American Dynamics

A Tyco International Company

# Hybrid Digital Video Recorder

## User Manual

Version 1.1

Part Number 8200-2713-01 B0

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To reduce risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

Do not expose this appliance to rain or moisture.

Do not install this product in hazardous areas where highly combustible or explosive products are stored or used.

This equipment is a Class 1 laser product incorporating a Class 1 laser diode and it complies with FDA radiation performance standards, 21 CFR subchapter J and the Canadian Radiation Emitting Devices Act, REDRC1370.

The lightning flash/arrowhead symbol, within an equilateral triangle, alerts the user to the presence of a shock hazard within the product's enclosure.

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the battery manufacturer. Dispose of used batteries according to the battery manufacturer's instructions.


## FCC COMPLIANCE

This equipment has been tested and found to comply with the limits for a Class "A" digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used

in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

This product was FCC verified under test conditions that included the use of shielded I/O cables and connectors between system components. To be in compliance with FCC regulations, the user must use shielded cables and connectors for all except power.

## EQUIPMENT MODIFICATION CAUTION

Changes or modifications not expressly approved by Sensormatic, the party responsible for FCC compliance, could void the user's authority to operate the equipment and could create a hazardous condition

This class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## Rack Mounting

Consult with the supplier of your equipment rack for adequate rack mounting means, with proper consideration for the weight of this product.

Consult with the manufacturer of your rack regarding the proper hardware and procedure of mounting this product in a safe and useable fashion

Avoid uneven loading or mechanical instability when rack mounting units.

Make sure that units are installed to get enough air flow for safe operation.

The maximum temperature for rack-mounted units is 35° C.

Avoid uneven loading or mechanical instability when rack mounting units.

Check product label for power supply requirements to assure that no overloading of supply circuits or overcurrent protection occurs.

Mains grounding must be reliable and uncompromised by any connections.

## CE Compliance

Any devices connected to the BNC panel shall comply with the Limited Power requirements of IEC60950

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# 1. Introduction

Thank you for purchasing the HDVR high-performance network digital video recorder. This manual was written to help you install your HDVR hardware and software. Your new system supports both analog and IP cameras individually or simultaneously. It is designed to preserve any investment you already have in analog cameras while providing you the ability to migrate to new network-based IP camera technology.

Regardless of your camera technology, HDVR offers you the most advanced video networking, recording and surveillance technology available in the market today.

## Product Description

The Hybrid Digital video recorder ("HDVR") is a next generation high-performance, H.264 30 images per second per channel security solution. The HDVR systems features 480 images per second 16 channel and 960 ips 32 channel H.264 hardware compression with video motion detection, event based recording, and relay output controls. Networking capabilities allow local and remote administration, playback, and export using a common PC or Mac client application. The HDVR supports a mix of analog and IP cameras with the same intuitive interface. Flexible high speed searches include time and date, event, and smart pixel searching. The HDVR offers users a highly intuitive and ergonomically designed interface that provides simple and efficient access to all setup and operation functions.

## Video Recording Overview

The fundamental functionality of the HDVR is to *record video* from analog or IP cameras so that if there's a breach of security you can quickly and easily search and find the video that will help to solve your security problem. There are many additional features and configuration settings that provide you with tools to customize your system to your specific requirements; however *searching recorded video* is a fundamental feature of the system. Understanding the basic video recording settings is important in order to take full advantage of this powerful video security solution. You will find a detailed description with diagrams explaining how to configure the video recording settings in the Software Setup section of this manual. Before we go there, here's a brief overview of the three video recording settings.

**Motion Detection Recording** - Video is only recorded when the HDVR System detects motion in the camera's field of view. This is a very efficient method of recording because if the system doesn't detect motion, video is not recorded saving a tremendous amount of disk capacity and extending the recording time. Motion detection recording is configured on the Schedule Setup screen.

**Continuous** video recording (also known as free run recording) records every video image all the time for the specified schedule you have set for the camera. Continuous recording is configured on the Schedule Setup screen.

**Event Recording** provides a method of linking different types of events such as input triggers, point of sale data, and loss of a video signal or video motion to cause an action such as recording video. There are additional action types that can be linked to the event types on the Event Linking screen. Connecting a door sensor to a trigger input on the HDVR and linking it to a camera to automatically record video upon tripping the sensor is an example of how you might configure event recording.

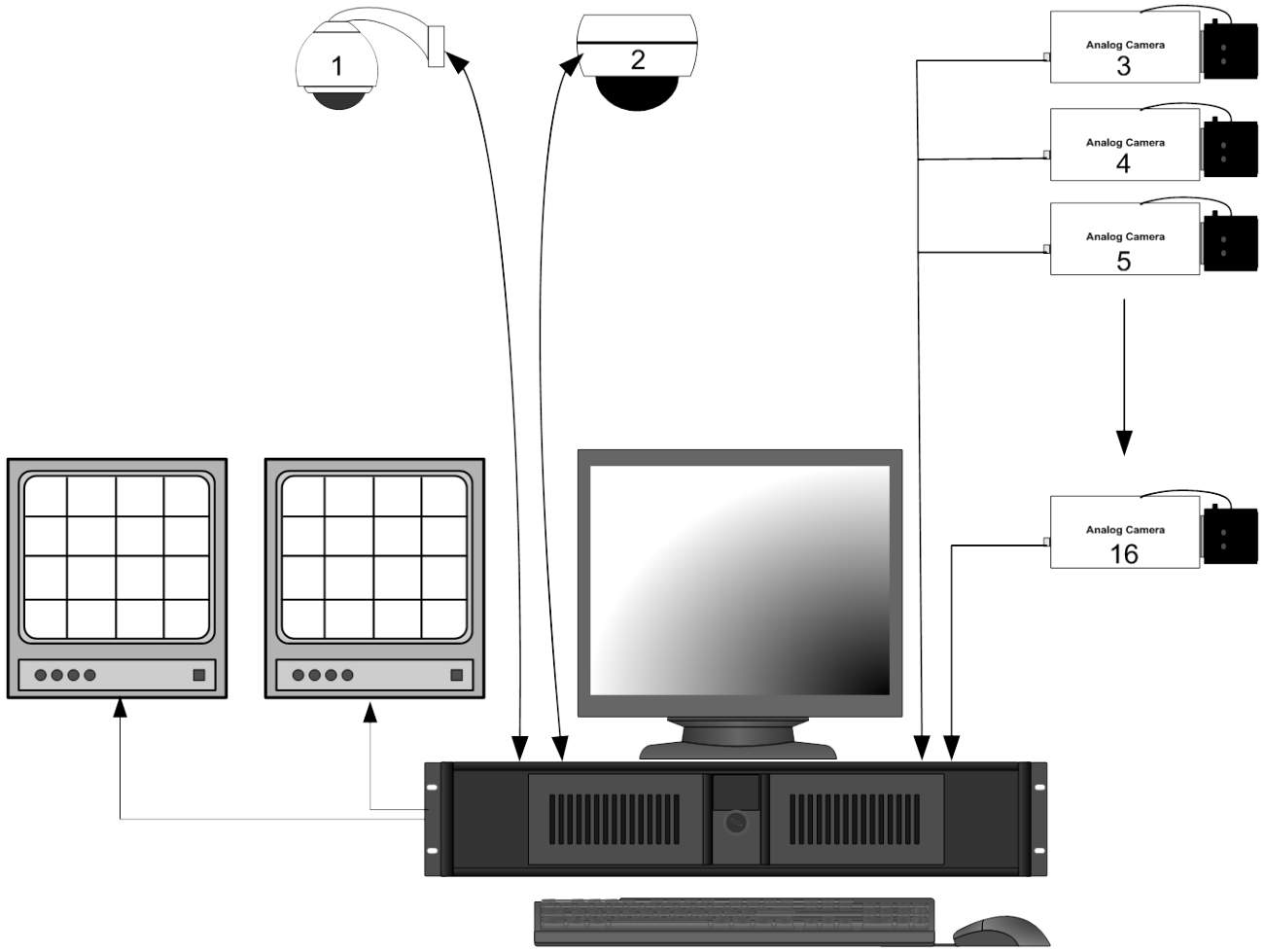
## Features

- Up to 32 analog camera inputs, auto-terminating
- Choice of hard disk capacities up to 8 TB
- System record rates up to 960 images per second (NTSC)
- H.264 compression with watermarking
- Built-in hardware motion detection with definable zones per camera
- Adjustable image rates and resolution per camera
- 2U, 4U chassis
- Client viewing and administration software
- 24/7 scheduling
- Transmission over Ethernet, DSL, or Cable
- Automatic IP address designation with DHCP
- Will not stop recording in the event of network failure, watchdog timer
- Bandwidth limitation for Ethernet/Dial-up networks
- Simultaneous record, playback, background image archiving
- Up to 32 internal alarm inputs, 16 alarm outputs, 1 relay outputs
- Multi full duplex audio with recording
- PTZ Control via RS 485/RS422
- Spot monitor output displays for live video
- Windows® XP  Operating System for stability and reliability
- Network Time protocol (NTP) support for time synchronization
- Interface with cash registers (POS) and ATMs for video + transaction text recording
- DVD Recorder
- Open API for third-party integration and interoperability

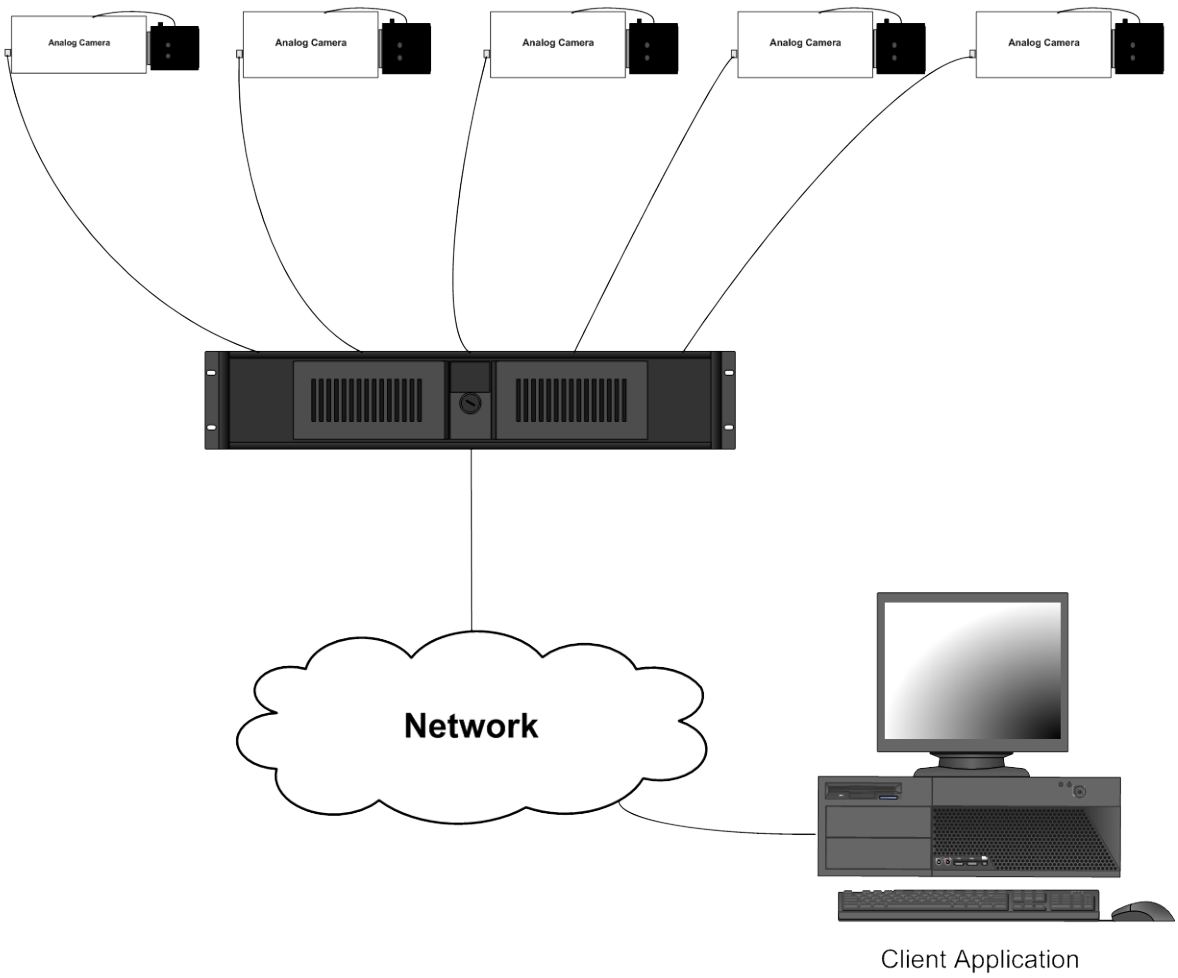
# 2. Sample Configurations

One of the most appealing features of the HDVR product line is its ability to address a wide variety of installations whilst also providing live monitoring, searching, and configuration through the same, easy to use interface. Below are some typical types of installations for which HDVR is well-suited.

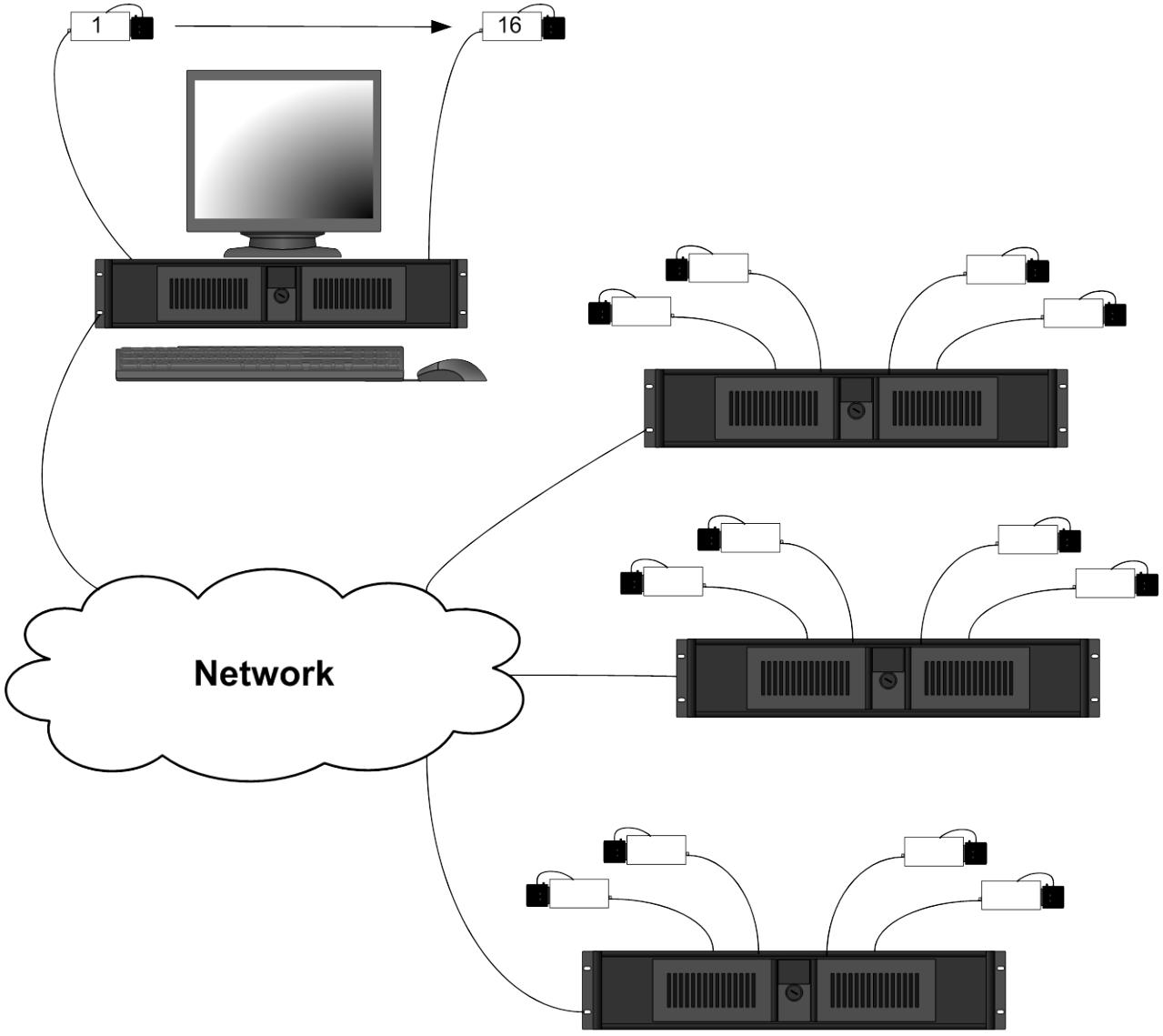
## Standalone HDVR System



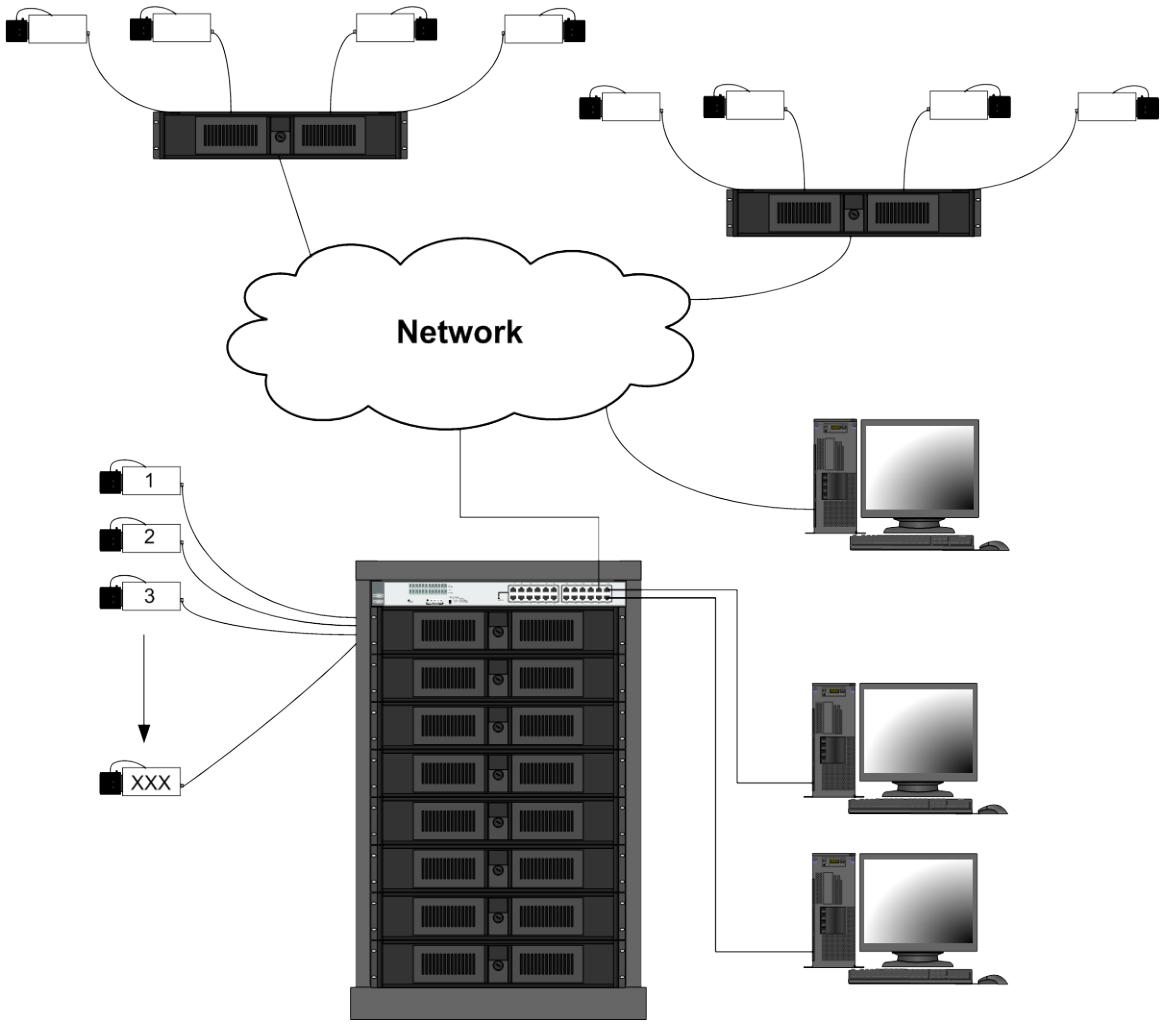
## Remote HDVR System



## Multi Branch Office HDVR System

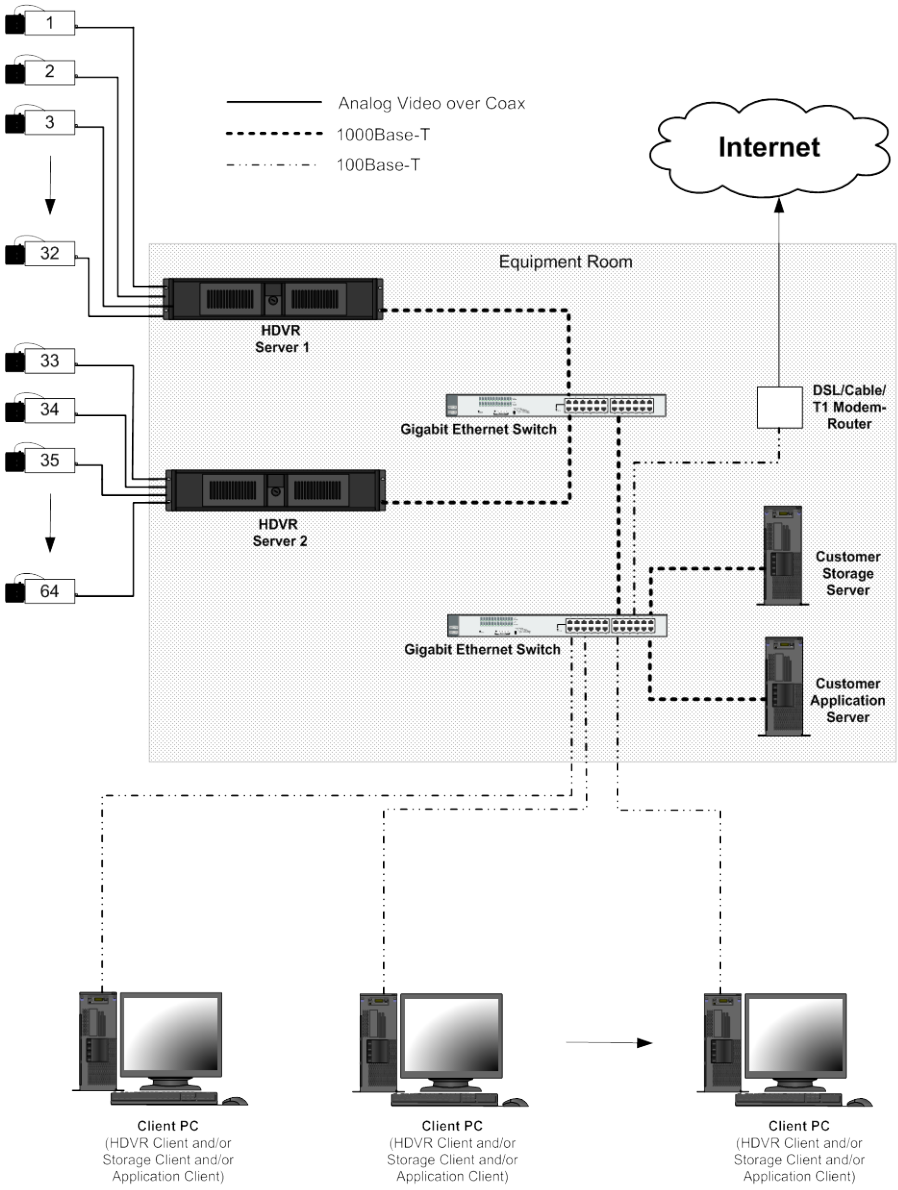


## Enterprise HDVR System



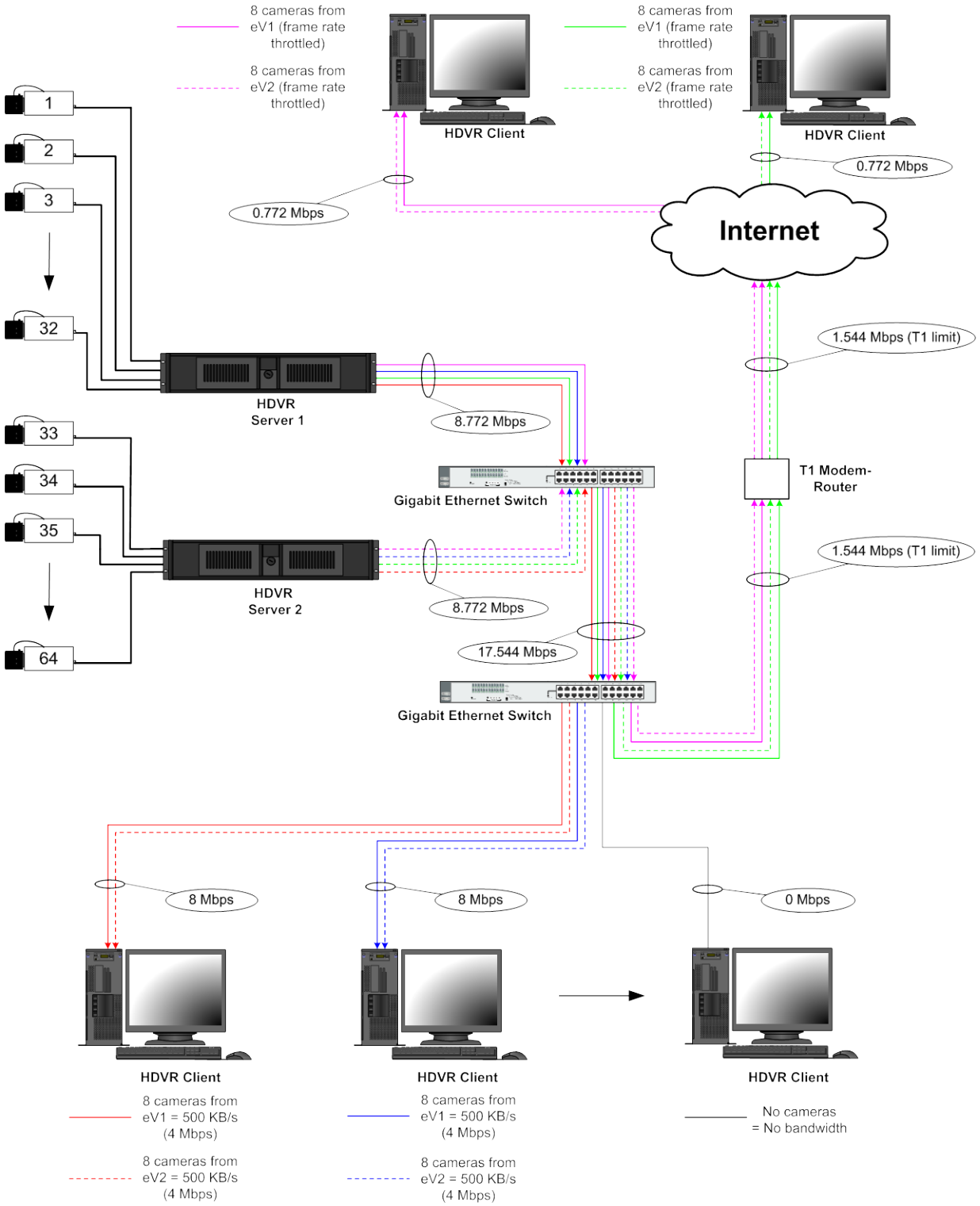
A detailed example of a small enterprise system is shown to illustrate network configurations which will provide satisfactory performance for your HDVR systems. In the drawing below, it is assumed that the customer has a pre-existing data network with servers that provide centralized file storage and/or applications to client computers on the network. The HDVR client can be installed on as many of these client computers as desired. The second Ethernet switch is only required if there are more network client computers than ports on the first Ethernet switch.

## Network Connections for Analog Camera HDVR System



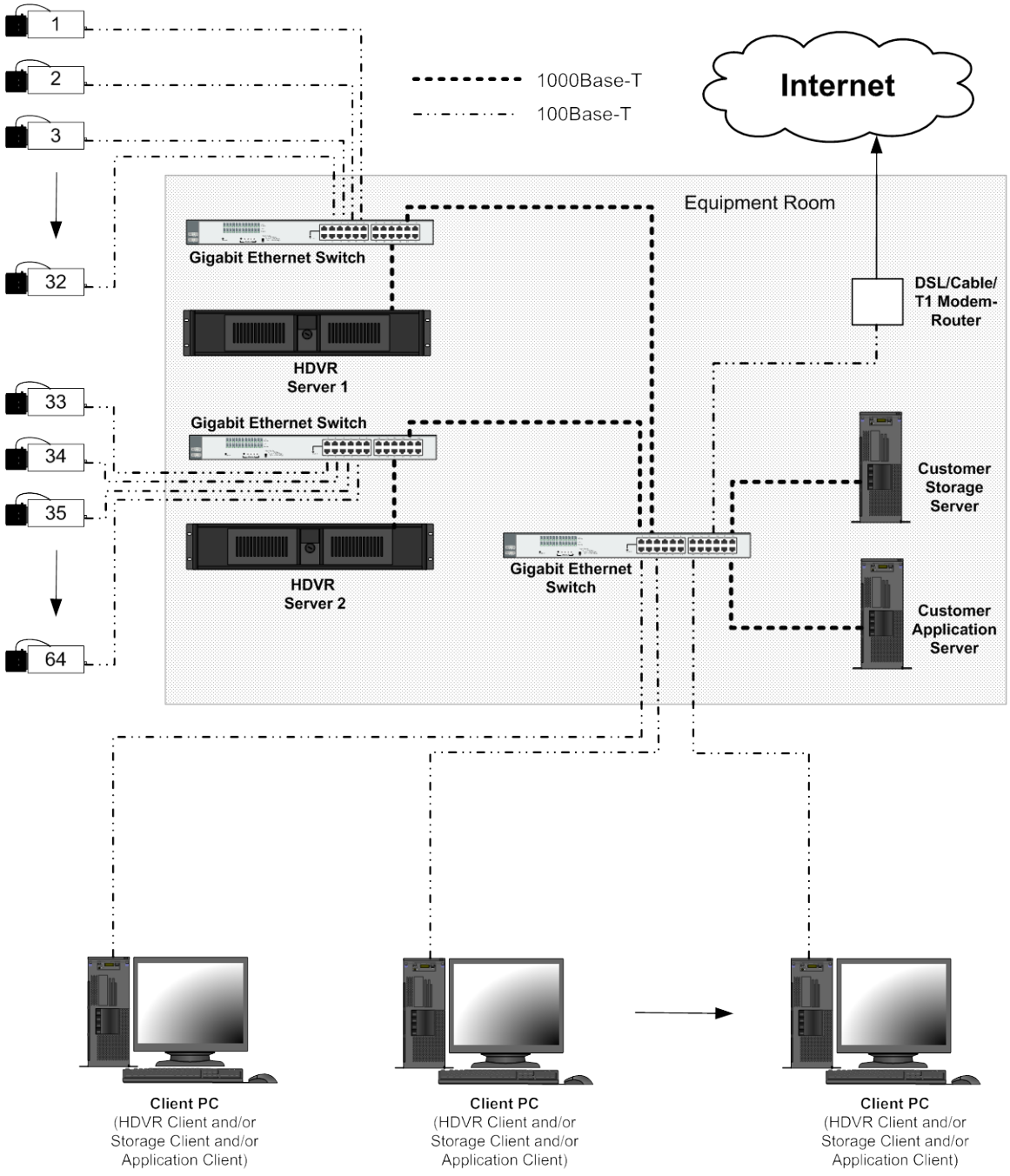

Gigabit Ethernet connections are recommended between the HDVR servers and the Ethernet switch, and between Ethernet switches. While a 100 Mbps connection from the switch to each HDVR Client is sufficient, it can be seen that each active HDVR Client increases the aggregate network bandwidth out of the HDVR server.

## Network Bandwidth Example for Analog Camera HDVR System



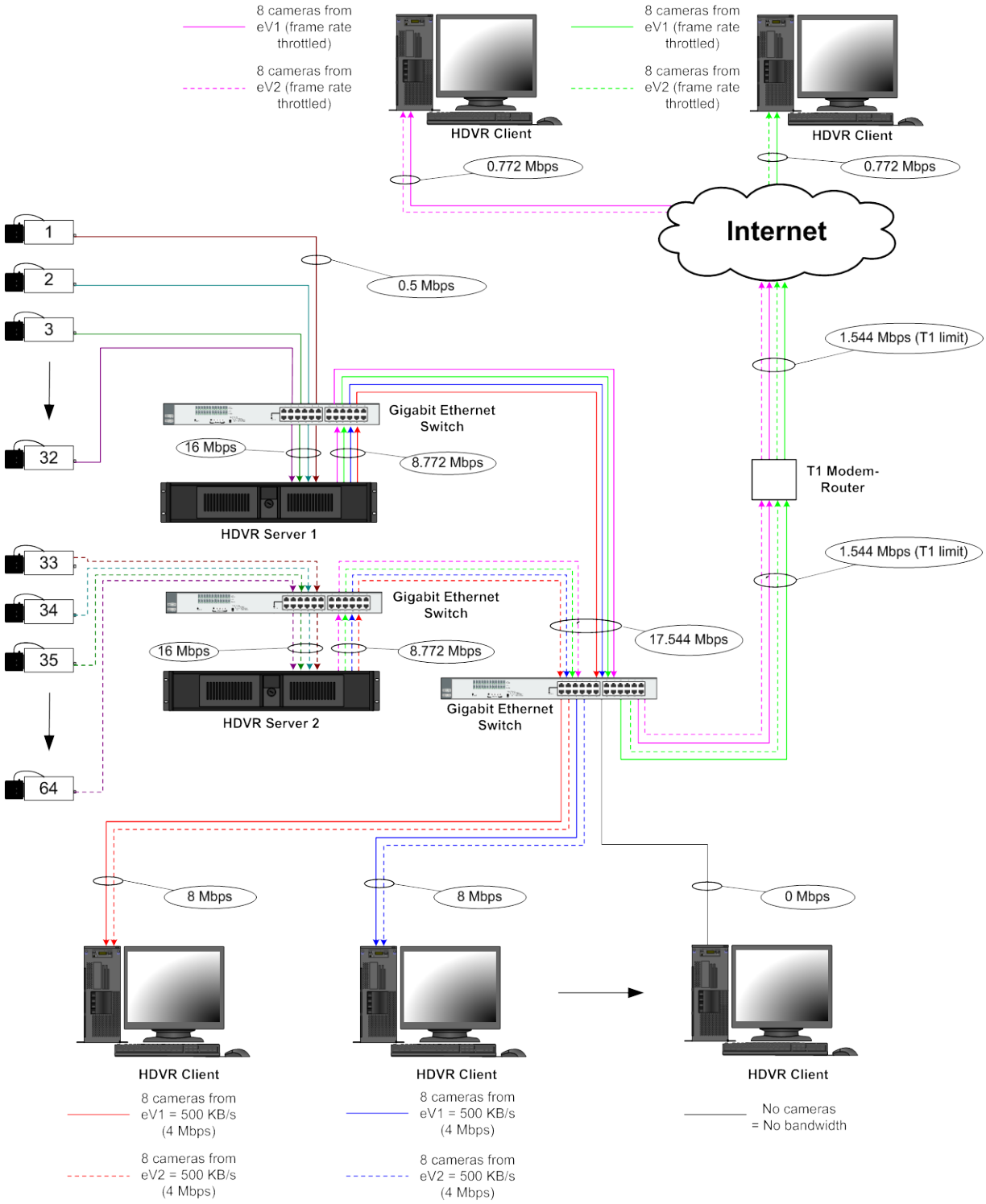
An installation with IP cameras is quite similar. HDVR recommends that the IP cameras are wired in “home-run” style back to an Ethernet switch near the HDVR Server.

## Network Connections for IP Camera HDVR System



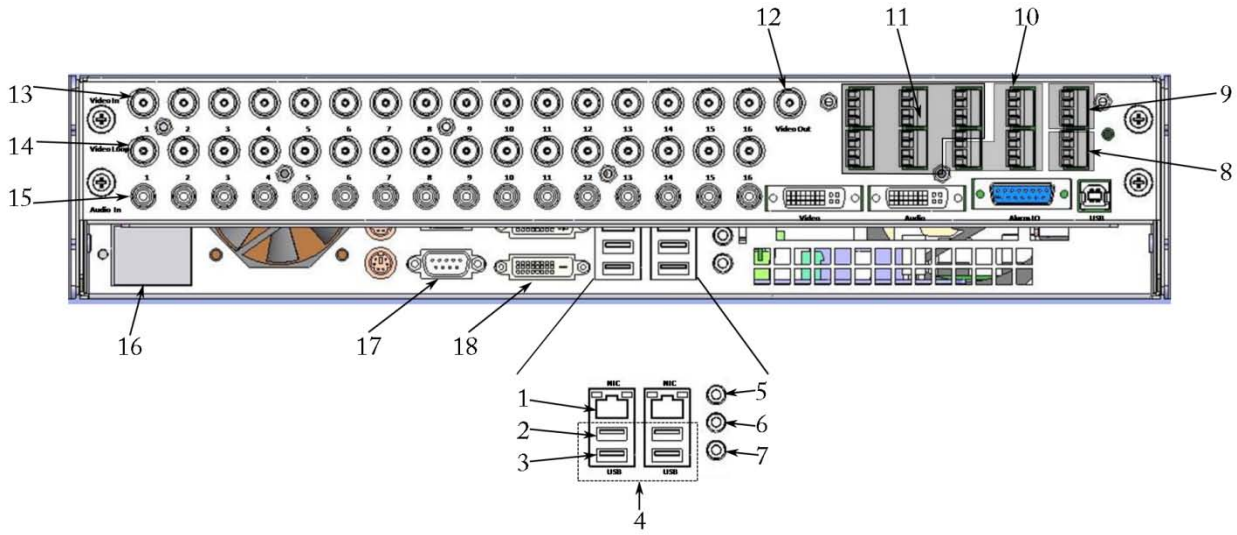
Again, referring to the diagram below, gigabit Ethernet connections are recommended between the HDVR servers and the Ethernet switches, but 100 Mbps connections from the switches to each IP camera and HDVR Client are sufficient.

## Network Bandwidth Example for IP Camera HDVR System



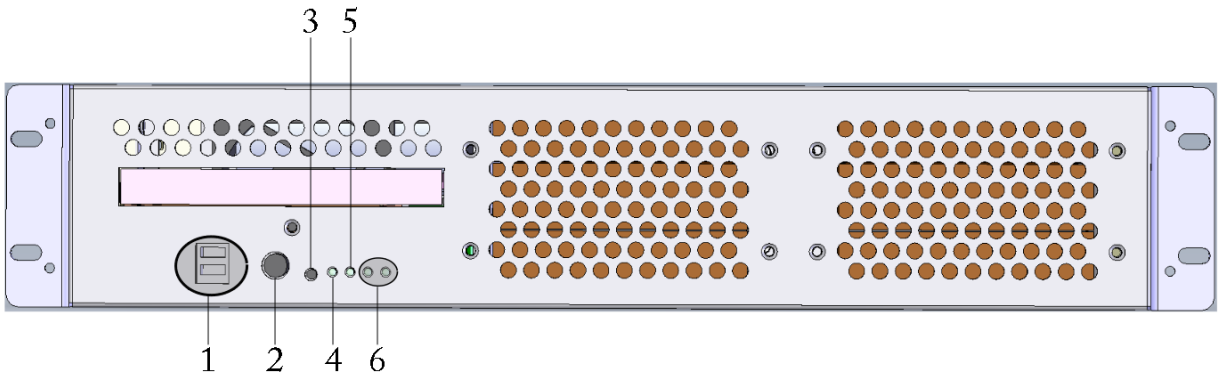
# 3. Chassis Layout

## Back Panel Layout




1. 10/100/1000 Mbits/sec Gigabit Ethernet Adapter Port
2. Keyboard Input
3. Mouse Input
4. 4 High Speed USB 2.0 Ports (2 additional USB 2.0 ports on the front of the unit)
5. Audio Line Input
6. Audio Line Output
7. Microphone Input
8. 1 RS-485/RS-422 Serial Port (COM4)
9. 1 Relay Output
10. 8 TTL Output Triggers
11. 16 TTL Input Triggers
12. 1 Switched Multi-Picture Composite Video Output
13. 16 Camera Inputs
14. 16 Camera Outputs – Loop Through
15. 16 Audio Inputs
16. AC Power Input – Switching Power Supply – 115V/230V, 50/60 Hz
17. 9 Pin RS-232 Serial Port (COM1)
18. DVI Monitor Output

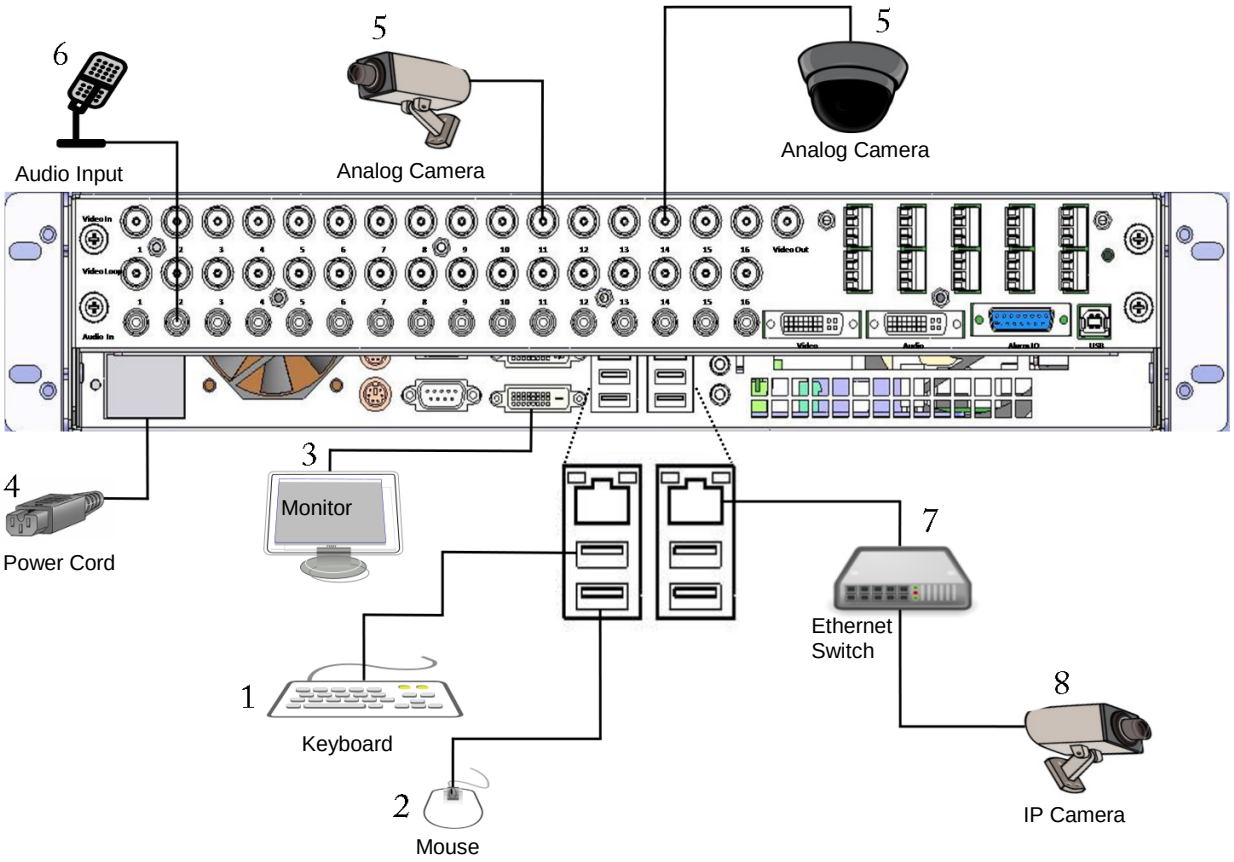
## Front Panel Layout




1. 2 USB 2.0 ports (4 additional USB 2.0 ports on the back of the unit)
2. Power switch – turns power on/off the system
3. Reset Switch
4. Power LED
5. Hard Drive LED
6. Unused

# 4. Hardware Installation

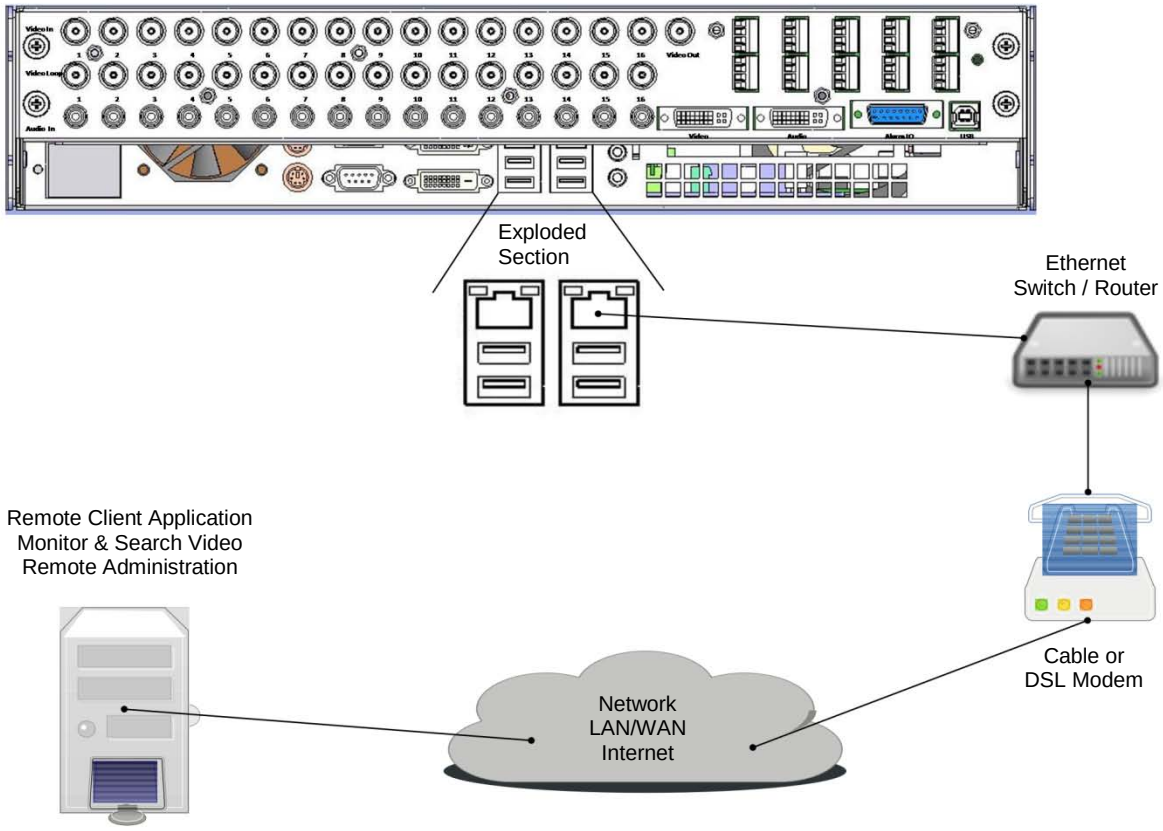
## Basic Connections




1. Connect the mouse to the bottom USB port
2. Connect the keyboard to the top USB port
3. Connect the monitor to the DVI port
4. Connect the power cord to the back of the unit and a power source
5. Connect the cameras to the BNC connectors
6. Connect the audio to the RCA connectors
7. Connect the Ethernet switch to the 10/100/1000 Mbits/sec Gigabit Ethernet Adapter Port
8. Connect the IP camera to the Ethernet switch

## Network Setup

HDVR systems can be connected to a local area network (LAN) or wide area network (WAN) for the purpose of monitoring or searching for video from a remote location. HDVR systems administration and configuration can also be performed from a remote client PC.




Connect the HDVR 10/100/1000 Mbits/sec Gigabit Ethernet Adapter Port to an Ethernet Switch / Router with Cat5 cable and RJ-45 connectors.

Connect the Ethernet Switch / Router to a Cable or DSL modem.

Connect the Cable or DSL modem to your cable outlet or DSL connection port.

**NOTE:**

In the first three steps, please refer to your manufacturers Ethernet Switch / Router and Cable / DSL modem installation guide for specific installation instructions.

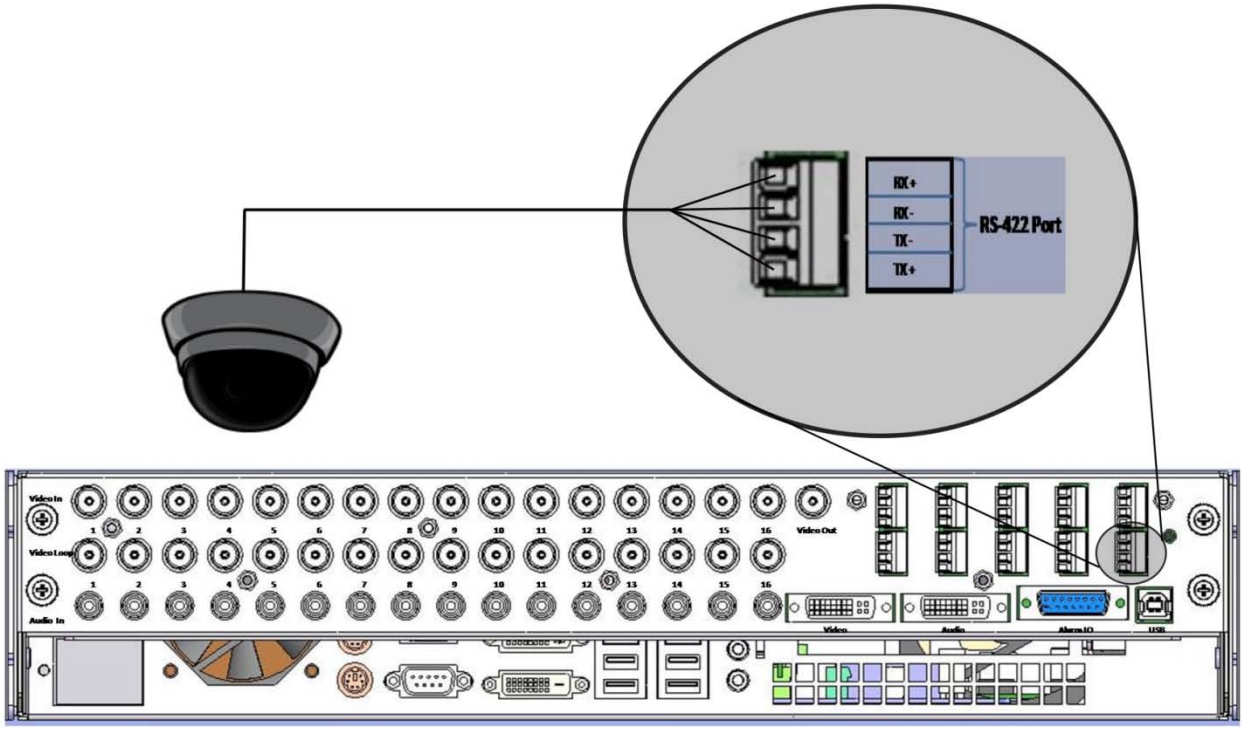
Connect your remote client PC to an Ethernet Switch / Router and Cable / DSL modem.

Install HDVR client software for remote viewing and administration of the HDVR System.

**NOTE:**

Local Area Network (LAN) installations eliminate the need of the Cable or DSL modem. Simply connect the HDVR and client PC directly to the Ethernet Switch port.

## RS-422/RS485 Port Setup



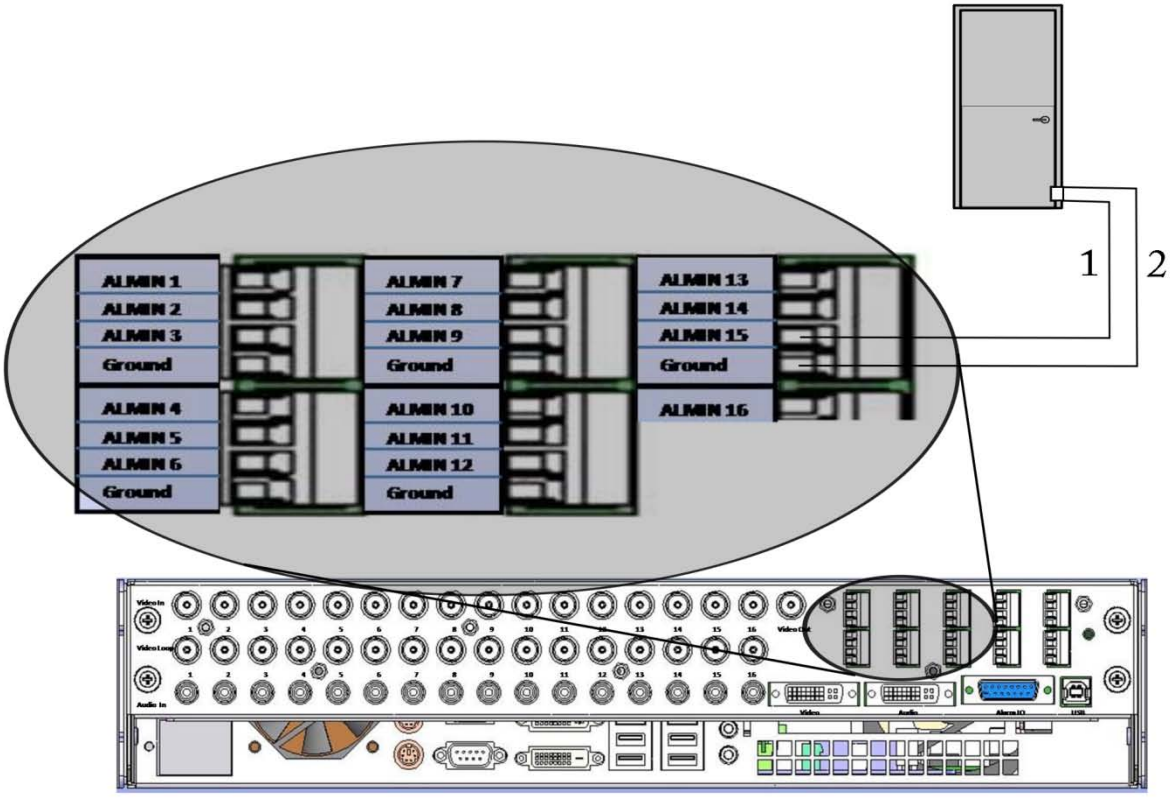

The HDVR System has one RS-485/RS-422 serial port that can be configured to control a variety of Pan Tilt Zoom (PTZ) cameras. The RS-485/RS-422 serial port terminal block plug on the back of the HDVR unit can be removed to easily connect the cable that controls the PTZ camera. There are four small screws on the top of the connector that need to be partially unscrewed in order to insert the wire into the individual connections (Tx+, Tx-, Rx+, Rx-). Once the wires are inserted into the connector, tighten each screw for a secure connection and then re-insert the connector in the back of the unit.

## Trigger Input

HDVR has 16/32 TTL trigger inputs that are configured through the Trigger Input Setup screen as either normally opened or normally closed. The Trigger Inputs terminal block plug on the back of the HDVR unit can be easily removed to connect the wires from the source sensor device (in this example a door sensor). There are small screws on the top of the connector that need to be partially unscrewed in order to insert the wire into the individual connections. Once the wires are inserted into the connector, tighten each screw for a secure connection and then re-insert the connector in the back of the unit.

1. Connect the one source output sensor wire to any of the 16/32 trigger inputs.
2. Connect the second source output sensor wire to one of the ground connectors.

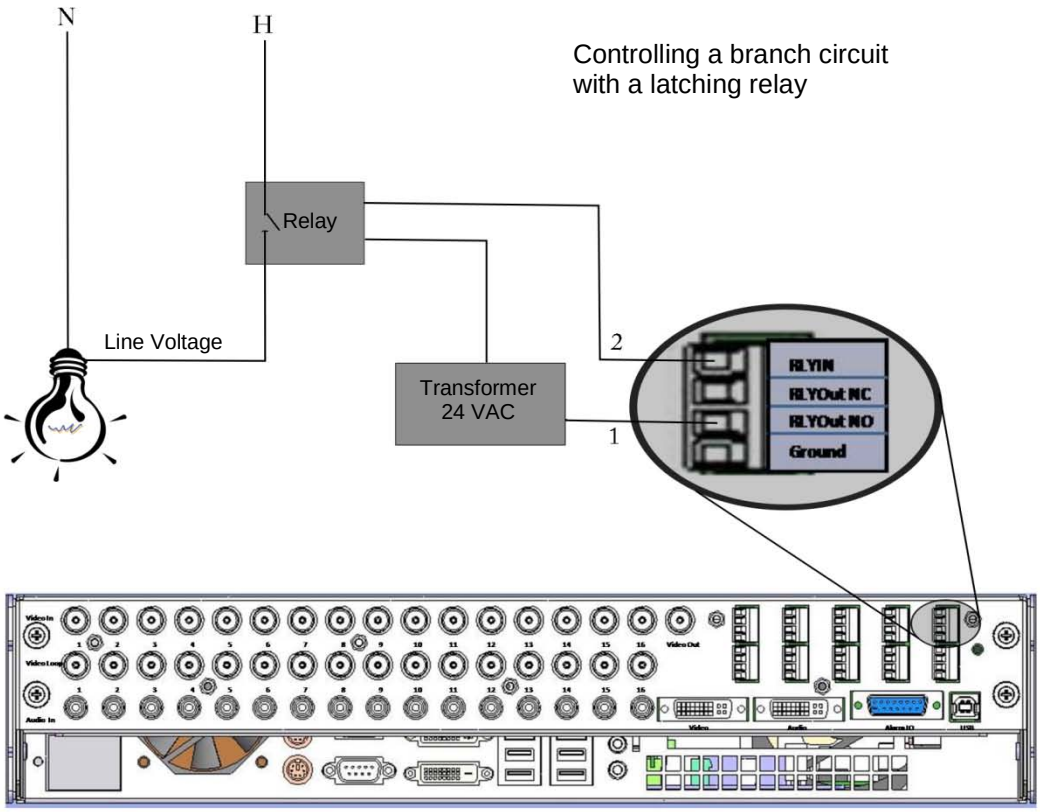
You can verify the proper operation of the input state by going to the Trigger Input setup screen and observing the “Status” state, which toggles back and forth between “Normal” and “Alarmed”. By default the “Normal State” is set to NC (Normally Closed). If you trip the sensor by opening the door you will see the “Status” state toggle from a green ‘Normal” to a red “Alarmed” indicating an alarm has been detected. The alarm can be linked to an action such as recording video or triggering a relay by going to the Event Linking screen and configuring the desired action (see Event Linking).



## Alarm Output - Relay

HDVR has one Relay Alarm Output that can trigger a variety of external events. In this example, the HDVR is integrated with a lighting control system through a 24 VDC latching relay. Through the Event Linking screen HDVR can be configured to turn on the light upon predefined events (motion, input trigger, etc…).

1. Connect the Alarm Output Relay to the transformers 24 VAC input
2. Connect the Common to the Relay Common

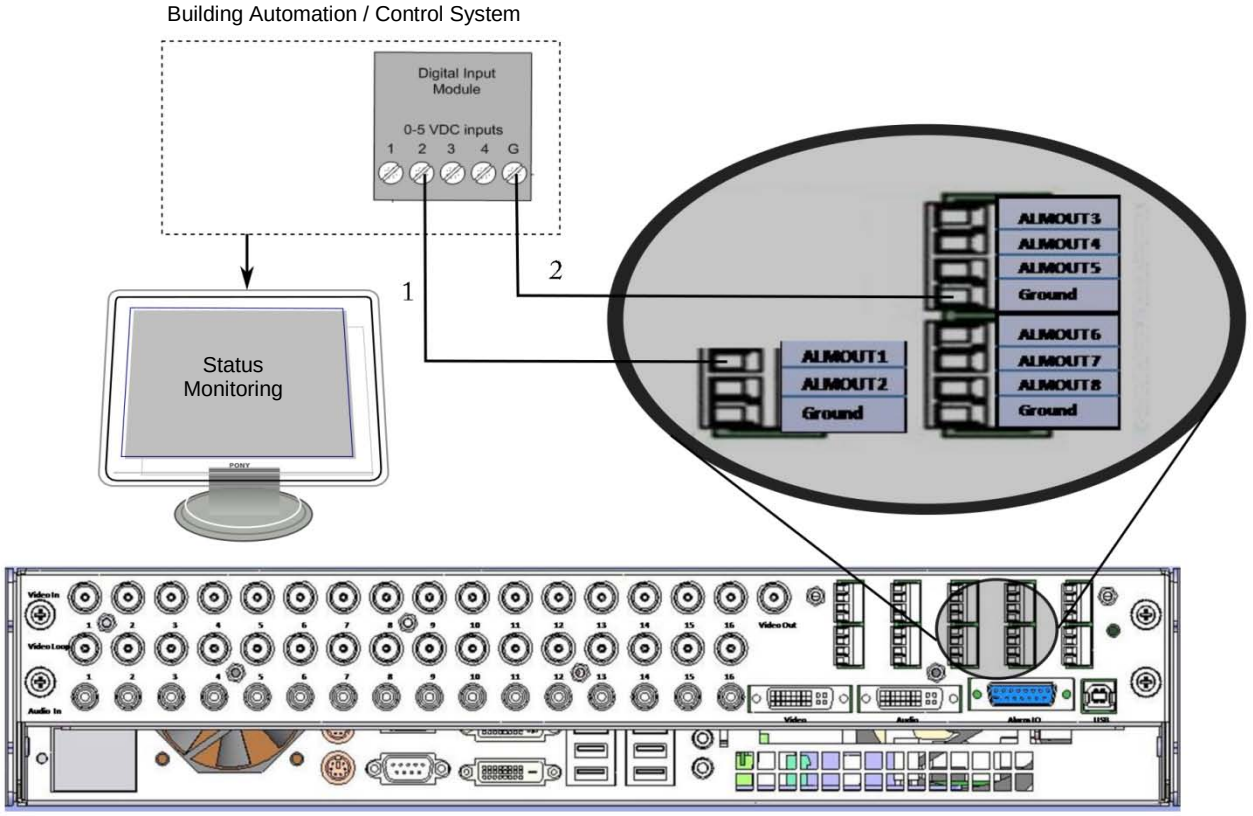


## Alarm Output - TTL

HDVR has 8/16 TTL Alarm Outputs that can be triggered by a variety of external events. In this example, the HDVR is integrated with a building automation system through a 0-5 VDC Digital Input Module for equipment or alarm status monitoring.

1. Connect any of the 8/16 TTL Alarm Outputs to the 0-5 VDC input
2. Connect ground to ground

You can set the “Normal State” of the Alarm Output to either High (5 VDC) or Low (0 VDC) on the Alarm Output setup screen.




## Audio Input

HDVR systems have multi-channel **Audio Inputs** that can be configured to record audio from line level security microphones and other line level audio devices. The audio connections receive an unbalanced, line-level audio signal only. Line-level signaling requires a voltage between -1 V and +1 V into an impedance of 1 kΩ or more. Microphones such as the Crown PZM11LL or Louroe Electronics ASK-4 KIT #101 pre-amplify the microphone signal and produce a line level output that is connected directly to the HDVR audio inputs.

# 5. Software Operation

## HDVR Software Overview

HDVR software is based on a client/server architecture. Client/server architecture provides a scalable platform, whereby each computer on a network is a client, server or both a client/server simultaneously.

Client A client is a computer system that accesses a (remote) service on another computer by a TCP/IP network. HDVR Client software views and searches live and recorded video, audio and alarms, and administers the HDVR Server configurations.

Server A server is a computer system that provides services to other computing systems—called *clients*—over a TCP/IP network. HDVR Server software records and retrieves video, audio and alarm data and provides it to the HDVR Clients upon request.

Client/Server A client and server can simultaneously reside and operate on one computer and communicate to each other through a TCP/IP loop back interface. A loopback address is a special IP address (127.0.0.1) that is designed for the client and server software to communicate with each other on the same computer. By combining the functionality of HDVR Client/Server software on one system, administrators can deploy a flexible standalone and network configurations that can scale to their requirements.

There is one HDVR Client application that can be installed in two different configurations depending on your requirements. The Client has the same features, functions and user interface in either installation configuration. The first client installation is referred to as a **Local Client**, meaning the client resides on the same system that is "local" to the server. The second installation is referred to as a **Remote Client**, meaning it is installed on a different computer that is "remote" from the server. All interaction (viewing live or recorded video and administration) with the server is performed through either the local or remote client.

The Local Client is factory installed on the HDVR and the Remote Client is installed by a user on a PC of their choice, either from the supplied CD or by downloading from the HDVR website (http://www.americandynamics.net/).

HDVR software can be installed and operated in the following configurations:

HDVR Local Client and Server software is factory installed on the HDVR system. The HDVR can either operate as a standalone system (not connected to a network) with the locally attached VGA monitor, keyboard, mouse and cameras (analog and IP) or it can be connected to a network to access other HDVRs.

HDVR Remote Client is shipped on a CD with the HDVR and can be installed on a PC of your choice that is networked to the HDVR.

**NOTE:**

Please skip to the "Starting the Local Client" section, as the steps below pertain to the operating system configuration on systems built at the factory.

## Starting the HDVR System

The HDVR has been designed to be very easy to install, operate, and update. The system ships with default settings that make it very simple to begin recording and searching video. Simply connect your keyboard, mouse, VGA monitor and cameras. Turn on the power switch and the system begins recording video from analog cameras. IP cameras require some steps to connect and configure.

## Logging In

Your HDVR System has been configured to take advantage of operating system security features. The factory configuration includes two operating system accounts:

Username: **admin**

Password: admin256

Privileges: computer administrator

Username: **user**

Password: user5710

Privileges: restricted user

When the computer boots, the HDVR Server automatically starts as a background service. The operating system will then automatically log into the **user** account. Both **user** and **admin** accounts are configured to start the HDVR Client immediately upon login.

Since it is running as a service, the HDVR Server will continue to record video even if no user is logged in or running HDVR Client. The HDVR Server will only stop operating if the computer is shut down, its service is stopped from the service control manager, or its process is stopped from the task manager. To prevent this from happening inadvertently, the ability to shut down the computer or access the operating system task manager has been restricted from the **user** account. To shut down the system or perform maintenance, an operator must switch from user to the **admin** account via the operating system start menu and enter the **admin** account password.

**NOTE:**

Default passwords should be changed by the operator and written and stored in a secure fashion to prevent unauthorized access or modifications to the system.

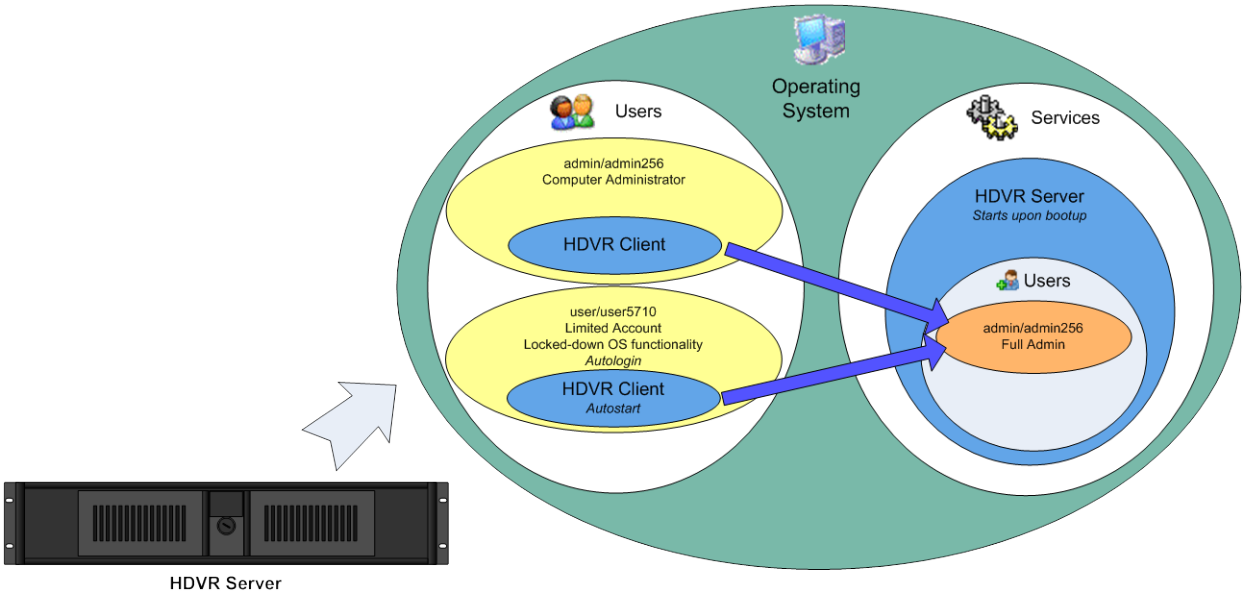
The HDVR Server can be accessed from multiple HDVR Clients, which may be running from the same computer as the HDVR Server or from remotely networked computers. The HDVR Server has been preconfigured with one user:

Username: **admin**

Password: admin25

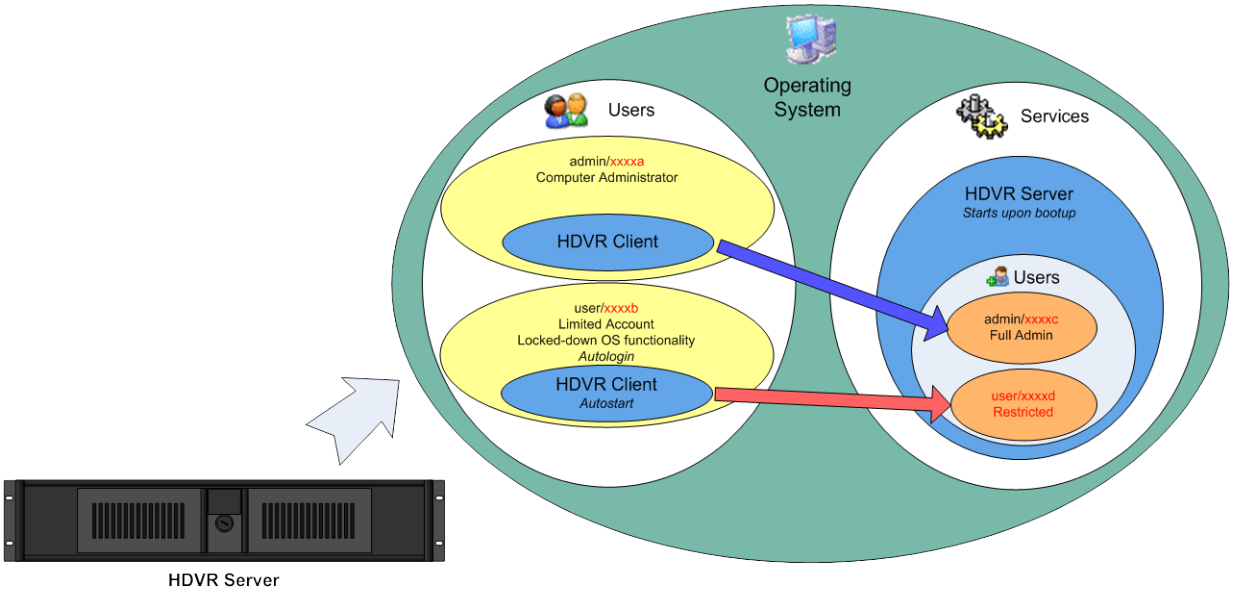
Privileges: HDVR Server administrator

Each operating system user account maintains separate settings for its HDVR Client. These settings include usernames, passwords, and network addresses required for HDVR Clients to access HDVR Servers. By default both the **user** and **admin** operating system accounts have settings which provide administrator access to the instance of HDVR Server running on the local computer, which is always via the 127.0.0.1 IP address. The factory configuration is shown below:




HDVR system as configured by factory

As part of the initial HDVR System configuration, HDVR recommends that the operator configure a new user on the HDVR Server with restricted privilege level, and change the HDVR Client settings in the **user** operating system account to connect to the local HDVR Server via this user. The new recommended configuration is shown below. See the Users Setup section of this manual or the context sensitive online help file for instructions on creating a new HDVR user.



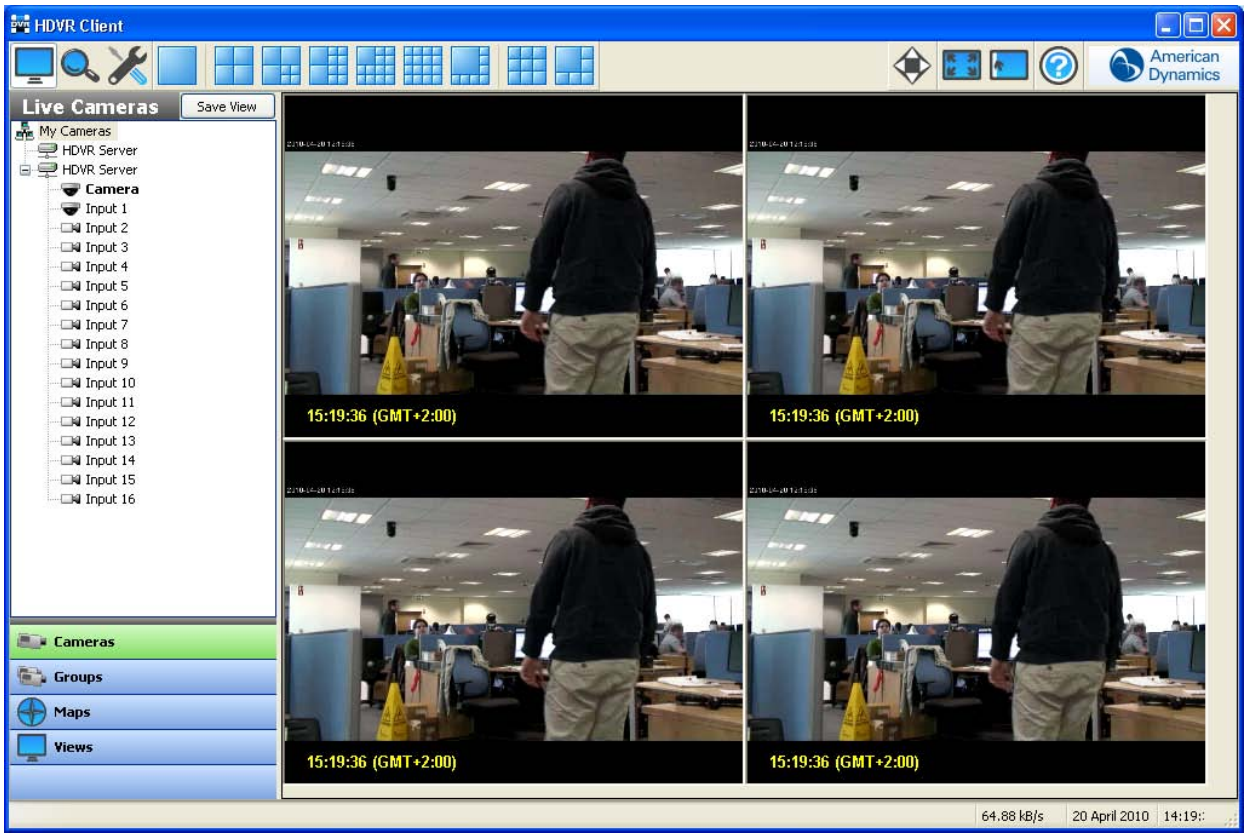

HDVR system recommended configuration
(note changes in red)

In the recommended configuration, a restart of the HDVR system due to power outage will put the system in a safe state from which administrator privilege access to HDVR Server is not available

without knowledge of the operating system **admin** account password or the HDVR Server **admin** password.

## Starting the Local Client

After successfully logging in, the local HDVR Client application will appear.

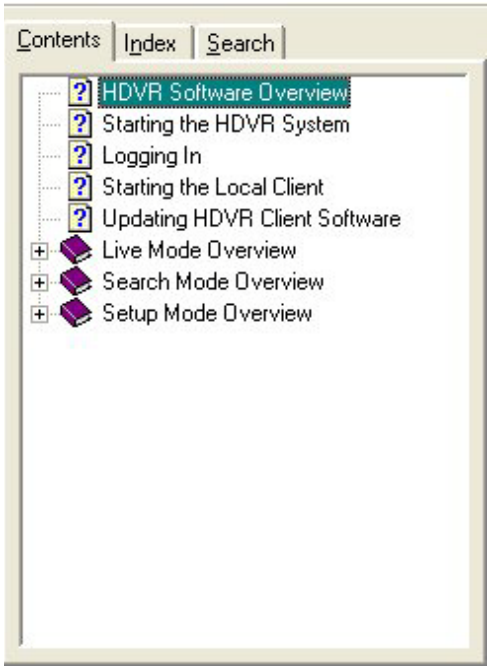



At the right end of the toolbar, you will find the Help button. Click it, to access online help for your HDVR System.

You can also toggle to and from the online help system by using the F1 key.

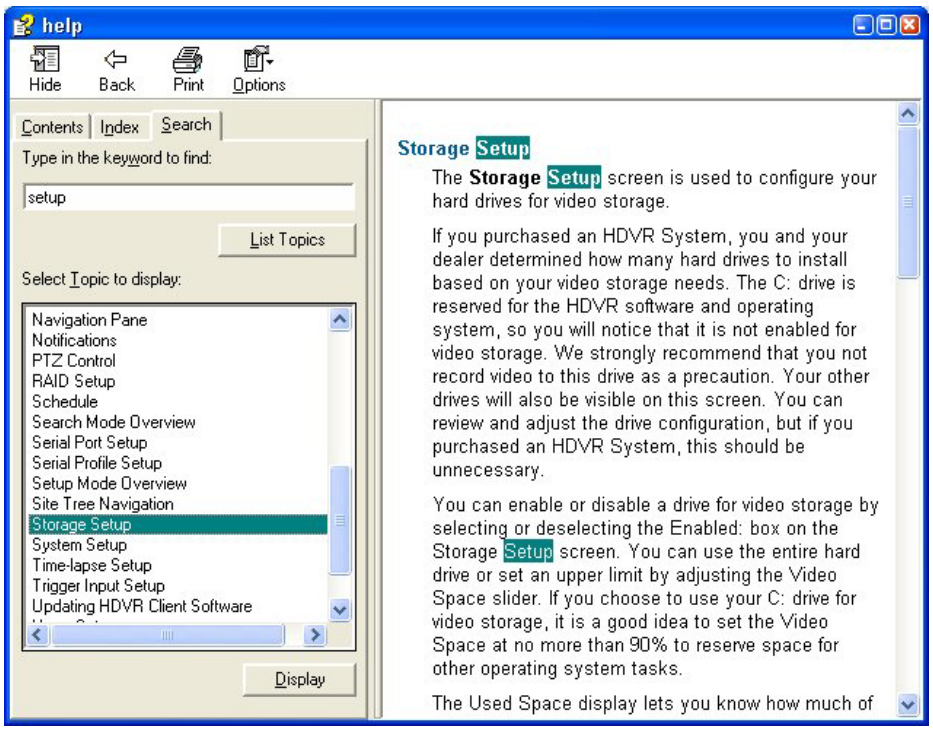
The system will default to the topic matching the part of the system you are working in. You can then scroll through the Help information by clicking the Next link in the upper right hand corner. You can get to the beginning of the Help information by clicking the Top link.

You can also use the Contents, Search, and Index tabs at the left of the Help window. To access information using the Contents tab, simply click the topic you want to review.




To use the Search tab, type in a word to search for and then click the List Topics button to generate a list of items that include the word you typed.


You can then double click any of the topics in the list to access Help information related to that topic or select the topic and click the Display button.



You will find the Online Help system very helpful as you setup your HDVR System.

The HDVR Server application begins recording video based on the factory default settings as soon as the power switch was turned on and the HDVR system started. The factory default settings can be changed with the Setup Mode icon to meet your specific requirements.

Operating Modes

HDVR systems have three main modes of operation depicted by the three icons below:

**Live Mode** allows users the ability to view live video.

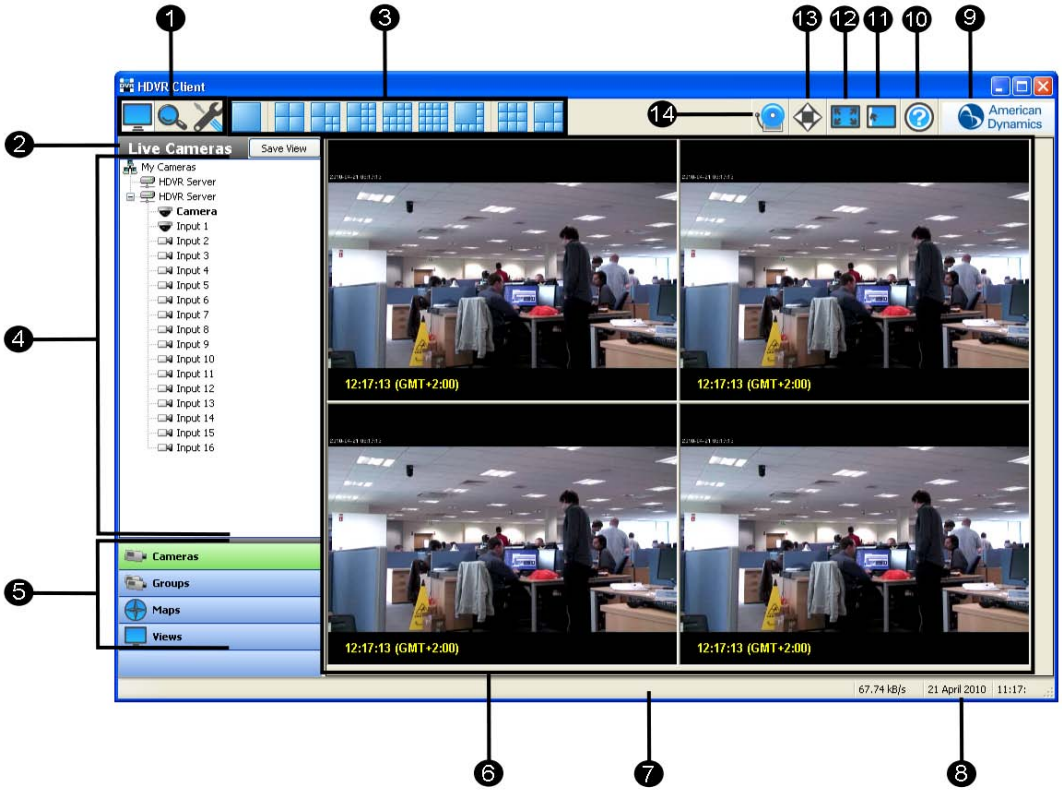
**Search Mode** allows users the ability to search for recorded video.

**Setup Mode** allows Administrators and Power Users the ability to configure systems.

Clicking on any of these icons will change the mode of operation.

## Live Mode Overview

**Live Mode** allows users the ability to view live video. To view live video on your HDVR System, you must first click the Live Operating Mode button.

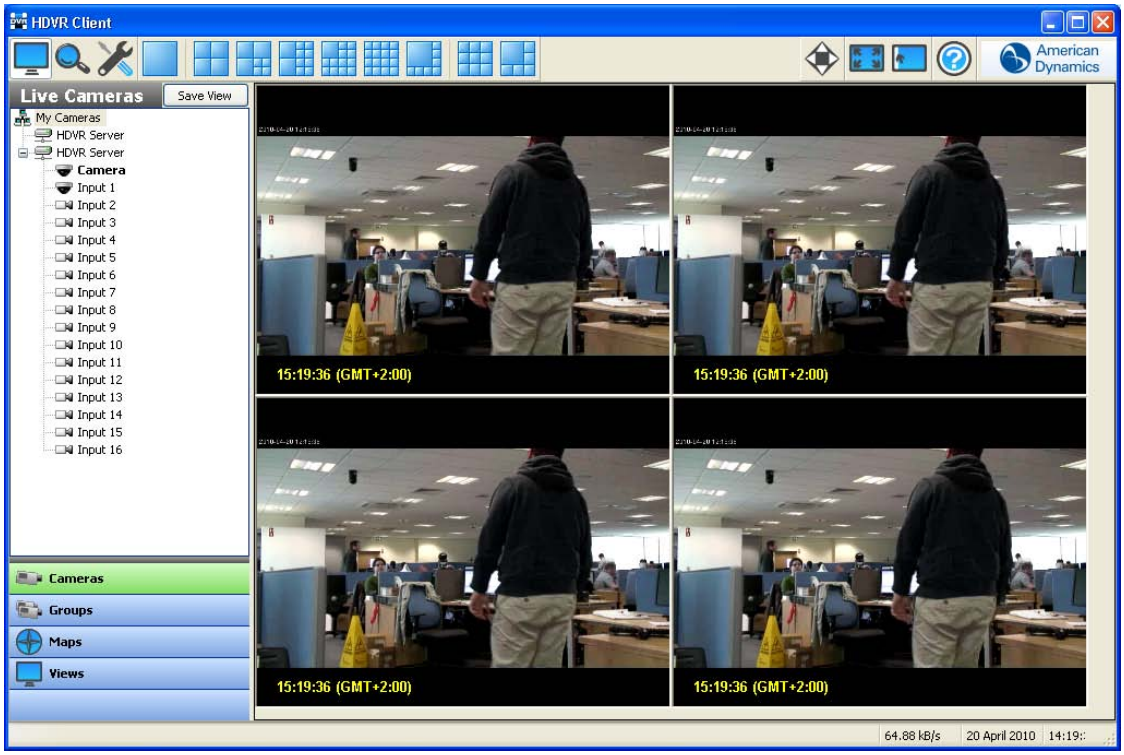



1. Title bar – displays HDVR Local and Remote Client application title.
2. Operating Modes – displays the three available views, Live, Search, and Setup.
3. Layout Buttons – allows you to organize your camera views to fit your needs.
4. Site Tree – displays icons representing HDVR systems, cameras, PTZ cameras, alarms, monitor & audio inputs. Also displays setup icons used to configure HDVR systems.
5. Navigation Panel – displays cameras and video in organized groups and views.
6. Video View Panel – displays video of cameras.
7. Message – displays system messages providing feedback and information about operating the system.
8. Date and Time – displays the date and time.
9. About Box – provides information about the client software you are using.
10. Help Button – displays information from the User Manual specific to the screen you are viewing.
11. Show/Hide Navigation Tree Button – expands the display by hiding the Navigation Tree.
12. Full Screen Button – enlarges the display by hiding the title and task bars.

13. PTZ Control Button – displays the PTZ Control window which allows you to maneuver a PTZ camera.
14. Soft Trigger Icon – Displays the status of any soft triggers on connected HDVR servers.

## Layout Panel

The system will default to the 2x2 layout, as shown in the example below.

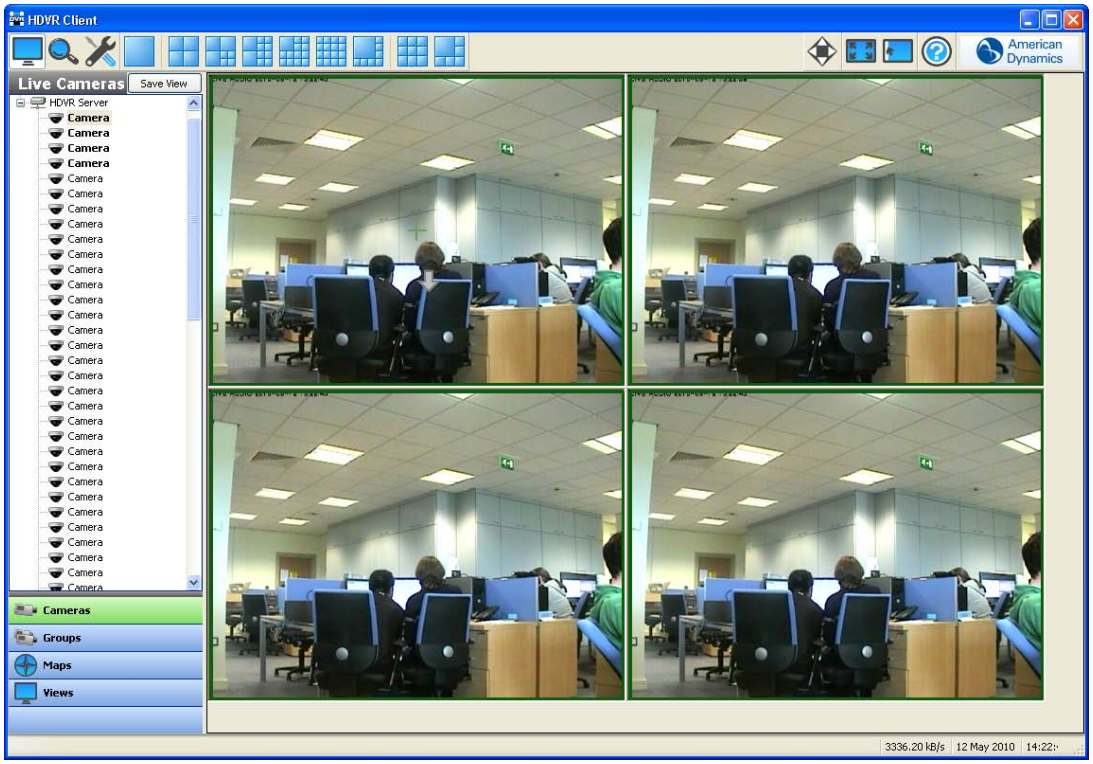



You change the layout of the Video Panel by clicking on one of the Layout buttons. Once you select a layout, it will become your new default.

**NOTE:**

The 4x3, 5x4, 6x5, and 8x6 buttons are only available on widescreen monitors.

The system will automatically fill the Video View Panel with the cameras from your Live Site Tree in the order they are listed.




There are several methods for adding cameras to your Video View Panel.

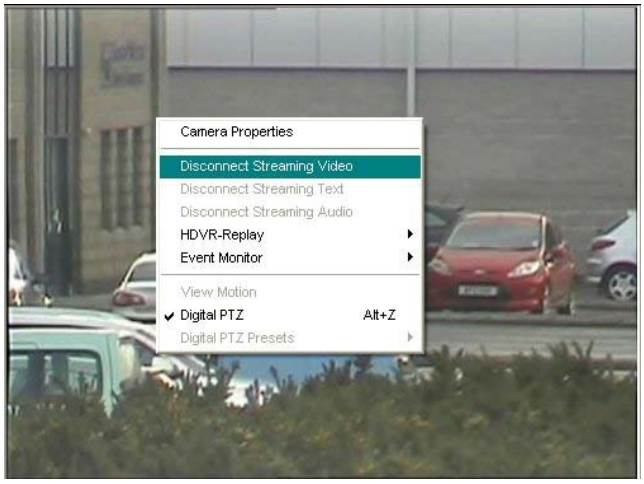
Click on one of the Layout buttons on the Toolbar. If you select the Single Camera view, the system will display the camera that was in the upper-left square in your Video View Panel. If you select the Two-By-Two Layout view, the system will keep the camera that is currently in the Video View Panel and grab the next three cameras from the Live Tree. If you select the Seven Camera Layout view, the system will keep the four cameras that are currently in the Video View Panel and add the next three cameras from the Live Tree, and so on.

Double click on one of the cameras listed in the Live Site Tree. The system will display that camera in the upper-left square of the Video View Panel and fill the additional squares by going down the list.

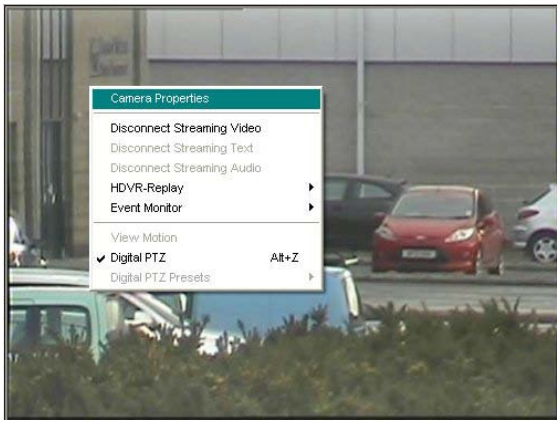
Drag and drop a camera in a square on the Video View Panel. If a different camera is already being displayed, the system will switch the view to the new camera.

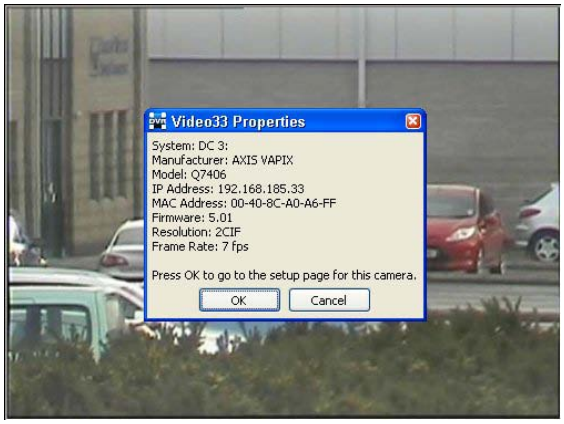
Press F3 or the joystick button to display the Find Camera dialog, type the name of a connected camera, and then click Find. This method allows you to display a camera without using a mouse. When you type a sufficient number of characters to uniquely identify a camera name, the full name of the camera will automatically appear. For this reason, this feature works best when cameras are uniquely named. For example, if camera names start with numerical characters (such as 1-Front Entrance, 2-Back Entrance, and so on), you can quickly find a camera by simply entering one or two numbers in the Find Camera dialog.

You can delete a camera from the Video View Panel by right clicking anywhere in the square and selecting Disconnect Streaming Video.

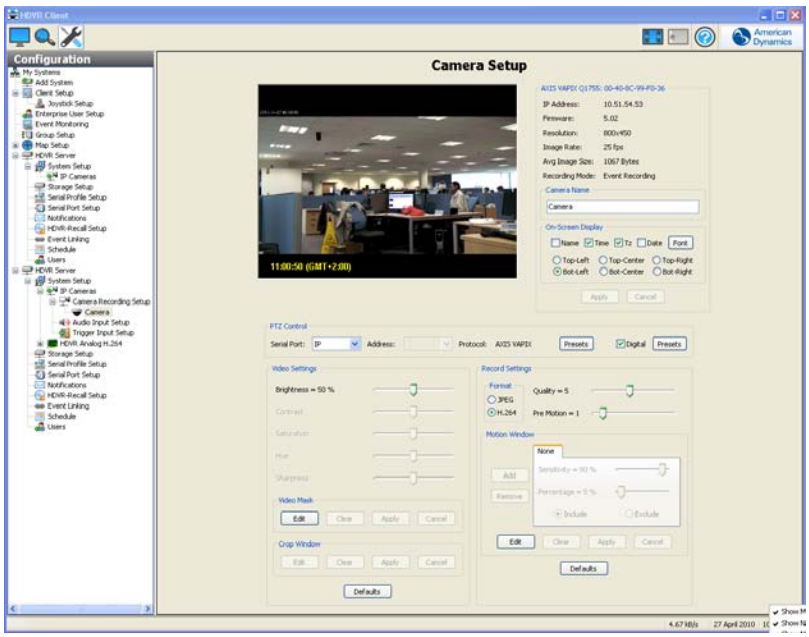



You can also access the Camera Setup screen directly from Live Mode by selecting Camera Properties, and then clicking the OK button.



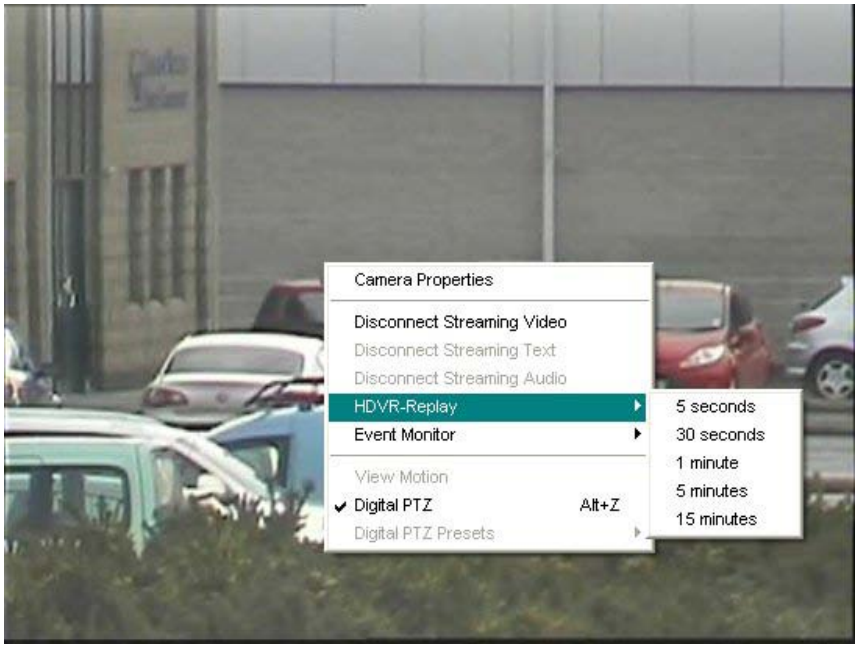




From here you can reconfigure the camera to fit your needs. See Setup for specific instructions.



## HDVR Replay

There may be instances when viewing live video feed that you want to replay a limited amount of recorded video. This can be quickly accomplished by right clicking in the appropriate camera view and selecting HDVR Replay. You will have the option of reviewing video in increments of 5 or 30 seconds or 1, 5, or 15 minute increments.




Once you select the desired video replay increment, the HDVR Replay window will open and begin downloading the recorded video. A blue or green Scrub Bar will track the progress of the download. The total number of frames in the video segment as well as the number that have been downloaded will also be displayed in the status bar. If you wish to stop the download, click the Stop Download button at the bottom of the window.

Once the download has started, you can scrub back and forth through the video using the Scrub Bar & Scrub Handle or the seven Video Playback Controls at the bottom of the window:


Play video in reverse fast (double) speed


Play video in reverse in normal speed


Stop video play


Play video forward in normal speed


Play video forward in fast (double) speed


Play video forward one frame at a time


Play video backward one frame at a time

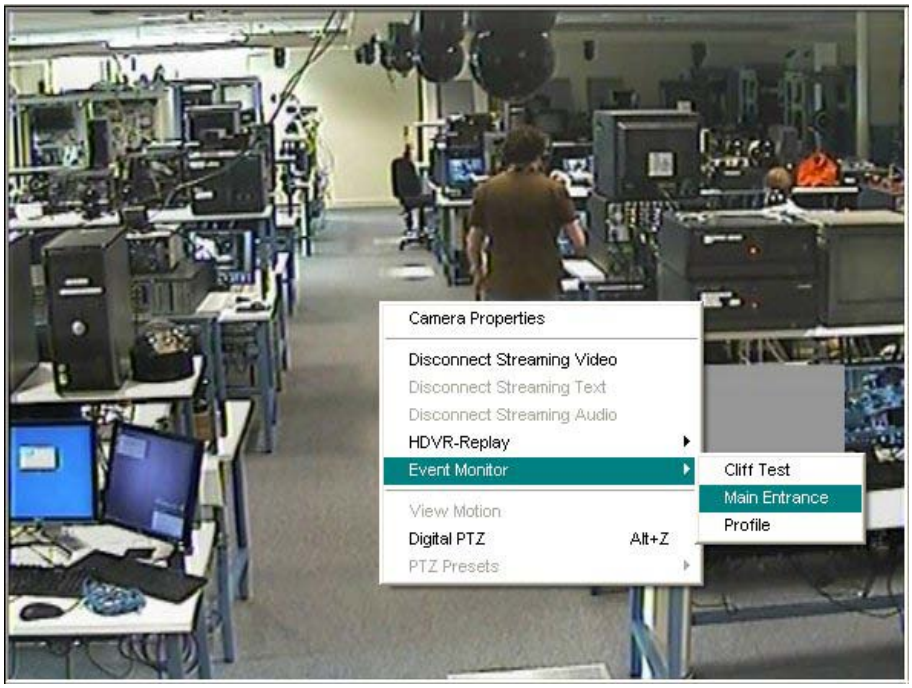
You can only scan the portion of the video that has downloaded. You will not have access to the entire video segment until the download is complete.

You can also maximize, minimize, or close the Video Playback window by clicking the appropriate icon in the upper-right corner.

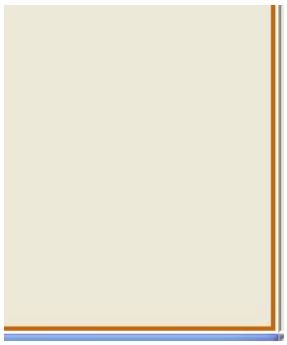
See, Search Mode Overview for complete instructions on how to search video.

## Live Event Monitoring

Event Monitoring is another feature that can be activated by right clicking in one of the video panels and selecting Event Monitor and then the profile you would like to view.

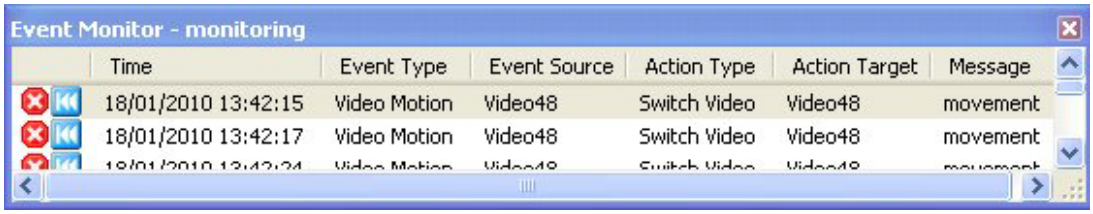



At this point, an orange border will appear around the video panel and you will probably not have any video in the panel until an event triggers. As motion is triggered on the cameras, it will trigger event monitoring.

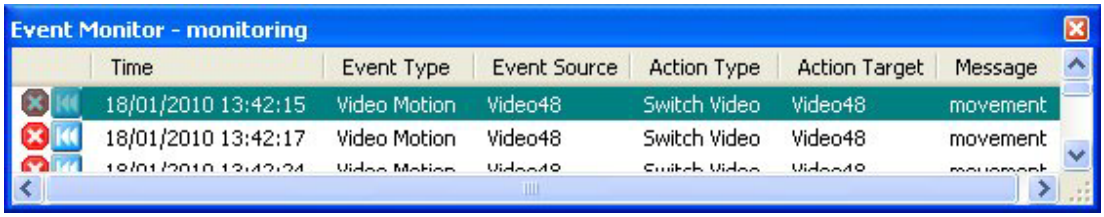


You can stop the Event Monitoring display by right clicking in the active video panel and disabling the active event monitoring profile.

If you configured your profile as an Event Monitoring mode, the Event Monitor Box will appear just below this panel. You can move it and resize it as you need. Once a video event takes place, it will be automatically listed in the box.




Clicking on the event line will switch the video to that camera.




Clicking on the small blue rewind button will replay the event as it was tripped.

Clicking the small red ‘X’ acknowledges the event and removes it from the list.

If you configured your profile in Virtual Matrix Mode, you will not see an Event Monitor box as motion triggers recording. Instead, it automatically switches between cameras and pops them into the frame as motion occurs.

**NOTE:**

For details on how to configure an Event Monitor profile refer to the Setup section of the manual.

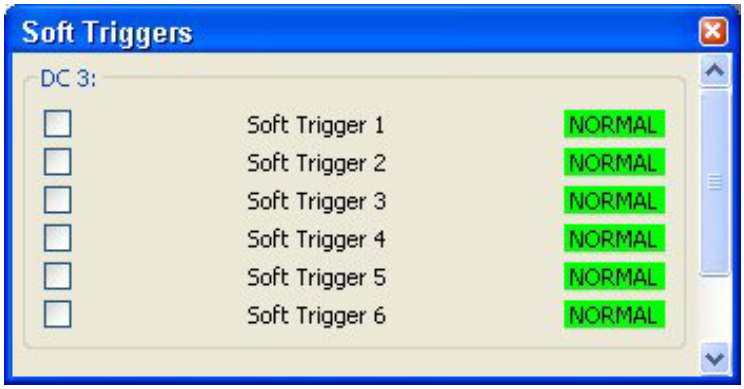
## Event Buttons

Your HDVR system allows you to monitor live video from a remote location using a separate client application. If you identify suspicious activity, you may want to send a notification via the server housed at the location being monitored. This notification is called a Soft Trigger. For example, you can activate an alarm, turn on a light, or trigger a door lock by using the Event Button feature on the client and the Soft Trigger feature on the server.

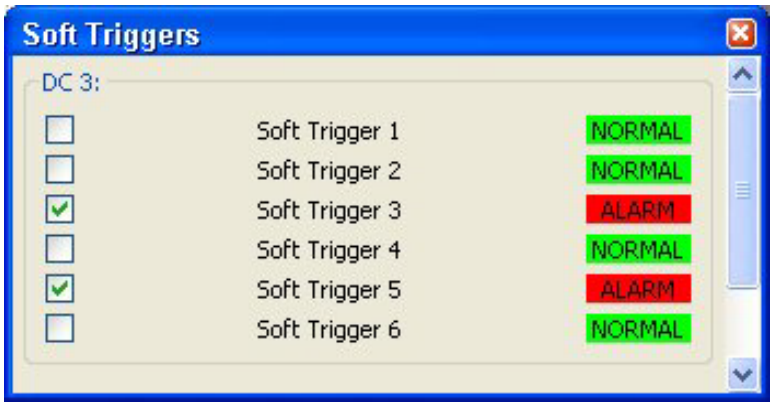
The Soft Trigger feature is set up on the Event Linking screen in the Setup Mode. See Event Linking, for detailed instructions.

Once you have set up a Soft Trigger, you will see the Soft Trigger icon in the toolbar at the top of the Live Panel screen.


Simply click the icon to access the Soft Trigger window.




To activate any of the preset soft triggers, simply select the corresponding checkboxes.

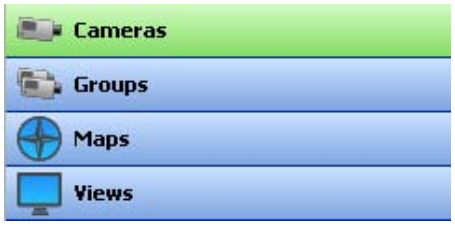



Notice the status changes from Normal (green) to Alarm (red), indicating that the soft trigger has been activated. To deactivate the soft trigger and return to a normal status, simply deselect the checkbox.

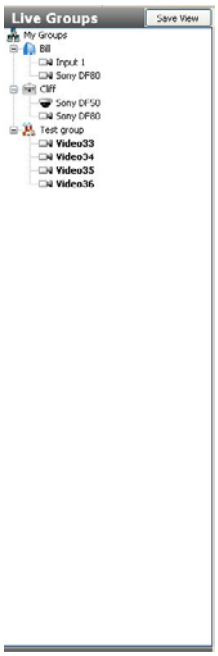
As an alternative to the Soft Triggers window, you can also create one or more, soft trigger shortcuts by using the Event Button feature on the Client Setup screen in Setup Mode. See Client Setup, for detailed instructions.

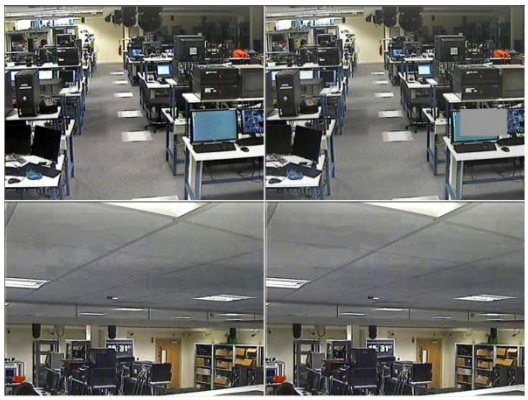
## Site Tree Navigation

Since you may not want to view your cameras in the order they appear in the Live Site Tree, your HDVR System allows you to organize your cameras into Groups. (For instructions on creating camera groups, go to Camera Setup.) This will enable you to efficiently view the cameras in the order you choose regardless of how they are listed in the Live Site Tree. Once you setup the camera groups, you need to select the cameras in those groups by clicking on the Group button in the Navigation Pane.



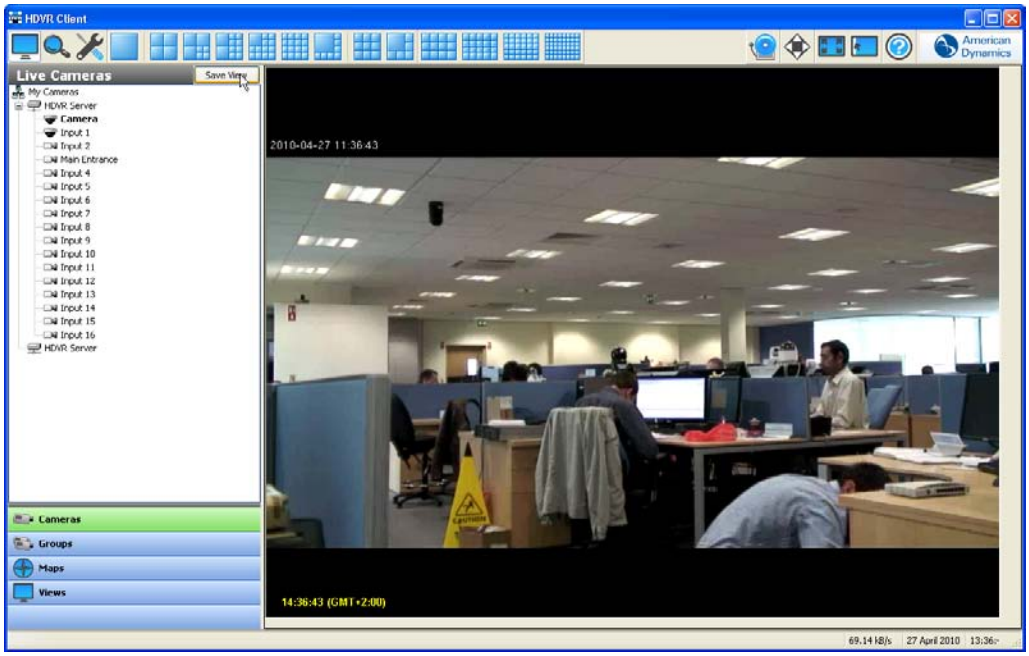

For example, if you want to view the Back Door, Front Desk, West Hall, and Reception Desk cameras you would have to individually drag and drop these cameras in the Video View Panel because they are not listed in order in the Site Tree. Using the Live Groups navigation, you can double click on the first camera in the Perimeter Group and the other cameras in that group will be displayed in the Video View Panel in the order they are listed.

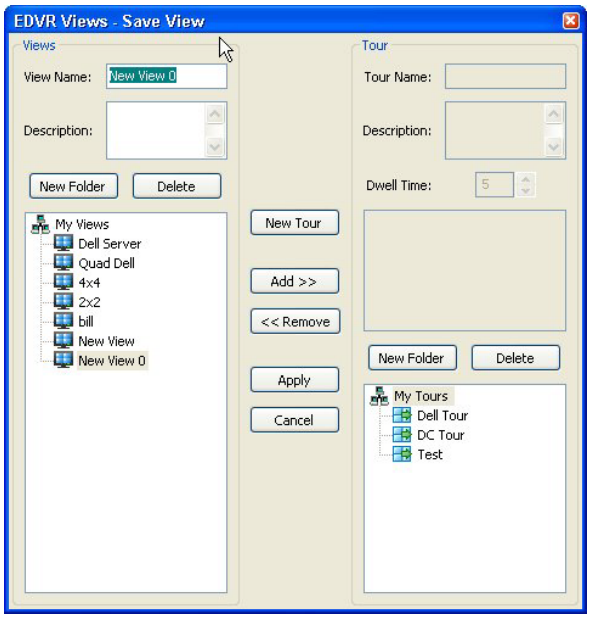



You can also organize your cameras into preset Views.

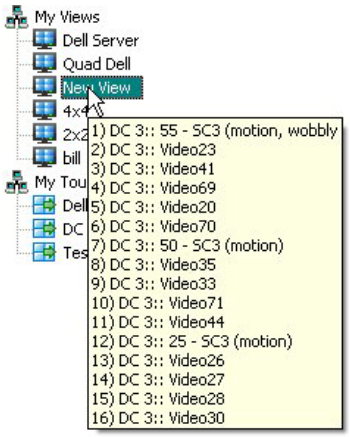

There are several methods for creating a View. The simplest method is to select a Layout button in the Live mode and drag the cameras, audio, and/or POS data you want to the appropriate spot on the Video View Panel. Once you have everything laid out the way you want it, click the Save View button at the top of the Live Site Tree.




This will take you to the HDVR Views window.



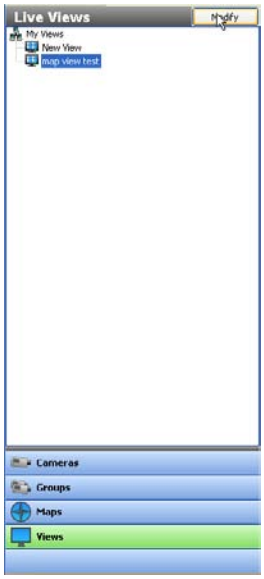

Type a unique name for your view in the View Name field. The system and camera names will be displayed when you hover over the view name in the Live View Site Tree.



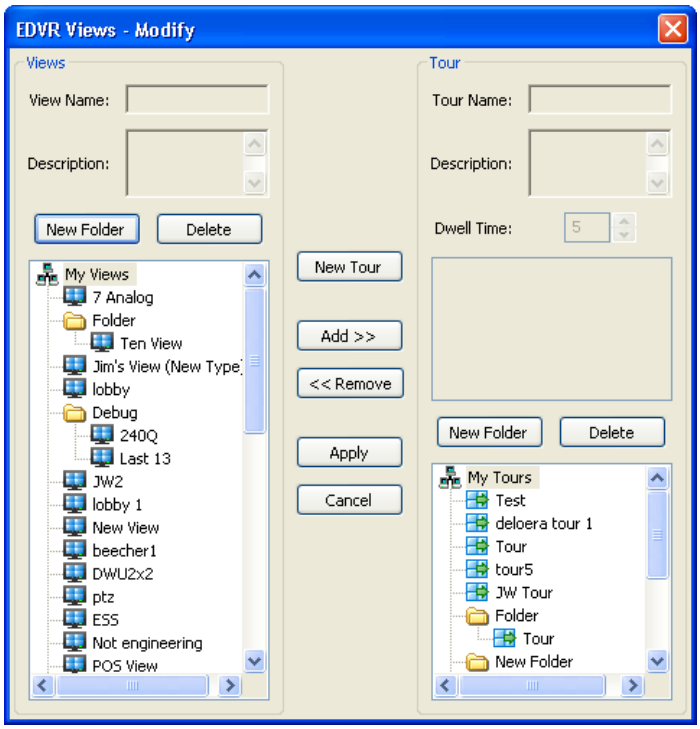

You can also include a description that will be added to the top line of the View tooltip, by typing it in the Description field.

Once you have typed a unique name and a description if desired, click the Apply button.

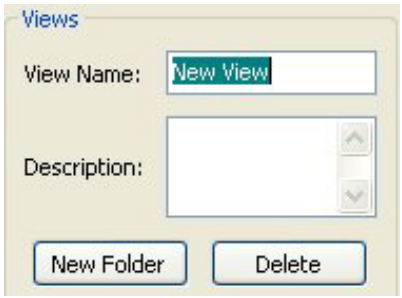

Once you have saved your view, you can access it by clicking the View button from the Navigation Pane. Select your view from the Live Views Site Tree and the camera layout you saved will be recreated in the Video View Panel.




You can also modify your views by clicking the Modify button at the top of the View Site Tree.

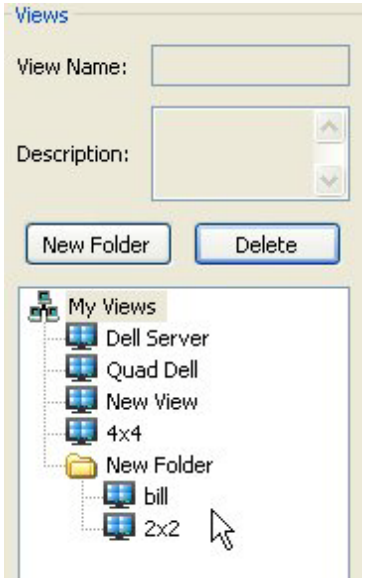



Here you can organize your views into folders or create tours of multiple views. To create a folder, simply click the New Folder button.

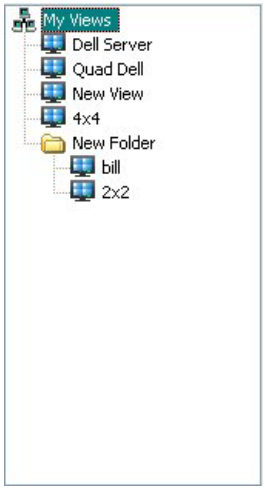



Type a unique name for the folder and a description if desired.

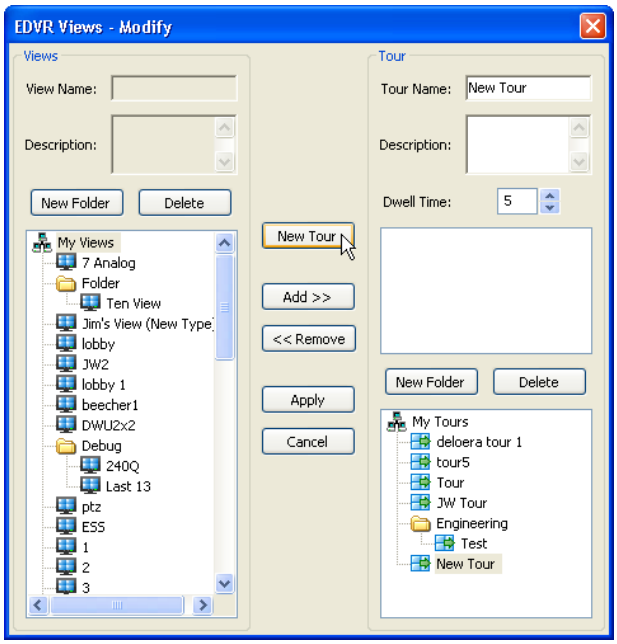
The folder will appear in the My Views Site Tree in the lower-left quadrant of the screen. You can then drag and drop any views you wish to place in the folder.



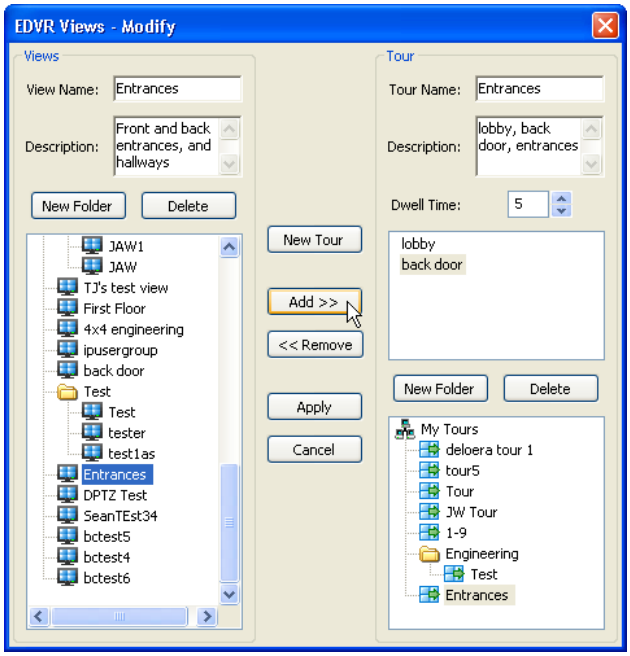

You can then organize your folders within your views by dragging it to the desired location in the My Views Site Tree.




If you would like your video view panel to automatically cycle through two or more views, you can create a View Tour. Begin by clicking the New Tour button in the center of the Modify Views window.




You will see a New Tour icon at the bottom of the My Tours tree in the lower-right quadrant of the window. In the upper-right corner of the window, type a unique name for the tour in the Tour Name field. You can then begin adding views by selecting them from the My Views Site Tree and clicking the Add button.

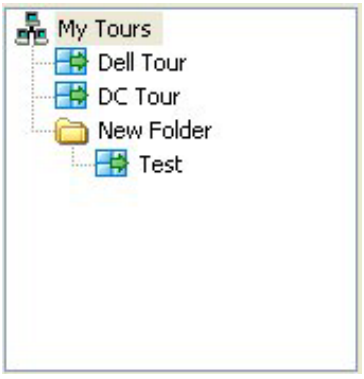


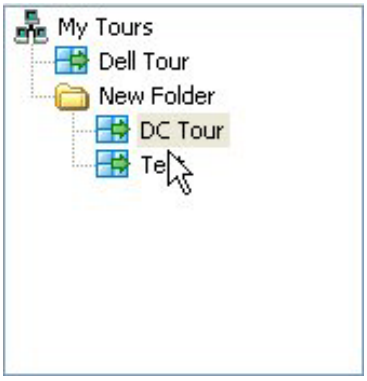

Once you have added all of the desired views, you may want to type a description of the tour in the Description field. This description will appear whenever you hover your cursor over the tour. It is optional, but it can serve as a helpful reminder when you go to select the tour.

Below the Description field, is the Dwell Time field. This sets the amount of time, in seconds, each view will remain in the Video View Panel before cycling to the next view. In this example, we used 5 seconds. You can increase or decrease the dwell time by using the up or down arrows.

Once you have named the tour, added the views and a description, and selected the appropriate dwell time, simply click the Apply button to save the settings.


You can also organize your tours in folders by creating a new folder and then dragging and dropping the appropriate tours in the folder.

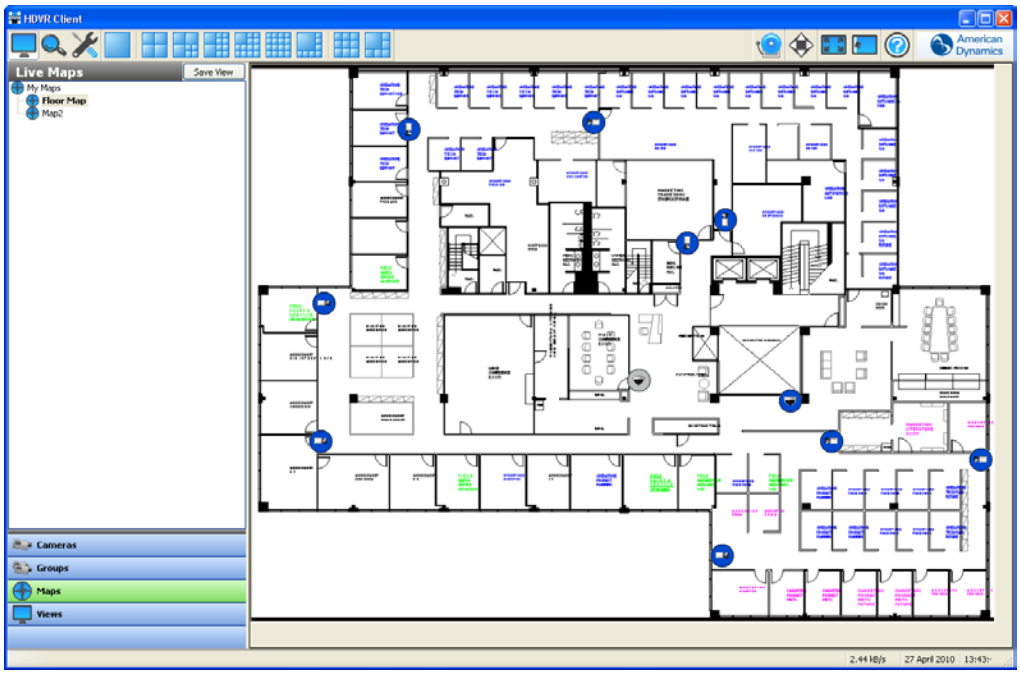



You can now select the tour from the Live Views Site Tree and the views you have created will cycle through the Video View Panel.

## Live Maps

The Live Maps feature allows you to manage your cameras and devices using a graphical representation of their physical location.




Live Maps allows you to select from a list of maps that you have imported into the HDVR. When you select Maps from the navigation pane, all the maps that you have entered are listed, organized based on parent and child maps.

You can display a map in the video view panel by double-clicking its name in the list or by dragging it into a video window. The map can be displayed in 1x1 mode or with video from any combination of cameras. A configuration with multiple windows displays video or data from as many devices associated with the map as possible in the available video windows. Multiple maps can be displayed in the same configuration.

Each map contains icons showing the location of devices. These icons change color to represent the current recording status (blue for motion, for example). You can display video or data from the device that it represents by double-clicking the icon or by dragging it to a video window.

Each map can contain icons representing parent or child maps. To view a child map, double-click the following button:

To view a parent map, double-click the small map button  in the upper-right corner of the map window.

For information on setting up maps, see Map Setup. For information on searching for video on devices in a map, see Searching Maps.

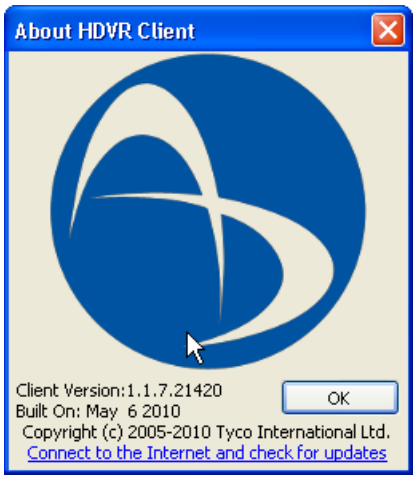
**NOTE:**

Maps can be created on a client computer, but they are associated directly with all HDVR servers that have cameras and devices associated with the map. Thus, any map that you create can be seen by other users when they are connected to any server that the map is associated with. To see which servers a map is associated with, right-click the map on the Live Maps page and select Properties. All associated servers are listed in the properties window, and you can view the setup page for the map by clicking the OK button that appears.

## About HDVR

Moving to the upper-right corner of the title bar, you'll see an About HDVR Box.


Clicking on this box provides information about the client software you are using. This information will be important when troubleshooting any issues you may have using your HDVR System.



## Online Help System

You can also access online help for your HDVR System by clicking the Help button or the F1 key. The system will default to information regarding the topic matching the part of the system you are working in. For more instructions on using the Online Help system, see Starting the Local Client.

To exit the Online Help system, click the Close button  or the F1 key.

## Display Buttons

Next to the Help button, you'll find the Hide/Show Navigation Panel button. Click the button to enlarge the HDVR display by hiding the Live Camera Site Tree. Click it again to return to the normal view. The F4 key will perform the same function. Click it once to enlarge the HDVR display. Click it again to return to the normal view.

The Full Screen Mode button enlarges the HDVR display by hiding the title and task bars. Click it once to expand the display. Click it again to return to the normal view. The F11 key will perform the same function. Click it once to expand the display. Click it again to return to the normal view.

The F8 key will expand the display by hiding the toolbar. Click it again to return to the normal view.

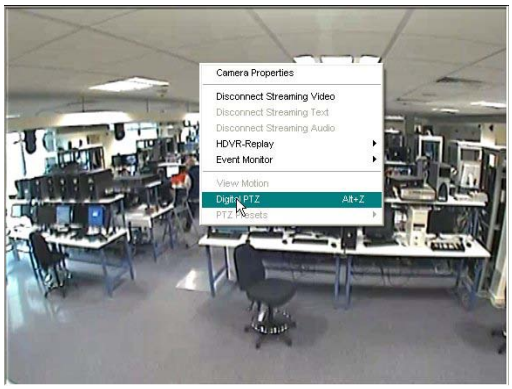
**NOTE:**

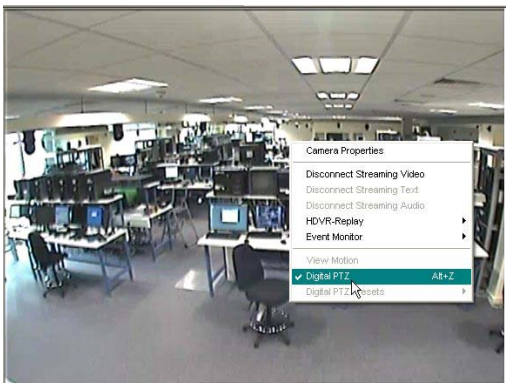
To expand your display to the maximum size, you can use all of the panel navigation and/or corresponding function keys at once.

## PTZ Control

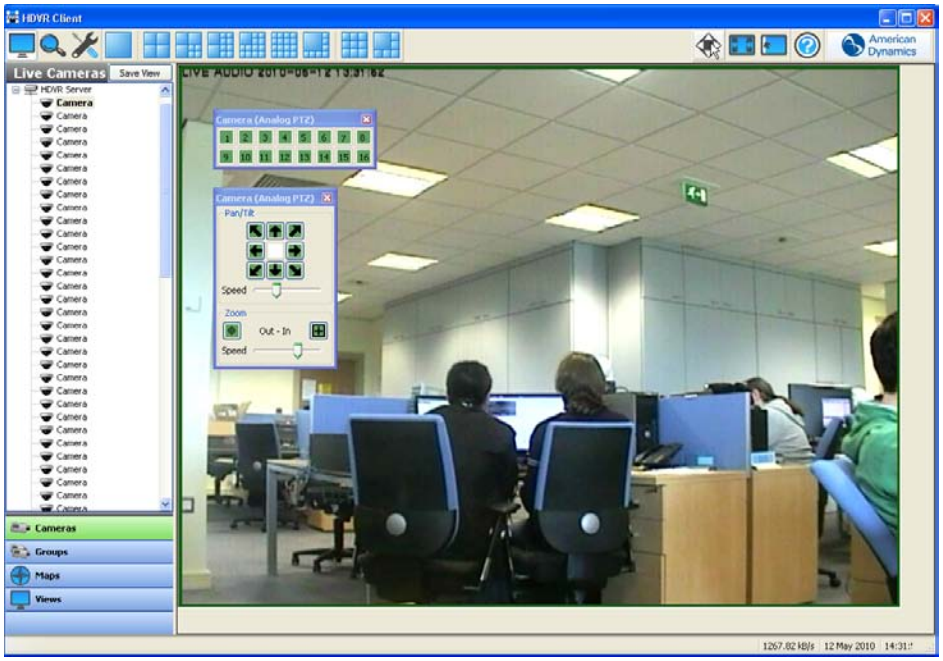
The PTZ Control Button displays the PTZ Control window which allows you to maneuver a PTZ camera or digitally zoom any video.

Click the button to access the PTZ Control windows. Please note that the controls will only open when a PTZ enabled camera is displayed in the Video View Panel. Even if you do not have a PTZ camera, you can use the digital PTZ feature to zoom in and pan around an image, provided digital PTZ has not been disallowed during Setup. To enable digital PTZ, right click in the appropriate Video Panel and select Digital PTZ. A checkmark will be displayed in the menu once the digital PTZ feature has been enabled.

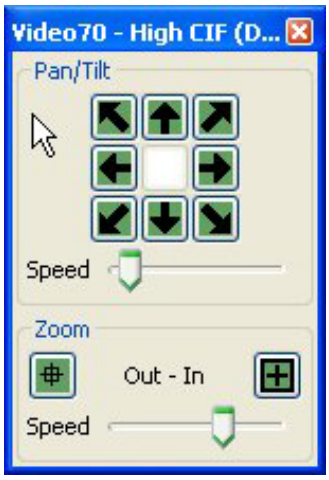



Once you open the PTZ Control windows, a green border will be displayed around the Video Panel in use. The name of the camera being controlled will also be displayed in the PTZ Control title bar. To switch the controls, click anywhere in the desired video panel.




You can also click and drag on the title bar of the PTZ Controls to move them anywhere on your screen.




To control **Pan/Tilt**, click on the green arrow buttons. To control **Zoom**, click on the Out or In buttons. To control the speed of the pan/tilt and zoom functions, adjust the **Speed** slider bar directly below each feature.

When using cameras that support **Focus** and **Iris**, you can also control those features using the PTZ Controls. You can focus Far or Near, or you can click Auto to activate auto-focus. Similarly, you can increase the iris setting by clicking Open, reduce it by clicking Close, or activate auto-iris by clicking Auto.

You can also use the Preset buttons you have setup by clicking on the green, numerical buttons at the bottom of the PTZ control. For directions on how to setup a Preset button, see Camera Setup. By rolling your cursor over the Preset buttons, you can access a tool tip based on the preset name you typed in when you set up the PTZ camera.


An even more efficient way to access the PTZ Controls is to use the Arrows, Page Up, and Page Down keys on your keyboard. The arrow keys will move your camera to the left, right, up, and down. Page Up will zoom in, and Page Down will Zoom Out.

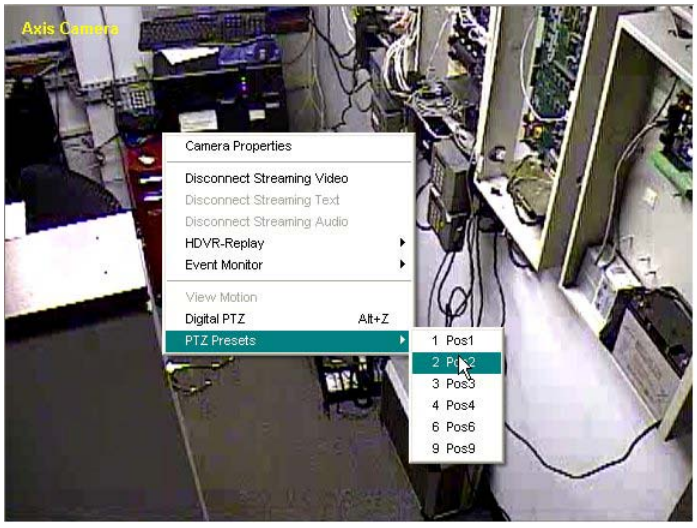
You can also move your mouse roller up and down to zoom in and out. Move your cursor to one of the corners or edges of the image, and the PTZ control arrows will appear. Click your mouse to pan the image in the direction of the arrow.

When you reach the edge of the image, PTZ limit indicator will be displayed.


To get a closer view, simply use your mouse roller to zoom in. The PTZ limit indicator will disappear, allowing you to pan the image again.

Clicking Alt and Z at the same time will enable the zoom box. You can zoom in on a particular location by holding down the control key and dragging the zoom box over the desired portion of the image. Clicking Alt Z again will bring it back.

You can also use your mouse to access the PTZ presets by right clicking anywhere in the PTZ Video Panel and selecting PTZ Presets and then the name of the desired preset.



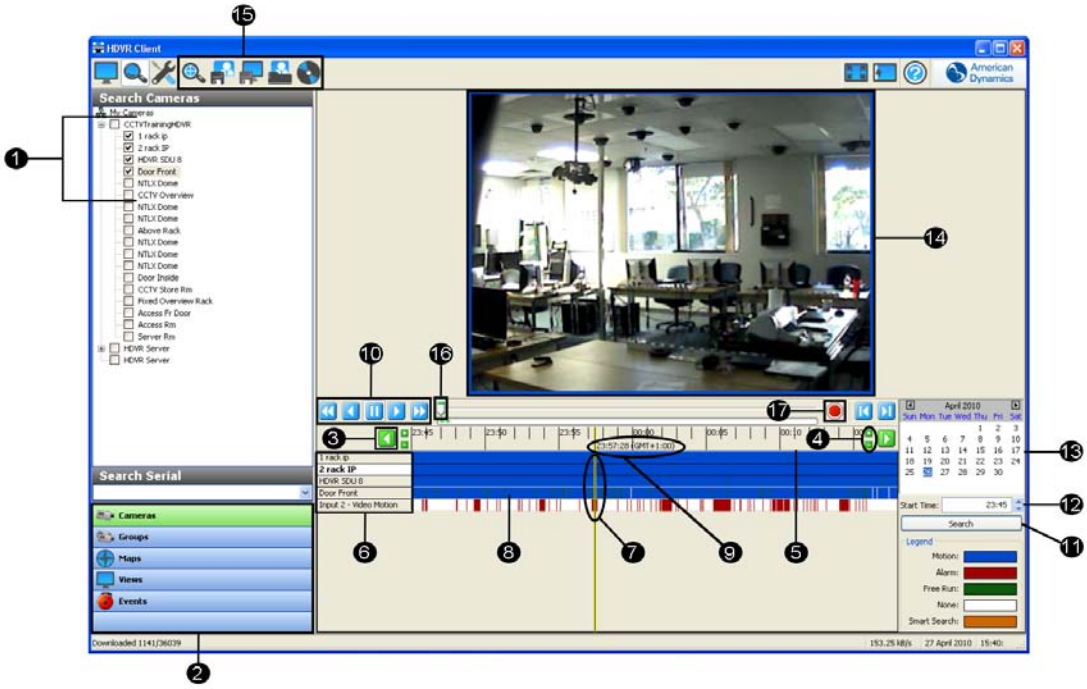

You can also use your mouse to maneuver the PTZ controls within the PTZ Video Panel. Move your cursor to the top and center of the PTZ camera view and you should see an up arrow. Click your mouse and the camera will move up. Move your cursor to the corner of the box and you will get a diagonal box. By clicking your mouse the camera will now move in that direction. You can continue this process along the remaining sides and corners of the PTZ camera display until you have positioned the camera in the desired location.

You can zoom the camera in and out by using your mouse roller. To zoom in, roll your mouse wheel forward one click and then quickly roll it back one click. To zoom out, roll the mouse wheel back one click first and then one click forward. Remember, you can adjust the speed of the Zoom feature by using the Speed slider control on the PTZ Control.

Finally, if you have access to a USB joystick, you can use it to maneuver your PTZ controls. See Joystick Setup, for detailed instructions on how to set up your joystick.

## Search Mode Overview

Search Mode allows users the ability to search for recorded video.




1. Camera Selection Tree – Check the box to select the camera(s) to search.
2. Navigation Pane – displays cameras, video, audio, and events in organized groups and views.
3. Left and Right Scroll Buttons – Scrolls left and right on the time line. Clicking on the left or right scroll button increments the time line by one major division, and initiates a new search.
4. Zoom In (+) and Zoom Out (-) Buttons – Zooms in and out on the video time line.
5. Video Time Line – time line of video that is displayed as blue bars. The video time line is displayed in views of 5 minutes, 1, 8 and 24 hours. Hovering your cursor on the top of the video time line then clicking and dragging either up or down allows expanding or shrinking the camera selection list and associated video bars along with the video playback display.
6. Camera Selection List – list of cameras that have been selected with the check box in the camera tree. Camera name is displayed in bold when it has been clicked on video time line bar.
7. Video Cursor – the video cursor is used to select the segment of video you would like to playback. One click will move the video cursor to a new location. Double click will begin video playback.
8. Recorded Video Bar – blue bars represent video that has been recorded.
9. Cursor Time – when the video cursor (7) is single clicked on a recorded video bar (8) the cursor time is displayed. When the video cursor is double clicked the recorded video is played back and the cursor time is also played in synchronization with the video.
10. Video Playback Controls – there are seven playback controls:

Play video in reverse fast (double) speed

Play video in reverse in normal speed

Stop video play

Play video forward in normal speed

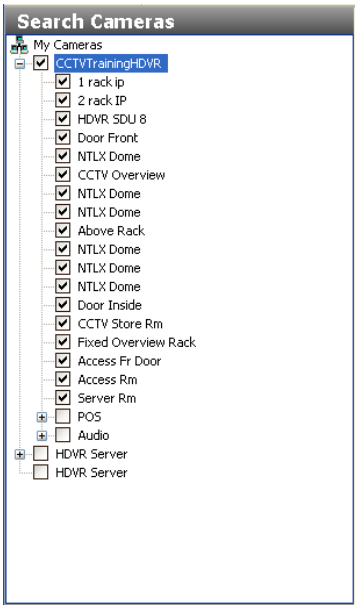
Play video forward in fast speed

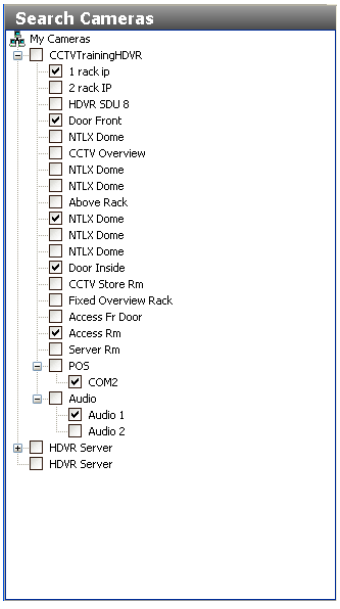
Play video forward one frame at a time

Play video backward one frame at a time

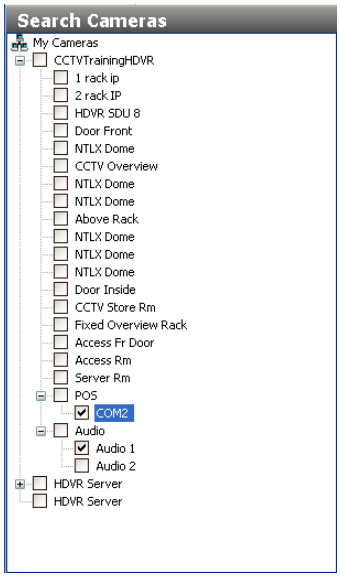
11. Search Button – the search button initiates a new video search based on changes that have been made in the camera selection tree (1), calendar (12) and start time (11).
12. Start Search Time – used to change the desired time of the video search
13. Calendar – used to select the day of the video search
14. Video Playback – video window that video is played in.
15. Export Buttons – Save Picture, Save Video, Print Picture, and Burn to CD or DVD.
16. Scrub Bar & Scrub Handle – used to quickly scrub back and forth through video.
17. Stop Download Button – used to stop the down the download.

To begin a search, you must first select a source or sources (i.e., camera, audio, POS, or event). To search every camera on a HDVR server, simply check the box to the left of the server in the Camera Selection Tree. You can then deselect any cameras you don't want to search. You can also select individual cameras using the check boxes to the left of each camera. You can also select individual cameras without checking the box next to the server.

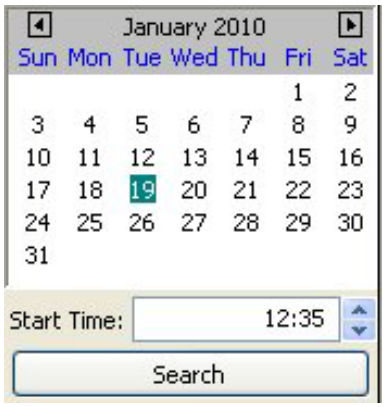



To search for POS data or audio, check the box next to the desired source in the Camera Selection Tree.

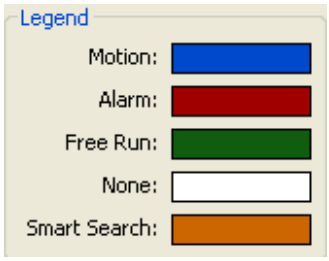



Once you have selected your sources, select the date and time you want to search.

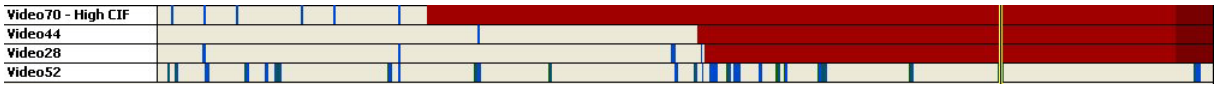



Use the arrows to the left and right of the month to go backwards or forward a month at a time. The up and down arrows next to the time will go backwards or forward in one hour increments. You can also adjust the time by typing directly in the Start Time field. Once you have selected the date and time, click the Search button.

When your search is complete, the camera names you selected will appear in the Camera Selection List with the corresponding Recorded Video Bar to the right. A Legend for the Recorded Video Bar is displayed in the lower right corner of the Search window.



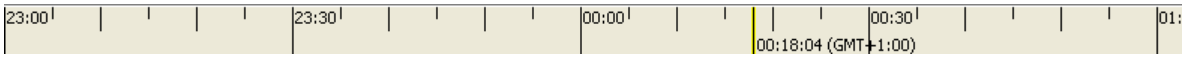

As you can see, a blue bar represents video recorded in Motion mode. The white bar represents a segment when no video was recorded. The green bar will be displayed when video was recorded in Free Run mode. A red bar will be displayed when the camera is recorded based on an alarm link.




The evenly spaced green bars represent video that was recorded based on the time lapse setting. *(*See Storage Setup)

## Video Timeline

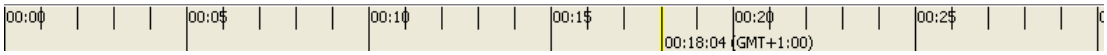
Just above the Camera Selection List and the Recorded Video Bars, you'll find the Video Time Line. The system will automatically display a two-hour timeline in 30 minute increments.




You can adjust the search time by clicking the left or right arrows or by typing a new start time in the Start Time field and clicking the Search button.

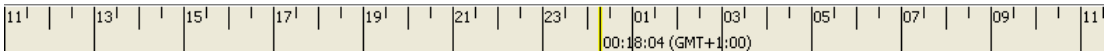
In addition to 30 minute increments (shown above), the Video Timeline can be displayed in increments of five minutes (A), as well as one (B), two (C), or 24 hours (D).

A.

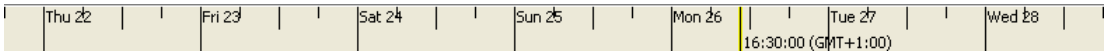



B.


C.

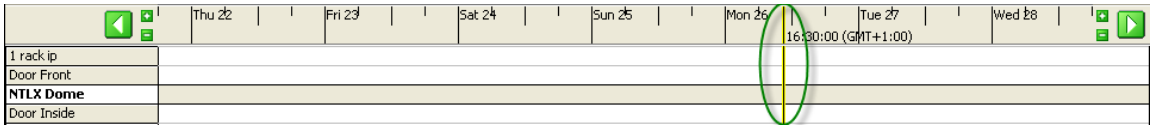



D.




You can adjust the time increments by using the Zoom buttons. Click the (-) button once to change the display to shorter increments. Click the (+) button to display longer increments.

The yellow Video Cursor is used to select a segment of recorded video.



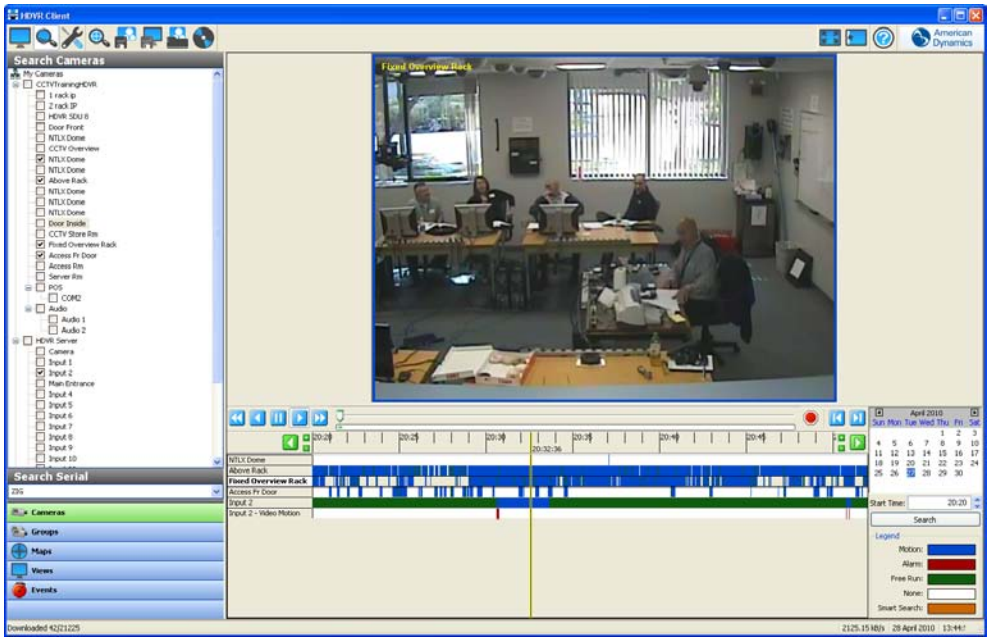

## Video Playback

To select a camera for video playback, click on a camera name in the search results area. To select multiple cameras for playback, press and hold the Control key and then click each of the camera names. To select a range of consecutive cameras, press and hold the Shift key, click the first camera name in the range, and then click the final camera name in the range.

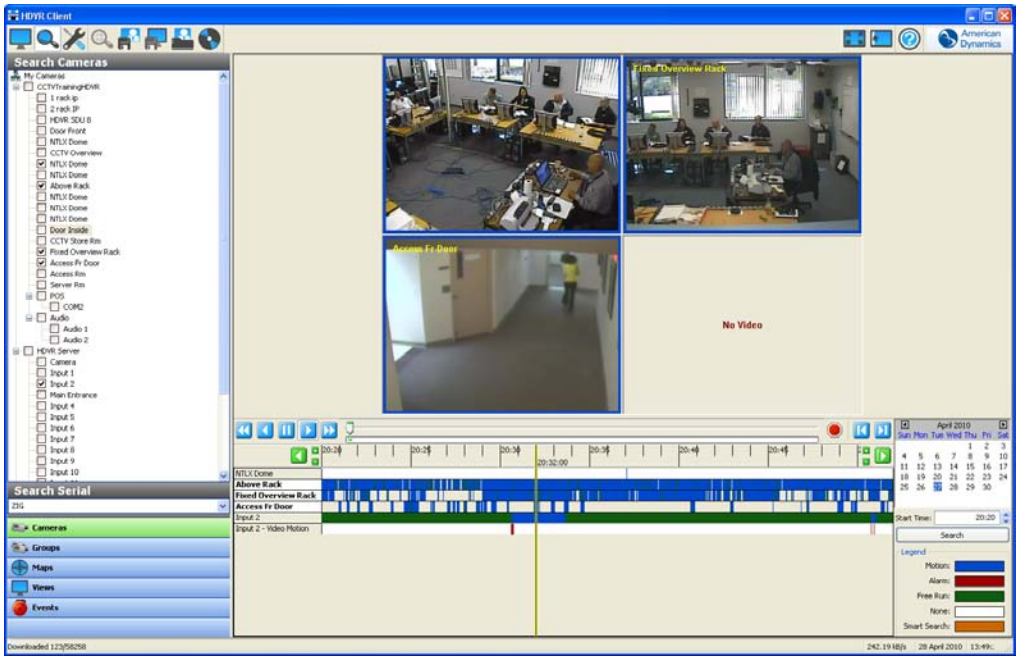
To play back a segment of video from all selected cameras simultaneously, move your mouse cursor along the Recorded Video Bar until you reach the time of the video you want to play back. Clicking once will change the location of the Video Cursor. Double clicking or pressing the play button will begin the playback of all the cameras included in the search in the Video Playback window at the top-center of the Search screen. The date, time (milliseconds), or camera names are displayed in the Video Playback windows depending on the configurations in Camera Setup.


The video clip shown in the figure above was set up to record on motion and it has an alarm linked to the *front door opening.* The blue border indicates that the recording occurred using the motion mode. A red border around the playback window indicates an alarm triggered the recording.

To zoom in on a single camera, double click its Video Playback window.



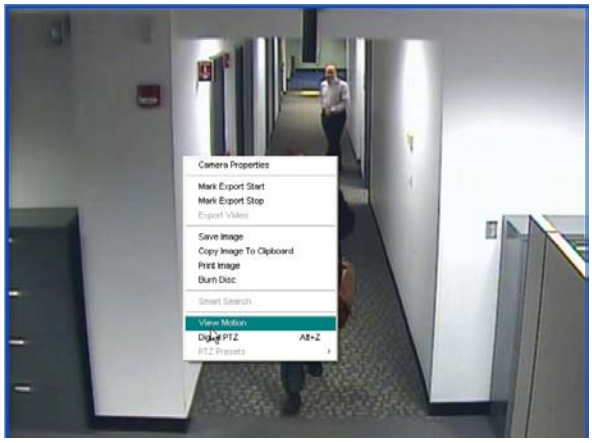

To return to the multi camera view, double click the remaining Video Playback window.



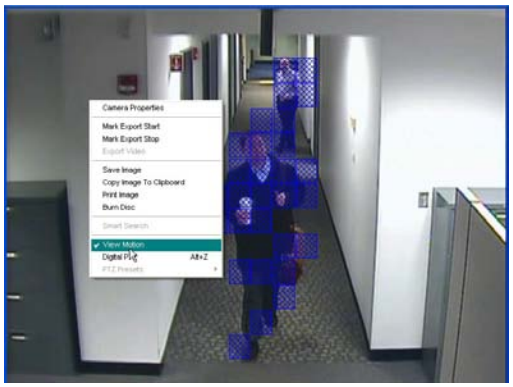

In some cases, wind or some other invisible motion sets off the camera. On an analog camera, you can highlight the motion that triggered the recording to identify the cause by right clicking anywhere in the playback window and select View Motion

**NOTE:**

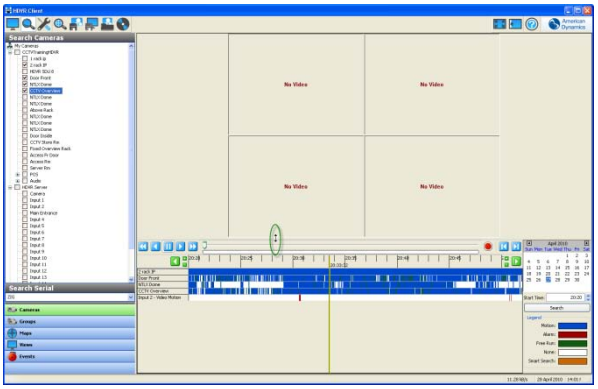
This feature is not available on IP cameras.

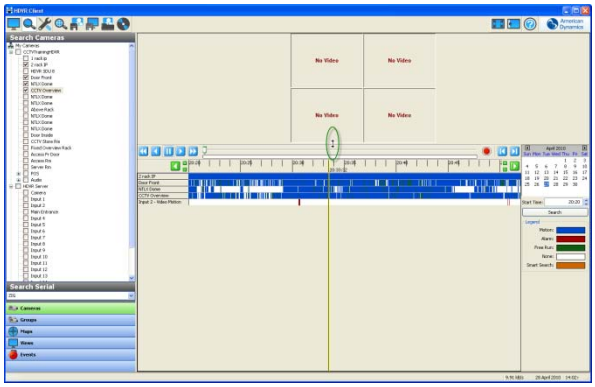



Blue motion boxes will mark the area where the motion occurred. When you want to remove the motion boxes, right click in the Video Playback window again and select Disable Motion.

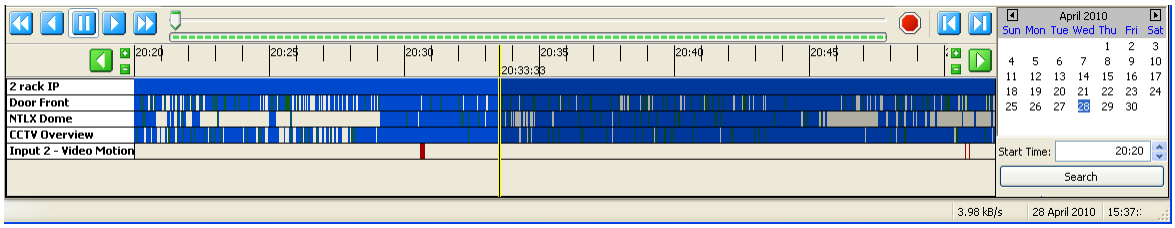



You can resize the Video Playback window by holding your cursor over the sash at the bottom of the window until it changes to a double arrow. Grab the sash and drag it up or down until you get the desired size.

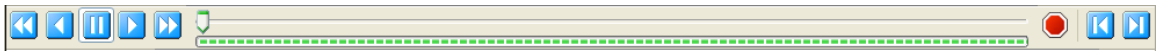




When the video playback begins, a blue or green Scrub Bar will track the progress of the download. The total number of frames in the video segment as well as the number that have been downloaded will also be displayed in the status bar.




Once the download has started, you can scrub back and forth through the video using the Scrub Bar & Scrub Handle or the Video Playback Controls. You can only scan the portion of the video that has downloaded. You will not have access to the entire video segment until the download is complete.



You can quickly scan the video by dragging the Scrub Handle along the Scrub Bar to the left or right.

You can also use any of the seven, blue Video Playback controls to scan the video.

The  button plays video in reverse fast speed. Click it once to reverse in 2x speed. Each additional click doubles the current speed. For example two clicks will reverse in 4x speed. Three will increase it to a speed of 8x, etc.

The  button plays video in reverse in normal speed.

The  button pauses the video play.

The  button plays video forward in normal speed.

The  button plays video forward in fast speed. Click it once to forward in 2x speed. Each additional click doubles the current speed. For example two clicks will forward in 4x speed. Three will increase it to a speed of 8x, etc.

The  button plays video forward one frame at a time.

The  button plays video backward one frame at a time.

Another way to quickly scrub through video is by pressing Enter or Backspace on the keyboard. To do this, select a video window and then hold down the Enter button to scrub forward or the Backspace button to scrub backward. Enter and Backspace play *every* frame of video as quickly as the system hardware allows, unlike the normal Play and Reverse buttons, which play video at actual speed even if frames must be skipped to do so.

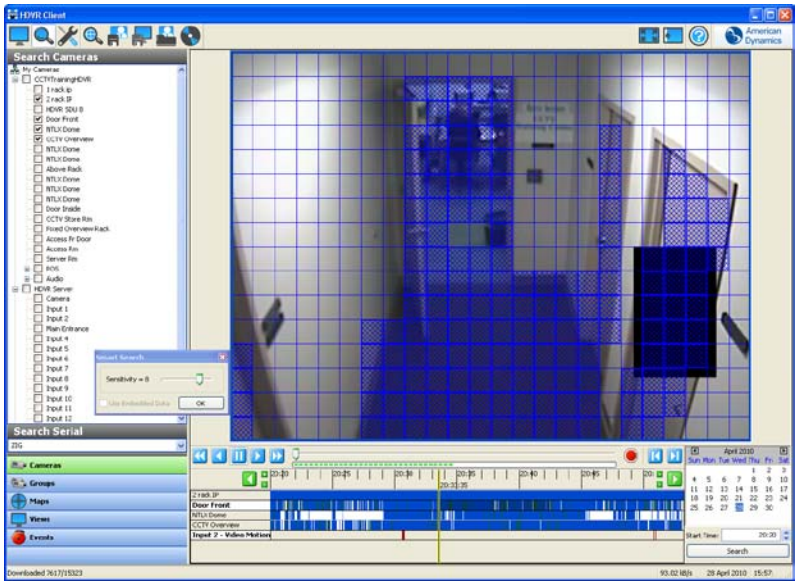
## Smart Search

Smart Search allows you to search for occurrences of motion in specific areas of a video window. To activate Smart Search, complete a search as described in the previous section and click the Smart Search button:

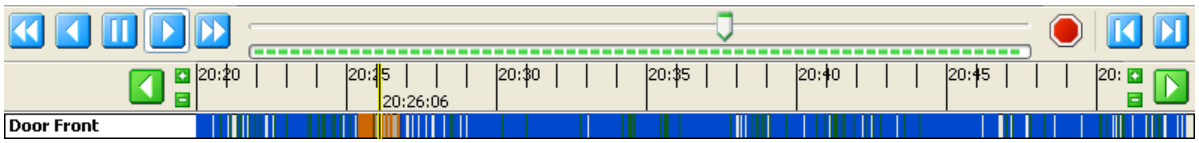
**NOTE:**

Smart Search can be run only on a 1 x 1 video window layout.

When you click on the Smart Search button, a Smart Search box appears and a grid is displayed over the video window. Use the mouse cursor to select grid boxes in the region of interest where you want to view all instances of motion. The selected boxes are filled in with blue; to deselect a box, click it again. To select multiple adjacent boxes, click and drag the cursor.



When the region of interest is complete, click OK in the Smart Search box. The system searches for all video from the original search that contains motion in the region of interest. When the Smart Search is complete, the number of frames containing motion in the region of interest is displayed. Click OK to view the frames. Smart Search frames appear in orange in the video results bar:




When orange bars appear in the video results bar, only the Smart Search frames that they represent are played back in the video playback window; any non-Smart Search frames in that time range are skipped.

## Navigation Pane

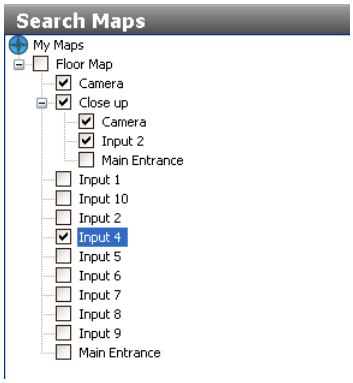
In addition to using the Camera Selection Tree, you can also search using the Groups, Maps, Views or Events Navigation Pane.


**NOTE:**

Conducting a Groups search allows you to organize your cameras in groups that suit your needs. (See Group Setup, for Groups set up instructions.) The actual Groups search process is the same as conducting a Cameras search.

## Searching Maps

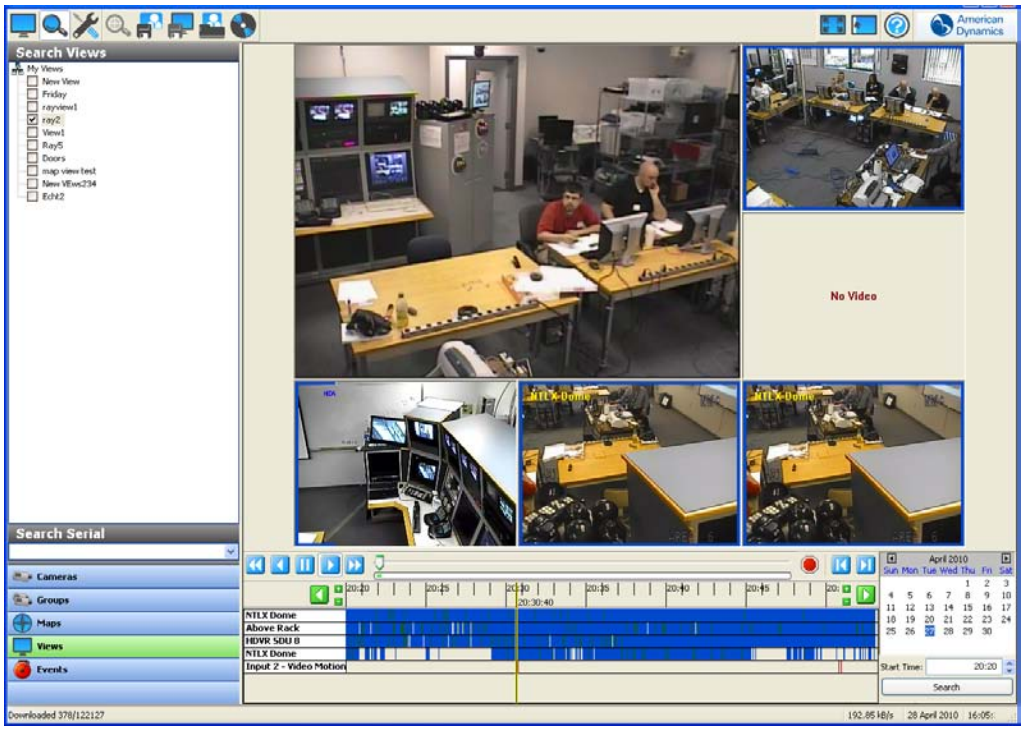
You can search for video from cameras associated with a map. (See Map Setup for information about importing and configuring maps.)




Select Maps from the Navigation Pane, and then select the map you want to search by clicking the appropriate checkbox. This selects all cameras associated with the map or its child maps. You can deselect any of the cameras to eliminate them from the search. Alternatively, you can expand a map without selecting its checkbox, and then select individual cameras to include in the search. You can include cameras from multiple maps in a single search.

## Searching Views

You can also search for video recorded on all cameras in a specific view (See Site Tree Navigation, for View set up instructions.)




Select Views from the Navigation Pane, and then select the View you want to search by clicking the appropriate checkbox. Select the date and time you would like to search by using the Calendar and Start Time fields, and then click the Search button. All of the cameras in the View will be displayed in the Video Playback window.

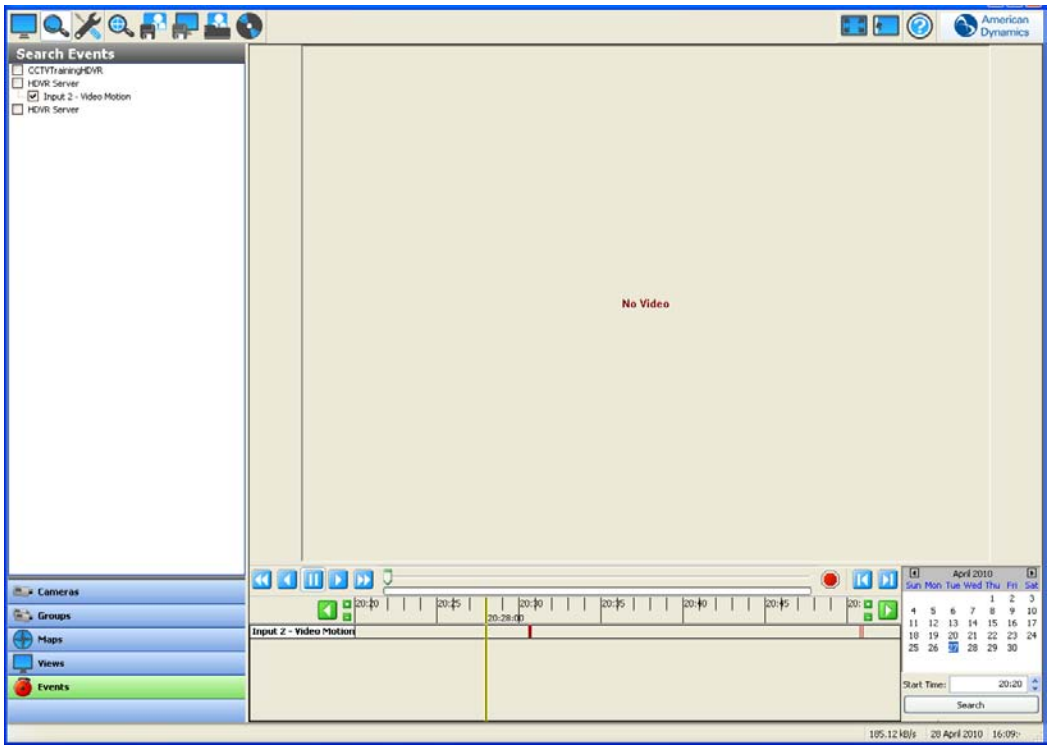
To zoom in on a single camera from the view, double click on the video in the Video Playback window. To return to the multi camera view, double click in the Video Playback window again.

## Searching Events

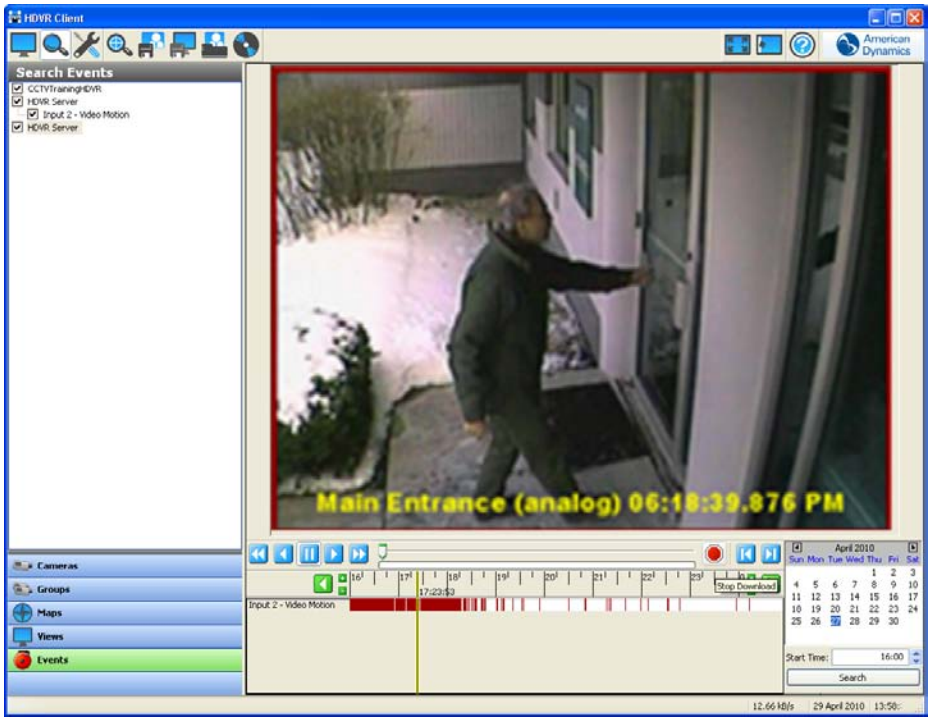
There may be times when you want to narrow your search to a specific event rather than all video that recorded on a particular camera during a given time period. For example, you may have a camera in the main lobby set to record upon motion. Rather than searching all of the video that recorded upon motion, you may only want to view instances when the front door opened. To start this process, you first need to create an event to record video based on the front door opening. See Linking for instructions on creating and linking an event.

Once this event has been established and linked appropriately, you will be able to conduct an Events search to locate video or audio associated with the event. To do this, click the Events button on the Navigation pane and the Event you want to search.


Once you have selected your event or events, select the desired date and time and click the Search button.




The red bars indicate instances when the event triggered video or audio recording. To search for the video associated with this particular event, you'll need to click the Cameras button in the Navigation Pane, and then conduct a search on the camera associated with that event.

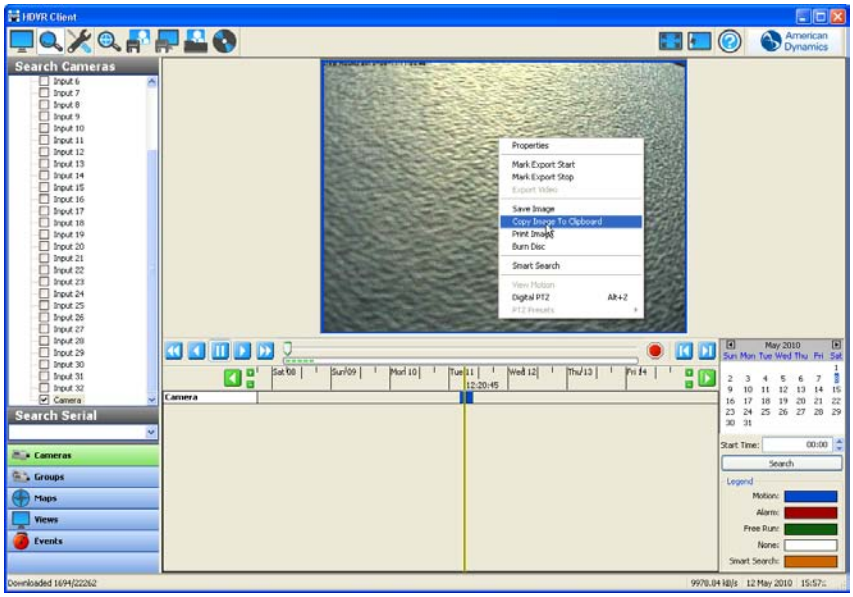



## Exporting Files

Once you have downloaded a video segment, you can use the Export buttons to save a picture or video, print a picture, or burn saved files to a CD or DVD.

There may be instances when you want to save a single frame to a file or print it in hard copy. Drag the Scrub Handle along the Scrub Bar until you find the frame you need and then select the Save Picture to File  or the Print Picture  or both, depending on your need.

You can also copy a picture to a clip board and paste it into a document. When you find the image you need, right click anywhere in the Video Playback window and select Copy Image to Clipboard. The image will be stored, and you can paste it into your document.

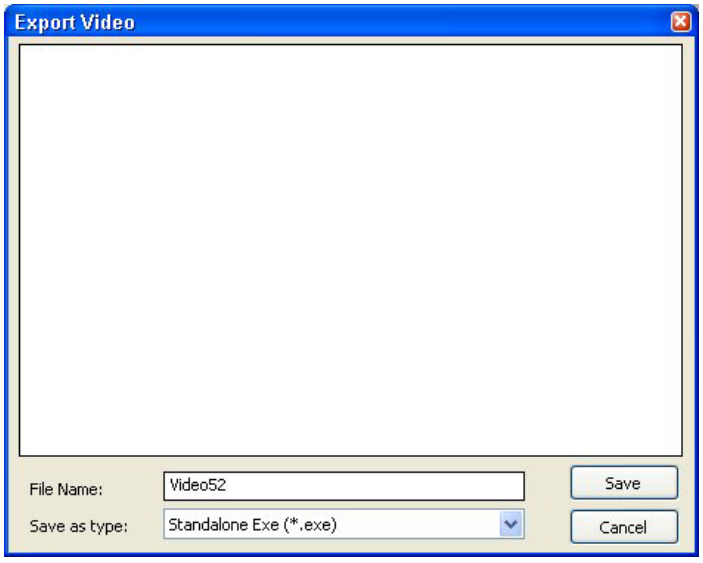



If you need to save a series of frames, you can save a video clip. To save a video clip, you must first mark the starting point of your video clip by Scrubbing to the location on the Scrub Bar where you want your video clip to begin. Right click anywhere in the Video Playback window and select Mark Export Start.


Use the same process to mark the ending point of your video clip, right click anywhere in the Video Playback window, and select Mark Export Stop.


Once you have marked the beginning and ending points, click the Save Video Button. 

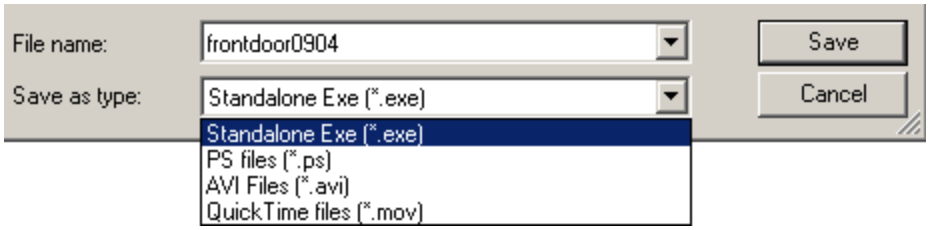
You will be prompted to save the file. You can store multiple video clips in a directory and then email the files or burn them to a CD or DVD.




The default directory is HDVR Files in My Documents. The file name will default to the camera name. You can assign it a unique name or keep it as is. After you have named the file, select a file type. The system defaults to a standalone *.exe file, which plays on its own and can be run by a Windows user who does not have access to an HDVR Client. Alternatively, you can save the clip as a *.ps, *.avi, or *.mov file if you are emailing it to another HDVR Client user; this will reduce the size of the clip. If you are running the client on a Linux or Mac operating system, you should save the clip as a *.ps file unless you are emailing it to a Windows user.

**NOTE:**

See the chart on the following page for information about file compatibility on each operating system. Also, an *.exe file can be created using any operating system even though it can be viewed using only Windows.




Quicktime and AVI File Export Players

| | Windows Players | | | Linux Players | | Mac Players |
|---|---|---|---|---|---|---|
| Video format | WMP* | Quicktime Player | VLC | MPlayer | VLC | Quicktime Player |
| AVI MJPEG | • | • with DivX decoder | • | • | • | • with DivX decoder |
| AVI MPEG4 | • with DivX | • with DivX decoder | • | • | • | • with DivX decoder |
| AVI MPEG4 with ASP | • with DivX | • with DivX decoder | • | • | • | • with DivX decoder |
| AVI H.264 | • with DivX | • with DivX decoder | • | • | • | • with DivX decoder |
| Quicktime MJPEG | | • | • | • | • | • |
| Quicktime MPEG4 | | • | • | • | • | • |
| Quicktime MPEG4 with ASP | | • with 3ivx MPEG4 decoder | • | • | • | • with 3ivx MPEG4 decoder |
| Quicktime H.264 | | • | • | • | • | • |

*WMP = Windows Media Player

You can download players at the following URLs:

**Windows Media Player**
http://www.microsoft.com/windows/windowsmedia/default.mspx

**Quicktime Player**
http://www.apple.com/quicktime/download/

**VLC Player**
http://www.videolan.org/vlc

**MPlayer**
http://www.mplayerhq.hu/design7/dload.html

You can download codecs at the following URLs:

**3ivx MPEG4 decoder**
http://store.3ivx.com/3ivxStore/?features=dec&platform=win&license=plus&Go=Go

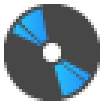
**DivX decoder**
http://www.divx.com/en/downloads

**Quicktime codec resources**
http://www.apple.com/quicktime/resources/components.html?os=Windows&ctype=696d6463&csubtype=48323634

Perian Codec for Quicktime
http://www.perian.org

Once you have named the file and selected the appropriate file type, click the Save button.

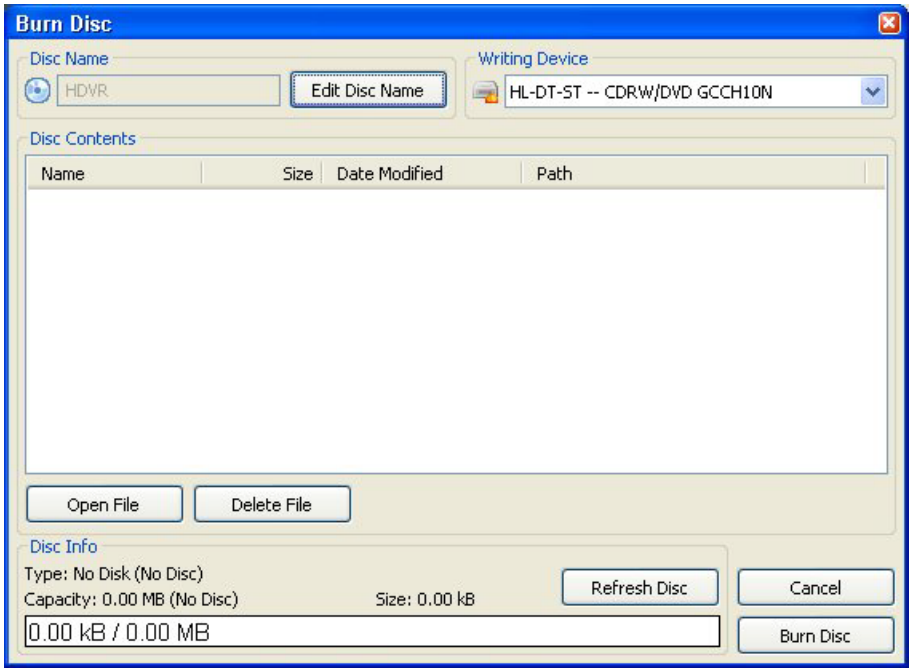

Once you have saved the files into a directory, you can attach them to an email or export them to a CD or DVD. If you wish to burn them to a CD or DVD, insert a writable CD or DVD and click the “Save to a CD or DVD” button at the top of the toolbar.



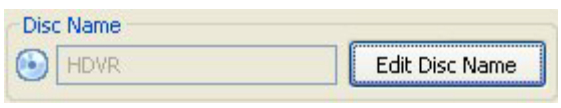
**NOTE:**

If you do not have a CD burner, the Save to a CD or DVD button will not be enabled. If you are running the client on a Mac, you can drag and drop the files into your Burn Folder. It will create links to these files. Once you are finished copying all the files, select the **Burn** button in the right hand corner. This will burn the files to the Disk.

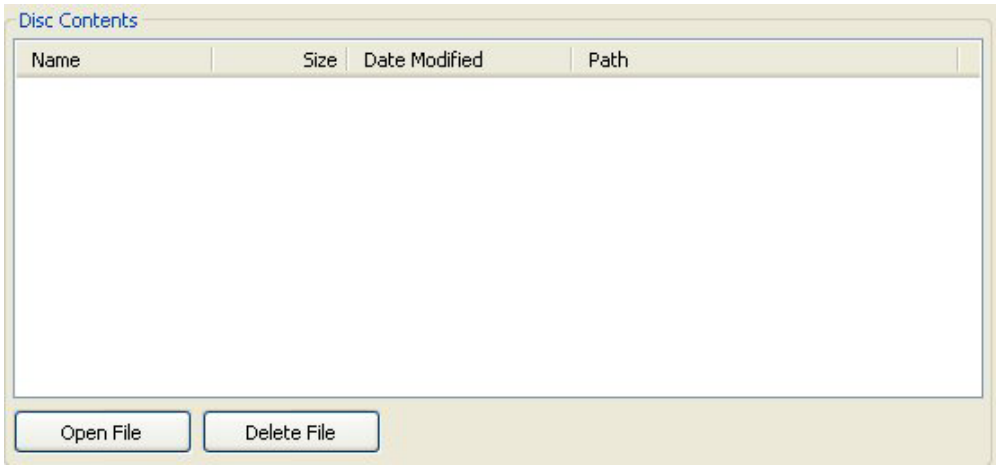
Once you click the Save to a CD or DVD button, the Burn Disc window will be displayed.




You can change the name of the disc by clicking the “Edit Disc Name” button.



The Disc Contents list displays all of the video clips in your directory.




The system will automatically select all of the video clips. You can edit the list by deselecting the checkboxes next to the file name.

If you would like to review one of the video clips, select the file and then click the “Open File” button. You can also delete a file by selecting it and clicking the “Delete File” button.

The Disc Info box displays some important information about your disc capacity.


The disc capacity thermometer (green bar) is a visual queue indicating how much disc space is required for the files you have selected. The disc capacity is also reflected in a numerical format. The first number listed (MB) is the amount of space required to burn all of the video clips you have selected. The next number represents the capacity of the disc you have inserted.

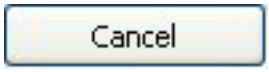
**NOTE:**

If you forget to insert a disc, this number will be zero. If you happen to click the “Burn CD” button without inserting a writable CD or DVD, you will need to click the Refresh Disc button before clicking the Burn CD button again.

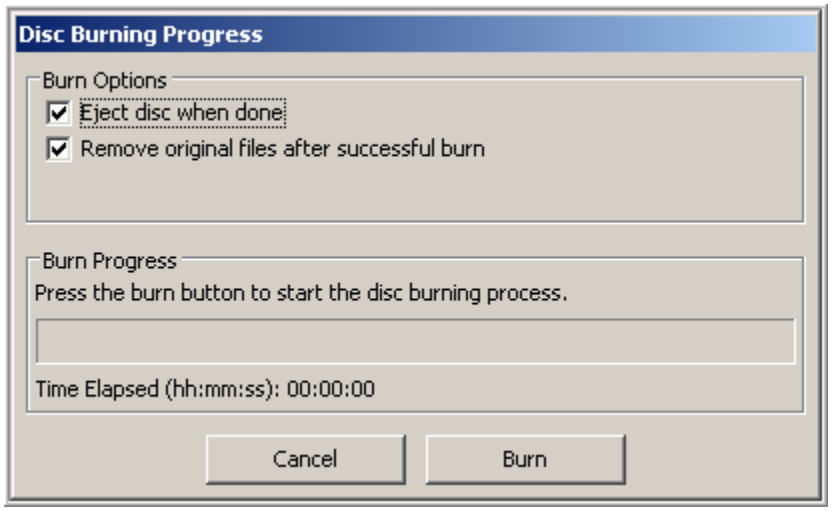
If your files exceed the disk capacity, you will need to either remove some files before Burning the CD or insert a new Disc with a larger capacity. When you insert a new disk, you will need to click the Refresh Disc button before Burning the new CD.

Once you have made all of the appropriate changes, press the “Burn Disc” button.


If you wish to cancel the process, click the “Cancel” button.




After clicking the “Burn Disc” button, the Disc Burning Progress window will be displayed.



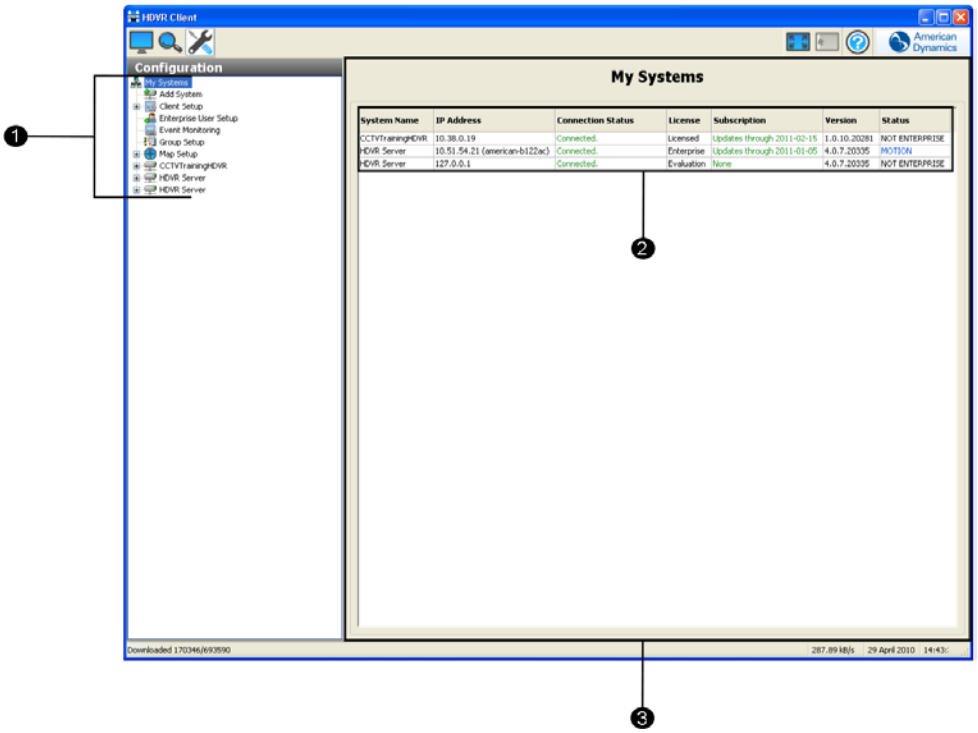

The system will automatically default to ejecting the disc when the burning process is completed. You may also want to uncheck this checkbox if the CD drive is behind closed doors as in the HDVR Server.

It will also automatically delete the files from the hard drive after a successful burn unless you uncheck the appropriate checkbox.

Click the Burn button to initiate the writing process. This may take several minutes, depending upon the amount of video to be written.

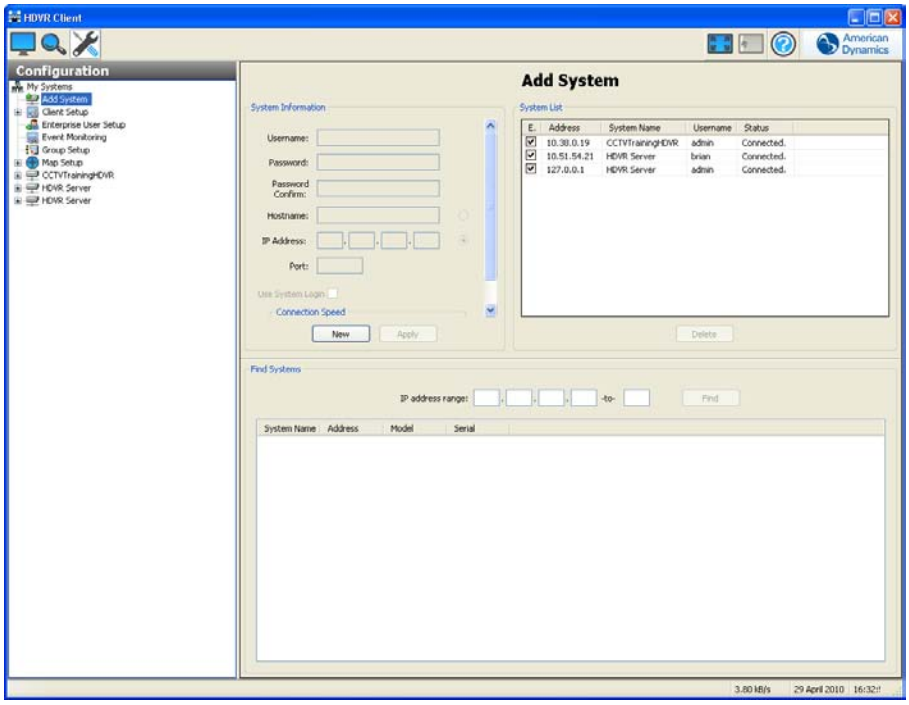
## Setup Mode Overview

Setup Mode is where Administrators and Power Users configure systems.



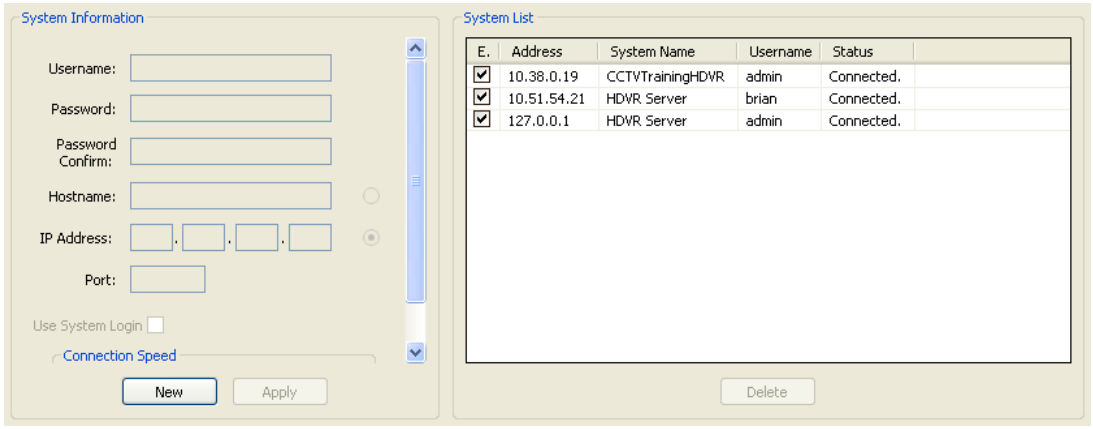

1. Setup Configuration Tree – click on any of the icons in the camera tree to take you to a new screen (see number 3 below) for configuring the item you selected
2. My Systems – is the first screen that displays systems that you have connected to. If you have only one stand alone system you will see one system listed on this screen. If you have configured multiple systems with the Network Setup screen (see Add System) that you are connected to you will see you will see each of those systems, the system status and the IP address.
3. Setup Screen – this area is known as a “screen.” It’s the area that will change to a new configuration screen when you click on the icons in the configuration tree.

## Add System



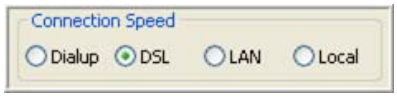

The **Add System** screen is where you add systems to your Systems List that you will connect to with your client application for viewing live and recorded video.

To add an HDVR to your **System List** click the New button and enter the Username, Password, and Password Confirm.



If you know the Hostname or IP address, enter it in the appropriate field by clicking the corresponding radio button. Contact your IT department if you don't have either the Hostname OR the IP address.

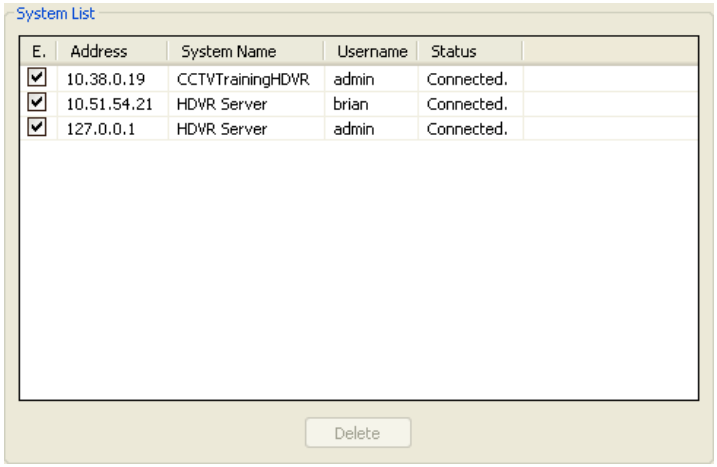
Select the radio button that matches your Connection Speed. This tells the system how much audio to buffer in order to help maintain a smooth audio stream.



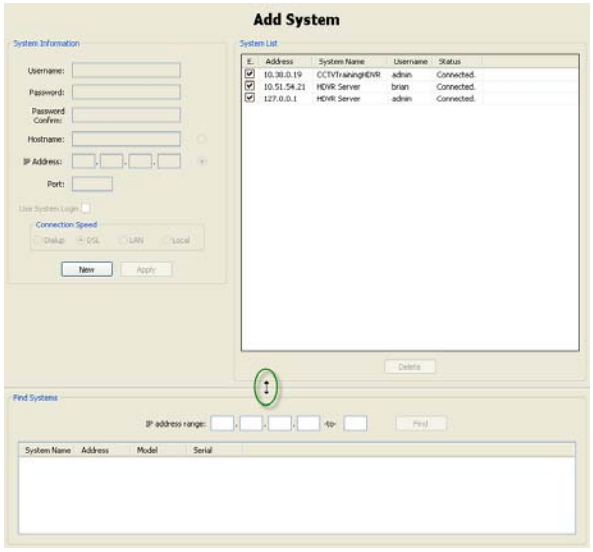

After you have competed entering the settings, click the Apply button.

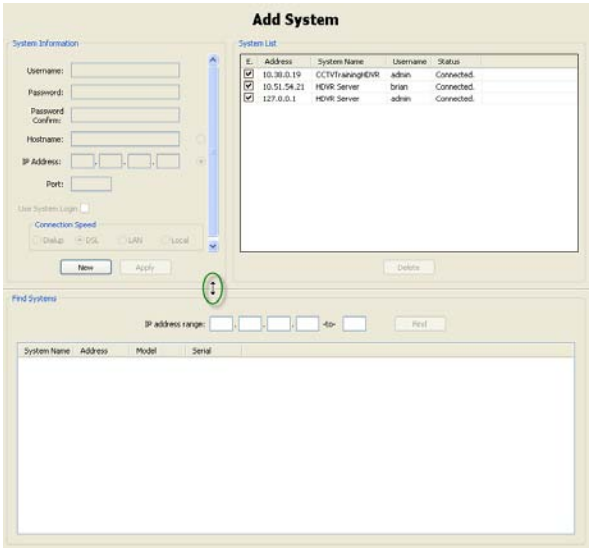

Once a system has been added to the Systems List, the Client will automatically connect to the system. All authorized video viewing, searching and system configuration functions will be available to your client application. It will now also appear in the Configuration, Live and Search trees.

To disconnect or reconnect a system, simply deselect or select the Connection box in the System List. Disconnected systems do not appear in the Configuration tree. Only those systems selected will be displayed.

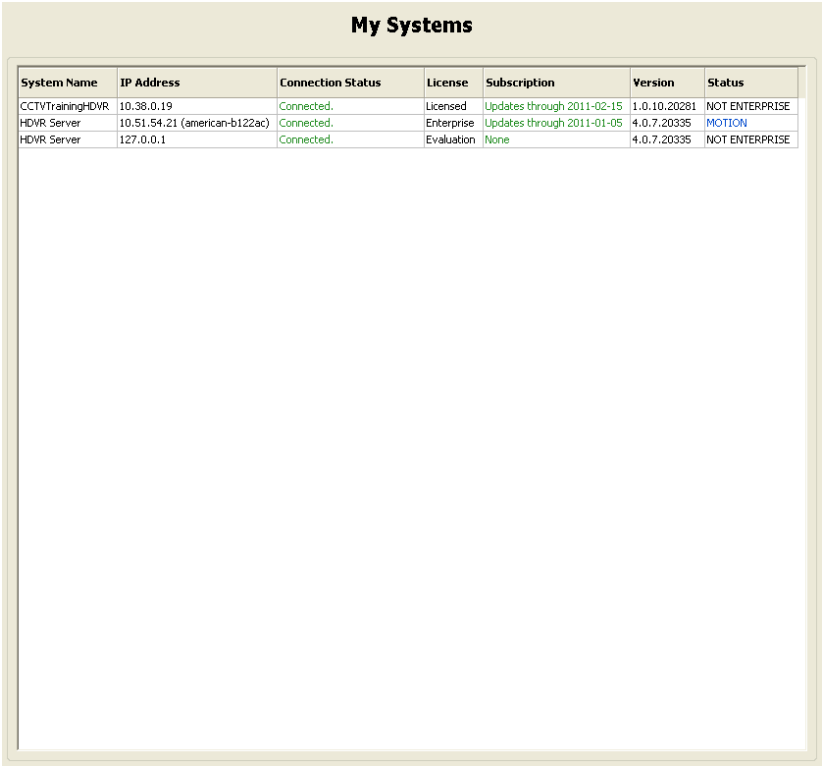



If desired, you can change the space allocated to the Add System window. Simply hover your cursor over the Resizing Bar, and drag it up or down to adjust the spacing to suit your needs.



## My Systems




The My Systems page lists all added systems. If you have only one standalone system, you will see one system listed on this screen. If you have configured multiple systems with the Network Setup screen (see Add System) that you are connected to, you will see you will see each of those systems. Information displayed for each system includes the IP address, connection status, license type, subscription information, version information, and status (such as, Normal, Alarm, or Motion).

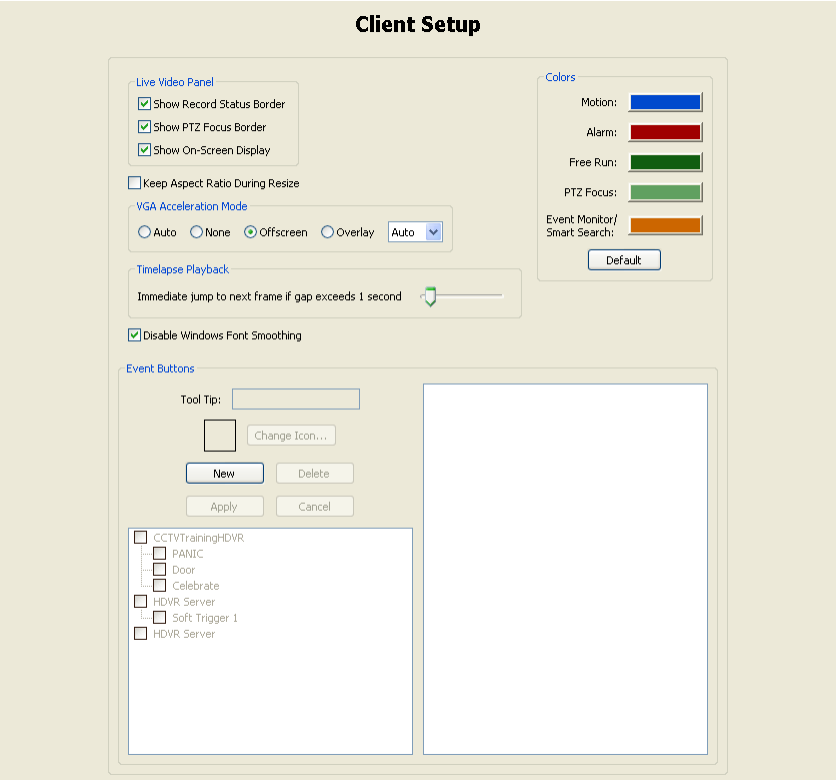
The following actions can be performed on the My Systems page:

- To view the System Information page for a system, double-click the information listed in any column for that system.
- To view model number and serial number information for a system, right-click the system name.
- To view MAC address and license key information for a system and copy it to the clipboard, right-click the information in the License or Subscription column for that system.
- To view additional version information for a system, right-click the information in the Version column for that system.
- To view additional information about Alarm or Motion status, hover the mouse pointer over the word while it appears in the Status column.

**NOTE:**

If the physical connection between the client computer and server is interrupted while you are connected to the server in HDVR Client, the Connection Status will be displayed as Network Activity Timeout. The status will then be displayed as Disconnected after a specific amount of time that varies among operating systems

## Client Setup



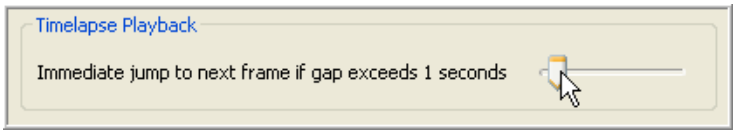

The Client Setup Screen allows you to customize your client based on your personal preferences.

The **Live Video Panel** field gives you the opportunity to disable the colored borders that are displayed in Live mode to indicate motion, alarms, or PTZ focus.

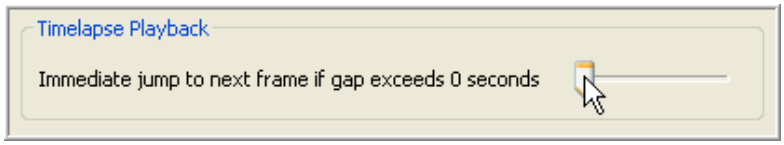

You can disable the blue motion and red alarm border by deselecting the Show Record Status checkbox and the green PTZ border by deselecting the PTZ Focus checkbox.

The **VGA Acceleration Mode** (Video Graphics Adapter) field can be used to resolve display issues that may be caused by your video card. See Display Issues.


The Timelapse Playback Interval Control allows you to adjust the amount of display time between video gaps due to timelapse recording or discontinuous motion.

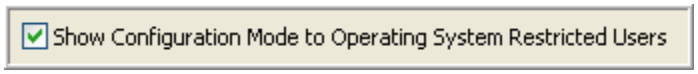


The system automatically jumps to the next video frame after a one second gap. You can decrease the dwell time to zero by sliding the interval control to the left or increase the dwell time up to 15 seconds by sliding it to the right.



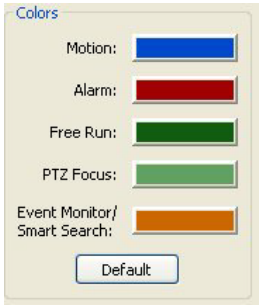

The Show Configuration Mode to Operating System Restricted Users checkbox allows you to hide the Setup button for a client who has a restricted Windows setting.

By default, the Setup button is displayed for all clients, but you can hide it for an individual client by deselecting the checkbox.

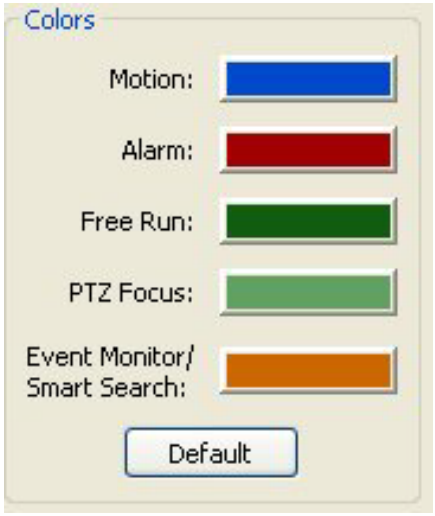


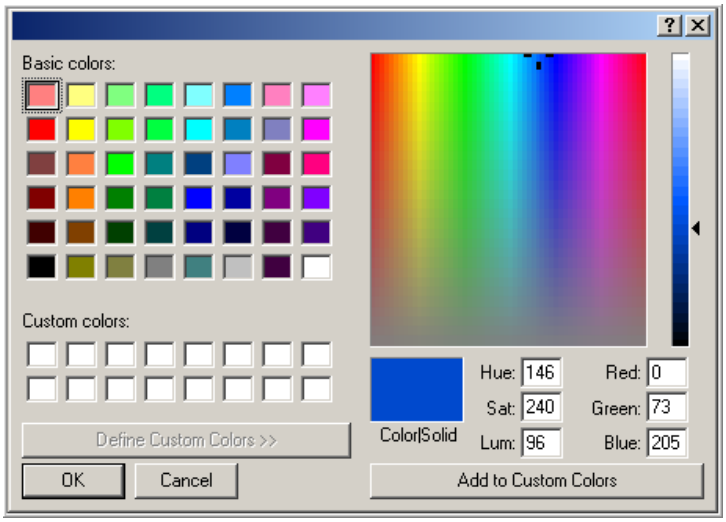

Instead of seeing the Live, Search and Setup icons, the restricted Windows user will only see the Live and Search icons. This may prevent confusion that may occur from displaying an icon the restricted user can't utilize.

The Colors field gives you the opportunity to change the default border colors for Motion, Alarm, Free Run, PTZ Focus and Event Monitor.

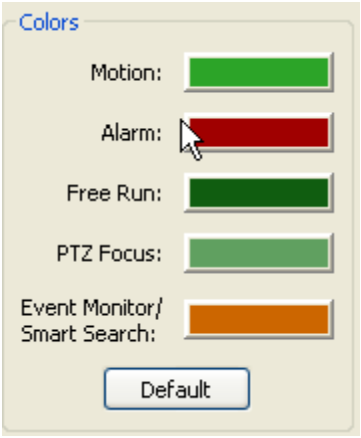



To change the color, simply click on the colored bar beside the border you would like to change. Select a basic color or create a custom color, and then click OK.

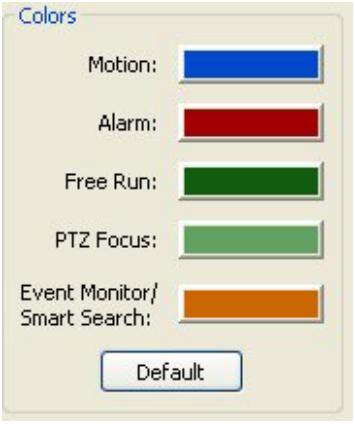


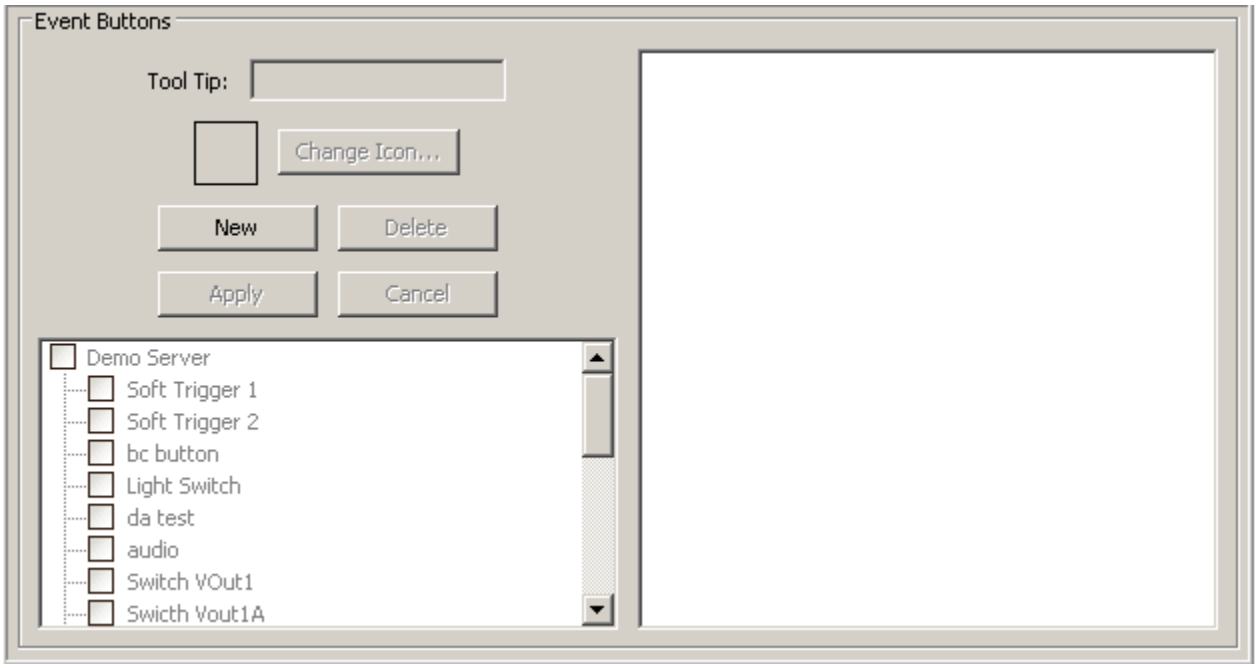
The new color will be reflected on the color bar in the Colors window.



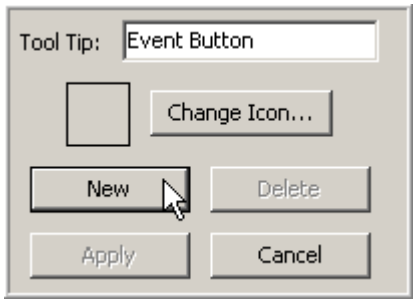

To return to the Default colors, simply click the Default button.




The Event Buttons field allows you to create a shortcut to any Soft Triggers you have set up. See Event Linking, for instructions on setting up a Soft Trigger event.

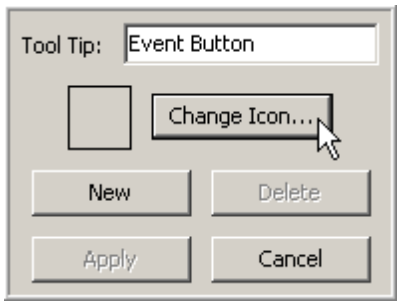


To create an Event Button, click the New button.

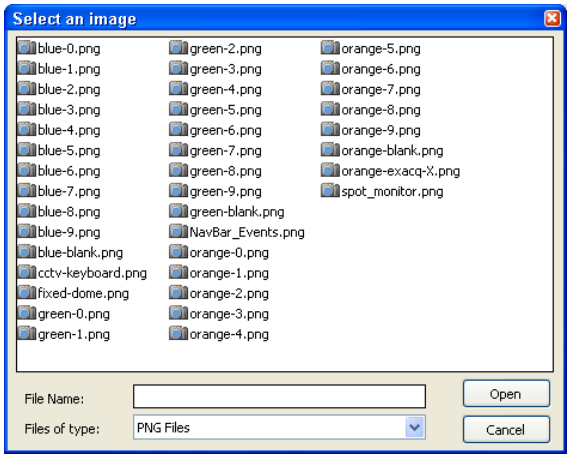



The Tool Tip will default to Event button, but you can change it to something more descriptive by typing in the Tool Tip field.

To select your icon, click the Change Icon button.

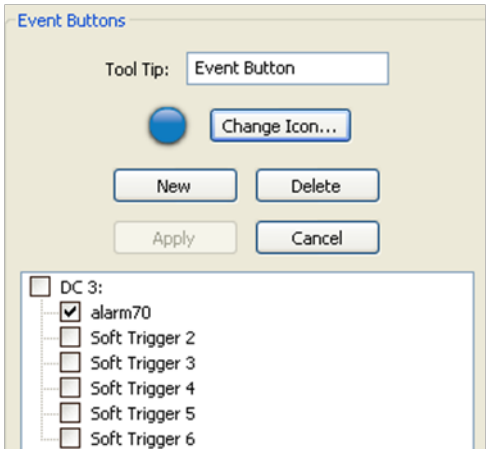



The system will automatically provide icon options of black, blue, green or red buttons. Click the desired file, and then the Open button.

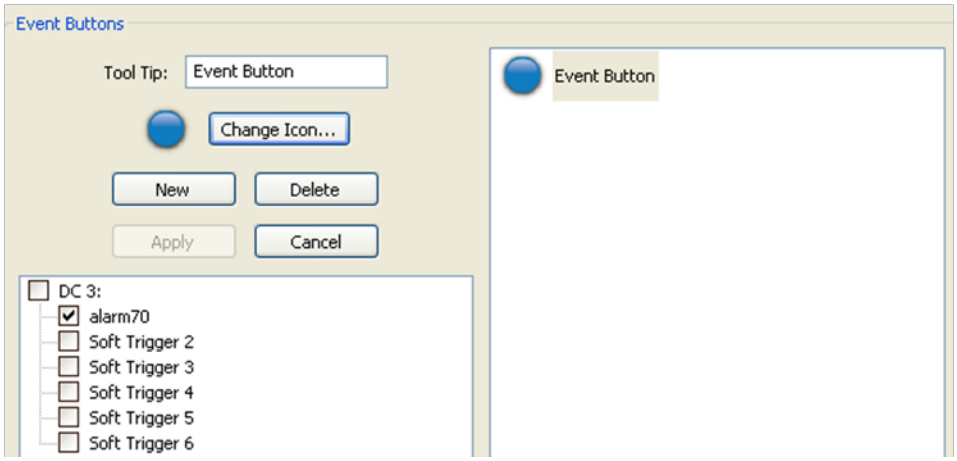



You can also customize your icon using the Look in field. Once you find an appropriate icon, click the Open button.

Select the appropriate Soft Trigger from the list provided, and then click Apply.




The icon will be displayed in the box to the right.

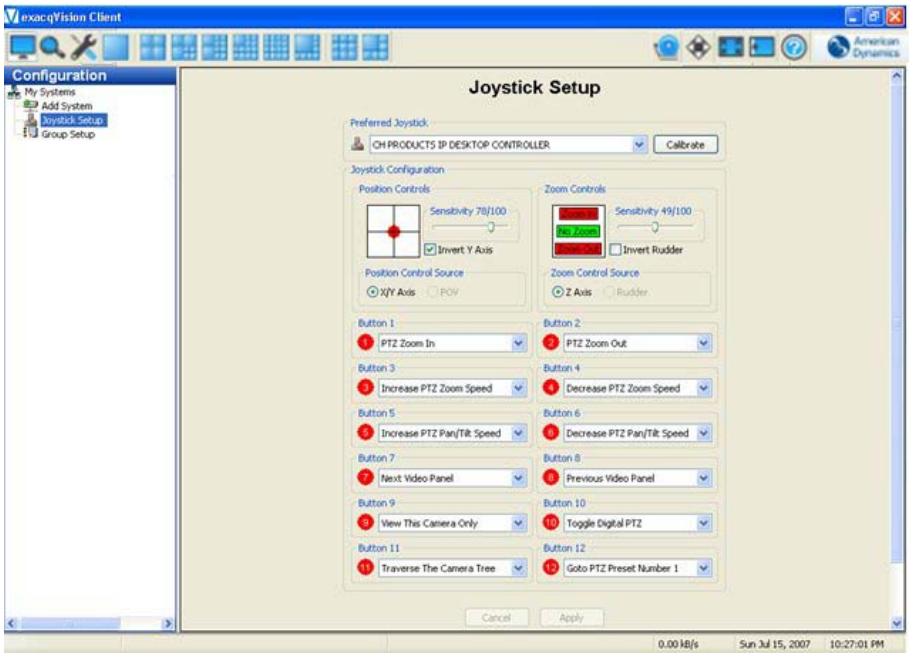



Continue this process until you have created all of the icons you desire.

The icons will be displayed next to the Soft Trigger icon on the Live mode toolbar. You will need a separate icon for each Soft Trigger shortcut.

## Joystick Setup

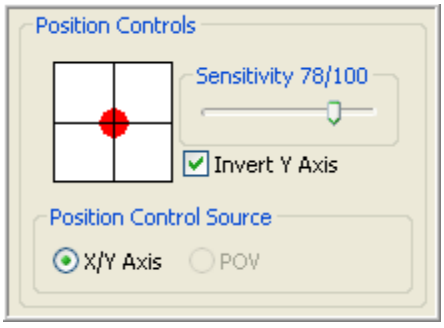
The Joystick Setup screen allows you to configure any standard USB joystick to work with your HDVR system.




If you have more than one joystick plugged into your USB ports, you will need to select the joystick you would like to configure in the Preferred Joystick field.


If the position control is drifting while the joystick is in its resting position, you can calibrate your joystick by clicking the Calibrate button.


There are several Position Controls that can be adjusted to suit your personal preferences. The sensitivity of the joystick can be adjusted by moving the Sensitivity slide bar to the left, making it less sensitive, or to the right, making it more sensitive.

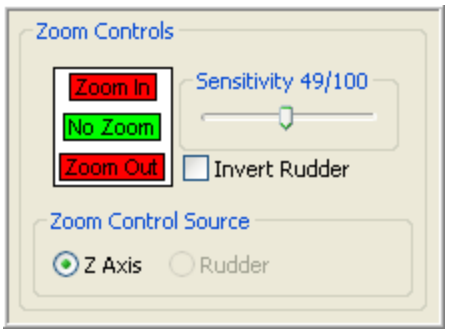



You can also alter the north and south movement of the camera or view. When the Invert Y Axis checkbox is selected, the PTZ camera or digital PTZ view, represented by the red dot in the picture above, will move north when you move your joystick down and South when you move it up. This can be reversed by deselecting the Invert Y Axis checkbox.

**NOTE:**

If your joystick has a Point of View source, you can switch your joystick functionality to the POV by selecting the POV radio button in the Position Control Source box.

The Zoom Controls box allows you to adjust the zoom features on your camera.



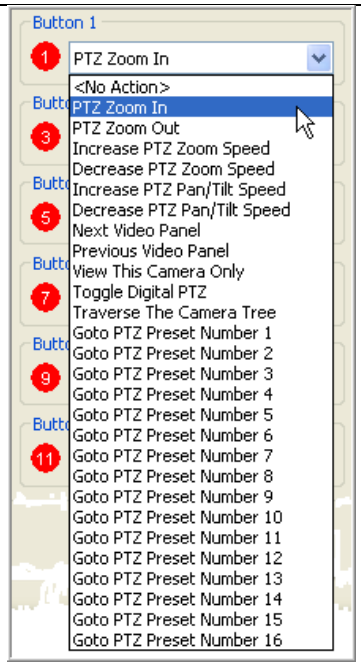

The camera or camera view can be zoomed in or out by twisting the joystick to the right or left. The zoom status is reflected by the green highlight as shown in the picture above. You can configure the joystick to zoom in by twisting the joystick to the right or left, depending on your personal preference. When the Invert Rudder checkbox is selected, the camera will zoom in by twisting the joystick to the left and zoom out when it is twisted to the right. Deselecting the Invert Rudder checkbox will reverse the zoom control.

The Sensitivity slide bar allows you to adjust the sensitivity of the twisting motion required to zoom the camera.

**NOTE:**

If your joystick has a rudder, you can switch the zoom functionality to the rudder by selecting the Rudder radio button in the Zoom Control Source box.

Finally, you can program one or more joystick buttons by using the drop down menu to select the desired setting.




| | |
|---|---|
| PTZ Zoom In/Out | Zooms the camera in and out. Click the button(s) multiple times until the camera is in the desired position. |
| Increase/Decrease PTZ Zoom Speed | Adjusts the zoom speed of the camera. |
| Increase/Decrease PTZ Pan/Tilt Speed | Adjusts the pan and tilt speed of a mechanical PTZ camera. |
| Next/Previous Video Panel | Changes the PTZ focus to the next/previous camera in the video panel. |
| View This Camera Only | Switches a camera in a multi-camera layout panel to a 1 x 1 layout. Clicking the button again will return it to the original layout. |
| Toggle Digital PTZ | Switches between digital and mechanical PTZ.<br>**NOTE:**<br>If the camera does not have mechanical PTZ, this setting will toggle between digital PTZ and off. |
| Traverse The Camera Tree | Moves to the next camera or set of cameras in the Camera Site tree, depending on the Layout button selected. |
| Go to PTZ Preset Number 1-16 | Navigates the PTZ presets that have been configured on the Camera Setup screen. See Camera Setup. |

**NOTE:**

To determine which joystick button correlates to the number identified on the screen, simply press the button on the joystick. The corresponding number on the screen will turn from red to green.

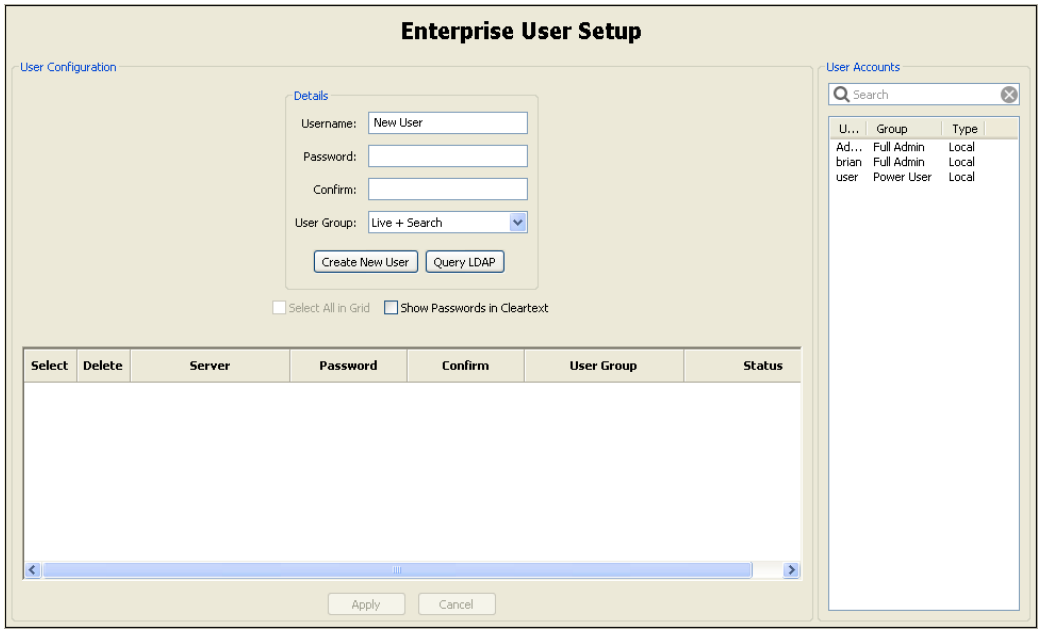
Once you have finished programming the settings for your joystick, click the Apply button.

## Enterprise User Setup

**NOTE:**

Enterprise User Setup is available only on systems with an Enterprise license.

Enterprise User Setup allows you to create a user account for multiple systems simultaneously. Select Enterprise User Setup in the site tree under My Systems to display the Enterprise User Setup page:




To create a new user, type a Username, password, and password confirmation in the Details section, and then select a User Group from the drop-down list (see the Users Setup section for a description of User Groups). When finished, click Create New User. A list of connected servers is then displayed along with the password (or asterisks) and user group for the new user. To see the actual passwords instead of asterisks, select the Show Passwords in Cleartext checkbox.

**To modify a user account on one system**, select the account from the User Accounts list. Click the box in the Select column next to the system on which you want to modify the account. You can then change the user's password on that system (and confirm it) by typing it in the Password and Confirm columns. You can also change the user's User Group on that system by selecting it from the drop-down list in the User Group column. When finished, click Apply.

**To modify a user account on multiple systems**, select the account from the User Accounts list. Click all boxes in the Select column for all the systems on which you want to modify the account (or click the Select All in Grid checkbox to select all listed systems). You can then change the user's password on all selected systems (and confirm it) by typing it in the Password and Confirm fields in the Details section. You can also change the user's User Group on those systems by selecting it from the User Group drop-down list in the Details section. When finished, click Apply to Grid Rows. Click Apply to complete the changes.

**To delete a user account from one or more systems**, select the boxes in the Delete column for each system and click Apply.

**NOTE:**

The Status column displays the status of the selected account on each system. The status can be OK, Pending, Not Enterprise, Disconnected, or Deleted.

**To add a user or group of users from an Active Directory or OpenLDAP directory, complete the following steps:**

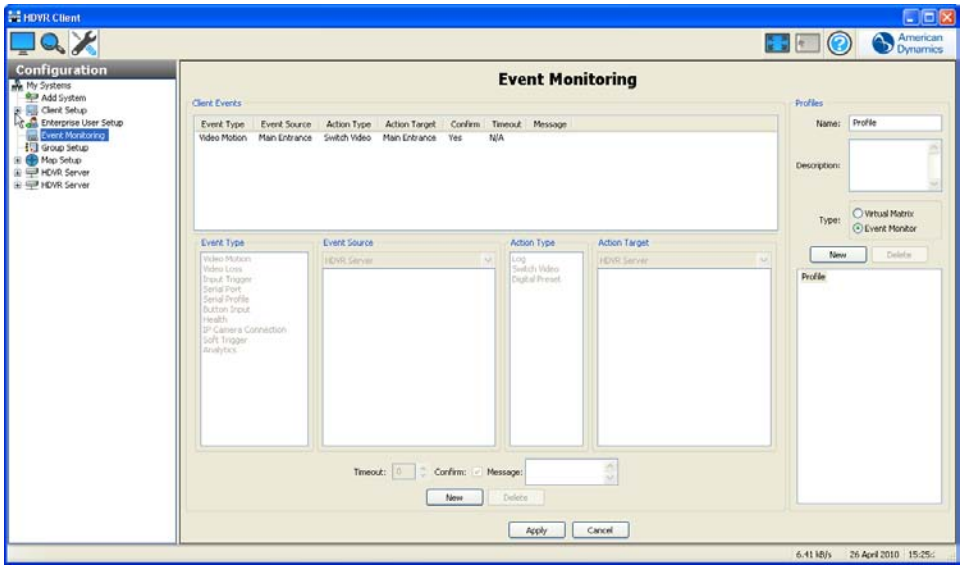
1. For information about configuring your system to connect with a directory, see the Active Directory/OpenLDAP chapter of this manual.
2. When the configuration is complete, click Query LDAP.
3. Select the directory from the drop-down list.
4. Enter all or part of the username or group that you want to add, and click Search.
5. Select the user or group that you want to add and click Select.
6. Continue configuring the user or group account as you would any other account.

**NOTE**:

When you add a user from an Active Directory or OpenLDAP directory, the password used for that account in the HDVR is the same as the password assigned to that account in the directory.

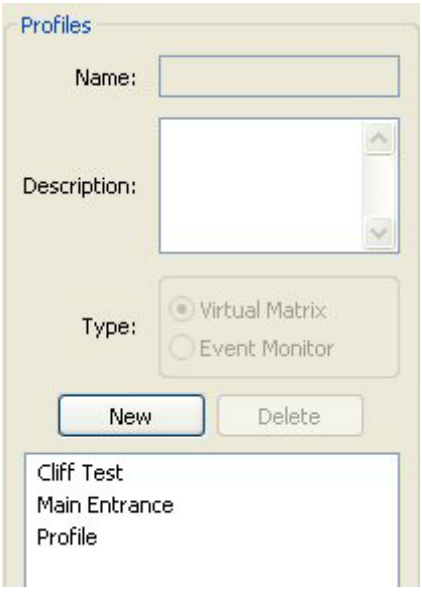
## Event Monitoring

The Event Monitoring screen allows you to set up your HDVR client to react to events that take place in the server or servers to which it is connected.



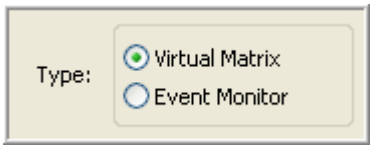

To activate the Event Monitoring feature, you must first create and define a new Event Monitoring Profile. A profile is a set of actions (e.g. the playing of live video or an alarm sound) triggered by sources such as video motion, input triggers, etc. Each profile can then be activated and assigned to a specific video panel by the user.

To create a new profile, click the New button in the Profiles field.




Give the profile a name and a description. In this example, we used Main Entrances. You can also type a brief description of your profile in the Description field.

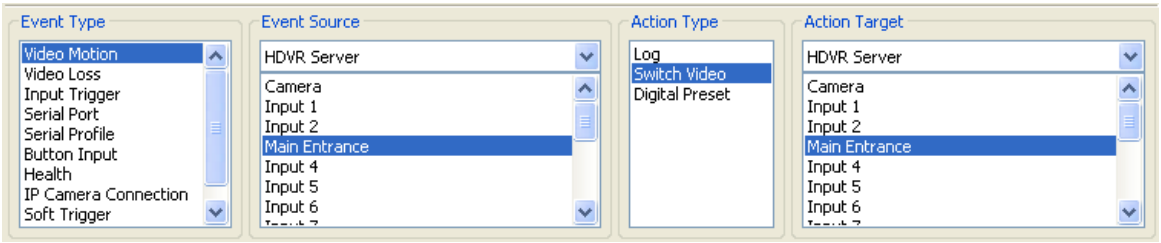
Next, you'll need to select the type of profile you would like to create using the Type radio buttons.




A Virtual Matrix profile will automatically show video as it is triggered. For example, if you have a series of entrances in one profile, each time any of the entrances is triggered, the video panel will switch to the camera displaying the most recent door motion.

Event Acknowledge Mode brings up a list of events which the user can click on to view giving you much more control. Using the same Main Entrances profile as our example, instead of the video panel automatically switching to the camera displaying the most recent door opening, the event would be added to a list. You could then click on the item to display the video. This may be useful if a guard needs to leave the monitor for a period of time. It is also helpful when you have events occurring on two cameras at the same time. Instead of seeing each event for a split second, you can view each event for as long as you need to.

Once you have initiated your profile, you need to add an event or events that you wish to monitor. If you are familiar with HDVR's Event Linking feature (**Event Linking**), this will look familiar to you.




In the "Event Type" box, click once on "Video Motion."

The next box, "Event Source," allows you to select a camera from which to monitor video.

The "Action Type" and the "Action Target" are set by default to show the video clip in the matrix display whenever motion is detected on the camera.

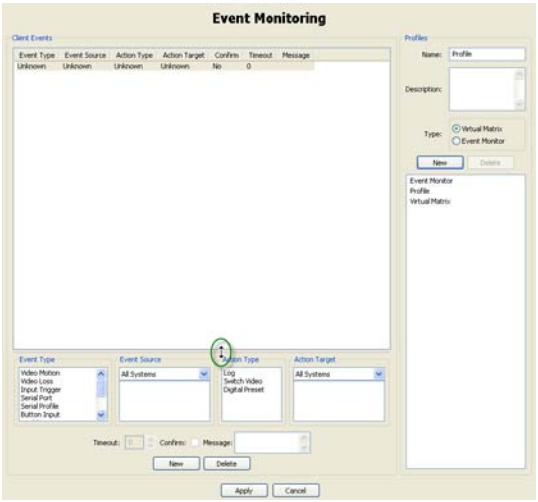
To add another event to this profile click on the other "New" button located at the bottom of the page.

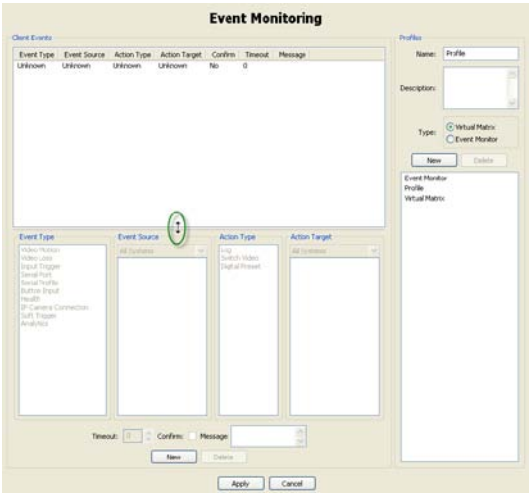

Repeat this process to add additional events to the profile.

Click the “Apply” button on the upper right when you have finished your profile.


You can now view your event profile in Live mode. (**Live Event Monitor**)

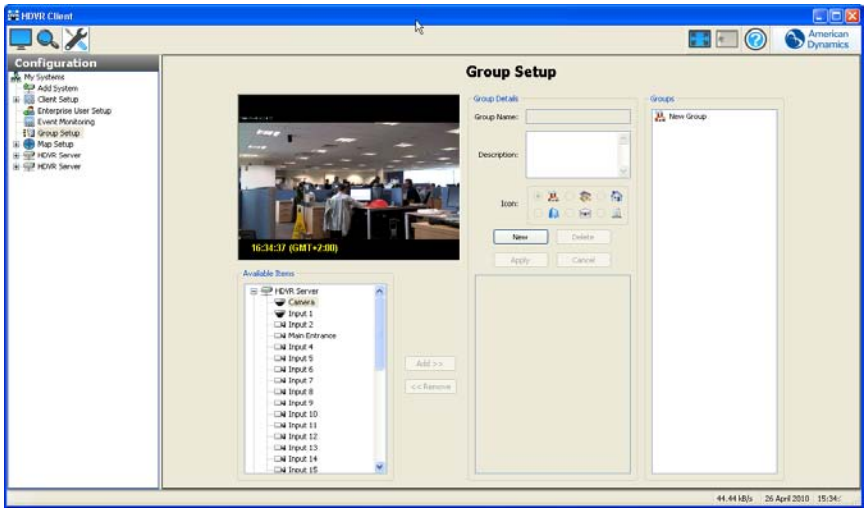
If desired, you can change the space allocated to the Event Monitoring window. Simply hover your cursor over the Resizing Bar, and drag it up or down to adjust the spacing to suit your needs.




## Group Setup

The Group Setup screen is where you create logical groups of cameras from single or multiple HDVR systems.




This is a useful feature when you have multiple systems with a fairly large number of cameras spread across a large building or campus and you would like to place cameras in logically named groups such as 1st floor, 2nd floor, and 3rd floor and so on. In this example you might have two HDVR systems with 16 cameras each, and you have a four story building that you want to place eight cameras on each

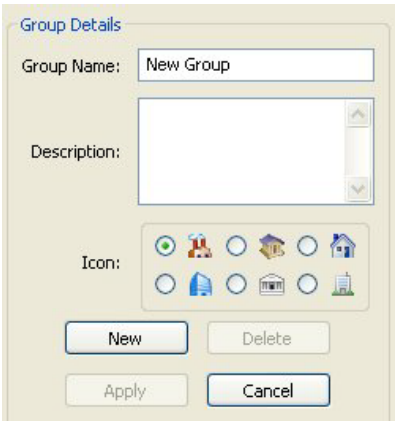
floor. Instead of viewing your cameras as they are physically connected to your HDVR systems, you create four named groups consisting of eight cameras each. It's much easier for a user to find cameras when they are located in named groups that match the logical layout of their building.

In addition to monitoring live video, groups are very useful for searching video. On the search video screen simply click on the Groups navigation pane on the lower left corner of the screen then select your group and search.

To access the Group Setup page, click Group Setup from the Setup Site Tree.

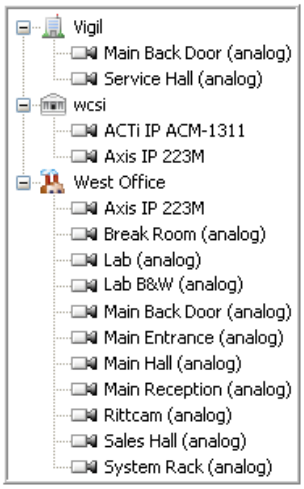
Create a new group by clicking on the New Group button.


In the Group Details setup box Group Name will be populated with New Group. Type a unique name over New Group and tab to the Description box to describe the new group you're creating.

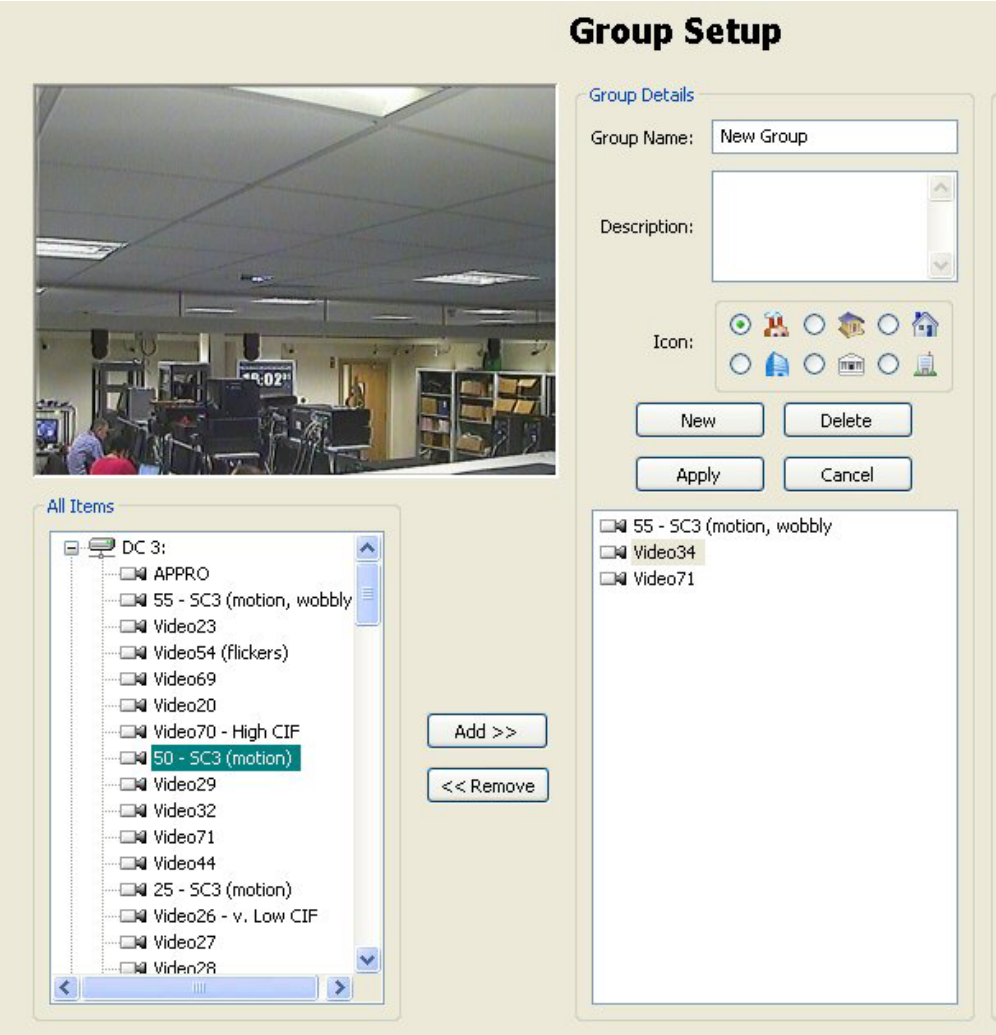



Select an icon to represent your group.


This icon will be displayed to the left of the group in the Live and Search site trees.




To add cameras to your group, select a camera from the All Cameras list and then click the Add button. The video will be displayed in the upper left hand corner, and your camera name will appear in the Cameras in Group box. Continue adding cameras until your group is complete.

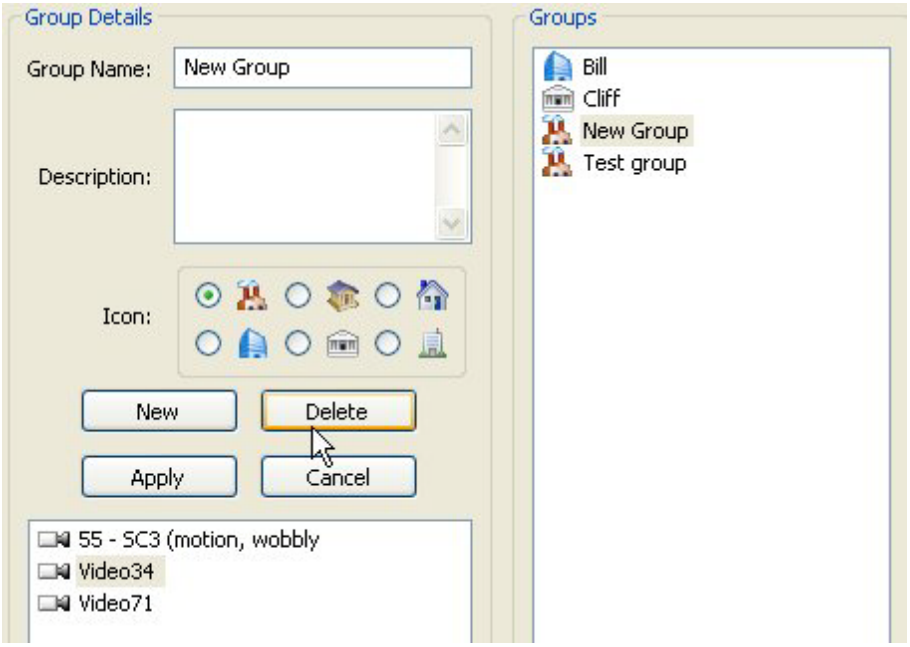



If you want to remove a camera from the Group, select the Camera from the Cameras in Group box, and click the Remove button.

Once your group is complete, click the Apply button.


Should you decide you don't want to finish setting up the group, you can click the Cancel button as long as you haven't clicked the Apply button yet.


To delete a group you have already set up, simply highlight it in the Groups list, and click the Delete Group button.

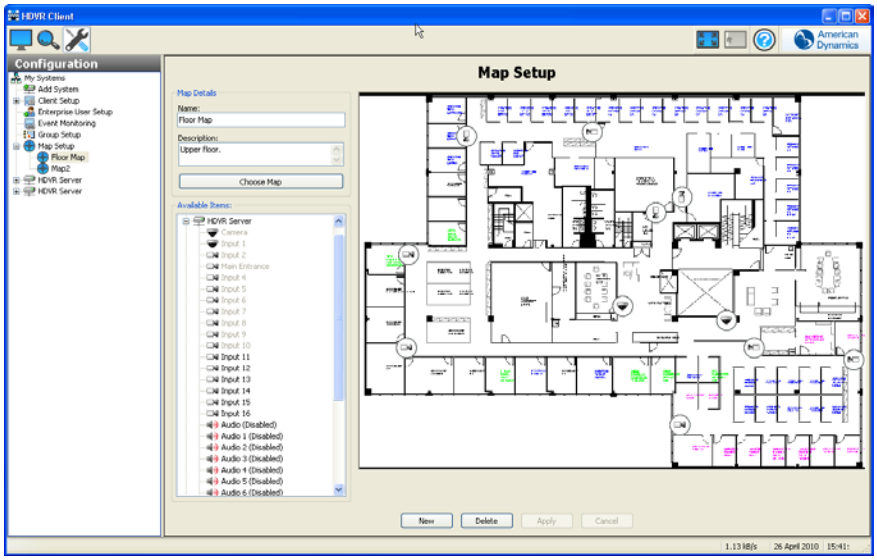



Continue this process until all of your cameras are organized to fit your needs.

These groups can now be used to monitor live video or searching video.

## Map Setup

Maps allow you to organize your cameras and other devices graphically.




To create a map from an existing graphic file, select Map Setup from the Navigation Pane. Click New and then enter a Name and Description (optional) for the map. Click Choose Map to open the Map File window, which allows you to browse for the graphic file that you want to use for the map. Select the file and click Open to display the map.

**NOTE:**

To create a child map for an existing map, select the existing map before you click New. This allows you to place an icon representing the child map on the existing (or parent) map. Notice that the child map is listed under the parent map when you click New.

The systems that you are currently connected to are listed in the Available Items section. Expand the systems to display the devices associated with it. Any child maps that you create for this map are also displayed in Available Items.

To add an icon representing a device or child map, drag the name of the device or map from the Available Items section into the part of the map where the icon should be located. When you view this map in Live Maps, double-clicking this icon will display video or data from the device or display the child map.

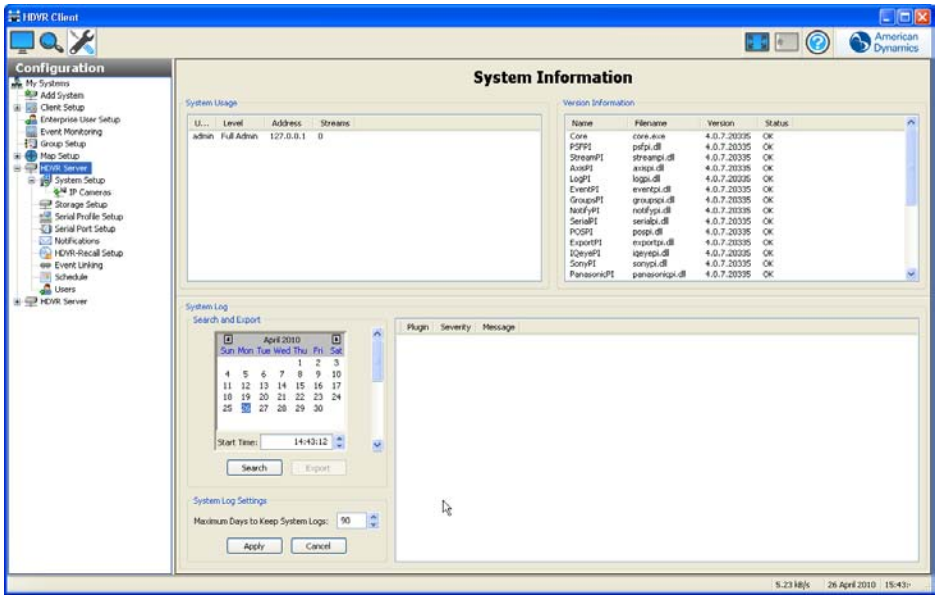
To remove an icon from a map, right-click it and select Remove Selected Item. To flip the icon to point the other way, right-click it and select Mirror Icon. To rotate the icon, right-click it, select Icon Rotation, and select any of the available options. To change the appearance of the icon, right-click it, select Icon Balloon, and select any of the available options.

**NOTE:**

If the map has a parent map, a small map icon representing the parent map is displayed in the upper-right corner. You can drag this parent map icon anywhere on the map.

To complete a map, click Apply. To delete the map, click Delete

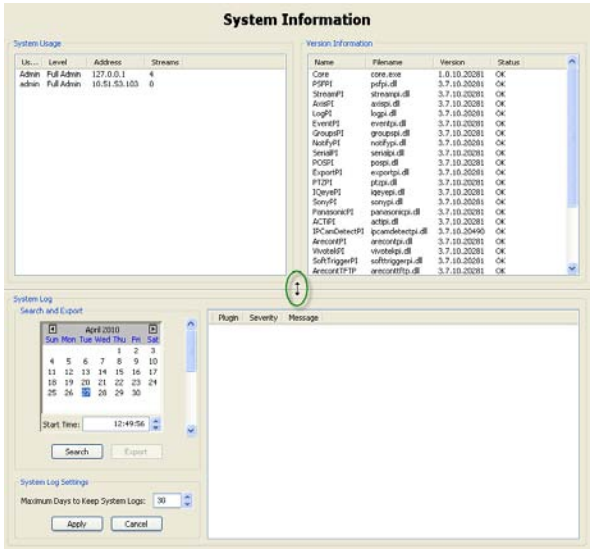
## System Information

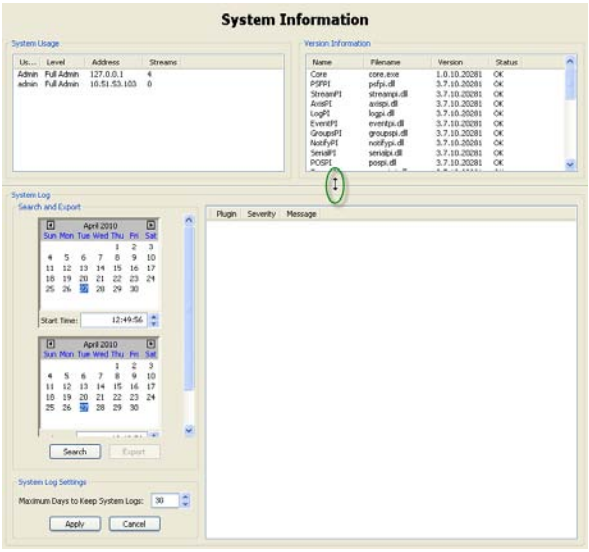



The **System Information** screen is where you can see information about users that are currently logged into the system, plug-in file version information number and status, and the System Log. The system log can be viewed by selecting the start and end date and time and clicking on the search button. If you would like to view the system log with a text editor you can export the log to a file name and open the log with the text editor. The system log is a useful tool for viewing a detailed history of all the processes that take place on the system.

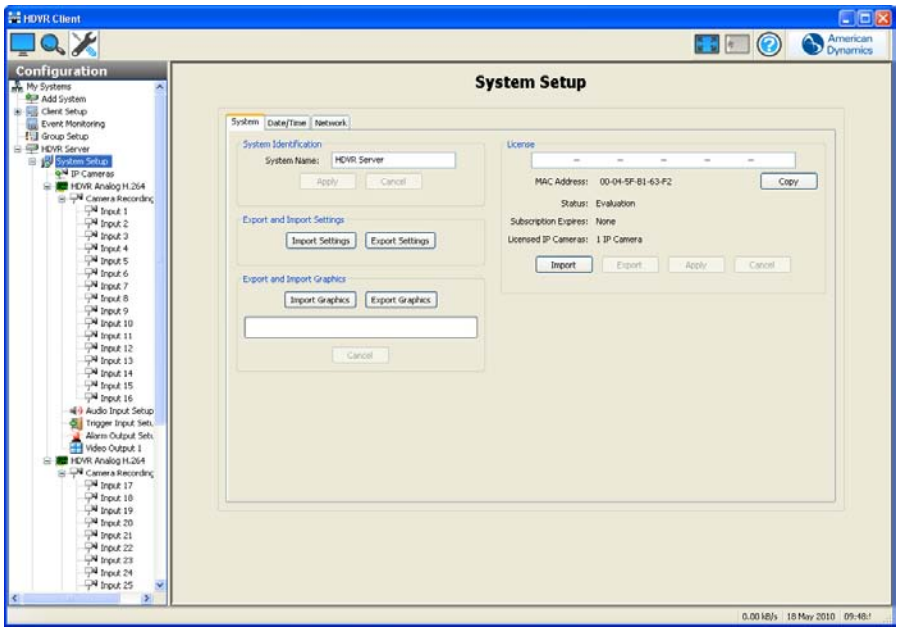
The Log Settings control box gives you the ability to set the maximum days that Logged Alarms and the System Logs are kept on the system.

If desired, you can change the space allocated to the System Information window. Simply hover your cursor over the Resizing Bar, and drag it up or down to adjust the spacing to suit your needs.




## System Setup




The **System Setup** screen is where you set basic system parameters for the client application. The following settings are available on the System Setup screen:

The System Name field will default to the serial number for the system you purchased. You can keep this name or change it by typing a new name over the serial number. Remember, your system name must be unique.

Time and Date Settings displays time information synchronized with time.nist.gov. You can change the time zone using the dropdown menu. Use the radio buttons to indicate Daylight Savings or Standard time. If you do not have access to time.nist.gov, you will need to disable the Time Server field by deselecting the box. Contact your IT department to get access to your company's internal time server, and enter that address in the Time Server field. IP Camera Time Server allows you to synchronize an IP camera to another time server. Select Enable Override to force the IP camera to synchronize to the time server entered; otherwise, the camera will synchronize with the HDVR server.

The Network Interface Settings section displays your system's Hostname, IP Address, Network, Gateway and DHCP status.

You can also Import and Export system settings. Every feature in the system that is setup and configured through the Setup Mode site tree can be imported or exported. After setting up your system it is a good idea to export your System Settings to a disk or USB key and store it in a safe place in the case of a disaster such as a fire or hard disk failure. The exported system settings will enable you to quickly reconfigure your system to the original settings. If you have multiple sites that require similarly configured systems the import setting function can also help you duplicate the settings saving you time. To save your settings, click the Export Settings button. You can either save the information as a file in your Client Folder, or export it to a disk or USB key. To do this, insert the disk or USB key, then select the appropriate drive from the dropdown menu and click save. If you need to restore your settings, insert the disk or USB key and click the Import Settings button. Use the dropdown menu to locate the appropriate file, and click Open. Confirm that you wish to open the settings by clicking Confirm. Your settings should be restored.

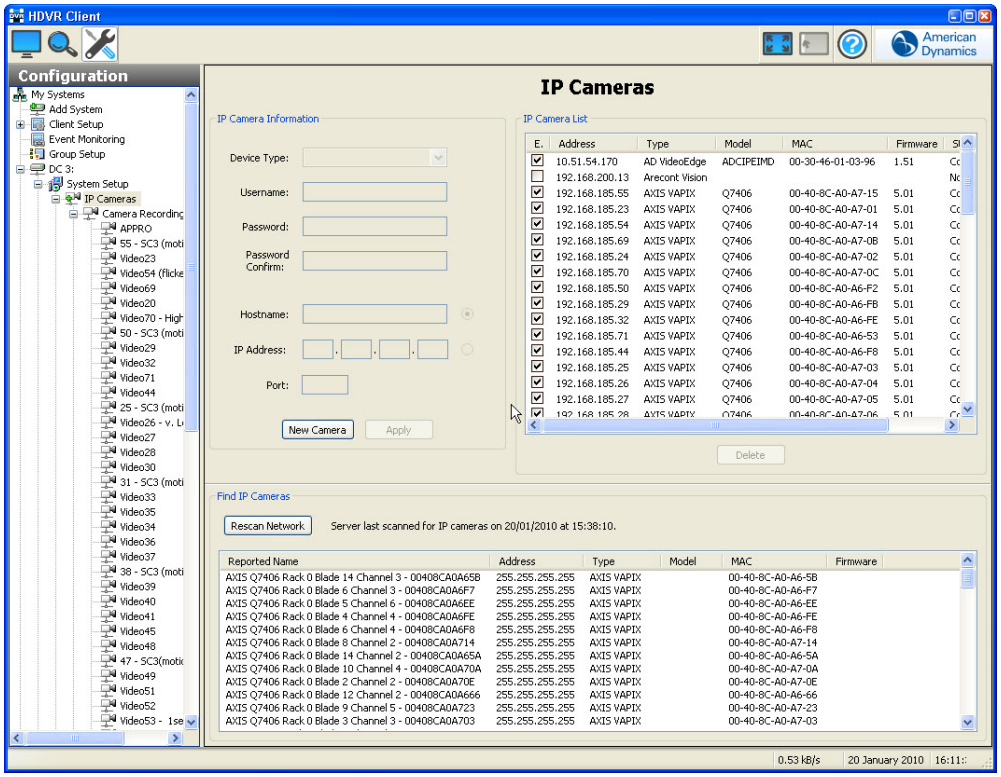
Bandwidth Settings.

Without a license key, your HDVR Server can only connect to one IP device at a time.

**NOTE:**

Click the Apply Settings button to apply each setting to your Client application.

## Add IP Cameras




The **IP Cameras Setup** screen is where you add IP cameras to your IP Camera List that will connect to your HDVR NDVR server. Once IP cameras have been added to the IP Camera List your HDVR Client application will be able to configure the camera settings and view live and recorded video.

Before adding any IP cameras, there is some background research to be done. First, ensure that your IP cameras are powered and connected to the same LAN as the HDVR Server. Next, you'll need to find

or assign the IP address of the cameras. The HDVR IP Camera Finder will find cameras from any of the supported manufacturers which are on the same network subnet as the HDVR Server.

**NOTE:**

If you need to confirm which camera you are installing, you can right click any of the cameras in the IP Camera List or IP Camera Finder to access the camera's website to see a video image.

If the IP address has already been assigned, you will see a unique number listed in the address field. You can simply click on the appropriate camera to auto populate the Device Type and IP Address.

Since you are adding a new IP Camera to the HDVR Server, you will more than likely find a default IP address listed for the camera in the IP Camera Finder. In this case, you need to change the IP address using the camera manufacturer's software. See the *Manufacturer Specific Addendum* to the *HDVR IP QuickStart* guide for more information.

**NOTE:**

You may also need to contact your IT department to determine the appropriate range of IP addresses to use.

Once you have assigned the appropriate IP address, click the Rescan Network button to refresh the list of cameras in the IP Camera Finder. You can then select the camera to auto populate the Device Type, and IP Address.

After completing the tasks above, you can begin adding the IP Cameras.

Tab through the Device Type field since it was auto populated.

Tab to the Username field and enter your Username.

Enter your password and confirm it.

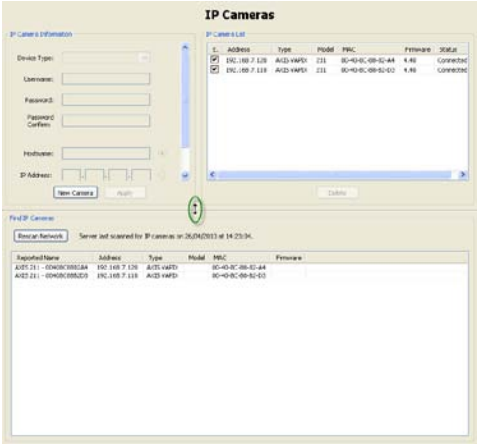
Tab through the IP Address field since it was auto populated.

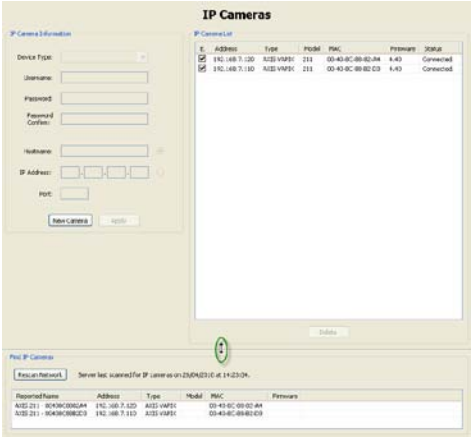
To connect your new IP camera, locate your camera in the IP Camera List and click the corresponding check box.

The maximum number of IP cameras that can be connected at one time with a basic license is eight. You may need to deselect another camera to make room for the new one. To do this, click the checkbox in front of the camera you want to disconnect.

All cameras that have been added to the IP Camera List will now also appear in the Configuration, Live and Search trees.

If desired, you can change the space allocated to the IP Cameras window. Simply hover your cursor over the Resizing Bar, and drag it up or down to adjust the spacing to suit your needs.



## IP Camera Recording Setup


Once IP cameras have been added to the server you can enable recording, set the recording resolution and recording frame rate measured in images per second (IPS). Each IP camera can be individually set.

The Camera Recording Setup screen is where you enable cameras to record video, set the recording resolution and set the image per second (IPS) recording rate.

The Camera Input column is the physical input connect that the camera is connected to on the back of the HDVR. Refer to the Back Panel Layout.

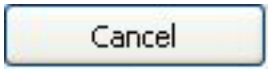
If a camera has been connected to a HDVR system and the camera is producing a video signal, the HDVR client application will automatically detect the video signal. If a video signal is detected it is indicated with a green "YES" under the **Video Detection** column and by default the **Record Enabled** column check box for that camera is checked. To disable recording uncheck the enable check box.

The HDVR systems by default are setup to record in CIF resolution if a video signal is detected.

You can change individual camera resolutions by clicking on the **Record Resolution** drop down box and selecting one of the resolutions listed. Your options will vary based on the camera manufacturer and model.

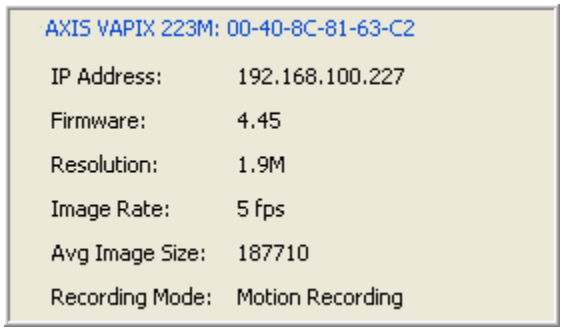

Once you have made the change you must click the Apply button to make the change.


To cancel the changes, click the cancel button.




## IP Camera Setup


The **IP Camera Setup** screen is where you configure the individual IP camera settings such as camera name, on-screen display, PTZ settings, video settings, recording quality and motion and video masks.




**IMPORTANT NOTE**

Any camera settings that are not available in the HDVR software can be accessed through the camera's web page. To view a camera's web page, click the hyperlink in the IP Address field. If you don't see a hyperlink beside the IP Address field, it could be for one of two reasons:

1.) You are not logged in to the operating system with administrative privileges. You will need to log in to operating system account with administrative privileges to access the hyperlink.

2.) Your client computer is not located on the same IP subnet as the IP camera. This could occur if you are using the client from a home computer to access a server at your office, for example. This restriction should cause few issues because camera website settings are typically changed only during initial configuration.

Most of the procedures for setting up an IP Camera are identical to those for an analog camera. See Camera Setup, for instructions on adjusting all settings in the HDVR software with the exception of Motion Mask, Motion Window, and Crop Window.

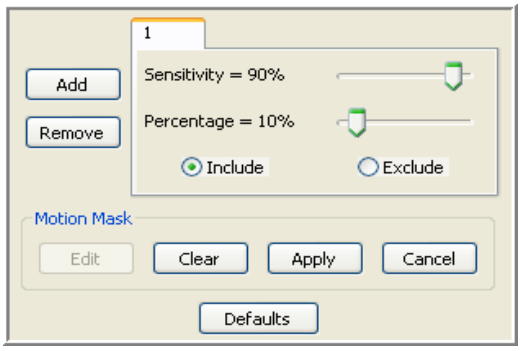
**IMPORTANT NOTE**

Some models of cameras allow you to create Motion Windows instead of Motion Masks. A Motion Mask is an area of a video window where motion is ignored, whereas a Motion Window is an area of a video window where motion is monitored.

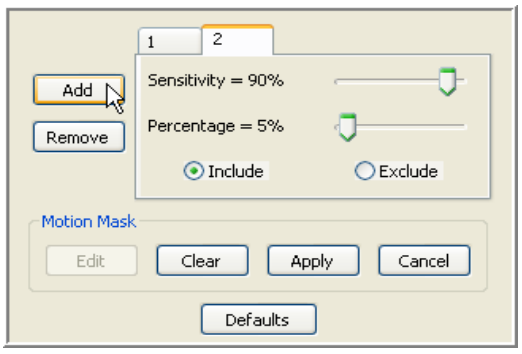
This section discusses how to create a Motion Mask. However, a Motion Window can be created using the same process.

To add a new Motion Mask or edit an existing mask, click the Edit button.

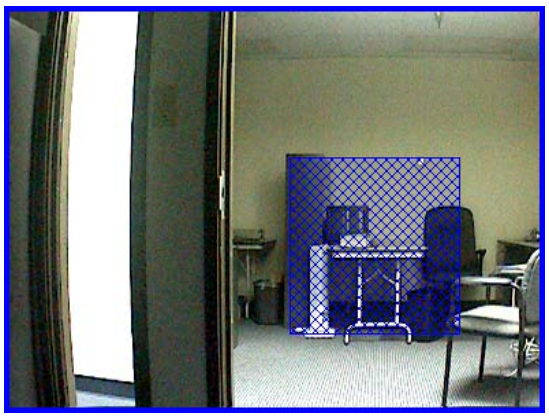

The Add and Remove buttons, as well as the Motion Mask tabs will now be enabled.




A separate tab will be created for each mask setting. To add a new mask, click the Add button.




Move your cursor to the video display panel at the top left corner of the IP Camera Setup screen. Determine where you want to set your rectangular mask to appear, click in the upper-left corner and drag it to the lower right corner. A blue rectangle will mark the location of the mask.

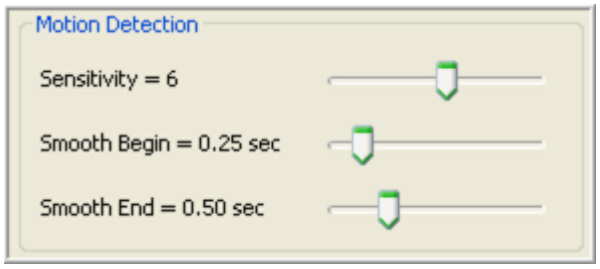


If you are not happy with the location of the mask you created, you can delete it by clicking anywhere in the mask area. You can also cancel any edits you have made on any of the Motion Mask tabs (as long as you have not clicked the Apply button) by clicking the Cancel button.

The **Sensitivity** slider control increases and decreases the sensitivity of the motion necessary to trigger the video recording. It is a useful tool for adjusting motion recording for certain environmental or camera signal quality factors. For example, you can set the sensitivity high (90 or 100%) if your cameras produce a good quality video signal with little noise and are in a bright environment because camera noise or shadows won't cause unwanted motion recording. If you have a dark environment with poor visibility and a poor quality video signal, setting the sensitivity low (10 or 20%) will reduce unwanted motion recording. The slider control ranges from 1% on the left being the least sensitive to 100% on the right being the most sensitive. To adjust the motion sensitivity, you can move the slider to the right and left or click on the control and use the left and right arrow keys.

The Percentage slider control increases or decreases the portion of the mask area that must be filled to trigger video recording.

Once you get the Motion Mask in the location you desire, you can set the camera to record only when motion occurs inside the mask area by clicking the Include button. This is the system default, but you can also block recording in the mask area by clicking the Exclude button.

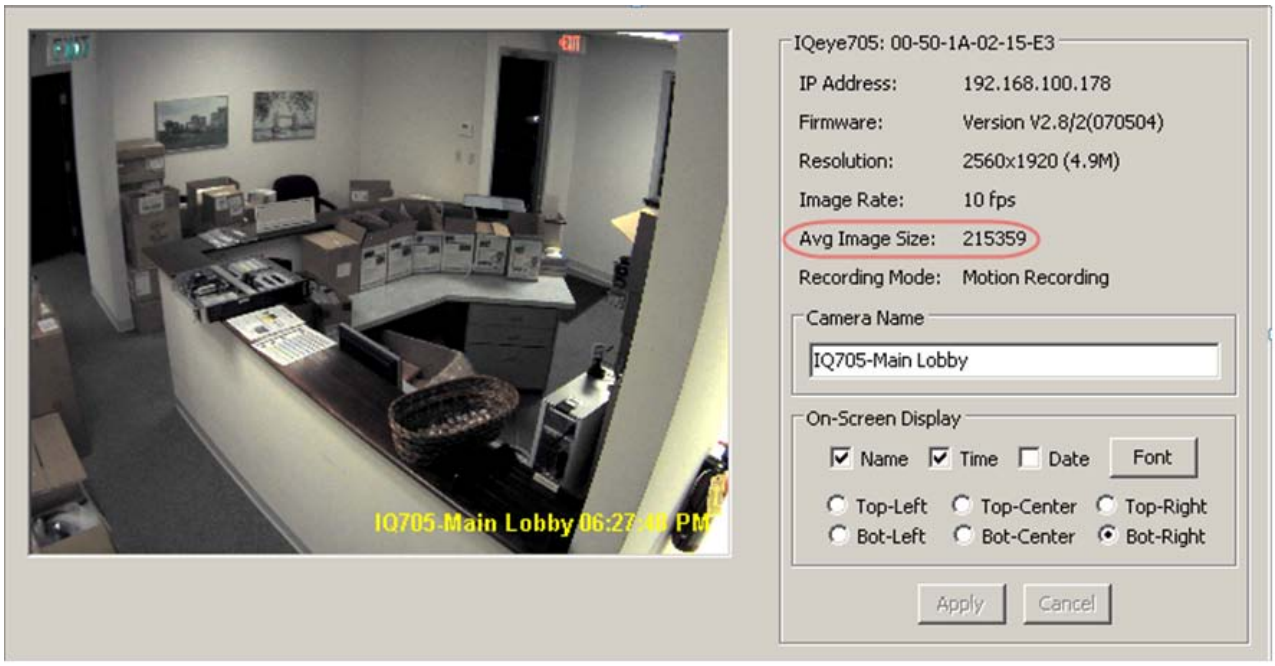



You can add additional Motion Mask tabs by clicking the Add button again and repeating the process above. To set your Motion Mask tab or tabs, click the Apply button.

To remove a Motion Mask tab, click the Edit button, click on the tab you want to remove, and then click the Remove button. You can also remove all of the Mask tabs by clicking the Edit button and then the Clear button.

To return to the default settings, click the Defaults button. The system will reset the Format to mpeg and the Quality to 8. It will also clear any Motion Masks that had been created.


Some camera manufacturers have implemented cropping in their IP cameras. If you are using one of those cameras, the Crop Window will be enabled, allowing you to crop unimportant portions of a camera image in order to save disk space.



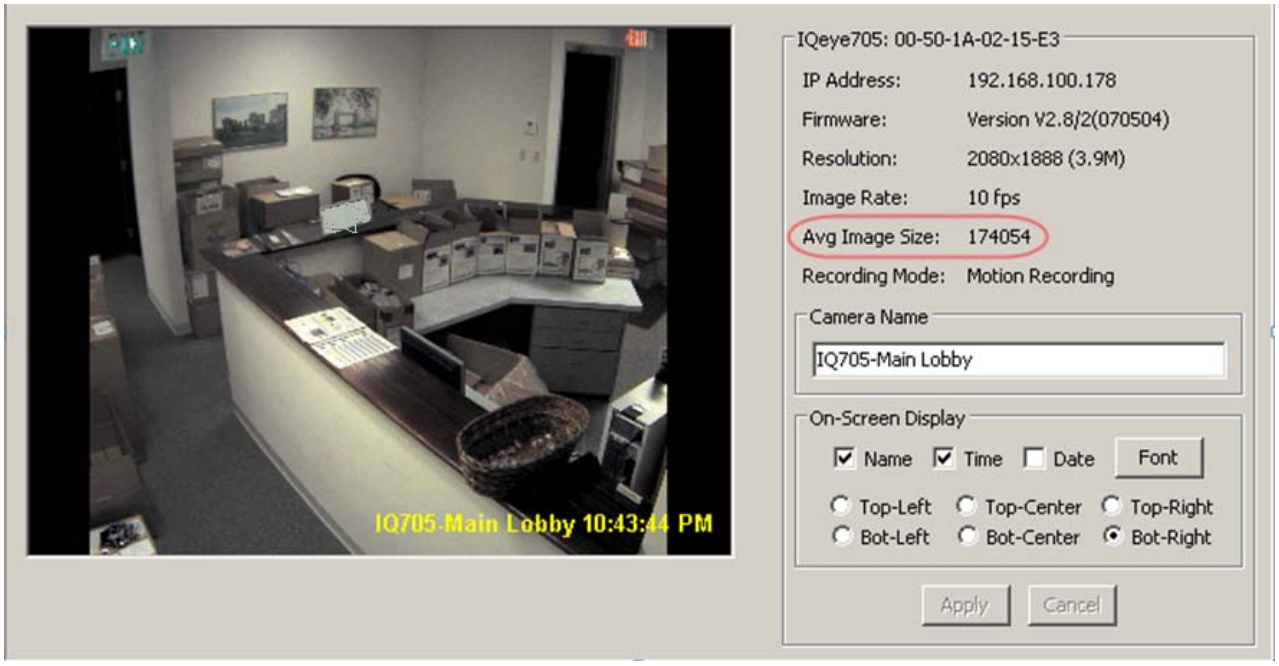

Click the Edit button to start the cropping process.


Click and drag your cursor over the portion of the camera image you would like to be displayed. Anything outside of the rectangle will be cropped.

If you are not happy with the new configuration and you haven't clicked Apply yet, you remove the setting by clicking the Cancel button. You will need to click the Edit button to start the cropping process again.

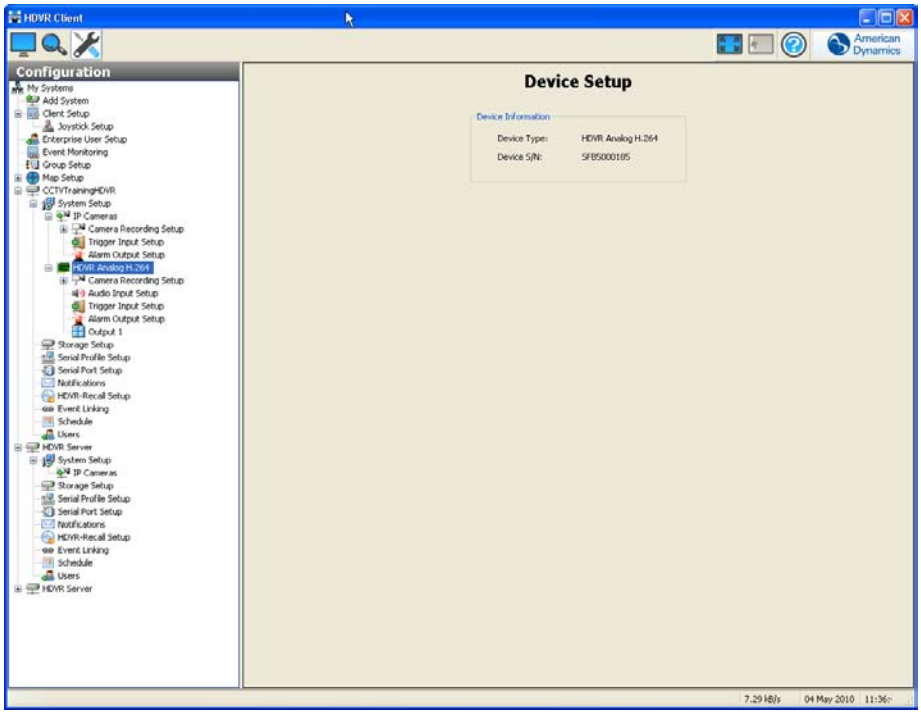

Once you are satisfied with the crop settings, click the Apply button.


The camera display will lose video for a couple of seconds before displaying the new, cropped image. In this example, you will notice that the Avg Image Size decreased from 215539 to 174054.



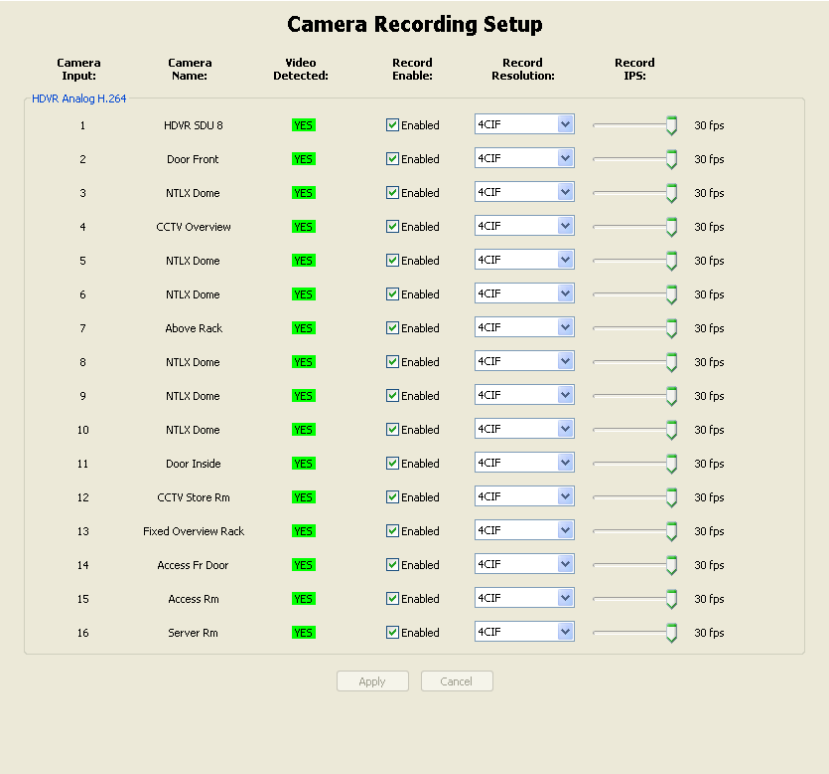

If you wish to restore the camera image to full-size, simply click the Edit ►Clear ►Apply to clear the crop setting.


## HDVR Analog H.264 Device



The HDVR Analog H.264 Device is the compression board installed in the HDVR video server that manages the analog video cameras connected to the system. The Device Information field displays the HDVR Device Type and Serial Number.

## Camera Recording Setup




The Camera Recording Setup screen is where you enable cameras to record video, set the recording resolution and set the image per second (IPS) recording rate.

The Camera Position column is the physical input connect that the camera is connected to on the back of the HDVR. Refer to the Back Panel Layout.

If a camera has been connected to an HDVR system and the camera is producing a video signal, the HDVR client application will automatically detect the video signal. If a video signal is detected it is indicated with a green "YES" under the **Video Detection** column and by default the **Record Enabled** column check box for that camera is checked. To disable recording uncheck the enable check box.


The HDVR systems by default are setup to record in 2CIF resolution if a video signal is detected.

There are two methods for changing a cameras record resolution.

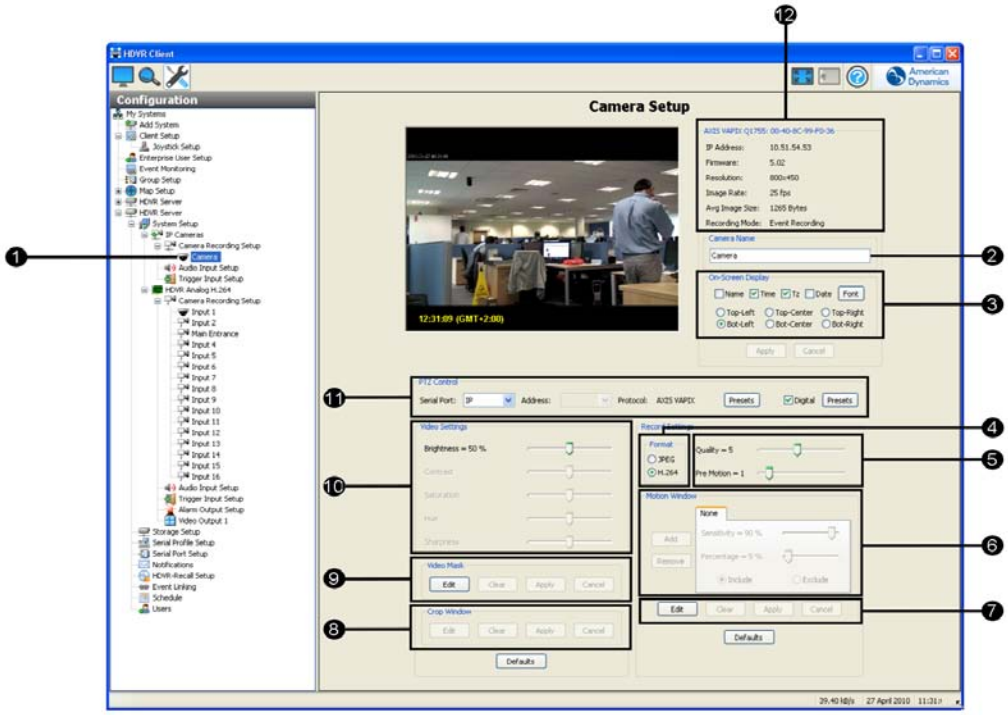
The first method is to change individual camera resolutions by clicking on the **Record Resolution** drop down box and selecting CIF, 2CIF or D1 resolutions.


Once you have made the change you must click the Apply button to make the change.


The second method is by clicking on the D1, 2CIF or CIF optimize buttons on the bottom of the screen, which will change all detected cameras equally for that setting.


Once you have made the change you must click the Apply button to make the change.


## Camera Setup

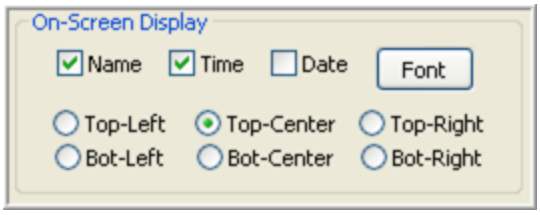



The **Camera Setup** screen is where you configure the individual camera settings such as camera name, video settings, recording quality and motion and video masks.

1. Click on one of the cameras in the camera tree to select the video source to display.

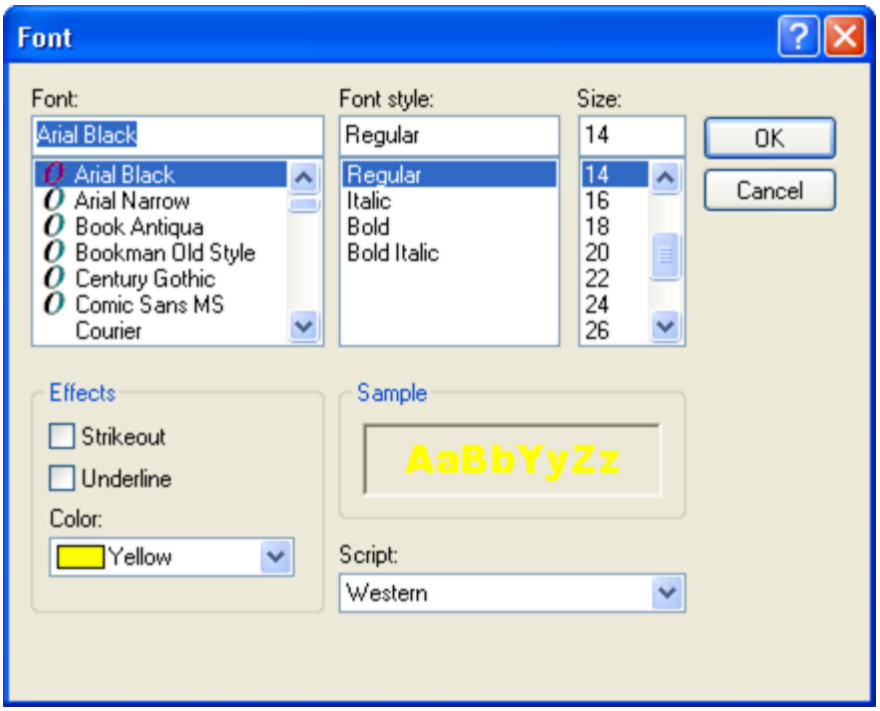
2. Move your cursor to the Name field and enter a new camera name then click Apply to make the change. You will see the new camera name in the Camera tree and Camera Information box (12).


3. If you would like to see the camera name, time, and date displayed on the live and recorded video click on the Name, Time and/or Date check boxes. By default these are left unchecked. The date format follows the Windows setting. To change the time and date format, go to the Start Menu ► Settings ► Control Panel ► Regional and Language Options. Make your desired changes, and then click Apply.




You can position the camera name, time and date on six different locations on the video display by clicking on the Top-Left, Top-Center, Top-Right, Bot-Right, Bot-Center or Bot-Right. By default the On-Screen Display is located on the bottom right,

Clicking on the **Font** button opens up a dialog box allowing you to change the font, font style and size that will be displayed on the video.




4. The compression **Format** can be changed from H.264 to JPEG by clicking on the radio buttons. H.264 is the default setting because it saves approximately seven (7) times the disk space than JPEG compressed video.

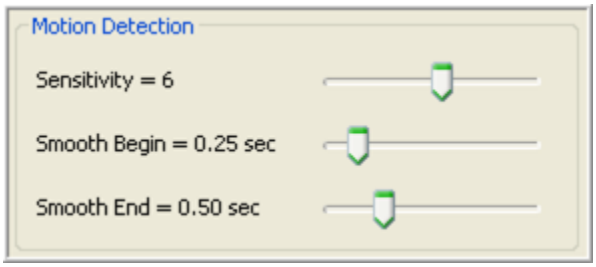
Look at the Average Image Size in the Channel Information box (9). Click on JPEG and wait a few seconds then click back on H.264. Note how H.264 saves disk space!

5. The **Quality** slider control gives you the ability to increase or decrease the visual and recorded quality of the video, which increases or decreases the Average Image Size. Moving the quality slider control to **the** right (10 maximum quality setting) increases the visual and recorded video quality and also increases the average image size (see Camera Information). Moving the slider control to the left (1 minimum) decreased the visual and recorded image quality decreases the average image size. Notice how the video becomes blocky when the quality slider is moved to a lower quality setting.


The default quality setting is 8.

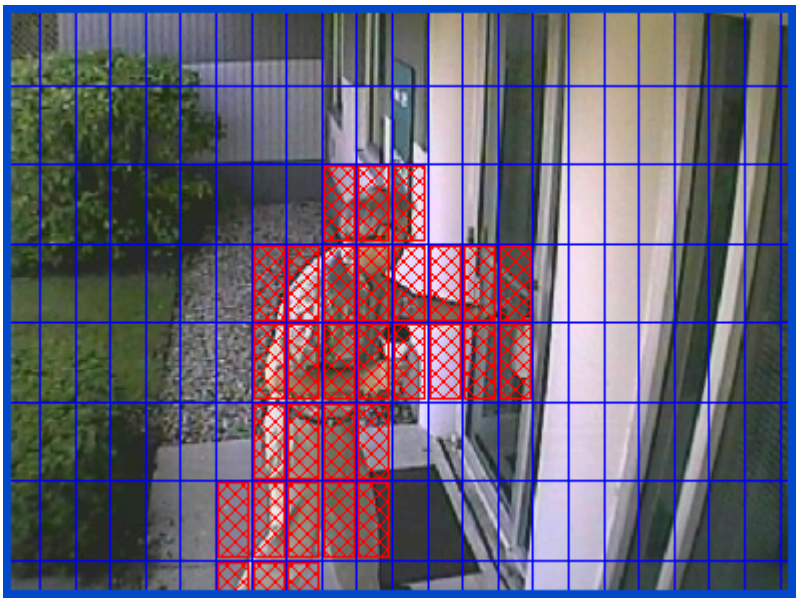
Decreasing image quality saves disk space by reducing the size of the video that's being recorded. A smaller video image size also transmits faster over local and wide area network. If you have a slow network connection you may want to reduce your average image size.

6. The Motion Detection **Sensitivity** sliders control increases and decreases the sensitivity of the motion detection algorithm used to record video. The slider control ranges from 1 on the left being the least sensitive to 10 on the right being the most sensitive. The default setting is 6. The sensitivity control is a useful tool for adjusting motion recording for certain environmental or camera signal quality factors. For example, you can set the sensitivity high (9 or 10) if your cameras produce a good quality video signal with little noise and in a bright environment because camera noise or shadows won't cause unwanted motion recording. If you have a dark environment with poor visibility and a poor quality video signal, setting the sensitivity low (1 or 2) will reduce unwanted motion recording.

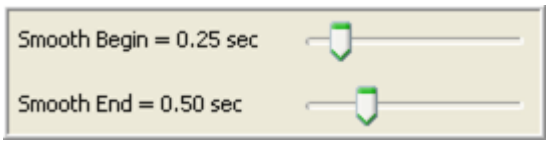



7. An effective method for seeing motion detection sensitivity setting feedback is to turn on the motion mask grid by clicking motion mask **Edit** button.


Motion in the video will be highlighted with red squares in the motion mask grid. If you lower the sensitivity setting you will see fewer red squares. If you increase the sensitivity setting you will see more frequent red squares. The outside border of the video display will turn blue indicating motion recording.



The **Smooth Begin** and **Smooth End** slider controls are used to reduce undesirable motion recording artifacts. The Smooth Begin slider control requires a minimum amount of time specified in fraction of a second from zero (0) to two (2) before the system begins to record motion video. The default is **.**25 second, which means the system will begin recording motion video only after it has acquired .25 second of motion. This will reduce short duration motion events like the blinking light of a laser bar code scanner in a dark room from triggering motion recording. Another example is placing a camera pointed at a lobby entrance with a window or glass door that has a road visible in the distant background. While the camera was placed to monitor and record people entering the lobby it also picks up moving cars through the window and glass door passing in the background. The cars pass quickly through the cameras field of view setting off unwanted motion recording. By increasing the Smooth Begin setting to .5 the car motion is not detected or recorded.




The Smooth End slider control specifies that amount of time in seconds from zero (0) to two (2) that the system will continue recording motion video after an object ends moving. This Smooth End slider control smoothes out motion recording when a person or object momentarily stop moving and prevents the system from recording choppy segments of video.

A motion mask will also reduce unwanted recording by eliminating motion events in certain areas of an image. For example, if a camera is pointed at a room that has a moving ceiling fan in the field of view you can eliminate continuous motion recording by masking out the fan. When someone walks into the room area not masked out in the cameras field of view the system will record video based on the motion. By creating motion masks you not only save storage space that will extend your recording time, you also make it easier to visually see motion events depicted as blue bars when you search for video. You can create a motion masks in a variety of patterns to suit your needs. To create a motion mask, complete the following steps:

If you haven't already done so, click on the **Edit** button:

A blue 11 x 8 motion grid is displayed over the live video. To create a mask you can either individually click on each motion region or you can left click holding down your mouse and drag the cursor to another region selecting multiple regions.

Click the **Apply** button to enable the motion mask.


There are a couple of ways to remove a motion mask. First, if you have not yet clicked the apply button, you can remove the mask by clicking the cancel button.


You can then create a new mask. Once you are happy with the location of the mask, click the Apply button.

If you have already clicked the Apply button and want to delete them, click the Edit button again and then click the Clear button. All of the masks will be cleared from the window. You can now add a new mask or keep the window clear. Remember to click the Apply button to accept the changes.

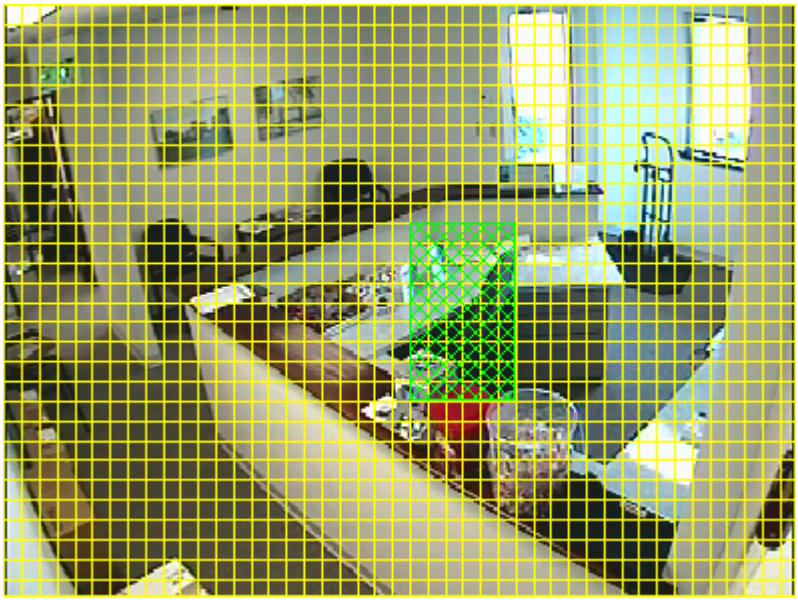

Clicking the Defaults button will clear any motion masks you have created **AND** reset all of the Record Settings to the default settings.


8. The Crop Window feature is not available on analog cameras.

9. The **Video Mask** is used to mask out a one rectangular region of live and recorded video. If you need to secure an area with video cameras but there's an object such as a combination safe or keypad that you don't want anyone to see, the video mask will permanently mask both live and recorded video from being viewed.

   Click on the Edit button and a yellow video mask grid will appear over the live video.

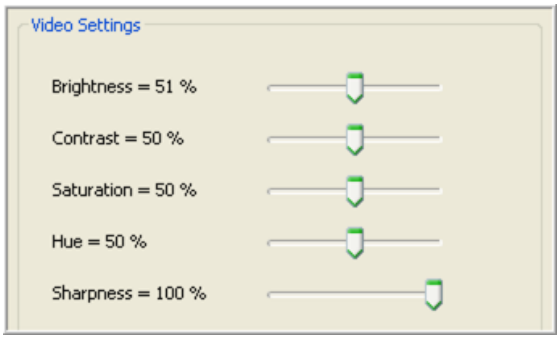
Left Click, hold and drag the cursor over the area of the grid you want to mask. A green rectangle will mark the masked area.



Click the Apply button and the yellow grid and green rectangle will disappear and the green rectangle will be replaced by a solid gray rectangle.

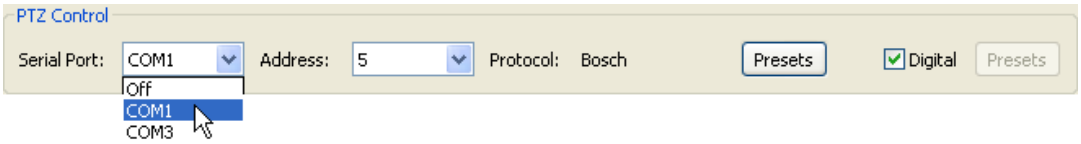

This area is now masked from both live and recorded video. To clear the mask, click the Clear button.


10. The **Video Settings** slider controls are used to adjust the image on your screen. The system defaults to 50% for Brightness, Contrast, Saturation, and Hue. The Sharpness is set to 100%. You can easily reset to the system defaults by clicking the Defaults button.

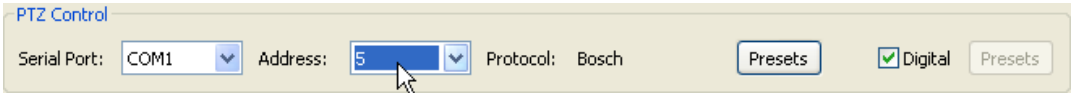



Clicking the Defaults button will clear any video masks you have created **AND** reset all of the Video Settings to the default settings.

11. The **PTZ** (Pan Tilt Zoom) **Control** box is used to set up your PTZ camera and to add position presets. To set up your camera, select the Serial Port from the dropdown box.

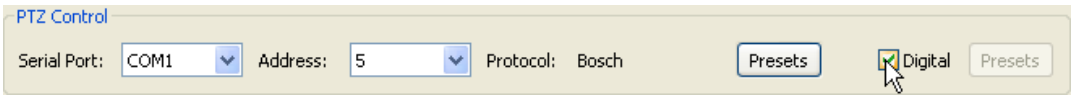



Check the switch setting on your camera and select that address in the Address dropdown menu.



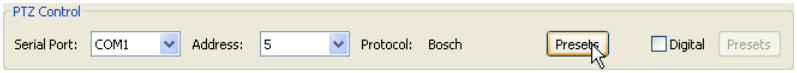

The protocol is automatically set based on the serial port selection.

You can allow use of digital PTZ on the Live and Search pages with the Digital checkbox. Digital PTZ allows a user to zoom and pan around a video stream without needing a mechanical PTZ camera. The Digital PTZ box will automatically be selected to enable digital PTZ. You can disallow digital PTZ by deselecting this box.

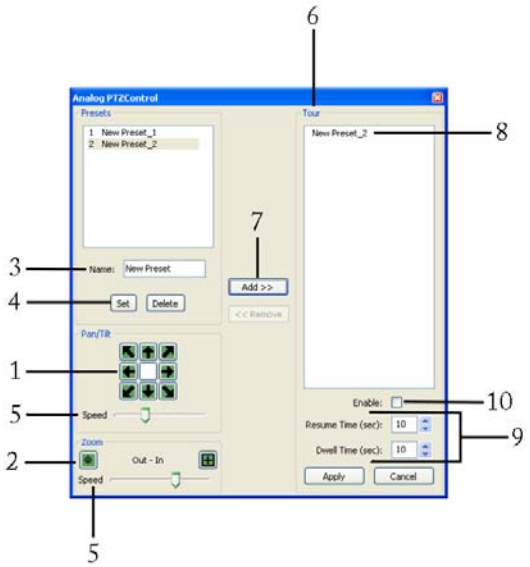



You can create camera analog or digital presets by clicking one of the Presets buttons to access the PTZ Control window.

Analog




Digital


(1) To add a new preset, use the arrows to point the camera to the appropriate location.

(2) Use the Zoom Control buttons to zoom the camera in and out.

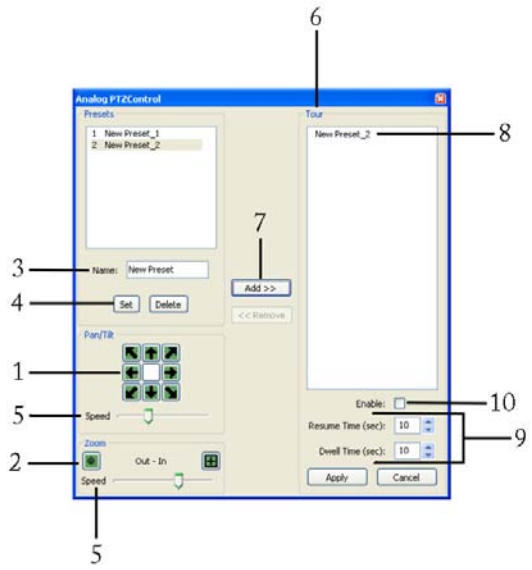
(3) Type a unique name in the **Name** field.

(4) Once you have the camera in the desired position, click the **Set** button.

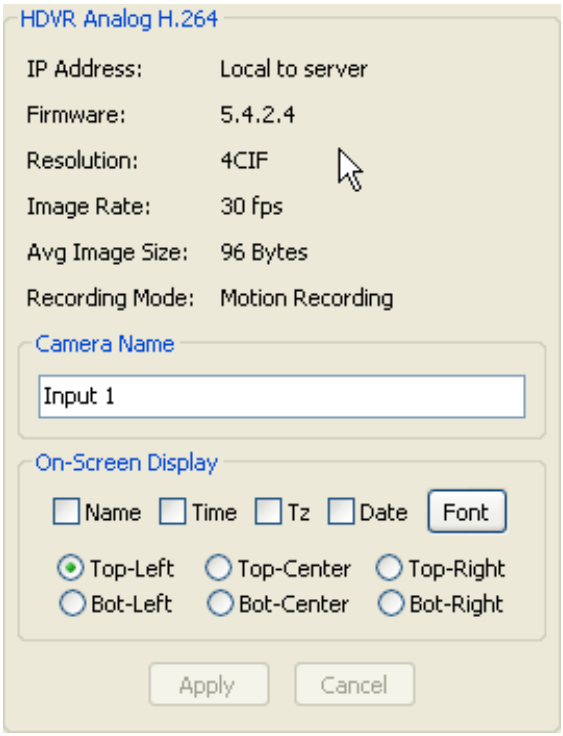
(5) You can adjust the speed of the **Pan/Tilt** and **Zoom** features in the Live view by using the **Speed** slider controls.

**NOTE:**

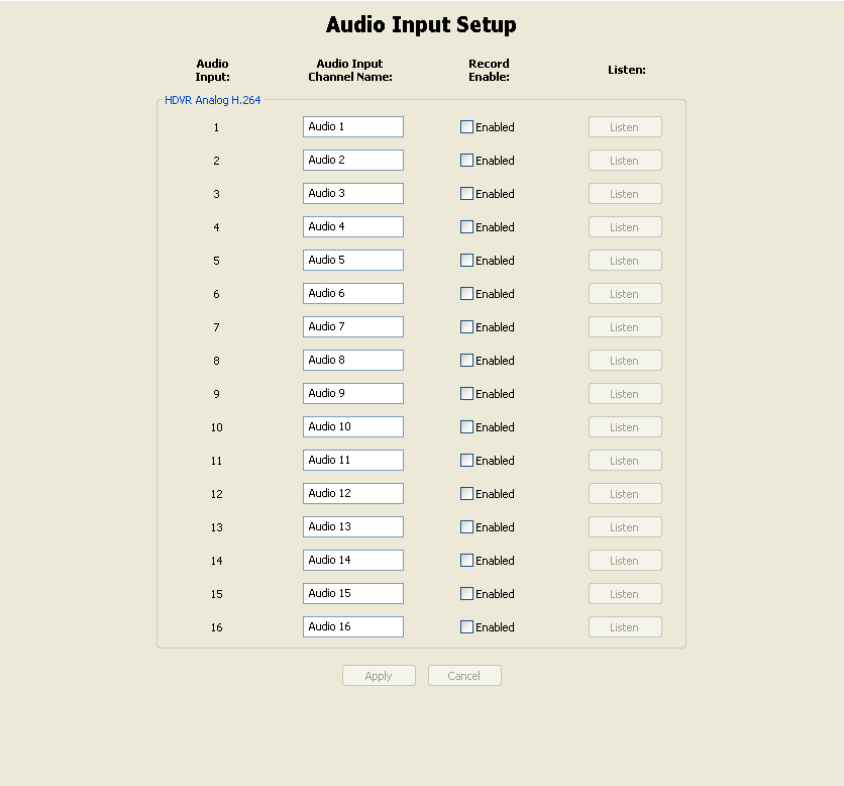
To adjust an existing Preset, you must delete it by selecting it in the **Preset** field and then clicking the **Delete** button. You can then set the camera to the desired location, retype the name, and then click the **Set** button.

<table>
<tr>
<td rowspan="5"> 
</td>
<td>(6) The PTZ Tour feature allows you loop through a group of presets.</td>
</tr>
<tr>
<td>(7) To add a preset to the Tour, select it from the Preset list and click the Add button. To remove a preset from the Tour, select it from the Tour list and click the Remove button.</td>
</tr>
<tr>
<td>(8) From the Tour list, you can drag and drop the presets until you get the desired order. You can add a preset multiple times if you want to view a camera more frequently than the others.</td>
</tr>
<tr>
<td>(9) The Dwell Time field controls the amount of time the camera pauses on each preset.<br><br>The Resume Time field sets the delay if you take over the Tour manually.</td>
</tr>
<tr>
<td>(10)Check the Enable box to activate the Tour.</td>
</tr>
</table>

12. The Camera Information box contains important information regarding the camera name, status, resolution, image rate, average image size, and recording mode.

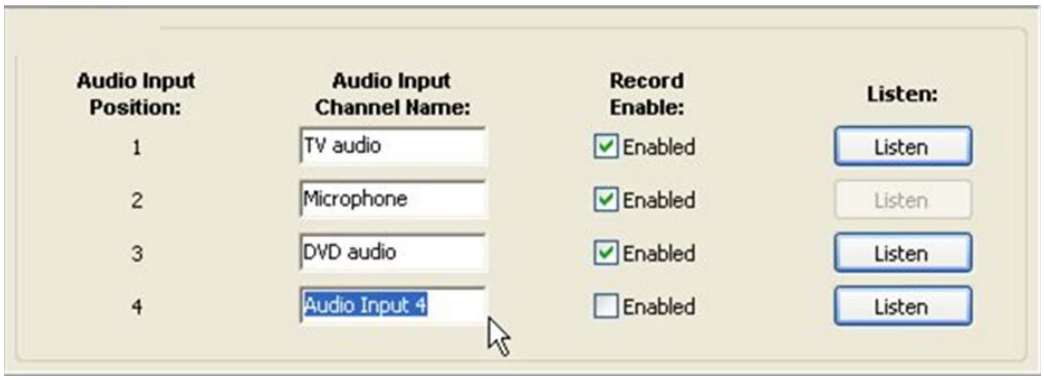


## Audio Input Setup




The Audio Input Setup screen is where you name and enable the audio inputs you want to record. There are multiple audio input positions that correspond to the audio inputs on the back of the HDVR NDVR (see Audio Input,). The HDVR System ships with the audio input positions disabled due to legal restraints on audio recording in some jurisdictions. You may want to seek legal guidance prior to recording any audio inputs.

To assign a new, logical name for the Audio Input Channel, simply highlight the existing name and type the new name.

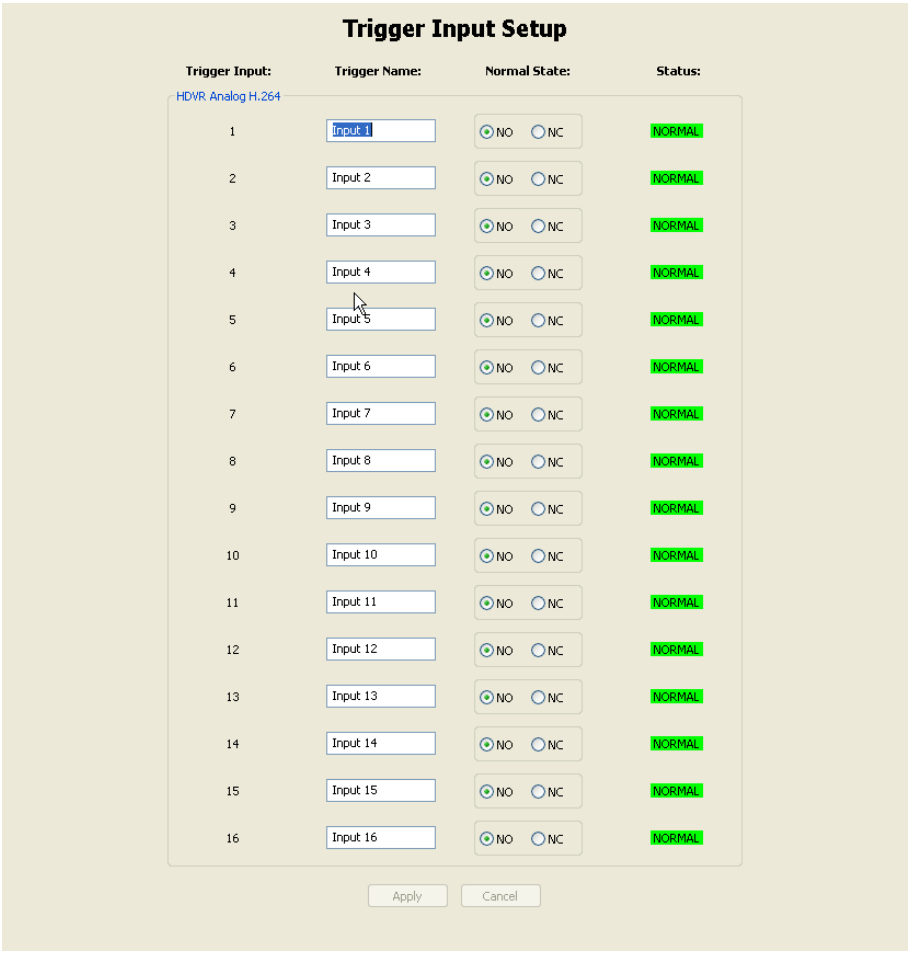



Enable the Audio Input Channel by checking the Record Enable box.

Repeat this process until all audio inputs have been named and then click the Apply button.

The Listen field allows you to verify the audio input connected to a channel. This is sometimes helpful when assigning names to multiple audio inputs. Simply check the Listen box and you will hear the audio for the corresponding input channel. To stop the live audio feed, deselect the Listen box.


## Trigger Input Setup



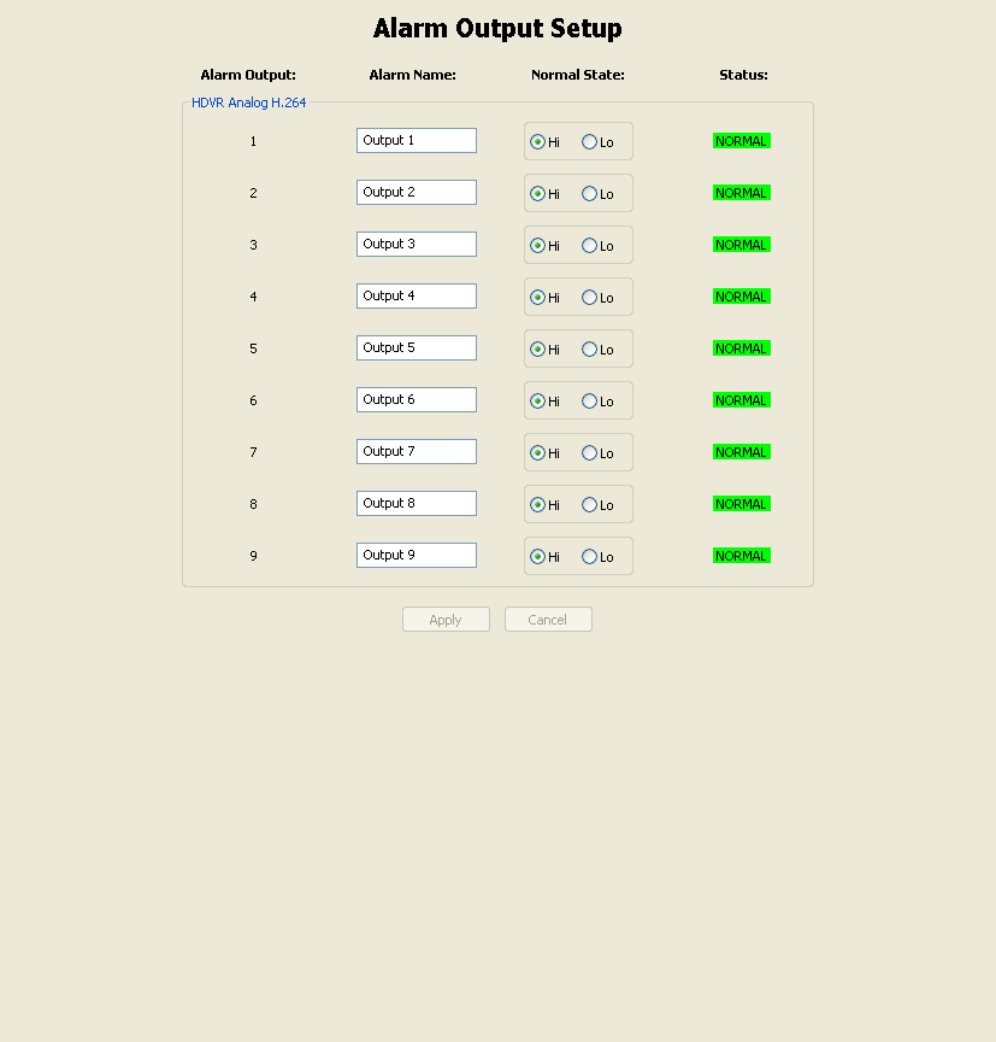

The Trigger Input Setup screen is where you assign names and set the Normal State (NO = Normally Open and NC = Normally Closed) of the HDVR input triggers. There are 16 Trigger Position that correspond to the 16 Trigger Inputs on the back of the HDVR NDVR (see Trigger Input). You can assign a new logical name and change the Normal State from the default of NO to NC.


Once you have made changes click on Apply.


You can verify the proper operation of the input state by going to the Trigger Input setup screen and observing the “Status” state, which toggles back and forth between “Normal” and “Alarm”. By default the “Normal State” is set to NC (Normally Closed). If you trip the sensor by opening the door you will see the “Status” state toggle from a green ‘NORMAL” to a red “ALARM” indicating an alarm has been

detected. The alarm can be linked to an action such as recording video or triggering a relay by going to the Event Linking screen and configuring the desired action (see Event Linking).

## Alarm Output Setup

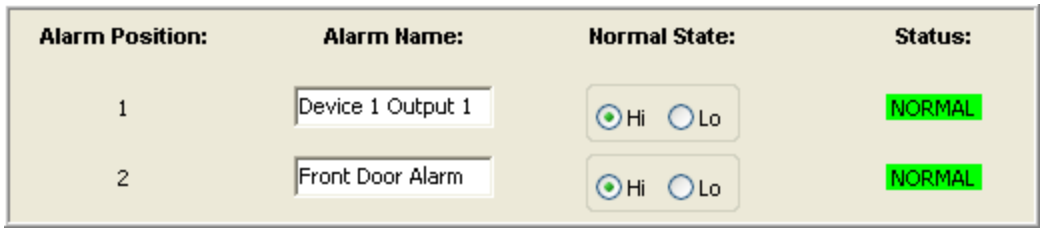



The Alarm Output Setup screen is where you assign names and set the Normal State of the HDVR output triggers. There is one (1) Relay Output and 8 TTL Alarm Outputs that correspond to the output triggers on the back the HDVR (see Trigger Input). You can assign a new logical name and change the Normal State of the 15 TTL Alarm Outputs from the default of Hi (5 VDC) to Lo (0 VDC). The Status is NORMAL in either the Hi or Lo Normal State setting until an event from the Event Linking screen activates an ALARM status.

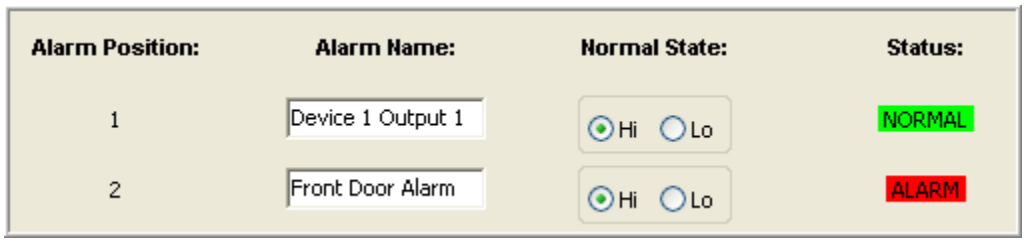
Once you have made changes click on Apply.


You can verify the proper operation of the output state by observing the “Status” state, which toggles back and forth between “Normal” and “Alarm”. By default the “Normal State” is set to Hi (5 VDC).

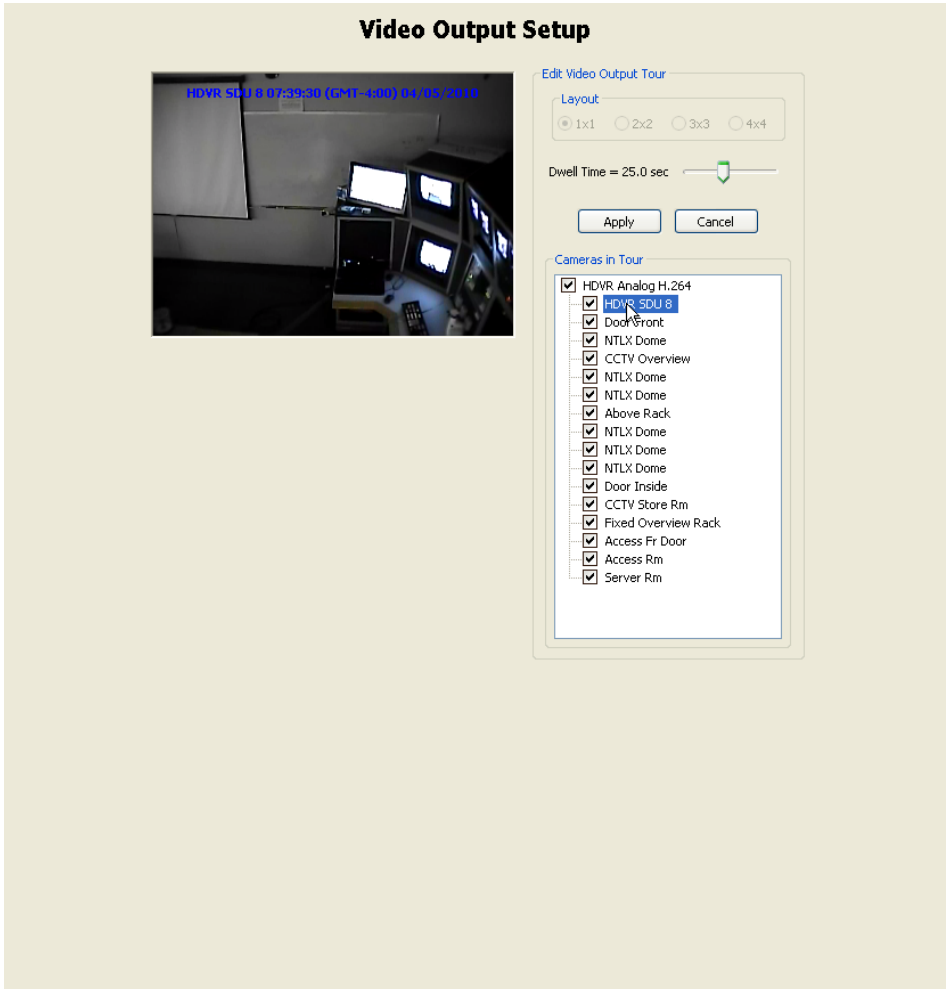
Go to the Event Linking Setup Screen and create an event that links Video Motion to an Output Trigger, for example, the Front Door Alarm.




Now, whenever video motion is detected you will see the Front Door Alarm is toggled from NORMAL to ALARM.

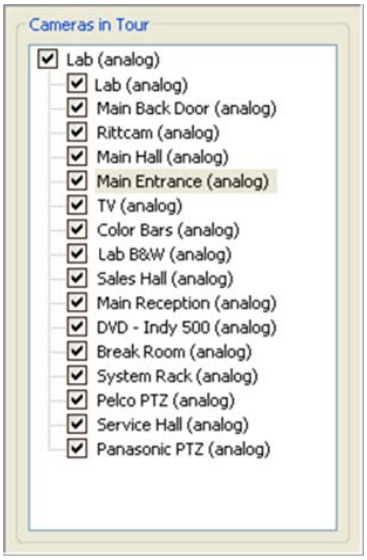


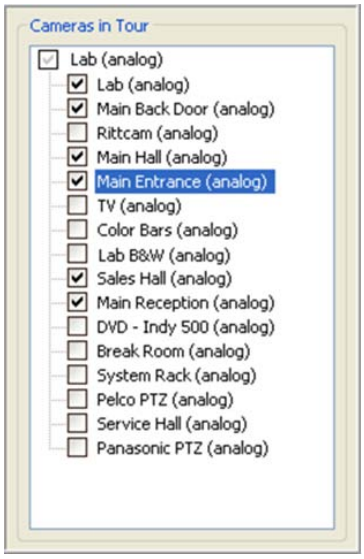

## Video Output Setup

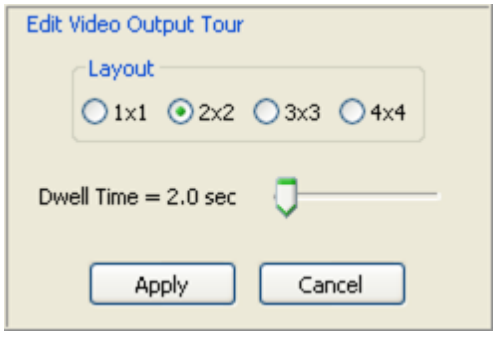



The Video Output Setup screen is where you configure your security spot monitor for touring (switching) between video cameras or displaying a single camera image.

Select the cameras you would like to include in the tour by clicking on the Camera in Tour check box. When you click on the check box or camera name, video will be displayed to visually assist you to select the cameras you want to include.



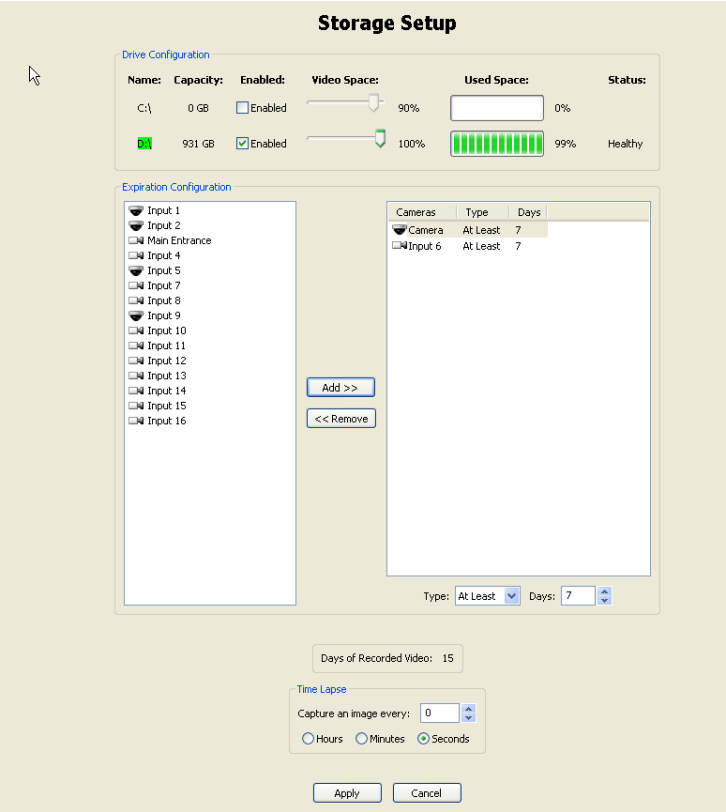




Slide the Dwell Time control to desired length of time before the monitor switches to the next camera. The Dwell Time range is from 1 to 60 seconds.

Once you have made changes click on Apply and the video output tour will begin.

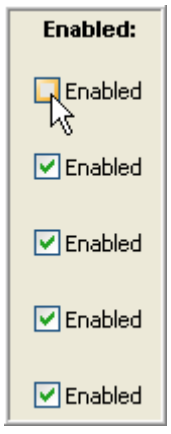
## Storage Setup



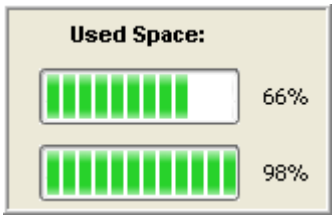

The **Storage Setup** screen is used to configure your hard drives for video storage.

If you purchased a HDVR System, you and your dealer determined how many hard drives to install based on your video storage needs. The C: drive is reserved for the HDVR software and operating system, so you will notice that it is not enabled for video storage. We strongly recommend that you do not record video to this drive as a precaution. Your other drives will also be visible on this screen. You can review and adjust the drive configuration, but if you purchased a HDVR System, this should be unnecessary.

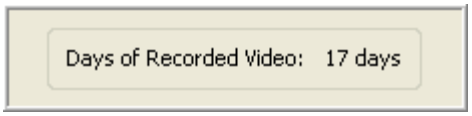
You can enable or disable a drive for video storage by selecting or deselecting the Enabled: box on the Storage Setup screen. You can use the entire hard drive or set an upper limit by adjusting the Video Space slider. If you choose to use your C: drive for video storage, it is a good idea to set the Video Space at no more than 90% to reserve space for other operating system tasks.



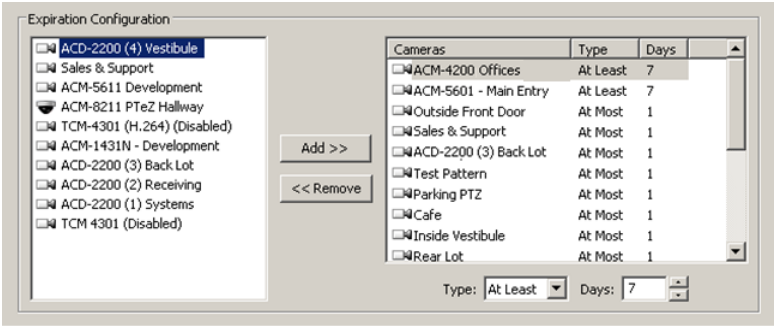
The Used Space display lets you know how much of the hard drive capacity you are currently using. Any hard drive issues will be displayed in the Status field. Also displayed is a field which indicates the age of the oldest video recorded on this system.




The actual amount of motion and complexity in the images from your cameras may not be accurately reflected in the estimate. In the illustrations, the oldest video stored was recorded 17 days ago and the drive is 98% full. Thus, if video needed to be stored for 30 days, the drive would not be large enough. However, an additional hard drive could be added to expand the storage capacity, or the quality of the video could be adjusted to conserve space. (See Camera Recording Setup and Camera Setup)




Expiration Configuration allows you to set minimum or maximum time periods for video from each camera to be stored. For example, you could configure one camera's video to be stored for at least 30 days before it is deleted, and another camera's to be deleted after no more than 7 days.




To configure video expiration, select a camera name in the list on the left and click Add>>. (You can select multiple cameras by pressing the Ctrl or Shift buttons.) Then select the camera name in the list on the right. You can configure two types of expiration:

To delete video after a certain amount of time, select At Most from the Type drop-down list and use the arrows to select the maximum number of days the video should be stored.

To save video for a minimum amount of time, select At Least from the Type drop-down list and use the arrows to select the minimum number of days the video should be stored.

Repeat for each camera that requires expiration rules. To remove expiration rules, select one or more camera names in the list on the right and click <<Remove.

**IMPORTANT NOTE**

Because the system normally retains recorded video from all cameras for as long as possible (that is, it deletes the oldest video only when required to create room for newly recorded video), it is recommended that you use the Expiration Configuration feature only when necessary, such as when video must be deleted after a specific maximum time period as required by law.

When using the feature, the Days of Recorded Video indicator should be higher than the greatest number of minimum days configured for a camera in the Expiration Configuration area. For example, if you configure a camera's video to be stored for at least 30 days, the Days of Recorded Video indicator should be at least 30 (assuming the system has been recording video for at least 30 days). If the Days

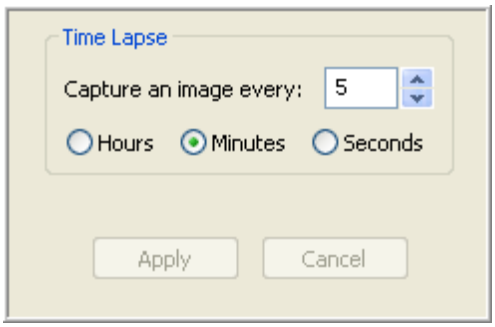
of Recorded Video indicator were lower than 30, video recording would stop for the camera until the oldest video stored from that camera were deleted when it was 30 days old.

To resolve issues with video expiration, you can expand your storage capacity by adding hard drives, reduce the minimum time that video needs to be stored, or reduce frame rates or quality settings for the applicable cameras. The best way to determine your needs is by trial and error; allow the system to record at your desired settings and then monitor the Storage Setup page to ensure that the settings will meet the storage requirements.

## Time-lapse Setup

You can set your HDVR system to take a periodic snapshot even if the cameras are set to record upon motion or alarm. This is useful if it is necessary to prove the system was operational even in the absence of motion. For example, in a slip and fall situation, you can use the snapshots to prove that the camera was functioning, but no motion (or fall) occurred to trigger the recording.

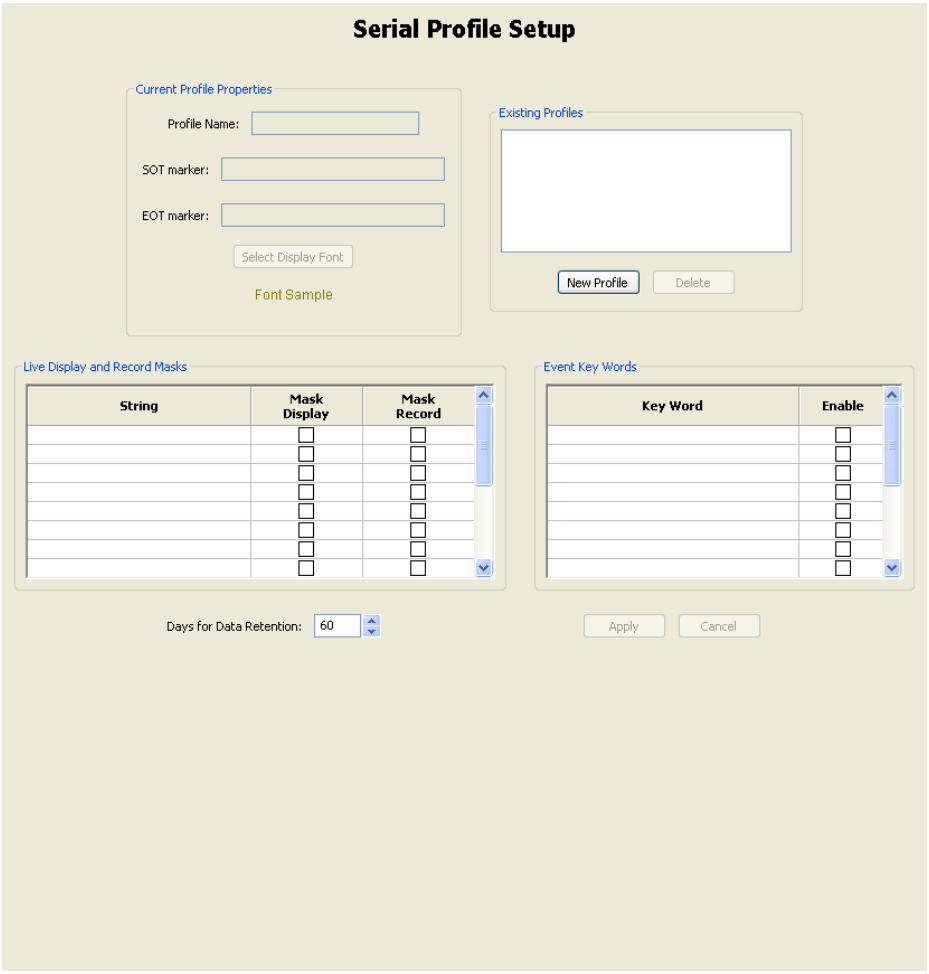
Use the up and down arrows to the desired increment and then select either the Hours, Minutes, or Seconds radio button. Selecting zero will disable this feature.



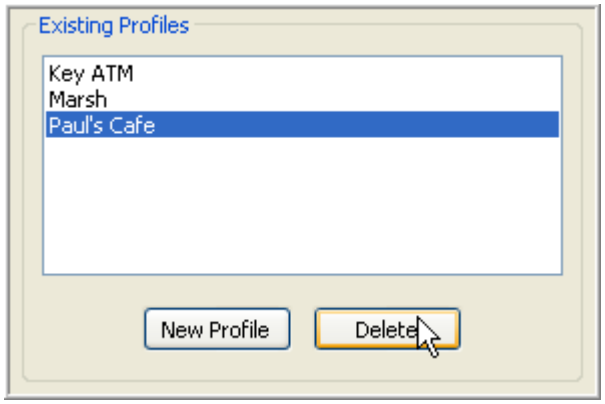

Click the Apply button to save your Storage settings.

## Serial Profile Setup

The Serial Profile Setup screen is where you view and create profiles for sales transactions so they can be viewed through live video or recorded and stored. You can also input an Event Keyword that will trigger a system alarm or action when certain items are being purchased.




To view an existing profile, simply click on it in the Existing Profiles field. You can delete an existing profile by clicking the Delete button.

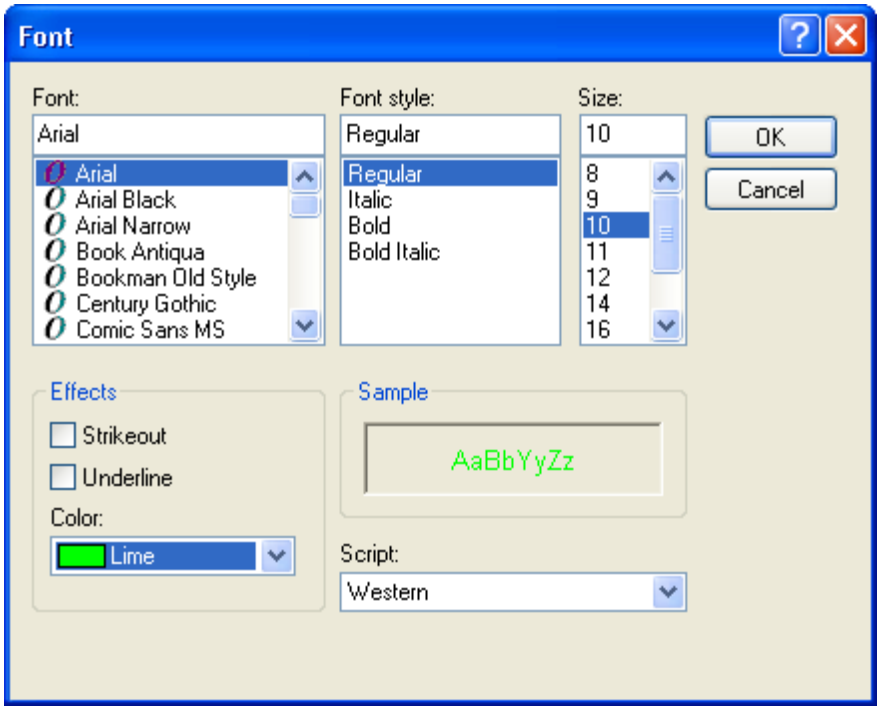



To add a new profile, click the New Profile button in the Existing Profiles box.

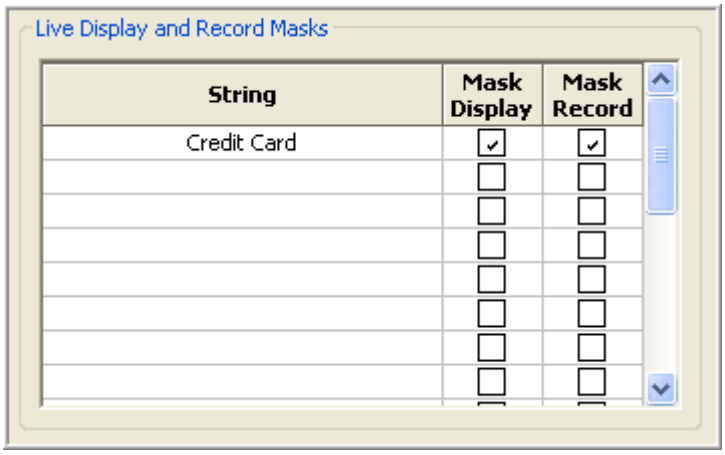

Type a unique name in the Profile Name field in the Current Profile Properties box.


The EOT, or End of Transaction, marker tells the HDVR System when the transaction has ended. You will want to enter the last line on the receipt to tell the system to start a new transaction each time it sees that line. For example, “www.marsh.net” or “Thank you for shopping at…”

The Select Display Font button allows you to select the font you want to be display on the Live view.

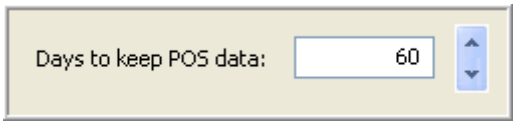


The Live Display and Record Masks box allows you to black out lines so they aren't visible on the live camera or through recorded data. This is frequently used to hide credit card information.

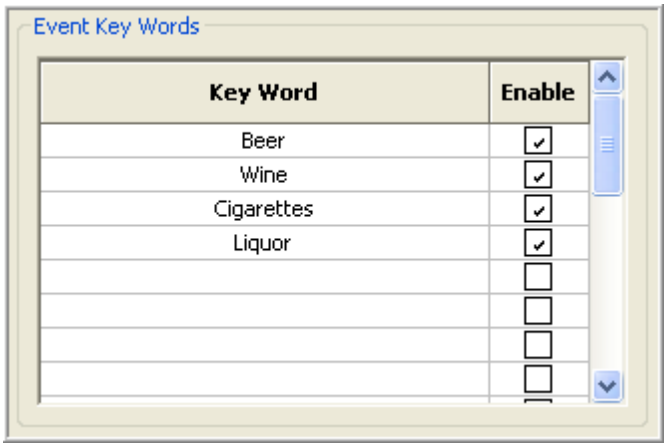



Simply type a signal word or words in the String field, and the system will black out the entire line on either the live display screen or recorded transaction or both. To mask the live video feed, tab to or check the Mask Display box. To mask the recorded transaction data, tab to the Mask Record Box or click in the box.

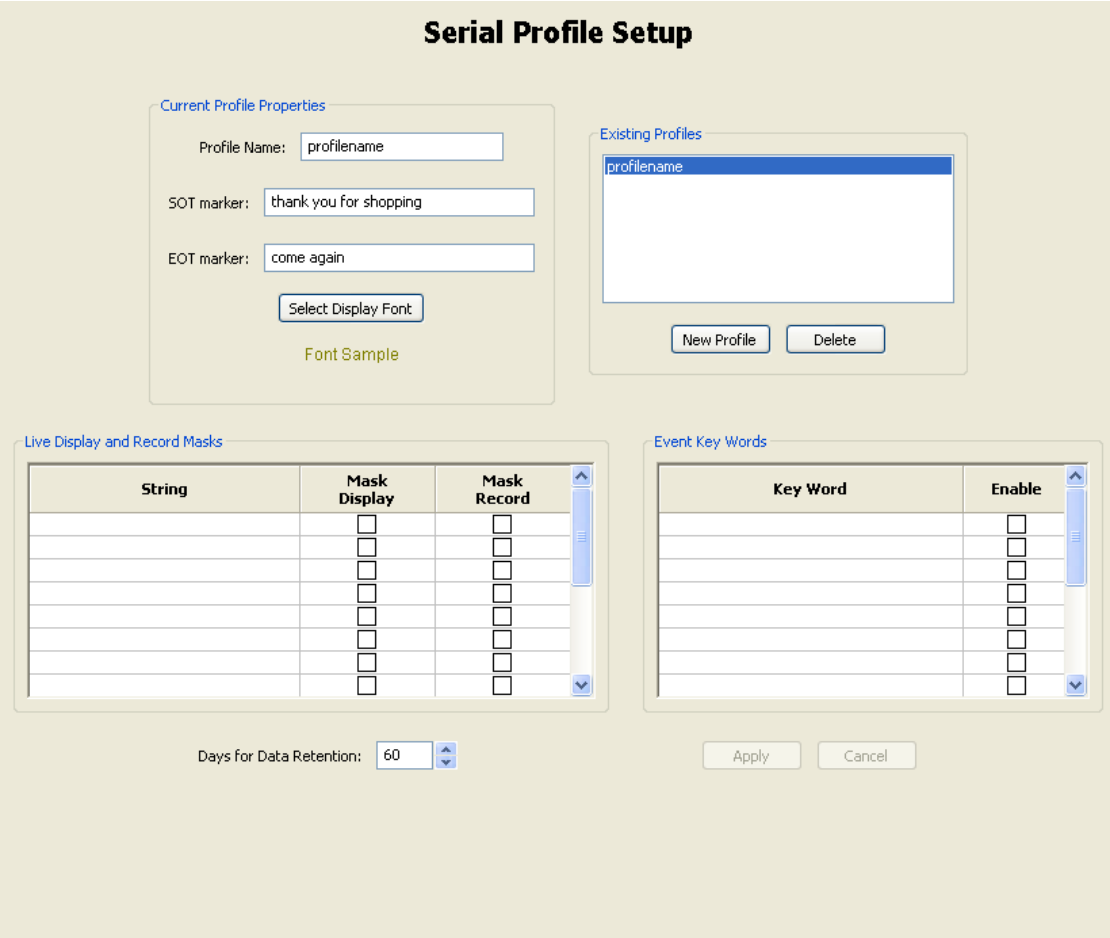
The Days to keep POS data field will automatically default to 60 days, but you can extend or shorten the time by using the up or down arrows or typing directly in the field.




The Event Keywords box allows you to set alarms that will be triggered through keywords on a receipt once you link the profile through the Event Linking system.

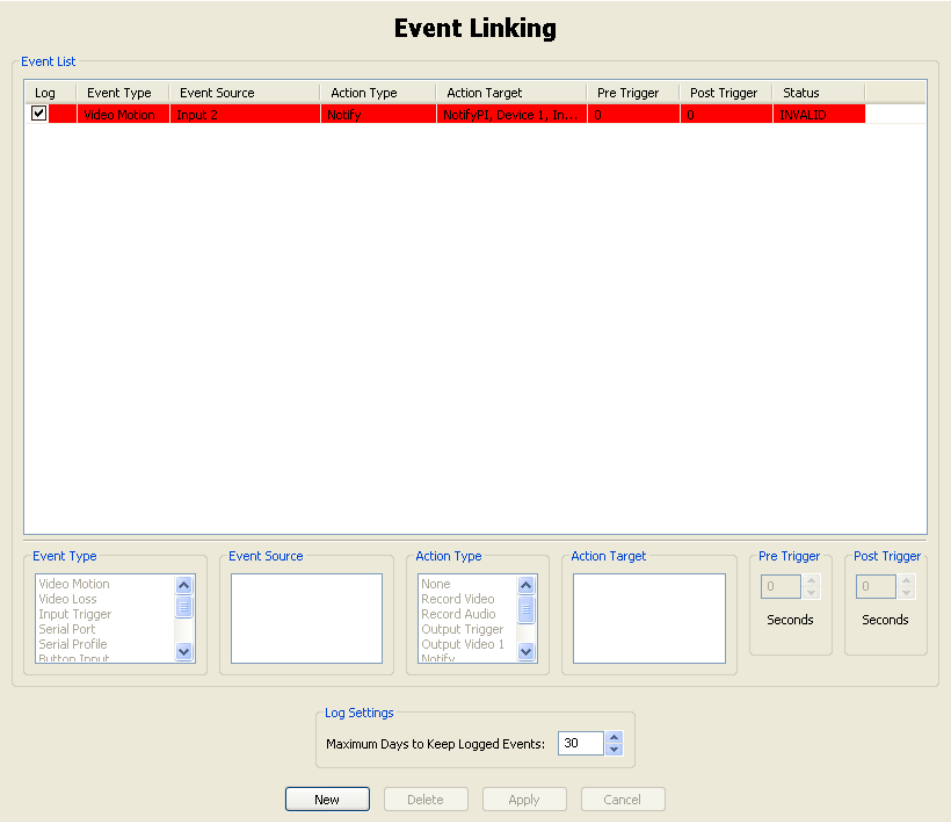



Once you have input all the information for your profile, click the Apply button at the bottom of the screen.




You have now created the new POS profile. If you entered any data in the Event Keywords box, you must link the profile to the appropriate Action through the Event Linking.

Return to the Event Linking system using the Set Up tree.




The Event List shows all of the Events.

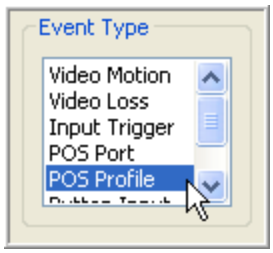
**NOTE:**

Red highlight indicates that one of the event parameters has been changed, making the event invalid.

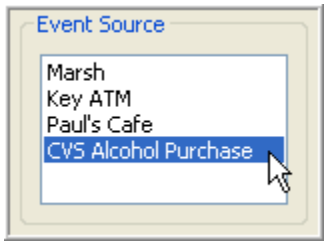
To link your profile to an event, begin by clicking the  button.



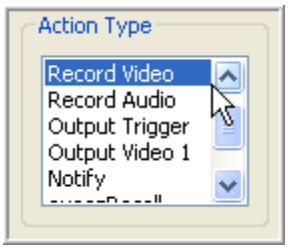
Select POS Profile as the Event Type.



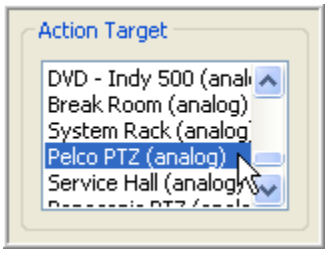

Then Select your profile from the Event Source box.



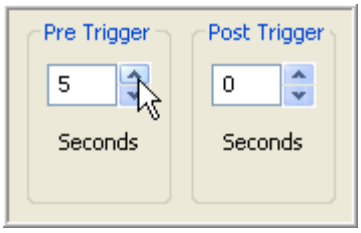
Select the Appropriate Action Type. For example, you can have the system “Notify” you via a page or an email when a particular item or a certain dollar value has been purchased or returned. You can also have it set off an alarm in an office when this occurs. You also have the option to record video or audio based on the profile you created; you will want to set up a Serial Port rather than a profile.



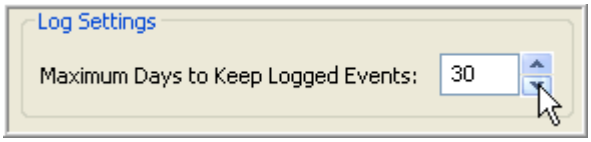

Now select the Action Target, or the location of the Action.




The Pre Trigger and Post Trigger fields’ tells the system to perform the Action Type for a certain period of time before and after the event occurs. For example, record video for five seconds prior and after the words beer, wine, cigarettes, and or liquor appear on the receipt. The system will default to 0 for every Action Type except Record Audio. Record Audio defaults to five seconds prior and after the event occurs. You can change the pre and post trigger settings by using the up and down arrows.

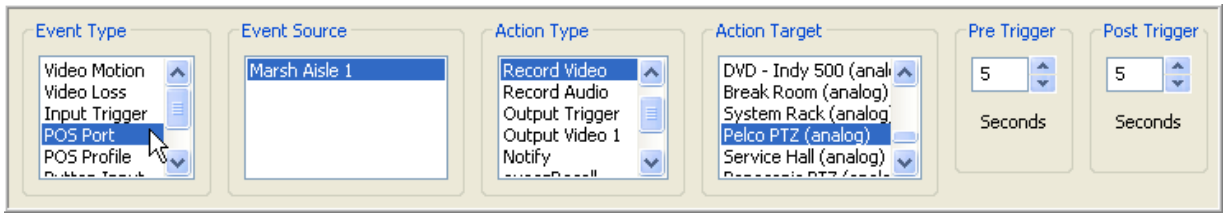



The system will automatically store the data for 30 days. If you wish to change that setting, simply click in the field and type or use the up and down arrows.




**IMPORTANT NOTE**

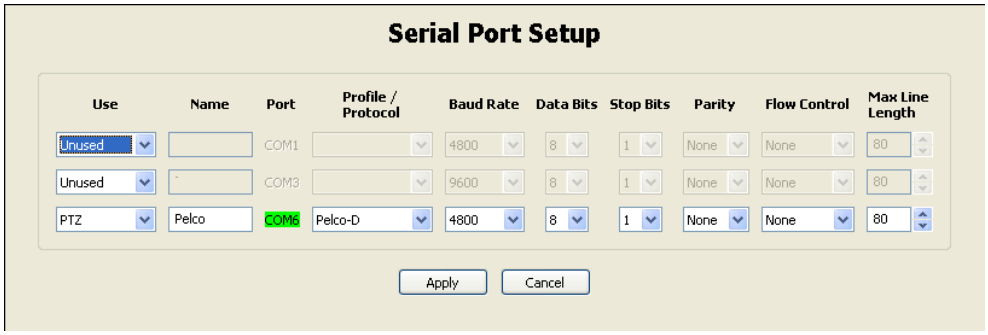
If your action type is to record video based on the keywords you input when you created the profile, and you have more than one register, you will want to use a POS Port rather than a profile so that only those cameras linked with the port that triggered the event will record. You will create the POS Profile as you did in the previous example, but when you get to the Event Linking screen, you will select POS Port rather than POS Profile.




The profile will be assigned on the Serial Port Setup screen.


## Serial Port Setup

The Serial Port Setup screen is where you configure serial ports on your HDVR NDVR so that they can be used to communicate with serial devices such as point of sale (POS) terminals or pan-tilt-zoom (PTZ) cameras.



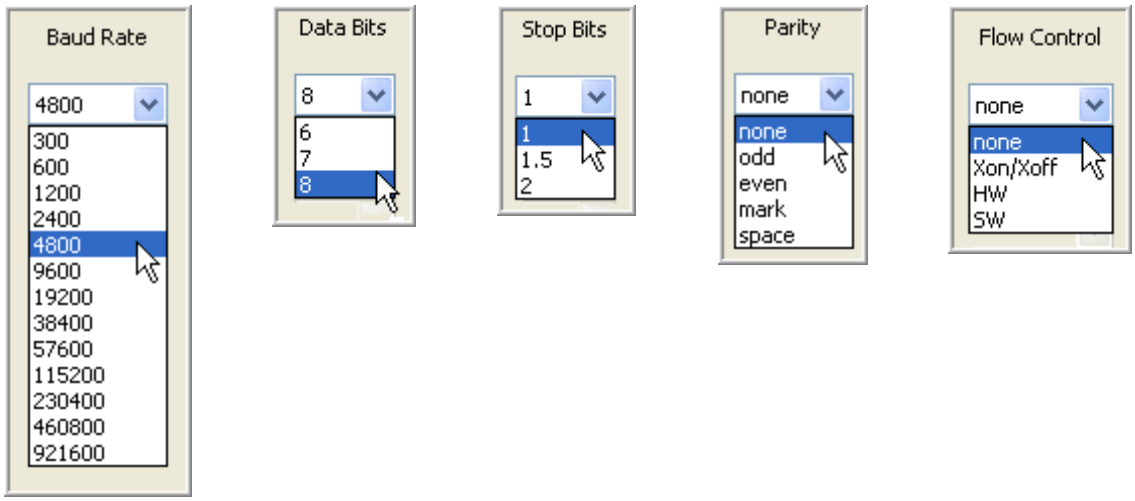

Once you have connected the wires to the serial port, you need to configure it. Start by telling the system how you want the serial port to be used by clicking on the Use drop down menu to.


The choices are unused, POS (Point Of Sale), or PTZ (Pan Tilt Zoom). Generally, the POS mode is used to record transactions at a cash register. The PTZ mode is used to control the motion of a PTZ camera; by default, the last serial port listed is the built-in RS-485 port. The HDVR NVDR system will default to unused until you configure it.

Once you have selected the Use, you will want to type a unique name for your POS, such as Express Lane, in the Name field.

The Port is automatically set by the Operating System.

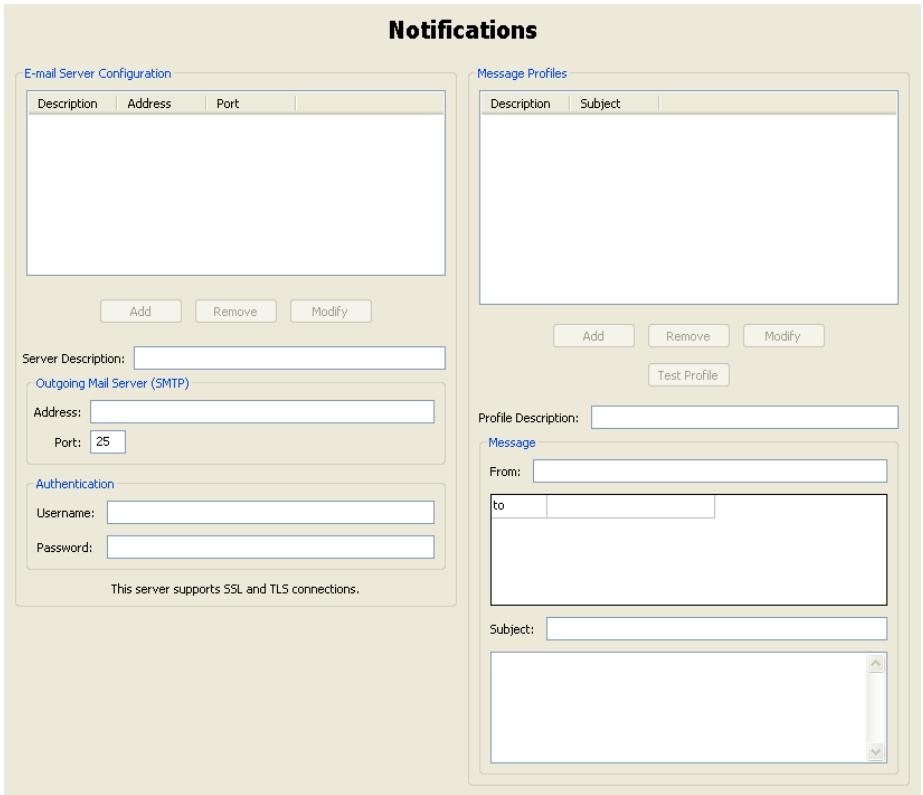
The Baud Rate, Data Bits, Stop Bits, Parity, and Flow control must match the devise you are connecting to. Check the User Manual for the devise you are using to determine the appropriate settings and use the drop down menus to make your selections.




The Max Line Length will default to 80. Generally, you will keep the setting at 80, but you can change the length by clicking on the up or down arrows.


When you are finished, save the settings by clicking the Apply button at the bottom of the screen.


## Notifications



The **Notifications** screen is where you configure an e-mail server and message profile that will send an email message when an event occurs. Once you have configured the e-mail server and message profile you will need to go to Event Linking, to configure the events that will cause an email message to be sent.

The **E-mail Server Configuration** box is where you setup the outgoing SMTP mail server that you will use to send email from the HDVR System. Obtain this information from your network administrator.

**NOTE:**

If the SMTP mail server has already been configured, move to the instructions for creating a Message Profile.


Click on the Server Description field and enter a descriptive name of email server so that you can uniquely identify it if you use more than one mail sever. This is a required field.

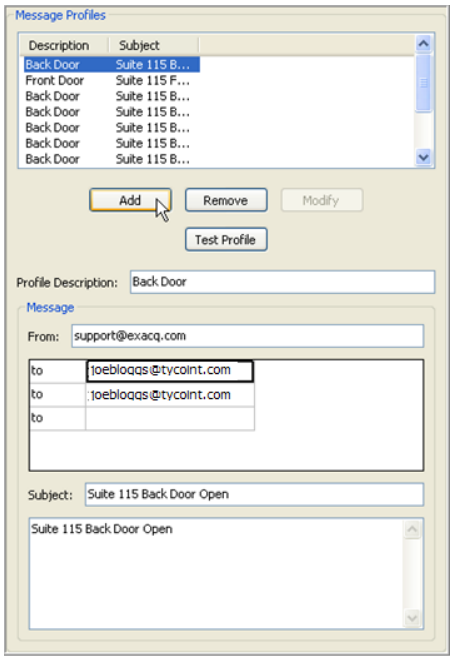
Enter the address and port number (25 is the default) of our Outgoing mail server (SMTP).

If your email server requires authentication enter your Username and Password.

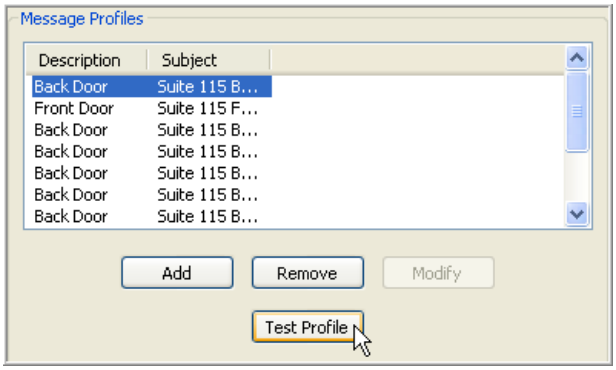
Once the email server is configured, you are ready to create a **Message Profile**. First, enter a brief description in the Profile Description field. This description will also appear in the Action Target field on the Event Linking Screen.

Next, enter the e-mail address of the person the email is coming from as well as the e-mail address of the person or persons to whom the e-mail will be sent.

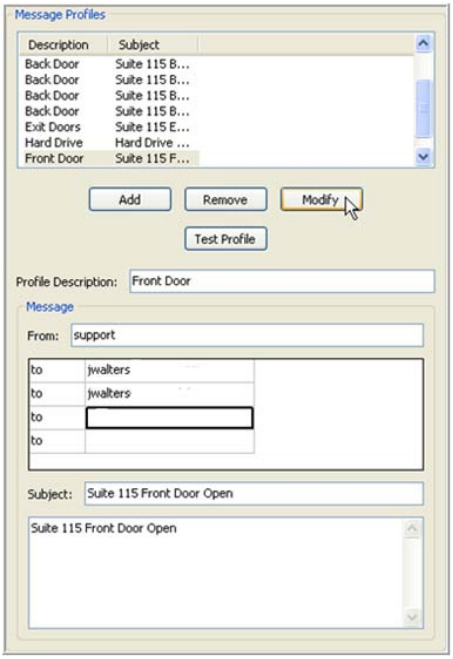
Finally, type the Subject and Message and click the Add button. The profile is now listed under the Message Profiles list.




You can test the profile by selecting it from the Message Profile list and clicking the Test Profile button.




You can make modifications as necessary by selecting the profile from the Message Profile list, making the appropriate changes, and clicking the Modify button.



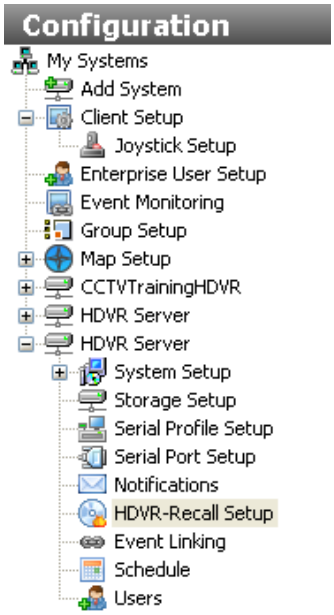

**NOTE:**

Once you have setup the Message Profile, you must go to the Event Linking screen to link it to an event.

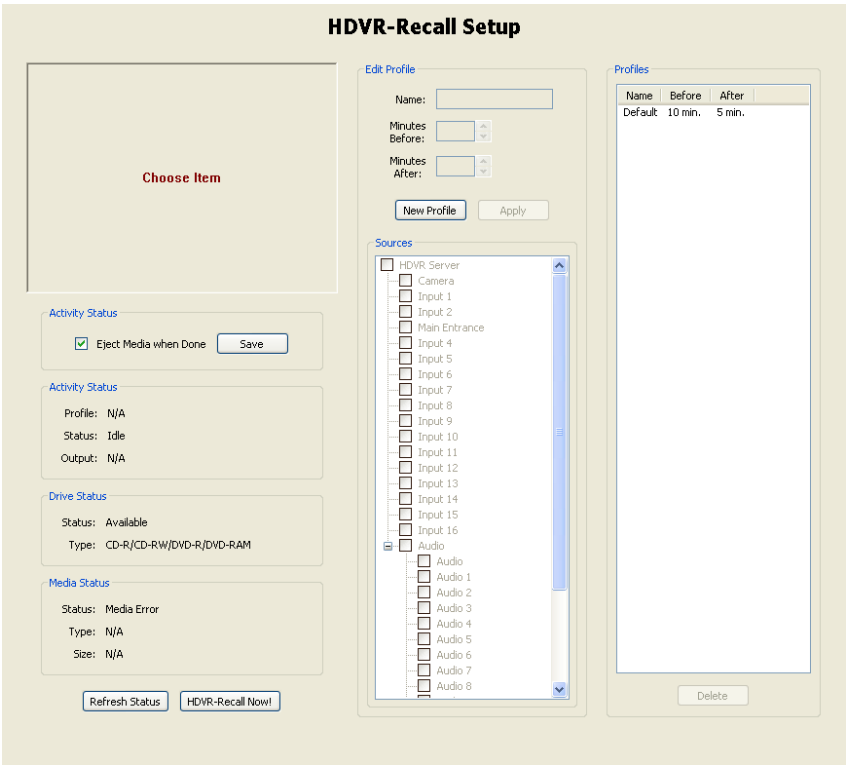
## HDVR Recall Configuration

Click on the  ("Change to Configuration page") button to go to the HDVR configuration page.

In the Setup menu on the left of your screen, click on the name of the HDVR server on which you will be setting up the HDVR Recall button. Then, scroll down the Setup menu and click on "HDVR Recall Setup."

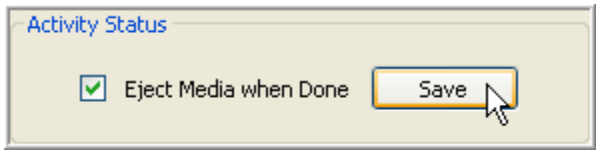


This will take you to the HDVR Recall Setup screen.

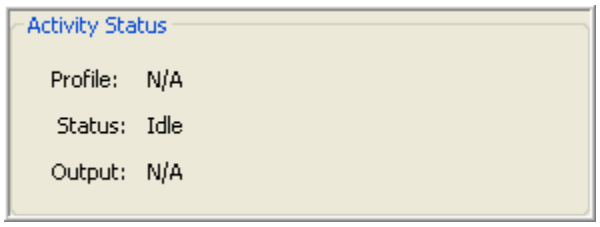



On the left of the screen, you will find four status boxes.

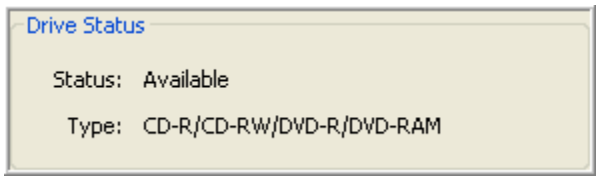
The top Activity Status box is where you select (check) or unselect (uncheck) that the CD/DVD drive should be automatically ejected when the system finishes burning it. It's an option because if the front door on the system is latched, the drive can't really eject anything. You can check or uncheck the box based on your system and click the Save button.



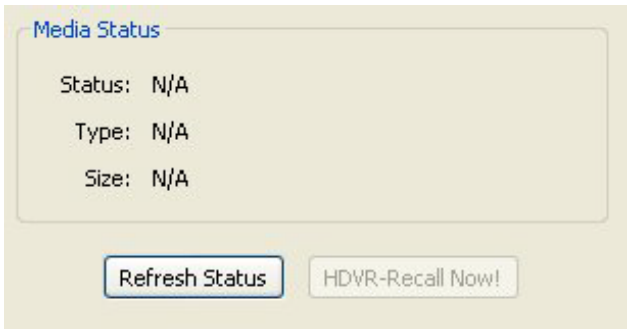
The second Activity Status box indicates the status of the HDVR Recall feature. Normally it's "Idle." If the system were to begin HDVR Recall, a sequence of different status messages, such as “Gathering video" or "Creating ISO image", will appear here to keep you informed of the status. If HDVR Recall is actually running, the profile “In Use” will be indicated as well.

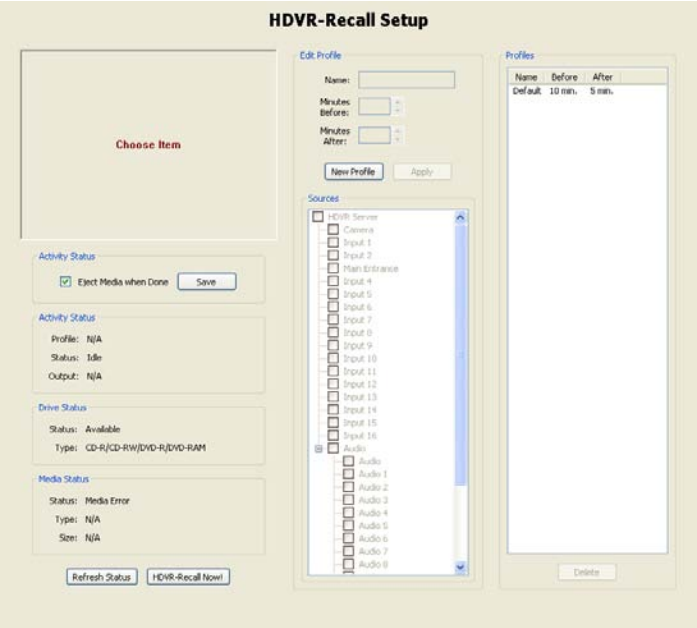



The Drive Status box indicates whether the system has a writable CD/DVD drive, and if so, what kinds of blank discs are compatible with it (i.e. CD-R, CD-RW, DVD-R, etc.).

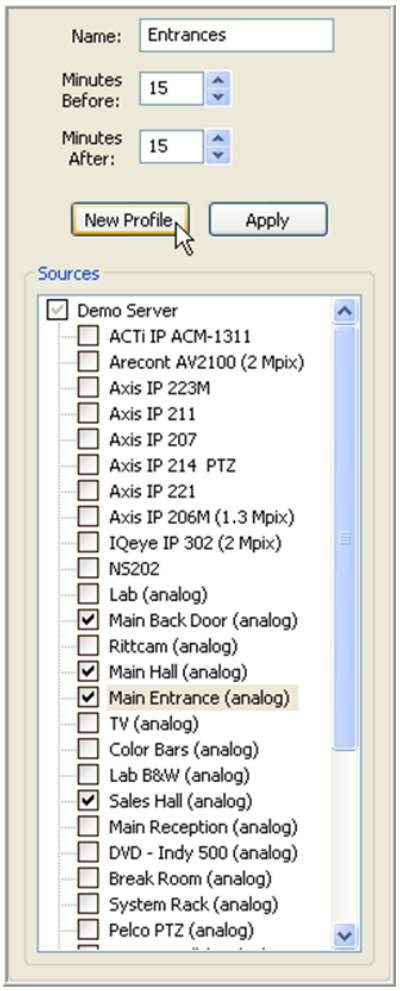



The Media Status box indicates whether there's a blank disc in the drive, and if so, what kind of disc it is, for example, CD-R, CD-RW, DVD-R, etc. It also indicates how much space it can hold. If you add a disk to the system, click the Refresh Status button, and in a moment, you should see a message confirming that a blank CD is in the drive and is ready.



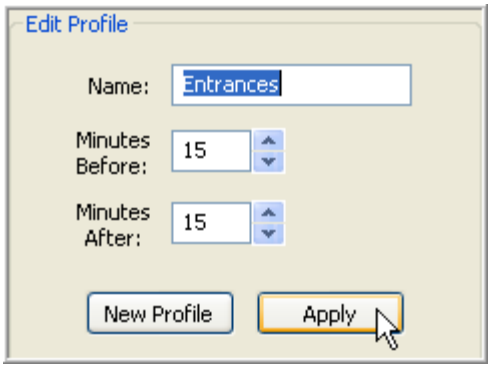



In the middle of the HDVR Recall Setup screen, you will notice the Edit Profile box. To create a new profile, start by clicking on the New Profile button in the Edit Profile box. In the “Minutes Before” field, select the number of minutes of recorded video you want to export before the button is pushed. The default setting is 30, but you can increase or decrease the time by using the up or down arrows. Repeat this process to export the appropriate number of minutes after the button is pushed. This will delay the export process after the button is pushed in order for the system to record additional video or audio input. This is useful when the button is pushed and users are waiting for a supervisor or police officer to arrive. In some cases, events are still taking place after the button is pushed.



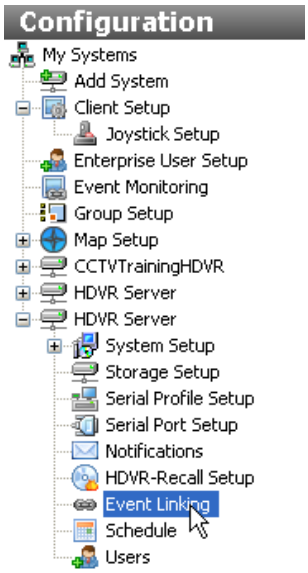

Next, name the profile (e.g. “Main Street Branch”).

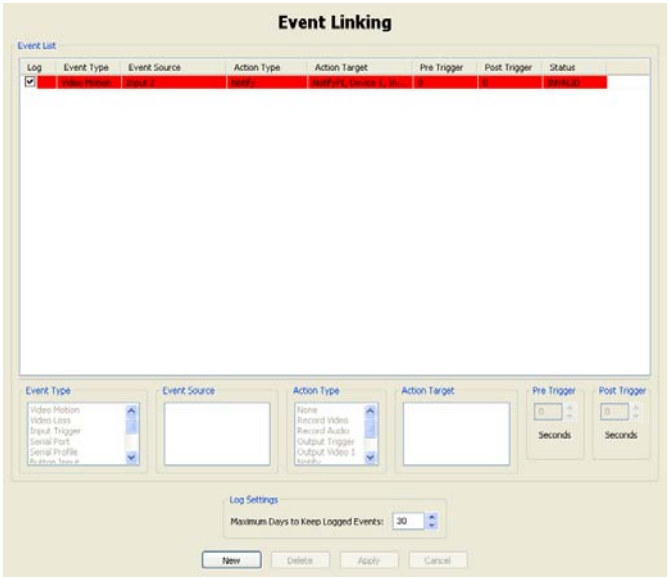
Finally, choose the cameras you wish to export and then click on the Apply button.



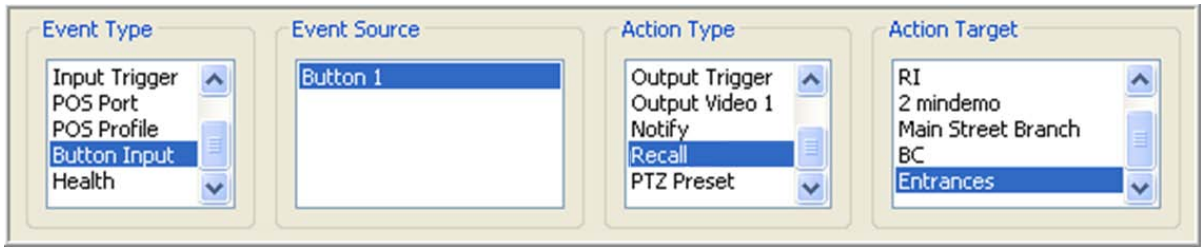

At this point, you have completed the process for creating an HDVR Recall profile, but the system will NOT use your settings until you link the profile to an event on the Event Linking screen.

Return to the Setup menu to the left of the screen, and select Event Linking. Click on the “New Event” button located at the bottom left of the screen.



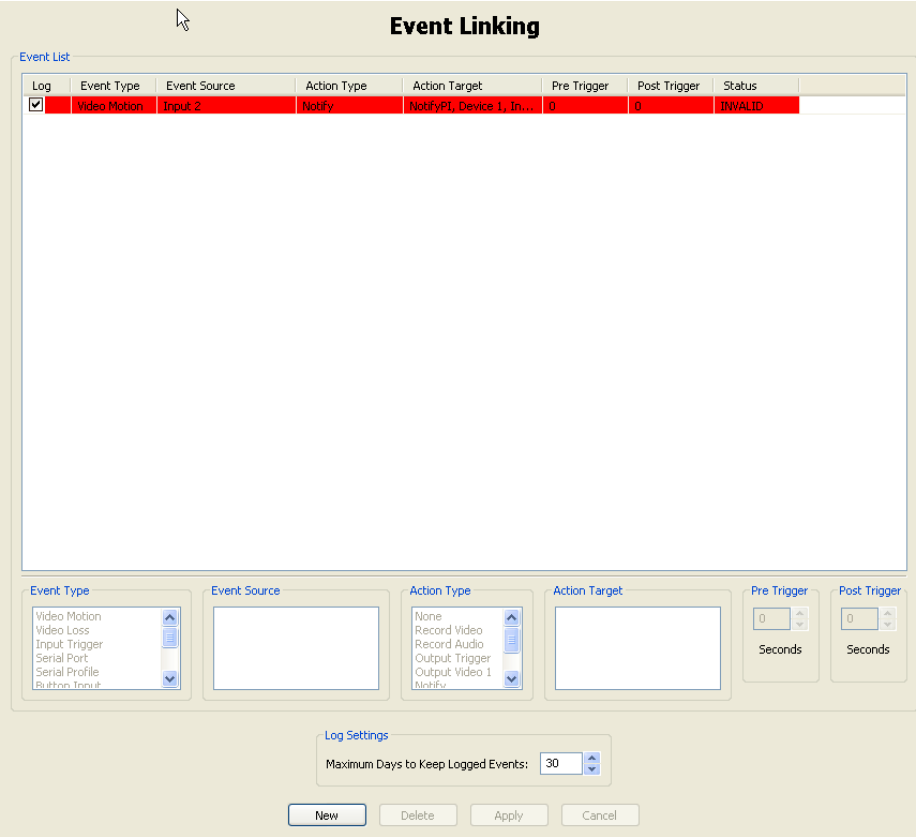

While still on the Event Linking page, locate the “Event Type” box at the bottom of the screen and scroll down to select “Button Input.” Next go to the “Action Type” field and select HDVR Recall. Finally, choose the appropriate profile as the “Action Target.” In this case, we selected “Entrances.”




Finally, click the Apply button at the bottom of the Event Linking page to apply the changes to the HDVR System.


Your HDVR Recall is now configured and activated.

## Event Linking




The Event Linking Setup screen is where you connect different types of events such as an input trigger to a desired action, for example, recording video or triggering an alarm.

An **Event Type** occurs on a predetermined **Event Source** which triggers an **Action Type** on a predetermined **Action Target**. Events are stored in a database for you to quickly find.


The reason for linking an event to an action is to create a logical relationship between your physical security devices to improve your ability to quickly search and find them when an event occurs. Event linking helps to narrow the information you are looking for. As an example, let's say you want to find video every time a door opened in a busy lobby. If a camera that is pointed at a door and is set to record upon motion you could simply search the camera for motion video. However, the problem is that people standing or passing through the lobby also set off motion recording and you can't distinguish it from the door opening. A solution for distinguishing between when the door opens and people pass through the lobby is to connect a door sensor to an input trigger and link it to video recording. Now you can go to the event searching screen and select the event and only find video associated with the event.

To create a new event, follow the steps below:

Click the New button to add the new event to the Event List.

Select one of the Event Types.

| Event Type | Description |
|---|---|
| Video Motion | Camera detects motion. |
| Video Loss | Video signal is disconnected. |
| Input Trigger | Wire trigger installed in back of server is activated. |
| Serial Port | Key word entered on Serial Profile page is detected on a preselected port. |
| Serial Profile | Key word is detected on any Serial Port with that profile. |
| Button Input | Button of front of the system typically used for HDVR Recall. |
| Health | Problem detected involving health of the HDVR server hardware. |
| IP Camera Connection | Network can't connect to the IP Camera. |
| Soft Trigger | Signal sent from the client to the server. |
| Analytics | Video analytic event detected. |

Select an Event Source. The available list varies depending on the Event Type selected:

| Event Type Selected | Event Source |
|---|---|
| Video Motion | Any one of the cameras connected to the HDVR server. |
| Video Loss | Any one of the cameras connected to the HDVR server. |
| Input Trigger | Any input trigger on the back of the server or IP camera connected to the server. The system will default to a device and input number, but these can be customized on the Input Trigger screen. See Trigger Input Setup. |
| Serial Port | Any of the serial ports that you have configured on your server. See Serial Port Setup. |
| Serial Profile | Any of the serial profiles you have configured. See Serial Profile Setup. |
| Button Input | Button 1. |
| Health | Temperature 1 (See HDVR Analog H.264 Device) or Storage. |
| IP Camera Connection | Any one of the IP cameras connected to the HDVR server. |
| Soft Trigger | Select New to create a new soft trigger with a default name. (Double click to name it.) Or select any of the predetermined soft triggers listed. |
| Analytics | A list of video analytic events (configured through provider's interface). |

Select an Action Type.

| Action Type | Description |
|---|---|
| None | No action will be preformed. The event will be logged in the Event Database which can be accessed in Search Mode. |
| Record Video | Video will be recorded based on event. |
| Record Audio | Audio will be recorded based on event. |
| Output Trigger | Activates a wired output trigger on the back of the server or IP camera. |
| Output Video 1 | Switches the analog monitor from existing to state to a full screen view of the selected camera. |
| Notify | An email notification will be sent according to profile created on the Notifications screen. See Notifications. |
| HDVR Recall | Burns a predetermined profile to a cd/dvd. |
| PTZ Preset | Positions the camera to a specific location based on the selected preset. See Camera Setup. |

Select an Action Target.

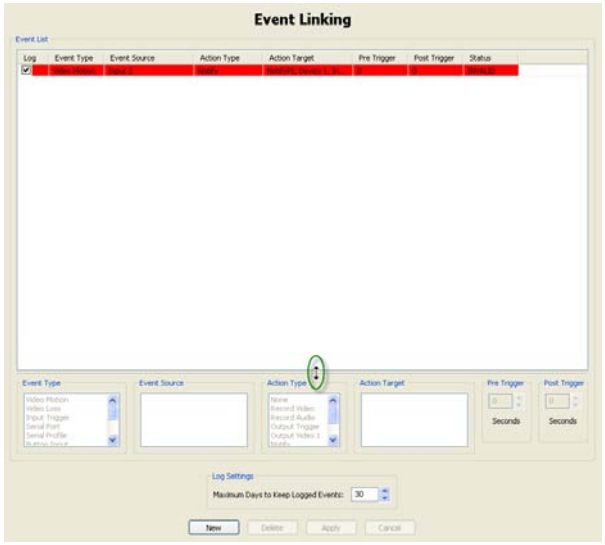
| Action Type | Action Target |
|---|---|
| None | No Action Target selected. |
| Recorded Video | Any one of the cameras connected to the HDVR server. |
| Recorded Audio | Any one of the audio inputs connected to the HDVR server. |
| Output Trigger | Any output triggers on the back of the HDVR server or IP cameras. |
| Output Video 1 | Any of the analog cameras connected to the HDVR server. |
| Notify | Any of the profiles that have been setup on the Notifications screen. See Notifications. |
| HDVR Recall | Any of the profiles that have been setup on the HDVR Recall Setup screen. |
| Preset | Any of the presets configured on any of the mechanical PTZ cameras. |

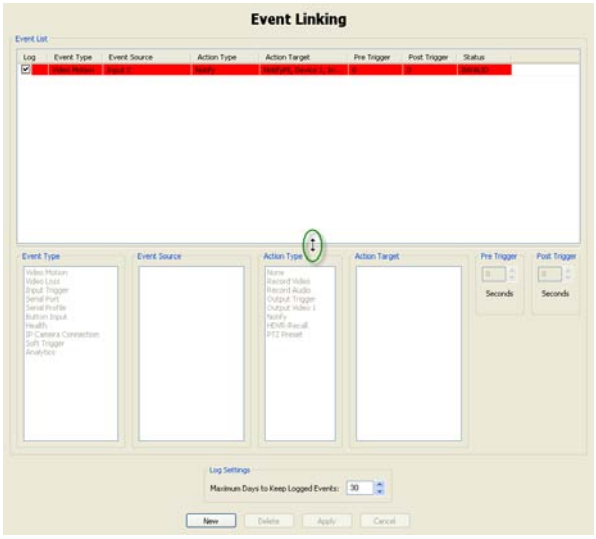
Pre and Post Triggers can be used to trigger some action types before and/or after the event occurs. For example, if a door opening is set to trigger video recording, a Pre and/or Post Trigger can be set to capture the video for up to 100 seconds before and/or after the door opened.

Click the Apply button to apply these settings to the event.

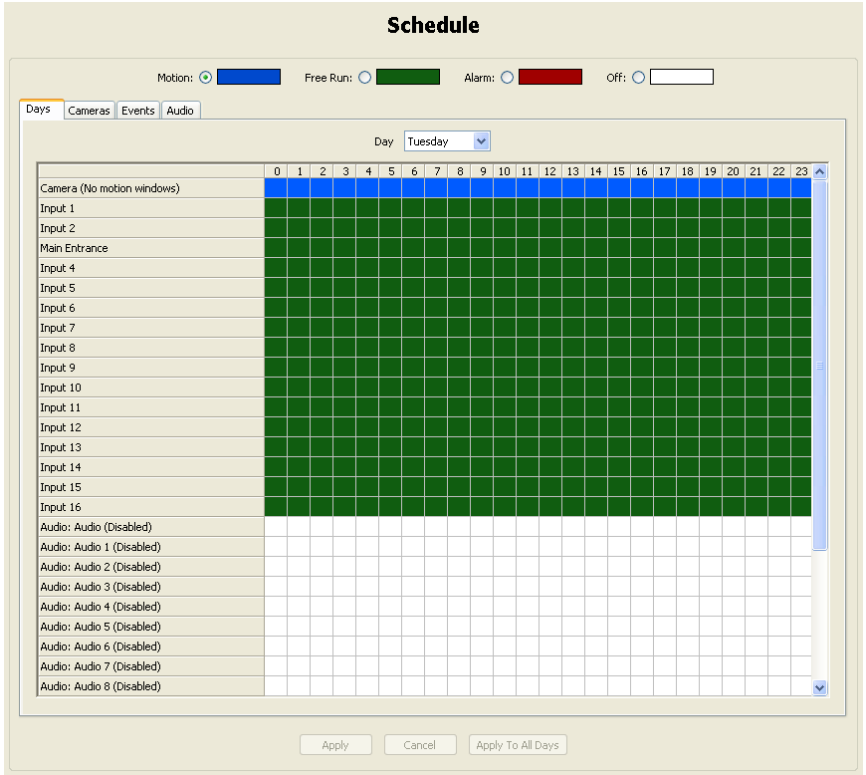

The Log Settings field is used to determine how long the event will be stored in the Event database. The system defaults to 30, but can modified by using the up or down arrows to select a number from 0 to 365.

If desired, you can change the space allocated to the Event Linking window. Simply hover your cursor over the Resizing Bar, and drag it up or down to adjust the spacing to suit your needs.




## Schedule




To maximize the amount of storage on your system, you will want to schedule your cameras based on your individual needs. For example, you may want continuous recording during business hours, but after business hours you may want your cameras to record based on motion or a specific event.

The **Schedule** screen is where you setup your camera and event recording schedule. HDVR software ships with Motion (Light Green) recording as the default schedule because this is the most common and efficient (disk saving) way to record video. The default Event schedule is shipped Enabled (Red) so that when events are setup in the Event Linking screen they will automatically function once created.

There are four modes of video recording:


Motion (Light Green) means video is recorded when motion is detected

Free Run (Dark Green) means video is continually recorded nonstop

Alarm (Red) means video is recorded when there is a triggering event

Off (White) means video is not recorded at this time

Caution should be taken when setting up a camera to record video in the Free Run recording mode. In Free Run mode, video is continually recorded nonstop for the time you specified taking up valuable disk space even if there is nothing to record except an empty hall or blank wall.

Customizing a recording schedule is quick and easy.

There are four scheduling tabs:

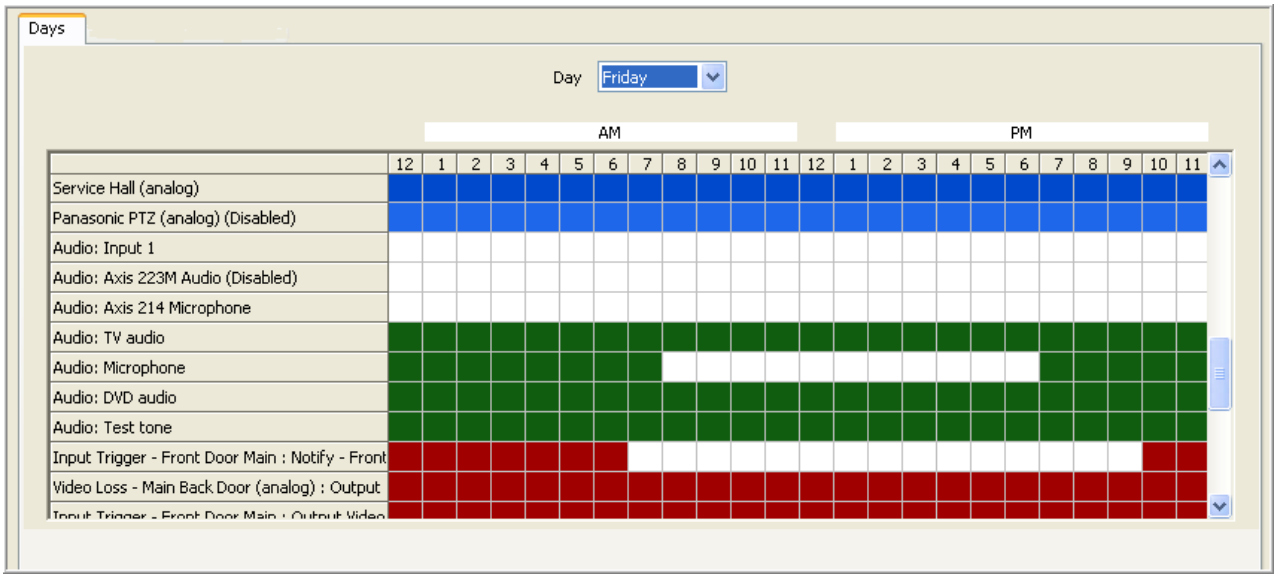

The **Days** and **Cameras** tabs are used to customize camera recording schedules.

You can use either or both tabs to customize the schedule.

The **Events** tab is used to enable or disable events for a particular time and day created on the Event Linking screen.

The **Audio** tab is used to schedule when audio is recorded.

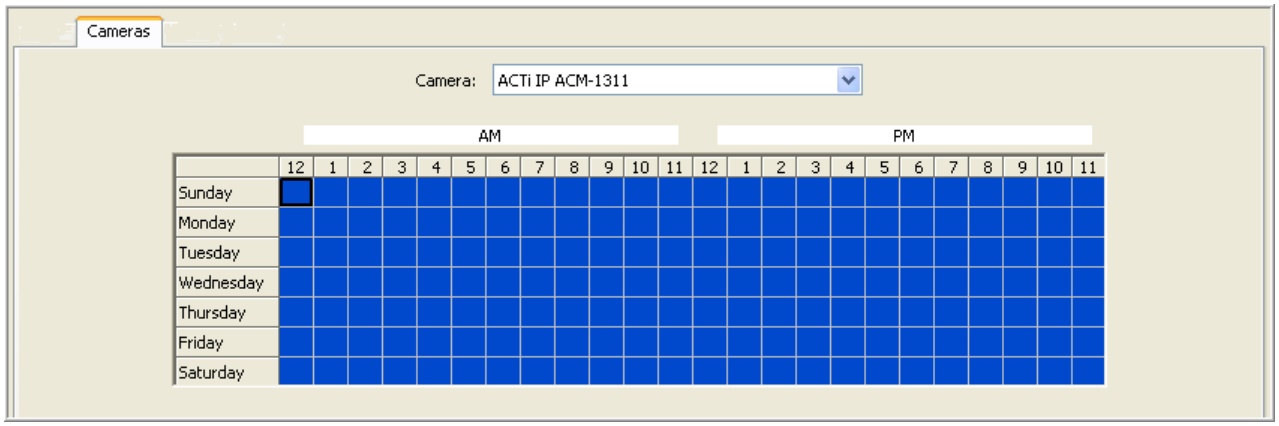
In the Days view you see each camera connected to the system, audio inputs, and events in the left column and the hours of the day across the top row labeled 12 a.m. through 12 p.m. At the top of the schedule you see the Day drop down box, which allows you to select the day of the week to schedule.



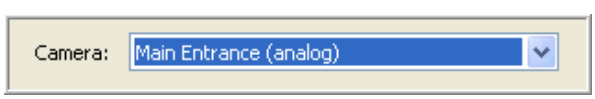

**NOTE:**

Cameras and Audios which have been disabled will be reflected on the Days Scheduling tab as a lighter shade of blue or green.

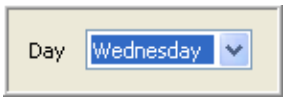
In the Cameras View you see each day of the week in the left column and the hours of the day across the top row labeled 12 a.m. through 12 p.m. At the top of the schedule you see the Camera drop down box, which allows you to select one of the enabled cameras connected to the system.



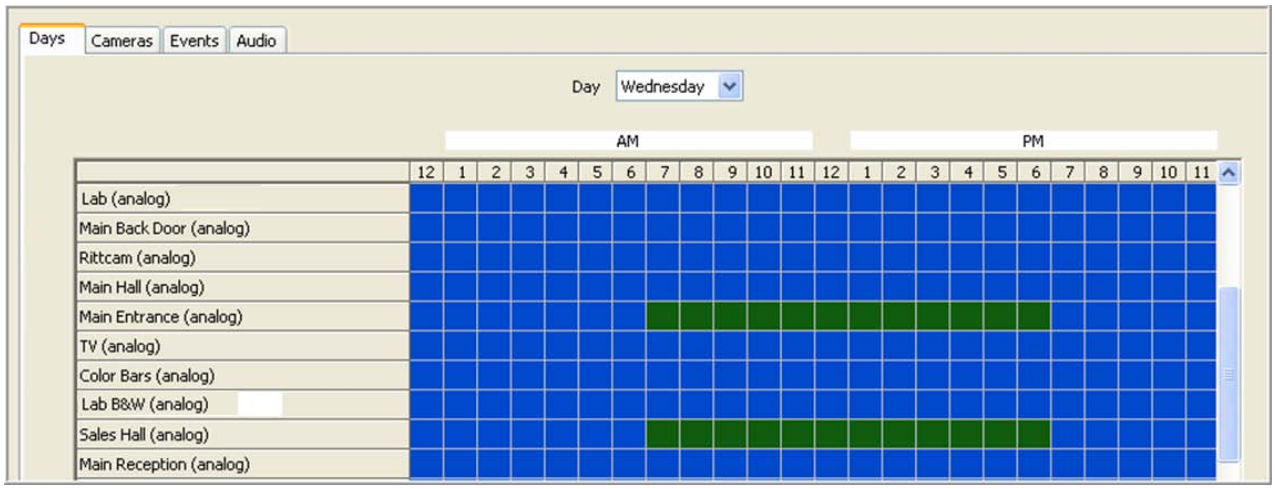

An easy way to quickly review the schedule is to click once on either the Camera or Day drop down box, which highlights the camera in blue. Use your up or down arrow key to scroll through each camera or day of the week.




or




Customize the schedule by clicking on either the Days or Camera tab. Next, select the Motion, Free or the Off button to select the recording mode. In this example the Free recording mode was chosen from the Days tab. Next, select the day you want to customize in the camera drop down box. Left click on the desired camera and hour grid holding the mouse button down while dragging it to another grid location and release the mouse button. The area will change to green representing free run continuous recording.


Once you have made the change you must click the Apply button to make the change.


The Apply to All Days allows you to make changes for one day and apply them to all days.

**NOTE**:

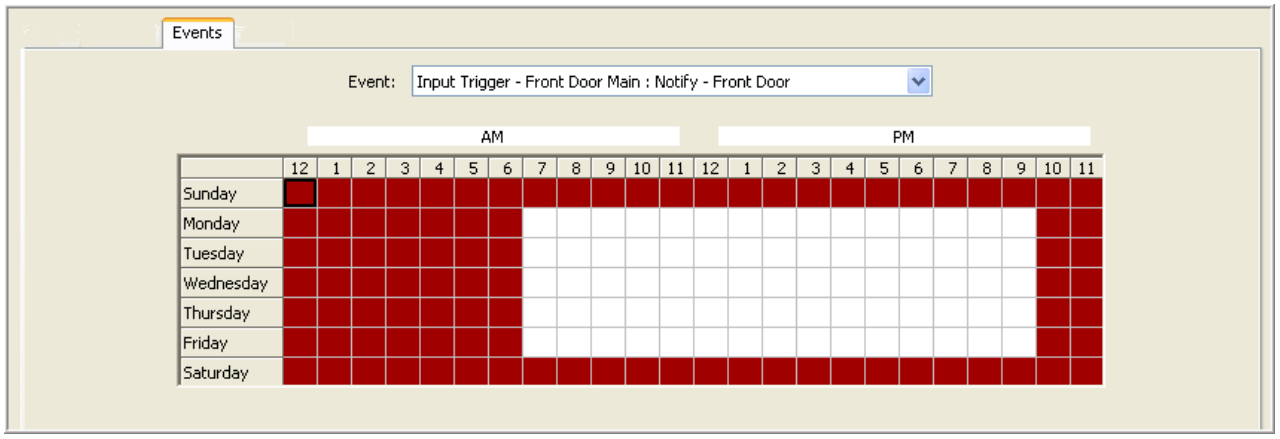
You can make the same customizations using the Cameras tab, depending on your preference. From the Cameras tab, you will see the days of the week on the left and the cameras will be listed in the drop down box at the top. Instead of an Apply to All Days button, you will see an Apply to All Cameras button. This will enable you to schedule one camera for the week and then apply that same schedule to all of the cameras. You do not need to customize your schedule in both views. Select the view that best meets your needs.

The Events schedule is where you enable or disable events created in Event Linking. By default, when an event is created in the Event Linking screen, it is automatically enabled in the Event Scheduling screen, meaning the action you have attached to the event will occur every time the event occurs. For example, if you have created a link with an input trigger of a door opening and an action target of a camera recording, the camera will record every time the door opens. However, if you only want the camera to record when the door opens on a specific day of the week or during set hours, you can use the Events schedule to customize when the actions will operate. To customize an event schedule:

Click on the Disable button.

Click on the Event drop down box and select an event.

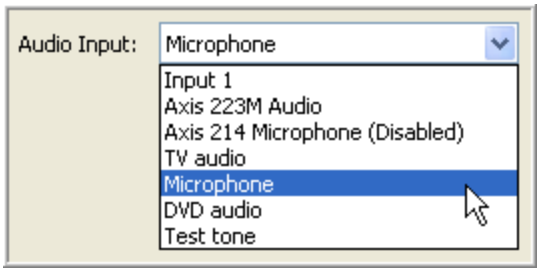
Left click on the desired day and hour grid holding the mouse button down while dragging it to another grid location and release the mouse button. The area will change to white indicating the date and time has been disabled. The Event will remain Enabled in the red area.

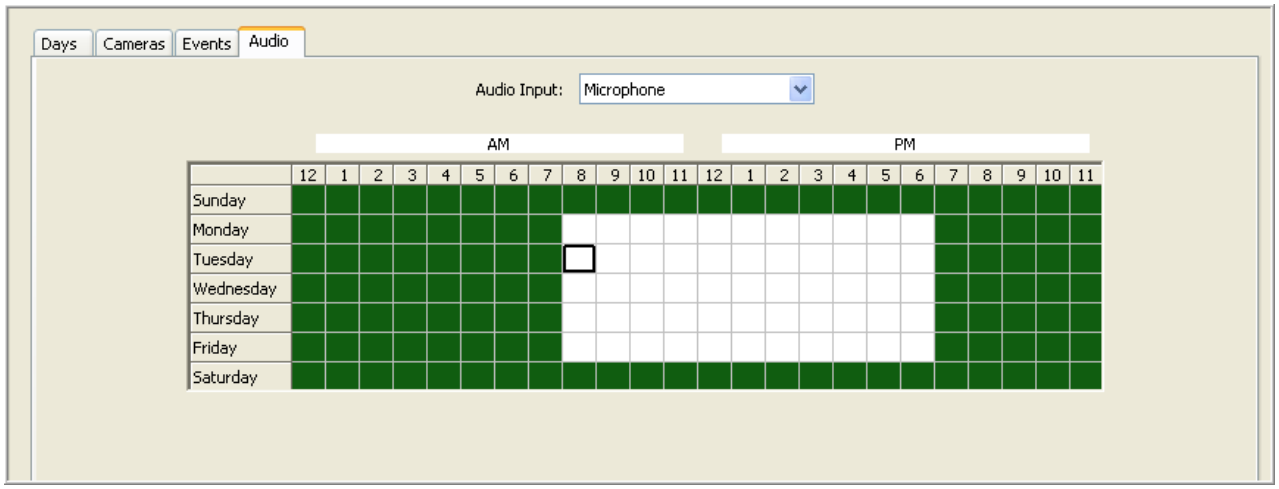

Once you have made the change you must click the Apply button to make the change. If you want the same schedule for every event you have enabled, you can click the Apply to All Events button.


The Audio tab enables you to schedule when the system records audio input. There are two modes for recording audio, Free Run, represented by the color green, or Off, represented by the color white.


The system defaults to the Off mode, meaning no audio is being recorded. To set the system up to record audio, select the Audio tab. Select the appropriate Audio Input using the dropdown menu. (Any audio terminals that have not been enabled on the Audio Input Setup screen will be listed as disabled.)

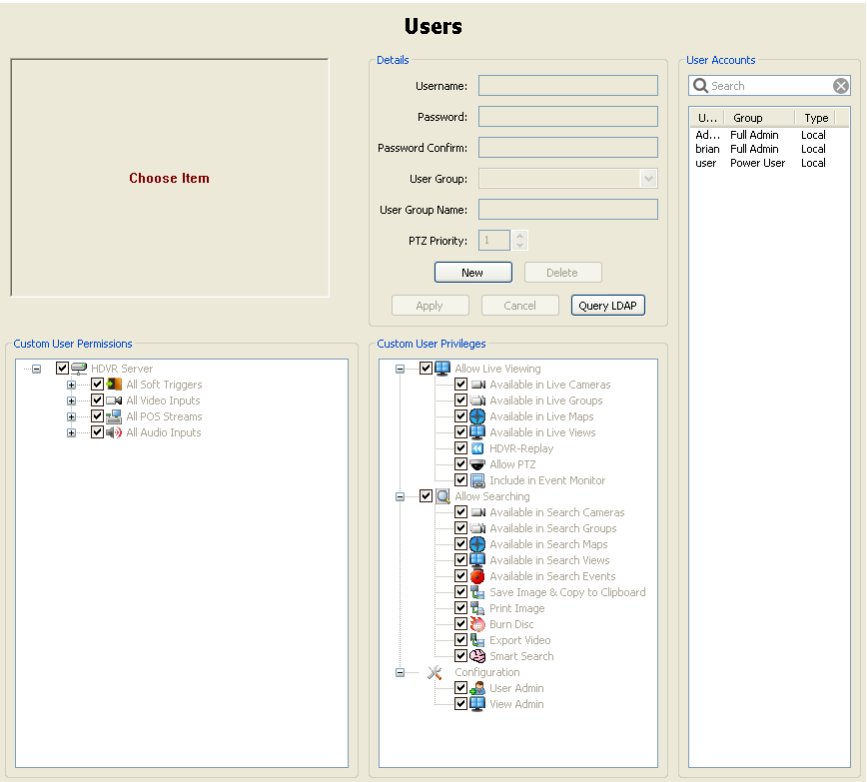



Click the Free Run radio button, then click in a square or drag your cursor across the multiple squares representing the day(s) and hour(s) you would like to record audio. To turn the audio recording off, select the Off radio button and drag it over any green squares you want to turn off.




Once you have completed your schedule, click the Apply button to set the Audio Input you selected. You can apply the schedule to all of the audio inputs by clicking Apply to All Audio In button. To cancel the schedule you created, click the Cancel button.

## Users Setup

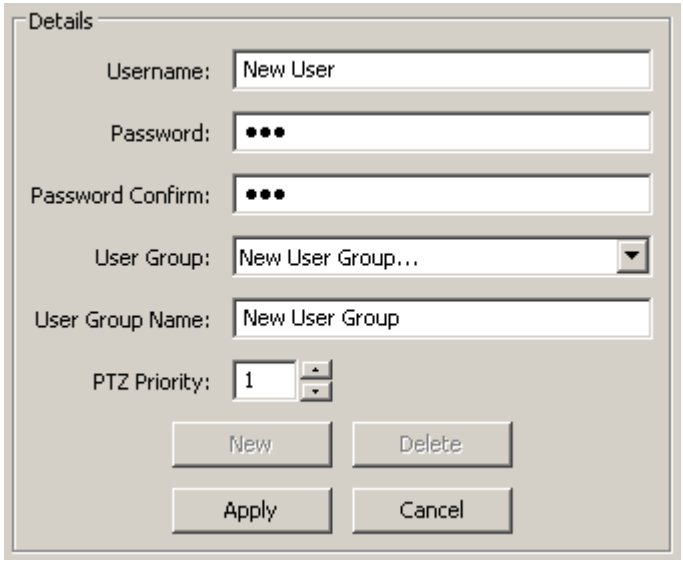



The **Users** screen allows you to add and delete users, configure a user's group access level, and assign permissions for viewing cameras. After a user has been added to the system, the user can log in and view live and recorded video according to the permissions assigned to them.

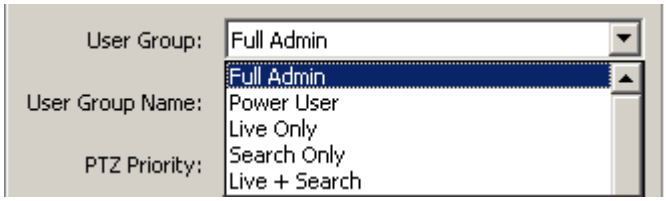
To add a new user, click the **New** button. Type the name of the user in the Username field, and enter a login password for the user in the Password and Password Confirm fields.

**NOTE:**

Alternatively, you can create an HDVR user account from an account that already exists in an Active Directory or OpenLDAP directory. For information about configuring your system to connect with a directory, see the Active Directory/OpenLDAP chapter of this manual. When you are finished configuring the connection, click Query LDAP on the Users page. Select the directory from the drop-down list, enter all or part of the username or group that you want to add, and click Search. Select the user or group that you want to add and click Select. Then continue configuring the user or group account as you would any other account. When you add a user from an Active Directory or OpenLDAP directory, the password used for that account in the HDVR is the same as the password assigned to that account in the directory.




The User Group drop-down list allows you to select a default permission level for the user or create a custom User Group.




Users can be assigned to one of the following default User Groups:

| | |
|---|---|
| Full Admin: | Has access to all features of the system |
| Power User: | Has access to all features except for adding or deleting users |
| Live Only: | Has access to view live video |
| Search Only: | Has access to search for recorded video |
| Live + Search: | Has access to view live video and search for recorded video |

The User Group drop-down list also contains all custom User Groups that have been previously created. When you select a User Group, the Custom User Permissions and Custom User Privileges sections display the permissions and privileges granted to that User Group.

To create a custom User Group, select New User Group…, type a name for the group, and modify the permissions and privileges displayed in the Custom User Permissions and Custom User Privileges sections. To modify a permission or privilege, select the appropriate check boxes. To expand or contract the tree, click the plus or minus buttons.

The Custom User Privileges section contains the following list of privileges that can be assigned to a user:

Allow Live Viewing

Available in Live Cameras

Available in Live Groups

Available in Live Views

HDVR Replay

Allow PTZ

Include in Event Monitor

Allow Searching

Available in Search Cameras

Available in Search Groups

Available in Search Views

Available in Search Events

Save Image & Copy to Clipboard

Print Image

Burn Disc

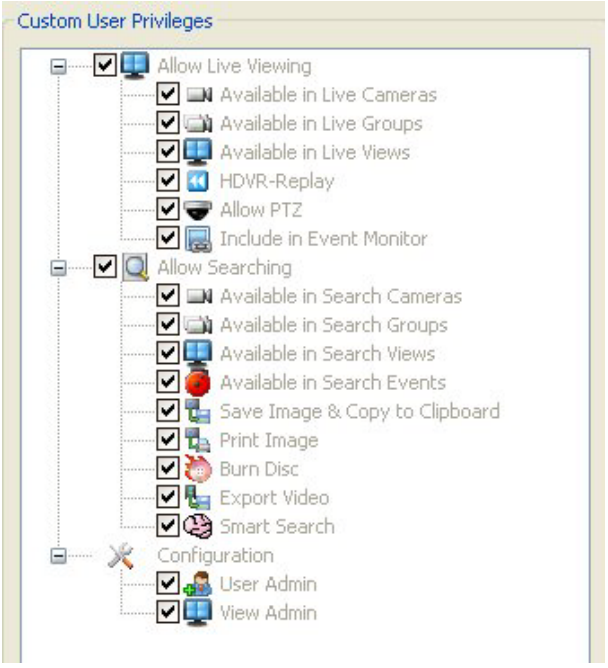
Export Video

Smart Search

Configuration

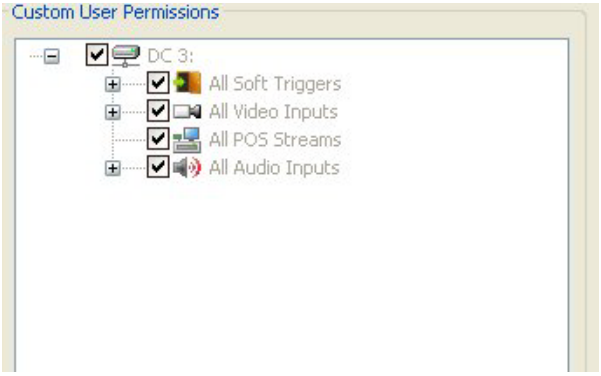
User Admin

View Admin




If you select the Allow Live Viewing or Allow Searching check box, all the privileges subordinate to that privilege are selected or deselected.

To enable the Custom User Permissions section, deselect View Admin in the Custom User Privileges section. Clicking on the camera name in the Custom User Permissions tree displays video from that camera. By default, a user is assigned permission to view all cameras. At the top of the tree you can uncheck the server to deselect all of the cameras. Click on any of the individual camera check boxes to select or deselect cameras. When the user logs in to the system, the user will not have access to the sources that are restricted for that account.




You can also assign a PTZ Priority level to the user. When multiple users attempt to control the PTZ functions of the same camera simultaneously, the user with the highest priority level is granted PTZ control. The highest priority level is 1, and the lowest is 10. If multiple users with the same priority level attempt to control PTZ functions on the same camera, control is granted to the first user who attempted to control the functions.

To activate the new user, click Apply.


To cancel the creation of the new user, click Cancel. To delete an existing user account, select it from the User Accounts list and click Delete.


## RAID Setup

Your HDVR RAID system has redundant hard drive to protect data upon hard drive failure. In the event that one hard drive fails, the information can be recreated once the hard drive is replaced.

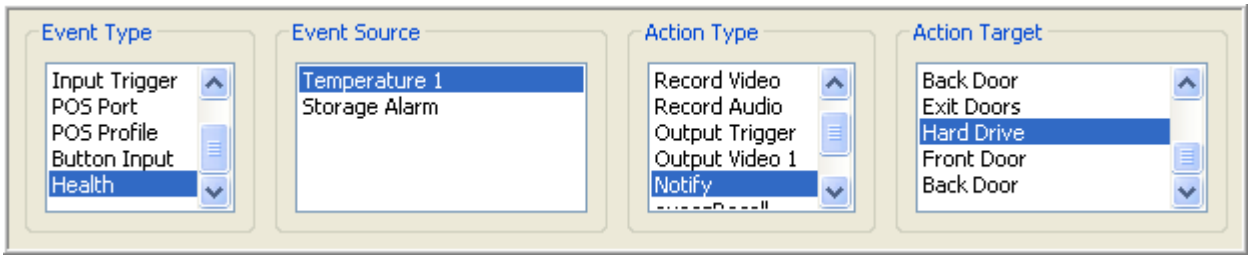
You will want to create a notification and link it to a health event on the RAID server to alert you when there is an issue with one of the hard drives.

Follow the instructions in the Notifications section, to set up the email notification.

Once you have configured the message profile, follow these steps to link the notification to the health event on the RAID server.

Click the Add button to add the event to the Event List.


Select Health as the Event Type.




Select Storage Alarm as the Event Source.

Select Notify as the Action Type.

Select the Action Target that matches your Message Profile Description.

Click the Apply button to apply these settings to the event.


Your RAID system will now send an email notification when it detects a hard drive issue. Should you receive this notification, go to www.americandynamics.net, or you may contact American Dynamics Technologies by phone.

## Remote Client Software Setup

### Recommended Remote Client PC Requirements

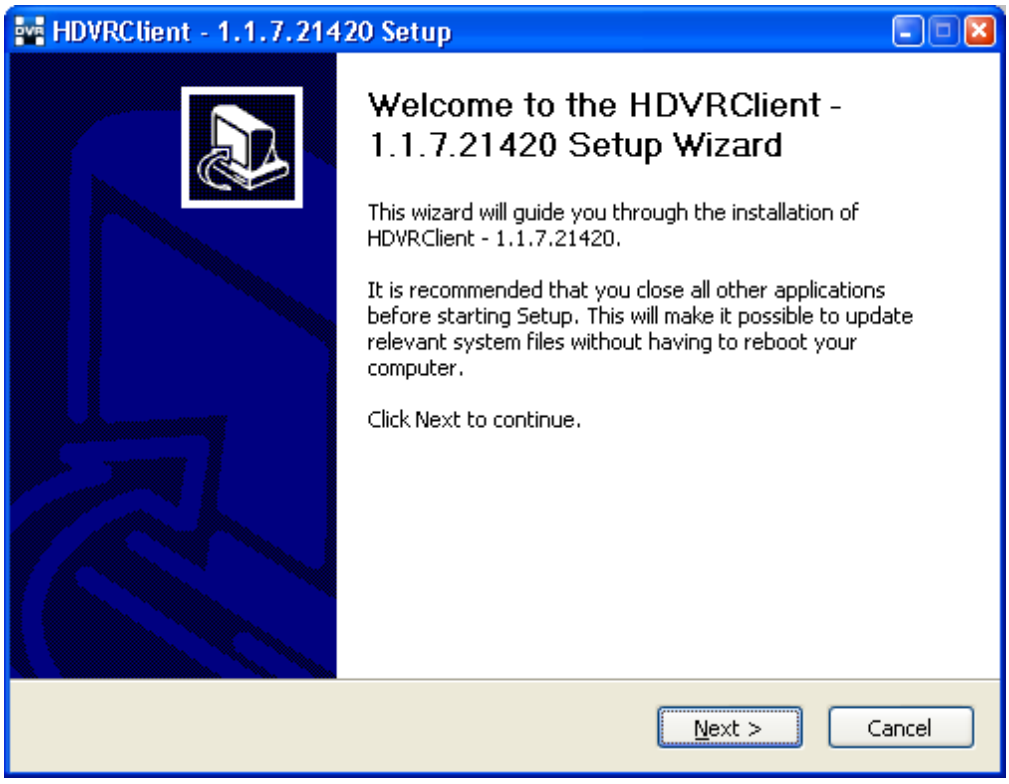
| Hardware | For basic use | With H.264 and Megapixel cameras |
|---|---|---|
| Processor | Intel® Celeron® D Processor 325 (2.53 GHz, 533 FSB) | Intel Core™2 Quad Processor Q9400 (6M Cache, 2.66 GHz, 1333 MHz FSB) |
| RAM | 256 MB | 2 GB |
| Video card | Minimum 64 MB video RAM, 1024×768 display resolution, 32-bit color, DirectX® 8.1 or later | NVS 295 or equivalent |
| Available disk space | 30 GB | 30 GB |
| Network card | Gigabit or greater | Gigabit or greater |
| Operating system | Windows XP | Windows XP or Windows Vista |

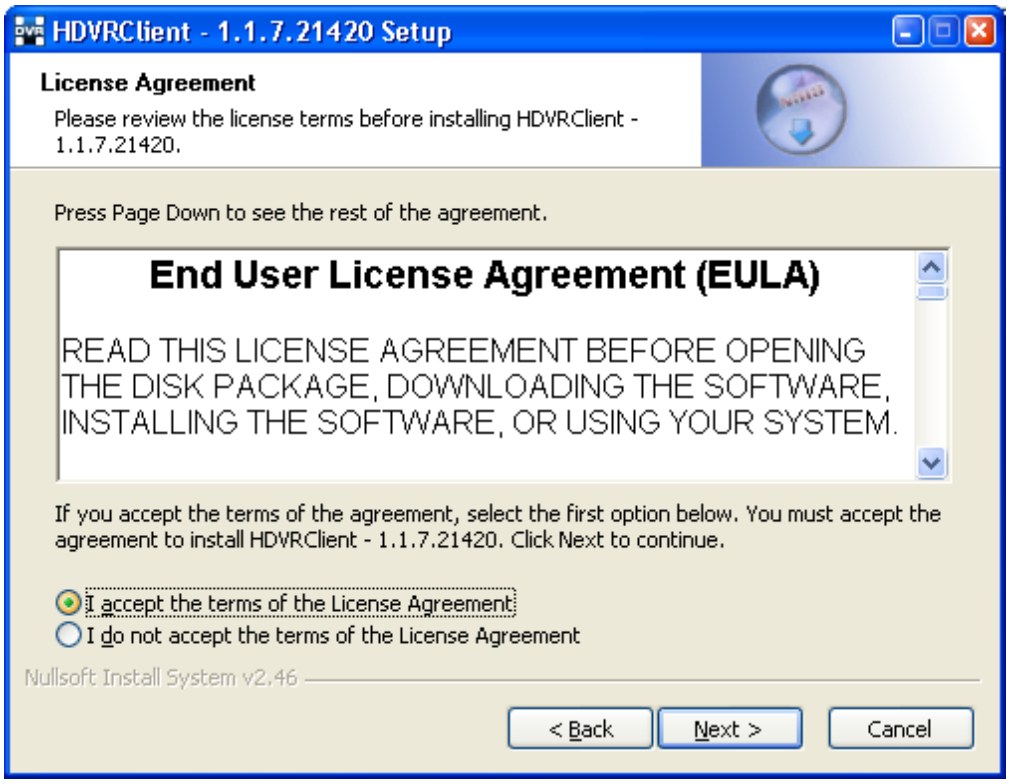
### Installing the Remote Client Application

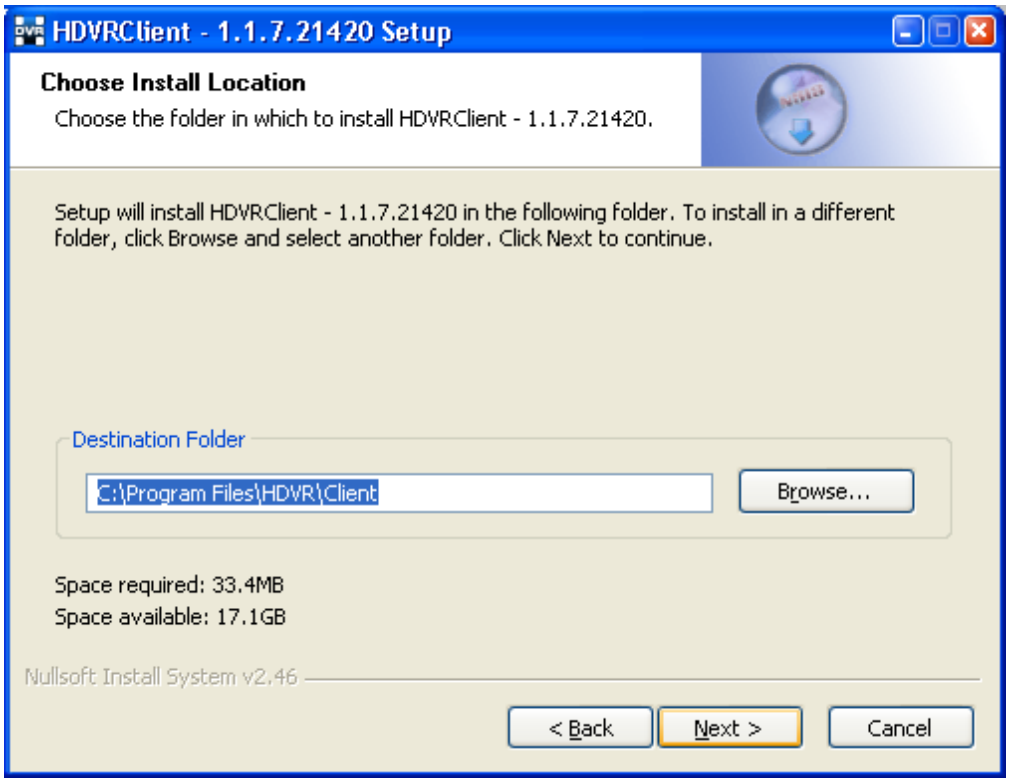
Start the Windows operating system.

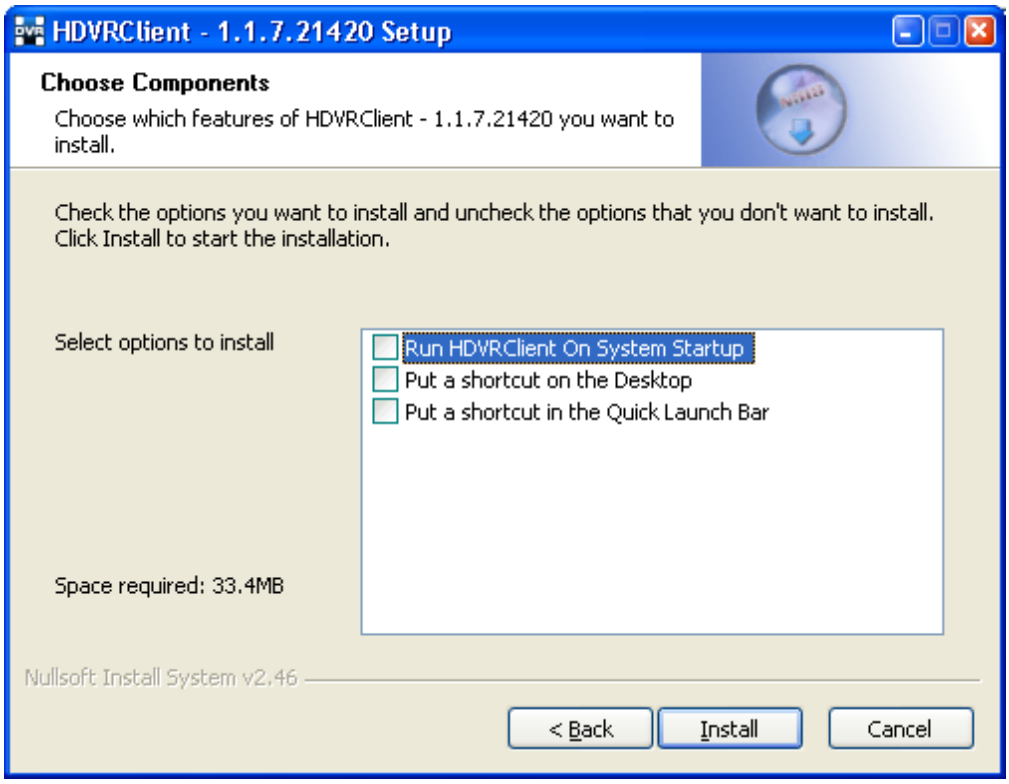
Close all programs, including any antivirus software.

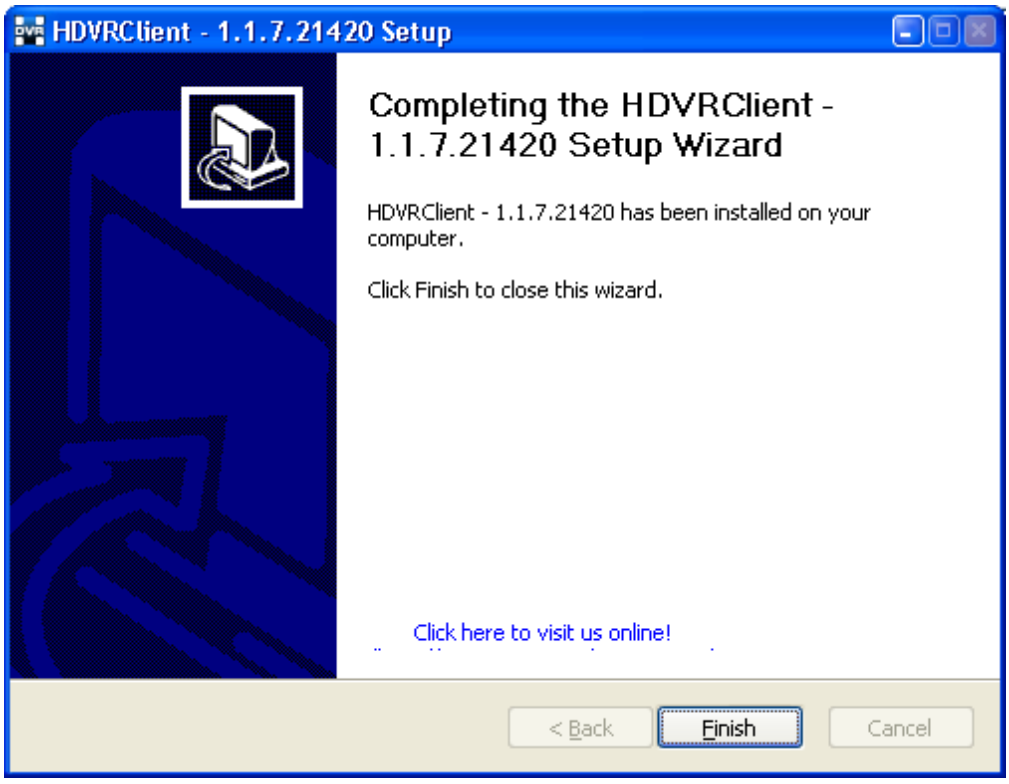
Insert the HDVR CD into your PC CD-ROM drive and the installation wizard will prompt you for installation instructions.


HDVRClient - 1.1.7.21420 Setup
Welcome to the HDVRClient - 1.1.7.21420 Setup Wizard
This wizard will guide you through the installation of HDVRClient - 1.1.7.21420.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel


HDVRClient - 1.1.7.21420 Setup
License Agreement
Please review the license terms before installing HDVRClient - 1.1.7.21420.
Press Page Down to see the rest of the agreement.
End User License Agreement (EULA)
READ THIS LICENSE AGREEMENT BEFORE OPENING THE DISK PACKAGE, DOWNLOADING THE SOFTWARE, INSTALLING THE SOFTWARE, OR USING YOUR SYSTEM.
If you accept the terms of the agreement, select the first option below. You must accept the agreement to install HDVRClient - 1.1.7.21420. Click Next to continue.
I accept the terms of the License Agreement
I do not accept the terms of the License Agreement
Nullsoft Install System v2.46
< Back
Next >
Cancel


HDVRClient - 1.1.7.21420 Setup
Choose Install Location
Choose the folder in which to install HDVRClient - 1.1.7.21420.
Setup will install HDVRClient - 1.1.7.21420 in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder
C:\Program Files\HDVR\Client
Browse...
Space required: 33.4MB
Space available: 17.1GB
Nullsoft Install System v2.46
< Back
Next >
Cancel


HDVRClient - 1.1.7.21420 Setup
Choose Components
Choose which features of HDVRClient - 1.1.7.21420 you want to install.
Check the options you want to install and uncheck the options that you don't want to install. Click Install to start the installation.
Select options to install
Run HDVRClient On System Startup
Put a shortcut on the Desktop
Put a shortcut in the Quick Launch Bar
Space required: 33.4MB
Nullsoft Install System v2.46
< Back
Install
Cancel


HDVRClient - 1.1.7.21420 Setup
Completing the HDVRClient - 1.1.7.21420 Setup Wizard
HDVRClient - 1.1.7.21420 has been installed on your computer.
Click Finish to close this wizard.
Click here to visit us online!
< Back
Finish
Cancel

## Starting the HDVR Remote Client Application

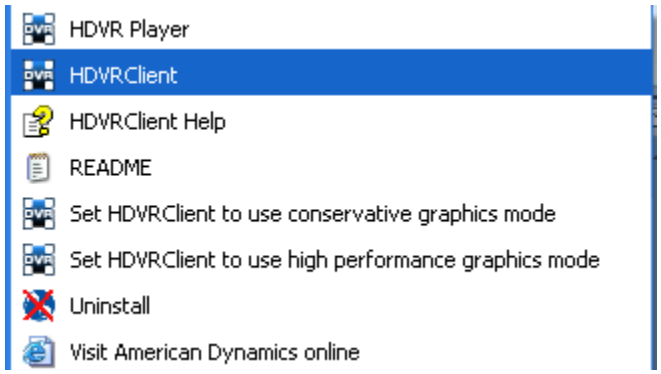
The HDVR Remote Client will automatically start if you choose “Run HDVR Client on System Startup” in the installation procedure above. If you didn’t select this startup option, follow the steps below:

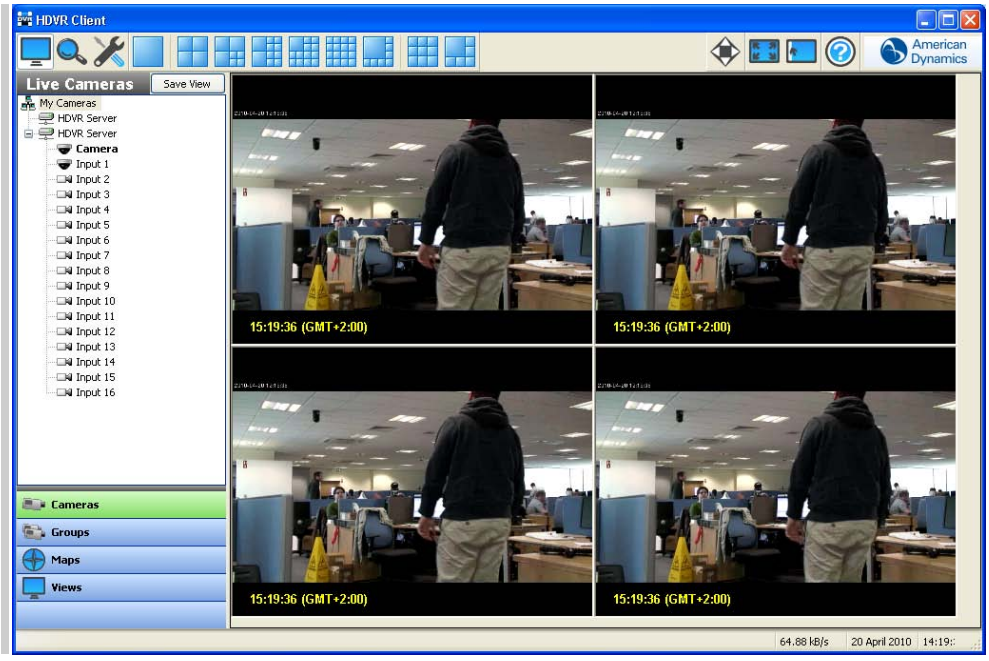
Click the Windows Start icon


Click the Windows All Program icon


Click the HDVR folder


Click on Start HDVR using conservative graphics mode



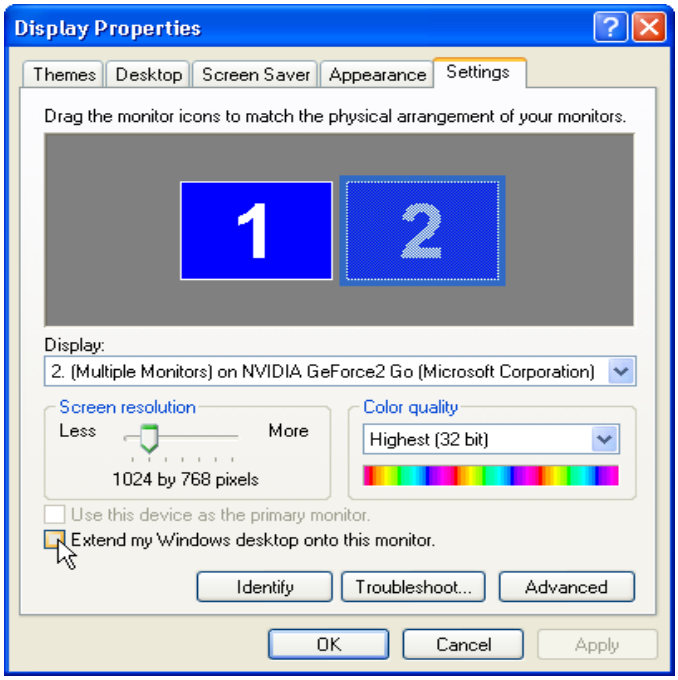




To display live video either drag a camera into the camera display area or click on one of the blue display modes.

# 6. Special Features

## Multi-Monitor Operation

If you are running HDVR client on a computer that is equipped with multiple monitors, you can greatly enhance your operating experience. First, configure your Windows Display Properties to use multiple monitors making sure the *Extend my Windows desktop onto this monitor* box is checked.




Once you have configured your Windows Display Properties to use multiple monitors, open HDVR client on your primary monitor and drag it to one of your attached monitors. You can then maximize the application to fill the monitor. Return to your primary monitor and open a second HDVR client application. Repeat this process until all of your attached monitors have an open instance of HDVR client.

**NOTE:**

The next time you open an instance of HDVR client, it will automatically open on the last monitor it was connected to.

You can now set each monitor to a different mode, searching recorded video or audio on one, and viewing live video on another, etc. Or, you can set the monitors to the same mode, expanding your view or workspace.

You can also drag and drop cameras between clients. For example, you may be using a multiple view layout panel on one client, and want to take a closer look at one of the cameras. Simply drag a camera to your second monitor, leaving your original layout panel intact.

**NOTE:**

You can drag multiple cameras by selecting a different layout button on your second monitor.

# 7. Active Directory/OpenLDAP

To configure HDVR permissions and privileges for accounts that exist on an Active Directory or OpenLDAP server, complete the procedure in the section that is applicable to the HDVR Client version that you are using.

When the HDVR server is appropriately configured and connected to your Active Directory server, the Users page and the Enterprise User Setup page each contain a Query LDAP button that allows you to search for users or user groups configured in Active Directory. You can manage their HDVR server permissions and privileges using the HDVR Client the same way you would for a local user. On the System Information page, the Username column lists any connected Active Directory users along with their Active Directory origin (whether each user was mapped as an individual or part of a user group) in parentheses.

## Windows Server & Client and Active Directory

1. On the Active Directory server, open the Windows Firewall control panel. In File and Printer Sharing, verify that all four rules are listed (usually TCP port 139, TCP port 445, UDP port 137, and UDP port 138). If you want to connect from a different subnet, click Change Scope and specify a custom list, as in the following example:

   192.168.1.0/255.255.255.0,192.168.100.0/255.255.255.0

2. Add a rule for the DNS server (c:\windows\system32\dns.exe), observing the same scope setting if appropriate.

3. Add a rule for the Local Security Authentication Server (c:\windows\system32\lsass.exe), observing the same scope setting if appropriate.

4. Add rules for TCP ports 389 (standard cleartext LDAP) and 636 (standard SSL LDAP), observing the same scope setting if appropriate.

5. On the Active Directory server, enter 127.0.0.1 as its own DNS server address.

6. On the HDVR server or client computer, designate the Active Directory server as the preferred DNS server. To do this, open Network Connections, right-click the connection and select Properties, select TCP/IP, click Properties, and enter the Active Directory server IP address as the Preferred DNS Server.

7. Make sure the Active Directory server's fully qualified host name can be resolved. To do this, open a command prompt, ping the fully qualified host name, and look for a reply.

8. Join the Windows system to the Active Directory domain. To do this, complete the following steps:

   A. Open System Properties and select the Computer Name tab.

B. Click Change and type a computer name that is unique to all computers recognized by the Active Directory server.
C. Select Domain, enter the Active Directory domain, and click OK. For example, a valid domain entry might be “HDVR.test.com” (not “HDVRTEST”).
D. When prompted, enter a username and password for a domain account with the right to add computers to the domain.
E. Restart the system when prompted.

9. When the login screen appears after the system restarts, notice that the drop-down list contains the Active Directory domain. Select the domain and log in.

10. Open a command prompt and use ipconfig to ensure that the hostname and primary DNS suffix are correct.

11. Note the fully qualified host name (*hostname.primary-dns-suffix*) and IP address of the HDVR server computer that you will connect to, the Active Directory domain, and the fully qualified host name and IP address of the Active Directory server. For example:

    hdvrserver.hdvr.test.com 192.168.1.16
    hdvr.test.com
    adserver2008.hdvr.test.com 192.168.1.70

12. If installing an HDVR server, add a service principal name on the Active Directory server for the HDVR server. To do this, open a command prompt (right-click to run as an Administrator if necessary) on the Active Directory server and execute the following command, substituting the name and fully qualified hostname of your HDVR Server:

    setspn –A HDVR/hdvrserver.hdvr.test.com hdvrserver

    **NOTE:**

    All text after the forward slash should be lower case, and “HDVR” must be upper case.

13. On the HDVR server or client computer, download and install the HDVR software from www.americandynamics.net. You must be logged in with Local Administrator privileges to do this. The software automatically starts after the installation is complete.

14. If installing an HDVR server, license the HDVR server as an Enterprise system. To do this, complete the following steps:

    A. Install the HDVR Client software on the server if it is not already installed.
    B. Run the HDVR Client and connect to the local server (127.0.0.1) using the default “admin” account.
    C. Open the System Setup page for the HDVR server you want to license and select the System tab.
    D. Enter the valid Enterprise license as generated by American Dynamics and click Apply in the License section.

15. If installing an HDVR server, configure the directory settings. To do this, complete the following steps:

    A. In the HDVR Client software, select the ActiveDirectory/LDAP tab on the System Setup page.
    B. Select the Enable Directory Service checkbox
    C. Select Active Directory in the LDAP Schema drop-down list.
    D. Enter the Active Directory server's IP address in the Hostname/IP Address field.
    E. Select the SSL checkbox if you want LDAP operations to use secure SSL. If so, see the *Configuring SSL on an HDVR Server* document.
    F. Verify the Active Directory server's connection port. Unless you have reconfigured your Active Directory server, the port should be 636 when using SSL, or 389 without SSL.
    G. Enter the LDAP Base DN, the container of all directory user accounts or groups that you want to map in the HDVR software. For example, if the domain were *hdvr.test.com*, the LDAP Base DN might be:

        CN=Users, DC=hdvr, DC=test, DC=com

        **NOTE:**

        Check with the system administrator for the correct LDAP Base DN for your situation.

    H. Enter the LDAP Binding DN, the fully qualified distinguished name (DN) of a directory user who has access to view the records of the directory user accounts. It is recommended that you enter the Administrator user account as the LDAP Binding DN. For example, if the domain were *hdvr.test.com*, the LDAP Binding DN of the Administrator account would be:

        CN=Administrator, CN=Users, DC=hdvr, DC=test, DC=com

    I. Enter the password for the account entered in the previous step.
    J. To prevent any non-directory users that have previously been created from connecting to the HDVR server (optional), deselect Enable Local User Accounts.
    K. Click Apply to connect. An indicator on the ActiveDirectory/LDAP tab displays the success or failure of the connection attempt.

## Windows Server & Client and OpenLDAP/Kerberos

1. On the OpenLDAP/Kerberos server, ensure that your installed schema includes the following object types:

   - **inetOrgPerson** (RFC 2798)
   - **organization** (RFC 2256)
   - **krbPrincipalAux** (provided by the Ubuntu krb5-kdc-ldap package)

2. On the OpenLDAP/Kerberos server, ensure that your user accounts exist as inetOrgPerson objects, and that each account is also marked with the krbPrincipalAux auxiliary object type. Ensure that each user account has the following attribute values:

   - **cn** -- the user account's display name (for example, "John Smith").
   - **krbPrincipalName** -- the user account's Kerberos principal name (for example, "john.smith@REALM").
   - **entryUUID** -- the unique identifier for the user account, managed by the slapd daemon

3. On the OpenLDAP/Kerberos server, ensure that your user groups exist as organization objects and that each group has the following attribute values:

   - **o** -- the group's display name (for example, "Marketing")
   - **entryUUID** -- the unique identifier for the group, managed by the slapd daemon

4. On the OpenLDAP/Kerberos server, ensure that your user accounts are associated with groups via an "o" attribute for each group. Each inetOrgPerson object can have as many associated "o" attribute values as desired. The attribute value should resemble "o=Engineers", for example, instead of "o=Engineers,dc=hdvr,dc=test,dc=com."

5. Make sure the OpenLDAP/Kerberos server's fully qualified host name can be resolved. To do this, open a command prompt, ping the fully qualified host name, and look for a reply.

6. Make sure you have access to the ksetup command by completing the following steps:

   A. For Windows XP, install the Windows XP Service Pack 2 Support Tools, available from Microsoft; for Windows Vista, find and install the equivalent package. When installing Support Tools, select a "complete" install. After installation, log out of Windows and then log in again.

      **NOTE:**

      Other recent Windows versions, such as Windows 7 and Windows Server 2003, already include the ksetup command.

   B. Open a command prompt and verify that you can execute the ksetup command.
   C. Execute ksetup commands to add your Windows machine to the OpenLDAP/Kerberos domain, as shown in the following examples (all are case-sensitive):

ksetup /addkdc HDVR.TEST.COM kdc.hdvr.test.com
ksetup /addkpasswd HDVR.TEST.COM kdc.hdvr.test.com
ksetup /setrealm HDVR.TEST.COM
ksetup /setcomputerpassword YOURCOMPUTERPASSWORD

**NOTE:**

Be sure to note your chosen computer password for steps later in this process.

7. Restart the server. When the login screen appears after the system restarts, notice that the drop-down list contains the OpenLDAP/Kerberos domain. Select the domain and log in.

8. Open a command prompt and use ipconfig to ensure that the hostname and primary DNS suffix are correct.

9. Note the fully qualified host name (hostname.primary-dns-suffix) and IP address of the HDVR server computer that you will connect to, the OpenLDAP/Kerberos domain, and the fully qualified host name and IP address of the OpenLDAP/Kerberos server. For example:

   hdvrserver.hdvr.test.com 192.168.1.16
   hdvr.test.com
   kdc.hdvr.test.com 192.168.1.70

10. If installing an HDVR server, add a service principal name on the OpenLDAP/Kerberos server for the HDVR server. To do this, open a terminal window on the OpenLDAP/Kerberos server and execute the following command (using your information where appropriate):

    sudo kadmin.local

    ank –e rc4-hmac:normal HDVR/hdvrserver.hdvr.test.com

    quit

    **NOTE:**

    All text after the forward slash should be lower case, and “HDVR” must be upper case.

11. On the HDVR server or client computer, download and install the HDVR software from www.americandynamics.net . You must be logged in with Local Administrator privileges to do this. The software automatically starts after the installation is complete.

12. If installing an HDVR server, license the HDVR server as an Enterprise system. To do this, complete the following steps:

    A. Install the HDVR Client software on the server if it is not already installed.
    B. Run the HDVR Client and connect to the local server (127.0.0.1) using the default “admin” account.
    C. Open the System Setup page for the HDVR server you want to license and select the System tab.
    D. Enter the valid Enterprise license as generated by American Dynamics and click Apply in the License section.

13. If installing an HDVR server, configure the directory settings. To do this, complete the following steps:

    A. In the HDVR Client software, select the ActiveDirectory/LDAP tab on the System Setup page.
    B. Select the Enable Directory Service checkbox
    C. Select OpenLDAP/Kerberos in the LDAP Schema drop-down list.
    D. Enter the OpenLDAP/Kerberos server's IP address in the Hostname/IP Address field.
    E. Select the SSL checkbox if you want LDAP operations to use secure SSL. If so, see the *Configuring SSL on an HDVR Server* document.
    F. Verify the OpenLDAP/Kerberos server's connection port. Unless you have reconfigured your OpenLDAP/Kerberos server, the port should be 636 when using SSL, or 389 without SSL.
    G. Enter the LDAP Base DN, the container of all directory user accounts or groups that you want to map in the HDVR software. For example, if the domain were *hdvr.test.com*, the LDAP Base DN might be:

        CN=Users, DC=hdvr, DC=test, DC=com

        **NOTE:**

        Check with the system administrator for the correct LDAP Base DN for your situation.

    H. Enter the LDAP Binding DN, the fully qualified distinguished name (DN) of a directory user who has access to view the records of the directory user accounts. It is recommended that you enter the Administrator user account as the LDAP Binding DN. For example, if the domain were hdvr.test.com, the LDAP Binding DN of the Administrator account would be:

        CN=Administrator, CN=Users, DC=hdvr, DC=test, DC=com

    I. Enter the password for the account entered in the previous step.
    J. To prevent any non-directory users that have previously been created from connecting to the HDVR server (optional), deselect Enable Local User Accounts.
    K. Click Apply to connect. An indicator on the ActiveDirectory/LDAP tab displays the success or failure of the connection attempt.

## Connecting to HDVR Servers

You can connect to your Enterprise HDVR servers from the **Windows HDVR Client** software in any of the following ways:

- You can use a local HDVR username and password.
- If you are already logged into Windows as a domain user, you can use your system login without entering a username or password. In this case, leave the username and password fields empty on the Add Systems page, select Use Single Sign-On, and click Apply.
- You can use any domain user account. Enter the account name in user@REALM format as the username (for example, “test.user@HDVR.TEST.COM"), and use the password associated with that account. The realm must be in upper case, as shown in the example. Do NOT select Use Single Sign-On with this login method.

**NOTE:**

If you attempt to connect to an HDVR server using your system login without first logging in to Windows through the domain, the connection will fail.

# 8. Trouble Shooting

The information outlined in this section may be helpful if you experience a problem with your HDVR System. If you are unable to find the information you need or cannot resolve the issue, contact HDVR.

## Display Issues

In rare instances, a video card issue may cause a distorted display as shown in the picture below.

Should this occur, follow these steps below to restore the video display.

Close the HDVR Client

Determine the video card manufacturer. This can be accomplished by right clicking on the Windows desktop, selecting the Properties menu item. In the dialog that pops up, select the Settings tab. In the middle of the page is a Display dropdown. It will identify the graphics chip manufacturer and model number.

Go to the manufacturer's website and download the latest drivers for the graphics chip, then install them.

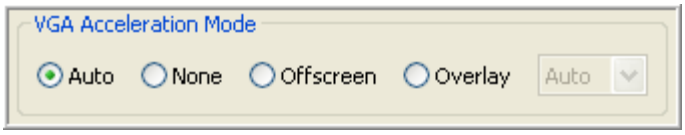
Alternatively, from the Update Drivers page that you access by right-clicking the Display Adapter item in Windows Device Manager, you can access the Microsoft-maintained driver database, but it quite often lags behind the drivers available on the manufacturer's site. (Start Menu ► Settings ► Control Panel ► System ► Hardware Tab ► Device Manager Button)

Install the new drivers.

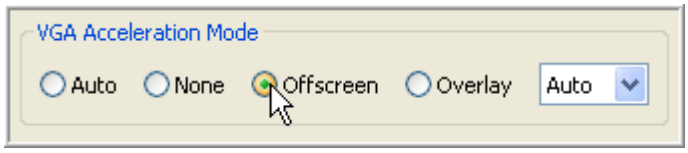
Restart the HDVR Client. If you are still experiencing a display issue, continue to step 6.

Go to the Setup mode, Client Setup tree item.

It is likely that the VGA acceleration mode is Auto.



Select the Offscreen radio button instead, then close and restart the HDVR Client.




If the display issue persists, repeat step 7), selecting the None radio button.