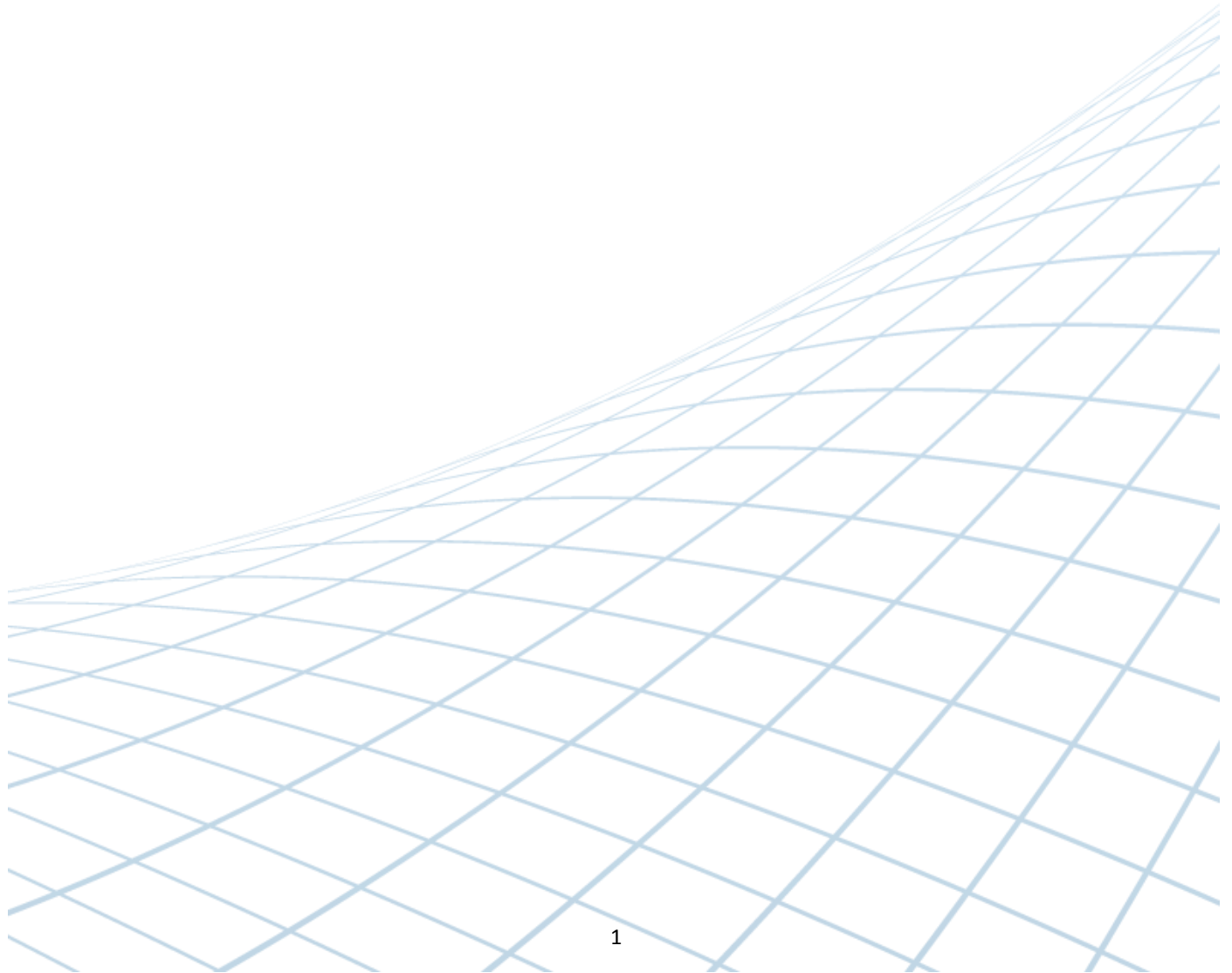# Milestone XProtect™ Corporate, Expert Integration with Lenel's OnGuard - User Manual December 2016

Document information

Project Name	Milestone Xprotect to Lenel's OnGuard Integration User Manual
Document Version	1.5

Document revision history

Revision Date	Author	Summary of changes	Changes marked
2011-10-17	SR	Initial version for OnGuard 6.3	1.0
2012-05-09	SR	Support for OG v6.4 and XPCO 5.0	1.1
2013-04-02	SR	Support for OG v6.5, v6.6	1.2
2013-05-27	SR	Support for XPCO 6.0, Expert	1.3
2014-12-03	JFM	Support for XPCO 2014, OnGuard 6.6, 7.0 Added support for Camera Import feature Added support for PTZ Preset import	1.4
2016-12-07	JFM	Support for XPCO 2016, OnGuard 7.1, 7.2, 7.3	1.5

Table of Contents

Introduction

This document describes steps to integrate Milestone (XPCO) X-Protect Corporate Video Management System with Lenel's OnGuard Access Control System.

The purpose of the integration is to enable users to view live and recorded Milestone video from inside the OnGuard user interface. The integration will allow users to view OnGuard data and Milestone video from a single integrated console instead of requiring two consoles, one to view OnGuard information and another to view Milestone video.

This integration will provide access to basic features of the Milestone VMS from inside OnGuard. To access the complete and extended features of the Milestone Video Management System, use the stand alone Milestone Smart Client application.

This integration has been verified with OnGuard v7.3, v7.2, v7.0.932 and Milestone XProtect Corporate 2014, 2016.

Feature Matrix

Supported features:

Video Feature	"X" indicates supported	Notes
Live Video	X	
Text Overlay	Not Supported	No plans to support this.
Pre-recorded Video Playback	X	
Status	X	
Export To AVI	X	
Time Synchronization	X	
Record Start (On Demand)	Not Supported	
Frame Rate Adjustment	Not Supported	needs setup in Milestone
Record Stop (On Demand)	Not Supported	needs setup in Milestone
PTZ	X	
Video Alarms	X	See alarms table below.
Video Tour	X	OnGuard implements tours
Video View Up To 16 Cameras	X	
Presets & Patterns	X	Presets only
View Live & Recorded Video from multiple cameras	X	
PTZ Presets & Presets based on event, alarm input	X	
Replay Up To 4 Cameras for same Time Interval	X	
Toggle Video Window Size from 1x to 4x	X	
Display Up To 4 Live Video Windows based on Event	X	
Original Recorded Video Cannot be Altered	X	
Playback and Recorded Video in one window	X	
Bi-directional Actions	Not Supported	
Camera Import into OnGuard	X	Added in v1.4 of OAAP Translator
Preset Import into OnGuard	X	Added in v1.4

Supported alarms:

OnGuard alarm	Milestone Event Source
L_VIDEO_MOTION_DETECTED	MotionStarted
L_VIDEO_MOTION_DETECTED_RESTORED	MotionStopped
L_VIDEO_DISK_FULL	DatabaseDiskFullEvent
L_VIDEO_RECORDING_STOPPED	RecordingStopped
L_VIDEO_CAMERA_TAMPER	TamperingStart
L_VIDEO_CAMERA_TAMPER_RESTORE	TamperingEnd
L_VIDEO_FAILOVER_STARTED	FailoverStarted
L_VIDEO_FAILOVER_RESTORED	FailoverStopped
L_VIDEO_OVERFLOW_STARTED	FeedOverflowBegin
L_VIDEO_OVERFLOW_RESTORED	FeedOverflowStopped
L_VIDEO_STORAGE_UNAVAILABLE	ArchiveDiskUnavailable OR DatabaseDiskUnavailable
L_VIDEO_SOURCE_SIGNAL_LOST	VideoLoss
L_VIDEO_ON_CAMERA_TRIP_WIRE	Tripwire

Installation

Pre-Requisites

Prior to integration, verify that OnGuard server and OnGuard clients are configured and working normally. Also verify that the Milestone Management Server, Milestone Recording servers and cameras are installed, configured and working normally. Refer to the user manuals and documentation for OnGuard and Milestone XPCO for a comprehensive description of the installation, configuration and features of the respective systems.

Installation Overview

The integration solution requires following steps:

> **THIS STEP ONLY APPLIES TO OnGuard 6.6 and up.**
>
> i.   Obtain the Microsoft .NET 4 Full Runtime (Not the .NET 4 Client Profile) and install in OnGuard Server and all OnGuard client machines where integrated video will be viewed. Any more recent version of the .NET runtime v4 will work. (4.5, 4.51, 4.5.2, 4.6)

ii.   Obtain Milestone SDK 3.5b redistributable from Milestone and install in OnGuard Server and all OnGuard client machines where integrated video will be viewed.

iii.   Obtain correct version of "Accessory Add-on for Milestone" from Lenel and install in OnGuard server and all OnGuard client machines where Milestone video will be viewed.

iv.   Generate key file in each OnGuard client machine and provide to Milestone.

v.   Place license file from Milestone in the OnGuard client machine where the integrated video will be viewed.

vi.   Execute Milestone camera discovery process

vii.   Setup and configure Video Recorder and Cameras in OnGuard System Administration application

Installing .NET 4 Runtime

THIS STEP ONLY APPLIES TO OnGuard 6.6 and up.

Download the .NET Framework 4.0 Full Profile. It can also be any of the .NET 4.5.x runtimes as they are just updates to the 4.0 .NET runtime. Install this on every Lenel OnGuard machine (LS Communication server and video clients).

Extracting files	✕

Preparing: F:\9d1b188092d7391fcf402d45eaf9\netfx_Full.mzz

Cancel
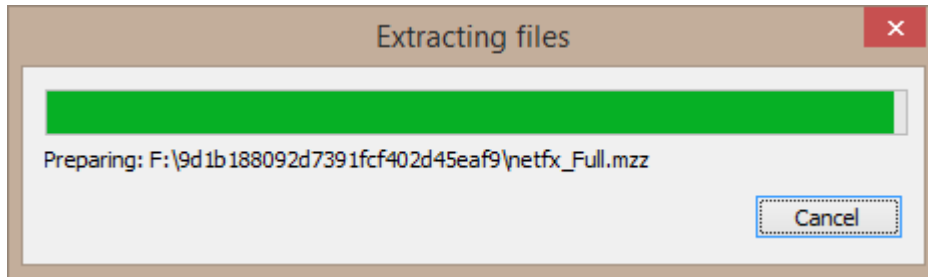
Installing Milestone SDK Runtime

Obtain "Milestone SDK 3.5 Redistributable package" (not the new MIP SDK) from Milestone. Install the package in all OnGuard client machines where Milestone video will be viewed.

Note: It is recommended to disable Firewall and disable or set "User Account Control" settings to lowest level before starting the integration.

Click on "Milestone_SDK_3.5_Redistributable_Package.msi" running as Administrator to start installation.
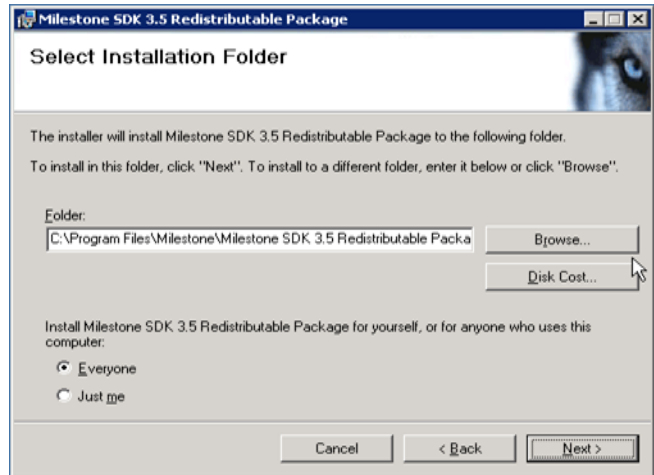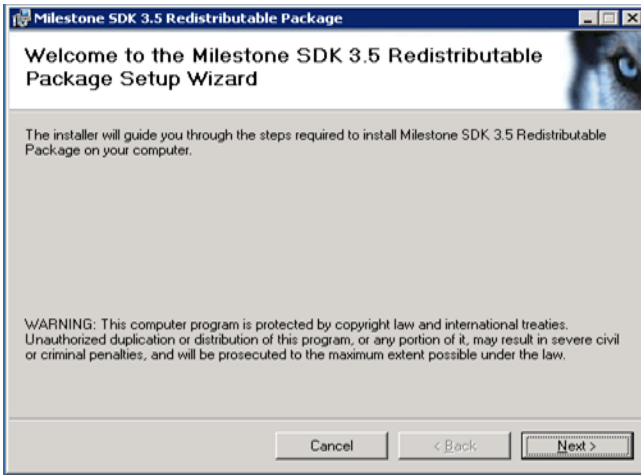
Select Install Folder and click Next.
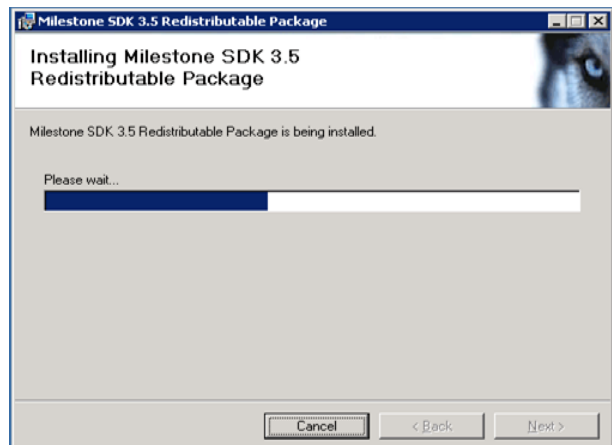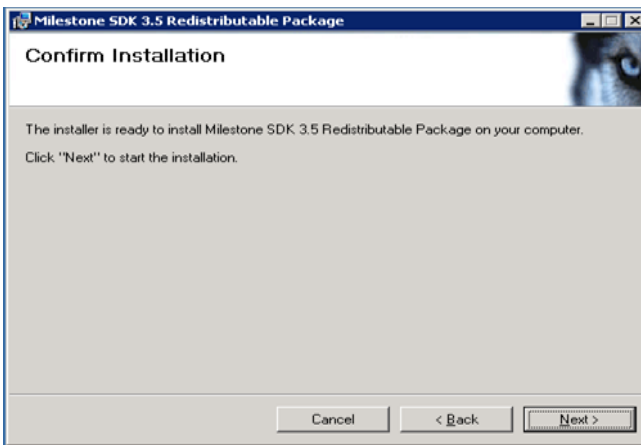
Note: Repeat this process in all OnGuard client machines where Milestone video will be viewed.

Installing Milestone-OnGuard Add-On

Since multiple versions are available in Lenel's website to support integration with 7.3, 7.2, 7.0, ensure you obtain the correct version of add-on for Milestone to be installed.

Install add-on on all OnGuard machines where Milestone video will be viewed. To start installation in OnGuard vX system, click "vX Accessory Add-on for Milestone" running as Administrator. X is a version number of Lenel OnGuard such as 6.4.500.
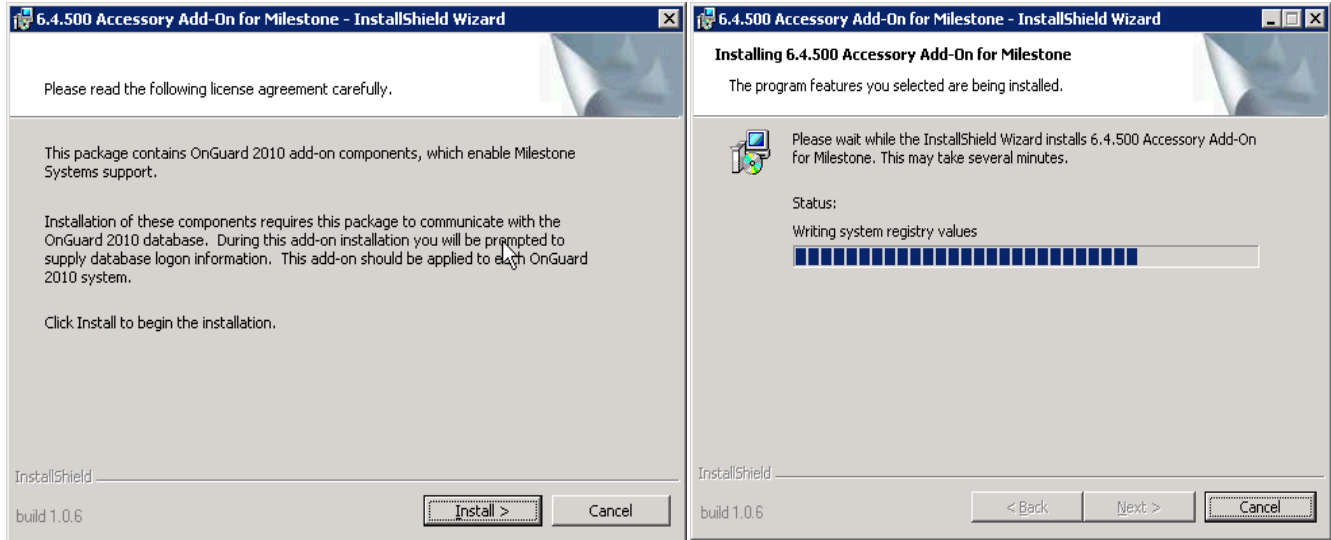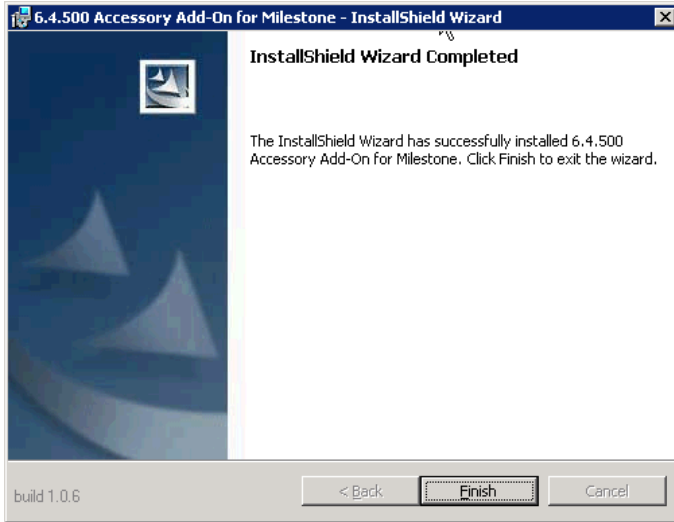

When prompted enter the credentials to login into the OnGuard Database, the default credentials are
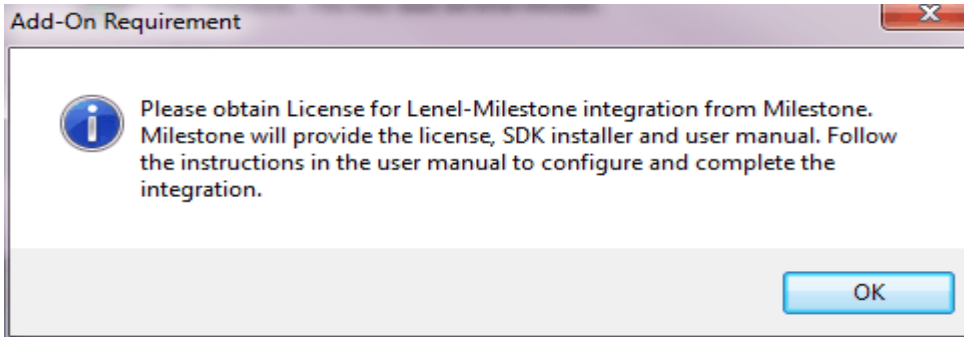
- **LoginID:** LENEL
- **Password:** MULTIMEDIA
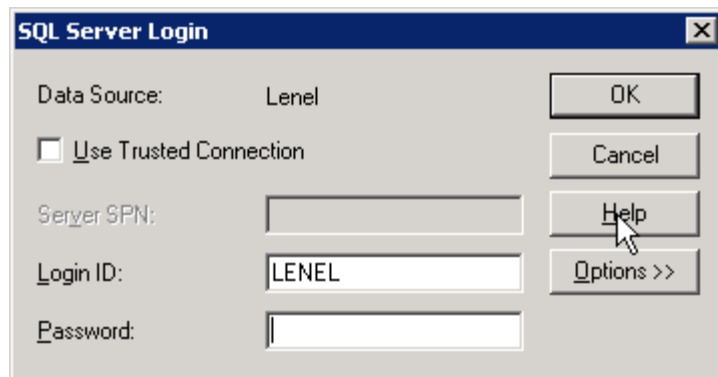
Once done, the add-on has successfully been installed:

To complete the installation and have the integration work, you must obtain a license for every machine that will run the integration (servers and workstations) running OnGuard that will use the Milestone integration.

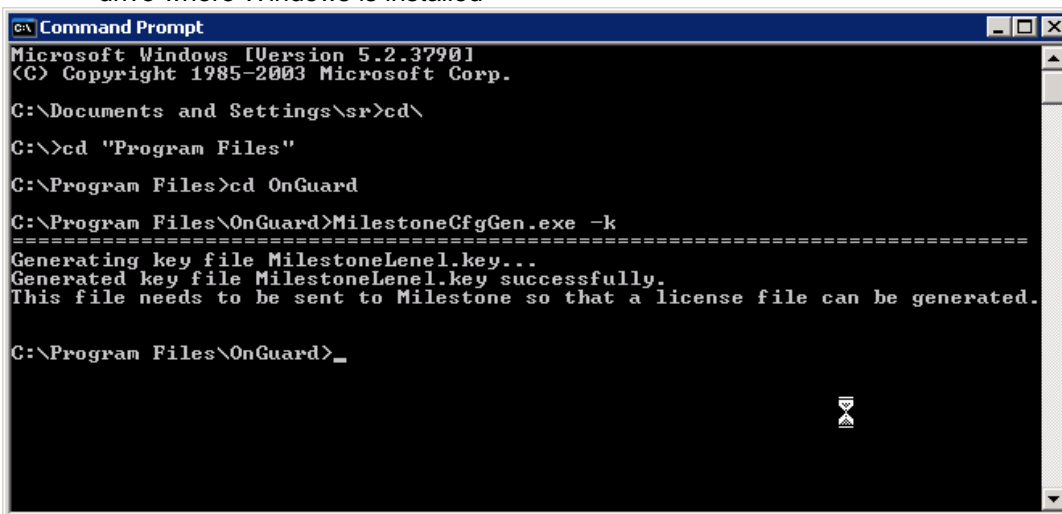## Licensing Lenel's OnGuard servers and workstations

Perform below steps in each machine where integrated Milestone video will be viewed.

- Open administrator command prompt (Run as Administrator) in the OnGuard machine (server or client) where add-on is installed.
- Browse to OnGuard folder.
- Run the key generation command. "MilestoneCfgGen.exe –k". This will generate MilestoneLenel-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX.key file in the X:\ProgramData\MilestoneTrans folder of the machine where X: is the drive where Windows is installed.
- Retrieve and send the MilestoneLenel-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX.key file to Milestone for licensing.
- Obtain MilestoneLenel-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX.lic license file from Milestone corresponding to the key file
- Copy MilestoneLenel-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX.lic file in the X:\ProgramData\MilestoneTrans\ folder where X: is the drive where Windows is installed of the corresponding machine where the key file was generated.
- This machine is now licensed for the integration

Note: Integration will not work until the corresponding license file is copied into the X:\ProgramData\MilestoneTrans\ folder of associated machine where X: is the drive where Windows is installed.

To generate the key file for each machine running OnGuard Milestone OAAP integration (servers and workstations):
- On Windows 32-bit machines the OnGuard folder is in X:\Program Files\OnGuard where X: is the drive where Windows is installed
- On Windows 64-bit machines the OnGuard folder is in X:\Program Files (x86)\OnGuard where X: is the drive where Windows is installed

Note: Repeat this process for all OnGuard client machines where Milestone video will be viewed.
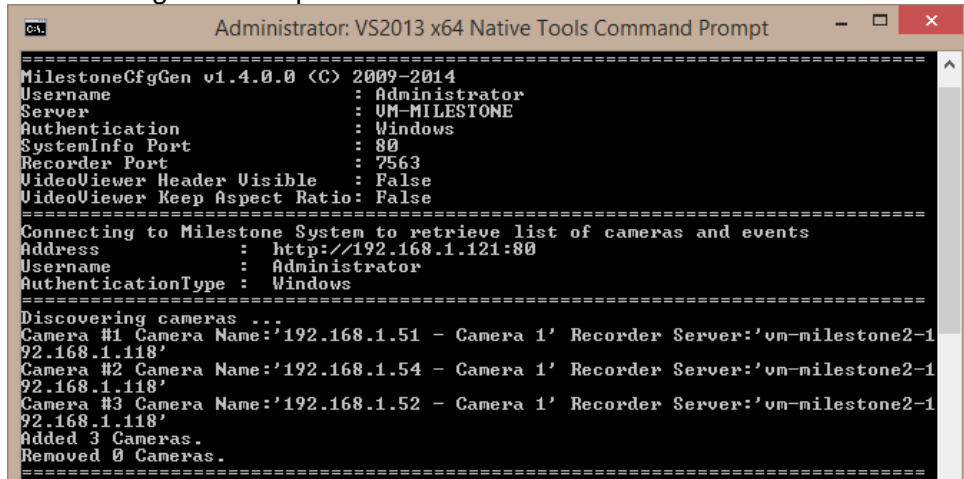
Configure Milestone-OnGuard Add-On

IMPORTANT:
- **ONLY DO THIS STEP ON THE ONGUARD LS COMMUNICATION SERVER MACHINE**
- **USE THE "DEPLOY MILESTONE-ONGUARD ADD-ON CONFIGURATION" STEP BELOW ON ALL OTHER ONGUARD MACHINES**
- **REPEAT THIS STEP ANYTIME CAMERAS ARE ADDED/REMOVED FROM MILESTONE AND BEFORE CHANGING CONFIGURATION IN ONGUARD SYSTEM ADMINISTRATION**

- Login to OnGuard Server where LS Communication Server is installed
- Open administrator command prompt (Run as Administrator).
- Browse to X:\Program Files (x86)\OnGuard folder.
- Run "MilestoneCfgGen –a:<MilestoneManagementServer> –u:<domain>\<user> –p:<password>"
  - Where <MilestoneManagementServer> is the IP Address or Machine Name of the Milestone Management Server
  - Where <domain> is the domain of the Milestone Management Server or the Milestone Management Server IP Address or machine name if the Milestone Management Server is not part of a domain
  - Where <user> is the username to login to the Milestone Management Server
  - Where <password> is the password to login to the Milestone Management Server
- SystemAdministration, AlarmMonitoring, LS Communication Server Service and LS Linkage Server Service should be restarted for the changes to the configuration to take effect.
- This command line generates a configuration file named **MilestoneLenel-Config.xml** located in the X:\ProgramData\MilestoneTrans\ folder where X: is the system drive where Windows is installed. **This is the configuration file that needs to be deployed to all other OnGuard machines.**

For example, if a Milestone Management server not part of a domain is named VM-MILESTONE, user is VM-MILESTONE\Administrator with password of @gwe!123 with windows authentication, in the command prompt, type

MilestoneCfgGen –a:VM-MILESTONE –u:VM-MILESTONE\Administrator –p:@gwe!123

You would get this output:

Deploy Milestone-OnGuard Add-On Configuration

> **IMPORTANT:**
> - **THIS STEP MUST BE REPEATED EVERYTIME THE CONFIGURATION IS UPDATED ON THE LS COMMUNICATION SERVER MACHINE**
> - **MAKE SURE TO EXECUTE "CONFIGURE MILESTONE-ONGUARD ADD-ON" STEP BEFORE DOING THIS STEP**
> - **REPEAT THIS STEP ANYTIME CAMERAS ARE ADDED/REMOVED FROM MILESTONE AND BEFORE CHANGING CONFIGURATION IN ONGUARD SYSTEM ADMINISTRATION**

When Milestone video will be viewed on multiple OnGuard client and/or server machines, copy "MilestoneLenel-Config.xml" from the X:\ProgramData\MilestoneTrans folder of the LS Communication Server machine into the X:\ProgramData\MilestoneTrans directory of ALL the other OnGuard client/server machines where Milestone video will be viewed. X: is the system drive where Windows is installed. You should restart SystemAdministration and AlarmMonitoring for the changes to take effect on each workstation after the copy.

OnGuard Channel Id Assignment

MilestoneCfgGen.exe generates a file named "MilestoneCfgGen_CameraList.csv", this is new in v1.4.0.0. This file contains the list of Milestone cameras as well as their assigned OnGuard channel ids. This list should be kept as a reference it establishes the correspondence between Milestone camera ids to OnGuard camera Ids. The OnGuard camera IDs are numbered from 1 to N where N is the total number of cameras in the Milestone system. In the next step, while configuring cameras in OnGuard, these IDs will be used as the OnGuard Camera IDs to link to Milestone cameras. This list can be opened in Excel and can be used as a reference, it will be overwritten every time MilestoneCfgGen.exe is run.

Adding Recorder

Note: If integrating with OG v6.5 or v6.6:
- Open Services applet and Stop "LS Communication Server" service.
- Open File explorer and browse to OnGuard directory. Change file name of ProgramFiles(x86)/OnGuard/LnlSkyPointBaseServerTranslatoru.dll to LnlSkyPointBaseServerTranslatoru_bak.dll. Restart Communication Server.
- This resolves an issue with streaming video from Alarm Monitor

Launch "System Administration" in OnGuard and login. Select the Video menu and click on "Digital Video ..." menu item.


Ensure Video Recorder tab is selected. Click Add button on the left hand bottom side of the screen to add a new Video Recorder device.
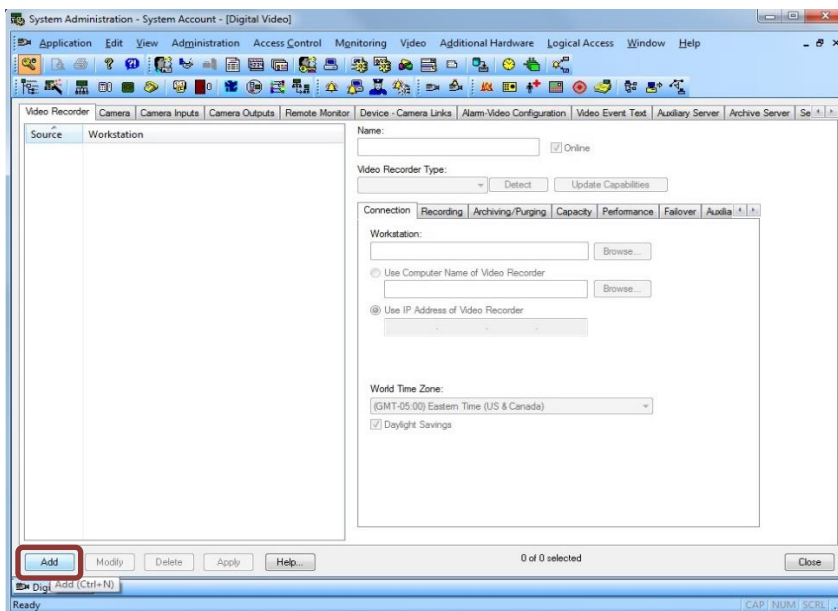
Open Milestone Management Client to note down the name of the Recording Server set up in Milestone.

- For Name, enter **the exact Name of the Milestone Recorder as set up in the Milestone system**.
- For Video Recorder Type, open the dropdown and select "Milestone".
- For Workstation, enter the workstation name where OnGuard communication server is installed.
- For the "Use Computer Name of Video Recorder" field enter **the exact Name of the Milestone Recorder as set up in the Milestone system.** It should be the same as the value entered in the Name field
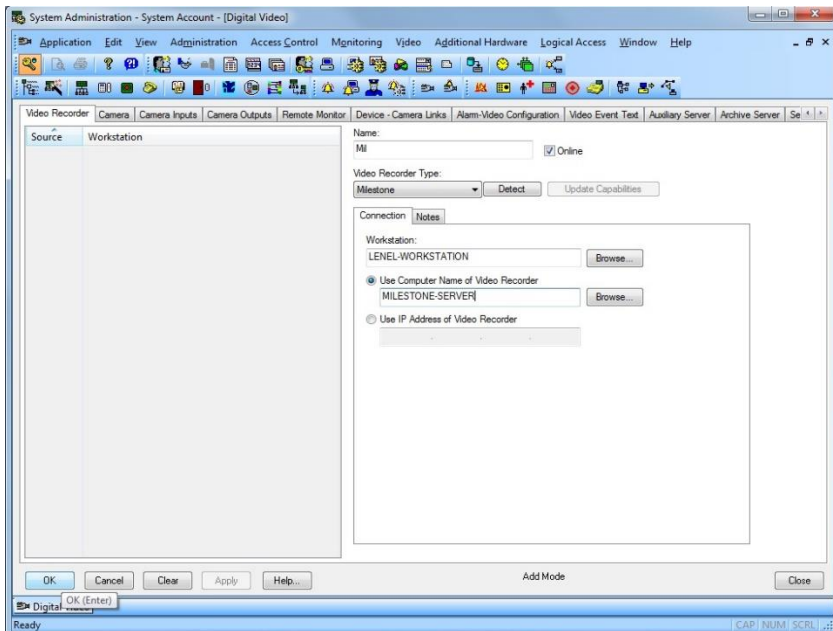

Click OK to create the Video Recorder device. Repeat process to set up multiple Recording servers.
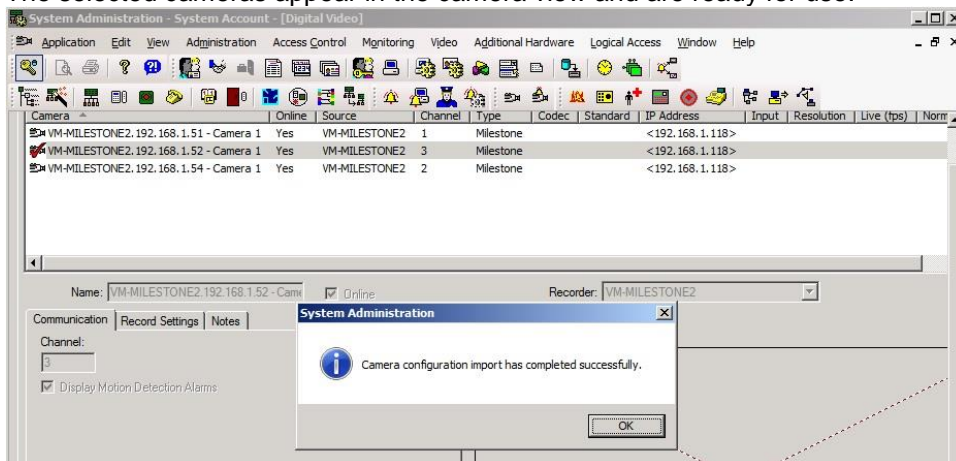
Adding Cameras

Automatically import cameras

To automatically import cameras from Milestone into OnGuard, a new feature added in OAAP Milestone-Lenel v1.4 and higher, allows the user to import the camera information into OnGuard by right clicking on the recorder and selecting the Import from Recorder menu. This option will only work in Milestone-OnGuard OAAP v1.4 and higher only.
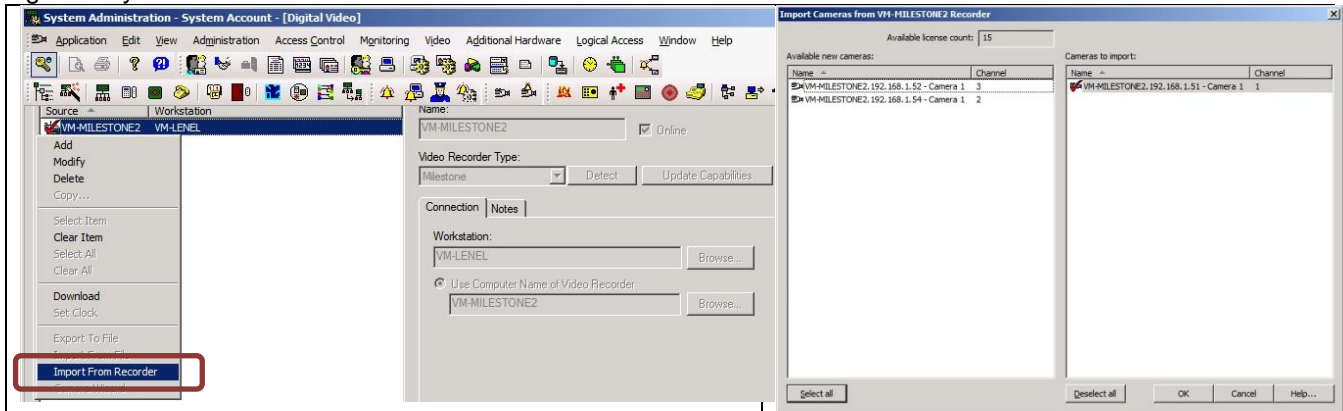
The import from recorder dialog will display the list of cameras in the specified recorder, you can then select the ones you want to import into OnGuard by clicking them in the left pane, they will then transfer to the right pane. Once all desired cameras are selected for import, press OK.
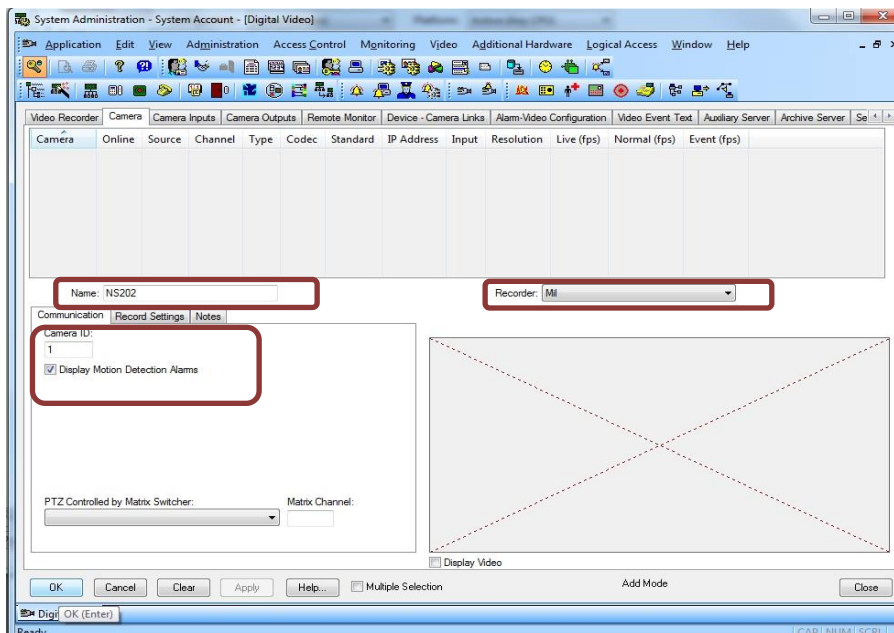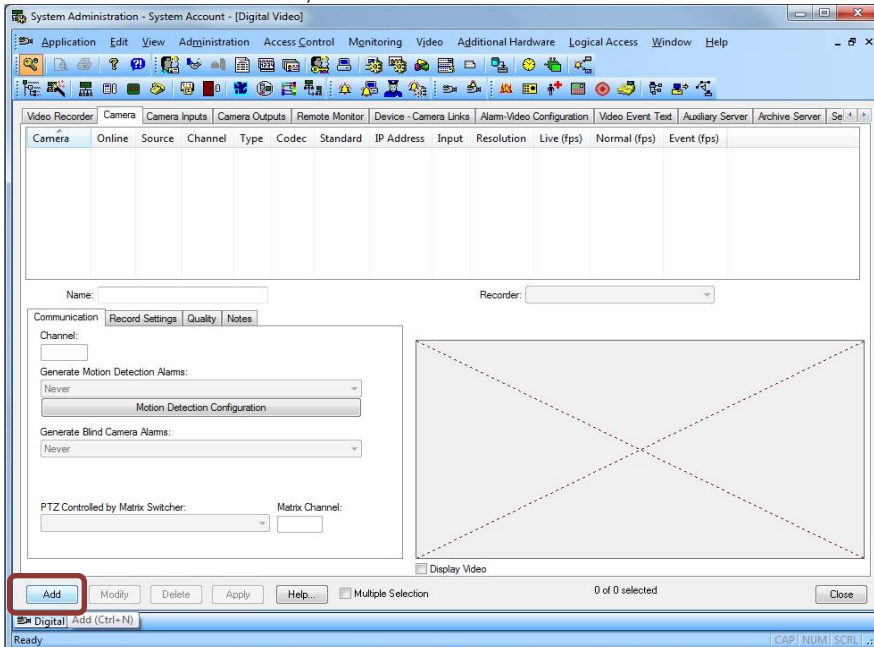
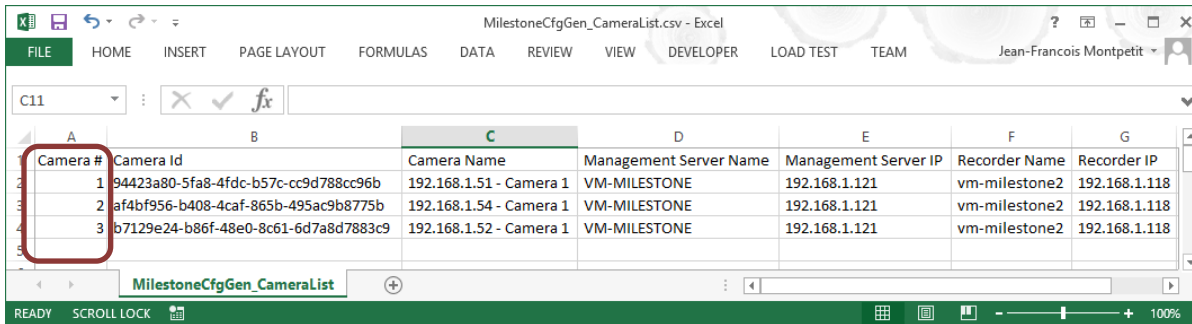The selected cameras appear in the camera view and are ready for use.

Manually import cameras

To add Milestone camera, select the Camera tab and click "Add" in the bottom left of the screen.

- For Name, enter the name of the Milestone camera. (It is recommended to use the exact name as set up in the Milestone system to prevent confusion)
- For Recorder, open the drop down and select the Milestone Recorder to which this camera belongs to, from the list of Recorders created earlier in the previous step.
- Check "Display Motion Detection Alarms" if you want to generate "Motion Detected" events for this camera in Alarm Monitoring.
- For Camera ID, enter the exact number associated with the Milestone camera during the discovery process. Refer to the MilestoneCfgGen_CameraList.csv file generated in step "Discovering Milestone Cameras for use in OnGuard". See sample screen below to see where the Camera ID is located:
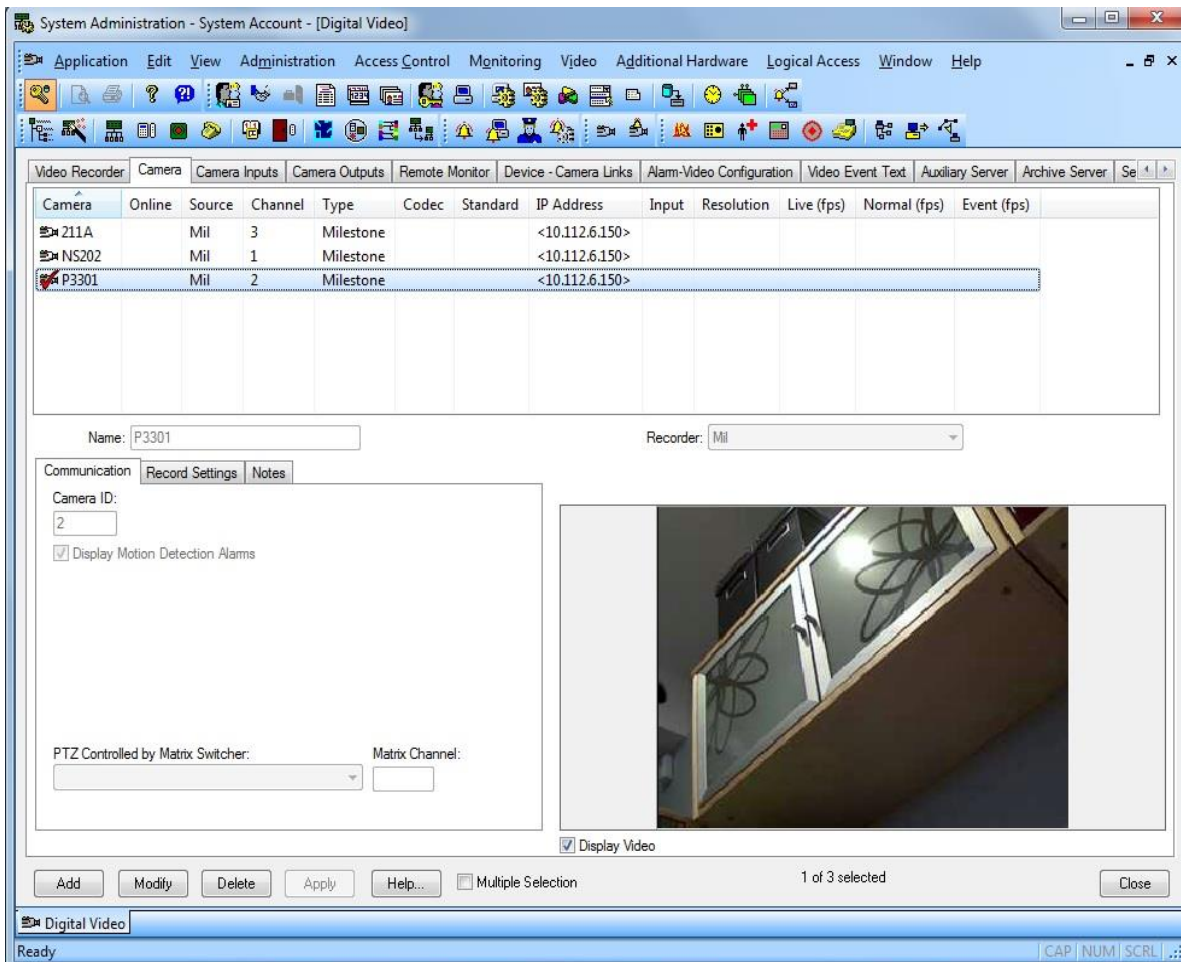
Click OK to create the Milestone camera in the OnGuard system. Repeat the Camera Add process to integrate all Milestone cameras one by one into OnGuard.

Video in System Administration

To view live video from the newly configured cameras in the System Administration tool, select the required camera from the list of cameras in the Camera tab and check "Display Video" check box (bottom middle section of the screen).
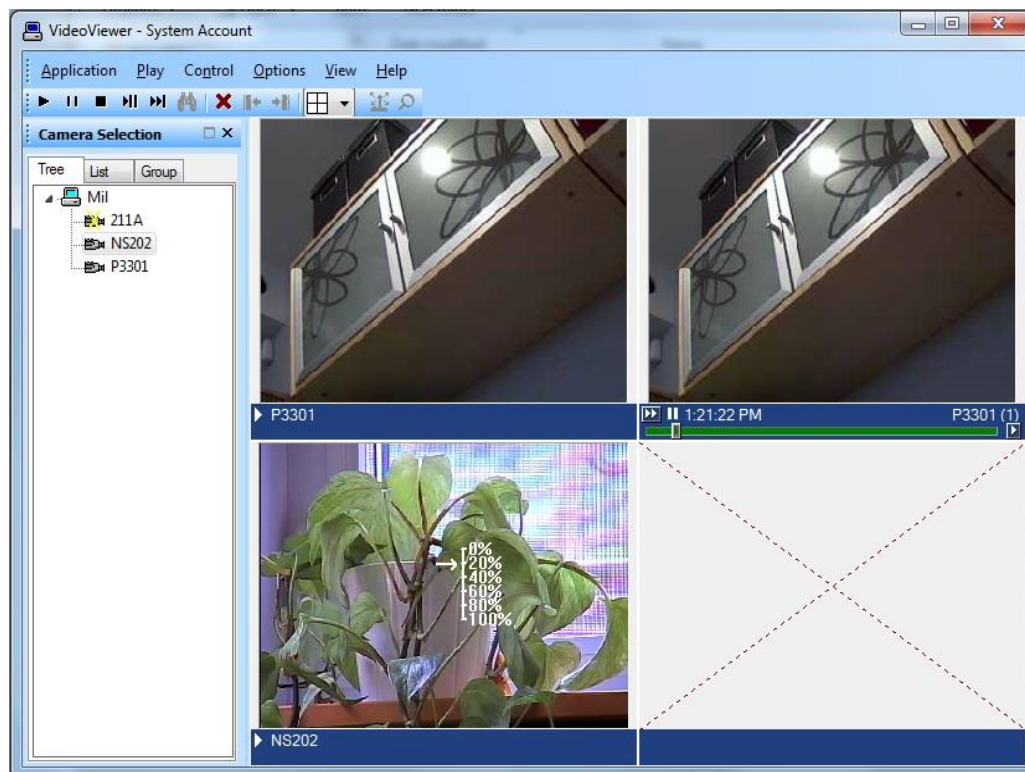
Video in OnGuard VideoViewer

Live Video and PTZ

Launch VideoViewer application in OnGuard to view live video from Milestone cameras. Select a suitable tile configuration for displaying video. Drag and drop required camera from the tree control on the left to any tile on the right to view live video from that camera.

PTZ controls are handled as an overlay on the video control. If a set of cross hairs is displayed when placing mouse pointer over the image from a PTZ camera, "Point and Click" PTZ control is supported for the camera. Click on the screen to pan/tilt and zoom on the video. For some cameras, cross hairs surrounded by a square may be displayed. In this case, zoom level can be controlled by holding down SHIFT key in the keyboard while moving the mouse up or down. Zoom area can also be selected by holding down the left mouse button, drawing a square around the required area in the image and releasing the left mouse button. The scroll wheel on the mouse may also be used to zoom in/out.
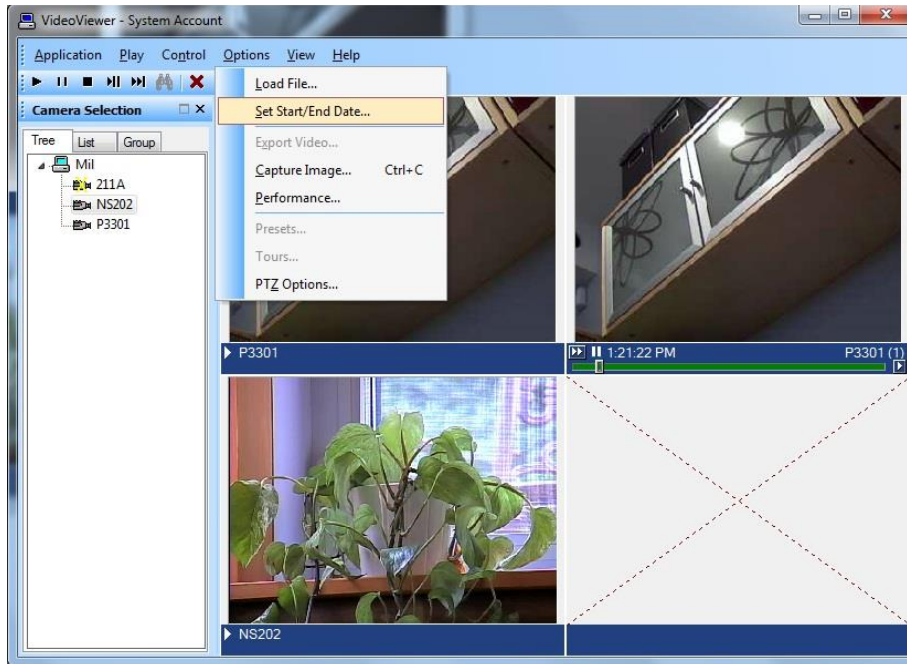

Note: Integrated Milestone video from selected camera can also be viewed from Alarm Monitoring application by selecting the required camera and clicking "Launch Video" in the context menu.

Recorded Video

Launch VideoViewer application in OnGuard to view recorded video from Milestone cameras. Select a suitable tile configuration for displaying video. Drag and drop required cameras from the tree control on the left to any tile on the right which will stream live video from those cameras. To playback recorded video from all cameras in the display tiles starting from a selected time, right click on Options Menu and select Set Start/End Date … menu item. To playback recorded video from a single camera, right click on the required camera name at the bottom of the tile and select Set Start/End Date …

Note: Integrated Milestone Recorded video from selected camera can also be viewed from Alarm Monitoring application by selecting the required camera and clicking "Launch Recorded Video" in the context menu.
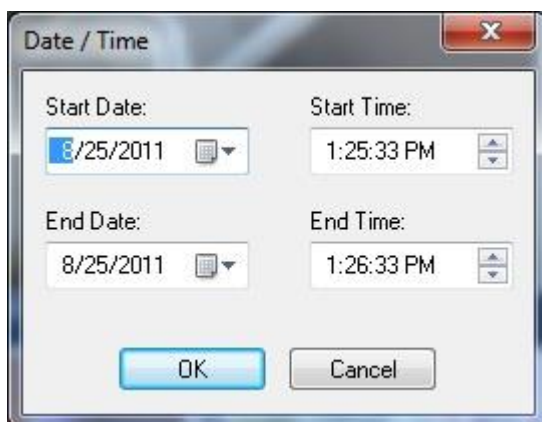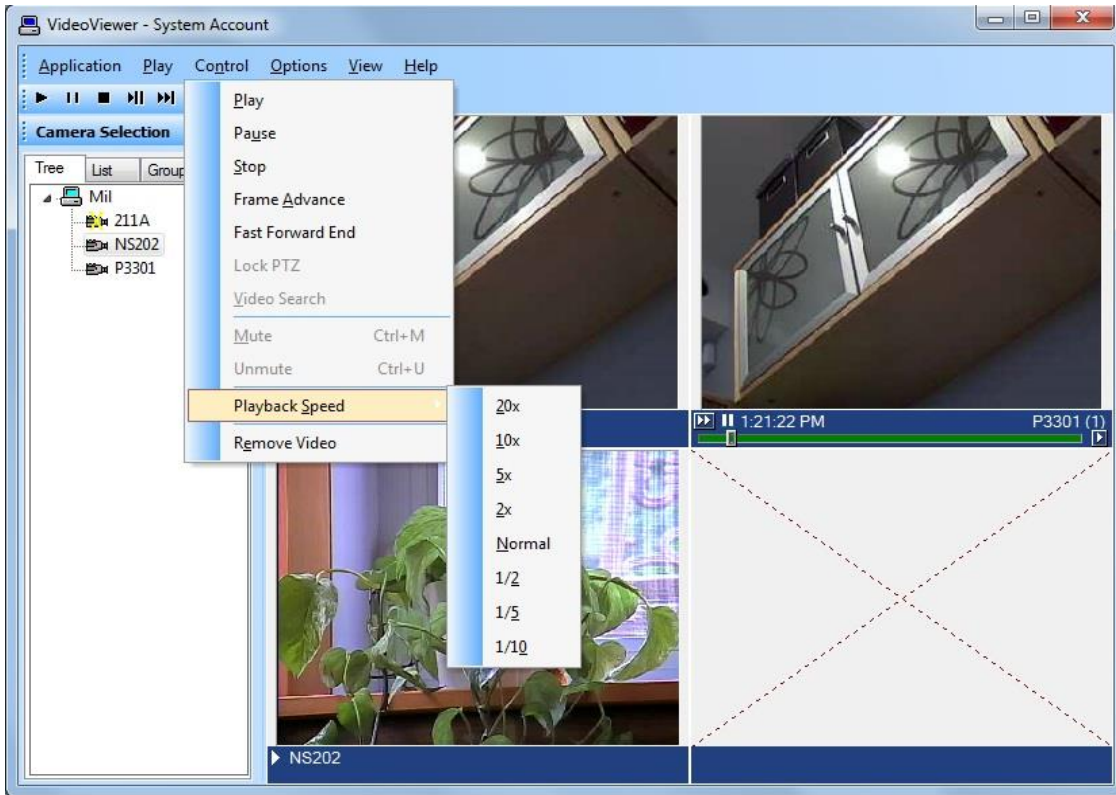
Set the start and end date and time of the recorded video to play back. Click OK to start playback.

- Click "Play" control to stream video for the selected timespan.

- Click "Pause" control to pause streaming video. Click Play to continue.

- Click "Stop" control to stop streaming and go back to beginning of selected timespan.

- Click "Frame Advance" control to advance one frame and pause. Click Play to continue.

- Click anywhere in the video slider control to "Go to" video at that point. Click Play to continue.

- Set playback speed for individual camera by clicking on the appropriate position of the playback speed slider control.

- Change date/time of start and end of playback in the date/time control. Click Play to start streaming video for the new timespan.

- Adjust playback speed for all cameras in the view by selecting Playback Speed menu item from Control Menu.

Export Video

Launch VideoViewer application in OnGuard. Drag and drop required camera into the tile on the right hand side. Right click on camera name in bottom portion of the video and click on "Recorded" to set display to playback mode. Play menu may also be clicked and "Recorded" selected to set display to playback mode. Click on tile selection icon and select "Single View".
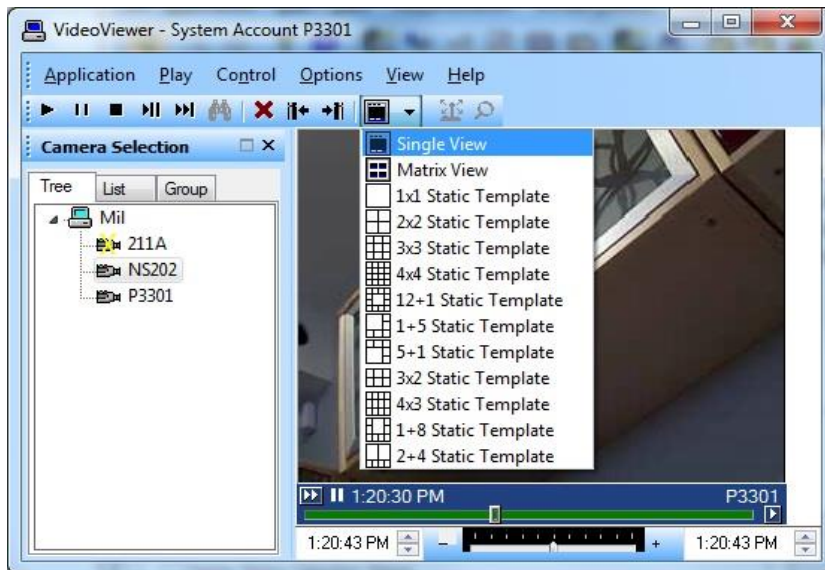
Click on Options Menu and click on "Export Video …" menu item to bring up the Export screen.
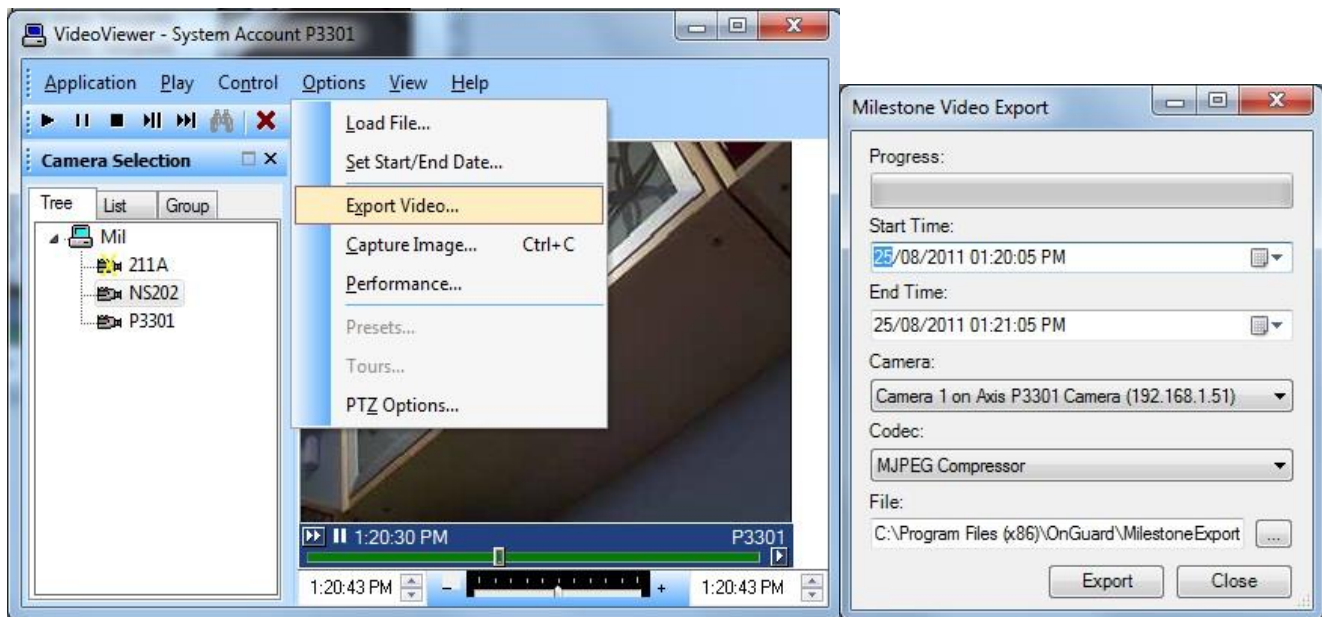
Select required values for Start Time, End Time, Camera, Codec and File to export to. Click "Export" to export the video for selected duration to the specified file.

Camera Tours

Configure Camera groups (Tours) in "System Administration" and view the Tours in "Alarm Monitoring" application.

Creating a Tour

Launch "System Administration" in OnGuard. Click on "Access Control" menu and click on "Groups …" menu item.
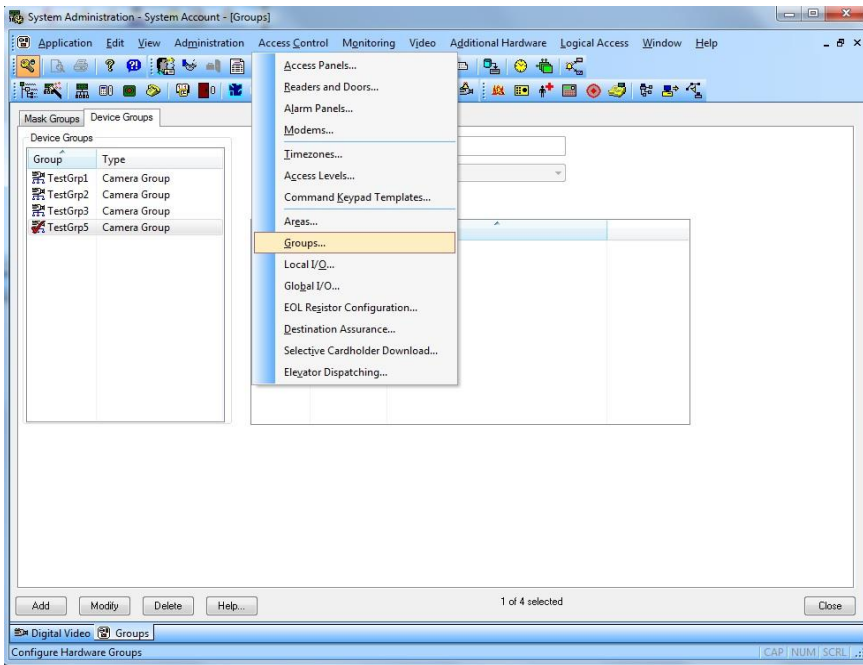
Select "Device Groups" tab on the upper left portion of the screen.
Click the Add button on bottom left portion of the screen.
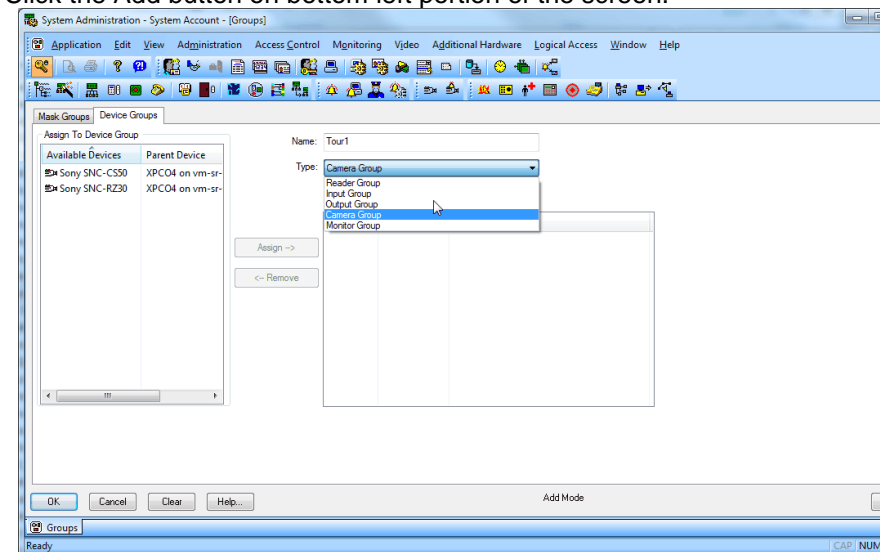
- For Name, enter the name for the new group.
- For Type, select Camera Group from the drop down items.
- Cameras available for assigning to the group will be displayed under "Available Devices" in the left hand side of the screen. Click on the icon of any camera which is to be added to the group. The "Assign" button gets enabled. Click on "Assign" button to add the camera to the group.

Repeat process to add all required cameras to the group. Click OK to save the settings.
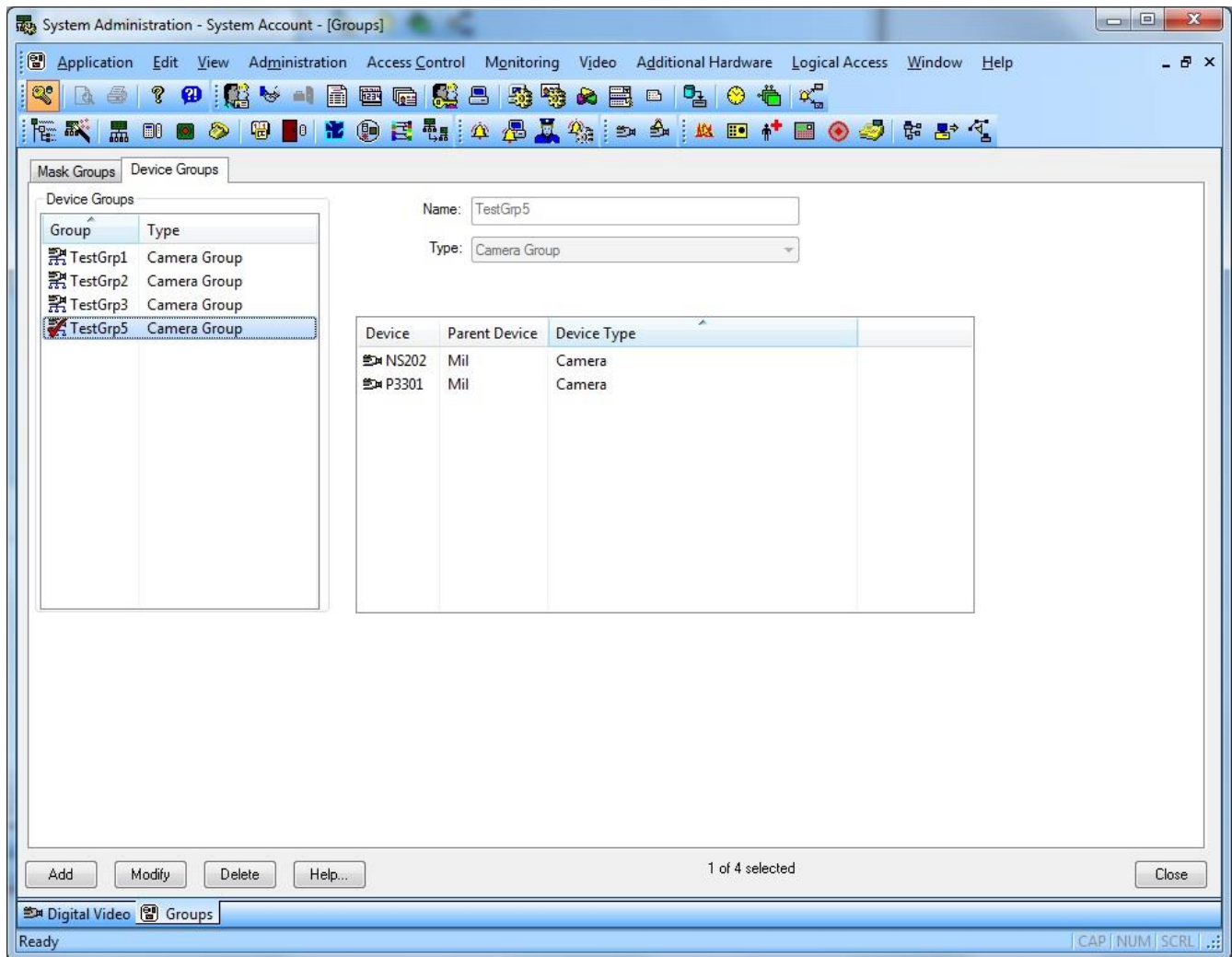
Viewing Tour

Launch "Alarm Monitoring" application in OnGuard.

Click on "View" menu and click on "Device Groups" menu item. Right click on the camera group and click on "Live Video". Select the required group on the Live Video tab and right click on "Configure Video".
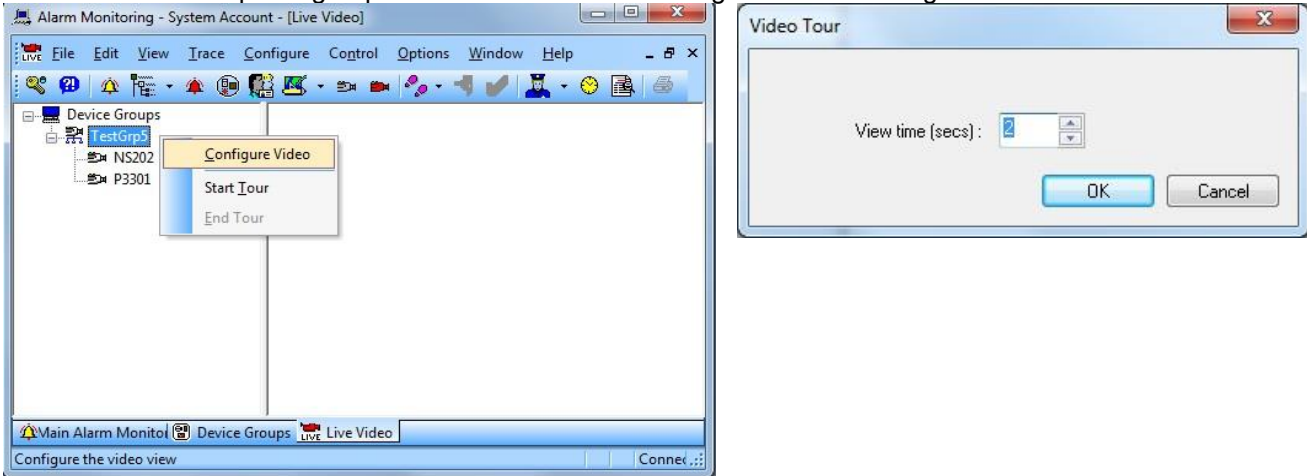
Set the dwell time to stream video for each camera before video switches to the next camera in the group. Press OK to save settings.
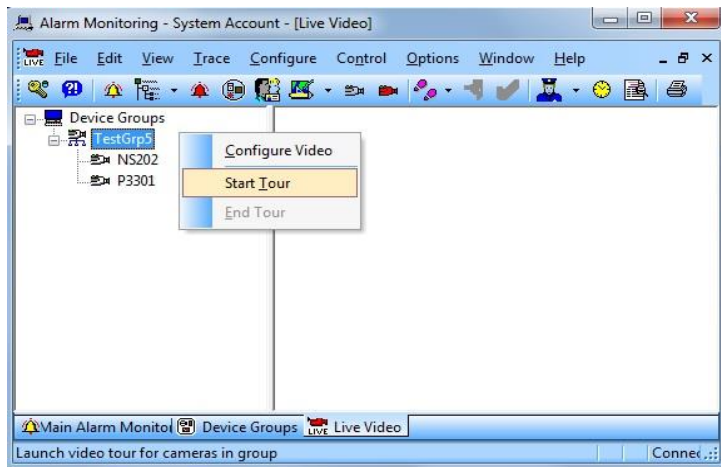
To start a tour, right click on the camera group and select "Start Tour". Live video from each the cameras in the group will be displayed in the screen sequentially streaming video from each camera for the dwell time before switching to the next camera. Click on "End Tour" to stop the tour.

Viewing Video linked to alarms

Event Video (Live and/or playback)

Configure the link between Alarms and Video in "System Administration" and view the Video when alarm occurs in "Alarm Monitoring" application. OnGuard can be configured to display live and or playback of one or multiple cameras when alarm is triggered. The following example shows how to configure OnGuard to automatically display video when Motion is detected.

Alarm-Video Configuration

Launch "System Administration" application in OnGuard. Click on "Video" menu. Click on "Digital Video …" menu item. Select "Alarm-Video Configuration" tab.
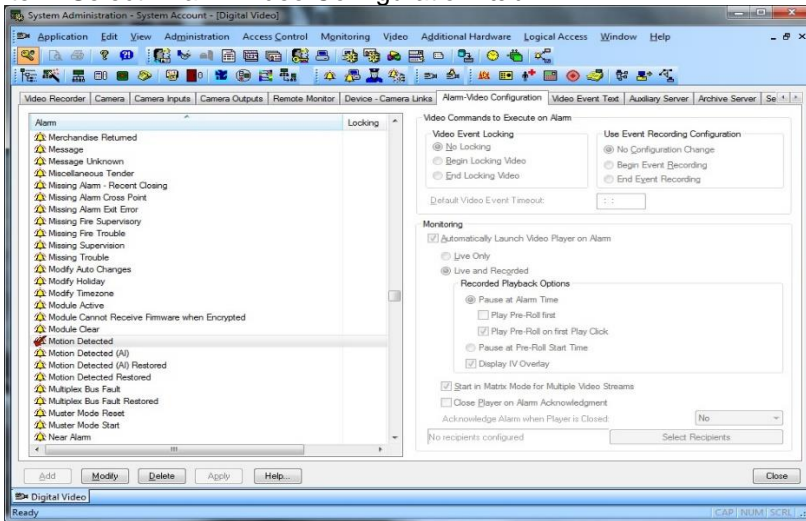
Select the required alarm that will be linked to video. In this case, select "Motion Detected". Click Modify to modify the existing response to the alarm.
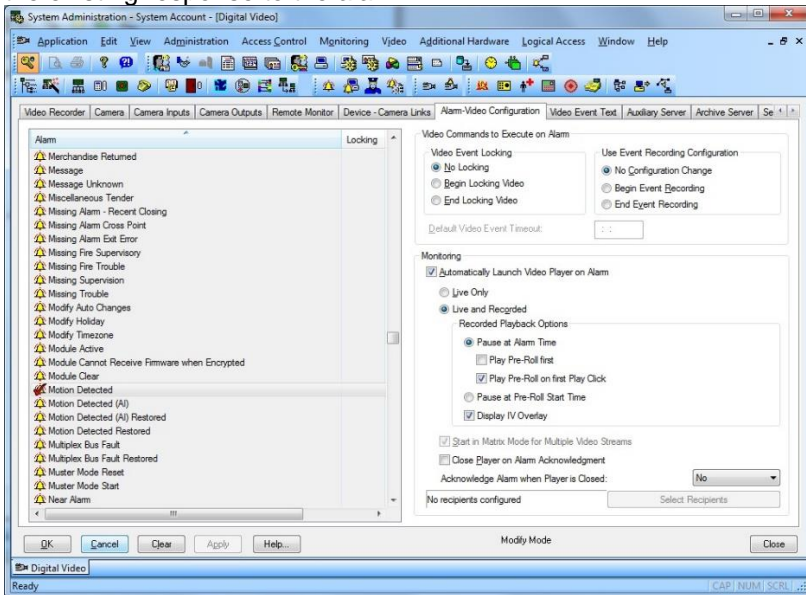
Check the "Automatically Launch Video Player on Alarm" checkbox and select "Live Only" or "Live and Recorded options". Click OK to save the configuration.

Device-Camera Links Configuration

Launch "System Administration" application in OnGuard. Click on "Video" menu. Click on "Digital Video …" menu item. Select "Device-Camera Links Configuration" tab.
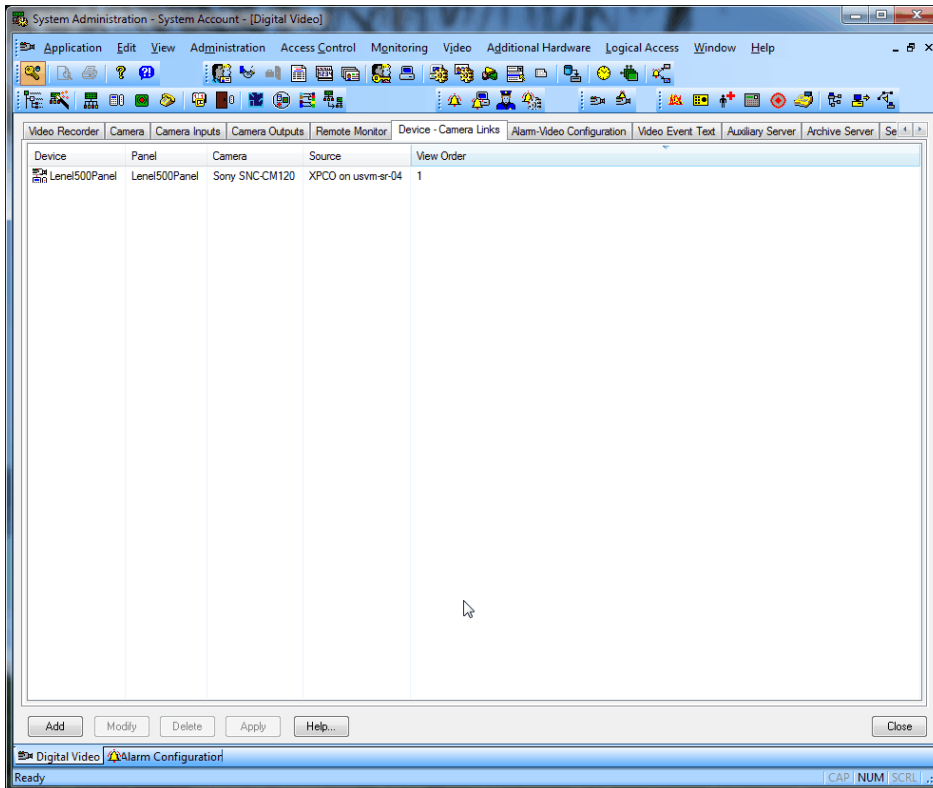
Click Add to start the process of linking a camera to a device.
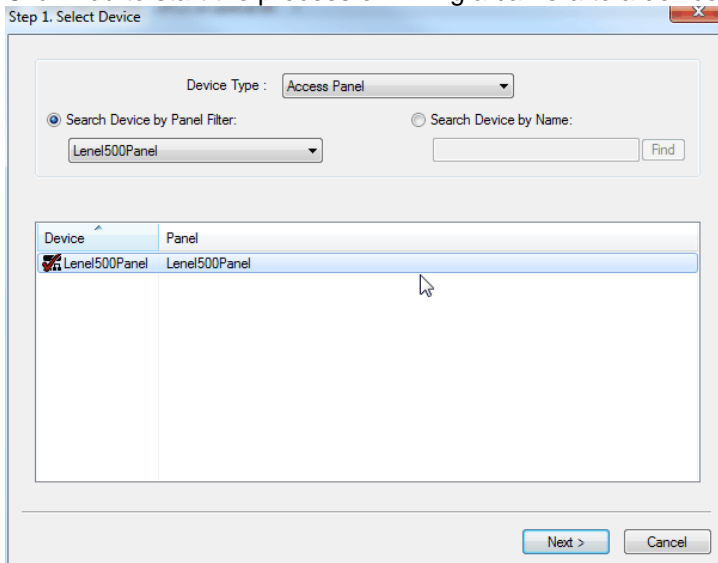
Choose "Device Type" from the dropdown and select the required device. Click Next to select the camera to be linked.
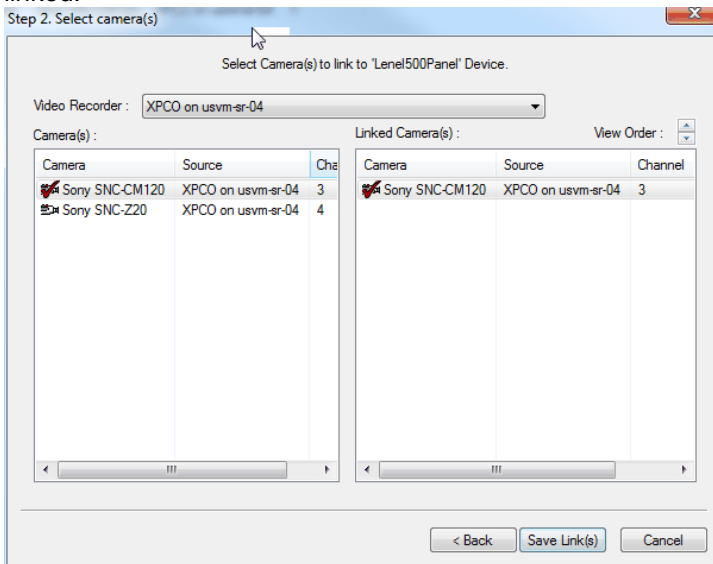
Choose the Video Recorder from the dropdown and select the required camera. Click on Save Links to save the linking.

Video display on alarm

Launch "Alarm Monitoring" application in OnGuard. When Motion is detected, a VideoViewer window will be launched displaying either live video or live and recorded video as configured, from the camera which detected motion.
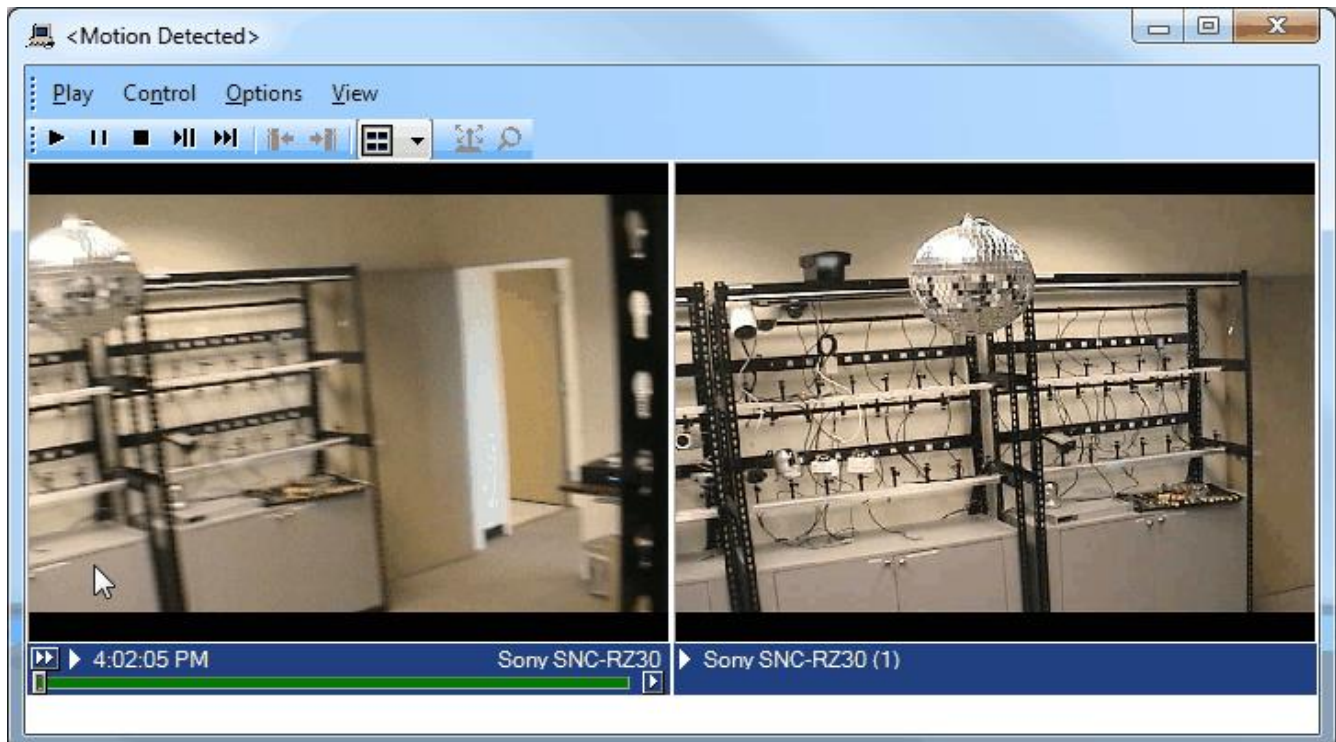
Logging

By default the logs are enabled on both the OnGuard workstation side and the OnGuard server side but they are in reduced information mode (Info). They can be increased for diagnostics purposes to Debug but be aware that this change causes more information to be logged using more disk space and possibly slowing down operations on busy servers. **DO NOT LEAVE logging at Debug levels** for extended periods of time for performance reasons. It should only be used for diagnostics purposes and put back to Info afterwards.

Gathering the logs

OnGuard workstation side

1. On each machine running the OnGuard workstation that uses the integration goto **x:\ProgramData\MilestoneTrans**, where X: is the drive where Windows is installed
2. Create a zip file of the contents of that whole folder, name it MilestoneTrans-{MachineName}.zip where {MachineName} is the name of the machine where the Lenel integration is installed.

OnGuard server side

3. On each machine running the OnGuard LS Communication Server goto **X:\ProgramData\MilestoneTrans**, where X: is the drive where windows is installed
4. Create a zip file of the contents of that whole folder name it MilestoneTransSvr-{MachineName}.zip where {MachineName} is the name of the machine where the Lenel integration is installed.
5. On clustered OnGuard servers, make sure that you capture the logs on all the machines that are part of the cluster, especially the active one.

Changing logging level

Sometimes for diagnostics purposes, it is necessary to obtain more information about the running state of the integration. The logging information can be increased by changing what we call the logging level. The logging level can be set at any of the following values in increasing amount of information recorded to file (Off, Fatal, Error, Warn, Info, Debug, Trace). Off writing no information to file and Trace writing the most information to file. The default setting is Info. The logs auto-delete after 10 days, so they do not take up too much disk space. Here is the procedure to change the log levels in the different modules of the integration:

OnGuard workstation side

1. On each machine running the OnGuard workstation goto x:\ProgramData\MilestoneTrans, where X: is the drive where Windows is installed
2. Find a file named "**MilestoneTrans-NLog.xml**", open it with a text editor like notepad
3. The second to last line in the file is like this **"<logger name="*" minlevel="Info" writeTo="mainlog" />"**
4. Change the "**Info**" to "**Debug**" in that line and save the file.
5. Depending on the OS you are running you may have to save the file to the desktop and copy it back to that folder because windows permissions will not let you save a file there directly.

OnGuard server side

1. On each OnGuard machine running the LS communication server machine goto x:\ProgramData\MilestoneTrans\. X: would be the drive where windows is installed.
   a. Find a file named "**MilestoneTrans-NLog.xml**", open it with a text editor like notepad
   b. The second to last line in the file is like this **"<logger name="*" minlevel="Info" writeTo="mainlog" />"**
   c. Change the "**Info**" to "**Debug**" in that line and save the file.
   d. Depending on the OS you are running you may have to save the file to the desktop and copy it back to that folder because windows permissions will not let you save a file there directly.

Debugging integration

1. Issues in "Discovering Milestone Cameras" (step 3.5)
   When MilestoneCfgGen command is run in the command prompt:

   "MilestoneCfgGen –a:ZOTAC –u:ZOTAC\Administrator –p:@sw!123"

   command prompt screen does not indicate "Found Cameras" and does not list the camera IDs and names.
   - Verify credentials are correct by logging on to Smart Client.
   - If Smart Client opens successfully, use the same credentials used to connect to Smart Client in the MilestoneCfgGen command.
   - Try deleting MilestoneLenel-Config.xml file in ProgramData/MilestoneTrans directory and re-run the above command.

2. When OnGuard Accessory Add-on is installed on Win 2008, an error is thrown with the following info: An assembly registration error has occurred, the following file failed to register: LnrInput.dll (RegAsm return code #100).

   - Ensure you are logged on as Administrator and retry the installation again.

3. Cameras status may show up as offline with red cross-mark though video can be viewed.
   - Ensure Communication server is running.

4. "Error communicating with Video Recorder" messsage in Alarm Monitor when clicking "Launch Video" of selected Milestone camera. Video can be viewed in VideoViewer and System Admin apps.
   - Stop Communication server. Change file name of ProgramFiles(x86)/OnGuard/ LnlSkyPointBaseServerTranslatoru.dll to LnlSkyPointBaseServerTranslatoru_bak.dll. Restart Communication Server and Alarm Monitoring application.
   - Ensure Milestone servers and OnGuard servers are online and connected to network.