



# MobileView Navigator User Manual

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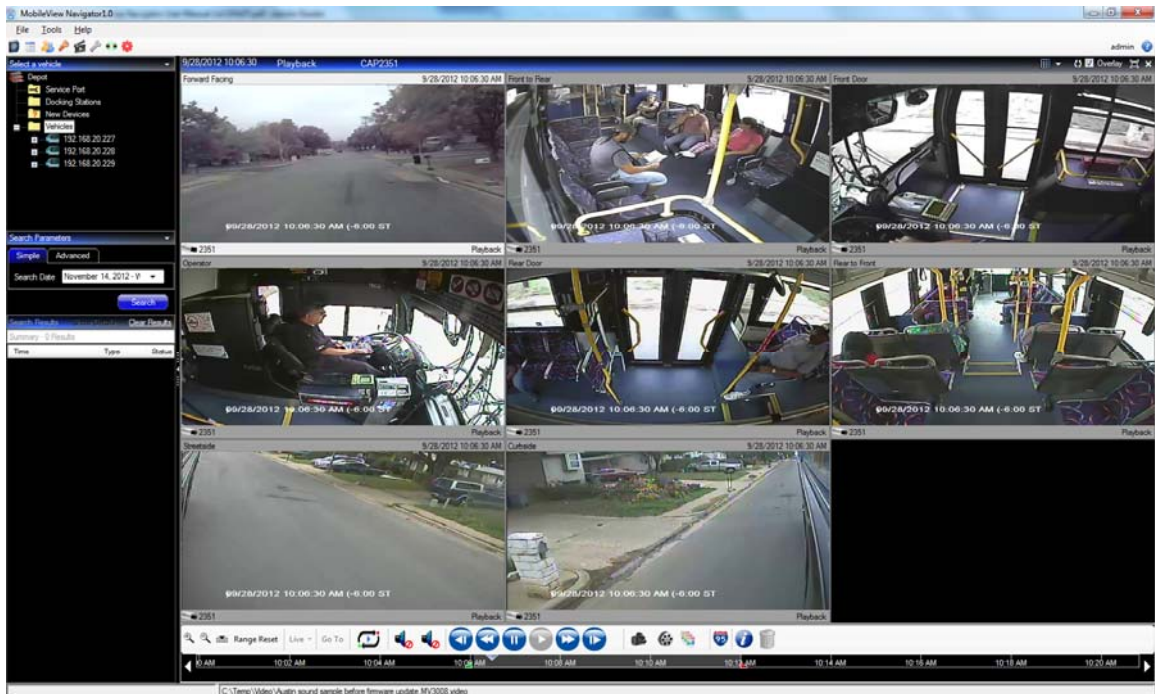




# Chapter 1 Overview

MobileView Navigator is video management software that enables security-related personnel to easily and remotely gather video evidence, monitor live situations, and configure and maintain a mobile video surveillance system that consists of UTC digital video recorders (DVRs) and analog video cameras. MobileView Navigator provides a more intuitive way to find and provide relevant video content. Figure 1 shows the MobileView Navigator main screen with a typical configuration.

Figure 1: MobileView Navigator Main Screen



**Figure 2: MobileView Navigator Main Screen**



**Table 1: Mobile 1.0 Main Screen Overview**

Item	Name	Description
1	File Menu	Contains the following drop-down menus: File, Tools, and Help
2	Toolbar	Contains shortcuts to Common Operations
3	Vehicle Selector Panel	All the folders and respective devices in folders are loaded into the Vehicle Selector tree. The state of devices loaded is represented on the tree. (Reachable/Not reachable)  If any Caddies are discovered they are added under Hard Drives node.
4	Search Parameters Panel	Tabs for Simple and Advanced Searching
5	Search Results Panel	Displays the Search results
6	Disk Analysis	When a video tile is selected the disk analysis for that camera is displayed under the timeline bar.
7	Help icon	Launches User Manual
8	Video Layout Manager	Contains commands related to the Video layout: Display Modes, Overlay, Maximize/Restore, and Close
9	Video Display	Displays Live or Playback Video
10	Timeline Bar	While playing video all cameras play in time synch. The video time will be displayed on the viewer and the time line pointer will move as the video proceeds.

MobileView Navigator consists of 6 panels and several major dialogs as listed above. Panels are resizable by dragging the vertical left or right splitter bars. Arrow icons next to panel names signify the ability to hide/unhide the panel. This provides custom application layout styles depending on the activities that you want to perform.

The **Vehicle Selector** panel is the central administration area in the software and allows you to quickly search and access any device or camera in your system.

The Vehicle Selector panel features double-click or drag n' drop capability to view cameras or devices as a whole. By right-clicking on any object in the Vehicle Selector panel, you will be exposed to a number of operations that can be performed on the object. These include health diagnostics, device configuration, disk analysis, properties, search, firmware uploads, and more.

This panel is permission-based, so if you do not have rights to perform certain actions, you will not see the options.

The **Video Display** panel allows you to view both live and recorded video from any video source in the system to verify and act on the content. It contains live or previous recorded videos that can be launched from the Search, Vehicle Selector, or Disk Analysis panels.

Users have several tile layouts to choose from when arranging the video sources. Standard tile layouts include 1x1, 2x2, 3x3, 4x4, and 5x5. We also support a Custom Tile Layout with 1 large tile and 7 smaller surrounding tiles for additional flexibility. Double-clicking in any single tile will bring that video to full screen. Double-clicking the video again will restore the video to the previous tile layout.

The **Timeline** toolbar allows you to manage video once it is loaded in the Video Display panel. The Timeline toolbar features a toolbar, a timeline, playback controls, and stream switching capabilities.

The Timeline toolbar allows you to select all video tiles in the viewer, zoom in and out on the timeline, center the timeline, perform a Go To search, and put video in live or playback. The Snapshot button allows you to take a snapshot of the current play time of a selected video tile and send it to the Hard Drive for export. The Video button allows you to send a desired video segment (of the time range you specified with the green and red indicators) to the Collector for export.

The **Disk Analysis** panel allows users to seek for video at specific points in time. Double-clicking anywhere on the timeline will automatically playback the selected video at that specific date and time. Use the current live/playback cursor (appears as a blue seek triangle icon) to seek and play the video anywhere along the timeline. Use the green and red triangle icons to mark the beginning and end of a desired video segment. Use the playback controls beneath the timeline to further manipulate playback video.

The **Search Parameters** panel allows users to perform both simple and advanced searches using various parameters. Filter parameters include Alarm, Event, Start Time, End Time, and Cameras. Searches can also run from the Search History and Search Device commands.

Search results are displayed in the **Search Results** panel. User can double click on the Start time column link from search results to view the video in video panel starting from that time. If playback video is currently playing, all the cameras will seek to the new time. If video is not playing, application will open streams for all cameras at the alarm time.

User can also export the video from search results by performing right clicking on any of the search results and select export video.

# Client Software Requirements

MobileView Navigator supports all of the following Operating Systems and other software components.

**Table 2: Client software requirements**

<b>Component</b>	<b>Version</b>
Operating System	Microsoft Windows 7 32-bit
	Microsoft Windows 7 64-bit
	Microsoft Windows XP SP3 32-bit
Other	Microsoft .NET Framework 4.0



# Chapter 2

# Installation

## Installation

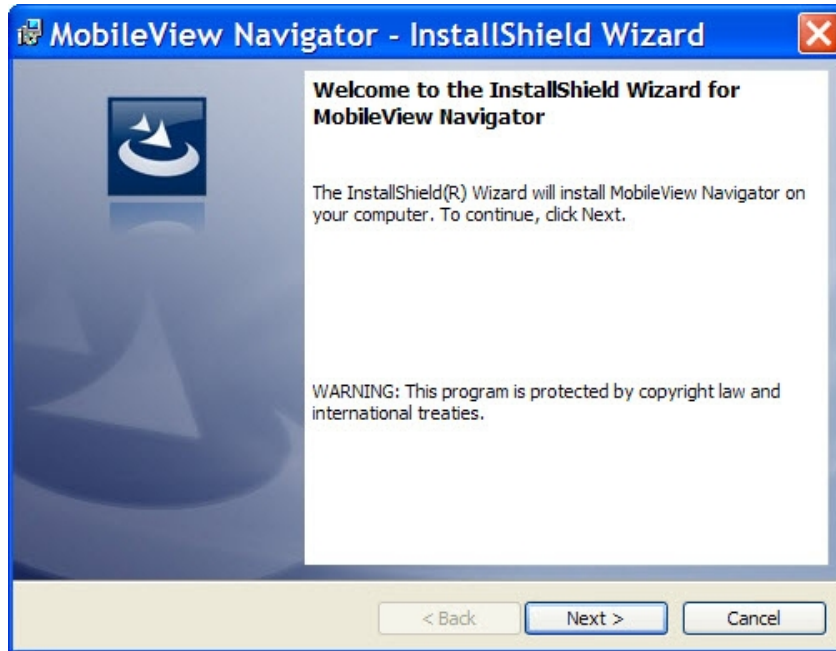
To install a new standalone instance of MobileView Navigator on your computer do the following:

Place the MobileView Navigator CD in the CD-ROM drive of a PC or place the MobileView Navigator setup.exe on the desktop of the PC.

Launch the InstallShield Wizard from the auto-run page or double-click the MobileView Navigator setup.exe to begin the installation.

The *Welcome* window displays.

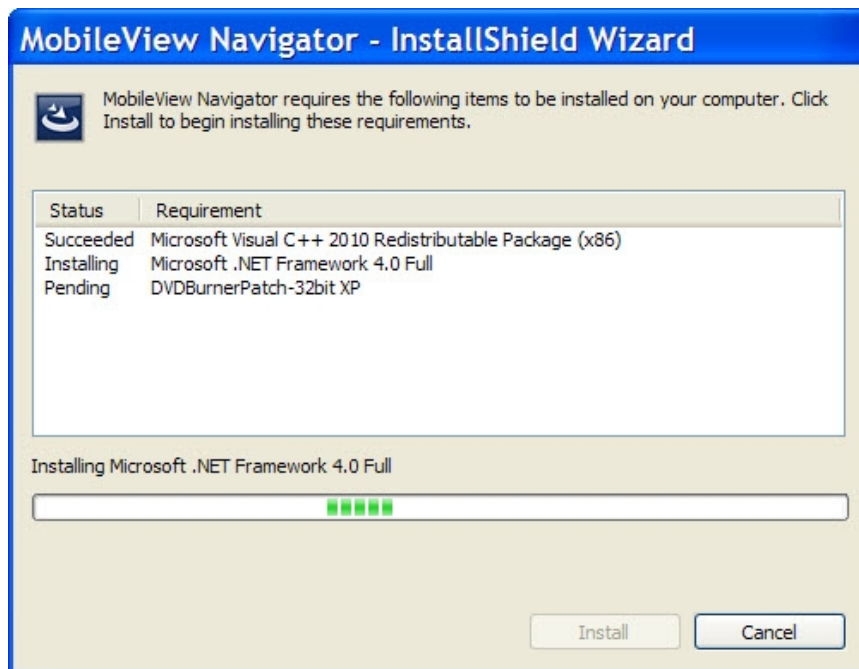
Figure 3: InstallShield Wizard window



Click **Next**.

The *Setup Type* window displays.

Figure 4: Setup Type window



Select *New UTC Installation* and click **Next**.



The *Installation Complete* screen displays.

Figure 5: The Installation Complete window



Figure 6: InstallShield Wizard window



Click **Next**.

Select the **Yes**, I want to restart my computer now option and click the **Finish** button.

A MobileView Navigator icon will be placed on your desktop and in your Start Menu to access the application.

Installation is complete.

## Initial Login

After successful installation, launch MobileView Navigator using one of the following methods:

Double-clicking on the MobileView Navigator icon on your desktop.

Access the Start menu, All Programs, MobileView Navigator.

When MobileView Navigator launches, a login window displays. Log in as the default Administrator using the following default credentials:

**Username** - admin

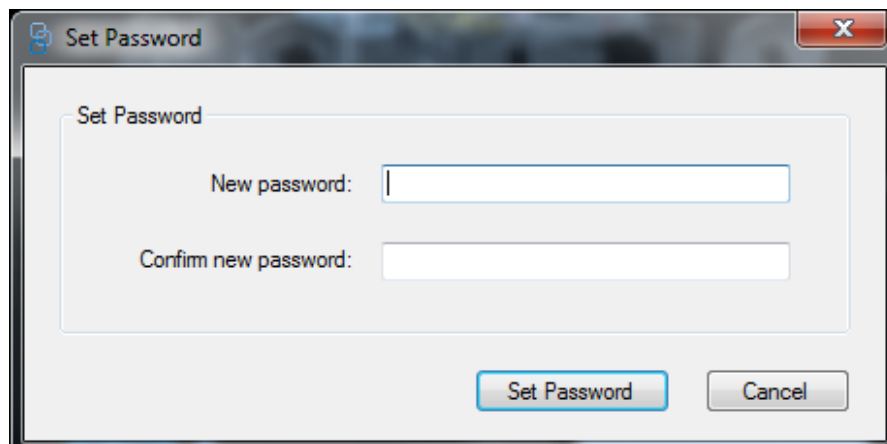
**Password** - admin

Figure 7: Login window



To change the default admin password by clicking on the Change Password icon in the toolbar.

Figure 8: Change Password Dialog



To change the password, do the following:

Click on the Change Password icon in the toolbar.

Enter the new password in the *Password* field.

Re-enter the password in the *Confirm Password* field.

Click on the Set Password button.

The User Account Challenge dialog window will display

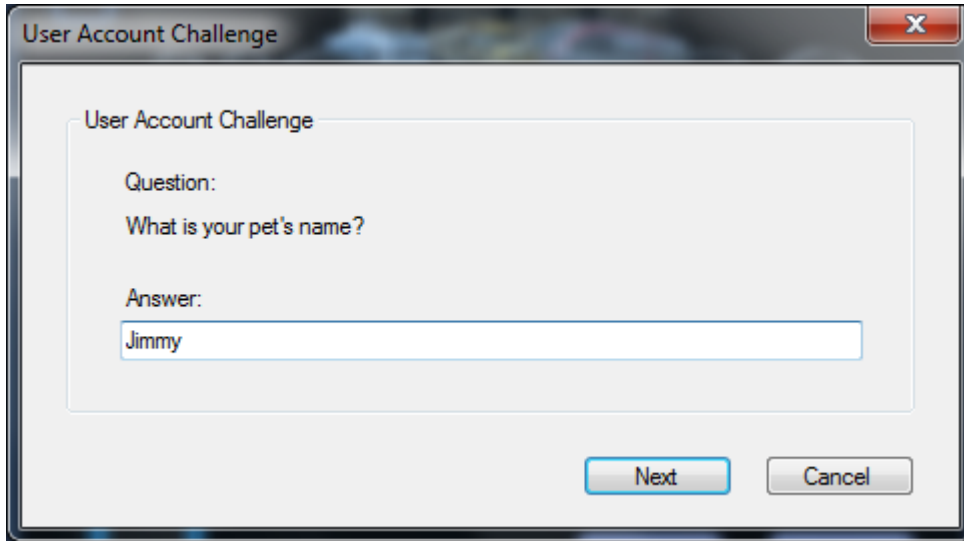
Select one of the following challenge questions from the drop-down list.

Enter the answer to your challenge question in the *Challenge Answer* field.

Press **Next**.

If you ever forget your password, simply click on the **Forgot ?** button on the Login dialog. This will allow you to answer your challenge question, and if successful, change your password and re-enter the application without calling for any assistance.

**Figure 9: User Account Challenge Dialog**



# Chapter 3

## Operation

### Getting to know MobileView Navigator 1.0

The next several figures explain the layout and controls in MobileView Navigator.

Figure 10: The Main Screen

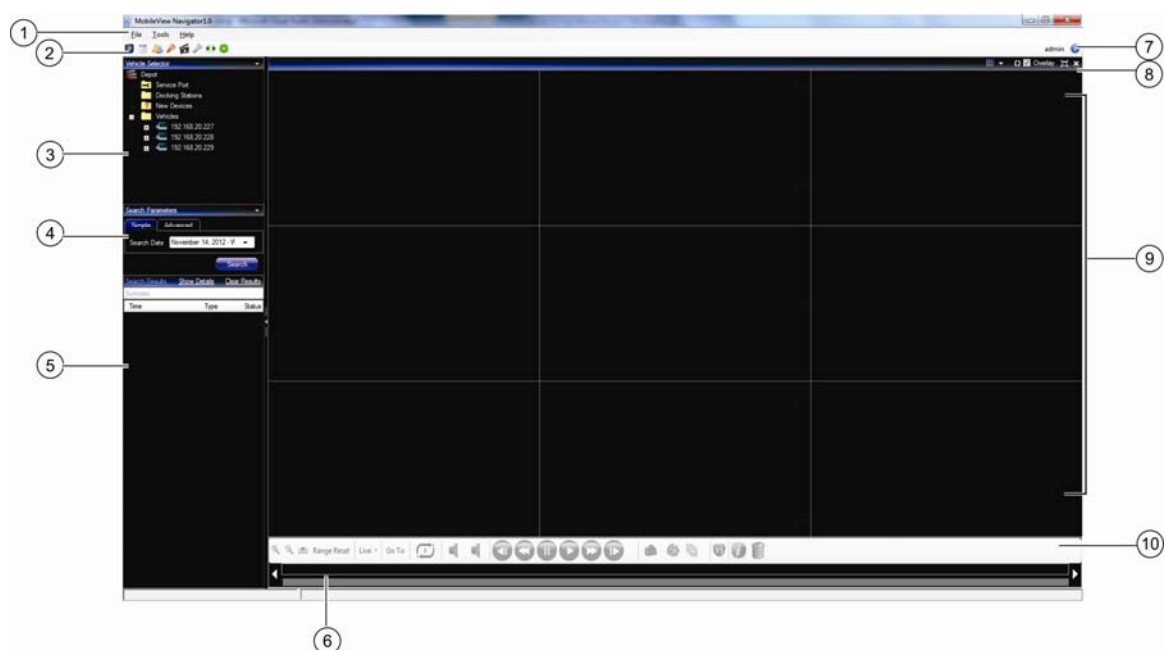


Table 2: Mobile 1.0 Main Screen Overview

Item	Name	Description
1	File Menu	Contains the following drop-down menus: File, Tools, and Help

Item	Name	Description
2	Toolbar	Contains shortcuts to Common Operations
3	Vehicle Selector Panel	All the folders and respective devices in folders are loaded into the Vehicle Selector tree. The state of devices loaded is represented on the tree. (Reachable/Not reachable)  If any Caddies are discovered they are added under Hard Drives node.
4	Search Parameters Panel	Tabs for Simple and Advanced Searching
5	Search Results Panel	Displays the Search results
6	Disk Analysis	When a video tile is selected the disk analysis for that camera is displayed under the timeline bar.
7	Help icon	Launches the user manual
8	Video Layout Manager	Contains commands related to the Video layout: Display Modes, Overlay, Maximize/Restore, and Close
9	Video Display	Displays Live or Playback Video
10	Timeline Bar	While playing video all cameras play in time synch. The video time will be displayed on the viewer and the time line pointer will move as the video proceeds.

## Timeline Bar

Timeline and video controls are enabled only while viewing video.

Figure 11: The Timeline bar

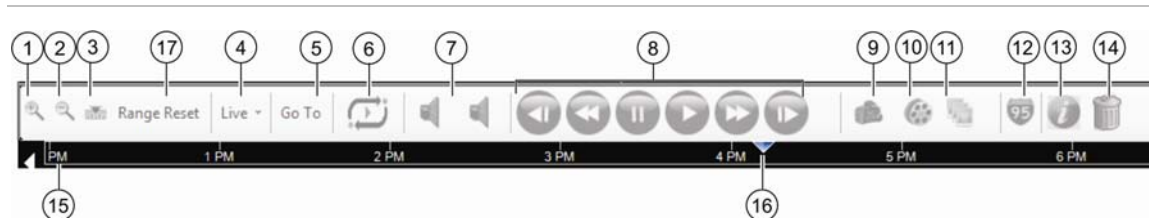


Table 3: Timeline Bar Overview

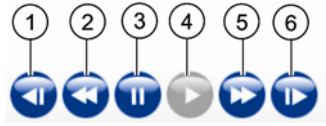
Item	Name	Description
1	Zoom In	Click to Zoom into the timeline bar to expand the disk analysis more clearly one step at a time.
2	Zoom Out	Click to Zoom out on the timeline bar to view the disk analysis at a higher level one step at a time

Item	Name	Description
3	Center Timeline	Click the Center Timeline icon on the timeline bar will center the timeline pointer of currently playing video to the center of the timeline.
4	Playback/Live Toggle	The Playback/Live button is a toggle button that changes from Play Live to Play Playback and Reverse. When Live video is playing the Button will display Play Playback.
5	Go To	The Go To option will open dialog to choose a specific Date and Time. Video will be fetched from the selected Date and Time from the Device.
6	Loop Video	Plays video between the selected range of time in a loop.
7	Audio Channel Selector	User selects an audio channel to enable audio for the channel available. A check mark appears against the enabled audio channel.
8	Video Playback Controls	Contains commands related to the Video control. See the Video Playback Controls section.
9	Snapshot	User can take snapshot of currently playing video stream. This operation can be achieved by clicking on Snapshot icon on toolbar. A dialog box opens which will contain the list of all the cameras. User can select cameras of his choice and click on OK button.
10	Export Video Clip	When user clicks on Export video toolbar button, a dialog will open that will allow the user to select Cameras. Video for all the selected cameras is exported into a single file (multiplexed video).
11	Image Log	Clicking on Image Log icon on the timeline toolbar will open a dialog window. User has to select an exported video file from MobileView 300 Device/Docking Station.
12	Show Map	User is playing Live or Playback video and clicks on map control for tracking the Vehicle on the Map. The map control dialog opens with map displayed at zoom level 8 on the given route. User has the option of 16 zoom levels.
13	Local File Information	User can click on the Local File Information icon on timeline toolbar to view the local file information at any time while video is playing.
14	Delete	Deletes the currently selected video range from the device.
15	Visual Timeline	When cameras start streaming video, the time of video is tracked on the timeline with a current play position indicator.
16	Timeline Pointer	When play back video is streaming the timeline pointer (track bar) will indicate the current date time point where the video is playing.
17	Range Reset	This will allow users to reset the selected video range on timeline bar.

## Playback Controls

The Playback Controls buttons are used to control how the video is displayed.

**Figure 12: Playback Controls**



**Table 4: Playback Controls Overview**

Item	Name	Description
1	Step Reverse	Allows user to view next frame in reverse direction
2	Play Reverse	Allows user to play current video in reverse mode at normal speed. On clicking the icon again the speed is increased by x speed amount. The speed management is device dependent
3	Pause	When user presses the Pause control, video is paused
4	Play	Plays the selected video at normal speed
5	Fast Forward	Allows user to play current video x times faster in forward direction. On clicking the icon again the speed is increased by x amount. The speed management is device dependent
6	Step Forward	Allows user to view next frame in forward direction



## Application Toolbars

The available options on the Application Toolbars vary by Account Type.

**Figure 13: Application Toolbar for Normal User**



**Table 5: Normal Application Toolbar Controls Overview**

Item	Name	Description
1	Manage Vehicle List	Opens the Vehicle Management Dialog Window. Double click on a device row to open the Device Properties Dialog Window. User can modify the details of the device.
2	Password Management	Click to launch Password Management Windows
3	Local File Playback	Allows user to play current video x times faster in forward direction. On clicking the icon again increases the speed by x amount. The speed management is device dependent
4	Burn to CD/DVD	Click to launch the CD/DVD burner dialog window with options to select files for burning to a CD or a DVD
5	Services	Shows details about the current Mobile Services

**Figure 14: Application Toolbar for Administrator**



**Table 6: Administrator Application Toolbar Controls Overview**

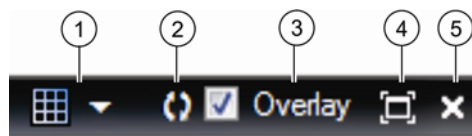
Item	Name	Description
1	Manage Vehicle List	Opens the Vehicle Management Dialog Window. Double click on a device row to open the Device Properties Dialog Window. User can modify the details of the device.
2	Task Scheduling	Scheduler dialog provides snapshot of current tasks and provides facility to modify pending tasks to download video from device.
3	Manage Users	Click to launch the Manage Users Dialog Window
4	Password Management	Click to launch Password Management Windows

Item	Name	Description
5	Local File Playback	Allows user to play current video x times faster in forward direction. Clicking the icon again increases the speed by x amount. The speed management is device dependent
6	Settings	Click to launch the Settings Dialog Window
7	Burn to CD/DVD	Click to launch the CD/DVD burner dialog window with options to select files for burning to a CD or a DVD
8	Services	Shows details about the current Mobile Services

## Video Layout Manager

The Video Layout Manager controls how the videos are displayed within the program.

**Figure 15: Video Layout Manager**



**Table 7: Video Layout Manager Controls Overview**

Item	Name	Description
1	Layout Selector	Change the video tile layout from the layout selector. The Layout selector will show all available layouts. Application will allow user to select any layout and display only those number of cameras
2	Camera Display Order	Changes the Camera Display Order.
3	Overlay	By selecting the overlay option user can view the video player header and footer on the video tiles which have video streaming in the viewer .On video tile header the details of camera title, date and time will be displayed. On the video tile footer the details of device name, type of video streaming (live/playback) will be displayed.
4	Maximize Restore layout	Maximize the current layout by clicking the Maximize/restore Viewer beside the layout selector. The current layout is maximized to full screen mode
5	Close	Closes all the videos streaming in the current layout tiles

# Chapter 4

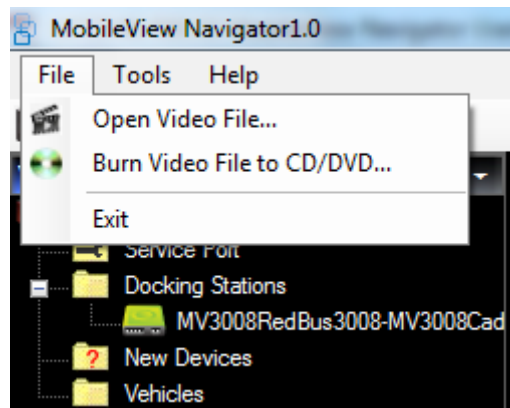
## Basic Operations

### Basic Operations

#### Opening a Video File

Click on the **File** menu and select **Open Video File**. The Open Video File menu allows user to select a video file from local disk or network share. On selecting the File, MvNav plays the video file.

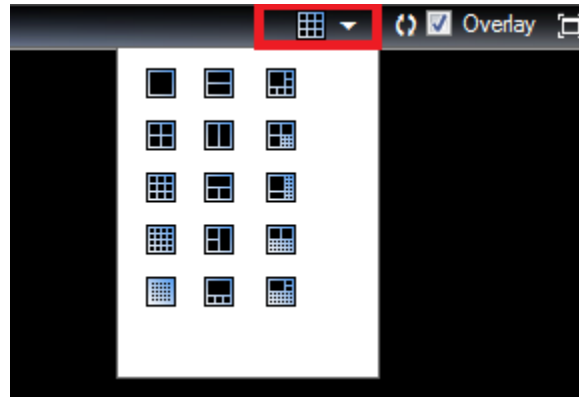
Figure 16: The Open Video File Dialog Window



#### Select the Display Mode with the Video Layout Manager

1. Click on the **Layout Selector** icon to display all the display mode options.
2. Click to select a desired display mode.

**Figure 17: The Layout Selector Menu**

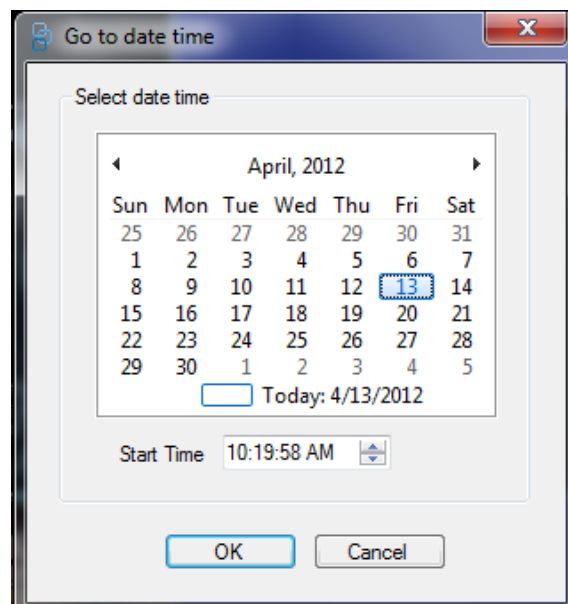


## Search Video

### Search by Date/Time

Click on the **Go To** button to launch the **Go to Date Time** Dialog Window. Select the desired Date/Time. Click on the **OK** button to start the search.

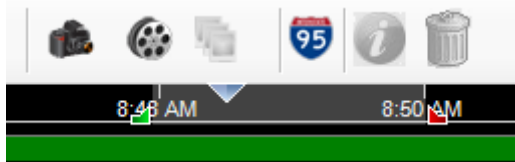
**Figure 18: The GoTo Date Time command and Dialog Window**



## Search by Timeline Bar

Hover the mouse over the **Timeline Bar** where the cursor is located. When the Range Selection indicators appear you can move (slide) the Selection Start Time indicator and the Selection End Time indicator to select the time range.

Figure 19: Range Selection Indicators



Click the **Zoom In** icon to magnify the time frame. Click the **Zoom Out** icon to reduce the time frame. Event types are represented by different colors. Please refer to the following chart for the meaning of events.

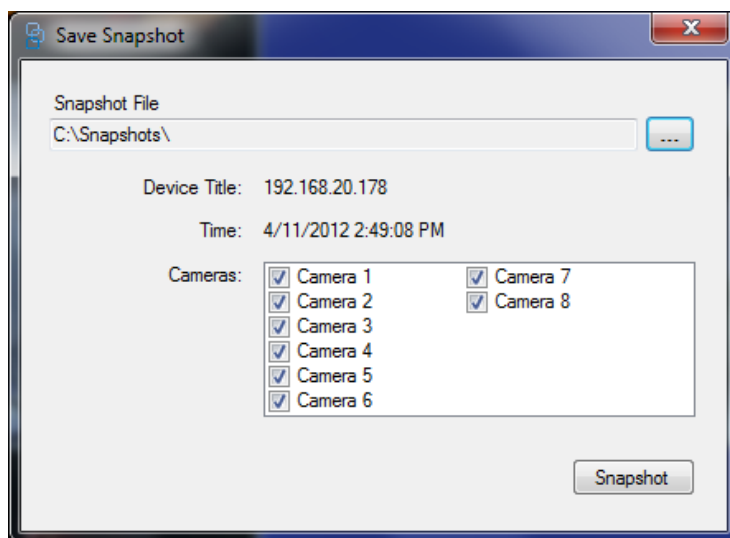
Table 8: Event type color code

Color	Event Type
Gray	No event
Blue	Video Loss
Red	Alarm
Yellow	Other event

## Snapshot and Archive

### Export Snapshot

You can take snapshot of the playing video stream. This operation can be achieved by clicking on the **Snapshot** icon on the toolbar. A dialog box opens which will contain a list of all the cameras. Select the cameras and click on the **OK** button. The destination folder for the Snapshot files is written to the System Settings snapshot folder. You can select a location for the files by clicking on the ... (Browse) button.

**Figure 20: The Save Snapshot Dialog Window**

While the snapshots are generated in the background if there is any delay in generating the snapshots, the snapshot icon will be disabled until it completes generating the snapshots and then gets enabled. Mean while use can perform other operations. The result of generating the snapshot is displayed on the status bar as message.

### Save Video to Disc

Click on the **Burn CD/DVD** button to display a file dialog to select a file or files to be written to the CD/DVD. All the files selected are added to a listbox. You can choose to include the player by checking the **Include Player** checkbox.

User can select to add files from a list box or click on the **Remove** button to remove selected files.

Click the **Burn** button to write all selected files to the CD/DVD. Do not cancel the burn (process) operation. If you try to close the Disc Burner dialog a message box is displayed stating “Busy with disc operation. Please wait...”

You can format the CD/DVD and erase the data on a rewritable CD/DVD by clicking on the **Format** button. All data on the CD/DVD will be lost.

Click on the **Drive Info** button to view the driver information. The following information will be displayed on the labels:

- Media drive
- Media type
- Disc status

Progress will be shown for the operation on the Progress bar.

## View Video Information

Displays the header and footer data for the selected video tile. Click the **Overlay** check box on the **Video Layout Manager Toolbar** to enable.

Figure 21: The Overlay check box



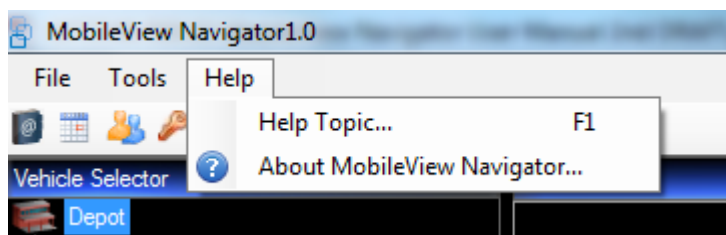
The following information is displayed on the header and footer of the video tile:

- Camera title
- Video play time
- Device name
- Video stream state
- Close video tile

## Help

If you need to get any assistance, select the **Help Menu** and select **Help Topic** to get help information.

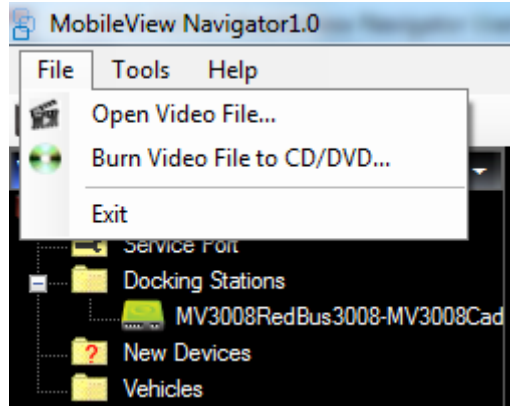
Figure 22: The Help Menu



## Exit

To exit from Mobile 1.0, select the **File Menu** and select **Exit**.

**Figure 23: The File Menu**





# Chapter 5

## Detailed Operations

### Initial UI Startup

Application will launch the main UI based on user permissions. The Vehicle selector tree will be populated with folders and devices from the database. Each device in the tree will be highlighted according to the reachability status. Devices that cannot be reached will be in italic font and devices that can be reached will be in normal font.

Main UI toolbar will have following items enabled based on user permissions –

Admin user: Address Book, Task Scheduling, Manage Users, Password Management, local file Playback, Settings, CD Burning, Service Information, Image Log, Erase Video data on Hdd.

Non Admin user: Address Book, Password Management, local file Playback, CD Burning, Service Information, Image Log.

*Note - If service is running on the machine the service information icon will be in green otherwise it will be red in color.*



- Service Active



- Service Inactive

Main UI will have the following items disabled on launch – Alarm Search, Main Timeline and associate controls, Video Controls and Disk Analysis on timeline.

## Vehicle Selector

On user login, Main UI is displayed to the user. Application will check the Folder/ Device list available in its database. All the folders and respective devices in folders are loaded into the Vehicle Selector tree.

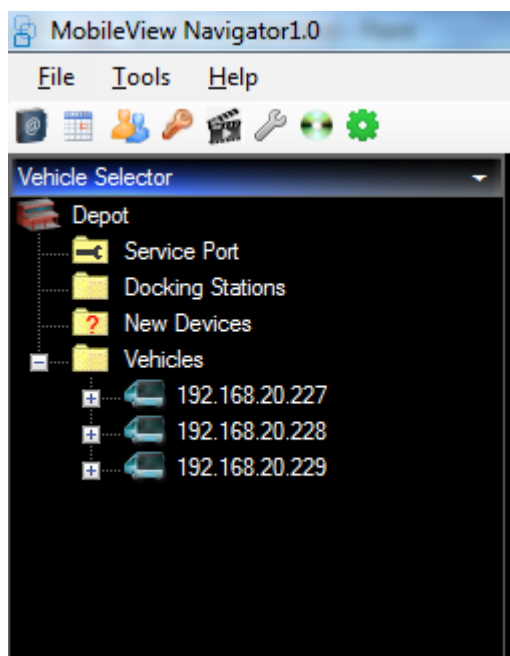
The state of devices loaded is represented on the tree. (Reachable/Not reachable)

Devices that cannot be reached will be in italic font and devices that can be reached will be in normal font

If any Caddies are discovered they are added under Hard Drives node.

If any new devices are discovered they are added under New Vehicles node.

Figure 24: Vehicle Selector Tree



## Context Menu

When user performs right click on a Tree node in Vehicle selector following options will be provided to the user based on the type of the Node.

Below list represents complete right click options.

Depot Node

- Show Search Bar
- Refresh Tree

## Hard Drives Node – No Options

### Mv3008 Caddy-1 (Caddy discovered)

- Disk Analysis
- Open Playback Video
  - Last 15Minutes
  - Last 30Minutes
  - Last 1 Hour
  - Last 24 Hours
  - From Beginning of Disk
  - Start Playback at Time
- Close Videos
- System Log
- Properties

## New Vehicles Node – No Options

### Vehicles Node

- Add Device
- Add Folder
- Import Address Book
- Export Address Book

### Folder

- Add Device
- Add Folder
- Delete Folder

### Device - Reachable

- Run Health Diagnostics
- Disk Analysis
- Open Live
- Open Playback
  - Last 15Minutes
  - Last 30Minutes
  - Last 1 Hour
  - Last 24 Hours
  - From Beginning of Disk
  - Start Playback at Time
- Close
- Configure Device
- Upload Firmware

- Get Log File
- Reboot Device
- Retire Device
- Properties

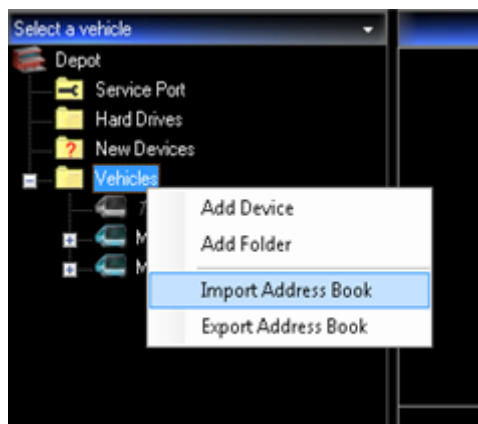
#### Device - Not Reachable

- Connect
- Delete Device
- Properties

## Import/Export Address Book

User selects Import Address Book option from context menu. This will open a file dialog to choose .csv or WaveReader file for import. On selection of Address Book by the user, application will load the Address Book file, parse the contents and populate the Vehicle Selector tree under folder named with current datetime. All imported devices/folder are added to the application database.

Figure 25: Import Address Book menu



User clicks on Vehicle Selector export from context menu of the root node. A file save dialog will be opened to choose where the exported file has to be saved. All the Devices in the Vehicles Selector tree will be exported. HDD Caddy information from the tree will not be exported.

The exported file will be in .csv format. The name of the file will include the mobile s/w version from which the file has been exported.

*Note: The address book will not contain any hard drive caddy information as the hard drives are not configured in the vehicle selector and are automatically populated when a caddy with HDD is plugged to USB port of the PC.*

## Add Folder to Vehicle Selector

Users will right click on the root node or on any folder in the tree and will select **Add Folder** option from context menu. A folder will be added under selected folder with name as “New Folder 1”. The title of the folder will be in edit state and user can enter his preferred name.

*Note: Feature is similar to the New Folder addition in windows explorer.*

## Add Device to Vehicle Selector

From the context menu of the selected folder user selects Add Device. This will open Add Device dialog. The Dialog will accept several parameters related to the Device such as Device Title, Device Type, Device ID, Device Port, and Streaming Type.

**Figure 26: Add Device Dialog window**

After entering the details and clicking on OK, Device is added to the Vehicle Selector under selected folder.

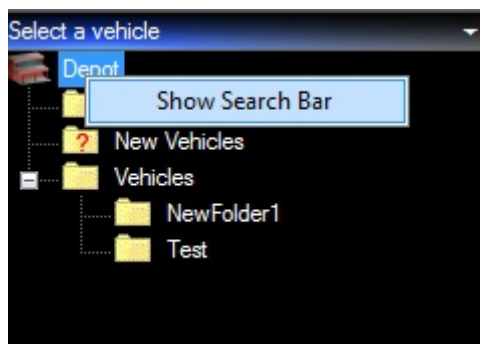
Initially Device is added in a not reachable state. Once the device is discovered, the reachability of the device is updated in the tree.

If Device is reachable at the time of adding the device, the reachability status will be updated.

## Search for Device in Vehicle Selector

User selects the search option from the root node context menu. This will open a search text box above the root node with a search icon. It is a toggle control with a text box and a search icon. User enters the name of the Device /Folder and clicks on search icon.

Figure 27: Show Search Bar command



The selected device or folder gets highlighted with background color. Scroll bar automatically scrolls to the item selected when the Vehicle list is large. The next device/folder that meets search criteria can be reached by clicking on the search icon again. If the selection reaches the end of vehicle selector then all search results will be highlighted and cursor will reach the first item.

## Device Discovery

Application will automatically look for devices that are reachable and will update their status in vehicle selector.

When new device is discovered, application places the device in "New Vehicles" folder. Thereafter user can

- Either Ignore the device or

- Drag & drop the device in “Vehicles” Folder indicating that, he wants to monitor and exercise all the options available in MvNav on that device.

Typical states of Devices in Vehicle Selector applies to both “Vehicles” and “New Vehicles” folder :

- Device not reachable (Grayed Out and Italicized)
- Connected/Reachable (Normal Font)

While dragging the device from “New Devices” folder to “Vehicles” folder, If the Device is reachable, Cameras will be auto populated. After the cameras are populated, user can start accessing the video Live/Playback from the Device.

## Caddy Discovery

Application will automatically look for hard drives that are added to the computer/Network and will update vehicle selector by adding newly found caddies under Hard Drives node. If a caddy is removed from the Computer after it is discovered that caddy will disappear from the Vehicle selector tree.

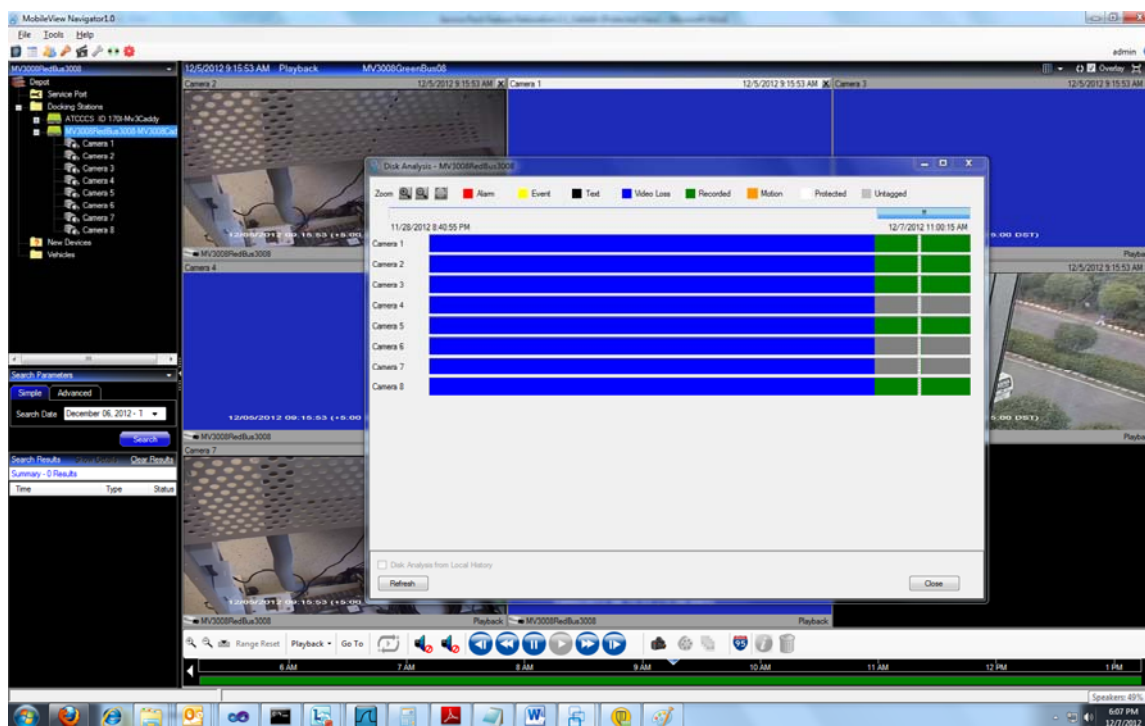
Once a caddy is added to the tree user can perform the following video operations:

- Play video from disk beginning.
- GoTo option on timeline bar can be used to view video from any date and time.
- Use timeline controls to perform video operations like Fast Forward, Fast Reverse, Frame Next and Previous Frame.
- User can click on Map icon to view the vehicle moving on the map.

The disk analysis for the first camera is displayed by default on timeline bar. The disk analysis for selected camera is displayed on timeline bar.

User is restricted from performing drag operation on caddy as live video is not available from Caddy.

Figure 28: Caddy added to Vehicle Selector Tree



## Device Connection

Application allows only one Device to be connected and accessed at a time. User can choose any Device in the tree. The application context switches to the currently selected Device.

The selected device Title is displayed in the Vehicle Selector caption bar.

Vehicles in the “New vehicles” folder will not be accessible until they are dragged into the “Vehicles” folder.

When user selects a Device, if the connection is successful, following updates are made to the Main UI :

- Once connected device will have all the available cameras populated and expanded
- Timeline and video controls will be in disabled state. They are enabled only while viewing video.
- Application will allow only one device or caddy to be connected at a time. When user connects to a new device, the currently streamed videos will be closed.



- User can access any feature available on the Device through context menu.
- Current selected Device Title is displayed in the Vehicle Selector caption panel.

## Connected Device goes out of Network

When device goes out of network while user is performing some operations, user will be provided with a message box indicating the Device has gone out of network and will ask him to close any open dialogs or operations related to the Device.

The Vehicle selector Icon will be updated to indicate Device not reachable status.

Further, if Live or Playback video is playing for the Device, all the Tiles will be closed and Layout will be brought to the initial state.

All objects related to the Device state will be cleared.

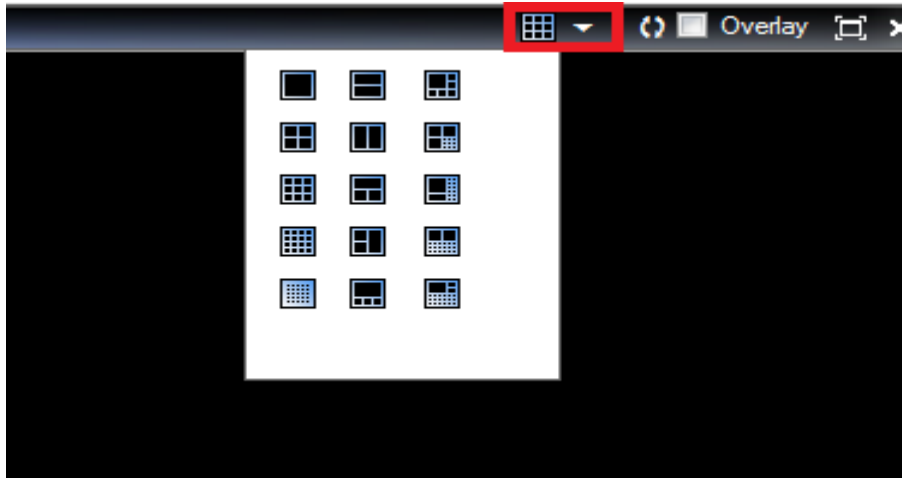
## Video Tile Layout Manager

User can change the video tile layout from layout selector. Layout selector will show all available layouts. Application will allow user to select any layout and display only those number of cameras. Rest of the cameras will be closed

Opening and closing of an individual camera stream is supported in the application.

When user selects a new layout, all the existing video streams and controls will be moved to the new layout.

Figure 29: Changing Layout



## Alarm/Event Search

### Simple Search

Default simple search is selected. The default selection is 1 day before the current date. Simple search consists of Months calendar, in which default current date is selected.

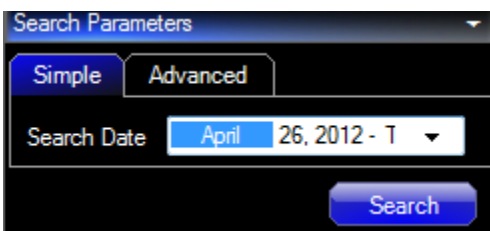
When user select Device on the Tree view. Click on Search button. User can click on Clear button only after the search result message displayed in status and clears the search result panel.

Search filters supported by simple search are for single day selection.

The results will be displayed in a grid display below the search parameters area and separately in Search result Form clickable at right corner of search Results panel as Show Details.

The clear button will clear the results found from search.

Figure 30: Simple Search tab

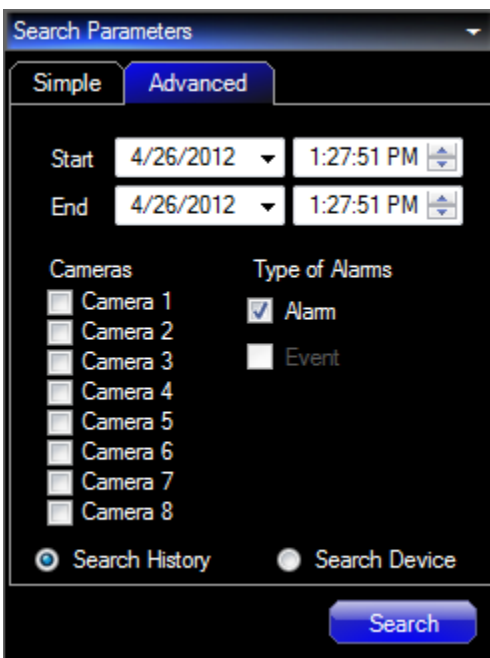


## Advanced Search

User select Advance search by selecting the Advanced tab.

Based up on the device selection. Device cameras are populated in the checkbox list. Types of Alarms with check boxes are dynamically displayed by capabilities of currently selected device.

Figure 31: Advanced Search tab



The following filters for alarm/event search will be supported.

- Alarm
- Event
- Start time

- End time
- Cameras

User can select to perform search from Search History or Search Device.

After selecting the filters, user clicks on Search button. Search button will be disabled. User can click on Clear button only after the search result message displayed in status and clears the search result panel.

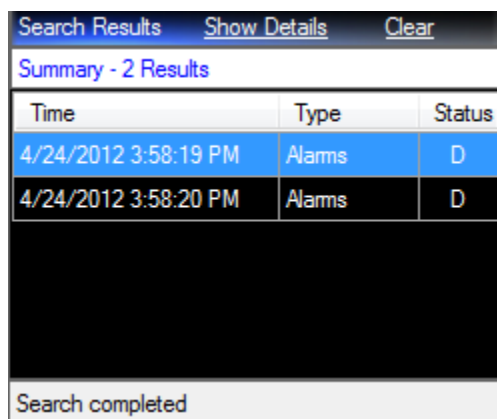
The results will be displayed in a grid display below the search parameters area and separately in Search result Form clickable at right corner of search Results panel as Show Details.

The clear button will clear the results found from search.

## Search Results

User can double click on the Time column link from search results to view the video in video panel starting from that time. If playback video is currently playing, all the cameras will seek to the new time. If video is not playing, application will open streams for all cameras at the alarm time.

Figure 32: Search Results screen



The screenshot shows a mobile application interface for search results. At the top, there are three buttons: 'Search Results', 'Show Details', and 'Clear'. Below the buttons is a header 'Summary - 2 Results'. A table displays the search results with three columns: 'Time', 'Type', and 'Status'. The first row shows '4/24/2012 3:58:19 PM', 'Alarms', and 'D'. The second row shows '4/24/2012 3:58:20 PM', 'Alarms', and 'D'. Below the table is a large black area, and at the bottom, a status bar says 'Search completed'.

Time	Type	Status
4/24/2012 3:58:19 PM	Alarms	D
4/24/2012 3:58:20 PM	Alarms	D

User can double click on the Start time column link from search results to view the video in video panel starting from that time. If playback video is currently playing, all the cameras will seek to the new time. If video is not playing, application will open streams for all cameras at the alarm time.

User can also export the video from search results by performing right click on any of the search results and select export video.

Figure 33: Search results

Search Results				
Start Time	End Time	Camera Number	Type	Auto Download Status
5/15/2012 11:01:04 AM	5/16/2012 4:32:56 AM	2,3	Alarms	Failed
5/16/2012 4:32:01 AM	5/16/2012 11:10:02 AM	2,3	Alarms	Failed
5/16/2012 12:08:56 PM	5/18/2012 10:56:37 AM	2,3	Alarms	Failed
5/23/2012 11:29:50 PM	5/23/2012 11:59:00 PM	1,2	Alarms	Completed

Search Results		
<a href="#">Show Details</a>	<a href="#">Clear</a>	
Summary - 3 Results		
Time	Type	Status
5/15/2012 11:01:04 AM	Alarms	N/A
5/16/2012	Export Video	N/A
5/16/2012 12:08:56 PM	Alarms	N/A

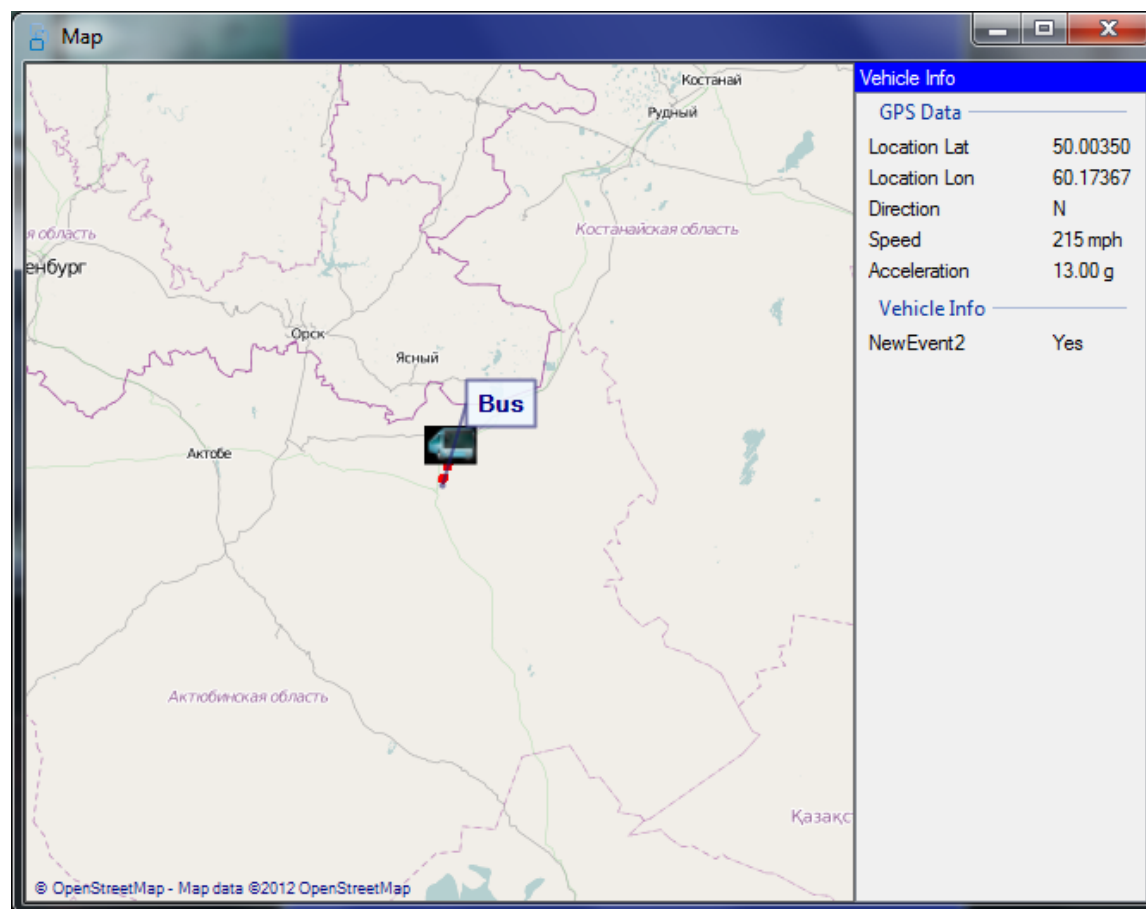
## Track Vehicle on Map

User is playing Live or Playback video and clicks on map control for tracking the Vehicle on the Map. The map control dialog opens with map displayed at zoom level 8 on the given route. User has option of 16 zoom levels.

The Vehicle will be tracked as the video is played through a bus Icon on the map. The Icon moves along the route with a track being drawn along the path that the Vehicle has traveled.

User can perform Pan on the map in all directions in the selected zoom level.

Figure 34: Map Screen



## Video Download Manger

Scheduler dialog provides snapshot of current tasks and provides facility to modify pending tasks to download video from device.

User can schedule to download video from a device. The Download Manager will take care to download video in sequential order if device is currently connected.

There are six types of task status filters that displays the tasks in the scheduler accordingly

### Completed

- Displays all the completed tasks

### Pending

- Displays all the pending tasks

### In-Progress

- Displays all the In-Progress tasks

### Cancel Requested

- Displays all the Cancel Requested tasks

### Canceled

- Displays all the Canceled tasks

### Failed

- Displays all the failed tasks

There are three types of task

### User Created Video Download Tasks

- These tasks are created by user

### Automatic Video Download of Alarm Video

- Tasks created by application basing on alarms in device

### Automatic Search tasks

- Task created to search the device for alarms for the duration it was offline

Device Filter: Filters the tasks as per the device selected.

Task Name Filter: Filters the tasks as per the task name.

Scheduler dialog will display the following information to the user:

- Title - Name of the Task
- Type - Indicates whether task is Search Task, Video Download Task or System Download Task
- Priority- Indicates Priority
- Scheduled Time - Indicated time at which the task is scheduled
- Status - Can be

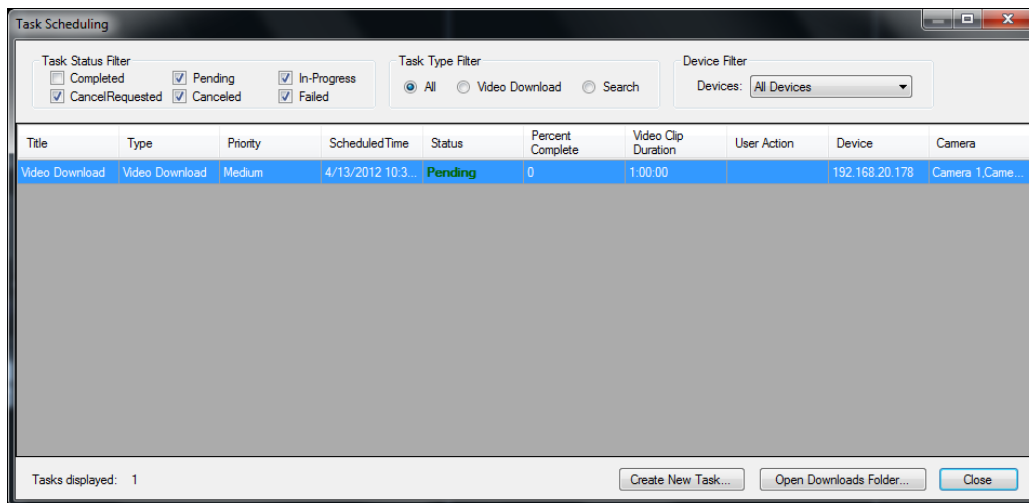
Pending	Video Download Task Yet to Start
InProgress	Video Download Task is in progress
Completed	Downloaded video has been saved to desired location by user
Failed	Video Download has failed
CancelRequested	User has decided to cancel the task
Canceled	Task has been canceled

- Percent Complete                      Percent of Video Download completed
- Video Clip Duration                    Duration of the clip
- User Action                              User Actions
- Device                                      Device used for download
- Camera                                    Cameras from which the videos were downloaded
- Open Downloads Folder                Button which shows location where videos were originally  
Downloaded (Always points to Video Download Location in System Setting)

If there is an alarm notification from a device the application will automatically schedule video download for the alarm.

On completion of download, video is saved to application created task specific folder that user can view by click on Open Downloads Folder button.

**Figure 35: Task Scheduling Window**

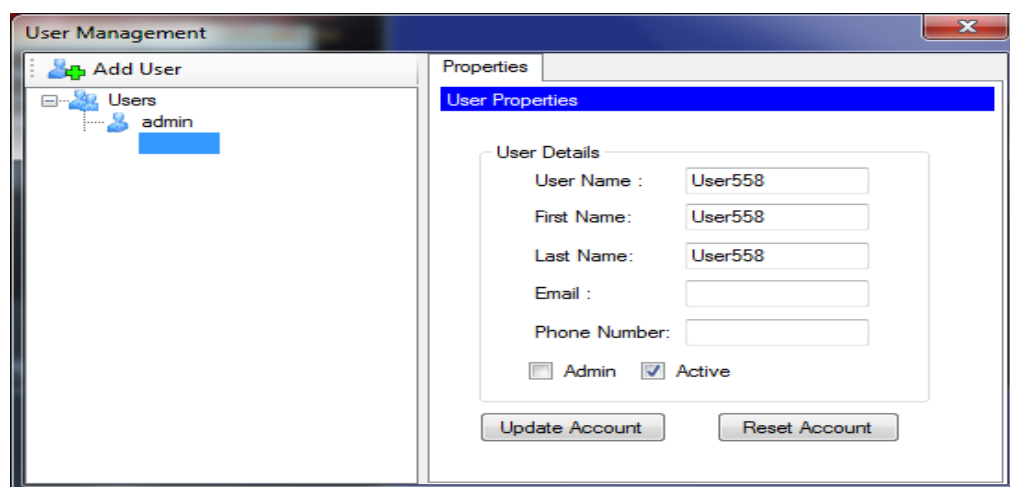
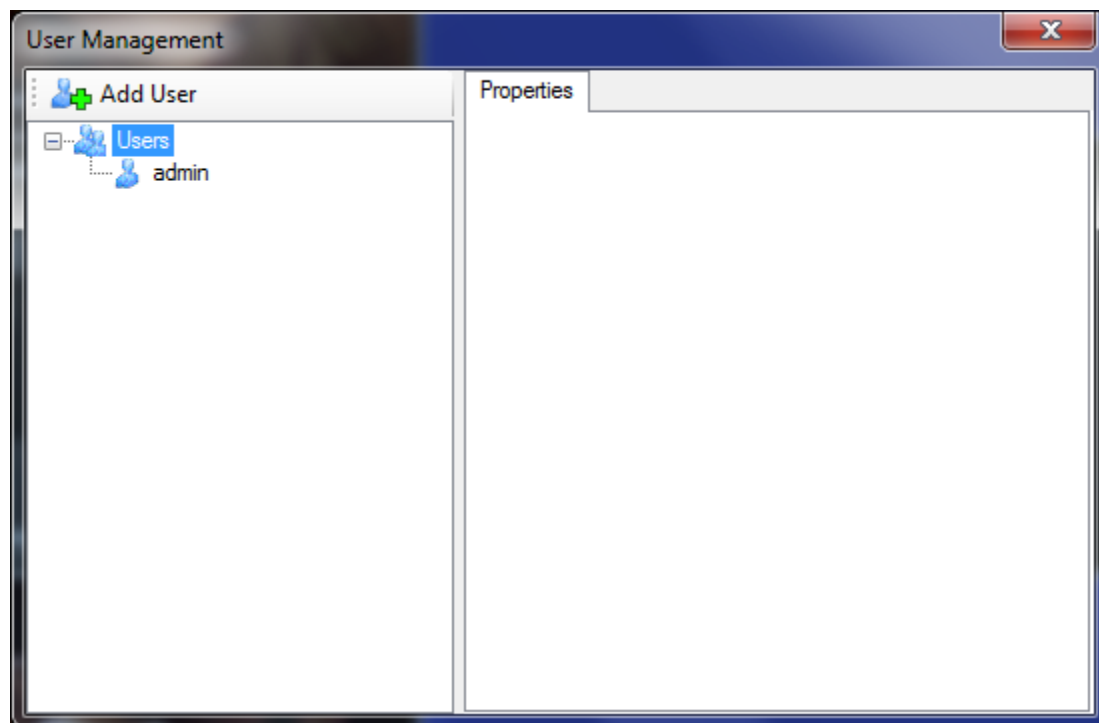


## Manage Users

User clicks on Add User toolbar button, this will add a new user to the users list with user information in the user properties/information section.



Figure 36: User Management Screen



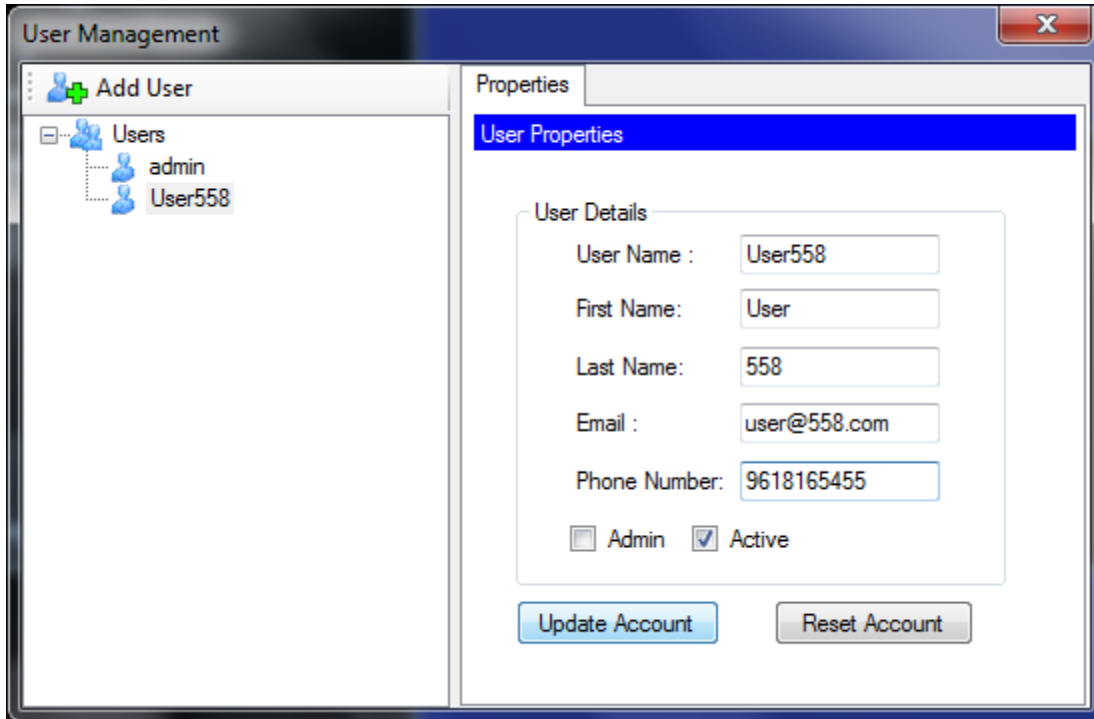
## Update User Information

User clicks on username for which information needs to be updated in users list. Selected user information is displayed in the user properties/information section.

Logged in user can update user information like first name, last name, email, phone number, set user as admin by checking the checkbox against Admin, set user status as Active by checking the checkbox against Active for user (By default user is active and checkbox against Active is checked). After updating the

information Logged in user has to click on Update Account button to save the new information.

**Figure 37: User Properties**



## User Permissions

A normal user can perform all the operations available in the application except Managing users, Task Scheduling and Managing system settings.

Application Permissions:

Admin User

- Manage Vehicle List
- Task Scheduling
- Manage Users
- Password Management
- Local File Playback
- Settings
- Burn to CD/DVD
- Services
- Erase Disk

## Normal User

- Manage Vehicle List
- Password Management
- Local File Playback
- Burn to CD/DVD
- Services

## Vehicle Management

User opens the vehicle management dialog and double clicks on a row. The selected device properties are opened in a device properties dialog. User can modify the details of the device.

User clicks on the Add vehicle toolbar button on the manage vehicle list Form. Add device dialog opens add new device dialog. The new device added is updated on vehicle selector.

User selects a device row on manage vehicle list and clicks on the Remove Vehicle button on toolbar. The selected device in the grid gets deleted from the list. The device list gets updated on vehicle selector.

User can Export the vehicle list into .csv format file by clicking on the Export List toolbar button.

User can import vehicles from address book (exported) files. User clicks on Import List toolbar button. An open file dialog opens for user to choose a .csv file (Mobile/Wave Reader) file. On selecting a valid file the vehicles list is imported and displayed in the vehicle management grid and the same is updated in vehicle selector.

## Application Configuration

When user selects Application Configuration from the toolbar, a dialog will open that will allow configuration of following parameters:

Potential configuration parameters:

### **Settings**

SMTP Server (SMTP Server details)

## Server

- Port
- Username
- Password
- SSL
- Email Notifications
- Primary Email Address
- Secondary Email Address
- Test Button (To test the connection)

Video Download folder (Default path where service will download the video from the device)

Snapshot Download Folder (Default path where application downloads the snapshots from the device)

Preserve Video Aspect Ratio

## **Service (Shows details about Mobile Service)**

Installed

Status (user can start/stop the service)

Running Since

Tasks

- Task Scheduling
- Maximum Concurrent Tasks
- Last Activity (Date when service performed last Task Scheduling)

Auto Download Settings (User can select the devices that are required to perform auto download)

- Auto Download

Device Discovery (Shows the IP address of the computer that devices alert when they join the network)

- Default

## **Rules**

Data Retention Policy (Specifies the time period task and downloaded data will be maintained in application)

- Keep Search results for
- Keep task status for
- Keep Downloaded video for

Check repository status (displays all the files that would be deleted in 10days).

Notifications (Allow user to set the capacity to notify the user when disk space is below that capacity).

### **Database**

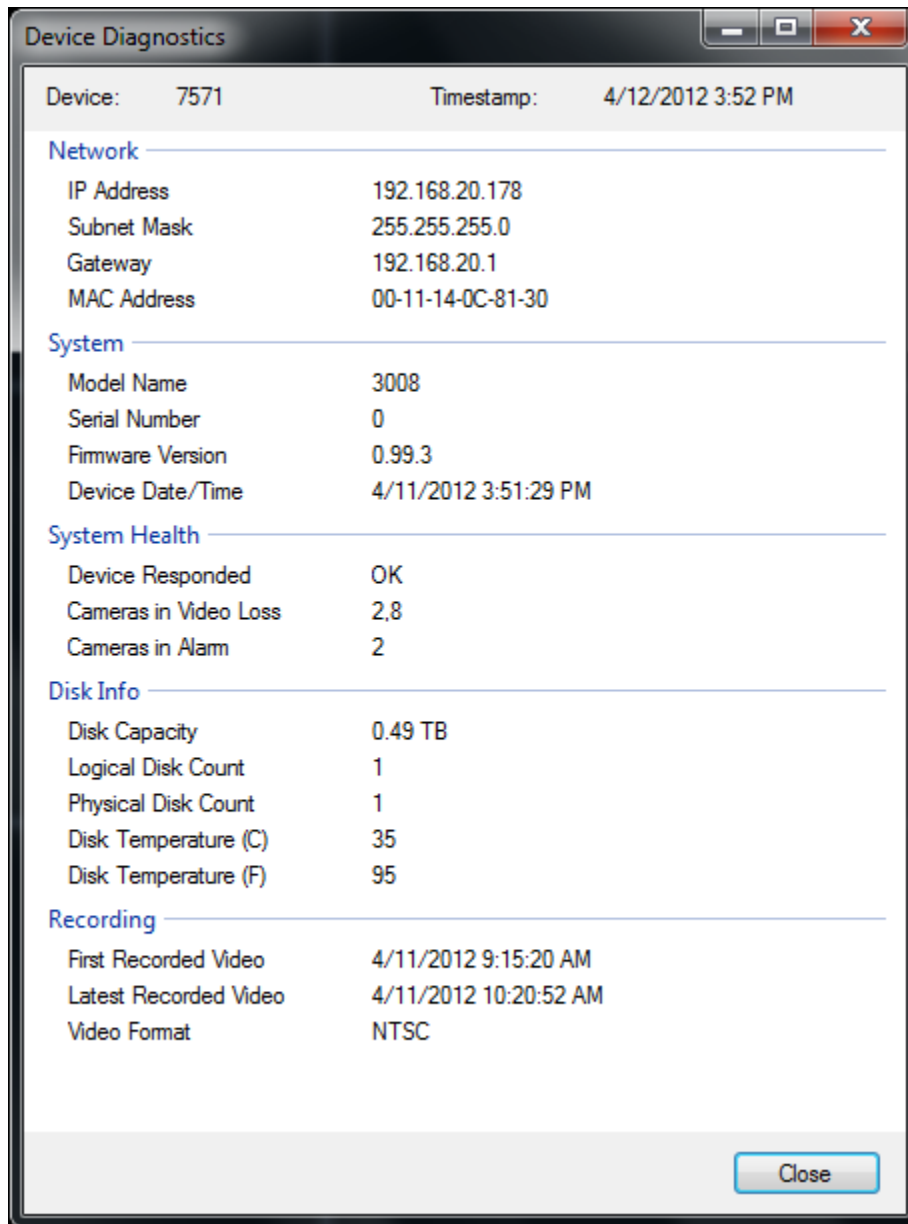
Device Reset (Resets the device and deletes all the information related to offline device from the database).

Application will use the setting where ever required.

# Diagnostics

User chooses Run Health Diagnostics from the Device context menu.

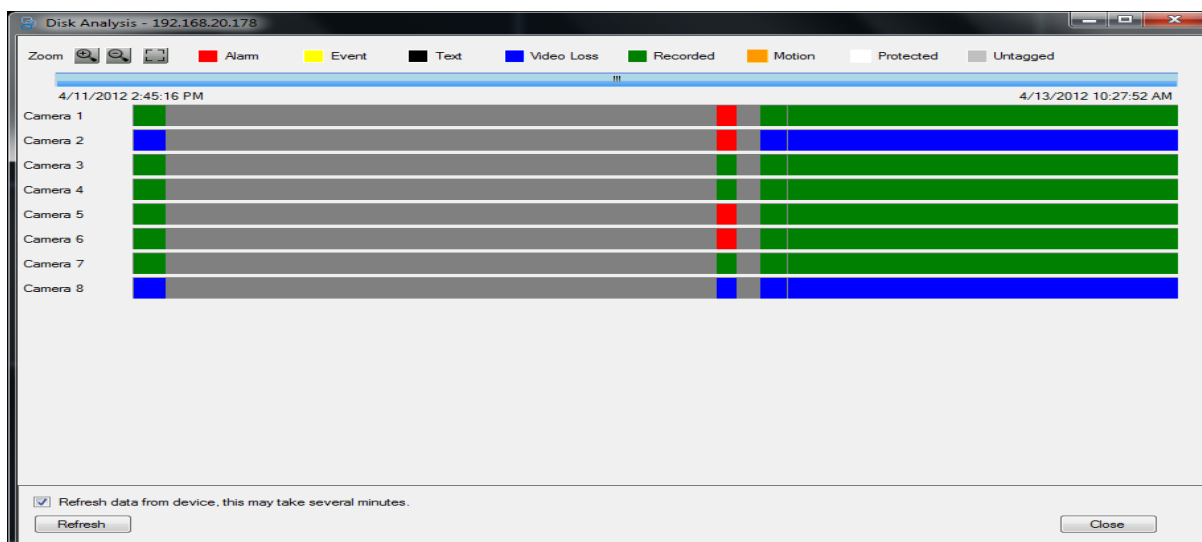
Figure 38: Diagnostics Screen



## Disk Analysis

User chooses Disk Analysis from the Device context menu or Toolbar Icon. Disk Analysis is retrieved and displayed in graphic format. Such dialog is generated by HAL. The dialog will clearly show the video data available on the disk. It will show the video type (Alarm, Video Loss, and No Video) for each camera through color coding. Refresh can be done to get retrieve the latest disk analysis.

Figure 39: Disk Analysis Screen



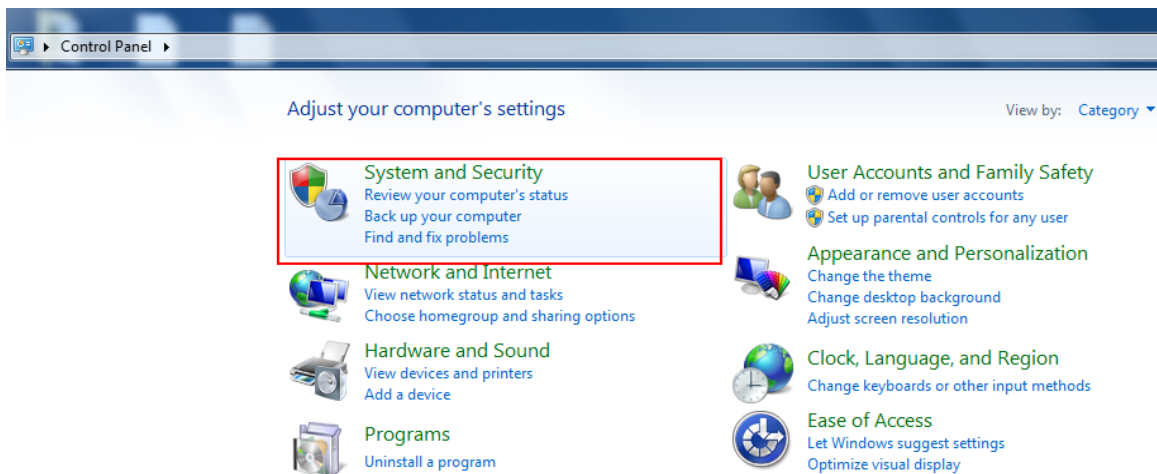




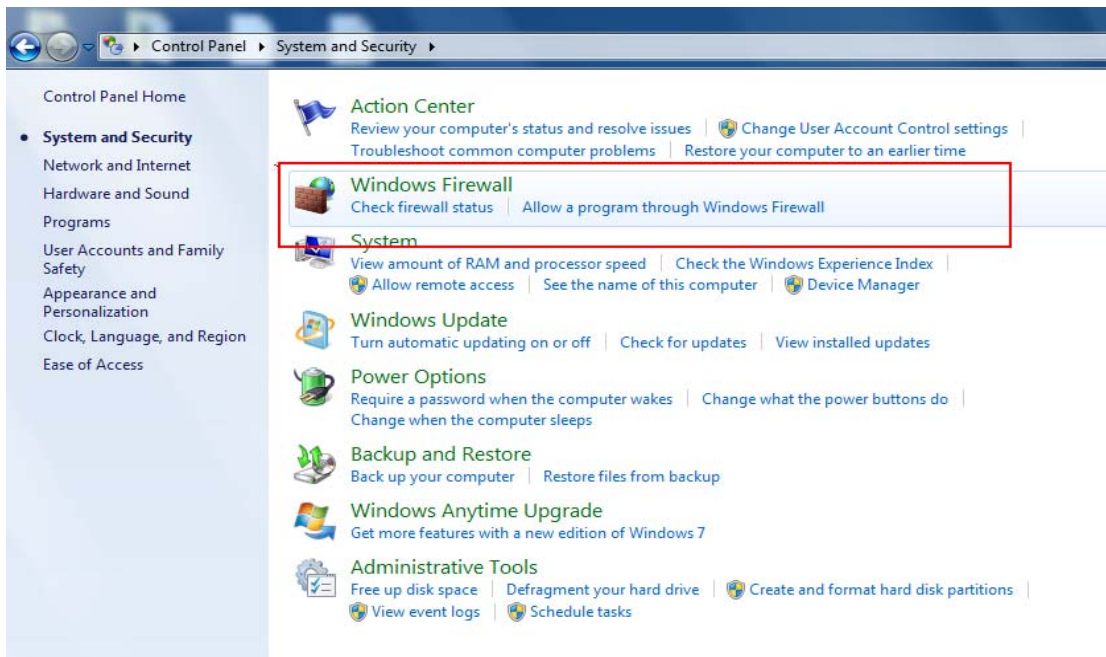
# Appendix A: Windows Firewall

## Steps to follow to add a port or program when Windows Firewall is ON

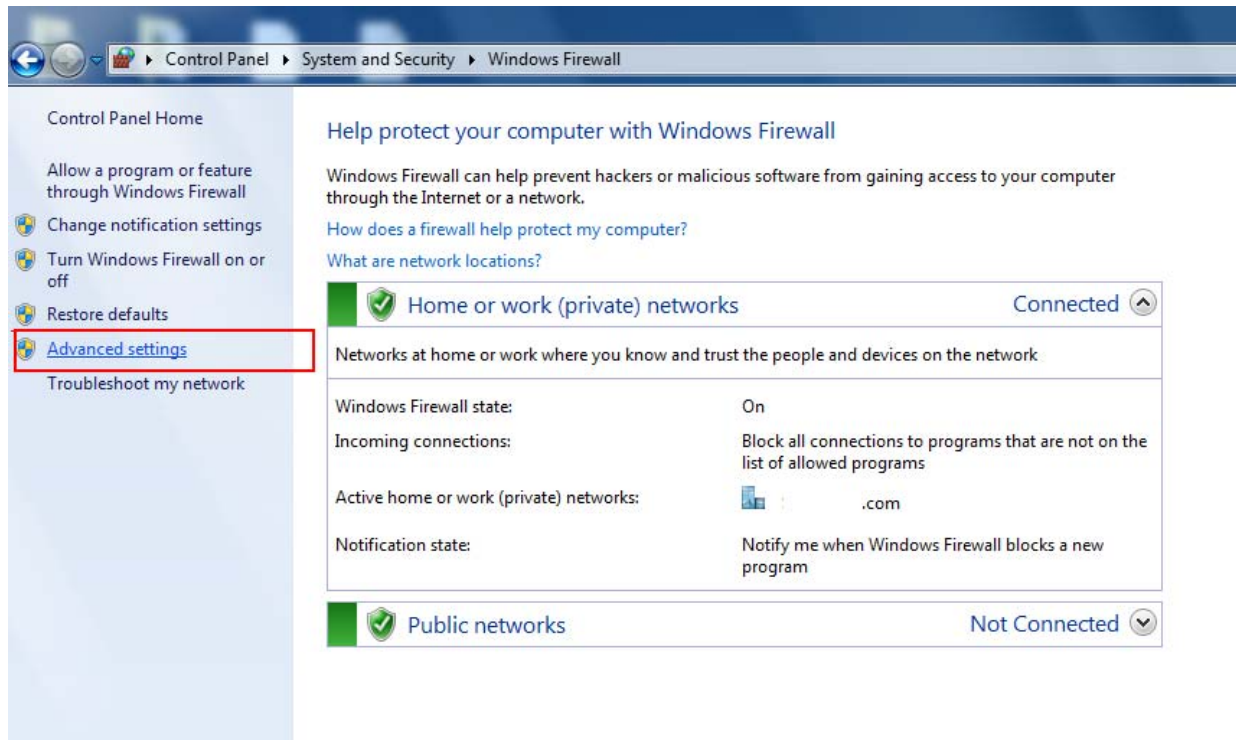
1) Goto Control Panel and select "System & Security"



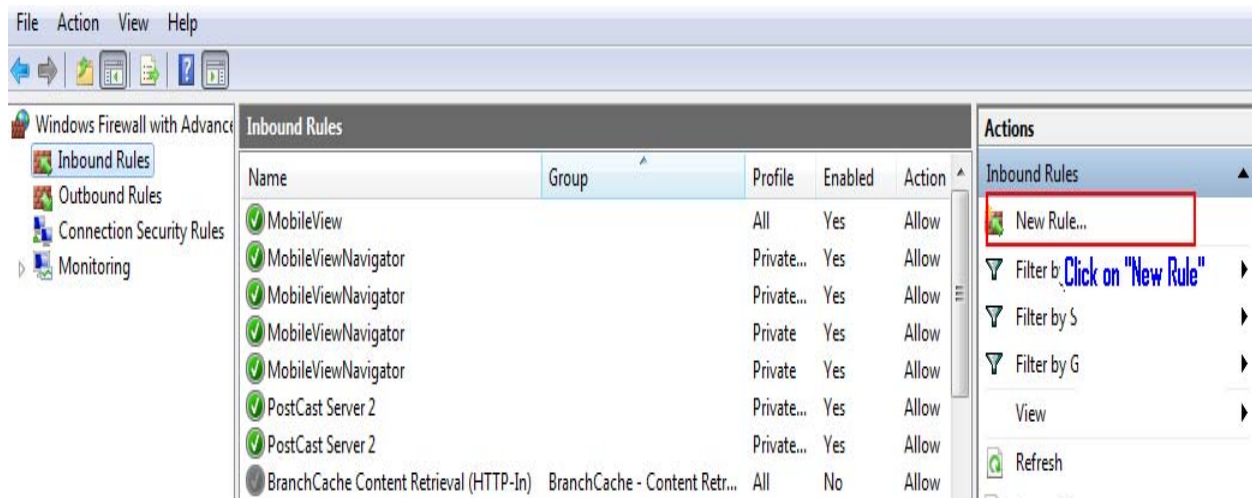
2) Click on "Windows Firewall"



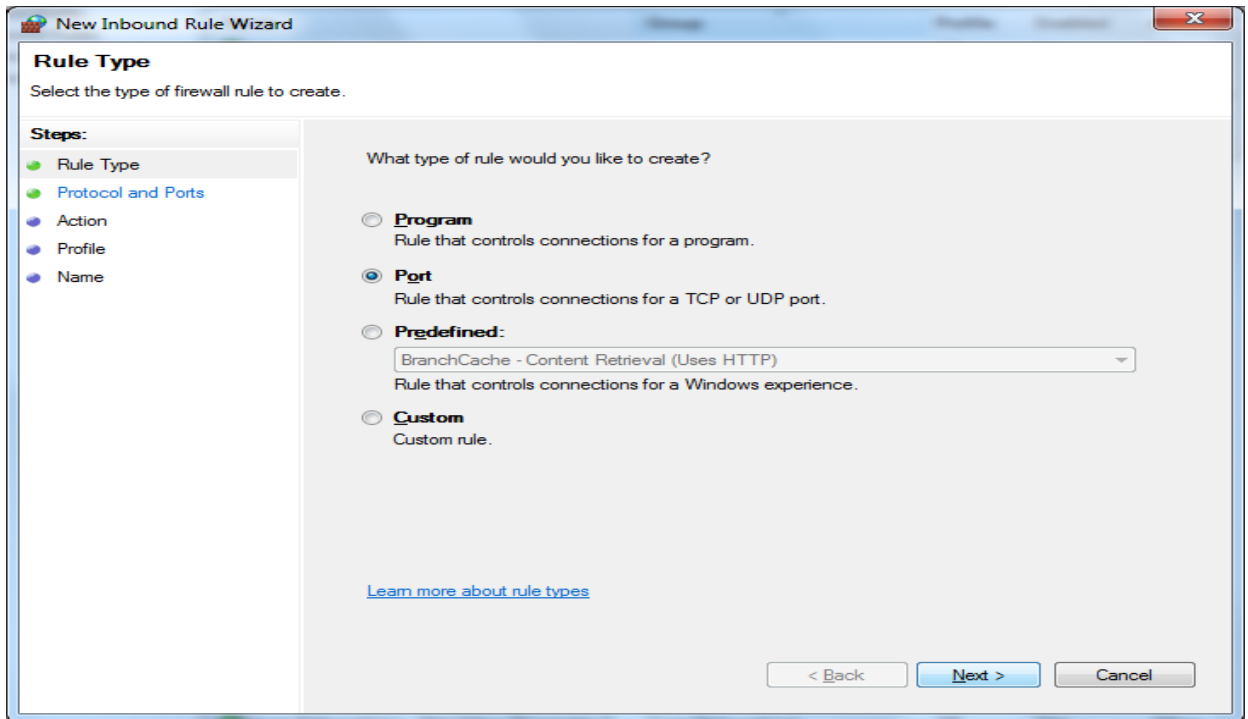
3) Now Click on “Advanced Settings”



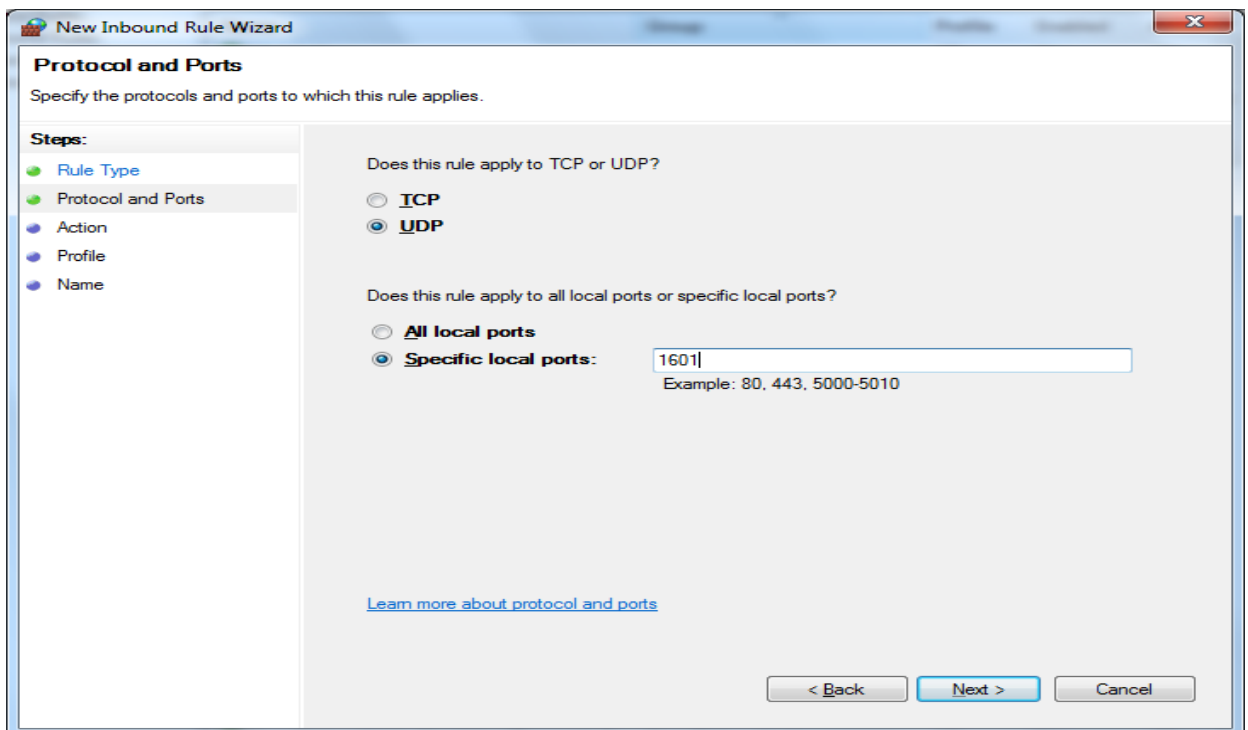
4) From “Advanced Settings”, select “Inbound Rules” & click on “New Rule”



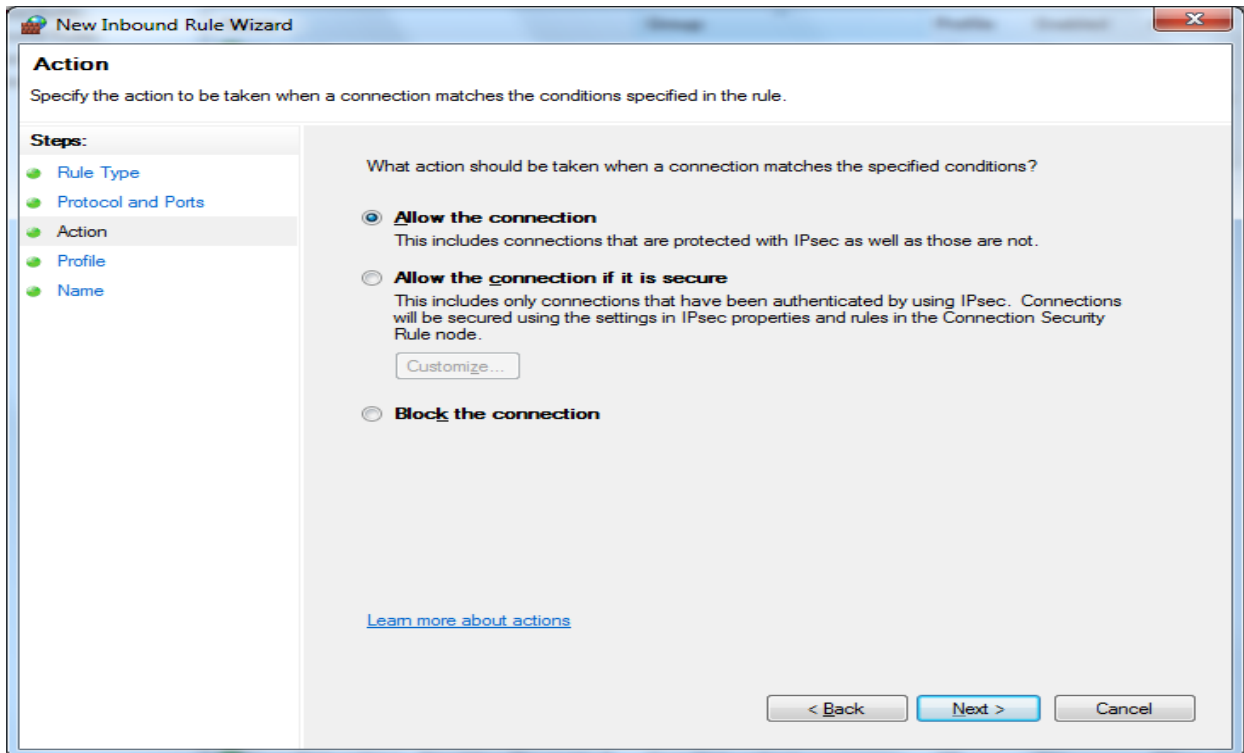
5) Select the type of firewall rule to create. A program or port can be selected and then click on “Next”



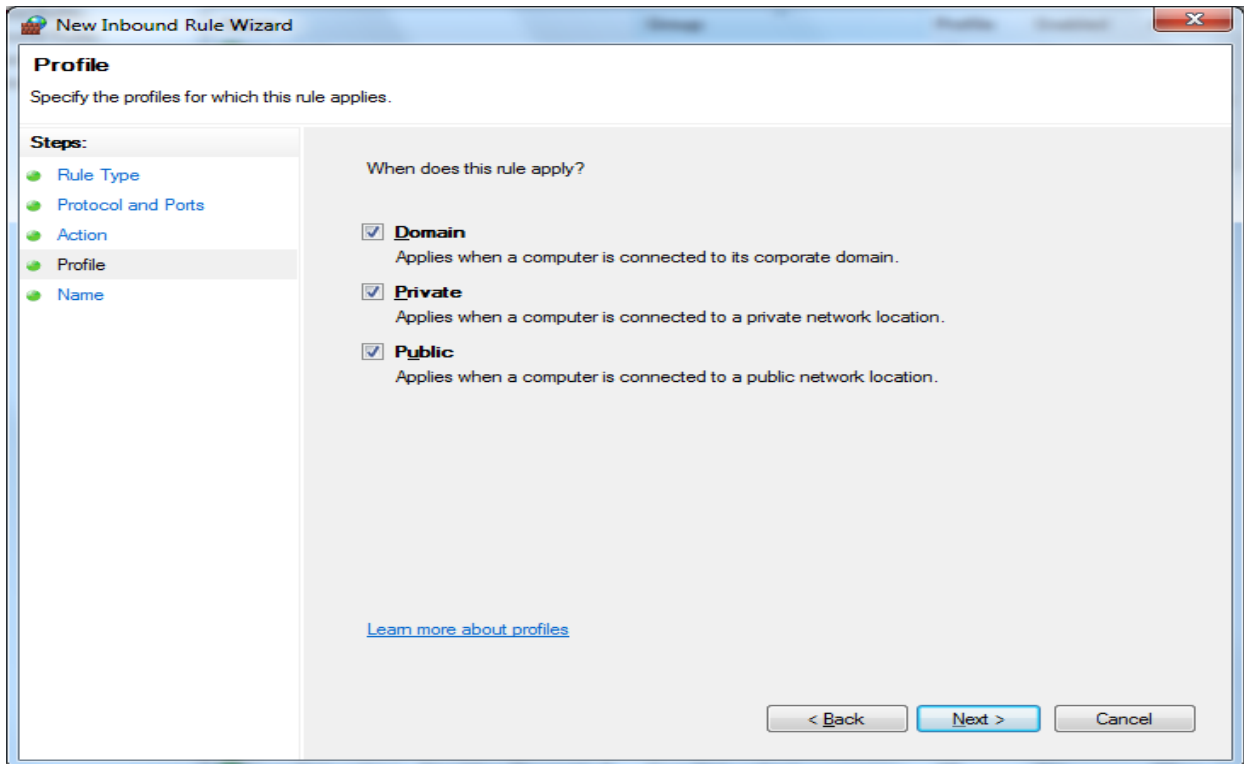
6) Specify the protocols and ports to which the rule applies (Ex: 1601 or input required port number)



7) Click on "Allow the connection"



8) Specify the profiles for which the rule applies



9) Specify the name and description of the rule and click on "Finish"

New Inbound Rule Wizard

**Name**

Specify the name and description of this rule.

**Steps:**

- Rule Type
- Protocol and Ports
- Action
- Profile
- **Name**

Name:

Description (optional):

< Back Finish Cancel

# Appendix B: Open Source Libraires

MobileView Navigator 1.0 uses following open source libraries:

- GMAP.NET
- OpenStreetMaps
- Sqlite

Each of the above products is governed by following license terms.



## **GMap.NET - Great Maps for Windows Forms & Presentation**

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