INOX®

IVS series™
Intelligent Video Surveillance
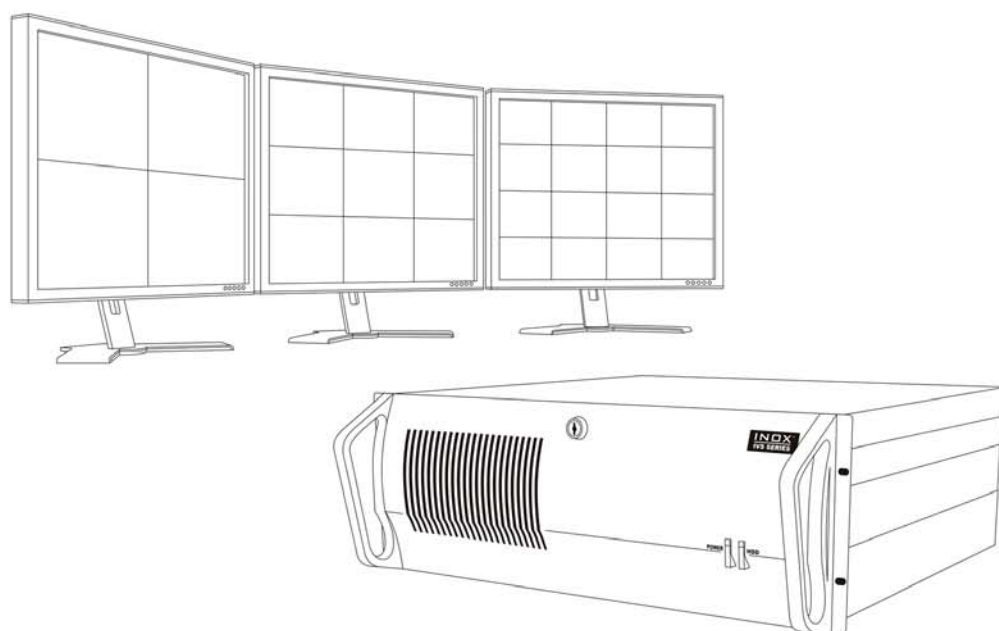
DVR SERVER SOFTWARE

USER MANUAL
Version 5.0

System Guide

Precaution in Use

- Please read all safety and operating instructions carefully before using the equipment.
- Power cords should be arranged safely. Do not touch with wet hands.
- Do not use loose plugs or damaged power cables.
- Do not use Benzene, Thinner or Alcohol for cleaning. It could damage the product.
- Do not touch exposed terminals.
- To switch off the system, turn the power off normally in the program and switch off the peripheral equipment.
- Do not insert conductive materials into the ventilation holes.
- Do not dismantle or modify the equipment.
- Do not place heavy objects on the equipment.
- Avoid mechanical shock while moving the equipment.
- When smoke is seen coming from the equipment, immediately unplug it from the power source to prevent fire or electric shock.
- Call the manufacturer or supplier for repairs.

Product Guide

These DVRs are Linux-based high-performance digital video recorders (DVRs). They are next-generation digital video security equipment replacing traditional analog time tape recorders.

These DVRs are cost-effective solutions because the cost of replacing analog tapes is completely eliminated. Overall maintenance is minimized by storing data with very high compression rates using hardware MPEG-4 technology.

Live View

Live View is the default mode when the DVR is first started. Under Live View, you can view videos from the cameras connected to the DVR. Search and Playback, PTZ and E-map functions of the DVR Server are accessible via Live View.

1. Power – Shuts down the DVR Server.
2. Channel Select – Displays the video of the selected camera in 1-camera layout.
3. Display Screen – Displays the videos from the cameras.
4. Date and Time – Indicates date and time of the DVR server.
5. Setup – Opens Server Setup window.
6. Search – Opens the Search and Playback window.
7. PTZ Function – Displays the PTZ control section.
8. E-map – Opens E-map window.
9. Screen Layout – Changes the screen layout of the live view.
10. Next Camera – Displays video of next camera or cameras. (For instance, if screen layout is at 4-camera layout, the next 4 cameras will be displayed upon pressing this button.)
11. Cyclic Screen – Displays videos in sequence. The cycle will follow the layout currently displayed and will skip those layouts that only show disabled cameras.
12. Full screen – Displays current layout of cameras in full screen.

13. Lock / Unlock – Locks / Unlocks the DVR application. When locked, all buttons are disabled except for the Lock / Unlock button. By default, the DVR server auto-locks when it has been idle for 60 minutes.

14. Mute / Unmute – Mutes / Unmutes the alarm sound.

15. Help – Opens the HELP manual window.
16. Remote Connections – Indicates occurrence of a Remote Client connection. If there is a connection, the Remote Connection icon will blink. Left-clicking on the icon will display the IP address of the connected Remote Client.
17. Deinterlace – Toggles the Deinterlace option on/off.
18. Disk Usage – Shows hard disk space consumption.
19. Image Control – Controls to adjust Brightness, Contrast, Hue and Saturation.
20. Force Record – Starts forced or manual recording. The video quality and resolution will be based on current settings and the frame rate will be based on the **With Event** fps.
21. Snapshot Picture – Takes a snapshot of the image displayed on-screen.
22. Video Event Log – Displays recent event logs.
23. History – Opens a window to display a full listing of the event logs.
24. Volume Control – Shows current output volume and adjusts output volume.
25. Sensor/Relay/Audio – Selects Sensor/Relay/Audio device.

Server Login

Users must login first to access all the functions of the DVR. All buttons are disabled by default.

To Login
1. Click on the **Unlock** button on the upper right corner under Live View.

2. Enter username and password.
3. Click on the **Login** button or press ENTER to login. Click on the **Cancel** button to exit.

NOTE: The factory default for the username is "Admin" and the password is "password". This can be changed in the Users Setup.

Power Off

To shutdown or reboot the DVR, press the **Power** button.

NOTE: Only authorized users can shutdown the DVR.

On Screen Display (OSD)

1. **Camera Label** – Indicates camera label. To modify, please go to Camera Settings Setup.
2. **Recording Status** and **Recording Type**
   [REC] appears when there is an ongoing recording. The [REC] label is color-coded based on the type of recording.

   Types of Recording:
   Continuous Recording – Magenta **[REC]**
   Sensor-triggered Recording – Yellow **[REC]**
   Motion-triggered Recording – Cyan **[REC]**
   Object Detection-triggered Recording – Orange **[REC]**
   Forced Recording – Red **[REC]**

3. **Motion Indicator** – A red border around the camera display indicates a detected motion.

View Screen Layout

View Screens in Split Mode
Switch from 1, 3, 4, 7, 9, 10, 13, or 16 channel views. Simply click on your selected layout to change layout.

Next Camera and Cyclic Screen
Click on the **Next Camera** button to switch to the next camera or cameras.

Click on the **Cyclic Screen** button to display camera or cameras in sequence.

Full Screen Mode
Click the Full Screen button to display channel view in full screen. To exit full screen mode, right-click on the display screen.

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Digital Zoom

Digital zoom allows you to zoom up to 10x.

Zoom In
On one screen layout or full screen mode, left-click to zoom in.

Zoom Out
While zoomed-in, right-click to zoom out.

Video Event Log

The Video Event Log displays recent events that the DVR system has logged. It displays the type of event, timestamp, camera, camera label, and date for each event that occurred. To instantly play back the video, simply choose from the log and click on your selection. A smaller playback window will appear on your screen.

1. Play/Pause – Plays / Pauses playback of the video.
2. Top – Moves playback of the selected video to the first frame.
3. Skip Back – Moves playback of the selected video 10 seconds back.
4. Previous Frame – Moves playback to the previous frame and then pauses the playback.
5. Next Frame – Moves playback to the next frame and then pauses the playback.
6. Skip Forward – Moves playback of the selected video 10 seconds forward.
7. Playback Speed controls – Increases/Decreases playback speed.
8. Playback Speed indicator – Indicates playback speed.

Image Control

Via Image Control, you can change brightness, contrast, hue, and saturation settings of the cameras currently displayed.

1. Simply click on **+** or **–** to increase or decrease the selected image control option.
2. To apply the changes to all cameras, click on the **Apply to All** button.
3. Click the **Restore Defaults** button to return settings to the factory default settings.

Date and Time

Date and Time displays the current date and time of the system.

1. To change date and time, turn off the DVR first to reboot.
2. Hold **LEFT-SHIFT** key while the application is loading so that it stops the auto startup of the DVR.
3. Click on the **Date and Time** icon (on the desktop) to edit date and time of the system.

Remote Connection

The Remote Connection indicator blinks when a Remote Client is connected to the DVR Server. Left-clicking on the icon will display the IP(s) of the connected Remote Client(s).

Screen Capture

1. To capture an image of the display screen, click on the **Screen Capture** button.

2. A separate window will open with a printable form containing the captured image, time stamp and camera information.
3. To print the page, click on **Print**. The page should be printed in landscape mode.
4. To save the captured image, click on **Save**. Then, save the file under the selected folder.
5. To unmount a mounted USB, click on the **Unmount USB** link at the bottom right corner.
6. Click on the **Close** button to exit the Screen Capture window.

Sensors

To know which sensors are active, click on the Sensor button. Active sensors are represented as highlighted buttons. If the beep alarm notification is turned on, the system beep will also be heard.

Relays

To know which relays are active, click on the Relay button. Active relays are represented as highlighted buttons. Relays can be activated/deactivated by clicking on the respective relay button.

Audio

To know which audio is active, click on the Audio button. The active audio channel is highlighted. Only one audio channel can be on at any particular time. Speakers must be attached to the PC audio out to be able to hear live audio. The audio channel can be activated/deactivated by clicking on the respective audio button.

Forced Recording

To manually start recording, click on the **Record** button. Click on **Record** button again to stop recording. Forced recording can also be scheduled through setup.

NOTE: Pressing this button will stop any ongoing recording (Continuous / Sensor-triggered / Motion-triggered / Object Detection) and Forced recording will start.

Disk Usage

Disk Usage displays the hard disk usage.
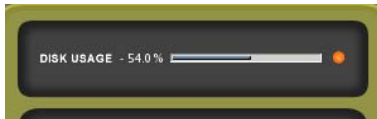
Deinterlace

Deinterlace is the process of creating a single frame from the two interlaced fields of a video frame. While interlaced, the video can look much better on a TV screen. On the contrary, on a VGA monitor, it can look rather bad. Interlace is the method of smoothening the video picture by having double the amount of frames than the video's FPS value suggests.

When toggling the Deinterlace, there are several options to choose from.

Adaptive Blend
Blends the pixels of the video frames with motion to remove tearing.

Continuous Blend
Blends the pixels all the time, with or without motion. The "blurry" effect on live view will be constant.

Adaptive Bob
Displays odd and even lines in separate frames consecutively to remove the tearing effect on video frames with motion. May cause a "jumping" effect when Bob is not implemented when there is no motion.

Continuous Bob
Displays odd and even lines in separate frames consecutively all the time and will not cause the "jumping" effect since the Bob algorithm is used on all the video frames.

None
Deinterlace is turned off

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PTZ Function

To use PTZ Function, ensure that your camera is a PTZ (Pan/Tilt/Zoom) camera.

1. Pan/Tilt buttons – Pans/Tilts the PTZ camera
2. PTZ Schedule – Indicates that there is/are scheduled PTZ command(s)
3. Auto Pan – Executes a pre-programmed sequence of PTZ commands
4. Camera Selector – Selects the PTZ camera channel to be control
5. Zoom Control – Zooms In / Zooms Out the PTZ camera lens
6. Focus Control – Adjusts focus of the camera
7. Iris Control – Adjusts amount of light entering the camera lens
8. Pan/Tilt Speed – Adjusts pan/tilt speed
9. Zoom Speed – Adjusts zoom speed of the lens
10. Focus Speed – Adjusts focus speed of the lens
11. Pattern Tracking – Opens Pattern Tracking table
12. Preset – Opens Preset table
13. Group Run – Opens Group Run table

Presets

Click on Preset to open Preset table

1. Select the preset you wish to run or delete.
2. Click on **Setup** to add/modify Preset settings.
3. Click on **Go** to run the selected preset
4. Click **Clear** to delete the selected preset.
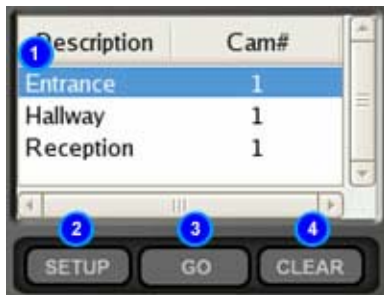
Add/Delete Preset(s) to a Camera

1. Define your preset by using the PTZ control buttons. Once you have defined the preset, click on **Setup** and then enter a Label for the preset and then click on **OK**. The new preset will be added to the list of presets.
2. To delete a preset, simply select the preset from the list and click on the **Clear** button.
3. Repeat Step 1 to add a new preset for the selected camera.
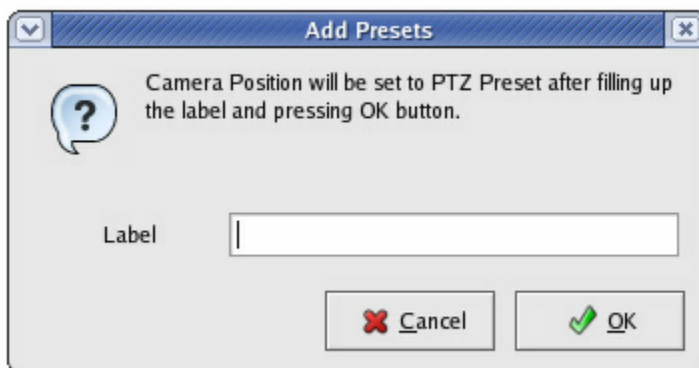
Pattern Tracking

Click on Pattern Tracking to open Pattern Tracking table

1. Select the pattern you wish to run or delete.
2. Click on **Setup** to add/modify Pattern Tracking settings.
3. Click on **Go** to run the selected pattern.
4. Click on **Clear** to delete the selected pattern.

Add Pattern Tracking to a Camera

1. Enter your Pattern Label.
2. Enter the Dwell Time. The Dwell Time is the length of time before the camera moves to the next preset.
3. Enter a description (for the pattern).
4. Define your pattern by selecting presets from the Presets list. Simply click on the **Right Arrow** to add your selected preset. Once you have defined the pattern, click on **Add**.
   The new pattern will be added to the list of patterns.
5. Repeat steps 1 to 4 to add a new pattern for the selected camera.
6. Click on the **Close** button to exit window.
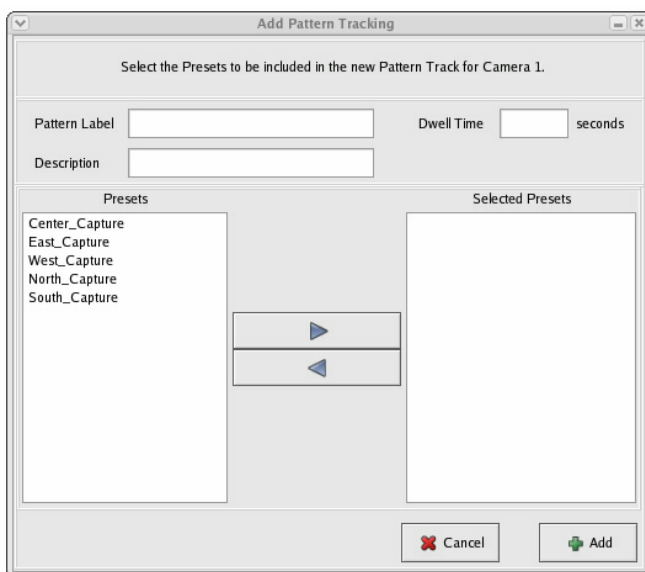
Group Run

Click on Group Run to open Group Run table

1. Select the Group Run you wish to run or delete.
2. Click on **Setup** to add/modify Group Run settings.
3. Click on **Go** to run the selected Group Run.
4. Click **Clear** to delete the selected Group Run.

Add/Delete Group Run

1. Enter a label.
2. Enter a description for the group run.
3. Define your group run by selecting the cameras from the list. Choose the preset (of the camera) that you wish to run by selecting from the drop list menu. Click on **Add** to save your settings. The new group run will then be added to the list. Note: You must select at least 2 cameras in order to create a group run.
4. Repeat Steps 1 to 4 to add a new group run.
5. Click on **Close** to exit the window.
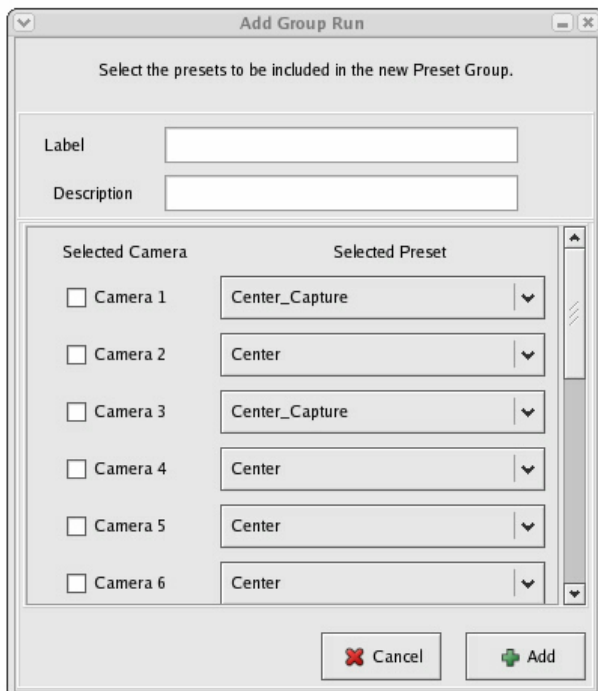
Search and Playback

1. Video Playback – Displays recorded video.
2. Channel Select – Selects the camera(s).
3. Event Filter – Displays drop down list menu for type of event.
4. Calendar – Displays the calendar.
5. Playback Speed – Speed up or slow down the playback of the video.
6. Search Layouts – Four layouts are available; 1, 4, 9, 16. Selecting a layout will automatically select the same number of cameras from the list. For example, clicking on the 4-layout will automatically select cameras 1-4.
7. Next Page – Goes to the next set of cameras given the layout.
8. Full Screen – Displays video(s) in full screen.
9. Panorama – Displays the video in a sequence of frames.
10. Snapshot Picture – Takes a snapshot of the image displayed on-screen.
11. Watermark Verification – Verifies the existence and authenticity of the watermark within the video being played back. This can only be done in 1-channel layout playback.
12. Bookmark for Backup – Enables the functionality to bookmark videos for backup at a later time. When this is turned on, zoom capability is turned off and clicking on a specific camera will place it in the bookmark list to mark it for backup later in the Backup and Restore module. The letter "B" will be displayed in the upper right corner signifying that the selected camera is bookmarked for backup.

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13. Help – Opens the Help window.
14. Close – Closes the Search and Playback window.
15. Playback Controls – Controls video playback.
16. Image Control – Adjusts Brightness, Contrast, Hue and Saturation.
17. Timeline – Indicates occurrence of recorded video for selected camera based on selected filters.
18. Volume Control - Adjusts the playback volume.
19. Browse Snapshots – Opens the Browse Snapshot window allowing the user to view previously taken snapshots.
20. Backup and Restore – Opens the Backup and Restore window.
21. Bookmark – Opens the bookmark window to allow adding/deleting of a bookmark on the selected video and also to jump to the bookmarked video.
22. Advanced Search – Opens the Advanced Search window if the playback is in one camera layout.

Playback Recordings

1. To search and playback recorded video, choose the type of event from the **Event Filter** drop list menu. You may choose from ALL, CONTINUOUS, SENSOR, MOTION, OBJECT DETECTION, EVENT, or FORCED RECORDING.
2. Select the date from the **Calendar**. You may specify the month, year and date.
3. Select the camera or cameras by clicking on the camera number. (Simply click on the camera number again to unselect camera.) If you see colored bars on the Timeline, that means there are recordings for that particular period.
4. On the **Timeline** for Hours, double click on the colored bars to view recorded videos for that particular hour. If there are any, recorded videos will appear as colored bars in the **Timeline** for Minutes.
5. Click on the colored bars in the Minutes section to play back the recordings starting from the minute selected. Playback will continue to other recordings until the end of the selected day.
6. To zoom in (available in single playback mode), simply left-click on the playback screen. Right-click to zoom out.

NOTE: Sensor-triggered recordings appear as yellow bars, motion-triggered recordings appear as blue bars, object detection-triggered recordings appear as orange bars, continuous recordings appear as purple bars and forced recordings appear as red bars. Recordings with audio appear with a green band at the bottom of the bar.

Playback Controls
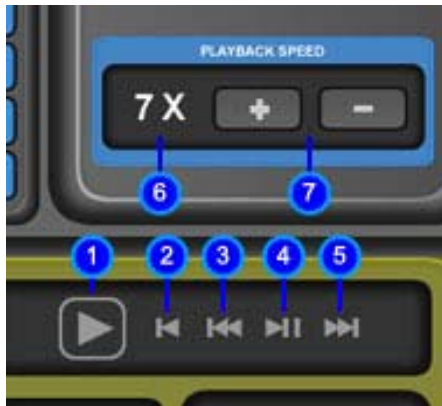
1. Play/Pause – Plays / Pauses playback of the video
2. Top – Moves playback of the selected video to the first frame
3. Skip Back – Moves playback of the selected video 10 seconds back
4. Next Frame – Moves playback to the next frame and then pauses the playback
5. Skip Forward – Moves playback of the selected video 10 seconds forward
6. Playback Speed indicator – Indicates playback speed
7. Playback Speed controls – Increases/Decreases playback speed

Advanced Search
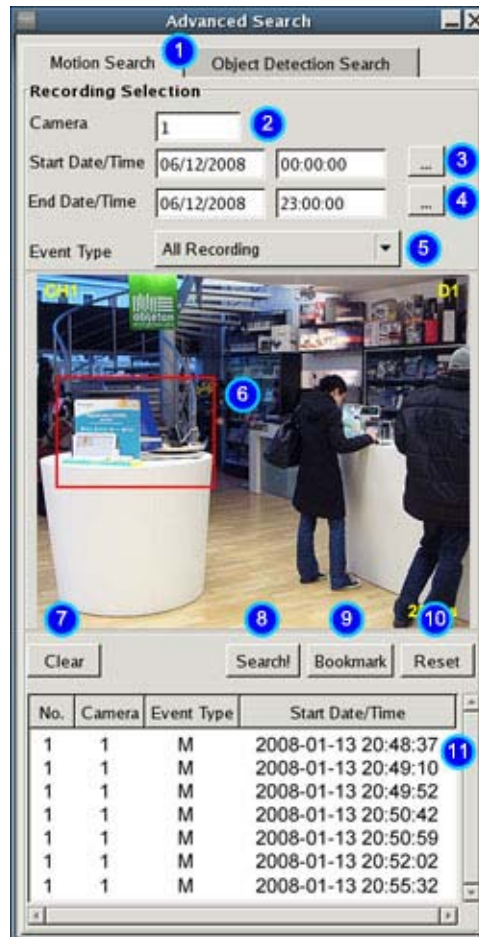
1. Search Type – Select if advanced search will be for motion or object detection.
2. Camera – Displays the camera currently selected for the advanced search.
3. Start Date/Time – Indicates the start for the date and time range for the advanced search.
4. End Date/Time – Indicates end for the date and time range for the advanced search.
5. Event Type Filter – Filters the type of recording to include in the advanced search.
6. Selected Region – Click and drag on the image to select the region which is to be searched.
7. Clear – Clears the currently selected region.
8. Search – Starts the search based on the parameter settings.
9. Bookmark – Bookmarks the currently selected entry in the search result list.
10. Reset – Resets the search result list back to blank.
11. Search Result List – Displays the results of the advanced search. Double clicking on an entry in the list will automatically start playing it in the Search and Playback window.

Backup and Restore

1. Backup Tab – Lists all video files that are ready for backup.
2. Restore Tab – Lists all video files that can be restored.
3. Bookmarks Tab – Lists all video files that have been previously bookmarked for backup.
4. Recording Type Filter – Displays a drop down list menu of recording types that can be used to filter the video files displayed.
5. Show Backed-up Files – Option to display previously backed up files in the selection list. By default. files that have already been backed up will no longer be displayed in the list.
6. Check List Options – A selection option that allows the user to select a start date, end date and a list of cameras. Clicking the Check List button will then automatically select the appropriate video files for backup in the selection list.
7. Logs – Indicates backup and restore logs as well as status information.
8. Add – Adds the selected folder to the Destination Directory
9. Remove – Removes the selected folder in the Destination Directory
10. Backup Options – Options to convert files to AVI format and to include the Backup Viewer installer for Windows.
11. Backup – Starts the backup process.
12. Clear Logs – Clears all backup and restore logs.
13. Close – Closes the Backup and Restore window.
14. Eject CD – Ejects the CD from the CD tray.
15. Unmount USB – Unmounts a mounted USB device

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Backup Files

1. To backup recorded videos, click on the **Backup and Restore** button in Search and Playback.
2. Click on the **Backup** tab.
3. Select the files that you wish to backup from the list indicated by "Video Files to Backup," by marking on the checkboxes. You may also filter files by choosing from the drop down list menu. Possible options are ALL, CONTINUOUS, SENSOR, MOTION, EVENT, or FORCED RECORDING.
4. Select the destination directory. To backup to CD or DVD, select cdrecorder. When cdrecorder is selected as the destination directory, folders cannot be created when the Create Folder button is clicked. The Create Folder button will only work when backing up to a USB or a hard disk.
5. To convert files to avi format, choose the "Convert backup files from mp4 to avi format" option. A dialog box will pop up, confirming such request. Click on **OK** to convert backup files to .avi format. NOTE: Video files converted to avi format cannot be restored and are not marked with the status of "backed up".
6. And then click on the **Backup** button to backup.

Note: Backup of videos currently does not support saving to multi-session CDs/DVDs.
To Backup successfully, a new CDR/DVDR or blank CDRW/DVDRW must be used.

- PLEASE VIEW NEXT PAGE FOR BACKUP SCREEN EXPLAINATION

1. Backup Tab – Lists all video files that are ready for backup.
2. Restore Tab – Lists all video files that can be restored.
3. Bookmarks Tab – Lists all video files that have been previously bookmarked for backup.
4. File System – Lists the file system drives.
5. Destination Directory – Lists the directories available for backup and restore.
6. Restore File List – Lists all the files that will be restored.
7. Add - Adds selected folder to the Destination Directory.
8. Remove – Removes selected folder in the Destination Directory.
9. Logs – Indicates backup and restore logs as well as status information.
10. Clear Logs – Clears all backup and restore logs.
11. Add File(s) – Adds file(s) to Restore File list.
12. Remove File(s) – Removes file(s) from the Restore File list.
13. Restore – Restores all files in the Restore File list.
14. Close – Closes the Backup and Restore window.
15. Eject CD – Ejects the CD from the CD tray.
16. Unmount USB – Unmounts a mounted USB.

Restore Files

1. To restore videos, click on the **Backup and Restore** button in Search and Playback.
2. Click on the **Restore** tab.
3. From your "File System," select the files that you wish to restore from the list. Add the files that you wish to restore by clicking on the **Add** button.
4. And then click on the **Restore** button to restore the video.

> NOTE: Retrieving / Restoring files changes the status of the selected file(s) from offline to online, thereby making this/these file(s) available for playback.

- PLEASE VIEW NEXT PAGE FOR BACKUP SCREEN EXPLAINATION

1. Backup Tab – Lists all video files that are ready for backup.
2. Restore Tab – Lists all video files that can be restored.
3. Bookmarks Tab – Lists all video files that have been previously bookmarked for backup.
4. Files for Backup – Displays the list of files that have previously been bookmarked for backup while doing Search and Playback.
5. Add – Adds the selected folder to the Destination Directory
6. Remove – Removes the selected folder in the Destination Directory
7. Backup options – Options to convert files to AVI format and to include the Backup Viewer installer for Windows.
8. Logs – Indicates backup and restore logs as well as status information.
9. Backup – Starts the backup process.
10. Clear Logs – Clears all backup and restore logs.
11. Close – Closes the Backup and Restore window.
12. Remove File – Removes the selected video file from the Files for Backup list.
13. Clear List – Clears all video files from the Files for Backup list.
14. Unmount USB – Unmounts a mounted USB.

Browse Snapshots
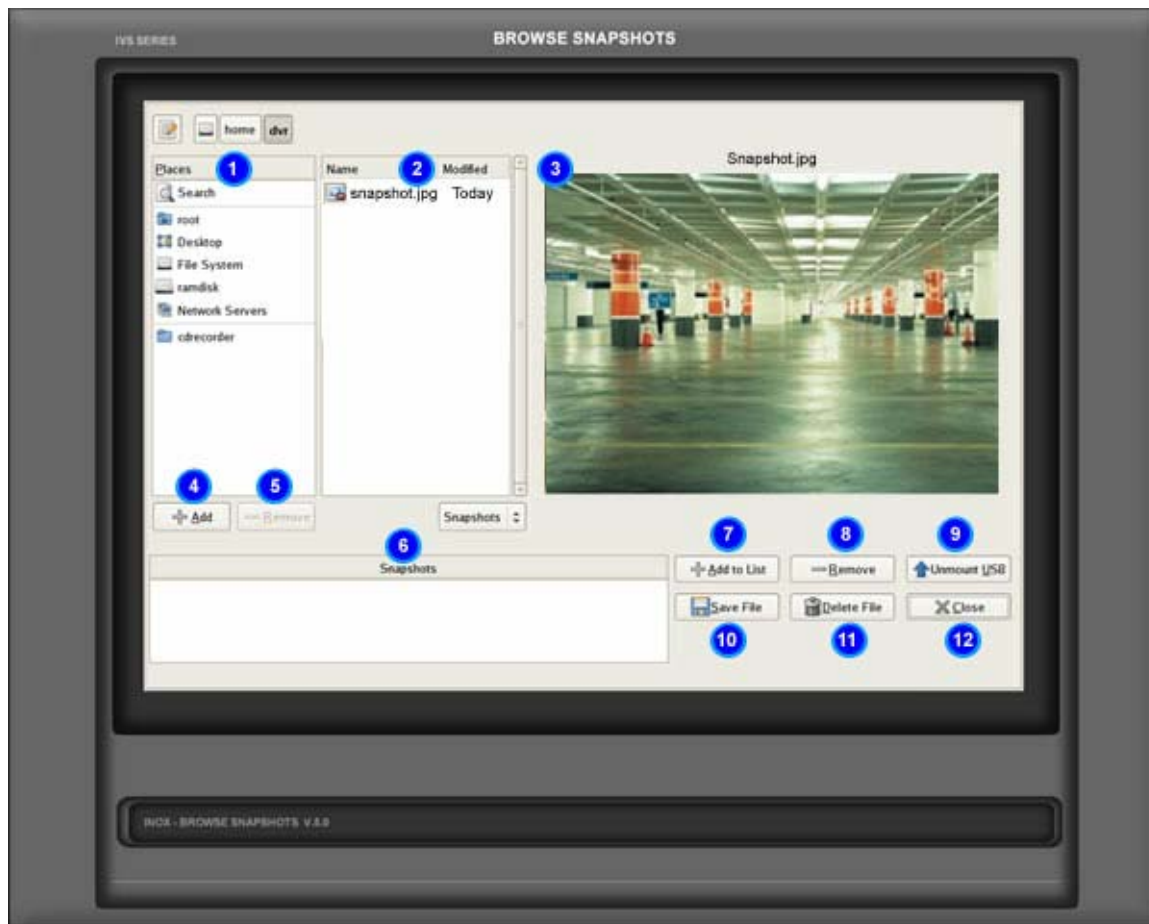
1. Directory Paths – Displays a list of available paths for easy navigation.
2. Snapshot Listing – Lists the available snapshots (JPEGs only) in the current directory.
3. Image Preview – Displays a preview of the snapshot selected.
4. Add – Adds the current folder to the Directory Paths.
5. Remove – Removes the selected folder from the Directory Paths.
6. Selected Snapshots – Displays the list of selected snapshots for copying.
7. Add to List – Add the selected snapshot to the list for copying.
8. Remove – Removes the selected snapshot from the list for copying.
9. Unmount USB – Unmounts a mounted USB.
10. Save File – Save the selected snapshots to the current directory.
11. Delete File – Delete the selected snapshot from the system.
12. Close – Close the window.

E-map

The E-map shows a geographical representation of where the cameras, sensors and relays are located.

1. Click on the E-map button to go to E-map.
2. To view the current video for a particular camera, simply double click on the camera on the map. A pop-up screen showing the video for that particular camera will appear.
3. To search for a particular camera, sensor or relay, simply double-click on the device under the devices section and the map containing the device will automatically be displayed.

NOTE: Please refer to Setup for more information on how to configure the E-map function.
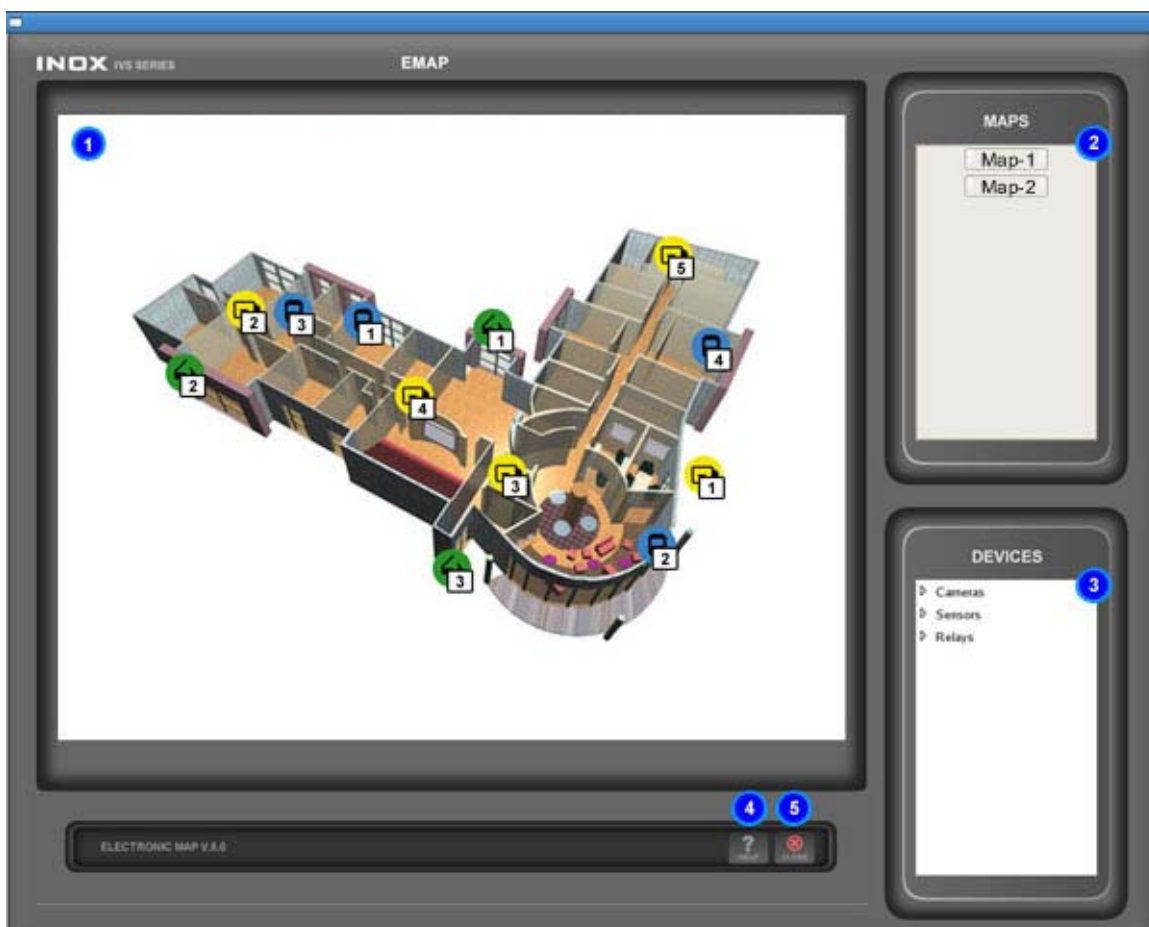
1. E-map Display – Displays the current selected E-map
2. Maps – Displays the list of available maps
3. Devices – Displays list of cameras, sensors and relays
4. Help – Opens the Help window
5. Close – Closes E-map window

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Web View

Web View offers connection to the DVR Server via a web browser.

1. Ensure that Internet Explorer (IE) can download unsigned ActiveX controls. For MPEG Stream connection, ActiveX plug-ins must be downloaded. For low bandwidth networks such as dial-up or ADSL connections, there is no need to install ActiveX plug-ins. You may go directly to Step 2. For Firefox users, logging in will automatically go to the JPEG Stream option since Firefox does not support ActiveX controls.

   For IE:
   - Open IE, click TOOLS, click Internet Options.
   - Click the Security tab.
   - Click on Custom Level.
   - Enable download unsigned ActiveX control and click OK.
   - Click Apply and select OK to exit.

2. Enter the IP address of the DVR Server on the address bar.
3. Enter username and password.
4. Click on **Login** button or press **Enter** to login or **Cancel** button to exit.

1. Sensor/Relay/Camera - Selects Sensor/Relay/Camera device.
2. Display Screen - Shows videos from the cameras.
3. Close - Closes Web View window.
4. Date and Time - Indicates date and time.
5. PTZ Function - Shows functions for PTZ control.
6. Snapshot Picture - Takes a snapshot of the image displayed on-screen.
7. Screen Layout - Displays screen layout of the selected layout.
8. Next Camera - Displays video of next camera or cameras. (For instance, if screen layout is at 4-split screen, the next 4 cameras will be displayed upon pressing this button.).
9. Cyclic Screen - Displays videos in sequence in full screen, with a delay of 3 seconds in between each camera.

Mobile Phone View

Mobile View allows users to access the DVR with the use of a mobile phone that is 3G-enabled. There are two ways to access the live streaming video of the DVR. One way is with the use of a GSM modem connected to the DVR. The other way is through the use of the mobile phone's web browser.

> Note: The DVR server must have a global IP address in order to view the video stream through a mobile phone.

When accessing through a GSM modem, follow the steps below:

1. Place the number of the mobile phone that will be used in the telephone field in the user setup. The format should only include the country code with the mobile number.
2. To access the DVR server, simply send a Short Message Service (SMS) to the mobile number of the GSM modem attached to the DVR with the following format:
   > ch <channel number>
   > ex. ch 4
3. The server will then send the link to display the live video for that channel.
4. Open the link on the phone to start streaming the live video.

When accessing through the mobile phone's web browser, follow the steps below:

1. Start the mobile phone's web browser.
2. Open the following URL in the browser: http://[DVR server global IP address]/mobile
3. A login screen will appear where a valid username, password and the camera to view is required.
4. Once these are validated, the browser will return a link to display the live video for that camera.
5. Open the link to start streaming the live video.

The links to the streaming video expire after 15 minutes unless refreshed by a new connection.

Remote View

Gain remote access to the DVR Server by installing the Remote Client (available in the CD Installer) on the PC that you wish to have remote connection to the DVR.

1. PTZ Options – Displays the various presets, pattern track and group run available.
2. Minimize – Minimizes the Remote Client application.
3. Date and Time – Displays date and time of DVR Server
4. Close – Closes the Remote Client application.
5. Remote View – Displays the remote live view.
6. PTZ Function – Shows functions for PTZ control
7. DVRs – Displays list of available DVR connections. Once connected it shows the list of cameras for the DVR server. Left-clicking on a camera displays the selected camera and sets the layout to 1-camera.
8. Screen Layout – Changes the screen layout of the live view.
9. Next Camera – Displays video of next camera or cameras. (For instance, if screen layout is at 4-camera layout, the next 4 cameras will be displayed upon pressing this button.)
10. Cyclic Screen – Displays videos in sequence. The cycle will follow the layout currently displayed and will skip those layouts that only show disabled cameras.
11. Full screen – Displays current layout of cameras in full screen.
12. Frames – Limits the number of frames sent from the server. This is useful if there is a bandwidth or CPU limitation for the remote user.

13. Talk – Click and hold to enable 2-way communication with server. A microphone must be attached and the MIC boost option turned off. To talk, click and hold the button. Audio playback will be paused during this period. Once released, audio playback will be continued. To hear the audio from the server, the appropriate audio channel must be selected.
14. Search and Playback– Opens the Search and Playback window.
15. Emap – Opens the Emap window.
16. Mute – Mutes/Unmutes the alarm sound.
17. Help – Opens the Help window.
18. FPS and KBps – When connected, the number bytes received as well as the FPS received and displayed are shown.
19. Connect/Disconnect button – Connect or disconnects to the selected DVR Server
20. DVR Selection – Selects the active DVR when in group mode. The relay and sensor display will depend on the active server selected in this dropdown.
21. Image Control – Controls to adjust Brightness, Contrast, Hue and Saturation.
22. Force Record – Starts forced or manual recording.
23. Snapshot Picture – Takes a snapshot of the image displayed on-screen.
24. Video Event Log – Displays recent event logs.
25. Client Setup – Opens the Client Setup window.
26. DVR Setup – Opens the DVR Server Setup window.
27. Sensor/Relay/Audio – Selects Sensor/Relay/Audio device.

Client Login

1. To login, click on the DVR Client on your desktop to open the Remote Client.
2. Enter username and password.
3. Click on the Login button or press ENTER to login. Click on the Cancel button to exit.

NOTE: The factory default for username is "Admin" and for password is "password" respectively. You can change the default username and password once you are logged in.

DVR Connection
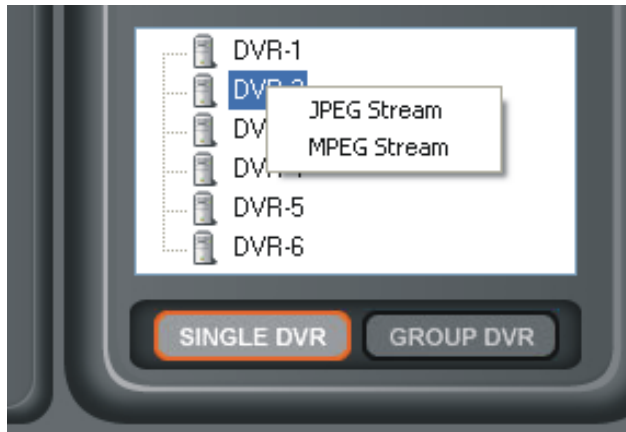
To connect to a DVR

1. Select a DVR from the list.
2. Click the **Connect** button or double-click on the DVR Name to connect to the selected DVR.
3. A menu will appear with the option for JPEG Stream connection or MPEG Stream connection. Select the desired connection and the application will then connect to the DVR Server.

JPEG Stream Connection
This type of connection displays the video as motion-JPEG images. The bandwidth it uses to display one camera or 16 cameras is the same but it comes with certain limitations. The limitations to this type of connection are:

- Display is at most 5 frames per second
- Live streaming audio is not available
- Remote recording is not available
- Zoom while in full screen mode is not available
- Image enhancements functionality is not available
- Video display will pause when someone is performing Search and Playback or Setup on the server
- The layout of the display is dependent on what is currently set on the server; changing the layout on the server will also change the displayed layout on the remote client

MPEG Stream Connection
This type of connection streams MPEG4 video to the Remote Client. The frames per second display follows what is set on the server just as long as the bandwidth can accommodate it. Once connected, the number of frames received, frames displayed and the size of data received per second are displayed for the user.
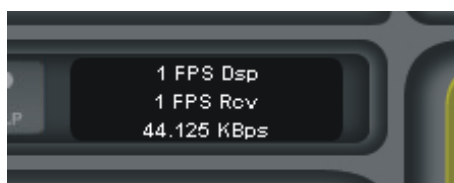
Remote Client OSD
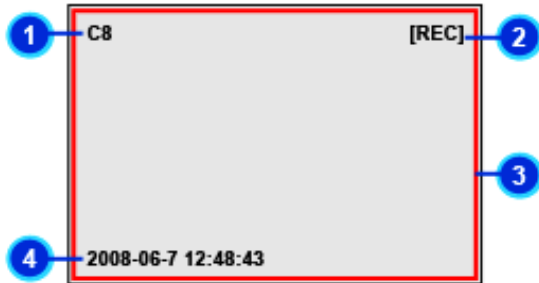
1. **Camera label** – Indicates camera label. To modify, please go to Setup.
2. **Recording Status** and **Recording Type**
   [REC] appears when there is an ongoing recording. The [REC] label is color-coded based on the type of recording.

   Types of Recording:
   Continuous Recording – Magenta **[REC]**
   Sensor-triggered Recording – Yellow **[REC]**
   Motion-triggered Recording – Cyan **[REC]**
   Object Detection-triggered Recording – Orange **[REC]**
   Forced Recording – Red **[REC]**

3. **Motion Indicator** – A red border around the camera display indicates a detected motion.

View Screen Layout

View Screens in Split Mode
Switch from 1, 4, 9, or 16 channel views. Simply click on your selected layout to change the layout.

Next Camera and Cyclic Screen
Click on the **Next Camera** button to switch to the next camera or cameras.

Click on the **Cyclic Screen** button to display camera or cameras in sequence.

Full Screen Mode
To display in full screen, click the **Full Screen** button. To exit full screen mode, right-click on the display screen.

Digital Zoom

Digital zoom allows you to zoom up to 2x.

Zoom In
On one screen layout or full screen mode, left-click to zoom in.

Zoom Out
While zoomed-in, left-click again to zoom out.

Video Event Log

The Video Event Log displays all events that the DVR system has logged. It displays the DVR Name, DVR's IP address, date and time, and the event that occurred.

To instantly play back the video, simply choose from the log and double-click on your selection. A smaller playback window will appear on your screen. This functionality is only available for PC-based DVRs.

1. Play – Plays playback of the video
2. Pause – Pauses playback of the video
3. Previous Frame – Moves playback to the previous frame and then pauses the playback
4. Next Frame – Moves playback to the next frame and then pauses the playback
5. Skip Back – Moves playback of the selected video 10 seconds back
6. Skip Forward – Moves playback of the selected video 10 seconds forward
7. Playback Speed indicator – Indicates playback speed
8. Playback Speed controls – Increases/Decreases playback speed

Image Control

Via Image Control, you can change brightness, contrast, hue, and saturation settings of the cameras currently displayed.

1. Simply click on **+** or **–** to increase or decrease the selected image control option on the cameras currently displayed.
2. To apply the changes to all cameras, click on the **Apply All** button.
3. Click the **Reset All** button to return settings to the factory default settings for all cameras.

Date and Time

Date and Time displays the current date and time of the DVR Server the Remote Client is connected to.

Screen Capture

1. To capture an image of the display screen, click on the **Screen Capture** button.

2. A separate window will open with a printable form containing the captured image, time stamp and camera information.
3. To print the captured image, click on **Print**.
4. To save the captured image, click on **Save** and then select the folder to save to.
5. Click on the **Close** button to exit the Screen Capture window.

Forced Recording

To manually start recording, click on the **Record** button. Click on **Record** button again to stop recording.

Sensors

To know which sensors are active, click on the Sensor button. Active sensors are represented as highlighted buttons. If the beep alarm notification is turned on, the system beep will also be heard.

Relays

To know which relays are active, click on the Relay button. Active relays are represented as highlighted buttons. Relays can be activated/deactivated by clicking on the respective relay button.

Audio

To know which audio is active, click on the Audio button. The active audio channel is highlighted. Only one audio channel can be on at any particular time. Speakers must be attached to the PC audio out to be able to hear live audio. The audio channel can be activated / deactivated by clicking on the respective audio button.

PTZ Function

To use PTZ Function, ensure that your camera is a PTZ (Pan/Tilt/Zoom) camera.

1. Pan/Tilt buttons – Pans/Tilts the PTZ camera
2. PTZ Schedule – Indicates that there is/are scheduled PTZ command(s)
3. Auto Pan – Executes a pre-programmed sequence of PTZ commands
4. Camera Selector – Selects the PTZ camera channel to be control
5. Zoom Control – Zooms In / Zooms Out the PTZ camera lens
6. Focus Control – Adjusts focus of the camera
7. Iris Control – Adjusts amount of light entering the camera lens
8. Pan/Tilt Speed – Adjusts pan/tilt speed
9. Zoom Speed – Adjusts zoom speed of the lens
10. Focus Speed – Adjusts focus speed of the lens
11. Pattern Tracking – Opens Pattern Tracking table
12. Preset – Opens Preset table
13. Group Run – Opens Group Run table

Presets

To display the list of presets available, simply click on the **Preset** button. Presets are predefined locations where a PTZ camera has been focused.

To set up a preset, refer to the Server Setup > Presets section.
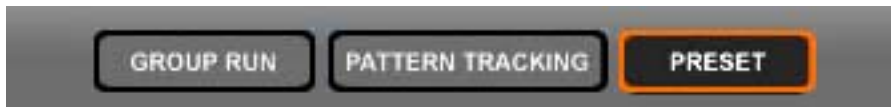
1. Select a preset from the list.
2. Click on the **Go** button to run the selected preset.

Pattern Tracking

To display the list of pattern tracking available, simply click on the **Pattern Tracking** button. Pattern tracking is a functionality which allows the DVR Server to control a PTZ camera to move from one predefined preset to another. It can be used to have a PTZ camera scan a room or area by automatically focusing on different locations in a sequential manner.

For details on setting up a pattern tracking sequence, refer to the <u>Server Setup > Pattern Tracking</u> section.

1. Select a pattern from the list.
2. Click on the **Go** button to run the selected pattern.
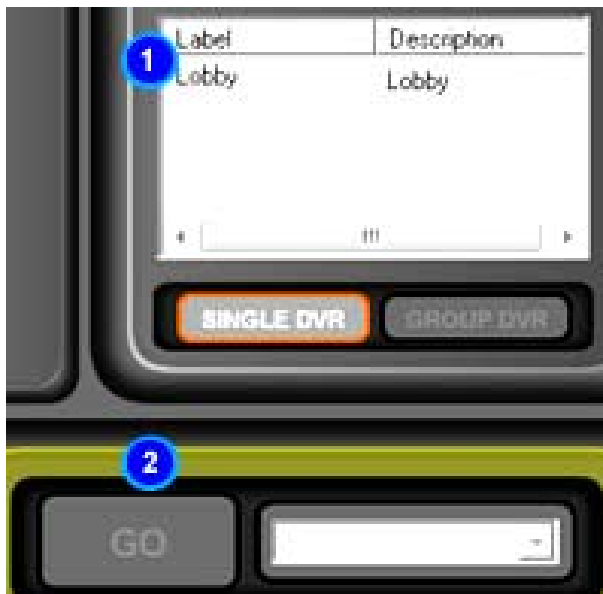
Group Run

To display the list of group runs available, simply click on the **Group Run** button. A group run is a functionality that allows the DVR Server to simultaneously redirect the focus of several PTZ cameras to specific areas.

To set up a group run, refer to the Setup > Group Run section.
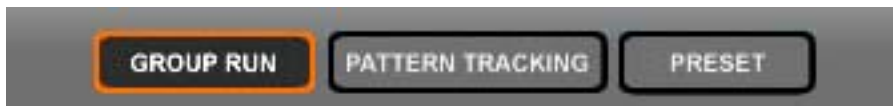
1. Select a group run from the list.
2. Click on the **Go** button to run the selected group run.

Search and Playback

Remote Search and Playback can be used for thorough look-up and playback of any recorded video.

1. Video Playback – Displays recorded video.
2. Channel Select – Selects camera(s) for playback.
3. DVR Selection – Selects the active DVR when in group mode.
4. Event Filter – Displays drop list menu for type of event
5. Calendar – Displays calendar.
6. Playback Speed – Speeds up or slows down the playback.
7. Full Screen – Displays video in full screen
8. Close – Closes Search and Playback window.
9. Playback Controls – Controls video playback.
10. Timeline – Indicates occurrence of recorded video for selected camera based on selected filters.
11. Record button – Starts forced or manual recording (Video quality and resolution will be based on existing recording settings; frame rate is based on settings for Event-FPS.)
12. Snapshot Picture – Takes a snapshot of the image displayed on-screen

Playback Recordings

1. To search and playback recorded video, choose the type of event from the **Event Filter** drop list menu. You may choose from ALL, CONTINUOUS, SENSOR, MOTION, EVENT, or FORCED RECORDING.
2. Select the date from the **Calendar**. You may specify the month, year and date.
3. Select the camera by clicking on the camera number. (Simply click on the camera number again to unselect camera.) If you see colored bars on the Timeline, that means there are recordings for that particular period.
4. On the **Timeline** for Hours, double click on the colored bars to view recorded videos for that particular hour. If there are any, recorded videos will appear as colored bars in the **Timeline** for Minutes.
5. Click on the colored bars in the Minutes section to play back the recordings starting from the minute selected. Playback will continue to other recordings until the end of the selected hour.
6. Initially, the recorded video is displayed in its original size (CIF, 1/2 D1 or D1). Left-clicking once will maximize the display on the playback area. The second left-click will zoom in to the selected area. Another left-click will then bring the display back to its original size.

NOTE: Sensor-triggered recordings appear as yellow bars, motion-triggered recordings appear as blue bars, continuous recordings appear as purple bars and forced recordings appear as red bars.

Playback Controls
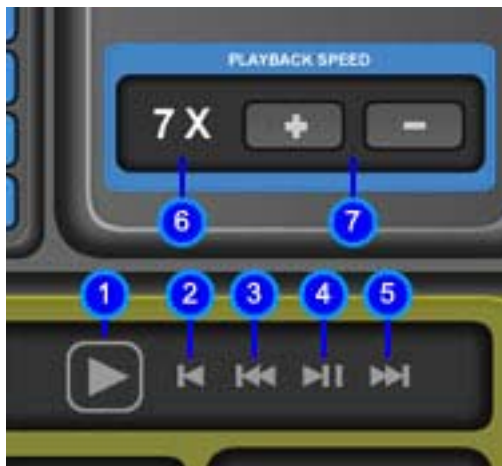
1. Play/Pause – Plays / Pauses playback of the video
2. Top – Moves playback of the selected video to the first frame
3. Skip Back – Moves playback of the selected video 10 seconds back
4. Next Frame – Moves playback to the next frame and then pauses the playback
5. Skip Forward – Moves playback of the selected video 10 seconds forward
6. Playback Speed indicator – Indicates playback speed
7. Playback Speed controls – Increases/Decreases playback speed

E-map

The E-map shows a geographical representation of where the cameras, sensors and relays are located. This functionality is only available for PC-based DVRs.

1. Under the Remote View Screen, click on the E-map button to go to E-map.
2. To view the current video for a particular camera, simply double click on the camera on the map. A pop-up screen showing the video for that particular camera will appear.
3. To search for a particular camera, sensor or relay, simply double-click on the device under the devices section and the map containing the device will automatically be displayed.

NOTE: Please refer to Setup for more information on how to configure the E-map function.
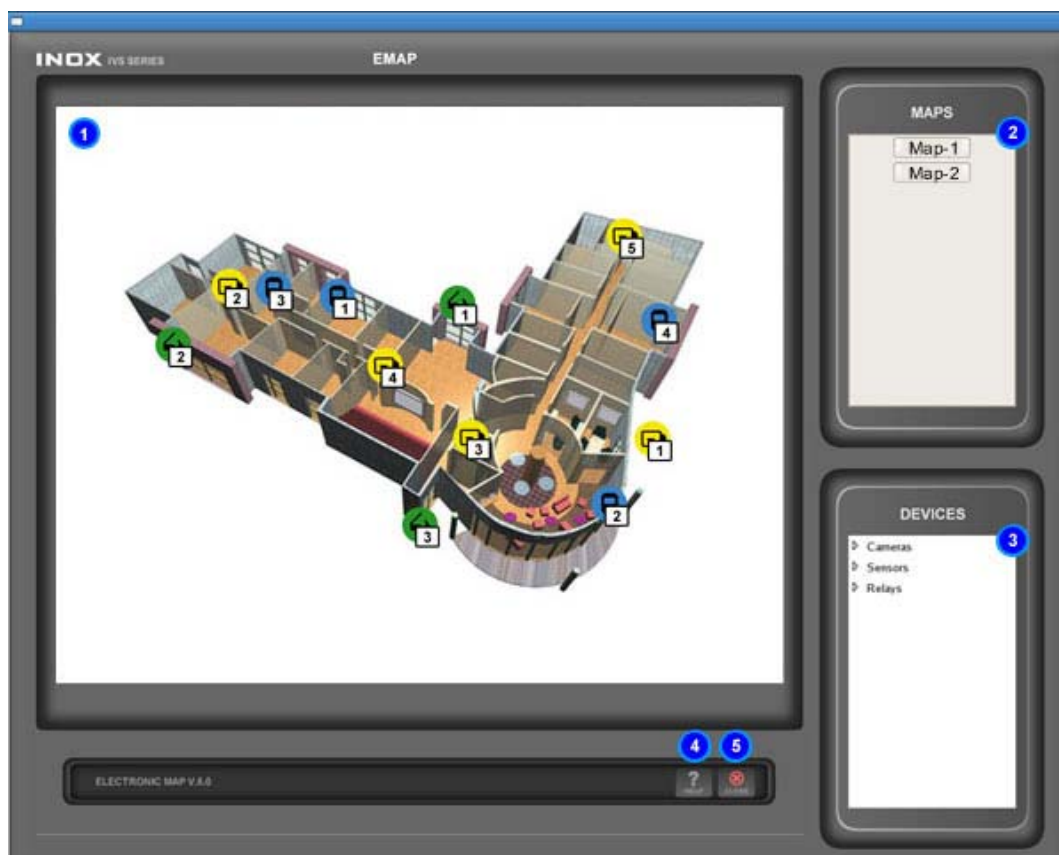
1. Emap Display – Displays the current selected E-map
2. DVR Selection – Selects the active DVR when in group mode
3. Maps – Displays the list of available maps
4. Cycle Maps – Displays maps in sequence, with a delay of 5 seconds in between each map
5. Devices – Displays list of cameras, sensors and relays
6. Emap Setup – Opens Emap Setup. Refer to DVR Setup>System>Emap for more information on setting up your E-map settings.
7. Close – Closes E-map window.

Client Setup

In order to use the Remote Client to access DVR servers, you will first have to setup the connection settings of the DVR servers that you want to connect to. This can be done by clicking on the Client Setup button once logged in to the Remote Client application.

From the Client Setup, you can manage the DVR servers that are available to connect to, the users who can log in to the application and other settings modifiable by the user.
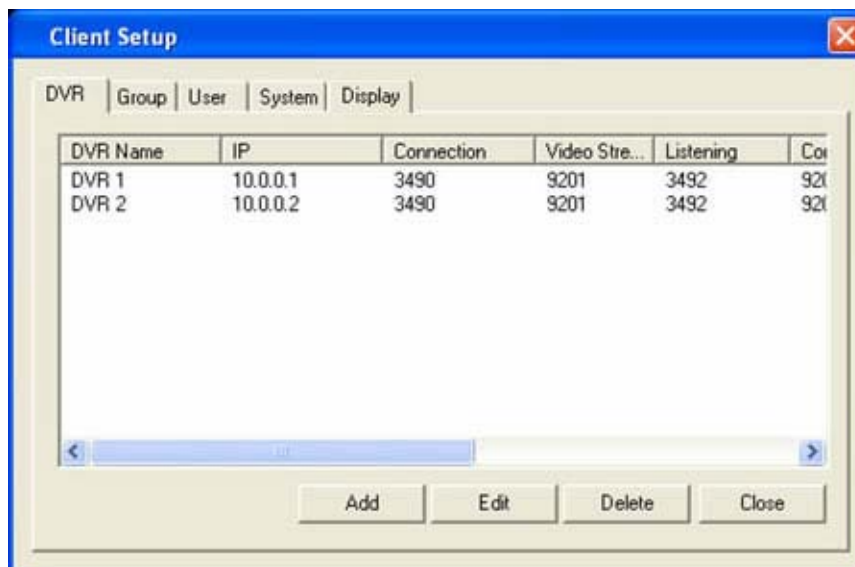
DVR (s)
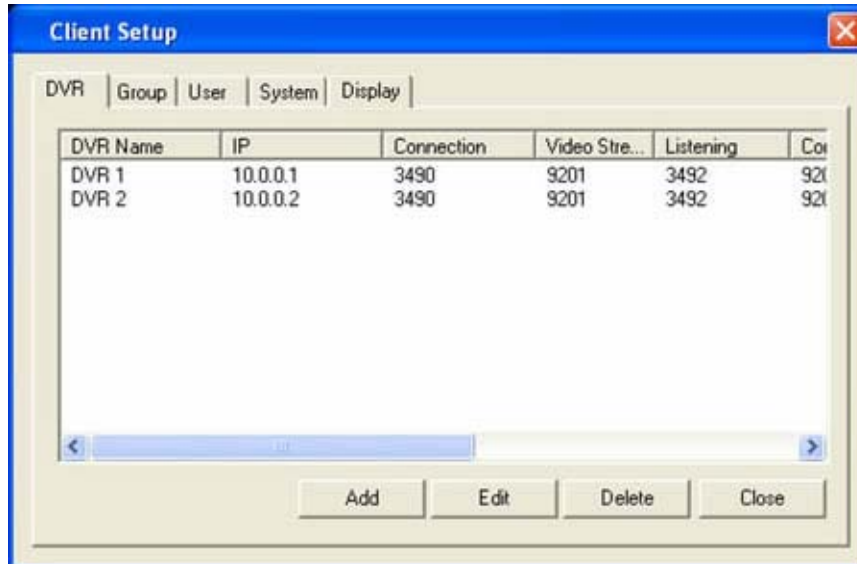
Add a DVR

1. Click on the **DVR** tab.
2. Click on **Add** button.
3. Enter the DVR Name.
4. For the connection type, pick from static IP, hostname or DDNS. Using the DDNS option requires registration to the DDNS server. Place the DDNS server followed by a slash and the client account name provided (i.e. www.dvr-ddns.net/client1). The DVR Name should also be set to the DVR Name set in the DVR server.
5. Place the username and password for the server and then click on the **OK** button.
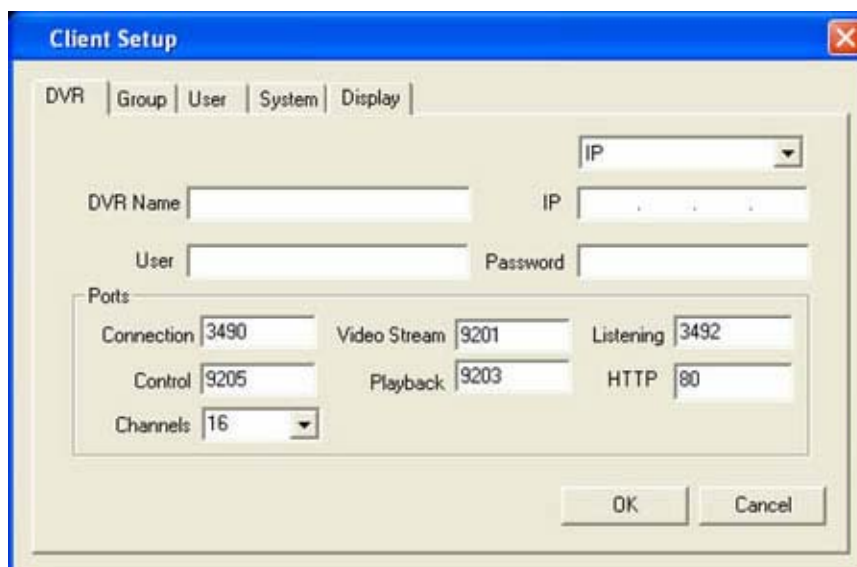
Group
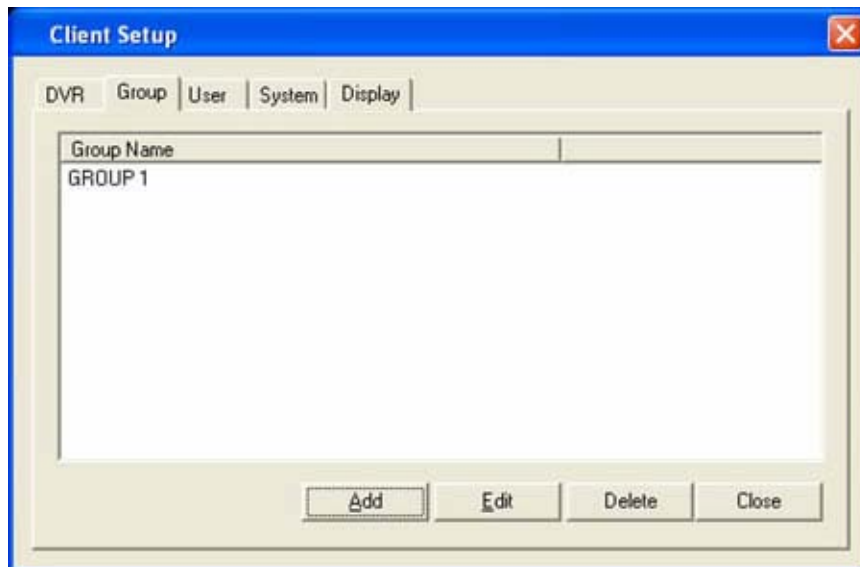
Add a Group
1. Click on the **Group** tab.
2. Click on **Add** button.
3. Enter the Group Name.
4. Select from the dropdown the DVR you want to add to the group.
5. Select from camera list the camera you wish to add to the group and click on the **Add** button.
6. To remove a camera from the group listing, select the camera from the group listing and click on the **Delete** button.
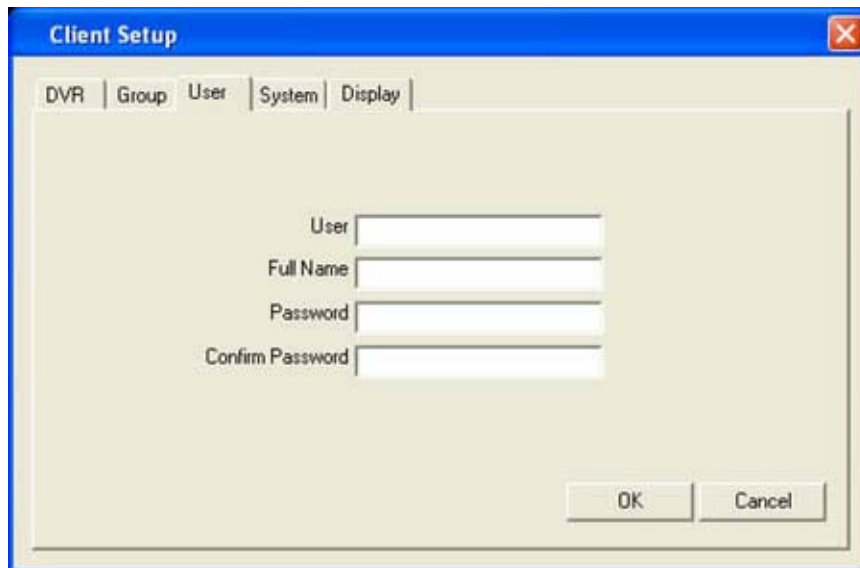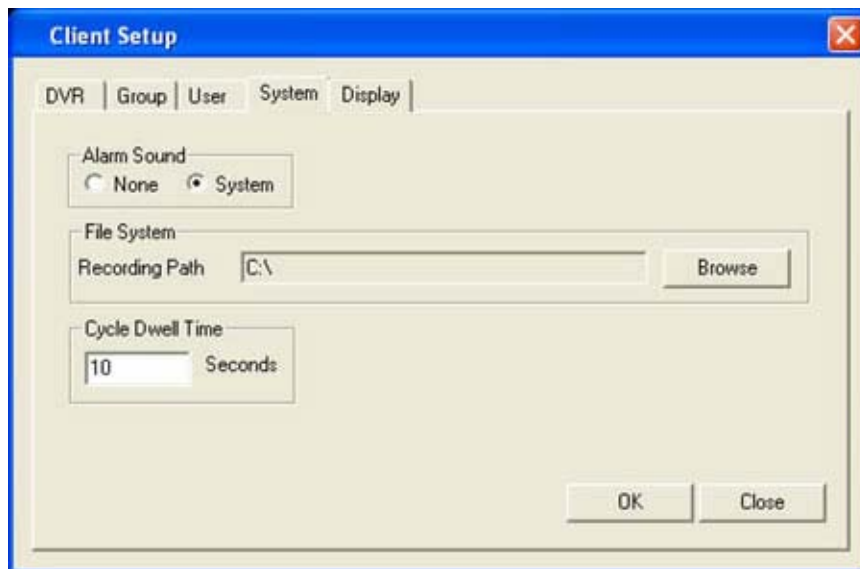7. Click on the **OK** button to save the group settings.

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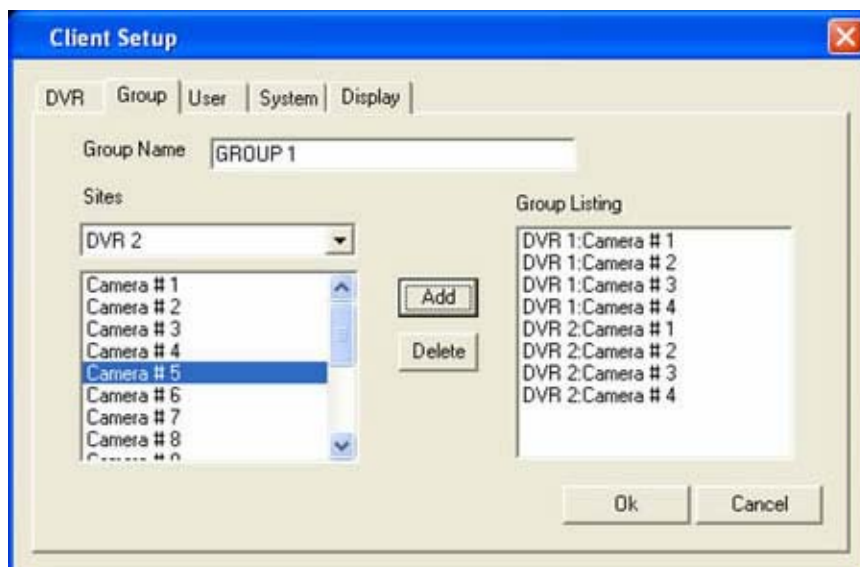
Users
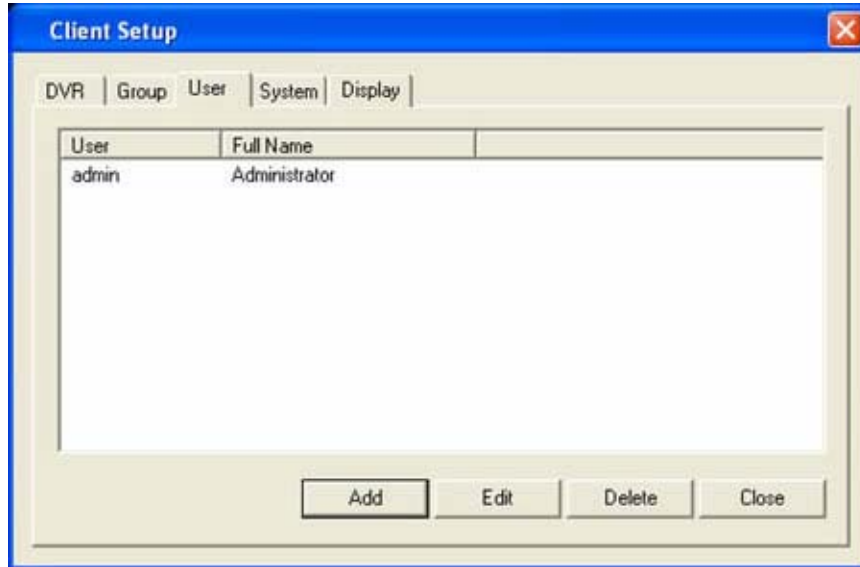
Add a User
1. Under Client Setup, click on the **User** tab.
2. Click on **Add** button.
3. Enter User (User ID or username), Full Name and Password. Confirm your password.
4. Click on **OK** button.

System

Set Alarm Sound
1. To enable **Alarm Sound**, select "System". This will enable the system beep.
2. Or select "None" if otherwise.
3. Click the OK button to save your settings.

Set Recording Path
1. Under the File System box, click on Browse to open the search dialog box.
2. Search for the folder where you want your video recordings to be stored/saved.
3. Once you are done, click on OK to set the path.
4. Click the OK button to save your settings.

Set Cycle Dwell Time
1. To set how long the camera waits before moving on to the next camera in cycle mode, place the desired number in seconds in the text box under the label Cycle Dwell Time.
2. Click the OK button to save your settings.

On Screen Display (OSD)
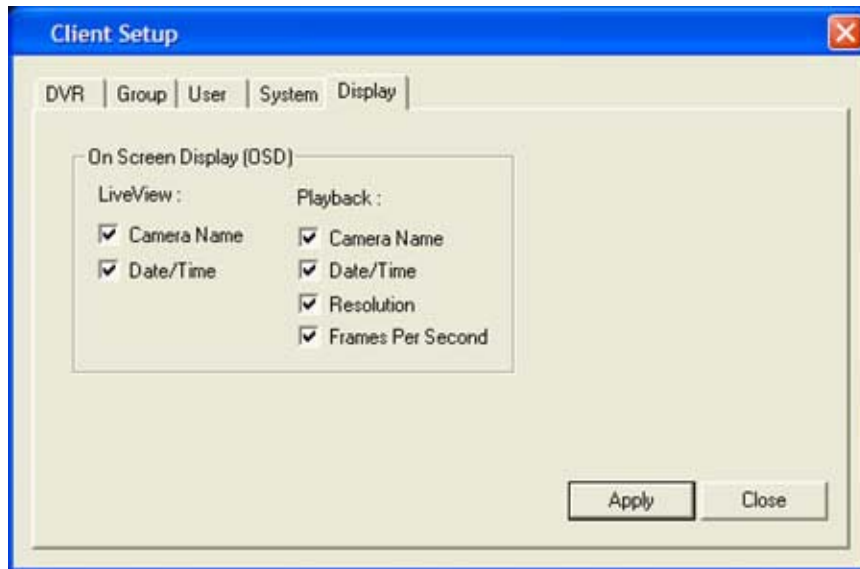
On Screen Display Options
The user has the option to display various OSD labels on the video whether in Live View or in Search and Playback. OSD modifications will take effect even while connected to a DVR.

Server Setup

The DVR Server Setup can be accessed either through the DVR Server itself or through the Remote Client application.

NOTE: Use of the DVR Setup function is only allowed if current user's Login ID is authorized for this function.

User Login

1. Enter the username and password.
2. Click on the Login button or press ENTER to login. Click on the Cancel button to exit.

NOTE: The factory default for username is "Admin" and for password is "password" respectively. You can change the default username and password once you are logged in.

Setup Menu options

The server setup is divided into several sections each with it's own sub-menu.

Camera
This section contains the setup for the camera settings - labels, Frames Per Second (FPS), video size, video quality, buffers, motion zones, audio quality and object detection settings.

Event
This section contains the setup for sensor and relay related settings - sensor-relay mappings, sensor-camera mappings, sensor-ptz mappings, motion-relay mappings and alarm notification details on these events.

PTZ
This section contains setup information on PTZ cameras - protocols, general communication settings, presets, pattern tracking and group run.

Schedules
This section contains the setup for scheduled tasks - video recording and PTZ schedules.

System
This section contains a variety of settings - Initial overlay screen, video signal, email server settings, DDNS settings, network configuration, Emap, user setup, storage setup and the server logs.

Import / Export
This section only contains the function for importing a previous DVR settings or exporting the current setting for backup.

Close
The (X) on the upper right-hand area of the menu is the close button for the DVR server setup. Only upon clicking this button will the DVR server reload the changes in the settings that have been applied in the setup.

Camera Settings

1. Unique settings checkbox – Indicates whether unique settings are used per camera or otherwise. If checked, unique settings are used per camera. To have all cameras use the same settings, keep this option unchecked and modify the settings in Camera All.
2. Secret Status – Indicates whether the secret option is on or off for the camera. If checked, it means that the video for that camera will not be displayed in live view. Any recording, however, will still take place and the recording status will still appear as an On-Screen Display (OSD).
3. Enabled Status – Indicates whether the camera is enabled or otherwise. If checked, it means that the camera is enabled.
4. MPEG4 Date/Time OSD – Indicates whether the date and time will be embedded on the MPEG4 recording as an OSD. The date/time OSD will be visible only on the modules that use the MPEG4 data (playback, remote client and setup).
5. Label – Indicates the camera label that will be displayed as an OSD in live view.
6. Sequence – Determines the display location of the specific camera in live view.
7. Normal FPS – Indicates the frames per second the video will be recorded/streamed at during normal circumstances when continuous recording is set.
8. With Event FPS – Indicates the frames per second the video will be recorded/streamed at when an event occurs. Events comprise of a sensor being triggered, motion being detected or when forced recording is turned on.

9. Video Quality – Indicates the quality the video will be recorded/streamed at. Five settings are available from Very High, High, Medium, Low, Very Low. With higher video quality, though, the file size of the recording will also increase.
10. Video Size – Indicates the resolution size the video will be recorded/streamed at. For NTSC the settings are 720x480 (D1), 720x240 (1/2 D1) and 360x240 (CIF). For PAL the settings are 720x576 (D1), 720x288 (1/2 D1) and 360x288 (CIF). The higher the resolution, the bigger the size in the recording file size. There is a limitation on the combination of settings for the Video Size in conjunction with the With Event FPS. Please see the note below for more details on this.
11. Pre-Record Buffer – Indicates how long in seconds the recording will be buffered at the start of an event recording.
12. Post-Record Buffer – Indicates how long in seconds the recording will be buffered at the end of an event recording.
13. Restore Defaults – Restores the default settings.
14. Apply – Saves the settings.

Important Note:

Example model IVS-16B, IVS-6R

Camera 1 to 16 has a maximum total capture speed of 480/400 fps for NTSC/PAL. This allows 30/25 fps per camera at CIF resolution. With larger video sizes, the set fps becomes equivalent to double, for 1/2 D1 resolution, and quadruple, for D1 resolution, when calculating the total capture speed for 16 cameras. Because of this, the maximum fps that can be set when cameras 1 to 16 are all set to D1 is 7.5 fps for NTSC.

Motion

Set Detection Zone(s)

1. To set detection zone(s), first select the camera desired by choosing from the Camera drop down list menu. Choosing the Camera All option will allow the settings to apply to all cameras.
2. Click on the Select button. Click and drag the mouse pointer on any area on the Video Display. Simply release the mouse button when the selection is done. The detection zone(s) are marked with a white grid. Repeat step 2 when necessary to add more detection zone(s).
3. To erase selection, click on the Erase button and drag the mouse pointer over the detection zone(s) that are to be erased.
4. To clear all selected detection zone(s), click on the Clear All button.
5. Drag or click on the sensitivity bar to set how sensitive the motion detection should be.
6. To apply settings, click on the Apply button.

1. Camera – Displays a drop down list menu listing all cameras. Choose "All" to update all cameras with the same settings.
2. Select – Enables selection of detection zone(s).
3. Erase – Enables the deletion of detection zone(s).
4. Select All – Selects the entire video area as a zone.
5. Clear All – Clears all detection zones.
6. Apply – Saves the settings.
7. Sensitivity – Shows the current motion sensitivity setting for the specific camera. The higher the value is, the more sensitive the motion detection will be.
8. Video Display – Shows current view of selected camera as well as the selected detection zones. Movement detected within the zones will highlight the specific area within the selected zone.

Audio

1. Audio Output volume control – Shows current output volume. Click on the + or - to increase or decrease the output volume respectively. This setting does not affect the audio volume set in the live view and is used only when testing the audio during setup.
2. Unique settings checkbox – Indicates whether unique settings are used per audio or otherwise. If checked, unique settings are used per audio. To have all audio use the same settings, keep this option unchecked and modify the settings in Audio All.
3. Enabled status – Indicates whether the audio is enabled or otherwise. If checked, it means that the audio is enabled. If the audio is disabled, the input gain controls will not be displayed. If there are no audio inputs, disable the audio to save on storage space.
4. Input Gain volume control – Shows current input gain volume. Click on the + or - to increase or decrease the input gain of the specific audio.
5. Test Audio – Tests current input gain settings. NOTE: Test button will only appear if setup is done on the server. You will need speakers attached to the audio out of the PC to be able to hear the live audio.
6. Restore Defaults – Restores the default settings.
7. Apply – Saves the settings.

Object Detection - Basic

Set Object Detection Zone(s)

1. To set object detection zone(s), first select the camera desired by choosing from the Camera drop down list menu. Choosing the Camera All option will allow the settings to apply to all cameras.
2. Click and drag the mouse pointer on any area on the Video Display. Simply release the mouse button when the selection is done. The object detection zone(s) are marked with a white grid. Repeat step 2 when necessary to add more detection zone(s). Zones should not overlap one another and there is a maximum of eight (8) zones per camera.
3. To clear all selected detection zone(s), click on the Clear All button.
4. To apply settings, click on the Apply button.

1. Camera – Displays a drop down list menu listing all cameras. Choose "All" to update all cameras with the same settings.
2. Select All – Selects the entire video area as one zone.
3. Clear All – Clears all object detection zones.
4. Apply – Saves the settings.
5. Video Display – Shows current view of selected camera as well as the selected detection zones.
6. Minimum Object Size – Displays the minimum object size to be detected within the selected zone(s). The size detected follows the area size indicated and not the shape displayed. For customized object size, select Other and place the desired block size.

NOTE: This setup page will only appear if the server specifications meet the minimum hardware requirements of at least a **Core 2 Duo processor and 2GB memory**.

Object Detection - Advanced

Objection detection depends on two pictures - the background picture and the foreground picture. The differences between the two pictures are the missing objects, new objects or displaced objects.
The advanced settings allow users to adjust the performance of the feature to adapt to the installation camera environment

1. Unique settings checkbox – Indicates whether unique settings are used per camera or otherwise. If checked, unique settings are used per camera. To have all cameras use the same settings, keep this option unchecked and modify the settings in Camera All.

2. Activity Level – This parameter describes the general activity of the scenario. The options are High, Medium and Low. Examples of scenes with high activity are mall entrances, train stations and airport lobbies. High activity scenes can be described as scenes that are always or almost always in a state of flux - people come and go fairly quickly. Examples of scenes with low activity are jewelry stores, secluded areas and stock rooms. Low activity scenes can be described as scenes that people don't visit often.

Continue next page …

3. Movement – Movement is a parameter that describes how people in a scene moves. The options are Very Fast, Fast, Medium, Slow and Very Slow. Examples of scenes where people move quickly are corridors, mall entrances and fire exits. In these scenarios, people don't stay at one place for even a small amount of time - they move continuously.

    On the other end, scenes where people don't move too much are conference rooms, restaurants and private offices. In these places, people tend to stay where they are for some time. Note, however, that it is possible for people to keep still for a long time that the computer may consider them an inanimate object.

    Anywhere in between are scenes like people waiting for an elevator, people lining up to buy tickets and people waiting for a green line so they can cross the street. The important consideration here is how long people tend to stay where they are. Below is a rough equivalence:
    a) Very fast would be constantly moving.
    b) Fast would be "pausing for a moment".
    c) Medium would be "staying in place for a few seconds".
    d) Slow would be "staying in place for a couple of seconds".
    e) Very slow would be "keeping still for about half a minute".

4. Sensitivity – This parameter controls how the computer responds to changes in scenes. The options are High, Medium and Low.

5. Video Clarity – This parameter controls how the computer handles video noise. Select what most closely describes the video clarity. The options are Excellent, Good, Fair, Poor and Noisy.

6. Restore Defaults – Restores the default settings.

7. Apply – Saves the settings.

NOTE: This setup page will only appear if the server specifications meet the minimum hardware requirements of at least a **Core 2 Duo processor and 2GB memory**.

Event Settings

1. Sensor/Relay Operation – Indicates if sensors and relays operation are enabled or disabled. If there are none attached to the DVR Server, make sure that this is set to disabled. To be able to map sensors to relays or cameras and cameras to relays, this option has to be enabled.
2. Relay Reset Time – Indicates the time in seconds it takes for relays to reset back to normal mode if the reset mode is time-based.
3. Restore Defaults – Restores the default settings.
4. Apply – Saves the settings.

Sensor Mapping

Map Sensors

1. To map the sensors to cameras, simply select Cameras in the Sensor Mapping option. Click on the grid to place an "O" to mark the sensor-camera mapping. Once a sensor has been mapped to a camera, this means that when that particular sensor is triggered, such as when a smoke detector detects smoke, the camera which is mapped to that sensor will start to record. NOTE: You can map one sensor to more than one camera and vice versa. When applied, this means that when a smoke detector or infrared motion sensor are triggered, the camera that is mapped to these sensors will start to record.
2. To map the sensors to relays, simply select Relays in the Sensor Mapping option. Click on the grid to place a mapping. Depending on what reset mode is selected in the drop down list menu, the appropriate mark will appear on the grid. A "T" for time-based reset mode, an "S" for sensor synchronized reset mode or an "X" for manual reset mode. Once a sensor has been mapped to a relay, this means that when that particular sensor is triggered, such as when a smoke sensor detects smoke, the relay which is mapped to that sensor will either open or close. NOTE: You can map one sensor to more than one relay and vice versa. When applied, this means that when a smoke detector or an infrared proximity sensor are triggered, the relay that is mapped to these sensors will open or close, i.e. light will turn on.
3. To apply settings, click on the Apply button.
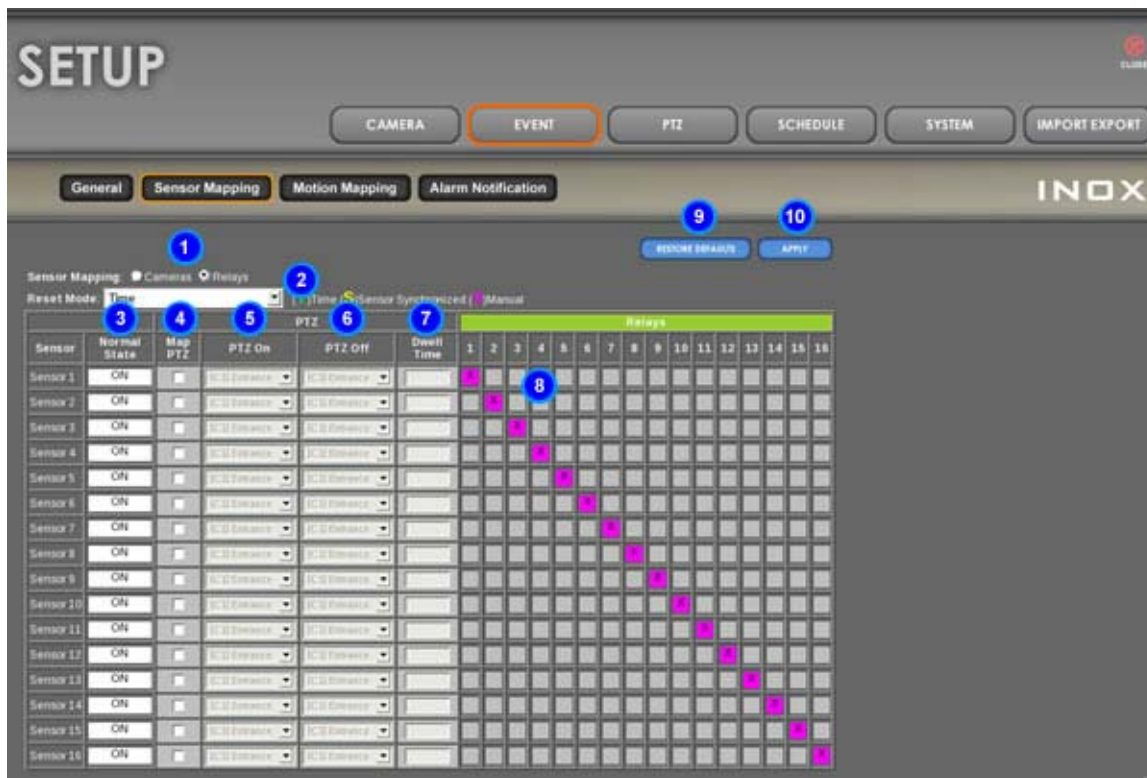
1. Sensor Mapping – Indicates what sensor mapping is currently displayed; mapping to cameras or relays. The active mapping is also indicated above the mapping area.

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2. Reset Mode – Indicates the reset mode for sensor-relay mappings. This is disabled when the sensor mapping is set to cameras. The reset mode options are Time, Sensor Synchronized and Manual.
   Time-based reset mode follows the relay reset time set in the General Event Settings.
   Sensor synchronized reset mode follows the status of the sensor. If the sensor is turns off, then so does the relay. Manual reset mode means the relay will not reset back to normal unless manually reset.

3. Normal State – Indicates what the normal state of the sensor is set to. If the sensor is normally set to "OFF", then click on the normal state to set it on.

4. Map PTZ – Indicates if the sensor will be mapped to a PTZ action when it is triggered. If this is unchecked, then the PTZ On, PTZ Off and Dwell Time options are also disabled.

5. PTZ On – Displays a drop down list menu of available PTZ presets and group runs that can be called when the sensor is triggered.

6. PTZ Off – Displays a drop down list menu of available PTZ presets and group runs that can be called when the Dwell Time length has been reached.

7. Dwell Time – Indicates the length in seconds on how long the PTZ will remain in the PTZ On position before going to the PTZ Off position.

8. Mapping – Indicates the mapping that have been set. For sensor-camera mappings, an "O" signifies that there is a mapping there. For sensor-relay mappings, a "T" signifies a mapping that has a time-based relay reset mode. An "S" signifies a mapping that has a sensor-synchronized relay reset mode. An "X" signifies a mapping that has a manual relay reset mode.

9. Restore Defaults – Restores the default settings.

10. Apply – Saves the settings.

Motion Mapping

Map Camera Motion

1. To map the cameras to relays, click on the grid to place a mapping. Depending on what reset mode is selected in the drop down list menu, the appropriate mark will appear on the grid. A "T" for time-based reset mode, an "M" for motion synchronized reset mode or an "X" for manual reset mode. Once a camera has been mapped to a relay, this means that when that particular camera detects motion, the relay which is mapped to that camera will either open or close. NOTE: You can map one camera to more than one relay and vice versa. When applied, this means that when motion is detected in any of the cameras, the relay that is mapped to these cameras will open or close, i.e. light will turn on.
2. To apply settings, click on the Apply button.
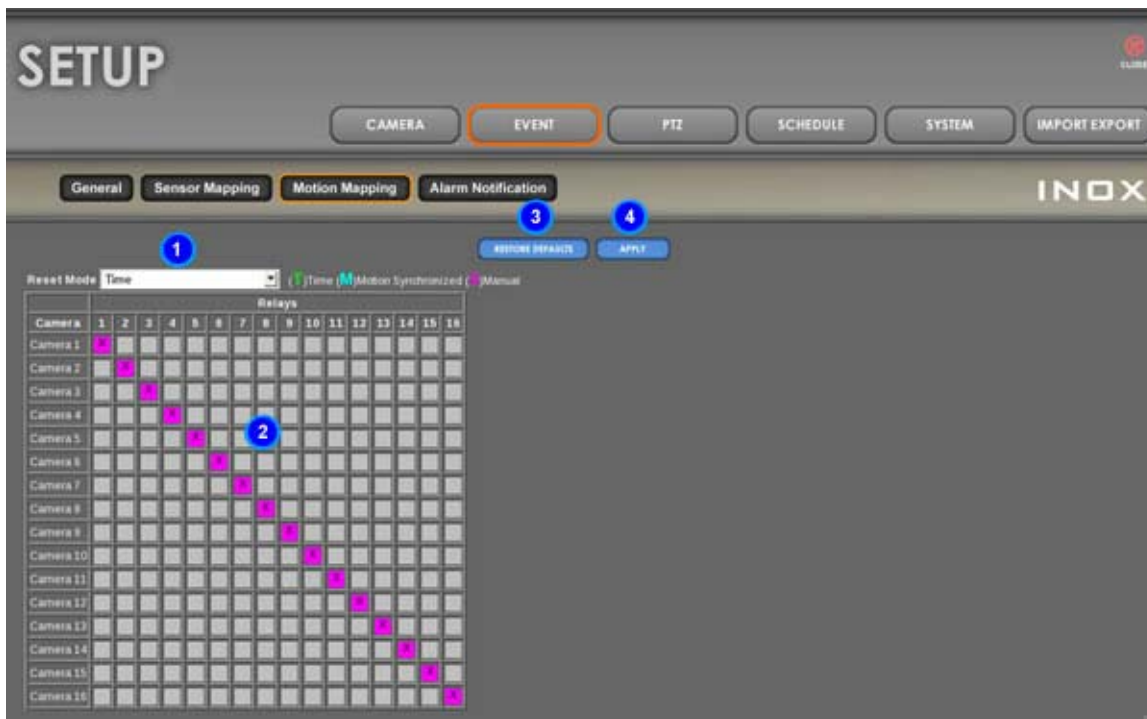
1. Reset Mode – Indicates the reset mode for camera-relay mappings. The reset mode options are Time, Motion Synchronized and Manual. Time-based reset mode follows the relay reset time set in the General Event Settings. Motion synchronized reset mode follows the status of the camera. If the camera no longer detects motion, then the relay turns off. Manual reset mode means the relay will not reset back to normal unless manually reset.
2. Mapping – Indicates the mapping that have been set. For camera-relay mappings, a "T" signifies a mapping that has a time-based relay reset mode. An "M" signifies a mapping that has a motion-synchronized relay reset mode. An "X" signifies a mapping that has a manual relay reset mode.
3. Restore Defaults – Restores the default settings.
4. Apply – Saves the settings.

Alarm Notification

1. Port – Displays a drop down list menu for port settings.
2. Data Bit – Displays a drop down list menu for data bit settings.
3. Baud Rate – Displays a drop down list menu for baud rate settings.
4. Parity – Displays a drop down list menu for parity settings.
5. Stop Bit – Displays a drop down list menu for stop bit settings.
6. Unique settings checkbox – Indicates whether unique settings are used per camera or otherwise. If checked, unique settings are used per camera. To have all cameras use the same settings, keep this option unchecked and modify the settings in Camera All.
7. Motion Border – Indicates whether the motion border alarm notification is enabled or not. If checked, it means that a red border will appear around the video in live view if motion is detected.
8. Object Detection Mask – Indicates whether the object detection mask alarm notification is enabled or not. If checked, it means that a transparent blue mask will appear around the area in live view where a new object was placed or where an object was removed.
9. Emap – Indicates whether the e-map alarm notification is enabled or not. If checked, it means that when motion is detected for that camera the camera icon in the Emap will then blink.
10. Beep – Enables/disables the system beep when an alarm is triggered.
11. E-mail – Indicates whether e-mail alarm notification is enabled or not. If checked, it means that an e-mail notification will be sent to the specified e-mail along with a jpeg screenshot attached to it when an alarm occurs for that specific camera.

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12. E-mail Address – Displays e-mail address used for the e-mail alarm notification.

13. SMS – Indicates whether SMS alarm notification is enabled or not. If checked, it means that an SMS notification will be sent to the specified cell number when an alarm occurs for that specific camera.
14. Cell No. – Displays cell phone number used for the SMS alarm notification. The country code must be included in the entry.
15. Email and SMS Notification Delay – Sets the minimum delay between email and SMS notifications. If an alarm is triggered for a specific camera and an email or an SMS notification has already been sent, an email or SMS will not be sent again for that camera if the same type of alarm is triggered within the delay period. This is to prevent the spamming of email and SMS notifications.
16. Restore Defaults – Restores the default settings.
17. Apply – Saves the settings.

PTZ Settings

1. Port – Displays a drop down list menu for port settings.
2. Data Bit – Displays a drop down list menu for data bit settings.
3. Baud Rate – Displays a drop down list menu for baud rate settings.
4. Parity – Displays a drop down list menu for parity settings.
5. Stop Bit – Displays a drop down list menu for stop bit settings.
6. With PTZ – Indicates the PTZ status of the camera. If checked, it means that the camera is equipped with PTZ capabilities.
7. Protocol – Displays a drop down list menu for supported PTZ protocols. Currently supported PTZ protocols include Pelco D, Pelco P, Merit Li-Lin, DynaColor (DSCP), and VISCA SNC-R225. **NOTE: VISCA SNC-R225 protocol does not have auto-pan or iris functionality. It also only supports 6 preset positions.**
8. Address – Indicates the address to be used for the PTZ camera. This address has to be unique across all enabled PTZ cameras.
9. Motion Tracking – Indicates if motion tracking for the PTZ is enabled. If enabled, the PTZ will track motion that is detected within it's field of vision.
10. Tracking Speed – Displays the tracking speed the PTZ camera uses to track detected motion. Increasing or decreasing this value will allow the user to calibrate the PTZ to track more smoothly.
11. PTZ Speed – Displays the movement speed of the PTZ camera. Increasing or decreasing this value will allow the user to calibrate the PTZ to track more smoothly.
12. Home Preset – Displays the preset location that the PTZ camera will move back to once a certain length of inactivity is reached.
13. Inactivity Reset – Displays how long in seconds the PTZ camera will wait before going back to the home preset location once there is no more motion activity detected.
14. Restore Defaults – Restores the default settings.
15. Apply – Saves the settings.

Presets
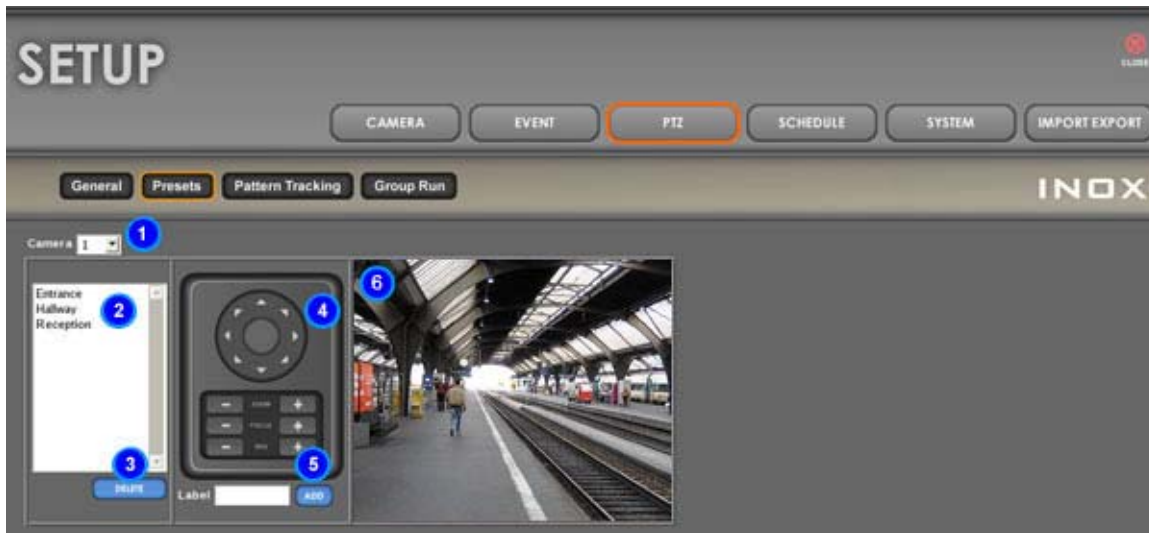
Presets are predefined locations where a PTZ camera has been focused.

1. Camera – Displays a drop down list menu of cameras. Only PTZ cameras enabled in PTZ Settings will be displayed.
2. Preset List – Displays the list of presets that have been defined for the selected camera.
3. Delete – Deletes a selected preset(s) from the preset list.
4. PTZ Control buttons – Controls the PTZ camera.
5. Add – Adds the current PTZ position as a preset for the current camera. The name of the preset will be based on what is placed in the text box.
6. Video Display – Displays the camera view.

Pattern Tracking

Pattern tracking is a functionality which allows the DVR Server to control a PTZ camera to move from one predefined preset to another. It can be used to have a PTZ camera scan a room or area by automatically focusing on different locations in a sequential manner.

1. Camera – Displays a drop down list menu of cameras. Only PTZ cameras enabled in PTZ Settings will be displayed.
2. Pattern selector – Selects the specific pattern for deletion.
3. Delete – Deletes the selected pattern(s).
4. Pattern Label – The label to be used for the pattern.
5. Dwell Time – The length in seconds the pattern will wait in between preset settings before moving to the next preset.
6. Description – The description to be used for the pattern.
7. Presets list – Displays the list of presets available for the current camera.
8. Preset selector – Adds/Removes presets to/from the selected preset list. To add a preset to the pattern, simply select a preset or several presets from the Presets list and click on the right arrow. To remove a preset or several presets from the pattern, select the preset(s) from th Selected Presets list and click on the left arrow. The order of the selected presets will be the order that the pattern will be run.
9. Selected Presets list – Displays the list of selected presets to be used for the pattern.
10. Add – Adds a new pattern based on the fields set.

Group Run

A group run is a functionality that allows the DVR Server to simultaneously redirect the focus of several PTZ cameras to specific areas.

1. Group selector – Selects the specific group for edit or deletion.
2. Add – Opens the "Add Group Run Settings" setup page to allow the user to add a new group run.
3. Edit – Opens the "Edit Group Run Settings" setup page to allow the user to edit the selected group.
4. Delete – Deletes the selected group(s).
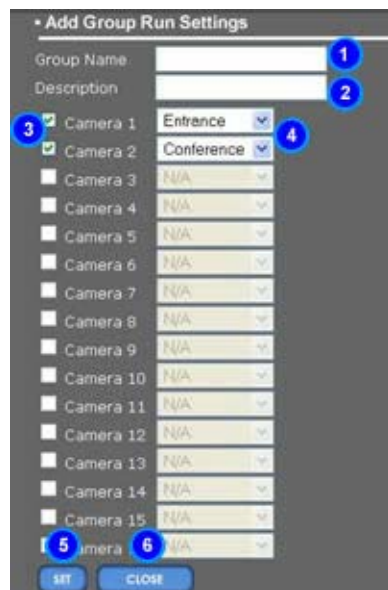
Add/Edit Group Run

1. Group Name – The group name to be used for the group run.
2. Description – The description to be used for the group run.
3. Camera selector – Cameras that have defined presets will be enabled and can be selected to be part of a group run. In order to create a group run, at least two cameras have to be selected.
4. Preset list – Displays a drop down list menu of presets available for the specific camera.
5. Set – Adds/Edits the group run based on the fields set.
6. Close – Closes the "Add/Edit Group Run Settings" setup page.

Recording Schedule

Set Recording Schedule

1. To set recording schedules, first select the camera desired by choosing from the Camera drop down list menu. Choosing the Camera All option will allow the settings to apply to all cameras.
2. Click and drag the mouse pointer over the grid to select the area to schedule for recording. Once you release the mouse pointer, a menu will appear, indicating the recording options: C – Continuous, M – Motion, D – Object Detection, S – Sensor, F – Forced, E – Event = Sensor and Motion and Object Detection, X – No Recording or Cancel to cancel the selection. When the recording is set to sensor, then only sensor triggered events are recorded. When motion recording is set, only motion detected events are recorded. Event recordings allow for motion, sensor and object detection events. However, if all of these events are triggered, sensor recording takes priority, then object detection and lastly motion. Continuous recording simply sets the camera to record all the time but should a sensor, motion or object detection event be triggered, the recording will be changed according to the event type triggered. The Forced recording option, is similar to the Continuous recording option except that it will ignore all triggered events.
3. To apply settings, click on the Apply button.
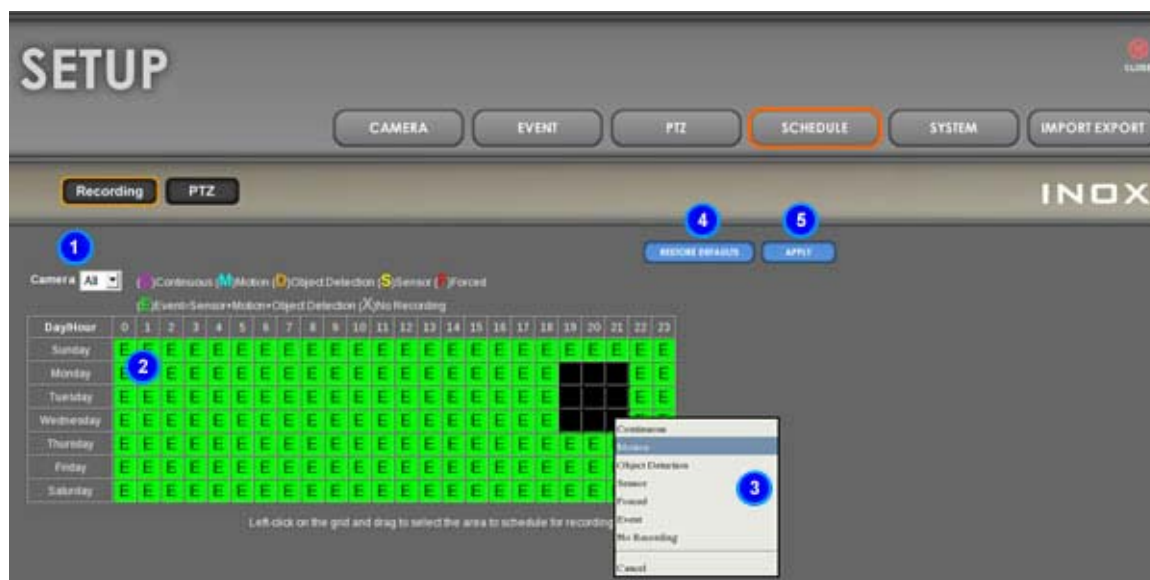
1. Camera – Displays a drop down list menu listing all cameras. Choose "All" to update all cameras with the same settings.
2. Recording Schedule grid – Displays the complete recording schedule.
3. Recording Type menu – After selecting a time period, this menu will appear where the user can select what type of recording will be assigned to the selected time period. Possible recording options are Continuous, Motion, Object Detection, Sensor, Forced, Event or No Recording.
4. Restore Defaults – Restores the default settings.
5. Apply – Saves the settings.

PTZ Schedule

Add / Delete PTZ Schedule

1. Under PTZ Schedule, select the groups, presets or patterns from the PTZ Type and List menus.
2. Select your Start day and time.
3. Select your End day and time. To select until the end of a particular day, set the day to the succeeding day and set the time to 00:00. For example, to set the entire day for Monday, set the Start to Monday 00:00 and then set the End to Tuesday 00:00. If the Start day and time is less than the End day and time, then the schedule will wrap around the week. For example, if the Start is set to Wednesday 00:00 and the End is set to Monday 00:00, then the schedule will take effect on all days except Monday and Tuesday.
4. Then, click on Add. The new schedule will then be added to the list. Pink bars indicate group runs, blue bars indicate presets, and red bars indicate patterns.
5. To delete a schedule, make a selection on the timeline in order to display the schedule(s) in the bottom left area for that particular day and hour. Select the schedules to delete by checking the checkbox next to the desired schedules and then click on Delete. A dialog box will pop up, confirming if you wish to delete the schedule. Click on OK to delete the schedule or click on Cancel if you choose otherwise.
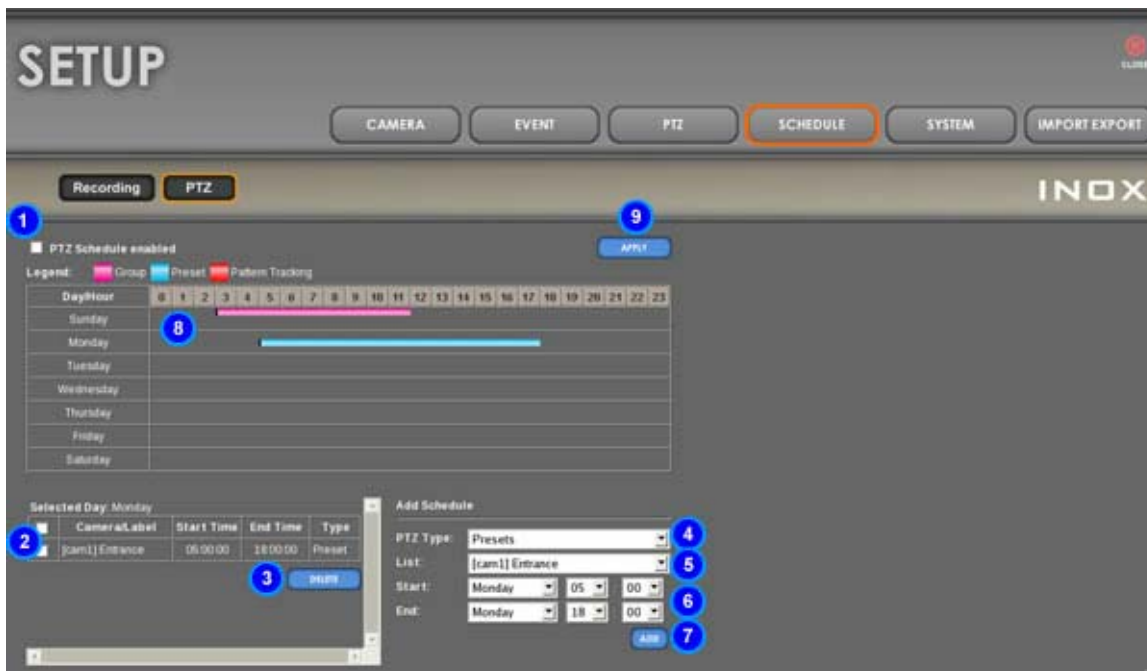
1. PTZ Schedule status – Indicates if PTZ schedule is enabled or otherwise. If checked, it means that the PTZ schedule function is enabled.
2. Schedule selector – Displays the list of scheduled PTZ functions in a given period. To select a PTZ schedule for deletion, simply check the checkbox next to the desired schedule. To select all listed schedules, check the topmost checkbox.
3. Delete – Deletes the selected PTZ schedule(s).
4. PTZ Type – Displays a drop down list menu for the types of PTZ functions to be scheduled: presets, pattern tracking and group.

5. List – Displays a drop down list menu of the selected PTZ Type. If in the PTZ type, preset was selected, then this list will display a complete list of all the presets available.
6. Start/End – Displays a drop down list menu for the start / end day and time of the PTZ schedule.

7. Add – Adds a new PTZ schedule based on the fields set. Should there be any conflicts in the PTZ schedules, the system will not insert the schedule and inform the user of the conflict.
8. PTZ Schedule Display – Displays all scheduled PTZ functions
9. Apply – Saves the settings.

System Settings

1. DVR Name – This is the name to be used by the DVR server.
2. Location – The location of where the DVR server is.
3. Description – The description of the specific DVR server.
4. Initial Overlay Screen – Displays the default screen layout when the DVR server starts.
5. Cycle Dwell Time – The time the system waits before moving to the next camera(s) when in cyclic screen mode.
6. Auto-lock Duration – The time the system waits before locking the application due to user inactivity.
7. Enable Watermark – Enables / Disables incorporation of a watermark into the video recording. The user can verify in Search and Playback the video recordings that could have been modified or altered. When the application determines that a video has been modified, a window will pop-up indicating that the specific image has been altered.
8. Video Signal – Displays the current video signal.
9. SMTP Server – Displays the SMTP server address.
10. Username – Displays the username to be used when validating for the SMTP server.
11. Password – Displays the password to be used when validating for the SMTP server.
12. Restore Defaults – Restores the default settings.
13. Apply – Saves the settings.

Network

1. **DVR Name** – This is the name to be used by the DVR server. If the DVR server will be registered to the DDNS server, then the DVR Name must be unique per client account.

DDNS Server Settings
The DDNS server setup allows the DVR server to be globally accessible by the Remote Client even if the DVR Server has a dynamic IP address. The DDNS server is a separate application which should be installed on a different machine.

2. **DDNS Server** – The IP Address or domain name of the DDNS server.
3. **Port** – The port to be used for the DDNS server.
4. **Username** – The username to be used to validate the account in the DDNS server.
5. **Password** – The password to be used to validate the account in the DDNS server.
6. **Client Account** – The client account name given by the administrator of the DDNS server.
7. **Auto Connect to DDNS** – To set the server to automatically update the DDNS server of any changes in the IP address of the DVR server, check this option.

Network Configuration
8. **Use DHCP** – To use Dynamic Host Configuration Protocol (DHCP) check this option. By default the DVR server uses DHCP. When unchecked a static IP for the server can be set and the options for IP Address, Subnet Mask and Gateway Address are enabled.

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9. IP Address – If DHCP is enabled, then this displays the IP currently set for the DVR server. If DHCP is disabled, use this field to enter the static IP address.
10. Subnet Mask – The subnet mask to be used for the static IP.
11. Gateway Address – The gateway address to be used for the static IP.
12. Primary DNS – The primary DNS to be used for the static IP.
13. Secondary DNS – The primary DNS to be used for the static IP.

14. Ports – Displays the various ports used by the DVR and related applications.
15. Restore Defaults – Restores the default settings.
16. Apply – Saves the settings.

Emap

Set Camera, Sensor and Relay Locations

1. To set the locations for cameras, sensors and relays, select the map first from the Map List.
2. Drag the device icons onto the map to set the location.
3. Click on the Apply button to apply and save your settings.
4. To remove the device icons, simply drag the device icons out of the map and they will return to the device icon list.

1. Map List – Displays the list of available maps.
2. Emap Display – Displays the current selected E-map with the device icons placed in user-specified locations.
3. Device Icons – Displays the list of device icons. Yellow icons are for cameras, blue icons are for sensors and green icons are for relays.
4. Add – Displays a section to allow the user to add more maps.
5. Edit – Displays a section to edit the map's name and description.
6. Delete – Deletes the selected map from the map list.
7. Apply – Saves the settings.

Add Emap

When the Add button is clicked, the lower part of the Emap displays a section to allow the user to upload additional electronic maps. Click on Browse to select a JPEG image for upload. Enter the name of the map and its description. To upload the map, click on the OK button. Otherwise, click cancel to hide the Add Emap section.

Edit Emap

When the Edit button is clicked, the lower part of the Emap displays a section to allow the user to modify the name and description of the selected Emap.

Users

1. User selector – Selects the specific user either for editing or deletion.
2. Add – Opens a new page to add a new user.
3. Edit – Opens a new page to edit the selected user.
4. Delete – Deletes the selected user(s).
5. Edit Access – Opens a new page to edit the access rights of the specific user.

NOTE: The Admin e-mail address indicated on the Users Settings table is also used when sending an alarm notification. The Admin account also cannot be deleted.

Add / Edit User
To add a user, just click on the Add button in the users setup page and a new page will open up where the user information can be added/edited. Saving the data will then display the list of users once again. When editing an existing user, the Login Name of the user can no longer be modified.

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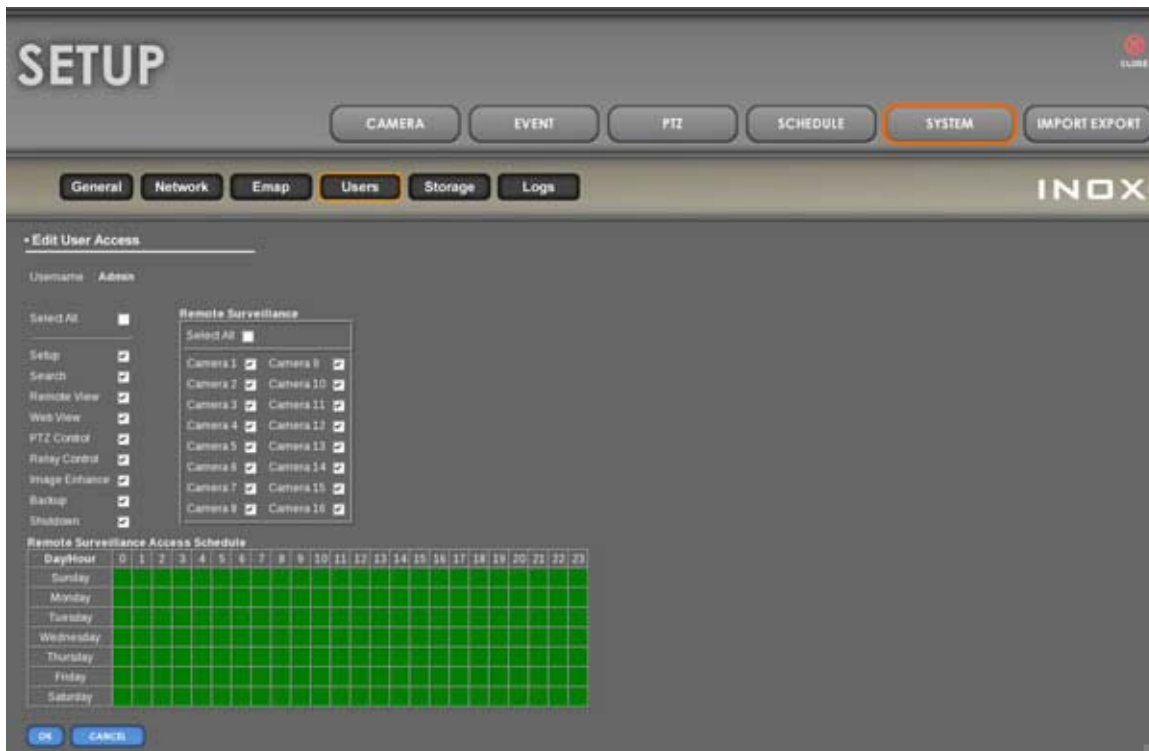
Edit User Access

Clicking on the Edit User Access button will display the page where the access rights of the user can be modified. Here, access to specific functionalities can be set per user. When the Remote View or Web View functionality is selected then the Remote Surveillance permissions are enabled, allowing the setup for specific cameras only.

Users can also be limited based on specific hours of a day. Simply click and drag to change the status of access rights. Red blocks mean that remote client access for this user is restricted. Green means there is no restriction to that hour.

NOTE: For the Admin account, the setup functionality cannot be removed.

Storage

1. Drive Information – Displays the name of the partition, total space, used space, available space, used space in percentage, and mount directory of the available partitions in the DVR server.
2. Delete old files – This option allows the deletion of old files when all Video DBs are full. If this is unchecked and all the space in Video DBs are full, then the DVR server will stop recording.
3. Path – Displays the directory where recorded videos are stored. This cannot be modified.
4. Auto-allocate – New hard disks formatted and mounted on the DVR server will not automatically be used as storage space by the DVR server. The auto-allocate function will make use of these hard disks by allocating a Video DB for each new device detected.
5. Apply – Saves the settings.

Logs

1. Log Option – Indicates what logs are currently displayed; System Events or System Logs.
2. Search category – Displays a drop down list menu of the different search categories. For System Events the search categories are Camera No, Event Type and Event Time. For System Logs the search categories are Audit Time, Status, Action and Remarks.
3. Search description – Keywords for searching within the Search Category. "%" can be used as a wild card but keep in mind that the search is case-sensitive.
4. Page size limit – Indicates the limit of the page size of the search results.
5. Go – Starts the search based on the search criteria.
6. Search results – Displays the results of the executed search. Columns in the search results vary depending on the type of log selected.
7. Search page navigation – Navigates the results pages.

Import / Export Settings

User's can export the setup settings of the DVR in case they want to back it up. Exported DVR settings are saved as settings-YYYYMMDD.dvr. They can use the import facility to load previously exported settings.

Export DVR Settings
1. Click on **Browse** button. A window will open showing the file directory of Server.
2. Browse for destination folder
3. Click **Export** button

Import DVR Settings
1. Click **Browse** button and locate the .DVR file you want to import
2. Click the **Import** button

1. Import – Imports DVR settings. Click on the Browse button to search for a DVR settings file to upload to the server.
2. Export – Exports DVR settings. Click on the Browse button to select the location of where the DVR settings file will be saved.
3. File Directory of Server – Displays the location of where the DVR settings file will be saved.

Note: The Import/Export menu is only available when performing setup on the DVR Server.

Frequently Asked Questions

Hard Disk Requirements

How do I determine how much hard disk space I need?

There are a number of factors to consider when calculating storage needs. They following factors are:

- Number of cameras
- Number of hours per day the camera(s) will be recording
- Length of storage (how long the data must be stored)
- Type of recording (motion detection, event/sensor-triggered, scheduled or continuous)
- Other parameters such as frame rate, resolution and compression

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Calculating your hard disk requirements on a DVR using hardware MPEG-4 compression:

In MPEG-4, the images are received in a continuous data stream. It is the bit rate which determines the corresponding storage requirements. The bit rate is a result of a specific frame rate, resolution and compression, as well as the level of motion.

Hardware MPEG-4 compression has an approximate file size from 1-5Kb per frame (CIF) 360x240.

Let's say you have 4 cameras and you need to continuously record video at real-time 30fps at 360x240 resolution. How much hard disk do you need for one month of continuous recording?

Calculation: 5 x F (frame rate) x 60 (sec) x 60 (min) x C (number of cameras)
Ex: 5Kb x 30fps = 150Kbps = 9,000 Kb per min = 540Mb per hour
540Mb x 4 (number of cameras) = 2,160Mb x 24 (hours) = 51,840Mb in one day
In one month, you would need 1,555,200Mb or 1,555Gb of hard disk space

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Storage Requirements in GB, Continuous Recording for High Quality 30fps CIF

Retention Period (in weeks)	Cameras							
	1	2	3	4	5	6	7	8
1	79	159	238	317	396	476	555	634
2	159	317	476	634	793	951	1,110	1,268
3	238	476	713	951	1,189	1,427	1,665	1,903
4	317	634	951	1,268	1,585	1,903	2,220	2,537
5	396	793	1,189	1,585	1,982	2,378	2,775	3,171
6	476	951	1,427	1,903	2,378	2,854	3,329	3,805
7	555	1,110	1,665	2,220	2,775	3,329	3,884	4,439
8	634	1,268	1,903	2,537	3,171	3,805	4,439	5,073
9	713	1,427	2,140	2,854	3,567	4,281	4,994	5,708
10	793	1,585	2,378	3,171	3,964	4,756	5,549	6,342
11	872	1,744	2,616	3,488	4,360	5,232	6,104	6,976
12	951	1,903	2,854	3,805	4,756	5,708	6,659	7,610

Storage Requirements in GB, Continuous Recording for High Quality 30fps 1/2 D1

Retention Period (in weeks)	Cameras							
	1	2	3	4	5	6	7	8
1	159	317	476	634	793	951	1,110	1,268
2	317	634	951	1,268	1,585	1,903	2,220	2,537
3	476	951	1,427	1,903	2,378	2,854	3,329	3,805
4	634	1,268	1,903	2,537	3,171	3,805	4,439	5,073
5	793	1,585	2,378	3,171	3,964	4,756	5,549	6,342
6	951	1,903	2,854	3,805	4,756	5,708	6,659	7,610
7	1,110	2,220	3,329	4,439	5,549	6,659	7,769	8,879
8	1,268	2,537	3,805	5,073	6,342	7,610	8,879	10,147
9	1,427	2,854	4,281	5,708	7,135	8,561	9,988	11,415
10	1,585	3,171	4,756	6,342	7,927	9,513	11,098	12,684
11	1,744	3,488	5,232	6,976	8,720	10,464	12,208	13,952
12	1,903	3,805	5,708	7,610	9,513	11,415	13,318	15,220

*Estimated values shown. Actual hard disk consumption may still vary.

Mounting USB Devices

How do I mount USB Devices?

USB devices should automatically be mounted. However, if for some reason, they are not, simply follow the steps below to mount them manually.

1. Attach the device into the USB port.
2. Click on CTRL + ALT + F1 to enter command window.
3. Log-in using the root account. Type in password.
4. Type in dmesg.
5. Look for the file system name that is assigned to the device. This varies for many systems, but usually it's sda, sda1, sdb or sdb1.
6. Type in mount <space> /dev/<file system> <space> /<name of new folder>, for example, mount /dev/sdb /mnt or mount /dev/sdb1 /mnt.
7. Type cd /mnt to go to the folder that you had just created.
8. Type ls to list all files in that folder.
9. To unmount, type in umount /dev/<file system>, for example, umount/dev/sdb1.
10. Click on CTRL + ALT + F7 to exit command prompt.

```
Initializing USB Mass Storage driver...
scsi2 : SCSI emulation for USB Mass Storage devices
   Vendor: usb         Model:                    Rev: 1.11
   Type:    Direct-Access                     ANSI SCSI revision: 02
SCSI device sda: 64512 512-byte hdwr sectors (33 MB)
sda: Write Protect is off
sda: Mode Sense: 03 00 00 00
sda: assuming drive cache: write through
SCSI device sda: 64512 512-byte hdwr sectors (33 MB)
sda: Write Protect is off
sda: Mode Sense: 03 00 00 00
sda: assuming drive cache: write through
 sda: sda1
Attached scsi removable disk sda at scsi2, channel 0, id 0, lun 0
USB Mass Storage device found at 2
usbcore: registered new driver usb-storage
USB Mass Storage support registered.
[root@localhost dvr]# 
```

Manual Partition of HDD

How can I partition several hard disks during installation?

If you are installing using one hard drive only, please use the "Automatically partition" option under DVR Installation Setup. Please refer to the DVR Server Installation Manual for more information.
If you are installing using several hard drives and you want to have them as separate hard disks, please follow the steps below:

1.   Select Create custom layout.
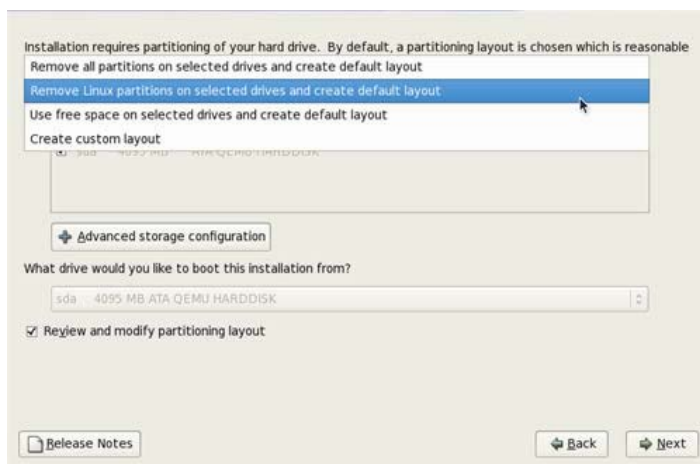
2.   All partitions must be removed. To delete, click on YES. Or select the partitions and then click on the DELETE button to delete partition.
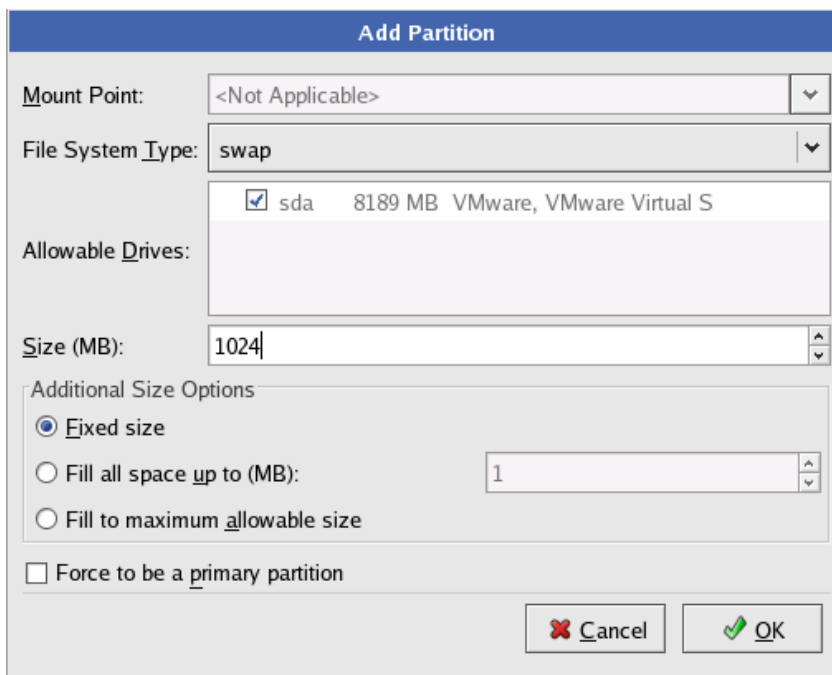

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Once you have deleted all partitions, your screen will look something like below.

4.   Click on NEW to add a new partition. Choose swap as your File System Type. And enter 1024
     (MB) on the Size textbox. Choose the Fixed Size radio button. Finally, click on OK.

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Drive /dev/sda (8189 MB) (Model: VMware, VMware Virtual S)

sda1	Free
1027 MB	7161 MB

New	Edit	Delete	Reset	RAID	LVM

Device	Mount Point/ RAID/Volume	Type	Format	Size (MB)	Start	End	
▽ Hard Drives							
▽ /dev/sda							
/dev/sda1		swap	✔	1028	1	131	
Free		Free space		7162	132	1044	

☐ Hide RAID device/LVM Volume Group members

◀ Back   ▶ Next

5. Click on NEW to add a new partition. Enter backslash on the Mount Point, as shown. Choose ext3 as your File System Type. Enter size for partition, for example 2000 MB. Choose the Fixed Size radio button. Check "Force to be primary partition". Finally, click on OK.

Drive /dev/sda (8189 MB) (Model: VMware, VMware Virtual S)

sda1	sda2	Free
2000 MB	1027 MB	5161 MB

| New | Edit | Delete | Reset | RAID | LVM |

Device	Mount Point/ RAID/Volume	Type	Format	Size (MB)	Start	End	
▽ Hard Drives							
▽ /dev/sda							
/dev/sda1	/	ext3	✓	2000	1	255	
/dev/sda2		swap	✓	1028	256	386	
Free		Free space		5162	387	1044	

☐ Hide RAID device/LVM Volume Group members

◀ Back   ▶ Next

1. Click on NEW to add a new partition. Enter a Mount Point, for example /data1. (Ensure that you input a backslash before entering the Mount Point.) Choose ext3 as your File System Type. Enter size for partition, for example 100 MB. Choose the Fill to maximum allowable size radio button. Finally, click on OK.

Add Partition

Mount Point: /data1

File System Type: ext3

Allowable Drives: ☑ sda   8189 MB VMware, VMware Virtual S

Size (MB): 100

Additional Size Options
○ Fixed size
○ Fill all space up to (MB):   1
◉ Fill to maximum allowable size

☐ Force to be a primary partition

✖ Cancel   ✔ OK

Drive /dev/sda (8189 MB) (Model: VMware, VMware Virtual S)

sda1	sda2	sda3
2000 MB	1027 MB	5161 MB

New	Edit	Delete	Reset	RAID	LVM

Device	Mount Point/ RAID/Volume	Type	Format	Size (MB)	Start	End	
▽ Hard Drives							
▽ /dev/sda							
/dev/sda1	/	ext3	✓	2000	1	255	
/dev/sda2		swap	✓	1028	256	386	
/dev/sda3	/data1	ext3	✓	5162	387	1044	

☐ Hide RAID device/LVM Volume Group members

◀ Back   ▶ Next

Using Partition Manager

How do I format or partition new hard disks once the DVR application has been installed?

To format or partition additional hard disks for DVR storage, follow these steps:

1. Double-click the PARTITION MANAGER icon on the Desktop.

2. Enter the root password to open the application window. Please follow the instructions below to avoid damaging the hard disks during partitioning and formatting.
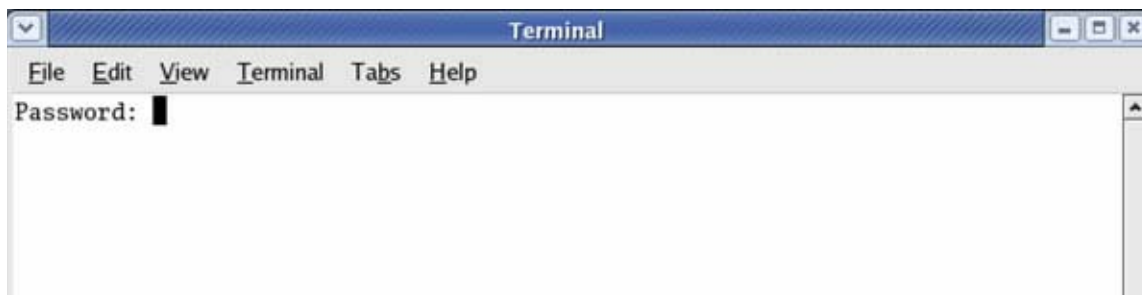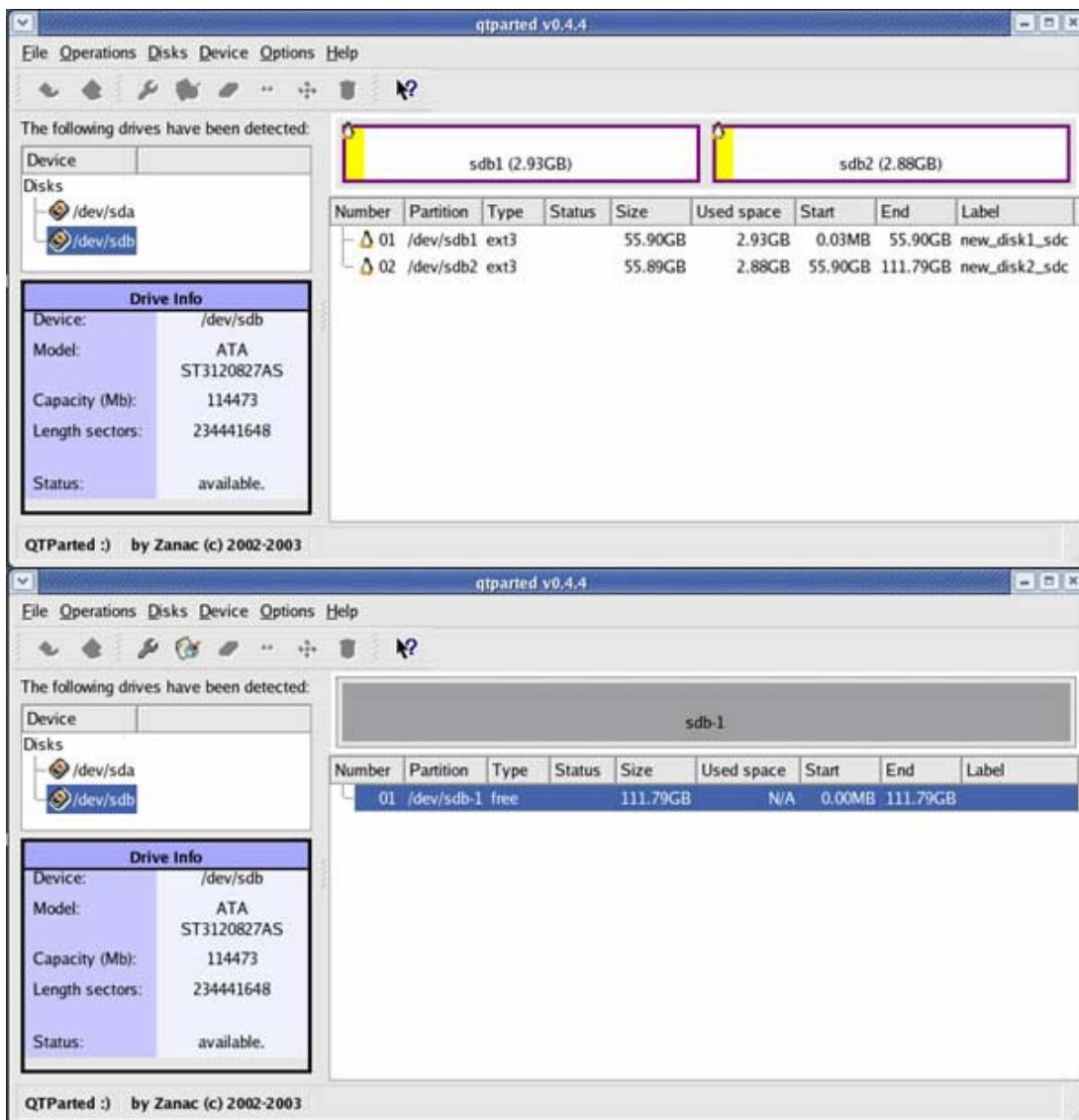

3. **On Detection:**
   Hard disk devices are sda, sdb... A display of sda1 and sda2 means there are 2 partitions in hard disk 0. sdb will be hard disk 1. Devices (e.g. sda, sdb) without number suffixes means unpartitioned devices.

   Detected hard disk devices are seen at the left side of the screen. Select only disk drives with Drive Info - status: available. Do not make any operation on disk drives with the busy status. A "busy" disk drive means that partition is currently mounted and can not be modified.

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4. **On Disk Partition**:

To make a new partition table follow these steps:

a. Select an available disk drive and right-click on it, then select "&Make a new Partition Table". Click Yes on message confirmation.
b. At the right side of the screen - list of partitions, right-click the first "free" entry and select "&Create".
c. Set the label and size of the new partition. Set the partition as **Primary Partition** and an **ext3 partition type**. Only OS disks need a partition of type "swap", so there is no need to create any swap partitions on non-OS disks.
d. To execute, click the save or commit icon (with diskette image) or click - File Menu | &commit then click Yes for confirmation and OK on progress completion.
e. If an error appears after committing, format the new partition following the steps outlined in the section below.
f. To make a new partition on remaining hard disk space, repeat instructions (b) to (e).

5. **On Formatting a Disk**:

   To format a partition listed at the right side of the screen follow these steps:

   a. Right-click the partition entry of a selected disk drive and select "&Format".
   b. Set the label of partition and set an **ext3** partition type then click OK.
   c. To execute/apply, click the save or commit icon (with diskette image) or click - File Menu | &commit then click Yes for confirmation and OK on progress completion.
   d. For another format operation, repeat instructions (a) to (c).
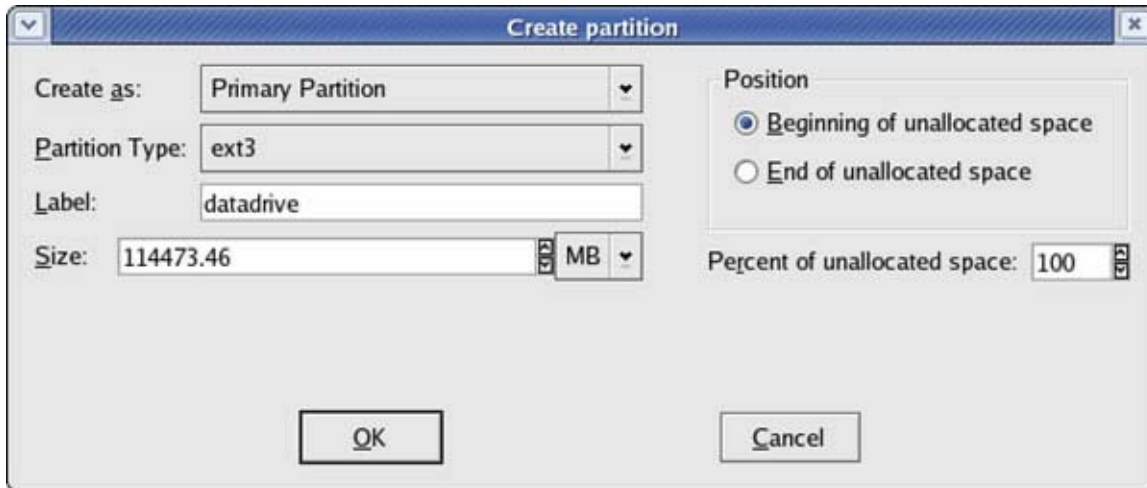
6. To mount a newly formatted partition or hard disk, note the device path of the disk partition (e.g /dev/sdb1) and use the DISK MOUNTER application on the Desktop.

6. Close the application.

Using Disk Mounter

How do I mount additional hard disks once the DVR application has been installed?

To mount or unmount additional hard disks for DVR storage, follow these steps:

1. Double-click the DISK MOUNTER icon on Desktop.

2. Enter root password. Click YES for backup file message confirmation. The filesystem table (fstab) editor window will be shown. This contains information on all the partitions and storage devices in your computer. Ex.

device	mountpoint	filesystem	options	dump	fsck
/dev/sda2	/	ext3	defaults	1	1

This means that SDA partition 2 is mounted automatically during boot time at / (root) folder having ext3 filesystem.
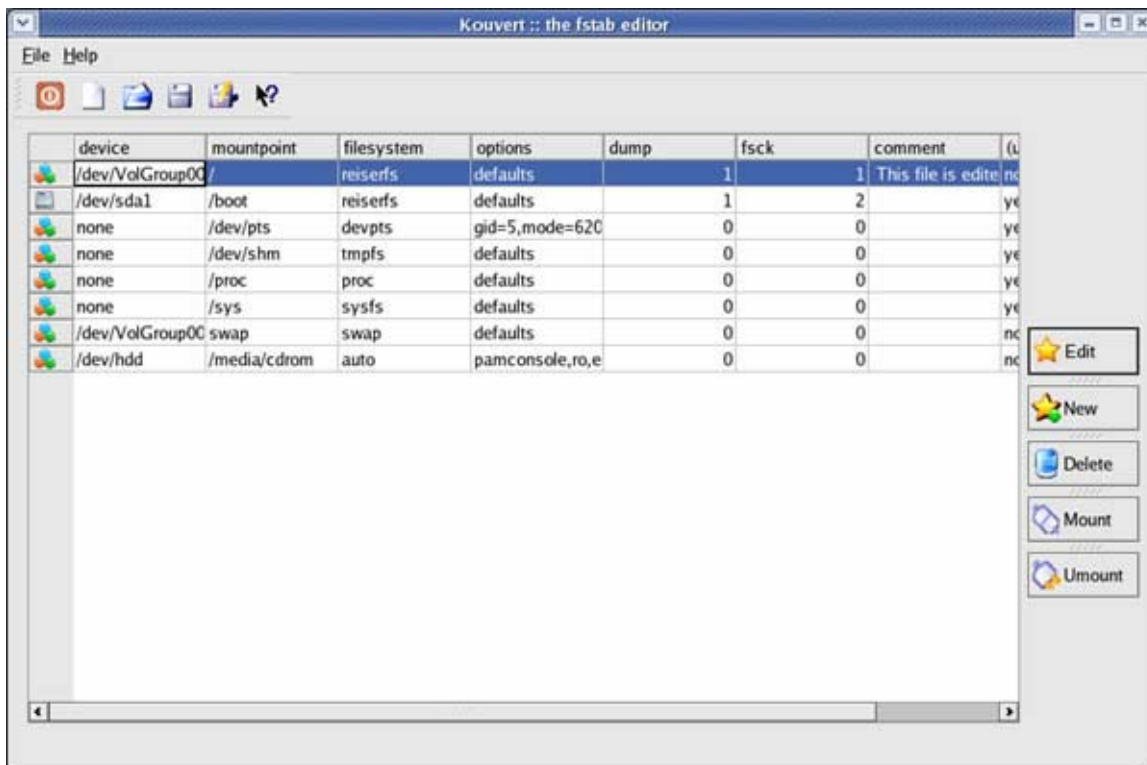
3. To mount a new hard disk, follow these steps:

   a. Click New button.
   b. Set the type with disk partition **type ext3**. DVR uses the ext3 filesystem of Linux. The ext3 file system provides stronger data integrity in the event that an unclean system shutdown occurs.
   c. Set the device path of additional disk partitions(e.g /dev/sdb1). You can find the device path using the PARTITION MANAGER on the Desktop and select the disk device with drive info - status:available then the partition device path is shown at the right side of the tool window. Please refer to the PARTITION MANAGER usage instructions for details.
   d. Set the mount point path by selecting an existing directory or creating a new one for the mount point (e.g. /disk2). This just means that your new device or disk is accessible in that specified directory.
   e. Set the following:
      *fsck order = last checked.
      *dump check box = checked.
   g. Place a comment for that mount point for easier identification of the mounted partition.
   h. Click "Valid" and the latest entry will be added at the bottom of the list.
   i. Select the latest entry added and click Mount button. To check if the mount is successful, click again the Mount button and a message that the disk is mounted already or busy will pop up, click OK then.
   j. Do steps (a) to (i) to mount another disk partition.
   k. Click Save button or File Menu | Save to mount the newly added partition automatically at boot time.

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4. To unmount a data disk (non-OS disk),

    a. Select the disk device entry in the list and click Umount button. To check if the unmount is successful, click again the Umount button and a message that the disk is not mounted will pop up, click OK then.

    b. Delete the list entry of an unmounted disk if the disk will not be mounted at boot time or the disk will not be available at reboot. An error will occur during OS bootup if a device is in the filesystem table but is not present/accessible during bootup.

    c. Click Save button or File Menu | Save to reflect the change of disk setting automatically at boot time.

5. Close the application.

Resetting Video Display

When the server starts, the screen becomes all black. What can I do?

This can sometimes happen when you change from the monitor that was initially used during the installation to a different one. The operating system uses the old video configuration and tries to apply it with the new monitor which would, in some cases, cause the black display.

To reset the video display, follow these steps:

1. When the black screen appears, press CTRL+ALT+F1 to go to terminal mode.

2. Login as root and place the appropriate password.

3. Once logged in, type:
    ### system-config-display

4. Make the necessary modifications in display configuration and apply the changes.

5. Once back in the terminal, reboot the system by typing:
    ### reboot

6. If the display is still black, follow steps #1 and #2. Then instead of following step #3, you can try to reset the settings back to defaults by typing:
    ### system-config-display --noui --reconfig

7. Then reboot the system once again.

8. When you no longer get the black screen, make sure the resolution is set correctly. press CTRL+ALT+Right Arrow to display the Desktop.

9. Double-click on the Configure Display on the desktop and make sure the resolution is set at 1280 x 1024 and that the video drivers are set correctly.

10. Once you have applied the settings, you might need to reboot. You can do so by double-clicking the Reboot icon on the desktop. If a reboot is not necessary, press CTRL+ALT+Left Arrow to go back to the DVR display.

Remarks -

NOTICE – Specification, functions and features mention in this manual are subject to change without prior notice. Future software upgrades and patches are available and downloadable at www.inox.com.my