Technical Document

Niagara Video Framework Guide

July 16, 2019

niagara4

Niagara Video Framework Guide

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Contents

About this guide

This topic contains important information about the purpose, content, context, and intended audience for this document.

Product Documentation

This document is part of the Niagara technical documentation library. Released versions of Niagara software include a complete collection of technical information that is provided in both online help and PDF format. The information in this document is written primarily for Systems Integrators. In order to make the most of the information in this book, readers should have some training or previous experience with Niagara 4 software, as well as experience working with JACE network controllers.

Document Content

This guide contains important information about how to install and configure video drivers. This guide provides procedures for configuring each aspect of a video driver. An index is provided to help you find the specific information you are looking for.

Document change log

This topic summarizes the history of this document.

July 16, 2019

- Edited for Niagara 4 and reorganized.
- Added Maxpro Video Driver documenation as Appendix C.

June 29, 2017

- Introductory sentence in the rewritten to indicate that the nmilestone driver supports both stand-alone systems and enterprise-wide systems.
- Introductory sentence in rewritten to clarify that the xprotect Corporate driver works only with enterprise-wide systems that have at least one Supervisor PC.

March 10, 2017

In the process of revising and updating this appendix, updated the entire document including:

- Made new screen captures.
- Updated formatting and terminology.
- Combined shared properties into common property topics.
- Consolidated all unique properties into component and plugin topics.
- Updated specific driver chapters: Dedicated Micros, Axis, and Rapid Eye based on NiagaraAX.
- Documented windows properties separately from view properties.

October 18, 2013

- Formatting updates
- Non-technical edits to the *Upgrading to Video Framework* section.

Related documentation

Several documents provide additional information about video drivers.

The following documents are related to the content in this document and may provide addition information on the topics it covers:

- NiagaraAX User Guide

- Niagara Drivers Guide

Chapter 1 Video Framework installation

Topics covered in this chapter

- ♦ Requirements
- ♦ Installing a video network
- ♦ Installing a DVR
- ♦ Adding a camera under a DVR
- ♦ Adding a display under a DVR
- ♦ Adding a camera to a station (non-DVR)
- ♦ Discovering remote cameras
- ♦ Adding a remote camera to a station
- ♦ Creating camera Move Presets
- ♦ Installing the Playback Viewer (Playback Chooser)
- ♦ Installing the Surveillance Viewer

This chapter provides general procedures for how to use Workbench to install and configure a **Video Framework** network, DVR device, camera (with and without a DVR), and a display (connected to a DVR).

The appendixes document individual driver requirements and procedures.

Requirements

To use a video device network, you need to have installed devices that are ready to be accessed. For example, cameras, DVRs, and displays that are connected to the network. Also, you need Niagara 4.6 or later video drivers, additional licenses, and one or more commissioned remote host controllers.

Installed devices ready to be accessed

All component devices (DVR, cameras and display) must be physically installed, powered on and functioning correctly. The remote host controller must be on the same network as the video devices it controls.

For the a host station to access a device you need the following information:

- Device IP address and port number: These are required to set up UDP communications for the device.
- Device user name and password: Credentials are required for http access to devices for configuration, as specified by each individual driver.

Communication security

If the company serves as its own Certificate Authority (CA), the company's root CA certificate must have been imported into each platform or station User Trust Store, and into the browser trust store if users will access a video device using a browser.

Driver modules

The following general-purpose video driver jar files must be present in your installation's `modules` folder or already on the target station's controller.

- ndriver-rt.jar
- ndriver-wb.jar
- nvideo-rt.jar
- nvideo-wb.jar
- videoDriver-rt.jar
- videoDriver-wb.jar

- videoHx-rt.jar
- remoteVideo-rt.jar
- remoteVideo-wb.jar

You can view them in the `C:\Niagara\MySoftware-n.n.nn\modules` folder, where `MySoftware-n.n.nn` is your unique software installation folder.

In addition, you need one or more drivers for the specific manufacturer's equipment.

Licenses

Your license file must include an entry for the videoDriver feature, as well as a vendor-specific entry. Other device and point limits may exist in your license as properties associated with those features.

If your topology includes remote stations managed under the NiagaraNetwork, the Supervisor station must be licensed for the remote video feature.

Commissioned remote host controllers

Whether or not your network includes a Supervisor PC, each remote host controller must have been commissioned using Niagara 4.6 Workbench or later.

Installing a video network

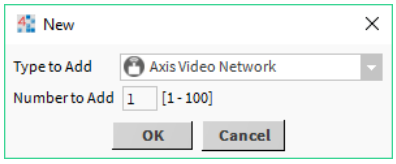
The network component for a specific manufacturer's video devices is typically included in the manufacturer's specific video driver palette (not the **`videoDriver`** palette) and is available from the **Driver Manager** view. This procedure installs a video network driver that may or may not support a DVR (Digital Video Recorder).

Step 1 In the Nav tree, expand **Config→Drivers** node and double-click on **Drivers** node.

The **Driver Manager** view opens.

Step 2 Click the **New** button.

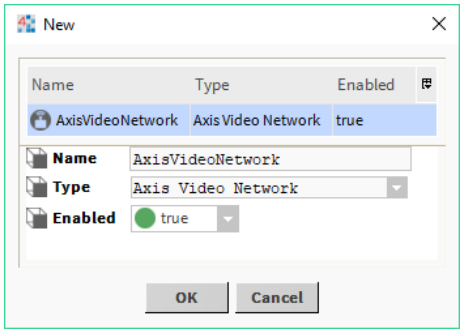
A first **New** window opens.



You can add any video driver that is listed in this window.

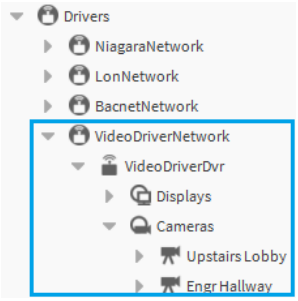
Step 3 Select the desired network for the specific video driver from the option list, enter the number of networks to add and click **OK**.

The Video Framework opens a second **New** window.



Step 4 Name the network, confirm that it is enabled (**`Enabled`** is set to `true`), and click **OK**.

The **Driver Manager** view opens and the Nav tree expands with the network component under the station's **Drivers** node.



NOTE: The framework places the video driver by default at the network level. Since it is possible to have more than one video driver network under the **Drivers** node, it is helpful to maintain all video driver components in a clear hierarchy within the station.

Step 5 Double-click on the newly added network.

The **Video Driver Manager** view opens.

Installing a DVR

Installing a DVR is similar to installing a network.

Prerequisites: You have added the driver for the video driver network, for example, MilestoneNetwork.

NOTE: Not all Video Driver networks support or require a DVR . The following procedure applies to a Video Driver that supports a DVR.

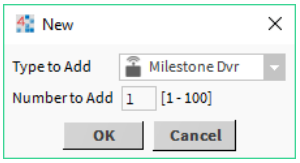
These limitations apply to a DVR:

- The display must be added manually (click the **Add** button in the **Device Manager** view).
- There is no way for Niagara 4 to know if in fact a display is connected to the DVR. If the DVR is on, the display is assumed to be available and turned on.
- It is not possible to ping the device.

Step 1 To open the Video Driver Manager, double-click the network video driver.

Step 2 Click **New**, at the bottom of the **Video Driver Manager** view.

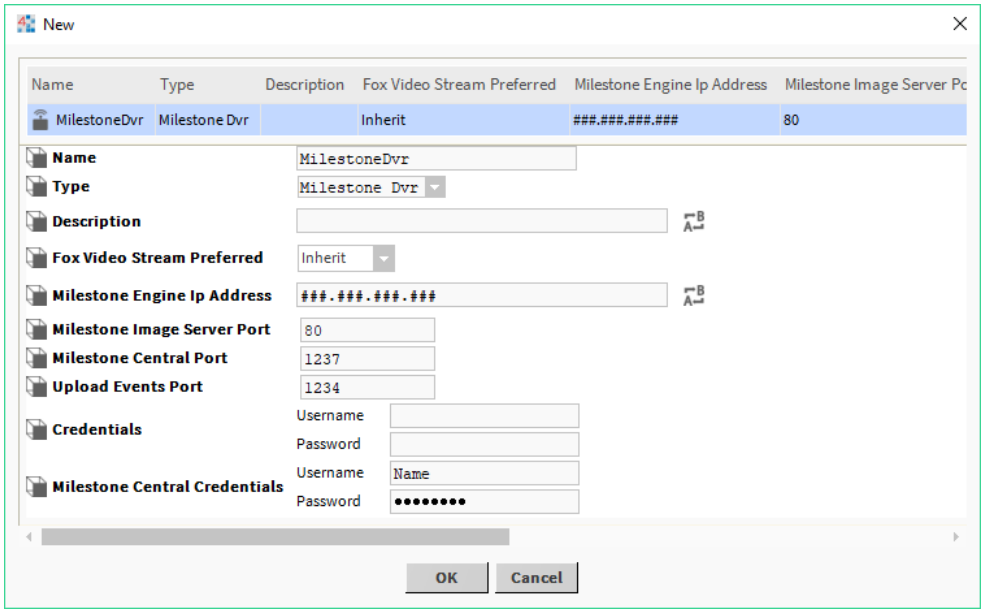
A first **New** window opens.



Step 3 In the **New** window, do the following:

- Verify the desired video device is selected from the option list.
- Enter the number of video devices to add and click **OK**.

The second **New** window opens.



The example screen capture is for a Milestone DVR, which requires two sets of credentials:

- The regular **`Credentials`** are required to access the DVR device.
- The **`Milestone Central Credentials`** are required by the central server.

Make sure you enter both sets of credentials.

Step 4 Select one or more of the listed devices and edit the fields, as desired.

The **Device Manager** under the manufacturer's network opens.

Adding a camera under a DVR

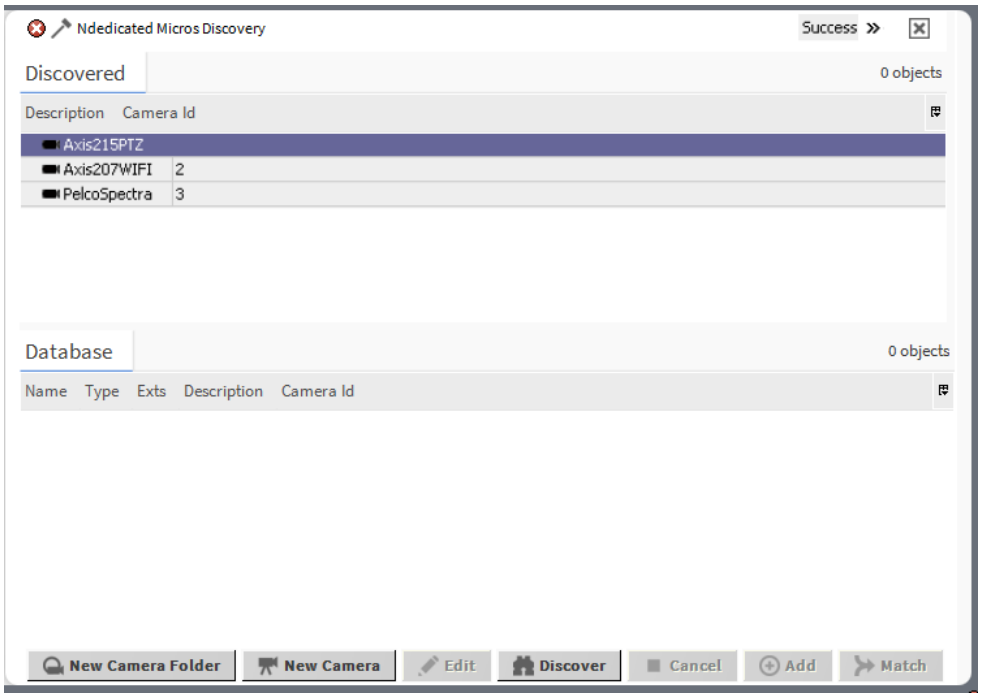
This procedure configures a camera under a DVR.

Prerequisites: A DVR is installed on the local area network.

Step 1 In the Nav tree, expand the **Config→Drivers** node to display the DVR node.

Step 2 Expand the DVR node and double-click the **Cameras** device extension.

The **Camera Manager** view opens.



Step 3 Click **Discover** at the bottom of the **Camera Manager** view.

Only the cameras that are configured and accessible from the DVR are available for discovery. Refer to the specific video driver and associated appendix for camera configuration instructions.

Step 4 In the **Discovered** pane, select one or more discovered cameras to **Add**.

The **Camera Manager** view's **Add** button is available when you have one or more items selected (highlighted) in the top **Discovered** pane. The toolbar has an Add tool , and the Manager menu has an Add command. You can double-click a discovered item to bring it up in the **Add** window.

Step 5 Click **Add**, at the bottom of the view.

The **Add** window opens, with all selected points in the top pane of the window.

Step 6 In the **Add** window, edit properties and click **OK**.

The framework adds the camera to the Database pane and expands the name of the camera in the Nav tree.

Adding a display under a DVR

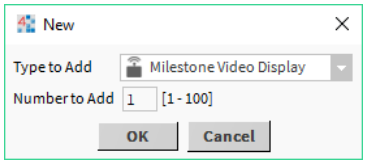
If the manufacturer of your DVR/NVR (Digital Video Recorder/Network Video Recorder) supports it, the video driver is capable of displaying multiple video feeds on a single display connected to the DVR/NVR. This procedure configures a display under a DVR.

Prerequisites: A DVR and cameras are installed on the local area network. You have already discovered or added the cameras to the station.

Step 1 Double-click the **Displays** extension under the DVR in the Nav tree.

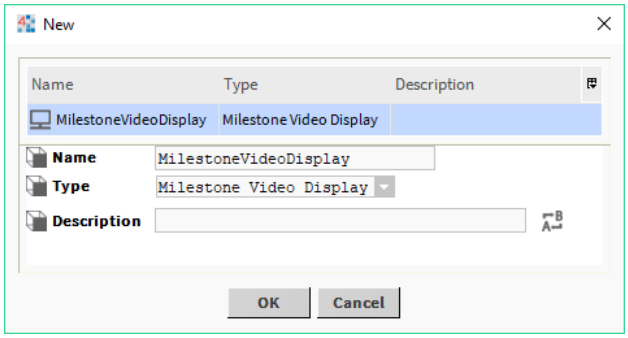
Step 2 In the **Video Display Mgr** view, click **New Display**.

The first **New** window opens.



Step 3 Select the display and click **OK**.

The second New window opens.



Step 4 Type a name and description for the display and click **OK**.

The driver adds the display to the station.

NOTE: There's no way to ping the display because it is connected to the DVR and not directly to the network.

Step 5 To edit the name and description, click Edit.

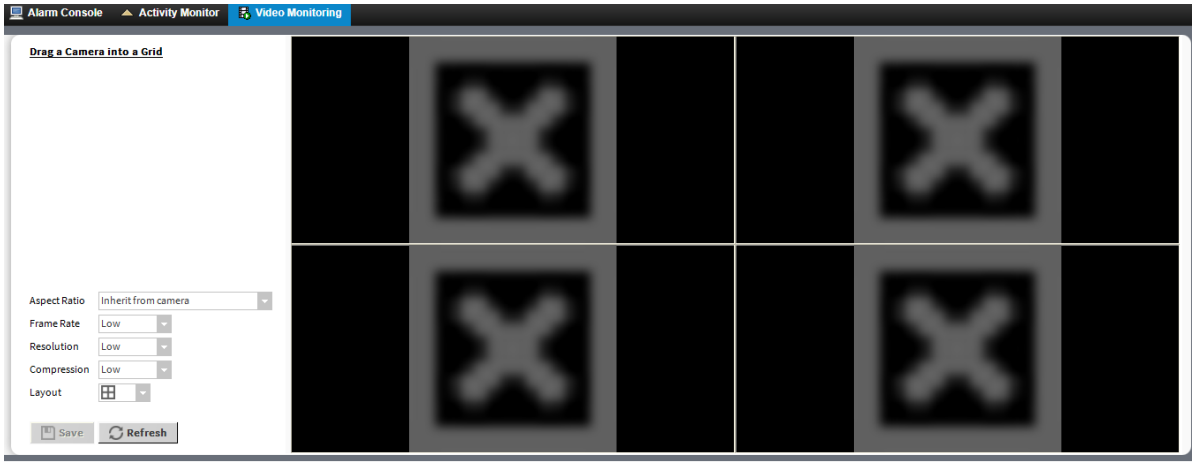
Step 6 Expand the Nav tree and double-click the display device.

The resulting view is the same as the **`Surveillance Viewer`** with the addition of a list of cameras displayed on the left side of the monitor.

Step 7 Select a camera in the list and drag it to one of the quadrants of the view.

Step 8 To update the display, click **Save**.

The camera feed opens in the view.



Adding a camera to a station (non-DVR)

This procedure adds a camera to a station that does not include a DVR. If the camera is already on the network, it is usually easiest to use the Discover method to find it.

Prerequisites: A video network driver that does not require a DVR is already installed in the **Drivers** folder.

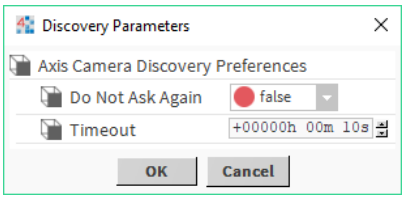
NOTE: In a properly licensed and configured station, remote cameras are available under the remote station's **NiagaraNetwork**. Remote cameras must be discovered and added to a station using the **Camera Manager** view.

Step 1 In the Nav tree, expand the **Config→Drivers** node and double-click the Cameras device extension.

The **Camera Manager** view opens.

Step 2 Click **Discover** at the bottom of the view.

The **Discovery Parameter** window opens with default settings.



For initial setup, you can usually accept all default settings.

Step 3 In the **Discovery Parameters** window, click **OK**.

The discovery job runs and the **Discovered** pane at the top of the view lists the discovered cameras.

Only the cameras that are configured and accessible on the network are available for discovery. Refer to the specific Video Driver and associated documentation for camera configuration instructions.

Step 4 In the **Discovered** pane, select one or more discovered cameras to add.

The Camera Manager's Add button is available when you have one or more items selected (highlighted) in the top **Discovered** pane. The toolbar has an Add tool and the Manager menu has an Add command.

Step 5 Double-click a discovered camera or select it and click **Add**.

The **Add** window opens, with all selected points in the top pane of the window.

Step 6 In the **Add** window, edit properties and click **OK**.

The framework adds the camera(s) to the **Database** pane and expands the node in the Nav tree to display them.

Discovering remote cameras

Setting up a remote video device involves configuring both the remote and local Supervisor stations.

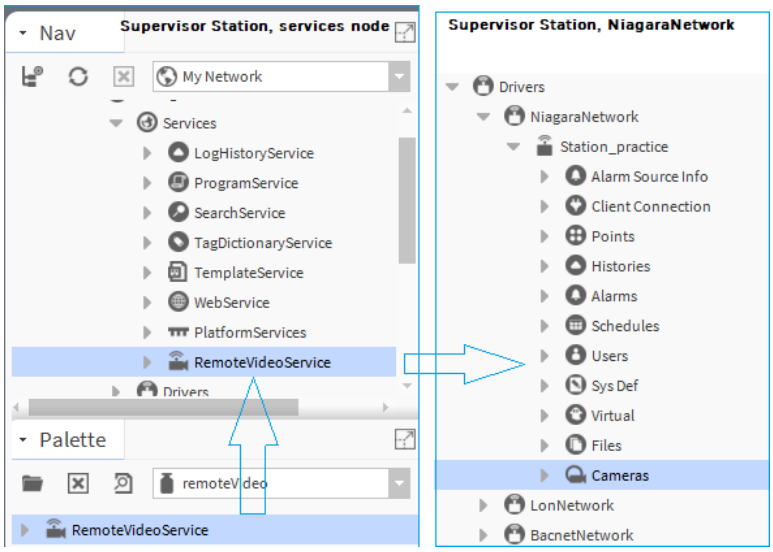
Prerequisites: The Supervisor station is licensed for remote video. The `nremoteVideo.jar` file (module) is present in the installation's `modules` folder. The remote controllers and video devices have been installed and added to the remote station database. You are working in the Supervisor station.

Step 1 Double-click the **Drivers→NiagaraNetwork** node in the Nav tree and either click **New** to add a new station or click **Discover**.

The **Station Manager** displays the found station(s).

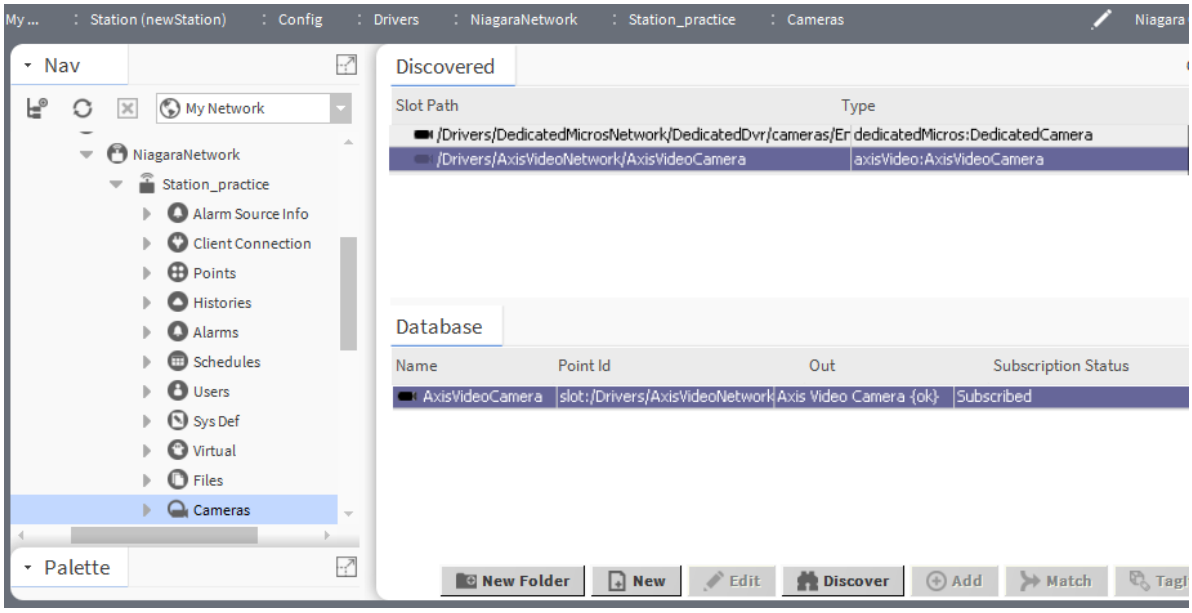
Step 2 Open the **`remoteVideo`** palette, expand **Config→Services** in the Nav tree, and drag the **RemoteVideoService** component from the palette to the **Services** node.

Cameras extensions open under the **NiagaraNetwork**.



Step 3 Double-click the **Cameras** node.

The **Niagara Camera Mgr** view opens.



In addition to configuring remote cameras, you can view multiple video streams on the display associated with a remote DVR.

Adding a remote camera to a station

This procedure adds a remote camera that is directly connected to the **NiagaraNetwork**.

Prerequisites: A Video Framework network is already installed in the remote station and the remote station has been discovered and added under the Supervisor (local) station's **NiagaraNetwork**.

In addition, the following prerequisites apply both the target (remote station) and local station:

- Niagara 4 is installed.
- The `nremoteVideo.jar` file (module) is installed, in addition to the general video modules.
- The **RemoteVideoService** component is installed under the station **Services** node.

Step 1 To display the remote station, in the Nav tree, expand **Config→Drivers→NiagaraNetwork** node.

If the remote station is not visible under the **NiagaraNetwork** node discover and add the remote station from the Supervisor's **Station Manager** view.

Step 2 In the Nav tree, expand the remote node and double-click on the **Cameras** node.

The **Camera Manager** view opens.

If the **Cameras** node is not visible, it is possible that you have not installed the **RemoteVideoService** under the station's **Services** node. The **RemoteVideoService** component is available in the **`remoteVideo`** palette.

Step 3 Click **Discover** at the bottom of the **Camera Manager** view.

The discovery job runs and discovered cameras display in the **Discovered** pane at the top of the view. All cameras connected to the remote station.

Step 4 In the **Discovered** pane, select one or more discovered cameras to add.

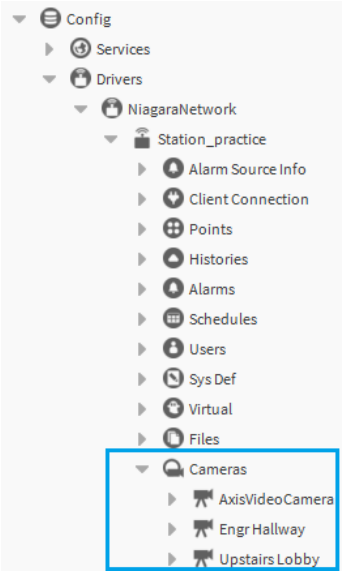
The Camera Manager's **Add** button is available when you select (highlight) one or more items in the top **Discovered** pane. The toolbar has an Add tool and the Manager menu has an Add command. You can double-click a discovered item to bring it up in the **Add** window.

Step 5 Select the camera and click **Add**.

The **Add** window opens with all selected camerass in the top pane.

Step 6 In the **Add** window, edit properties and click **OK** .

The framework adds the camera(s) to the **Database** pane and opens in the Nav tree, under the **NiagaraNetwork**, as shown below.



Creating camera Move Presets

Presets are memorized camera configurations that you can create, store (save), and Go to (invoke) for cameras that support pan, zoom, and tilt controls.

NOTE: Both the **Video Playback** view and the **Live Video** view have a Presets control. The Presets option list and the Go and Store buttons are located at the top of the **Video Playback** view and at the bottom of the **Live Video** view.

Step 1 In the Nav tree, expand the network driver to the camera node.

Step 2 Right-click on the **camera** node and select `Video Playback` or `Live Video` from the popup menu.

The selected camera view opens.

Step 3 Use the available camera controls to move and adjust the camera to a point and state that you want to store (save) for reference.

Step 4 From the **`Presets`** option list, select an available Preset option (an unused one, or one you are willing to change) and click **Store**.

The framework saves the preset for future use.

NOTE: You can add, name, and delete preset options for cameras that support presets. Use the **`Preset Text`** property in the camera **Property Sheet** view to open the **Enum** window where you can `Add`, `Modify`, or `Remove Preset` options.

Installing the Playback Viewer (Playback Chooser)

This viewer plays back pre-recorded video from a single, selected camera. The **Playback Viewer** component automatically populates an option list with all cameras in a station. This procedure installs a single instance of the **Playback Viewer** anywhere in the running station.

Prerequisites: You are working on a Supervisor station using Workbench running on a PC. You have discovered all cameras connected on the network.

NOTE: Only remote cameras with licenses for remote video are visible to Supervisor stations. You add remote station(s) and discover remote cameras under the Supervisor's **NiagaraNetwork**.

You can also add the **Playback Viewer** component directly to a Px page. If you drag a **Playback Viewer** to a Px page, choose the **Playback Viewer** from the Workbench Views options in the Make Widget Wizard.

Step 1 In the Palette side bar, open the videoDriver palette.

Step 2 Drag the **Playback Viewer** component to the desired location (to a **Property Sheet** view or directly to the Nav tree).

The **Playback Viewer** automatically populates a **Video Playback** view with an option list of all cameras in the station.

Step 3 From the **Playback Viewer** option list (located in the top left corner), select the camera.

The camera **Playback Viewer** opens the selected camera’s video stream.

Installing the Surveillance Viewer

This viewer supports live video from up to nine cameras. The **Surveillance Viewer** component automatically populates a **Camera** Pane with a list of all cameras in a station. You drag each cameras to the quadrantin a pre-designed grid of your choice. This procedure installs a single instance of the Surveillance Viewer anywhere in the running station.

Prerequisites: Both remote and local cameras are installed. You ran a discovery job to locate all cameras.

NOTE: Only remote cameras with licenses for remote video are visible to Supervisor stations. You add remote station(s) and discover remote cameras under the Supervisor's **NiagaraNetwork**.

You can also add the **Playback Viewer** component directly to a Px page. If you drag a **Playback Viewer** to a Px page, choose the **Playback Viewer** from the Workbench Views options in the Make Widget Wizard.

Step 1 In the Palette side bar, open the videoDriver palette.

Step 2 Drag the **Surveillance Viewer** component in the desired location (to a **Property Sheet** view or directly to the Nav tree).

The **Surveillance Viewer** automatically populates a **Camera** pane with a list of all cameras in the station.

Step 3 Configure the **`Frame Rate`**, **`Resolution`** and **`Compression`**.

These properties affect the amount of bandwidth and picture quality of the video displayed in this view.

Step 4 From the Layout option list, select a pre-configured layout.

The **Surveillance Viewer** View changes to match the selected layout.

Step 5 From the **Camera** Pane list, drag cameras onto an unoccupied grid in the main view pane and click **Save**.

The camera **Playback Viewer** view saves the configuration and opens the selected camera video.

Step 6 Click any quadrant in the grid to open the selected camera's **Video Playback** view.

Chapter 2 Video alarm-related procedures

Topics covered in this chapter

- About Video Driver alarms
- Setting up the Video Alarm Console recipient
- Preparing the UserService with video alarm properties
- Discovering remote cameras
- Customizing the video popup window
- Routing alarms from the video surveillance system
- Routing alarms to the video surveillance system
- Replaying alarm video (Alarm Console)
- Replaying alarm video (Video Playback view)
- Disabling and enabling alarm events in a Video Surveillance System

You have two choices regarding reporting video alarms: You may choose to have them appear on the standard alarm console. Or, you may configure video alarms to appear on a separate video alarm console, which may include a live video feed. This console handles only alarms created where a video camera is present. The advantage of this choice is that you can see what is happening at the location that is responsible for the alarm. As you acknowledge a video alarm, the live video feed switches to the next unacknowledged alarm. You can also playback recorded video. This chapter explains how to configure a separate video alarm console.

To set up the video alarm console you need:

- The **VideoAlarmConfigurationService** component under the **Services** node in the Nav tree.
- The **VideoAlarmConsoleRecipient** component under the **AlarmService** node in the Nav tree.

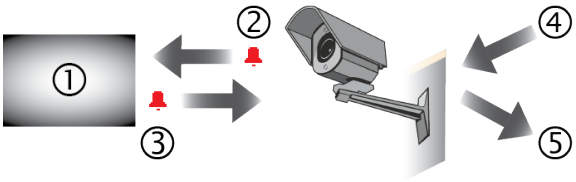
Each service provides properties to configure.

About Video Driver alarms

All video surveillance systems that are built on the API from the Video Framework module (videoDriver.jar) support alarming in two directions.

A video camera sends a video surveillance alarm, such as motion detected, to the station where a security guard can view the video and trigger an appropriate action. Standard system alarms can travel from the station to the video surveillance system where they re-orient the direction the camera is pointing and initiate video recording.

Video Driver alarms



1. Station
2. Surveillance alarms sent to the station
3. Standard alarms sent to the video surveillance system
4. Event that triggers a surveillance alarm

5. Camera location change caused by a standard alarm

Setting up the Video Alarm Console recipient

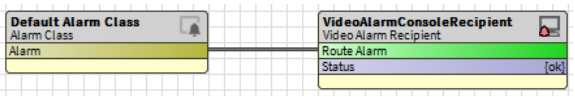
Just as the standard console recipient is associated with a standard alarm console, a video alarm recipient is required to use the video alarm console.

Prerequisites: The `videoDriver` palette is open.

Step 1 In the Nav tree, navigate to **Config→Services**, double-click the **AlarmService** node, and select the **Wire Sheet**.

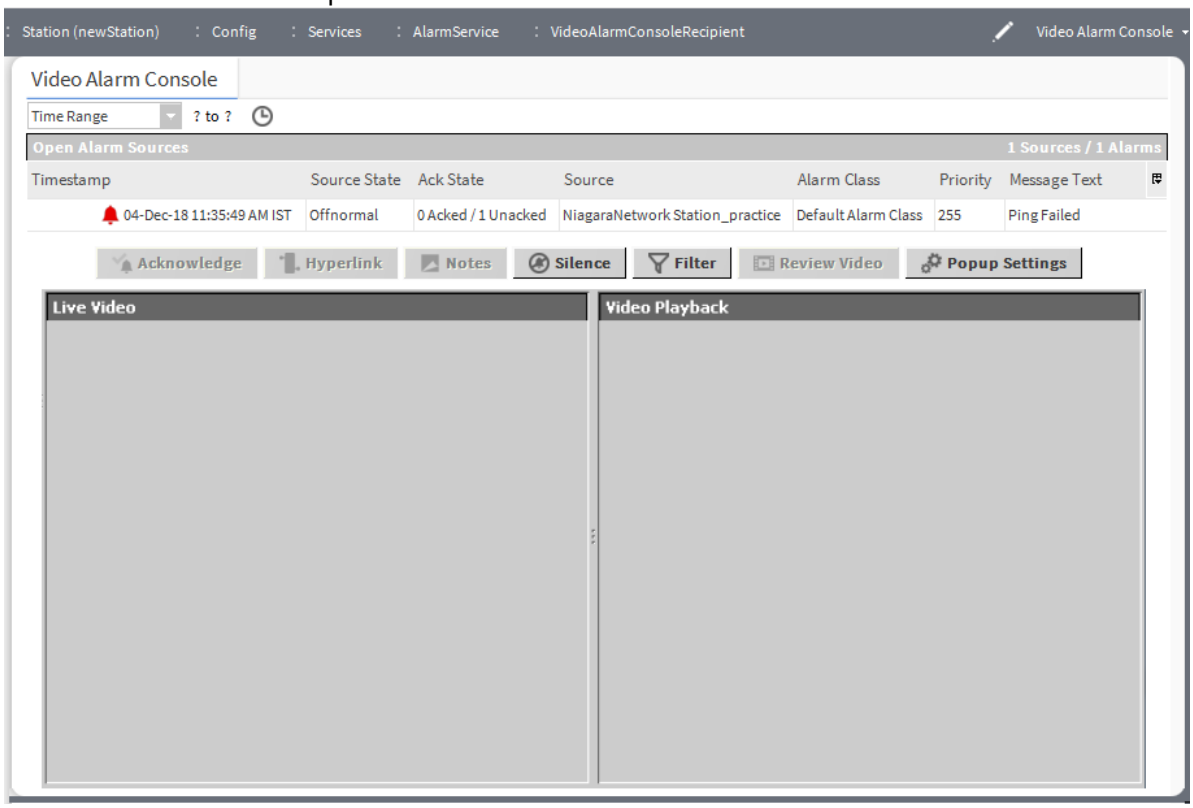
Step 2 Expand the **Alarm** node in the palette, drag the **VideoAlarmConsoleRecipient** from the palette to the **Wire Sheet**, and click **OK**.

Step 3 Connect the **Default Alarm Class** to the **VideoAlarmConsoleRecipient**



Step 4 To open the default **Video Alarm Console**, double-click the **VideoAlarmConsoleRecipient**.

The video Alarm Console opens.



In the top right corner, this view is identified as the Video Alarm Console. The table looks like a standard alarm console. Below the table is space for two video feeds, Live Video and Video Playback.

Preparing the UserService with video alarm properties

To configure a unique console and alarm actions for each framework user, the UserService requires video alarm properties. If a new user's mode does not contain these two components: Video Alarm Console

Options and Alarm Popup Settings, this procedure sets up the UserService to include these two nodes under each user.

Prerequisites: The videoDriver palette is open. You have created one or more users whose video alarm consoles need to be configured.

Step 1 In the Nav tree, expand the **Station** and navigate to **Config→Services** and double-click the **UserService**.

The **User Manager** view opens.

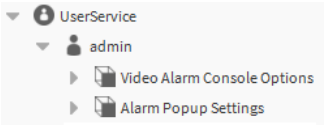
Step 2 Expand each user and confirm that the **Video Alarm Console Options** and **Alarm Popup Settings** components are missing.

Step 3 Select the **Wire Sheet** view.

Step 4 In the videoDriver palette, expand the **Alarm** node.

Step 5 Drag the **VideoAlarmConfigurationService** from the palette to the **UserService** wire sheet renaming it or keeping the default name.

Two new components expand below the user in the Nav tree: **Video Alarm Console Options** and **Alarm Popup Settings**.



These components enable the user properties with which to configure the layout of a customized video alarm console for each user.

Discovering remote cameras

Setting up a remote video device involves configuring both the remote and local Supervisor stations.

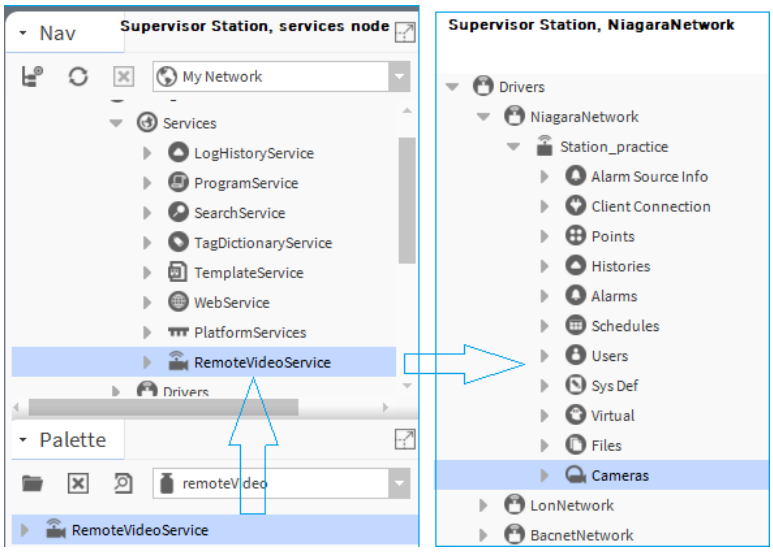
Prerequisites: The Supervisor station is licensed for remote video. The `nremoteVideo.jar` file (module) is present in the installation's `modules` folder. The remote controllers and video devices have been installed and added to the remote station database. You are working in the Supervisor station.

Step 1 Double-click the **Drivers→NiagaraNetwork** node in the Nav tree and either click **New** to add a new station or click **Discover**.

The **Station Manager** displays the found station(s).

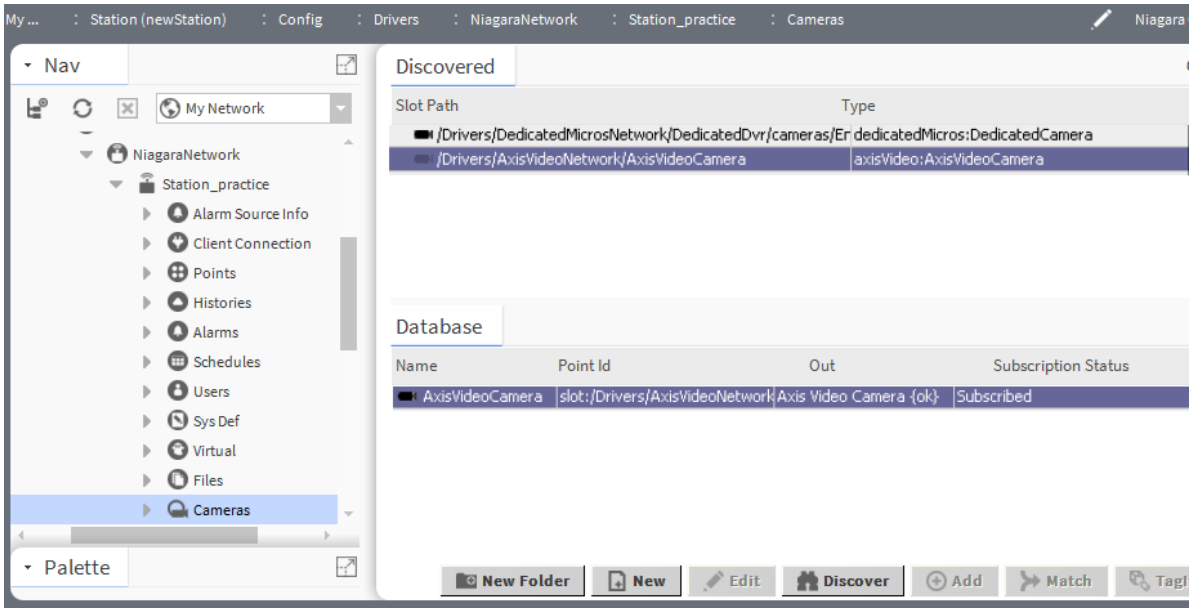
Step 2 Open the **`remoteVideo`** palette, expand **Config→Services** in the Nav tree, and drag the **RemoteVideoService** component from the palette to the **Services** node.

Cameras extensions open under the **NiagaraNetwork**.



Step 3 Double-click the **Cameras** node.

The **Niagara Camera Mgr** view opens.



In addition to configuring remote cameras, you can view multiple video streams on the display associated with a remote DVR.

Customizing the video popup window

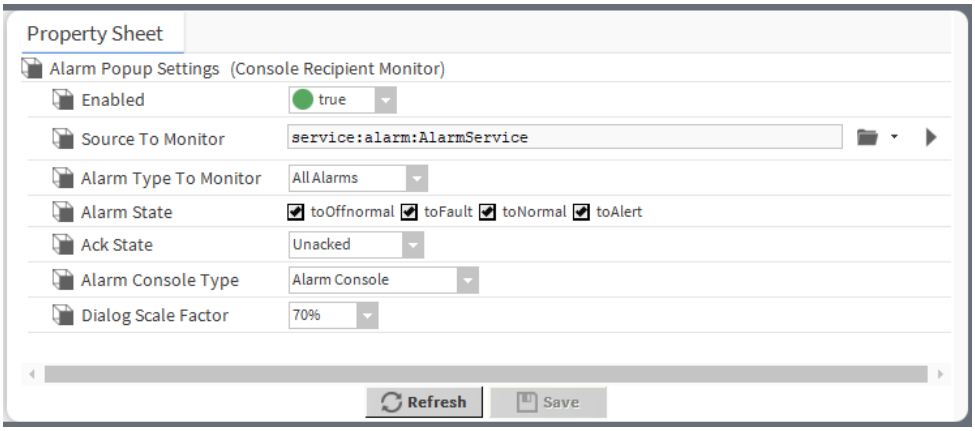
The contents of the popup window can be different for each system user. This procedure configures this window for each user.

Prerequisites: The **AlarmService** is configured with a **VideoAlarmConsoleRecipient**. You have created one or more users and configured the alarm console for each.

Step 1 Expand **Config→Services→UserService**, expand a user, and double-click on **Alarm Popup Settings**.

Alarm popup settings are also available by expanding the **AlarmService**, double-clicking the **VideoAlarmConsoleRecipient** and clicking **Popup Settings**.

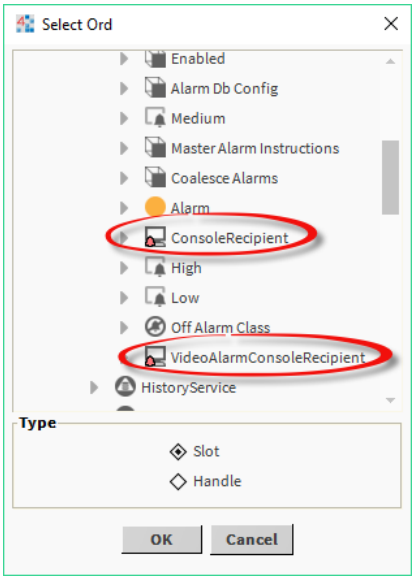
The Alarm Popup Settings **Property Sheet** opens.



These properties configure the popup console recipient for monitoring video.

Step 2 For **`Source to Monitor`**, click the down arrow next to the chooser icon ( ) and select the Component Chooser from the drop-down list.

The **Select Ord** list opens.



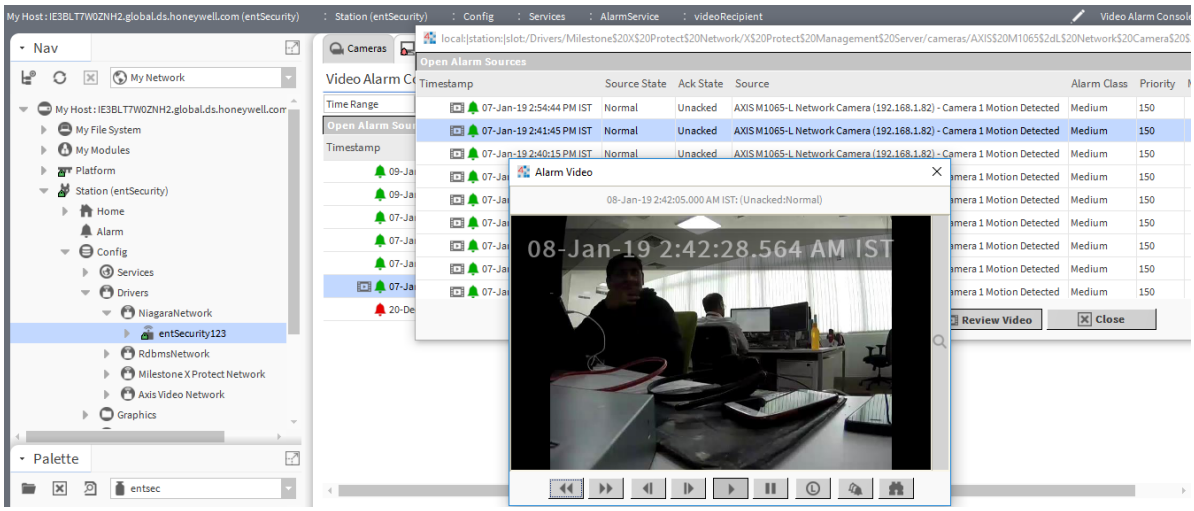
Step 3 Scroll down and select the `VideoAlarmConsoleRecipient` and click **OK**.

The standard alarm `ConsoleRecipient` is also available in this list.

Step 4 Configure the **`Alarm Type To Monitor`**, select an **`Alarm Console Type`**, and click **Save**.

Step 5 To confirm the layout, log out and back in to the station using the credentials of the user for whom you configured the layout options, navigate to the **AlarmService** in the Nav tree and double-click the **VideoAlarmConsoleRecipient**.

The alarm recipient reflects the changes you made.



The screen capture shows an alarm console with video received from a remote camera.

Routing alarms from the video surveillance system

The framework treats alarms generated by a video camera, such as motion detected, as event points ( ). This procedure explains how to configure each type of alarm point with an alarm extension and route the output from the extension to an alarm class in the Supervisor station. These steps are for a generic video driver. Some details may not apply to all drivers. Exceptions are noted, where possible.

Prerequisites: You are connected to a station with sufficient editing privileges and the station has a valid video network installed and properly configured. The **alarm** palette is open in the palette side bar.

Step 1 In the Nav tree, expand the station **Config→Drivers** node followed by expanding the video driver network node.

Step 2 Under the video driver network node, expand the video device (camera for non-DVR cameras or DVR and camera for DVR cameras) to view the **Events** node.

If there is no **Events** node under the camera device, the camera does not support importing video surveillance system alarms. Event-enabled video drivers typically support the following types of events:

- Camera Fail indicates that the camera is in a fault state.
- Motion Detected indicates the motion detection status when the video surveillance system detects motion.

Step 3 In the Nav tree, double-click the **Events** node.

The **Video Event Manager** view opens.

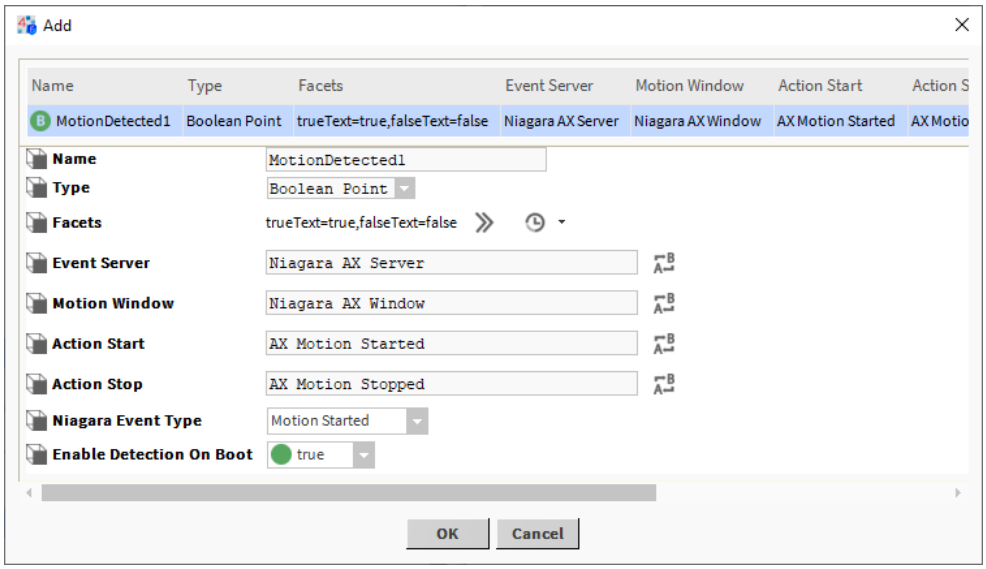
Some video drivers do not require event discovery. These drivers automatically populate the **Discovered** pane when the **Video Event Manager** view opens.

Step 4 If no events open in the view, click the **Discover** button at the bottom of the view.

The discovery job runs and any video events open in the **Discovered** pane.

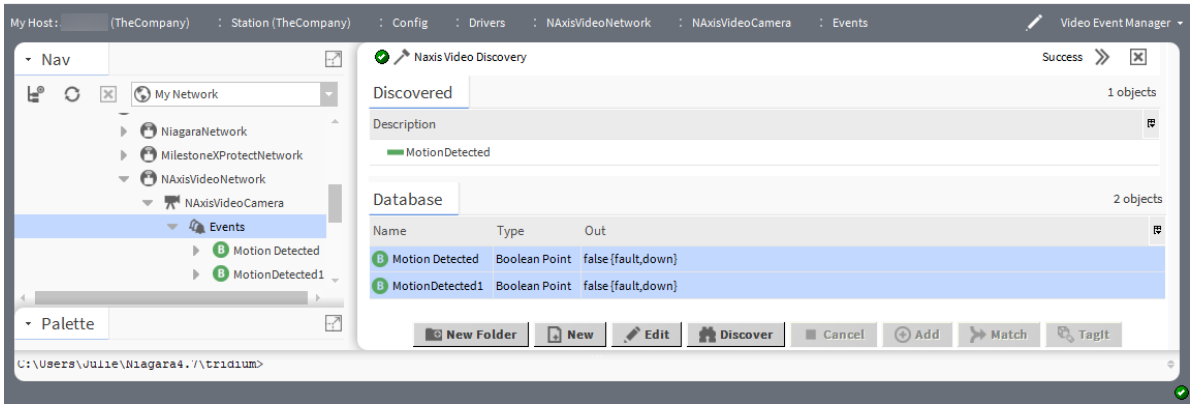
Step 5 From the **Discovered** pane, select one or more events and click **Add**.

The **Add** window opens, displaying selected event(s) as potential Boolean points.



Step 6 If the video driver supports other point types (for example string), select the supported point type, and click **OK**.

The events open in the **Database** pane and expand under the **Events** node in the Nav tree.



For each added point, the value under the Out column in the **Database** pane indicates the event status. For example, an Out value of `true` indicates that an alarm event is occurring; `false` indicates no event.

Step 7 To select an event in preparation to configure its routing, double-click on an alarm event point (Motion Detected, for example), under the **Events** node in the Nav tree.

The event **Property Sheet** opens.

Step 8 Expand the **Extensions** node in the palette, drag an alarm extension (for example, the BooleanChangeOfStateAlarmExt) from the palette to the property sheet, expand the extension, and configure its properties.

Scroll down to **`Alarm Class`**. The `Default Alarm Class` sends the alarm to the standard alarm console.

Step 9 To associate a stored video with this alarm, close the alarm palette, open the videoDriver palette and do the following:

a. Expand the **Alarm** node in the palette and drag a VideoAlarmExtParameters component onto the alarm extension component in the Nav tree.

When you drop it on the alarm extension, it automatically fills in the associated camera information.

b. Leave the Start Recording property set to `false` since it is already recording.

Refer to the *Niagara Alarms Guide* for information about each alarm property.

Routing alarms to the video surveillance system

The video surveillance system can receive alarms from the station. These alarms, which are generated by conditions typically outside of the video surveillance system, initiate an event on the video surveillance system in response to the alarm. For example, a door-forced-open alarm delivered to an alarm recipient can trigger a preset that causes the camera to pan, tilt, and zoom toward a specific door area and begin recording. This procedure configures the routing of alarms to trigger events in the video surveillance system.

Prerequisites: The local station is licensed for the remote Video feature.

Step 1 In the Nav tree, double-click on any standard control point from which to route an alarm.

The control point **Property Sheet** view opens.

Step 2 From the palette side bar, open the **alarm** palette, drag a standard Alarm Extension onto the control point, and configure its properties:

Step 3 From the palette side bar, open the **videoDriver** palette and drag a **Video Alarm Ext Parameters** component onto the Alarm Extension that you added in the previous step.

The **Video Alarm Ext Parameters** component opens as a property under the Alarm Extension in the **Property Sheet** view (and Nav tree).

Step 4 In the **Video Alarm Ext Parameters Property Sheet** view, click on the folder and browse in the **Choose Camera** window.

If you see a video camera in the station but the **Ok** button is not available, that particular type of camera in its particular video driver does not support this feature. It is probably a very basic, standalone camera in that case and does not support any special alarming features.

Step 5 Enable **Start Recording** and choose a preset (**Go to Preset**).

CAUTION: If you start recording (select `true` for**Start Recording**) for a point that has been imported from a video surveillance system, you may duplicate the recording since the video system itself originally created the alarm and recorded the associated video footage. In this configuration select `false`, for the **Start Recording** property.

Enabling **Go to Preset** signals the camera to move to a particular camera preset position as a function of routing the alarm to the video surveillance system. When you select `true`, the `Camera Preset` option opens.

Step 6 If you enabled **Go to Preset**, select the preset from the option list.

Available selections vary based on how the camera driver provides access to its camera presets.

NOTE: Make sure that the appropriate PTZ Support properties are enabled on the camera that you are sending the alarm to.

Step 7 In the Nav tree, expand the nodes: **Station→Config→Services** and double-click on the **AlarmService** component.

The **AlarmService Wire Sheet** opens.

Step 8 In the palette side bar, open the **videoDriver** palette and drag a **Video Alarm Recipient** component from the **Alarm** folder onto the **AlarmService Wire Sheet**.

Step 9 In the **AlarmService Wire Sheet** view, create a link from the desired Alarm Class component (Alarm) topic to the **Video Alarm Recipient** component (Route Alarm) action.

This Alarm Class component must be the same one that you designated in the control point Alarm Extension Alarm Class property. Alarm routing from the framework to the video surveillance system is complete.

NOTE: If the **`Start Recording`** property is set to `true` on the **Video Alarm Ext Parameters** for the control point's alarm extension, the video surveillance system starts recording or protecting the video feed per its internal alarm settings at the exact time when the alarm occurs.

When the framework routes an alarm to a video surveillance system, the surveillance system should start recording or start protecting the video footage that occurs at the time of the alarm. The video surveillance system uses its own pre-configured duration and alarm recording and protection duration time to support this function. The framework is integrated with the video surveillance system, such that the video surveillance system handles the alarm the same as it does any of its own native alarms.

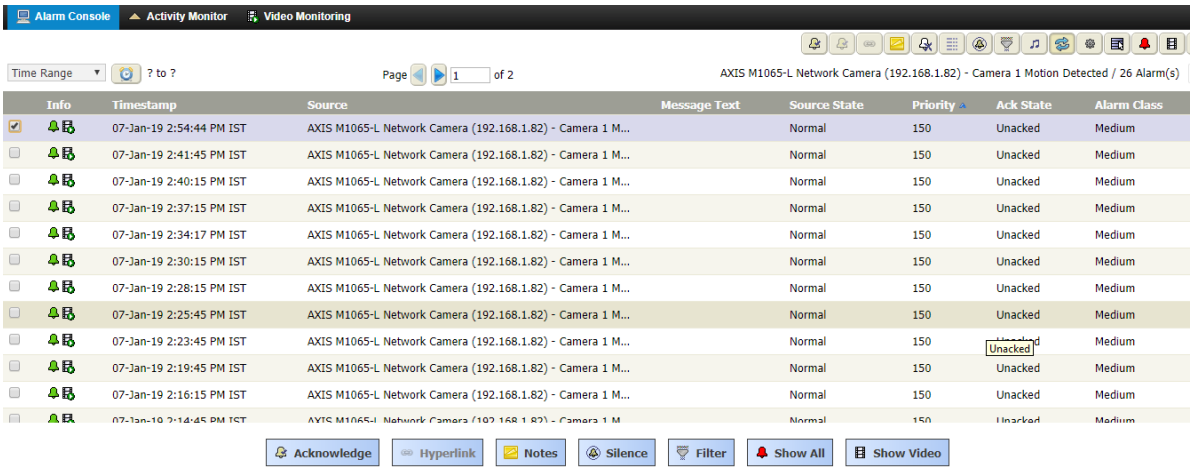
Replaying alarm video (Alarm Console)

The remote video feature routes to a Supervisor station and plays back the associated alarm video from the Supervisor **Alarm Console**. The Supervisor station must be licensed for the remote video feature and the remote station added under the Supervisor's **NiagaraNetwork**.

Prerequisites: Recorded video alarms are available for viewing.

Step 1 In the Nav tree, expand the nodes: **Station→Config→Service→AlarmService** and double-click on the **ConsoleRecipient** component.

The **Alarm Console** view opens a tabular list of alarms.



The screen capture shows events routed from a video surveillance system to the alarm console. Video alarms are indicated by the filmstrip with green arrow icon (). Only video alarms have this icon.

The video surveillance system sends these types of alarms to the station. For example, a video surveillance system that is configured to detect motion, sends the current status of the event to the station when the camera detects a motion event. Depending on the capabilities of the surveillance system and driver, the system may send a camera failure and other specific video conditions to the station as status events.

Step 2 To play back an alarm with an attached video, select the alarm and click the **Show Video** button at the bottom of the view.

Step 3 To view alarm sources, double-click the alarm row in the table.

This action opens the **Open Alarm Sources** window, displaying all open alarms associated with the selected alarm source.

Step 4 Select the desired alarm record and click the **Show Video** button at the bottom of the window.

This action opens the Alarm Video window (**Video Playback** view) and plays the alarm video. The standard Video Playback controls are available at the bottom of the window.

Step 5 To view detailed information about the alarm, double-click the alarm record in **Open Alarm Sources** window and click **Review Video** at the bottom of the window.

This action opens the Alarm Video window (**Video Playback** view) and plays back the alarm video. The standard Video Playback controls are available at the bottom of the window.

Step 6 When you finish viewing, close all windows.

Replaying alarm video (Video Playback view)

The remoteVideo feature allows the **Video Surveillance Viewer** component on a station to view either live or recorded video from any recording device that is configured on a remote station communicating over the network. The local station must be licensed for the remote video feature.

Prerequisites: The Event camera extension has been configured, event points have been added to the **Event Camera Extension** component, and alarm events have occurred.

Step 1 In the Nav tree, double-click on the appropriate camera.

The **Video Playback** view opens.

Step 2 At the bottom of the view, click the **Events** button.

The **Browse Events** window opens, displaying a list of any events.

Step 3 Do one of the following:

- If you know the time of the event you are looking for, you can go directly to the selected playback time by clicking the **Search** button in the bottom of the view followed by entering the time in the **Time Index** window and clicking **OK**.
- Use the controls at the top of the window to page up and down to find the event.

Step 4 In the **Browse Events** window, select the desired event and click **OK**.

The event plays in the **Video Playback** view.

Disabling and enabling alarm events in a Video Surveillance System

As part of the Video Framework API, a standard mechanism allows video driver developers to enable and disable particular alarm events on particular video cameras. This means that for some video drivers, the framework can enable and disable motion detection on a per-camera basis.

Prerequisites: The videoDriver palette is open in the side bar. The video driver you are using supports this feature.

Step 1 If the event point is not already under the **Events** node, discover and add the desired alarm event point.

Step 2 In the Nav tree, double-click on the target alarm event point.

The point's **Property Sheet** opens.

Step 3 Collapse any expanded extensions and, in the palette side bar, drag the **EventDetectionCtrlExt** component from the **`videoDriver`** palette to the control point **Property Sheet**.

The **Event Detection Ctrl Ext** component opens under the control point in the **Property Sheet** view.

Step 4 Select the control point **Wire Sheet** from the view selector.

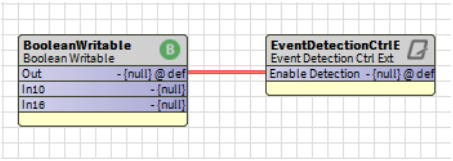
The **EventDetectionCtrlExt** displays on the **Wire Sheet**.

Step 5 Right-click on the **Wire Sheet** and select **New→BooleanWriteable** from the popup menu.

The **Name** window opens.

Step 6 Click **OK** in the **Name** window.

The framework adds the BooleanWritable point to the **Wire Sheet**.



Step 7 Link the **`Out`** property of the BooleanWritable control point to the **`Enable Detection`** property of the **EventDetectionCtrlExt**.

The status of the `Emergency Override` action on the BooleanWritable control point can now enable and disable the alarm detection feature.

Step 8 To enable the detection mechanism in the camera for this particular event, invoke the `Emergency Active` action on the BooleanWritable control point.

Step 9 To disable the detection mechanism in the camera for this particular event, invoke the Emergency Inactive action on the BooleanWritable control point.

NOTE: You may link any Boolean logic (such as a Boolean Schedule) from within the framework to enable and disable the event detection mechanism of a particular event for a particular camera. It does not have to just be from a BooleanWritable, as in this example.

Chapter 3 Video in graphics

Topics covered in this chapter

- ♦ Creating a camera view on a Px page
- ♦ Creating a video multistream Px view
- ♦ Types of videoDriver Px widgets

The procedures in this chapter explain how to include video on Px pages.

Creating a camera view on a Px page

This procedure describes how to add a single Live Video Player widget or a Camera Widget to a Px page.

Prerequisites: The **VideoDriverNetwork** is enabled and configured. The Supervisor station is licensed for the remoteVideo feature and the remote station is present under the Supervisor's **NiagaraNetwork**. The **`videoDriver`** palette is open.

Step 1 Right-click a component, click **Views→New View**, give the view a name and click **OK**.

The **Px Editor** view opens.

Step 2 From the Nav tree, under the DVR device, drag a camera onto a Px page.

The Make Widget Wizard opens.

Step 3 In the Make Widget Wizard, select the `From Palette` option and choose the desired widget (Live Video Player or Camera Widget) from the videoDriver palette.

NOTE: You can configure the widget properties in the Make Widget Wizard before clicking **OK** or in the Properties window after the widget is on the Px page.

Step 4 In the Make Widget Wizard, click **OK**.

The widget opens on the Px page.

Step 5 Select the widget, re-size and move it to the desired location on the Px page.

Step 6 Save the Px page and select the **Wb Px** view to open the Camera Widget or Live Video Player widget.

Creating a video multistream Px view

The **Video Multistream** Pane displays multiple video images when using a single video binding. This view is available only using cameras that are controlled by a single DVR device.

Step 1 Create a new Px page or open a Px page to edit in the **Px Editor** view.

Step 2 From the Nav tree, expand nodes: **Station→Drivers→VideoDriverNetwork** to display the DVR device.

Step 3 Drag the DVR device onto the Px page.

The Make Widget Wizard opens.

Step 4 In the Make Widget Wizard, select the **Video Multistream** pane from the palette property and click **OK**.

The Video Multistream widget opens on the Px page and in the **Px Editor Widget Tree** pane.

Step 5 In the **Px Editor Widget Tree**, double-click on the **VideoMultistream** pane.

The **Properties** window opens.

Step 6 In the **Properties** window, set the propertiesd, and click **OK**.

It is sometimes easier to set the **Layout** property in the **Properties** window than to drag the widget borders. Using absolute positioning (abs), notice that using a value of 0 for both X and Y values places the top left corner of the widget in the top left corner of the parent object.

Step 7 From the Nav tree, expand the DVR device and any container folders (such as a **Cameras** folder) to display cameras under the DVR device.

Step 8 To add each camera, do the following:

a. Drag a camera onto the **Canvas** Pane under the **VideoMultistream** pane.

The Make Widget Wizard opens.

b. In the Make Widget Wizard, with the From Palette option selected, select the Live Video Player widget from the videoDriver Px folder and click **OK**.

The Live Video Player displays on the **Px** view.

c. Select the Live Video Player widget, re-size, and move it to the desired location.

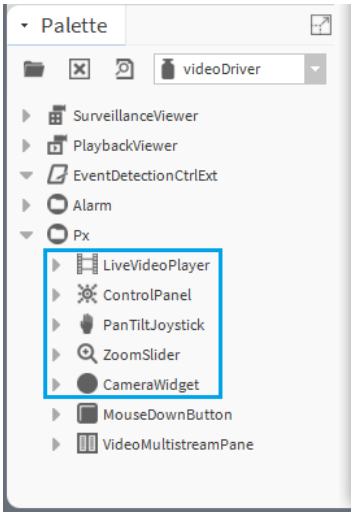
Step 9 Save the Px page and select the **Wb Px** view to display the **multistream Px** view.

Types of videoDriver Px widgets

The Video Framework module contains a set of widgets and control components that you can use to develop graphic pages for a Video Framework application.

The widgets are located in the **Px** folder of the **videoDriver** palette.

Figure 1 videoDriver Px widgets folder



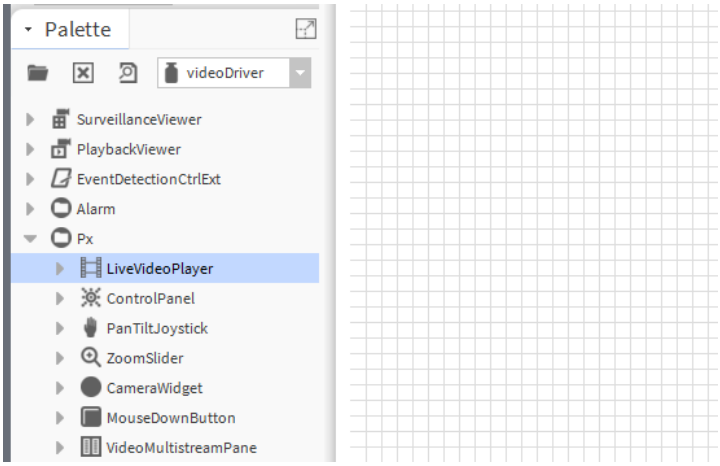
NOTE: To use the video widgets your instance of the Video Framework must be licensed for the remote video feature.

The common properties and plugins chapters document the controls and indicators associated with Px widgets.

Live Video Player widget

This widget is available in the **videoDriver** palette.

Live Video Player widget



There are two ways to add video to a Px page:

- Drag the widget directly from the palette onto a Px page and set the binding (Video Stream Binding) to the desired video camera.
- Drag a video camera to the Px page and use the Make Widget Wizard to add the Live Video Player widget to the Px page.

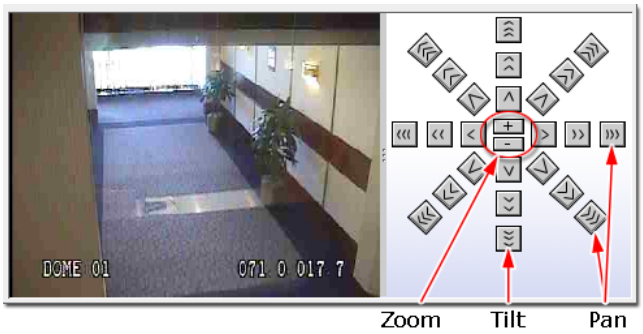
Both methods create an adjustable area on the Px page within which to display the video images. When you adjust the size and shape of the Live Video Player widget, the video image stretches or flattens as necessary to fill the box.

Control Panel widget

The Control Panel widget is available in the **`videoDriver`** palette. It is intended for use on very basic touch screen systems that do not support dragging (as required for using the Pan Tilt Joystick widget).

NOTE: Camera controls do not operate unless they are `Enabled`. Each of these controls must be enabled by selecting the option box for each control under the **`PTZ Support`** property on the camera's **Property Sheet**. The default setting for these controls is `Disabled` (or, not selected).

Control Panel widget



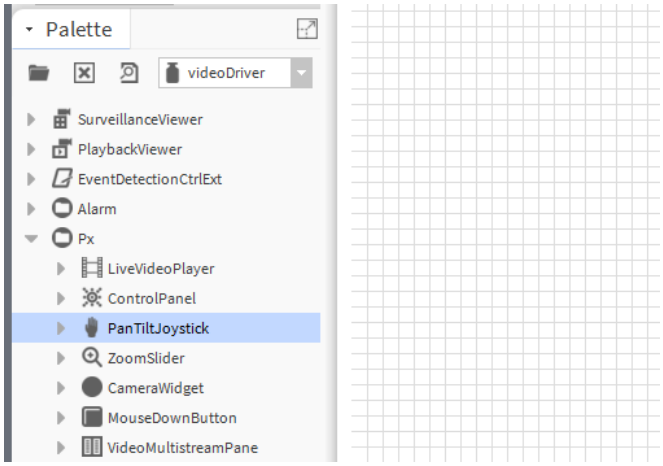
There are two ways to provide a set of buttons to pan, tilt, and zoom the camera at three speeds (Slow >, Medium >>, and Fast >>>):

- Drag this widget directly from the palette onto a Px page and start live video by setting the binding (Video Stream Binding) to the desired video camera.
- Drag a video camera to the Px page and use the Make Widget Wizard to add the Live Video Player widget to the Px page.

Pan Tilt Joystick widget

This widget is available in the **videoDriver** palette and is intended for use on touch screen systems that support dragging.

Pan Tilt Joystick widget



To use this widget, drag it directly from the palette onto a Px page, then drag the widget boundaries to adjust the layout size and position the widget to fit directly over the video display.

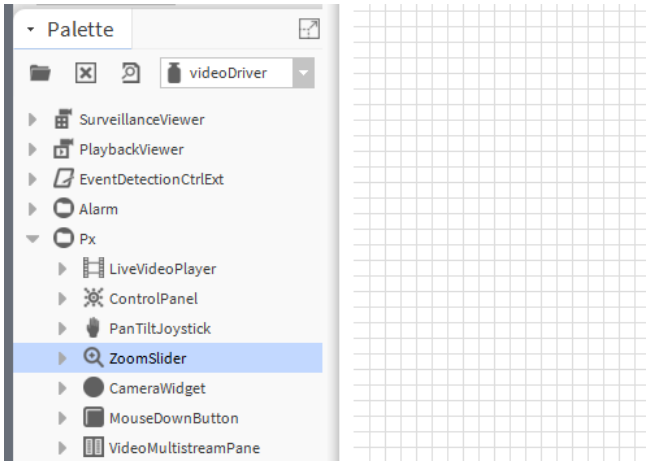
After binding the widget to a **camera** component, you have a transparent control overlay with which to pan, tilt, and zoom the camera at three speeds: Slow(>), Medium (>>), and Fast (>>>) by dragging the mouse across the display.

NOTE: Camera controls do not operate unless they are `Enabled`. Each of these controls must be enabled by selecting the option box for each control under the PTZ Support property on the camera property sheet. The default setting for these controls is `Disabled` (or, not selected).

Zoom Slider widget

This widget is available from the **videoDriver** palette. It adds zoom action control to a Px page video camera interface. This widget looks similar to a typical scroll bar and is designed to fit along one of the four bounding edges of a Live Video Player widget.

Figure 2 Zoom Slider widget



To add it to a Px page, drag it directly from the palette onto the Px page. After placing it on the Px page, drag the widget boundaries to adjust the size, position, and orientation.

Figure 3 Zoom Slider control examples

To invoke the zoom action, click on the zoom icon that is located in the center of the zoom bar. Depending on how you orient the widget on the Px page, the zoom slider acts as follows:

- Vertical orientation: when the Zoom Slider widget is oriented vertically, drag the zoom icon up to zoom-in and down to zoom-out.
- Horizontal orientation: when the Zoom Slider widget is oriented horizontally, drag the zoom icon right to zoom-in and left to zoom-out.

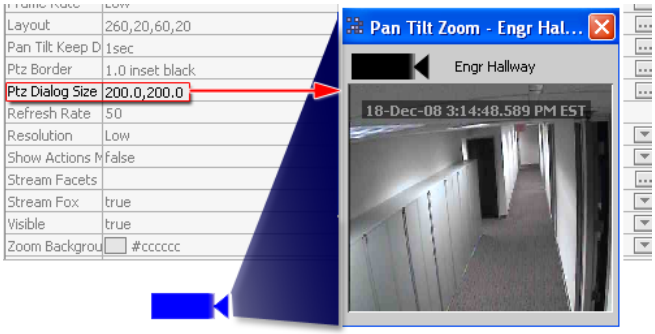
How far up or down you move the icon controls the zoom speed. The color indicates changes in the zoom bar.

NOTE: Camera controls do not operate unless they are `Enabled`. Each of these controls must be enabled by selecting the option box for each control under the PTZ Support property on the camera property sheet. The default setting for these controls is `Disabled` (or, not selected).

Camera widget

This widget is available in the **`videoDriver`** palette. When implemented on a Px page, it opens the video image from a linked camera in a popup window. This window includes the pan, tilt, and zoom features as well as buttons to adjust the camera's focus and iris. Presets are also available.

Camera widget PT window size properties

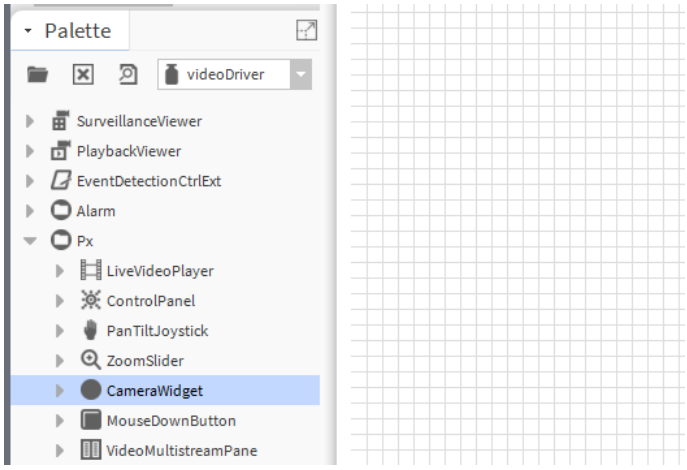


You drag it directly from the palette onto a Px page where you can adjust the widget size and shape to fit the desired area on the page. You can also adjust the Camera widget colors by editing the properties.

NOTE: It is important to set the PTZ properties in the camera widget **Property Sheet**. These properties define the size of the popup window that opens as shown above.

To start live video display after dragging the Camera widget to the Px page, set the camera binding (Video Ptz Binding) to the desired video camera.

Live Video Player widget

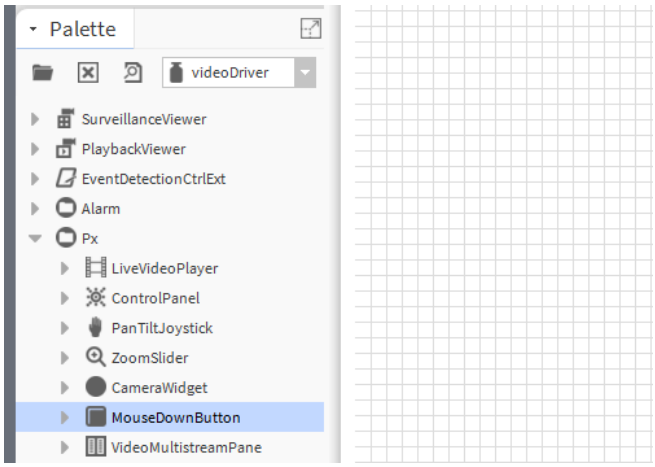


Mouse Down Button widget

This widget is available in the **`videoDriver`** palette. When configured as part of a Px page, this widget adjusts the camera iris and the focus so that they are functionally equivalent to the Iris and Focus buttons that are provided in the **Live Video** view.

NOTE: Camera controls do not operate unless they are `Enabled`. Each of these controls must be enabled by selecting the option box for each control under the **`PTZ Support`** property on the camera **Property Sheet**. The default setting for these controls is `Disabled` (or, not selected).

Mouse Down Button widget



You can drag the widget directly from the palette onto a Px page where you can adjust the widget size and shape to fit the desired area on the page. You can also adjust the camera widget colors by editing the properties.

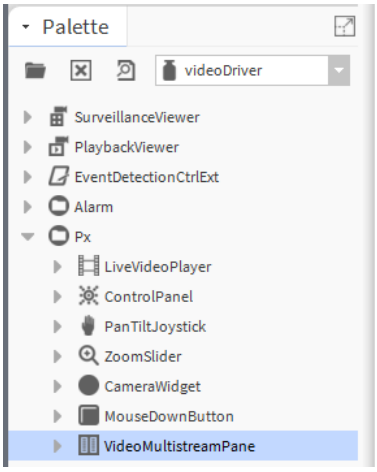
To enable live video display after dragging the Camera widget to the Px page, bind the Hold Down Px (Video Ptz Binding) to the desired video camera.

Video Multistream Pane widget

This widget is available in the **`videoDriver`** palette Px folder. It provides a way to use a single network connection to display multiple cameras, thereby saving network bandwidth.

NOTE: You cannot use the Video Multistream Pane widget for remote video in an enterprise environment. As an alternative, use the **Surveillance Viewer** component.

Video Multistream Pane widget in the videoDriver palette



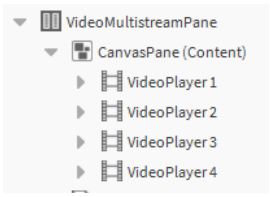
There are two ways to design a single Px page that holds one or more camera views:

- Drag this widget directly from the palette onto a Px page canvas pane and set the Video Multistream Binding Ord to the DVR device.

  The default height and width of the canvas pane is 100 x 100 pixels. Adjust this pane's **`View Size`** property as required to provide the necessary space for displaying the desired number of live video streams. Then add Live Video widgets as needed for the multiple camera displays.

- Drag the devices from the Nav tree onto the Px page and use the Make Widget Wizard to add the Ord bindings to the widgets as you add them to the Px page.

Example Video Multistream Pane widget with four Live Video Players



Chapter 4 Common properties and components

Topics covered in this chapter

♦ Health properties
♦ Alarm Source Info properties
♦ Monitor properties
♦ Multistream Preferences properties
♦ Default Tuning Policies properties
♦ Fox Video Stream Preferred
♦ Poll properties
♦ Camera properties
♦ Widget properties
♦ videoDriver-VideoPlaybackChooser (Playback Viewer)
♦ videoDriver-EventDetectionCtrlExt
♦ videoDriver-VideoAlarmConsoleRecipient
♦ videoDriver-VideoAlarmConfigurationService
♦ videoDriver-VideoAlarmConsoleOptions
♦ videoDriver-VideoAlarmExtParameters
♦ videoDriver-VideoPlayer (Live Video Player)
♦ videoDriver-VideoPtzCtrlPanel (Control Panel)
♦ videoDriver-VideoPanTiltJoystick (Pan Tilt Joystick)
♦ videoDriver-VideoZoomSlider (Zoom Slider)
♦ videoDriver-VideoCameraWidget (Camera Widget)
♦ videoDriver-HoldDownPxButton (MouseDownButton)
♦ videoDriver-VideoMultistreamPane
♦ remoteVideo-RemoteVideoService

Components include services, folders and other model building blocks. They may be dragged and dropped onto a property or wire sheet from a palette. These components are common to all video network drivers.

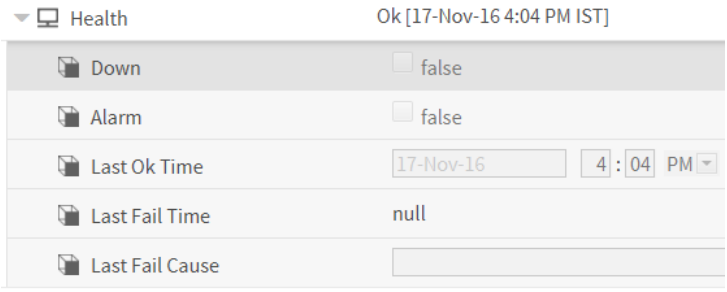
The descriptions included in the following topics appear as headings in documentation. They also appear as context-sensitive help topics when accessed by:

- Right-clicking on the component and selecting **Views→Guide Help**
- Clicking **Help→Guide On Target**.

Health properties

These properties are common to all Niagara components. They report information about the current condition of the component.

Health properties

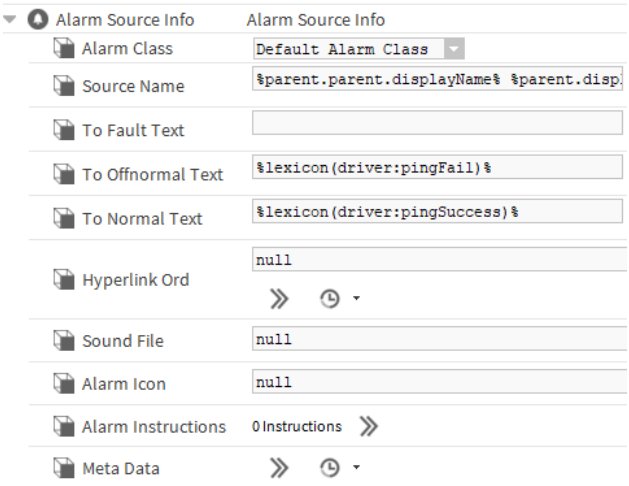


Property	Value	Description
Health	text	Health contains historical properties about the relative health of the network in the station, including historical timestamps.
Down	`true` or `false` (default)	Displays the health of the network.
Alarm	`true` or `false` (default)	Reports the component's alarm status. `true` indicates the component has generated an alarm. `false` indicates the component has not generated an alarm.
Last Fail Cause	text	Displays the reason for the last failure of the network health.
Last Fail Time	`date time`	Displays the last date and time the network health failed.
Last OK Time	`date time`	Displays the last date and time the network health was OK.

Alarm Source Info properties

This set of properties configures and routes alarms when this component is the alarm source. These properties are common to all Niagara components.

Figure 4 Alarm Source Info properties

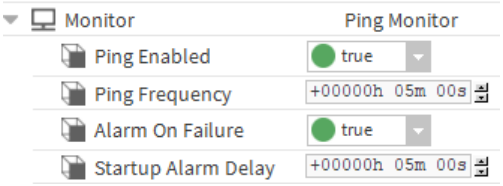


Property	Value	Description
Alarm Class	Default Alarm Class (default)	Selects an alarm class from the option list. The alarm class specifies the alarm routing options for this component.
Alarm Icon	file path	Enters or chooses the path to a graphic file that will be added to the display in the "timestamp" column of the alarm table in the Console Recipient view. Use the folder icon to browse to the file that you want to use. Click the arrow icon to the right of the folder icon to test the path that you enter.
Alarm Instructions	# instructions	Provides information that may be important or helpful to the user when the system generates an alarm.
Source Name	text	Displays the name in an alarm record that identifies the source of the alarm.
To Fault Text	text	Defines the text to display when the component transitions to a Fault state.
To Offnormal Text	text	Defines the text to display when the component transitions to an Offnormal (alarm) state.
To Normal Text	text	Defines the text to display when the component transitions to a Normal state.
Hyperlink Ord or Hyperlink	Ord, BQL Query or path	Associates an ord, BLQ query or path with an alarm state on the component. When an alarm is reported in the console, the Hyperlink button activates. Clicking this button links to the location you specify here.
Sound File	ord	Defines the path to a sound file that plays when the current component is in an alarm state. Use the folder icon to browse to the file. Click the arrow icon to the right of the folder icon to test the path.
Meta Data	facet	Use this property to enter new facets.

Monitor properties

These properties verify the general health of the network and its devices by pinging each device at some minimal repeating interval. These properties contain ping and alarm-related parameters that are common to all Niagara video components.

Figure 5 Monitor properties

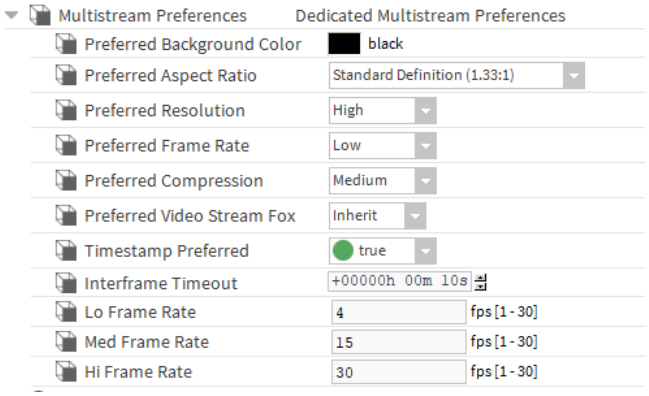


Property	Value	Description
Ping Enabled	`true` (default) or `false`	Controls the monitor ping. • If *true* a ping occurs for each device under the network, as needed • If *false* device status pings do not occur. Moreover, device statuses cannot change from what existed when this property was last true It is recommended you leave Ping Enabled as true in almost all cases.
Ping Frequency	`hours:minutes:seconds`	Specifies the interval between periodic pings of all devices. Typical default value is every 5 minutes (05m 00s), you can adjust differently if needed.
Alarm On Failure	`true` (default) or `false`	Controls the recording of ping failure alarms. If `true`, the system records an alarm in the station's AlarmHistory upon each ping-detected device event ("down" or subsequent "up"). If `false`, the system ignores and does not record device "down" and "up" events in the station's AlarmHistory.
Startup Alarm Delay	`hours:minutes:seconds`	Specifies the period a station must wait after restarting before device "down" or "up" alarms are generated. Applies only if the Monitor's property **`Alarm On Failure`** is true.

Multistream Preferences properties

This topic documents the display properties that are common among video network drivers.

Example of display properties



How to access these properties depends on the driver.

- For Milestone nmilestone video drivers, these properties are part of the **Dvr** component.
- For the Milestone xProtect video driver, these properties are part of the **X Protect Management Server** component.
- The Axis drivers each have a separate camera component.

You access these properties by right-clicking the component and clicking **Views→Property Sheet**.

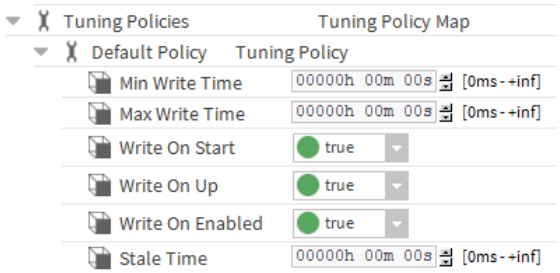
Video/Multistream Preferences

Property	Value	Description
Preferred Background Color	chooser	Assigns a color, gradient, or image to open as the background widget.
Ptz Support	`true` or `false` (default)	Turns Pan Tilt, Zoom, Focus, Iris, Move To Preset, and Store Preset features on (`true`), and off (`false`). **NOTE:** If these properties are not enabled, PTZ functions do not work. This means that any widgets that use PTZ controls do not work.
Preferred Resolution	drop-down list (defaults to `High`)	Specifies the pixel resolution of each transmitted frame. Options are: `High`, `Medium`, or `Low`. The actual pixel values for these three relative settings are defined in the video device.
Preferred Frame Rate	drop-down list (defaults to `Low`)	Defines the speed of the video stream. Options are: `Low`, `Medium`, and `High`. You can configure each rate.
Preferred Compression	drop-down list (defaults to `Medium`)	Specifies what level of compression is used during live video streaming. The actual compression values for these relative settings are defined in the video device. Higher compression uses less bandwidth but negatively affects image quality. Options are: `None`, `Low`, `Medium`, or `High`
Timestamp Preferred	`true` (default) or `false`	Configures the camera to record and display (`true`) a timestamp on the video.
Interframe Timeout	hours, minutes, seconds	Defines the maximum amount of time permitted to elapse between frames. A video stream that takes longer than this amount of time to retrieve a video frame needs to be re-established.
Lo Frame Rate, Med Frame Rate, Hi Frame Rate (Multistream Preferences property)	frames per second (fps) between one and 30.	**NOTE:** This property is available only when using Milestone X Protect drivers. Defines the fps values to use when selecting `Lo Frame Rate`, `Med Frame Rate`, and `Hi Frame Rate` for **`Preferred Frame Rate`**.
Fast, Medium, Slow Speed (Multistream Preferences property)	`Fast`, `Medium`, and `Slow`	These three properties define the resolution settings that are selected under the **`Video Preferences`** property. Type in a numeric text string between 0 (slowest) and 15 (fastest) to specify each of the three speeds. These speeds affect the rate of movement for pan, tilt, and zoom functions.

Default Tuning Policies properties

These properties are common to the default tuning policies for all Niagara network components.

Figure 6 Network Tuning Policies properties



Property	Value	Description
Tuning Policies	additional properties	Defines rules for evaluating both *write requests*, that is to writable proxy points, as well as the acceptable "freshness" of *read requests* that result from polling.
Min Write Time	hours minutes seconds, zero (default) to infinity	Specifies the minimum amount of time allowed between writes to writable proxy points, thus providing a method to throttle rapidly changing values so that only the last value is written. The default (zero) disables this rule causing all value changes to attempt to write.
Max Write Time	hours minutes seconds, zero (default) to infinity	In the case that no event triggers a write to a writable proxy point, this property specifies the maximum amount of time to wait before rewriting the value to the point. Any write action resets this timer. The default (zero) disables this rule resulting in no timed rewrites.
Write On Start	`true` (default) or `false`	Determines writeable proxy point behavior when a station starts. **NOTE:** Consider setting to `false` except for critical proxy points, otherwise large networks may experience write-queue-overflow exceptions.
Write On Up	`true` (default) or `false`	Determines writable proxy point and parent device behavior when a status transitions from down to up. • If `true`, a write occurs when the parent device transitions from down to up. • If `false`, no write occurs.
Write On Enabled	`true` (default) or `false`	Determines writable proxy point behavior when the point's status transitions from disabled to normal (enabled). • If `true`, a write occurs when the point transitions from disabled to enabled. • If `false`, no write occurs.
Stale Time	hours minutes seconds, zero (default) to infinity	Determines when point states transitions to "stale." • A non-zero value causes point status to become stale if the configured time elapses without a successful read, indicated by a Read Status of `ok`. • A zero value disables the stale timer causing point status to become stale immediately when the point is unsubscribed.

Fox Video Stream Preferred

Selects or declines the use of Fox streaming. This is a property on all video driver components, although it shows up in different places.

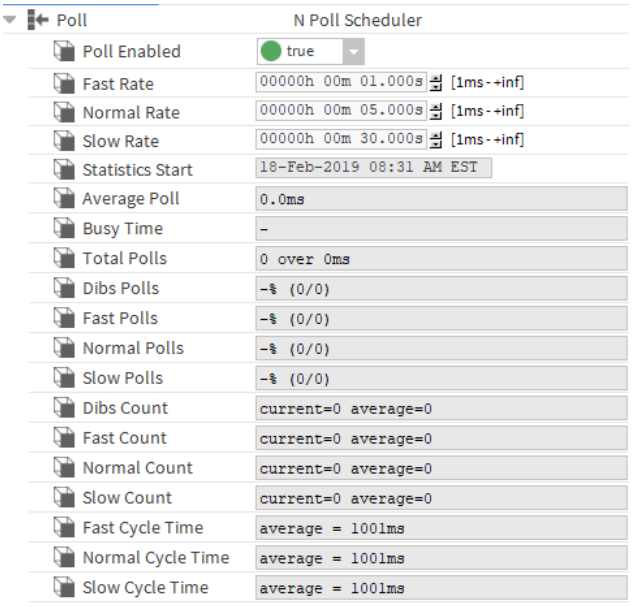
You access this property in the video network component by double-clicking the video network component, followed by selecting the **Property Sheet**.

Property	Value	Description
Fox Video Stream Preferred	`true` or `false` (default)	`true` sends the video stream from the video camera to the station (controller) and then forwards it to the Workbench interface through the standard Fox connection. This overcomes fire wall issues in the event that the video surveillance system is not exposed to the outside world on its network. **NOTE:** This option assumes that the controller is exposed, otherwise you could not even connect to the station. `false` sends the video stream directly from the video camera to the Workbench interface. Using this setting you can set the **`Preferred Resolution`** and **`Preferred Frame Rate`** to `High` without impacting CPU usage. In essence, this removes the station from the CPU-usage equation. In either case (`true` or `false`), the client-side computer expends some of its CPU utilization to render the video on the screen.

Poll properties

These properties gather and report information about how the network and devices (points) are functioning. They are common to all video network components.

Figure 7 Poll properties

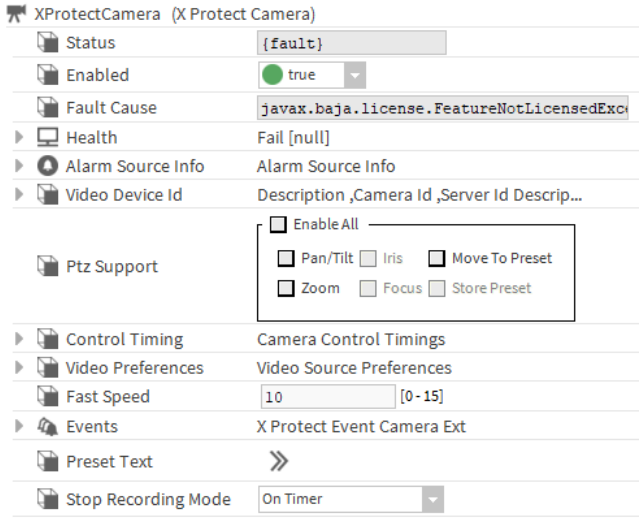


These properties are described in the *Niagara Drivers Guide*

Camera properties

This topic documents the camera properties that are common among video network drivers.

Example of Camera properties (xprotect driver, Workbench and Web UI views)



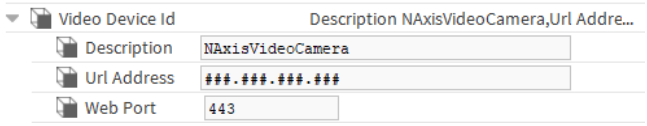
In addition to the standard properties (Status, Enabled, Fault Cause, Health, and Alarm Source Info), these unique properties are common.

Property	Value	Description
Video Device Id	additional properties	Identifies the device. Refer to Video Device Id, page 48.
Ptz Support	`true` or `false` (default)	Turns Pan Tilt, Zoom, Focus, Iris, Move To Preset, and Store Preset features on (`true`), and off (`false`). **NOTE:** If these properties are not enabled, PTZ functions do not work. This means that any widgets that use PTZ controls do not work.
Control Timing	multiple properties	These properties represent Timeout and Interval settings for a set of camera control parameters. Refer to Control Timing properties, page 49.
Video Preferences	multiple properties	Configures how the video feed looks.
Events	multiple properties	Contains the properties to view, configure, and tune all aspects of video events.
Preset Text	Opens the **Enum Facets** window.	Provides a means for adding and naming preset options using the **Enum** window. The options, once defined here, are available from the **`Presets`** option list on the camera **Live Video** view. Refer to *Enum facets window* in this guide.

Video Device Id

Three properties are available for identifying the camera.

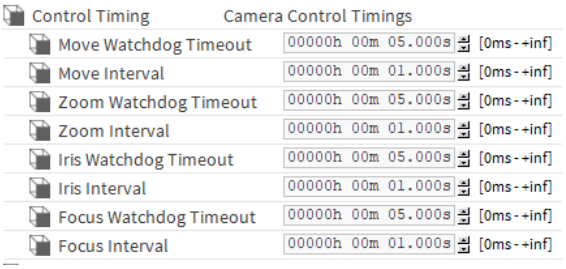
Figure 8 Video Device Id properties



Property	Value	Description
Description	text	Provides additional information.
URL Address	IP address in the format: ###.###.###.###	Defines the URL or IP address of the video device (camera or DVR).
Web Port	number (defaults to 443)	Defines the port when using the web UI. `443` services secure communication between the camera and the station. For a camera that does not support TLS secure communication (Rtsp and HTTP), change this value to `80`.

Control Timing properties

Figure 9 Control Timing properties



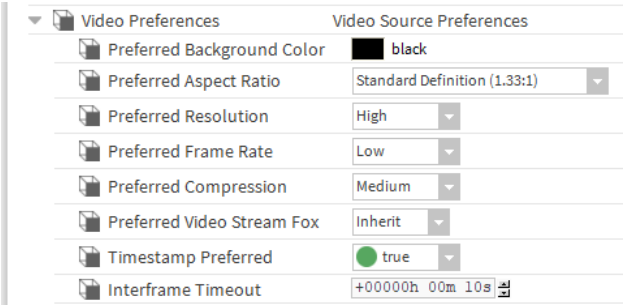
These settings affect how long a camera continues to respond to control communications after a control message is received. The reason for these limits is to prevent a camera from being left in a state of continual movement or adjustment (iris, focus, or zoom) in case communication with the device is lost.

Properties	Value	Description
Move, Zoom, Iris, and Focus Watchdog Timeouts	hours minutes seconds (all default to 5 seconds)	Defines the maximum amount of time that a camera control remains active after receiving the last control command. For example, if a move control command directs a camera to pan right, and communication is immediately lost, the camera continues to pan right for five seconds and stops. You can adjust this time-out value for each of these controls: Move, Zoom, Iris, and Focus.
Move, Zoom, Iris, and Focus Intervals	hours minutes seconds (all default to 1 second)	Assumes communication is lost and initiates a watchdog timer when a camera does not receive a control communication after the amount of the interval (default: one second) elapses. You can adjust this interval for each of these controls: Move, Zoom, Iris, and Focus.

Video Preferences properties

These properties configure the quality of the video feed.

Figure 10 Video Preferences properties



Property	Value	Description
Preferred Background Color	chooser	Assigns a color, gradient, or image to open as the background widget.
Preferred Aspect Ratio	drop-down list (defaults to `Standard Definition` (1.33:1))	Defines the ratio of the width to the height of the video frame. Options include Inherit from camera (default), `Standard Definition`, `Inherit from Stream`, `Fit to Screen`, etc. Resolution at the device or network may linked to the video stream options and inherited. In some cases, this may adversely affect the aspect ratio of your streaming video. If video images display distorted, try setting the camera's **`Preferred Aspect Ratio`** to the `Standard Definition` option.
Preferred Resolution	drop-down list (defaults to `High`)	Specifies the pixel resolution of each transmitted frame. Options are: `High`, `Medium`, or `Low`. The actual pixel values for these three relative settings are defined in the video device.
Preferred Frame Rate	drop-down list (defaults to `Low`)	Defines the speed of the video stream. Options are: `Low`, `Medium`, and `High`. You can configure each rate.
Preferred Compression	drop-down list (defaults to `Medium`)	Specifies what level of compression is used during live video streaming. The actual compression values for these relative settings are defined in the video device. Higher compression uses less bandwidth but negatively affects image quality. Options are: `None`, `Low`, `Medium`, or `High`
Preferred Video Stream Fox	drop-down list (defaults to `Inherit`)	Selects or declines the use of Fox streaming. `Inherit` sets this property to the value set for its parent component (the DVR or network component). `Yes` sends the video stream from the video camera to the station (controller) and then forwards it to the Workbench interface through the standard Fox/Foxs connection. This overcomes fire wall issues in the event that the video surveillance system is not exposed to the outside world on its network. **NOTE:** This option assumes that the controller is exposed - otherwise you could not even connect to the station. `False` sends the video stream directly from the video camera to the interface. Using this setting allows you to set the **`Preferred Resolution`** and **`Frame Rate`** to `High` without impacting CPU usage. In essence, this removes the station from the equation.

Property	Value	Description
		In either case, the client-side computer expends some of its CPU utilization to render the video on the screen.
Timestamp Preferred	`true` (default) or `false`	Configures the camera to record and display (`true`) a time-stamp on the video.
Interframe Timeout	hours, minutes, seconds	Defines the time allowed for the video stream to begin.

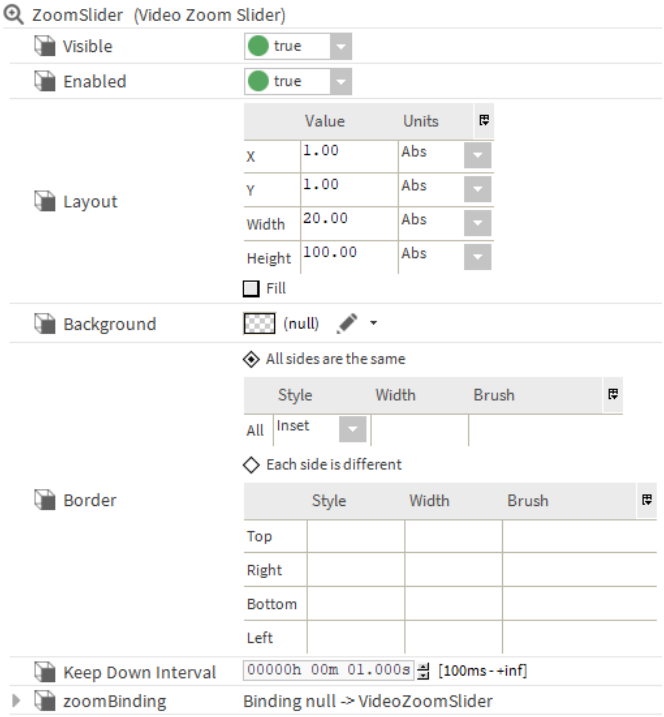
Camera Device Extension shared property

Property	Value	Description
Do Not Ask Again	`true` (default) or `false`	Hides (`true`) the prompt that normally opens when you click the discover button on the **Device Manager** view.

Widget properties

These properties are common to one or more of the **`videoDriver`** Px widgets.

Figure 11 Example of widget properties



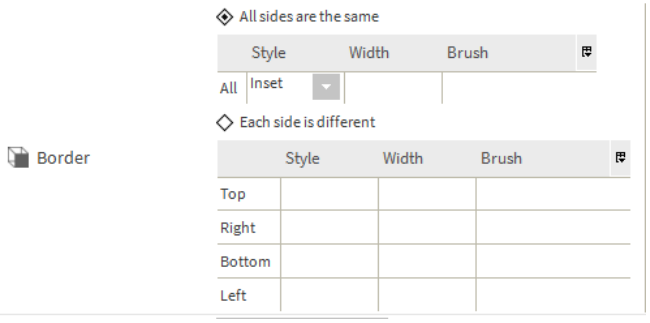
Property	Value	Description
Visible	`true` (default) or `false`	Hides the widget by selecting the `false` option and shows it again by selecting the `true` option.
Enabled	`true` or `false`	Turns the widget on and off.
Layout	Uses a three col-umn table. The	Defines the width and height of the widget

Property	Value	Description
	columns are Value and Units. The rows define X, Y, Width and Height. four options: X, Y, Width Height, each have a **`Value`** and **`Units`** property	**NOTE:** Widgets that use absolute layout should be placed on a Canvas pane Each Value may be a logical coordinate within the parent object coordinate space or it may be a percent of the parent size. Additionally, width and height may use the keyword "pref" to indicate use of preferred width or height. For example, "10,5,100,20" "0,0,30%,100%", and "10%,10%, pref,pref". Lastly the keyword "fill" may be used as a shortcut for "0,0,100%,100%", which means fill the parent pane. Fill is the default for the layout property, which makes it easy to define layers and shapes.
Background/Background Color	chooser	Assigns a color, gradient, or image to open as the background widget.
Border/Ptz Border	multiple properties	Configure the look of the border. Refer to Border, page 53.
Video Stream Fox		Refer to *Fox Video Stream Preferred property* in this guide.
Resolution	drop-down list	The underlying video driver interprets these options: • `High` • `Medium` • `Low`
Compression	drop-down list	Compression allows you to reduce the bandwidth that is required for transmission of video images. Compression relates to the quality of the image that is filling the specified resolution (as set in the Resolution property value field). The higher the compression, the lower the bandwidth requirements. However, over-compression can result in degraded video images. The underlying video driver interprets these options: • `None` • `High` • `Medium` • `Low`
Stream Facets	chevron to the right used to open the **Config Facets** window	Provides metadata directly to the driver. Although these data are not necessarily required for all drivers, some driver developers might decide that they need more input from the user to provide the camera video feed. If required, then the particular video driver must document the requirements for this property.
Stream Facets	chevron to the right used to open the **Config Facets** window	Provides metadata directly to the driver. Although these data are not necessarily required for all drivers, some driver developers might decide that they need more input from the user to provide the camera video feed. If required, then the particular video driver must document the requirements for this property.
Frame Rate	`High`, `Medium`, and `Low`	The underlying video driver interprets these options.

Property	Value	Description
Keep Down Interval	hours minutes seconds	Causes the corresponding slot to be engaged on this periodic basis provided that the mouse is clicked (held down) on the button. For example, if this property is set to 1 second, then when a "Dim" action is invoked by clicking, dimming occurs for 1 second, as long as the button is held down for at least one second. If it is held down for more than 1 second, the dim action is still limited to 1 second.
Keep Down Interval	hours minutes seconds (defaults to one second)	Engages the corresponding slot on this periodic basis when a user clicks (holds down) the mouse button. For example, if set to one (1) second, and the user clicks a dim action, the screen dims for 1 second as long as the user holds the button for at least one second. If the user holds the button for more than 1 second, the screen still dims for one second.
binding, zoomBinding, cameraBinding, panTiltBinding, panTiltZoomBinding (widget properties)	multiple properties	Configure each action to associate with a widget.
binding, zoomBinding, cameraBinding, panTiltBinding, panTiltZoomBinding	multiple properties	Refer to Binding properties, page 54.

Border

Figure 12 Border properties



Property	Value	Description
All sides are the same	option box	Creates a square.
Each side is different	option box	Creates an irregular object.
Style	drop-down list	Defines the line type: solid, dotted, etc.
Width	number	Defines the width of the rule.
Brush		

Binding properties

Figure 13 zoomBinding properties

Property	Value	Description
Ord	ORD	Specifies the Ord of the camera that you want to bind to the widget.
Degrade behavior	drop-down list (defaults to `None`)	Selects what to do if the connection to the bound Ord is lost (due to an invalid Ord or an inadequate permission level). `None` leaves the widget appearance unchanged (the widget just does not work). `Disable` disables the widget. `Hide` hides the widget.

videoDriver-VideoPlaybackChooser (Playback Viewer)

This component provides a standard **Video Playback** view with the addition of a camera option list. The option list allows you to choose the **Video Playback** view from any camera under that particular **Video Driver Network**. This component is provided in the **`videoDriver`** palette.

videoDriver-EventDetectionCtrlExt

This extension provides a standard mechanism to enable or disable particular alarm events on specific cameras. This means you can enable or disable different events on a per-camera basis, based on Boolean logic (for example, a Schedule).

Event Detection Ctrl Ext property

The EventDetectionCtrlExt is available from the **`videoDriver`** palette. It has a single Boolean property. You drag this property to a discovered video alarm event and use it to enable or disable the event. For example, you can link a Boolean writable control point to this property and use point to change the Enable Detection status.

NOTE: You can link any Boolean logic to this property; it does not have to be from a Boolean writable point.

Property	Value	Description
Enable Detection	`true` or `false` and null definition	Turns detection on and off.

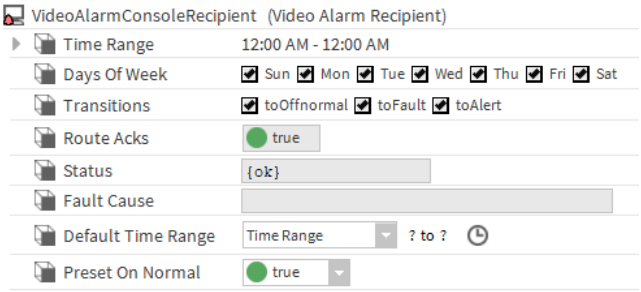
videoDriver-VideoAlarmConsoleRecipient

This component is used to configure the video alarm console in the Supervisor station.

This component provides the ability to have a video driver component take special action, such as asking a video camera to start recording when an alarm occurs. The following list provides an outline of how this works.

1. Add a VideoAlarmRecipient to the station under the AlarmService.
2. From an appropriate AlarmClass component, link to the VideoAlarmRecipient RouteAlarm slot.
3. From the VideoAlarmRecipient, link to a video driver component to serve as the video responder for alarm notifications.
4. When the VideoAlarmRecipient receives an alarm from the alarm service, the video driver component is tasked to take a specific action ("start recording", for example).

Figure 14 VideoAlarmConsoleRecipient property sheet



To set up, drag the component from the **videoDriver** palette (**Alarm** folder) to the **AlarmService Wire Sheet** view and link it to the recipient from the Default Alarm Class or other desired Alarm Class component.

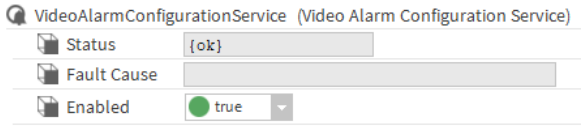
Property	Value	Description
Time Range	additional properties	Sets a limited period of time during a day for collection of alarms, using the following properties: • **Start Time** defines a time of day (hour, minute and second) to begin alarm collection. • **End Time** defines a time of day (hour, minute and second) to end alarm collection.
Days of Week	option boxes	Define specific days to collect alarms.
Transitions	option boxes	Define specific alarm transitions to include or exclude as alarms to send to the alarm recipient. Only those transitions that are selected are sent – even though all of the alarms are saved into the alarm history.
Route Acks	`true` or `false`	When set to `true`, acknowledgments are routed to this recipient; when set to `false`, only alarms (not acknowledgments) are routed to the recipient.
Default Time Range	drop-down list	Selects the time range in days.
Preset on Normal	`true` or `false`	When set to `true`, causes the camera to move to a preset position when a standard alarm returns to normal.

videoDriver-VideoAlarmConfigurationService

This component adds two additional components for each system user in the **UserService** and must be present under the **Services** node in the Nav tree.

The services added to each user are:

- **Video Alarm Console Options** provides properties for configuring the layout of the video alarm console.
- **Alarm Popup Settings** provides properties for configuring which alarms open on the video alarm console.

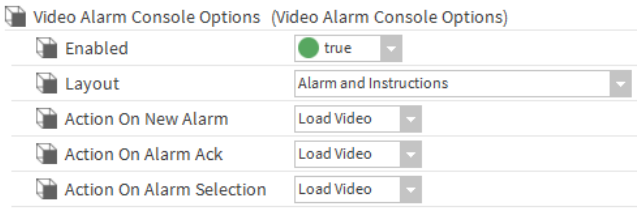


There are no unique properties to configure for this service.

videoDriver-VideoAlarmConsoleOptions

This component configures the alarm console assigned to a specific user.

Figure 15 Video Alarm Console Options properties



You access these properties by double-clicking the Video Alarm Console Options node under **Services→UserService→admin** (or other user name) in the Nav tree.

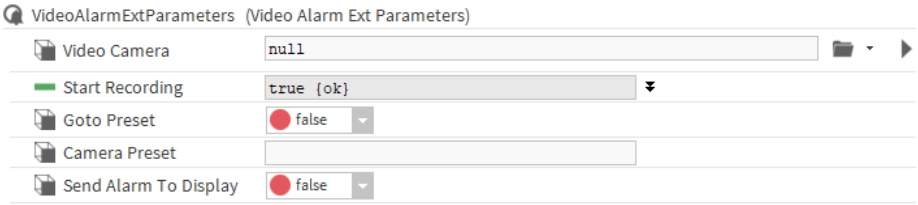
In addition to the common property, **`Enabled`**, this component provides these properties:

Type	Value	Description
Layout	drop-down list	Determines the look of the alarm console. Some layouts include one or more video feeds.
Action On New Alarm	drop-down list (defaults to `Load Video`)	Defines what to do when a camera generates a new alarm. `Load Video` loads the video feed for the latest alarm. `No Action` leaves the current video feed unchanged.
Action on Alarm Ack	drop-down list (defaults to `Load Video`)	Defines what to do when the operator acknowledges the alarm. `Load Video` loads the video feed for the next most recently unacknowledged video alarm. `No Action` leaves the current video feed unchanged.
Action On Alarm Selection	drop-down list (defaults to `Load Video`)	Defines what to do when the operator selects and alarm in the alarm console. `Load Video` loads the video feed for the selected alarm. `No Action` leaves the current video feed unchanged.

videoDriver-VideoAlarmExtParameters

This component links from the Supervisor station to the camera. Based on a standard alarm, this extension directs the camera to point to a preset target and start recording.

Figure 16 VideoAlarmExtParameters properties



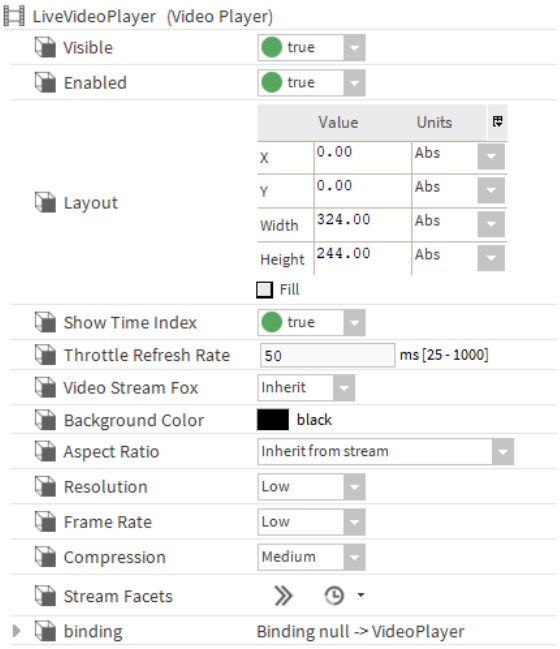
This component is provided in the **videoDriver** palette (**Alarm** folder).

Property	Value	Description
Video Camera	ORD	Defines the camera to which to route an alarm. Clicking the folder opens the **Choose Camera** window. When you select a camera and click **OK** , the Start Recording option list opens.
Start Recording	`true` or `false`	`true` configures the camera to start recording when it receives the alarm. **CAUTION:** Do not select `true` for an event point from a video surveillance system. If you do, you may duplicate the recording - since the video system originally created the alarm and recorded the associated video footage. In this configuration select `false`.
Go to Preset	`true` or `false`	`true` configures the camera to move to a particular Preset pan and tilt when it receives the alarm. Selecting `true`, displays the `Camera Preset` option.
Camera Preset		Select one of the presets. Options vary depending on the video driver. **NOTE:** Make sure that the appropriate **PTZ Support** properties are enabled on the camera that you are sending the alarm to.
Send Alarm To Display	`true` or `false`	Sends the alarm to the display.

videoDriver-VideoPlayer (Live Video Player)

This component is a Px widget for designing a Px page with video displays.

Figure 17 VideoPlayer properties



This widget is provided in the **videoDriver** palette. To use this widget, drag it from the palette to a Px page, configue it and size it, as desired. You access this property sheet by right-clicking the widget and clicking **Views→Property Sheet**.

NOTE: This topic documents only the properties that are unique to this widget. For the common properties, refer to *Multistream Preferences properties* and *Widget properties* elsewhere in this guide.

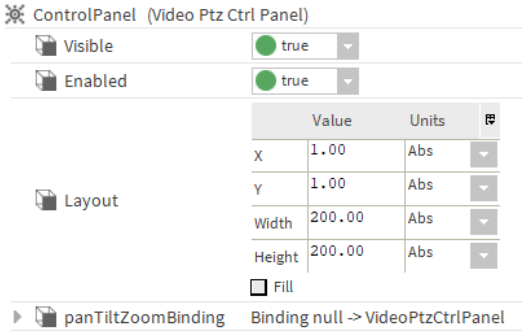
Property	Value	Description
Show Time Index	`true` or `false`	`true` configures the display to show the time index. `false` hides the time index. The time index is a timestamp that overlays the video image. This property is applicable only if the underlying video driver provides time indexes with each video frame.
Throttle Refresh Rate	milliseconds	Sets a refresh rate from the client side. If a video frame arrives sooner than this value, the framework waits until this much time passes before displaying the frame. If another frame arrives before the **Throttle Refresh Rate** time elapses, the framework displays the later frame (assuming it is the latest frame available after the **Throttle Refresh Rate** time elapses). The purpose of this property is to preserve CPU on the client-side CPU. **NOTE:** If this property is set to a high value (for example, greater than 250), lower the **frameRate** property to medium or low since there is no use in streaming video faster than the client PC is permitted to render it.

videoDriver-VideoPtzCtrlPanel (Control Panel)

This component is a Px widget that provides buttons to control a Px page camera's point, tilt, and zoom at three speeds. It is intended for use on very basic touch screen systems that do not support dragging (as

required for using the Pan Tilt Joystick widget). You can drag the widget boundaries to adjust the widget size and position on the Px page.

Figure 18 ControlPanel properties



To add this widget, drag it directly from the palette to the Px page. You access this property sheet by right-clicking the widget and clicking **Views→Property Sheet**.

NOTE: All properties for this widget are common to other widgets. Refer to common *Widget properties* elsewhere in this guide.

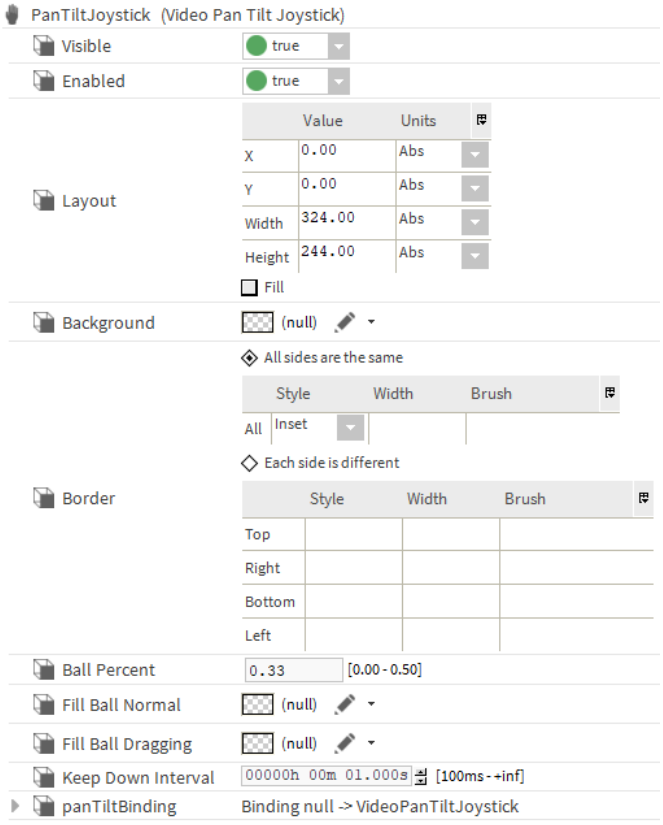
videoDriver-VideoPanTiltJoystick (Pan Tilt Joystick)

This component is a Px widget that provides point, tilt, and zoom controls to a camera that is displayed on the Px page.

You can drag a BIVideoCamera onto a Px page and choose this widget from the pallete. Please note that the palette places a BVideoPtzBinding on this widget to tie this widget to a particular video camera in the station. This widget looks like a box with a ball inside. The ball starts out in the center and the user can drag it around to control the connected camera.

To access this property sheet, double-click the **`PanTiltJoystick`** Px component.

Figure 19 PanTiltJoystick properties



To use this widget, drag it from the palette to your Px page and size it to fit over a Video Player widget. By binding the widget to the camera Ord, you can control the associated camera by dragging your mouse over the widget area.

You access this property sheet by right-clicking the ControlPanel widget and clicking **Views→Property Sheet**.

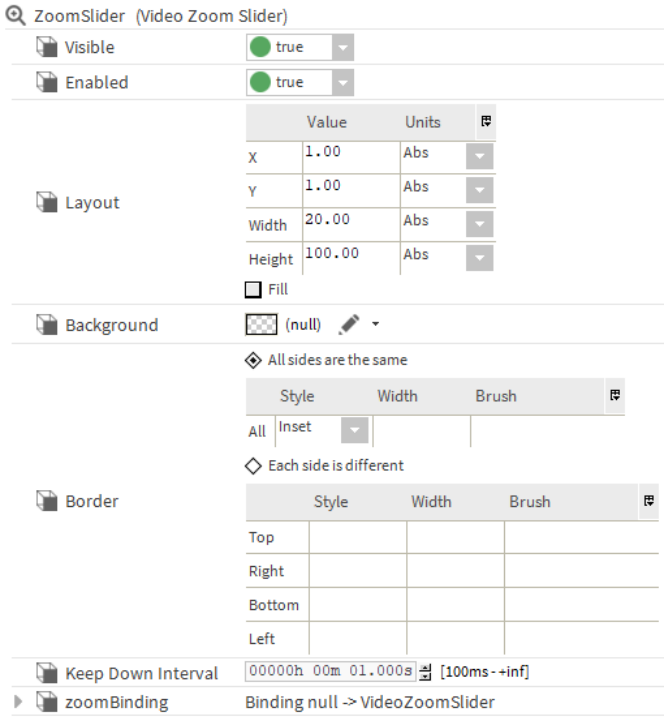
NOTE: This topic documents only the properties that are unique to this widget. For the common properties, refer to common *Network properties* and *Widget properties* in this guide.

Property	Value	Description
Ball Percent	number between 0.00 and 0.50	Use these values to specify, as a percentage, how large the ball-shaped control area is inside the widget pane.
Fill Ball Normal	drop-down list (default = null)	Solid Gradient image Null
Fill Ball Dragging	drop-down list (default = null)	Solid Gradient image Null

videoDriver-VideoZoomSlider (Zoom Slider)

This component is a widget that adds zoom action control to the Px page that configures a video camera interface. This widget looks similar to a typical scroll bar and is designed to fit along one of the four bounding edges of a Live Video Player widget.

Figure 20 ZoomSlider properties



The Zoom Slider widget is available from the **videoDriver** palette. You drag it directly from the palette onto a Px page. After placing it on the Px page, drag the widget boundaries to adjust the size, position, and orientation, as desired.

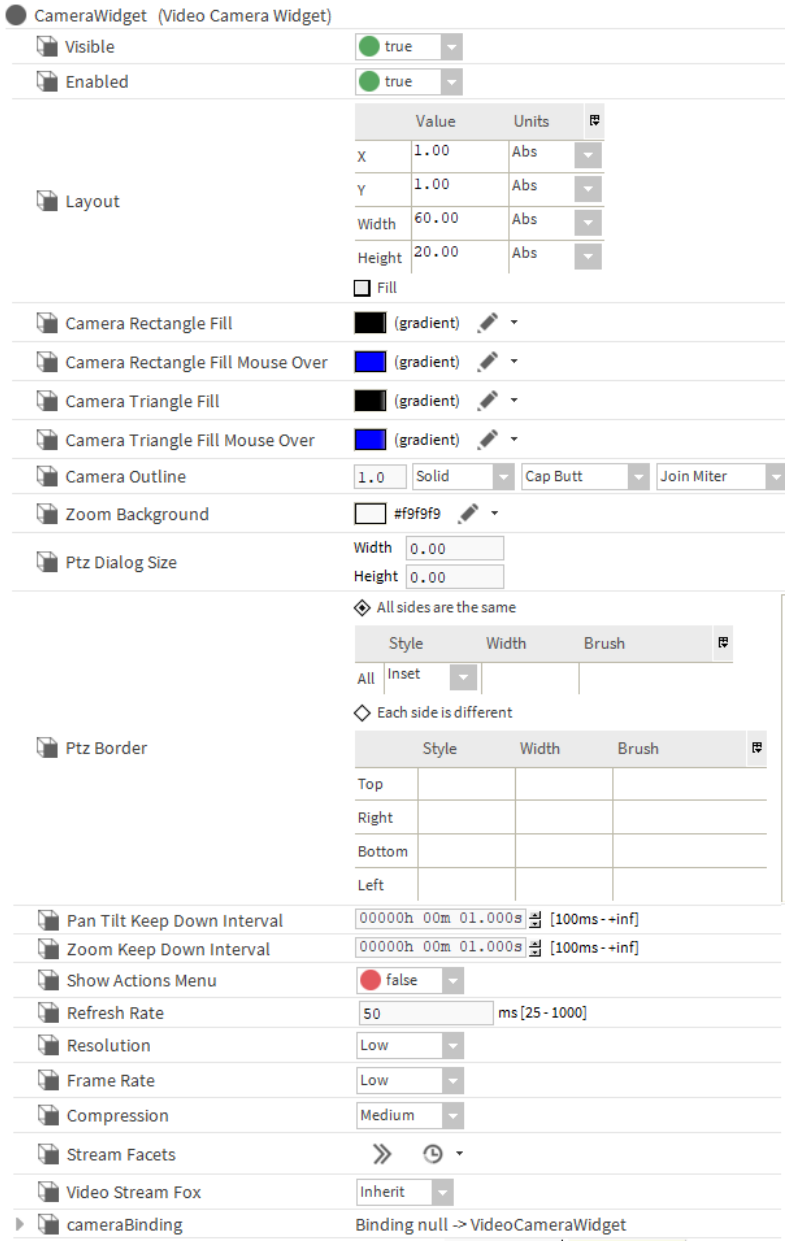
NOTE: All properties for this widget are common to other widgets. Refer to common *Widget properties* elsewhere in this guide.

videoDriver-VideoCameraWidget (Camera Widget)

This component is a widget that, when implemented on a Px page, opens a window that shows the video footage from a linked camera.

To access this component, double-click the **CameraWidget** node in the palette or nav tree.

Figure 21 CameraWidget properties



The Camera widget is available in the videoDriver palette and you can drag it directly from the palette onto a Px page where you can adjust the widget size and shape to fit the desired area on the page.

NOTE: This topic documents only the properties that are unique to this widget. For the common properties, see *Common Video Driver properties* and *Common Widget Properties* elsewhere in this guide.

Property	Value	Description

Camera Rectangle Fill	drop-down list (default = Gradient)	Defines the fill color and style for the camera widget.
		`Solid`
		`Gradient`
		`Image`
		`Null`

Camera Rectangle Fill Mouse Over	drop-down list (default = Gradient)	Defines the mouse over (hover) fill color and style for the camera widget.
		`Solid`
		`Gradient`
		`Image`
		`Null`

Camera Triangle Fill	drop-down list (default = Gradient)	Defines the fill color and style for the triangle area of a camera widget.
		`Solid`
		`Gradient`
		`Image`
		`Null`

Camera Triangle Fill Mouse Over	drop-down list (default = Gradient)	Provides a fill color definition for the triangle area of the widget during mouse over.
		`Solid`
		`Gradient`
		`Image`
		`Null`

Camera Outline	multiple properties	Configures the style of the outline around the camera image.

Zoom Background	drop-down list	Provides a background color definition for the widget
		`Solid`
		`Gradient`
		`Image`
		`Null`

Ptz Dialog Size	inches	Defines the width and height of the window.
Ptz Border	Style (default = Inset), Width and Brush	Style options: Inset None Solid Dotted Dashed Groove

Property	Value	Description
		Ridge Outset
Pan Tilt Keep Down Interval	hours minutes seconds (defaults to 100 ms)	Defines the Pan and Tilt behavior when the mouse-pressed event is active. This is a period of time (in milliseconds).
Zoom Keep Down Interval	hours minutes seconds (defaults to 100 ms)	Defines the zoom behavior when the mouse-pressed event is active. This is a period of time (in milliseconds).
Show Actions Menu	`true` or `false` (default)	Controls the viewing of the actions menu.
Refresh Rate	milliseconds (defaults to 50)	Defines how frequently the screen refreshes.

Camera Outline properties

Property	Value	Description
1.0 (default)	numeric value	Provides a line weight value for the outline of the camera widget image.

(type of outline)	drop-down list (default = Solid)	`Solid`
		`Dotted`
		`Dashed`

(type of caption)	drop-down list (default = Cap Butt)	`Cap Butt`
		`Cap Round`
		`Cap Square`

(type of join)	drop-down list (default = Join Round)	`Join Miter`
		`Join Bevel`
		`Join Round`

videoDriver-HoldDownPxButton (MouseDownButton)

This widget provides buttons to adjust the camera Iris and the Focus. They are functionally equivalent to the Iris and Focus buttons in the **Live Video** view.

Figure 22 MouseDownButton properties in the Workbench property sheet view

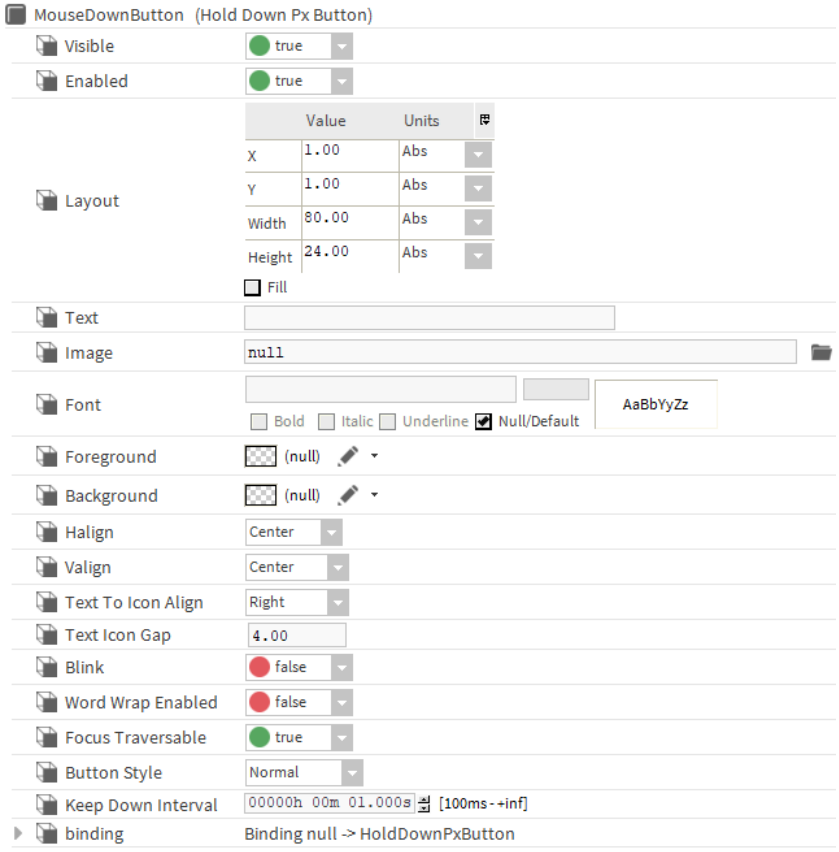
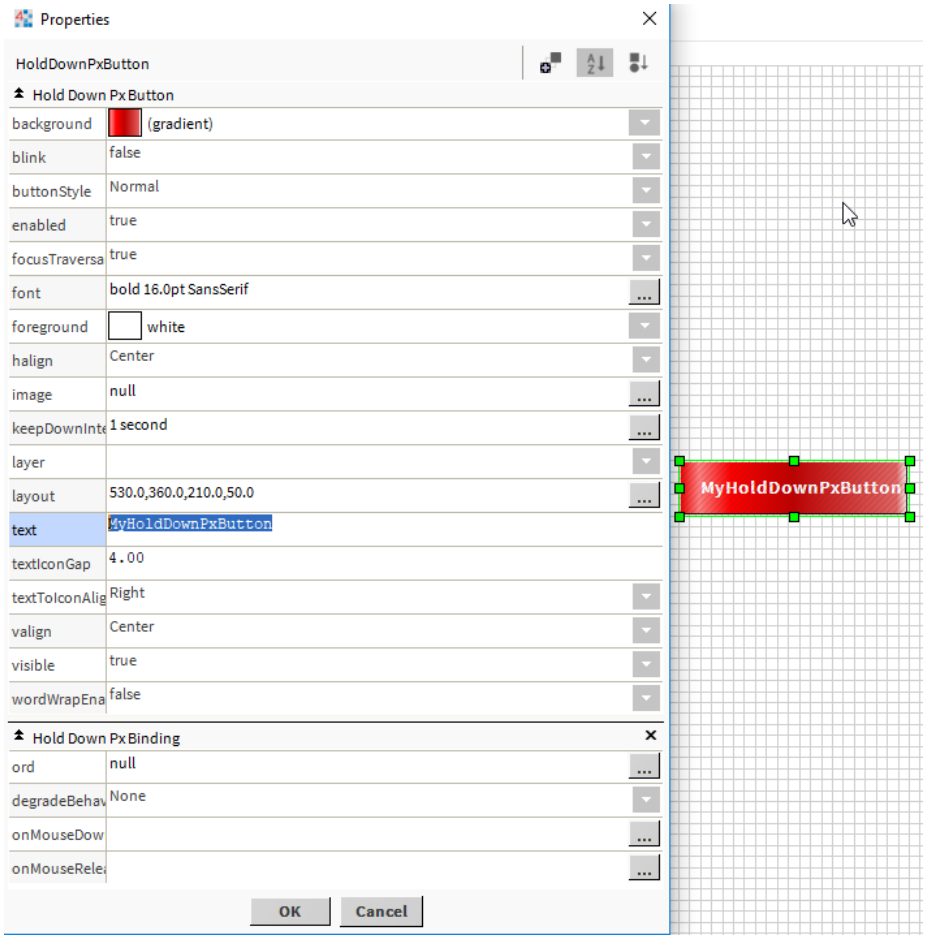


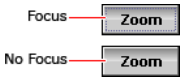
Figure 23 HoldDownPxButton in the Px Editor view



This widget is available in the **videoDriver** palette. You drag it directly from the palette to a Px page, then adjust its size and shape to fit the desired area on the page. To access these properties in the **Px Editor**, right-click the widget and click **Edit Properties**.

NOTE: This topic documents only the properties that are unique to this widget. For the common properties, refer to common *Network properties* and *Widget properties* in this guide.

Property	Value	Description
Text	text	Contains the text that displays on the button.
Image	image chooser	Defines an image to display on the button widget.
Font	text	Selects the font to use for the display text.
Foreground	color chooser	Specifies the color of the display text.
Background	color chooser	Specifies the color of the button, using a solid color, a gradient, an image, or the default background color.
Halign and Valign	drop-down lists (both default to Center)	Specify the alignment characteristics of the display text.
Text to Icon Align	drop-down list (defaults to Right)	Specify how the image defined by the **image** property displays in relation to the text (**text** property).

Property	Value	Description
Text to Icon Gap	number (defaults to 4.0)	Defines an amount of space to leave around the image.
Blink	`true` or `false` (default)	`true` causes the Mouse Down Button to blink.
Word Wrap Enabled	`true` or `false` (default)	Turns word wrap on and off.
Focus Traversable	`true` (default) or `false`	`true` includes this widget in the set of Mouse Down Buttons that can sequentially receive focus when the **Tab** key is pressed in a Px view that contains the button. `false` disables focus for the button using the **Tab** key. 
Button Style	`Normal` (default) or `Toolbar`	`Normal` displays a common interface button. `Toolbar` uses a button that is more appropriate for displaying along a toolbar menu.
binding	multiple properties	

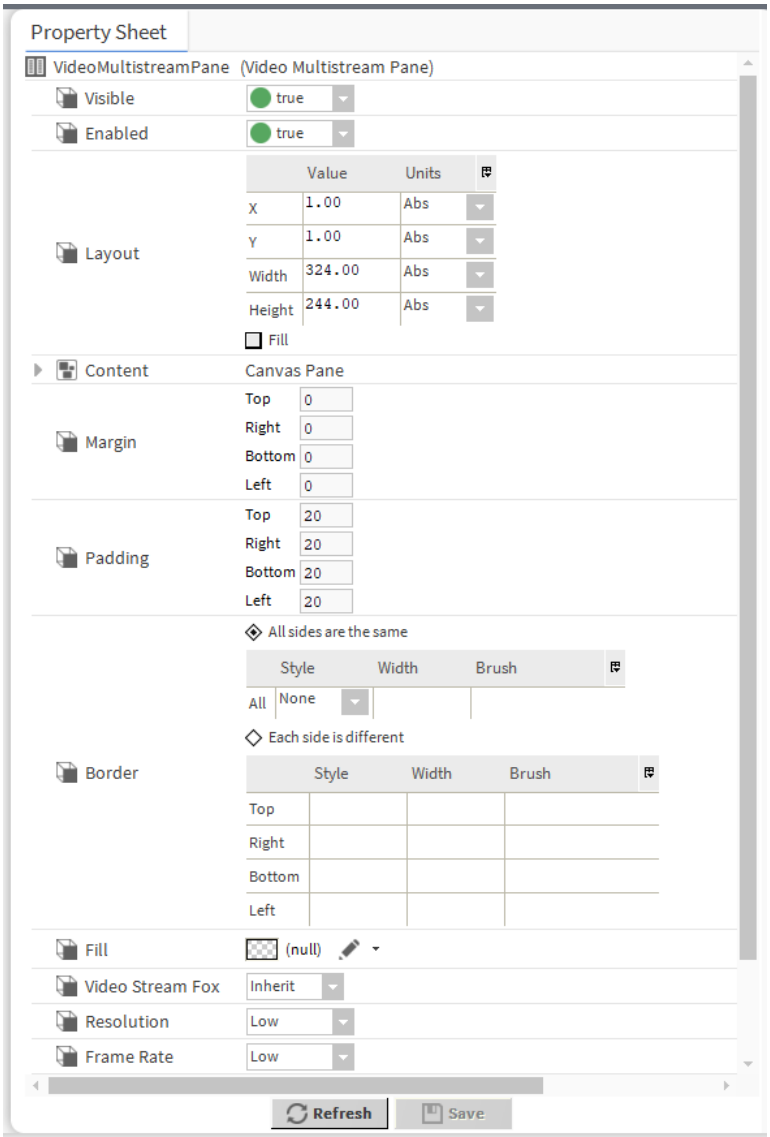
Binding properties

Property	Value	Description
On Mouse Down		Specifies the action to be taken when the mouse button is held down. If an appropriate Ord property value is set, you can choose Slot and Value settings from the **On Mouse Down** window that opens when you click in the property field (from the **Px Editor** view).
On Mouse Release		Specifies the action to be taken when the mouse button is released. If an appropriate Ord property value is set, you can choose Slot and Value settings from the **On Mouse Release** window that opens when you click in the property field (from the **Px Editor** view).

videoDriver-VideoMultistreamPane

This widget configures a single network connection to display multiple cameras.

Figure 24 Video Multistream Pane properties



You cannot use this widget for remote video in an enterprise environment. Use the **Surveillance Viewer** component instead. This widget is available in the **videoDriver** palette. To use, drag it directly from the palette to a Px page and adjust the widget size and shape to fit the desired area on the page.

To access these properties, double-click the widget in the Nav tree.

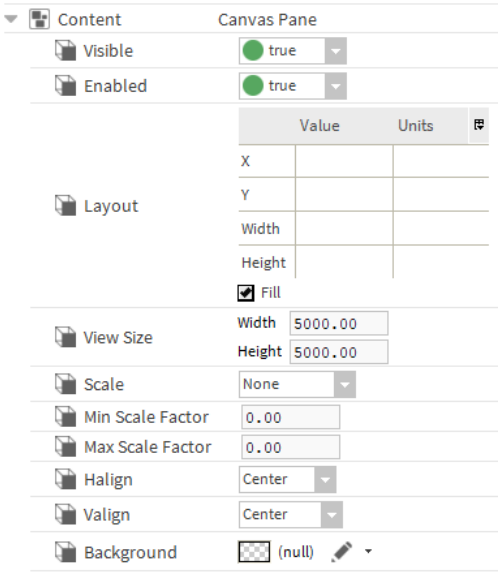
NOTE: This topic documents only the properties that are unique to this widget. For the common properties, see *Common network properties* and *Common widget properties* in this guide.

Property	Value	Description
Content	additional properties	Configures the canvas pane. Refer to Content properties, page 69.
Margin	numbers	Defines all margins.
Padding	numbers	Defines the distance from the margins to where text and images begin.

Property	Value	Description
Resolution	drop-down list (defaults to Low)	Specifies the pixel resolution of each transmitted frame. Options are: `High`, `Medium`, or `Low`. The actual pixel values for these three relative settings are defined in the video device.
Frame Rate	drop-down list (defaults to Low)	Defines the speed of the video stream. Options are: `Low`, `Medium`, and `High`. You can configure each rate.

Content properties

Figure 25 Multistream pane content properties



Property	Value	Description
View Size	Width and Height (defaults to 5000.0 and 5000.0)	Configures the size of the view.
Min Scale Factor	number (defaults to 0.00)	Defines the lower limit of the scale.
Max Scale Factor	number (defaults to 0.00)	Defines the upper limit of the scale.
Halign	drop-down list (defaults to Center)	Configures the horizontal alignment of the Px contents.
Valign	drop-down list (defaults to Center)	Configures the vertical alignment of the Px contents.

remoteVideo-RemoteVideoService

This service enables remote station video communications with a Web Supervisor station. To use this service, a station must be licensed for the remote video feature.

The remote video service is located in the **`remoteVideo`** palette. You drag this service to the **Services** folder in the Nav tree.

This component has three standard properties.

Chapter 5 Common plugins (views)

Topics covered in this chapter

- videoDriver-LiveVideo
- videoDriver-VideoPlayback (Playback Viewer)
- videoDriver-VideoMultistreamViewer (Surveillance Viewer)
- videoDriver-VideoPlaybackChooserView (Playback Viewer view)
- videoDriver-VideoAlarmConsole

Plugins provide views of components and can be accessed in many ways. For example, double-click a component in the Nav tree to see its default view. In addition, you can right-click on a component and select from its **Views** menu.

These views are common to all video network drivers.

For summary documentation on any view, select **Help→On View** (**F1**) from the menu or press **F1** while the view is open.

videoDriver-LiveVideo

The **Live Video** view is a view on the typical stand-alone camera device (not DVR camera) and is indicated by the live video icon in the view selector (top right corner)

Figure 26 Live Video view

You access this view by expanding **Config→Drivers** followed by expanding the video driver node, locating and double-clicking the camera.

This view has a video display with a camera ID and description in the top left corner and camera controls across the bottom of the video view area. The controls adjust the active camera iris, focus, and direction. You can also create, store, and select Preset camera positions. In addition, a zoom control is located along the right side of the view.

Controls and indicators are grouped in the following categories:

- Camera controls
- Video indicators

Table 1 Camera controls

Control	Description
 Iris	The iris is the adjustable opening (aperture) of a camera that controls the amount of light that is allowed through the lens. The **Iris** increase and decrease control buttons are located in the top left corner of the view and allow you to manually adjust the opening: • Up arrow increases the iris opening and causes the image to brighten. • Down arrow decreases the iris opening and causes the image to darken.
 Focus	Adjusts the sharpness or clarity of the video image. You pull the focus in one direction or another. • Up arrow moves the focus closer. • Down arrow moves the focus farther away.
 Presets	Manages pre-configured camera settings. • The drop-down list provides the name for the preset. You configure preset names on the camera's **Property Sheet** view (using the **`Preset Text`** property and the **Enum** window). • **Go** invokes the Preset that is currently displayed in the Presets option list. **NOTE:** A Preset must have a location defined, using the Store button, before it can be activated, even though the option opens in the list. • **Store** saves the current camera position with this Preset option.
Pan and Tilt	Clicking directly on the video activates these controls. Dragging the hand icon pans the video in the desired direction. The blue pan and tilt arrow indicates pan, tilt speed and direction, which vary.
Zoom	Clicking the zoom icon that is located in the zoom bar on the right side of the view zooms in and out. Zoom-in by dragging the zoom icon up and zoom-out by dragging the zoom icon down. How far up or down you move the icon controls the zoom speed. The color changes in the zoom bar indicate speed.

Table 2 Video indicators

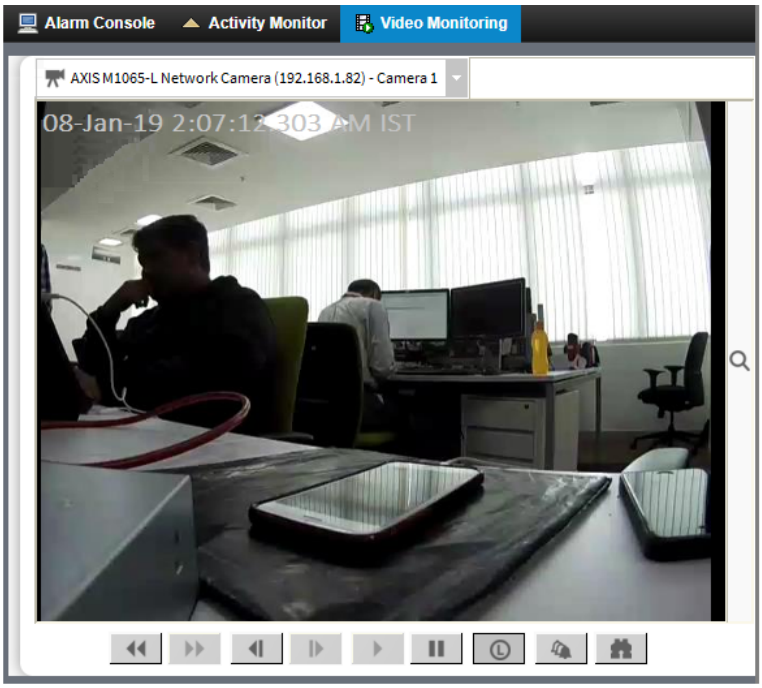
Indicator	Description
Live Video indicator ()	Opens temporarily at the top left and right corners of the playback view when a live mode is selected. This indicates that the video currently displaying is live or occurring in real-time.
Playback speed indicator ()	Indicates the current playback speed in terms of multiples of normal play speed. Each click on the **Fast Play Forward** button increments the speed by one multiple. Speed indications are expressed as `X1`, `X2`, `X3` (times one, times two, times three) and so on.
Video Playback indicators ()	These icons (fast-forward, skip, play, and pause) open temporarily near the top left and right corners of the playback view any time that there is a playback state change. For example, if you click the pause button, the pause indicator icons appear for a few seconds to alert you that the playback has paused. When you click the play button, play icons appear similarly.
Pan and Tilt	Both pan and tilt are indicated by the blue Pan and Tilt indicator. This polygon (arrow-like) indicator is superimposed on the video image whenever you click directly on a live video image. There are two aspects to pan and tilt: • Pan and Tilt Direction: The Pan and tilt arrow represents directional control on the screen. The pan and tilt locations comprise eight segments. The largest end of the blue arrow indicates the direction that the camera is moving. • Pan and Tilt Speed: The speed indicator displays one of three shades of blue to indicate slow (light blue), medium (medium blue), and fast (dark blue).

Indicator	Description
Zoom	There are two aspects to zoom: • Pan, Tilt, and Zoom speed: The darkness (or opacity) of the pan, tilt, and zoom icons indicate pan, tilt, and zoom speed. Indicators display one of three shades of blue to indicate slow (light blue), medium (medium blue), and fast (dark blue). • Zoom-in and Zoom-out: The vertical position of the zoom icon indicates direction . Drag the zoom icon up on the scroll bar to zoom in. Drag the zoom icons down on the scroll bar to zoom out. Zoom speed is indicated by the darkness (or opacity) of the zoom indicator bar.
Status message	Displays on the screen at times to indicate the connection status.

videoDriver-VideoPlayback (Playback Viewer)

This Playback Viewer is the default view of the typical camera and is indicated by the playback icon ie in the view selector (top right corner). Its controls are based on industry standards

Figure 27 Video Playback view



You access this view from an alarm console by double-clicking the video icon to the left of an alarm row in the table.

You can use this view to access and review recorded video segments using the controls along the bottom of the view. To change to the live view, click the **Live Video** button ( ).

Controls and indicators are grouped in the following categories:

- Video Playback Controls
- Event Controls

Table 3 Video playback controls

Control	Description
Fast Play Forward	Incrementally speeds up the forward play speed with each click. The on-screen play indicator shows the current play speed while this function is being used.
Fast Play Reverse	Incrementally speeds up the reverse play speed with each click. The on-screen play indicator shows the current play speed while this function is being used.
Skip Forward/ Skip to the end or next clip	While playing back video, this function skips forward to the next recorded track and starts playing automatically.
Skip Reverse/ Skip to the start or previous clip	While playing video, this function skips backward to the beginning of the current track and starts playing automatically.
Play	Initiates playback and resumes playback following a pause.
Pause	Discontinues playback at the current location.
Live	Switches from a playback video display to a live video display (still in the **Video Playback** view).

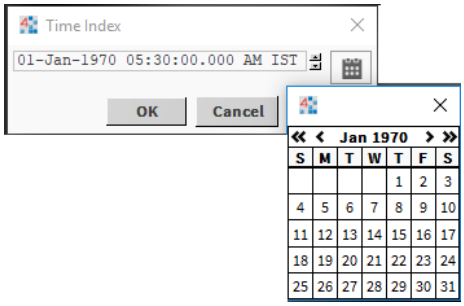
Table 4 Event Controls

Control	Description
Browse events	Opens the **Browser Events** window.
Discover	Initiates playback from a specific time.

Find Event

This function opens the **Time Index** window, which allows you to select an event according to a specific date and time in terms of day, month, year, and time. A calendar icon in the window presents an interactive calendar for browsing to and selecting the desired date.

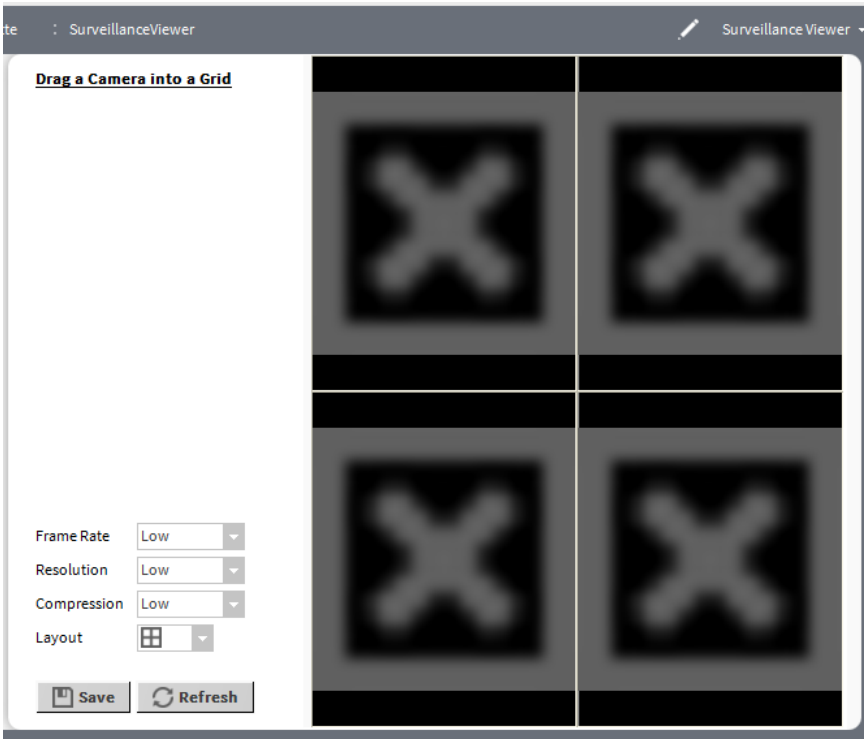
Figure 28 Time Index window



videoDriver-VideoMultistreamViewer (Surveillance Viewer)

This is a view of the **Surveillance Viewer** component. It provides a pre-configured grid with various layout options to quickly find and display the video feeds from all the cameras in a station. It may display on your computer's monitor or on a monitor connected to a DVR.

Figure 29 Surveillance Viewer (video multistream viewer)



This component is located on the **videoDriver** palette. To use it, drag it from the palette to a Px view. In addition to the camera-feed grid on the right, it provides a side bar with the list of available cameras and configuration properties. To add a camera to the grid, drag it from the side bar to the grid. The viewer properties and controls in the bottom left area of the view contains the standard **Save** and **Refresh** buttons.

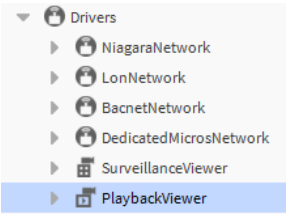
Property	Value	Description
List of cameras (top of the side bar)	Camera1 (through Camera16)	Lists the cameras in your station that are assigned to the **Surveillance Viewer**. From the **Property Sheet** view, you can manually add and remove these cameras by changing their ORDs. However, they are set for you automatically when you drag a camera to a Surveillance Viewer grid. If no cameras are available, list is empty.
Aspect Ratio	drop-down list (defaults to the camera's aspect ratio)	Defines the image aspect ratio. When you drag to re-size the view, the driver preserves this aspect ratio.
Frame Rate	drop-down list (defaults to `Low`)	Configures the frame rate. The underlying video driver interprets these options.
Resolution	drop-down list (defaults to `Low`)	Configures the camera resolution. The underlying video driver interprets these options.
Compression	drop-down list (defaults to `Low`)	Configures the transmission bandwidth. Compression relates to the quality of the image at the specified **Resolution**. The higher the **Compression**, the lower the bandwidth required. However, over-compression can result in degraded video images. The underlying video driver interprets these options.

Property	Value	Description
Video Stream Fox	`true` or `false`	`true` streams video using the Fox network `false` , if possible, streams video using the local network. This option sends video directly from the camera to the viewer. Refer to *Common network properties* in this document for more details about Fox streaming.
Layout	drop-down list	Configures the view grid. This includes several layout options and a picture-in-picture option.

videoDriver-VideoPlaybackChooserView (Playback Viewer view)

The video **Playback Viewer** view is the default view of somel cameras and also a view on the **Surveillance Viewer** component. This view has a video display with controls across the top and bottom of the video border. You can use this view to access and review recorded video segments using the controls along the bottom of the view. Using the controls along the top of the view (if supported), you can choose cameras, adjust the active camera iris, focus, and direction, and create, store and select "Preset" camera positions. In addition, a zoom control is located along the right side of the view.

Figure 30 PlaybackViewer in the nav tree

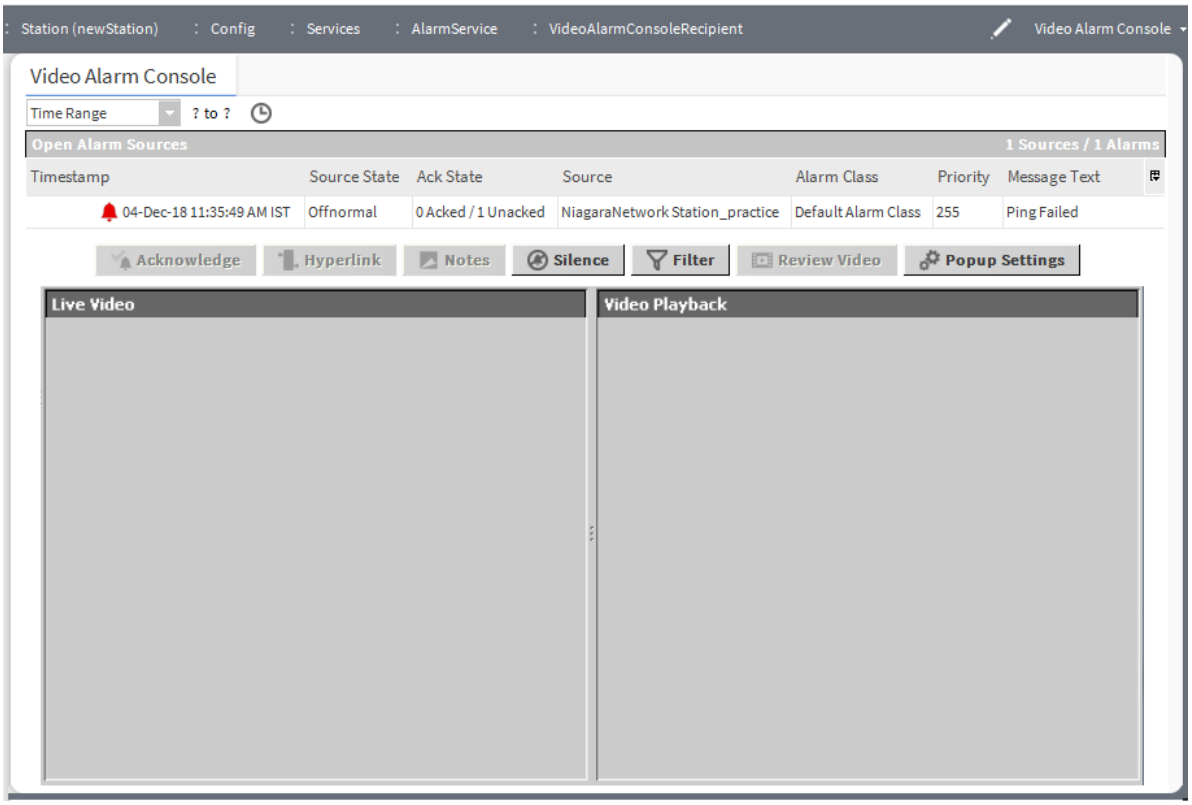


Property	Value	Description
Most Recent Camera Viewed	ORD	Reports the ORD value of the last camera view that was used. You can browse to a camera and select it to provide the initial default video camera view for the Video Playback Chooser component.

videoDriver-VideoAlarmConsole

Each system user can have a unique alarm console configuration that includes a live Surveillance Viewer and a Playback Viewer. This view resembles the **Alarm Console - Live** view.

Figure 31 Video Alarm Console view (popup window)



To access this view, double-click the **Config→Services→AlarmService→VideoAlarmConsoleRecipient** node in the Nav tree. To configure this view, click the **Popup Settings** button.

Property	Value	Description
Time Range	drop-down list	Selects which alarms to view based on when the alarm was generated.

The alarm console table columns (Timestamp, Source State, Ack State, etc.) are documented in the Niagara Alarms Guide.

The alarm control buttons provide these features:

- **Acknowledge** tells the system that you have read the alarm and taken action.
- **Hyperlink** changes the current view to the hyperlinked target associated with the selected alarm. If no hyperlink is associated with the alarm, the **Hyperlink** button is not available.
- **Notes** displays the **Notes** window, which allows you to add a text description to an alarm.
- **Silence** mutes the audible sound associated with all alarms in the console.
- **Filter** opens the **Filter** window, which allows you to limit the alarms that display in the console by selecting display parameters.
- **Review Video** opens a **video playback** window that automatically plays the video associated with the alarm.
- **Popup Settings** configures the **Video Alarm Console** view.

Chapter 6 Windows

Topics covered in this chapter

- nmilestone New Network windows
- nmilestone New Dvr windows
- nmilestone New Display windows
- nmilestone New Camera windows
- X Protect Management Server New windows
- X Protect New Camera windows
- xprotect recording server New windows

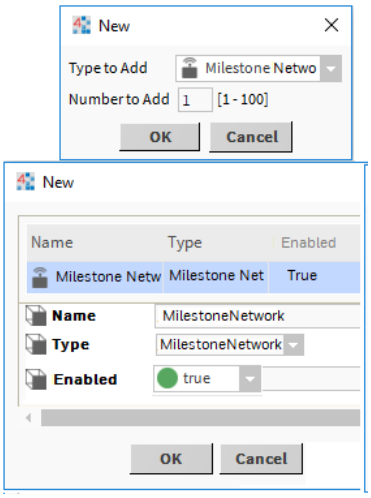
Windows create and edit database records or collect information when accessing a component. You access them by dragging a component from a palette to a nav tree node or by clicking a button.

Windows do not support **On View (F1)** and **Guide on Target** help. To learn about the information each contains, search the help system for key words.

nmilestone New Network windows

These windows set up a new Milestone Network in a station.

Figure 32 Milestone Network New windows



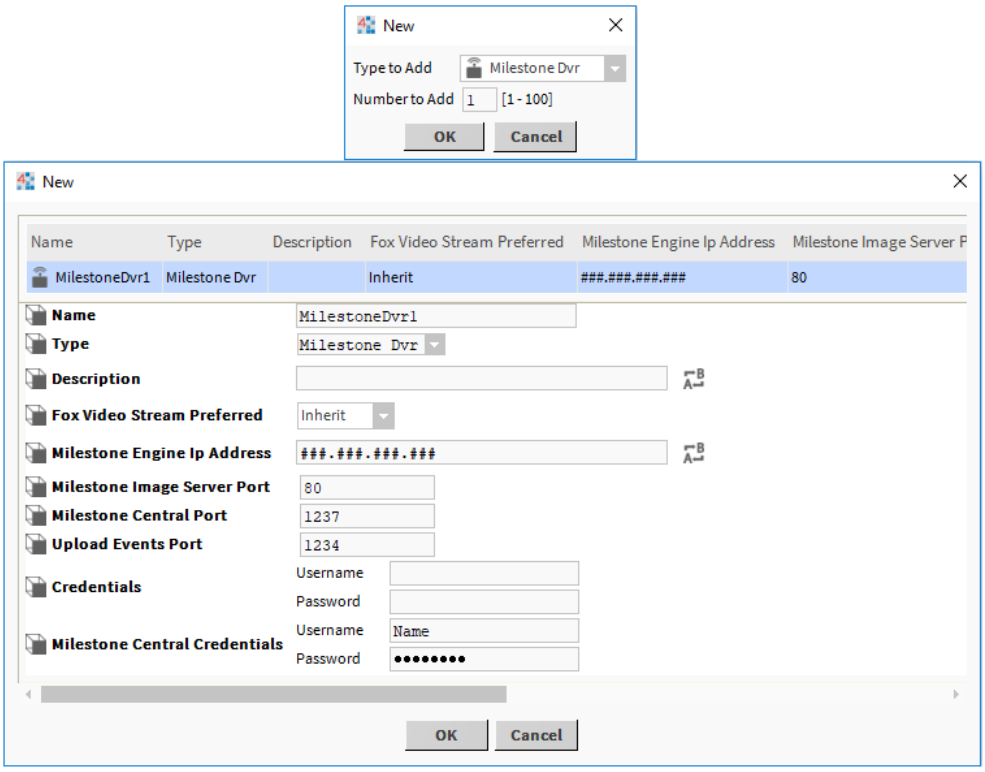
You access these properties by clicking the **New** button at the bottom of the **Driver Manager** view.

NOTE: For more information about these common properties, refer to *Common properties and components.* This topic is in this guide.

nmilestone New Dvr windows

This topic documents the properties that are unique to configuring a new Milestone DVR.

Figure 33 New Dvr windows in Workbench (left) and Web UI (right)



You access these properties in Workbench by double-clicking the **NMilestoneNetwork** node in the nav tree (which opens the **N Device Manager** view), followed by clicking the **New** button at the bottom of the **Database** table.

You access the security framework Web UI view by navigating to the **DVRs** tab under **System Setup→Remote Devices→NMilestoneNetwork** and clicking the new button ( ).

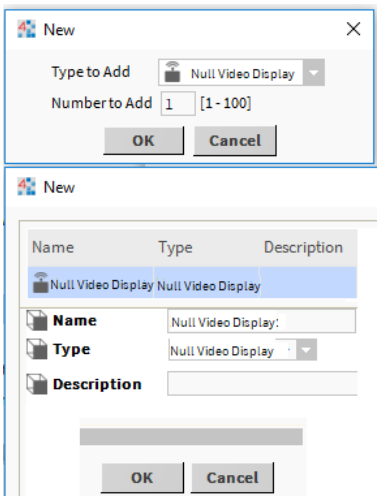
NOTE: For more information about the common properties (**`Type to Add`**, **`Number to Add`**, **`Name`**, and **`Type`**), refer to *Common properties and components* elsewhere in this guide.

Property	Value	Description
Milestone Engine Ip Address	number	Do not change this value.
Milestone Central Port	number	Do not change this value.
Upload Events Port	number	Do not change this value.
Credentials	Username and Password	Controls configuration access to the driver. These are the first properties to set when configuring the driver.
Milestone Central Credentials	Username and Password	These credentials are required to connect to a Milestone camera. Enter the same credentials you set up when you configured the Milestone Application. Refer to the Milestone documentation.
Description	text	Creates a unique text string for each device. This might include the location or purpose of the device. This description is used in multi-stream widgets, such as the **Surveillance Viewer**.

nmilestone New Display windows

The New windows for a nmilestone display has properties that you must configure to enable communication between the display and the DVR device.

Figure 34 nmilestone New Display windows

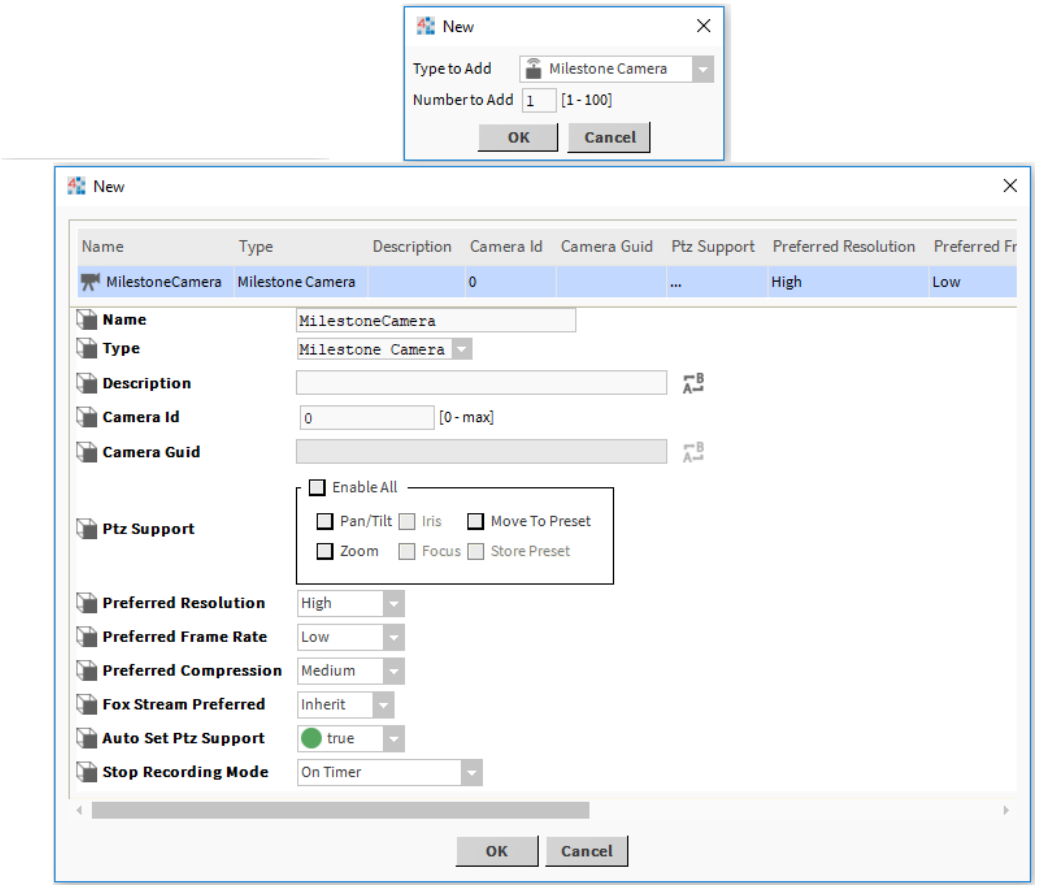


These windows are available only when using the Milestone nmilestone driver. You access them by clicking the **New Display** button at the bottom of the **Video Display Mgr** view. The **`Type to Add`**, **`Number to Add`**, Name, **`Type`**, and **`Description`** properties are documented in *Common properties and components*..

nmilestone New Camera windows

This topic documents the properties that are unique to configuring a new Milestone camera.

Figure 35 Milestone New Camera windows



These windows are available only when using the Milestone nmilestone driver. You access them by clicking the **New Camera** button at the bottom of the **Camera Manager** view.

The properties in these windows are documented as follows:

- For: **`Type to Add`**, **`Number to Add`**, **`Name`**, **`Type`**, and **`Description`**, refer to *Common properties.*.
- For: **`Preferred Resolution`**, **`Frame Rate`**, **`Compression`**, and **`Fox Stream`**, see Refer to common *Display properties* in this guide.
- For: **`AutoSet Ptz Support`** and **`Stop Recording Mode`**, see the *nmilestone-MilestoneCamera* topic.

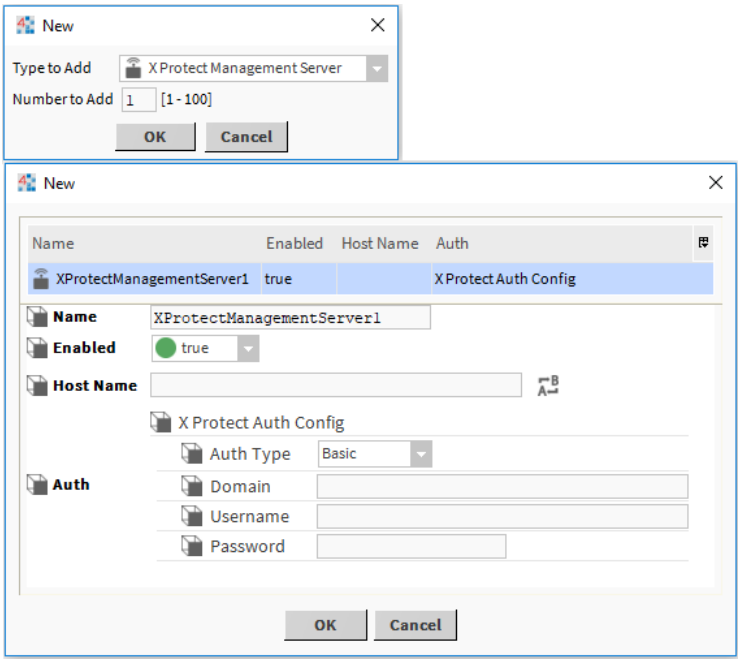
These topics are in this guide.

Property	Value	Description
Camera Id	read-only	
Ptz Support	multiple properties	Refer to common *Camera properties* in this guide.

X Protect Management Server New windows

These windows define basic server properties.

Figure 36 X Protect Management Server New windows



These windows require the Milestone xprotect driver. You access them by clicking the **New** button at the bottom of the **X Protect Server Manager** view.

NOTE: For more information about the common properties (**`Type to Add`**, **`Number to Add`**, **`Name`**, **`Type`**, and **`Enabled`**), refer to *Common properties and components.* This topic is in this guide.

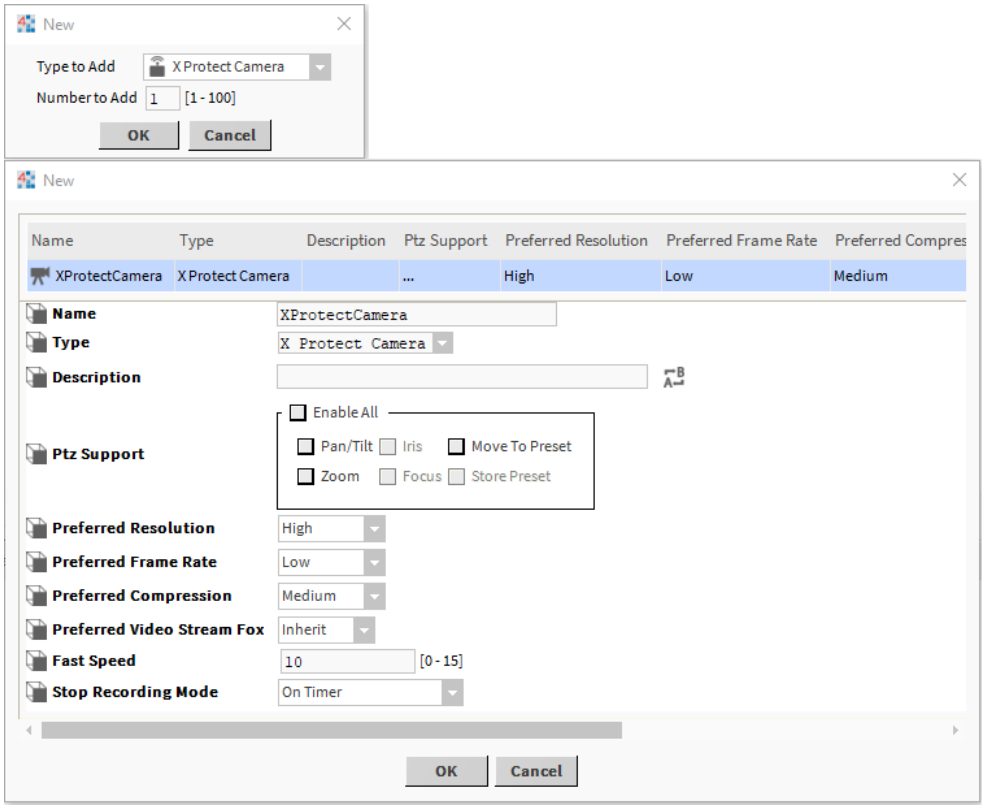
Auth properties

Property	Value	Description
Host Name	**`name`** or **`IP address`**	Defines the host name or IP address of the host running xprotect Corporate NVR.
Auth Type	drop-down list	Selects the type of authentication: • `Basic` (default) sets up simple credentials. • `Windows`
Auth Domain	URL	Defines the Windows domain name when the type of authentication is Windows.
Auth Username	text	This name identifies a user who is allowed to connect to the management server that is running the xprotect Corporate software.
Auth Password	text	Sets up the password required to connect to the management server that is running the xprotect Corporate software.

X Protect New Camera windows

This topic documents the properties required to set up a new Milestone X Protect camera.

Figure 37 X Protect New Camera windows



These windows open only when you are using the Milestone xprotect driver. You access them by clicking the **New Camera** button at the bottom of the X Protect **Camera Manager** view.

The properties in these windows are documented as follows:

- For: **`Type to Add`**, **`Number to Add`**, **`Name`**, **`Type`**, and **`Description`**, refer to *Common properties and components* elsewhere in this document.
- For: **`Preferred Resolution`**, **`Frame Rate`**, **`Compression`**, and **`Fox Stream`**, refer to common *Display properties* elsewhere in this guide.

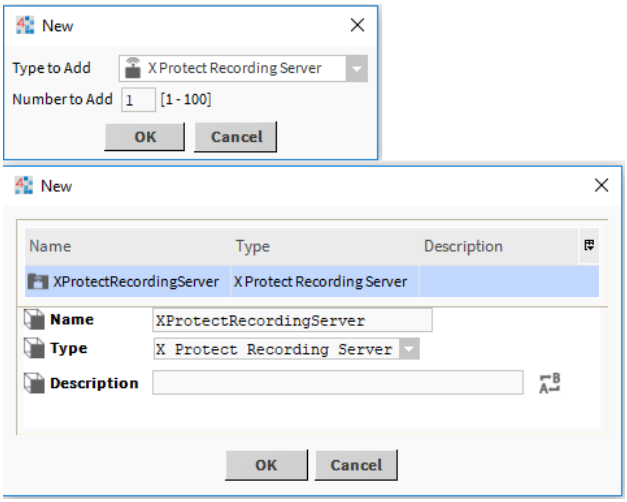
These topics are in this guide.

Property	Value	Description
Ptz Support	multiple properties	Refer to common *Camera properties* in this guide.
Fast Speed	0–15 (defaults to 10)	Defines the speed of a quick pan or tilt.

xprotect recording server New windows

This procedure documents the new recording server properties.

Figure 38 Recording Server New windows



These windows require the Milestone xprotect driver. You access them by clicking the **New** button at the bottom of the **Xprotect Device Manager** view.

NOTE: For more information about these common properties, refer to *Common properties and components*. This topic is elsewhere in this guide.

A Axis Video driver

Topics covered in this appendix

♦ Adding an Axis driver to a station
♦ Adding an Axis video device to a station
♦ Monitoring Axis video activity
♦ Common properties and components
♦ Common plugins (views)

The following topics include information that is unique to the Video Framework Axis video driver. For common video driver information, including the installation process, refer to the rest of this guide.

Palettes

Two palettes are available for the Axis driver:

- `axisVideo`, supports the older driver, and provides backward compatibility with earlier systems.
- `naxisVideo`, is the newer driver, which should be used for all upgraded and new installations.

Features

Supported features include:

- Automatic discovery of cameras
- PTZ operation, including Go To preset
- Focus and iris
- Surveillance Viewer
- Remote video connections
- Fox video streaming
- Graphics widgets
- Motion detection from the camera

Unsupported features

Unsupported features include:

- Alarm video playback
- Live video playback
- Switching between live and playback video
- Bidirectional alarms

Tested models

The Axis has been tested with the following cameras:

- Axis 215 PTZ with version 4.49 firmware
- Axis M114 W with version 5.00

Other models may or may not work with the driver depending on the firmware version installed. It is recommended to upgrade the Axis camera to the current firmware when using this video driver.

Requirements

Axis video driver requirements include the following:

- IP access between the camera and remote network controller
- Appropriate ports open; the defaults are port 80 for the web, port 554 for control, and port 9000 for data
- Security status of each camera. The software defaults to TLS (Transport Layer Security) secure communication. If one or more of your cameras does not support or is not configured to support secure communication, you can turn off this feature.

Adding an Axis driver to a station

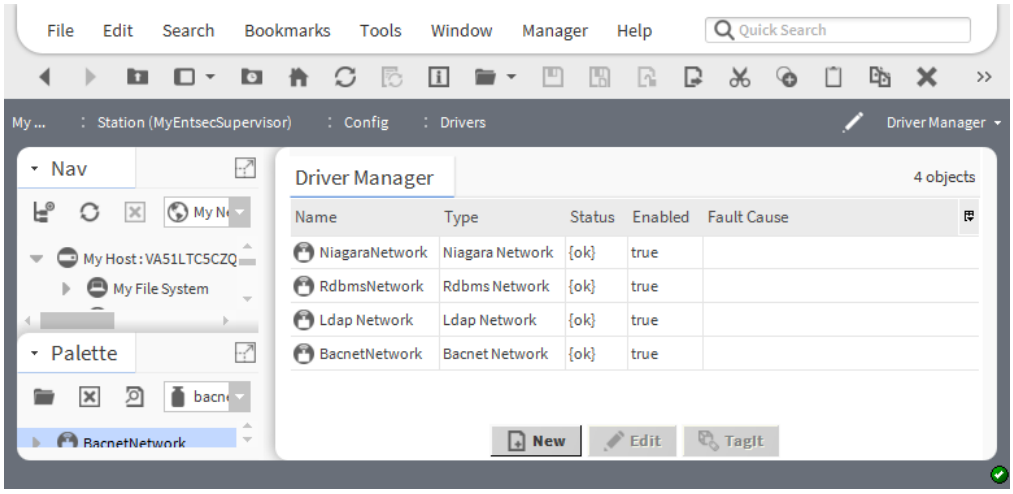
This topic adds an Axis network driver to a station.

Prerequisites: Using Workbench, you are connected to the Supervisor station (enterprise-wide configuration) or to your only remote host controller station (standalone configuration).

The security system defaults to TLS secure communication between each camera and security station. If your camera(s) do not support secure communication, you must change the network's **`Use Tls`** property to `false`. If your configuration includes cameras that support secure communication as well as ones that do not, you must create separate network drivers: one for the camera(s) that support secure communication and another for those that do not, and configure the network **`Use Tls`** property accordingly.

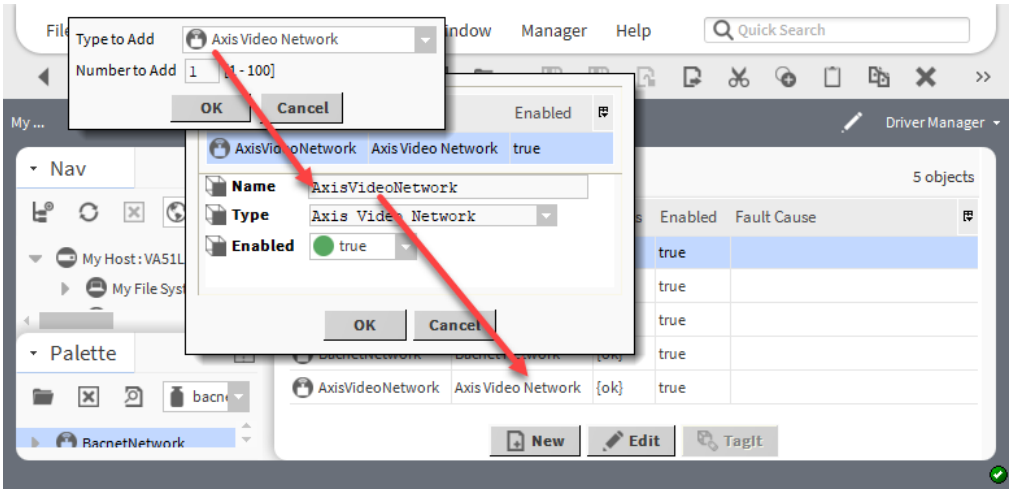
Step 1 In the **station** Nav tree **Config** folder, double-click the **Drivers** folder.

The **Driver Manager** view opens.



Step 2 To set up the Axis video network, click **New** .

The **New** windows open.



Step 3 Select the `Axis Video Network` option and click **OK**.

Step 4 In the second **New** window, name the network driver and click **OK**.

The driver opens automatically under the **Drivers** node in the station.

NOTE: Before performing any operation, wait for the Axis status to read, `{Ok}` in the **Driver Manager** view.

Step 5 If you need more than one network driver to accommodate one or more cameras that do not support secure communication, repeat these steps.

Step 6 To modify network properties, such as **`Use Tls`**, double-click the AxisVideoNetwork row in the **Driver Manager**, select `AX Property Sheet` or `Property Sheet` from the drop-down list of views, change network properties, and click **Save**.

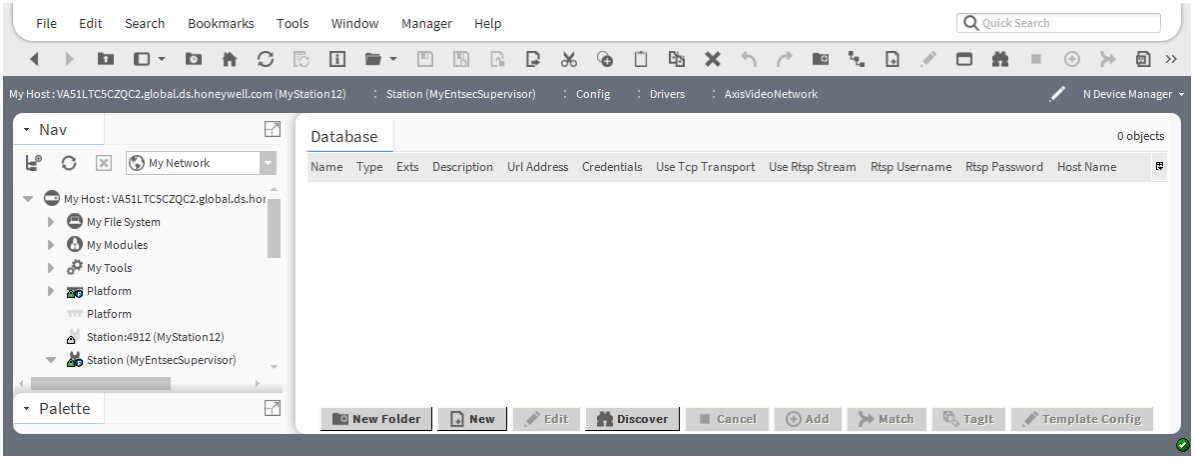
Adding an Axis video device to a station

This topic adds an Axis camera to a station. If your configuration includes cameras that do not support TLS secure communication, make sure you add them to the appropriate Axis network driver.

Prerequisites: Using Workbench, you are connected to the Supervisor station (enterprise-wide configuration) or to your only remote host controller station. You created one or more Axis network drivers.

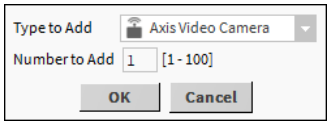
Step 1 Double-click the Axis driver row in the **Driver Manager** view.

The **N Device Manager** view opens.



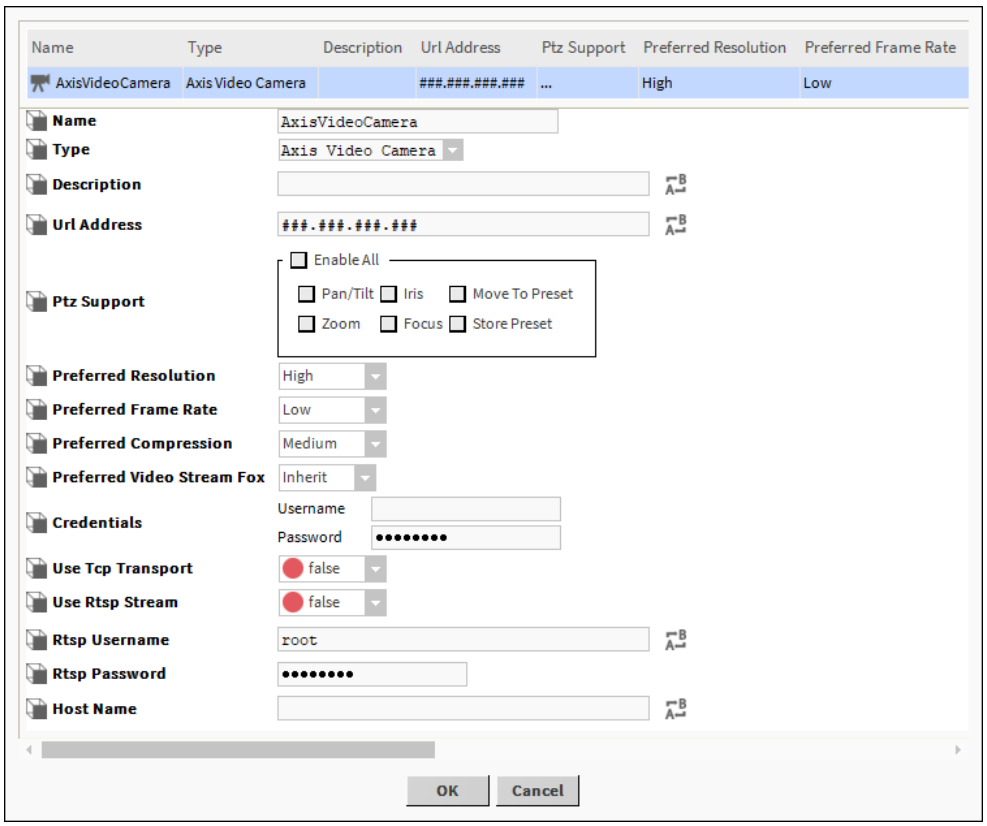
Step 2 To set up a new camera, click **New** .

The add **New** camera window opens.



Step 3 If not already selected, select the Axis Video Camera and click **OK**.

The **New** properties window opens.



For information about each property, refer to *Components* under *Axis Video Driver* in this document.

Step 4 Configure each property based on site requirements.

Most of the Axis device setup, configuration, import and export features are similar to other **VideoNetwork** driver devices.

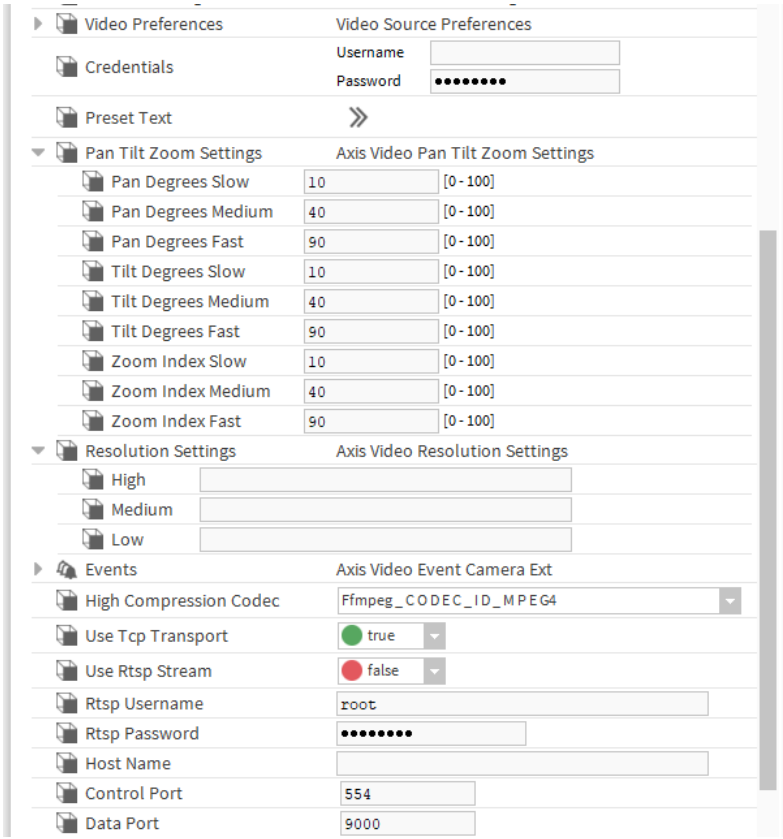
Monitoring Axis video activity

This procedure explains how to open an Axis camera view.

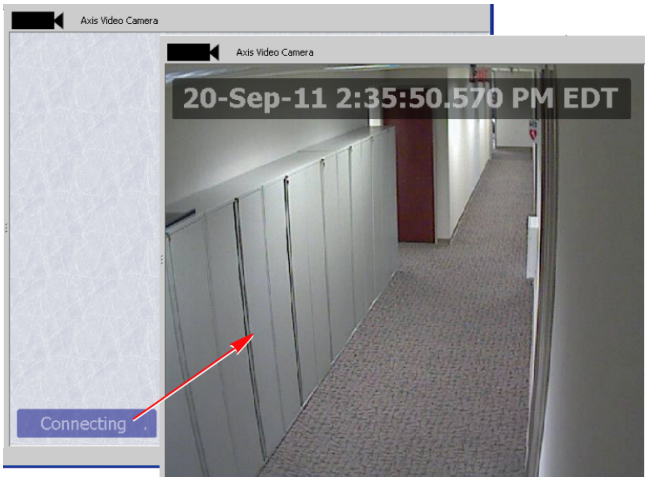
Prerequisites: Using Workbench, you are connected to the Supervisor station (enterprise-wide configuration) or to your only remote host controller station.

Step 1 In the Nav tree, expand **Station→Config→Drivers→AxisVideoNetwork** node.

Step 2 Double-click the Axis camera.



The system attempts to connect to the camera and, assuming correct configuration, displays the live video feed.



Common properties and components

Components include services, folders and other model building blocks. They may be dragged and dropped onto a property or wire sheet from a palette. These components are common to all video network drivers.

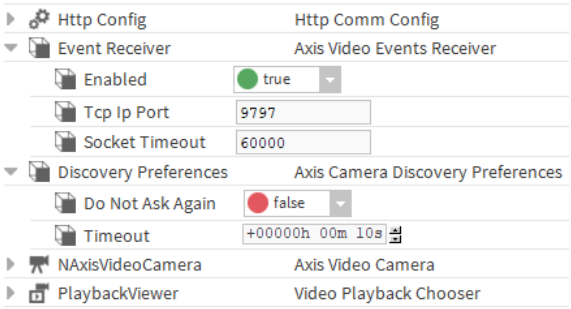
The descriptions included in the following topics appear as headings in documentation. They also appear as context-sensitive help topics when accessed by:

- Right-clicking on the component and selecting **Views→Guide Help**
- Clicking **Help→Guide On Target**.

naxisVideo-AxisVideoNetwork

This component is the top-level network component for the Axis video driver. It is available to drag from the **axisVideo** palette to the **Drivers** node in the nav tree, or by adding the driver using the **New** button in the **Driver Manager** view.

Figure 39 Axis Video Network properties



You access this view by right-clicking the **Axis Video Network** node in the Nav tree and clicking **Views→Property Sheet**.

In addition to the standard network properties (Status, Enabled, Fault Cause, Health, Alarm Source Info, Monitor, Tuning Policies, Fox Video Stream Preferred, and Poll), this component provides these properties.

Property	Value	Description
Http Config	additional properties	Configures Internet access. Refer to Http Config properties, page 93.
Event Receiver, Enabled	`true` (default) or `false`	Turns on and off the configuration of events coming in from the devices.
Event Receiver, Tcp Ip Port	number (defaults to 9797)	Identifies the network TCP/IP port.
Event Receiver, Socket Timeout	number (defaults to 60000)	Defines how long a connection waits to receive information from a device before timing out.
Discovery Preferences, Do Not Ask Again	`true` or `false` (default)	Determines the type of connection to use between the station and the camera. `true` uses the fox connection to route video output from the camera to the station. `false` disables this feature.
Discovery Preferences, Timeout	hours minutes seconds (defaults to 10 seconds)	Specifies how long to attempt the discover of an Axis camera before timing out.

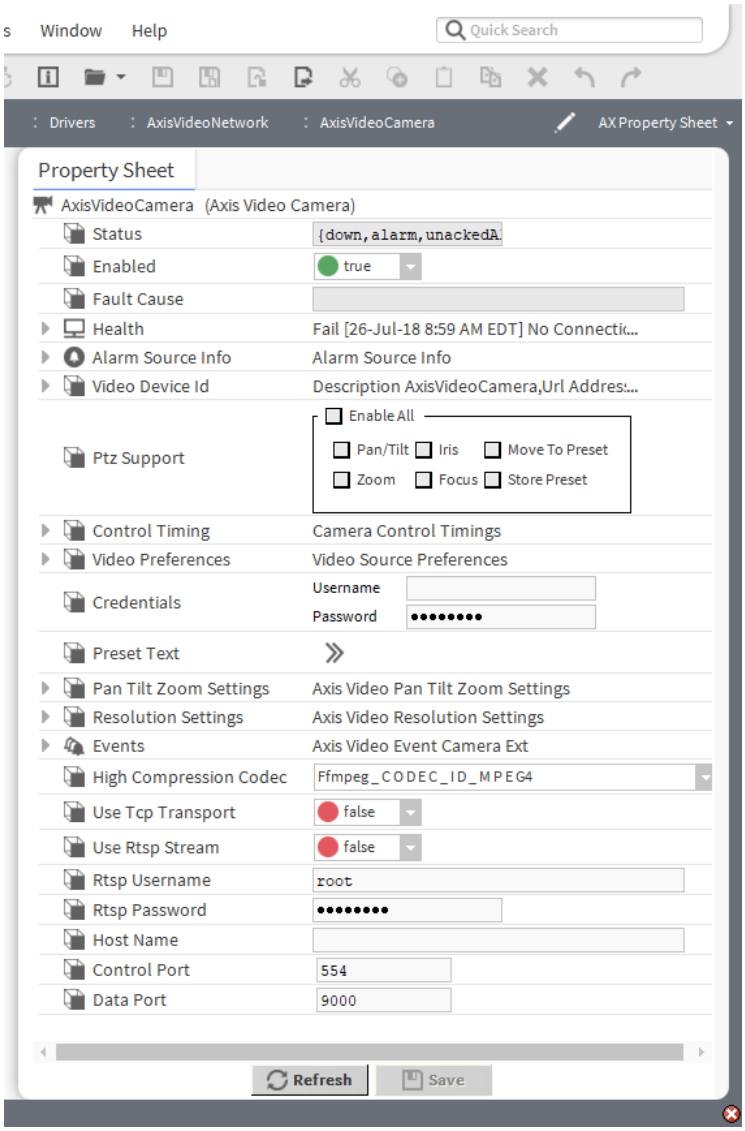
Http Config properties

Property	Value	Description
Use Tls	`true` (default) or `false`	Configures secure communication between the station and network devices. By default, the system uses TLS secure communication. You would change this network property to `false` only if a legacy device (camera) cannot support TLS. If some devices on your network support TLS and others do not, you may add two networks of the same type: one for the secure devices, and the other for those that do not support security. This works for an Axis network.
Address, Ip Address	IP address	Identifies the IP address of the Supervisor PC.
Address, Port	number	Defines the communication port in the Supervisor PC.
Connection Timeout	number of milliseconds	Defines how long the driver waits to connect before timing out.

naxisVideo-AxisVideoCamera

This component is the required device for working with the cameras supported by the Axis driver.

Figure 40 Axis Video Camera properties



You access these properties by double-clicking the **Axis Video Camera** node in the Nav tree, followed by selecting **Property Sheet** from the drop-down list in the upper right corner of the **Live Video** view.

In addition to the standard Status, Enabled, Fault Cause, Health, Alarm Source Info properties and the common camera-related properties (documented in *Camera properties*), this driver includes these unique properties:

Property	Value	Description
Credentials	text	Defines the Username and Password required to access the camera.
Pan Tilt Zoom Settings: Pan Degrees Slow, Medium and Fast	0–100 degrees each (defaults: 10, 40, 90 respectively)	Controls pan speed.

Property	Value	Description
Pan Tilt Zoom Settings: Tilt Degrees Slow, Medium and Fast	0–100 degrees each (defaults: 10, 40, 90 respectively)	Controls tilt speed.
Pan Tilt Zoom Settings: Zoom Index Slow Medium and Fast	0–100 degrees each (defaults: 10, 40, 90 respectively)	Controls zoom speed.
Resolution Settings: High, Medium and Low	number of pixels	Specifies the pixel resolution of each transmitted frame. Options are: `High`, `Medium`, or `Low`. The actual pixel values for these three relative settings are defined in the video device.
Events	additional properties	Serves as a container for video events, which the framework treats as points.
High Compression Codec	drop-down list	Selects the type of compression used by the camera.
Use Tcp Transport	`true` (default) or `false`	Turns on and off use of the channel that handles inbound TCP (Transport Control Protocol) requests from the station to the camera.
Use Rtsp Stream	`true` or `false` (default)	Turns RTSP (Real Time Streaming Protocol) on and off. This popular protocol controls a camera using DVD-style controls (play, pause, etc.)
Rtsp Username	text, defaults to `root`	Defines the user name required by RTSP to control the camera.
Rtsp Password	text	Defines the password required by RTSP to control the camera.
Host Name	URL (in the following format): <ip-address>/axis-media/media.amp>	Defines the host, which is required by RTSP.
Control Point	number (defaults to 554)	
Data Point	number (defaults to 9000)	

naxisVideo-AxisVideoEventCameraExt

This component serves as a container for video surveillance system event points that result from motion detected and camera failure.

There are no properties associated with this container.

Common plugins (views)

Plugins provide views of components and can be accessed in many ways. For example, double-click a component in the Nav tree to see its default view. In addition, you can right-click on a component and select from its **Views** menu.

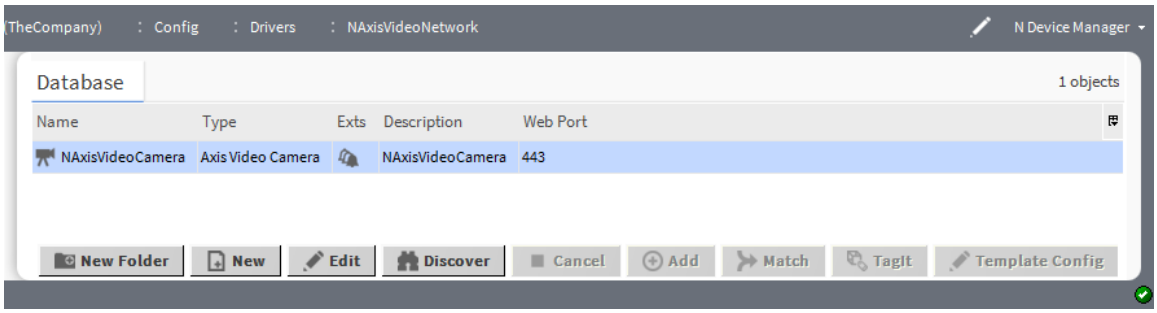
These views are common to all video network drivers.

For summary documentation on any view, select **Help→On View** (**F1**) from the menu or press **F1** while the view is open.

NAxisVideoNetwork - N Device Manager

This is the default view for the Axis network component.

Figure 41 Axis N Device Manager view



You access this view by expanding **Config→Drivers** and double-clicking **NAxisVideoNetwork** or right-clicking this node and clicking **Views→N Device Manager**.

Default columns

Column	Description
Name	Reports the name of the camera.
Type	Reports the type of camera.
Exts	Indicates the use of an extension.
Description	Provides additional information.
Web Port	Defines the https port used to communicate with the Supervisor station.

Additional columns

Column	Description
Path	Identifies the path to the camera in the station.
Url Address	Reports the universal resource locator for the camera.
Ptz Support	Indicates if the camera supports Ptz properties.
Preferred resolution	Reports the camera's currently-configured resolution.
Preferred Frame Rate	Reports the camera's currently-configured frame rate.
Preferred Compression	Reports the type of data compression the camera is currently configured to use.
Preferred Video Stream Fox	Indicates use of the Fox network.
Credentials	Reports the camera's username and password.
Use Tcp Transport	Indicates if the Transport Control Protocol channel is in use.
Use Rtsp Stream	Indicates of the Real Time Streaming Protocol is in use.
Rtsp Username	Indicates the username required by RTSP.

Column	Description
Rtsp Password	Indicates the password required by RTSP.
Host name	Identifies the Supervisor computer.

Buttons

- New Folder creates a new folder for organizing multiple cameras.
- New creates a new camera record in the database.
- Edit opens an existing camera record for updating.
- Discover searches the network for Axis cameras.
- Cancel terminates the search.
- Add inserts a record for a discovered camera in the database.
- Match associates a discovered camera with a record that is already in the database.
- TagIt associates metadata with the camera.
- Template Config updates a template.

B Milestone drivers

Topics covered in this appendix

♦ About Milestone Network and DVR configuration
♦ Common properties and components
♦ Common plugins (views)
♦ Windows

This appendix documents the drivers that support Milestone XProtect products.

Milestone software products and drivers

Milestone provides three video management software products:

- XProtect Enterprise
- XProtect Professional
- XProtect Corporate

The framework supports these three products with two drivers:

- The **Milestone Network (nmilestone)** driver supports the XProtect Enterprise and XProtect Professional products.
- The **Milestone XProtect Network (xprotect)** driver supports the XProtect Corporate product.

CAUTION: The three Milestone products do not support secure communication, therefore, it is not possible to secure the connection between a station and its Milestone devices.

Interfaces

Two interfaces are available to add and configure these drivers in a station:

- Workbench 3.8.208 or later
- Niagara Enterprise Security or Web User Interface (Web UI)

This document references both interfaces.

Driver naming conventions

You will find that the palette contains three Milestone drivers: **milestone**, **nmilestone**, and **xprotect**. The milestone driver is an older version, which is provided for backward compatibility. It should not be used for upgraded or new installations. The remaining two drivers **nmilestone** and **xprotect** are referred to in different ways depending where you are in the system:

Table 5 Milestone naming conventions

Driver name	Milestone product (s) supported	License name	.jar file name	Driver names in the Workbench palette	Add Driver name in the Web UI
nmilestone	XProtect Enterprise and XProtect Professional	milestoneVideo	milestone.jar	nmilestone	Milestone Network (nmilestone)
xprotect	XProtect Corporate	milestoneCorporate	xprotect.jar	xprotect	Milestone X Protect Network (xprotect)

About Milestone Network and DVR configuration

The system supports three Milestone DVR software products with two drivers: **`nmilestone`** and **`xprotect`**.

CAUTION: The three Milestone products do not support secure communication, therefore, it is not possible to secure the connection between a station and its Milestone devices.

Driver names

Between Workbench and the web UI you will encounter these names:

Table 6 Milestone names

Name in the Workbench palette	Name in the web UI	Milestone product(s) supported	License name	.jar file name
nmilestone	Milestone Network	XProtect Enterprise and XProtect Professional	milestoneVideo	milestone.jar
xprotect	Milestone X Protect Network	XProtect Corporate	milestoneCorporate	xprotect.jar

The nmilestone driver

This driver supports the Milestone XProtect Enterprise and Professional video management software programs running in a stand-alone (single controller) or company—wide installation that includes at least one Supervisor PC.

Nmilestone features

- Automatic discovery of cameras
- PTZ operations: control and go to presets
- Motion detection alarms and recording alarms
- Surveillance viewer
- Alarm video playback
- Live video playback
- Switching between live and playback video
- Remote video connections
- Fox video streaming
- Graphics widgets

Tested models

The nmilestone driver has been tested with the Milestone X Protect Enterprise version, 10.1a, build 1025.

Requirements

- IP access between the DVR or camera and remote controller
- Appropriate open ports: the defaults are port 80 for the web (image server port), central port 1237, and upload events port 1234.

Compliance

- To create presets, use the Milestone application. This driver does not support preset creation. It does support the Move-to-Preset option.
- Milestone cameras do not support: Enable Detection and Disable Detection. Even if you add an Event Detection Control Ext, it will not work with a Milestone camera.
- This driver does not support Iris and Focus controls.
- Camera health continues to report "Ok" even after the camera is disconnected from the network. This is an issue with the Milestone application. Video is not streamed for a disconnected camera.

The xprotect driver

This driver supports Milestone's xprotect Corporate video management software running in a company-wide installation that includes at least one Supervisor PC.

NOTE: For the purpose of configuring a camera, the xprotect driver must run in the Supervisor PC. For this reason, stand-alone systems, which have only one controller, do not support integrating a camera with the Milestone XProtect Corporate video management software. In a company-wide installation, the xprotect driver running in a controller provides alarm mapping (it resolves xprotect camera Ords that appear in the Supervisor's alarm console). No other xprotect features work in a controller.

xprotect features

Supported features include:

- Automatic discovery of cameras
- PTZ operations: control and go to presets
- Motion detection alarms and recording alarms
- Surveillance viewer
- Alarm video playback
- Live video playback
- Switching between live and playback video
- Remote video connections
- Fox video streaming
- Graphics widgets
- Support for a management server

Tested models

The xprotect driver has been tested with the Milestone X Protect Corporate product, version 10.1a, build 1375.

Required files

This file in the `Niagara_Home\modules` folder: `xprotect-wb.jar`

NOTE: The previous module name for the xprotect driver was `xprotect-se.jar`. If you upgrade a system, do not copy this old file to the `module` folder. Running the software with both drivers introduces conflicts.

These files in the `Niagara_Home\bin` folder:

- `VideoOS.Platform.dll`
- `VideoOS.Platform.SDK.dll`
- `xprotectBridgeService.exe`

Compliance

- The xprotect SDK API does not support preset creation. The xprotect video driver supports only the Move to Preset option. To create presets, use the Milestone Corporate software.
- For each camera, an action on the xprotect camera called Get Preset List must be invoked to read the list of presets from the Milestone Corporate software.Workbench provides this action, which takes immediate effect. Otherwise, getting presets from the camera occurs automatically on each camera ping.
- The xprotect SDK does not provide an API to add a camera programmatically to the management or recording servers. As a result, the xprotect driver does not support the add-net-camera option from Workbench. You must discover cameras to add them to a station.

- The xprotect SDK API does not support iris and focus controls. Consequently, the xprotect driver does not support the iris and focus operations from Workbench.
- The xprotect driver supports only Motion Detection Started and Motion Detection Stopped alarm conditions from the Milestone Corporate software.
- As motion detection events are polled from a recording server, recording servers must be discovered and added to the management server component apart from cameras.

Approving the camera's certificate

If you configured TLS secure communication between the camera to the station, connecting for the first time to the camera generates a certificate error. This is because the certificate from the camera has not been signed by a root CA certificate in the station's Trust Store.

Prerequisites: You connected to a camera for the first time using the web UI (a browser) and got a message that the certificate is not valid.

Step 1 Go ahead and make a connection to the camera.

Step 2 To locate the certificate:

- Using the web UI, navigate to **Controller (System) Setup→Remote Devices→Certificate Management**.
- Using Workbench navigate to **Station→Services→PlatformServices→CertManagement**.

Step 3 Click the **Allowed Hosts** tab.

Step 4 Open and view the certificate, confirm that its **Issued By** and **Subject** properties are as expected, and click **Ok**.

For a self-signed certificate, these properties should be the same. They should contain the name of the camera manufacturer or other identifiable text.

CAUTION: If you do not recognize the value of these properties, you may need to investigate with the camera manufacturer. This certificate authenticates the camera as a valid video server. Approving a bogus certificate opens your system to a man-in-the-middle attack.

Step 5 Assuming that the certificate is valid, click **Approve**; and respond to the confirmation window by clicking **Yes**.

The secure Axis video camera opens in the web UI's **Camera Manager** view.

Adding an xProtect Enterprise or Professional DVR

A DVR device can include a camera and display.

Prerequisites: You are connected to the remote host station that controls the devices. You are working in the web UI.

Step 1 From the main menu, click **Controller Setup→Remote Devices→Remote Drivers**.

The **Remote Drivers** view opens.

Step 2 Double-click on the `Milestone Network` row in the table.

The **Driver Manager** view opens with the **Milestone Network** tab selected.

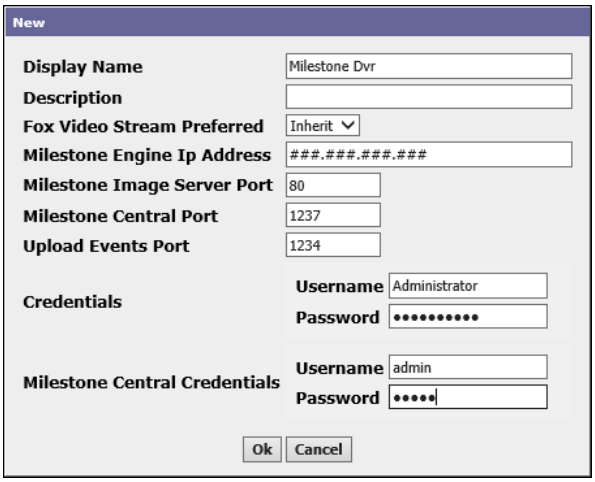
Step 3 Click the **DVRs** tab.

Step 4 Do one of the following:

- To edit the properties for an existing xProtect Enterprise or Professional DVR, double-click the DVR row in the table or select the DVR and click the Edit button ( ).
- To add a new xProtect Enterprise or Professional DVR, click the **DVRs** tab.

Step 5 To continue adding a DVR, click the New button ( ), select the DVR from the drop-down list, name it, and click **OK**.

The **New** window opens.



Step 6 Enter at least these properties and click **Ok**:

- **`Milestone Engine Ip Address`** is the IP address for the DVR software.
- **`Credentials`** (**`Username`** and **`Password`**) are for accessing the DVR.
- **`Milestone Central Credentials`** (**`Username`** and **`Password`**) are for accessing the Milestone management server.

Adding a DVR adds the tabs (containers) for cameras and displays as well as adding the driver to the **Driver Manager** view.

Adding an xProtect Corporate DVR

This procedure explains how to add an xprotect Corporate DVR to a station using the Web UI.

Prerequisites: The driver has been added and configured. You are using the web UI.

Step 1 From the main menu, click **Controller Setup→Remote Devices→Remote Drivers**.

The **`Remote Drivers`** view opens.

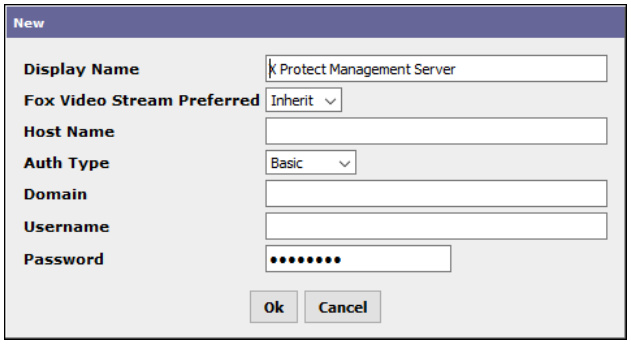
Step 2 Double-click the **Milestone X Protect Network** row in the **Remote Drivers** table.

Step 3 Click the **DVRs** tab.

The **DVR** view opens.

Step 4 Click the **New** button ( ).

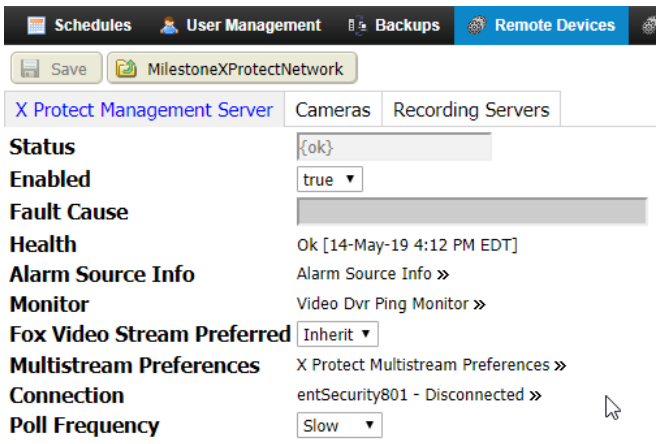
The **New** window opens.



Step 5 Enter the IP address for the remote controller in the **Host Name** property, create access credentials (**Username** and **Password**), and click **Ok**.

Step 6 Double-click the **X Protect Management Server** in the table.

The X Protect Management Server view opens with three tabs.



Notice that the **Connection** property shows "Connecting" and changes to "Connected."

Using Workbench to add an xProtect Corporate server

xProtect Corporate requires a management server to communicate with an NVR (Network Video Recorder). This procedure explains how to use Workbench to add this server.

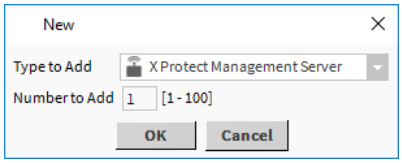
Prerequisites: You are working in Workbench and have installed the **MilestonexprotectNetwork** under **Drivers** node in the Nav tree.

Step 1 Double-click the **MilestonexprotectNetwork** node in the nav tree.

The **X Protect Server Manager** view opens.

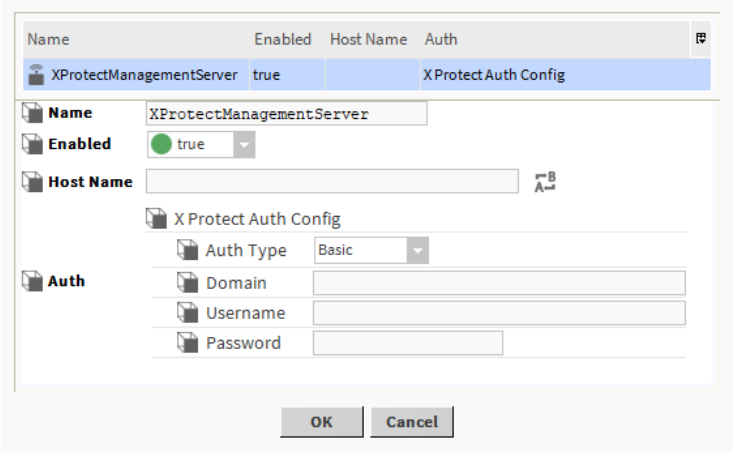
Step 2 Click the **New** button at the bottom of the view.

The **New** window opens.



Step 3 Optional: change the name and click **OK**.

A second **New** window opens.



These properties enable communication between the xprotect Management Server NVR and the X Protect Management Server.

Most features are similar to other **VideoNetwork** driver devices. For property details, refer to the xprotect-xprotectManagementServer component topic in the *Reference*.

Step 4 Configure the properties and click **OK**.

The `xprotectManagementServer` opens in the **X Protect Server Manager** view.

This view has the standard **New** and **Edit** buttons that you can use to add, configure and monitor Milestone Corporate video devices.

Step 5 Expand the **MilestonexprotectNetwork** and **xprotectManagementServer** nodes in the nav tree.

The **xprotectManagementServer** node contains two additional nodes: **Cameras** and **Recording Servers**.

Discovering cameras

This procedure is for discovering cameras when using the Web UI.

Step 1 From the main menu, click **Controller (System) Setup→Remote Devices→Remote Drivers**.

The **`Remote Drivers Manager`** view opens.

Step 2 Do one of the following:

- If you are using the nmilestone driver, double-click the `Milestone Network` row in the table and click the **`DVRs`** tab, and double-click a DVR row in the table.
- If you are using the xprotect driver, double-click the `X Protect Management Server` row in the table, click the **`DVRs`** tab, and double-click the `XProtectManagementServer` row in the table.

Step 3 Click the **`Cameras`** tab.

Step 4 Click the Discover button ( ).

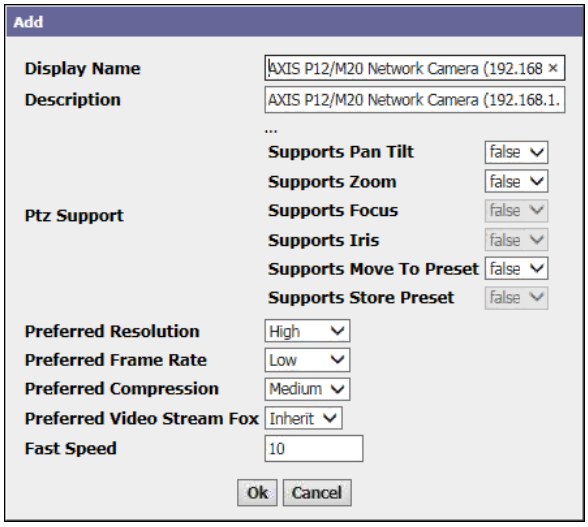
The system discovers the cameras.

Step 5 Select a camera in the **`Discovered`** pane, and click the Add button ( ).

The system adds the discovered camera to the **`Database`** pane.

Step 6 To configure the camera, double-click its row in the table.

The **Add** camera window opens.



These properties depend on the camera. To understand the implications of making changes to camera properties, refer to the documentation for the camera.

Step 7 Check the configuration and click **Ok**.

Discovering a recording server

A recording server is required to poll motion-detection events.

Prerequisites: You have added the driver and X Protect Management Server. The X Protect Management Server tab on the **X Protect Management Server** view is open.

Step 1 Click the **Recording Servers** tab.

Step 2 Click the Discover button ( ).

Step 3 When the recording server(s) are discovered, click a server, and click the add button ( ).

The **Add** recording servers window opens.

Step 4 Make any changes to the **`Display Name`** and **`Description`** and click **Ok**.

Playing back a video

Using this procedure you can play back a video clip without leaving the alarm console recipient.

Prerequisites: The X Protect Management Server, recording servers and devices have been added and configured. An alarm condition has been configured to report detected motion.

Step 1 On the main menu, click **Monitoring→Alarm Console**.

The **ConsoleRecipient - Snapshot** view opens.

Step 2 Select a video event and click the Review Video button ( ).

The video clip opens and plays back.

Viewing live and recorded video

This procedure explains how to view a recorded video clip through the **Cameras** tab.

Prerequisites: The xprotect Milestone driver has been added, cameras and recording servers found. The **X Protect Management Server** view is open.

Step 1 Click the **Cameras** tab.

Step 2 Click an added camera.

The **camera** view opens with the **X Protect Camera** tab selected.

Step 3 Click the **Live View** button and respond to the security question.

After a moment, the **live** view opens

Step 4 Click your browser's go-back button to return to the **X Protect Camera** tab.

Step 5 Click the **playback** view control button ( )

The most recently recorded video plays back.

Step 6 Click the alarm control at the bottom of the window.

The **Browse Events** window opens.

Step 7 Select an event and click **View**.

The saved video clip plays back.

If you added a display, the resulting **Surveillance Viewer** lists the cameras displayed on the left side of the monitor.

Using Workbench to add a driver

You add a Milestone driver to a station using the **Driver Manager**. You can also drag the **driver** component from the palette to the nav tree **Drivers** folder.

Prerequisites: The station is licensed for a Milestone driver. Workbench is open.

Step 1 Start the platform and station.

NOTE: At times, it can take from a few seconds to a minute to establish communication with the station.

Step 2 In the **station** nav tree **Config** folder, double-click the **Drivers** folder.

The **Driver Manager** view opens.

This view manages network video drivers. The example shows more than one video driver in the station.

Step 3 Do one of the following:

a. To set up a driver for the first time, click the **New** button at the bottom of the view.

b. To change driver properties, select the driver (activates the button) and click the **Edit** button.

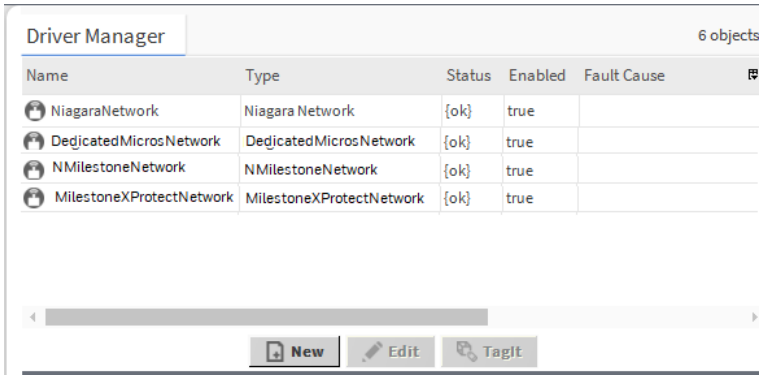
The appropriate windows open.

Step 4 To add the driver, select it from the **Type to Add** list and click **Ok**.

NOTE: There are three Milestone drivers: `Milestone Network (milestone)`, `Milestone Network (nmilestone)` and `Milestone X Protect Network`. The first (milestone) is an older version, which is provided for backward compatibility. Do not select this version unless you know you need it. The other versions are supported.

Step 5 Enter the **New** properties and click **OK**.

When adding a driver, the new driver opens under the **Drivers** node of your station and on the **Remote Drivers** view when using the Web UI.



Step 6 Before performing any additional operation, wait for the Milestone status to read, `{Ok}` in the **Driver Manager** view.

Using Workbench to add a DVR

This procedure uses Workbench to add an nmilestone DVR.

Prerequisites: The driver has been installed, Workbench is open and the nmilestone palette is open.

Step 1 Expand the **Config** node in the nav tree and double-click **Drivers**.

The **Driver Manager** view opens.

Step 2 Click the **New** button at the bottom of the view, or drag the device component from the palette to the **driver** node in the Workbench nav tree **Drivers** folder.

Step 3 Name the driver and click **OK**.

Using Workbench to discover cameras

This procedure documents how to discover devices that are compatible with the nmilestone driver using Workbench.

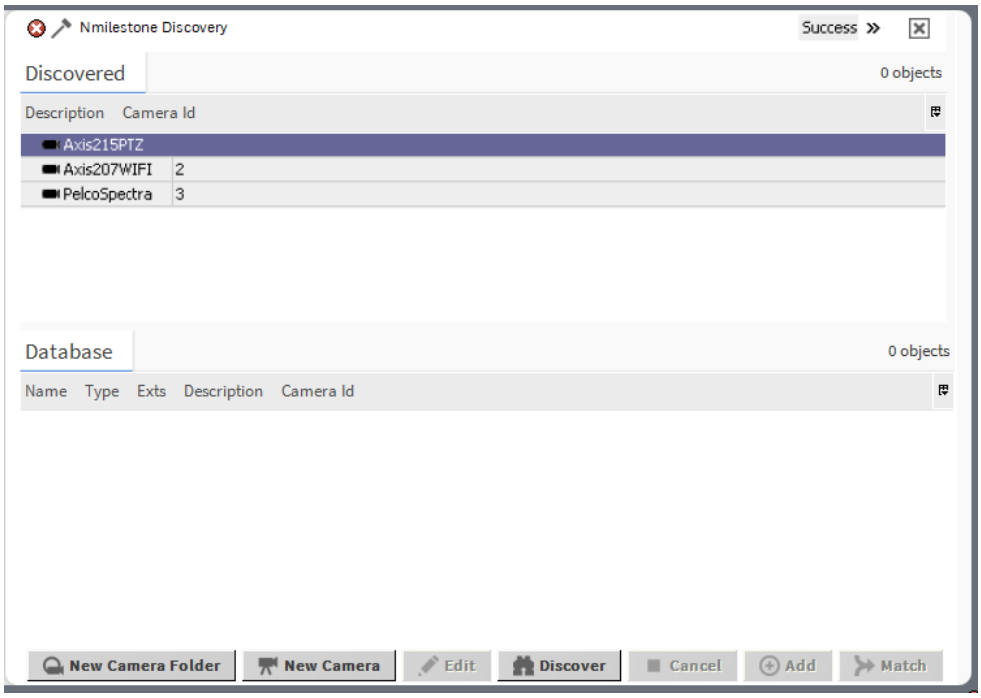
Prerequisites: The nmilestone driver has been installed. Your platform and station are open.

Step 1 Expand **Drivers→NMilestoneNetwork→NMilestoneDvr** node in the nav tree, and double-click **Cameras**.

The **Camera Manager** view opens.

Step 2 Click the **Discover** button at the bottom of the view.

The **Discovered** and **Database** panes open.



This view has a standard appearance, with a **Discovered** pane and a **Database** pane that is similar to all driver **Device Manager** views.

The **Camera Manager** view has **Add**, **New** and **Edit** buttons that are used to add, configure, and monitor device drivers. The discover, add, and edit features are similar to other camera devices.

Step 3 Select the camera to add and click the **Add** button.

Using Workbench to monitor video activity

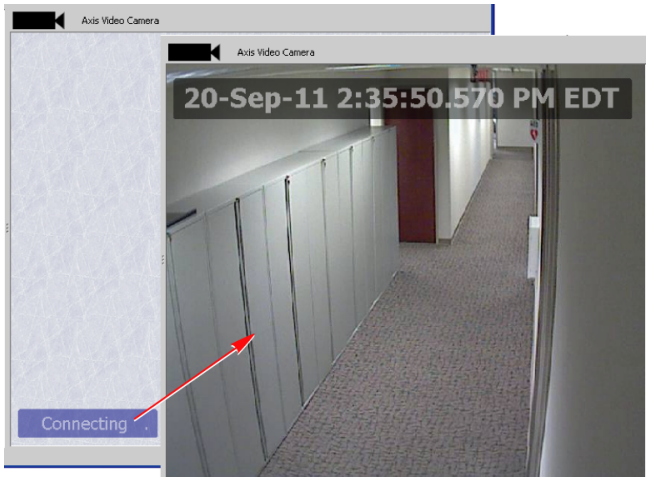
This procedure provides steps for viewing live video using theWorkbench interface.

Prerequisites: The nmilestone driver is installed and configured.

Step 1 Expand **Drivers→Milestone Network→Milestone Dvr→Cameras**.

The **Device Manager** view opens.

Step 2 Double-click the camera in the nav tree.



Common properties and components

Components include services, folders and other model building blocks. They may be dragged and dropped onto a property or wire sheet from a palette. These components are common to all video network drivers.

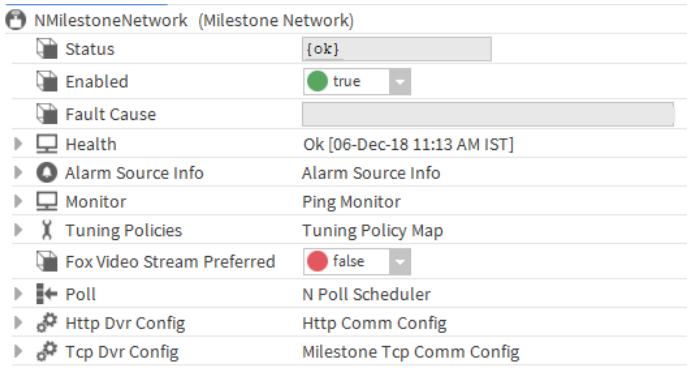
The descriptions included in the following topics appear as headings in documentation. They also appear as context-sensitive help topics when accessed by:

- Right-clicking on the component and selecting **Views→Guide Help**
- Clicking **Help→Guide On Target**.

nmilestone-MilestoneNetwork

This component is the top-level network component for the nmilestone driver. It is available to drag from the **nmilestone** palette to the **Drivers** node in the nav tree, or by adding this network-level component from the **Driver Manager** view using the **New** button.

Figure 42 NMilestoneNetwork properties



You access this view in Workbench by right-clicking the **NMilestoneNetwork** node in the nav tree and clicking **Views→Property Sheet**.

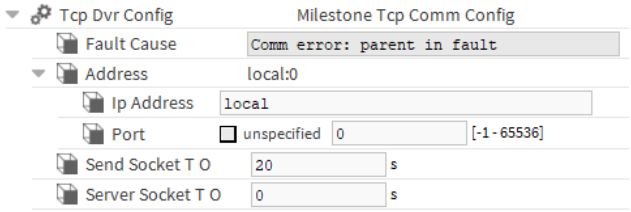
You access these properties in the security framework Web UI by expanding **System Setup→Remote Devices**, and clicking **Remote Drivers**, followed by double-clicking the name of the network in the **Remote Drivers** table.

NOTE: This topic documents only the properties that are unique to this component. For the common properties, see *Common properties* elsewhere in this guide.

Property	Value	Description
Poll	multiple properties	Reports and configures polling-related properties.
Http Dvr Config	**Fault Cause** and **Address**	Reports the cause of any communications fault and configures the **Ip Address** and **Port** for Http communication.
Tcp Dvr Config	multiple properties	See Tcp Dvr Config, page 111.

Tcp Dvr Config

Figure 43 Tcp Dvr Config properties

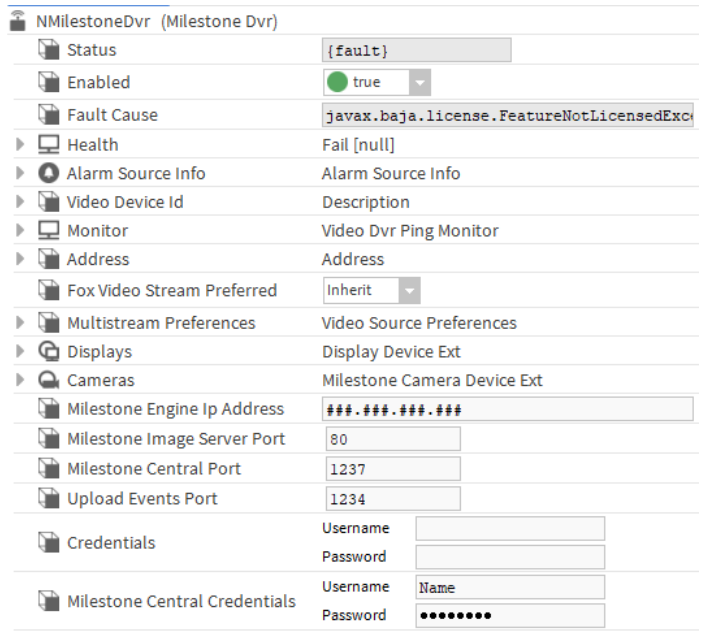


Property	Value	Description
Fault Cause	read-only	Reports the cause of any communications fault .
Address	**Ip Address** and **Port**	Configures the **Ip Address** and **Port** for Http communication.
Send Socket T O (Time Out)	seconds, default = 0 (zero)	Accesses the communication stack used to send messages. Defines an amount of time used to listen on the sockets that serve outgoing messages.
Server Socket T O (Time Out)	seconds, default = 0 (zero)	Accesses the communication stack used to receive messages. Defines an amount of time used to listen on the sockets that serve incoming messages.

nmilestone-MilestoneDvr

This component is required to work with the cameras supported by the Milestone DVR (Digital Video Recorder). It is available to drag from the **milestone** palette to the **Milestone** driver node in the Nav tree, or by adding the component using the new button in the **Device Manager** view.

Figure 44 nmilestone Dvr view (Workbench and Web UI)



You access this view in Workbench by right-clicking the **NMilestoneDvr** node in the Nav tree and clicking **Views→Property Sheet**.

You access this view in the security framework Web UI by expanding **System Setup→Remote Devices**, clicking **Remote Drivers**, double-clicking the network name in the **Remote Drivers** table, clicking the **DVRs** tab, followed by double-clicking the name of the Milestone Dvr in the **DVRs** table.

NOTE: This topic documents only the properties that are unique to this component. For the common properties, see *Common properties* elsewhere in this guide.

Property	Value	Description
Video Device Id, Description sub-property	text	Defines a longer name for the DVR.
Displays		Serves as a container for the display devices.
Cameras		Serves as a container for the camera devices.
Milestone Engine Ip Address	Ip format	Identifies the Milestone server address.
Milestone Image Server Port	defaults to 80	Identifies the Milestone image server port.
Milestone Central Port	defaults to 1237	Identifies the Milestone central port.
Upload Events Port	defaults to 1234	Identifies the Milestone port used to upload events to Enterprise Security.
Credentials	Username (defaults to Name) and Password	Defines the Milestone image server credentials.
Milestone Central Credentials	Username and Password	Defines the Milestone central server credentials.

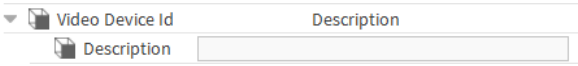
Cameras Device Extension shared property

Property	Value	Description
Do Not Ask Again	`true` (default) or `false`	Hides (`true`) the prompt that normally opens when you click the discover button on the **Device Manager** view.

nmilestone-MilestoneCameraDeviceExt

This component extension adds a camera container to the nmilestone driver's **nmilestoneDvr** component.

Figure 45 nmilestone camera properties



To access this property in Workbench, right-click the **Cameras** node under the **nmilestoneDvr** in the nav tree, and click**Views→Property Sheet**.

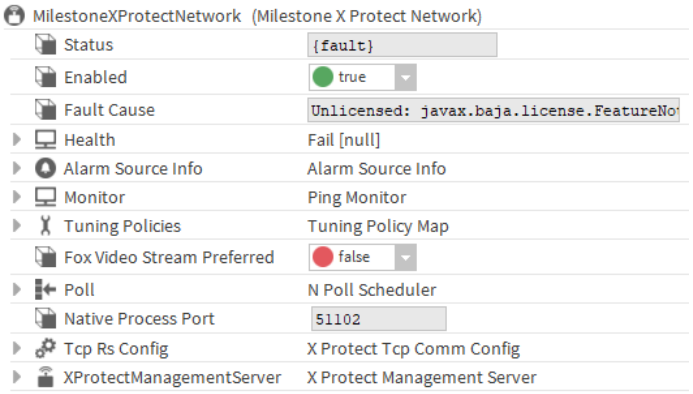
To access this property using the security framework Web UI, expand **System Setup→Remote Devices**, click **Remote Drivers**, double-click the network name in the **Remote Drivers** table, click the **DVRs** tab, double-click the name of the DVR in the **DVRs** table, click the **Cameras** tab, and click the preferences control button  .

The **`Do Not Ask Again`** property is documented in the common *Camera Properties* topic in this guide.

xprotect-MilestonexprotectNetwork

This component is the top-level network component for the xprotect driver (Milestone Corporate Video Driver). It is available to drag from the **xprotect** palette to the **Drivers** node in the Nav tree, or by adding this network-level component from the **Driver Manager** view using the **New** button.

Figure 46 Milestone X Protect Network properties



You access the Workbench properties by right-clicking the **MilestonexprotectNetwork** node in the nav tree and clicking **Views→Property Sheet**.

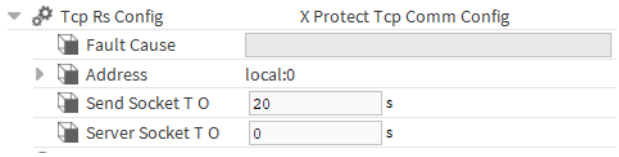
You access these properties in the security framework Web UI by expanding **System Setup→Remote Devices**, and clicking **Remote Drivers**, followed by double-clicking the name of the network in the **Remote Drivers** table.

NOTE: This topic documents only the properties that are unique to this component. For the common properties, see *Common properties* elsewhere in this guide.

Property	Value	Description
Poll	multiple properties	Reports and configures polling-related properties.
Native Process Port	defaults to 53442	Not used.
Tcp Rs Config		See Tcp Rs Config, page 113.

Tcp Rs Config

Figure 47 Tcp Rs Config properties



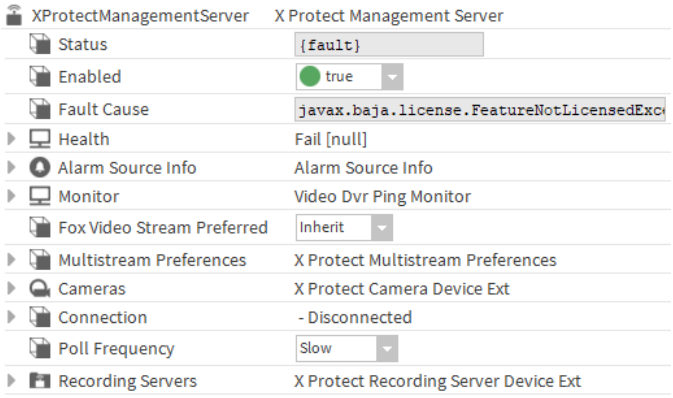
Property	Value	Description
Fault Cause	read-only	Reports the cause of any communications fault .
Address	**Ip Address** and **Port**	Configures the **Ip Address** and **Port** for Http communication.

Property	Value	Description
Send Socket T O	seconds, default = 0 (zero)	Accesses the communication stack used to send messages. Defines an amount of time used to listen on the sockets that serve outgoing messages.
Server Socket T O	seconds, default = 0 (zero)	Accesses the communication stack used to receive messages. Defines an amount of time used to listen on the sockets that serve incoming messages.

xprotect-xprotectManagementServer

The xprotect driver requires access to a management server to verify authentication. This component is the required server for working with Milestone xprotect, NVR-supported cameras.

Figure 48 Milestone X Protect Management Server properties



You access the Workbench properties by right-clicking the **X Protect Management Server** node in the Nav tree and clicking **Views→Property Sheet**.

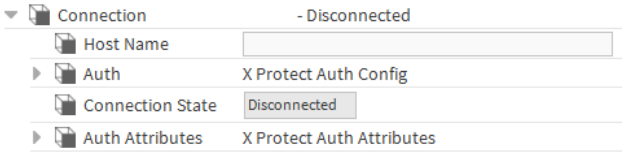
You access these properties in the security framework Web UI by expanding **System Setup→Remote Devices**, clicking **Remote Drivers**, double-clicking the `MilestonexprotectNetwork` row in the **Remote Drivers** table, clicking the **DVRs** tab, followed by double-clicking the `X Protect Management Server` row in the **DVRs** table.

NOTE: This topic documents only the properties that are unique to this component. For the common properties, see *Common properties* elsewhere in this guide.

Property	Value	Description
Cameras	multiple properties	Serves as a container for one or more cameras. Refer to *xprotect-xprotectCameraDeviceExt* elsewhere in this document.
Connection	multiple properties	See Connection, page 115.
Poll Frequency	`Slow` (5000 milliseconds is the default)	Polls points, objects and devices in a device network. Options define how often the system polls. • `Fast` polls every 1000 milliseconds • `Normal` polls every 3000 milliseconds • `Slow` polls every 5000 milliseconds
Recording Servers	multiple properties	Serves as a container for one or more recording servers. Refer to *xprotect-xprotectRecodingServerDeviceExt* elsewhere in this document.

Connection

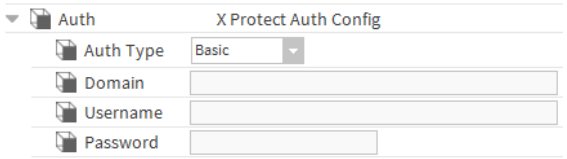
Figure 49 Connection properties



Property	Value	Description
Host Name	text	Defines the xprotect corporate server's host name.
Auth	multiple properties	Refer to Auth properties, page 115.
Connection State	read-only	Indicates the current condition of the server.
Auth Attributes	multiple properties	Refer to Auth Attributes, page 115

Auth properties

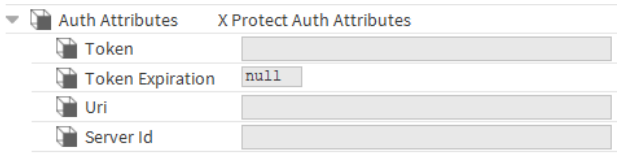
Figure 50 Authentication properties



Property	Value	Description
Auth Type	drop-down list Basic (default)	Defines the type of authentication to use: Basic or Windows-based user to access the Milestone corporate server.
Domain	domain name format	Defines the domain name when the authentication type is Windows.
Username	text	Defines the user name required by the Milestone corporate server.
Password	text	Defines the password required by the Milestone corporate server.

Auth Attributes

Figure 51 Authentication attributes



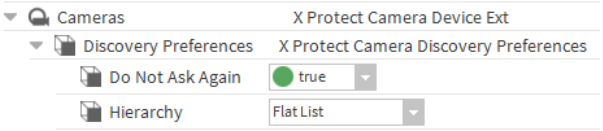
Property	Value	Description
Token	read-only	Indicates the token Enterprise Security receives upon completion of a successful authentication. This token is used later.
Token Expiration	read-only	Indicates when the token becomes no longer valid. Until this date, the system uses the token in any number of image-server

Property	Value	Description
		connect requests. During an open image-server session, the token stands in for the user name and password. Enterprise Security sends a request for a new token before the current token expires.
Uri	read-only	The URI to which to connect to get an updated token.
Server Id	read-only	Identifies the Milestone xprotect corporate server.

xprotect-xprotectCameraDeviceExt

This extension comes, by default, with the DVR component and is used to contain xprotect cameras. The primary view of this component is the **Camera Manager**.

Figure 52 xprotect Camera Device Extension properties



You access these properties by right-clicking the Milestone **Cameras** node in the nav tree and clicking **Views→Property Sheet**.

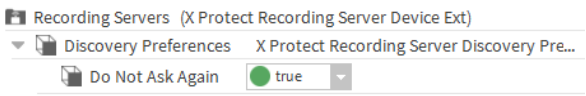
To access these properties using the security framework Web UI, expand **System Setup→Remote Devices**, click **Remote Drivers**, double-click the network name in the **Remote Drivers** table, click the **DVRs** tab, double-click the name of the DVR in the **DVRs** table, click the **Cameras** tab, and click the preferences control button  .

Property	Value	Description
Do Not Ask Again	`true` (default) or `false`	See *Camera properties* in this guide.
Hierarchy	`Flat List` (default)	• `User Defined` identifies the folder that was set up as a device group to be used for camera discovery. • `System Defined` identifies a folder in the physical hierarchy, for example, **Server→Recorder→Hardware** • `Flat List` identifies the lowest camera in the hierarchy of cameras to discover in the Milestone corporate server.

xprotect-xprotectRecordingServerDeviceExt

This component extension adds a container.

Figure 53 Recording Servers device extension properties



To access this property, right-click the **Recording Servers** node under the **xprotectManagementServer** in the nav tree, and click**Views→Property Sheet**.

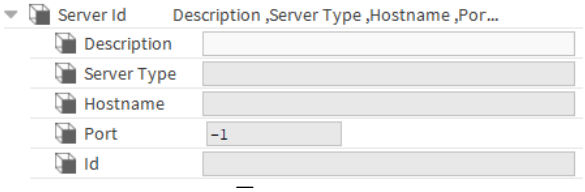
To access this property using the Web UI, expand **System Setup→Remote Devices**, click **Remote Drivers**, double-click the network name in the **Remote Drivers** table, click the **DVRs** tab, double-click the name of the DVR in the **DVRs** table, click the **Recording Servers** tab, and click the preferences control button .

NOTE: This topic documents only the properties that are unique to this component. For the common properties, see *Common Video Driver properties* elsewhere in this guide.

Property	Value	Description
Id	multiple properties	See Id properties, page 117.
Poll Frequency	drop-down list, default: `Slow`	Polls points, objects and devices in a device network. Options define how often the system polls. • `Fast` polls every 1000 milliseconds • `Normal` polls every 3000 milliseconds • `Slow` polls every 5000 milliseconds

Id properties

Figure 54 Id properties



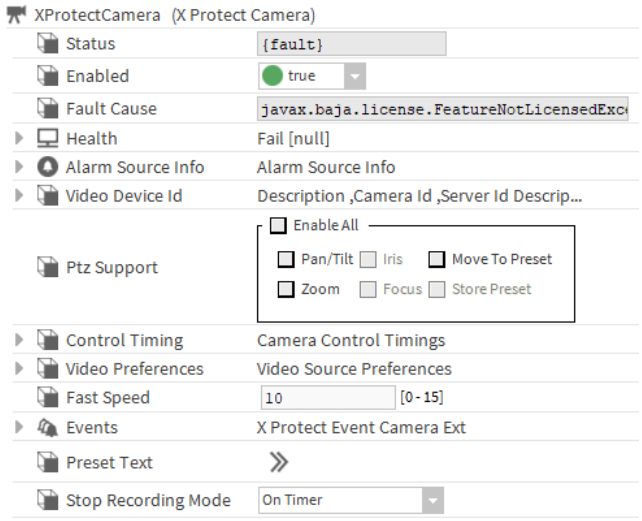
A Milestone server can be configured with one or more recording servers. Enterprise Security cannot create a recording server. It can only discover and add one or more recording servers under the xprotect management server. Discovery should be performed in Enterprise Security to ensure event notification, such as motion detection.

Property	Value	Description
Description	text	Describes the recording server.
Server Type	read-only	Identifies the type of recording server.
Hostname	read-only	Displays the host name retrieved dring the discovery process.
Port	read-only	Identifies the port over which the recording server is running.
Id	read-only	Identifies the identification number or name associated with the recording server.

xprotect-xprotectCamera

This component documents xprotect camera properties.

Figure 55 xprotectCamera properties



You access these properties by right-clicking the Milestone **X Protect Camera** node in the nav tree and clicking **Views→Property Sheet**.

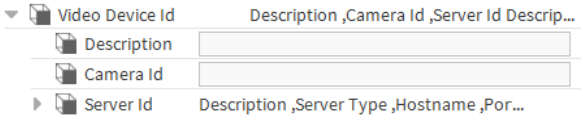
To access these properties using the security framework Web UI, expand **System Setup→Remote Devices**, click **Remote Drivers**, double-click the `MilestonexprotectNetwork` row in the **Remote Drivers** table, click the **DVRs** tab, double-click the `X Protect Management Server` row in the **DVRs** table, click the **Cameras** tab, and click the `X Protect Camera` row in the **Cameras** table.

NOTE: This topic documents only the properties that are unique to this component. For the common properties, see *Common properties* elsewhere in this guide.

Property	Value	Description
Video Device Id	multiple properties	Refer to Video Device Id, page 118
Ptz Support	multiple option boxes	Refer to common *Camera properties* elsewhere in this document.
Control Timing	multiple properties	Refer to common *Camera properties* elsewhere in this document.
Video Preferences	multiple properties	Refer to common *Display properties* elsewhere in this guide.
Fast Speed	0–15 (defaults to 10)	Defines the speed of a quick pan or tilt.
Events	container	This is a container for the **xprotect-xprotectEventCameraExt** component.
Preset Text	opens the **Enum** window	Refer to common *Camera properties* elsewhere in this document.

Video Device Id

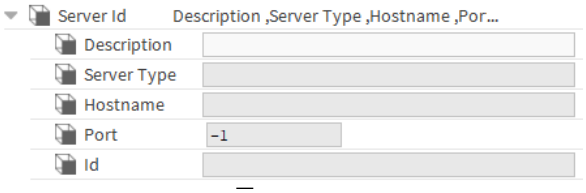
Figure 56 Video Device Id properties



Property	Value	Description
Description	text	Provides a name for the device.
Camera Id	text	Identifies the device by its domain name or IP address.
Server Id	multiple properties	Refer to Video Device Id Server Id properties, page 119.

Video Device Id Server Id properties

Figure 57 Server Id properties



Most properties are read-only because it is not possible to create a recording server in Enterprise Security. Recording Servers are discovered.

Property	Value	Description
Description	text	Allows you to enter text to describe the discovered recording server.
Server Type	read-only	Identifies the type of the discovered recording server.
Hostname	read-only	Reports the host name of the discovered recording server.
Port	read-only	Identifies the port used by the discovered recording server.
Id	read-only	Identifies the unique identifier assigned in the Milestone server to the DVR.

xprotect-xprotectEventCameraExt

This component serves as a container for video surveillance system event points that result from motion detected and camera failure.

There are no properties associated with this container.

Common plugins (views)

Plugins provide views of components and can be accessed in many ways. For example, double-click a component in the Nav tree to see its default view. In addition, you can right-click on a component and select from its **Views** menu.

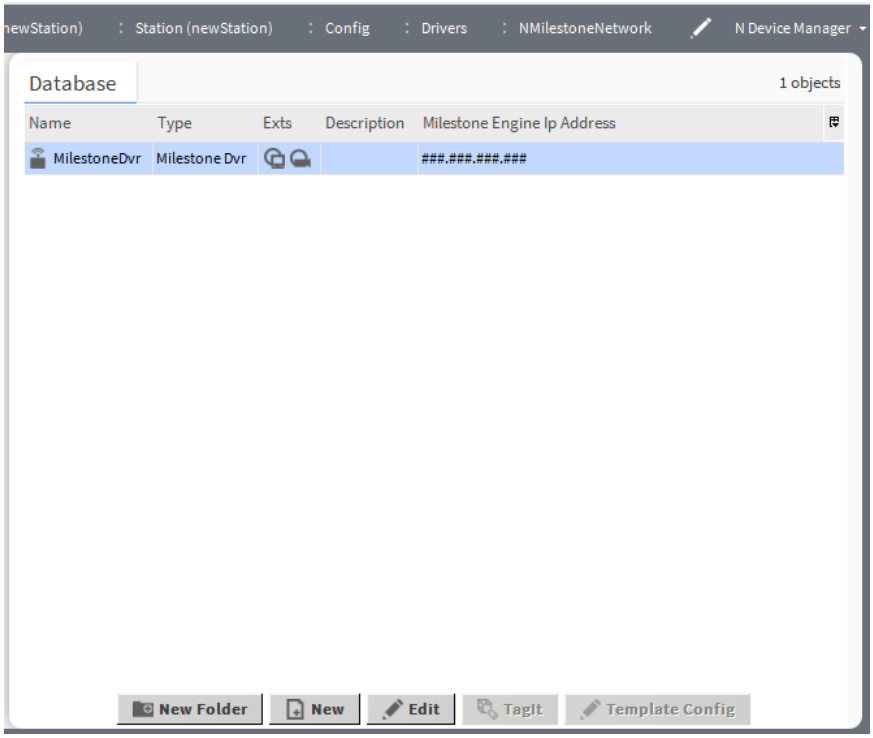
These views are common to all video network drivers.

For summary documentation on any view, select **Help→On View** (**F1**) from the menu or press **F1** while the view is open.

Device Manager (Milestone)

This plugin is the default view of the **Milestone** component as it opens in Workbench. It has a standard appearance with a **Database** pane and table that is similar to most **Device Manager** views associated with Niagara 4.

Figure 58 Device Manager



The Milestone **Device Manager** view has the standard buttons used to add, update and monitor Milestone video devices similar to the way other network devices are configured:

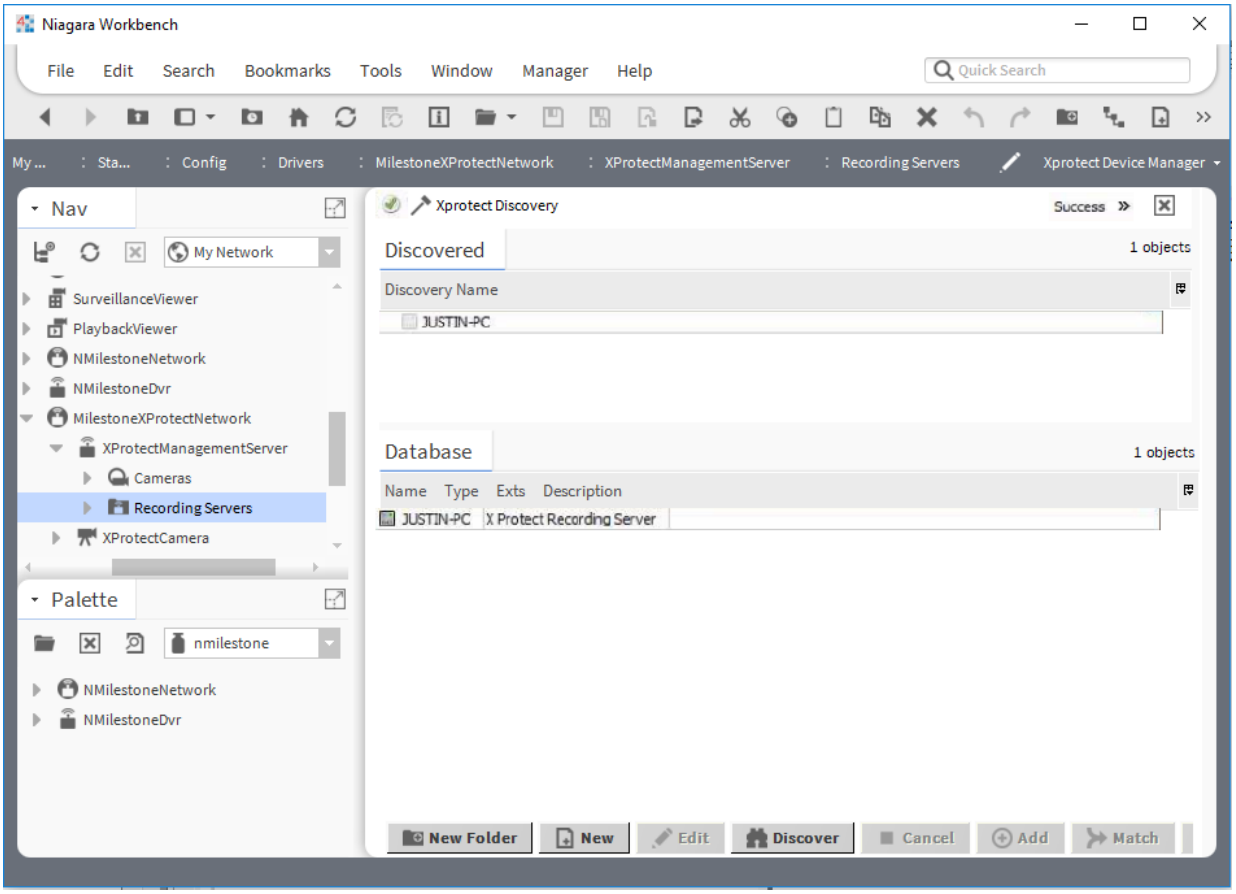
- The **New Folder** creates a sub-folder, which you can use to organize multiple cameras.
- The **New** button opens the **New** window.
- The **Edit** button opens the **Edit** window.

The **New** and **Edit** buttons display the property sheet for the device.

xprotect Device Manager (Milestone)

This plugin is the default view of the **xprotect** component as it opens in Workbench. It has a standard appearance with a **Database** pane and table that is similar to most **Device Manager** views associated with Niagara 4.

Figure 59 Device Manager



The xprotect **Device Manager** view has the standard buttons used to add, update and monitor Corporate video devices similar to the way other network devices are configured:

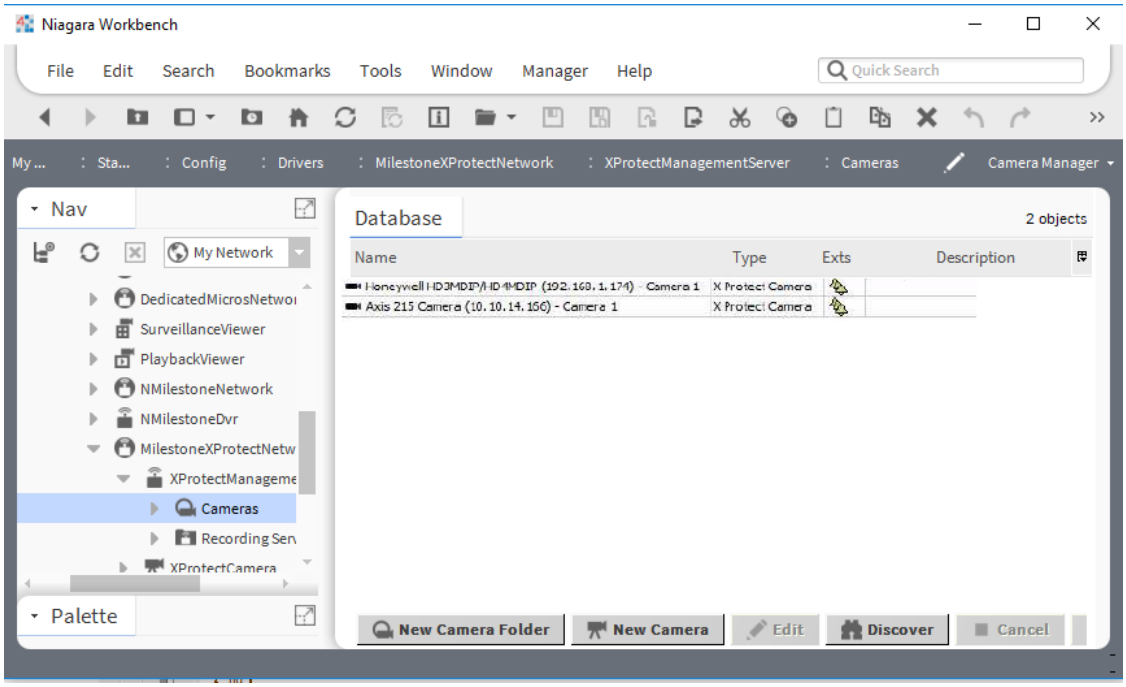
- The **New Folder** creates a sub-folder, which you can use to organize multiple cameras.
- The **New** button opens the **New** window.
- The **Edit** button opens the **Edit** window.

The **New** and **Edit** buttons display the property sheet for the device.

Camera Manager (Milestone)

This is the default view of the nmilestone and xprotect drivers. It is a standard view with **Discovered** and **Database** panes and tables similar to most **Device Manager** views.

Figure 60 xprotect Camera Manager view



You access this view by expanding **Config→Drivers→NMilestoneNetwork→MilestoneDvr** and double-clicking **Cameras** folder or right-clicking this node and clicking **Views→Camera Manager**.

Columns

Column	Description
Name	Displays the camera name.
Type	Identifies the type of camera.
Exts	Indicates the extension.
Description	Provides additional information.
Camera Id	Reports the camera domain name or IP address.
Camera Guid	Reports the camera's globally unique identifier (a 32–hexadecimal digit that identifies the camera.

Buttons

- **New Camera Folder** creates a new folder for organizing multiple devices.
- **New Camera** adds a camera to the database.

  NOTE: The nmilestone driver does not support adding a new camera directly under the **NMilestone-Network** driver node in the Nav tree. You add cameras under the **MilestoneDVR→Cameras** node.
- **Edit** opens the camera's database record for updating.
- **Discover** runs a discover job to locate installed cameras.
- **Cancel** ends the current job.
- **Add** adds a discovered and selected camera to the database.
- **Match** associates a database record with a discovered device.
- **TagIt** adds metadata to identify the camera.

- **Template Config**

Windows

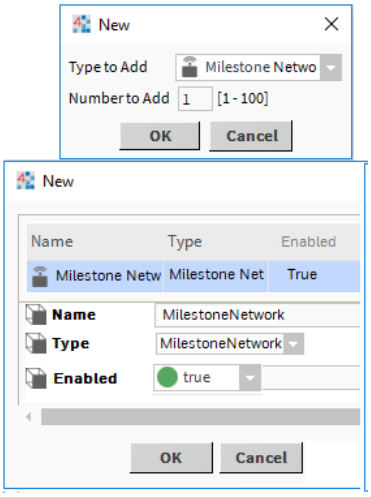
Windows create and edit database records or collect information when accessing a component. You access them by dragging a component from a palette to a nav tree node or by clicking a button.

Windows do not support **On View (F1)** and **Guide on Target** help. To learn about the information each contains, search the help system for key words.

nmilestone New Network windows

These windows set up a new Milestone Network in a station.

Figure 61 Milestone Network New windows



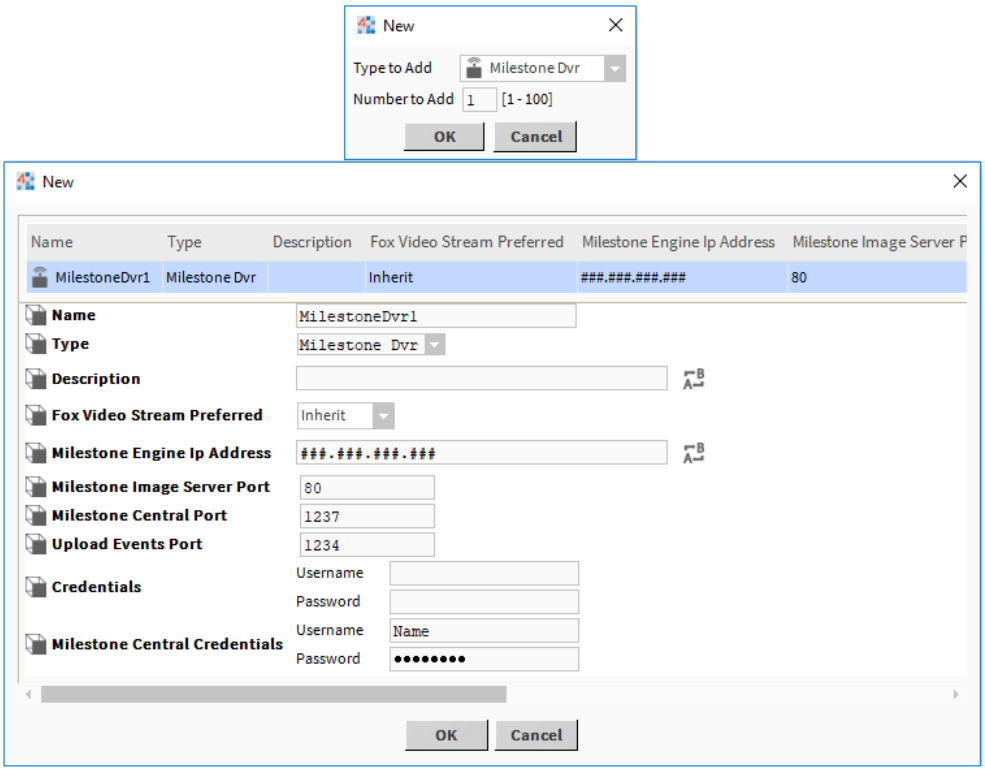
You access these properties by clicking the **New** button at the bottom of the **Driver Manager** view.

NOTE: For more information about these common properties, refer to *Common properties and components.* This topic is in this guide.

nmilestone New Dvr windows

This topic documents the properties that are unique to configuring a new Milestone DVR.

Figure 62 New Dvr windows in Workbench (left) and Web UI (right)



You access these properties in Workbench by double-clicking the **NMilestoneNetwork** node in the nav tree (which opens the **N Device Manager** view), followed by clicking the **New** button at the bottom of the **Database** table.

You access the security framework Web UI view by navigating to the **DVRs** tab under **System Setup→Remote Devices→NMilestoneNetwork** and clicking the new button ( ).

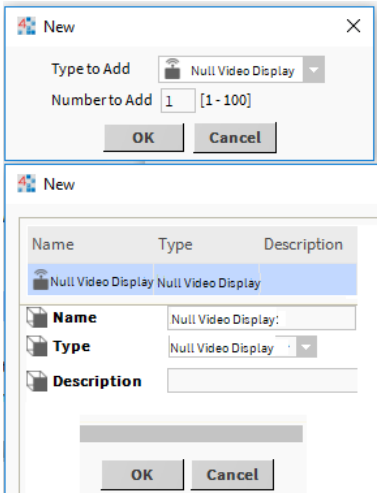
NOTE: For more information about the common properties (**`Type to Add`**, **`Number to Add`**, **`Name`**, and **`Type`**), refer to *Common properties and components* elsewhere in this guide.

Property	Value	Description
Milestone Engine Ip Address	number	Do not change this value.
Milestone Central Port	number	Do not change this value.
Upload Events Port	number	Do not change this value.
Credentials	Username and Password	Controls configuration access to the driver. These are the first properties to set when configuring the driver.
Milestone Central Credentials	Username and Password	These credentials are required to connect to a Milestone camera. Enter the same credentials you set up when you configured the Milestone Application. Refer to the Milestone documentation.
Description	text	Creates a unique text string for each device. This might include the location or purpose of the device. This description is used in multi-stream widgets, such as the **Surveillance Viewer**.

nmilestone New Display windows

The New windows for a nmilestone display has properties that you must configure to enable communication between the display and the DVR device.

Figure 63 nmilestone New Display windows

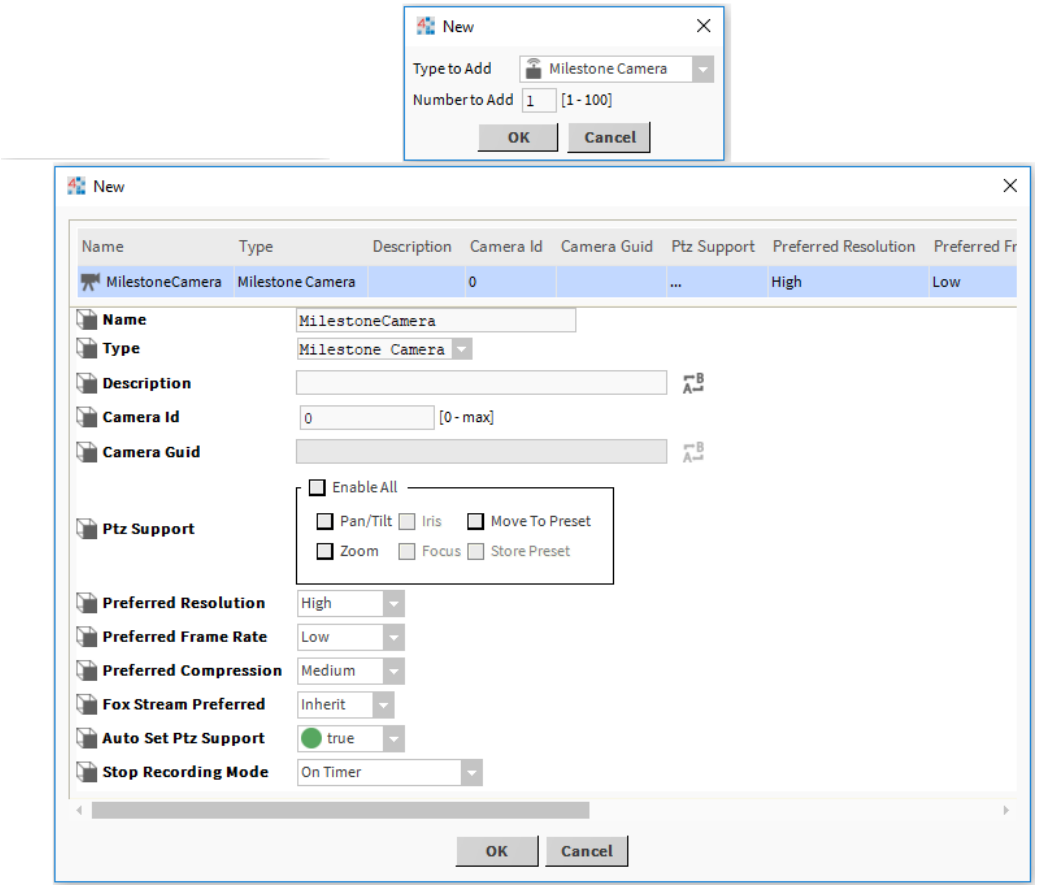


These windows are available only when using the Milestone nmilestone driver. You access them by clicking the **New Display** button at the bottom of the **Video Display Mgr** view. The **`Type to Add`**, **`Number to Add`**, Name, **`Type`**, and **`Description`** properties are documented in *Common properties and components.*.

nmilestone New Camera windows

This topic documents the properties that are unique to configuring a new Milestone camera.

Figure 64 Milestone New Camera windows



These windows are available only when using the Milestone nmilestone driver. You access them by clicking the **New Camera** button at the bottom of the **Camera Manager** view.

The properties in these windows are documented as follows:

- For: **`Type to Add`**, **`Number to Add`**, **`Name`**, **`Type`**, and **`Description`**, refer to *Common properties.*.
- For: **`Preferred Resolution`**, **`Frame Rate`**, **`Compression`**, and **`Fox Stream`**, see Refer to common *Display properties* in this guide.
- For: **`AutoSet Ptz Support`** and **`Stop Recording Mode`**, see the *nmilestone-MilestoneCamera* topic.

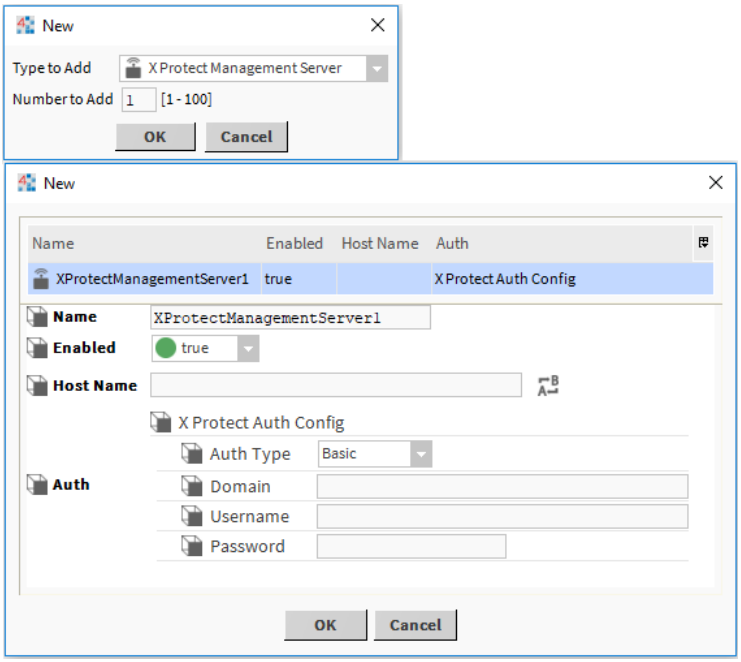
These topics are in this guide.

Property	Value	Description
Camera Id	read-only	
Ptz Support	multiple properties	Refer to common *Camera properties* in this guide.

X Protect Management Server New windows

These windows define basic server properties.

Figure 65 X Protect Management Server New windows



These windows require the Milestone xprotect driver. You access them by clicking the **New** button at the bottom of the **X Protect Server Manager** view.

NOTE: For more information about the common properties (**`Type to Add`**, **`Number to Add`**, **`Name`**, **`Type`**, and **`Enabled`**), refer to *Common properties and components.* This topic is in this guide.

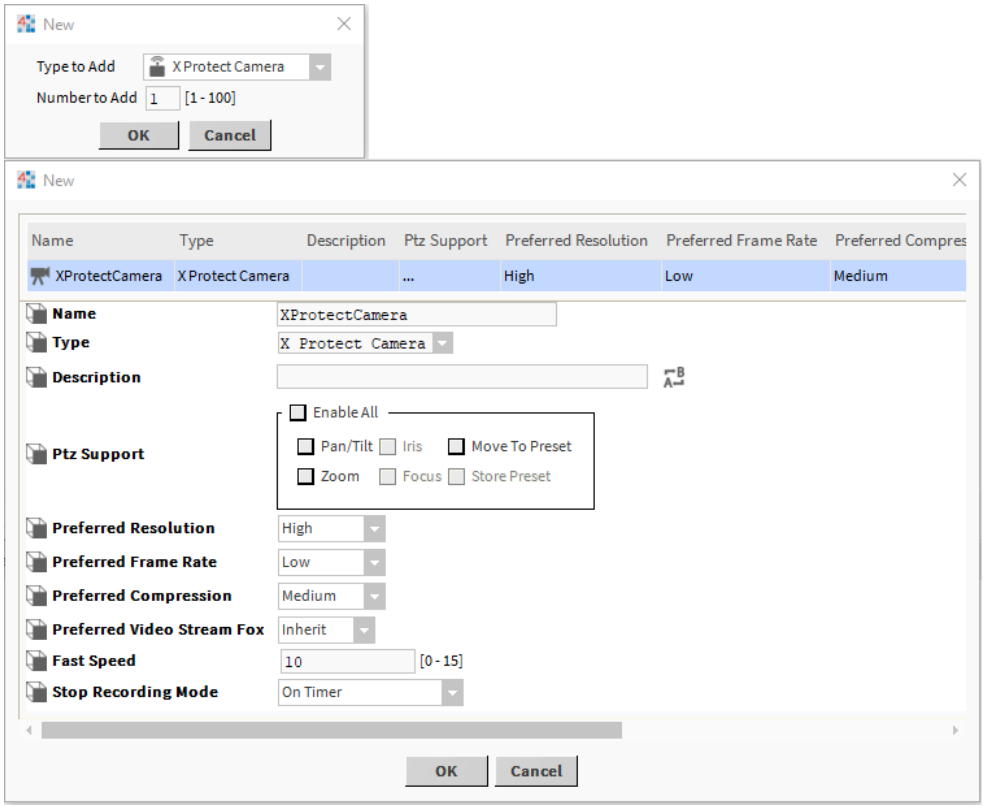
Auth properties

Property	Value	Description
Host Name	**`name`** or **`IP address`**	Defines the host name or IP address of the host running xprotect Corporate NVR.
Auth Type	drop-down list	Selects the type of authentication: • `Basic` (default) sets up simple credentials. • `Windows`
Auth Domain	URL	Defines the Windows domain name when the type of authentication is Windows.
Auth Username	text	This name identifies a user who is allowed to connect to the management server that is running the xprotect Corporate software.
Auth Password	text	Sets up the password required to connect to the management server that is running the xprotect Corporate software.

X Protect New Camera windows

This topic documents the properties required to set up a new Milestone X Protect camera.

Figure 66 X Protect New Camera windows



These windows open only when you are using the Milestone xprotect driver. You access them by clicking the **New Camera** button at the bottom of the X Protect **Camera Manager** view.

The properties in these windows are documented as follows:

- For: **`Type to Add`**, **`Number to Add`**, **`Name`**, **`Type`**, and **`Description`**, refer to *Common properties and components* elsewhere in this document.
- For: **`Preferred Resolution`**, **`Frame Rate`**, **`Compression`**, and **`Fox Stream`**, refer to common *Display properties* elsewhere in this guide.

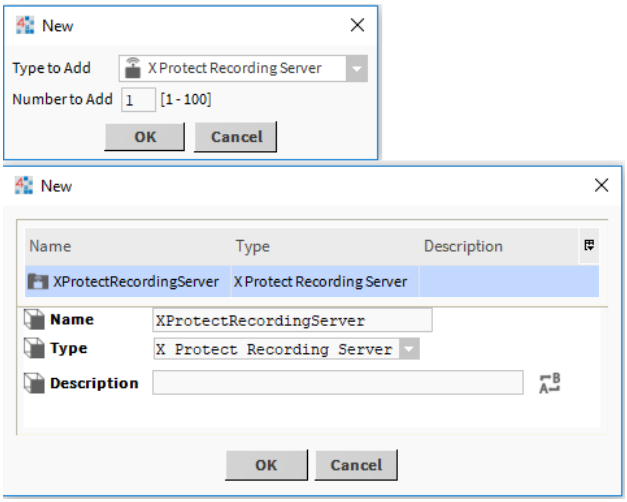
These topics are in this guide.

Property	Value	Description
Ptz Support	multiple properties	Refer to common *Camera properties* in this guide.
Fast Speed	0–15 (defaults to 10)	Defines the speed of a quick pan or tilt.

xprotect recording server New windows

This procedure documents the new recording server properties.

Figure 67 Recording Server New windows



These windows require the Milestone xprotect driver. You access them by clicking the **New** button at the bottom of the **Xprotect Device Manager** view.

NOTE: For more information about these common properties, refer to *Common properties and components*. This topic is elsewhere in this guide.

C Maxpro Video Driver

Topics covered in this appendix

♦ Software versions
♦ Required files
♦ RTSP
♦ Configuring HTTPS support
♦ Accepting the MAXPRO-NVR certificate
♦ Approving the allowed host
♦ Configuring pan, tilt and zoom
♦ Configuring motion detection events
♦ Viewing live and playback video
♦ Presets
♦ Components
♦ Plugins (views)
♦ Windows
♦ Troubleshooting

The MAXPRO® VMS (Video Management System) controls multiple sources of video subsystems to collect, manage and present video in a clear and concise manner. Niagara 's Maxpro Video Driver makes the MAXPRO features available to Niagara Framework developers and integrators.

The Maxpro Video Driver supports these features:

- Automatic discovery of cameras
- NVR (Network Video Recorder) and Camera Health Status
- PTZ (Pan Tilt Zoom) operation including control and go-to presets
- Live and recorded video streams
- H.264 Codec
- RTSP (Real Time Streaming Protocol) and HPS (Honeywell Progressive Streaming)

  RTSP streaming has been tested with Honeywell's HDZMD series camera.
- Read camera events and alarms
- Forward, rewind, fast forward, and fast rewind
- 1 /2, 1, 2, 4, 6, 8 & 16 replay speeds
- Custom RTSP URL for RTSP streaming

The Maxpro Video Driver does not support Fox streaming.

Software versions

The Maxpro video driver works with both NiagaraAX and Niagara.

- The Maxpro Video Driver works with Maxpro NVR Software, version v4.5.0.162 and later.
- Supported hardware models are Maxpro NVR XE, SE and PE with NVR Software version v4.5.0.162 and later.
- The Maxpro Video Driver uses Maxpro Web Services API rev 3.1.
- The driver v 3.8.401.1 can be used on 3.8.401 and later AX versions for both HTTP & HTTPS communication.

- The driver v 4.6.96.28.5 can be used with Niagara 4 4.6.96 and later both HTTP & HTTPS communication.
- The driver can be licensed on JACE 600/600E/700/8000 Security JACE 602/616 platforms for the AX version, and JACE 8000 platform for Niagara 4.
- The driver can be licensed on both Niagara 4 and .

Required files

Most required files are included in the software build.

- maxpro-rt.jar, maxpro-wb.jar
- ndriver-rt.jar, ndriver-wb.jar (included in standard Niagara builds)
- videoDriver-rt.jar, videoDriver-wb.jar (included in standard Niagara builds)
- remoteVideo-rt.jar, remoteVideo-wb.jar (included in standard Niagara builds)
- platCrypto-rt.jar, platCrypto-wb.jar (included in standard Niagara 4 builds)

RTSP

The default streaming protocol is HPS (Honeywell Progressive Streaming). To use RTSP (Real Time Streaming Protocol) instead, the system requires additional configuration.

Control Port 554 is the default port for RTSP streaming. It should be opened in the Network by firewall and set up in the Maxpro NVR PC in web.config file. Check with your Network Administrator regarding opening the port in the firewall. To confirm that the port is open, enter the camera's RTSP stream URL in the VLC player and confirm the video stream. If the port is open, the VLC should be able to stream through RTSP.

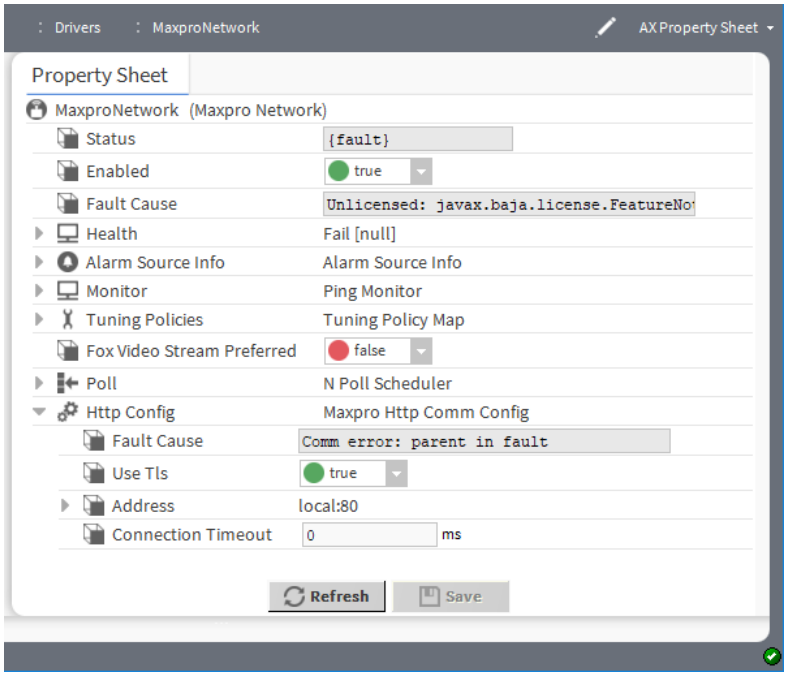
Video streaming quality is based on the FPS (Frames Per Second) settings. But a high FPS can consume significant system and network resources. Since RTSP is a real-time video protocol, it is suggested that you configure it to use a low FPS rate, such as five (5) frames per second. This will reduce the demand on system and network resources required to do video streaming.

No timestamp displays for RTSP Streaming because it is live streaming and RTSP packets do not contain a timestamp.

Configuring HTTPS support

The Niagara 4 Maxpro Video Driver supports HTTPS Communication to communicate with Maxpro NVR.

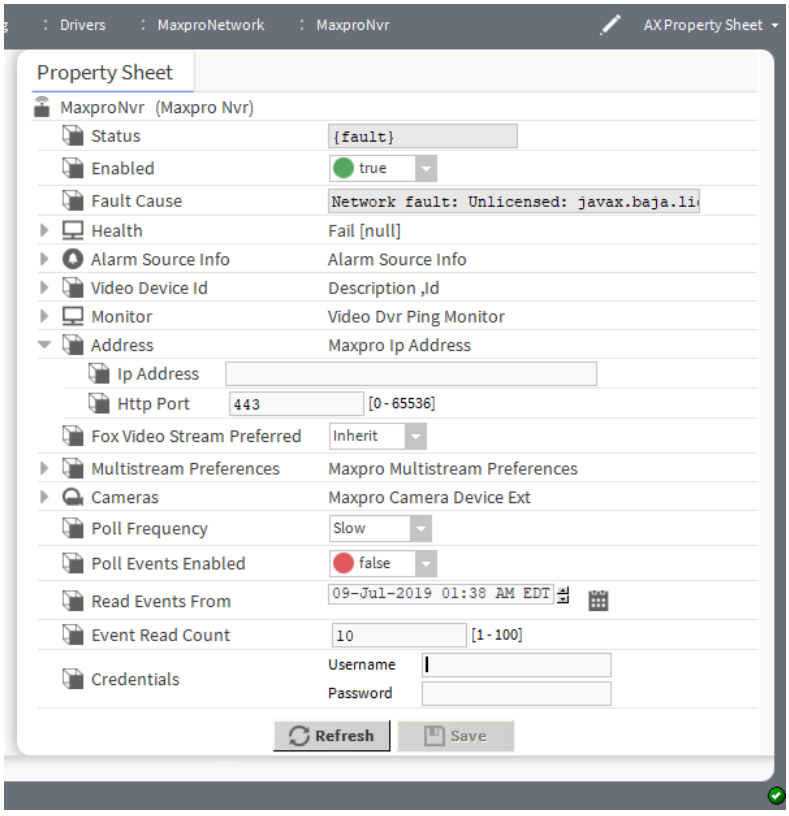
Step 1 To set up HTTPS Communication, navigate to Maxpro Network's Property Sheet view.



Step 2 Expand **`Http Config`** and set **`Use Tls`** to `true` and click **Save**.

Leaving **`Use Tls`** set to `false` (the default) disables security and configures the link for HTTP communication between the Maxpro Video Driver and Maxpro NVR.

Step 3 Add the MaxproNvr component to the MaxproNetwork and expand the **`Address`** container.



Step 4 Set the **`Http Port`** to 443 **(`HTTPS Port`** in NVR) and click **`Save`**.

Step 5 To test the connection, double-click the MaxproNetwork node in the Nav tree, right-click on the **MaxproNvr** row in the table, and click **Actions→Ping**.

This initiates the HTTPS communication between the Maxpro Video Driver and Maxpro NVR.

Accepting the MAXPRO-NVR certificate

The Maxpro Video Driver supports HPS (Honeywell Progressive Streaming) over an HTTPS connection using the Java App plugin and Web-Start. When using web-start for the first time, the certificate needs to be accepted by the client, just as the client accepted it in the Workbench.

Step 1 After launching Web-Start, log in to the station and navigate to the **Camera** components just as you did in Workbench.

Step 2 To open the Live/Playback Video view, double-click the camera.

A Identity Verification window opens.

Step 3 To continue HTTPS streaming in the browser, accept this certificate.

Approving the allowed host

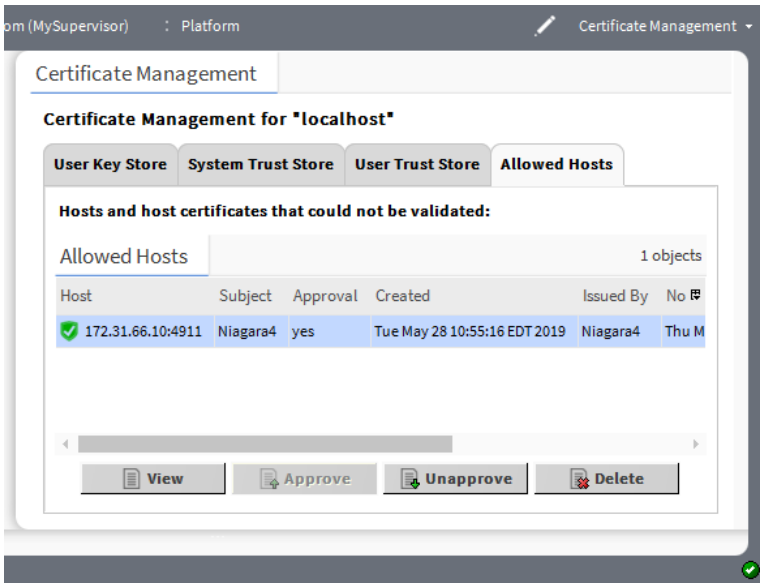
The TLS certificate encrypts data transfer. To use HTTPS (secure) communication, the default self-signed certificate for the Maxpro NVR must be approved or a signed server certificate imported into the certificate Key Store. This procedure approves the default, self-signed certificate, which provides data encryption but does not verify server authenticity.

Step 1 After entering your credentials at station start, accept the certificate to communicate using HTTPS protocol.

This accepts the self-signed default certificate, which encrypts data, but does not verify the server.

Step 2 Navigate to **Platform→Certificate Management** and click the **Allowed Hosts** tab.

The software displays the Maxpro NVR certificate.



Step 3 Select the certificate and click **Approve**.

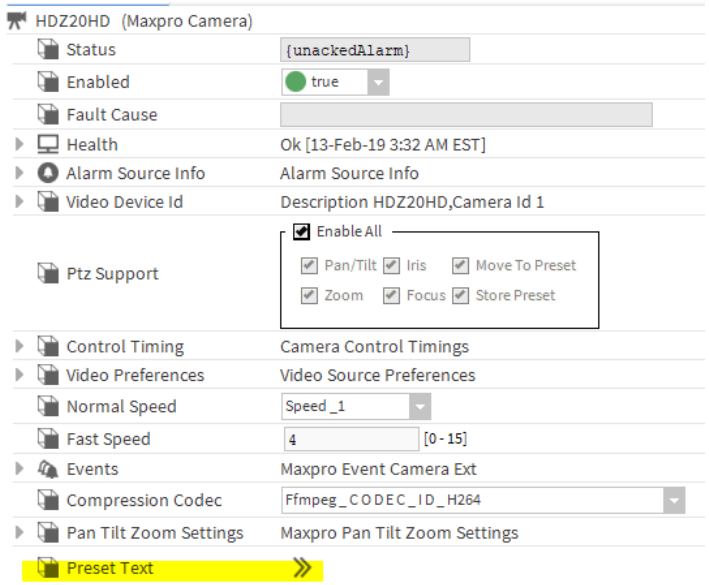
After approving the certificate encrypted communication between the Maxpro NVR and the Maxpro Video Driver begins.

Configuring pan, tilt and zoom

You configure pan, tilt, zoom degrees using the **Pan Tilt Zoom Settings** in camera's Property Sheet View. Presets are text files that contain commands for panning, tilting and zooming. When you execute the preset, the camera adjusts its pan, tilt and zoom accordingly.

Prerequisites: You are working in Workbench.

Step 1 Navigate to the camera in the Nav tree.

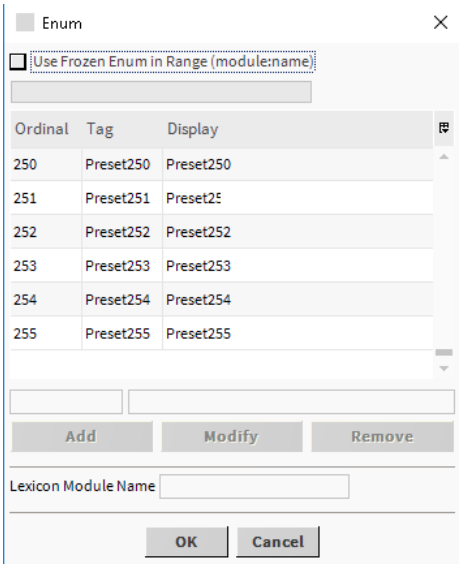


Step 2 If necessary, enable Ptz Support for all degrees.

Step 3 Expand the Pan, Tilt and Zoom Settings and configure the degrees.

Step 4 Click the chevron (>>) to the right of Preset Text.

The list of presets opens.



Step 5 Click Add to create a preset or Modify to edit an existing preset.

Step 6 Configure the preset and click OK.

Configuring motion detection events

If polling for events is enabled (**Poll Events Enabled** = `true`) on the MaxproNVR component, the driver polls for events. You can configure the number of events the camera reads in each poll. The driver reads the selected number of events per poll based on the last timestamp (also a property on the MaxproNVR component). The driver updates the Last Read Timestamp with the timestamp of the last received event during the polling cycle. This timestamp becomes the starting point form the next poll.

Prerequisites: You are working in Workbench.

To generate alarms for motion detection events, You need to add a motion-detected event to the Camera Events folder.

Step 1 To add a motion-detected event, double-click Events under the Maxpro Camera component.

Step 2 Click Discover.

Step 3 Add the motion detection event to the database.

A motion detection event has a custom alarm extension called Maxpro Alarm Ext.

During event polling, when the driver receives a camera-motion-started event from the camera, it sets the **Motion Detected** point under the camera to `true`. When the camera receives a camera-motion-stopped event from the camera, it sets the **Motion Detected** point under the camera to `false`. The custom alarm extension, Maxpro Alarm Ext, automatically generates alarms for each camera-motion event received from the Maxpro NVR. It creates an alarm record with the same timestamp as the event timestamp received from the NVR.

Viewing live and playback video

The driver supports streaming live video and the playing back of recorded video.

Prerequisites: You are using Workbench.

For video streaming, the Maxpro Web Services API supports HPS (Honeywell Progressive Streaming). Unlike the streaming provided by other Niagara video drivers, HPS does not provide a continuous video stream. Instead, it continuously repeats a two–step streaming process. Before beginning the process, the Maxpro Video Driver skips the first media file (with index 0), as suggested by Maxpro Web Services team, and renders video only from media file 1. The protocol asks for the next available media file number, then it renders a one- or two-second chunk of video from the file. It repeats these two steps to stream video. This process takes a few seconds to start rendering video in the Live and Playback views.

After reading and rendering data from a single media file, HPS reads the next file from the Maxpro NVR. The short delay (a few milli-seconds) displays a still frame between reading and rendering each file.

Step 1 Navigate to the camera and double-click it.

The view defaults to live video.

Step 2 Select a video recording to play back and click the Play Back button.

The recorded video plays back.

Step 3 To pause, rewind or fast forward the recorded video, click a button.

Fast forward and rewind take a few seconds to stop the existing video stream, start a new stream, and set the direction and speed. This causes a delay. It happens every time you click a forward or rewind control to change the change the playback speed. This limitation is expected.

Rewind flows smoothly. Forward exhibits a jumpy flow. This is due to the generation of media files from the Maxpro NVR software.

Step 4 To change pan, tilt and zoom, click Preset, select a preset from the drop-down list and click OK.

The Maxpro Web Services API does not provide an API to read the list of presets from the Maxpro NVR. By default the Maxpro Video Driver provides the option to choose the presets from 1-255 using a drop-down list.

Presets

You create presets in the Maxpro NVR Software. The Maxpro Web Services API does not support creating new presets. As a result, the Maxpro Video Driver supports only the Move To Preset option.

You configure the pan, tilt, zoom degrees using the **`Pan Tilt Zoom Settings`** on the camera's Property Sheet.

The Maxpro Web Services API does not support iris and focus features. As a result, the Maxpro Video Driver does not provide these features in Workbench.

Components

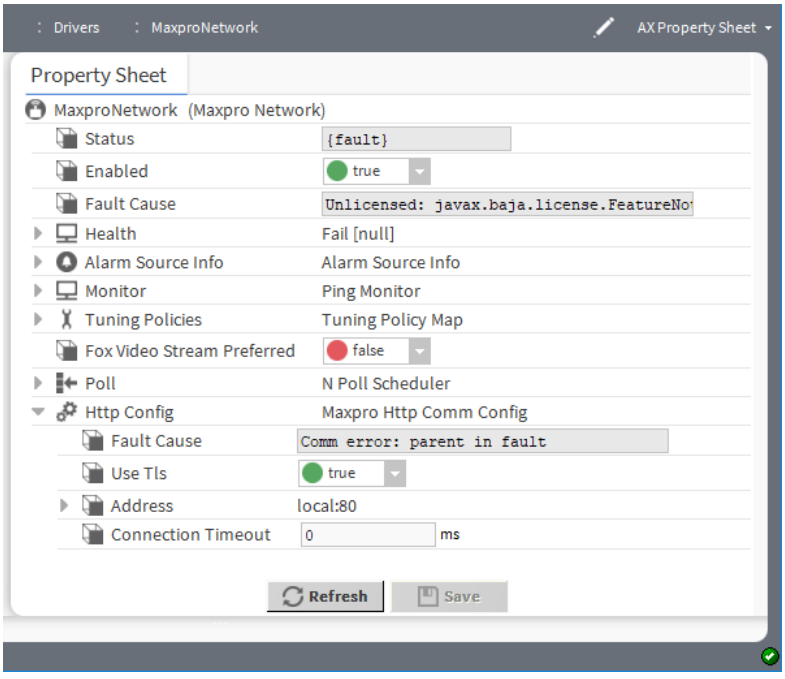
Components include services, folders and other model building blocks associated with a module. You may drag them to a property or wire sheet from a palette.

Descriptions included in the following topics appear as context-sensitive help topics when accessed by:

- Right-clicking on the object and selecting **Views→Guide Help**
- Clicking **Help→Guide On Target**

MaxproNetwork

This component is the top level network component for the MaxproVideo Driver.



This component is available from the maxpro palette or from the New dialog box. Typically, you add the network-level component from theNiagara Driver Manager view using the New window and it appears under the Drivers node of your Niagara station.

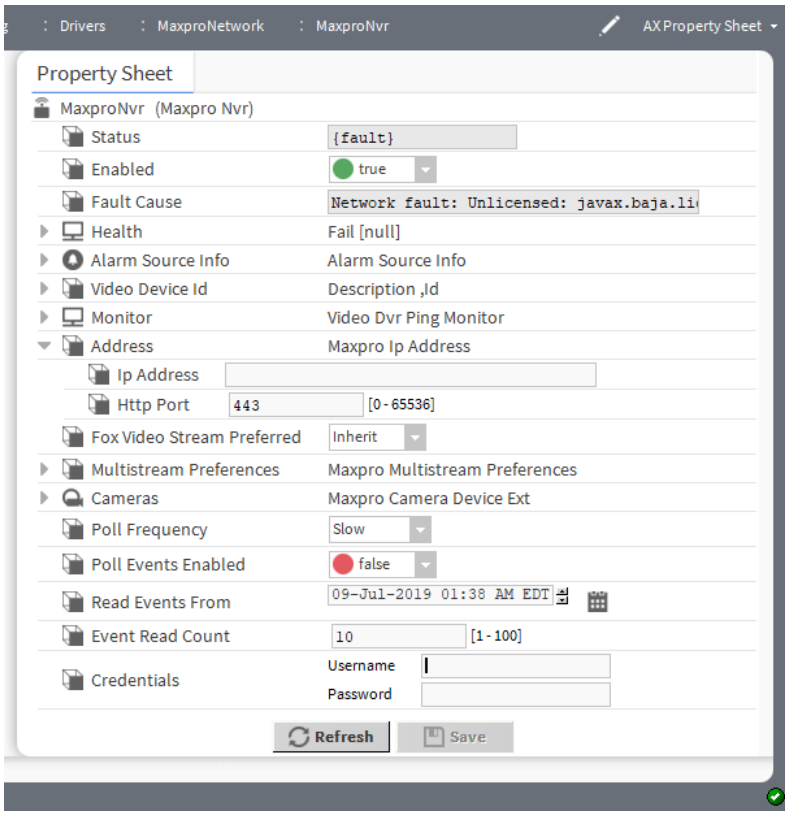
In addition to the standard properties, Status, Enabled, Fault Cause, Health, Alarm Source Info, Monitor, Tuning Policies, Fox Video Stream Preferred, and Poll, these properties configure HTTPS.

Property	Value	Description
Use Tls	`true` (default) or `false`	Configures secure communication between the station and network devices. By default, the system uses TLS secure communication. You would change this network property to `false` only if a legacy device (camera) cannot support TLS. If some devices on your network support TLS and others do not, you may add two networks of the same type: one for the secure devices, and the other for those that do not support security. This works for an Axis network.
Address, Ip Address	IP address	Identifies the IP address of the Supervisor PC.
Address, Port	number	Defines the communication port in the Supervisor PC.

Maxpro Nvr

This component is modeled for each Maxpro NVR. You can discover and add cameras to this component.

Figure 68 MaxproNVR Property Sheet



This component is available from the maxpro palette and from the **New** window. Typically, you add the MaxproNVR from the Niagara Network Manager view using the **New** window and it appears under the MaxproNetwork node inyour station.

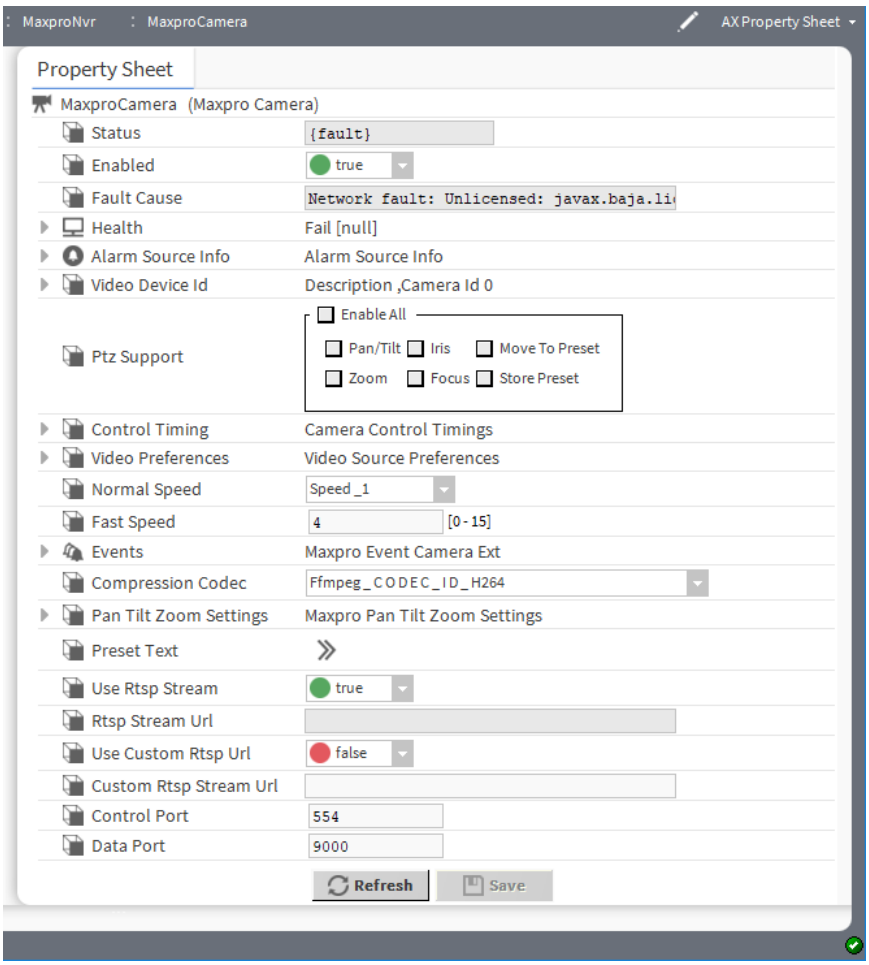
In addition to the standard properties (Status through Poll Frequency), these properties are unique to the MaxproNVR.

Property	Value	Description
Poll Events Enabled	true and false	Turns on polling for Maxpro NVR events.
Read Events From	date and time	Configures the timestamp to record with read events. The driver updates the last read timestamp at every poll cycle.
Event Read Count	a number form 1 to 100 (defaults to 10)	Configures the number of events to read from the Maxpro NVR in each poll cycle.

Maxpro camera

The Maxpro camera component configures camera properties.

Figure 69 Maxpro camera Property Sheet



In addition to the standard properties (Status through Preset Text), these properties are unique to the Maxpro camera.

Property	Value	Description
Use Rtsp Stream	`true` (default) or `false`	Turns RTSP streaming on and off. `true` enables RSTP streaming. `false` enables HPS streaming.Playback video always streams using HPS.
Rtsp Stream Url	read-only	Displays the camera's URL sent by the NVR.
Use Custom RTSP Url	`true` or `false` (default)	`true` enables the use of a custom RTSP URL other than the URL returned by the NVR for this camera. If you are using a custom URL for RTSP streaming, make sure that the URL results in the RTSP video streaming. If this URL is from NVR, make sure that the URL/channel is open on the NVR side to receive video frames from the custom RTSP URL. `false` enables HPS streaming.
Custom Rtsp Stream Url	URL	Identifies the custom URL to stream RTSP for the camera. The driver uses this URL if **`Use Custom RTSP URL`** is set to `true`.
Control Port	number (defaults to 554)	Identifies the control port for RTSP streaming.
Data Port	number (defaults to 9000	Identifies the port used to receive RTSP data. (Culd be an open port.)

Messages and alarms

The driver processes messages and alarms from the camera and displays them on the alarm console.

The driver displays these messages and alarms on the alarm console:

- Camera User Recording Started
- Camera User Recording Completed
- Camera User recording error
- Camera Disconnected
- Camera Connected
- Camera Continuous Recording Disabled
- Camera Continuous Recording Enabled
- Camera Event Recording Started
- Camera Event Recording Completed
- Camera Disabled
- Camera Enabled
- Camera NoMotion Detected
- Camera Motion Detected
- Camera Motion Started
- Camera Motion Stopped
- Camera Motion Stopped in all regions

Plugins (views)

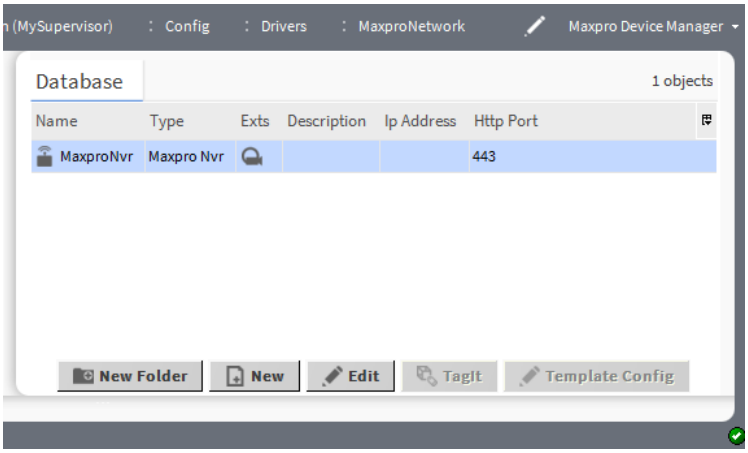
Plugins provide views of components and can be accessed in many ways. For example, double-click a component in the Nav tree to see its default view. In addition, you can right-click on a component and select from its **Views** menu.

For summary documentation on any view, select **Help→On View** (**F1**) from the menu or press **F1** while the view is open.

N Device Manager

This is the default view for the MaxproNetwork component. Its standard layout includes a Database pane and table that is similar to most device manager views.

Figure 70 N Device Manager view



You open this window by expanding **Config→Drivers→MaxproNetwork** and clicking the **New** button.

Buttons

- New creates a new device record in the database.
- Edit opens an existing device record for updating.

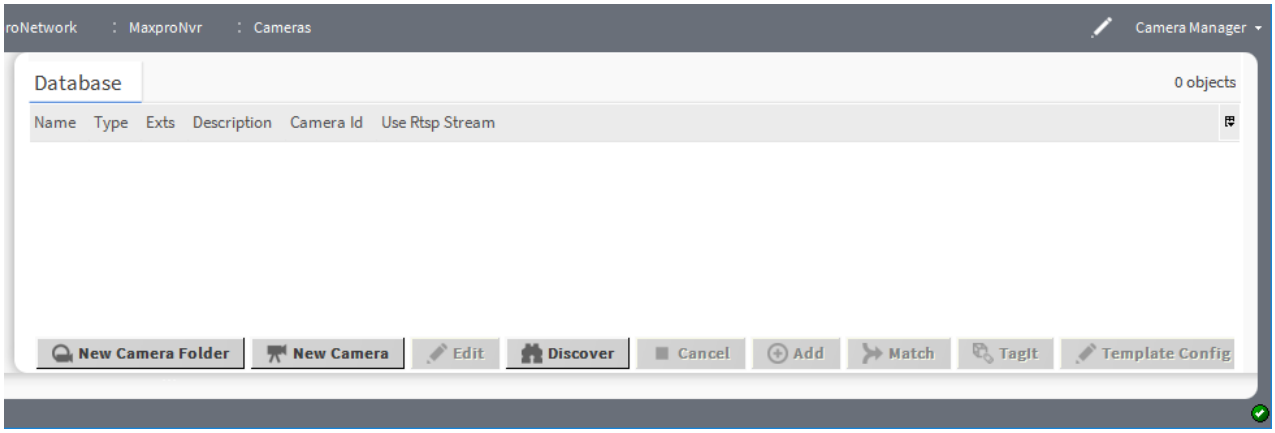
Columns

Column	Description
Name	Reports the name of the camera.
Type	Reports the type of camera.
Exts	Indicates the use of an extension.
Description	Provides additional information.
IP Address	Defines the IP address
Http Port	Defines the https port used to communicate with the Supervisor station.
Credentials	Reports the camera's username and password.

Camera Manager

This is the default view of the Maxpro Camera Device Ext, which is named "Cameras" under the Maxpro NVR.

Figure 71 Maxpro Camera Manager



Buttons

- **New Camera Folder** creates a folder for organizing multiple cameras.
- **New Camera** opens the New Camera window.
- **Edit** opens the record for an existing, selected camera.
- **Discover** invokes a camera-discovery job. All discovered cameras appear in the Discovered pane. This view has a standard appearance that is similar to all Workbench Device Manager views.
- **Cancel**
- **Add**
- **Match**
- **TagIt**
- **Template Config**

Video Playback view

The camera's Video Playback view provides Forward and Rewind features for playing back video. The driver supports these speeds: 1/ 2x, 1x, 2x, 4x, 8x and 16x.

Video controls

Figure 72 Video controls

-  Fast Rewind quickly returns the video to an earlier frame. The rewind speed defaults to 4x. Use the camera's Property Sheet view to change this speed. Clicking this button once rewinds at 4x. Clicking it again increases the rewind speed to 8x. The maximum rewind speed is 16x.
-  Fast Forward advances the video at high speed. Fast forward speed defaults to 4x. Use the camera's Property Sheet view to change this speed. Clicking this button once advances at 4x. Clicking it again increases the fast forward speed to 8x. The maximum forward speed is 16x.
-  Slow Rewind returns the video to an earlier frame. The rewind speed defaults to 1x. Use the camera's Property Sheet view to change this speed. Clicking this button once rewinds at 1x. Clicking it again increases the rewind speed to 2x, 4x, etc. The maximum rewind speed is 16x.

-  Slow Forward Playback Video advances the video at slow speed. It defaults to 1x. Clicking it again increases the slow forward speed to ex, then 4x, etc. The maximum forward speed is 16x.
- Normal Speed defaults to Speed-1. This means that during slow forward and slow rewind, the software uses 1x as the starting speed for video playback.To increase this speed, click the appropriate button again. The software increases the speed as follows: 2x, 4x, 8x, and 16x. You may set Normal Speed to Speed_1_2, which changes the default to 1/2x
-  Events shows all events received from the Maxpro NVR software in a pop-up window. You cannot generate alarms from this events window. The driver does not update the Motion Detected point under the camera even if Camera Motion Started and Camera Motion Stopped events desplay in this window. These are just events and not processed alarms.
-  Time Index selects an event according to a specific day, month, year, and time.
-  Live Video starts the display of live video.

Video indicators

The driver displays these indicators in the video playback window:

-  (L) indicates Live Video.
- X1,X2….. indicate the play back speed.
- Fast-Forward, Skip,Play and Pause indicate the video playback mode.
- Slow- Light blue, Medium- Medium blue and Fast- Dark blue indicate the pan, tilt and zoom degrees.
- A text message displays on the screen at times to indicate the connection status.

Windows

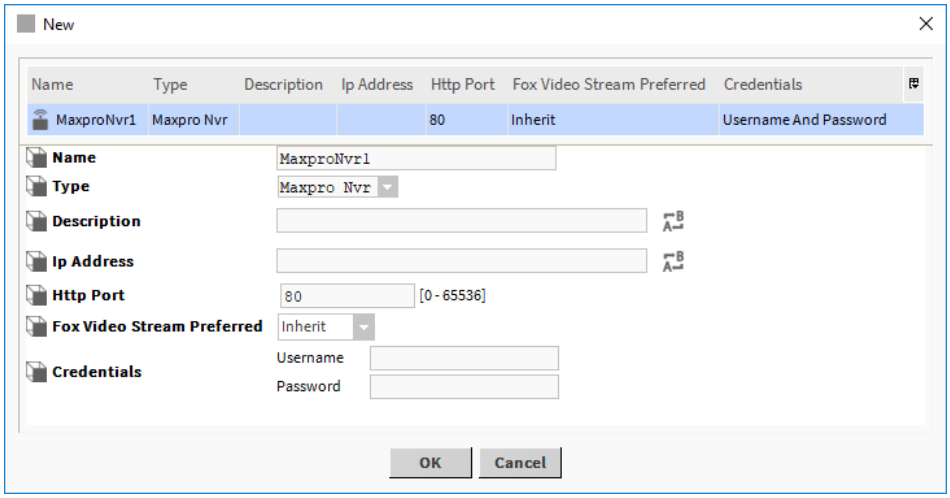
Windows create and edit database records or collect information when accessing a component. You access them by dragging a component from a palette to a nav tree node or by clicking a button.

Windows do not support **On View (F1)** and **Guide on Target** help. To learn about the information each contains, search the help system for key words.

New device window

This window creates a new NVR. A similar window opens to edit the NVR record in the database.

Figure 73 MaxPro driver New window



Property	Value	Description
Name	text	Provides a meaningful name with which to identify the device.
Type	drop-down list	Identifies the type of video device: DVR, camera, display, etc.
Description	text	Provides room add more information, such as where the device is located, what its purpose is, who is responsible to maintain it, etc.
Ip Address	IP address	Identifies the device on the network. This should be the host name or IP address of the Maxpro NVR.
Http Port	number	Identifies the port on the controller or computer the device uses to communicate with the station.
Fox Video Stream Preferred	drop-down list (defaults to `Inherit`)	Configures Fox streaming. `Inherit` duplicates the value configured for the parent. `true` sends the video stream from the video camera to the station (controller) and then forwards it to Workbench through the standard Fox connection. This overcomes fire wall issues in the event that the video surveillance system is not exposed to the outside world on its network. **NOTE:** This option assumes that the controller is exposed—otherwise you could not even connect to the station. `false` sends the video stream directly from the video camera to Workbench. This setting allows you to set the resolution and frame rate to `High` without impacting CPU usage. In essence, this removes the station from the equation. In either case (`true` or `false`), the client-side computer expends some of its CPU utilization to render the video on the screen.
Credentials	User name and password	Username and Password are the credentials set in the Maxpro Web Configuration window to connect to the Maxpro NVR.

Troubleshooting

Video performance may vary for expected reasons.

Forward and rewind time out.

Sometimes it takes more time to get the video content from the Maxpro NVR because of a low FPS (Frames Per Second) rate. If your configuration uses HSF, increase the FPS rate. But, be aware that increasing the FPS rate results in higher bandwidth consumption and network usage.

The same camera is assigned to separate panes.

If the same camera is added to a surveillance viewer more than once, video data received for each video session is shown in the respective video panes. In HPS, video is shown as per the data received in the current media file. This is the expected behavior.

PTZ changes and presets take a long time to occur.

Since HPS does not provide continuous streaming, you may experience up to a six-second second delay when viewing live video. This means that any PTZ or Preset operations may take time to reflect the change the video.

Why is there no timestamp on an RTSP stream?

RTSP is a real-time protocol. Its packets do not contain a timestamp.

Workbench hands when streaming video for a long time.

This is caused by not enough memory allocated for theNiagara JVM. You allocate more memory in the nre. properties file. It is suggested to use a browser for streaming video for long periods of time since a browser uses system resources differently than does Workbench. RTSP streaming has been tested in a browser for continuously for up to 24 hours.

Index

F

G

H

I

L

M

N

P

R

S

T

U

V

W

X

Z