

Technical Document

Niagara^{AX-3.x} Video Driver Guide

July 6, 2012



Video Driver Guide

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CONTENTS

Preface	vii
Document Change Log	vii
Related documentation	vii
Video Driver installation	1-1
Requirements	1-1
Getting started with a Video Driver	1-2
<i>Install a videoDriverNetwork and device</i>	<i>1-2</i>
<i>Adding a Video Driver camera under a DVR</i>	<i>1-4</i>
<i>Adding a Video Driver camera to a station (non-DVR)</i>	<i>1-4</i>
<i>Adding a remote camera to a station</i>	<i>1-5</i>
About NiagaraAX Video Integration	2-1
About the Video Driver hierarchy	2-2
Types of common video driver properties	2-3
About Video Driver alarms	2-4
About Video Events	2-5
Types of Events extension properties and points	2-5
About the “remoteVideo” feature (NiagaraAX-3.4 and later)	2-6
Types of remoteVideo features	2-6
About remote video configuration	2-7
Adding a remote camera to a station	2-8
Types of VideoNetwork components	2-9
About the Camera device	2-9
About the DVR device	2-11
Types of DVR device properties	2-11
About the Event Detection Ctrl Ext	2-13
About the Video Playback Chooser	2-13
About the Surveillance Viewer	2-14
Types of Surveillance Viewer properties	2-14
Types of Video Driver views	2-15
VideoNetwork Device Manager view	2-15
Camera Manager view	2-15
Video Playback view (Playback Viewer)	2-16
Live Video view	2-16
Point Manager view	2-17
About the Surveillance Viewer view	2-17
Types of Video View controls and indicators	2-18
Camera controls	2-18
Video Playback controls	2-19
Video indicators	2-20
Types of videoDriver Px widgets	2-21
Common videoDriver widget properties	2-21
Live Video Player widget	2-22
Control Panel widget	2-23

Pan Tilt Joystick widget	2-23
Zoom Slider widget	2-24
Camera widget	2-24
Mouse Down Button widget	2-25
Types of Mouse Down Button properties	2-26
About the Video Multistream Pane widget	2-27

Common Video Driver tasks..... 3-1

General procedures	3-1
<i>Install a videoDriverNetwork and device</i>	<i>3-1</i>
<i>Adding a Video Driver camera to a station (non-DVR)</i>	<i>3-3</i>
<i>Adding a remote camera to a station</i>	<i>3-3</i>
<i>Creating camera "Move" Presets</i>	<i>3-4</i>
<i>Using the Playback Viewer (Playback Chooser)</i>	<i>3-5</i>
<i>Using the Surveillance Viewer</i>	<i>3-5</i>
Alarm-related procedures	3-5
<i>Route video surveillance system alarms to NiagaraAX alarms</i>	<i>3-6</i>
<i>Route NiagaraAX alarms to a video surveillance system</i>	<i>3-6</i>
<i>Replay alarm video (Video Playback view)</i>	<i>3-7</i>
<i>Replay alarm video (NiagaraAX alarm console)</i>	<i>3-8</i>
<i>Disable and enable alarm events in a video surveillance system</i>	<i>3-8</i>
Widget procedures	3-9
<i>Create a camera view on Px page (Live Video Player or Camera Widget)</i>	<i>3-9</i>
<i>Create a video multistream Px view</i>	<i>3-9</i>

Component Guides..... 4-1

Components in videoDriver module	4-1
Components in the remoteVideo module	4-2

Plugin Guides..... 5-1

Plugins in videoDriver module	5-1
--	------------

Dedicated Micros driverA-1

Dedicated Micros features and tested models	A-1
Dedicated Micros DVR setup	A-1
<i>Dedicated Micros DVR setup</i>	<i>A-1</i>
Components in the dedicatedMicros module	A-2
Plugins in dedicatedMicros module	A-3

Axis Video driverB-1

Axis features and tested camera models	B-1
Axis requirements	B-1
Add the Axis network driver to the station	B-1
<i>Add (or edit) network driver procedure</i>	<i>B-2</i>
Add an Axis video device to the station	B-3
<i>Add (or edit) a device procedure</i>	<i>B-3</i>
Monitor Axis video activity	B-5
<i>Monitor procedure</i>	<i>B-5</i>
Components in the axisVideo module	B-6
Plugin in the axisVideo module	B-7

Milestone Video driver C-1

Milestone features and tested models	C-1
Milestone requirements and compliance	C-2
Configure Milestone software	C-2
<i>Configuration procedure</i>	C-2
Add the Milestone network driver to a station	C-2
<i>Add (or edit) the network driver procedure</i>	C-2
Add a Milestone video device to a station	C-3
<i>Add (or edit) a device procedure</i>	C-4
Discover Milestone devices	C-5
<i>Device discovery procedure</i>	C-5
Monitor Milestone video activity	C-6
<i>Monitor procedure</i>	C-6
Components in the Milestone driver	C-6
Plugins in the Milestone driver module	C-8

Rapid Eye™ Hybrid HD driver D-1

Rapid Eye features	D-1
Hardware compatibility	D-1
Software requirements	D-2
Connect the Rapid Eye hardware	D-2
<i>Connection procedure</i>	D-2
Configure the Rapid Eye DVR	D-2
<i>Configuration procedure</i>	D-2
Add (or edit) the RapidEye network driver to a station	D-4
<i>Add (or edit) the network driver procedure</i>	D-4
Add a RapidEye video device to a station	D-5
<i>Add (or edit) a device procedure</i>	D-5
Discover RapidEye devices	D-7
<i>Device discovery procedure</i>	D-7
Monitor RapidEye DVR activity	D-8
<i>Monitor procedure</i>	D-8
Components in the rapidEye module	D-8
Plugins in the rapidEye module	D-9

PREFACE

Preface

- [Document Change Log](#)
- [Related documentation](#)

Document Change Log

Updates (changes/additions) to this *NiagaraAX-3.x Video Driver Guide* document are listed below.

- Revised: July 6, 2012: Edited RapidEye appendix.
- Revised: November 4, 2011: Edited driver appendices.
- Revised: October 27, 2011: Added RapidEye appendix.
- Revised: October 20, 2011 to include descriptions of Enterprise Video features.
 - Updated Dedicated Micros driver appendix with features and tested models.
 - Added Axis and Milestone appendices.
- Initial release: December 19, 2008

Related documentation

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

- *NiagaraAX-3.x User Guide*
- *NiagaraAX-3.x Drivers Guide*

CHAPTER 1

Video Driver installation

This chapter describes how to use WorkbenchAX to install and configure a Video Driver Network, DVR device, and Camera. This chapter contains the following major sections:

To install and configure a Video Driver with a videoDriver device see the following sections:

- [Requirements](#)
- [Getting started with a Video Driver](#)
 - [Install a videoDriverNetwork and device](#)
 - [Adding a Video Driver camera under a DVR](#)
 - [Adding a Video Driver camera to a station \(non-DVR\)](#)
 - [Adding a remote camera to a station](#)

Requirements

The following list includes prerequisites for successfully installing and using a Video Driver. The contents of this list and the exact implementation of the items may vary depending on the particular type of Video Driver, and the particular types of devices that are installed under the Video Driver network.

- **NiagaraAX-3.2 or later**
From your PC, use WorkbenchAX 3.2.*nn* (or later) installed with the “installation tool” option selected (“This instance of Workbench will be used as an installation tool”). This option installs the needed distribution files (.dist files) for commissioning various models of remote JACE® platforms. The dist files are located under your NiagaraAX installation directory under a “sw” subdirectory. For details, see “About your software database” in the *NiagaraAX Platform Guide*.
- **NiagaraAX license feature for “video driver”, “remote video”, and specific video vendor driver.**
In addition to the “videoDriver” feature entry in the license file, (see [Figure 1-1](#)), you also need a vendor-specific (for example, “dedMicrosDvr”) feature entry in the license. Other device limits or point limits may exist in your license as properties associated with those features.
Note: Starting in NiagaraAX-3.4, an Enterprise Video feature “remoteVideo” is available as a licensed feature as well.

Figure 1-1 License file with videoDriver and remoteVideo license feature entries

```
<feature name="asphp" expiration="2009-03-31" device.limit="none" history.limit="none" point.li
<feature name="asup" expiration="2009-03-31" device.limit="none" history.limit="none" point.li
<feature name="andoverInfinity" expiration="2009-03-31" device.limit="none" history.limit="none
<feature name="bacnet" expiration="2009-03-31" device.limit="none" export="true" history.limit
<feature name="bacnetws" expiration="2009-03-31" parts="SEC-WP-AX"/>
<feature name="dedMicrosDvr" expiration="never" camera.limit="16" device.limit="none" foxStream
<feature name="email" expiration="2009-03-31" parts="SEC-WP-AX"/>
<feature name="fileDriver" expiration="2009-03-31" device.limit="none" history.limit="none" par
<feature name="lonIp" expiration="2009-03-31" device.limit="none" history.limit="none" point.li
<feature name="lonworks" expiration="2009-03-31" device.limit="none" history.limit="none" point
<feature name="mbus" expiration="2009-03-31" device.limit="none" history.limit="none" point.li
<feature name="modbus" expiration="2009-03-31" device.limit="none" history.limit="none" point
<feature name="provisioning" expiration="2009-03-31" parts="SEC-WP-AX"/>
<feature name="remoteVideo" expiration="2010-06-19" camera.limit="none" device.limit="none" dvr
<feature name="rdbMySQL" expiration="2009-03-31" history.limit="none" historyImport="true" part
<feature name="rdbOracle" expiration="2009-03-31" history.limit="none" historyImport="true" part
<feature name="rdbSqlServer" expiration="2009-03-31" history.limit="none" historyImport="true" part
<feature name="videoDriver" expiration="never" camera.limit="none" device.limit="none" dvr.limit
<feature name="sms" expiration="2009-03-31" device.limit="none" point.limit="none" parts="SEC-W
<feature name="snmp" expiration="2009-03-31" device.limit="none" history.limit="none" point.li
<feature name="station" expiration="2009-03-31" resource.limit="none" parts="SEC-WP-AX"/>
<feature name="tunneling" expiration="2009-03-31" fox="true" http="true" parts="SEC-WP-AX"/>
```

- The following jar files (version 3.2.22.6 or later) must be present in your NiagaraAX installation (or already on the target station's JACE).
 - devDriver.jar

- devHttpDriver.jar
- devIpDriver.jar
- devVideoDriver.jar
- videoDriver.jar
- remoteVideo.jar (required for Enterprise Video features, NiagaraAX-3.4 and later)
- In addition, you need a driver module for the CCTV equipment associated with the purchased driver. For example, *dedicatedMicros.jar* is used for Dedicated Micros equipment.
- **Network access**
Network access between the station and all video devices. This includes the following:
 - Device IP address and port number
The device IP address and port number are used to configure UDP communications for the device.
 - User name and password for access to all devices, as required.
Credentials are required for http access to devices for configuration, as specified by each individual driver.

Getting started with a Video Driver

This section provides procedures that describe how to install a Video Driver network and setup a DVR and Camera device using WorkbenchAX. Procedures include:

- [Install a videoDriverNetwork and device](#)
- [Adding a Video Driver camera under a DVR](#)
- [Adding a Video Driver camera to a station \(non-DVR\)](#)
- [Adding a remote camera to a station](#)

Install a videoDriverNetwork and device

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

To install the Video Driver Network with a DVR device component, do the following:



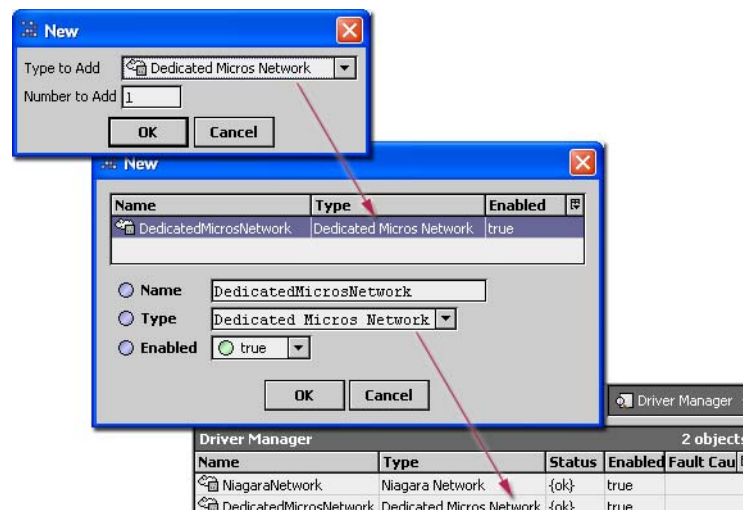
- Step 1 In WorkbenchAX, connect to the target station (where you want to install the network driver). Expand the Config node  in the nav tree and double-click on the Drivers node . The Driver Manager view displays.
- Step 2 At the bottom of the view, click the **New** button. The **New** dialog box appears, as shown in [Figure 1-2](#).

Figure 1-2 Use the New dialog box to add a Video Driver (Dedicated Micros driver example)



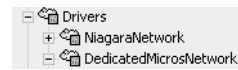
- Step 3 In the **New** dialog box, select the desired network for the specific video driver from the option list, enter the number of networks to add, and click the **OK** button. The **New** dialog box appears again with the selected driver(s) displayed in the table pane across the top. Select a Video Driver from the option list and edit the following fields, as desired:

- **Name**
Type a meaningful name in this field to identify the Video Driver instance.

- **Type**
This is the same option list as in the previous step. Verify the current selection is the desired Video Driver.
- **Enabled**
Set this value to `true` (default) to enable each added Video Driver, as desired.

Step 4 In the **New** dialog box, click the **OK** button. The Video Driver appears in the Driver Manager view and in the nav tree, as shown in [Figure 1-3](#).

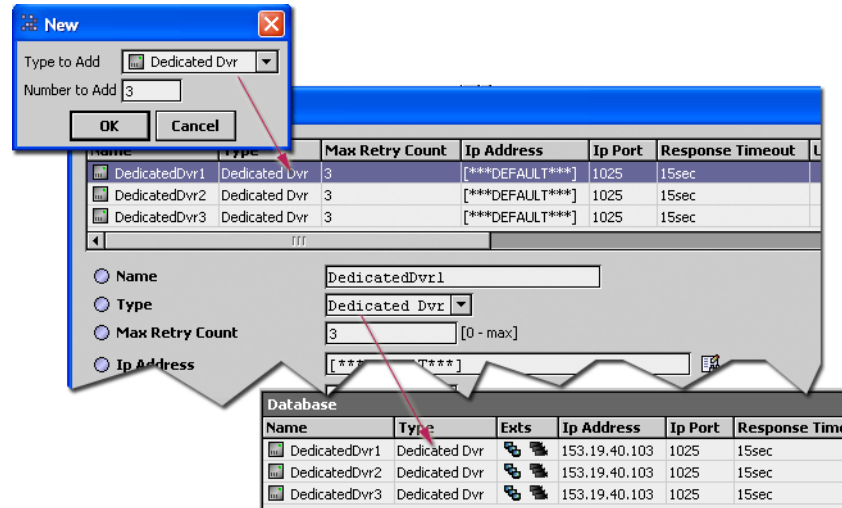
Figure 1-3 Video Driver under Drivers node in nav tree



Step 5 Double-click the newly added Video Driver. The Video Driver Manager view displays.

Step 6 At the bottom of the view, click the **New** button. The **New** dialog box appears, as shown in [Figure 1-2](#).

Figure 1-4 Use the New dialog box to add video devices (Dedicated Micros DVR example)

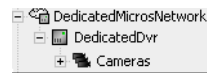


Step 7 In the **New** dialog box, verify that the desired video device is selected in the option list, enter the number of video devices to add, and click the **OK** button. The **New** dialog box appears again with the selected video device(s) displayed in the table pane across the top. Select one or more of the listed devices and edit the following fields, as desired:

Note: You can batch-edit the *Type* and *Enabled* fields by selecting all entries in the table pane. However, you must individually select each entry to name it.

- **Name**
Type a meaningful name in this field to identify the device.
- **Type**
This is the same option list as in the previous step. Verify the current selection or choose a different device, if desired.
- **Max Retry Count**
Set this value to zero or greater to specify the maximum allowable attempts at establishing a network connection with the device.
- **Ip Address, IP Port**
In these two fields, enter the local area network IP address and port number for the specific video device that you are adding.
- **Response Timeout**
In this field, set a maximum amount of time to wait for communications from the device before indicating a “timeout” status.
- **Username, Password**
In these two fields, enter the credentials for user level access to the device.
- **User Name, Password (For Device Config)**
In these two fields, enter the credentials for admin level access to the video device (if applicable).
- **Description**
Type text in this field to represent and identify each video device.

The new video device appears under the Video Driver network, as shown in [Figure 1-5](#).

Figure 1-5 VideoDriverNetwork with video device (Dedicated Micros DVR example)




Note: Some video device extensions include one or more default child nodes. For example, a DVR device may contain a “Cameras” device extension. These specific device extensions are container components that organize and provide manager views for the associated devices. However, some video devices may not contain or support these types of subordinate device extensions.

The following procedure describes how to add a camera device under a video device such as a DVR or NVR. As an example, the procedure shows how to add cameras under a Dedicated Micros DVR.

Adding a Video Driver camera under a DVR

This procedure assumes that a Video Driver network with a Video Driver DVR device component is already installed in the station. Refer to “[Install a videoDriverNetwork and device](#)” on page 1-2, if necessary.

To add a Video Driver camera, do the following:

- Step 1 In WorkbenchAX, connect to the target station (where you want to install the video driver). Expand the Config node , the Drivers node, and then the Video Driver node  to display the DVR device node in the nav tree.
- Step 2 In the nav tree expand the DVR device node and double-click the Cameras device extension . The Camera Manager view displays.
- Step 3 In the Camera Manager view, click the **Discover** button at the bottom of the view. The **Discovery Parameter** dialog box appears with default settings.

Note: For initial setup, you can usually accept all default settings.
- Step 4 In the **Discovery Parameters** dialog box, click the **OK** button. The discovery job runs and “discovered” cameras appear in the Discovered pane at the top of the view.

Note: Only the cameras that are configured and accessible from the DVR device are available for discovery. Refer to the specific Video Driver and associated documentation for camera configuration instructions. As an example, refer to “[Dedicated Micros DVR setup](#)” on page A-1 for instructions specific to the Dedicated Micros driver.
- Step 5 In the Discovered pane, select one or more discovered Cameras to add.


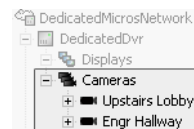




Note: The Camera Manager's **Add** button is available when you have one or more items selected (highlighted) in the top Discovered pane. Also, the toolbar has an available Add tool , and the Manager menu has an Add command. Also, you can simply double-click a discovered item to bring it up in the **Add** dialog box.
- Step 6 At the bottom of the view, click the **Add** button. The **Add** dialog box appears, with all selected points in the top pane of the dialog box.
- Step 7 In the **Add** dialog box, edit properties as desired (refer to “[About the Camera device](#)” on page 2-9 for a description of typical camera properties) and click the **OK** button. The camera(s) are added to the Database pane and appear in the nav tree, as shown in [Figure 1-6](#).

Figure 1-6 Cameras under the Cameras device extension

Adding a Video Driver camera to a station (non-DVR)

This procedure requires that a non-DVR Video Driver network is already installed in the station. Refer to “[Install a videoDriverNetwork and device](#)” on page 1-2, if necessary.

To add a Video Driver camera to a station, do the following:


- Step 1 In WorkbenchAX, connect to the target station (where you want to install the camera). Expand the Config node , the Drivers node, and then the Video Driver node  to display the Cameras device extension  in the nav tree.
- Step 2 In the nav tree, double-click the Cameras device extension . The Camera Manager view displays.
- Step 3 In the Camera Manager view, click the **Discover** button at the bottom of the view. The **Discovery Parameter** dialog box appears with default settings.

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

Step 4 In the **Discovery Parameters** dialog box, click the **OK** button. The discovery job runs and “discovered” cameras appear in the Discovered pane at the top of the view.

Note: 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.

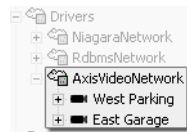
Step 5 In the Discovered pane, select one or more discovered Cameras to add.

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

Step 6 At the bottom of the view, click the **Add** button. The **Add** dialog box appears, with all selected points in the top pane of the dialog box.

Step 7 In the **Add** dialog box, edit properties as desired (refer to “[About the Camera device](#)” on page 2-9 for a description of typical camera properties) and click the **OK** button. The camera(s) are added to the Database pane and appear in the nav tree, as shown below.

Figure 1-7 Cameras under the Cameras device extension (non-DVR)





Adding a remote camera to a station


This procedure requires that a Video Driver network is already installed in the remote station and that the remote station has been discovered and added under the local station's NiagaraNetwork. In addition, the following prerequisites apply both the target (remote station) and local station:

- NiagaraAX-3.4 or later is installed.
- The stations are licensed for remote video.
- The remoteVideo.jar file (module) is installed, in addition to the standard video module requirements that are listed in *Chapter 1, Video Driver Installation*.
- The RemoteVideoService component is installed under the station Services node.

To add a remote camera to a station, do the following:

Step 1 In WorkbenchAX, open the supervisor station and, in the nav tree, expand the Config node , the Drivers node, and the NiagaraNetwork node  to display the remote station in the nav tree.


Note: If the desired remote station is not visible under the NiagaraNetwork node you must do a Discover and Add from the supervisor's Station Manager view to add the desired remote station.

Step 2 In the nav tree, expand the remote Niagara Station node and double-click on the Cameras node . The Niagara Camera Mgr view displays.

Note: 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.

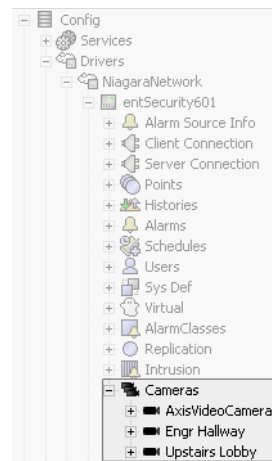
Step 3 In the Camera Manager view, click the **Discover** button at the bottom of the view. The Discover job runs and “discovered” cameras appear in the Discovered pane at the top of the view. These are all cameras that have been added at the remote station.

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

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

Step 5 At the bottom of the view, click the **Add** button. The **Add** dialog box appears, with all selected points in the top pane of the dialog box.

Step 6 In the **Add** dialog box, edit properties as desired (refer to “[About the Camera device](#)” on page 2-9 for a description of typical camera properties) and click the **OK** button. The camera(s) are added to the Database pane and appear in the nav tree, under the NiagaraNetwork, as shown below.



Figure 1-8 Remote cameras under the NiagaraNetwork

CHAPTER 2

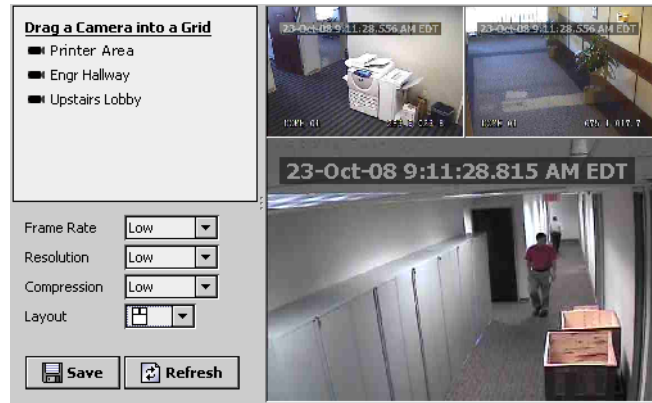
About NiagaraAX Video Integration

The NiagaraAX Video Driver module (videoDriver) provides the foundation for integration to selected commercial off-the-shelf (COTS) video surveillance and recording systems so that all normal daily operations can be performed from a NiagaraAX application interface. This integration is accomplished by modeling the commonly used video functions in the NiagaraAX Framework and using specific drivers for the different manufacturers video video products.

While each video driver has some of its own particular capabilities and requirements, each video driver uses a common set of components and characteristics that is the same among all video drivers. This chapter describes some of the concepts, components, and functions that are common to *most* video drivers that are developed for integrations using NiagaraAX-3.2 or later. Refer to the manufacturer documentation for system-specific video device capabilities and requirements. Some of the basic common video features include the following:

- **Real-time camera control**
Camera control capabilities include: controlling pan, tilt, zoom, focus and iris settings. You can create camera presets to be used in association with alarm events or for activation during live video display.
- **Alarm generation**
Some video devices (such as intelligent IP Cameras, DVRs, and NVRs) have the ability to provide motion-detection alarms. These types of alarms can be routed to a NiagaraAX application where they are presented in the alarm console with a link to the recorded video.
- **Alarm configuration**
NiagaraAX alarms can be routed to the video device to initiate actions based on those alarms. For example, a NiagaraAX alarm may initiate an action to direct a camera to move and start recording one of several pre-configured targets. DVRs can identify and store alarm-related footage for review.
- **Enterprise Web Supervisor Video (NiagaraAX-3.4 and later)**
Starting in NiagaraAX-3.4, the “Remote Video” feature adds new capabilities to the video framework. The remote video feature includes the following remote support capacities:
 - **Supervisor Station Alarms**
A Web Supervisor alarm console can display video associated with an alarm that was generated at a remote station.
 - **Supervisor Station Graphics**
A Supervisor station can support video graphics (using Px widgets) and have them served by cameras that are assigned to remote stations associated with the Web Supervisor.
 - **Remote Video Playback**
The Playback Viewer component  displays live or recorded video from any recording device that is configured on a remote station communicating over the Niagara Network.
 - **Remote Video Surveillance**
The Video Surveillance Viewer component  displays live or recorded video from any recording device that is configured on a remote station communicating over the Niagara Network
 - **Remote Video Recording**
Video recording devices on local stations may start recording as a result of an alarm event that occurs at a remote station communicating over the NiagaraNetwork. These alarms can be archived to a supervisor station and associated video viewed from the supervisor.

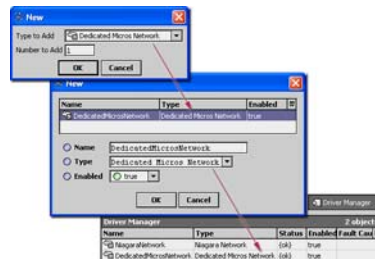
Video drivers have some properties and extensions in common with other “field bus” type network drivers. However, there are several distinctive Video Driver characteristics that are described in the following sections:

Figure 2-1 Example Video Surveillance view

- [About the Video Driver hierarchy](#)
- [Types of VideoNetwork components](#)
- [Types of Video Driver views](#)
- [Types of videoDriver Px widgets](#)

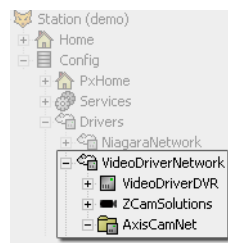
About the Video Driver hierarchy

The video driver network component that is associated with a specific manufacturer's video devices is typically included in the specific “Video Driver” palette (not the videoDriver palette) and is available from the Driver Manager view (shown in [Figure 2-2](#)). You can add any video driver that is listed in the **New** dialog box. The **New** dialog box displays when you click the **New** button from the Driver Manager view.

Figure 2-2 Adding the video driver from the Driver Manager view (Dedicated Micros Network example)

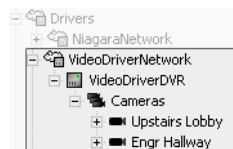
When you add the Video Driver component from the Driver Manager view (see [Figure 2-2](#)), using the **New** dialog box, the component is placed under the Station “Drivers” node, as shown in [Figure 2-3](#).

Note: The Video Driver is, by default, placed 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 this hierarchy for all video drivers in the station.

Figure 2-3 Video Driver component in a station

A Video Driver, like other NiagaraAX networks, provides a top-level network component for all NiagaraAX Video Driver types. Under a Video Network, each manufacturer's “device” component represents a particular instance of video hardware. A device component should be located under its specific VideoNetwork driver node, as shown in [Figure 2-4](#).

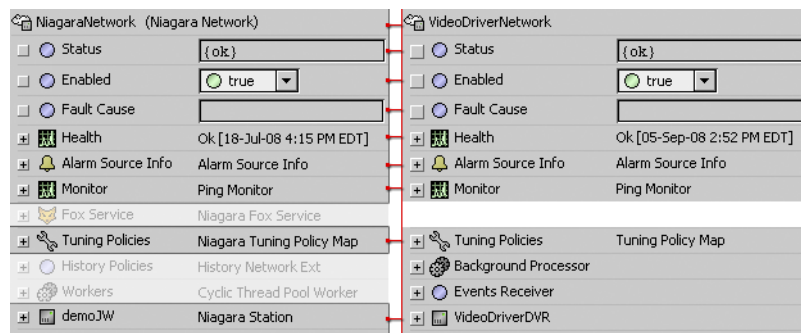
Figure 2-4 Video hardware components under the VideoNetwork



Types of common video driver properties

In keeping with the standard NiagaraAX driver architectural model, many of the Video Driver components, device extensions, and WorkbenchAX views resemble those in other NiagaraNetwork drivers. In addition, many video-related components have properties that are common to the NiagaraAX environment. Figure 2-5 shows a comparison between a NiagaraNetwork property sheet and a Video-Driver Network property sheet.

Figure 2-5 Comparison between NiagaraNetwork and Video Driver properties



Common properties (described in the *NiagaraAX-3.x Drivers Guide*) include:

- Status
- Enabled
- Fault Cause
- Health
- Alarm Source Info
- Monitor
- Tuning Policies

Other significant properties that are unique to specific video drivers are listed below:

- **Fox Video Stream Preferred**

This property allows you to select or decline the use of Fox Streaming. The following paragraphs describe the effects of these two options.

– true

The true option enables Fox Streaming. This means that the video stream is sent from the video camera to the station (Controller) and then forwarded to the WorkbenchAX interface through the standard Fox connection. This overcomes firewall issues in the event that the video surveillance system is not exposed to the outside world on its network

Note: This assumes that the controller is exposed - otherwise you could not even connect to the station.

If this option is selected, then you should consider setting the resolution and frame Rate to Low and the compression to High in order to preserve CPU usage in the station (controller).

Note: Empirical analysis on the Dedicated Micros driver revealed that CPU utilization on a JACE 6 while streaming one low frame rate Fox Video Stream is 5 to 10 percent. Utilization for one high frame rate fox video stream is around 40 percent!

– false

If false, then the video stream is sent directly from the video camera to the WorkbenchAX interface. Using this setting allows you to set the resolution and Frame Rate to High without having to worry about reducing the station (Jace) CPU - the station is removed from the equation. In either case, the client-side computer expends some of its CPU utilization to render the video on the screen.

Note: CPU usage varies greatly depending on the capabilities of the client-side PC. During testing, even an 800 Mhz Pentium III PC with 256 MB RAM running Windows 2000 with Mozilla Firefox or Microsoft Internet Explorer was able to easily render at least one video feed.

Typically this method can only be used when the client browser or WorkbenchAX interface is accessed through a VPN connection. In this configuration, both the NiagaraAX station and the remote client must connect to the video device using the same IP address.

- inherit (some drivers)

When selected, the `inherit` option causes a camera to use the value for this property that is set at it's parent component (whether the parent is a DVR or a Network component).

For example, if the parent component's Fox Video Stream Preferred property is set to `true`, then the camera component also uses the value of `true`. In this example, if the parent is a DVR device, the DVR device may also have an `inherit` option set. If so, the value from the Network Device's Fox Video Stream Preferred property is used.

- **Events Receiver**

This property contains parameters related to event communication. The following property values are configurable:

- **Enabled**
Set this parameter option to `true` to enable or `false` to disable the Events Receiver property.
- **Tcp Ip Port**
Specify the Tcp Ip port to use in this text field.
- **Socket Timeout**
Specify a time, in milliseconds, for timeout on the Events Receiver communication.

In addition to the properties listed here, many of the widgets that are provided in the videoDriver palette Px folder have common properties that are described in “[Common videoDriver widget properties](#)” on page 2-21.

About Video Driver alarms

All video surveillance systems that are built on the API from the videoDriver module (videoDriver.jar) support two kinds of alarming in NiagaraAX, as illustrated in [Figure 2-6](#).

Note: The “remoteVideo” feature (supported in NiagaraAX-3.4 and later) allows licensed supervisor stations to view video from remote stations. To use this feature, the supervisor must be licensed for remoteVideo and the remote station must be available under the supervisor's NiagaraNetwork.

Figure 2-6 Video Driver alarms



- **Video surveillance system alarms**

These types of alarms are sent to NiagaraAX from the video surveillance system. For example, a video surveillance system that is configured to detect motion, may send the current status of the event to a NiagaraAX station when motion is detected. “Camera failure” and other types of specific video surveillance system parameters may also be sent as event status, depending on the capabilities of the system and the driver. [Figure 2-7](#) shows an event that has been routed from a video surveillance system to a NiagaraAX alarm console. Alarms that are routed from the video surveillance system to NiagaraAX appear as “events” in the NiagaraAX environment.

Note: Video alarms are indicated in the NiagaraAX alarm console by the filmstrip with green arrow button icon (📽️). Only video alarms have this icon. You can also select and play video alarms from the alarm console by clicking the Alarm Video button at the bottom of the console.

See “[About Video Events](#)” for more details.

Figure 2-7 Video surveillance alarm (motion detected) routed to NiagaraAX alarm console

Open Alarm Sources				7 Sources / 18 Alarms
Timestamp	Source State	Ack State	Source	
29-Oct-08 9:11:02 AM EDT	Normal	0 Acked / 2 Unacked	Cameras Engr Blue Team	
28-Oct-08 10:56:42 PM EDT	Normal	0 Acked / 2 Unacked	Motion Detected	
28-Oct-08 6:41:32 PM EDT	Offnormal	0 Acked / 1 Unacked	Cameras DedicatedCamera	
24-Oct-08 11:03:25 PM EDT	Normal	0 Acked / 1 Unacked	Cameras My Camera	
24-Oct-08 11:02:31 PM EDT	Normal	0 Acked / 10 Unacked	Cameras Upstairs Lobby	
06-Oct-08 3:11:04 PM EDT	Offnormal	0 Acked / 1 Unacked	VideoDriverNetwork AcmeVideoDriver	
11-Sep-08 3:31:08 PM EDT	Offnormal	0 Acked / 1 Unacked	mSolutions	

Alarm Video Icon

Alarm Video Button

Acknowledge Hyperlink Notes Silence Filter Alarm Video

- **NiagaraAX alarms**
These types of alarms include alarms that are used by NiagaraAX (typically, outside of the video surveillance system) to initiate an event on the video surveillance system so that it can respond in some way. For example, a “door forced open” alarm delivered to a NiagaraAX alarm recipient may send an event to a surveillance system that can respond by using its pan, tilt, and zoom capabilities to point the camera toward specific “preset” door area and immediately begin recording.

About Video Events

Events are like NiagaraAX points and are associated with video surveillance system alarms. Some video camera devices support importing video surveillance system events and some do not. Video camera drivers that support events include an events component under the camera device. The default view of the event device extension is the Video Driver Point Manager view which may be used to Add or Discover video events (similar to NiagaraAX Point Discovery).

Figure 2-8 Point Manager view

Discovered				2 objects
Event Type Enum				
Motion Detected				
Camera Fail				

Database				1 objects
Name	Type	Out	Event Type Enum	
Camera Fail	Boolean Point	false {ok}	Camera Fail	

New Folder New Edit Discover Cancel Add Match

Event-enabled video drivers typically support the following types of events:

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

Note: Some video drivers (for example, Dedicated Micros Video driver) automatically populate the Discovered pane when the Point Manager view is displayed. If no events appear in the view - use the **Discover** button.

Refer to the *NiagaraAX-3.x Drivers Guide* for more information about using the Point Manager view.

Types of Events extension properties and points

The Events camera extension has the following properties:

- **Event points**
Individual Events appear under the Event Camera Extension once they are “Added” to the Database pane from the Discovered pane. Types of Event points may differ, depending on the Video Driver type. The following events are typical Events:
 - **Camera Fail**
 - **Motion Detected**

Note: These events only provide the current status of the associated feature available on the video device. To configure these status points to generate alarms in NiagaraAX, see “Alarm-related procedures” on page 3-5.

About the “remoteVideo” feature (NiagaraAX-3.4 and later)

Starting in NiagaraAX-3.4, the “RemoteVideo” feature adds new capabilities to the video framework. The following sections describe the remoteVideo feature in terms of:

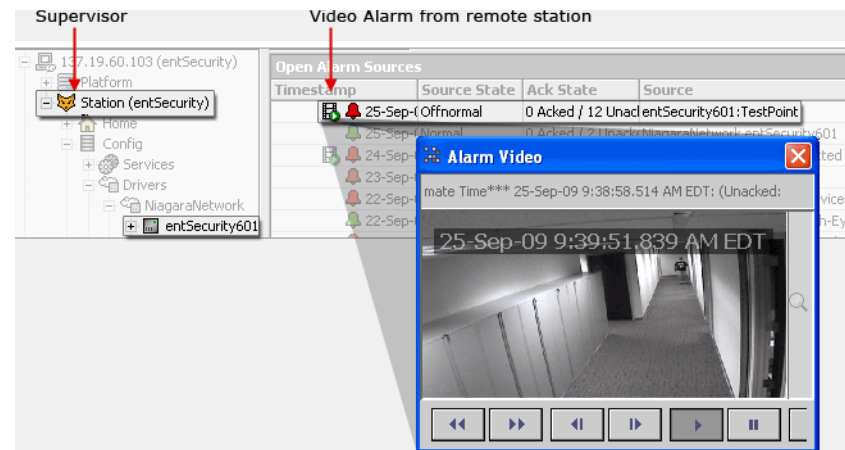
- [Types of remoteVideo features](#)
- [About remote video configuration](#)

Types of remoteVideo features

This feature includes the following remote support capacities:

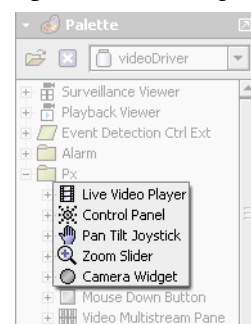
- **Supervisor Alarms**
A supervisor station alarm console can display video associated with an alarm that was generated at a remote station. In order to use this feature, you need to have a supervisor station that is licensed for the remote video feature. The remote station in this scenario should be configured for video alarms and must be set to route alarms to the supervisor using a “station recipient” component in the alarm service. In addition, the supervisor and the remote station must have a “RemoteVideoService” component under their Services node. When properly configured, the supervisor alarm console displays any remote video alarm, annotated with the video icon. You can review the remote alarm video by clicking the **Remote Video** button.

Figure 2-9 Video alarm archived to a supervisor station alarm console view



- **Supervisor Graphics**
A Supervisor station can support video graphics (using Px widgets) and have them served by cameras that are attached to remote stations under the supervisor’s NiagaraNetwork. The following Px Widgets are located in the videoDriver palette Px Folder and support remote video:
 - Live Video Player
 - Control Panel
 - Pan Tilt Joystick
 - Zoom Slider
 - Camera Widget

Figure 2-10 Px widgets supporting remoteVideo feature



- **Remote Video Playback**
The Playback Viewer component displays live or recorded video from any recording device that is configured on a remote station communicating over the Niagara Network.

- **Remote Video Surveillance**
The Video Surveillance Viewer component displays live or recorded video from any recording device that is configured on a remote station communicating over the Niagara Network
- **Remote Video Recording**
Video recording devices on local stations may initiate recording as a result of an alarm event that occurs at a remote station communicating over the Niagara Network.

About remote video configuration

The following points are a summary of remote video feature configuration requirements that apply to both the remote video station and a supervisor station:



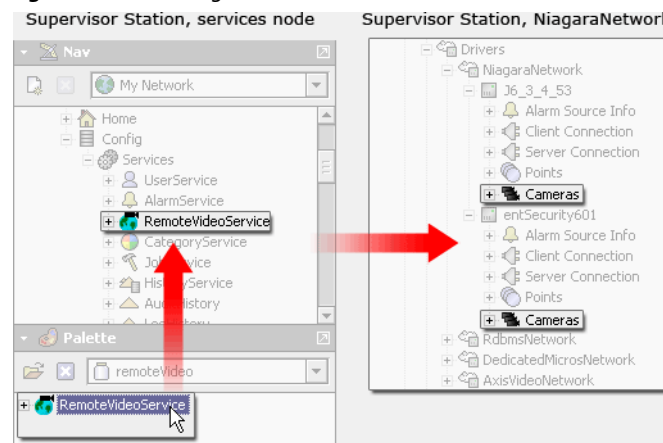
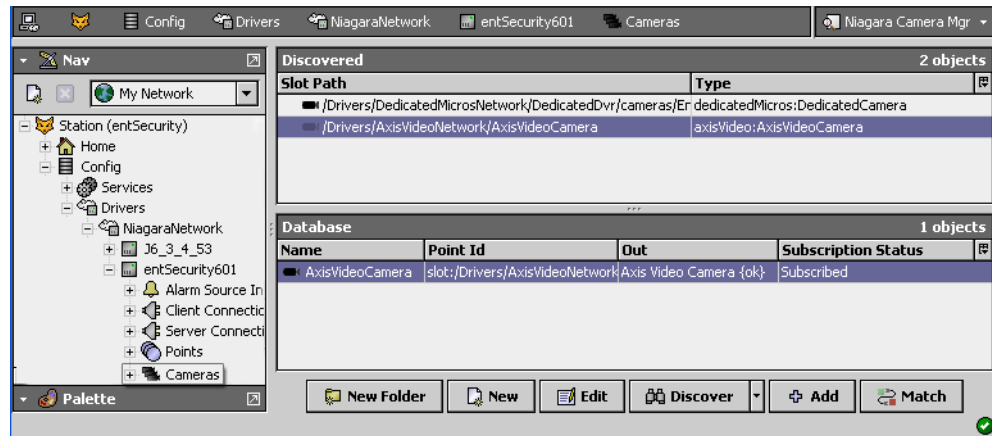
- **Verify software version, license, and module**
Any station trying to access a camera that is under a remote controller must have the following:
 - NiagaraAX-3.4 or later
 - Specific remote video licensing as described in *Chapter 1, Video Driver Installation*.
 - The `remoteVideo.jar` file (module) must be present in your NiagaraAX installation, in addition to the standard video module requirements that are listed in *Chapter 1, Video Driver Installation*.
- **Install the RemoteVideo Service**
Drag the RemoteVideoService component  from the remoteVideo palette and drop it under the Services node.
Note: When this service is installed, Niagara Cameras Extensions  appear under each station NiagaraNetwork station devices, as shown in [Figure 2-11](#).
- **NiagaraNetwork communication and remote cameras**
The station with one or more remote cameras must be present under the NiagaraNetwork of the local (typically a supervisor) station before cameras can be discovered and added to the supervisor station. You can double-click on the Niagara Cameras Ext node to display the Niagara Camera Mgr view for initiating camera discovery.

Figure 2-11 Adding remoteService adds Cameras Extension to NiagaraNetwork remote devices



- **Discover remote cameras**
With the remoteService installed, cameras may be discovered under the NiagaraCameraExt component, using the Niagara Camera Mgr view.

Figure 2-12 Discovering remote cameras under the NiagaraNetwork



Adding a remote camera to a station

This procedure requires that a Video Driver network is already installed in the remote station and that the remote station has been discovered and added under the local station's NiagaraNetwork. In addition, the following prerequisites apply both the target (remote station) and local station:

- NiagaraAX-3.4 or later is installed.
- The stations are licensed for remote video.
- The remoteVideo.jar file (module) is installed, in addition to the standard video module requirements that are listed in *Chapter 1, Video Driver Installation*.
- The RemoteVideoService component is installed under the station Services node.

To add a remote camera to a station, do the following:





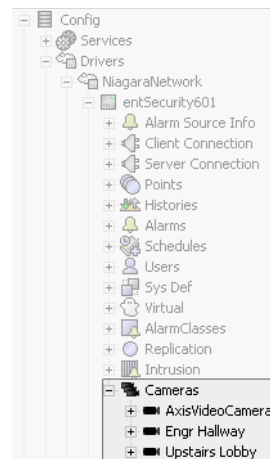
- Step 1 In WorkbenchAX, open the supervisor station and, in the nav tree, expand the Config node , the Drivers node, and the NiagaraNetwork node  to display the remote station in the nav tree.
- Note:** If the desired remote station is not visible under the NiagaraNetwork node you must do a Discover and Add from the supervisor's Station Manager view to add the desired remote station.
- Step 2 In the nav tree, expand the remote Niagara Station node and double-click on the Cameras node . The Niagara Camera Mgr view displays.
- Note:** 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 In the Camera Manager view, click the **Discover** button at the bottom of the view. The Discover job runs and “discovered” cameras appear in the Discovered pane at the top of the view. These are all cameras that have been added at the remote station.
- Step 4 In the Discovered pane, select one or more discovered Cameras to add.
- Note:** The Camera Manager's **Add** button is available when you have one or more items selected (highlighted) in the top Discovered pane. Also, the toolbar has an available Add tool  and the Manager menu has an Add command. Also, you can simply double-click a discovered item to bring it up in the Add dialog box.
- Step 5 At the bottom of the view, click the **Add** button. The Add dialog box appears, with all selected points in the top pane of the dialog box.
- Step 6 In the Add dialog box, edit properties as desired (refer to “About the Camera device” on page 2-9 for a description of typical camera properties) and click the **OK** button. The camera(s) are added to the Database pane and appear in the nav tree, under the NiagaraNetwork, as shown in [Figure 2-13](#).

Figure 2-13 Remote cameras under the NiagaraNetwork



Types of VideoNetwork components

The following Video Driver network-level components may be included under VideoNetwork:

- [Camera device](#)
- [DVR device](#)
- [Event Detection Ctr IExt](#)
- [Video Playback Chooser](#)
- [Surveillance Viewer](#)

About the Camera device

Cameras may be supported by a DVR or they may be installed and configured as “standalone” cameras on the network. If they are DVR-supported, then the camera device typically is located in the Cameras folder under the DVR video device, which in turn is under the specific Video Network for that DVR manufacturer Driver network. You can add a camera to the network by using the **Add** or **Discover** function from the Camera Manager view. If the camera is already on the network, it is usually easiest to use the **Discover** method to find it.

Note: *In a properly licensed and configured station, remote cameras are available under the remote station's NiagaraNetwork representation. Remote cameras must be discovered and added to a station using the Niagara Camera Mgr view. See the [About the “remoteVideo” feature \(NiagaraAX-3.4 and later\)](#) section for more information.*

The Camera component represents a single Video Camera device. One or more Camera components may be added using the Camera Manager view. Camera devices vary, according to model and video driver. If a DVR device supports cameras, then the DVR device configuration needs to include information to allow communication between the DVR device and the camera device. DVR and Camera properties and actions may vary based on the DVR and Camera type. In addition to the common properties (mentioned in [“About the Video Driver hierarchy”](#) on page 2-2) the following properties are common to most Camera devices, for properties unique to a specific camera and driver, refer to the individual driver descriptions (listed as Appendix sections in this document):

- **Device ID**
This property contains two text strings that describe the camera: Description and Camera Id. Camera Id is the number of the camera as it is configured on the DVR . Description is a name that you can use to identify the camera as it appears in other views (such as the Camera Manager view).
- **PTZ Support**
This property contains the following parameters that specify the features available on the associated camera. Select or clear each option box to specify that the camera does or does not support the listed pan, tilt and zoom feature.
Note: *If these properties are not enabled, PTZ functions do not work. This means that any widgets that use PTZ controls do not work.*
 - **Enable All**
When selected, this option enables all of the PTZ options.
 - **Pan/Tilt**
When selected, this option enables the pan and tilt feature.

- **Iris**
When selected, this option enables the camera iris controls.
- **Focus**
When selected, this option enables the camera focus controls.
- **Zoom**
When selected, this option enables the camera zoom controls.
- **Move to Preset**
When selected, this option enables the move to preset position controls.
- **Store Preset**
When selected, this option enables the ability to create and save preset values.
- **Control Timing**
These properties represent Timeout and Interval settings for a set of camera control parameters. 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.
 - **Watchdog Timeouts**
This is the maximum amount of time that a control continues to be active after the last “control message”. For example, with the Move Watchdog Timeout property set to 5 seconds, if a “Move” control message directs a camera to “pan right” and communication is immediately lost, the camera continues to pan right for 5 seconds and stops.
 - **Intervals**
If the Move Interval property is set to 1 second and the camera does not receive a control communication after 1 second, communication is assumed to be “lost” and the “Watchdog” timer begins.

You can adjust the camera controls on each of the parameters by setting and saving the time values for each of the following properties:

- Move Watchdog Timeout
- Move Interval
- Zoom Watchdog Timeout
- Zoom Interval
- Iris Watchdog Timeout
- Iris Interval
- Focus Watchdog Timeout
- Focus Interval
- **Video Preferences**
The following properties allow you to configure video quality and transmission options:
 - **Preferred Resolution**
Choose `High`, `Medium`, or `Low`. These options specify the pixel resolution of each transmitted frame. The actual pixel values for these three relative settings are defined in the video device.
 - **Preferred Frame Rate**
Choose `Low`, `Medium`, or `High`. These options are defined by the `Lo Frame Rate`, `Med Frame Rate`, and `Hi Frame Rate` properties.
 - **Preferred Compression**
Choose `None`, `Low`, `Medium`, or `High`. These options specify 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.
 - **Fox Video Stream Preferred**
This property allows you to select or decline the use of Fox Streaming. The following paragraphs describe the effects of these two options.
 - `inherit`
When selected, the `inherit` option causes a camera to use the value for this property that is set at its parent component (whether the parent is a DVR or a Network component). For example, if the parent component’s Fox Video Stream Preferred property is set to `true`, then the camera component also uses the value of `true`. In this example, if the parent is a DVR device, the DVR device may also have an `inherit` option set. If so, the value from the Network Device’s Fox Video Stream Preferred property is used.
 - `true`
The `true` option enables Fox Streaming. This means that the video stream is sent from the video camera to the station (Controller) and then forwarded to the WorkbenchAX inter-

face through the standard Fox connection. This overcomes firewall issues in the event that the video surveillance system is not exposed to the outside world on its network

Note: *This assumes that the controller is exposed - otherwise you could not even connect to the station.*

If this option is selected, then you should consider setting the resolution and frame Rate to Low and the compression to High in order to preserve CPU usage in the station (controller).

Note: *Empirical analysis on the Dedicated Micros driver revealed that CPU utilization on a JACE 6 while streaming one low frame rate Fox Video Stream is 5 to 10 percent. Utilization for one high frame rate fox video stream is around 40 percent!*

- false

If false, then the video stream is sent directly from the video camera to the WorkbenchAX interface. Using this setting allows you to set the resolution and Frame Rate to High without having to worry about reducing the station (Jace) CPU - the station is removed from the equation. In either case, the client-side computer expends some of its CPU utilization to render the video on the screen.

Note: *CPU usage varies greatly depending on the capabilities of the client-side PC. During testing, even an 800 Mhz Pentium III PC with 256 MB RAM running Windows 2000 with Mozilla Firefox or Microsoft Internet Explorer was able to easily render at least one video feed.*

Typically this method can only be used when the client browser or WorkbenchAX interface is accessed through a VPN connection. In this configuration, both the NiagaraAX station and the remote client must connect to the video device using the same IP address.

- **Timestamp Preferred**

Set this property to true to display and record a timestamp on the video.

- **Fast, Medium, Slow Speed**

These three properties define the “Fast”, “Medium”, and “Slow” 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, as described in [“Types of Video View controls and indicators”](#) on page 2-18

- **Frame Rates: Lo, Med, Hi**

These parameters allow you to define the frame rate between 1 and 15 frames per second (fps) for each of the three frame rate selections.

- **Preset Text**

This property provides a means for adding and naming preset options using the Enum dialog box. The options, once defined here, are available from the Presets option list, which is available from the camera Live Video view or Video Playback view.

- **Events**

The Event Camera Ext contains the properties that allow you to view, configure, and tune all aspects of video events. See [“About Video Events”](#) on page 2-5.

- **Fox Video Source**

This property is present to allow for Fox Tunneling. It must exist under the video camera in the station in order for the WorkbenchAX (or Wb applet) to access camera video stream through Fox networking. The first time any camera uses Fox Video streaming, this property is added to the video camera device, where it subsequently remains.

About the DVR device

The DVR component represents a single Digital Video Recorder (DVR) device. One or more DVR components may be added using the Video Driver Device Manager view. DVR devices vary, according to model and video driver. If a DVR device supports cameras, then the DVR device configuration needs to include information to allow communication between the DVR device and the camera device. DVR properties and actions may vary based on the DVR Video Driver type.

Types of DVR device properties


In addition to the common properties (mentioned in [“About the Video Driver hierarchy”](#)) the following properties are common to most DVR devices:

- **Communicator**

The Communicator holds the following child properties.

- **UDP Communicator**

This property holds UDP - related transmitter and receiver properties. All transmitter property statistics may be reset to zero by right-clicking on the UDP Communicator component

 **Udp Communicator** and selecting **Actions > Reset Statistics** from the popup menu.

- **Transmitter**

This property represents a UDP Transmitter that contains the following configurable and read-only properties:

- Transmission Attempts, Transmission Count, Retry Count
These read-only fields display the number of times transmissions were initiated, distinguishing between successful and unsuccessful attempts, as well as retransmissions. These numbers may be set to zero, as described above.
 - Max Retry Count
This field allows you to specify how many retransmissions are allowed when a transmission attempt is unsuccessful.
 - Send To Address
This property holds two text field properties that are provided to designate the DVR IP Address and the DVR IP Port number.

- **Receiver**

This property represents a UDP Receiver that contains the following configurable and read-only properties:

- Response Timeout
This configurable field allows you to set a desired timeout period in hours, minutes, and seconds.
 - Num Frames Received
This read-only frame displays the number of video frames that have been received since the last statistic reset.

- **Network Interface**

This field allows you to specify the type of interface that the DVR uses to connect to the network.

- **HTTP Communicator**

This component holds HTTP - related transmitter and receiver properties, polling settings, and credentials for logging into the DVR device.

- Transmitter

This property represents a UDP Transmitter that contains the following configurable and read-only properties:

- Transmission Attempts, Transmission Count, Retry Count
These read-only fields display the number of times transmissions were initiated, distinguishing between successful and unsuccessful attempts, as well as retransmissions. These numbers may be set to zero, as described above.
 - Max Retry Count
This field allows you to specify how many retransmissions are allowed when a transmission attempt is unsuccessful.

- Receiver

This property represents a UDP Receiver that contains the following configurable and read-only properties:

- Response Timeout
This configurable field allows you to set a desired timeout period in hours, minutes, and seconds.
 - Num Frames Received
This read-only frame displays the number of video frames that have been received since the last statistic reset.


- Poll Scheduler

This property contains parameters that you can configure in order to observe and “tune” the HTTP communications for the associated device. Polling and the associated properties are described in the *NiagaraAX-3.x Drivers Guide*.

- Credentials: Username, Password

In these two fields, enter the credentials for user level access to the device.

Note: Some video drivers that support DVR devices may require additional credentials to access DVR configuration settings. For example, see “[Dedicated Micros driver](#)” on page A-1.

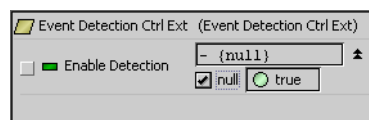
- **Device Id**
This property holds a single “Description” field for typing a text string to identify the DVR device.
- **Monitor**
Monitor provides verification of the general health of the network, plus the network's “pingables” (devices) by ensuring that each device is minimally pinged at some repeating interval. This property contains Ping and Alarm related parameters, as described below:
 - **Ping Enabled**
This property allows you to disable (`false`) or enable (`true`) the Ping Monitor function. You should leave Ping Enabled set to `true` in almost all cases. In this state, a ping occurs for each device under the network, as needed. While set to `false`, device status pings do not occur and device status message displays cannot change.
 - **Ping Frequency**
This property allows you to set the interval time (in hours, minutes, and seconds) between pings of the DVR. Specifies the interval between periodic pings of all devices. Typical default value is every 5 minutes (05m 00s), you can adjust differently if needed. The default setting of 5 minutes between pings should be good for most situations. If the ping frequency is set to some very low setting and you have a lot of devices on the network, the message traffic for pinging could be significantly higher.
 - **Alarm on Failure**
This property allows you to disable (`false`) or enable (`true`) generation of an alarm if the DVR transitions to a failed state. If this property is set to `true` (default), an alarm is recorded in the station's AlarmHistory upon each ping-detected device event (down or subsequent up). If `false`, device down and up events are not recorded in the station's AlarmHistory.
 - **Startup Alarm Delay**
This property value specifies the period a station must wait after restarting before device down or up alarms are generated. This applies only if the Monitor's property Alarm On Failure is true.
- **Cameras** 
This component is a container that comes, by default, with some DVR device components.

About the Event Detection Ctrl Ext

The Event Detection Ctrl Ext 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 some boolean logic (for example, a Schedule). The Event Detection Ctrl Extension has a single boolean property (shown in [Figure 2-14](#)) and is described below.

- **Enable Detection**
This property has `true` and `false` options to enable and disable the associated event and a `null` option which prevents any input to the event from this extension.

Figure 2-14 Event Detection Control Extension



You can use this property to enable or disable the video alarm event that it is associated with. For example, you can link a boolean writable control point to this property and use that property to change the Enable Detection status, as desired.

Note: You can link any boolean logic from within NiagaraAX to this property; it does not have to be from a boolean writable point.

The Event Detection Ctrl Extension is available from the videoDriver palette.

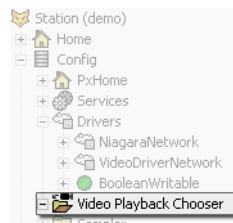
About the Video Playback Chooser

The Video Playback chooser provides a standard Video Playback view (see “[Video Playback view \(Playback Viewer\)](#)” on page 2-16) with the addition of a camera option list. The option list allows you to choose the Video Playback view from any camera under the Video Driver network. The Video Playback Chooser component has a single property:

- **Most Recent Camera Viewed**
This editable text field holds the ORD value of the last camera view that was used. In the property sheet view, you can browse to a camera and select it to provide the initial default video camera view for the Video Playback Chooser component.

The Video Playback Chooser component is available from the videoDriver palette and must be added somewhere in the station hierarchy to be used as shown in [Figure 2-15](#).

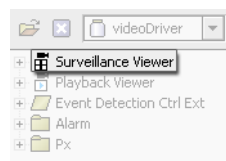
Figure 2-15 Video Playback Chooser in the nav tree



About the Surveillance Viewer

The Surveillance Viewer component provides two types of pre-configured display options that you can use to show multiple cameras on a single view. This component is located on the videoDriver palette, as shown in [Figure 2-16](#).

Figure 2-16 Surveillance Viewer on the videoDriver palette



You must add this component anywhere under your station and it automatically searches for all cameras in the station and presents them in a panel on the left side of the Surveillance Viewer or in an option list at the top left corner of the Playback Viewer. You can then drag cameras to the viewer grids, as desired. Selected cameras display video automatically in the section where you drag them. To view a single camera, click on the desired camera grid area and the default view of the camera (typically the Video Playback view) displays.

Types of Surveillance Viewer properties

The surveillance viewer has the following properties.

In addition to the common properties (mentioned in [“About the Video Driver hierarchy”](#) on page 2-2), following is a list of the unique Video Surveillance properties:

- **Frame Rate**
This property provides three options: High, Medium, and Low. The underlying video driver interprets these options.
- **Resolution**
The three options are: High, Medium, and Low. The underlying video driver interprets these options.
- **Compression**
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 four options are: None, High, Medium, and Low. The underlying video driver interprets these options
- **Stream Fox**
The two options provided here allow you to stream video using the Fox network (`true`) or, if possible, using the local network that sends video directly from the camera to the viewer (`false`). See [“Types of common video driver properties”](#) on page 2-3 for more details about Fox streaming.
- **Layout**
This option list allows you select one of several view orientations that provide a way to include one or more cameras on the selected view. This includes several layout options and a picture-in-picture option.
- **Camera1 (through Camera16)**
These are the properties that specify the Ord location of cameras in your station that are assigned to the Surveillance Viewer. From the property sheet view, it is possible to add and remove these Ord strings manually. However, they are set for you automatically when you drag a camera into a grid

from the Surveillance Viewer view. If no camera is set for a Camera property , the field should contain a “null” value.

Types of Video Driver views

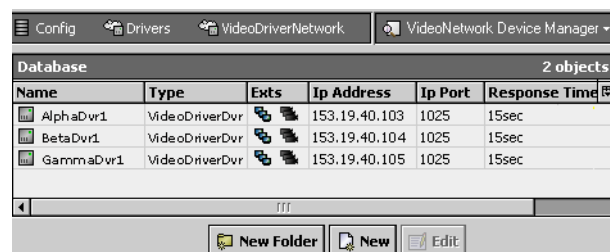
In addition to standard representations of the Wire Sheet, Category Sheet, Slot Sheet, and Link Sheet views, some Video Driver components have the following additional views:

- [VideoNetwork Device Manager view](#)
- [Camera Manager view](#)
- [Video Playback view \(Playback Viewer\)](#)
- [Live Video view](#)
- [Point Manager view](#)
- [About the Surveillance Viewer view](#)

VideoNetwork Device Manager view

The VideoNetwork Device Manager is a view on the VideoDriverNetwork component. It has a standard NiagaraAX “device manager” appearance, with a Database pane and table that is similar to all WorkbenchAX drivers device manager views.

Figure 2-17 VideoNetwork Device Manager is a standard WorkbenchAX view



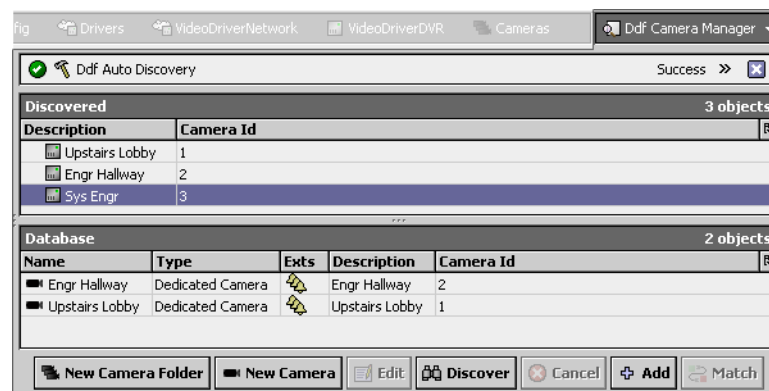
The VideoNetwork Device Manager view has **New** and **Edit** dialog boxes that are used to add, configure, and monitor VideoNetwork drivers similar to the way other network drivers are used.

Individual VideoNetwork drivers have some different characteristics, features, and properties that are specific to the type of driver that they represent. However, most of the setup, configuration, import and export features are similar among all VideoNetwork driver devices. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Device Manager view features.

Camera Manager view

The Camera Manager view is the default view of the Camera Device Extension. This view, shown in [Figure 2-18](#), has a Discovered pane and a Database pane that is similar to all WorkbenchAX driver device manager views.

Figure 2-18 Camera Manager view



The Camera Manager view has **Add**, **New**, and **Edit** dialog boxes that are used to add, configure, and monitor Camera drivers.

Individual Camera drivers have some different characteristics, features, and properties that are specific to the type of driver that they use. However, most of the discover, add, and edit features are similar among all camera devices. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Discover, Add, New and Edit view features.

Video Playback view (Playback Viewer)


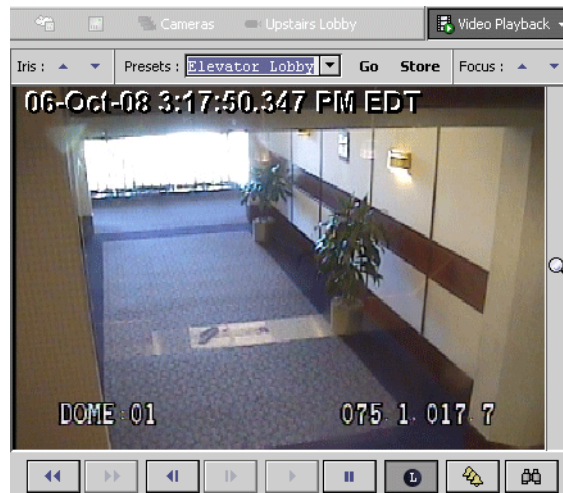
The Video Playback view is the default view of the typical Camera device and is indicated by the “playback” icon  in the view selector (top right corner). This view, shown in [Figure 2-19](#), has a video display with controls across the top and bottom of the video perimeter. You can use this view to access and review recorded video segments using the controls along the bottom of the view. This view can change to a “live” mode where it displays live video when you click on the **Live Video** button. Using the controls along the top of the view, you can choose cameras, 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.

Figure 2-19 Video Playback view



Refer to “[Types of Video View controls and indicators](#)” on page 2-18 for descriptions of controls and indicators associated with this view.

Live Video view


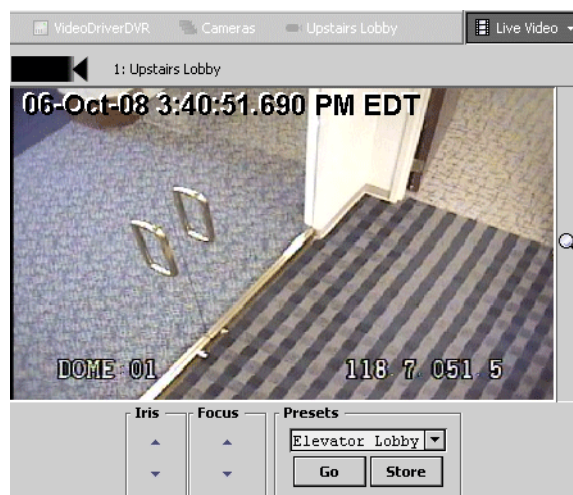
The Live Video view is a view on the typical camera device and is indicated by the live video icon in the view selector (top right corner) . This view, shown in [Figure 2-18](#), has a video display with a camera ID and description in the top left corner and camera controls across the bottom of the video view area.

Figure 2-20 Live Video view

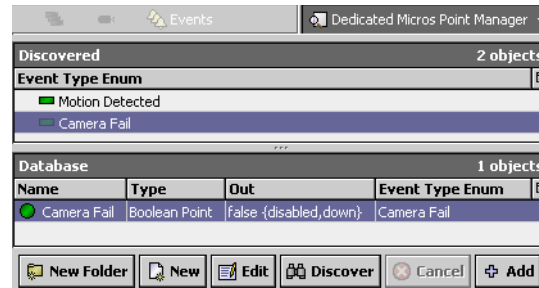


The camera controls (Iris, Focus, and Presets) are explained in “Types of Video View controls and indicators” on page 2-18.

Point Manager view

The Point Manager view is a view on the Events component (see “About Video Events” on page 2-5 for a description of Events).

Figure 2-21 Point Manager view



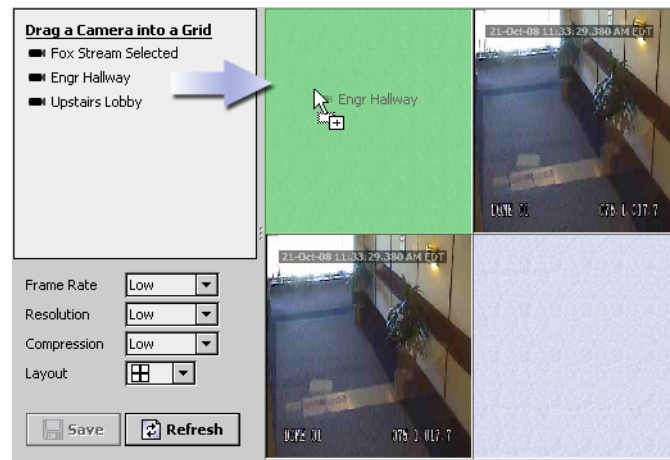
This view has **Add**, **New**, and **Edit** dialog boxes that are used to add, configure, and monitor Events.

Individual Camera drivers have some different characteristics, features, and properties that are specific to the type of driver that they use. However, most of the discover, add, and edit features are similar among all camera devices. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Discover, Add, New and Edit view features.

About the Surveillance Viewer view

The Surveillance Viewer view provides a pre-configured grid-view with various layout options that allow you to quickly find and display all of the video cameras on your NiagaraAX station. This view has several layout options that allow you display up to sixteen live cameras on a single view.

Figure 2-22 Dragging a camera onto the surveillance viewer



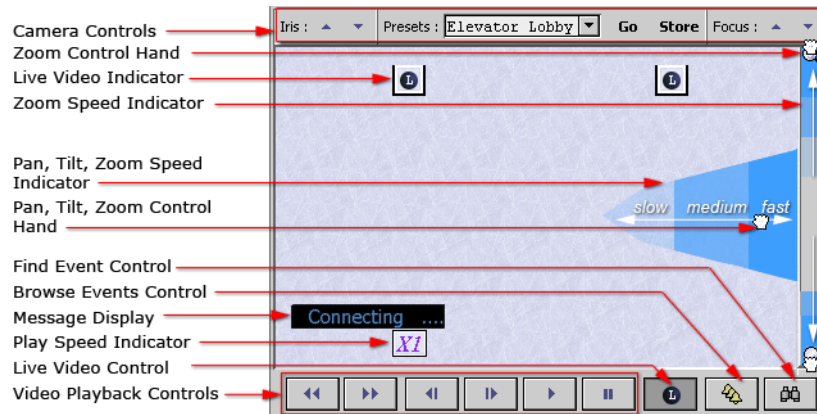
The Surveillance Viewer view is comprised of the following areas:

- **Camera listing pane**
The top left corner of this view contains all the cameras that are found on the station. You can drag cameras (listed by name) from this pane to the camera layout pane.
- **Camera layout pane**
This pane shows a grid of areas that are available for displaying camera views. The layout pane changes according to the option that you select in the Layout property.
- **Viewer properties and controls**
This bottom left area of the view contains the standard **Save** and **Refresh** buttons, as well as the following properties (described in “About the Surveillance Viewer” on page 2-14):
 - Frame Rate
 - Resolution
 - Compression
 - Layout

Types of Video View controls and indicators

Different cameras may have different controls and functions available, however, the following illustration shows a common set of camera controls and functions available in the Video Playback view.

Figure 2-23 Video Playback controls and indicators







Controls and indicators are grouped in the following categories:





- Camera Controls
- Video Playback Controls
- Event Controls
- Video Indicators

Camera controls

The following control descriptions apply to drivers that support them.

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).

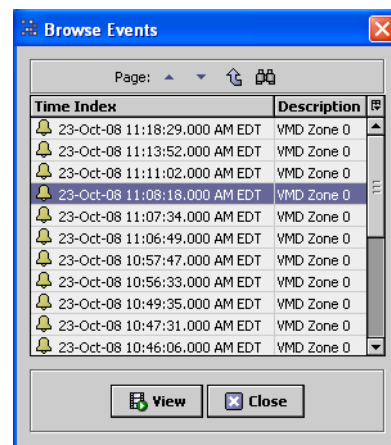
- **Iris**
The iris is the adjustable opening (aperture) of a camera that controls the amount of light that is allowed through the lens. This **Iris** control buttons are located in the top left corner of the view and allow you to manually adjust the opening:
 - Increase 
This button increases the iris opening and causes the image to brighten.
 - Decrease 
This button decreases the iris opening and causes the image to darken.
- **Presets**
This option list is located along the top and in the center of the Video Playback view. The Presets option list contains preset options that are configured in the camera's property sheet view (using the Preset Text property and the Enum dialog box. Presets are defined and actuated using the following buttons:
 - **Go**
Click this button to activate 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 appears in the list.
 - **Store**
Click this button to associate the current camera position with this Preset option.
- **Focus**
The **Focus** buttons allow you to manually "pull focus" in order to improve the sharpness and clarity or to change the focal target of the image. This button is located in the top right corner of the view and has two control buttons:
 - Increase 
This button moves the focus closer.
 - Decrease 
This button moves the focus farther.




- **Pan and Tilt**
Pan and Tilt controls are activated by clicking directly on the video display and dragging the hand icon  in the desired direction. Pan and tilt speed and direction is variable and indicated by the blue pan and tilt arrow, shown in  and described in “Video indicators” on page 2-20.
- **Zoom**
You can zoom in and out by clicking on the zoom icon  that is located in the zoom bar on the right side of the view. Zoom-in by dragging the zoom icon up and zoom-out by dragging the zoom icon down. The speed of the zoom is controlled by how far up or down you move the icon and is indicated by the color changes in the zoom bar, shown in  and described in “Video indicators” on page 2-20.

Video Playback controls

- **Fast Play Forward**
This control 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**
This control 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**
While playing back video, this function skips forward to the next recorded track and starts playing automatically.
- **Skip Reverse**
While playing video, this function skips backward to the beginning of the current track and starts playing automatically.
- **Live**
This button-control functions to switch from a playback video display to a live video display (still in the Video Playback view), when you click the button.
- **Browse events**
This function opens the **Browser Events** dialog box, as shown in [Figure 2-24](#).

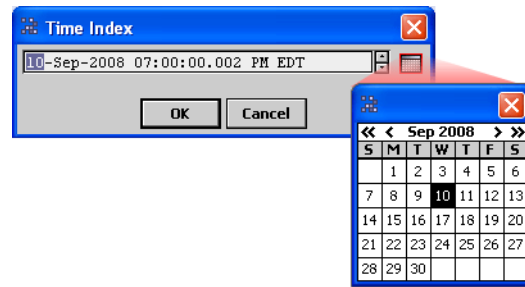
Figure 2-24 Browse Events dialog box



- **Browse events dialog box**
This dialog box displays a 2-column tabular list of events that shows a Time Index and Description of each event. In addition to the standard table controls and functions (described in the *NiagaraAX-3.x User Guide*), the dialog box has the following controls:
 - Page Up 
When the number of events exceeds the maximum that can be displayed in the table display, you can click this button to display the next earlier series of events.
 - Page Down 
When the number of events exceeds the maximum that can be displayed in the table display, you can click this button to display the next earlier series of events.
 - Page Home 
Clicking this button loads the earliest set of events.
 - Find event
Clicking this button opens the **Time Index** dialog box (see [Figure 2-25](#)).
- **Find event**
This function opens the **Time Index** dialog box.





- **Time Index dialog box**
This dialog box, shown in Figure 2-25, 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 dialog box presents an interactive calendar for browsing to and selecting the desired date.

Figure 2-25 Time Index dialog box



Video indicators

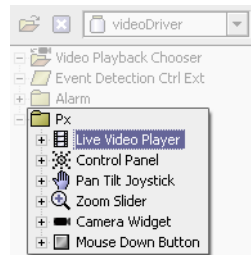
In addition to the actual video image, the following indicators are displayed in the Live Video or Video Playback views:

- **Live Video**
 This icon appears 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**
 This 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) appear 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 display over the display for a few seconds to alert you that the playback has paused. When the play button is clicked, “play” icons display 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. The following parameters are indicated:
 - **Pan and Tilt Direction**
Directional control is represented by the Pan and Tilt arrow display location on the screen. The pan and tilt locations comprise 8 segments. The largest end of the blue arrow indicates the direction that the camera is moving.
 - **Pan and Tilt Speed**
The speed indicator display one of three shades of blue to indicate slow (light blue), medium (medium blue), and fast (dark blue).
- **Zoom**
Zoom parameters are indicated by the following:
 - **Pan, Tilt, and Zoom speed**
Pan, tilt, and zoom speed is indicated by the darkness (or opacity) of the pan, tilt, and zoom indicator. 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**
Zoom direction is indicated by the vertical position of the zoom icon . 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.
 - **Pan and Tilt Speed**
The speed indicator display one of three shades of blue to indicate slow (light blue), medium (medium blue), and fast (dark blue).
- **Status message**
A text message displays on the screen at times to indicate the connection status.

Types of videoDriver Px widgets

The videoDriver module contains a set of widgets and control components that you can use to develop graphic pages for a videoDriver application. The widgets are located in the Px folder on the videoDriver palette, as shown in [Figure 2-26](#).

Figure 2-26 videoDriver Px widgets folder



Following is a list of components (and common properties) contained in the Px palette of the videoDriver and described in the following sections:

- [Common videoDriver widget properties](#)
- [Live Video Player widget](#)
- [Control Panel widget](#)
- [Pan Tilt Joystick widget](#)
- [Zoom Slider widget](#)
- [Camera widget](#)
- [Mouse Down Button widget](#)
- [About the Video Multistream Pane widget](#)

Common videoDriver widget properties

The following common properties are used in one or more of the videoDriver Px widgets:

- **Visible**
This property allows you to hide the widget by selecting the `false` option and show it again by selecting the `true` option.
- **Enabled**
This property has two options that allow you to enable (`true`) or disable (`false`) the widget.
- **Layout**
Every widget has layout properties are comprised of four parameters (X, Y, Width Height) that each have a Value and Units field.
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. Examples include "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**
This property allows you to assign a color, gradient, or image to appear as the background widget
- **Show Time Index**
This property allows you to select `true` to show the time index or `false` to hide 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**
This property allows you to set a refresh rate (in milliseconds) from the client side. This means that if a video frame arrives sooner than this value, it is not displayed on the screen until this much time elapses. If another frame arrives before the Throttle Refresh Rate time elapses, then the later frame is displayed (assuming it is the latest frame available after the Throttle Refresh Rate time elapses). This 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) then the frameRate property should also be lowered to medium or low since there is no use in streaming video faster than the client PC is permitted to render it.
- **Stream Fox**
This property allows you to select or decline the use of Fox Streaming. Refer to the section "[About the Camera device](#)" on page 2-9, for more details.

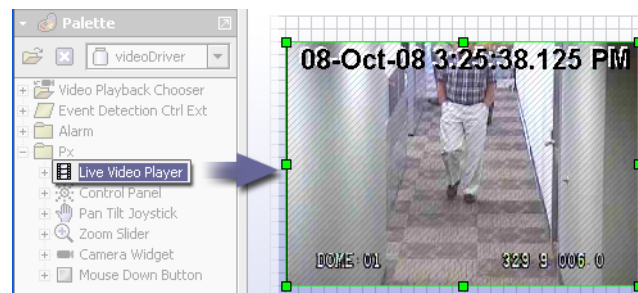
- **Resolution**
The three options are: High, Medium, and Low. The underlying video driver interprets these options.
- **Compression**
Compression allows you to reduce the bandwidth that is required for transmission of video images. Compression relates to the quality of the image that is filling the 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 four options are: None, High, Medium, and Low. The underlying video driver interprets these options
- **Stream Facets**
This property provides metadata directly to the driver. Although this data is not necessarily required for all drivers, some driver developers might decide that they need more input from the user in order to provide the camera video feed. If required, then the particular video driver must document the requirements for this field.
Note: Some drivers (including Dedicated Micros) does not require an entry in this field.
- **Frame Rate**
This property provides three options: High, Medium, and Low. The underlying video driver interprets these options.
- **binding**
The binding property contains the following parameters:
 - Ord
This field allows you to specify the Ord of the camera that you want to bind to the widget.
 - Degrade Behavior
This property allows you to choose between three options to use for cases where the connection to the bound Ord is lost (due to an invalid Ord or an inadequate permission level).
 - None: When this option is selected, no change in widget appearance occurs when the binding is lost (the widget just does not work).
 - Disable: When this option is selected, the widget is visible but is disabled when the binding is lost.
 - Hide: When this option is selected, the widget is hidden when the binding is lost.

Live Video Player widget

The Live Video Player widget is available in the videoDriver palette, as shown in [Figure 2-27](#). You can drag it directly from the palette onto a Px page to add an adjustable area on the Px page to display video images. You can adjust the widget boundaries to the desired area on the Px page. 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.

After dragging the Live Video Player widget to the Px page, you can set the binding (Video Stream Binding) to the desired video camera to start live video display. Alternatively, instead of dragging the Live Video Player from the palette, you can 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.

Figure 2-27 Live Video Player widget



Note: In NiagaraAX-3.4 and later versions this widget supports Enterprise Video functions, if it is licensed for the “remoteVideo” feature.

For a description of the Live Video Player widget properties, see [“Common videoDriver widget properties”](#) on page 2-21.

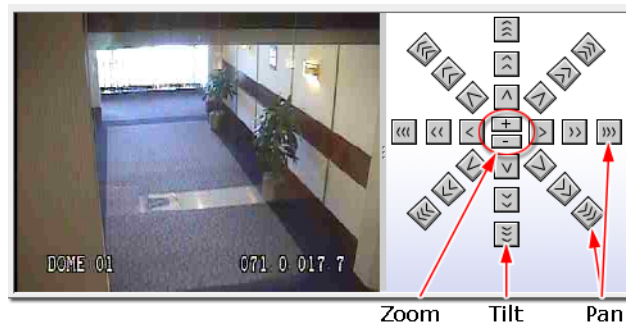
Control Panel widget

The Control Panel widget is available in the videoDriver palette. You can drag it directly from the palette onto a Px page to provide a set of buttons that allow you to pan, tilt, and zoom the camera at three speeds (Slow >, Medium >>, and Fast >>>).

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).

This widget, shown in Figure 2-27, 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 2-28 Control Panel widget



After dragging the Control Panel widget to the Px page, you can set the binding (Video Stream Binding) to the desired video camera to start live video display.

Note: Alternatively, instead of dragging the Live Video Player from the palette, you can 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.

Note: In NiagaraAX-3.4 and later versions this widget supports Enterprise Video functions, if it is licensed for the “remoteVideo” feature.

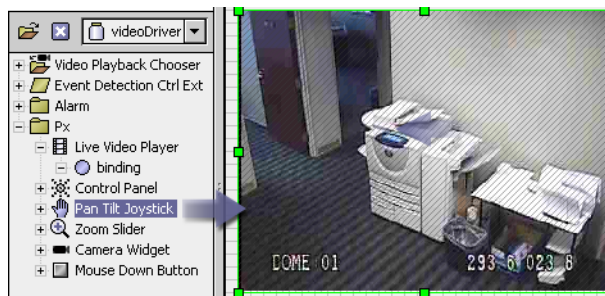
For a description of the Control Panel widget properties, see “Common videoDriver widget properties” on page 2-21.

Pan Tilt Joystick widget

The Pan Tilt Joystick widget is available in the videoDriver palette and is intended for use on touch screen systems that support dragging. You can drag it directly from the palette onto a Px page, as shown in Figure 2-29, and then drag the widget boundaries to adjust the layout size and position to fit directly over the video display.

Note: In NiagaraAX-3.4 and later versions this widget supports Enterprise Video functions, if it is licensed for the “remoteVideo” feature.

Figure 2-29 Pan Tilt Joystick widget



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

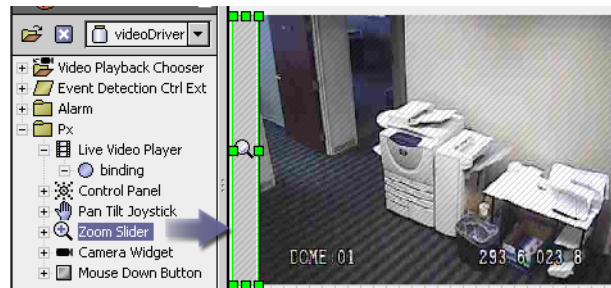
Note: Camera controls do not operate unless they are Enabled. Each of these controls must be enabled by selecting the option box for each control under the PTZ Support property on the camera property sheet. The default setting for these controls is Disabled (or, not selected).


See [Figure 2-23](#) and “Types of Video View controls and indicators” on page 2-18 for a description of the controls and indicators associated with this widget. For a description of the Pan Tilt Joystick widget properties, see “Common videoDriver widget properties” on page 2-21.

Zoom Slider widget

The Zoom Slider widget provides a way to add 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. The Zoom Slider widget is available from the videoDriver palette and you can drag it directly from the palette onto a Px page, as shown in [Figure 2-30](#). After placing it on the Px page, drag the widget boundaries to adjust the size, position, and orientation, as desired.

Figure 2-30 Zoom Slider widget



The zoom action is initiated by clicking 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 (see [Figure 2-31](#)):

- **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*.

Note: In NiagaraAX-3.4 and later versions this widget supports Enterprise Video functions, if it is licensed for the “remoteVideo” feature.

Figure 2-31 Zoom Slider control examples



The speed of the zoom is controlled by how far up or down you move the icon and is indicated by the color changes in the zoom bar, shown in “Video Playback view (Playback Viewer)” on page 2-16 and described in “Video indicators” on page 2-20.

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).

For a description of the Zoom Slider widget properties, see “Common videoDriver widget properties” on page 2-21.

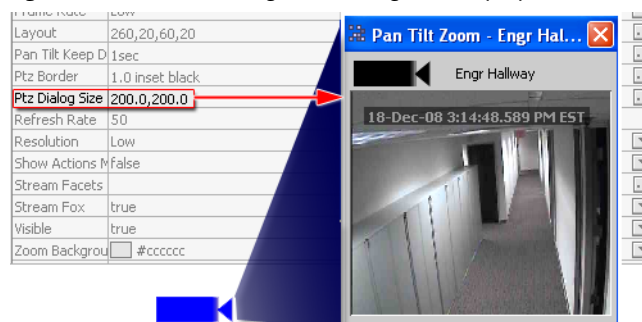
Camera widget

The Camera widget, when implemented on a Px page, opens a dialog box that shows the video image from a linked camera in a popup window. This view includes the pan, tilt, and zoom features as well as buttons to adjust the camera's focus and iris. Presets are also available. The Camera widget is available in the videoDriver palette, as shown in [Figure 2-33](#). 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. You can also adjust the Camera widget colors by editing the properties, as described in “Common videoDriver widget properties” on page 2-21.

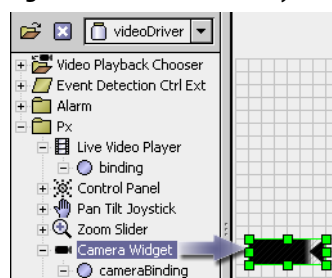
Note: It is important to set the PTZ properties in the Camera widget property sheet. These property values define the size of the popup dialog box that opens, as shown in Figure 2-32.

Figure 2-32 Camera widget PTZ dialog box size properties



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

Figure 2-33 Live Video Player widget



Note: In NiagaraAX-3.4 and later versions this widget supports Enterprise Video functions, if it is licensed for the “remoteVideo” feature.

For a description of the Camera widget properties, see “Common videoDriver widget properties” on page 2-21.

Mouse Down Button widget

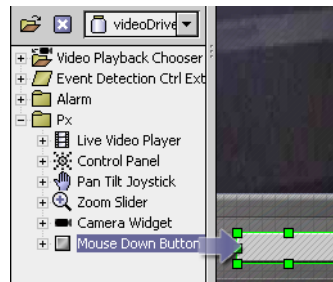
The Mouse Down Button widget is supported in NiagaraAX-3.4 and later, only. When configured as part of a Px page, this widget allows for buttons to adjust the camera iris and the focus so that they are functionally equivalent to the **Iris** and **Focus** buttons that are provided in the Live Video view (see “Live Video view” on page 2-16).

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).

The Mouse Down Button widget is available in the videoDriver palette, as shown in Figure 2-34. 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. You can also adjust the Camera widget colors by editing the properties, as described in “Common videoDriver widget properties” on page 2-21.

After dragging the Camera widget to the Px page, you can set the Hold Down Px binding (Video Ptz Binding) to the desired video camera. to enable live video display.

Figure 2-34 Mouse Down Button widget



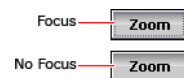
For a description of the Mouse Down Button widget properties, see [“Types of Mouse Down Button properties”](#) on page 2-26.

Types of Mouse Down Button properties

In addition to the common properties, described in [“Types of videoDriver Px widgets”](#) on page 2-21, the following list provides a description of the Video Player widget properties:

- **Text**
This property contains the text that displays on the button.
- **Image**
This property allows you to choose an image to display on the button widget.
- **Font**
This property allows you to select the font to use for the display text.
- **Foreground**
This option allows you to specify the color of the display text.
- **Background**
This property provides a way to specify the color of the button, using a solid color, a gradient, an image, or the default background color.
- **Halign and Valign**
These two properties specify the alignment characteristics of the display text.
- **Text to Icon Align, Text to Icon Gap**
These two properties specify how any image (specified using the image property) displays in relation to the text (text property).
- **Blink**
When set to true, this property causes the Mouse Down Button to blink.
- **Focus Traversable**
The default value (`true`) allows the selected widget to be included in the set of Mouse Down Buttons that can sequentially receive focus when the Tab key is pressed in a Px view containing the button. If the `false` value is selected, focus on that particular button cannot be set using the Tab key.

Figure 2-35 Button focus indicator is available when Focus Traversable property is set to `true`



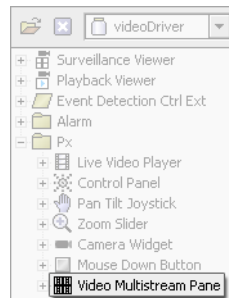
- **Button Style**
Two options are offered with this property. Choose the default `Normal` option to display a common interface button and choose `Toolbar` to use a button that is more appropriate for displaying along a toolbar menu.
- **Keep Down Interval**
This property causes the corresponding slot 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.
- **binding**
The binding property contains the following parameters:
 - **Ord**
This field allows you to specify the Ord of the camera that you want to bind to the widget.
 - **Degrade Behavior**
This property allows you to choose between three options to use for cases where the connection to the bound Ord is lost (due to an invalid Ord or an inadequate permission level).

- None: When this option is selected, no change in widget appearance occurs when the binding is lost (the widget just does not work).
- Disable: When this option is selected, the widget is visible but is disabled when the binding is lost.
- Hide: When this option is selected, the widget is hidden when the binding is lost.
- On Mouse Down (available in NiagaraAX-3.4 and later)
This property 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** dialog box that appears when you click in the property field (from the Px Editor view).
- On Mouse Release (available in NiagaraAX-3.4 and later)
This property 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** dialog box that appears when you click in the property field (from the Px Editor view).

About the Video Multistream Pane widget

The Video Multistream Pane widget is available in the videoDriver palette Px folder, as shown in [Figure 2-36](#). You can drag it directly from the palette onto a Px page to design a single Px page that holds one or more camera views.

Figure 2-36 Video Multistream Pane widget in the videoDriver palette



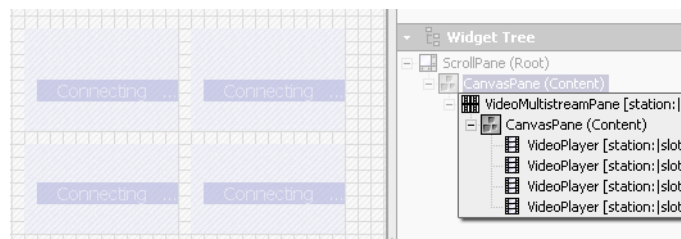
One of the primary benefits of using this widget is that it provides a way to use a single network connection to display multiple cameras, thereby saving network bandwidth. You can drag the widget boundaries to adjust its size and position on the Px page.

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

To use the widget, you can drag it onto a Px page canvas pane and set the Video Multistream Binding Ord to the DVR device. The Video Multistream Pane comes with a Canvas Pane that has default height and width of 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 display that you want. See [Figure 2-37](#) for an example of the Video Multistream Pane being configured in the Px Editor.

Note: Alternatively, instead of dragging the Video Multistream Pane widget and subsequent Live Video Player widgets from the palette, you can 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.

Figure 2-37 Example Video Multistream Pane widget with four Live Video Players



CHAPTER 3

Common Video Driver tasks

The following main sections provide information related to some of the common uses of the Video Driver:

- [General procedures](#)
- [Alarm-related procedures](#)
- [Widget procedures](#)

General procedures

The following general procedures are described in this section:

- [Install a videoDriverNetwork and device](#)
- [Adding a Video Driver camera to a station \(non-DVR\)](#)
- [Adding a remote camera to a station](#)
- [Creating camera “Move” Presets](#)
- [Using the Playback Viewer \(Playback Chooser\)](#)
- [Using the Surveillance Viewer](#)

Install a videoDriverNetwork and device

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

To install the Video Driver Network with a DVR device component, do the following:



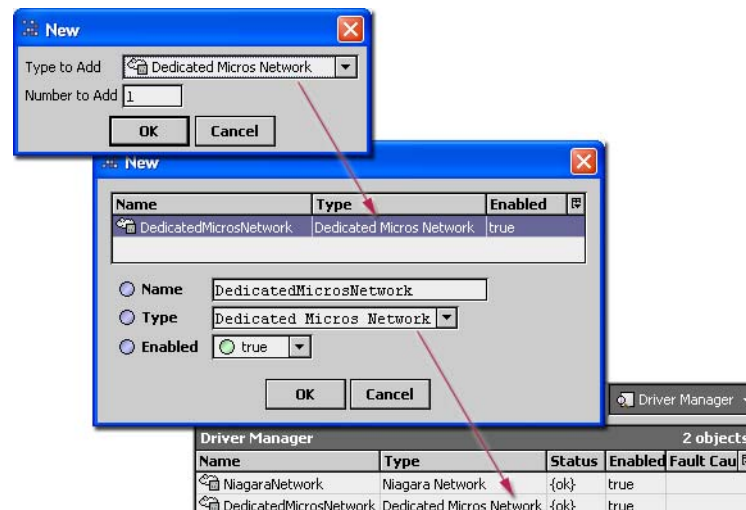
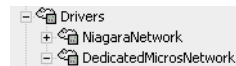
- Step 1 In WorkbenchAX, connect to the target station (where you want to install the network driver). Expand the Config node  in the nav tree and double-click on the Drivers node . The Driver Manager view displays.
- Step 2 At the bottom of the view, click the **New** button. The **New** dialog box appears, as shown in [Figure 3-1](#).

Figure 3-1 Use the New dialog box to add a Video Driver (Dedicated Micros driver example)



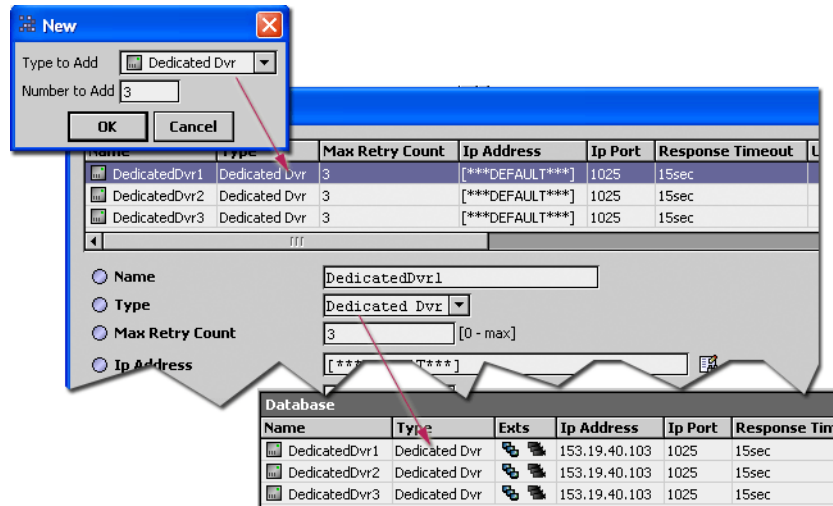
- Step 3 In the **New** dialog box, select the desired network for the specific video driver from the option list, enter the number of networks to add, and click the **OK** button. The **New** dialog box appears again with the selected driver(s) displayed in the table pane across the top. Select a Video Driver from the option list and edit the following fields, as desired:
- **Name**
Type a meaningful name in this field to identify the Video Driver instance.
 - **Type**
This is the same option list as in the previous step. Verify the current selection is the desired Video Driver.
 - **Enabled**
Set this value to **true** (default) to enable each added Video Driver, as desired.
- Step 4 In the **New** dialog box, click the **OK** button. The Video Driver appears in the Driver Manager view and in the nav tree, as shown in [Figure 3-2](#).

Figure 3-2 Video Driver under Drivers node in nav tree



- Step 5 Double-click the newly added Video Driver. The Video Driver Manager view displays.
- Step 6 At the bottom of the view, click the **New** button. The **New** dialog box appears, as shown in [Figure 3-3](#).

Figure 3-3 Use the New dialog box to add video devices (Dedicated Micros DVR example)



- Step 7 In the **New** dialog box, verify that the desired video device is selected in the option list, enter the number of video devices to add, and click the **OK** button. The **New** dialog box appears again with the selected video device(s) displayed in the table pane across the top. Select one or more of the listed devices and edit the following fields, as desired:

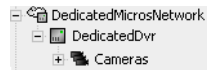
Note: You can batch-edit the **Type** and **Enabled** fields by selecting all entries in the table pane. However, you must individually select each entry to name it.

- **Name**
Type a meaningful name in this field to identify the device.
- **Type**
This is the same option list as in the previous step. Verify the current selection or choose a different device, if desired.
- **Max Retry Count**
Set this value to zero or greater to specify the maximum allowable attempts at establishing a network connection with the device.
- **Ip Address, IP Port**
In these two fields, enter the local area network IP address and port number for the specific video device that you are adding.
- **Response Timeout**
In this field, set a maximum amount of time to wait for communications from the device before indicating a “timeout” status.
- **Username, Password**

- In these two fields, enter the credentials for user level access to the device.
- **User Name, Password (For Device Config)**
In these two fields, enter the credentials for admin level access to the video device (if applicable).
- **Description**
Type text in this field to represent and identify each video device.

The new video device appears under the Video Driver network, as shown in [Figure 3-4](#).

Figure 3-4 VideoDriverNetwork with video device (Dedicated Micros DVR example)



Note: Some video device extensions include one or more default child nodes. For example, a DVR device may contain a “Cameras” device extension.” These specific device extensions are container components that organize and provide manager views for the associated devices. However, some video devices may not contain or support these types of subordinate device extensions.

Adding a Video Driver camera to a station (non-DVR)

This procedure requires that a non-DVR Video Driver network is already installed in the station. Refer to [“Install a videoDriverNetwork and device”](#) on page 3-1, if necessary.

To add a Video Driver camera to a station, do the following:







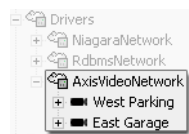
- Step 1 In WorkbenchAX, connect to the target station (where you want to install the camera). Expand the Config node , the Drivers node , and then the Video Driver node  to display the Cameras device extension  in the nav tree.
 - Step 2 In the nav tree, double-click the Cameras device extension . The Camera Manager view displays.
 - Step 3 In the Camera Manager view, click the **Discover** button at the bottom of the view. The **Discovery Parameter** dialog box appears with default settings.
- Note:** For initial setup, you can usually accept all default settings.
- Step 4 In the **Discovery Parameters** dialog box, click the **OK** button. The discovery job runs and “discovered” cameras appear in the Discovered pane at the top of the view.
- Note:** 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 5 In the Discovered pane, select one or more discovered Cameras to add.
- Note:** The Camera Manager's **Add** button is available when you have one or more items selected (highlighted) in the top Discovered pane. Also, the toolbar has an available Add tool  and the Manager menu has an Add command. Also, you can simply double-click a discovered item to bring it up in the **Add** dialog box.
- Step 6 At the bottom of the view, click the **Add** button. The **Add** dialog box appears, with all selected points in the top pane of the dialog box.
 - Step 7 In the **Add** dialog box, edit properties as desired (refer to [“About the Camera device”](#) on page 2-9 for a description of typical camera properties) and click the **OK** button. The camera(s) are added to the Database pane and appear in the nav tree, as shown below.

Figure 3-5 Cameras under the Cameras device extension (non-DVR)







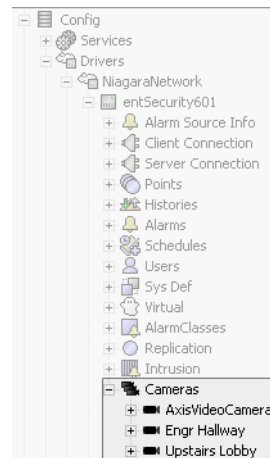
Adding a remote camera to a station

This procedure requires that a Video Driver network is already installed in the remote station and that the remote station has been discovered and added under the local station's NiagaraNetwork. In addition, the following prerequisites apply both the target (remote station) and local station:

- NiagaraAX-3.4 or later is installed.
- The stations are licensed for remote video.
- The `remoteVideo.jar` file (module) is installed, in addition to the standard video module requirements that are listed in *Chapter 1, Video Driver Installation*.
- The RemoteVideoService component is installed under the station Services node.

To add a remote camera to a station, do the following:

- Step 1 In WorkbenchAX, open the supervisor station and, in the nav tree, expand the Config node , the Drivers node, and the NiagaraNetwork node  to display the remote station in the nav tree.
- Note:** *If the desired remote station is not visible under the NiagaraNetwork node you must do a Discover and Add from the supervisor's Station Manager view to add the desired remote station.*
- Step 2 In the nav tree, expand the remote Niagara Station node and double-click on the Cameras node . The Niagara Camera Mgr view displays.
- Note:** *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 In the Camera Manager view, click the **Discover** button at the bottom of the view. The Discover job runs and “discovered” cameras appear in the Discovered pane at the top of the view. These are all cameras that have been added at the remote station.
- Step 4 In the Discovered pane, select one or more discovered Cameras to add.
- Note:** *The Camera Manager's Add button is available when you have one or more items selected (highlighted) in the top Discovered pane. Also, the toolbar has an available Add tool  and the Manager menu has an Add command. Also, you can simply double-click a discovered item to bring it up in the Add dialog box.*
- Step 5 At the bottom of the view, click the **Add** button. The **Add** dialog box appears, with all selected points in the top pane of the dialog box.
- Step 6 In the **Add** dialog box, edit properties as desired (refer to “About the Camera device” on page 2-9 for a description of typical camera properties) and click the **OK** button. The camera(s) are added to the Database pane and appear in the nav tree, under the NiagaraNetwork, as shown below.
- Step 7 Remote cameras under the NiagaraNetwork



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.*

To create a camera Preset, do the following:

- Step 1 In the NiagaraAX nav tree, expand nodes, as required, under the Station > VideoDriverNetwork to expose the desired camera node.
- Step 2 Right-click on the desired camera node and select **Video Playback** or **Live Video** from the popup menu. The selected camera view displays.
- 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 the **Store** button. The Preset is stored.

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 dialog box where you can Add, Modify, or Remove Preset options.*

Using the Playback Viewer (Playback Chooser)

You can use the Playback Chooser component to automatically populate an option list with all cameras in your station. However, before the Playback Viewer can be used, you must install it in the running station. It can be installed at any location within the station nav tree, but you must be sure to only install one instance of this component.

Note: Starting with NiagaraAX-3.4 or later, cameras associated with remote stations are visible to “remoteVideo” licensed supervisor stations. The remote stations must be added and cameras “discovered” under the supervisor’s NiagaraNetwork.

Note: You can also add the Playback Viewer component directly to a Px page. If you drag a Playback Chooser to a Px page, choose the Playback Viewer from the Workbench Views options in the Make Widget Wizard. To use the Playback Viewer (Playback Chooser), do the following.

- Step 1 In the NiagaraAX Palette side bar, open the videoDriver palette.
- Step 2 From the videoDriver palette, drag and drop the Playback Viewer component in the desired location (a Property Sheet view or directly in 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 desired camera. The camera Playback Viewer view displays the selected camera video.

Using the Surveillance Viewer

You can use the Surveillance Viewer component to automatically populate a “Camera Pane” with a list of all cameras in your station. Each of these cameras may be dragged to a pre-designed grid of your choice. However, before the Surveillance Viewer can be used, it must be installed in the running station. It can be installed at any location within the station nav tree, but you must be sure to only install one instance of this component.

Note: Starting with NiagaraAX-3.4 or later, cameras associated with remote stations are visible to “remoteVideo” licensed supervisor stations. The remote stations must be added and cameras “discovered” under the supervisor’s NiagaraNetwork.

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

To use the Surveillance Viewer (Playback Chooser), do the following:

- Step 1 In the NiagaraAX Palette side bar, open the videoDriver palette.
- Step 2 From the videoDriver palette, drag and drop the Surveillance Viewer component in the desired location (a Property Sheet view or directly in the nav tree). The Surveillance Viewer automatically populates a “Camera Pane” with a list of all cameras in the station.
- Step 3 In the property options fields, select the desired Frame Rate, Resolution, Compression. These properties affect the amount of bandwidth and picture quality of the video displayed in this view. Refer to “Types of Surveillance Viewer properties” on page 2-9 for details about these properties.
- Step 4 The layout option list provides several different arrangements for a differing number of live video views. 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, as desired, onto an unoccupied grid in the main view pane. The camera Playback Viewer view displays the selected camera video.
- Step 6 Click the **Save** button at the bottom of the view. The view is saved.
- Step 7 Click any view in the grid to take you to the selected camera’s Video Playback view.

Alarm-related procedures

The following alarm-related procedures are included in this section:

- [Route video surveillance system alarms to NiagaraAX alarms](#)
- [Route NiagaraAX alarms to a video surveillance system](#)
- [Replay alarm video \(Video Playback view\)](#)
- [Replay alarm video \(NiagaraAX alarm console\)](#)
- [Disable and enable alarm events in a video surveillance system](#)
- [Create a camera view on Px page \(Live Video Player or Camera Widget\)](#)
- [Create a video multistream Px view](#)

Route video surveillance system alarms to NiagaraAX alarms

This procedure assumes that you are connected to a NiagaraAX station with sufficient editing privileges and that the station has a valid video network installed and properly configured.

Refer to “Getting started with a Video Driver” on page 1-2 for more details.

Note: *The following steps are written for a generic video driver and the term “Video Driver” refers to any video driver. Some details may not apply to all drivers. Exceptions are noted, where possible.*

- Step 1 In the NiagaraAX nav tree, expand the station “Config” and “Drivers” nodes to display the desired video driver network node.
- Step 2 Under the video network node, expand the video device (camera for non-DVR cameras or DVR and camera for DVR cameras) to expose the Events node.
- Note:** *If there is no Events node under the camera device, then the camera does not support importing video surveillance system alarms into NiagaraAX.*
- Step 3 In the nav tree, double-click the Events node. The Video Driver Point Manager appears. If needed, refer to the *NiagaraAX-3.x Drivers Guide* for a detailed explanation of how to use this (Point Manager) view.
- Note:** *Some video drivers do not require “Event Discovery”. With these types of drivers, Events appear immediately in the Video Driver Point Manager View.*
- Step 4 In the Video Driver Point Driver view, click the **Discover** button at the bottom of the view. The Discovery job runs (if necessary) and any video Events appear in the Discovered pane.
- Step 5 From the Discovered pane, select one or more desired Events and click the **Add** button. The **Add** dialog box appears, displaying selected events as potential boolean points. If the video driver supports other point types (for example “string”) then you can select the supported point type at this time.
- Step 6 In the **Add** dialog box click the **OK** button. The Events appear in the Database pane and under the appropriate Video Driver Events node in the nav tree. For each point that is added, the out value of the point indicates the Event status. For example, the Event “out” value is set to `true` when an alarm event is occurring and `false` when an alarm event is not occurring.
- Step 7 In the nav tree, under the Events node, double-click on the Event point (“Motion Detected”, for example) that you want to route an alarm from. The Event property sheet view displays.
- Step 8 In the Event property sheet view, add and configure an appropriate alarm extension (for example, the Boolean Change of State Alarm Ext) from the alarm palette. Using the alarm extension, you can route the alarm to the desired NiagaraAX alarm class in order to send the alarm notification to the alarm console. Refer to the *NiagaraAX-3.x User Guide* for details about configuring and routing NiagaraAX alarms.
- Step 9 If you want the alarm console to indicate that there is a stored video associated with this alarm, do the following:
 - From the VideoDriver palette, drag a Video Alarm Ext Parameter onto the alarm extension component. When you drop it on the alarm extension, it automatically fills in the associated camera information.
 - Leave the Start Recording property set to `false` since it is already recording.

Route NiagaraAX alarms to a video surveillance system

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

Note: *The remoteVideo feature (available in NiagaraAX-3.5.53 and later) allows the Video Surveillance Viewer component on a NiagaraAX station to view either live or recorded video from any recording device that is configured on a remote station communicating over the NiagaraAX Network. The local station must be licensed for the “remoteVideo” feature.*

- Step 1 In the NiagaraAX alarm nav tree, double-click on any standard NiagaraAX control point that you want to route an alarm from. The control point Property Sheet view displays.
- Step 2 From the NiagaraAX Palette side bar, open the alarm palette and drag and drop a standard NiagaraAX Alarm Extension onto the control point and configure the following properties, as desired:
 - To Offnormal Text
 - To Normal Text
 - To Fault Text
 - To Fault Algorithm and Offnormal Algorithm (one or both)

- Alarm Class
- Step 3 From the NiagaraAX Palette side bar, open the videoDriver palette and drag and drop a Video Alarm Ext Parameters component onto the Alarm Extension that you added in the previous step. The Video Alarm Ext Parameters component appears as a property of under the Alarm Extension in the Property Sheet view (and nav tree).
- Step 4 In the Video Alarm Ext Parameters Property Sheet view, configure the properties, as follows:
- Camera Ord
Click on the folder and browse in the **Choose Camera...** dialog box to select the camera that you want to route an alarm to. When you select a camera and click the **OK** button, the Start Recording option list appears.
Note: When browsing in the Choose Camera... dialog box, if you see a video camera in the station but the Ok button is not available then that particular type of camera in its particular video driver does not support this feature. It is probably a very basic, stand-alone camera in that case and does not support any special alarming features.
 - Start Recording
Select `true` from the option list, unless the control point that is the alarm origination point is under the same video camera that you just selected in the previous (Ord) property (see Caution, below).



Caution If you select `true` for a point that has been imported from a video surveillance system, then you may duplicate the recording - since the video system has originally created the alarm and recorded the associated video footage. In this configuration select `false` for the Start Recording property.

When you select `true`, the Go To Preset option list displays.


- Go To Preset
Select `true` if you want to have the NiagaraAX alarm signal the camera to move to a particular camera Preset point as a function of routing the NiagaraAX alarm into the video surveillance system. When you select `true`, the Camera Preset option displays.
 - Camera Preset
Select one of the preset options from the option list. The selection for this property may vary depending on the way that the particular video driver provides access to the camera presets.
Note: Make sure that the appropriate PTZ Support properties are enabled on the camera that you are sending the alarm to.
- Step 5 In the NiagaraAX nav tree, expand the nodes: Station > Config > Services and double-click on the AlarmService component in the nav tree. The AlarmService Wire Sheet view displays.
- Step 6 In the NiagaraAX Palette side bar, open the videoDriver Palette and drag a Video Alarm Recipient component from the Alarm folder onto the AlarmService Wire Sheet view.
- Step 7 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. The Alarm Class component that you use in this step must be the same one that you designated in the control point Alarm Extension Alarm Class property (Step 2). Alarm routing from NiagaraAX 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 then the particular video driver will also be asked to request the video surveillance system to start recording or protecting the video feed per its internal alarm settings at the exact time when the Niagara AX alarm occurs.

Replay alarm video (Video Playback view)

The following steps assume that the Event camera extension has been configured, event points have been added to the Event Camera Extension component, and alarm events have occurred.

Note: The `remoteVideo` feature (available in NiagaraAX-3.5.53 and later) allows the Video Surveillance Viewer component on a NiagaraAX station to view either live or recorded video from any recording device that is configured on a remote station communicating over the NiagaraAX Network. The local station must be licensed for the "remoteVideo" feature.

To replay alarm video from the Video Playback view, do the following:

- Step 1 In the NiagaraAX nav tree, double-click on the appropriate camera. The Video Playback view displays.
- Step 2 At the bottom of the view, click the **Events** button . The **Browse Events** dialog box opens, displaying a list of any events. Use the controls at the top of the dialog box to page up or down to find the event that you want.

Note: If you know the time of the event you are looking for, click the **Search** button in the bottom of the view and enter the time in the **Time Index** dialog box. Click **OK** to go directly to the selected playback time.

- Step 3 In the **Browse Events** dialog box, select the desired event and click the **OK** button. The event plays in the Video Playback view.


Replay alarm video (NiagaraAX alarm console)

Note: The *remoteVideo* feature (available in NiagaraAX-3.5.53 and later) allows alarms to be routed to a supervisor station and for the associated alarm video to be played from the supervisor alarm console. The supervisor station must be licensed for the “remoteVideo” feature and the remote station added under the supervisor’s Niagara Network.

To replay alarm video from the NiagaraAX alarm console, do the following:

- Step 1 In the NiagaraAX nav tree, expand the nodes: **Station > Config > Services > AlarmService** and double-click on the **ConsoleRecipient** component in the nav tree. The **Alarm Console** view displays a tabular list of alarms.

- Step 2 Select on the desired video alarm and do one of the following:

Note: Video alarms are indicated by the filmstrip with green arrow button icon (). Only video alarms have this icon.

- Click the **Alarm Video** button at the bottom of the view.
This action opens the **Alarm Video** dialog box (Video Playback view) and plays the alarm video. The standard Video Playback controls are available at the bottom of the dialog box.
- Double-click the video alarm record.
This action opens the **Open Alarm Sources** dialog box, displaying all open alarms associated with the selected alarm source. In this dialog box, do *either one* of the following:
 - Select the desired alarm record and click the **Alarm Video** button at the bottom of the dialog box. This action opens the **Alarm Video** dialog box (Video Playback view) and plays the alarm video. The standard Video Playback controls are available at the bottom of the dialog box.
 - Double-click on the desired alarm record entry. This action opens the **Alarm Record** dialog box, showing detailed information about the alarm. From this view you can:
 - Click the **Close** button to close the **Alarm Record** dialog box.
 - Click the **Alarm Video** button at the bottom of the dialog box.
This action opens the **Alarm Video** dialog box (Video Playback view) and plays the alarm video. The standard Video Playback controls are available at the bottom of the dialog box.

- Step 3 Close all dialog boxes when viewing is complete.

Disable and enable alarm events in a video surveillance system

As part of the videoDriver framework API, video driver developers may implement a standard mechanism through which particular alarm events on particular video cameras are enabled or disabled from NiagaraAX. For some video drivers this allows motion detection to be enabled or disabled on a per-camera basis.

To enable or disable video surveillance alarm events using NiagaraAX, do the following:

- Step 1 If the desired Event point is not already under the Events node, refer to [“Route video surveillance system alarms to NiagaraAX alarms”](#) on page 3-6 and add the desired alarm event point. For example, for some drivers you could add a “Motion Detected” point under the device Events extension.
- Step 2 In the NiagaraAX nav tree, double-click on the target Event point. The Event point Property Sheet view displays.
- Step 3 In the NiagaraAX palette side bar, drag the Event Detection Ctrl Ext component from the videoDriver palette and drop it onto the control point Property Sheet view. The Event Detection Ctrl Ext component displays under the control point in the Property Sheet view.
- Step 4 Select the control point Wire Sheet view from the view selector. The Event Detection Ctrl Ext is displayed on the Wire Sheet view.
- Step 5 Right-click on the Wire Sheet view and select **New>BooleanWritable** from the popup menu. The **Name** dialog box displays.
- Step 6 Click the **OK** button in the **Name** dialog box. The BooleanWritable point is added to the Wire Sheet view.
- Step 7 Link the Out property of the BooleanWritable control point to the Enable Detection property of the Event Detection Ctrl Ext. The alarm detection feature may now be enabled or disabled by the status of the Emergency Override action on the BooleanWritable control point.

- Step 8 Invoke the Emergency Active action on the BooleanWritable control point to enable the detection mechanism in the video field device for this particular event.
- Note:** You may link any Boolean logic (such as a Boolean Schedule) from within NiagaraAX to enable or disable the event detection mechanism for the particular type of event for the particular camera. It does not have to just be from a BooleanWritable as in this example.

Widget procedures

The following widget-related procedures are included in this section:

- [Create a camera view on Px page \(Live Video Player or Camera Widget\)](#)
- [Create a video multistream Px view](#)

Create a camera view on Px page (Live Video Player or Camera Widget)

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

Note: The remoteVideo feature (available in NiagaraAX-3.5.53 and later) allows you to use cameras associated with remote stations. The supervisor station must be licensed for the “remoteVideo” feature and the remote station present under the supervisor’s Niagara Network.

With an enabled and configured VideoDriverNetwork, do the following:

- Step 1 From the NiagaraAX nav tree, under the DVR device, drag a camera onto a Px page. The Make Widget Wizard displays.
- Step 2 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 in the **Make Widget Wizard**.
- Note:** You can configure the widget properties in the **Make Widget Wizard** before clicking **OK** or in the Properties dialog box after the widget is on the Px page.
- Step 3 In the **Make Widget Wizard**, click the **OK** button. The widget appears on the Px page.
- Step 4 Select the widget, resize, and move it to the desired location on the Px page.
- Step 5 Save the Px page and select the Wb Px View to display the Camera Widget or Live Video Player widget.

Create a video multistream Px view

You can use the Video Multistream Pane to display multiple video images using a single video binding. This is available only using cameras that are controlled by a single DVR device.

To create a video multistream Px view, do the following:

- Step 1 Create a new Px page or open a Px page to edit in the Px Editor view.
- Step 2 From the NiagaraAX 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 displays.
- Step 4 In the **Make Widget Wizard**, select the Video Multistream Pane from the palette field and click the **OK** button. The Video Multistream widget appears on the Px page and in the Px Editor Widget Tree pane.
- Step 5 In the Px Editor Widget Tree, double-click on the VideoMultistreamPane. The properties dialog box displays.
- Step 6 In the Properties dialog box, set the properties, as desired and click the **OK** button. Refer to “About the Video Multistream Pane widget” on page 2-22 for more details about the widget properties.
- Note:** It is sometimes easier to set the Layout property in the Properties dialog box 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 NiagaraAX nav tree, expand the DVR device and any container folders (such as a Cameras folder) to display cameras under the DVR device.
- Step 8 For each camera that you want to add to the view, do the following:
- Drag a camera onto the CanvasPane under the VideoMultistreamPane. The Make Widget Wizard displays.
 - In the Make Widget Wizard, with the From Palette option selected, select the Live Video Player widget from the videoDriver Px folder and click the **OK** button. The Live Video Player displays on the Px view.
 - Select the Live Video Player widget, resize, 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.

CHAPTER 4


Component Guides

These Component Guides provide summary information about the videoDriver components.

Components in videoDriver module


- [VideoPlaybackChooser](#)
- [EventDetectionCtrlExt](#)
- [VideoAlarmRecipient](#)
- [VideoAlarmExtParameters](#)
- [VideoPlayer](#)
- [VideoPtzCtrlPanel](#)
- [VideoPanTiltJoystick](#)
- [VideoZoomSlider](#)
- [VideoCameraWidget](#)
- [HoldDownPxButton](#)

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.


See also, [“About the Video Playback Chooser”](#) on page 2-13.

videoDriver-EventDetectionCtrlExt


 The Event Detection Ctrl Ext provides a standard mechanism to enable or disable particular alarm events on specific cameras. This means that you can enable or disable different events on a per-camera basis based on some boolean logic (for example, a Schedule). The Event Detection Ctrl Extension is available from the videoDriver palette.

See also, [“About the Event Detection Ctrl Ext”](#) on page 2-13.


videoDriver-VideoAlarmRecipient

 This component is used to specify parameters relating to routing alarms from NiagaraAX to a video surveillance system. You can set it up by dragging the component from the videoDriver palette (Alarm folder) onto the NiagaraAX Alarm Service Wire Sheet view and linking into the Video Alarm Recipient from the desired Alarm Class component. Also see [“About Video Driver alarms”](#) on page 2-4.


videoDriver-VideoAlarmExtParameters

 This component is used to configure a NiagaraAX alarm extension so that an alarm from a NiagaraAX component can direct a video camera to start recording and point to a preset target. This extension provides a link from the component alarm extension to the camera. This component is provided in the videoDriver palette (Alarm folder). Also see [“About Video Driver alarms”](#) on page 2-4.

videoDriver-VideoPlayer (Live Video Player)


 This component is a Px widget that allows you to design a Px page with video displays. You can use it by adding the widget to a Px page, configuring it and sizing it, as desired. This widget is provided in the videoDriver palette. See [“Live Video Player widget”](#) on page 2-22, for more details.

videoDriver-VideoPtzCtrlPanel (Control Panel)


 This component is a Px widget that provides point, tilt, and zoom control to a camera that is displayed on the Px page. You can drag it directly from the palette onto a Px page to provide a set of buttons that allow you to pan, tilt, and zoom the camera at three speeds. This widget is intended for use

on very basic touch screen systems that do not support dragging (as required for using the Pan Tilt Joystick widget). This widget is provided in the videoDriver palette. See [“Control Panel widget”](#) on page 2-23 for more details.


videoDriver-VideoPanTiltJoystick (Pan Tilt Joystick)

 This component is a Px widget that provides point, tilt, and zoom control to a camera that is displayed on the Px page. You can use it by adding it to your Px page and sizing 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. This widget is provided in the videoDriver palette. See [“Pan Tilt Joystick widget”](#) on page 2-23 for more details.


videoDriver-VideoZoomSlider (Zoom Slider)

 This component is a widget that provides a way to add 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. The Zoom Slider widget is available from the videoDriver palette and you can 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. See [“Zoom Slider widget”](#) on page 2-24 for more details.


videoDriver-VideoCameraWidget (Camera Widget)

 This component is a widget that, when implemented on a Px page, opens a dialog box that shows the video footage from a linked camera. 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. See [“Camera widget”](#) on page 2-24 for more details.

videoDriver-HoldDownPxButton (Mouse Down Button)

 The Mouse Down Button widget is supported in NiagaraAX-3.4 and later, only. When configured as part of a Px page, this widget allows for buttons to adjust the camera Iris and the Focus and so that they are functionally equivalent to the Iris and Focus buttons that are provided in the Live Video view (see [“Live Video view”](#) on page 2-16). The Mouse Down Button widget is available in the videoDriver palette. 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. See [“Mouse Down Button widget”](#) on page 2-25 for more details.


videoDriver-VideoMultistreamPane (Video Multistream Pane)

 The Video Multistream Pane widget is supported in NiagaraAX-3.4 and later, only. When configured as part of a Px page, this widget allows you to use a single network connection to display multiple cameras. You cannot use this widget for remote video in an enterprise environment - use the Surveillance Viewer component instead. The Video Multistream Pane widget is available in the videoDriver palette. 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. See [“About the Video Multistream Pane widget”](#) on page 2-27 for more details.

Components in the remoteVideo module

The remoteVideo module contains the following module:

remoteVideo-RemoteVideoService

 The remote video service is located in the remoteVideo module. This service provides functions that enable remote station video communications with a Web Supervisor station. A station must be licensed for the “remoteVideo” feature in order to use this service.

CHAPTER 5

Plugin Guides



Plugins provide *views* of components, and can be accessed many ways—for example, double-click a component in the tree for its *default* view. In addition, you can right-click a component, and select from its **Views** menu. For summary documentation on any view, select **Help > On View** (F1) from the Workbench menu, or press F1 while the view is open.

Summary information is provided on the videoDriver module plugins in the following sections:


Plugins in videoDriver module

- [VideoPlayback](#)
- [LiveVideo](#)
- [VideoMultistreamViewer](#)
- [VideoPlaybackChooserView](#)


videoDriver-VideoPlayback

 The Video Playback view is the default view of the typical DVR Camera device (not stand-alone camera) and is indicated by the “playback” icon  in the WorkbenchAX view selector (top right corner). This view has a video display with controls across the top and bottom of the video perimeter. You can use this view to access and review recorded video segments using the controls along the bottom of the view. This view can change to a “live” mode where it displays live video when you click on the **Live Video** button. Also see “[Video Playback view \(Playback Viewer\)](#)” on page 2-16.


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) . This view has a video display with a camera ID and description in the top left corner and camera controls (but no “playback” controls) across the bottom of the video view area. Also see “[Live Video view](#)” on page 2-16.

videoDriver-VideoMultistreamViewer (Surveillance Viewer)

 The Surveillance Viewer view provides a unique pre-configured grid pane display that you can use to show multiple cameras on a single view. It is a view on the Surveillance Viewer component and is located on the videoDriver palette. In addition to a grid pane it provides a pane that holds a list of available cameras that you can use to drag onto the grid. Also see “[About the Surveillance Viewer view](#)” on page 2-17.

videoDriver-VideoPlaybackChooserView (Playback Viewer)

 The Video Playback Chooser view is the default view of the typical camera device 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. Also see “[Video Playback view \(Playback Viewer\)](#)” on page 2-16.

APPENDIX A

Dedicated Micros driver

The following sections include information that is unique to the Dedicated Micros video driver.

- [Dedicated Micros features and tested models](#)
- [Dedicated Micros DVR setup](#)
- [Components in the dedicatedMicros module](#)
- [Plugins in dedicatedMicros module](#)

Dedicated Micros features and tested models

- **Supported features include:**
 - Automatic discovery of cameras
 - PTZ operation, including:
 - Go To preset
 - Storing presets
 - Focus and iris
 - Bidirectional alarms
 - Surveillance Viewer
 - Alarm video playback
 - Live video playback
 - Switching between live and playback video, including:
 - Remote video connections
 - Fox video streaming
 - Graphics widgets
- **The following DVR models have been tested with the driver:**
 - SD Advanced Closed IPTV software version 6.6 (8.0053) M3UP 2010-11-30 16:1
 - Digital Sprite 2 software version 04.5(043)M2IP - 03.1(09.2)

Dedicated Micros DVR setup

The following procedure describes how to configure the Dedicated Micros DVR settings for use with the NiagaraAX videoDriver module.

Dedicated Micros DVR setup

This procedure briefly describes how to setup a Dedicated Micros DVR and configure it to make cameras available under the DedicatedMicrosNetwork in a NiagaraAX station.

To setup a Micros DVR, do the following:

- Step 1 Connect a monitor to the DVR with an SVideo cable. The login screen automatically displays.
- Step 2 Login to the online screen and follow the instructions for setting up the network TCP/IP configuration to get the DVR on your network.

***Note:** Anytime you change anything on the DVR network settings, you must restart the DVR.*
- Step 3 Open a browser application, type the IP address of the DVR into the address bar and press Enter. If you are able to connect the DVR, the home page displays.
- Step 4 On the DVR home page, click on the **Configuration** button. A login screen displays.
- Step 5 Enter the login credentials (User Name and Password). Default values at the time of this publication, are:
 - User Name: dm
 - Password: web

After login, the Main Setup page displays.

- Step 6 On the Main Setup page, set the Browser Settings property to “Java Applet”. Make sure the “Browser Settings” property is set to “Java Applet”.
- Step 7 You will need to configure some cameras so it knows what is connected. In the menu on the left side of the screen, select “Cameras” on the left and “Camera and Record Setup”. Check the “Connected” column for each one hooked up, give each one a title, and under “Camera Type”, pick “Colour” (assuming they are not black and white).

Note: For PTZ cameras, you will need to configure the telemetry later.

- Step 8 Setup a user account by selecting the “System” section and choosing “User Accounts” in that section. Use the same dm and web credentials.
Then you probably will want to give access to all cameras so just select “all” for camera selection, and then save the account.

- Step 9 In the bottom section, create a video account by selecting “Add” and giving it a user name and password.

- Step 10 Test the settings as follows:

- On the left side, select “Home” and “Live Page”. A page opens.
- At the bottom of the open page, select a connected camera (1-N). The DVR should prompt you for a user name and password.
- Enter the user name and password that you used earlier and click OK. If the credentials are correct and the connection is good, you should see a picture.

Refer to [“Getting started with a Video Driver”](#) on page 1-2 for instructions regarding the NiagaraAX configuration.

Components in the dedicatedMicros module

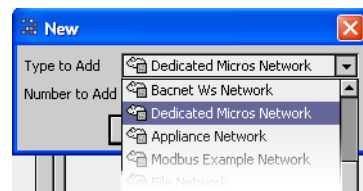
The following components are in the dedicatedMicros module:

- [Dedicated Micros network component](#)
- [Dedicated Micros DVR component](#)
- [Dedicated Micros camera component](#)

dedicatedMicros-DedicatedMicrosNetwork

This component is the top level network component for the Dedicated Micros driver. It is available from the dedicatedMicros palette or from the **New** dialog box, as shown in [Figure A-1](#). Typically, you add the network-level component from the NiagaraAX Driver Manager view using the **New** dialog box and it appears under the Drivers node of your NiagaraAX station. See [“Types of common video driver properties”](#) on page 2-3 for details about the common video network properties.

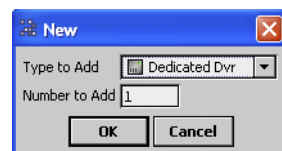
Figure A-1 Adding the Dedicated Micros network component using the **New** dialog box



dedicatedMicros-DedicatedDvr

This component is the required device for working with the Dedicated Micros DVR-supported cameras. It is available from the dedicatedMicros palette and from the **New** dialog box, as shown in [Figure A-2](#).

Figure A-2 Adding a Dedicated Micros DVR component using the **New** dialog box



The Property Sheet view has properties that you must configure to enable communication between cameras and the DVR device. See [“Types of DVR device properties”](#) on page 2-11 for details about typical DVR properties.

dedicatedMicros-DedicatedCameraDeviceExt

The Dedicated Camera Ext is an extension that comes, by default, with the Dedicated Micros DVR component (see “[dedicatedMicros-DedicatedDvr](#)” on page A-2) and is used to contain the Dedicated Micros cameras. The primary view of this component is the Ddf Camera Manager view, described in “[Camera Manager view](#)” on page 2-15. This extension has the following properties:

- **Timeout**
This is the amount of time that the driver should wait after transmitting a discovery request before timing out.
- **Retry Count**
This is the number of retries that the driver should attempt after a request times-out (before giving up on that particular request).
Note: Sometimes during a discovery process it could be helpful to specify shorter time-outs and less retries so that the entire device discovery process can complete sooner.
- **Do Not Ask Again**
The default value: `true` indicates that you do not want to receive a prompt when you click the Discover button on the device manager.

Plugins in dedicatedMicros module


- [Dedicated Micros network view](#)
- [Dedicated Micros camera view](#)

devDriver-DdfDeviceManager

The VideoNetwork Device Manager is the default view of the DedicatedMicrosNetwork component. It has a standard appearance, with a Database pane and table that is similar to most device manager views associated with NiagaraAX.

Most of the Dedicated Micros device setup, configuration, import and export features are similar to other VideoNetwork driver devices. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Device Manager view features. See “[VideoNetwork Device Manager view](#)” on page 2-15 for details about video device manager views.

devVideoDriver-DdfCameraManager

The Ddf Camera Manager view is the default view of the Dedicated Camera Device Ext ().

For details, see “[Camera Manager view](#)” on page 2-15.

APPENDIX B

Axis Video driver

The following sections include information that is unique to the NiagaraAX Axis Video Driver.

- [Axis features and tested camera models](#)
- [Axis requirements](#)
- [Add the Axis network driver to the station](#)
- [Add an Axis video device to the station](#)
- [Monitor Axis video activity](#)
- [Components in the axisVideo module](#)
- [Plugin in the axisVideo module](#)

Axis features and tested camera models

- **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 include:**
 - Alarm video playback
 - Live video playback
 - Switching between live and playback video
 - Bidirectional alarms
- **The Axis Video Driver 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.

Axis requirements

Axis video driver requirements include the following:

- IP access between the camera and JACE
- Appropriate ports open; the defaults are port 80 for the web, port 554 for control, and port 9000 for data.

Add the Axis network driver to the station

This section explains how to add the Axis Video Driver to a station through **Device Manager**. You can also drag and drop the driver component from the palette to the Nav tree Drivers folder. The illustrations show configuring the driver for a new Axis camera. For more information on the driver installation process, see [“Getting started with a Video Driver”](#) on page 1-2.

Add (or edit) network driver procedure

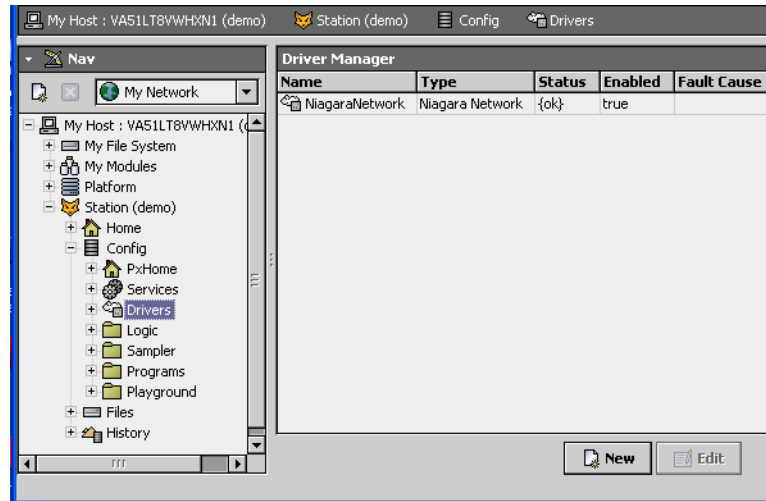
Step 1 Start the platform and station.

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 appears.

Figure B-1 Driver Manager view



This view manages the NiagaraAX network video drivers.

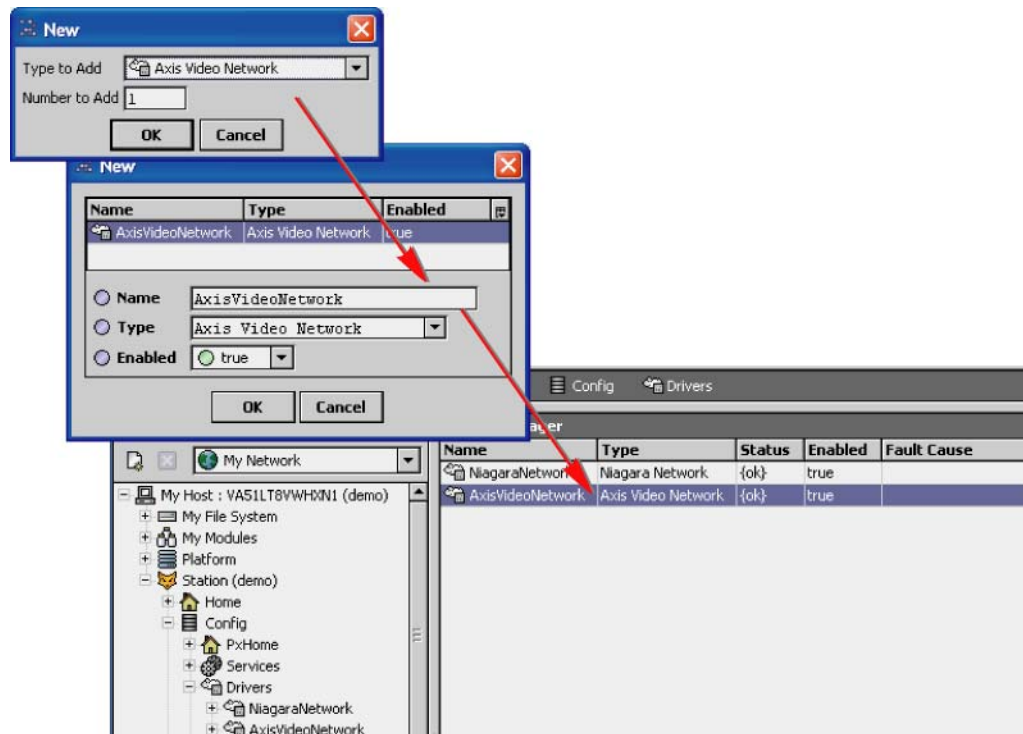
- opens the **New** dialog box.
- opens the **Edit** dialog box.

These dialog boxes allow you to configure network driver properties.

Step 3 To set up the Axis video network, click the new button.

The **New** dialog boxes appear.

Figure B-2 Use the New dialog boxes to add a Video Driver



When you use the **New** dialog boxes to add the driver, it appears automatically under the **Drivers** node of your NiagaraAX station.

Note: Before performing any operation, wait for the Axis status to read, “Ok” on the Driver Manager view.

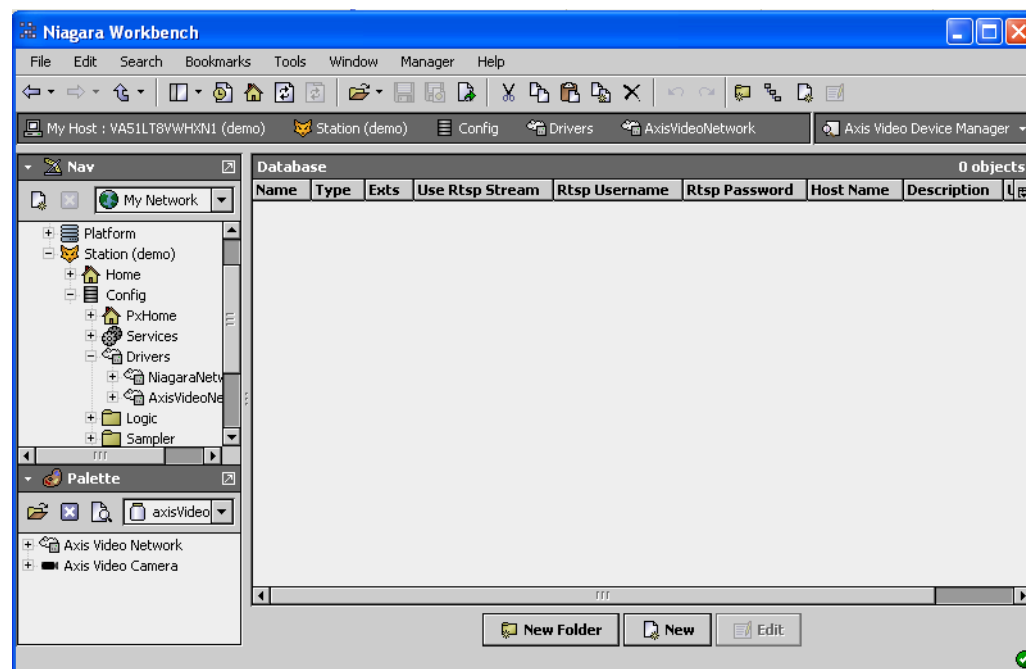
Add an Axis video device to the station

This section explains how to add an Axis camera to a station through **Device Manager**. You can also drag and drop the device component from the palette to the driver node in the Nav tree Drivers folder. The illustrations show adding a device for a new Axis camera. For more information on the driver installation process, see “Getting started with a Video Driver” on page 1-2

Add (or edit) a device procedure

- Step 1 Double-click the Axis driver row in the **Driver Manager** view.
The **Axis Video Device Manager** view appears.

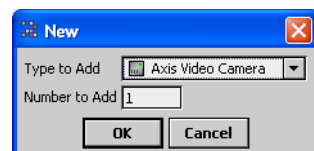
Figure B-3 Axis Device Manager view



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

- Step 2 To set up a new camera, click the new **New** button.
The add **New** driver dialog box appears.

Figure B-4 New dialog box with Axis Video Camera device driver selected



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

The camera property sheet appears.

Figure B-5 Axis camera properties

Name	Type	PTZ Support	Credentials	Use Rtsp Stream	Rtsp Username
AxisVideoCamera	Axis Video Camera	...	[/ ...]	false	rot

☐ Name: AxisVideoCamera
☐ Type: Axis Video Camera
☐ Enable All
☐ Pan/Tilt ☐ Iris ☐ Move To Preset
☐ Zoom ☐ Focus ☐ Store Preset
☐ PTZ Support
☐ Credentials: Username: Password:
☐ Use Rtsp Stream: false
☐ Rtsp Username: root
☐ Rtsp Password:
☐ Host Name:
☐ Description:
☐ Url Address: ###.###.###.###
☐ Preferred Resolution: High
☐ Preferred Frame Rate: Low
☐ Preferred Compression: Medium
☐ Fox Stream Preferred: Inherit

OK Cancel

For information about each property, see [“Components in the axisVideo module”](#) on page B-6.

Step 4 Configure each property based on site requirements.

For more information

Most of the Axis device setup, configuration, import and export features are similar to other VideoNetwork driver devices. Refer to [“About the Camera device”](#) on page 2-9 section for details about common features.

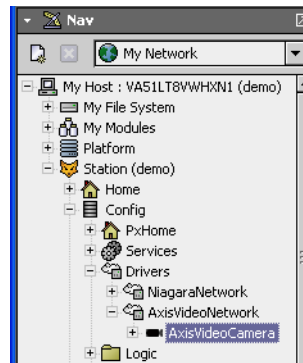
- For details about common features, see the *NiagaraAX-3.x Drivers Guide* and [“VideoNetwork Device Manager view”](#) on page 2-15.
- For instructions regarding the NiagaraAX configuration, refer to [“Getting started with a Video Driver”](#) on page 1-2.

Monitor Axis video activity

Monitor procedure

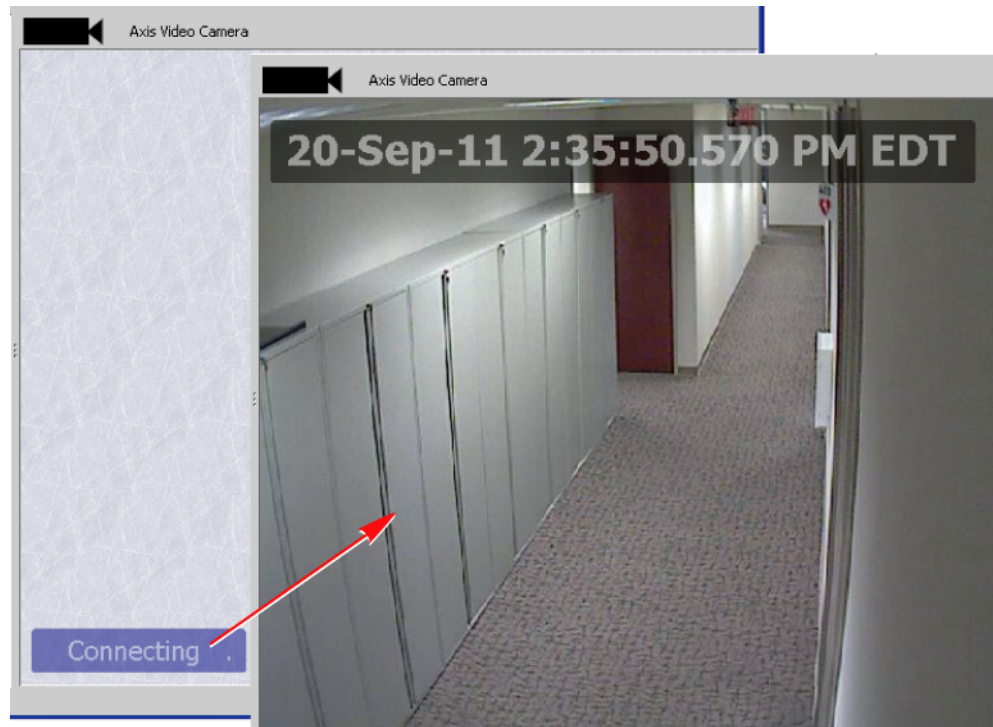
- Step 1 In Workbench, double-click the camera in the nav tree.

Figure B-6 Axis camera node in the nav tree



Workbench attempts to connect to the camera and, assuming correct configuration, displays the camera feed.

Figure B-7 Connecting to an Axis camera




Components in the axisVideo module

The following components are in the Axis module:

- [Axis network component](#)
- [Axis camera component](#)

axisVideo-AxisVideoNetwork

This component is the top-level network component for the Axis video driver. It is available to drag and drop 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. See “[Types of common video driver properties](#)” on page 2-3 for details about the common video network properties.

axisVideo-AxisVideoCamera


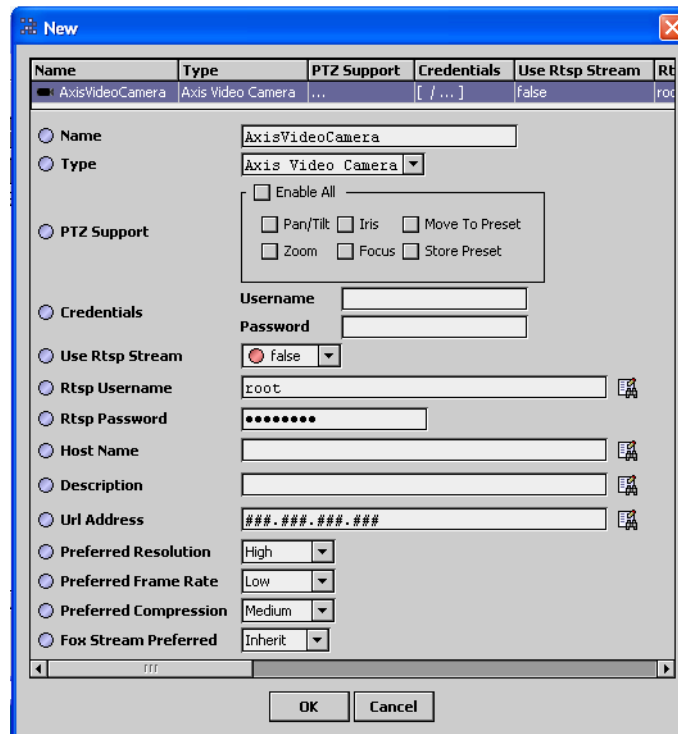
This component is the required device for working with the cameras supported by the Axis driver. It is available to drag and drop from the axisVideo palette to the Axis Video driver node in the Nav tree, or by adding the component using the  button in the **Device Manager** view. Clicking **OK** displays the properties in the **New** dialog box.

Figure B-8 Axis camera properties



Name	Type	PTZ Support	Credentials	Use Rtsp Stream	Rtsp Username
AxisVideoCamera	Axis Video Camera	...	[/ ...]	false	root

☐ Name: AxisVideoCamera
☐ Type: Axis Video Camera
☐ Enable All
☐ Pan/Tilt ☐ Iris ☐ Move To Preset
☐ Zoom ☐ Focus ☐ Store Preset
☐ Credentials: Username: Password:
☐ Use Rtsp Stream: ☒ false
☐ Rtsp Username: root
☐ Rtsp Password:
☐ Host Name:
☐ Description:
☐ Url Address: ###.###.###.###
☐ Preferred Resolution: High
☐ Preferred Frame Rate: Low
☐ Preferred Compression: Medium
☐ Fox Stream Preferred: Inherit

OK Cancel

- **Name**
Enter any name you choose to identify the camera.
- **Type**
This property is not editable once the device has been created.
- **PTZ Support**
Configure based on the camera capabilities.
- **Credentials**
To control configuration access to the NiagaraAX driver, the Axis properties include User Name and Password. These are the first properties to set when configuring the driver.
- **Use Rtsp Stream**
Axis cameras can be configured for either the MJPEG or RTSP/MPEG4 formats. The default is MJPEG (**Use Rtsp Stream** is set to false). To use the RTSP/MPEG format, enable **Use Rtsp Stream** and configure these additional properties:
 - Enter the RTSP credentials already set up in the camera.
 - Identify the **Host Name** for the RTSP stream. For most camera models, this name is in the format: `<ip_address>/mpeg4/media.amp`.
To alternate between RTSP and MJPEG formats enable and disable this property.

- **Description**
Enter a unique text string for each camera. The description might include the location or purpose of the camera. This description is used in multi-stream widgets, such as the surveillance viewer.
- **URL Address**
This is the URL address of the camera for both the MPG4 and MJPEG formats. This address is also required for PTZ operations.
- **Preferred Resolution, Preferred Frame Rate, Preferred compression, Fox Stream Preferred**
For information about these properties, see [“About the Camera device”](#) on page 2-9.

Most of the Axis device setup, configuration, import and export features are similar to those found in other VideoNetwork drivers. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Discover, Add, New and Edit view features.

Plugin in the axisVideo module

devDriver - DdfDeviceManager

The **Ddf Camera Manager** is the default view of the AxisVideoNetwork component. For details about video network device manager views, see [“VideoNetwork Device Manager view”](#) on page 2-15

For more information, refer to [“Camera Manager view”](#) on page 2-15.

APPENDIX C

Milestone Video driver

The following sections include information that is unique to the NiagaraAX Milestone Video Driver.

- [Milestone features and tested models](#)
- [Milestone requirements and compliance](#)
- [Configure Milestone software](#)
- [Add the Milestone network driver to a station](#)
- [Add a Milestone video device to a station](#)
- [Discover Milestone devices](#)
- [Monitor Milestone video activity](#)
- [Components in the Milestone driver](#)
- [Plugins in the Milestone driver module](#)

Milestone features and tested models

The Milestone AX Video Driver works with Milestone IP Video Surveillance Systems.

- **Supported features include:**
 - Automatic discovery of cameras
 - PTZ operation
 - Control
 - Go To preestablished presets
 - Focus and iris
 - Bidirectional alarms
 - Surveillance Viewer
 - Alarm video playback
 - Live video playback
 - Switching between live and playback video
 - Remote video connections
 - Fox video streaming
 - Graphics widgets
- **Unsupported features:**
 - Creating and store new presets
Creating new presets is not supported with this driver. However, you can use the Milestone application to create presets. The driver does support the Move-to-Preset option for existing presets.
- **Testing**
Milestone AX Video Driver has been tested with Milestone XProtect Enterprise application v7.0c.

Milestone requirements and compliance

Requirements

- IP access between the DVR or camera and JACE
- Appropriate ports open; 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. The driver does not support preset creation. The driver 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.
- The Milestone AX Video 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.

Configure Milestone software

Refer to the Milestone Management Application documentation for how to do the following.

Configuration procedure

- Step 1 Create Milestone credentials
- Central credentials
 - Login credentials
- Step 2 Add one or more users with Windows® login credentials to the Milestone application.
- Step 3 Restart Milestone services.

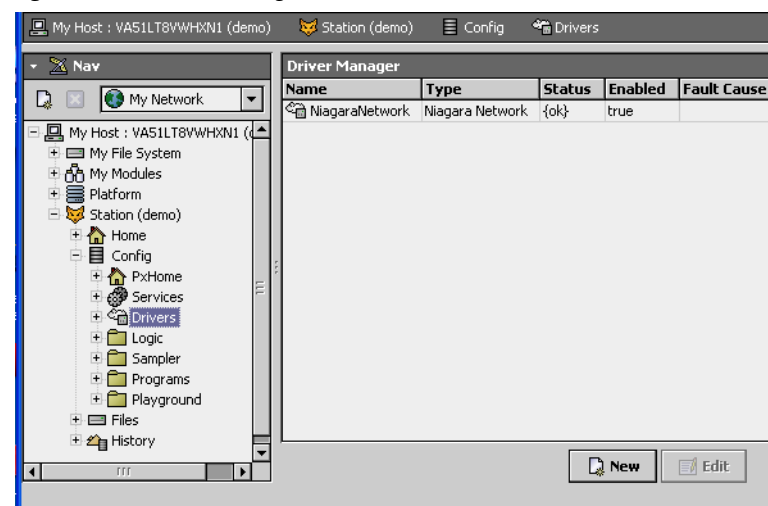
Add the Milestone network driver to a station

This section explains how to add the Milestone network Video Driver to a station through **Driver Manager**. You can also drag and drop the driver component from the palette to the Nav tree Drivers folder. The illustrations show configuring the driver for a new Milestone device. For more information on the driver installation process, see [“Getting started with a Video Driver”](#) on page 1-2.

Add (or edit) the network driver procedure

- 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 appears.

Figure C-1 Driver Manager view



This view manages the NiagaraAX network video drivers. Clicking the new  button or selecting a network driver and clicking the edit  button opens a **New** or **Edit** dialog box (respectively).

These dialog boxes allow you to configure the network driver properties.


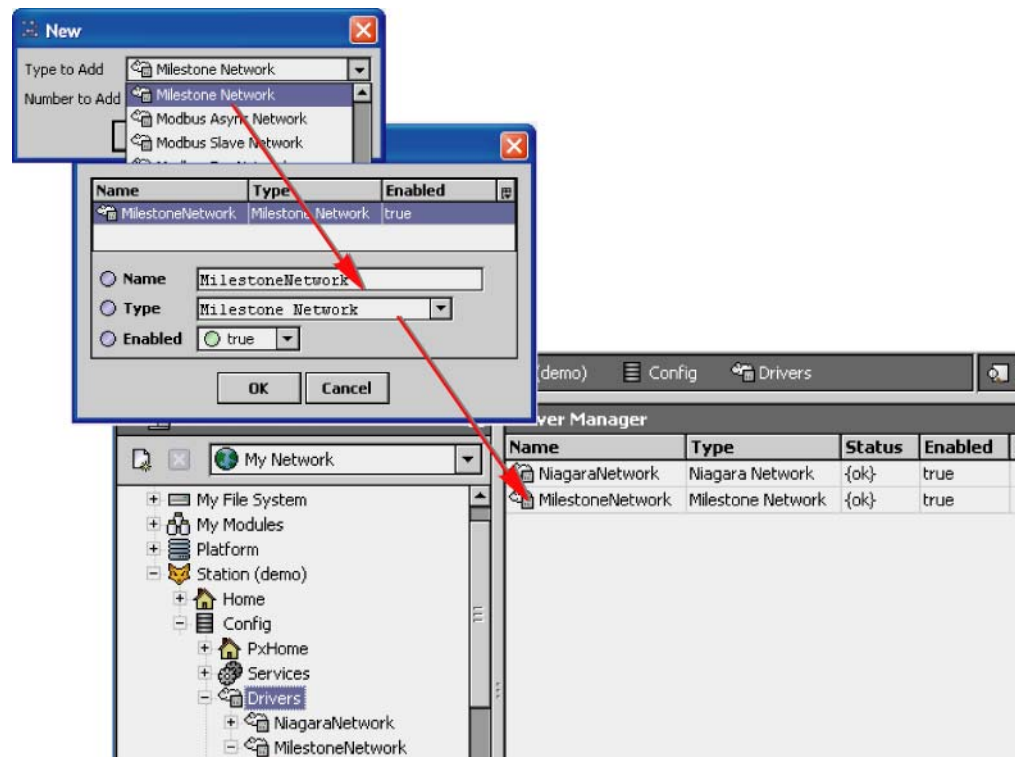
- Step 3 To set up the Milestone video network driver, click the new  button. The **New** dialog boxes appear.

Figure C-2 Use the New dialog boxes to add the network Video Driver



When you use the **New** dialog boxes to add the driver, it appears automatically under the **Drivers** node of your NiagaraAX station.

Note: Before performing any operation, wait for the Milestone status to read, "Ok" on the Driver Manager view.

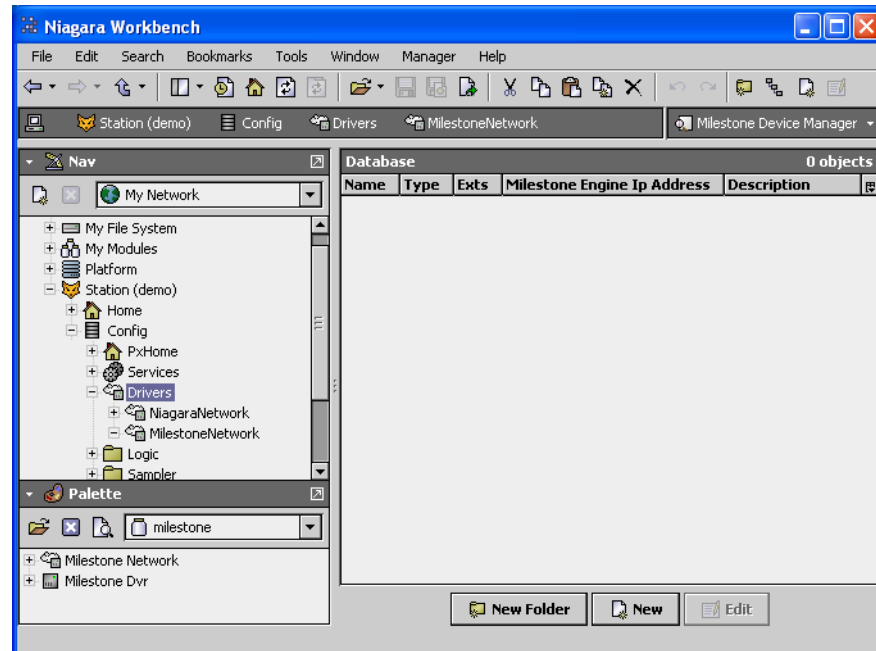
Add a Milestone video device to a station

This section explains how to add a Milestone DVR or camera to a station through **Device Manager**. You can also drag and drop the device component from the palette to the driver node in the Nav tree Drivers folder. The illustrations show adding a device for a new Milestone DVR. For more information on the driver installation process, see ["Getting started with a Video Driver"](#) on page 1-2

Add (or edit) a device procedure

- Step 1 Double-click the Milestone driver row in the **Driver Manager** view.
The **Milestone Device Manager** view appears.

Figure C-3 Milestone Device Manager view



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

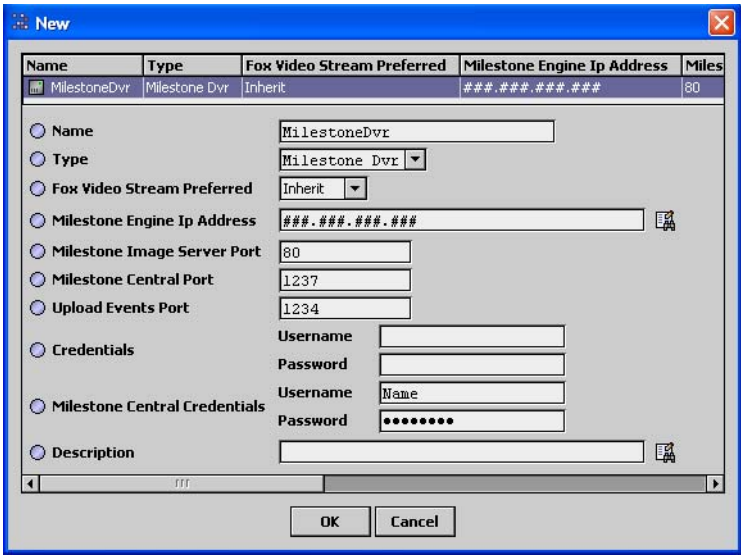
- Step 2 To set up a new DVR or camera, click the new **New** button.
The add **New** driver dialog box appears.

Figure C-4 New dialog box with Milestone DVR device driver selected



- Step 3 If not already selected, select the **Milestone DVR** and click **OK**.
The property sheet appears.

Figure C-5 Milestone camera properties



Step 4 Configure each property based on site requirements. For details about each Milestone property, see [“milestone-MilestoneDvr”](#) on page C-7.

For more information

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

- For details about common features, see the *NiagaraAX-3.x Drivers Guide* and [“VideoNetwork Device Manager view”](#) on page 2-15.
- For instructions regarding the NiagaraAX configuration, refer to [“Getting started with a Video Driver”](#) on page 1-2.
- For details about typical DVR properties, refer to [“About the DVR device”](#) on page 2-11.

Discover Milestone devices

Device discovery procedure

- Step 1

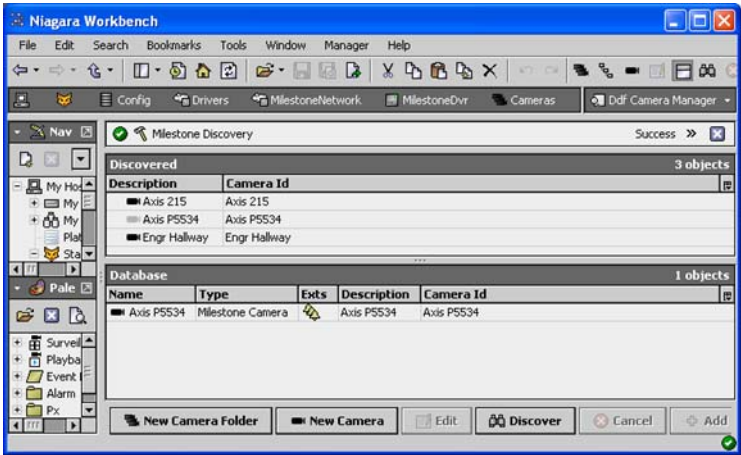
Double-click **MilestoneDvr** in the Nav tree.
- Step 2

Under **MilestoneDvr**, click **Cameras**
- Step 3

Click the **Discover** button.
The **Discovery Parameters** dialog box appears.
- Step 4


Make any changes and click **OK**.
The **Ddf Camera Manager** view appears.

Figure C-6 Ddf Camera Manager view



This view has a standard appearance, with a Discovered pane and a Database pane that is similar to all WorkbenchAX driver device manager views.

The Camera Manager view has **Add**, **New**, and **Edit** dialog boxes that are used to add, configure, and monitor device drivers. The discover, add, and edit features are similar to other camera devices. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Discover, Add, New and Edit view features. Also see “[Camera Manager view](#)” on page 2-15.

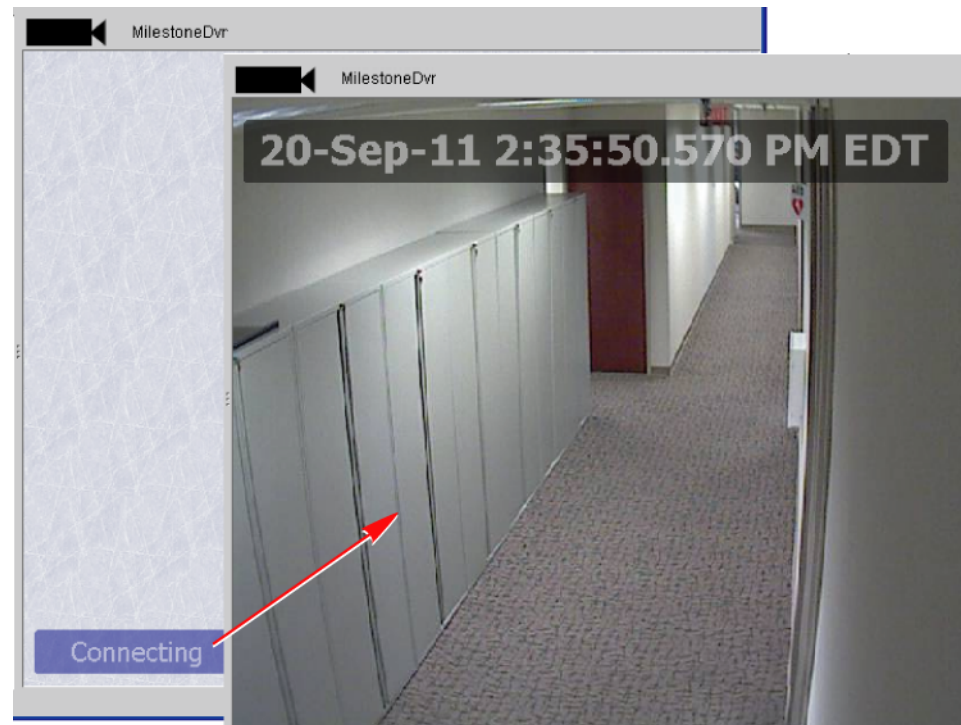
- Step 5 Select the camera to add and click the  **Add** button.

Monitor Milestone video activity

Monitor procedure

- Step 1 In Workbench, double-click the camera in the Nav tree.
Workbench attempts to connect to the camera and display the camera feed.

Figure C-7 Connecting to a Milestone DVR



Components in the Milestone driver

The following components are in the Milestone module:

- [Milestone network component](#)
- [Milestone DVR component](#)
- [Milestone camera component](#)

milestone-MilestoneNetwork


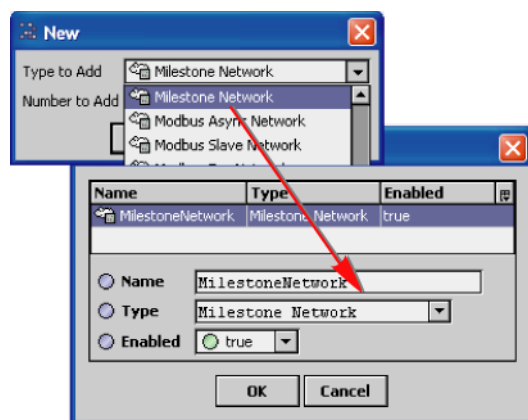
This component is the top-level network component for the Milestone driver. It is available to drag and drop from the milestone palette to the **Drivers** node in the Nav tree, or by adding this network-level component from the NiagaraAX **Driver Manager** view using the new  **New** button. The driver appears under the **Drivers** node of your NiagaraAX workstation. See “[Types of common video driver properties](#)” on page 2-3 for details about the common video network properties.

Figure C-8 Adding the Milestone Network component using the **New** dialog box



For an explanation of each field, see [“Getting started with a Video Driver”](#) on page 1-2. When you use the **New** dialog boxes to add the driver, it appears automatically under the **Drivers** node of your NiagaraAX station.

milestone-MilestoneDvr


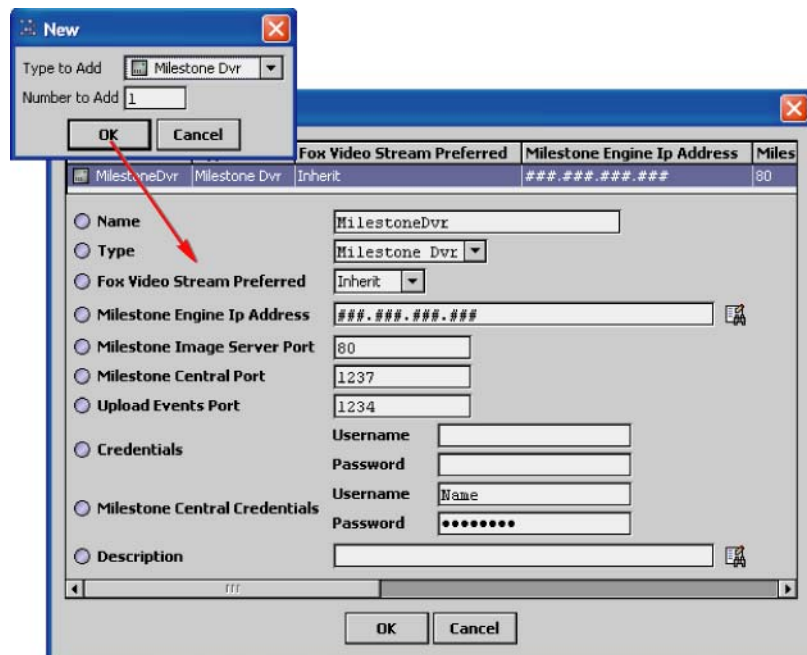
This component is the required device for working with the cameras supported by the Milestone DVR. It is available to drag and drop from the milestone palette to the Milestone driver node in the Nav tree, or by adding the component using the  **New** button in the **Device Manager** view.

Figure C-9 Setting up camera properties



The following describes the properties that are unique to the Milestone Dvr component. For information about the properties that are common to all video drivers, see [“Types of common video driver properties”](#) on page 2-3.

- **Milestone ports**
Do not change these values.
- **Credentials**
To control configuration access to the NiagaraAX driver, the Milestone properties include User Name and Password. These are the first properties to set when configuring the driver.
- **Milestone Central Credentials**
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**

Enter a unique text string for each device. The description might include the location or purpose of the device. This description is used in multi-stream widgets, such as the surveillance viewer.

milestone-MilestoneCameraDeviceExt

The Milestone Camera Ext is an extension that comes, by default, with the DVR component (see “[milestone-MilestoneDvr](#)” on page C-7) and is used to contain the cameras. The primary view of this component is the Ddf Camera Manager view, described in “[Camera Manager view](#)” on page 2-15. This extension has the following properties:

- **Timeout**

This is the amount of time that the driver should wait after transmitting a discovery request before timing out.

- **Retry Count**

This is the number of retries that the driver should attempt after a request times-out (before giving up on that particular request).

***Note:** Sometimes during a discovery process it could be helpful to specify shorter time-outs and less retries so that the entire device discovery process can complete sooner.*

- **Do Not Ask Again**

The default value: `true` indicates that you do not want to receive a prompt when you click the Discover button on the device manager.

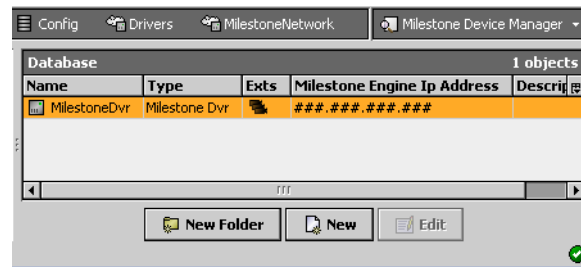
Plugins in the Milestone driver module

- [Milestone network driver view](#)
- [Milestone camera manager view](#)




Network driver view - DdfDeviceManager

The **Milestone Device Manager** is the default view of the Milestone component. It has a standard appearance with a **Database** pane and table that is similar to most **Device Manager** views associated with NiagaraAX.

Figure C-10 Milestone Device Manager view



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:

-  creates a sub-folder, which you can use to organize multiple cameras.
-  opens the **New** dialog box.
-  opens the **Edit** dialog box.

The New and Edit buttons display the property sheet as described in “[milestone-MilestoneDvr](#)” on page C-7. For more information refer to “[VideoNetwork Device Manager view](#)” on page 2-15

Device driver view - DdfCameraManager plugin

The Ddf Camera Manager is the default view of the Milestone camera. The **Ddf Camera Manager** is a standard NiagaraAX view with **Discovered** and **Database** panes and tables similar to most **Device Manager** views.

For more information about this view, see “[Camera Manager view](#)” on page 2-15. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Discover, Add, New and Edit view features.

***Note:** The Milestone driver does not support adding a new camera from Workbench. You add cameras from the Milestone DVR using the discovery process.*

APPENDIX D

Rapid Eye™ Hybrid HD driver

The Rapid Eye Hybrid HD is a digital video recorder (DVR) that supports up to 16 channels of analog and IP cameras.

The following sections include information that is unique to the NiagaraAX Rapid Eye video driver.

- [Rapid Eye features](#)
- [Hardware compatibility](#)
- [Software requirements](#)
- [Connect the Rapid Eye hardware](#)
- [Configure the Rapid Eye DVR](#)
- [Add \(or edit\) the RapidEye network driver to a station](#)
- [Add a RapidEye video device to a station](#)
- [Discover RapidEye devices](#)
- [Monitor RapidEye DVR activity](#)
- [Components in the rapidEye module](#)
- [Plugins in the rapidEye module](#)

Rapid Eye features

Rapid Eye driver is available for NiagaraAX-3.5 and NiagaraAX-3.6 releases. The following features are supported in `rapidEye.jar 3.5.39.4` and `rapidEye.jar 3.6.37.3`.

- **Supported features**
 - Automatic discovery of cameras
 - PTZ operation, including:
 - Go To preset
 - Storing presets
 - Focus and iris
 - Bidirectional alarms
 - Surveillance Viewer
 - Alarm video playback
 - Live video playback
 - Switching between live and playback video
 - Graphics widgets
 - H.264 decoding
- **Unsupported features**
 - Fox video streaming
 - Viewing video in a Windows® 64-bit browsers or 64 bit NiagaraAX stations

Hardware compatibility

The following Rapid Eye™ Hybrid HD model and camera model have been tested with the driver:

- Multi-Media LT version 10.1 Build 21
- Video Camera: Honeywell HD45IP

Software requirements

- **Niagara-AX version**
This driver requires Niagara-AX 3.5.34 or later versions.
- **Target Platforms**
In addition to running on a 32 bit host, this driver can run on a Windows 64 bit platform targeting a NiagaraAX 32 bit client or 32 bit browser (Internet Explorer). However, due to a COM technology dependency, the RapidEye driver does not run on a NiagaraAX 64 bit client or in a 64 bit browser (IE). Only two live streams can be opened per camera.
In summary, the RapidEye driver can run on a 64 bit host machine if the client or station (Internet Explorer or Niagara-AX) is running as a 32 bit platform. Supported target platforms are listed below:
 - **Windows® Clients:**
 - Windows XP SP3, 32 bit
 - Windows 7, 32 bit
 - Windows Internet Explorer, 32 bit on Windows XP, 64 bit
 - Windows Internet Explorer, 32 bit on Windows 7, 64 bit
 - **Niagara Station or Supervisor running on:**
 - JACE 7
 - JACE 6
 - JACE 2
 - Windows® Server 2008 32 bit or 64 bit
 - Windows® 7 32 bit or 64 bit

Connect the Rapid Eye hardware

Connection procedure

- Step 1 Connect the Rapid Eye DVR to the JACE (using an Ethernet cable from the DVR's LAN port to an Ethernet port on the JACE).
- Step 2 Connect a monitor, mouse and optional keyboard to the DVR following the instructions in the *Rapid Eye Quick Start Guide*.

Configure the Rapid Eye DVR

The Rapid Eye DVR can report events and alarms based on specific conditions. You should enable only those events and alarms that apply to your site.

The following topics identify specific DVR settings, which are not mandatory, but provide suggestions to take advantage of the unit's features. Enabling these settings will ensure that information is available to the NiagaraAX platform.

For details about how to configure and use the Rapid Eye DVR, see:

- *Rapid Eye Hybrid – Common Operations Guide*
- *Rapid Eye Hybrid – Installation Guide*
- *Rapid Eye Hybrid – Quick Setup Guide*
- *Rapid Eye Hybrid – Remote View Guide*
- *Rapid Eye Hybrid – System Administrator Guide*

These documents are available at <https://www.honeywellvideo.com/products/recorders/pc/306064.html>.

Configuration procedure

- Step 1 Log in to the Rapid Eye software and configure the **Network Settings** on the **System** tab.
- Step 2 Make a note of the IP address. You will need this information to configure the NiagaraAX Rapid Eye driver.
- Step 3 If your site requires Camera Sabotage Detection (CSD), configure **Tamper detection** on the **Video** tab as follows:
 - For analog cameras and IP camera models HCD554IP and HD4DIP, enable Blind, Blur, Scene Changed, Log and Alarm.
 - For IP camera models HCD3MDIP, HD4MDIP, HCD554MIH, HD3MIH, and HD4MIH, you access the camera through the Rapid Eye software and configure tamper detection in the camera itself. Enable Blur, Blinding and Scene Changed.
- Step 4 Configure motion detection on the **Video** tab as follows:

- For analog cameras, enable Log and Alarm.
- For IP camera models HCD3MDIP, HD4MDIP, HCD554MIH, HD3MIH, and HD4MIH, you access the camera through the Rapid Eye software and configure motion detection in the camera itself.

Note: *Motion detection is not available for camera models HCD554IP and HD4DIP.*

Step 5 Using the **Events** tab, enable only those session, system, maintenance, input, output, video and user boost events that apply to your site.

The following events are available as alarms to NiagaraAX.

- **Camera alarms**
 - Motion Detected
 - Video Signal Lock
 - Video Signal Unlock
 - Video CSD Moved On
 - Video CSD Moved Off
 - Camera Blind Detection Enabled
 - Camera blind Detection Disabled
 - Camera Blur Detection Enabled
 - Camera Blur Detection Disabled
 - Video Boost Record On.
- **Recorder alarms**
 - Recorder Connected
 - Recorder Disconnected
 - Session Connected
 - Session Disconnected
 - System-No Video Recording
 - Session Rejects
 - System- Self Restart
 - System- Reboot
 - System- Storage Device Missing
 - System- Time Server Unusable
 - System- No Synchronization in 24 Hours
 - System- S.M.A.R.T. Disk Failure
 - Rule Engine Action Triggered
 - System- Excessive System clock Drift
 - Maintenance - Configuration Modification
 - Maintenance - Security Modification
 - Maintenance - System files Modification
 - Maintenance Synchronize Time
 - Maintenance Clear Storage
 - Maintenance - Clear Stream
 - System - Runtime Failure
 - Input Enabled
 - Input Disabled
 - Output Enabled
 - Output Disabled

These six events are modeled as event points in NiagaraAX and can be considered alarms based on how you configure the JACE:

- Motion Detected
- Video Signal Lock/Unlock
- CTD Blind on/off
- CTD Blur on/off
- CTD Changed on/off
- Video Recording Boost on/off

Step 6 On the **System** tab two options control the fault relay:

- **Enable Status Pulse**
Power outages and other events can cause a unit to fail to function or to record video. Enabling this option triggers the fault relay, if either event persists for more than 19 minutes.
- **Monitor Alarm Reporting**
Enabling this option triggers the fault relay if a delay in the reporting of an alarm takes longer than 19 minutes.

Add (or edit) the RapidEye network driver to a station

This section explains how to add the RapidEye network Video Driver to a station through **Driver Manager**. You can also drag and drop the driver component from the palette to the Nav tree Drivers folder. The illustrations show configuring the driver for a new Rapid Eye DVR. For more information on the driver installation process, see [“Getting started with a Video Driver”](#) on page 1-2.

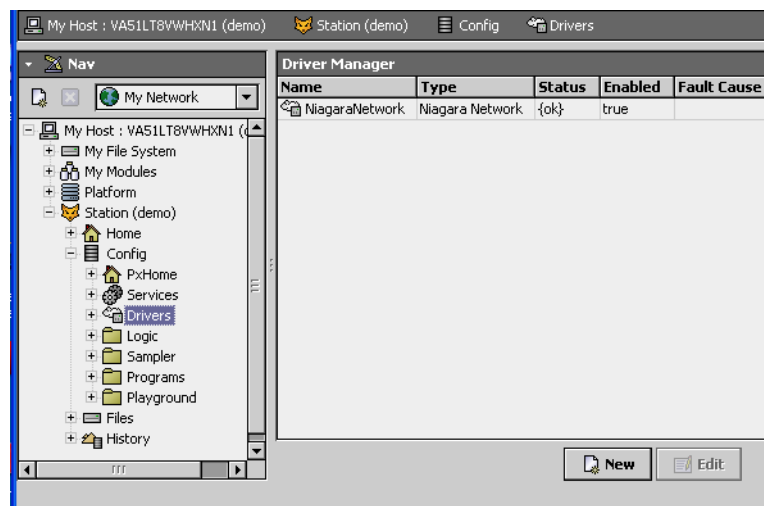
Add (or edit) the network driver procedure

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. The default response timeout for the DVR is set to 30 seconds.

Step 2 In the station Nav tree **Config** folder, double-click the **Drivers** folder. The Driver Manager view appears.

Figure D-1 Driver Manager view



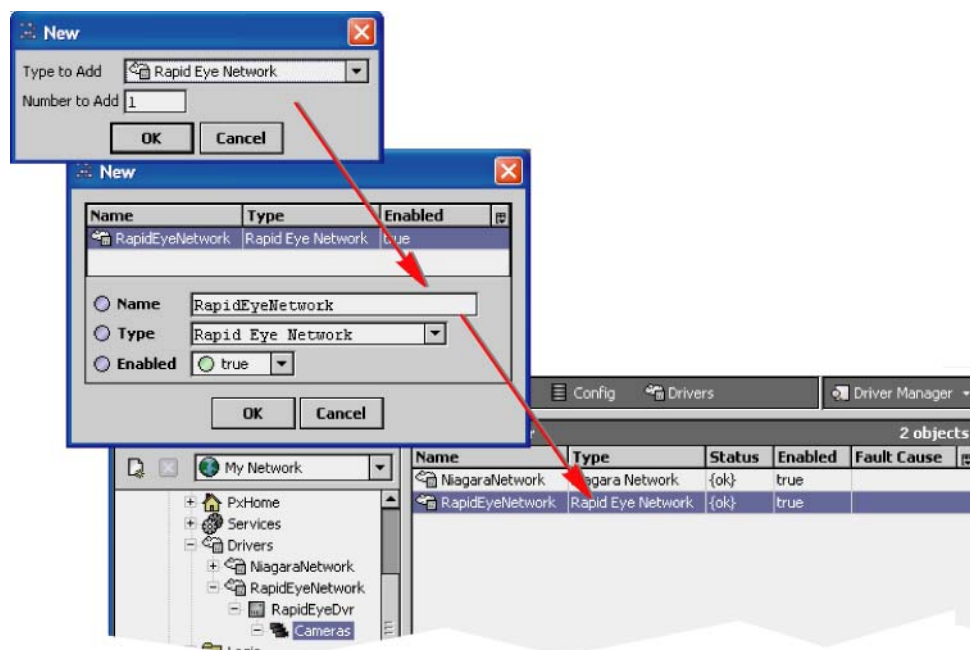
This view manages the NiagaraAX network video drivers.

- opens the **New** dialog box.
- opens the **Edit** dialog box.

These dialog boxes allow you to configure network driver properties.

Step 3 To set up the RapidEye video network driver, click the new button. The **New** dialog boxes appear.

Figure D-2 Use the New dialog boxes to add a Video Driver



When you use the **New** dialog boxes to add the driver, it appears automatically under the **Drivers** node of your NiagaraAX station.

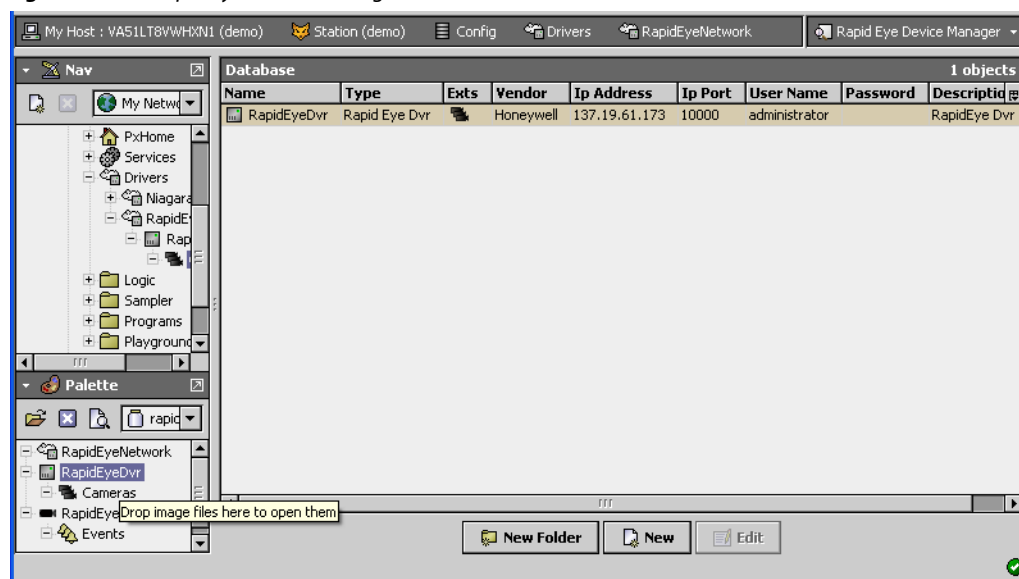
Note: Before performing any operation, wait for the **Rapid Eye Network** status to read, “Ok” on the **Driver Manager** view. The initial connection to the Rapid Eye DVR may take up to 30 seconds to reach an “Ok” status.

Add a RapidEye video device to a station

This section explains how to add a RapidEye DVR or camera to a station through **Device Manager**. You can also drag and drop the device component from the palette to the driver node in the Nav tree Drivers folder. The illustrations show adding a device for a new RapidEye DVR. For more information on the driver installation process, see [“Getting started with a Video Driver”](#) on page 1-2

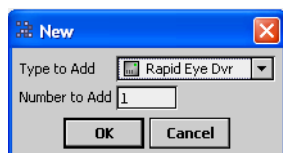
Add (or edit) a device procedure

- Step 1 Double-click the RapidEye Network driver row in the **Driver Manager** view. The **Rapid Eye Device Manager** view appears.

Figure D-3 Rapid Eye Device Manager view

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

Step 2 To set up a new DVR or camera, click the new **New** button.
The add **New** driver dialog box appears.

Figure D-4 New dialog box with RapidEyeDvr device driver selected

Step 3 If not already selected, select the **Rapid Eye Dvr** and click **OK**.

The RapidEye **Edit** dialog box appears.

Figure D-5 RapidEyeDvr device properties

Name	Type	Fox Video Stream Preferred	Vendor	Ip Address
RapidEyeDvr	Rapid Eye Dvr	Inherit	Honeywell	137.19.61.173

☐ Name: RapidEyeDvr
☐ Type: Cannot edit
☐ Fox Video Stream Preferred: Inherit
☐ Vendor: Honeywell
☐ Ip Address: 137.19.61.173
☐ Ip Port: 10000
☐ User Name: administrator
☐ Password:
☐ Description: RapidEye Dvr 1

OK Cancel

Step 4 Configure each property based on site requirements.

To control configuration access to the NiagaraAX DVR driver, the RapidEyeDvr properties include User Name and Password. For details on each property, see [“rapidEye-RapidEyeCamera”](#) on page D-9.

For more information

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

- For details about common features, see the *NiagaraAX-3.x Drivers Guide* and [“VideoNetwork Device Manager view”](#) on page 2-15.
- For instructions regarding the NiagaraAX configuration, refer to [“Getting started with a Video Driver”](#) on page 1-2.
- For details about typical DVR properties, refer to [“About the DVR device”](#) on page 2-11.

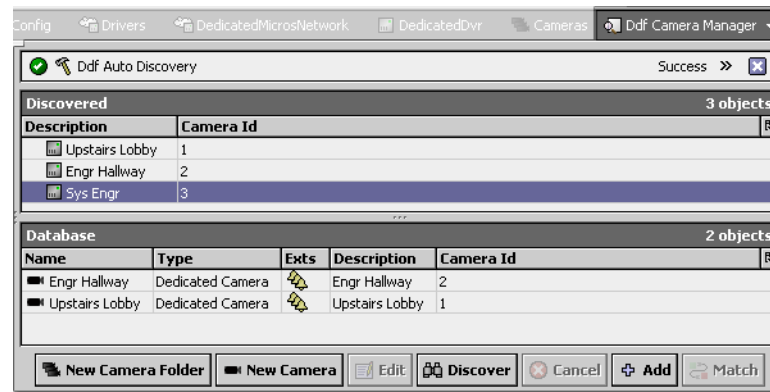
Discover RapidEye devices

Device discovery procedure

- Step 1 Double-click **RapidEyeDvr** in the Nav tree.
- Step 2 Under **RapidEyeDvr**, click **Cameras**
- Step 3 Click the Discover button.
The **Discovery Parameters** dialog box appears.
- Step 4 Make any changes and click **OK**.


The **Ddf Camera Manager** view appears.

Figure D-6 Ddf Camera Manager view



This view has a standard appearance, with a Discovered pane and a Database pane that is similar to all WorkbenchAX driver device manager views.

The Camera Manager view has **Add**, **New**, and **Edit** dialog boxes that are used to add, configure, and monitor device drivers. The discover, add, and edit features are similar to other camera devices. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Discover, Add, New and Edit view features. Also see “[Camera Manager view](#)” on page 2-15.

- Step 5 Select the camera to add and click the  **Add** button.

Monitor RapidEye DVR activity

Monitor procedure

- Step 1 In Workbench, double-click the camera.
Workbench attempts to connect to the camera and, assuming correct configuration, displays the camera feed.

Components in the rapidEye module

The following components are in the rapidEye module:

- [RapidEye network component](#)
- [RapidEye DVR component](#)
- [RapidEye camera component](#)
- [RapidEye camera](#)

rapidEye-RapidEyeNetwork


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

Figure D-7 Rapid Eye Network component dialog box



When you use the **New** dialog box to add the driver, it appears automatically under the **Drivers** node of your NiagaraAX station. For property descriptions, see “[Types of common video driver properties](#)” on page 2-3.

rapidEye-RapidEyeDvr


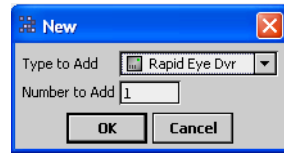
This component is the required driver for working with the cameras supported by the rapidEyeDvr (driver). It is available to drag and drop from the rapidEye palette to the RapidEye driver node in the Nav tree, or by adding the driver using the new  button in the **Database** view.

Figure D-8 Setting up device properties



The property sheet view has properties that you must configure to enable communication between the cameras and the DVR device. See the section that follows and [“Types of DVR device properties”](#) on page 2-11.

rapidEye-RapidEyeCameraDeviceExt

This is the extension that comes, by default, with the DVR component (see [“rapidEye-RapidEyeDvr”](#) on page D-9) and is used to contain the cameras. The primary view of this component is the Ddf Camera Manager view, described in [“Camera Manager view”](#) on page 2-15. This extension has the following properties:

- **Timeout**
This is the amount of time that the driver should wait after transmitting a discovery request before timing out.
- **Retry Count**
This is the number of retries that the driver should attempt after a request times-out (before giving up on that particular request).
Note: Sometimes during a discovery process it could be helpful to specify shorter time-outs and less retries so that the entire device discovery process can complete sooner.
- **Do Not Ask Again**
The default value: `true` indicates that you do not want to receive a prompt when you click the Discover button on the device manager.

rapidEye-RapidEyeCamera

The rapidEye-RapidEyeCamera component provides the camera device for Rapid Eye cameras. It is available on the rapidEye palette. You can add a camera by dragging and dropping the component from the palette onto the Cameras node under the RapideEyeNetwork in the nav tree.

Rapid Eye Camera component properties are described in [“About the Camera device”](#) on page 2-9.



Note: The Camera Hardware Id property value is automatically set, based on camera features and typically does not need editing.

Plugins in the rapidEye module

- [Rapid Eye device manager view](#)
- [Rapid Eye camera manager view](#)

devDriver-DdfDeviceManager

The **VideoNetwork Device Manager** is the default view of the rapidEye network component. It has a standard appearance, with a Database pane and table that is similar to most Device Manager views associated with NiagaraAX.

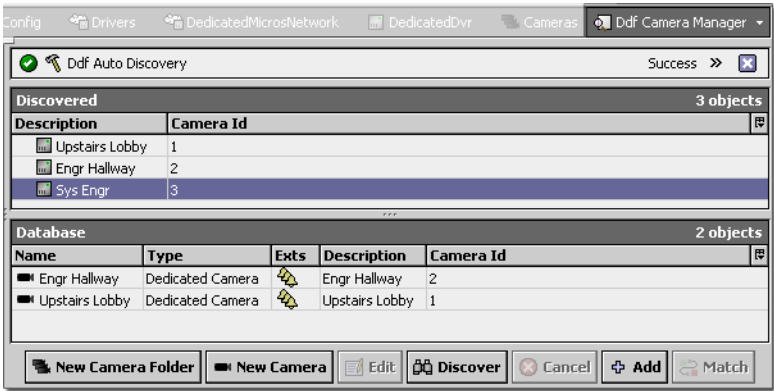
The RapidEye **Device Manager** view has the standard new  and  buttons that you can use to add, configure and monitor RapidEye video devices similar to the way other network devices are configured. Clicking the new button or selecting a device and clicking the edit button opens a **New** or **Edit** dialog box (respectively). These dialog boxes allow you to configure the device properties (the Type property is not editable once the device has been created). The RapidEye configuration has additional User Name and Password fields for setting up credentials to control configuration access to the NiagaraAX DVR driver.

Most of the RapidEye device setup, configuration, import and export features are similar to those found in other VideoNetwork drivers. Refer to the *NiagaraAX-3.x Drivers Guide* for details about common Discover, Add, New and Edit view features. See also [“VideoNetwork Device Manager view”](#) on page 2-15.

devVideoDriver-DdfCameraManager

The **Ddf Camera Manager** view is the default view of the RapidEye camera.

Figure D-9 Ddf Camera Manager view



The Camera Manager view has **Add**, **New**, and **Edit** dialog boxes that are used to add, configure, and monitor Camera drivers. Most of the discover, add, and edit features are similar to other camera devices. Refer to [“Camera Manager view”](#) on page 2-15.