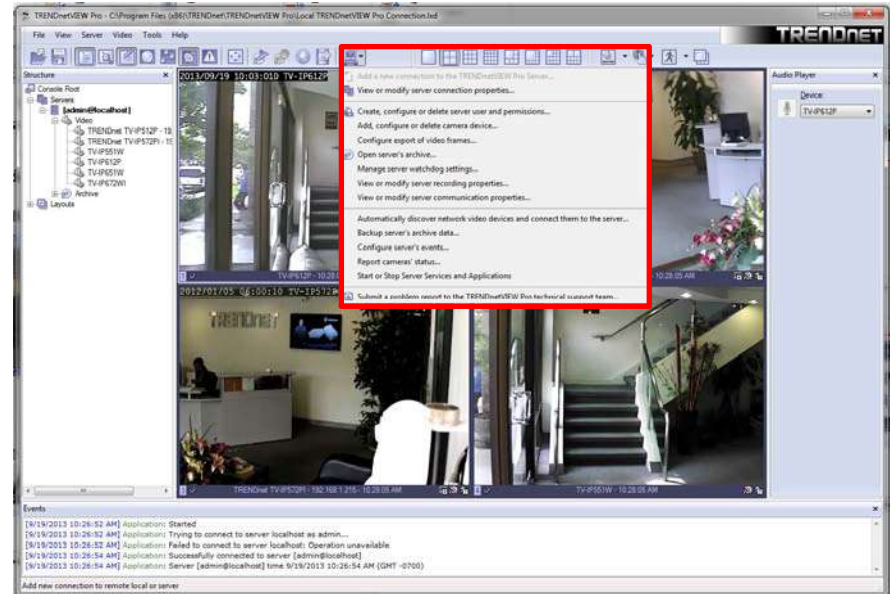
Chapter 2

TRENDnetVIEW Pro Installation

Begin the installation process by double clicking the TRENDnetVIEW Pro setup file.

1. "Welcome to the TRENDnetVIEW Pro Setup Wizard" window appears. Click **Next**.

2. Please read and accept the **Software License Agreement**. Then click **Next**.

3. Select the installation destinalation and then click **Next**. Changing the location is optional but not recommended.

4. The "Select Components" window appears. Select the desired options to install, choose the desired language and then click **Next**.
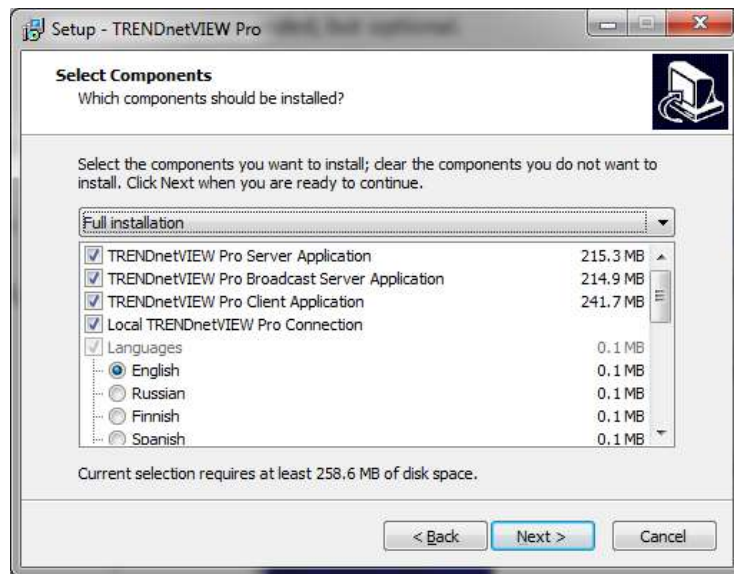
5. "Select Start Menu Folder" window appears. Click **Next**. Changing the location is optional but not recommended.

6. "Additional Icons" window appears. Click **Next**. These are shortcuts and are recommended, but optional.

7. "Ready to install" window appears. Click **Next**. TRENDnetVIEW Pro Server and options will now be installed.

8. To complete the installation of the TRENDnetVIEW Pro setup wizard, click **Finish**. Leave "Run server setup wizard" option checked.
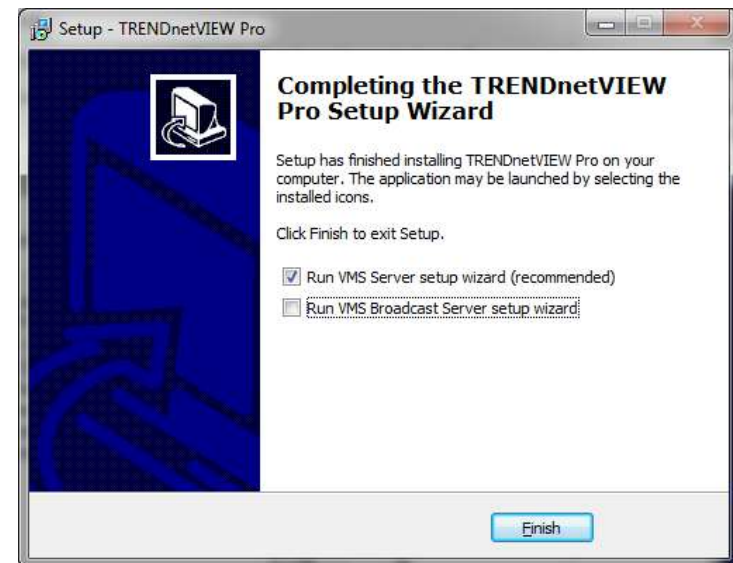
TRENDnetVIEW Pro Server Setup Wizard

1. The "TRENDnetVIEW Pro Server Setup Wizard" appears. Click **Next**. When the "Server Properties" window appears, enter your machines unique Identifying name and server title. It is recommended that you check "Compact the configuration database" (checking this option will help optimize your configuration database in the future). Click **Next**
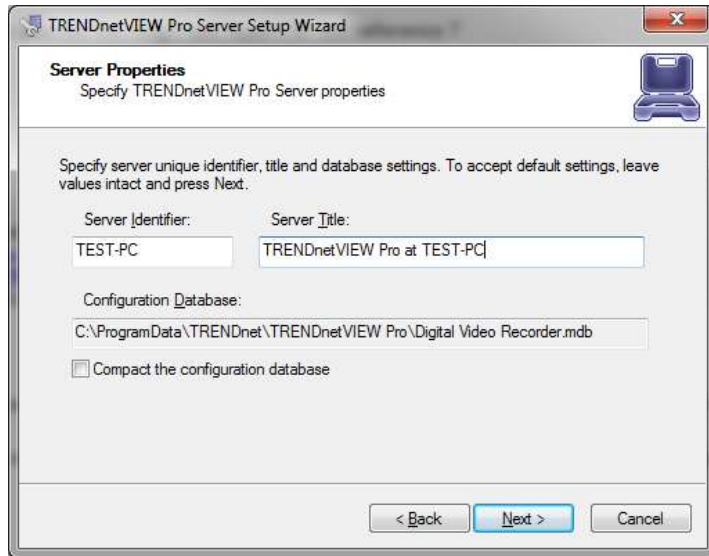
2. The "Server Administration Settings" window appears. Setup the administrator user name and password in this window. Leave the default user name as "admin" (Recommended), enter a unique password in the "Password" field and reenter the password in the "Password Confirmation" field. You will have the chance to add additional users at a later time. Click **Next**

Note: This user name and password is used for broadcast server login.
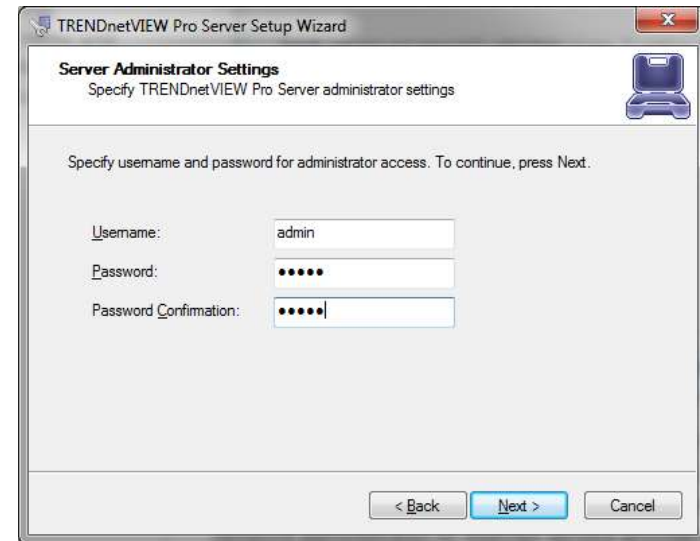
3. The "Server Network Settings and Port settings" window appears. Click **Next**. The default firewall port that TRENDnetVIEW Pro uses is 60554 but you can change that to any port that you would like as long as it is open on your firewall. Please check with your network administrator or internet service provider about your firewall settings

Allow TCP connections from remote applications: To enable TCP to accept remote connections can be disabled or enable at any time from the TRENDnetVIEW Pro server settings.

TCP Port: 60554 is the default port and it can be changed to your preferences.
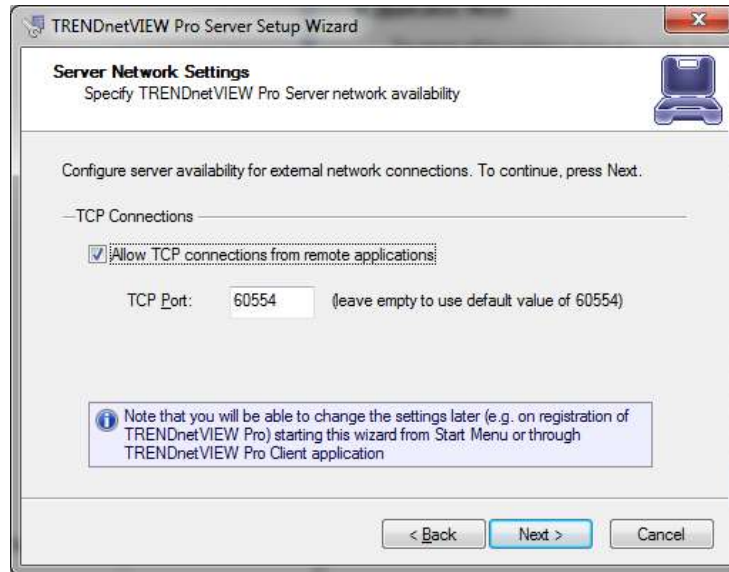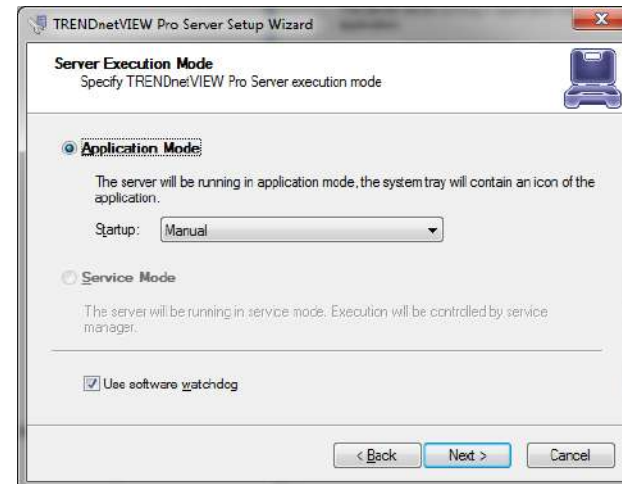
4. Select **Application Mode** and then click **Next**.

Application Mode.
The following **"Startup"** option can be selected:

- **Manual**: That means you will physically have to double click the program to get it started.
- **Automatically with any user logon**: The software will open up when any user logs into Windows on that machine.
- **Automatically with current user logon**: The user currently logged into Windows, will be the user that activates TRENDnetVIEW Pro upon Windows login.

5. Click **Start Server Application** and then click **Next.**
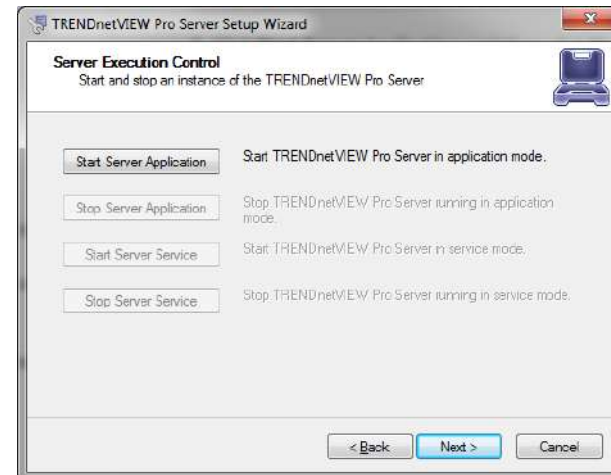
6. Click **Finish** to exit the installation wizard.

TRENDnetVIEW Pro Terminology

Panel – Panel, window

Toggle- To alternate between two or more electronic, mechanical, or computer-related options, usually by the operation of a single switch or keystroke

Toolbar- The toolbar that you see at the top of your screen gives you various options such as open, save and various screen manipulations, at the click of a button.

Open Configuration- This button on the toolbar allows you to open previous TRENDnetVIEW Pro configurations. It is most useful if you are exporting configurations from one machine to another.

Save Configuration- This button on the toolbar allows you to save any changes that you have just made to your DVR, it will continue to save to the same file unless you click on File and Save As then you can save to a different file or even to a floppy.

Structure Pane - This button toggles whether you see or don't see the structure pane on the left side of your TRENDnetVIEW Pro window. The structure pane is most useful when you are looking at cameras from multiple locations and multiple TRENDnetVIEW Pro servers. We will discuss the structure pane later on in this chapter.

Toggle Structure Filter Pane – This button toggles *structure filter pane* under regular structure pane. This filter will allow you to quickly locate necessary camera from the list of cameras you currently have, or several set of cameras with similar name.

Events - This button toggles the events window. The events window gives you important notifications such as, when you are connecting to a server successfully. It lets you know if you have input improper user names and passwords and gives you error codes when needed.
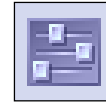
PTZ Control - This button toggles the PTZ control pane. If you do not have a pan-tilt-zoom camera connected to your system then this button does no need to be pressed.

Video amplification- This button toggles the video amplification pane. When this button is pressed a pane will come up from which you will be able to adjust the brightness, contrast, saturation, sharpness, and hue for any camera.

Audio- This button toggles Audio pane control. Audio pane enables you to listen to Audio from different cameras.
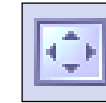
Full Screen - This button toggles full screen mode. In full screen, none of the panes will be seen and the cameras will be expanded to their maximum size to fill the full screen of your monitor.

Open Archive – This button opens archive viewer window. You will be able to view archived data of your connected DVR.

Emergency Recording – On activation of emergency recording mode for a device, the footage is recorded at full frame rate during specific period of time and then is automatically returned to regular recording settings.

Manage Maps – This button toggles map module window for managing and viewing cameras on Google or previously added maps.

Save Current Frame as – This button allows you to save currently rendered video frame into file. Frame from selected screen will be saved only.

Wizards- The wizard's icon on the toolbar gives you a shortcut to various server, and camera options and configurations. You can also access these features through the right click menus in the software.

Views- These buttons on the toolbar allow you to manipulate your views and camera layouts to your own preference.

Screen Footer- The screen footer button on the toolbar allows you to display various information underneath each camera window. It can display current frame time, image resolution, and average image size per frame and average frame rate per second.   The screen footer is the text below each camera

Stream Selection- The stream selection button allows you to pick which camera you would like to view in the selected camera window. This can also be done through the right click menus and by dragging the desired camera from the structure pane to the desired display window, or right click on any camera window and select stream.

Show Motion- The show motion toolbar button toggles whether or not you want the motion outlined on the selected camera screen. Note: Motion detection must be setup before this feature can be activated

Maximize- When pressed the maximize button puts the selected camera into a single view, if pressed again it will return to the previous view. This can also be accomplished by double clicking on the camera of choice.

Structure Pane

The structure pane is the control center. This is where you will setup all of your cameras as well as your server.
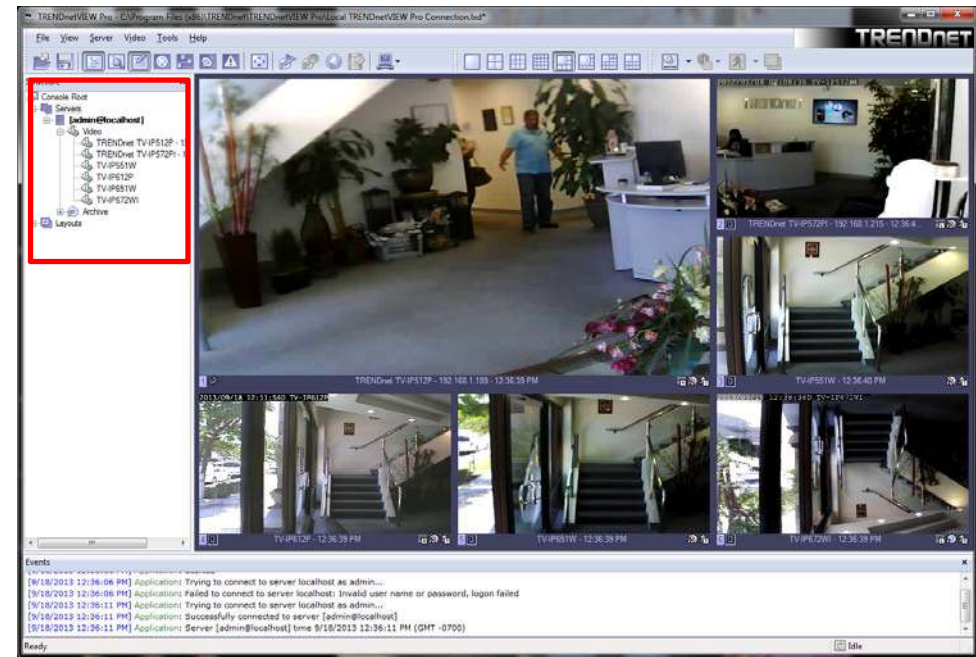

Broadcast Server Connections

TRENDnetVIEW Pro Broadcast Server - is a separate product to broadcast video streams to multiple web-browsing platforms (e.g. Internet Explorer, Firefox, and Google Chrome) as well as for iPhone, Android, etc. TRENDnetVIEW Pro Broadcast Server will resample and recompress video stream for web or mobile client depending on connection speed and viewing capabilities.

1. Start Broadcast Server by clicking on the Start or Windows Icon and then click Program Files→ TRENDnet -> TRENDnetVIEW Pro -> DVR Broadcast Server. This will start Broadcast Server for Viewing over Web browser and Smartphone devices such as Android and/or iPhone through browser.
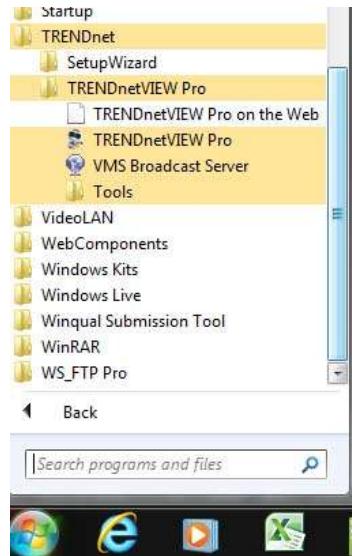
2. The Broadcast Server icon will appear in system tray and through it you will be able test/configure Broadcast Server operation. To open the Broadcast Server, Right click on the icon → Open Web Application or enter the IP address of the server followed by port 8080.
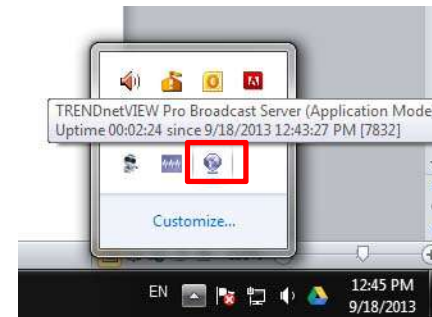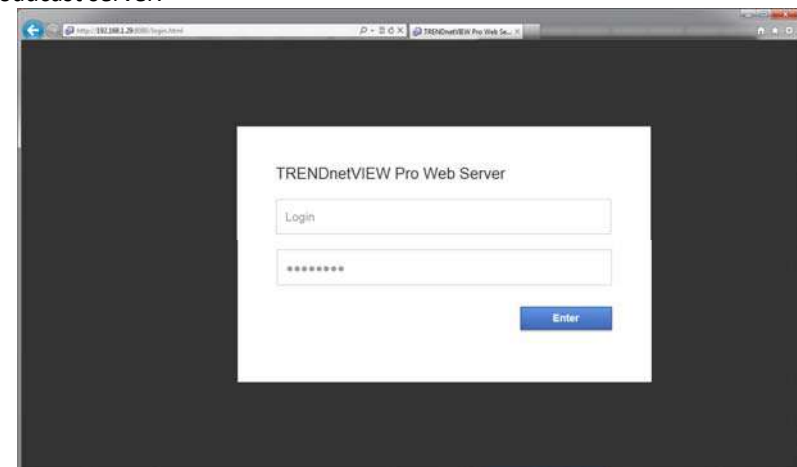

Right click on the icon and select Open Web Application
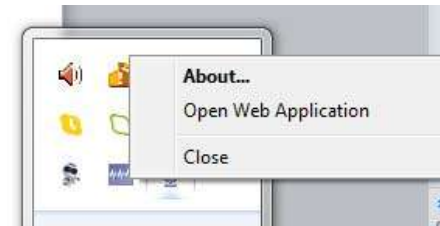
Also you can enter Broadcast domain for access over the Internet.

Use the previously set TRENDnetVIEW Pro software user name and password to login to broadcast server.

When logged into the server via the browser on a PC or Mac, you can click on any cameras to the left in structure pane. The IP cameras will be displayed in main screen as separate windows that can be resized and moved anywhere within the window.
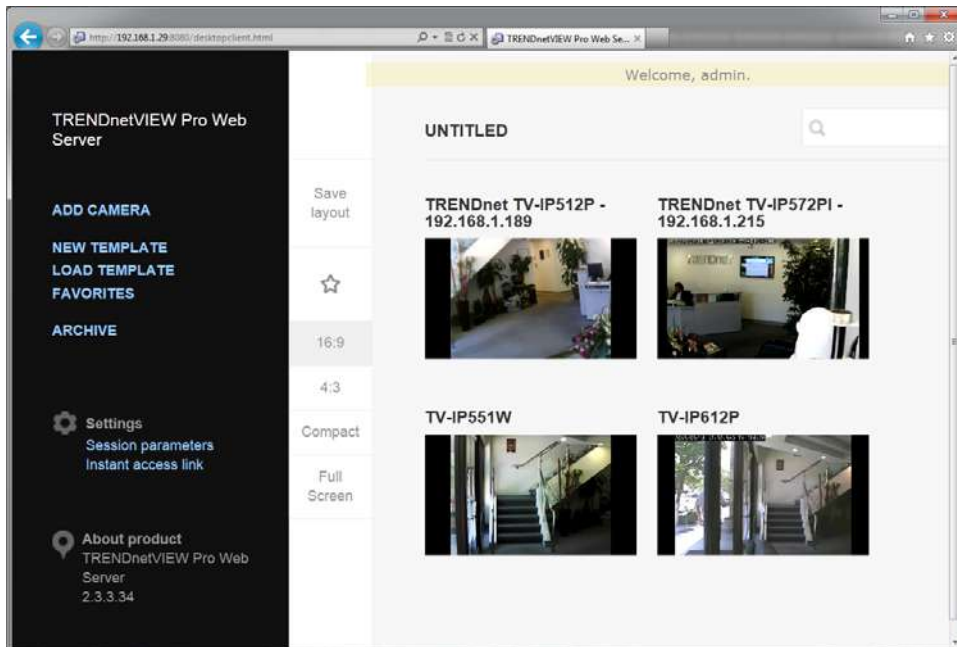

Chapter 3
Server Recording Properties
1. Right click on your server
2. Click **Tasks**.
3. Click **Recording Properties**.
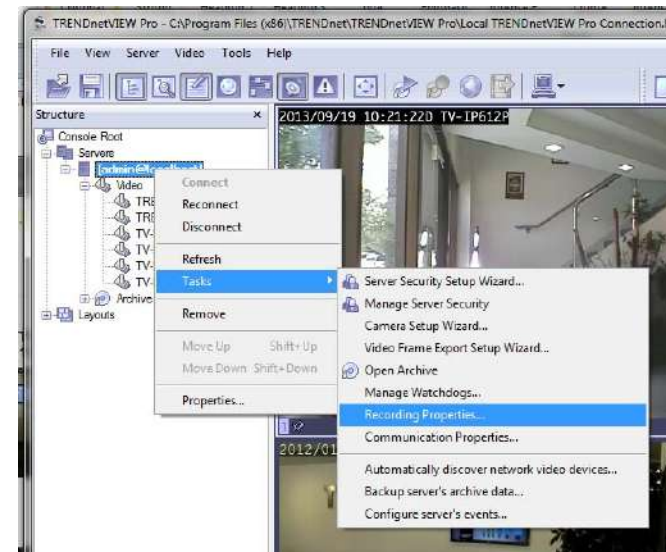
- **Directories**
  - o **Priority**- Choose which of your drives records first. Check and then highlight (by clicking one time) the drive you wish to customize in this portion
  - o **Quota** - Chose the amount of space you would like to designate for storage on that particular hard drive. NOTE: NEVER, choose 100% for the C Drive. This may cause your machine to eventually crash due to not available virtual memory for page. The reasonable quota is 85-90% of the drive capacity to avoid the effects of fragmentation issues and also to allow the highly loaded DVR to effectively enforce recording quotas
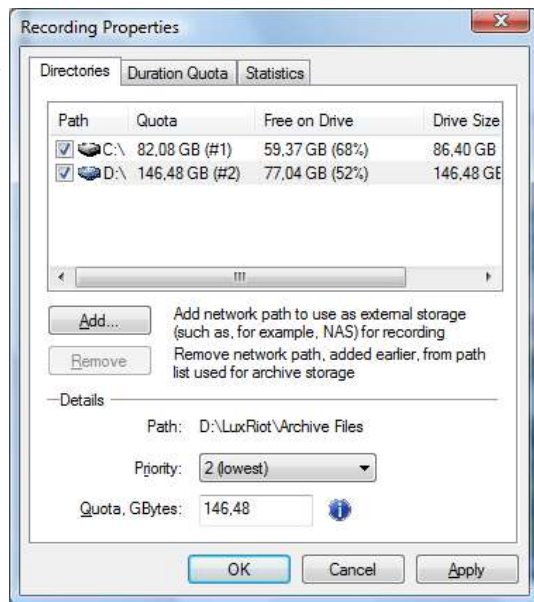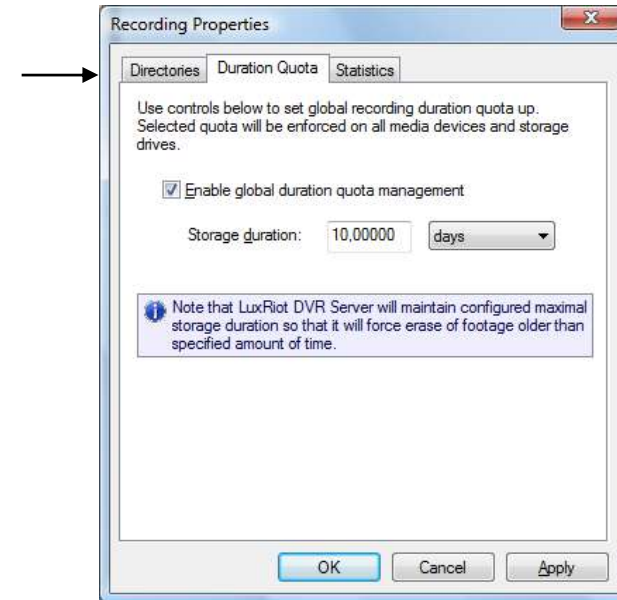
o **Add** - Add external storage address for recording such as sharing on a remote computer or NAS drive.
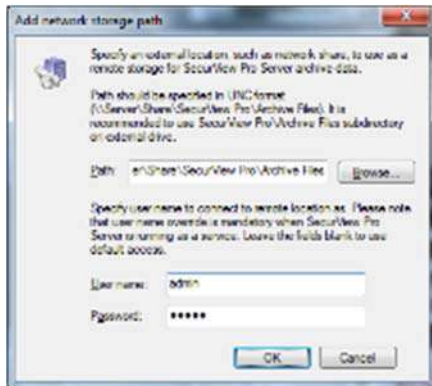
o **Remove**- This button removes currently selected network storage path.

- **Duration Quota**
 o **Storage Duration** - Chose the numbers of days you would like to store.

- **Statistics** - Check on used spaced and available space left on the hard drives being used by TRENDnetVIEW Pro.

4. Click **Apply** to save settings.

Server Communication Properties

1. Right click on your server

2. Click **Tasks**.

3. Click **TCP Communication Properties**.

Connections- Here you can see at all times who is connected to your server. The IP address, user name and connection time can all be seen. Click refresh at any time for an updated list.
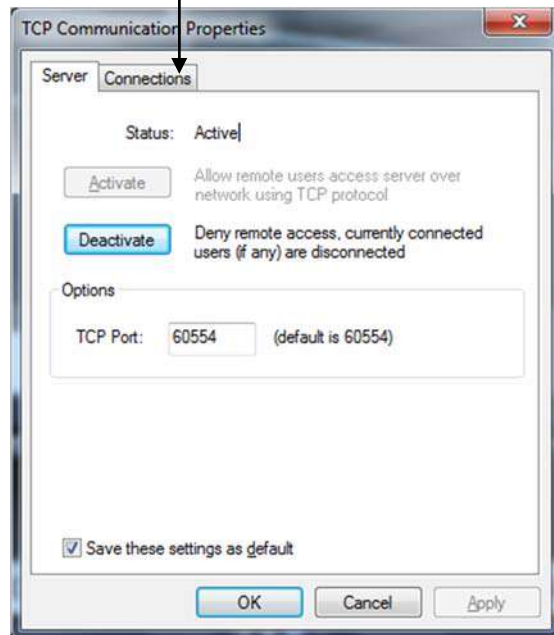
Server Watchdog

Your Server Watchdog performs an important operation, protecting your software from improperly working due to system problems. Configuring your watchdog is not necessary, if you chose to enable it during installation. The default settings will work well, however if you are having frequent restarts, adjusting it may become vital.

1. Right click on your server

2. Click **Tasks**.

3. Click **Manage Watchdog**.

4. In order to select the "Disable", "Enable" and "Properties" buttons, left click on "Software Watchdog".
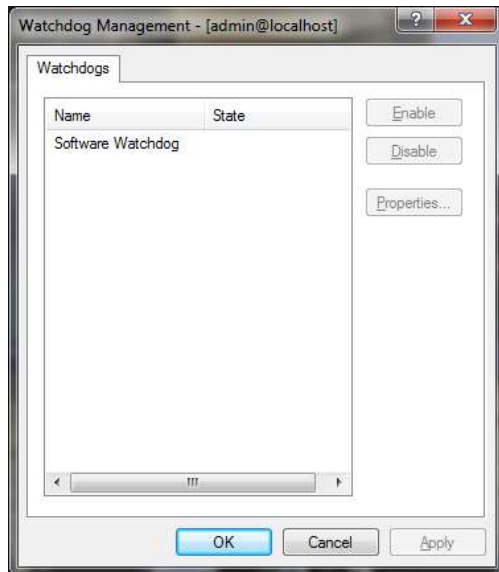
State

Properties > State

- **State**- Start or Stop running Watchdog.
- **Start Watchdog with Server**- Will begin the Watchdog application when server is started.
- **Enable Watchdog**-Will keep Watchdog running at all times.
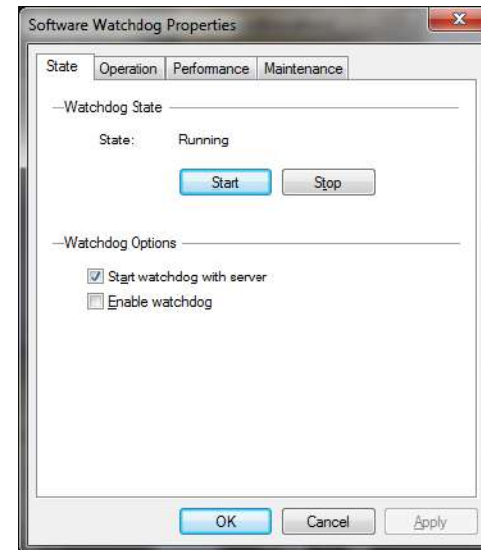
Watchdog Operation

Properties > Operation

Grace Interval Seconds- The grace period given when starting the application.

**Reboot Interval Minutes-** The amount of time Watchdog will allow between reboots.

Number of Failure to Reboot- The amount of failed attempts to fix whatever problem has been detected, by restarting only the TRENDnetVIEW Pro application. Once this number has been reached, Watchdog will now reboot Windows and the TRENDnetVIEW Pro application.
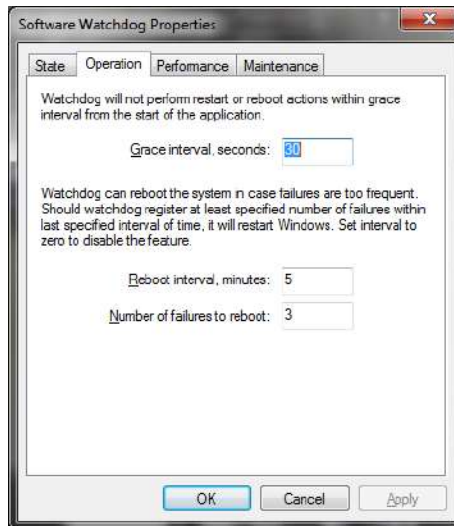
Performance

Properties > Performance

This tab allows you to configure which environment performance counters and variables will determine necessity of server or system restart. Watchdog will attempt to restart server or system after any specified threshold exceeding; There are also visible current values of the environment variables.
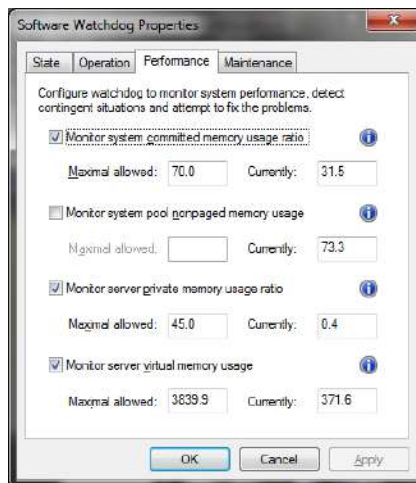

Maintenance

Properties > Maintenance

Restart Intervals- Days or Hours.

Enable Periodic Restart- Enabling this feature will restart the Server Application at times specified. It is recommended to restart the Server Application to Refresh system resources. The Watchdog Server-Restart will go virtually unnoticed by the user.

Enable Periodic Restart Hours- Enabling this feature allows the user to define a range in hours during which maintenance restarts are allowed (e.g. from 7:00PM to 11:20PM).
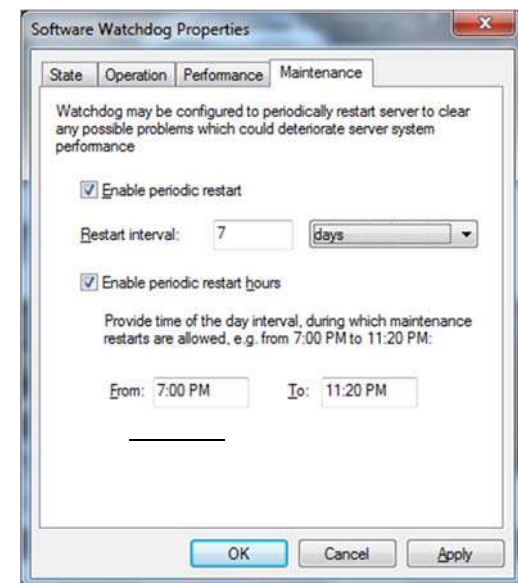
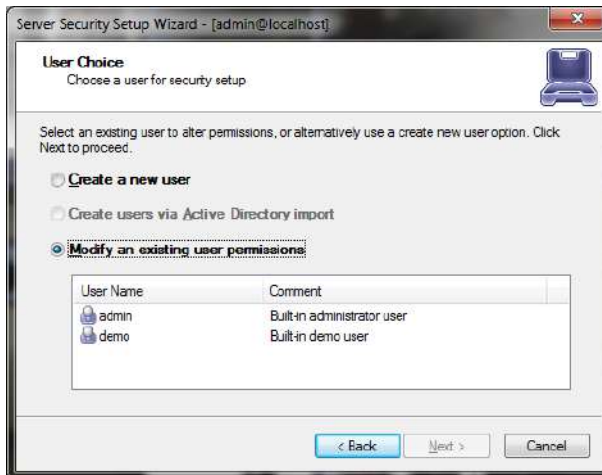Note: If any changes have been made, click **Apply**.

Server User Management

To start the "Server Security Wizard", right-click on the server within the Structure pane, click **Tasks** and then click **Server Security Wizard**.
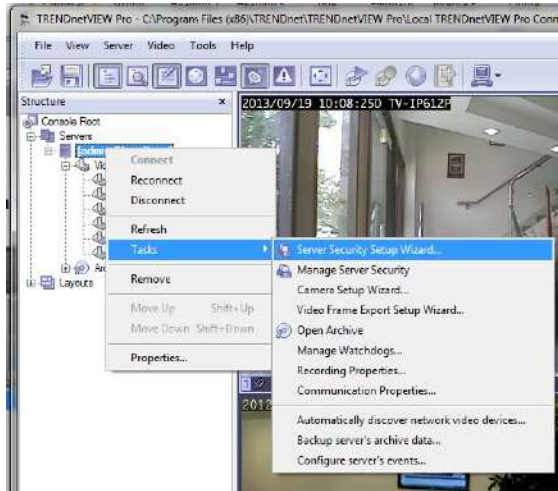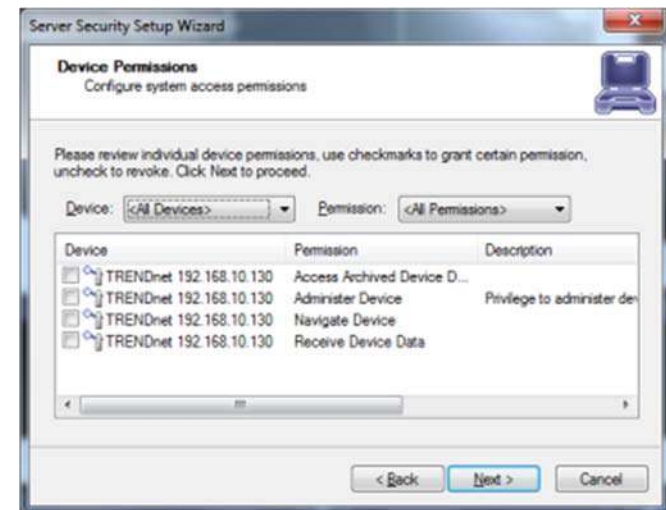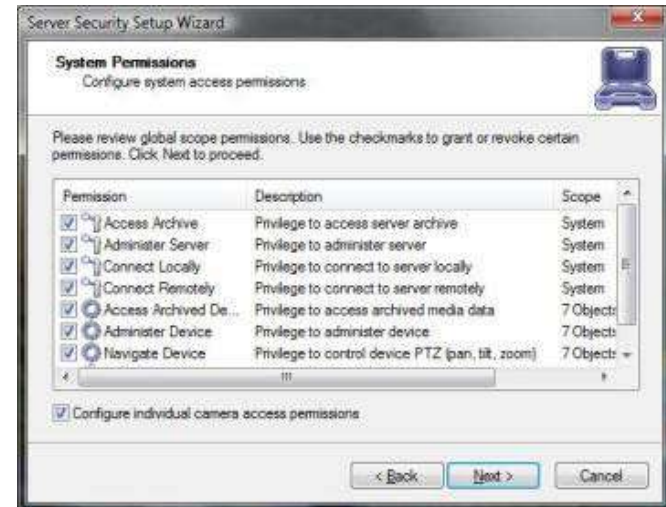
Create users or modify existing users rights

This wizard guides you step by step to add, remove, or modify user permissions.

System/User Permissions

As you see TRENDnetVIEW Pro system permissions provides Global Scope permissions for better user management.

Chapter 4

Setting up an IP Camera

There are two ways of setting up an IP camera to work with TRENDnetVIEW Pro:

1. Let the software find the cameras automatically
2. Manually input all of the camera's IP information

Configure your IP Cameras automatically

1. Right click on your server name

2. Click **Tasks**

3. Click **Automatically discover network video devices**.

4. The "TRENDnetVIEW Pro Automatic Discovery Wizard " will appear. Click **Next.**
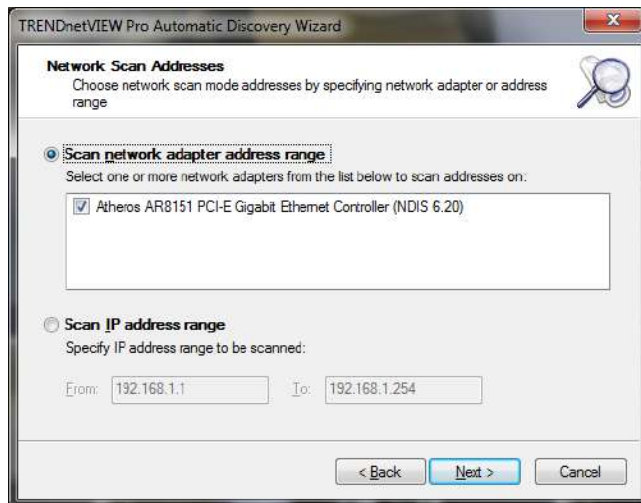

5. Enter port number for each IP camera and then click **Next**.

   (Leave blank to search all cameras with all ports)

6. TRENDnetVIEW Pro will now begin scanning your network and specified ports for any IP cameras. Once it is finished it will give you a list of the cameras that it found and give you an option to add them to TRENDnetVIEW Pro.
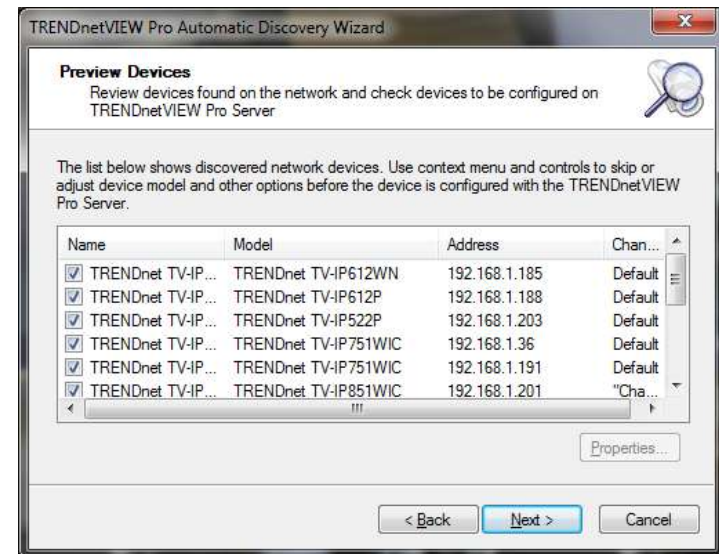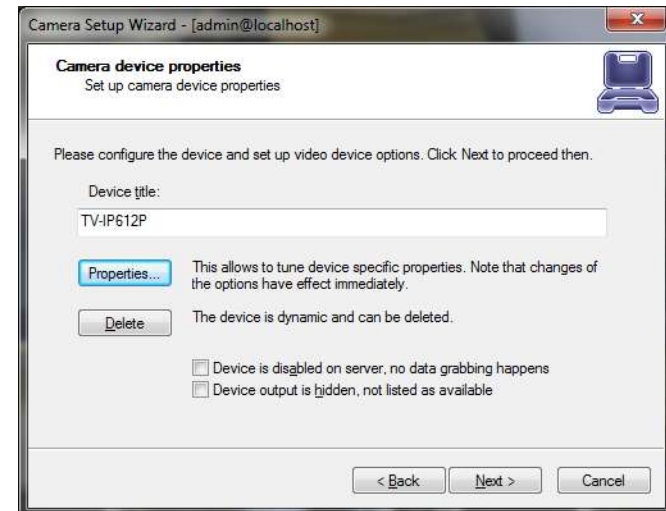
Add a Network Cameras manually

1. Right click on your server name

2. Click **Tasks**

3. Choose "Camera setup Wizard".

4. Select "Network Devices (IP Camera, Video Server)".
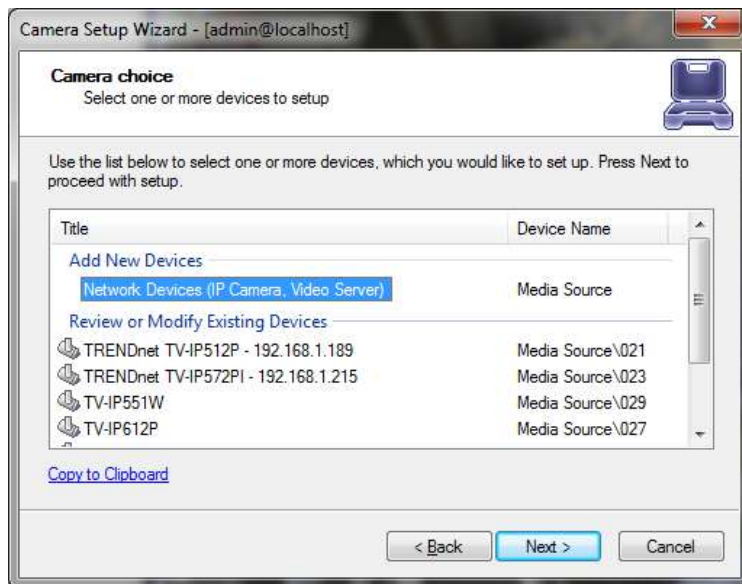
5. Click **Next**.

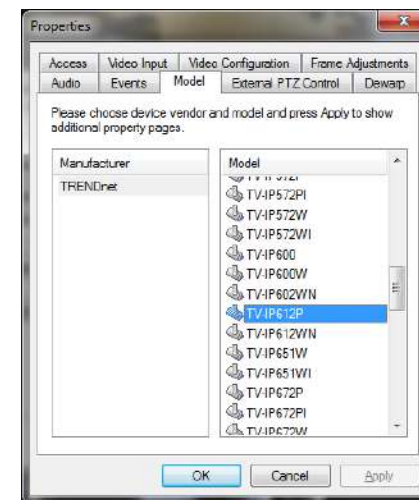6. For "Device title", type in a name for the IP Camera.

7. Click **Properties**.

Note: The tabs under properties are described below
Model Tab
Properties > Model

- Select TRENDnet and then select the IP camera model. Then click **Apply**.

Access Tab

Properties > Access

- Input the IP address of the IP Camera, Port Number, User Name and Password. Then click **Apply**.


Video Input Tab

Properties > Video Input

- Select "Trendnet" for Operation mode.

Video Configuration Tab

Properties > Video Configuration

- Color Mode- Color or black and white
- Resolution: Quality of the picture. The higher quality you choose the more space it will take. Options include 704 x 450, 352 x 240 and 176 x 112.
- Encoding: Choose the encoding type that is supported by your camera. Options include Default, MJPEG, MPEG-4 and H.264.   Depending on the Encoding type selected, you may be able to adjust the following;
  - o I-Frame Interval
  - o Bit Mode
  - o Quality
  - o Bit Rate
- Frame Rate: Here you may adjust the frame rate for the ip camera. Options include Default, 1, 2, 3, 5, 10, 15 and 30.

**Frame Adjustment Tab**

Properties > Frame Adjustment

- Brightness, Contrast, etc… Change the appearance of your video quality.
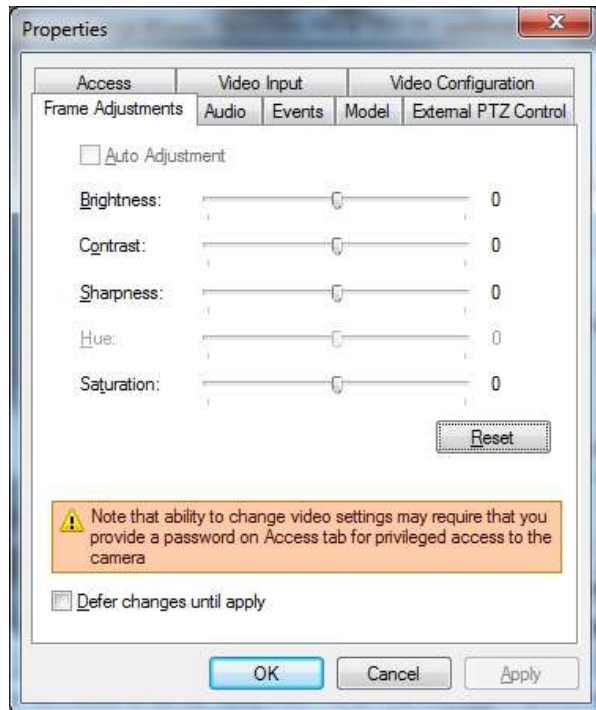
**Audio Tab**

Properties > Audio

- Audio Input. Audio input can be the audio in of the pc main-board or additional USB audios.
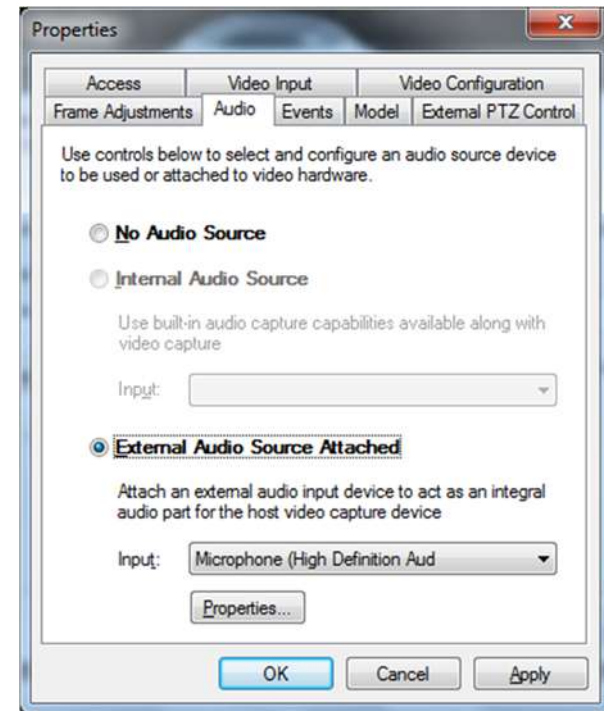
- Options for Internal Audio Source from an IP camera can be found under the camera properties. From the Audio Tab the internal Audio source can be selected and activated.
- If the camera selected is not an audio compatible camera then the Internal Audio Source" option will not be activated. In the case that the camera does not support internal audio, you can select external audio and use a usb microphone (for one way audio) or your computer's built in microphone.
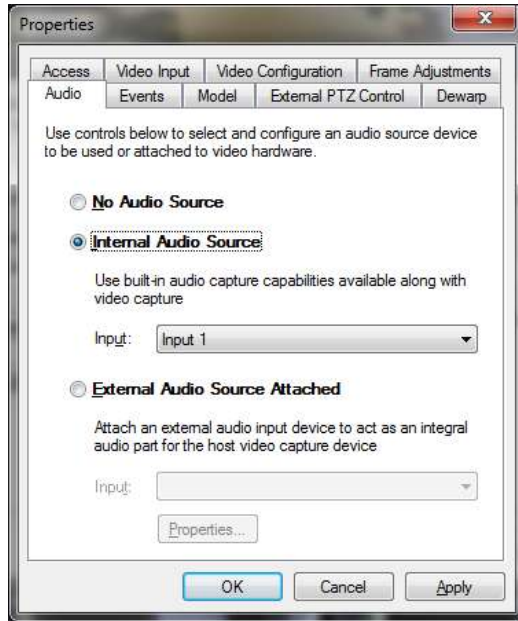
- Audio to the camera can be sent via Client application Audio Pane by selecting a camera from the list and pressing the microphone icon. When the icon is pressed you can speak into microphone connected to Client PC and audio should be sent to the speaker connected to the remote camera.
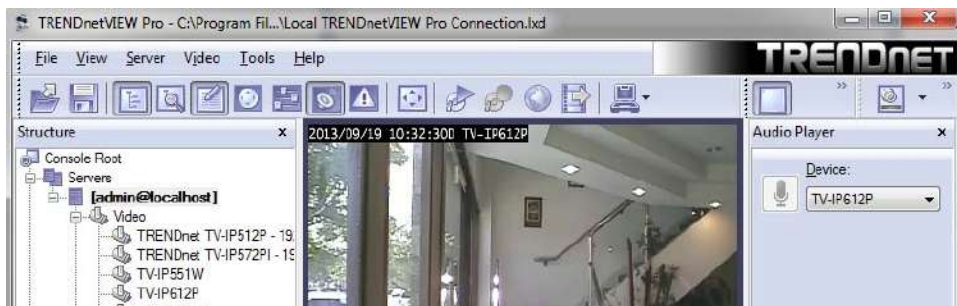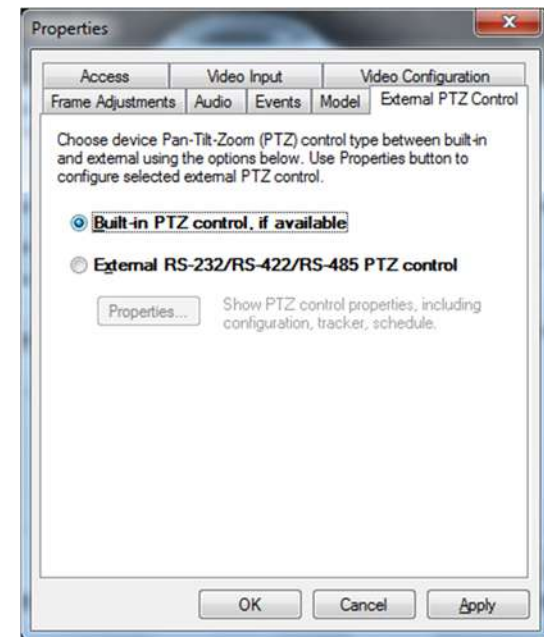

Events
Properties > Events

For more information regarding Events, see Digital Input Configuration and Events sections on page

External PTZ Control Tab
*Properties > External PTZ Control*

Click Properties.

- **Pan-Tilt-Zoom Protocol**: If you do have an external pan-tilt-zoom device connected to your IP camera, you must choose the correct communication protocol. The protocol has to match the protocol assign on your PTZ camera.

- **Communication Settings.**
  - o **Serial Port** – The communication port has to match the communication port that the RS232/485 controller is connected.
  - o **Port Speed (Baud Rate)** – Baud rate has to match the baud rate of your PTZ camera.
  - o **Device Identifier** – Device Identifier, is a unique ID that has to be set on PTZ cameras. Having multiple PTZ cameras requires a unique id to be set on every individual PTZ camera. Failing to assign a unique id to every single PTZ camera will result for all cameras to move at the same time.
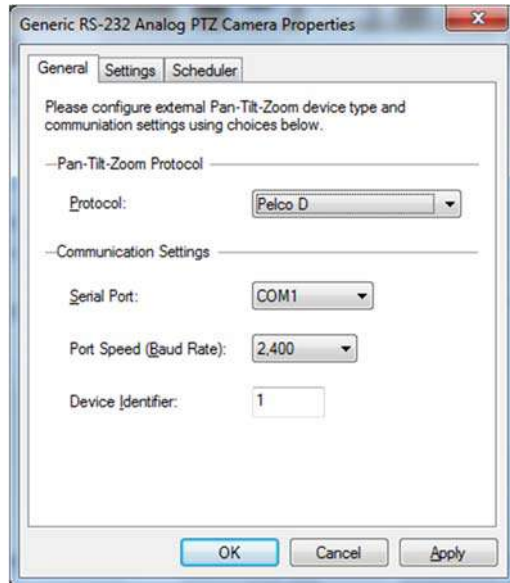

8. Click **Apply** to save the settings.

9. Click **OK** to exit the properties window.

10. Back in the setup wizard, click **Next**.

11. The "Motion Analysis" window appears.

- **Use Motion for the steam being set up**- This box should be checked if you are interested in using Motion Detection. We recommend you use motion detection for it will save you an abundance of well-needed storage space. Choose Properties
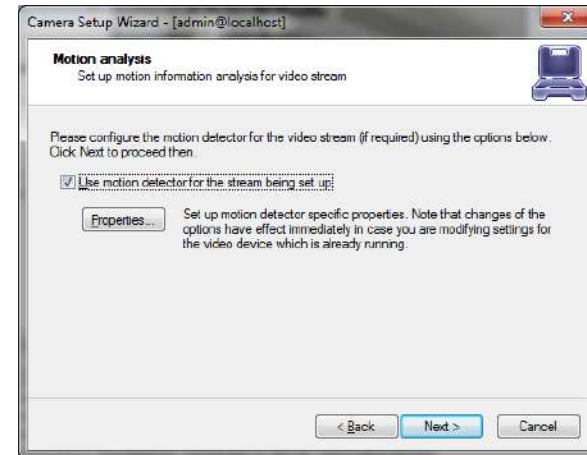

12. Click **Properties**.
Sensitivity Tab
Properties > Sensitivity
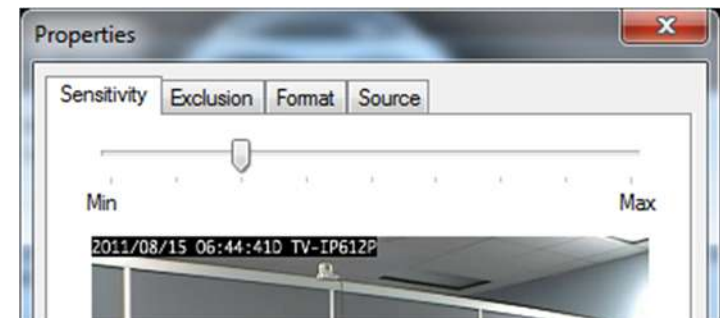
The sensitivity should be adjusted to a point where motion is only seen by people and not by blinking lights, reflections, or shadows, otherwise you will get "false motion" and TRENDnetVIEW Pro will be recording based on motion that does not exist.

Exclusion Tab

Properties > Exclusion

Format Tab

Properties > Format

This controls the internal motion detection analysis properties.
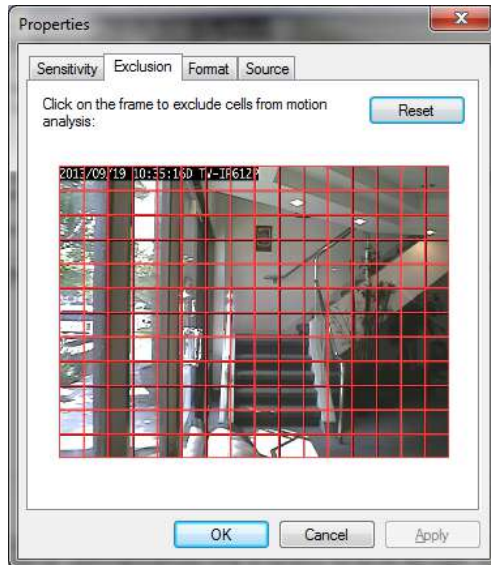
If you are still getting motion from lights, trees or things moving from an air-conditioner or an open door then you can click on exclusion and block the object out from the motion detection grid. You simply click on the grid boxes around the object that you would like to exclude, to remove them from being seen by the motion detection engine in TRENDnetVIEW Pro.
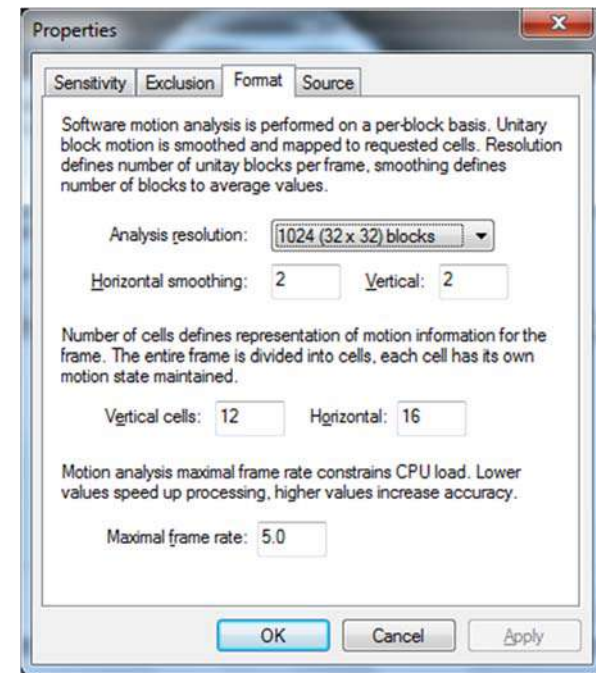
- **Analysis resolution**- controls precision of the detection process, the more resolution blocks is selected, the better precision is, and however, the greater CPU consumption is needed.
- **Smoothing**- feature averages preliminary detection result so that neighboring area is included into motion area as well. Smoothing, however, slightly decreases motion detection sensitivity.
- **Horizontal and vertical cell number**- Defines the dimensions of the target grid, which is used as output of the motion detection algorithm. The defined cells are shown. Click ok when finished

Source Tab
Properties > Source
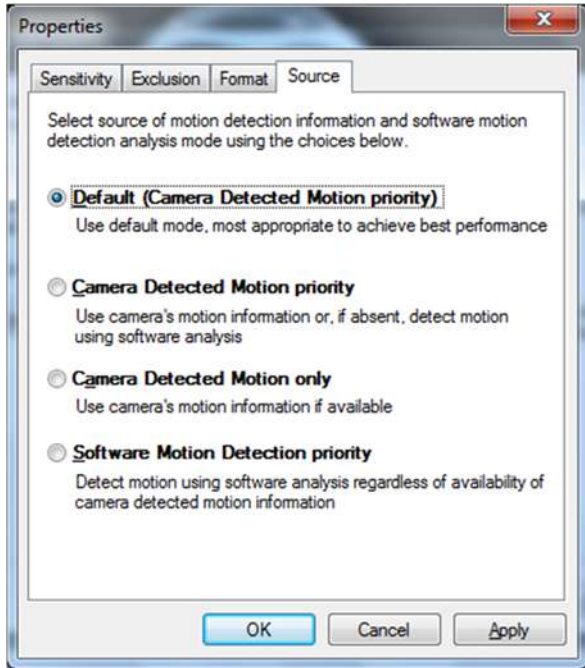
- **Default (Camera Detected Motion Priority)-** automatic mode, software decides what is best.
- **Camera Detected Motion priority-** with this option you enable hardware/on-camera detection to software.
- **Camera Detected Motion only-** instructs to only use hardware detection, wherever available, and never detect via software detection.
- **Software Motion Detection priority-** instructs to use software motion detection only.

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

13. Click **OK** to exit the properties window.

14. Back in the setup wizard, click **Next**.

15. The "Data Recording" window appears.

16. Click **Advanced Properties**.
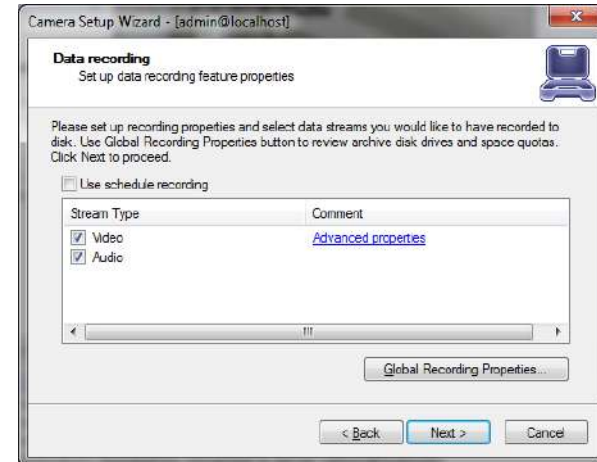
Here you can specify whether or not you would like motion information and video recording to be written to the hard drive. It is recommended that you write both to the hard drive, because it will make it much easier to review your recordings with motion information. Without motion being recorded to the hard drive you will not be able to search by general motion or defined motion regions (Smart Search, see Page 36).

Global Recording Properties: For Global Recording Properties, please refer to the Server Recording Properties section at the beginning of Chapter 3.

Advanced properties - Allows you to setup time-lapse recordings, and Enable Motion control recording. Time lapse creates a small delay between every frame that is written to the hard drive. This allows the space available on on your hard drive to be used more efficiently.

Time Lapse Tab
Advanced Properties > Time Lapse
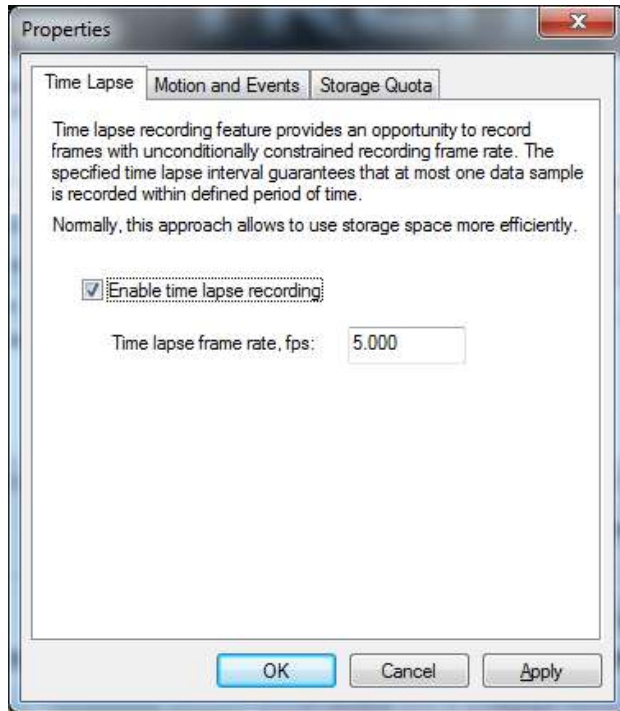
- **Time Lapse recording**: The number of frames to be record camera by camera. It gives you the opportunity to use hard drive space more efficiently. Less important cameras can be set to record less frames than others. This does not apply for MPEG-4 and H.264 compressions.

Motion and Events Tab
Advanced Properties > Motion and Events

Enable Motion control recording to save disk space and make playback more efficient.
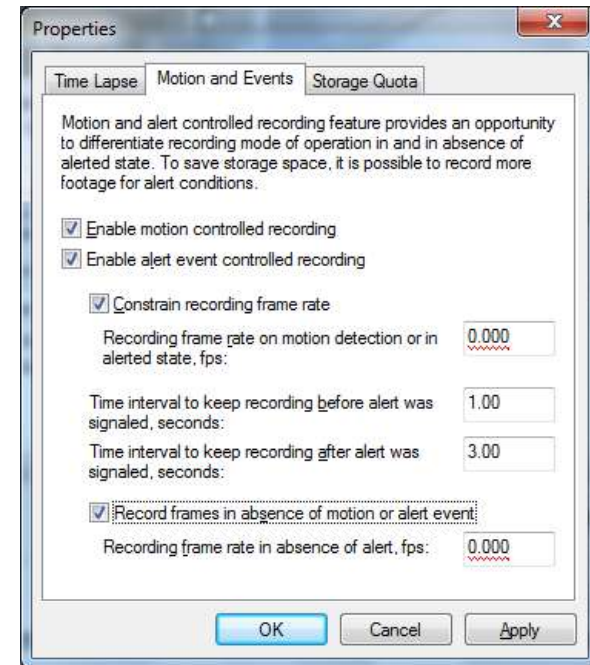
- **Enable motion controlled recording -** Enable recording when motion is not detected at selected frame rate. When Motion occurs recording frame rate goes to maximum automatically.
- **Enable alert event controlled recording -** Enable Alert recording Alert is is detected at selected frame rate. **When Alert** occurs recording frame rate goes to maximum automatically.
- **Constrain recording frame rate** - Constrain the number of frames to be record camera by camera. It gives you the opportunity to use HD space more efficiently. Less important cameras can be set to record less frames than others. Cannot apply for Mpeg4 and H.264 compressions.
- **Time interval to keep recording before alert was signaled (in seconds):** Pre-recording allows you to setup the number of seconds you want to have recorded before the last motion.
- **Time interval to keep recording after alert was signaled (in seconds):** Post-recording allows you to setup the number of seconds you want to have recorded after the last motion.

Storage Quota Tab
Advanced Properties > Storage Quota

Enable Individual limit on amount of stored data - Enable Individual limit amount for data for the current camera. Some cameras are more important than others and some are less important. The user can define the limit for every individual camera.
Enable Individual limit on duration of stored data - Enable Individual duration limit for the current camera. Can be set to minutes, hours, days or months
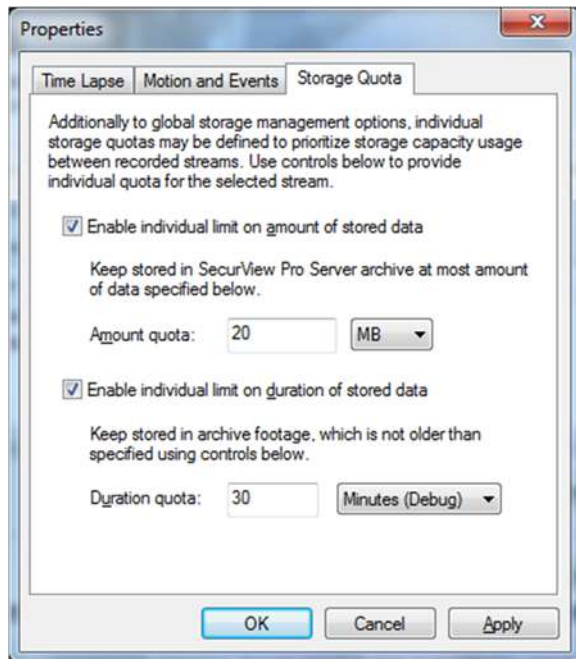
17. Click **Apply** to save the settings.

18. Click **OK**.

19. Checking "Use Schedule Recording" enables schedule recording. See "Schedule Recording Configuration" section for more information. Click **Next**.

20. The "Action Summary" window appears.   This page of the camera setup wizard gives you a summary of all of the changes that you have made throughout the wizard. You should set up every camera that you have connected to your DVR one by one and

disable the inputs that have nothing connected to them. The camera setup wizard only has to be run the first time that you install TRENDnetVIEW Pro to setup all of your inputs or afterwards to make changes to camera names and/or motion detection, recording, etc, properties.
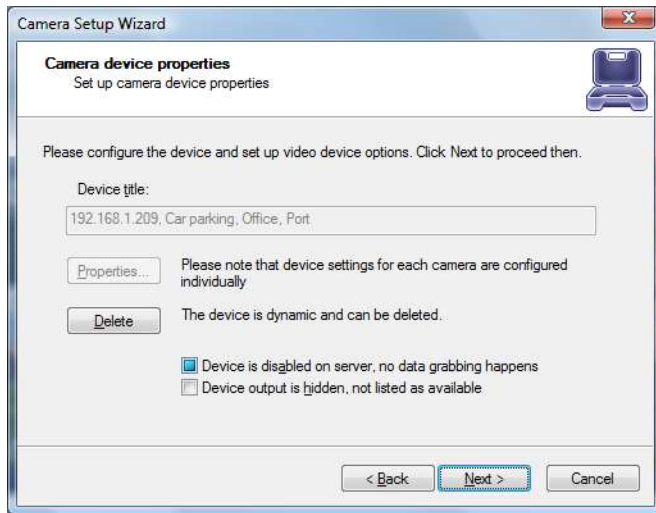
21. Click **Finish**.

Configure multiple cameras
1. To select multiple IP cameras, click on mouse button while holding down the Shift key and clicking in the window and drag the pointer diagonally, providing drawing frame.
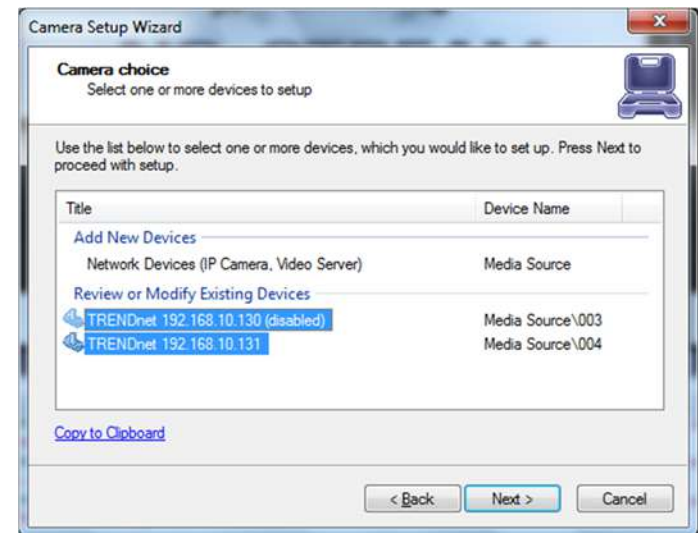
2. When you change the camera settings, you must remember that the camera may already have some of the settings.
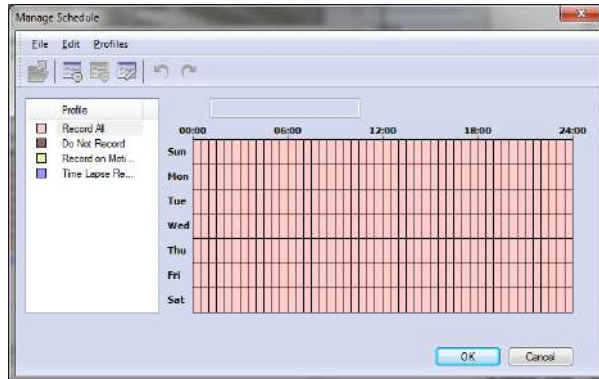

Scheduled Recording Configuration

Scheduled recording requires device configuration administration permissions through the "Camera Setup Wizard". As soon as scheduled recording is selected, cameras will be recorded in accordance with the schedule.
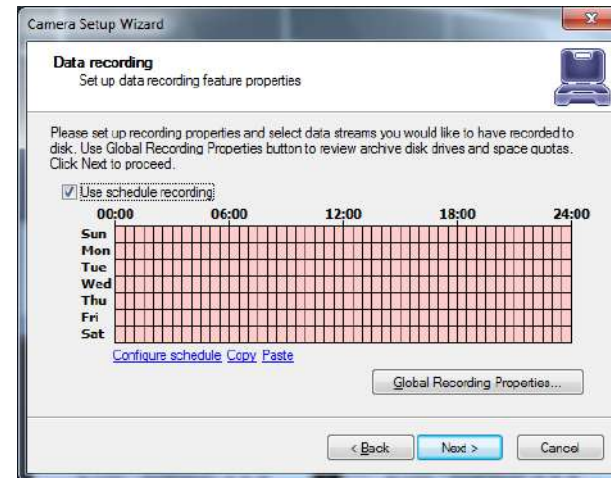
Click on **Configure schedule** to bring up the "Manage Schedule" window.

You can create, edit and delete profiles of the schedule by clicking on the top toolbar. By Selecting a profile from the list and "drawing" on the schedule you can specify the time for the selected profile.

Profile Configuration

Profiles > Create New Profile

- **General tab** -Specify settings that affect only the appearance of the profile in the settings of the schedule.
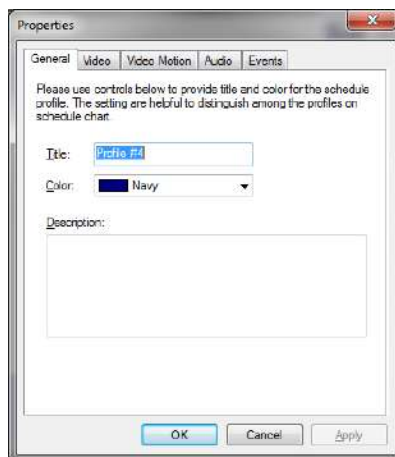
- **Video tab** - Allows managing of the video recording settings.

  - **Enable video recording** - enable/disable video recording.
  - **Enable motion / alert controlled recording** - enable/disable the recording of the movement, or   events.
  - **Record frames in absence of motion or alert event -** this option works differently.
  - **Record of Motion / off events:** includes compression record by limiting the frame rate.
  - **Recording by motion/events enabled** - enable recording when there is no movement/events. You can also set the number of frames per second.
  - **Constrain recording** - enable/disable the compression record by limiting the frame rate.
  - **Time interval to keep recording before / after alert was signaled** - the recording time before and after the motion or event.
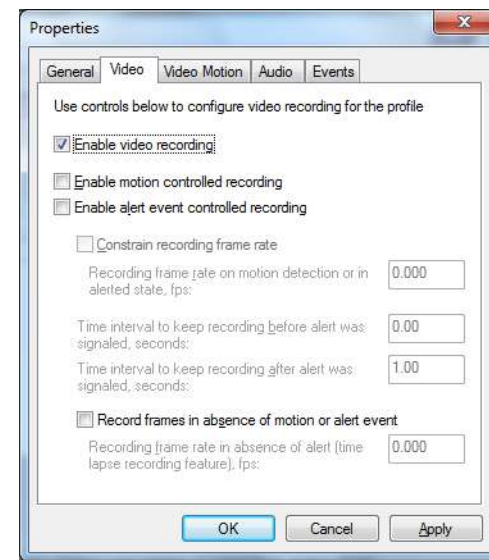
- **Video Motion Tab** – Enable video motion recording.

- **Audio Tab** - Enable audio recording – enable/disable audio recording.

- **Events Tab** - Enable events recording – enable/disable e recording.


Digital Input Configurations and Events

To activate the dry contacts (digital or dry inputs) on the camera you need run Camera Setup Wizard, open the camera settings and select the tab Events. Next, you need to include the generation of events (Enable event generation), also select the State in which the alert generated by the event - this can be done by clicking the mouse on the link in the column State. After changing the settings you have to continue the Camera Setup Wizard to finish.

Available State:.

- **Active -** by changing the status of the contact, it is recorded in the archive;
- **Alert if Change -** Same as Active, but by changing the state of contact is generated alert;
- **Alert if Open -** the same as Active, but when closing the contact generated alert;
- **Alert if Close -** same as Active, but the closure of the contact is generated alert.
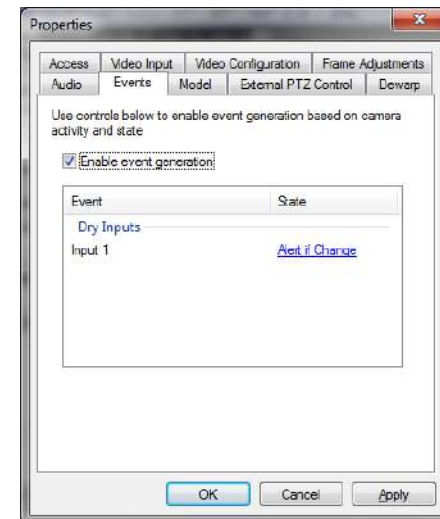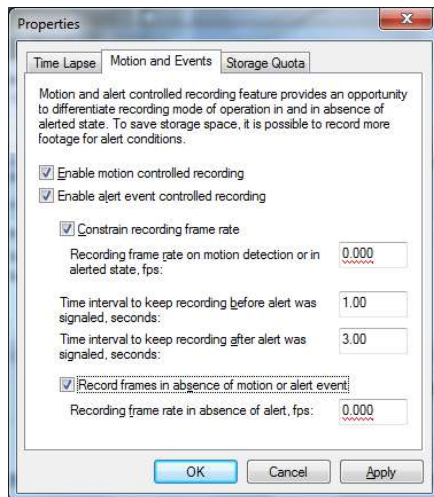
Recording

For the recording of events, select the corresponding check-box on the page, Data recording, in the Camera Setup Wizard.
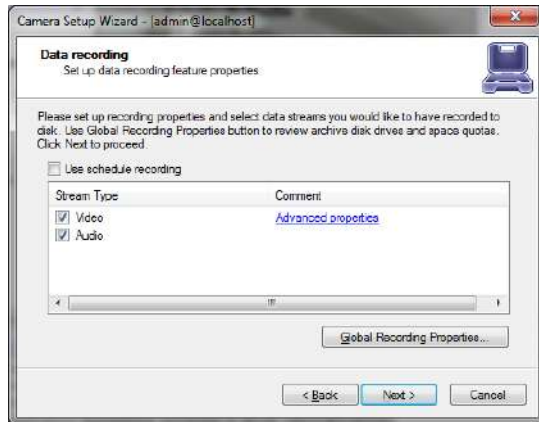

You can also set up to activate record video after an alarm event. To do this, click **Advanced Properties**, select the "Motion and Events tab", and select "Enable alert event controlled recording."
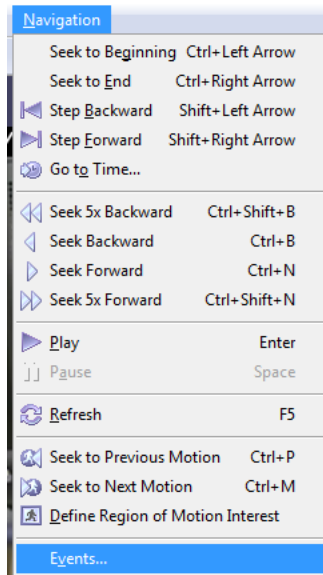
Archive

1. Click **Archive** in the structure pane on the left.

2. Click **Video**.

3. Double click the desired camera.

At the Time Line bar, events are displayed in the lower part, and are marked with yellow or red (alarm events) Labeled.
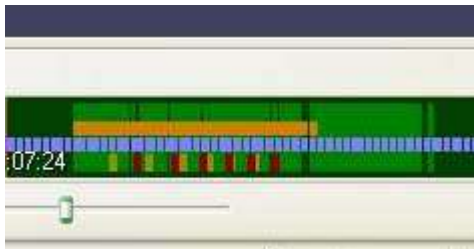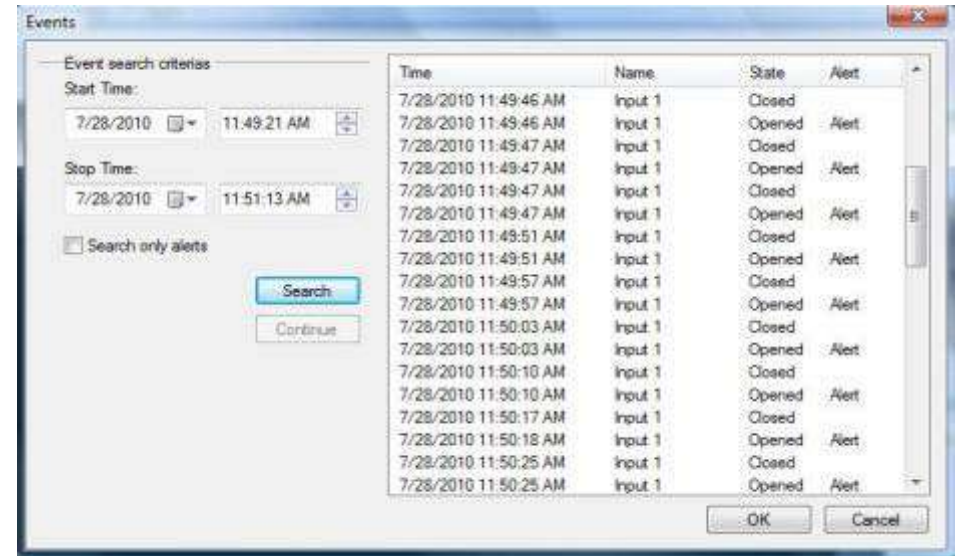

Search for Events
To search for events, choose **Navigation** -> **Events** in the archive window..

Specify search criteria and click **Search**. Double click on the event of interest to establish the position of the archive at the time of the event

Live view pop up by motion and events

1. Cameras will be placed on a client screen as soon as Motion/Event triggered on the camera

2. Each camera has the option in a footer "lock" and "unlock".

When a camera is unlocked it will be changed on the screen if you have enabled Pop up features. If a camera is locked then it will always stay on the screen.
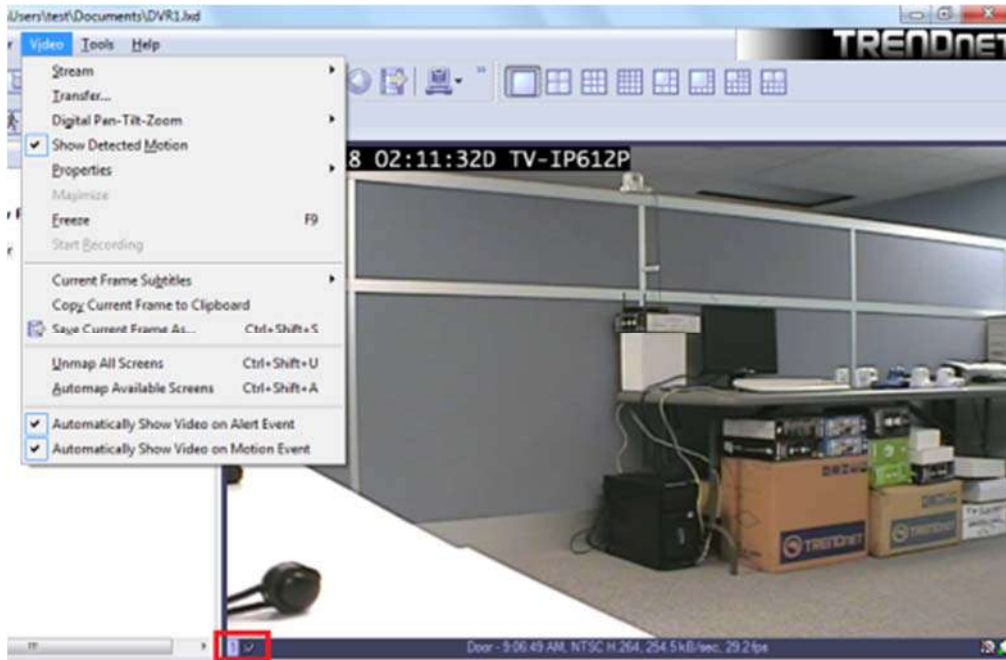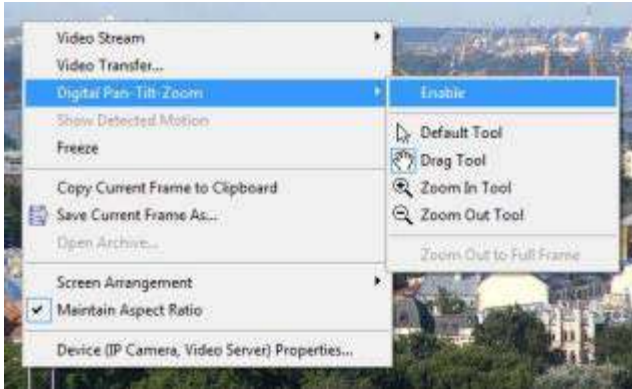

3. On an event, camera placed on the screen by pop up will be marked in red blinking frame.

Chapter 5

Digital PAN-TILT-ZOOM on live view

1. Right-Click on any camera to activate the Digital Pan-Tilt and Zoom function.

2. Then by activating the PTZ control pane live streaming video can be digitally enhance.

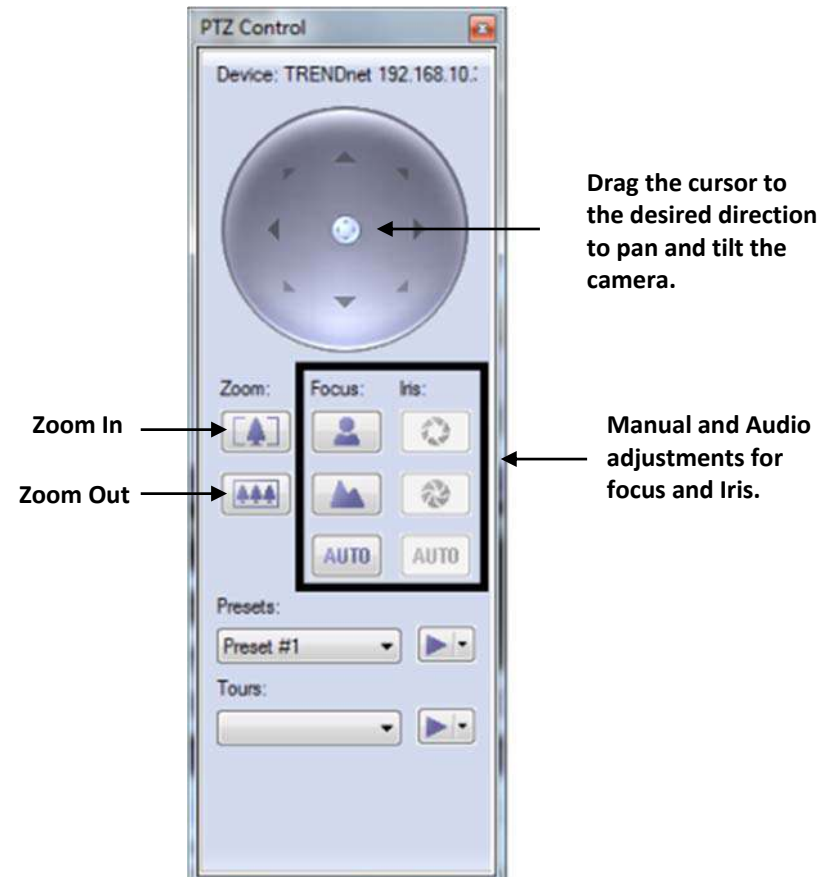

Digital PAN-Tilt-Zoom Tools
.
- Default Tool – It will click and drag as if no digital PTZ was enabled. Digital PTZ control still be accessible via PTZ control pane
- Drag Tool – when selected mouse can drag digitally zoomed image around screen changing your viewpoint. Additionally mouse wheel will works as zoom in/zoom out.
- Zoom In(Out) Tool – digital zoom out (in) on mouse left button click.
- Zoom Out to Full Frame – zoom level automatically reverts to 0, image will fit on screen completely.

Digital PAN-Tilt-Zoom on Playback

To Activate the Digital Pan-Tilt and zoom function on already recorded video just activating the PTZ control pane from the archive window. It can be controlled only via PTZ control pane.
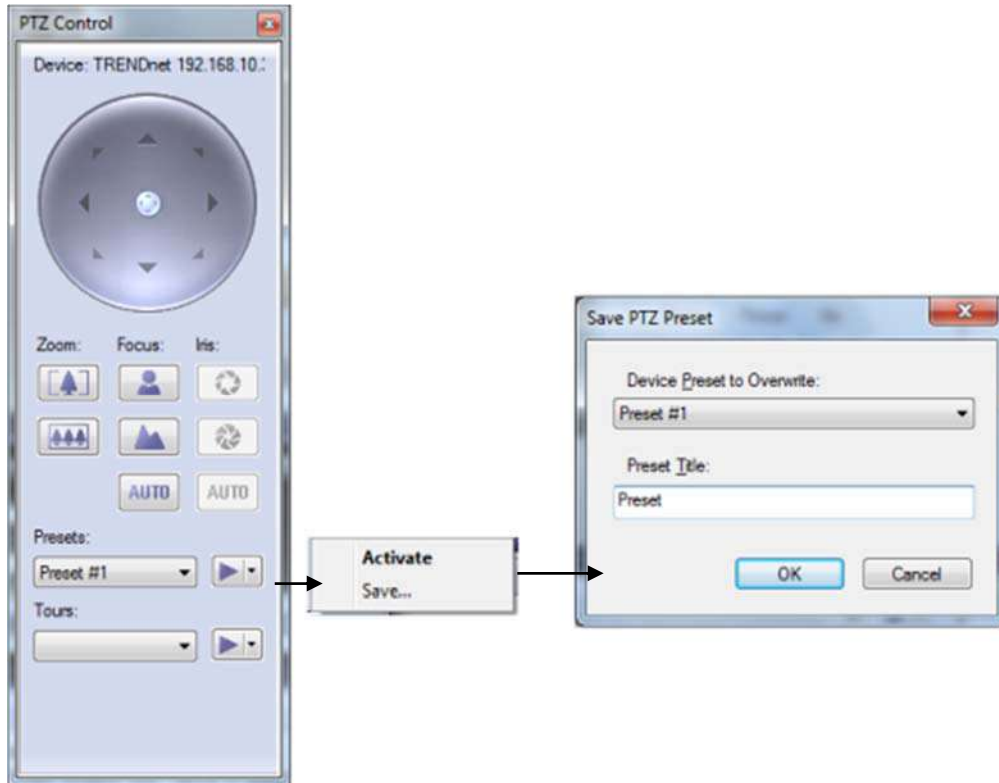
PTZ Control Panel for optical zoom

Click on this icon on the main toollbar to get to the PTZ control panel.

Drag the cursor to the desired direction to pan and tilt the camera.

Zoom In

Zoom Out

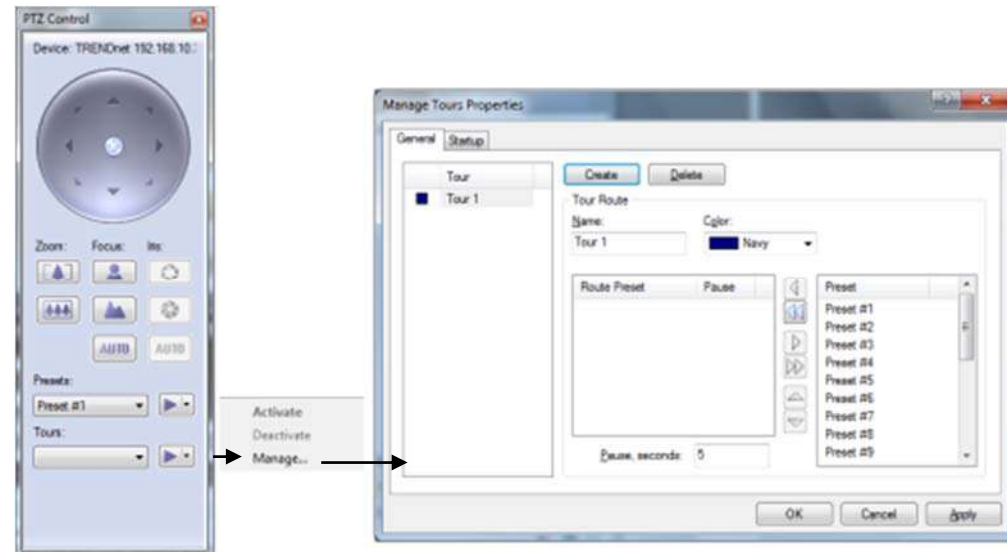**Manual and Audio adjustments for focus and Iris.**

Save Presets and Tours for PTZ Cameras

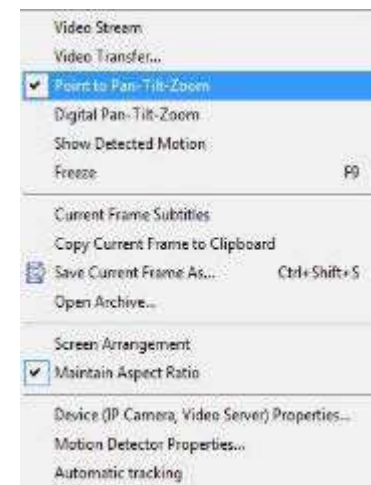Presets and Tours can be configured from the PTZ control window.

Manage PTZ tours camera by camera by selecting the presets of your choice and time between them.

PTZ control – Point to click PTZ

Point to click works on PTZ cameras that support point to click.

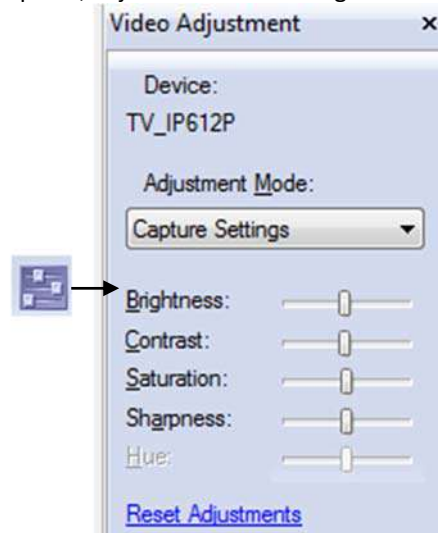To enable point to click, right-click the live video stream and click **Point to Pan-Tilt-Zoom**.

PTZ control – Shortcut Keys

PTZ cameras can be controlled with the +- and arrow keys form pc keyboard.

Video Adjustments

Video adjustment panel, adjust the video settings for the desired IP camera.

Audio Adjustments

From the Audio Panel, enable live audio from the IP camera of your choice

Video Frame Export

Video Frame Export Setup Wizard allows you to configure continuous saving of video frames on network, fixed storage or FTP. Frame export can be configured for multiple devices. Also you can use fps limit (time lapse) and motion controlled export. Exported frames will be saved in JPEG format using file name format you specify when configure export until disabled.
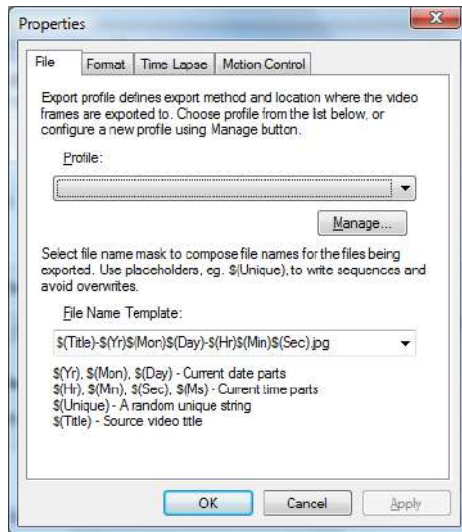
1. Right click on the server in structure pane or click **Server->Selected Server** in the menu bar.

2. Choose **Tasks**

3. Click on **Video Frame Export Setup Wizard**

4. The "Video Frame Export Setup Wizard" window appears. Click **Next**.

5. The "Video Streams" window appears. Select one or more devices from the list for frame export configuration. Then click **Next**.

6. The "Export properties" window appears. You can enable or disable video frame export in this screen.
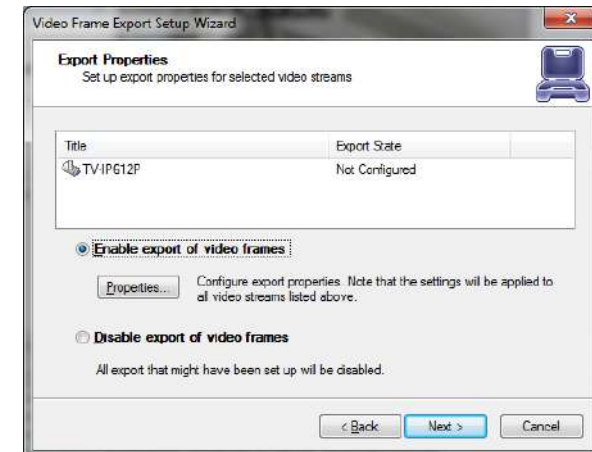
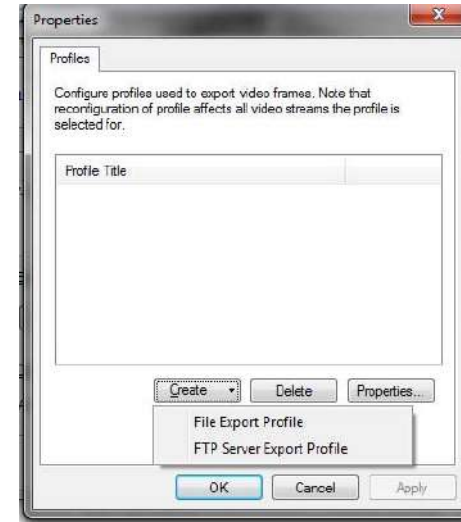If you want to enable export, press properties button to configure it. Review the settings:

- **Profile**: Select already created profile or create at least one to start using video frame export. There are two types of profiles: file export profile and FTP export profile. Use manage button to create edit or delete those profiles
- **File Name Template**: Each frame will be saved into file, this template string will be used for formatting filename. Please make sure that it will be unique by adding it's time in milliseconds (ms) or random unique string ($(Ms) or $(Unique) format tags

7. Click **Manage**.

o **FTP Server Export Profile**
Fill the fields below with FTP access data to allow TRENDnetVIEW Pro to connect and save frames there. Then click **Apply**.
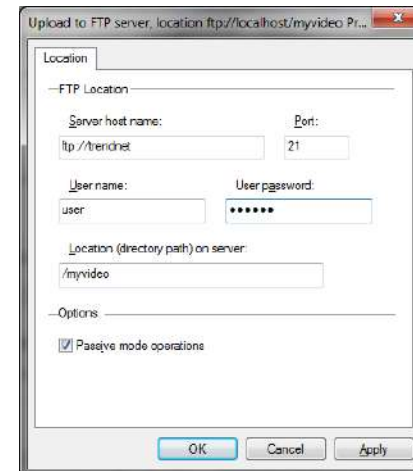
8. The "Profiles" window appears. Review the settings:

- **Profiles**: Edit or delete already created profiles in this list by pressing corresponding buttons.
    - o **Create**: Use Create button to choose where do you want to export video frames (File Export Profile or FTP Server Export Profile)

o **File Export Profile**
Directory: Specify frame export directory. If you are connected remotely please note that this is server side directory. You can specify network storage or share path. Then click **Apply**.
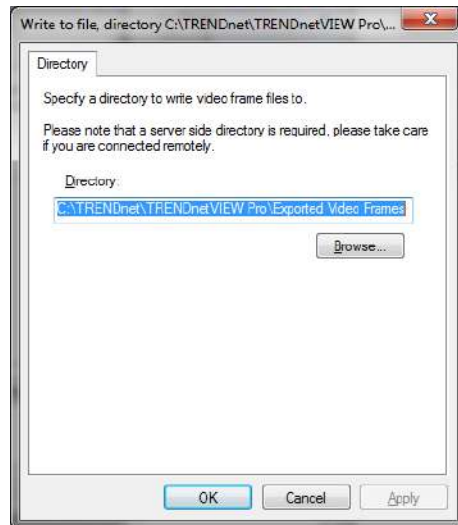

Exclusivity Mode (Windows lock out feature)

Tools > Options > Exclusivity

Exclusivity Mode feature ensures that the operator cannot get access to Windows operating system. The operator can have access to TRENDnetVIEW Pro software only. This is to ensure uninterrupted server operation and stability eliminating the human error.

Exclusivity is a password protected function.

1. Enter desired **Password**
2. Under "Mode", check "Enable exclusive mode".
3. Click **Apply**.
4. Uncheck "Enable exclusive mode" to disable Exclusivity mode.
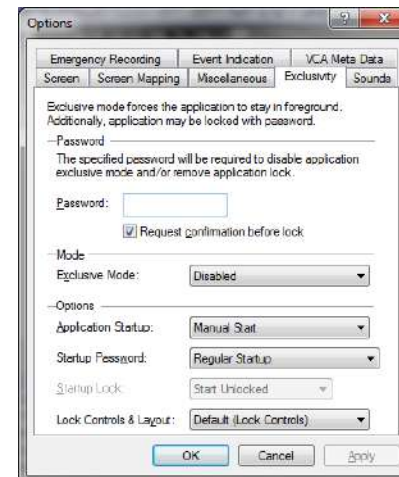
Lock Application

Tools > Lock Application

TRENDnetVIEW Pro Client can be locked to ensure that no one could damage server settings while administrator is away. Exclusivity mode password will be used to unlock application. You can combine Exclusivity Mode and Lock Application features in order to exclusively control TRENDnetVIEW Pro Client application and restrict access to other applications.
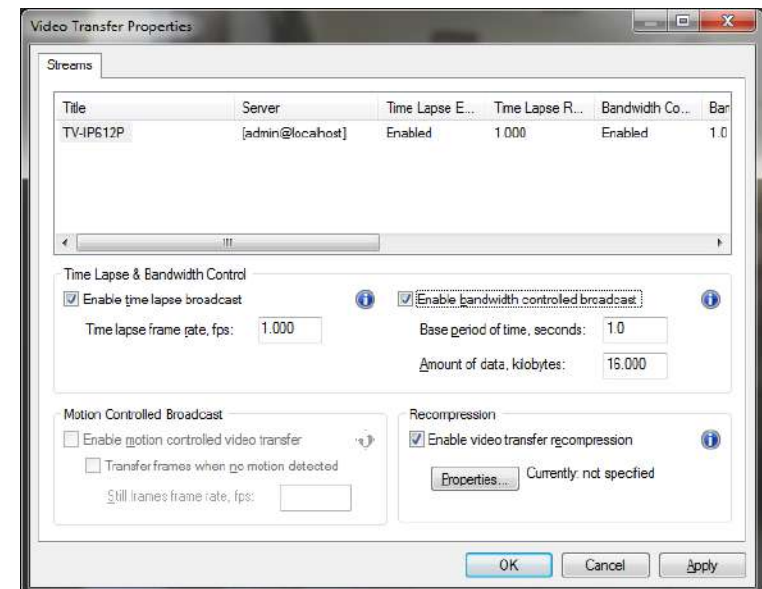
Enable Video Transfer Properties

Video Transfer feature is made for network traffic reduction between DVR Server and DVR Client (if remotely connected) and/or CPU load decreasing on the Client side. Video Transfer reduces amounts of data transferred from server to client by skipping some frames, transferring only motion detected frames, re-compressing or down sampling them without reducing recorded data quantity and quality. This feature is useful in slow remote connection or highly loaded network when viewing cameras remotely. Also it will be effective to decrease image resolution or transfer fps on the low-end systems, where DVR Client is used for viewing large amount of cameras. This approach reduces resolution and amount of frames, waiting to be rendered on the screens.


Review the settings:

1. **Time Lapse & Bandwidth Control:**
   - **Enable time lapse broadcast**: Enable time lapse broadcast on your remote connection only if needed.
   - **Enable bandwidth controlled broadcast**: Adjust data controlled broadcast if needed.
2. **Motion Controlled Broad Cast**
   - **Enable motion controlled video transfer**: Enable this feature remotely if want to see video on motion only. This is very helpful because frame rate is distributed to the cameras that have motion only.
3. **Recompression**
   - **Enable Video transfer recompression**: This feature can be very useful for remote connections only.   The TRENDnetVIEW Pro server can record up 3 megapixel images, but remotely using this feature a user can receive more frame rate with less image quality without changing the server properties

Video Transfer Defaults

You can specify default values of the video transfer for newly added devices. All options are identical to the Video Transfer properties. Those defaults can be accessed by clicking on server and choosing menu item Properties.
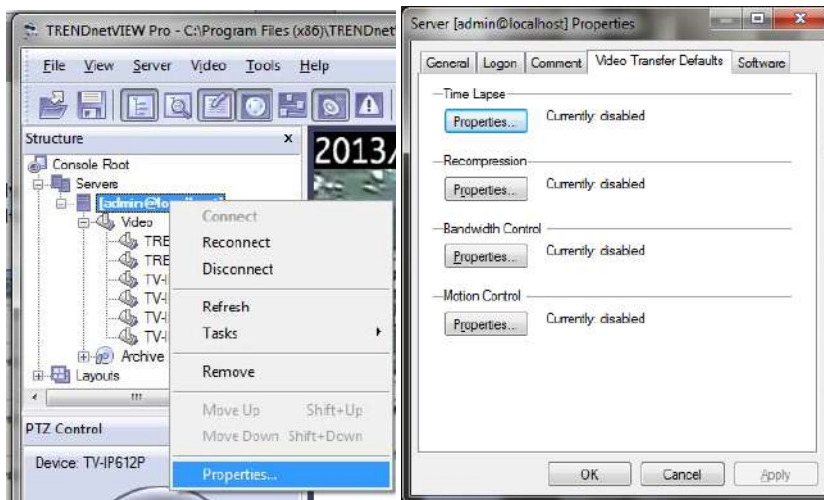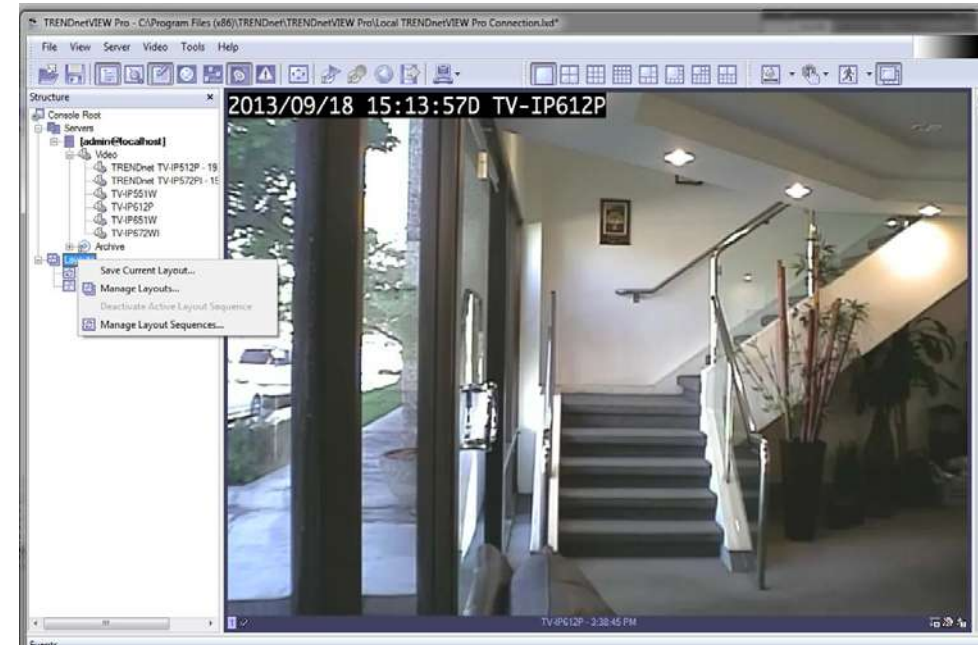

Layouts

Create custom Layouts by grouping cameras from different DVR Servers/Locations into groups for more efficient monitoring, and better management. For example group together all out-door cameras from different location or all POS cameras from all registers.

Individual Layouts can be activated by double-click on them with the mouse.

Users now can perform playback and other function by Right-click on the camera of their interest.

Note: Empty screens by default are filled with available cameras. You can disable this feature by selecting Tools->Options and choosing Screen mapping tab on appeared dialog, Set Automatic mapping mode to "disabled".
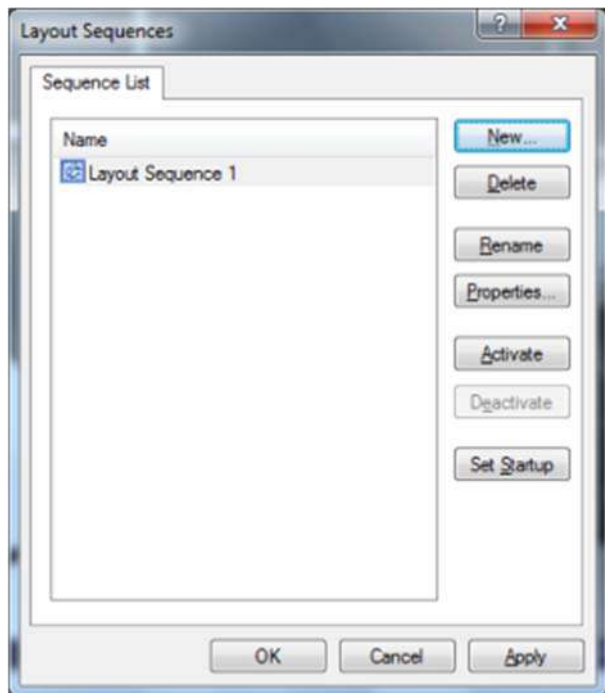
Layout Sequence

When Layouts are created, they can be used for sequencing.   To create sequences:

1. Right click on Layouts and click **Manage Layout Sequences**.
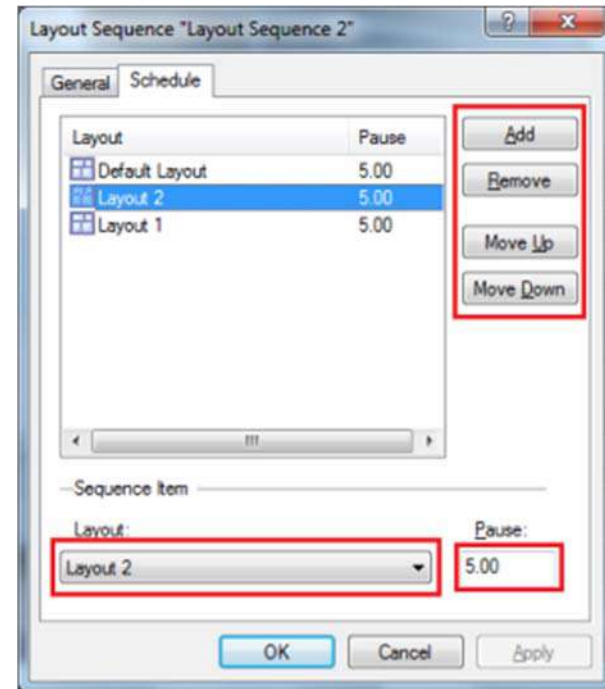
2. Click **New.**

3. Review the settings:

Add/Remove/Move Up/Move Down: Manage priority or remove layouts of your choice.

Layout: Choose given Layouts for adding them in a sequence.
**Pause**: Set time interval between layouts (in seconds)

Map Module

TRENDnetVIEW Pro Maps allows you to quickly and conveniently locate cameras for viewing placed on Google Map and/or on your own floor plans added in JPEG format.

1. To start this module, click this button on the toolbar:

2. Right click the map and use context menu commands to configure and control map features.
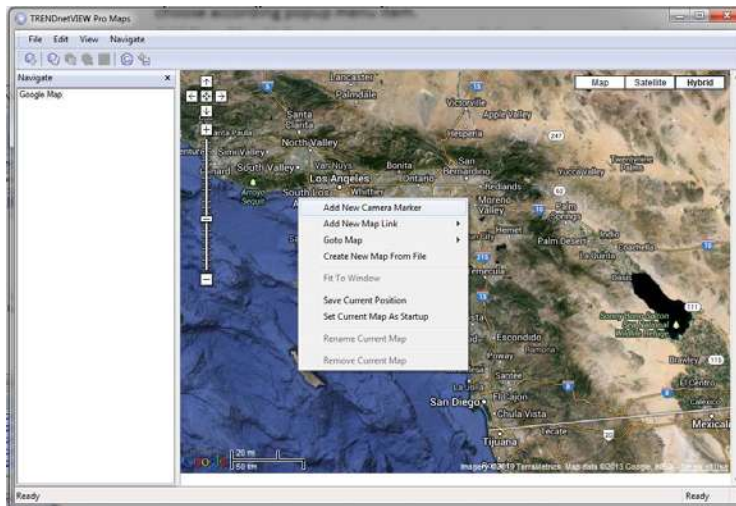
3. Review the settings:

- **Add New Camera Marker** – this item will add camera marker in place where menu has been called. There will be shown list of servers and cameras after choosing this menu item. After adding new marker you can double click on marker to activate matching camera. To remove marker right click on it and choose according popup menu item.
- **Add New Map Link** – inserts on current map link on the new or already created map. Double click will change current map on the linked map. To remove this link use right click on it and choose according menu item.
- **Goto Map** – navigate to other maps in appeared list.
- **Create New Map From File** – add new map from JPEG image file, which will be used as background.
- **Fit To Window** – JPEG map will strain on window maintaining it's aspect ratio.
- **Save Current Position** – used in Google map to saving it's current position.
- **Set Current Map As Startup** – set current map as startup map. Selected map will be loaded when starting to view this map module.
- **Rename Current Map** – rename currently selected map.
- **Remove Current Map** – delete currently selected map.

Archive Backup Wizard

Archive Backup Wizard purpose is to backup specific part of archive or burn CD/DVD with archive and Archive Viewer on it. This can be useful to create backup copies of your archive with lower fps, or writing specific part of the archive on the CD for other machines without TRENDnetVIEW Pro being installed on them. Please note that this wizard works only on the same machine where DVR Server is installed.

1. Click the Wizards icon and select **Backup server's archive data…**
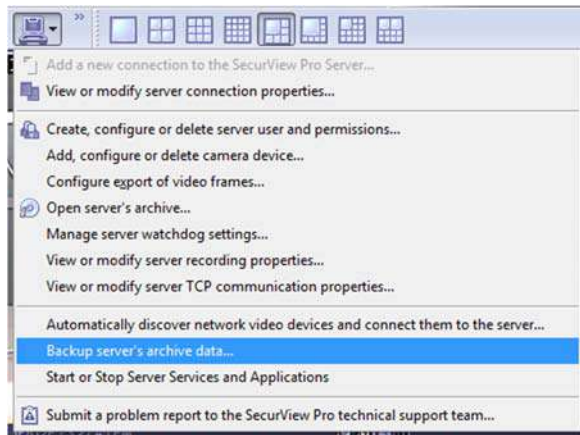
2. The "TRENDnetVIEW Pro Archive Backup Wizard" window appears. Click **Next**.

3. Select Cameras to Backup. Select one or more cameras from the list. Then click Next. Please note **Estimated Backup Size**. There are estimates of backup size on every page in this wizard. Note that you can always decrease estimate size by decreasing output fps of backup archive, deselecting some of the cameras or changing time range.
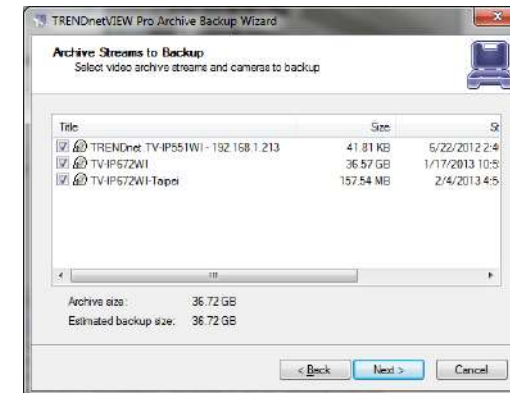
4. The time selection window appears. Select time range of backup archive. Click **Next**.

5. The Video Backup Option window appear. Click **Constrain backup video frame rate** to decrease fps of backup in advanced options. Click **Next**.
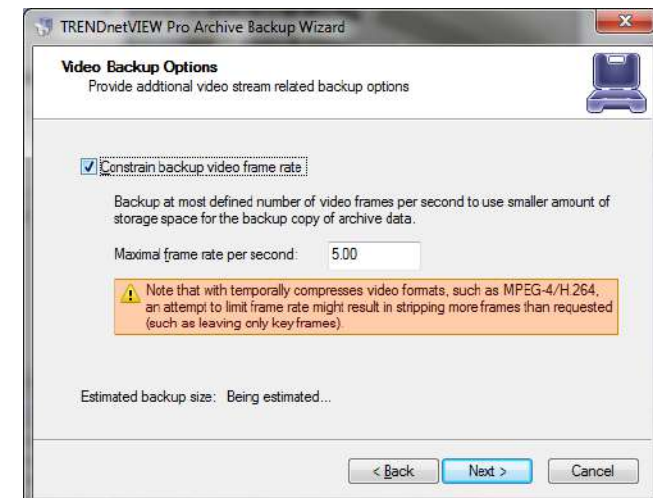
6. The "Backup Destination" window appears. Select type of backup ("Burn archive on CD or DVD disc" or "Copy archive to hard drive or network drive").   Then click **Next**.

7. If you select "Burn archive on CD or DVD disc", the "CD/DVD Device Settings" window appears. Click **Next**.
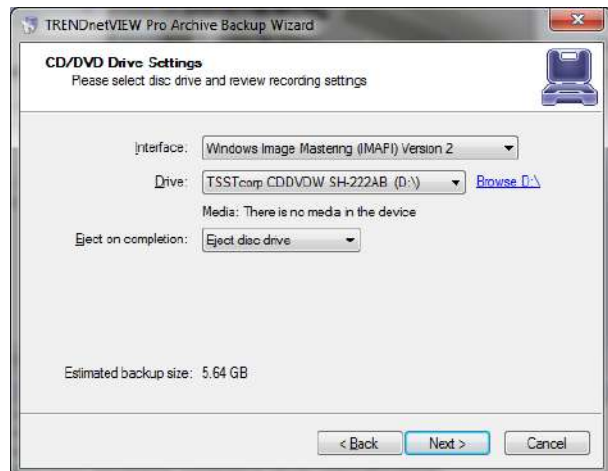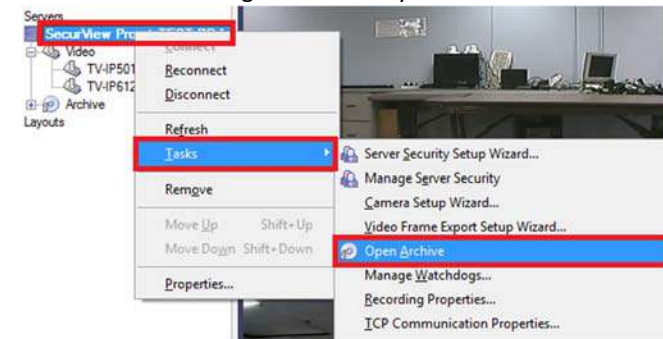

8. On the next window you will see progress of backup action. After backup is complete, click **Finish**

Chapter 6
How to playback video

1. Right click on your server name

2. Choose **tasks**

3. Click **Open archive.**

Note: You can also right click on any camera view and choose open archive.

4. The archive pane will now open up.

- **Playback Window Structure** - Now that you are in the playback screen, the structure pane on the left lists all of the cameras that you have recordings for .
- **To Navigate through the Video** - Double click on the camera you wish to playback (This camera will now appear with footage on the video screen).
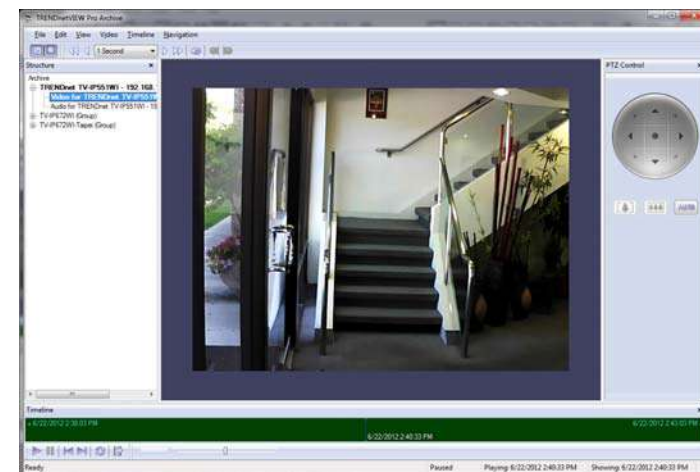
Fast forward & Rewind

There is a dial on the bottom of the screen, which you can drag in either direction to browse through your video in high speeds. Another way to fast forward is to use the arrow controls on top of the screen in which you can define how many increments of time you would like to move through the video.
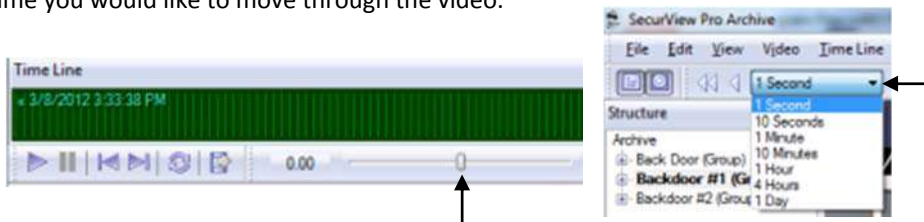
Playback Motion Only

Located at the top of your Archive Pane, there are two buttons that allow you to seek video with actual motion in return saving you time.

With the camera you wish to review selected and showing in your video screen

Choose either

"seek previous motion"

or
"seek next motion"

Smart Search

You can also search through video not only by motion in the screen, but also by motion in a specific part of your camera screen. Through TRENDnetVIEW Pro's playback screen, you can define a specific object in your view, or define a path, and seek through motion only in that specific region. This process is very commonly referred to as "smart search".

Define motion of interest

1. Click on **Navigation** at the top of the archive window.

2. Click on "Define region of motion interest".
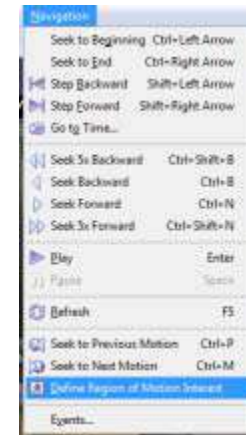
3. Press the left button and drag the mouse over the area you would like to see motion in. This will create a grid in that area. You can also select multiple regions.
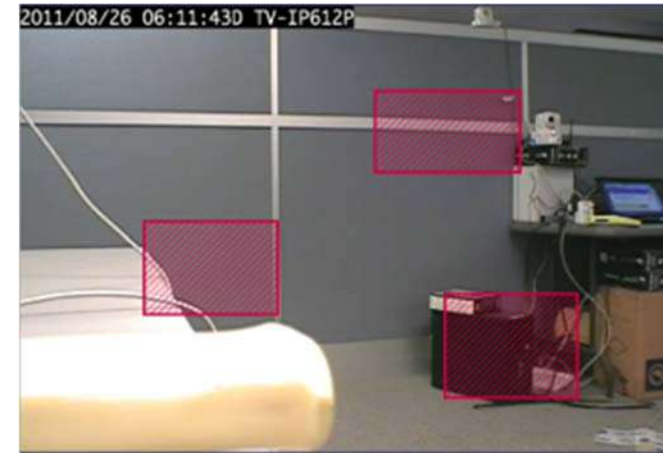
4. Click on "seek to previous motion" or "seek to next motion" to search through motion in the defined area or areas.

Export Video

To export video, you first have to select the section of recordings that you want to export to a different location (This will also prevent it from getting overwritten). To select video:
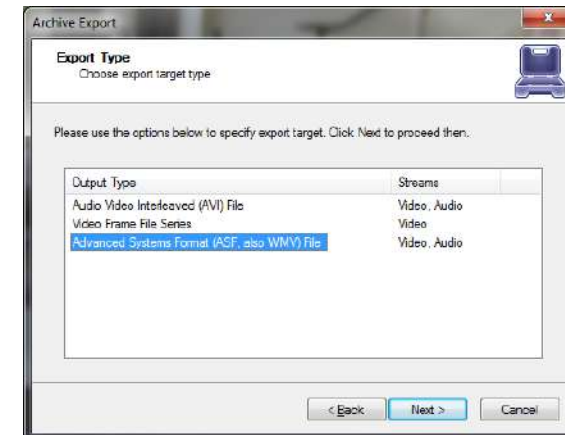
1. Click on **Edit** at the top of the playback screen.
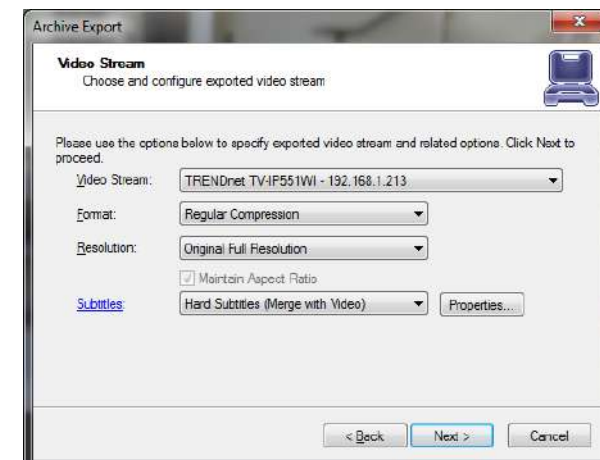
2. Click on **Export Wizard**.
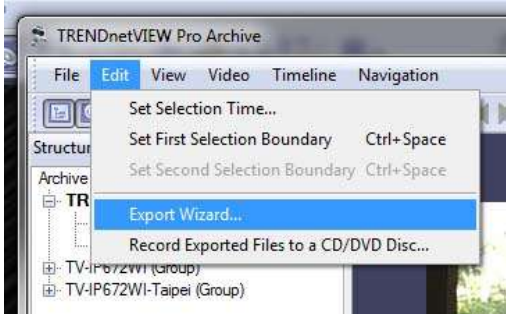
3. Select **Simple Mode** or **Advanced Mode** and then click **Next**.

3. The **Export Type** window appears.   Click **Next**. Note: Video + Audio export available only for ASF and WMV formats.
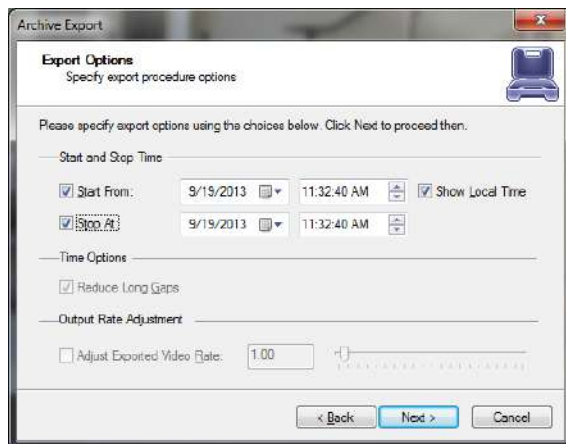

4. The "Video Stream" window appears. Choose the desired camera (video stream), compression (format) and subtitles. Then click **Next**.

5. The "Audio Stream" window appears. Choose which Audio stream you want to export along with video. Then click **Next**.
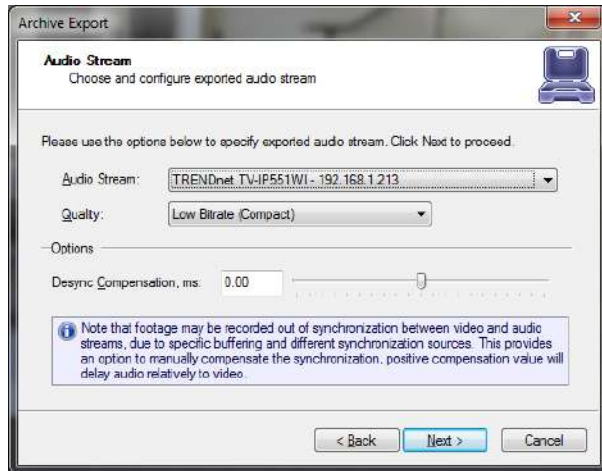

6. The "Export Options" window appears. Select the start and finish times of the video clip that you want to export. Click **Next**.


7. The Wizard will guide you to the next step for you do designate to which drive or folder to save the export video.

Note: To play back the TRENDnetVIEW Pro AVI file on a computer that doesn't have TRENDnetVIEW Pro installed, a codec (a small executable file) will have to be installed in order for your media player to recognize the TRENDnetVIEW Pro video file. The codec can be downloaded from http://www.trendnet.com/downloads.
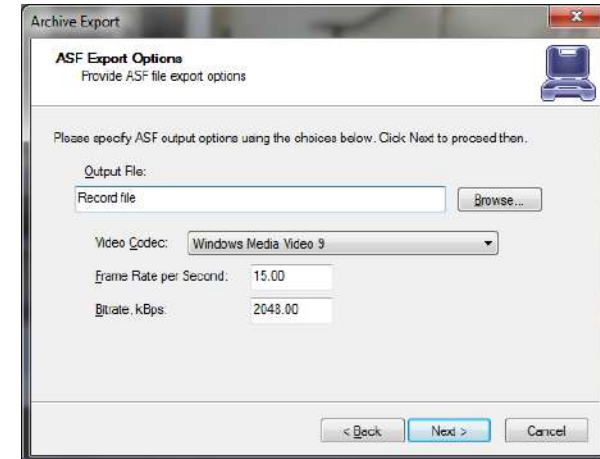
8. The "Export Batch" window appears. Set all necessary parameters and before start export. The export Batch Window allows you add multiple export tasks.
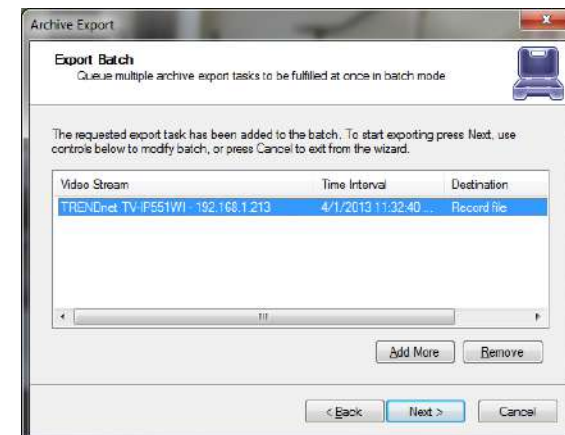
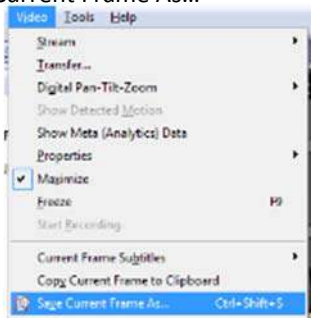9. **The** "Content CD/DVD Disc" window appears. Click **Next**.
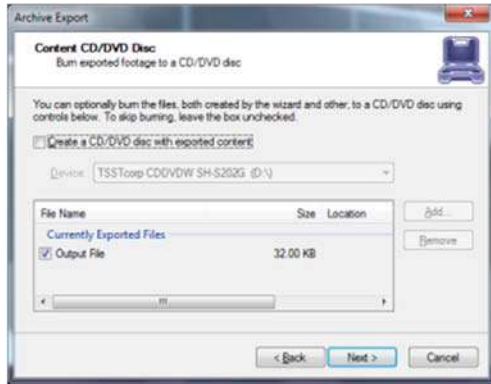
10. Archive Export wizard is now complete. Click **Finish**.

Export Snapshots
Another way to export video is to save one frame at a time, like a snapshot.

1. Pause the video on the image that you would like to copy.

2. Click on **Video**.

3. Choose "Save Current Frame As…"

4. Select a location and file name for your image

5. Click **Save**.
Now you will have the image stored so that you can print, e-mail, or enhance that snapshot.
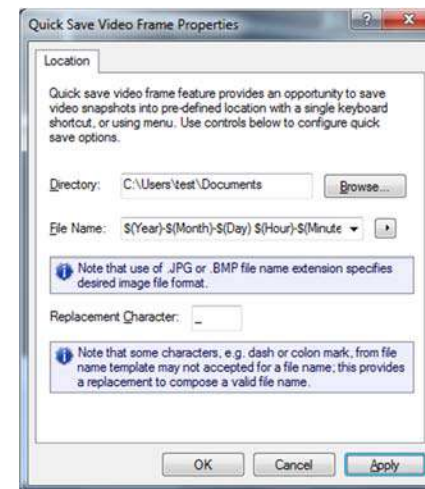
Quick snapshot save and current visible frame save

The Quick save feature provides you the option to quick save video snapshot to a pre-define location with a single keyboard shortcut.
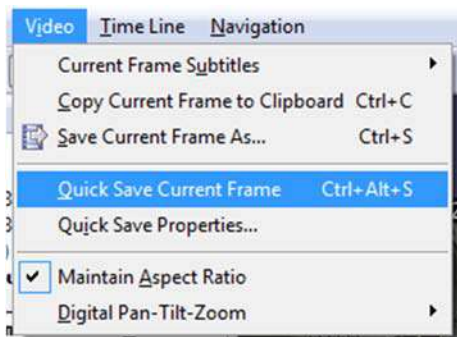
1. Prior to using the "quick save current frame" the Quick save properties must be configured to pre-define the save location
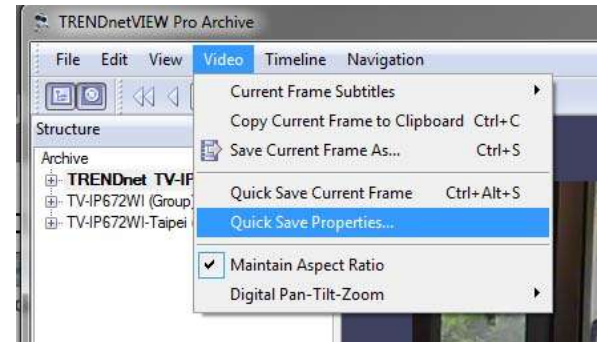
2. Setup preferred directory for saving the snapshots.

3. Press Ctrl + Alt +S on your keyboard or click **Video** and select **Quick Save Current Frame**.

Chapter 7

## Upgrading TRENDnetVIEW Pro software to a newer version

To check for upgrades and new free versions you can always visit www.trendnet.com

Updating the software requires all DVR services to stop before Installation.

During the installation of the new version you will encounter the following message.

Yes: Recommended. Keep all current configurations of your server.

No: Start a new database. All previous settings and configurations will be erased and a new database will be created.
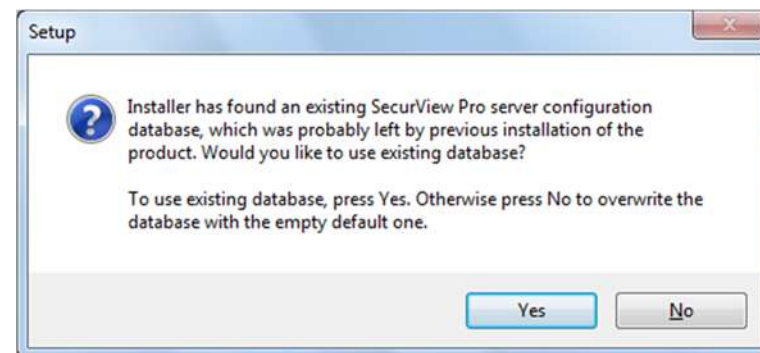
After you complete the above steps, you can continue with the installation.

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