



Avigilon™ Control Center Enterprise Client User Guide

Version 5.4.2

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What is the Avigilon™ Control Center Client?

The Avigilon™ Control Center Client software works with the Avigilon™ Control Center Server software to give you access and control of your Avigilon High Definition Stream Management (HDSM)™ surveillance system.

The Client software allows you to view live and recorded video, monitor events, and control user access to the Control Center. The Client software also gives you the ability to configure your surveillance system.

The Client software can run on the same computer as the Server software, or run on a remote computer that connects to the Site through a local area network (LAN) or a wireless area network (WAN).

What you can do in the Client software depends on the Server software edition. There are three editions of the Server software available: Core, Standard and Enterprise. Visit the Avigilon website for an overview of the features available in each edition: <http://avigilon.com/products/video-surveillance/avigilon-control-center/editions/>

A copy of the Client software can be downloaded from the Avigilon website or installed with the Server software.

System Requirements

	Minimum requirements	Recommended requirements
Monitor resolution	1280 x 1024	1280 x 1024
OS	Windows Vista, Windows 7, Windows 8 (32-bit or 64-bit), or Windows 8.1	Windows 7 (64-bit)
CPU	Intel Dual Core 2.0 GHz processor	Quad Core 2.0 GHz
System RAM	2 GB	2 GB
Video card	PCI Express, DirectX 10.0 compliant with 256 MB RAM	PCI Express, DirectX 10.0 compliant with 256 MB RAM
Network card	1 Gbps	1 Gbps
Hard disk space	500 MB	500 MB

For More Information

Visit Avigilon at <http://www.avigilon.com/> for additional product documentation.

The Avigilon Training Center

The Avigilon Training Center provides free online training videos that demonstrate how to set up and use the Avigilon Surveillance System. Register online at the Avigilon Partner Portal site to begin: <http://avigilon.force.com/login>

Support

For additional support information, visit <http://avigilon.com/support-and-downloads/>. The Avigilon Partner Portal also provides self-directed support resources - register and login at <http://avigilon.force.com/login>.

Regular Avigilon Technical Support is available Monday to Friday from 12:00 a.m. to 6:00 p.m. Pacific Standard Time (PST):

- North America: +1.888.281.5182 option 1
- International: +800.4567.8988 or +1.604.629.5182 option 1

Emergency Technical Support is available 24/7:

- North America: +1.888.281.5182 option 1 then dial 9
- International: +800.4567.8988 or +1.604.629.5182 option 1 then dial 9

E-mails can be sent to: support@avigilon.com.

Upgrades

Software and firmware upgrades will be made available for download as they become available. Check <http://avigilon.com/support-and-downloads/> for available upgrades.

Feedback

We value your feedback. Please send any comments on our products and services to feedback@avigilon.com

Getting Started

Once the Avigilon™ Control Center Client software has been installed, you can start using the Avigilon High Definition Stream Management (HDSM)™ surveillance system immediately. Refer to any of the procedures in this section to help you get started.

Starting Up and Shutting Down the Control Center Client


The Control Center Client software can be started or shut down at anytime - video recording is not affected because it is controlled separately by the Server software.

Starting Up the Client Software

Perform one of the following:


- In the Start menu, select **All Programs** or **All Apps** > **Avigilon** > **Control Center Client**.



- Double-click the  shortcut icon on the desktop.
- From the Avigilon Control Center Admin Tool, click **Launch Control Center Client**. For more information, see the *Avigilon Control Center Server User Guide*.

Log in to your Site when the Log In dialog box appears. For more information, see [Logging In to and Out of a Site](#)

Shutting Down the Client Software

1. In the top-right corner of the Client, select  > **Exit**.
2. In the confirmation dialog box that appears, click **Yes**.

Logging In to and Out of a Site


To access any of the features in your Avigilon High Definition Stream Management (HDSM)™ surveillance system, you must log in to a Site.

The default administrator access uses *administrator* as the username and no password. To maintain the security of the administrator account, it is recommended that your system administrator immediately create a password for this account after the first login. Your system administrator can then create user accounts for other users.

Logging In

1. Open the Log In dialog box. The Log In dialog box automatically appears when the Client software is launched.

To manually access the Log In dialog box, do one of the following:

- In the top-right corner of the Client, select  > **Log In...** to log in to all available Sites.
 - In the System Explorer, right-click a Site and select **Log In...** to log in to the selected Site.
2. In the Log In dialog box, select a specific Site or select **All Sites** from the **Log in to:** drop down list.

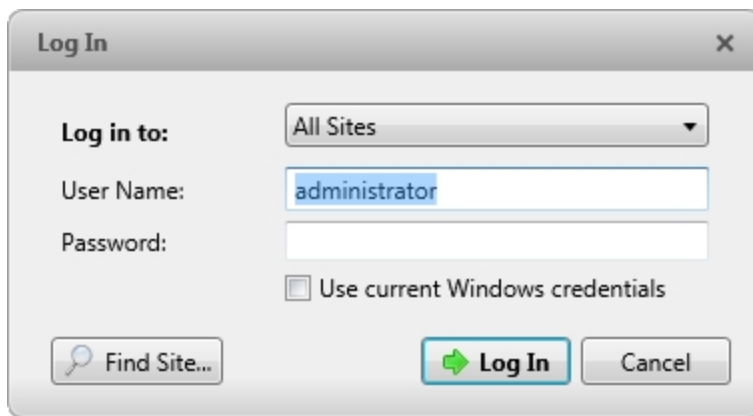


Figure 1: The Log In dialog box

Tip: If you accessed the Log In dialog box from a specific Site, you will not have the option of logging in to All Sites.


If the Site you want to log into is not shown, click  to discover the Site. For more information, see [Discovering Sites](#).

3. Enter your **User Name:** and **Password:**. Or, select the **Use current Windows credentials** check box to automatically use the same username and password as your computer.
4. Click **Log In**.

After logging in the first time, you can set up automatic login from the Client Settings... dialog box. For more information, see [General Settings](#).

Logging Out

You can log out of one or all Sites at any time.

To...	Do this...
Log out of one Site	1. In the System Explorer, right-click the Site and select Log Out .
Log out of all Sites	1. In the top-right corner of the Client, select  > Log Out . 2. In the confirmation dialog box, click Yes .

Navigating the Client

Once you log in, the Avigilon™ Control Center Client application window is populated with all the features that are available to you.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

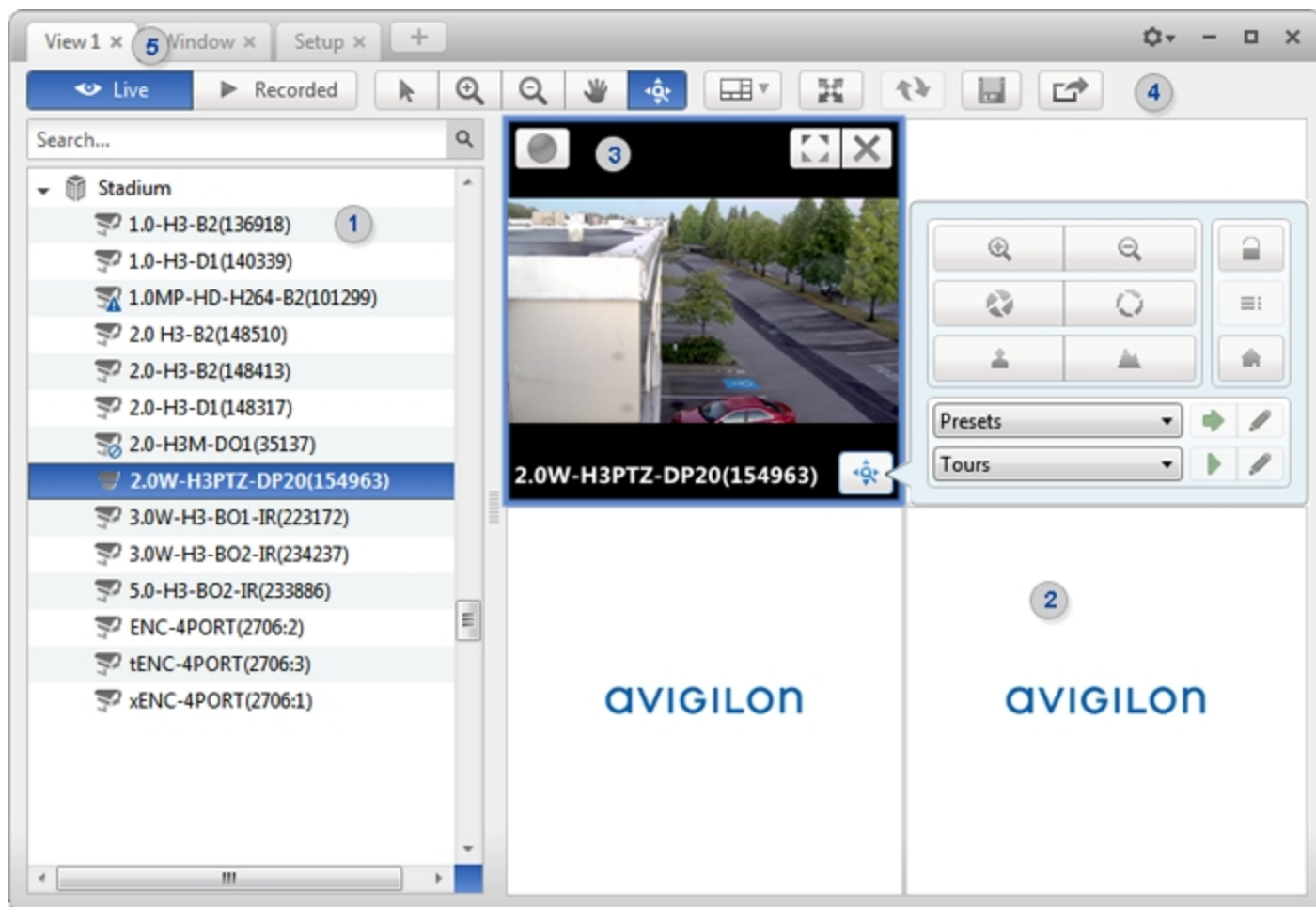














Figure 2: The Avigilon Control Center Client application window.

Application Window Features

	Area	Description
1	System Explorer	<p>Displays all the elements in your surveillance system.</p> <p>Use the Search... bar to quickly locate anything that is available in the System Explorer. You can search for items by name, and devices can also be searched for by location, logical ID, serial number and IP address.</p> <p>Tip: The content of the System Explorer changes depending on the tab you have open. For example, servers are not listed in the View tab.</p>
2	View tab	Allows you to monitor video and organize image panels. You can have multiple Views open at once.
3	Image panel	Displays live or recorded video from a camera. The video control buttons are displayed when you move your mouse into the image panel.
4	Toolbar	Provides quick access to commonly used tools.
5	Task tabs	Displays all the tabs that are currently open.

	Area	Description
	The New Task button	Opens the New Task menu so you can select and open new task tabs. You can access advanced tools like Search and Export, or system administrative features like Site Setup.
	The Application Menu menu	This menu gives you access to local application settings like Client Settings.... You can also open a new window from this menu.
	System message list	<p>The highlighted number shows the number of system messages that need your attention. Click the number to display the list of messages.</p> <p>The highlight color indicates the severity of the most recent message.</p> <ul style="list-style-type: none"> • Red = Error • Yellow = Warning • Green = Information

System Explorer Icons

Icon	Description
	A Site. Listed under a Site are all the connected devices and linked features in the system.
	A server.
	A camera.
	A PTZ camera.
	An encoder.
	A Virtual Matrix monitor.
	A saved View.
	A map.
	A web page.

Adding and Removing Cameras in a View

To monitor video, add a camera to a View. Camera video can be removed from a View at any time.

Adding a Camera to a View

Do one of the following:


- Drag the camera from the System Explorer to an empty image panel in the View tab.
- Double-click a camera in the System Explorer.
- In the System Explorer, right-click the camera and select **Add To View**.

The camera is added to the next empty image panel in the View layout.

Tip: You can drag the same camera to multiple image panels to watch the video at different zoom levels.

Removing a Camera from a View

Do one of the following:

- Right-click the image panel and select **Close**.
- Inside the image panel, click .

Viewing Live and Recorded Video

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

When you monitor video, you can choose to watch live and recorded video in the same View, or only one type of video per View.

Once you've added cameras to the View, perform the following:



- To switch all of the image panels in the View between live and recorded video, click either  **Live** or  **Recorded** on the toolbar.
- To switch individual image panels between live and recorded video, right-click the image panel and select either **Live** or **Recorded**.

Image panels displaying recorded video have a **green** border.

Accessing the Setup Tab

The Setup tab is where you would configure the majority of your system – including Sites, servers and cameras.

Follow one of the following steps to open the Setup tab:

- At the top of the application window, click  to open the New Task menu. When the menu appears,

click .

- In the System Explorer, right-click the device you want to configure, then select **Setup**.

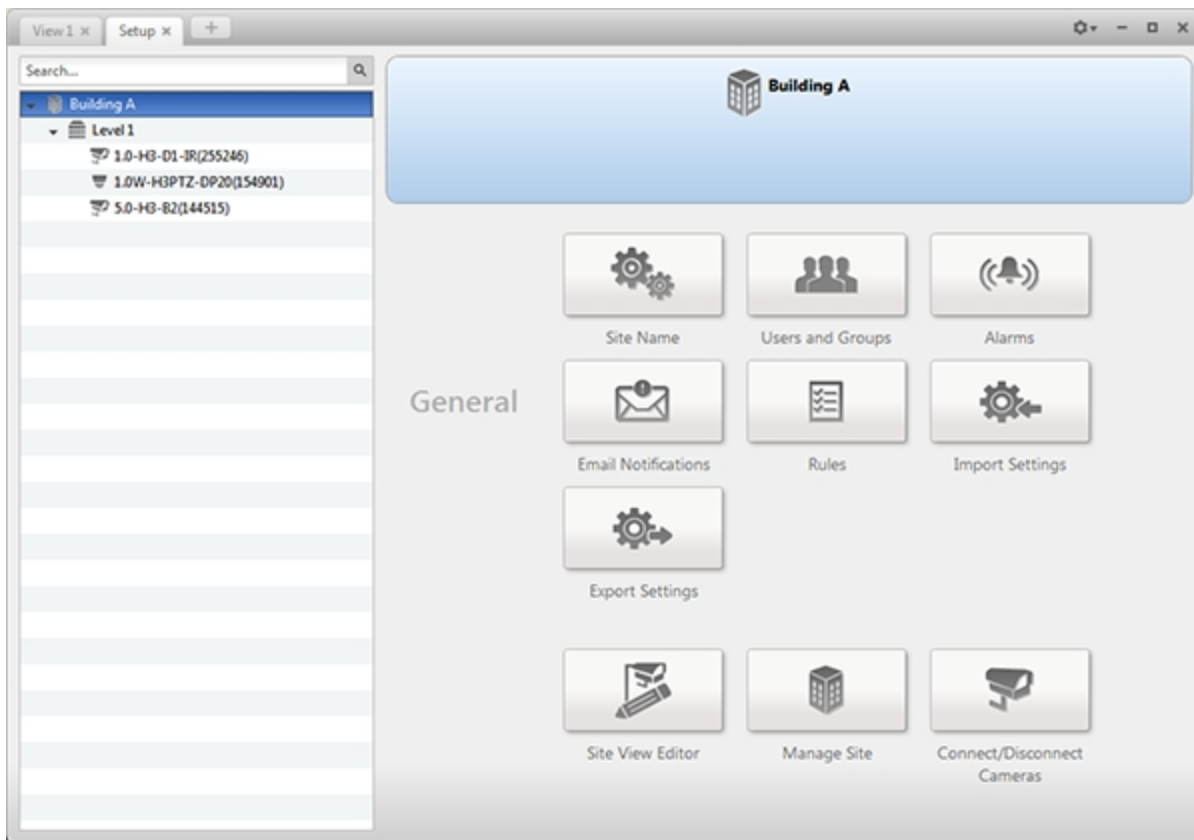


Figure 3: The Setup tab

In the Setup tab, the System Explorer is displayed on the left and the Setup options are displayed on the right. The Setup options change depending on the device that is selected in the System Explorer.

Managing a Site

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

The default settings in the Avigilon™ Control Center Client software allow you to start using the application immediately after installation. However, you may want to customize and set up your Site to reflect how the system will be used in daily operations.

In Avigilon Control Center 5, servers are maintained in clusters called Sites. Each Site can contain multiple servers that share configuration settings across the entire Site.

At the Site level, you can manage your server and device connections, as well as set up Site-wide system events.

At the server level, you can manage the recording and bandwidth for each of the server's connected cameras.

At the device level, you can edit the camera image quality and other device-specific features.

All the Site, server and device settings can be configured from the Setup tab.

Sites and Servers

In the Avigilon Control Center software, servers are organized in clusters called Sites. By organizing the system into clusters, you are able to control user access and system wide events through the Site settings. Site settings are stored on the server, or across all servers in a multi-server system.

Depending on your system and license edition, you may have multiple servers in a Site. When there are multiple servers in a Site, the Site is able to distribute tasks and system data between the servers so that the system can continue running even if a server fails.

Within a Site, each individual server is responsible for managing the devices that are connected to it. Specifically, the server controls video recording. Through the server settings, you control when video is recorded, how long it is stored, and how much bandwidth is used to stream video.

Discovering Sites

If your computer is on the same network segment (subnet) as a Site, that Site is automatically discovered and displayed in the System Explorer.

If the Site you want to access is not listed, it is because the Site is on a different subnet and must be manually discovered. There is no limit to the number of Sites that can be discovered by the Client software.

By default, when a server is first connected to the system, it is added to a Site with the same name. To locate a new server, you need to search for its Site.

1. Open the Find Site dialog box.

- In the top-right corner of the Client, select  > **Log In...** . In the Log In dialog box, click  .
- Or, select  > **Client Settings...** > **Site Networking**. In the Site Networking tab, click  .

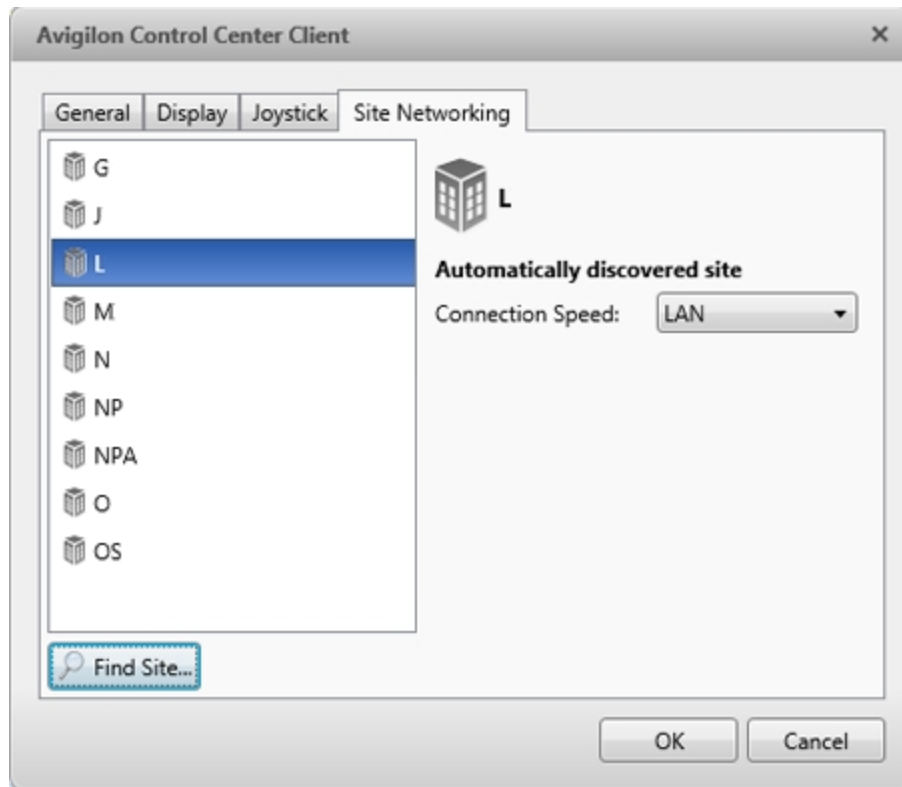


Figure 4: The Site Networking tab

2. In the dialog box, enter the **IP Address/Hostname:** and the **Base Port:** of the server in the Site you want to discover.

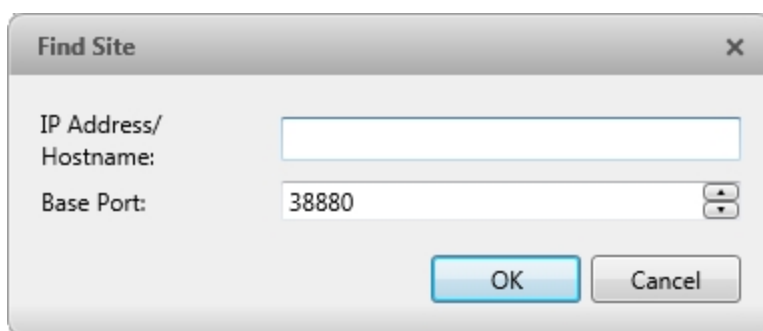


Figure 5: The Find Site dialog box

The base port is 38880 by default. You can change the base port number in the Avigilon Control Center Admin Tool. For more information, see *The Avigilon Control Center Server User Guide*.

3. Click **OK**.

If the Site is found, it is automatically added to the Site list in the Site Networking tab.

If the Site is not found, check the following then try again:

- The network settings are configured correctly.
- The firewall is not blocking the application.
- The Avigilon Control Center Server software is running on the server you searched for in step 2.

Sharing Site Settings Between Client Users

When a user sets up Sites on an Avigilon Control Center Client or Virtual Matrix Application, the following global settings are shared for all users that are logged in to that machine:

- Sites that have been manually discovered in the Site Networking tab in the Client Settings... dialog box will be visible to all users. Users will not be able to access the manually discovered Sites if they do not have the required access permissions.
- A Site's **Connection Speed**: settings in the Site Networking tab will be common to all users.

User permissions are as follows:


- **Administrators** - Can always read and write global LAN/WAN settings and manually add Sites.
- **Standard Users** - Can always read global LAN/WAN settings and manually add Sites. Sites added manually by Standard Users will default to WAN. Standard Users cannot change this.

Managing Site Logs

The Site Logs record events that occur in the Avigilon Control Center. This can be useful for tracking system usage and diagnosing issues.

You can filter the items displayed in the log and save the log to a separate file for sending to Avigilon support.

NOTE: The Site Logs maintain a record of system events for as long as video data is available or 90 days, whichever is longer.

1. In the New Task menu, click .

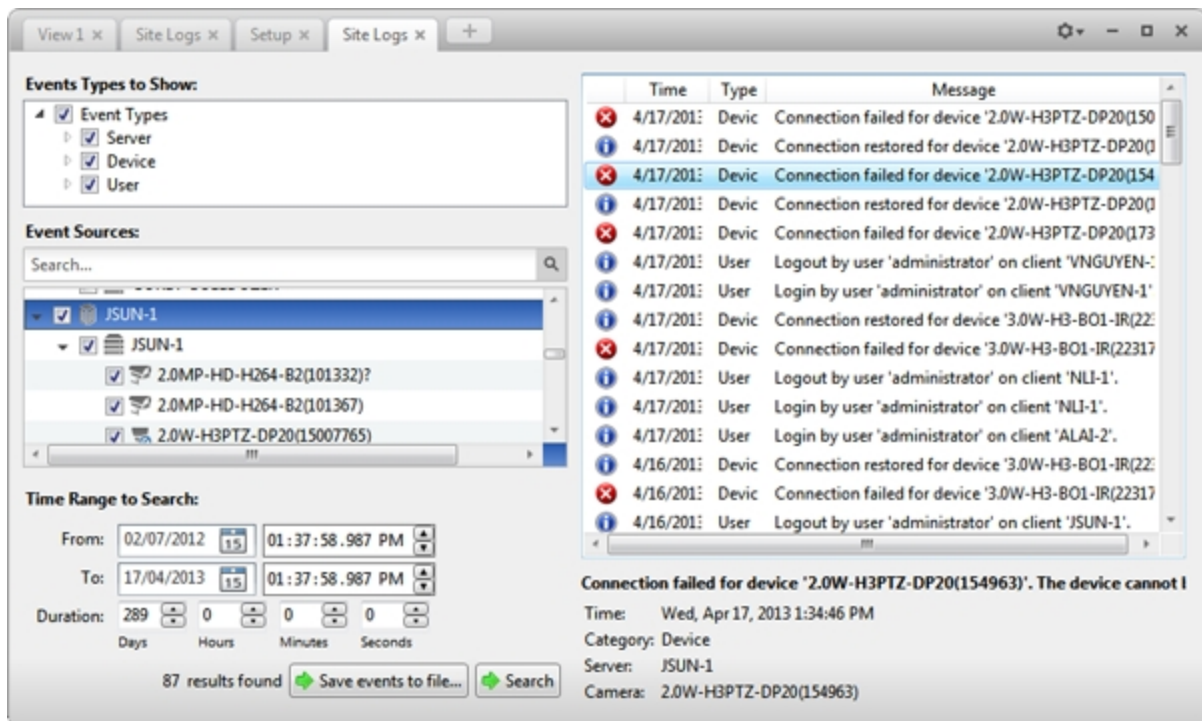



Figure 6: The Site Logs tab

2. In the Site Logs tab, select the **Event Types to Show:**
3. Next, select the specific Sites, servers and devices whose logs you want to see.
4. In the **Time Range to Search:** area, set the date and time range of your search.
5. Click **Search**.
6. Select a result to display its event details.
7. To save the log search results, click **Save events to file...** and save the file. You can choose to save the search results as a text file or a CSV file.

Managing User Connections

If you find that too many users are logged in through the same username or inactive users are preventing active users from accessing a Site, you can force specific users to log out.



1. In the New Task menu, click .
2. In the User Connections tab, select a Site from the System Explorer to display a list of all the current users on the right.

Site	User Name	Login Duration	Machine Name
Building A	administrator	1 hours, 50 minutes	ALAI-2
	administrator	1 hours, 42 minutes	ALAI-2

Log Users Out

Figure 7: The User Connections tab

- The users are listed by username and computer name so that users that share a login are displayed separately.
- The Login Duration column lets you know exactly how long that user has been logged in to the Site.

3. To force a user to log out of a Site, select a user then click **Log Users Out**.

Monitoring Server Status

To help you monitor the health of your Site, you can access a quick overview in the Server Status tab.

- In the New Task menu, click



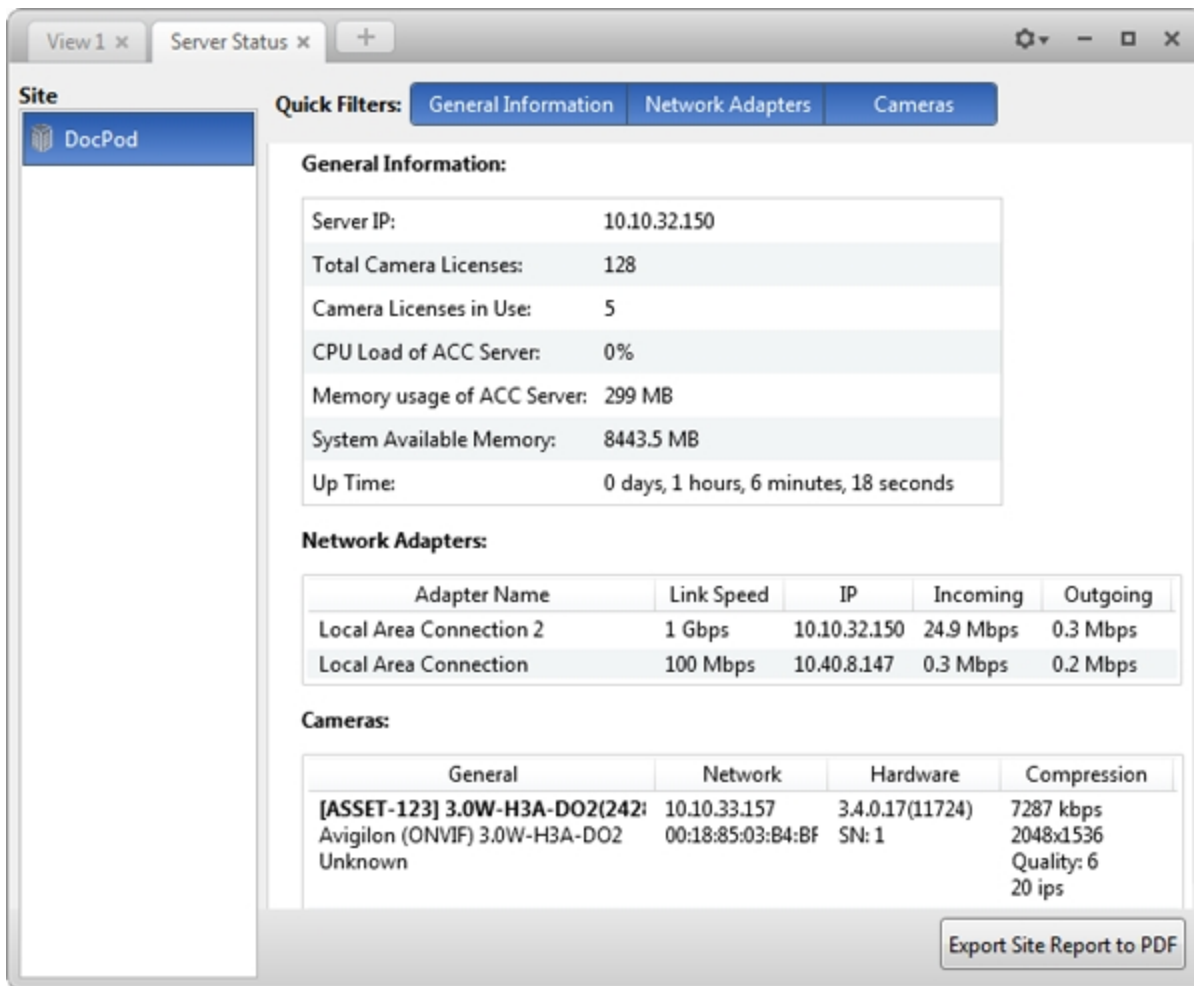


Figure 8: The Server Status tab

In the System Explorer, select a Site to display the statuses of the connected servers. At the top of the tab, click any of the **Quick Filters** to choose what type of information is displayed.

Listed information includes:

1. **General Information:** Information about the server you have selected.
 - **Server IP:** the server's IP address.
 - **Total Camera Licenses:** the total number of camera channel licenses that have been activated on the server.
 - **Camera Licenses in Use:** the number of cameras that are currently connected to the server.
 - **CPU Load of ACC Server:** the percentage of server processing power used by the AvigilonControl Center server software.
 - **Memory usage of ACC Server:** the amount of memory used by the AvigilonControl Center Server software.
 - **System Available Memory:** the amount of storage available for video recording.
 - **Up Time:** the amount of time the server has been running since it was last rebooted.

- **Network Adapters:** the networks that the server is connected to, including the IP address of the network connection, the network speed, and the amount of data passing through the connection.

2. Network Adapters:

- **Adapter Name:** the name of the network adapter.
- **IP:** the IP address of the network adapter.
- **Incoming:** the speed of incoming data.
- **Outgoing:** the speed of outgoing data.

3. Cameras: The devices that are connected to this server.

- **General:** the name, model number, and location of the device.
- **Network:** the IP and MAC addresses of the device.
- **Network:** the serial number of the device.
- **Compression:** the video compression rate, resolution, quality, and images per second (ips) of video streamed from the device.

Click **Export Site Report to PDF** to export the listed server information.

Site Settings

The settings stored at the Site level impact all users and devices within the Site.

These settings include alarms, rules, user account information and email notifications. This is also where you can set up how the System Explorer is laid out, and where you can add or remove servers and devices in a Site.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

Naming a Site

Give the Site a meaningful name so that it can be easily identified in the System Explorer. Otherwise, the Site uses the name assigned to the server it was originally discovered with.



1. In the Site Setup tab, click .
2. In the dialog box that appears, give the Site a name.

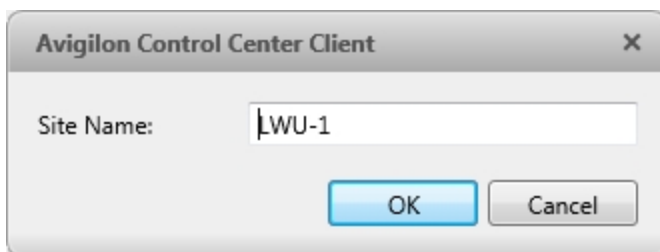


Figure 9: The Site Name: dialog box

Editing the Site View

You can edit the way your Site is organized in the View tab so that it reflects how your system is set up.

Through the Site View Editor, you can organize the System Explorer to display cameras by location, group maps, and saved Views for convenience, or hide cameras that are not relevant to an ongoing investigation.

By default, all cameras are listed in alphabetical order by Site in the System Explorer.

NOTE: These settings only affect the System Explorer in the View tab.



1. In the Site Setup tab, click

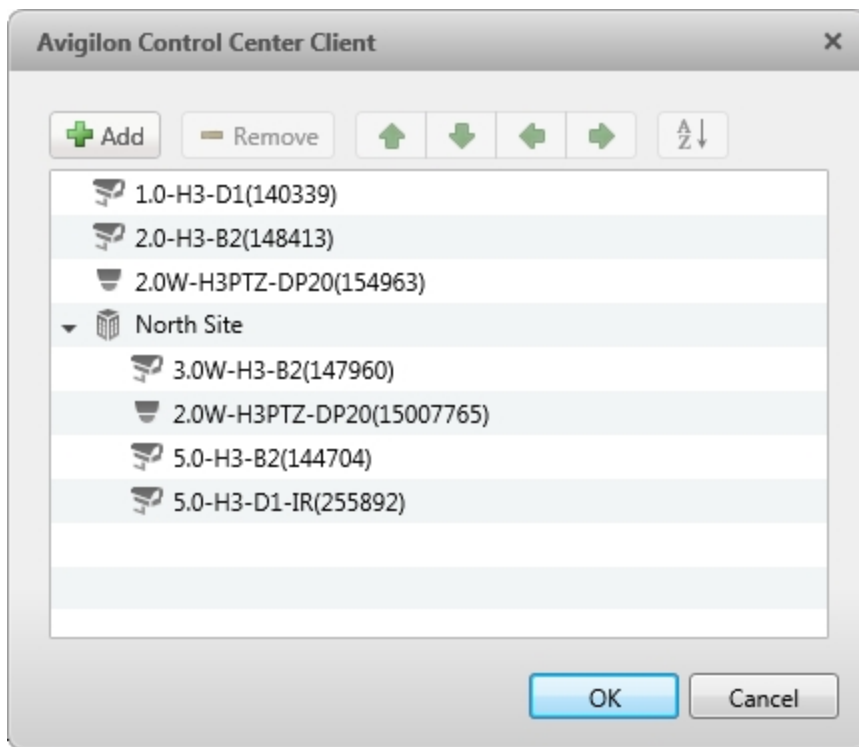





Figure 10: The Site View Editor dialog box


2. In the Site View Editor dialog box, you can perform the following:
 - Select any of the listed elements and use the green arrows to move it up and down the list, or move it under a Site folder.
 - Click  to sort the list in alphabetical order.
 - Click  to add a new Site. The new Site is a virtual folder for organizational purposes only and will not have any Setup options.
Double-click the new Site to change the default name.
 - Click  to delete a Site folder.
3. Click **OK** to save your changes.

When you open a new View tab, your changes will be displayed in the System Explorer.

Exporting Site Settings

You can export Site settings so that they can be backed up or used on a different Site.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

1. In the Site Setup tab, click 
2. Select the settings you want to export.

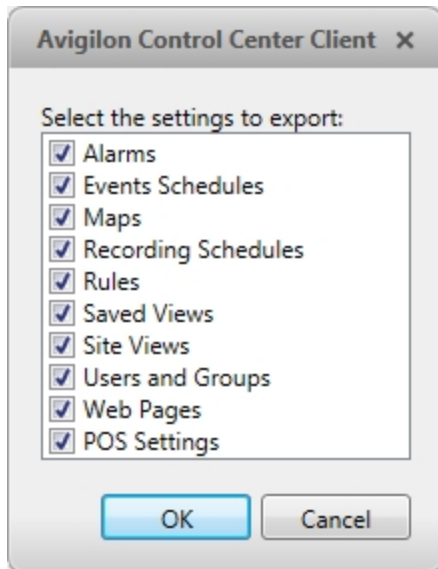



Figure 11: The Export Settings dialog box

3. Click **OK**.
4. In the Save As dialog box, name and save the file.

Exported client settings can only be saved in Avigilon Settings File (.avs) format.

Importing Site Settings

You can import and use settings that were previously exported from a Site.

1. In the Site Setup tab, click 
2. In the Select File to Import dialog box, find the Avigilon Settings File (.avs) you want to import then click **Open**.

NOTE: .avc files are not compatible with this version of the Avigilon Control Center Client software.

3. Select the settings you want to import. Only the settings included in the .avs file are displayed.

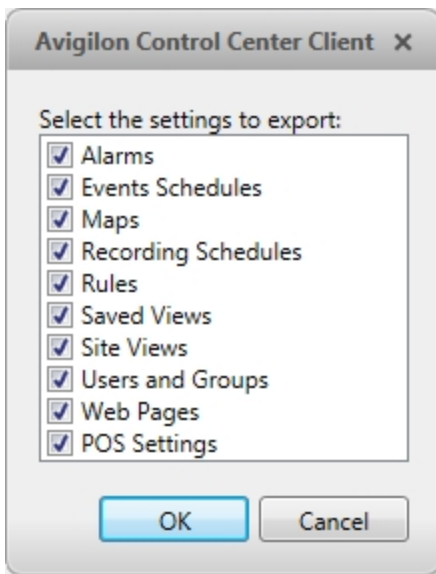


Figure 12: The Import Settings dialog box

4. Click **OK**.

The settings are merged.

- Unique settings are added to the Site.
- If the settings are identical, only the current Site version is kept.
- If an import setting and a Site setting have the same name but are configured differently, the import setting is added to the Site and renamed in this format: *<setting name> (Import)*, like Email1 (Import).
 - In the rules engine, the Notify users (default) rule is always added and renamed, even if the settings are the same. The import version is enabled and the Site version is disabled by default.
- The two Site Views are combined.
 - The import settings take precedence.
 For example, a map from the import file is already used in the Site. Currently, the map is stored at the top of the Site View. But in the import file, the map is kept at the bottom. After the import settings are merged with the current Site settings, the map is moved to the bottom.
 - Unorganized elements from the import file are listed at the bottom of the Site View.
- User permission groups are merged.
 - If groups have the same name, the import settings are used and the users from both the import file and the current Site are added to the group.
 - Groups added from the import file automatically gain access to all the new devices that were added since the settings were exported.
- Users with the same name will use the import settings, including passwords.

Managing Servers in a Site

A Site can contain multiple servers to share settings and tasks across all the servers. For example, users and groups that are added to the Site will automatically have access to all linked servers.

By default, when a server is first discovered on the network, it is added to the System Explorer as a server in a Site of the same name. You can move the server to a different Site to share resources.



1. In the Site Setup tab, click .
2. The Site Management tab lists all the Sites you can access and all the servers connected to each Site.

If you do not see the Site or server you want to configure, see [Discovering Sites](#) for more information.

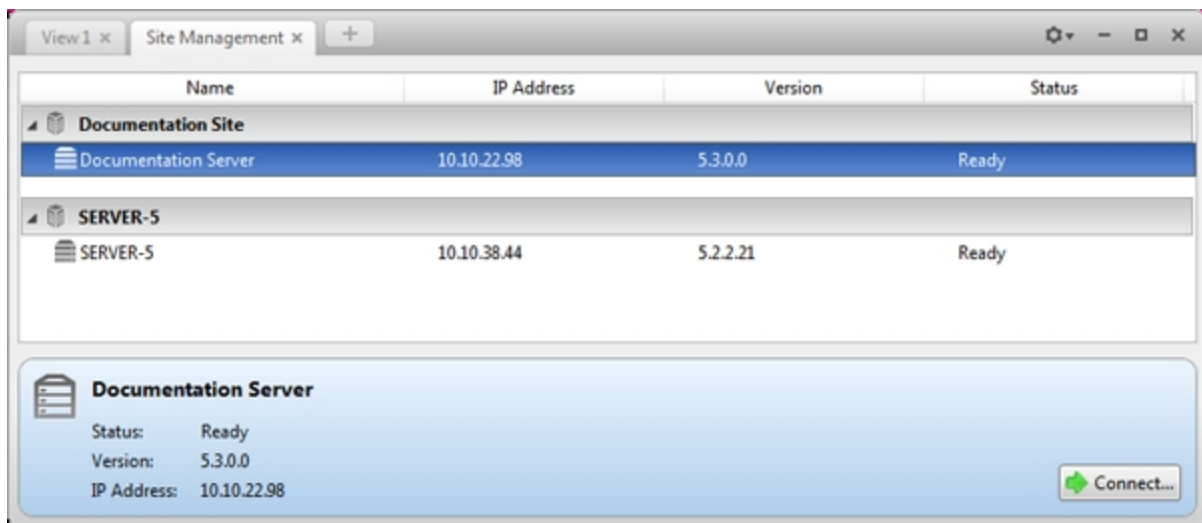


Figure 13: The Site Management tab

3. When you select a server, you will see the available options at the bottom of the screen.
4. To move a server:
 - Select the server and drag it to a different Site.
 - Or, select the server then click **Connect**. In the dialog box that appears, select the Site you want the server to connect to.

NOTE: Sites without any servers are automatically removed from the list.

Once the server is connected to the Site, the settings are merged.

- Unique settings from the server are added to the Site.
- If the settings are identical, only the Site version is kept.
- If a server setting and a Site setting have the same name but are configured differently, the server setting is added to the Site and renamed in this format: *<setting name> (server name)*, e.g. Email1 (Server2F).

- In the rules engine, the *Notify users (default)* rule is always added and renamed, even if the settings are the same. The Site version remains enabled but the added rule is disabled by default.
 - The two Site Views are combined.
 - The Site settings take precedence.
 For example, a map from the Site was copied to the server in the past. In the server, the map was placed at the top of the Site View. But in the Site, the same map is placed at the bottom. After the server is connected to the Site, the map takes the position used by the Site (the bottom).
 - New, unorganized elements from the server are listed at the bottom of the Site View.
 - User permission groups are merged.
 - If groups have the same name, the Site settings are used and the users from both the Site and the server are added to the group.
 - Groups that are new to the Site automatically get access to all the devices in the Site.
 - Groups that are new to the server automatically get access to all the devices that are connected to the server.
 - Users with the same name will use the settings configured in the Site (including passwords), and gain group permissions from the server.
 - If the Site is connected to a Windows Active Directory, the server must be connected to the same Active Directory domain or the connection will fail. For more information, see [Importing Active Directory Groups](#).
5. If the Site has multiple servers, you can choose to disconnect a server from the current Site and re-assign the server to its own Site.
- Select a server from the Site then click **Disconnect from Site....**

When a server is disconnected, it retains all the settings it received from its previous Site.

Site Families

Child Sites can be connected to a parent Site to create a site family. Once set up, all ranked user and group privileges on the parent Site are pushed to the child Sites, and controlled from the parent Site. The child Site can still define local users and groups.

NOTE: A parent Site can have multiple child Sites, but a child Site can only have one parent Site. You must be logged in to both your desired parent and child Sites before you can connect them.

Only Enterprise Sites can be parent Sites. Each parent Site can have up to 1 Core Site, 24 Standard Sites and unlimited Enterprise Sites as child Sites.

Connecting a Child Site to a Parent Site

1. In the Site Setup tab, click .

The Site Management tab is displayed.

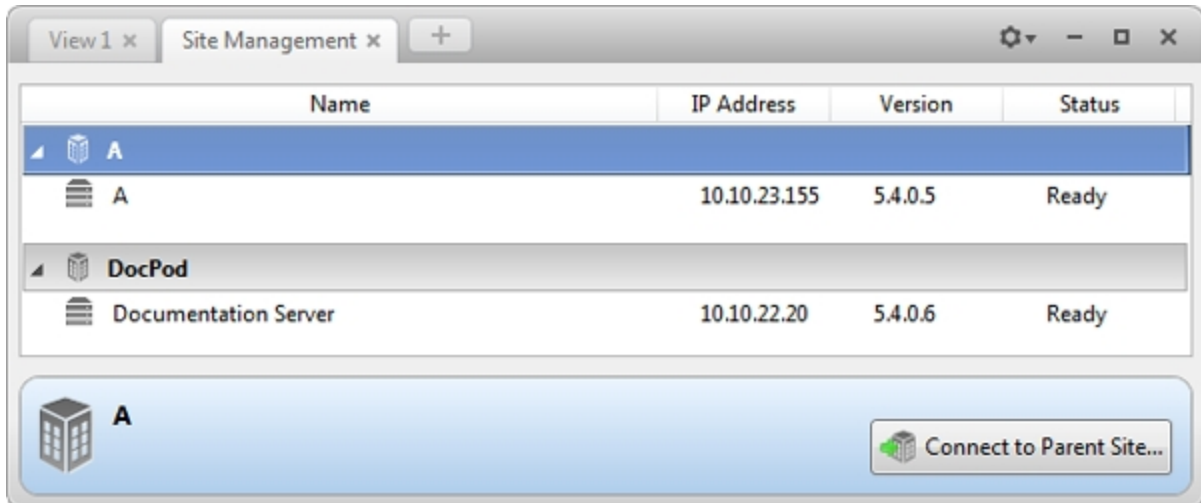


Figure 14: The Site Management tab

2. Select the Site you want to connect as a child Site.

3. In the bottom right corner of the tab, click .

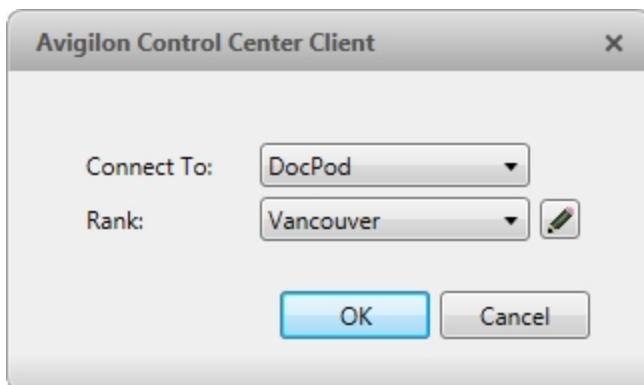



Figure 15: The Parent-Child Setup dialog box

4. In the following dialog box, select the parent Site from the **Connect to:** drop down list.
5. In the **Rank:** drop down list, select a rank for the child Site. To edit or view the entire Corporate Hierarchy, click . For more information, see [Setting Up a Corporate Hierarchy](#).
6. Click **OK**.
7. In the confirmation dialog box, click **Yes**.



Disconnecting Site Families

If a child Site needs to be removed from or moved in the Corporate Hierarchy, you can disconnect it from the parent Site. The child Site can then function independently, be reconnected to the parent Site, or be connected to a new parent Site.

You can also revoke a child Site's access from the parent Site.

Disconnecting a Child Site from a Parent Site





1. In the Site Setup tab, click .
2. Select the child Site you want to disconnect.
3. In the bottom right corner of the tab, click .
4. When the confirmation dialog box appears, click **OK**.

NOTE: If a network issue occurs while you are disconnecting the child Site, you need to also revoke access from the parent Site.

Revoking Parent Site Access to a Child Site






1. In the Site Setup tab, click .
2. Select the parent Site whose child Site you want to disconnect.
3. In the bottom right corner of the tab, click .
4. From the drop down list, select the child Site you want to disconnect.
5. When the confirmation dialog box appears, click **OK**.


Connecting/Disconnecting Cameras and Devices

Cameras and other devices are connected to a Site through the linked servers. The server manages and stores the camera's recorded video, while the Site manages the events that can be linked to the camera's video.

You can connect and disconnect cameras and devices through the Connect/Disconnect Cameras... tab.

A camera's connection status is indicated by the icon beside the camera name in the System Explorer. The status icons may appear over any device icon in the System Explorer.

Icon	Definition
 Camera Connected	The camera is connected to the server.
 Camera Upgrading	The camera is connected to the server and is currently upgrading its firmware.
	The camera cannot connect to a server. This may be because the camera is no longer on the network or there is a

Icon	Definition
Camera Connection Error	network conflict
 Camera Disconnected	The camera is disconnected but recorded video from the camera remains on the server.
No Icon	The camera is disconnected and no recorded video from the camera remains on the server.

Discovering a Device

When devices are connected to the network, they should be automatically discovered by the Client.

If a device is not automatically discovered, you can try to manually discover the device.



- In the Site Setup tab, click .

In the Connect/Disconnect Cameras... tab, all Avigilon and ONVIF cameras that are connected to the same network segment (subnet) are automatically detected and appear in the Discovered Cameras list.

If the device you want to connect to is on a different subnet, or is manufactured by a third-party, do the following:

1. At the top of the Connect/Disconnect Cameras... tab, click **Find Camera....**
2. In the Find Camera dialog box, complete the following fields:

The screenshot shows the 'Find Camera' dialog box. The 'Search From Server' dropdown is set to 'CLIENTXPSTD'. The 'Search Type' dropdown is set to 'IP Address'. The 'Camera Type' dropdown is set to 'Avigilon'. The 'IP Address/Hostname' field is empty. The 'Control Port' is set to '55080'. There are 'OK' and 'Cancel' buttons at the bottom.

Figure 16: The Find Camera dialog box: Search Type - IP Address

The screenshot shows the 'Find Camera' dialog box. The 'Search From Server' dropdown is set to 'CLIENTXPSTD'. The 'Search Type' dropdown is set to 'IP Address Range'. The 'Camera Type' dropdown is set to 'Avigilon'. The 'Start IP Address' and 'End IP Address' fields are both set to '0 . 0 . 0 . 0'. The 'Control Port' is set to '55080'. There are 'OK' and 'Cancel' buttons at the bottom.

Figure 17: The Find Camera dialog box: Search Type - IP Address Range

- **Search From Server:** select the server that you want the device to connect to.
- **Search Type:** select a search type.
- **Camera Type:** select the device's brand name.

Tip: Select ONVIF to discover devices that are ONVIF compliant.

- **IP Address/Hostname:** (For IP Address search only) enter the device's IP address or hostname. The device and server's gateway IP address must be set correctly for the device to be found.
- **Start IP Address:** and **End IP Address:** (For IP Address Range search only) enter the start and end IP addresses. Only addresses in that range will be searched for the selected device type.
- **Control Port:** enter the device control port.
- Provide the **User Name:** and **Password:** for the device if required.

3. Click **OK**.

If the device is discovered, it will appear in the Discovered Cameras list. You can now connect the device to a server.

Connecting a Device to a Server

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

To access a device from a Site, it must be connected to server within the Site. The server manages and stores a camera's recorded video, while the Site manages the events that can be linked to a camera's video.

Once a device has been discovered on the network, it can be connected to the server. If you do not see a device you want to connect, see [**Discovering a Device**](#).



1. In the Site Setup tab, click

View 1 x Connect/Disconnect Cameras... x +


Find Camera... Show All Servers ▾

Discovered Cameras


Name	IP Address	Type	Model	MAC
3.0W-H3-B2(147960)	10.10.32.87	Avigilon (ONV	3.0W-H3-B2	00:18:85:03:E5
3.0W-H3-B2(147963)	10.10.32.219	Avigilon (ONV	3.0W-H3-B2	00:18:85:03:E5
3.0W-H3-BO1-IR(223172)	10.10.32.40	Avigilon (ONV	3.0W-H3-BO1-	00:18:85:03:E5
3.0W-H3-BO1-IR(223537)	10.10.32.183	Avigilon (ONV	3.0W-H3-BO1-	00:18:85:03:E5
3.0W-H3-BO1-IR(233937)	10.10.32.20	Avigilon (ONV	3.0W-H3-BO1-	00:18:85:03:E5
3.0W-H3-BO2-IR(234237)	10.10.34.132	Avigilon (ONV	3.0W-H3-BO2-	00:18:85:03:E5
3.0W-H3-DO1(133837)	10.10.32.10	Avigilon (ONV	3.0W-H3-DO1	00:18:85:03:E5
3.0W-H3-DO1(147943)	10.10.32.75	Avigilon (ONV	3.0W-H3-DO1	00:18:85:03:E5

Connected Cameras

Name	IP Address	Type	Model	MAC Address
Level 1				
1.0-H3-D1-IR(255246)	10.10.33.171	Avigilon (ONV	1.0-H3-D1-IR	00:18:85:03:E5
1.0W-H3PTZ-DP20(154901)	10.10.32.61	Avigilon (ONV	1.0W-H3PTZ-	00:18:85:02:5C
5.0-H3-B2(144515)	10.10.32.170	Avigilon (ONV	5.0-H3-B2	00:18:85:02:34

**3.0W-H3-DO1(133837)**
3.0W-H3-DO1

Firmware Version: 2.5.0.1(8320)
IP Address: 10.10.32.10
MAC Address: 00:18:85:02:0A:C

Camera is Disconnected
 This camera is not connected to a server, its images are not being recorded.


 **Connect...**

Figure 18: The Connect/Disconnect Cameras... tab

2. In the Discovered Cameras area, select a device then click **Connect...**

Tip: You can also drag the device to a server on the Connected Cameras list.

3. In the Connect Camera dialog box, select the server you want the device to connect to.

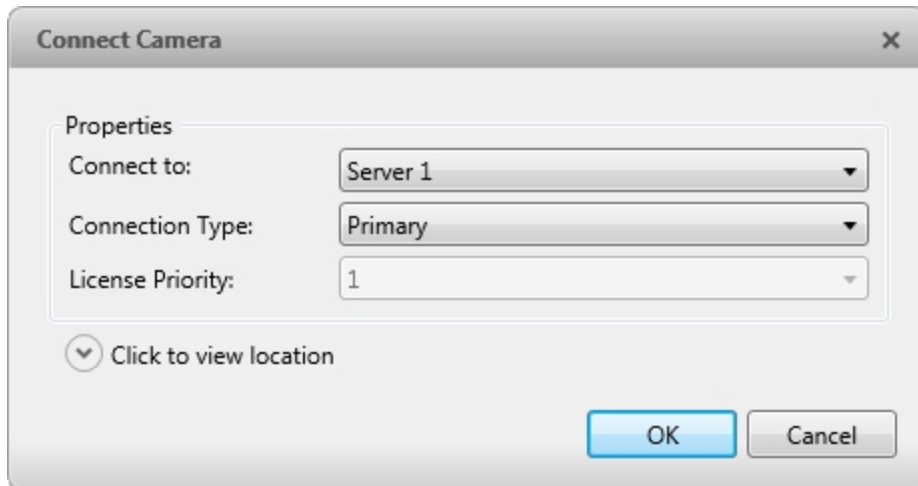


Figure 19: The Connect Camera dialog box


4. If you are connecting a third-party device, you may choose to connect the device by its native driver. In the **Camera Type:** drop down list, select the device's brand name. If there is only one option in the drop down list, the system only supports one type of driver from the device.
5. In the **Connection Type:** drop down list, select **Primary**. The device will automatically connect to this server if they are in the same network.

If you plan to create failover connections, see [Failover Connections](#) for more information.

6. In the **License Priority:** drop down list, select the appropriate license priority. The highest priority is **1** and the lowest priority is **5**.

NOTE: This option is only available if you are connecting to a secondary or tertiary server.

The License Priority: setting decides the order that devices are connected to the server. The server will try to connect cameras with a higher priority before cameras with lower priority. If the server does not have enough camera channel licenses, low priority devices may not be connected. A camera channel license is only used when the device actually connects to the server.

7. Click  to choose where the device appears in the System Explorer.
 - If your Site includes virtual sub-sites, select a location for the device. The list on the right updates to show what is stored in that directory.
 - In the Site directory, drag the device up and down to set where it is displayed.

Tip: If the Site you want is not listed, you may need to connect the device to a different server. Make sure the selected server is connected to the Site you want.

8. Click **OK**.
9. If the device is password protected, the Camera Authentication dialog box appears. Enter the device's username and password, then click **OK**.

Connecting Cameras to a Video Analytics Appliance

If you have an IP model of the video analytics appliance, you do not need to physically connect the camera to the appliance, you can do so through the Video Analytics Configuration dialog box.

If you have an analog model of the video analytics appliance, the cameras are automatically associated with video analytics appliance channels. You do not need to connect cameras to video analytics appliance channels through the Video Analytics Configuration dialog box.

NOTE: The connecting camera and video analytics appliance must be on the same server.

1. Add the video analytics appliance to the server. For more information, see [Editing the Device Connection to a Server](#).
2. Connect the required cameras to the same server as the video analytics appliance.
3. In the Setup tab, select a video analytics appliance camera channel.



4. Click . The Video Analytics Configuration dialog box opens.

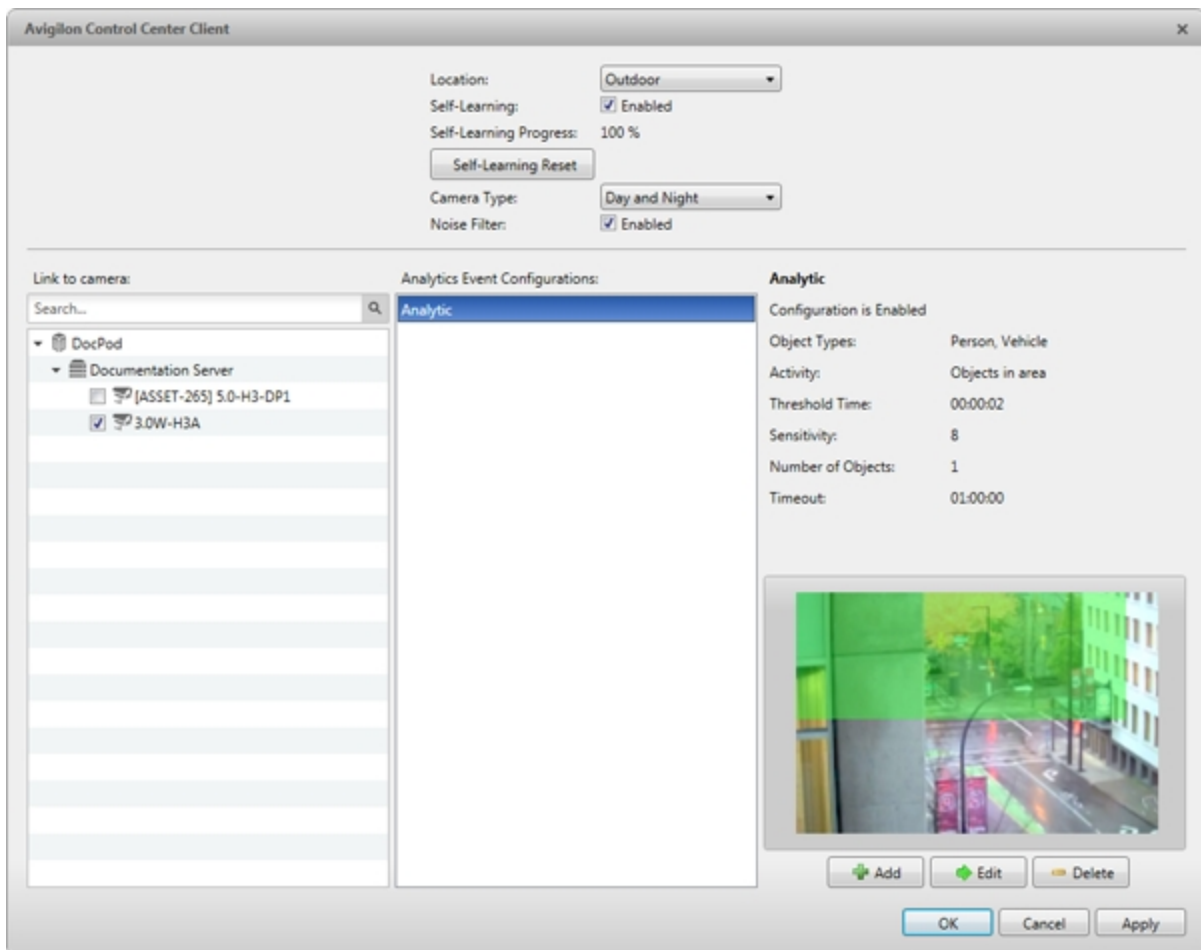


Figure 20: The Video Analytics Configuration dialog box

5. Select the check box beside the camera you want to assign to this camera channel.

Tip: After connecting or disconnecting a camera to a video analytics appliance, you will need to reboot the video analytics appliance before making any further configuration changes to the device. This process will take about 5-10 minutes. It is recommended that you make all required connection changes before rebooting. For more information, see [Rebooting a Device](#).

6. Click **OK**.


If the camera you link to has a resolution higher than 2.0 MP, the video analytics appliance will use the camera's secondary video stream.

NOTE: The video streamed from the video analytics appliance may not be in high definition because the video analytics appliance cannot stream video with a resolution higher than 2.0 MP. This does not affect the resolution of recorded video.

Editing the Device Connection to a Server

NOTE: You can only edit manually discovered device connections.



1. In the Site Setup tab, click .
2. In the Connect/Disconnect Cameras... tab, select the device connection you want to edit from the Connected Cameras list.
3. Click **Edit...** For details about the editable options, see [Connecting a Device to a Server](#).
4. Click **OK**.

Failover Connections

You can set up failover connections so that if a server fails, the devices connected to it will automatically connect to a backup server and continue recording.

NOTE: Failover connections can only be made between servers within the same Site.

Failover connections are set up in the Connect/Disconnect Cameras... tab and are defined by the Connection Type: setting and the License Priority: setting.

The Connection Type: determines when the device will connect to a server:

- **Primary:** the device will automatically connect to this server if they are in the same network.
- **Secondary:** if the Primary server is not available, the device will try to connect to this server.
- **Tertiary:** if the Primary and Secondary servers are not available, the device will try to connect to this server.

The License Priority: setting decides the order that devices are connected to the server — **1** is the highest and **5** is the lowest. The server will try to connect devices with a higher priority before devices with lower priority. If the server does not have enough camera channel licenses, low priority devices may not be connected. A camera channel license is only used when the device actually connects to the server.

Setting Up a Failover Connection

1. In the Connect/Disconnect Cameras... tab, select a device that is currently connected to its Primary server.
2. At the bottom of the application window, click **Connect...**
3. When you see the Connect Camera dialog box, select a different server within the same Site and set the **Connection Type**: as either **Secondary** or **Tertiary**.
4. Select a **License Priority**: for the failover connection.
5. Click **OK**.
6. Repeat this procedure until all the required failover connections have been made.

The following is an examples of how failover will work in the event of server failure.

Example

Cameras A, B, C, D, E and F have failover connections set up to two different servers. Assume each server has 6 camera channel licenses, and the license priority is set to 1 for each connection.



Connection Type	NVR 1 	NVR 2 	NVR 3 
Primary	 A  B	 C  D	 E  F
Secondary	 E  F	 A  B	 C  D
Tertiary	 C  D	 E  F	 A  B

Figure 21: Primary connections

When the server NVR1 fails, cameras A and B from NVR 1 automatically connect to their Secondary server, NVR 2.

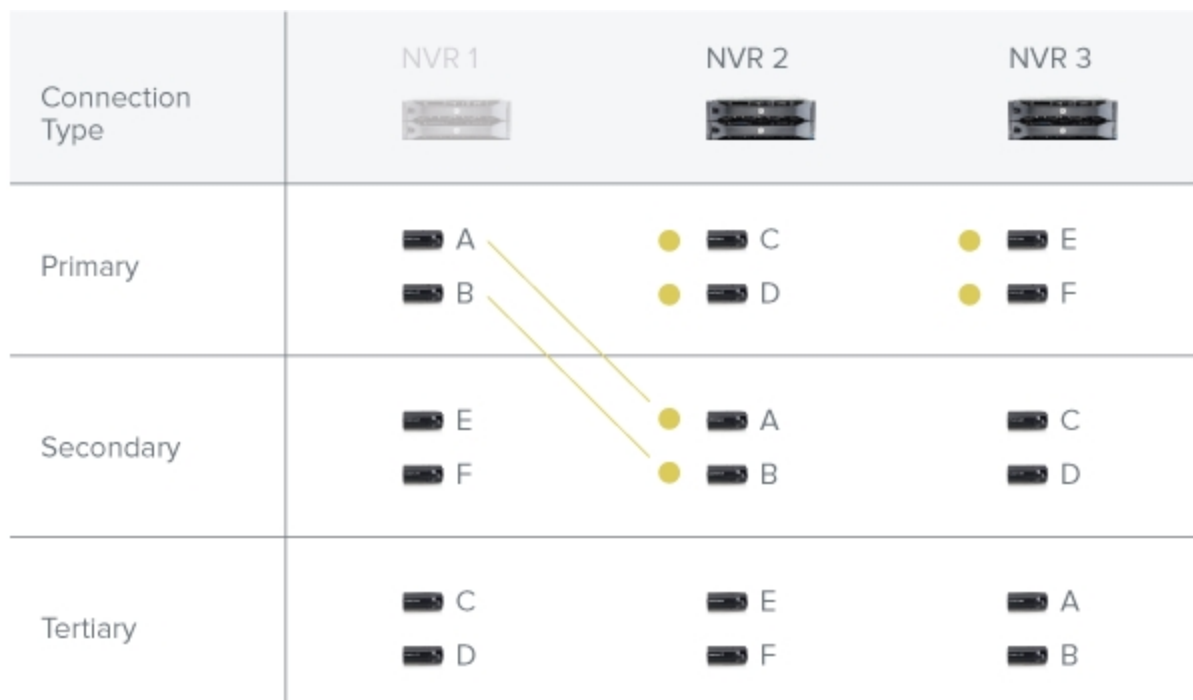


Figure 22: NVR 1 fails

When the server NVR3 fails, cameras E and F automatically connect to their Tertiary server, NVR 2.

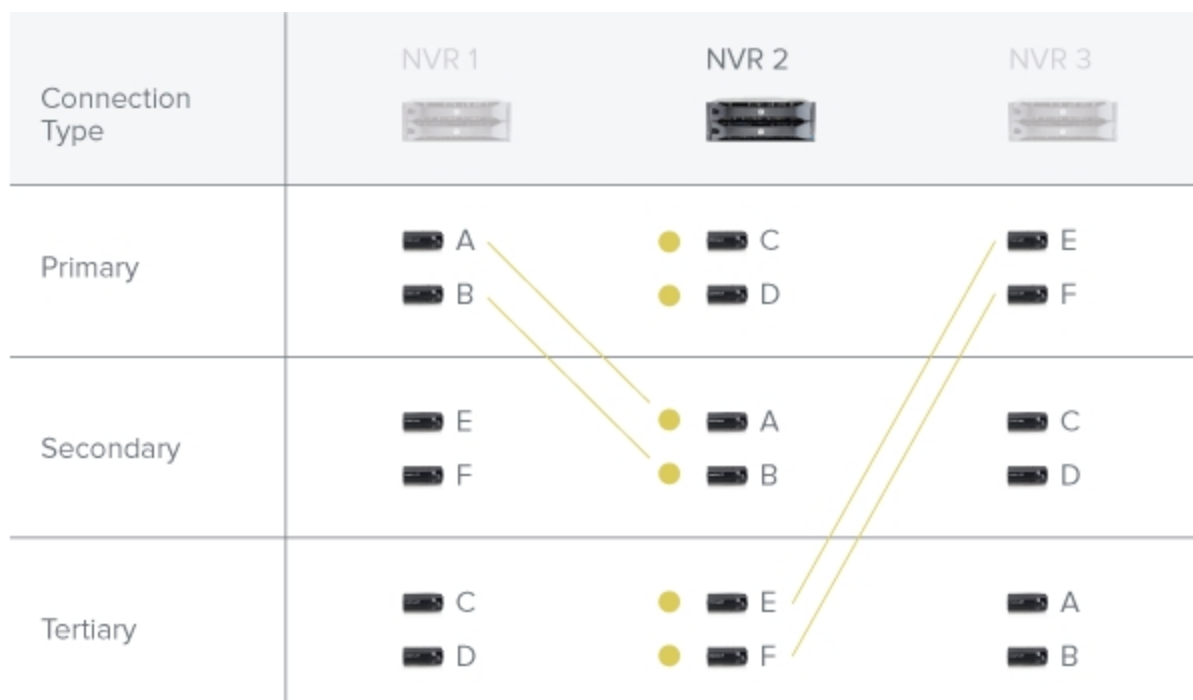



Figure 23: NVR 3 fails


Disconnecting a Device from a Server




1. In the Site Setup tab, click .
2. In the Connect/Disconnect Cameras... tab, select the device you want to disconnect from the Connected Cameras list, then do one of the following:
 - Click **Disconnect**. The device will be disconnected from the server and moved to the Discovered Cameras list.
 - Drag the device into the **Discovered Cameras** list.

Upgrading Camera Firmware

Camera firmware updates are typically included with the Avigilon™ Control Center Server update packages. Camera firmware updates are automatically downloaded and installed to the camera.

When the camera firmware is being upgraded, video from that camera cannot be displayed and the System Explorer will display  beside the camera name.

When the firmware upgrade is complete, the System Explorer will display  again and video from the camera will display.

Users and Groups

When users are added to the Avigilon Control Center, they are assigned to a group that defines their access permissions in a Site. Use the Users and Groups dialog box to create and manage users and groups.

Managing Users and Groups Across Multiple Sites

When you have a large organization, you need detailed user access permissions to manage how the system is used each day.

The Avigilon Control Center system offers several features to help you manage large organizations:

- **Active Directory Support:** The system can synchronize with Windows Active Directory to quickly import large number of users. For more information, see [Importing Active Directory Groups](#).
- **Group Privileges:** Users must be added to at least one group that defines what they can access within the system. This includes system features and specific devices. Only users with **Setup user and group settings** permission are able to edit other users and groups at all. For more information, see [Adding Groups](#).

To help you manage groups across the system, here are some features to help you maintain secure group access:

- **Corporate Hierarchy:** Create a Corporate Hierarchy to determine which groups have control over other groups. For more information, see [Corporate Hierarchy](#).
- **Site Families:** You can connect multiple child Sites to an Enterprise parent Site. You can then control group settings for all of the Sites from the parent Site. For more information, see [Site Families](#).

Best Practices

Listed here are some recommendations for maintaining an efficient and secure system:

- Change the default administrator password. The default administrator user has control over all aspects of the system, so adding a password to the account is highly recommended. By default, there is no password for the administrator account.
- Create a secondary user for the Administrator group. It is recommended that you do not use the default administrator user account, instead create a secondary user account with the same privileges so that the default administrator user can still be used in the rare event that the system becomes compromised.

Tip: If you forget your administrator user password, the alternate administrator user can be used to reset the password. This will avoid the need for a system-wide reset to restore the default administrator user password.

- Assign a rank to all groups. Unranked groups have access over all other groups, so it is recommended that any groups with users be assigned a rank to further define their access privileges. The default Administrators group is Unranked by default, but you can create a new group with same permissions and assign a rank to the new group. For more information, see [Corporate Hierarchy](#).
- Limit the number of users in the default Administrator group. The Administrator group is the oversight group that should only be used for system maintenance. For example, users in the default Administrator group are the only ones who can see or remove private bookmarks made by all users.
- Always check that the device access permissions are correct after a child Site has been connected to a parent Site. Ranked groups from the parent Site whose rank is above or equal to the child Site retain their permissions on the child Site. These groups automatically gain access to all devices, maps, saved Views, and web pages on the child Site.
- Always check group access permissions after a new server has been merged into the Site.
 - If groups have the same name, the Site settings are used and the users from both the Site and the server are added to the group.
 - Groups that are new to the Site automatically get access to all the devices in the Site.
 - Groups that are new to the server automatically get access to all the devices that are connected to the server.
- Always check group access permissions after new users and groups settings are imported into the Site.
 - If groups have the same name, the import settings are used and the users from both the import file and the current Site are added to the group.
 - Groups added from the import file automatically gain access to all the new devices that were added since the settings were exported.

Corporate Hierarchy

You can set up a Corporate Hierarchy to reflect your organization's structure.

The Corporate Hierarchy can only be accessed by users belonging to a group with the Setup sites and Setup corporate hierarchy privileges. Users cannot see groups of equal or higher rank than the group they belong to, unless they are part of an Unranked group. If users belong to multiple groups of different ranks, they will be able to view all ranks below the highest rank they belong to.

Sites can also be combined together as Site families to reflect the defined Corporate Hierarchy. This further defines what devices and events users can control.

Setting Up a Corporate Hierarchy

Adding and Editing Ranks

When you see the **Edit Corporate Hierarchy** option while configuring a group or adding a child Site, you can select an existing Corporate Hierarchy or create a new Corporate Hierarchy.

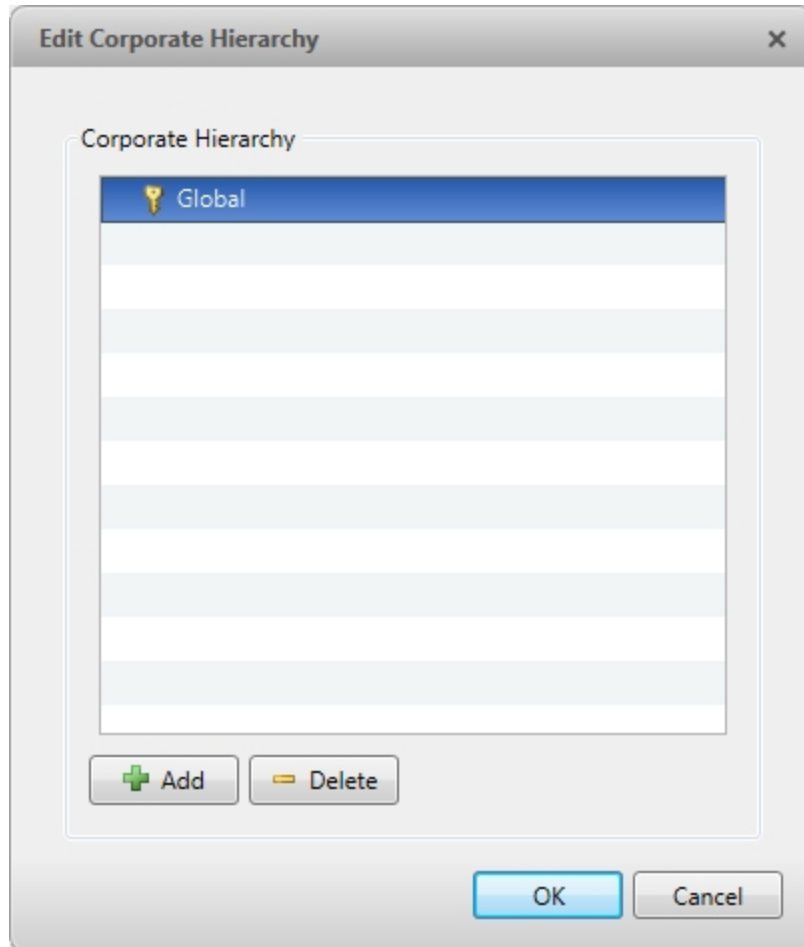




Figure 24: The Edit Corporate Hierarchy dialog box

NOTE: If you have not yet created a Corporate Hierarchy, a message will appear prompting you to create a new one. Click **Yes** to create a Corporate Hierarchy for this Site.

The default rank is **Global**. It is the highest rank in the Corporate Hierarchy.

6. To create a new rank, select **Global** and click . A **Add rank** will be created.

NOTE: The Global rank cannot be deleted. It can only be renamed.

7. To rename a rank, double-click the name and enter a new name in the text field. Click anywhere outside the text field to save the new name.
8. Selecting a rank and clicking  will create a new rank immediately below the rank you selected.

NOTE: Ranks can only be added or deleted. They cannot be moved within the Corporate Hierarchy.

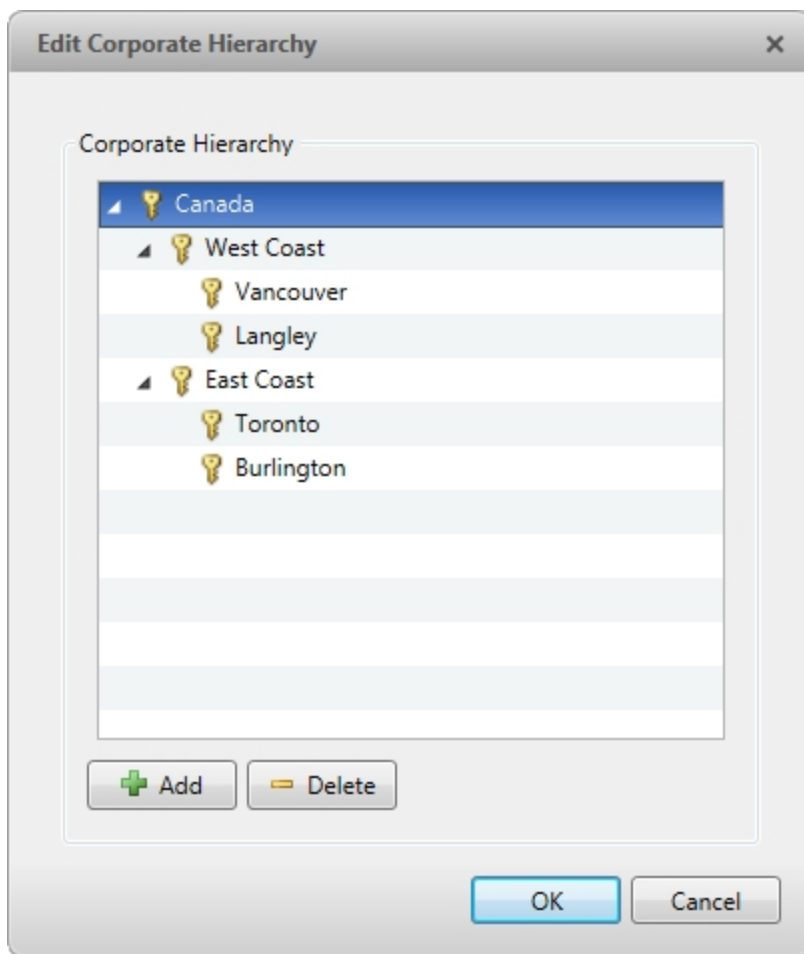


Figure 25: An example of a Corporate Hierarchy with multiple ranks that share a level. **Canada** is the highest, Global rank. **West Coast** and **East Coast** are of equal rank to each other, and one rank below **Canada**. Users belonging to **East Coast** cannot edit ranks below **West Coast** and vice versa.

Now that you've set up the Corporate Hierarchy, you can assign ranks to permission groups to define what users can access within the system. For more information, see [Users and Groups](#).

Deleting Ranks

If a rank is deleted, groups in this rank are removed from the hierarchy and assigned an orphaned rank. An orphaned rank is the lowest rank possible and is only visible to Unranked and Global users.

Unranked and Global users can reassign group ranks at any time. Members of the orphaned rank have no Setup user and group settings privileges but still retain other privileges, e.g. viewing live video.

Deleting a rank will also delete all the ranks below it in the Corporate Hierarchy. Remotely synchronized users and groups may become inaccessible.

- To delete a rank, select it in the Corporate Hierarchy and click .

Unranked Groups

The Unranked groups are not part of the Corporate Hierarchy. The Unranked rank cannot be deleted or edited.

Users belonging to Unranked groups are able to create and edit any ranked or Unranked groups and users if they have the **Setup user and group settings** privilege.

The default groups Administrators, Power Users, Restricted Users, and Standard Users are Unranked.



Ranking Site Families

The Corporate Hierarchy is configured through the parent Site. The Global rank is associated with the parent Site. To edit the Corporate Hierarchy, a user on the parent Site must have the **Setup corporate hierarchy** privilege. A child Site is assigned a rank in the Corporate Hierarchy through the parent Site. For more information, see [Site Families](#).

A child Site's rank determines the access rights of groups and users that are pushed to it from the parent Site. Any pushed group whose rank is higher than the child Site's can access the child Site. Pushed groups and users are controlled by the parent Site.

Adding a User

NOTE: This procedure describes adding individual users to the system. If you are managing users through Windows Active Directory, add new users directly through Active Directory.

1. In the Site Setup tab, click .
2. In the Users tab, click .

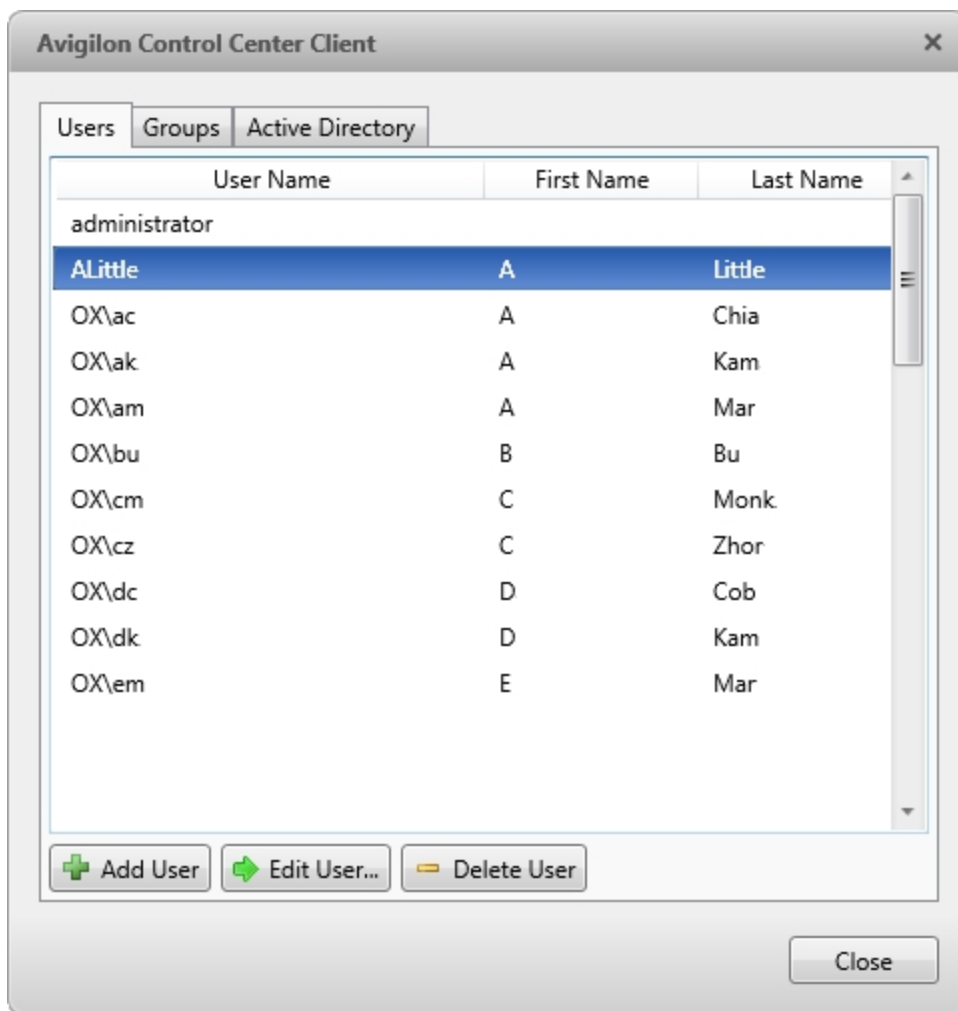


Figure 26: The Users and Groups dialog box

3. When the Add User dialog box appears, complete the User Information area.

Add User [X]

General Member Of

User Information

User Name:

First Name:

Last Name:

Email Address:

☐ Disable user

Login Timeout

☐ Enable login timeout

Idle Time: 0 hour 0 min

Password

Password:

Confirm Password:

☐ Require password change on next login

☐ Password never expires

Password Expiry (Days): 90

OK Cancel

Figure 27: The Add User dialog box, General tab

4. If you don't want this user to be active yet, select the **Disable user** check box. Disabled users are in the system but cannot access the Site.
5. In the Login Timeout area, select the **Enable login timeout** check box to limit the amount of time the user can be logged in while the Client is idle.
6. In the Password area, complete the following fields:
 - **Password:** enter a password for the user.
 - **Confirm Password:** re-enter the password.
 - **Require password change on next login:** select this check box if the user must replace the password after the first login.

- **Password Expiry (Days):** specify the number of days before the password must be changed.
 - **Password never expires:** select this check box if the password never needs to be changed.
7. In the Member Of tab select the check box beside each access group the user belongs to.

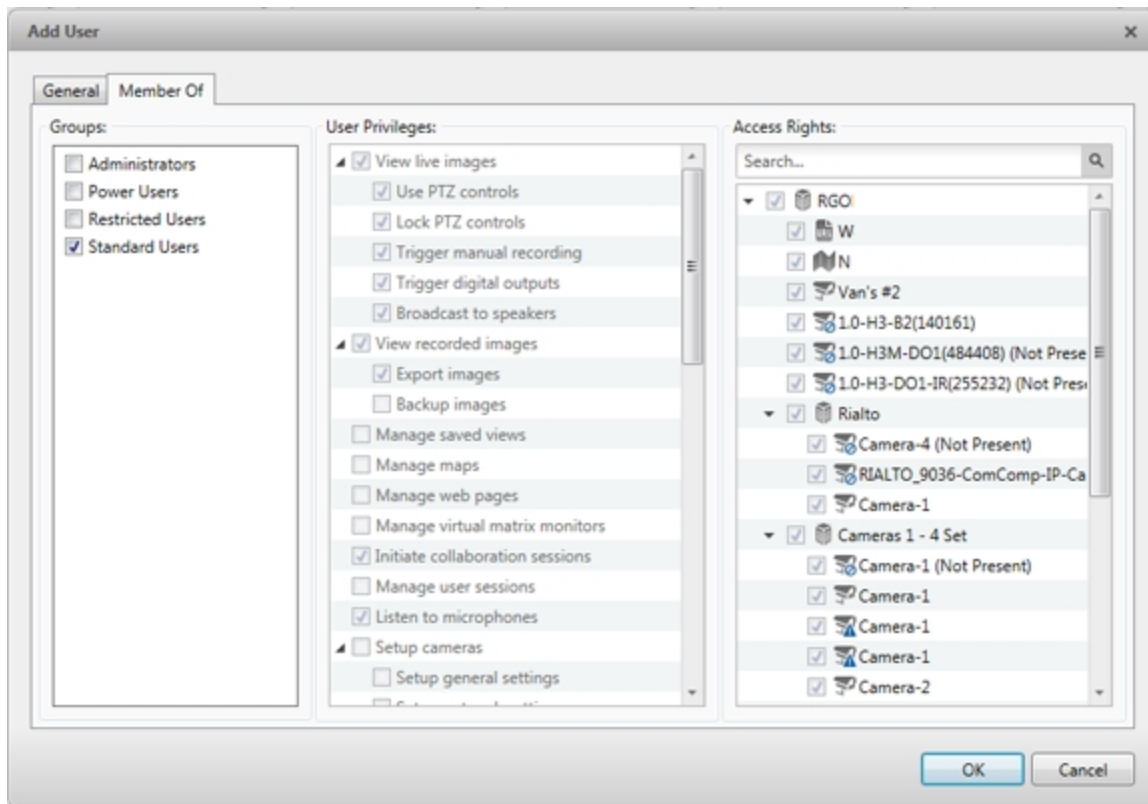


Figure 28: The Add User dialog box, Member Of tab

The other two columns display the permissions linked to the selected group.




8. Click **OK**. The user is added to the Site.

Editing and Deleting a User

You can edit and delete users as needed.

NOTE: Be aware that you cannot edit or delete users that belong to the same ranked group as you or higher. This also means that you cannot edit your own user account unless you are part of an Unranked group.

Tip: If a user has access to more than one Site, the changes to the user need to be made on each Site.


1. In the Site Setup tab, click .
2. In the Users tab, select a user then perform one of the following:
 - To edit the user's information, click .
 - To delete the user, click .

NOTE: Users imported through the Active Directory tab cannot be deleted, only disabled.

Importing Active Directory Groups

You can import Windows Active Directory groups to the Site so users can log in using their Windows credentials. Members of an imported Active Directory group are automatically added as users to the Site.

Changes to member accounts in the Active Directory are automatically synchronized with user accounts in the Avigilon Control Center.

1. In the Site Setup tab, click .
2. Select the Active Directory tab.

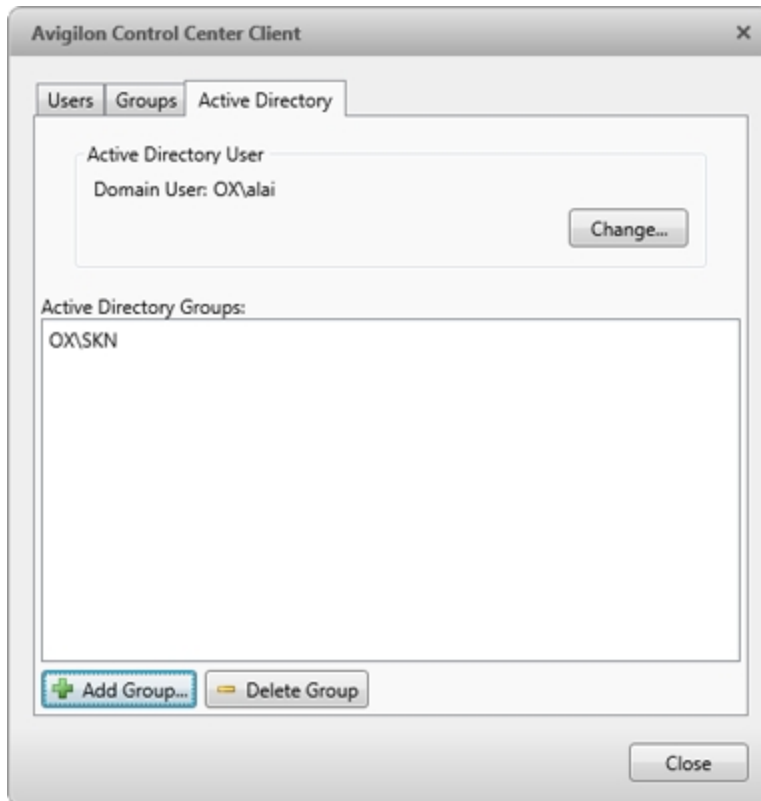



Figure 29: The Users and Groups dialog box

3. If it says *Active Directory Synchronization is Disabled* at the top, you need to enable the feature first.
 - a. Click **Change....**
 - b. In the dialog box, select the **Enable Active Directory synchronization** check box.
 - c. Enter your username and password for the network domain.
 - d. Click **OK**.
4. Click .
5. Assign a set of permissions to the Active Directory group, then click **OK**. You can edit the permissions for the group later.

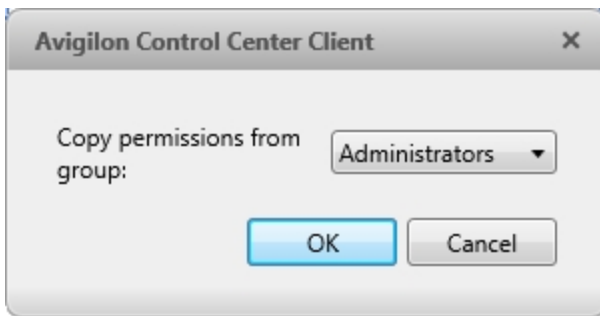


Figure 30: Copy Permissions dialog box

6. In the Select Groups dialog box, locate the Windows group you want to import by doing one of the following:
 - Enter the name of the Windows group in the **Enter the object names to select** field and click **OK**.
 - Click the **Advanced** button and search for the group you want.

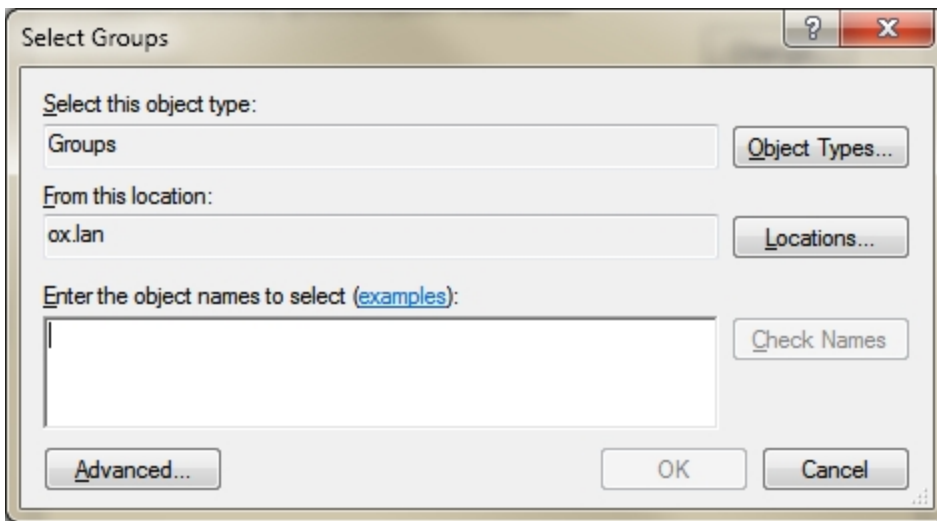


Figure 31: Select Groups dialog box


Once located, the group is automatically added to the Active Directory Groups: list and the Groups list. All the users in the group are imported into the Users list.

Members of an imported Active Directory group can now be added to any existing ranked user group in the Avigilon Control Center Client, and will be treated like other users.

Imported user information, including login credentials, is maintained by the Active Directory. In the Users and Groups dialog box, you can only disable an imported user or configure the Login Timeout settings. For more information see [Editing and Deleting a User](#).

Adding Groups

Groups define what features users have access to. Create new groups to change what users can access.

1. In the Site Setup tab, click .
2. Select the Groups tab and click

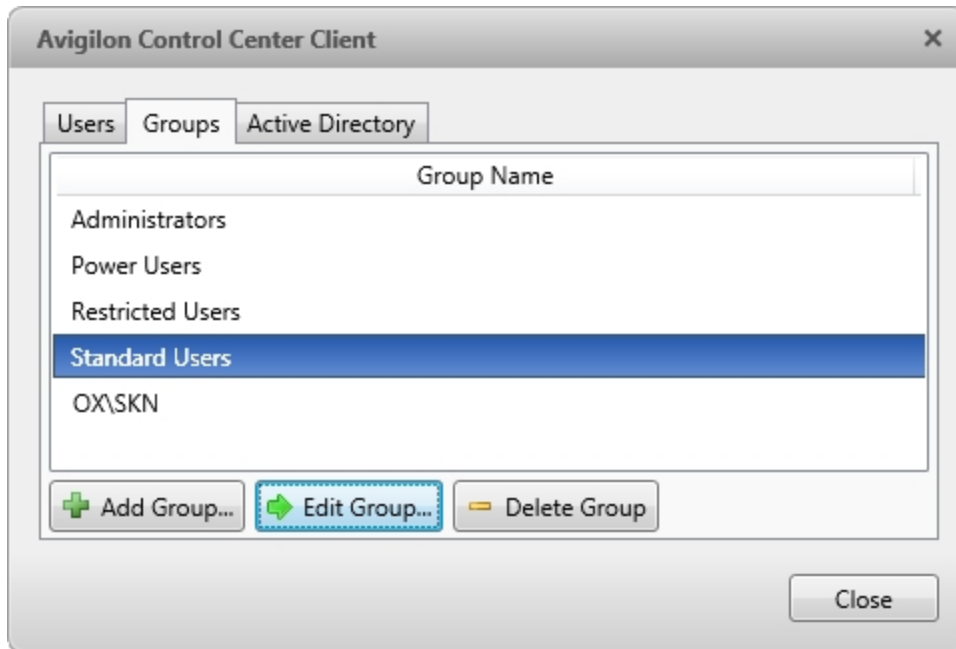


Figure 32: The Groups tab

3. Select an existing group to use as a template for your new group, then click **OK**.

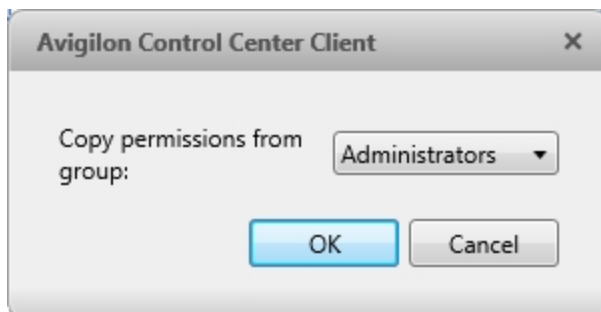


Figure 33: The Copy permissions from group: dialog box

4. In the Edit Group dialog box, complete the following:

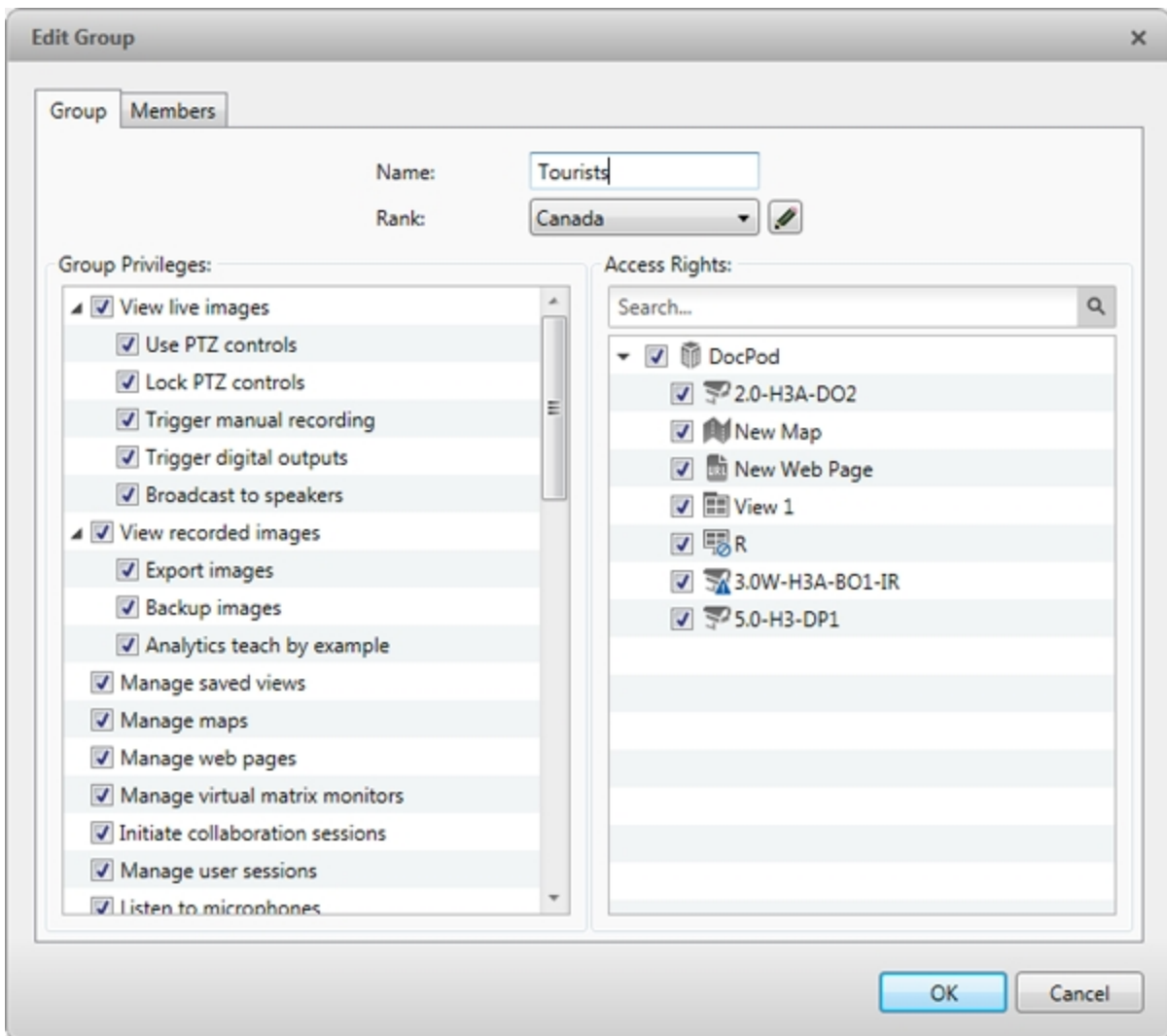



Figure 34: The Edit Group dialog box: Group tab

- a. Give the new group a name.
 - b. Choose a rank for the group from the Rank: drop down list. To edit or view the entire Corporate Hierarchy, click . For more information, see [Setting Up a Corporate Hierarchy](#).
 - c. Select the **Group Privileges:** and **Access Rights:** for the group. Clear the check box of any feature or camera you do not want the group to access.
5. Select the Members tab to add users to the group. If a user is added to the group through the Add User dialog box, the user is automatically added to the group's Members list. For more information, see [Adding a User](#).

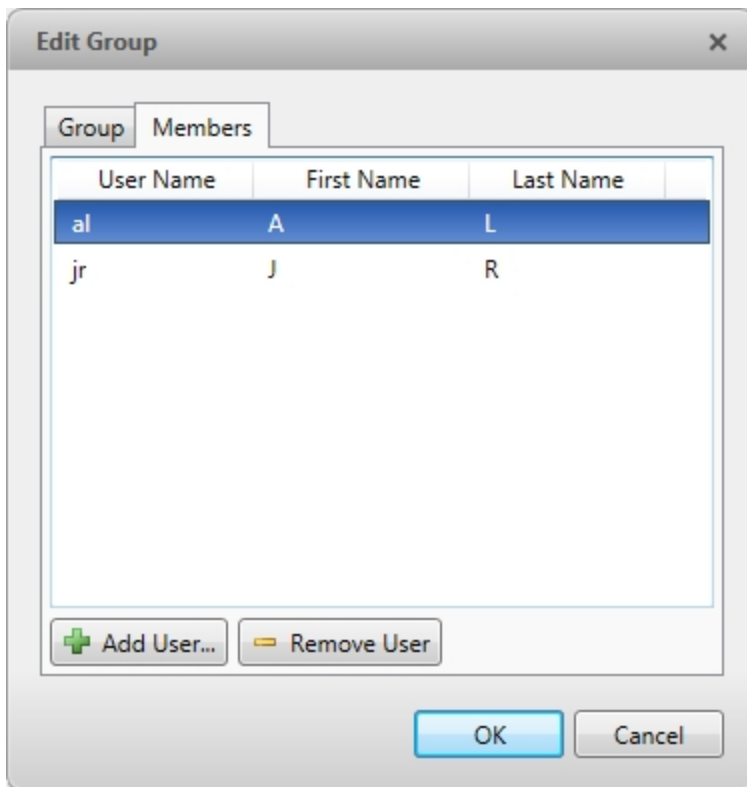



Figure 35: The Edit Group dialog box: Members tab

- a. Click .
- b. Select the users that should be part of this new group. Only users that have been added to the Site are displayed.

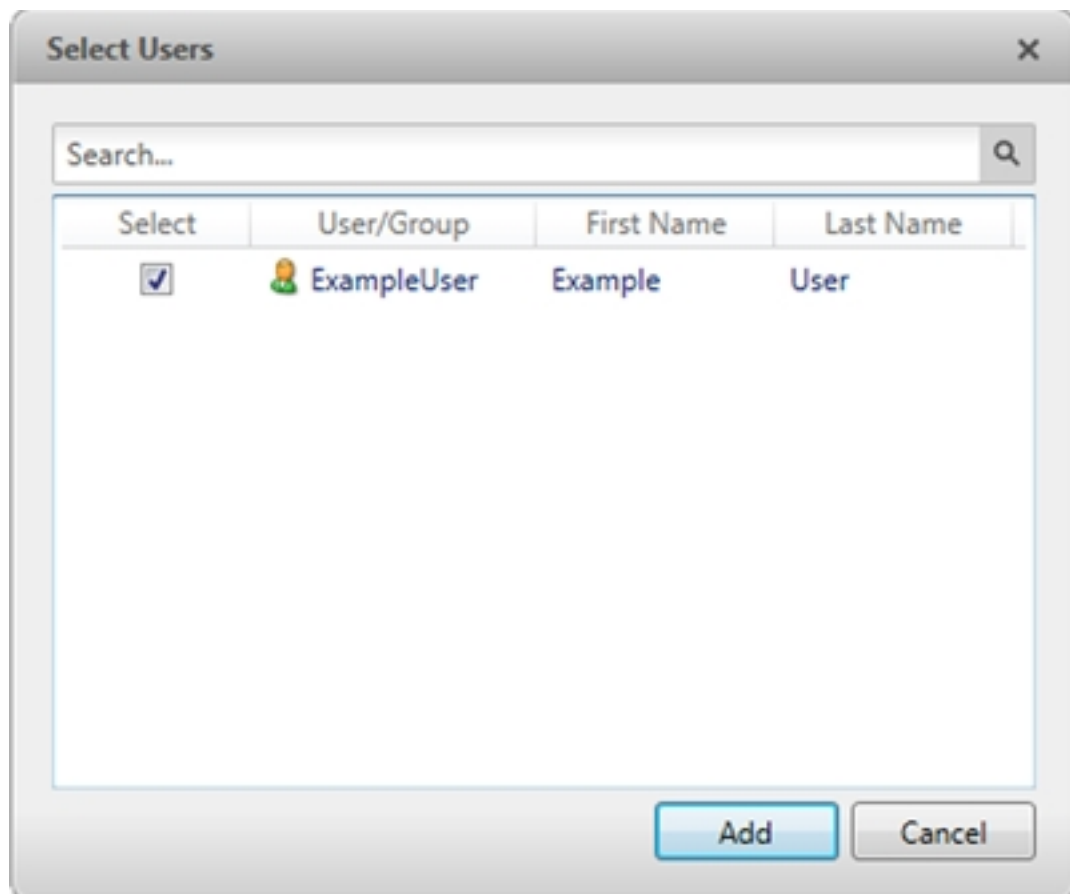





Figure 36: The Select Users dialog box

- c. Click **Add**. The users are added to the Members list.
6. Click **OK** to save the new group.

Editing and Deleting a Group

You can change the access permissions for a set of users by editing their access group.

1. In the Site Setup tab, click .
2. Select the Groups tab.
3. Select a group and do one of the following:
 - To edit the group, click . For details about the configurable options, see [Adding Groups](#).
 - To delete the group, click .



NOTE: Default groups cannot be deleted.

Alarms

Use the Alarms dialog box to create and manage alarms. Once an alarm has been created, you can monitor alarm events in the Alarms tab. For more information, see [Accessing the Alarms Tab](#).

Adding a New Alarm

Alarms need to be added to the Site before they can be monitored in the Alarms tab.

1. In the Site Setup tab, click .
2. In the Alarms dialog box, click .
3. Select an **Alarm Trigger Source**: . Click  when you are ready to continue. The alarm trigger options are:

- **Motion Detection** - movement has been detected within a camera's field of view.
- **Video Analytics Event** - a video analytics event has been detected.

NOTE: A Video Analytics Event can only be detected on a video analytics camera or on a camera that is connected to a video analytics appliance.

- **Digital Input Activation** - a digital input connected to a device has been activated.
- **License Plate Watchlist Match** - a license plate on the Watch List has been detected.
- **POS Transaction Exception** - a transaction exception has been detected at a POS transaction source.
- **Camera Error** - a camera error has occurred.
- **System Error** - a system error has occurred.
- **External Software Event** - an event generated by third-party integration software has occurred.

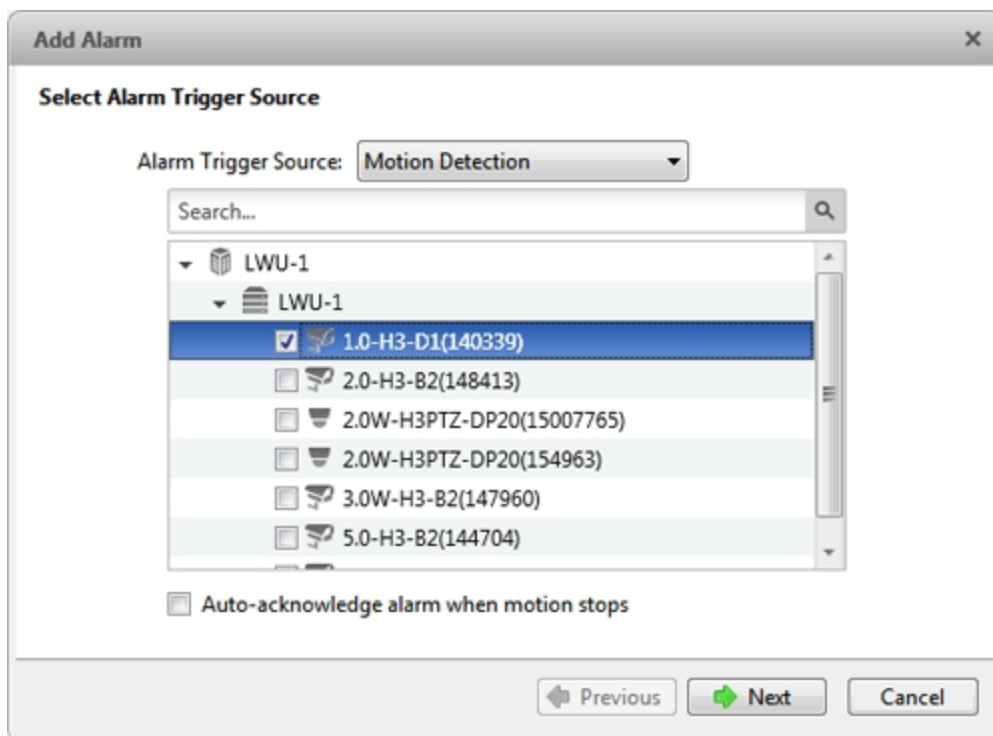


Figure 37: The Select Alarm Trigger Source dialog box

4. Select the cameras to link to this alarm, then complete the following:

Add Alarm

Select Linked Cameras

Select the camera(s) to link to this alarm:

Search...

- ▼ LWU-1
 - ▼ LWU-1
 - ☒ 1.0-H3-D1(140339)
 - ☒ 2.0-H3-B2(148413)
 - ☒ 2.0W-H3PTZ-DP20(15007765)
 - ☒ 2.0W-H3PTZ-DP20(154963)


Pre-Alarm Record Time: 5 seconds

Recording Duration: 1 min 0 sec

☒ View linked cameras when alarm is triggered

Previous Next Cancel

Figure 38: The Select Linked Cameras dialog box

- a. Set the **Pre-Alarm Record Time:** and the **Recording Duration:**.
 - b. Select the **View linked cameras when alarm is triggered** check box to automatically display the alarm video in a View when the alarm is triggered.
 - c. Click .
5. Select the groups and users that need to receive alarm notifications. You can create an escalation workflow to determine who is notified next if the alarm is not acknowledged.

Add Alarm [X]

Select Alarm Recipients

Select the users that will be notified when this alarm is triggered:

User/Group	First Name	Last Name	Wait Time
administrator			0 [up/down] h 0 [up/down] m
ExampleUser	Example	User	0 [up/down] h 5 [up/down] m

Add Recipients... **Remove Recipients**

☐ **Play sound when alarm is triggered:** Alarm 1.wav [play icon]

Previous **Next** **Cancel**

Figure 39: The Select Alarm Recipients dialog box

- Click to add the users or groups that will be notified of this alarm. By default, the list is empty and you must add at least one user to continue.
- In the dialog box that appears, select all the required users () and groups (). Use the search bar at the top of the window to quickly find the user/group you want.
- Click **Add**.
- Assign each user a **Wait Time**. The Wait Time determines when the user or group will be notified of the alarm. If a user is assigned 0h 0m, the user will be notified immediately after the alarm occurs. If the next user is assigned a wait time of 1h 0m, that user is notified in one hour if the alarm is not acknowledged in that time. If the first user acknowledges the alarm within one hour, the second user is never notified of the alarm.

In the Alarms tab, only users who are notified will see the live alarm trigger. All potential alarm recipients will see the alarm once it has been acknowledged.

- Select the **Play sound when alarm is triggered:** check box to play a sound when the alarm is triggered. The sound is played in the Client only, and will be used to notify the selected users. Select the sound you want to use for the alarm from the drop down list.
- Click .

8. (Optional) Set the actions that must occur when an alarm is acknowledged.

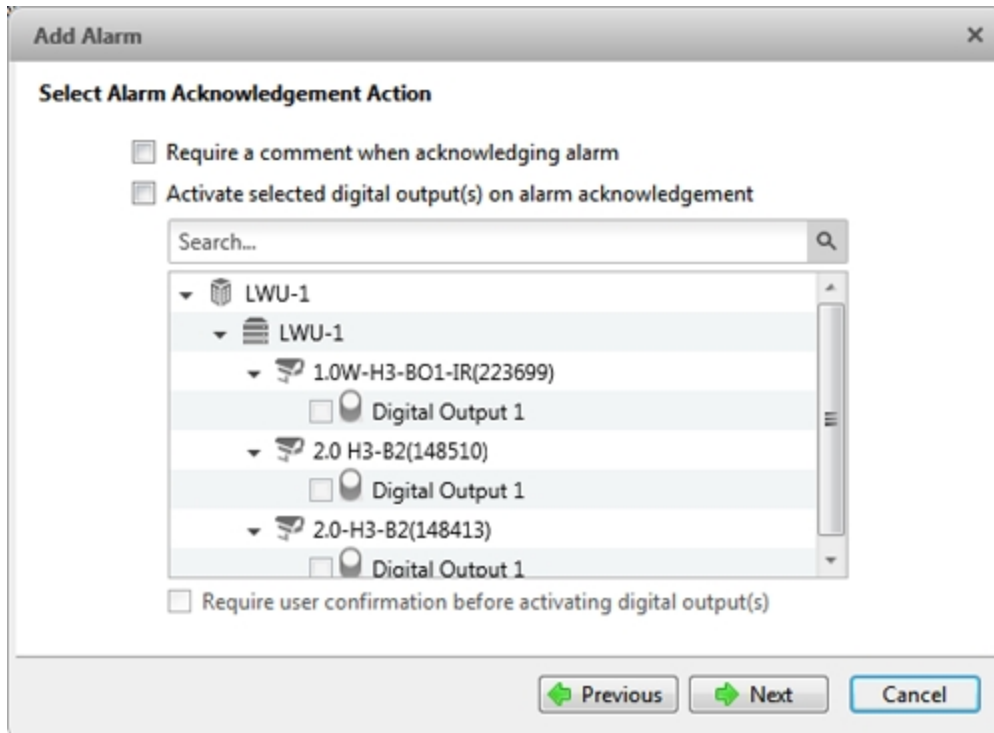

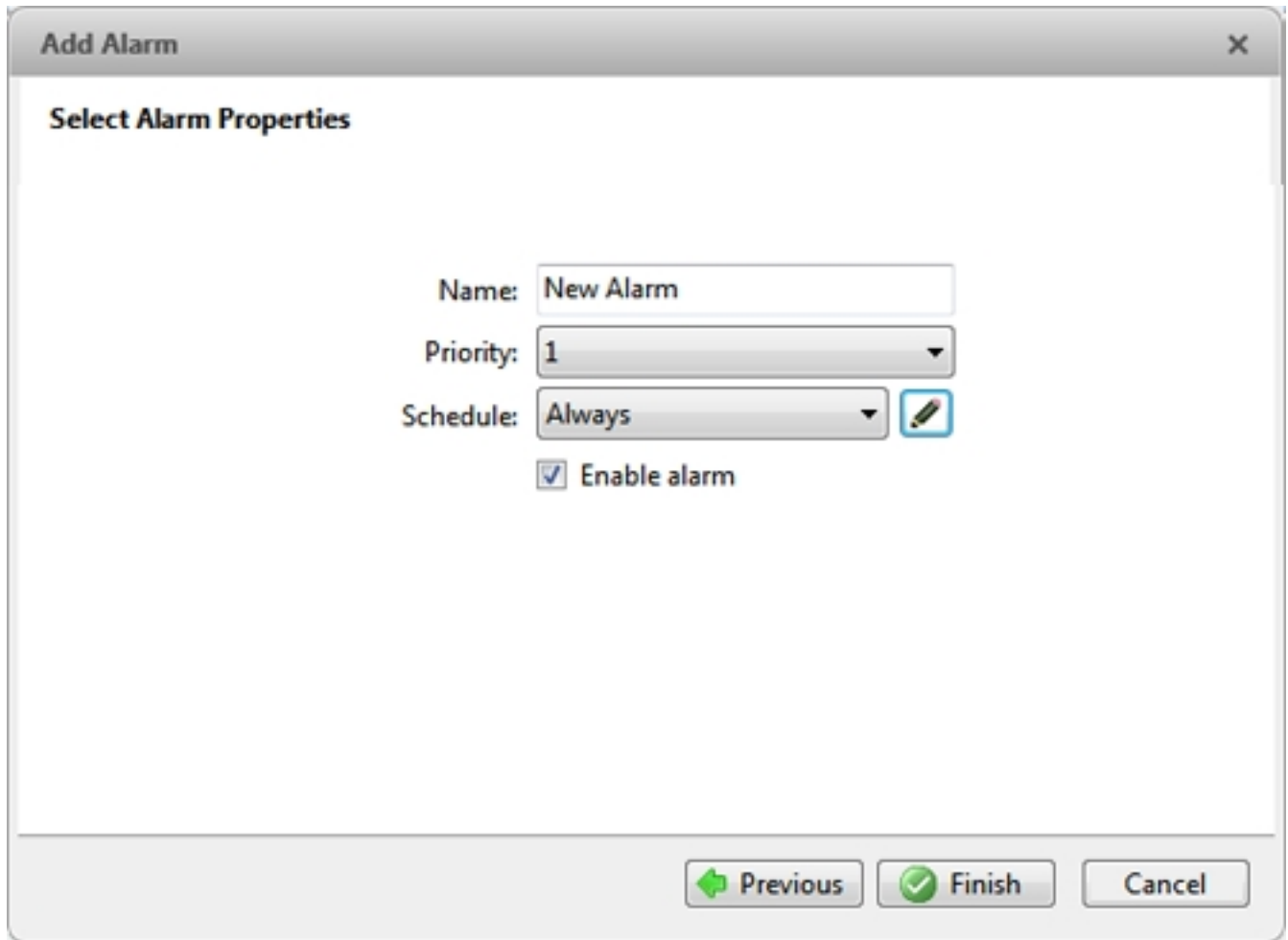


Figure 40: The Select Alarm Acknowledgement Action dialog box

- If the user must add comments about the alarm, select the **Require a comment when acknowledging alarm** check box.
- If a digital output must be activated when the alarm is acknowledged, select the **Activate selected digital output(s) on alarm acknowledgement** check box. Then, select the digital outputs to be activated.
- If the digital output should only be activated when confirmed by a user, select the **Require user confirmation before activating digital output(s)** check box.
- Click .

9. On the last page, complete the following:




The image shows a dialog box titled "Add Alarm" with a close button (X) in the top right corner. Inside the dialog, the section "Select Alarm Properties" contains the following fields and controls:




- Name:** A text input field containing "New Alarm".
- Priority:** A dropdown menu showing "1".
- Schedule:** A dropdown menu showing "Always", with a small edit icon (pencil) to its right.
- Enable alarm:** A checked checkbox.

At the bottom of the dialog, there are three buttons: "Previous" (with a left arrow), "Finish" (with a green checkmark), and "Cancel".

Figure 41: The Select Alarm Properties dialog box

- Enter a **Name:** for the alarm.
 - Select a **Priority:** for the alarm. Priority: **1** is the highest alarm priority.
 - Select a **Schedule:** for the alarm. For more information, see [Scheduling Site Events](#).
 - Make sure the **Enable alarm** check box is selected to enable the alarm.
10. Click .

Editing and Deleting Alarms

- In the Site Setup tab, click .
- In the Alarms dialog box, select an alarm, then do one of the following:
 - To edit the alarm, click . Go through the Add Alarm wizard and make the required changes on each page. On the last page, click  to save your changes. For details about the editable options,

see [Adding a New Alarm](#).

- To delete the alarm, click .

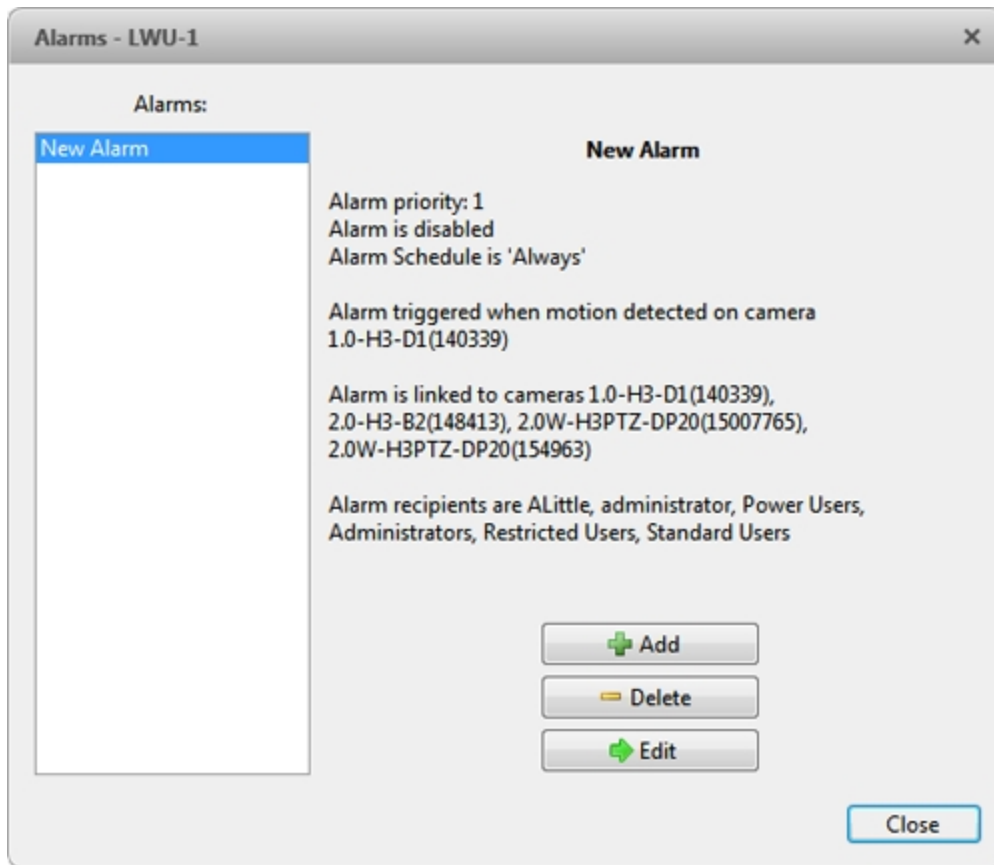


Figure 42: The Alarms dialog box: alarm properties


Email Notifications

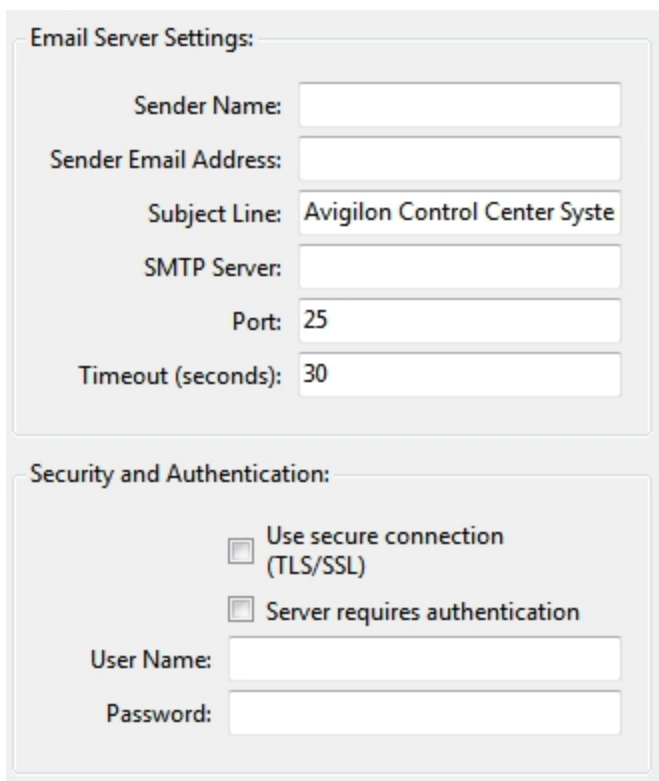
Use the Email Notifications dialog box to set up the Site to send email in response to specific events. You can choose what events require email notifications and who receives the emails.

Setting Up the Email Server

To send email notifications, the Site must be given access to an email server.



1. In the Site Setup tab, click .
2. Select the Email Server tab.



Email Server Settings:

Sender Name:

Sender Email Address:

Subject Line:

SMTP Server:

Port:

Timeout (seconds):

Security and Authentication:

☐ Use secure connection (TLS/SSL)

☐ Server requires authentication

User Name:

Password:



Figure 43: The Email Notifications dialog box: Email Server tab

3. In the Email Server Settings: area, complete the following:
 - a. **Sender Name:** enter a name to represent the Site in all email notifications.
 - b. **Sender Email Address:** enter an email address for the Site.
 - c. **Subject Line:** enter a subject line for all emails sent from the Site. The default subject is *Avigilon Control Center System Event*.
 - d. **SMTP Server:** enter the SMTP server address used by the Site.
 - e. **Port:** enter the SMTP port.
 - f. **Timeout (seconds):** enter the maximum amount of time the server will try to send an email before it quits.
4. (Optional) If the email server uses encryption, you can select the **Use secure connection (TLS/SSL)** check box.
5. (Optional) If the email account has a username and password, select the **Server requires authentication** check box.
 - a. Enter the **User Name:** and **Password:** for the email account.
6. Click **OK**.

Configuring Email Notifications

In the Email Notifications dialog box, you can create email notification groups to specify who will receive email notifications when certain events occur.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

1. In the Site Setup tab, click .
2. In the Email Notifications dialog box, make sure the Email Notifications tab is selected.
3. Click .

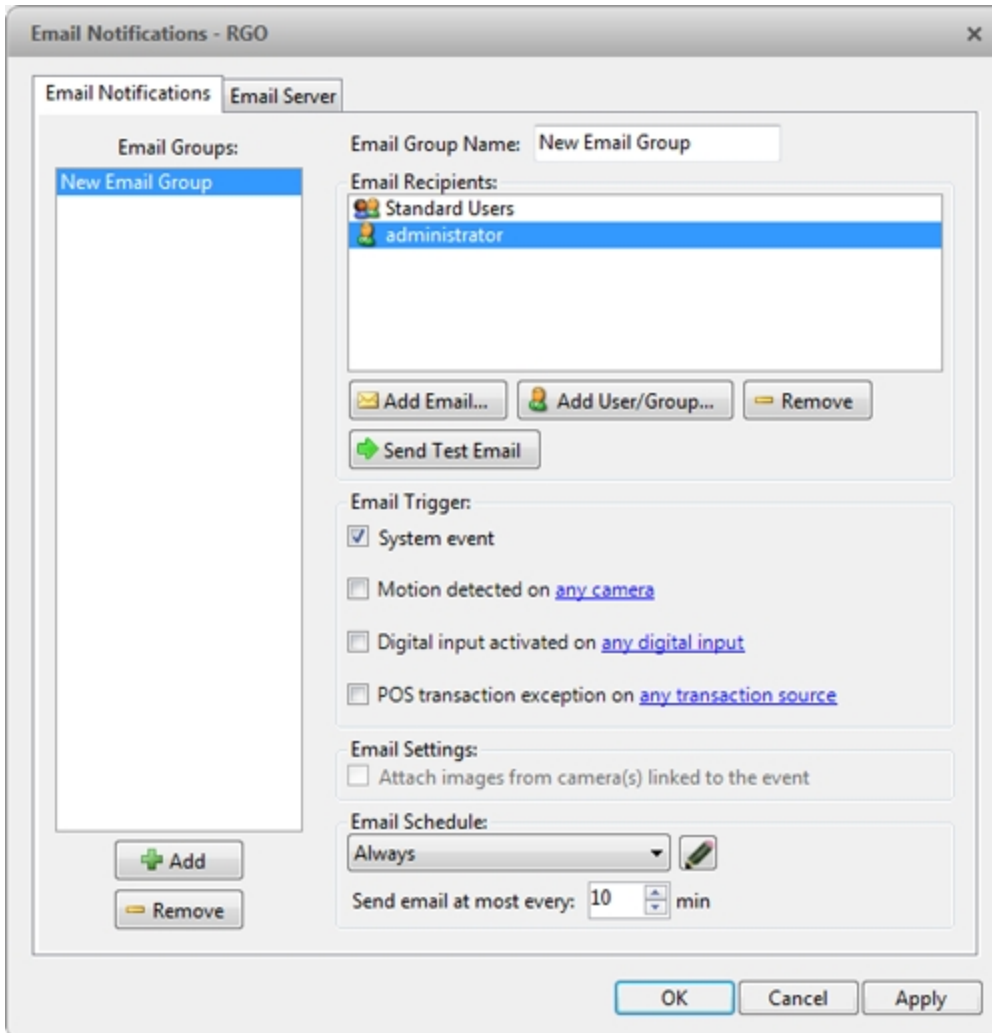





Figure 44: The Email Notifications dialog box

4. Enter an **Email Group Name**.
5. In the **Email Recipients** area, add all the user, group, and individual emails that are part of this email group. Do any of the following:

- Click  to add a Site user or access group. In the dialog box, select all the required users and groups then click **OK**.
- Click  to add individual emails. In the dialog box, enter the email address, then click **OK**.

Tip: Make sure the Site users in the Email Recipients: list have a valid email in their user account.

6. Click  to send a test email to everyone on the Email Recipients: list.
7. In the **Email Trigger:** area, select all the events that will trigger an email for this email group. Click the blue underlined text to define the event requirements.

Tip: If you require other events or more specific requirements, you can also configure email notification in the rules engine. For more information, see [Rules](#).

8. To attach a snapshot of the email notification event, select the **Attach images from camera(s) linked to the event** check box.



NOTE: This option is disabled if *Motion Detect* is not selected because there are no images associated with system events, digital inputs, or POS transaction exceptions.

9. In the **Email Schedule:** area, select a schedule for the email notification. For more information, see [Scheduling Site Events](#).
10. To limit the number of emails sent, enter the minimum amount of time between each email in the **Send email at most every:** field.
11. Click **OK**.

Editing and Deleting an Email Notification

You can edit or delete email notifications as needed.



1. In the Site Setup tab, click .
2. In the Email Notifications tab, do one of the following:
 - To edit the email notification, select the Email Group from the **Email Groups:** list, then make the required changes. For details about the configurable options, see [Configuring Email Notifications](#).
 - To delete the email notification, select the Email Group from the **Email Groups:** list, then click .



Rules

The Rules engine allows you to trigger specific actions when a certain event, or set of events, occurs.

For example, you can create a rule that starts a live stream when the back door is opened.

If the default email notification options are insufficient for your needs, you can use the Rules engine to set up more specific trigger events.

Adding a Rule

1. In the Site Setup tab, click .
2. In the Rules dialog box, click .
3. Select the events that will trigger the rule. If blue underlined text appears in the rule description, click on the text to further define the event.

When the trigger event is defined, click .

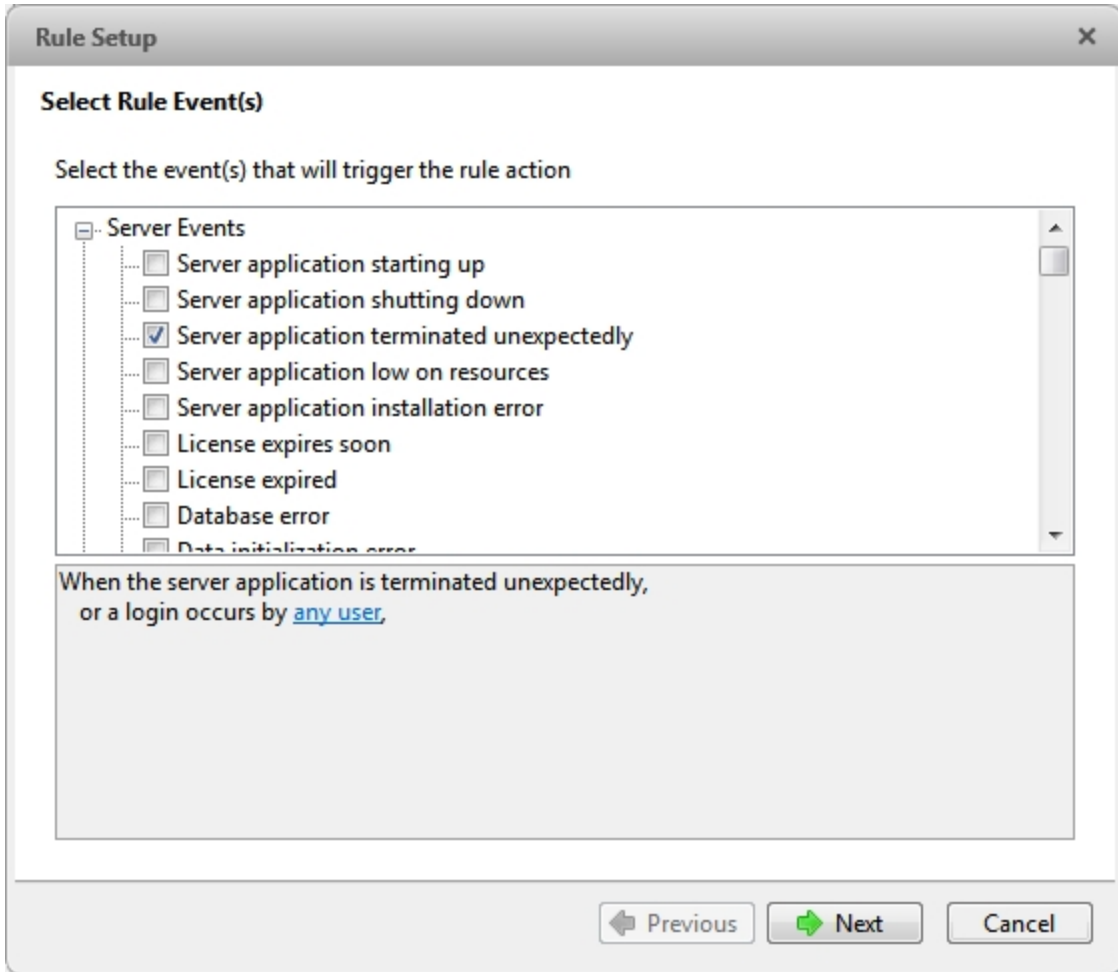



Figure 45: The Select Rule Event(s) page

4. Select the actions that will occur when the rule is triggered. If any blue underlined text appears in the rule description, click on the text to further define the action.

When the action is defined, click .

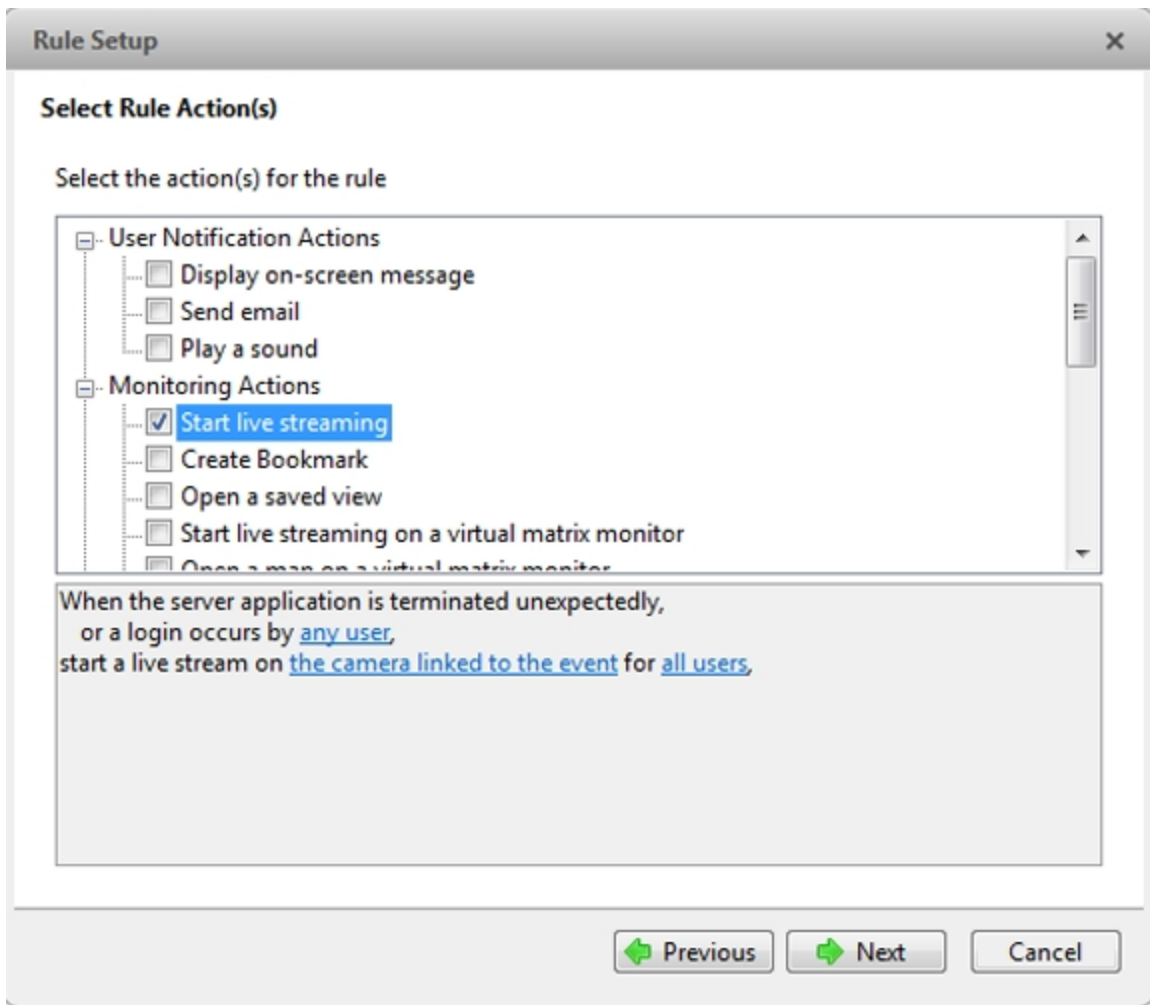


Figure 46: The Select Rule Action(s) page


5. Complete the following:
 - a. Enter a **Rule Name:** and a **Rule Description:**.
 - b. Select a **Schedule:** for the rule. For more information, see [Scheduling Site Events](#).
 - c. Make sure the **Rule is enabled** check box is selected to enable the rule.

Rule Setup

Select Rule Properties

Rule Name:

Rule Description:

Schedule: 

☒ Rule is enabled

When the server application is terminated unexpectedly,
or a login occurs by any user,
start a live stream on camera 'Camera-1' for all users,




 Previous  Finish Cancel

Figure 47: The Select Rule Properties page

6. Click .

Editing and Deleting a Rule

1. In the Site Setup tab, click .
2. In the Rules dialog box, select a rule, then do one of the following:

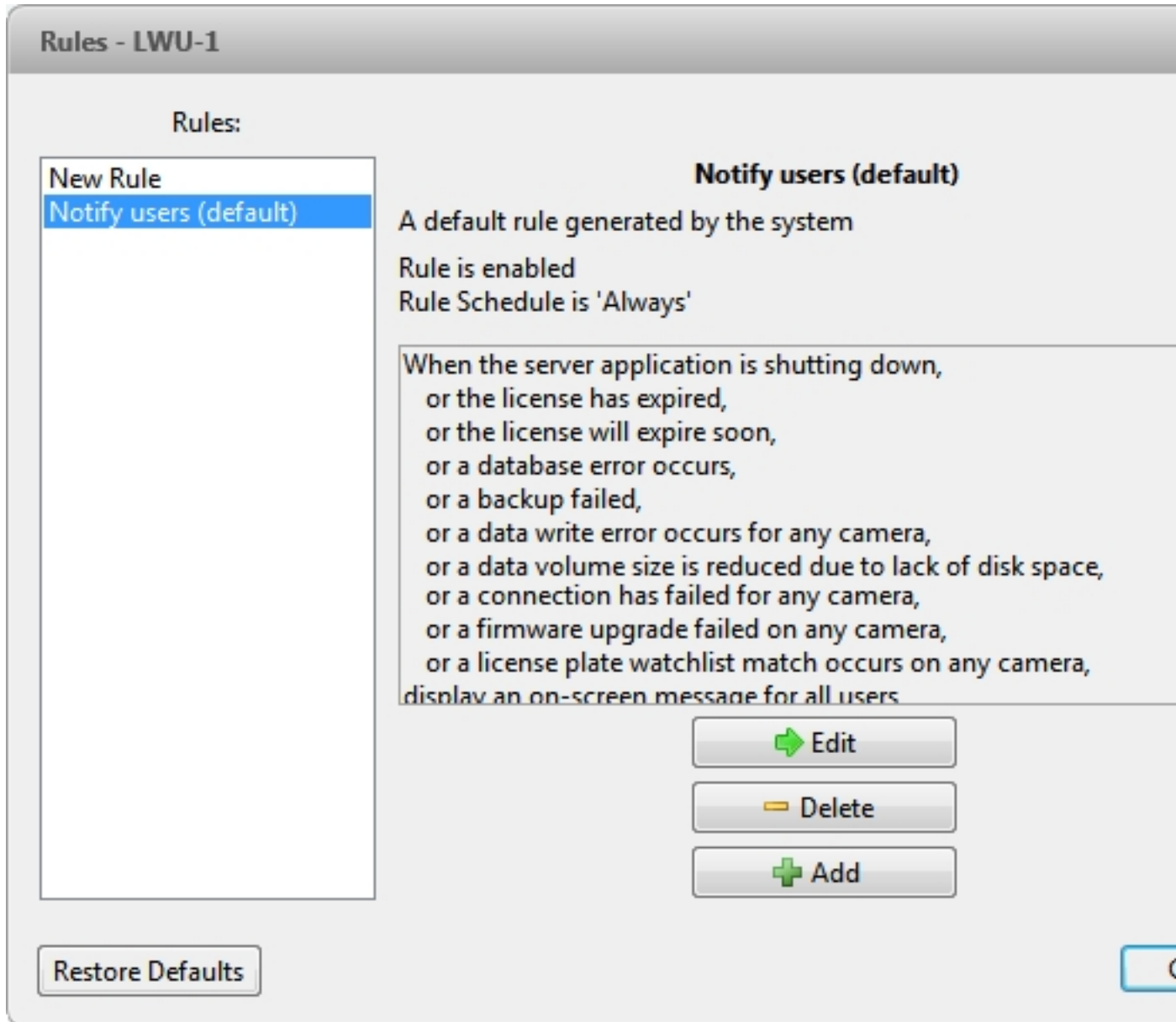




Figure 48: The Rules dialog box

- To edit the rule, click . Go through the **Rule Setup** wizard and make the desired changes on each page. On the last page, click  to save your changes.

For details about the editable options, see [Adding a Rule](#).

- To delete a rule, click . When the confirmation dialog box appears, click **OK**.

Scheduling Site Events

Site events are actions that can affect the entire Site, like email notifications. When you configure a Site event, you are given the option to assign a schedule to the event. Schedules control when events can occur — at specific times during a day or only on specific days.

When you see the **Schedule** option while configuring an event, you can select an existing schedule or create a new schedule.

NOTE: Schedules are shared across a Site.



Figure 49: Schedule option









- To use a preconfigured schedule, select an option from the drop down list. The default option is *Always*, which allows the event to run constantly.
- To change a schedule, select the schedule then click  and select .
- To delete a schedule, select the schedule then click  and select .
- To create a schedule, click  then select . When you see the Edit... dialog box, complete the following steps:

Figure 50: The Edit... dialog box.

1. Give the new schedule a name.
2. Give the recurrence a name.

You can add multiple recurrences to create a detailed schedule. For example, you could create one recurrence to cover every weekend, plus extra recurrences to cover public holidays.

- To add a recurrence, click .
- To delete a recurrence, select the recurrence then click .

3. In the **Start:** and **End:** fields, enter the time the recurrence will cover.

Be aware that if you enter an End: time that is earlier than the Start: time, the event will span two days. For example, if the schedule is set to start at 12:00pm and end at 11:59am, the event is automatically enabled from 12:00pm on day 1 and will end at 11:59am on day 2.

4. In the **Start Date:** field, enter when the recurrence should begin.
5. In the Recurrence pattern area, schedule how often the event will be enabled during this recurrence.

Option	Description
Daily	<p>The event is enabled during the same time every day.</p> <ul style="list-style-type: none"> • Select the number of days between each schedule recurrence.
Weekly	<p>The event is enabled during the same day and time every week.</p> <ul style="list-style-type: none"> • Select the day(s) of the week, then select the number of weeks between each schedule recurrence.
Monthly	<p>The event is enabled during the same day and time every month.</p> <ul style="list-style-type: none"> • Select the specific day or weekday, then select the number of months between each schedule recurrence.
Yearly	<p>The event is enabled during the same day and time every year.</p> <ul style="list-style-type: none"> • Select the specific day or weekday and month, then select the number of years between each schedule recurrence.

6. Complete any other recurrences that have been added to the schedule.
7. Click **OK** to save the new schedule.

Server Settings

Server settings are related to video recording. This includes configuring the recording schedule, data aging, and bandwidth usage, as well as POS transactions and scheduled video backups.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

Naming a Server

Give the server a meaningful name so that it can be easily identified in the System Explorer. Otherwise, the server uses the name that is assigned by Windows.



1. In the server Setup tab, click .
2. In the dialog box that appears, give the server a name.

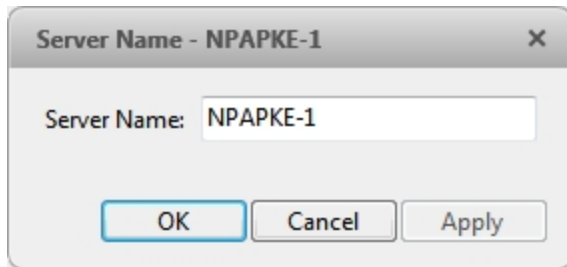


Figure 51: The Server Name dialog box

3. Click **OK**.

Recording Schedule

Use the Recording Schedule dialog box to set the recording schedule for cameras connected to the server. By default, the server is set to record motion and configured events when they occur.

Once the recording schedule is set, video is recorded automatically.

Setting Up a Weekly Recording Schedule

You can set up a weekly recording schedule by applying templates to cameras for each day of the week.



1. In the server Setup tab, click .
2. In the Recording Schedule dialog box, select a template from the Templates: pane.
3. In the Default Week area, click the days of the week this template applies to for each camera.

Default Week:	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1001 - 5.0MP-HD-DOVE-ON(18267)	Weekend	Default	Default	Default	Default	Default	Weekend
1002 - 11MP-HD-PRO-M(55547)	Weekend	Default	Default	Default	Default	Default	Weekend
1003 - ENC-4PORT-2AI(11153:1)	Weekend	Default	Default	Default	Default	Default	Weekend
1004 - 8.0MP-HD-DOVE-360(20108:1)	Weekend	Default	Default	Default	Default	Default	Weekend

Figure 52: The Recording Schedule dialog box: Default Week

4. Click **OK**.

Using Templates to Modify the Recording Schedule

The recording schedule is set by using templates that tell cameras when and what to record. For example, you can create one recording schedule template for weekdays and another for weekends.

NOTE: Recording templates are shared across a Site.

Adding a Template

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.



1. In the server Setup tab, click .
2. In the Recording Schedule dialog box, click **Add Template** below the Templates: pane.

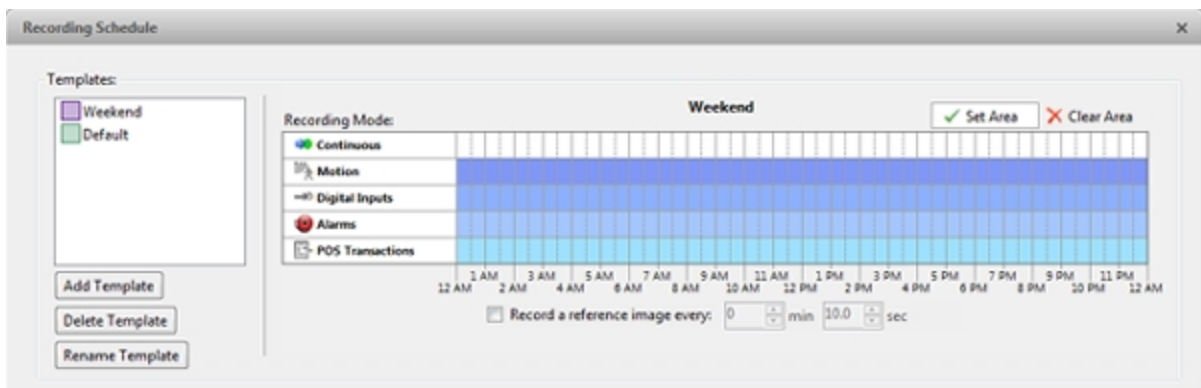


Figure 53: The Recording Schedule dialog box

3. Enter a name for the **New Template**.
4. Click the **Set Area** button, then click or drag the cursor across the **Recording Mode:** timeline to set the types of events that the cameras will record throughout the day. Individual rectangles on the Recording Mode: timeline will be colored if they have been selected.

Record Mode	Definition
Continuous	Record video constantly.
Motion	Only record video when motion is detected.
Digital Inputs	Only record video when a digital input is activated.
Alarms	Only record video when an alarm is activated.
POS Transactions	Only record video when a point of sale (POS) transaction is made.
License Plates	Only record video when a license plate is detected.

5. To disable recording in parts of the template, click the **Clear Area** button, then click or drag the cursor across the timeline to remove the set recording areas.
6. If cameras are *not* recording in Continuous mode all day, you can set cameras to record reference images between events in the recording schedule.

- Select the **Record a reference image every:** check box then set the time between each reference image.

Editing and Deleting a Template



1. In the Setup tab, select the server you want to edit, then click .
2. In the Recording Schedule dialog box, select a template from the Templates: pane and do one of the following:
 - To edit a template, modify the schedule.
 - To rename a template, click **Rename Template** and enter a new name.
 - To delete a template, click **Delete Template**.
3. Click **OK** to save your changes.

Recording and Bandwidth

While the Recording Schedule dialog box sets when and what cameras record, the Recording and Bandwidth dialog box sets how long recorded video is stored.

In the Recording and Bandwidth dialog box, you can change the Data Aging settings and set the maximum record time for each connected camera.



1. In the server Setup tab, click .

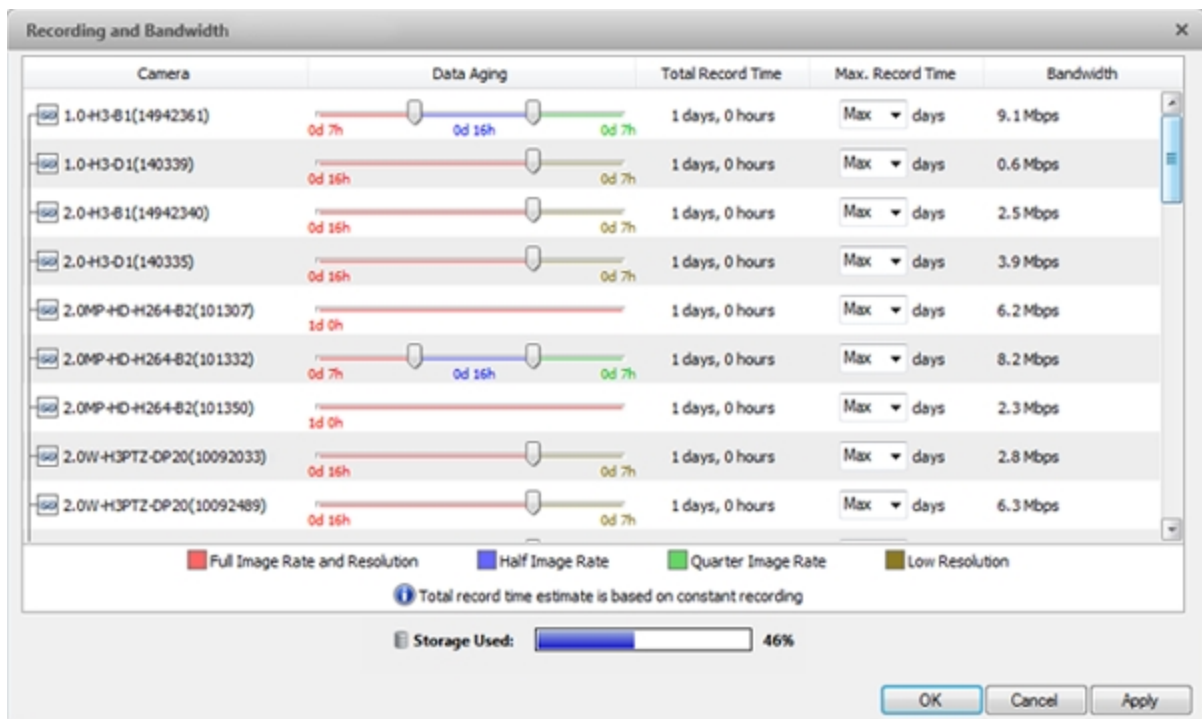



Figure 54: The Recording and Bandwidth dialog box

The Data Aging column shows an estimate of the recording time that is available at each image rate, given the amount of space on the server.

- For JPEG2000 or JPEG compression cameras, Data Aging is available at three rates:
 - **Full Image Rate and Resolution** keeps recordings at their original quality.
 - **Half Image Rate** discards half of the recorded data to make room for new recordings.
 - **Quarter Image Rate** keeps 1/4 of the original recorded data so that you can still see older video.
- For H.264 cameras that support Data Aging, Data Aging is available at two rates:
 - **Full Image Rate and Resolution** keeps the original high quality video and the secondary stream of low resolution video.
 - **Low Resolution** only keeps the secondary stream of low resolution video.

NOTE: The Data Aging can only occur when the secondary stream is enabled.

- For H.264 cameras that *do not* support Data Aging, only the **Full Image Rate and Resolution** video is kept.
2. In the Data Aging column, move the sliders to adjust the amount of time video is stored at each image rate.
 - To change the data aging settings for all linked cameras, move the slider for one linked camera and all linked cameras will be updated.
 - To change the data aging setting for one camera, break the camera's link to other cameras by clicking the  icon to the left of its name, then make your changes.
 3. In the **Max. Record Time**, manually enter a maximum record time or select one of the options from the drop down list for each camera.

NOTE: If the time estimated in the Total Record Time column is shorter than what is set in the Max. Record Time column, the camera's actual recording time will be shorter than the Max. Record Time.


4. Click **OK**.

Scheduled Backup

Video backup must be enabled in the Avigilon™ Control Center Admin Tool before Scheduled Backup settings can be set in the Client. The Admin Tool is also where you manually set the backup file location. For more information, see *The Avigilon Control Center Server User Guide*.

Files are always backed up in Avigilon Backup (AVK) format. You can review backed up video in the Avigilon Control Center Player.

Once backups are enabled, you can schedule the application to automatically back up recorded video.

1. In the server Setup tab, click .

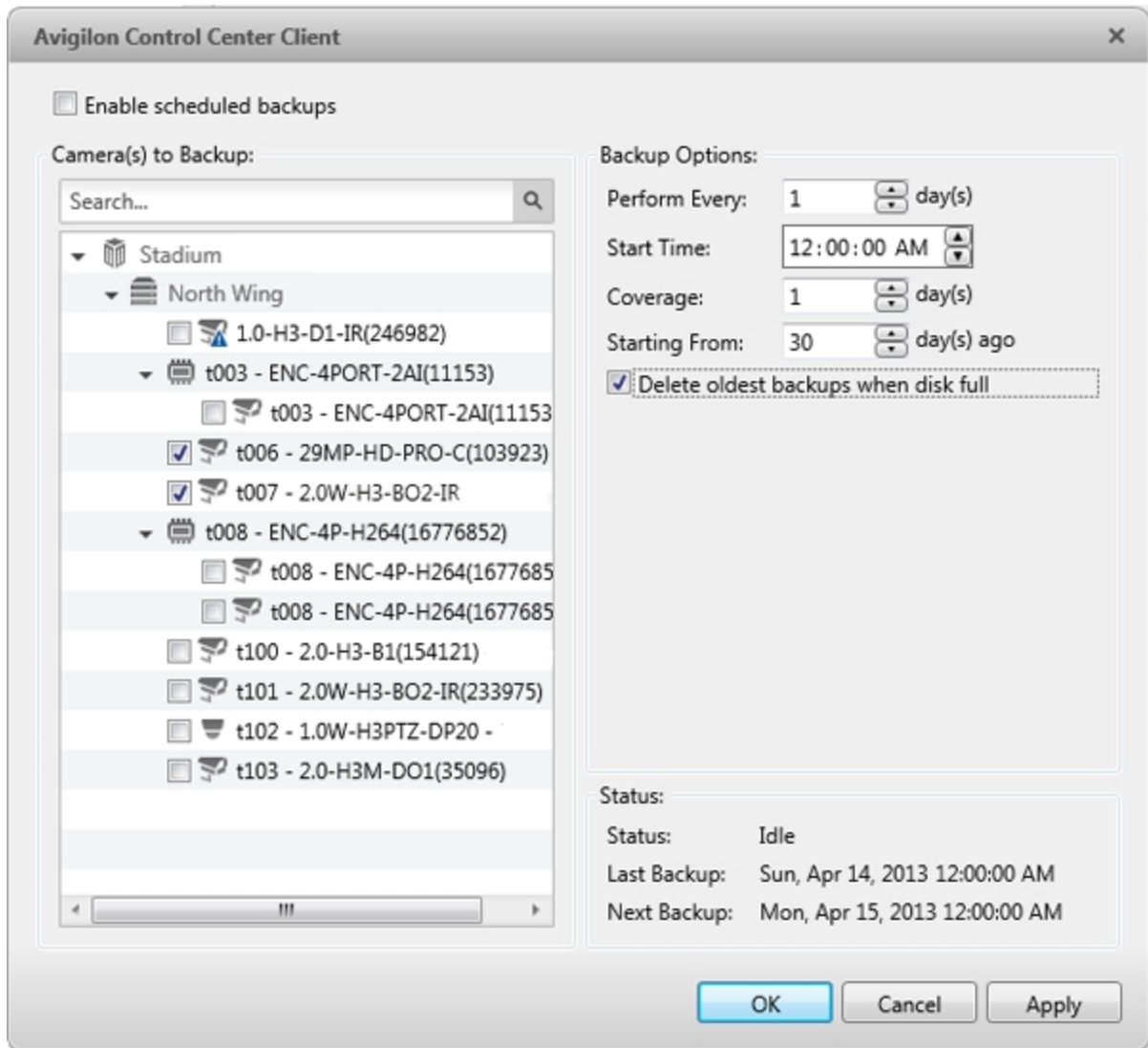


Figure 55: Scheduled Backup Setup dialog box

2. Select the **Enable scheduled backups** check box.
3. In the Camera(s) to Backup: list, select all the devices to back up.
4. In the Backup Options: area, complete the following:
 - **Perform Every: <X> day(s):** specify the number of days between backups
 - **Start Time:** the time when backup occurs
 - **Coverage:** the amount of recorded image data that is backed up
 - **Starting From:** starting point for the backup

- **Delete oldest backups when disk full:** select this check box to automatically delete the oldest backups when the backup storage location is full

For example in the figure above, the Scheduled Backup is configured to occur every day at 12 am. Video from 30 days ago is backed up and will cover 1 day of video, so only the 30th day is backed up to the remote server each night.

5. Click **OK**.


The Status area displays when the next backup will be.

License Plate Recognition

License Plate Recognition (LPR) is a licensed feature that allows users to read and store vehicle license plate numbers from any video streamed through the Avigilon Control Center.

The License Plate Recognition options will only appear if you have the feature licensed and installed on the server.

Setting Up License Plate Recognition

1. In the server Setup tab, click .

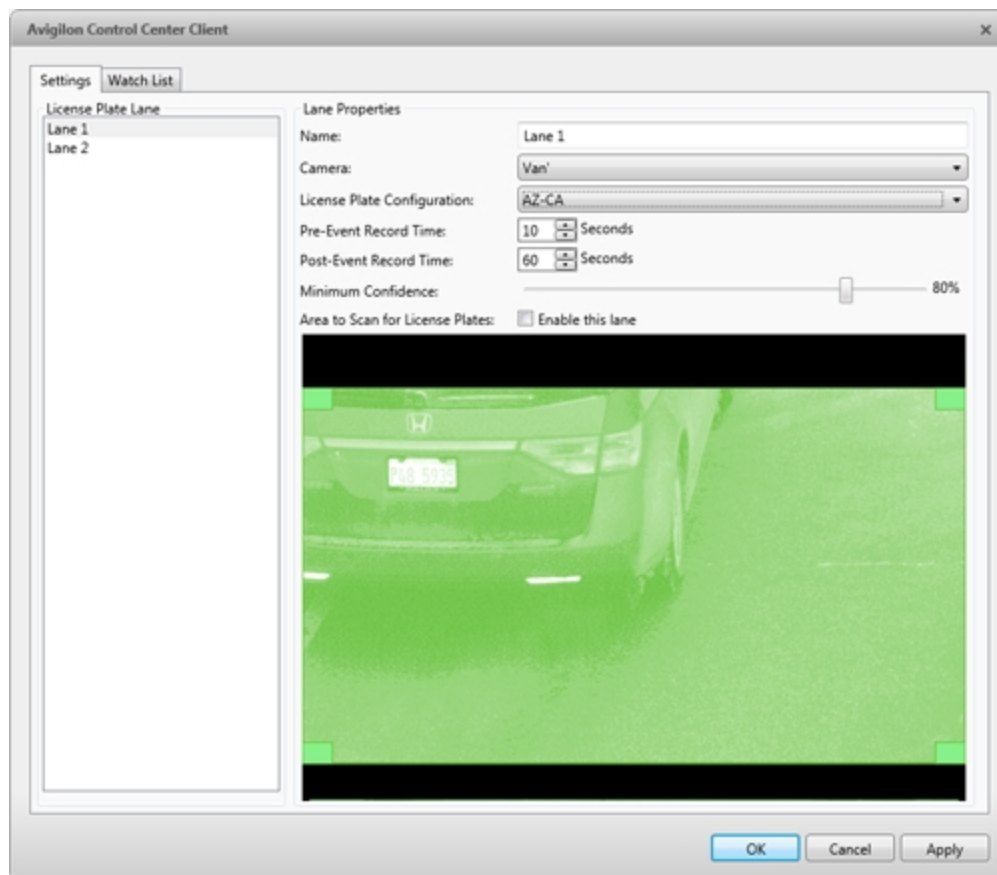


Figure 56: License Plate Recognition Setup dialog box

2. Select a lane from the left pane.

The number of lanes listed is determined by the number of License Plate Recognition (LPR) channels that are licensed.

3. Complete the following fields:

- **Name:** enter a name for the lane.
- **Camera:** select the camera that will perform LPR. One camera can be used for multiple lanes.
- **License Plate Configuration:** select the regional license plate format that needs to be recognized by the camera. For more information, see [Supported License Plates](#).
- **Pre-Event Record Time:** enter the amount of time that video is recorded before the license plate is recognized.
- **Post-Event Record Time:** enter the amount of time that video is recorded after the license plate is recognized.
- **Minimum Confidence:** move the slider to set the minimum confidence required for a detected license plate to be recognized. The default value is 80%.
- **Enable this lane:** select this check box to enable LPR on this lane.

4. Move and adjust the size of the overlay to define the area where license plates are detected by the camera.

NOTE: License plates are only detected when the overlay is green. If the overlay is red, the license plate detection area is too large.

5. Click **OK**.


Configuring the Watch List

The License Plate Recognition (LPR) Watch List identifies license plates that are of special interest. When a license plate on the Watch List is detected, an event is generated to notify you of the license plate and can be used to trigger an action in the Rules engine.

You can manually add each license plate that needs to be recognized, or import a list of license plates into the Client.

Adding Licenses to the Watch List



1. In the server Setup tab, click .
2. When the License Plate Recognition dialog box appears, select the **Watch List** tab.

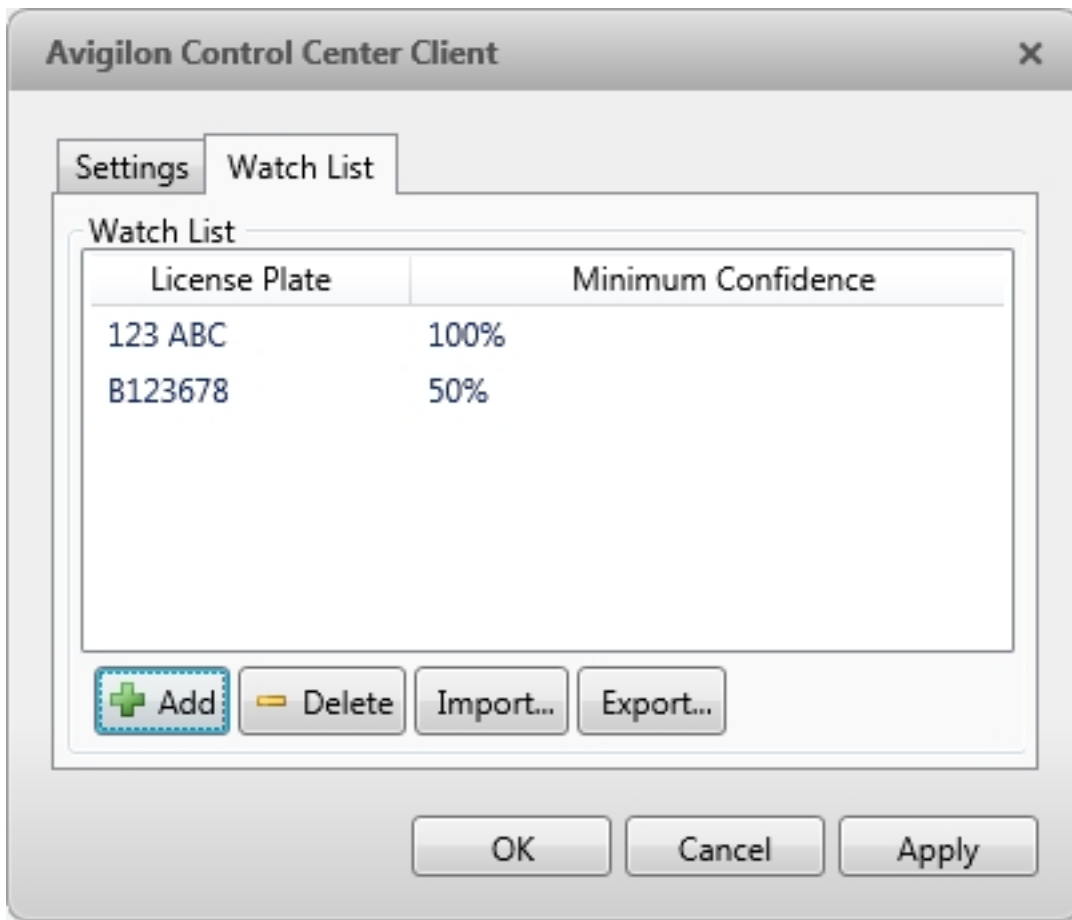


Figure 57: License Plate Recognition dialog box: Watch List tab

- Click **Add...**. The Add License Plate dialog box appears.

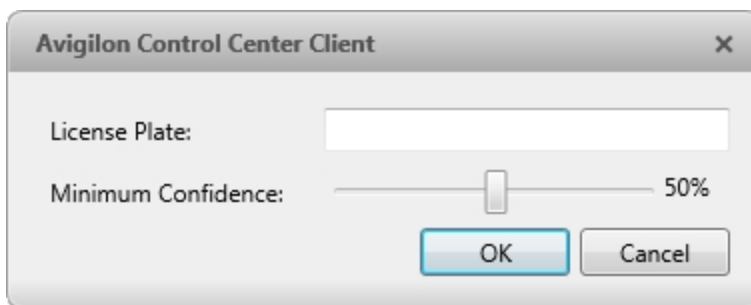


Figure 58: Add License Plate dialog box

- Enter the license plate number you want to watch for.
- Move the **Minimum Confidence** slider to determine how similar the detected license plate must be before it is considered a match.

For example, if a license plate on your Watch List is ABC 123 and the Avigilon Control Center detects an ABC 789 license plate, the system will be 50% confident that it has found a match. If the system detects ABC 129, it will be 83% confident that it has found a match.

- Click **OK**.

Deleting a License Plate from the Watch List

1. In the License Plate Recognition dialog box, select the **Watch List** tab.
2. Select the license plate from the Watch List, and click **Delete**.

Exporting a Watch List

1. In the License Plate Recognition dialog box, select the **Watch List** tab.
2. Click **Export...**
3. In the Save As dialog box, name the file and click **Save**.

The Watch List can be exported as a text file or a comma-separated values (CSV) file.

Importing a Watch List

1. In the License Plate Recognition dialog box, select the **Watch List** tab.
2. Click **Import...**
3. In the Import dialog box, locate the Watch List file and click **Open**.

POS Transactions




The Point of Sale (POS) Transaction Engine is a licensed feature that records raw data from POS transaction sources. You can link cameras to specific POS transaction sources, and set up the system to make note of transaction exceptions.

Once POS transactions have been set up, you can see live and recorded POS transaction data in the View tab while watching any linked video.

To monitor live POS transactions, see [**Monitoring Live POS Transactions**](#).

To review recorded POS transactions, see [**Reviewing Recorded POS Transactions**](#).

Adding a POS Transaction Source

1. In the server Setup tab, click  .
2. In the POS Transactions dialog box, click  .
3. Enter the **Hostname/IP Address:** and the **Port:** number for the POS transaction source device, then click  .

The screenshot shows a window titled "POS Transactions Setup" with a close button (X) in the top right corner. Below the title bar, the section "Set Transaction Source Device" is displayed. A text label reads "Set the IP address and port for the transaction source device:". Below this, there are two input fields: "Hostname/IP Address:" with the value "10.10.32.65" and "Port:" with the value "10002". At the bottom of the window, there are three buttons: "Previous" (with a left arrow), "Next" (with a right arrow), and "Cancel".

Figure 59: The Set Transaction Source Device page

4. Select a Transaction Source Data format, then click **Next**.

If the source data format needs to be added or edited, click or **Edit**. Alternatively, click **Copy From** to create a new data format based on the selected data format. For more information, see [**Adding a Transaction Source Data Format**](#).

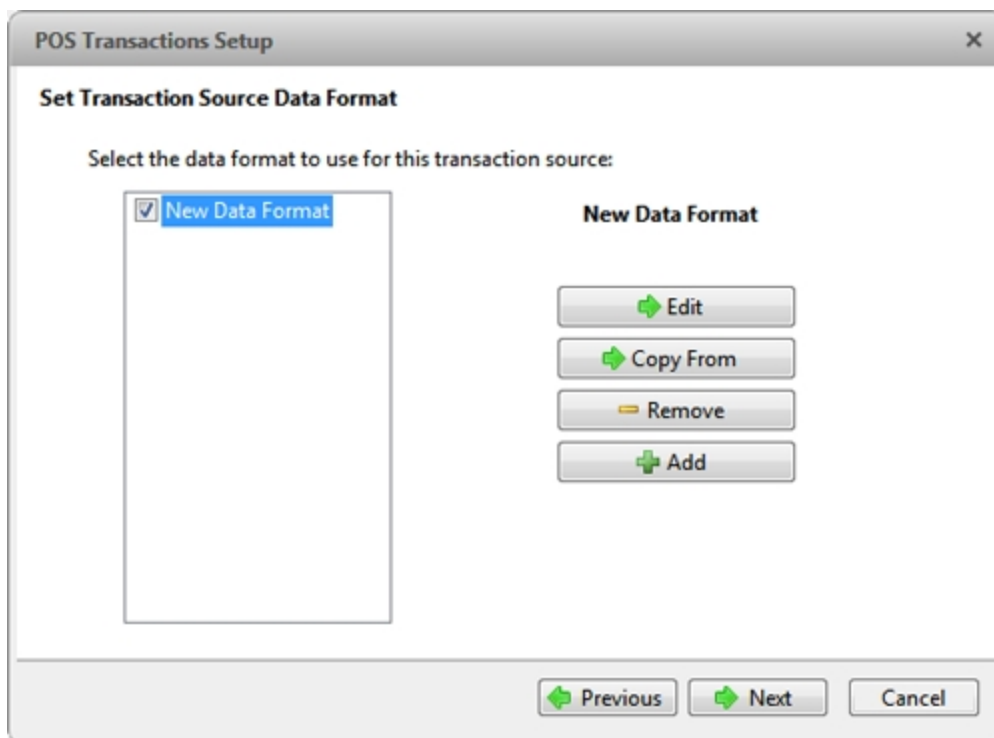


Figure 60: The Set Transaction Source Data Format page

5. On the Set Transaction Exceptions page, select any exceptions that need be monitored, then click **Next**. If you do not need to monitor for exceptions, just click **Next**.

Click to add an exception or **Edit** to edit an existing exception. For more information, see [Adding a Transaction Exception](#).

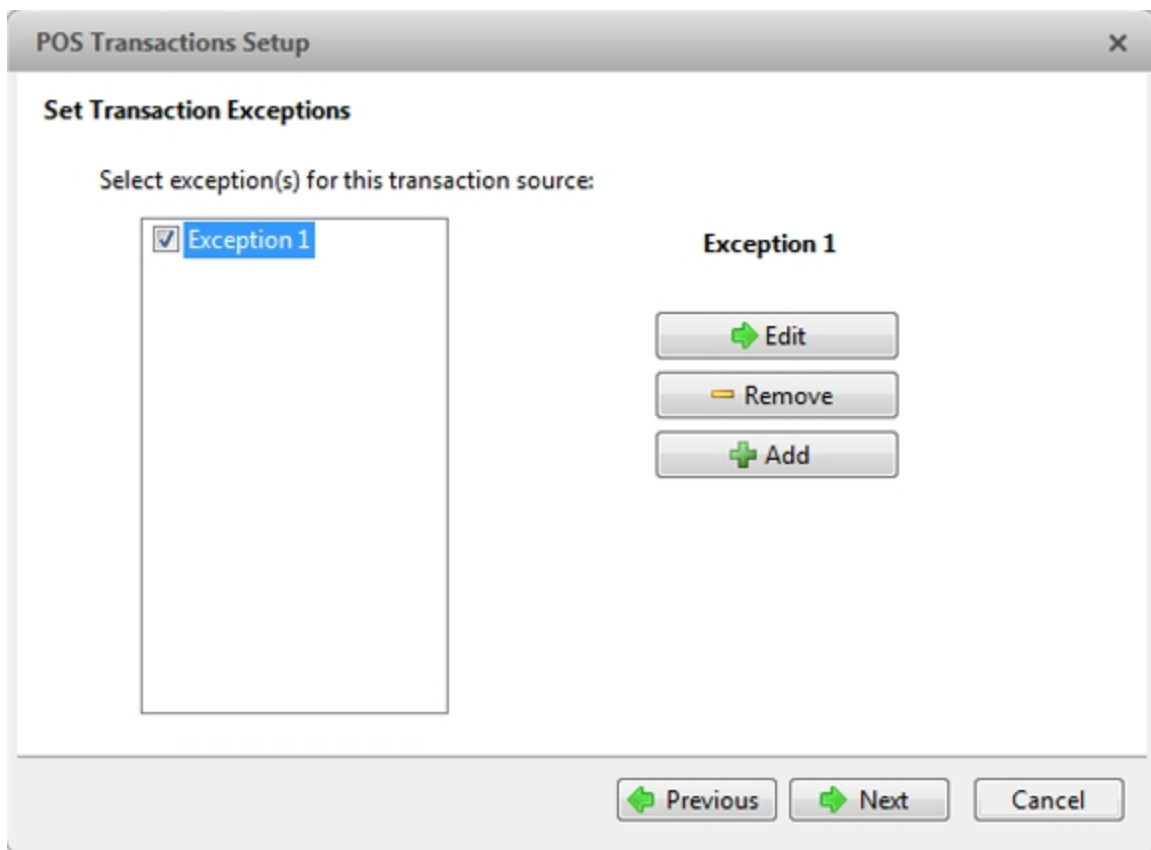



Figure 61: The Set Transaction Exceptions page

6. Select any cameras you want to link to the transaction source, and set the amount of time video needs to be recorded before and after each transaction. Then click .

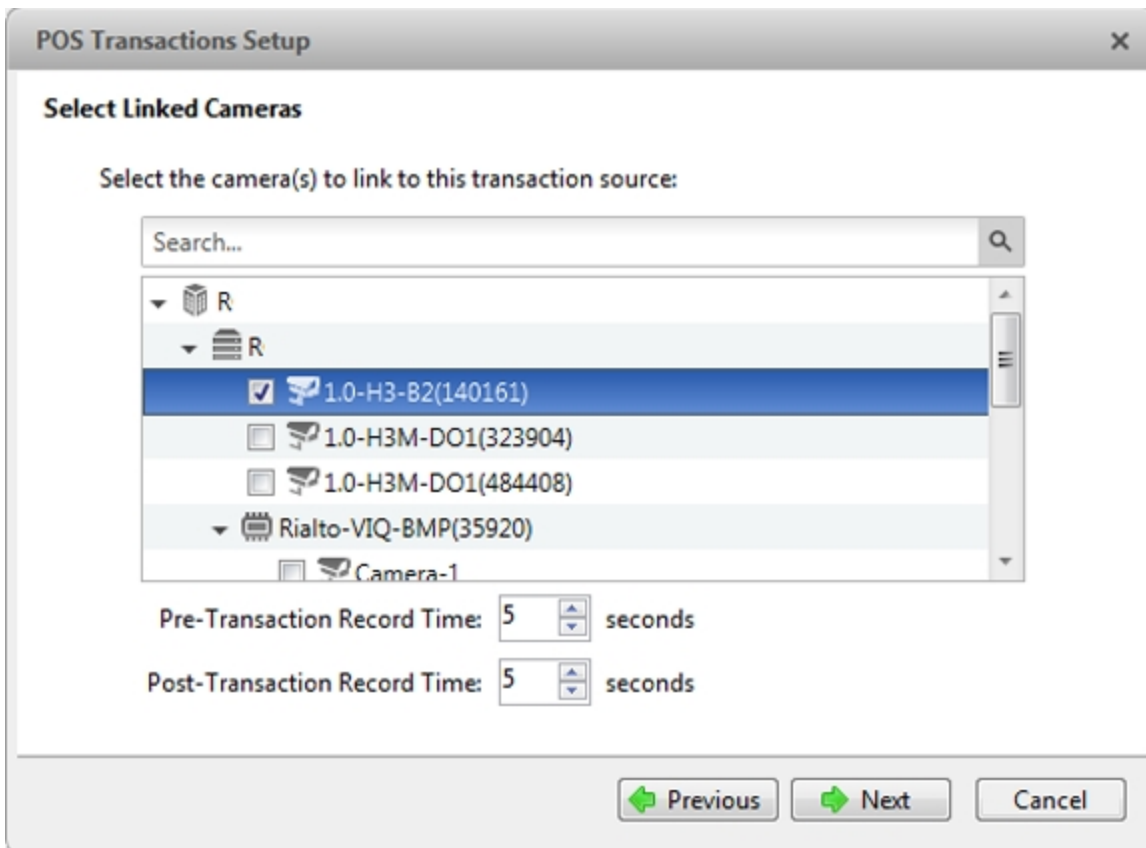


Figure 62: The Select Linked Cameras page

7. Enter a name and description for the transaction source, then select **Enable transaction source** to start receiving data from the transaction source.


Figure 63: The Set Transaction Source Name and Description page

8. Click .

Adding a Transaction Source Data Format

NOTE: POS transaction source data formats are shared across a Site.

When you add a new POS transaction source, be aware that the transaction source must have a source data format.

In the POS Transactions Setup wizard, click  when you arrive on the Set Transaction Source Data Format page. When the Configure Data Format dialog box appears, complete the following procedure:

1. In the Properties area, specify the following:

Figure 64: The Configure Data Format dialog box

- **Name:** enter a name for the data format.
 - **Description:** enter a description of the data format.
 - **Transaction Start Text:** (required) enter the text that identifies the start of each transaction from the POS transaction source.
 - **Transaction End Text:** (optional) enter the text that identifies the end of each transaction.
 - **Encoding:** Select the encoding used by the POS transaction source.
2. The following figure shows raw transaction data on the left and filtered transaction data on the right. Perform any of the following to capture raw data for the source data format:

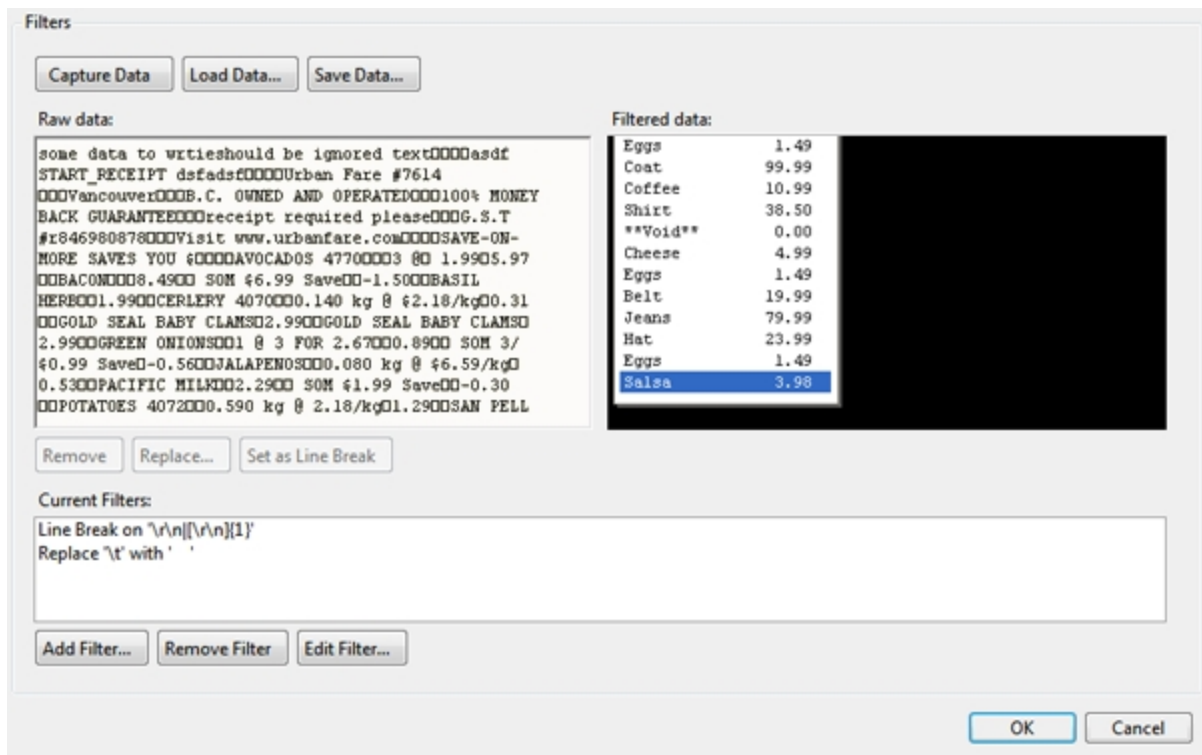


Figure 65: The Configure Data Format dialog box

- Click **Capture Data** to start capturing a raw transaction data sample.
 - Click **Stop Capture** to stop capturing transaction data.
 - Click **Load Data...** to load raw transaction data from a file.
 - Click **Save Data...** to save a copy of the transaction data that has been captured.
3. (Optional) Click **Add Filter...** to create a new filter for the raw transaction data file.

There are two default filters in the Current Filters: area: one to create line breaks and the other to delete extra white space at the beginning of each line. If you do not need extra filters, skip this step.

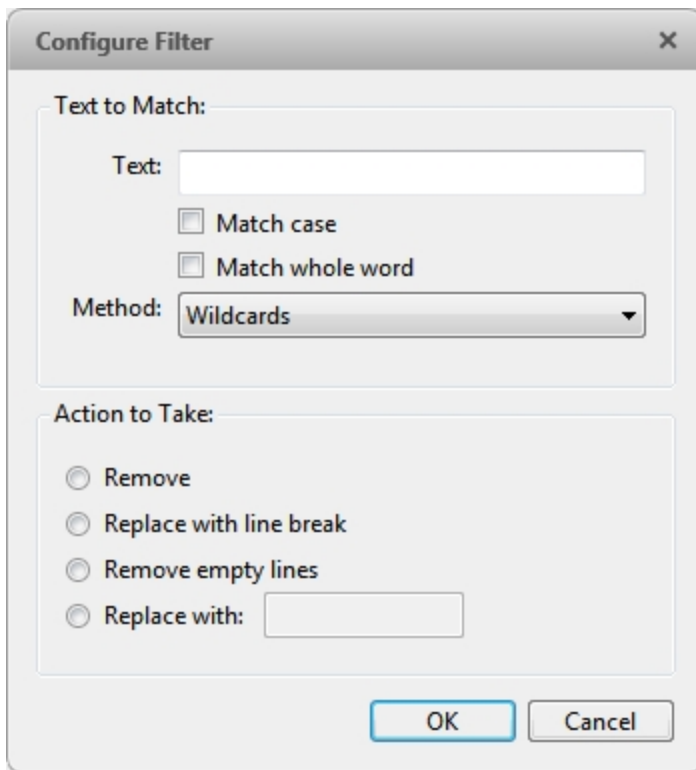


Figure 66: The Configure Filter dialog box

- a. In the **Text:** field, enter text for the filter to search for.
 - b. Select the **Match case** and/or **Match whole word** check box to focus the text filter to only find text with the same capitalization or an exact match.
 - c. In the **Method:** drop down list, select a search method. You can choose to filter text found through a **Normal** search, **Wildcards** search, or **Regular expressions** search.
 - d. In the **Action to Take:** area, select which action to take when the filter finds a match to your text criteria.
 - e. Click **OK**.
4. On the Configure Data Format screen, click **OK** to add the new data format to the data format list.

Adding a Transaction Exception

NOTE: POS transaction exceptions are shared across a Site.

To help monitor unusual transactions, you can set up transaction exceptions. Transaction exceptions can help you identify unauthorized discounts, fake returns, and manual price overrides.


In the POS Transactions Setup tab, select the camera you want to edit and go through the setup wizard. Click  when you arrive on the Set Transaction Exceptions page. When the Configure Exception dialog box appears, complete the following procedure:

Figure 67: The Configure Exception dialog box

1. Enter a name for the exception.
2. Select one of the Text to Match options:

Select	And do this...
Match Text	Enter text for the exception to search for. The exception will monitor all transactions for the text entered in the Text to Match field.
Match Value	Enter the value that triggers the exception, and enter the text that may appear around the value. The exception will monitor all transactions for values that match what you enter in the Text Before Value: , Match when value: , and Text After Value: fields

3. Click **OK**.

Editing and Deleting a POS Transaction Source

1. In the server Setup tab, click .

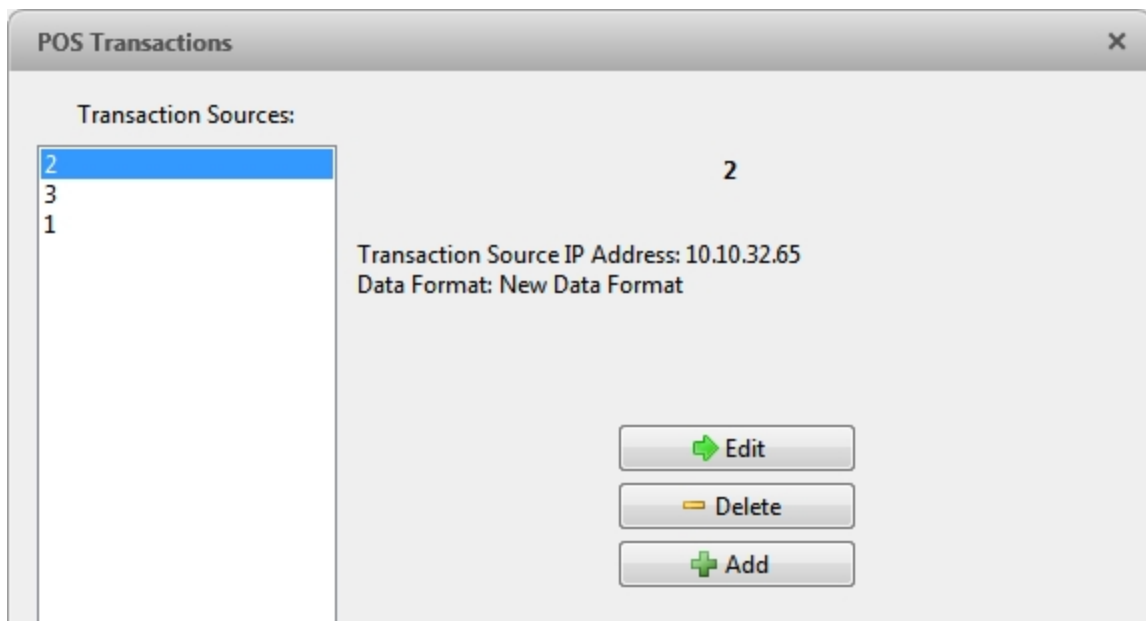





Figure 68: The POS Transactions dialog box

2. In the POS Transactions dialog box, select a POS transaction source, then do one of the following:
 - To edit the POS transaction source, click . Go through the POS Transactions Setup wizard and make the required changes on each page. On the last page, click  to save your changes. For details about the editable options, see [Adding a POS Transaction Source](#).
 - To delete the POS transaction source, click . When the confirmation dialog box appears, click **Yes**.

Device Settings

Device settings are used to adjust video quality and set up devices that can be connected to cameras and video analytics appliances. These settings include adjusting camera display quality, video compression, and image rate, as well as digital and audio inputs/outputs.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.

General

Use the device General dialog box to set a device's identity and configure device PTZ settings. You can also reboot the device through the General dialog box.

Setting a Device's Identity

In a device's General dialog box you can give the device a name, describe the device's location, and give the device a logical ID. The logical ID is needed to control the device through keyboard and joystick commands.

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.



1. In the device Setup tab, click
2. In the **Camera Name:** field, give the device a meaningful name to help you identify it. By default, the device model number is used as the device's name.
3. In the **Camera Location:** field, describe the device's location.
4. In the **Logical ID:** field, enter a unique number to allow the Client and integrations to identify this device.
5. (Cameras only) To disable the LEDs on a device, select the **Disable camera status LEDs**. This may be required if the device is installed in a covert location.
6. (Cameras only) If a device has a motorized zoom and focus lens, the **Enable PTZ controls** check box will be displayed. For more information, see [Configuring PTZ](#).
7. Click **OK**.

Configuring PTZ

Use the camera General dialog box to enable and configure the motorized pan, tilt, zoom (PTZ) devices that may be connected to Avigilon™ cameras. PTZ devices are connected to Avigilon cameras through the RS-485 inputs.

Third-party PTZ camera controls cannot be configured through the Control Center software.



1. In the camera Setup tab, click .
2. In the PTZ area, select the **Enable PTZ controls** check box.

NOTE: If the following options are not displayed, the camera only has a motorized zoom and focus lens that can be controlled through the PTZ Controls pane. Other PTZ controls will not be available.

3. In the **Protocol:** drop down list, select the appropriate PTZ protocol. The available protocols include:
 - AD Sensormatic
 - AXSYS
 - AXSYS DCU
 - Ernitec ERNA
 - Honeywell Diamond
 - Kalatel ASCII
 - Pelco D
 - Pelco P
 - TEB Ligne
 - Videotec MACRO
 - Videotec Legacy
 - Vicon extended
 - Vicon normal
 - JVC JCBP
4. Enter the **Dip Switch Address:**, **Baud Rate:**, and **Parity:** for the PTZ device.
5. Click **OK**.

Once PTZ has been configured, you can use the camera's PTZ Controls while you watch the camera's live video stream. For more information, see [Controlling PTZ Cameras](#).

Rebooting a Device

You can restart all Avigilon devices through the device's General dialog box. This feature is not available for third party devices.



1. In the device Setup tab, click .
2. Click **Reboot Camera....**

The device will disconnect from the Avigilon Control Center and shut down. When the device starts up again, the device should automatically reconnect with the Avigilon Control Center.

Network

Use the device Network dialog box to change how a device connects to the server network.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

1. In the device Setup tab, click .
2. In the Network dialog box, select how the device obtains an IP address:

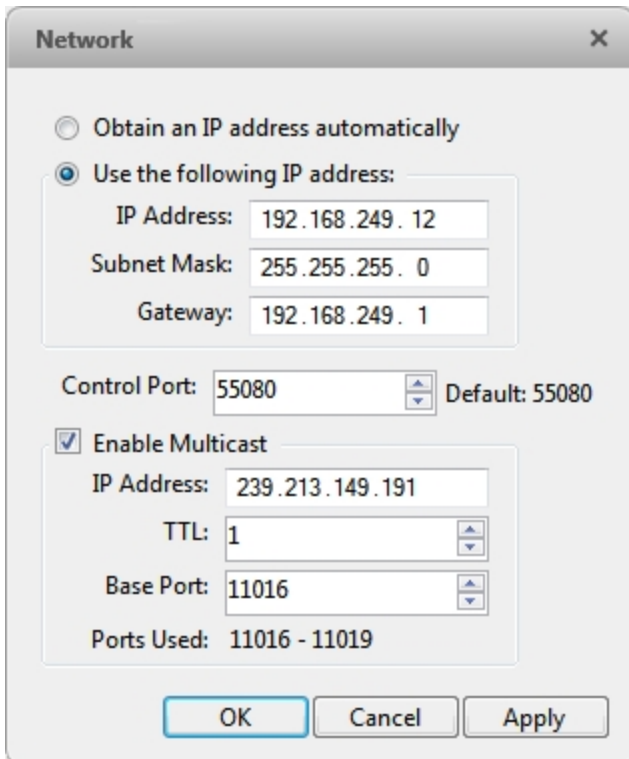


Figure 69: The Network dialog box

- **Obtain an IP address automatically:** select this option for the device to connect to the network through an automatically assigned IP address.

The device will attempt to obtain an address from a DHCP server. If this fails, the device will obtain an address through Zero Configuration Networking (Zeroconf) and select an address in the 169.254.0.0/16 subnet.

- **Use the following IP address:** select this option to manually assign a static IP address to the device.

Enter the **IP Address**:, **Subnet Mask**:, and **Gateway**: you want the device to use.

3. Select the **Control Port**: for connecting to the device. This port is also used for manually discovering the device on the network.
4. (Cameras only) Select the **Enable Multicast** check box to enable multicast streaming from the device. You

must Enable Multicast to set up redundant recording to multiple servers.

Use the default generated **IP Address:**, **TTL:**, and **Base Port:**, or enter your own values.

5. Click **OK**.

Image and Display


Use the Image and Display dialog box to control a camera's display settings for live and recorded video.

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.

Changing Image and Display Settings

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.



1. In the camera Setup tab, click .
2. In the Image and Display dialog box, make the required changes to adjust the camera's image settings. A preview of your changes is displayed in the image panel.

Tip: Use the **Maximum Exposure:**, **Maximum Gain:**, and **Priority:** options to control low light behavior.

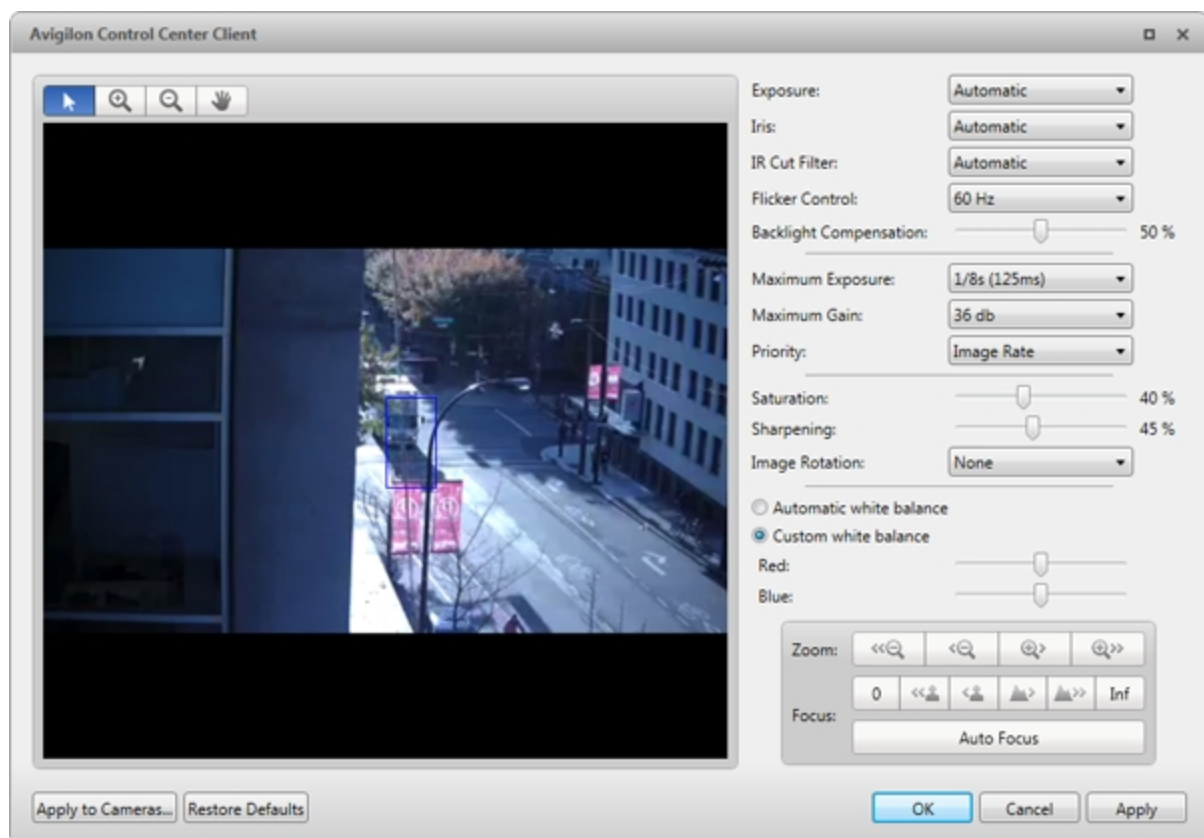


Figure 70: The Image and Display dialog box

Option	Description
Exposure:	<p>You can allow the camera to control the exposure by selecting Automatic, or you can set a specific exposure rate.</p> <p>NOTE: Increasing the manual exposure time may affect the image rate.</p>
Iris:	You can allow the camera to control the iris by selecting Automatic , or you can manually set it to Open or Closed .
IR Cut Filter:	You can allow the camera to control the infrared cut filter by selecting IR Cut Filter ., or set the camera to Color or Monochrome mode.
Flicker Control:	If your video image flickers because of the fluorescent lights around the camera, you can reduce the effects of the flicker by setting the Flicker Control : to the same frequency as your lights. Generally, Europe is 50 Hz and North America is 60 Hz .
Backlight Compensation:	If your scene has areas of intense light that cause the overall image to be too dark, move the Backlight Compensation : slider until you achieve a well exposed image.
Enable Wide Dynamic Range	Select this box to enable automatic color adjustments through Wide Dynamic Range (WDR). This allows the camera to adjust the video image to accommodate scenes where bright light and dark shadow are clearly visible.
Maximum Exposure:	<p>You can limit the automatic exposure setting by selecting a Maximum Exposure: level.</p> <p>By setting a Maximum Exposure: level for low light situations, you can control the camera's exposure time to let in the maximum amount of light without creating blurry images.</p>
Maximum Gain:	<p>You can limit the automatic gain setting by selecting a Maximum Gain: level.</p> <p>By setting a Maximum Gain: level for low light situations, you can maximize the detail of an image without creating excessive noise in the images.</p>
Priority:	<p>You can select Image Rate or Exposure as the priority.</p> <p>When set to Image Rate, the camera will maintain the set image rate as the priority, and will not adjust the exposure beyond what can be recorded for the set image rate.</p> <p>When set to Exposure, the camera will maintain the exposure setting as the priority, and will override the set image rate to achieve the best image possible.</p>
Saturation:	You can adjust the video's color intensity by moving the Saturation : slider until the video image meets your requirements.
Sharpening:	You can adjust the video sharpness to make the edges of objects more visible. Move the Sharpening : slider until the video image meets your requirements.
Image Rotation:	You can change the rotation of captured video. You can rotate the video 90,


Option	Description
	180, or 270 degrees clockwise.
White Balance	You can control white balance settings to adjust for differences in light. You can allow the camera to control the white balance by selecting Automatic white balance , or select Custom white balance and manually set the Red: and Blue: settings.

- To focus the camera, see [Zooming and Focusing the Camera Lens](#).
- Click **Apply to Cameras...** to apply the same settings to other cameras of the same model.
- Click **OK**.

Zooming and Focusing the Camera Lens

If the camera has remote zoom and focus capabilities, you can control the camera's zoom and focus through the Image and Display dialog box.

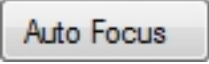








- In the camera Setup tab, click .
- If the camera has a built-in auto-focus feature, you can choose one of the following:
 - Continuous Focus:** the camera will automatically focus itself whenever the scene changes. Skip the following steps.
 - Manual Focus:** you can manually focus the camera through the **Focus:** buttons. Once the focus is manually set, it will not change.
- While you watch the preview in the image panel, complete the following steps to zoom and focus the camera:

Tip: For Avigilon™ HD Professional Cameras, the lens must be set to auto-focus (AF) mode on the camera. If the camera does not detect the lens, the Focus: buttons are not displayed.

 - Use the **Zoom:** buttons to zoom in to the distance you want to focus.
- In the **Iris:** drop down list, select **Open**. When the iris is fully open, the camera's depth of field is the shortest.
- Use the **Focus:** buttons until the image becomes clear.

Focus Buttons

Button	Description
	The camera will automatically focus one time.
	The camera will focus as close to zero as possible.

Button	Description
	Large step toward zero.
	Small step toward zero.
	Small step toward infinity.
	Large step toward infinity.
	Infinity.

6. Click **Apply to Cameras...** to apply the same settings to other cameras of the same model.
7. Click **OK**.

Dewarping a Panomorph Lens

If your camera uses a fisheye or panomorph lens, you may choose to dewarp the image through the Avigilon™ Control Center software.

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.



1. In the camera Setup tab, click .
2. In the Image and Display dialog box, select the **Lens Type:** used by the camera.

If the Lens Type list is empty, contact Avigilon Technical Support and request that support for your camera and lens model be added to the application.

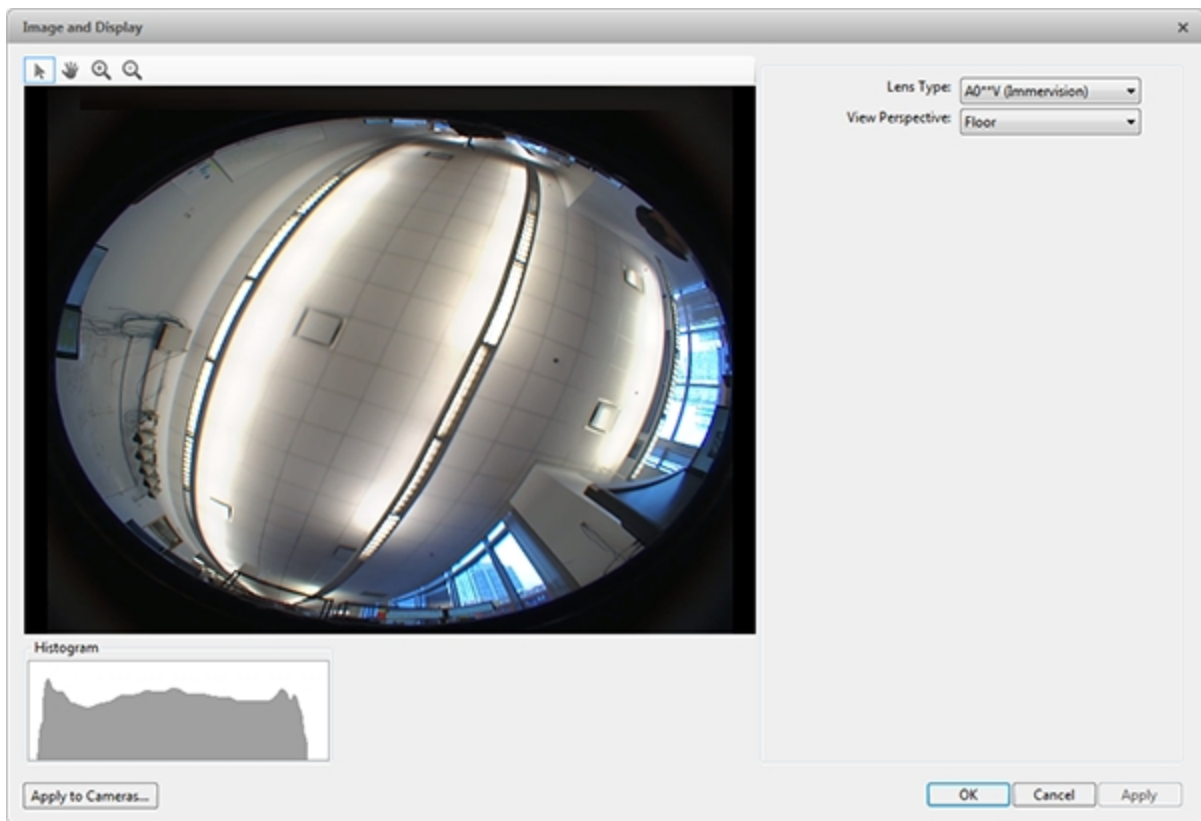


Figure 71: The Image and Display dialog box for panoramic lens configuration

3. In the **View Perspective:** drop down list, select one of the following options:
 - **Floor:** select this option if the camera is installed to look up.
 - **Ceiling:** select this option if the camera is installed to look down.
 - **Wall:** select this option if the camera is installed to look at the horizon.
4. If available, edit the image and display settings that are supported by the Lens Type:.
5. Click **OK**.

The system dewarps the lens image based on the way it is installed. You will be able to control how video is display in an image panel through the PTZ controls.

Compression and Image Rate

Use the camera Compression and Image Rate dialog box to modify the camera's frame rate and image quality settings for sending image data over the network.

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.

For more information about the supported compression technologies, see the [Understanding Compression Technologies for HD and Megapixel Surveillance](#) white paper on the Avigilon website.

1. In the camera Setup tab, click

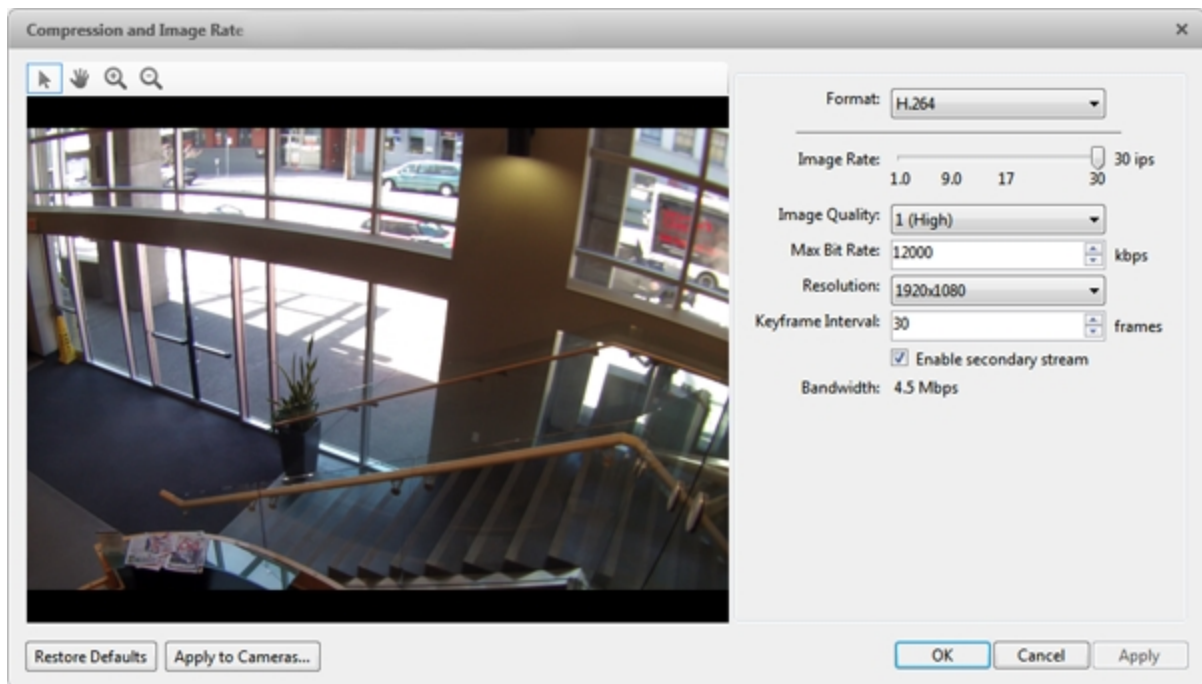


Figure 72: The Compression and Image Rate dialog box.

The Bandwidth: area gives an estimate of the bandwidth used by the camera with the current settings. Adjust the settings as required.

NOTE: For cameras capable of maintaining multiple streams, the settings in this dialog box only affect the primary stream.

2. In the **Format:** drop down list, select the preferred streaming format.
3. In the **Image Rate:** bar, move the slider to select the number of images per second (ips) you want the camera to stream over the network.

For H.264 cameras and encoders, the image rate setting must be divisible by the maximum image rate. If you set the slider between two image rate settings, the application will round to the closest whole number.

4. In the **Image Quality:** drop down list, select an image quality setting. An image quality setting of **1** will produce the highest quality video and require the most bandwidth. The default setting is **6**.
5. In the **Max Bit Rate:** drop down list, select the maximum bandwidth the camera can use in kilobits per second (kbps).
6. In the **Resolution:** drop down list, select the preferred image resolution.
7. In the **Keyframe Interval:** drop down list, enter the preferred number of frames between each keyframe.

It is recommended that you have at least one keyframe per second. So, if the image rate is set to 30 ips, you should enter **30** for the Keyframe Interval: setting.

8. If your camera supports multiple video streams, you can select the **Enable secondary stream** check box.

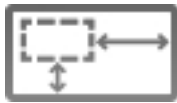
When enabled, the secondary stream is a lower resolution video stream that is used by Avigilon's HDSM feature to maximize bandwidth and storage efficiencies.

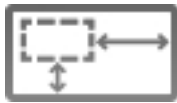
9. Click **Apply to Cameras...** to apply the same settings to other cameras of the same model.
10. Click **OK**.

Image Dimensions

Use the Image Dimensions dialog box to set the image dimensions for the camera. You can crop the video image to help reduce bandwidth and increase the maximum image rate.

NOTE: This feature is only available for JPEG2000 cameras.



1. In the camera Setup tab, click .
2. In the Image Dimensions dialog box, adjust the image dimensions by doing one of the following:
 - Drag the edges of the image until the video is cropped to fit your requirements.
 - Change the values for the **Top**:, **Left**:, **Width**:, and **Height**: fields.

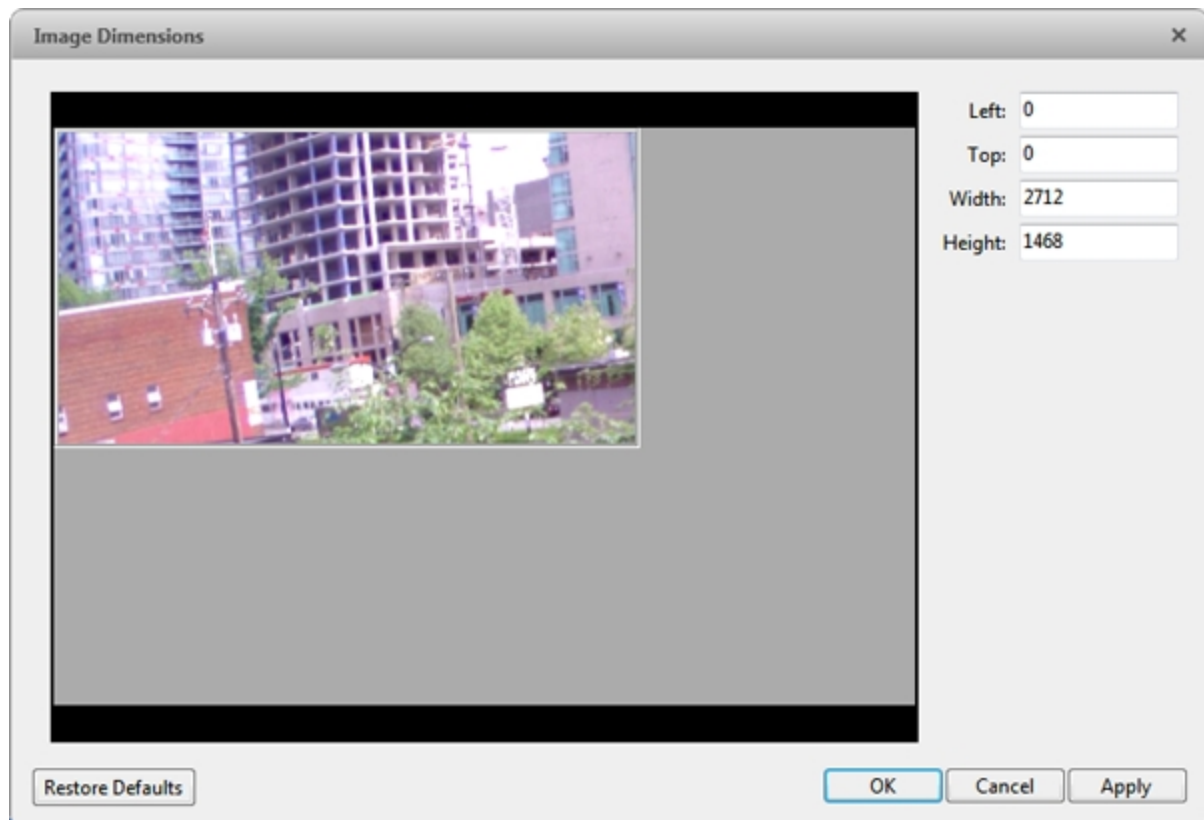


Figure 73: The Image Dimensions dialog box

3. Click **OK**.

Motion Detection

In the Motion Detection dialog box you can define specific pixel motion detection areas and configure the camera's sensitivity and threshold for pixel motion.

If you have a video analytics device, you can configure classified object motion detection. For more information, see [Setting Up Classified Object Motion Detection](#).

Selecting a Pixel Motion Detection Area

In the Motion Detection dialog box, you can set the green pixel motion detection areas in the camera's field of view. Pixel motion detection is ignored in the areas not highlighted in green.



1. In the camera Setup tab, click
2. Use the tools below the image panel to define the green pixel motion detection area:



- : Click this button then draw green rectangles to define the pixel motion detection areas. You can draw multiple rectangles to create your pixel motion detection area.



- : Click this button and draw rectangles to erase sections from the pixel motion detection area.



- : Click this button and manually draw pixel motion detection areas with your mouse. This tool allows you to be very specific and highlight unusual shapes.



- : Click this button to highlight the entire image panel for pixel motion detection.



- : Click this button to clear the image panel of all pixel motion detection areas.

Tip: Avoid areas with continuous pixel motion, like a TV or computer monitor, so that the camera is not constantly detecting unimportant pixel motion events.

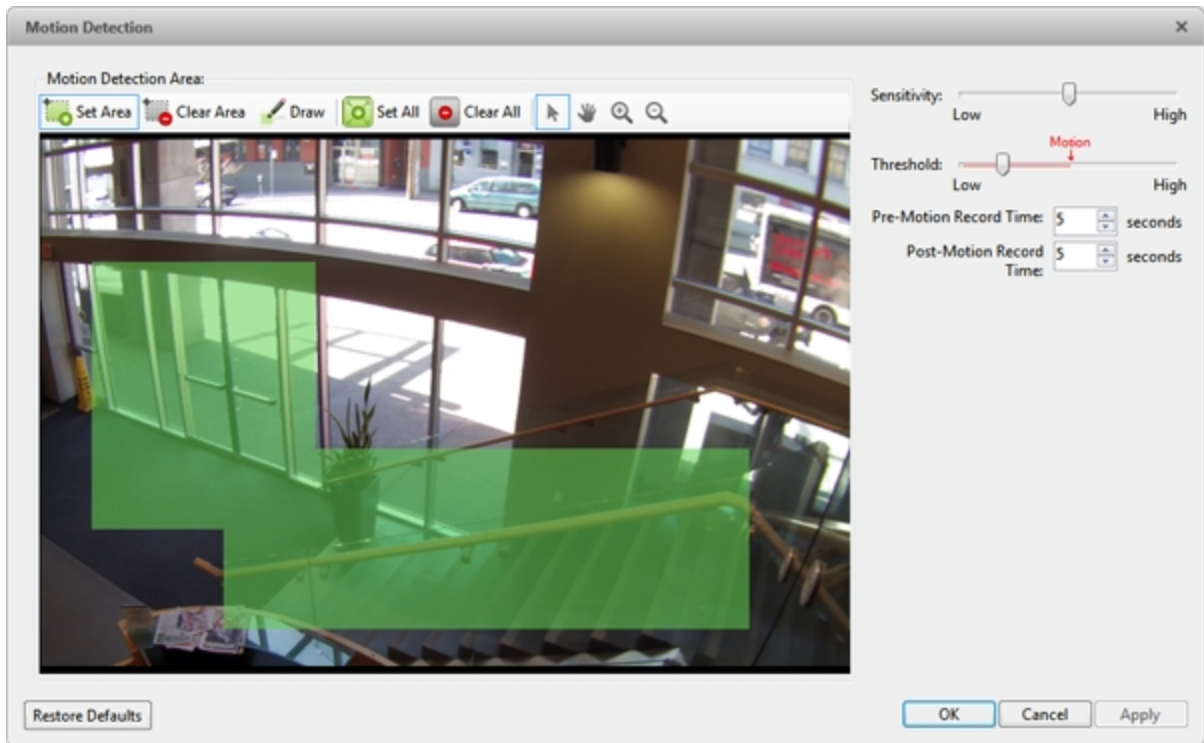


Figure 74: The Motion Detection dialog box

3. Click **OK**.

To define the sensitivity and threshold of the pixel motion detection area, see [**Controlling Pixel Motion Sensitivity and Threshold**](#).

Controlling Pixel Motion Sensitivity and Threshold

In the Motion Detection dialog box, you can control the camera's sensitivity and threshold for pixel motion. You can also define how long video is recorded before and after each pixel motion event.

1. In the camera Setup tab, click

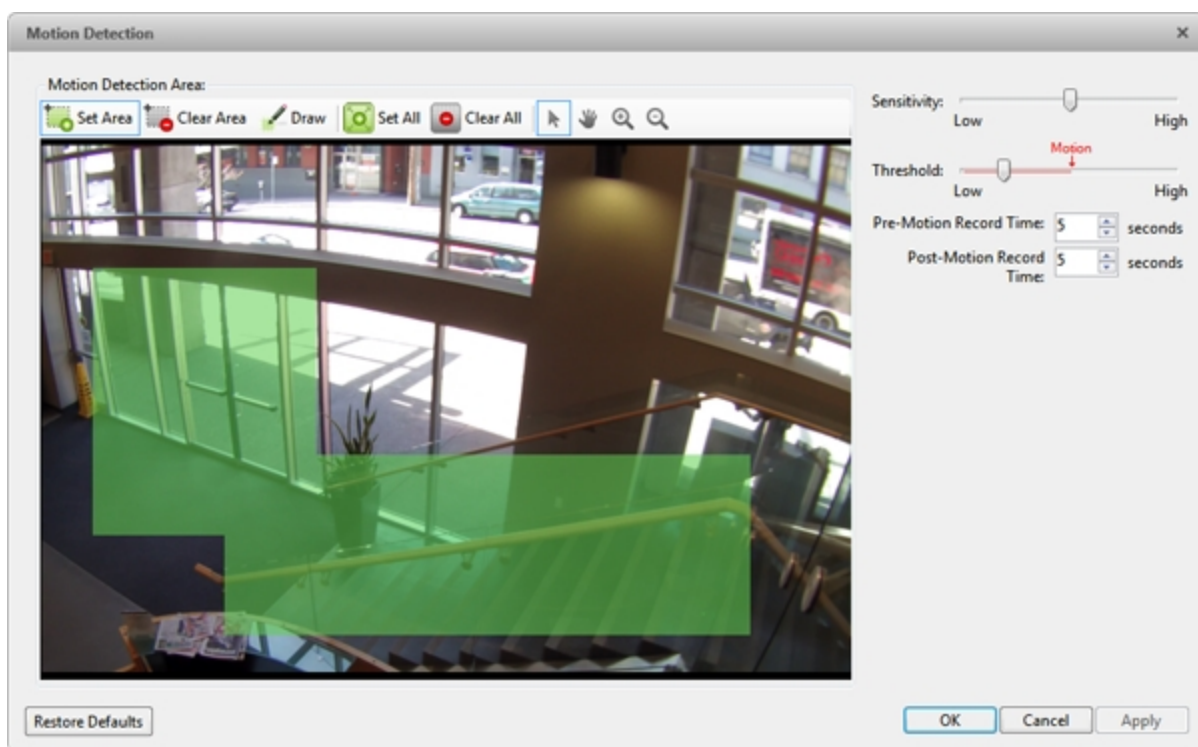


Figure 75: The Motion Detection dialog box

2. Move the **Sensitivity** slider to adjust how much each pixel must change before it is considered in motion.

When the sensitivity is High, even small movements are detected - like dust floating immediately before the camera lens.

Move the slider to Low to avoid triggering pixel motion detection.

3. Move the **Threshold** slider to adjust how many pixels must change before the image is considered to have pixel motion.

When the threshold is High, only large motions are detected - like a truck driving across the scene.

Tip: The **Motion** indicator above the Threshold slider will move to indicate how much motion is occurring in the current scene. Only when the Motion indicator moves to the right of the Threshold marker will the camera detect the pixel motion.

4. In the **Pre-Motion Record Time** and **Post-Motion Record Time** fields, specify how long video is recorded before and after the pixel motion event.
5. Click **OK**.

Adaptive Video Analytics

Adaptive video analytics is available on adaptive video analytics devices, including Rialto™ Video Analytics Appliances and Avigilon™ cameras with adaptive video analytics.

Configuring Video Analytics Device Location

NOTE: Changing the location of a video analytics device deletes existing teach data for that device.



1. In the device Setup tab, click

The Video Analytics Configuration dialog box opens.

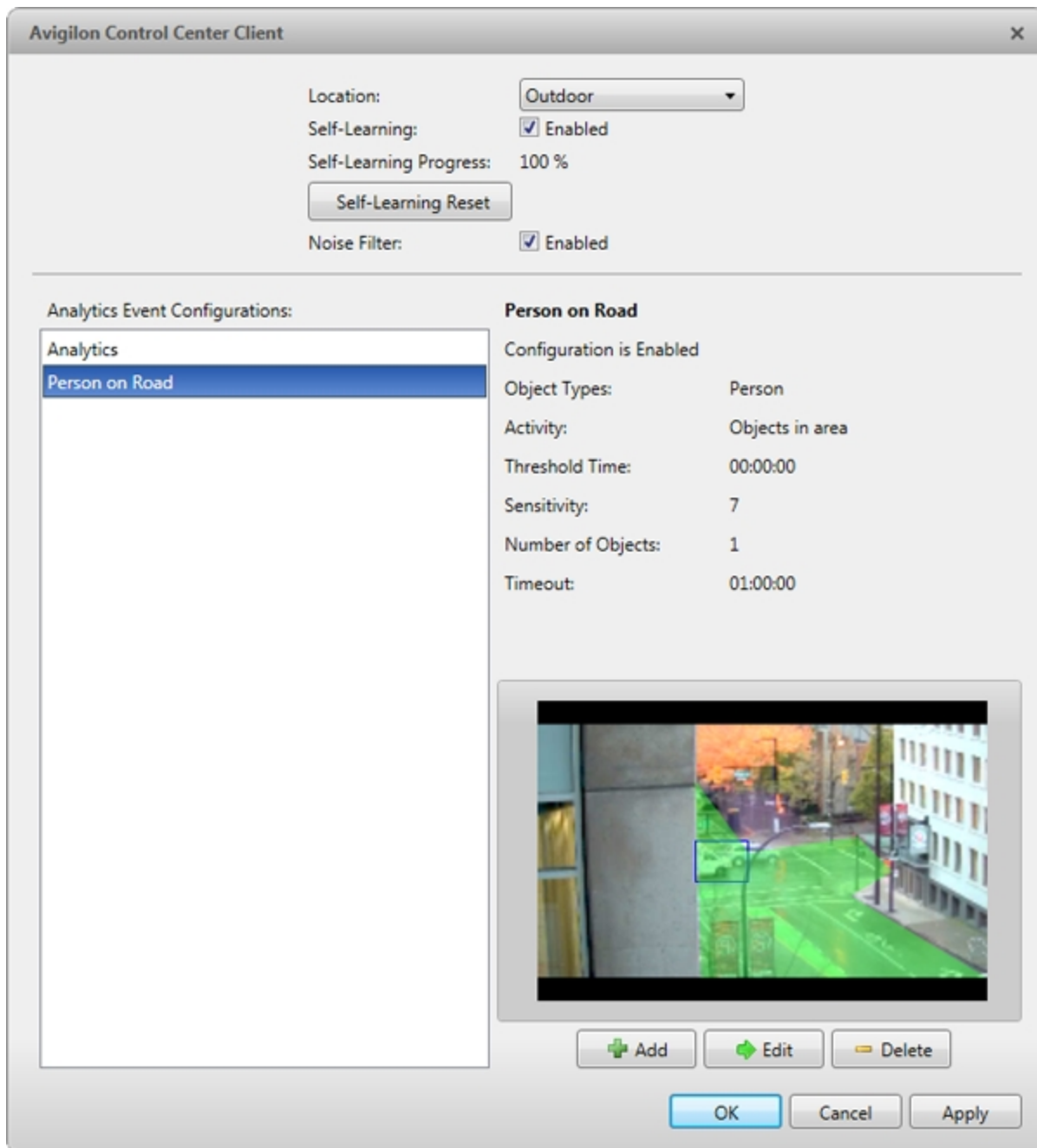


Figure 76: The Video Analytics Configuration dialog box

2. From the **Location:** drop down menu, select one of the following options:

- **Outdoor** - Use for outdoor scenes. This setting detects humans and vehicles.
- **Large Indoor Area** - Use for indoor scenes with a width of 1.5 m (5 ft) or more. Vehicle detection is disabled.
- **Indoor Overhead** - Use when camera is mounted overhead, with its field of view capturing the tops of people's heads. This setting is useful for counting people. Vehicle detection is disabled.

Configuring the Camera Type

To improve the analytics detection accuracy of a video analytics appliance, you can choose the type of video sent by each connected camera to the appliance.



1. In the device Setup tab, click .

The Video Analytics Configuration dialog box opens.

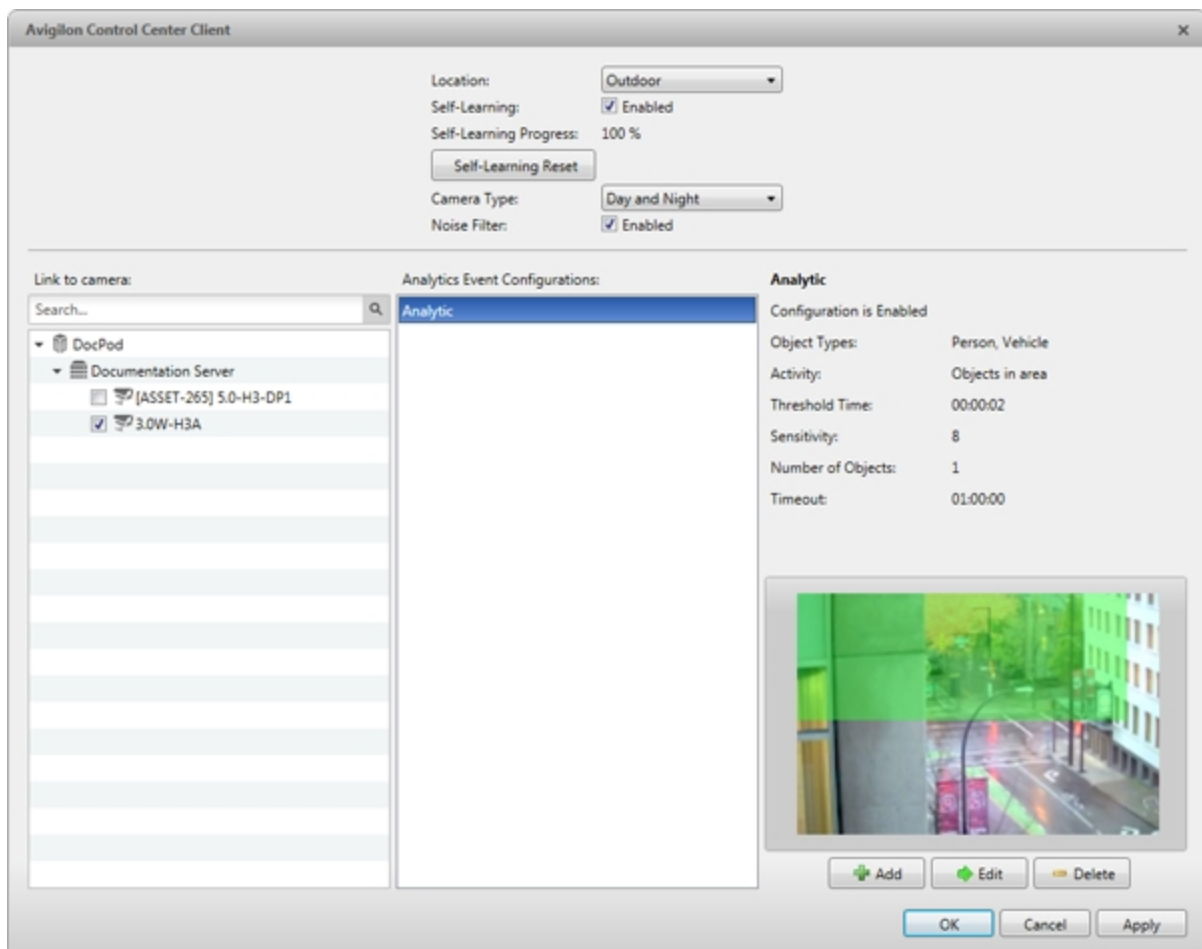


Figure 77: The Video Analytics Configuration dialog box

2. In the **Camera Type:** drop down list, choose one of the following options:
 - **Day and Night** - the video analytics appliance automatically detects if the video is in color or black and white.

- **Color** - the video analytics appliance is configured to analyze color video. It automatically detects if the video is daytime or nighttime.

If the camera location is configured as Large Indoor Area or Indoor Overhead, the video analytics appliance is configured to analyze daytime video.

- **Black and White** - the video analytics appliance is configured to analyze black and white video.
- **FLIR** - the video analytics appliance is configured to analyze forward looking infrared (FLIR) video.

Using the Color Noise Filter

If the video analytics device is too sensitive and falsely detects motion as classified objects, enable the color noise filter. This is helpful for scenes with a lot of light and small, irrelevant motion, such as tree leaves on a sunny day.

- At the top of the Video Analytics Configuration dialog box, select the **Noise Filter:** check box. Make sure the check box is checked.

If the video analytics device is not sensitive enough and does not detect relevant classified objects, disable the color noise filter.

- At the top of the Video Analytics Configuration dialog box, select the **Noise Filter:** check box. Make sure the check box is unchecked.

Configuring Video Analytics Device Self-Learning

When self-learning is enabled, the video analytics device will perform initial self-calibration for the scene in its field of view. This can significantly improve classification accuracy of humans and vehicles.

NOTE: Enabling and disabling self-learning does not affect the Teach By Example feature.

Enabling Self-Learning



1. In the device Setup tab, click .

The Video Analytics Configuration dialog box opens.

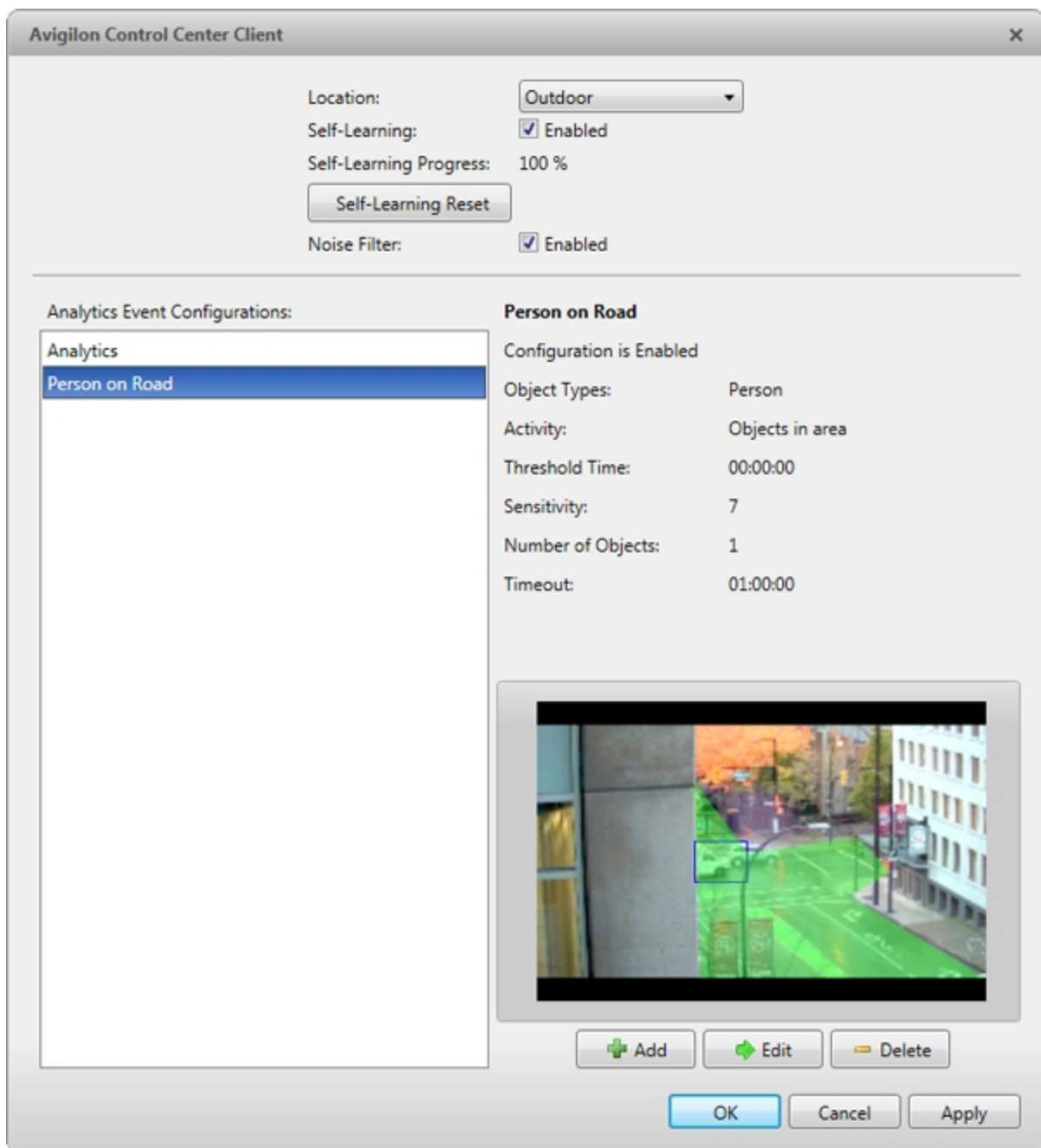


Figure 78: The Video Analytics Configuration dialog box

2. At the top of the dialog box, select the **Self-Learning**: check box. Make sure the check box is checked.

Self-Learning Progress

- **0% - 33%** - The device is in the initial learning stage where it begins to gather information on the scene.
- **34% - 66%** - The device is calibrating itself using the data it has gathered on the average person and average vehicle in the scene.
- **67% - 100%** - The device has established a high level of classified object detection accuracy based on its self-learning.

Tip: To further improve the detection accuracy of the device, use the Teach By Example feature. For more information, see [Teach By Example](#).

NOTE: If after the device has reached a 100% Self-Learning Progress: level it has low classified object detection accuracy, an error may have occurred during installation. Contact Avigilon Technical Support.

Disabling Self-Learning

NOTE: Disabling self-learning may result in more classified objects being falsely detected.

You should disable self-learning in the following situations:

- If you do not expect any humans or vehicles in the device's field of view.
- If humans and vehicles in the field of view move at multiple height levels, such as people on a staircase.



1. In the device Setup tab, click  .

The Video Analytics Configuration dialog box opens.

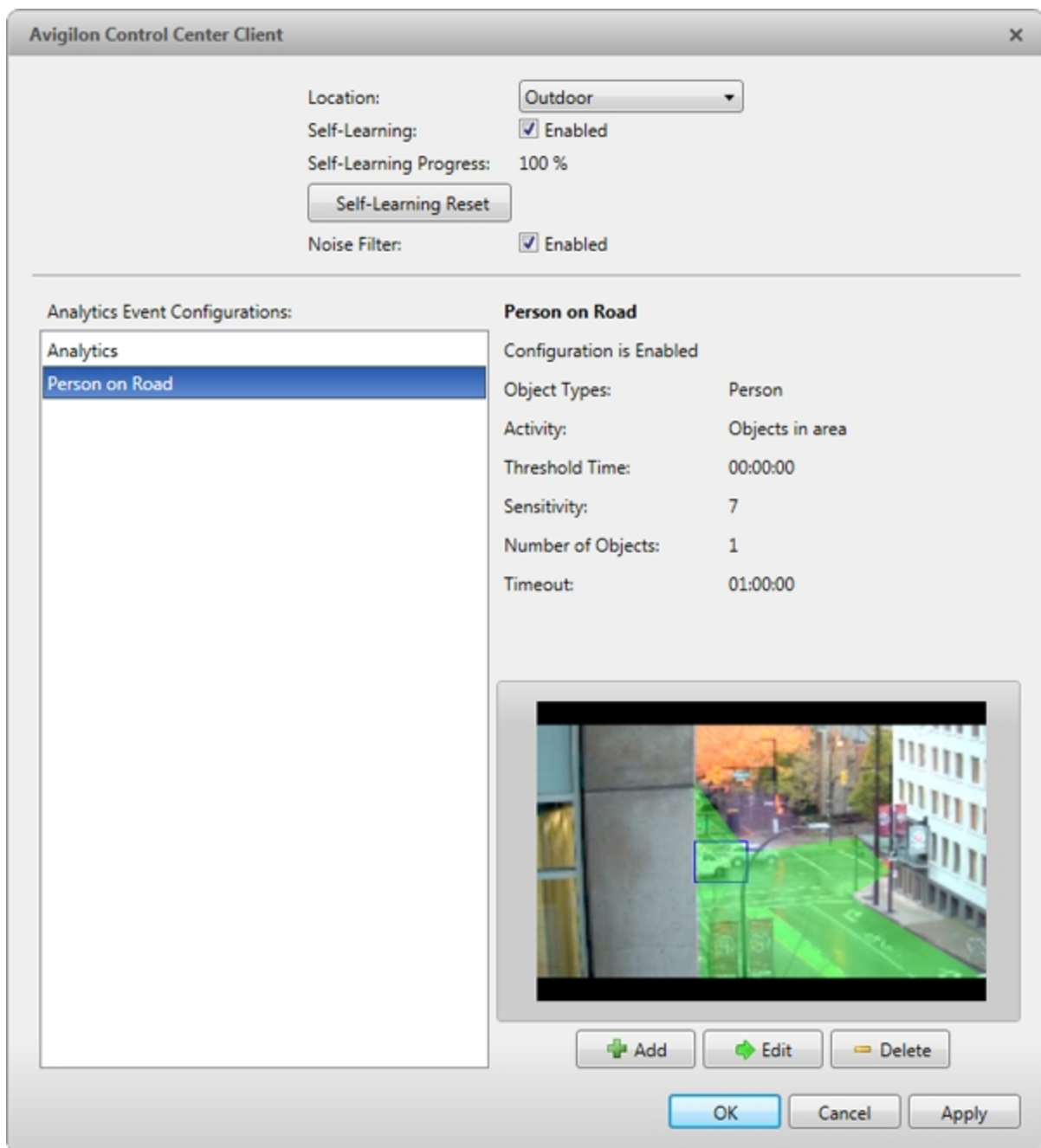


Figure 79: The Video Analytics Configuration dialog box

- At the top of the dialog box, select the **Self-Learning:** check box. Make sure it is unchecked.

Resetting Self-Learning

When self-learning is reset, all previous self-learning data for the device is deleted.

You should reset self-learning when the field of view of the device is changed to ensure classified object detection accuracy.



1. In the device Setup tab, click

The Video Analytics Configuration dialog box opens.

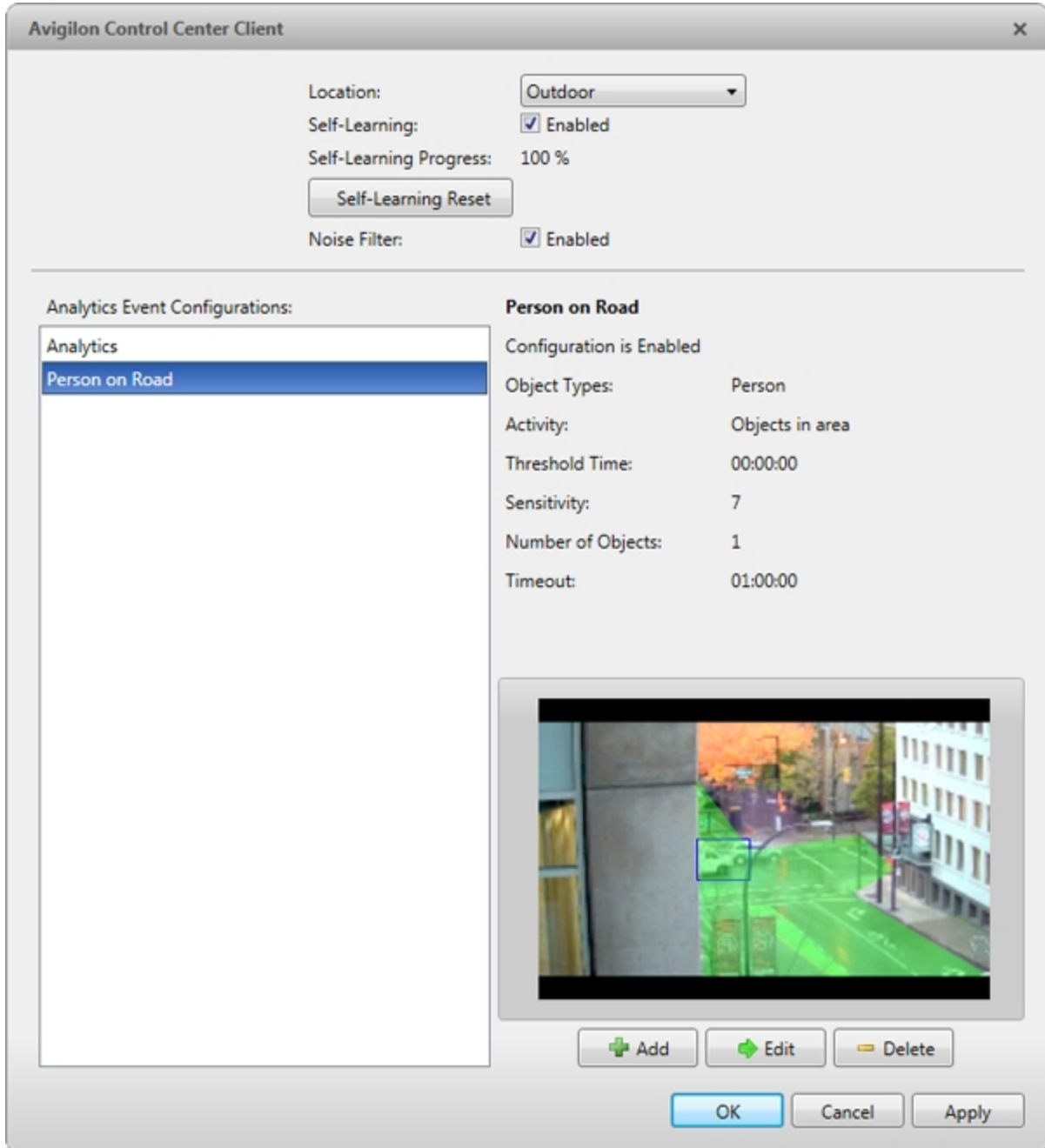


Figure 80: The Video Analytics Configuration dialog box

2. At the top of the dialog box, click **Self-Learning Reset**.
3. In the confirmation dialog box that appears, click **Yes**.

Resetting self-learning creates an event that appears in the Site Logs.

Setting Up Classified Object Motion Detection

The Avigilon™ adaptive video analytics devices use adaptive video analytics to intelligently detect relevant motion, such as a person or vehicle, while ignoring irrelevant movement, such as a moving tree. This allows you to receive events, trigger alarms and rules, and record video only when human or vehicle motion requires your attention.



1. In the device Setup tab, click

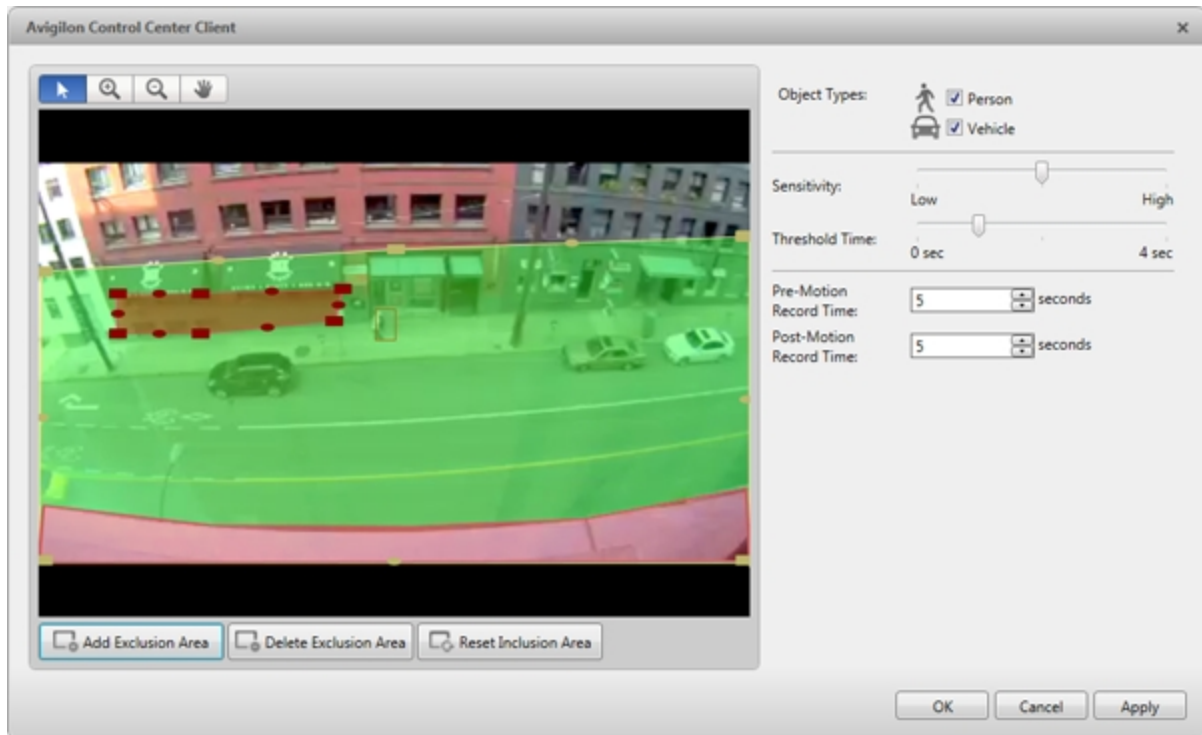


Figure 81: The Classified Object Motion Detection dialog box

2. To configure classified object motion detection, do the following:

Configuring Classified Object Motion Detection Settings

1. Select the **Person** and/or **Vehicle** check boxes to enable the detection of people and/or vehicles.
2. Move the **Sensitivity** slider to adjust how sensitive the video analytics device is to the detection of classified objects.
3. Move the **Threshold Time** slider to adjust how long an object must be moving before it triggers Classified Object Motion Detection.
4. In the **Pre-Motion Record Time** and **Post-Motion Record Time** fields, specify how long video is recorded before and after a classified object motion detection event.
5. Click **Apply** to save your settings.

Next, define the Classified Object Motion Detection area.

Selecting the Classified Object Motion Detection Area

By default, the camera's entire field of view is highlighted in green. You can set the camera's Classified Object Motion Detection area by changing the green overlay. Feet or wheels in the green overlay will trigger Classified Object Motion Detection. Classified object motion will not be detected in areas not highlighted in green.

1. Use the image panel tools to define the green overlay:

- To change the shape or size of the green overlay, click and drag any of the yellow markers on the border. Extra markers are automatically added to help you fine tune the shape of the overlay.
- To move the green overlay, place the cursor over the green overlay until the cursor changes into a hand or pan symbol. Then, click and drag the green area to the desired location.



- : Click this button to add an exclusion area. The exclusion area is added inside the green overlay.
 - Classified object motion in the exclusion area will not be detected. The exclusion area can be modified in the same way as the green overlay.
 - To set an exclusion area, move and resize the exclusion area as required then click anywhere on the green overlay.
 - To edit an exclusion area, double-click the exclusion area then modify as required.



- : Select an exclusion area then click this button to remove the exclusion area.



- : Click this button to restore the default green overlay.

2. Click **OK**.

Video Analytics Event Configuration

On each Avigilon™ adaptive video analytics device, you can set up specific video analytics events to detect a variety of human and vehicle activity within a scene.

Adding Video Analytics Events

Before you can add video analytics events to rules and alarms, they must first be created for each video analytics device.



1. In the device Setup tab, click .

The Video Analytics Configuration dialog box opens.

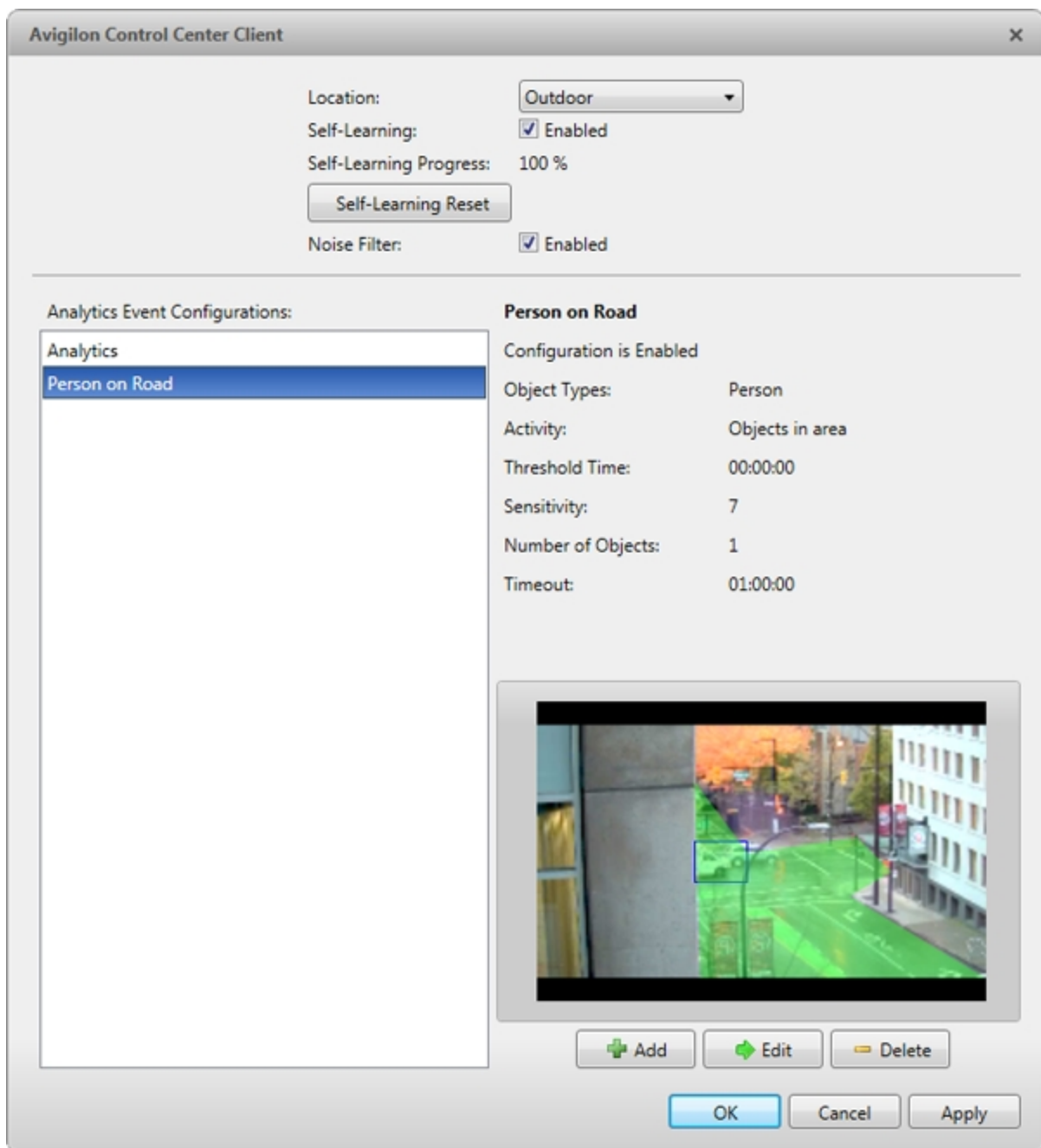



Figure 82: The Video Analytics Configuration dialog box

2. Click . The Add a Video Analytics Event dialog box opens.

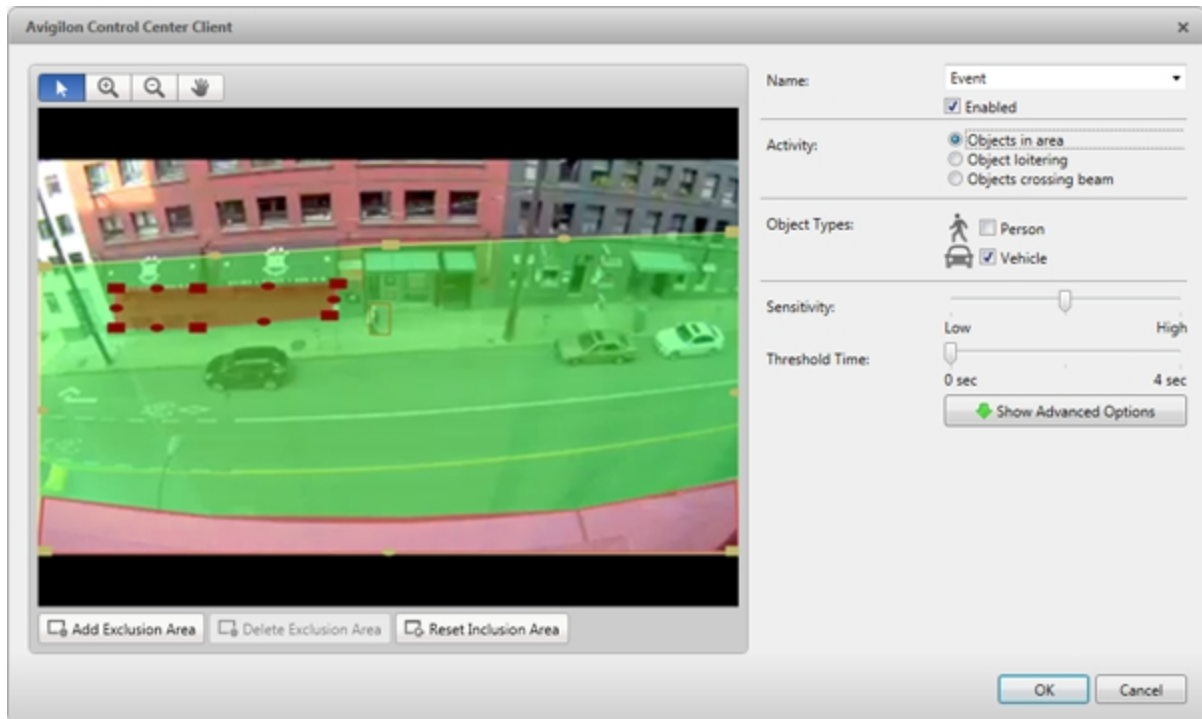


Figure 83: The Add a Video Analytics Event dialog box.

3. Enter a name for the video analytics event.
4. Select the **Enabled** check box. If the check box is clear, the video analytics event will not detect or trigger any events.
5. In the Activity: area, select one of the following options:
 - **Objects in area** – the video analytics event will only trigger when a selected object moves in the specified region of interest.

In the image panel, define the region of interest. The green overlay can be configured like the Classified Object Motion Detection feature. For more information, see [Setting Up Classified Object Motion Detection](#).

- **Object loitering**– the video analytics event will only capture people or vehicles that stay within the region for an extended amount of time.

In the image panel, define the specific area of interest. The green overlay can be configured like the Classified Object Motion Detection feature. For more information, see [Setting Up Classified Object Motion Detection](#).

- **Objects crossing beam** – the video analytics event will only trigger when people or vehicles cross the green beam in the pointed direction.

In the image panel, move or resize the green beam as needed:

- To move the line, click and drag the green beam in any direction.
- To change the length or rotate the beam, click one end of the beam and stretch or rotate the beam.



- To change the direction of the beam, click .





- To detect objects traveling in either direction of the beam, click .

Depending on the selected video analytics activity, some of the following options may not be available.

- To view more Activity: options, click . For a description of each Activity: option, see [Video Analytics Event Descriptions](#).



- In the **Object Types:** area, select  and/or .
- Move the **Sensitivity:** slider to adjust how sensitive the video analytics device is to the detection of classified objects.
- Move the **Threshold:** slider to adjust how long an object must be moving before it triggers a video analytics event.
- In the **Number of Objects:** field, enter the minimum number of persons or vehicles that must be in the scene to trigger the video analytics event.
- In the **Timeout:** field, enter the maximum length of a video analytics event. After this time, if the event is still active it will trigger a new event.
- Click **OK**.

Editing and Deleting Video Analytics Events



- In the device Setup tab, click .
- In the following dialog box, select a video analytics event from the Analytics Event Configurations: list and do one of the following:

The dialog box may look different depending on the type of video analytics device.

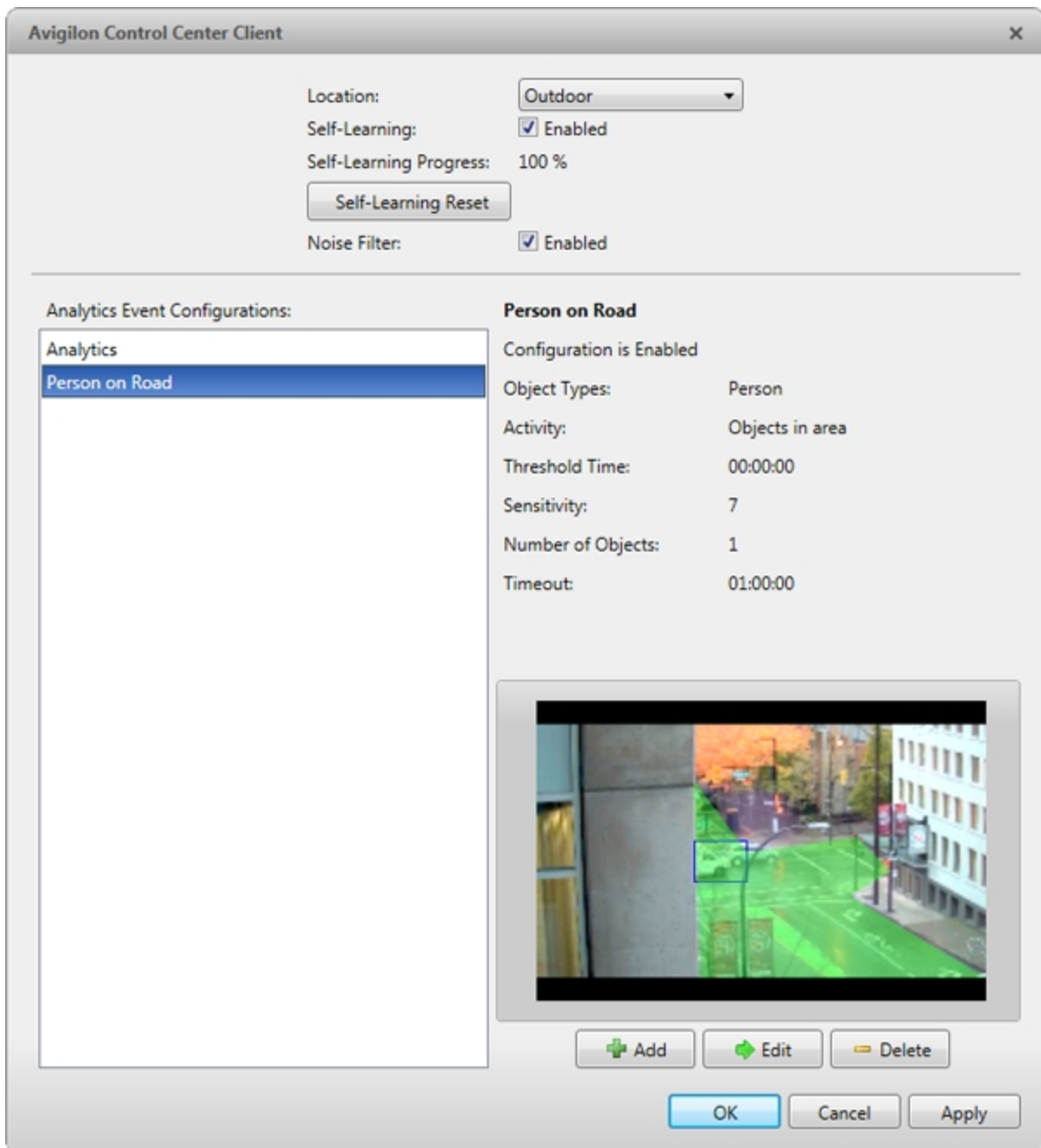



Figure 84: The Video Analytics Configuration dialog box for a video analytics camera.

- To edit the video analytics event, click . In the following dialog box, make the required changes. For more information, see [Adding Video Analytics Events](#).

NOTE: If you change the name of the event, any rules or alarms linked to the event may no longer function.

- To delete the video analytics event, click .

Teach By Example

You can improve the accuracy of classified object detection by using the Teach By Example feature. You can assign true or false Teach Markers to the objects detected by an Avigilon™ adaptive video analytics device, then apply the Teach Markers to train the video analytics engine of the Avigilon™ adaptive video analytics device.

NOTE: The Teach Markers are local to a single server and are created for individual cameras. They are not shared between servers or cameras.

Accessing the Teach By Example Tab

NOTE: To access the Teach By Example tab, a user must belong to a group with the Teach by example permission.

From the Teach By Example tab, you can assign and apply Teach Markers.



1. In the device Setup tab, click

The Teach By Example tab opens.

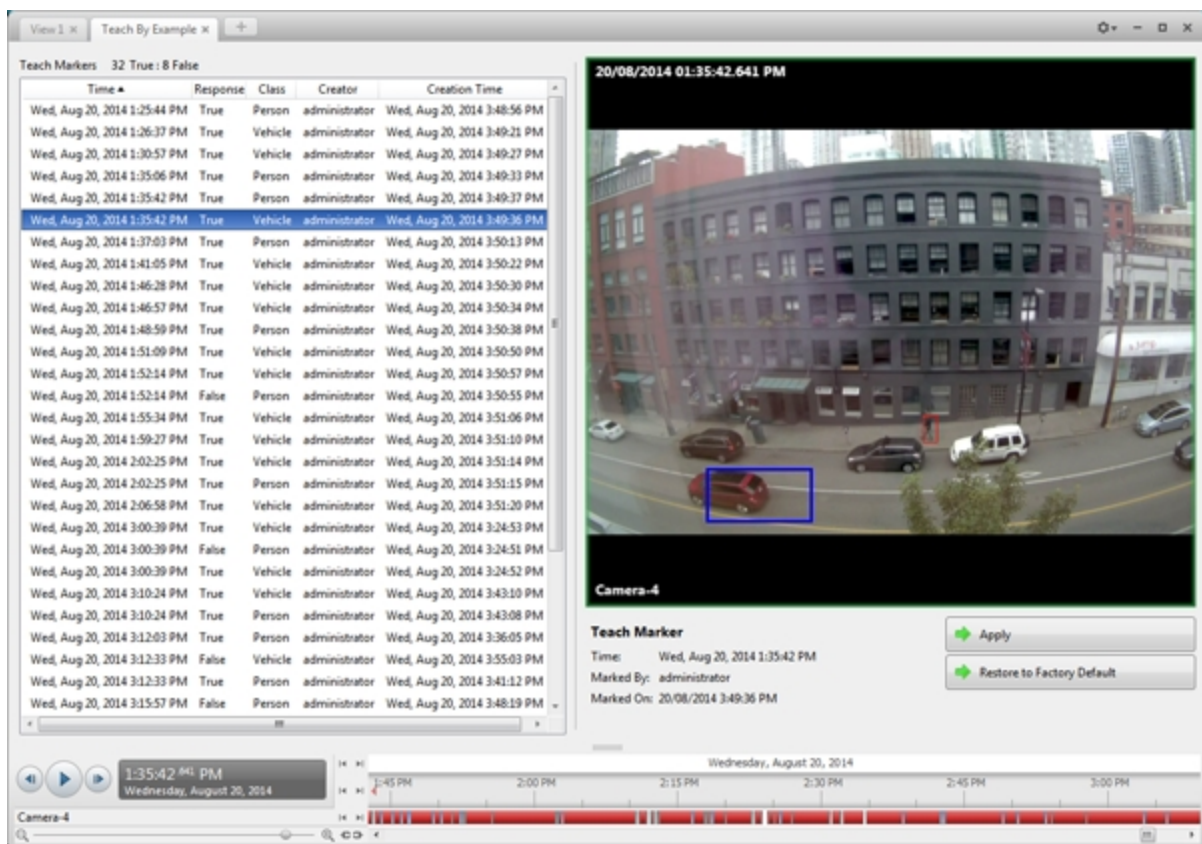


Figure 85: The Teach By Example tab

Assigning Teach Markers

In the Teach By Example tab, recorded video is shown in the image panel. Objects detected by the video analytics device are outlined in red bounding boxes (for humans) or blue bounding boxes (for vehicles).

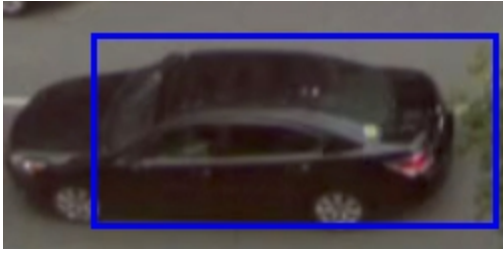


Figure 86: A detected classified object outlined in a blue bounding box.

1. Click inside a bounding box to open the object's Teach Markers menu.



Figure 87: A Teach Markers menu

2. Select one of the following options:

The options differ depending on whether the object has been classified as a vehicle or a person.

- **True Person/True Vehicle** - Select this option if the video analytics device has correctly identified this object as a person or vehicle.
- **False Person/False Vehicle** - Select this option if the video analytics device has incorrectly identified this object as a person or vehicle.
- **Not Used** - Select this option if you do not want to use this object as a teaching sample.

You can change Teach Markers at any time. The newest rating will override previous ones.

You can have a maximum of 50 true Teach Markers and 50 false Teach Markers per camera at a time. You need at least 30 true Teach Markers and 30 false Teach Markers per camera to teach a video analytics device.

The number of true and false Teach Markers already marked is displayed above the **Teach Markers** list.

Applying Teach Markers

NOTE: The user who assigns the Teach Markers can be different from the user who applies them to the video analytics device.

In the Teach By Example tab, you can apply Teach Markers to teach the video analytics device.

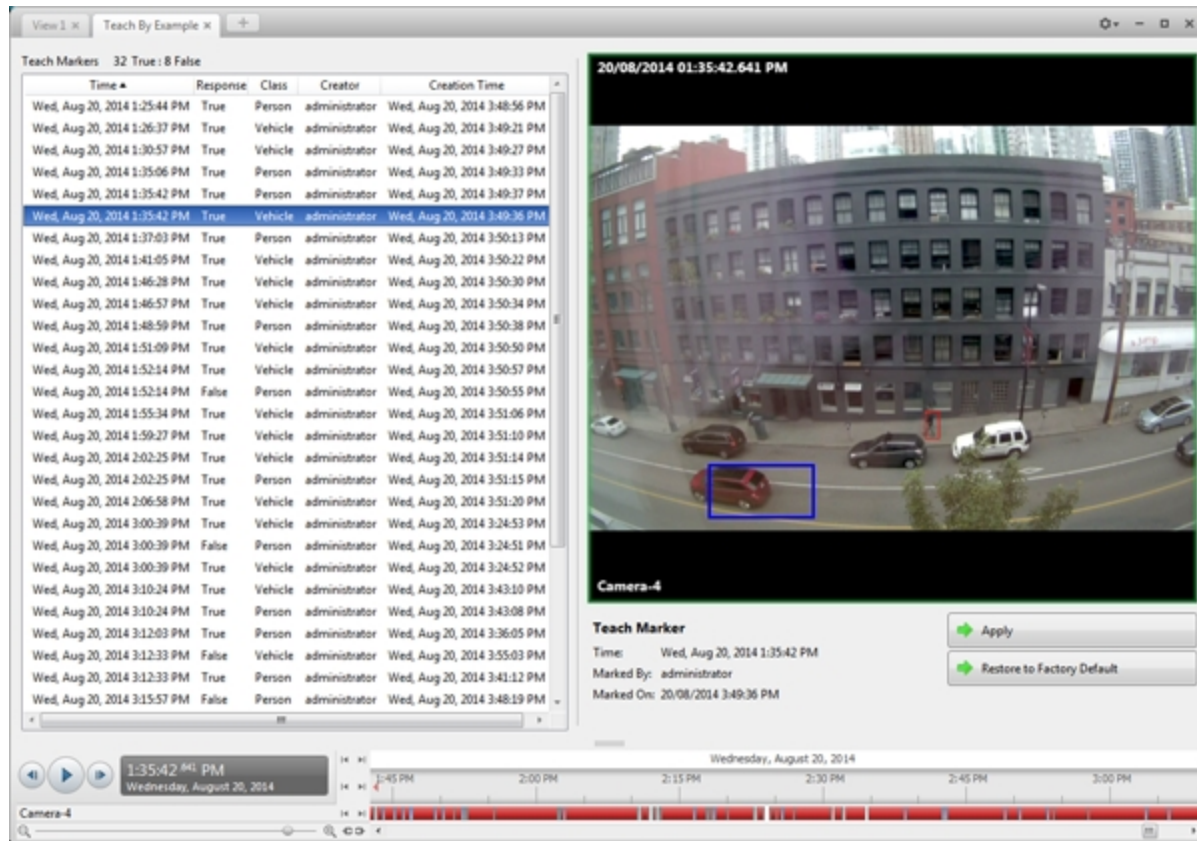


Figure 88: The Teach By Example tab

- Select a marker from the Teach Markers list to view it. The associated video is displayed in the image panel. The details are displayed below.

You can sort the Teach Markers in ascending or descending order by **Time**, **Response**, **Class**, **Creator**, or **Creation Time** by clicking the column headings.

- To apply Teach Markers to a video analytics device, click **Apply**. The video analytics device will now use the listed markers to improve its classified object detection accuracy.

NOTE: To apply Teach Markers, you need a minimum of 30 true Teach Markers and 30 false Teach Markers. If you do not have the minimum required, you will see an error message.

When you apply Teach Markers, they are removed from the Teach Markers list.

- To reset the video analytics device's teach state click **Restore to Factory Default**. This will not delete any Teach Markers from the Teach Markers list, only clear the settings that were applied to the video analytics device.

Privacy Zones

You can set privacy zones in the camera's field of view to block out areas that you do not want to see or record, like bathroom entrances and other private areas.

Adding a Privacy Zone

NOTE: You can add up to 4 privacy zones per camera.

1. In the camera Setup tab, click .
2. In the Privacy Zones dialog box, click  and a green box will appear on the image panel.

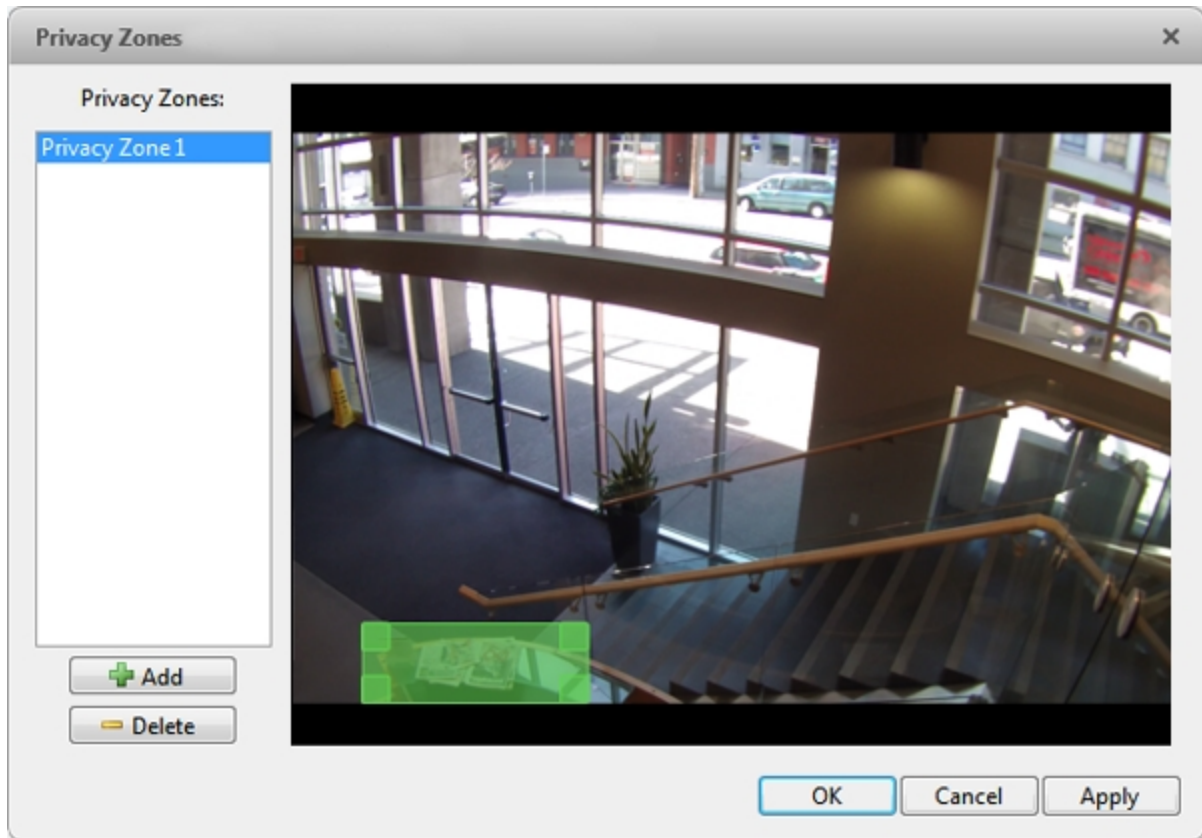




Figure 89: The Privacy Zones dialog box

3. Move and resize the green box until it covers the area you want to block out.
4. Click **OK**.

Editing and Deleting a Privacy Zone

1. In the camera Setup tab, click .
2. In the Privacy Zones dialog box, select a privacy zone from the Privacy Zones: list and do one of the following:
 - To edit the privacy zone, adjust the green box in the image.
 - To delete the privacy zone, click .
3. Click **OK** to save your changes.

Manual Recording

When you trigger manual recording in an image panel, you are telling the camera to record video outside of its recording schedule. Manual recording continues until it is stopped, or until the maximum manual recording time is reached.

To set the maximum manual recording time, follow these steps:

1. In the camera Setup tab, click .

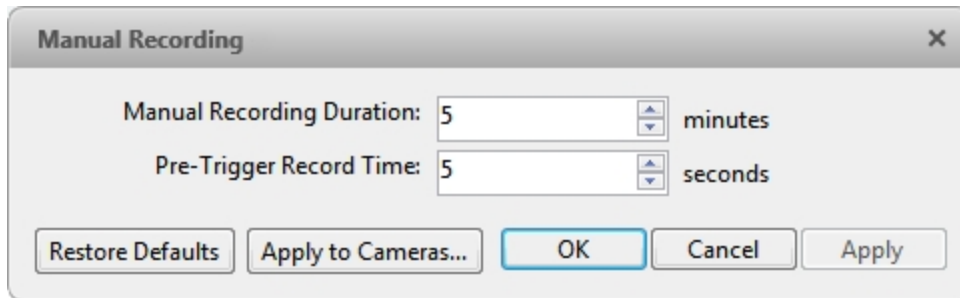


Figure 90: The Manual Recording dialog box

2. Specify the following:
 - **Manual Recording Duration:** enter how long the camera should record if recording is not manually stopped.
 - **Pre-Trigger Record Time:** enter the amount of time video is recorded before manual recording is activated.
3. Click **Apply to Cameras...** to apply the same settings to other cameras of the same model.
4. Click **OK**.


For more information on manually recording video, see [Triggering Manual Recording](#).

Digital Inputs and Outputs

Use the Digital Inputs and Outputs dialog box to set up external digital input and output devices that are connected to the device (a camera or video analytics appliance).

The external devices can be used to create alarms or trigger recording events and specific actions through the Rules engine. For more information, see [Rules](#).

Setting Up Digital Inputs

1. In the device Setup tab, click .
2. In the **Digital Inputs:** area, select an input.

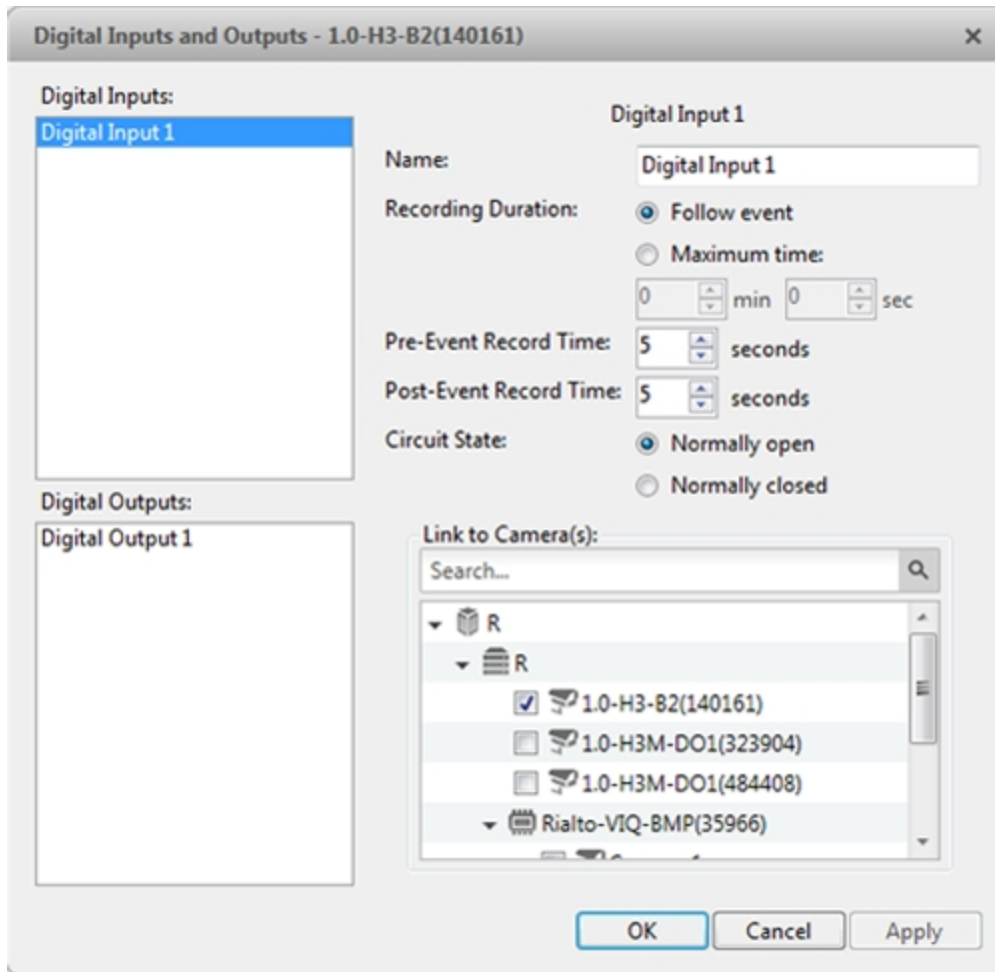


Figure 91: The Digital Inputs and Outputs dialog box

3. Enter a **Name:** for the digital input.
4. In the **Recording Duration:** area, select one of the following:
 - Select **Follow event** to record the entire digital input event.
 - Select **Maximum time:** to limit the recording time.
5. Enter the **Pre-Event Record Time:** and **Post-Event Record Time:**.
6. Select the digital input's default **Circuit State:**.
7. Select cameras to link to this digital input.

If the Recording Schedule is configured to record digital inputs, the cameras selected in the **Link to**


Camera(s): area are used to record the events triggered by this digital input.

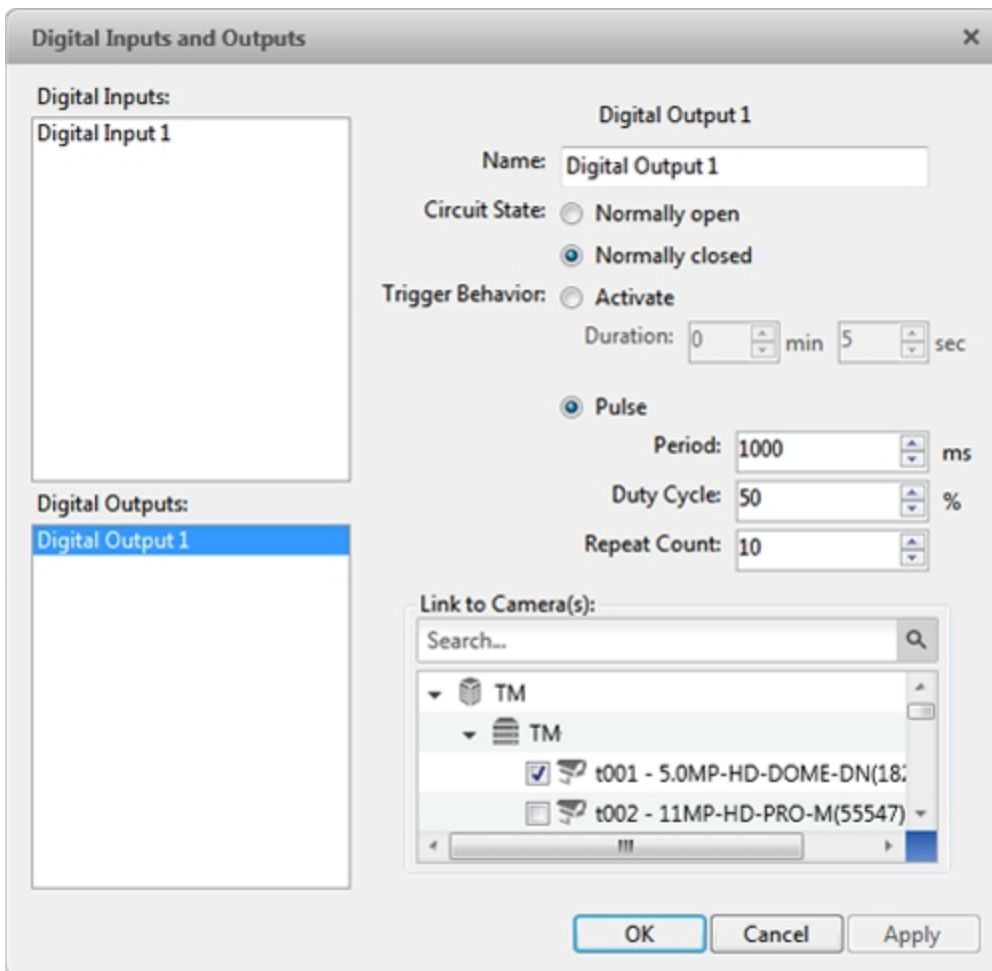
8. Click **OK**.

Setting Up Digital Outputs

Once a digital output is configured, you can manually trigger the digital output in an image panel. For more information, see [Triggering Digital Outputs](#).

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.

1. In the device Setup tab, click .
2. In the **Digital Outputs:** area, select an output.



The screenshot shows the 'Digital Inputs and Outputs' dialog box. On the left, there are two lists: 'Digital Inputs' containing 'Digital Input 1' and 'Digital Outputs' containing 'Digital Output 1'. The 'Digital Output 1' is selected. On the right, the settings for 'Digital Output 1' are displayed. The 'Name' is 'Digital Output 1'. The 'Circuit State' has two options: 'Normally open' (unselected) and 'Normally closed' (selected). The 'Trigger Behavior' has two options: 'Activate' (unselected) and 'Pulse' (selected). Below 'Pulse', there are three settings: 'Period' set to 1000 ms, 'Duty Cycle' set to 50 %, and 'Repeat Count' set to 10. At the bottom, there is a 'Link to Camera(s):' section with a search bar and a list of cameras. The list shows two cameras: 't001 - 5.0MP-HD-DOME-DN(18:' and 't002 - 11MP-HD-PRO-M(55547)'. Both are checked. At the bottom of the dialog are 'OK', 'Cancel', and 'Apply' buttons.

Figure 92: The Digital Inputs and Outputs box: Digital Output Settings

3. Enter a **Name:** for the digital output.
4. Select the digital output's default **Circuit State:**.

5. The **Trigger Behavior:** options define what occurs when the digital output is activated.
 - Select **Activate** to enable the digital output in continuous mode. The **Duration:** fields allow you to specify how long the digital output should be active for.
 - Select **Pulse** to enable the digital output in pulse mode. Specify the **Period:**, **Duty Cycle:**, and **Repeat Count:** for the pulse.
6. Alternatively, there may only be a **Trigger Duration:** field. Specify the trigger duration in minutes and seconds.
7. Select the cameras that should be linked to this digital output.

When the digital output is triggered, all the cameras linked to this digital output will begin recording.
8. Click **OK**.

Microphone

Use the Microphone dialog box to change the settings for any audio input device that is connected to a camera or video analytics appliance. You can also link the audio to other cameras.

To use this feature, a microphone must be connected to the device.

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.

1. In the device Setup tab, click .

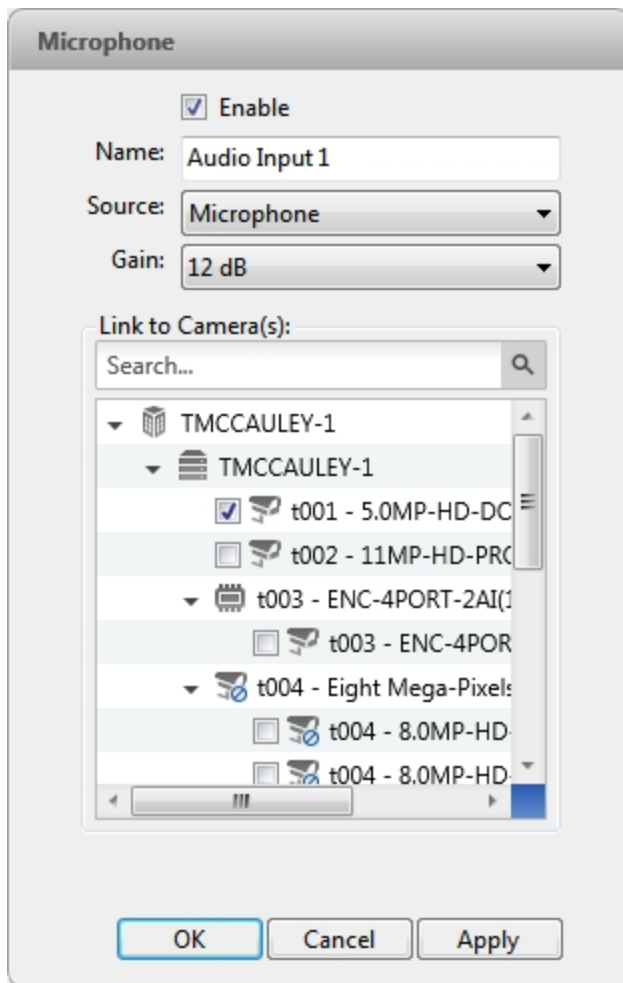


Figure 93: The Microphone dialog box

2. If multiple **Microphone Inputs:** are listed, select the one you want to edit.
3. Select the **Enable** check box to enable audio recording from microphones connected to the device.
4. Enter a name for the microphone.
5. In the **Source:** drop down list, select the audio input source.
6. In the **Gain:** drop down list, select the amount of analog gain that is applied to the audio input. The higher the dB setting, the louder the volume.
7. In the **Link to Camera(s):** area, select cameras to link to this audio.
8. Click **OK**.

Speaker

Use the Speaker dialog box to change the settings for any audio output that is connected to a device (a camera or video analytics appliance). You can also link the audio to other devices.

To use this feature, speakers must be connected to the device and a microphone must be connected to your local Client.

NOTE: The dialog box may appear differently depending on the device. Options that are not supported by the device will be disabled or hidden.

1. In the device Setup tab, click .

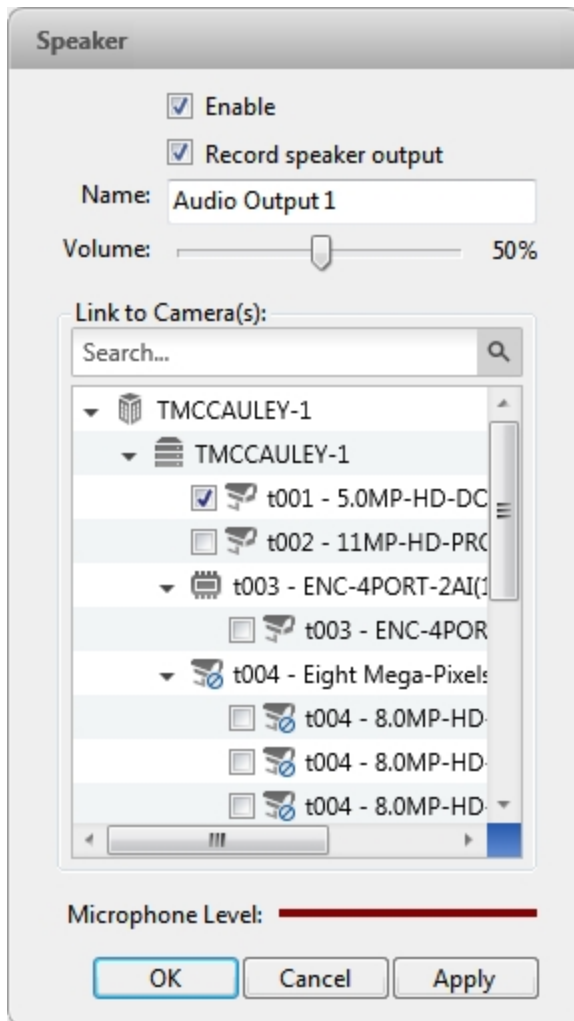


Figure 94: The Speaker dialog box

2. If multiple **Speaker Outputs:** are listed, select the one you want to edit.
3. Select the **Enable** check box to enable audio broadcasting. Speakers connected to the device will broadcast audio from the microphone that is connected to the local Client.
4. Select the **Record speaker output** check box to record what is broadcast.
5. Enter a name for the speaker.
6. The **Volume:** slider controls the volume of the speakers.
7. In the **Link to Camera(s):** area, select cameras to link to the speakers.
8. To test the **Microphone Level:**, speak into the microphone. The red bar will move to show the audio input

level.

9. Click **OK**.

If you want to enable two-way audio, see **General Settings** for the local Client.


Client Settings

The Client Settings... are used to set your preferences for your local copy of the Client software. This includes saving your password, setting the language, saving your last window layout, configuring your joystick, and manually adding and removing Sites.

General Settings

Use the General settings to set your local Client preferences. Any changes you make will only affect this copy of the Client software.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

1. In the top-right corner of the Client, select  > **Client Settings....**
2. In the General tab, make any required changes:

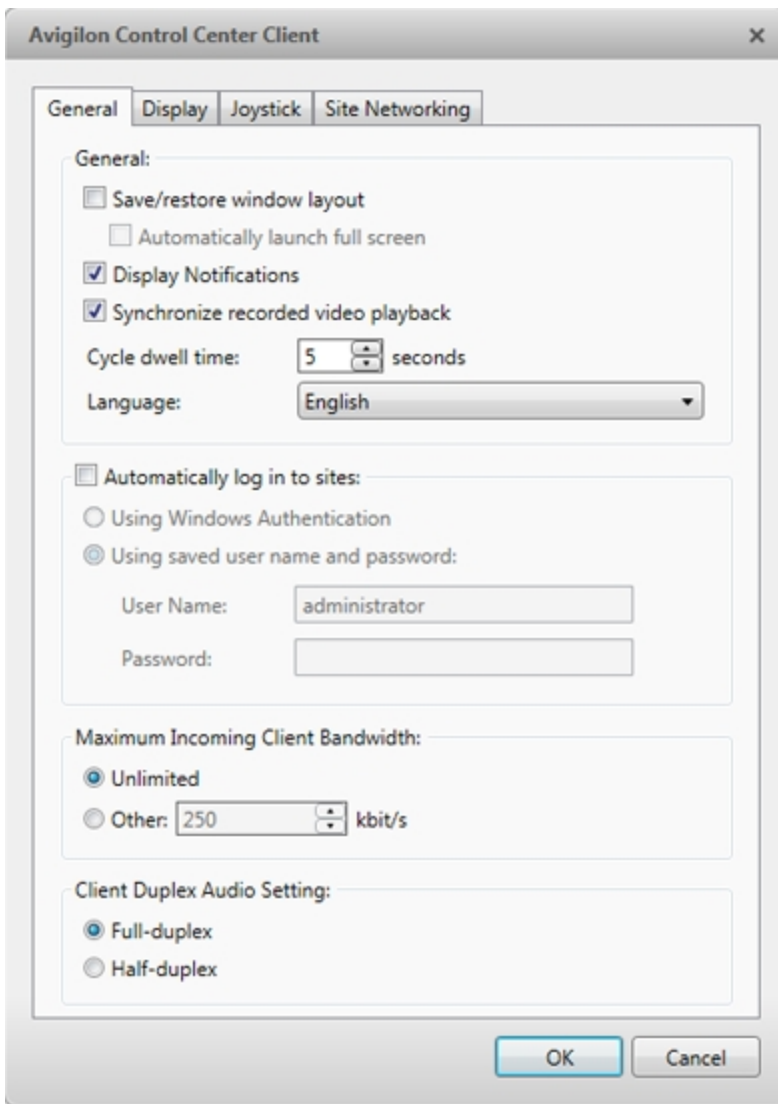


Figure 95: The Client Settings... dialog box

- **Save/restore window layout:** Select this check box if you want the Client to remember your layout preferences.
- **Automatically launch full screen:** Select this check box if you want the Client to automatically launch in full screen mode each time it starts.
- **Display Notifications:** Select this check box if you want the Client to display system messages. System messages are listed in the red box at the top-right corner of the Client - click the red box to see the messages. System messages notify you of Site events, system events and possible device connection issues.

If this check box is cleared, all system messages are hidden.

- **Cycle dwell time:** Enter the number of seconds the Client waits before it cycles to a different View tab. For more information, see [Cycling Through Views](#).

- **Language:** Select a language from the drop down list to change the Client language. Select **Windows Default** for the Client to use the same language as the operating system.
- **Automatically log in to sites:** Select this check box to automatically log in to all Sites you can access. Select the type of login you use:
 - Select **Using Windows Authentication** if you use your Windows login to access Sites.
 - Select **Using saved user name and password:** if you use your Avigilon Control Center username and password.
- In the **Maximum Incoming Client Bandwidth:** area, you can set how much bandwidth is received by the client. This includes video streaming.

You can select **Unlimited** or **Other:**, and specify the maximum bandwidth allowance in kilobits per second (kbit/s).

- In the **Client Duplex Audio Setting:** area, decide if you want to enable two-way audio. This allows people in the video to talk with the operator monitoring the video.

You have the option of **Full-duplex** audio, which allows simultaneous communication, or **Half-duplex**, which only allows communication from one side at a time. To use this feature, you need to set up microphones and speakers to cameras. For more information, see [Microphone](#) and [Speaker](#).

3. Click **OK** to save your changes.

Joystick Settings


There are two types of joysticks supported by the Client: standard Microsoft DirectX USB joysticks and the Avigilon USB Professional Joystick Keyboard.

Access the Joystick settings to install the required drivers and configure your joystick options.

Configuring an Avigilon™ USB Professional Joystick Keyboard For Left-Hand Use

The Avigilon USB Professional Joystick Keyboard is a USB add-on that contains a joystick for controlling zooming and panning within image panels, a jog shuttle for controlling the Timeline, and a keypad programmed with the Client's keyboard commands. Refer to [Keyboard Commands](#) for the keypad commands that control the Client.

By default, the keyboard is installed in right-hand mode. Change the Joystick settings to configure it for left-hand mode.

1. Connect the keyboard.
2. In the top-right corner of the Client, select  > **Client Settings...** > **Joystick**.

If the keyboard is not automatically detected, an error message will appear. Click **Scan for Joysticks...**

Otherwise, the following option is displayed.

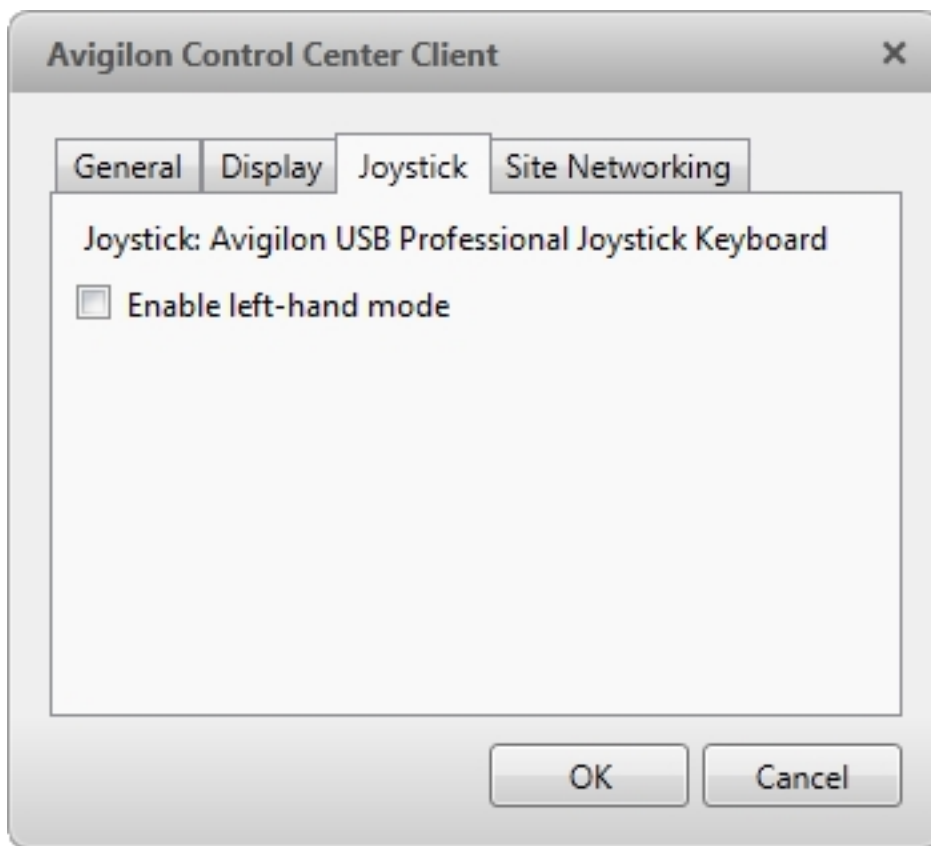



Figure 96: The Joystick dialog box

3. Select the **Enable left-hand mode** check box.
4. Click **OK**. The keyboard is now configured for left-hand mode.
5. Rotate the keyboard until the joystick is on the left and the jog shuttle is on the right. Reinstall the keypad cover with the View button labels at the top.

For more information about the Avigilon USB Professional Joystick Keyboard, see the installation guide included with the device.

Configuring a Standard USB Joystick

Use the Joystick settings to configure the buttons used in your standard Microsoft DirectX USB joystick.

1. Connect the joystick. In the top-right corner of the Client, select  > **Client Settings** > **Joystick**.
2. If the joystick is not automatically detected, an error message will appear. Click **Scan for Joysticks....**

Otherwise, the following options are displayed:

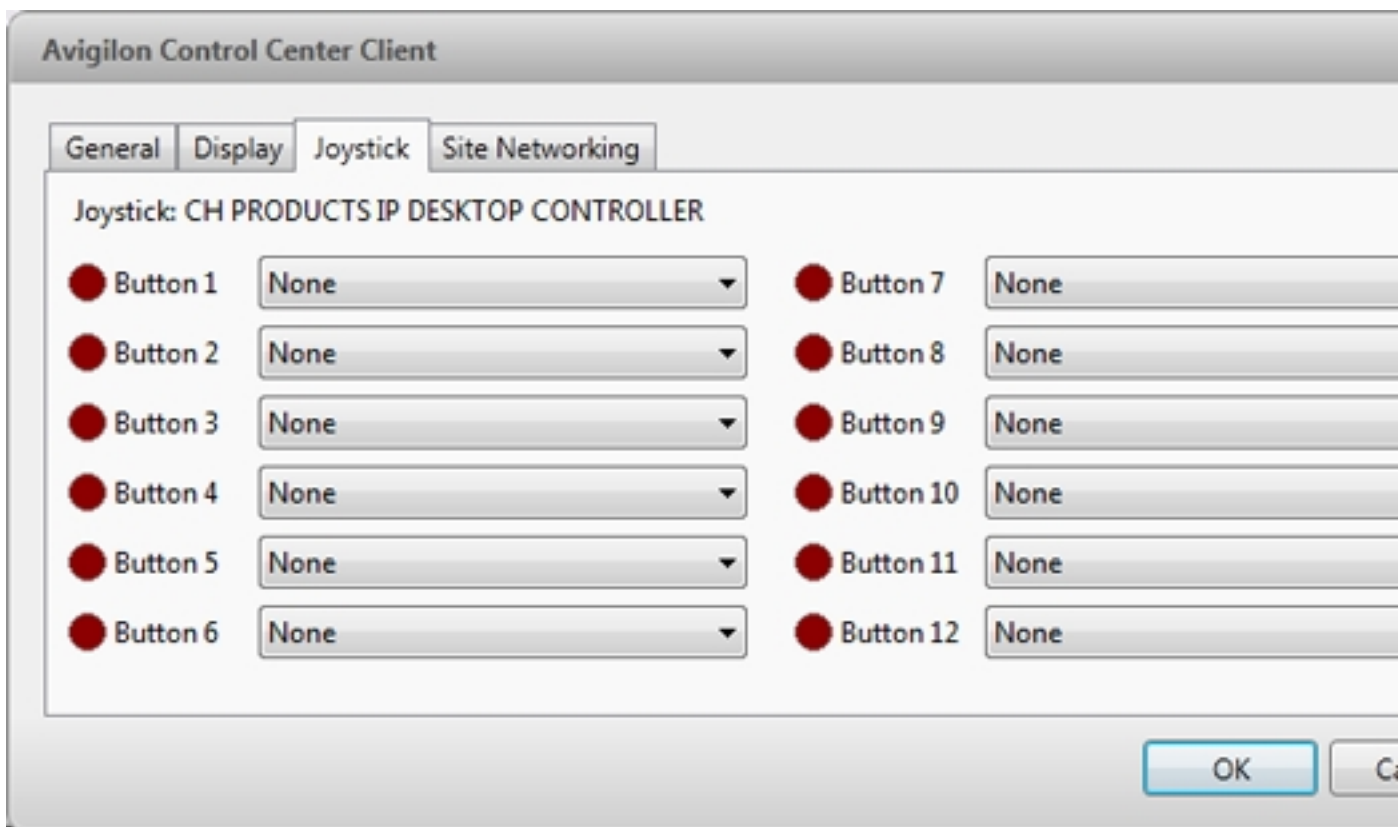



Figure 97: The Joystick dialog box

3. Choose an action for each button on the joystick:
 - a. Press a button on the joystick to highlight its label in the dialog box.
 - b. Select an action for the button from the drop down list.
Options include ways to control recorded video, Views, image panels, instant replay, audio, snapshots and PTZ.
 - c. Repeat this procedure for each button on the joystick.
4. Click **OK**.

Video Display Settings

You can adjust the Client Display settings to improve how video is displayed on your monitor.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

1. In the top-right corner of the Client, select  > **Client Settings...** > **Display**.

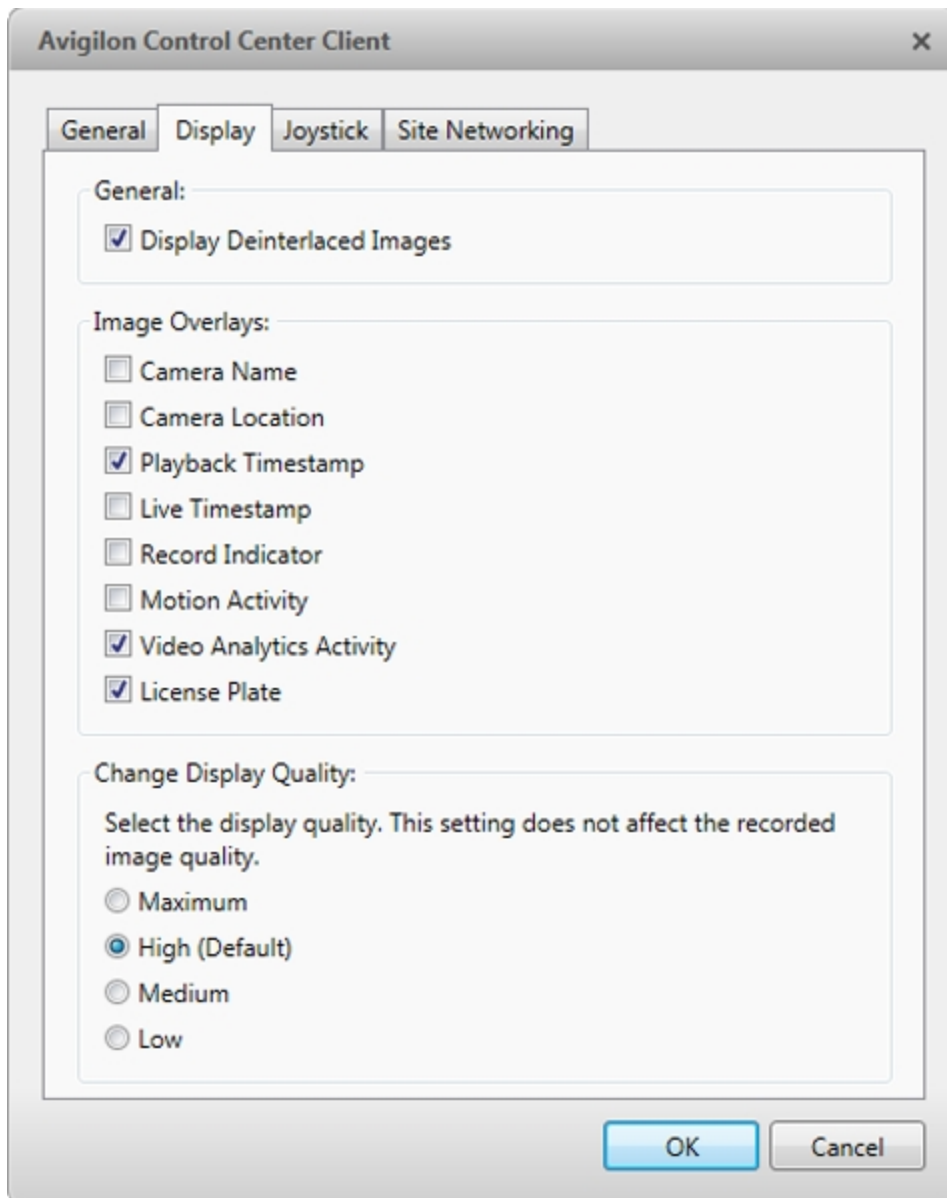


Figure 98: The Display Settings tab




2. Follow any of the following procedures to adjust how video is displayed in image panels.

Displaying Analog Video in Deinterlaced Mode

Select the **Display Deinterlaced Images** check box if the analog video you are watching is showing interlacing artifacts. This setting will help improve video image and smooth out some of the artifacts.

Displaying Image Overlays

Select any of the Image Overlays: options to set the type of information that is displayed over video.

Overlay	Description
Camera Name	Displays the name assigned to the camera.
Camera Location	Displays the location assigned to the camera.
Playback Timestamp	(Recorded video only) Displays the exposure timestamp for the video.
Live Timestamp	(Live video only) Displays the current system date and time to the millisecond.
Record Indicator	<p>(Live video only) Displays the recording status of a camera.</p> <p>The recording status is indicated by the round icon on the top left corner of the image panel. The color of the icon shows the camera's recording status.</p> <ul style="list-style-type: none">  : recording triggered by a motion event  : recording  : not recording. Click this icon at any time to begin manual recording.
Motion Activity	Highlights motion in red.
Video Analytics Activity	<p>Bounding boxes outline objects detected in the video. The color of the bounding box identifies the object type:</p> <ul style="list-style-type: none"> Red - a person Blue - a vehicle <p>The Video Analytics Activity overlay is only activated for video from a video analytics device.</p>
License Plate	<p>(Live video only) Displays license plate numbers as they are detected.</p> <p>NOTE: This feature is only available if the <i>License Plate Recognition</i> feature is installed.</p>

Changing Display Quality

If your computer does not have enough network bandwidth or processing power, you may not be able to watch video at its full image rate and quality. You can configure the image panels to display video in high quality and low frame rate, or low quality and high frame rate.

Select a higher display quality setting if you need to see specific details or faces in the scene. Select a lower display quality setting if it's more important to see moving events as they occur.

The Change Display Quality: settings only affect the image panel display and do not affect the actual video quality or image rate between the camera and the server. Therefore, you can review recorded footage later to confirm what you saw in the image panel.

In the Change Display Quality: area, select one of the following options:

- **Maximum:** displays video at full resolution with the lowest image rate.
- **High (Default):** displays video at 1/4 resolution.
- **Medium:** displays video at 1/16 resolution.
- **Low:** displays video at 1/64 resolution with the highest image rate.

What are Views?

A View tab is where you watch camera video. Inside the View tab is a set of image panels that allows you to organize how video is displayed.

You can arrange image panels into different layouts to take advantage of different camera angles and save View layouts that you like.






You can share Views with other users during investigations, and organize how video is displayed across multiple monitors.

For more information on controlling live and recorded video, see [Monitoring Video](#).

Adding and Removing a View

View tabs allow you to customize how you monitor video. You can open a new View in the current window or open a View in a new window to make use of multiple monitors. Views can also be removed as required.

If you want to make use of a large number of monitors, like a video wall, see [Virtual Matrix](#).

To...	Do this...
Open a new View tab	Click  >  .
Close a View tab	On the View tab, click  .
Open a new window	Select  > New Window A new window appears. You can now position this window to make use of multiple monitors.
Close a window	In the top-right corner of the window, click  . NOTE: If you see a confirmation dialog box, it is because there is only one window open and closing this window will also close the application.


View Layouts

You can organize how video is displayed through View layouts. You can choose to display video in 1 - 64 image panels. You can also customize the shape of image panels to accommodate cameras that are installed vertically to capture long hallways.

There are 10 pre-configured layouts that you can edit to fit your needs.

Selecting a Layout for a View

You can organize how video is displayed by selecting a View layout. The figure below shows the default View layouts.

- On the toolbar, select , then select one of the following layout options.

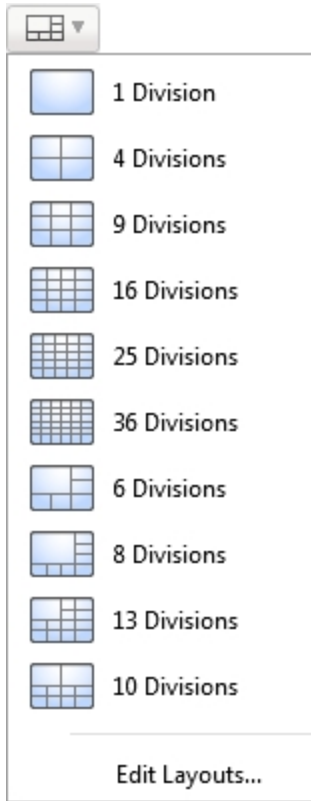


Figure 99: Layouts in the toolbar

Editing a View Layout

If the default View layouts do not fit your surveillance requirements, you can customize a View layout.

1. On the toolbar, select  > **Edit Layouts....**

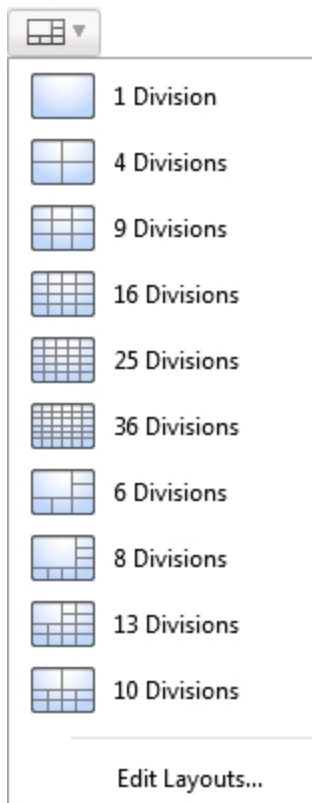


Figure 100: Layouts in the toolbar

2. In the Edit Layouts dialog box, select the layout you want to change.
3. Enter the number of **Columns:** and **Rows:** you want in your layout.

4. In the layout diagram, do any of the following to further customize the layout.

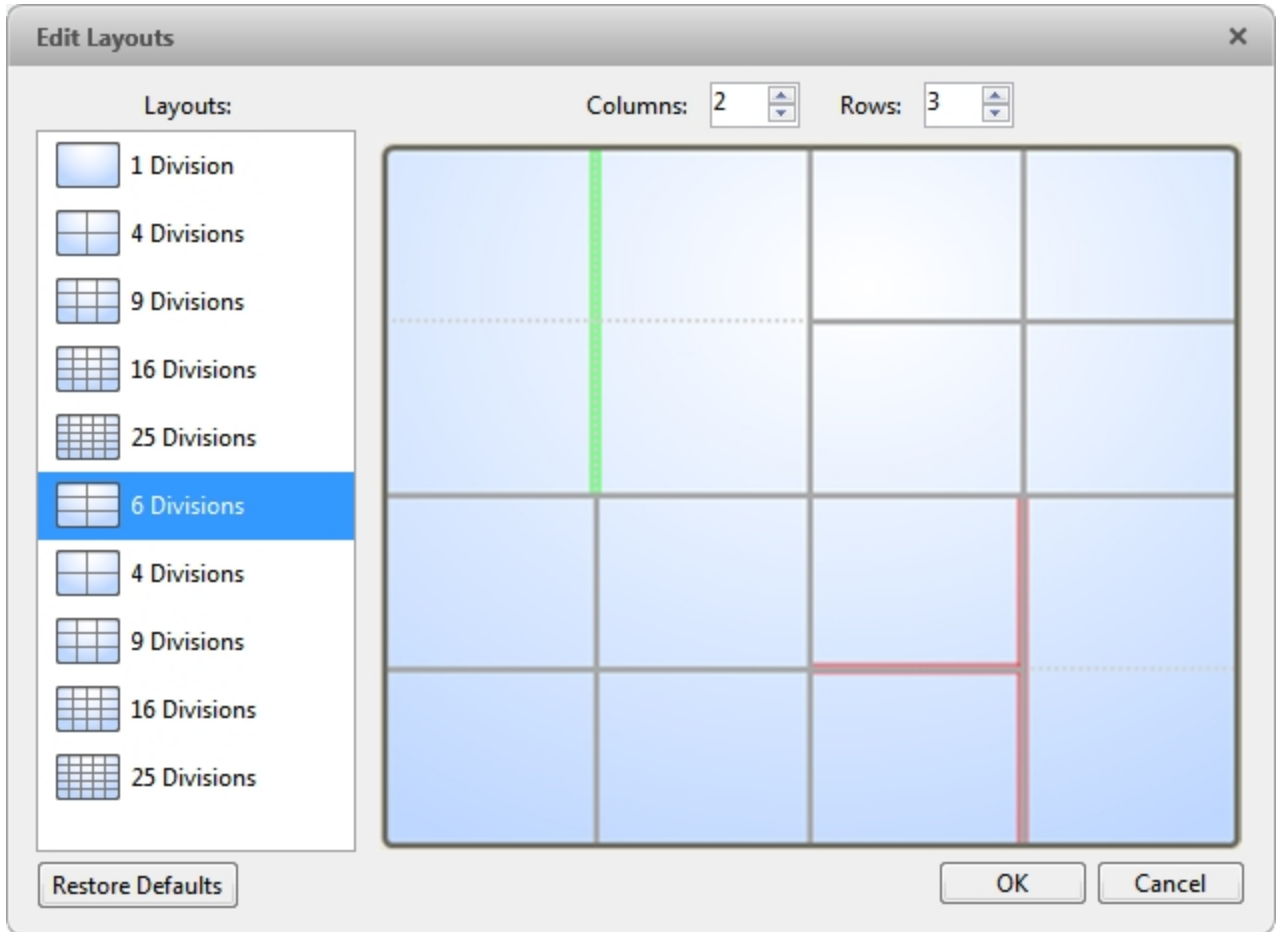


Figure 101: The Edit Layouts dialog box

- To create a larger image panel, select a gray line to delete the border between two image panels. When a line is highlighted in red, the line can be deleted.
- To restore an image panel, select a dotted line to divide a larger image panel into two. When a dotted line is highlighted in green, the line can be restored.
- To restore all default View layouts, click **Restore Defaults**. All custom layouts in the Layouts: list will be replaced.


NOTE: You can only add or subtract lines to create a rectangular shape.

5. Click **OK** to save your changes. The previous View layout has been replaced with your customized layout.


Tip: The keyboard commands used to access View layouts are linked to the layout's position in the Layouts: list. For example, if your custom layout is placed at the top of the Layouts: list (layout 1), you can press Alt + 1 to use that layout.

Making a View Full Screen

You can maximize a View to fill an entire monitor screen.

- On the toolbar, click .

Ending Full Screen Mode

- While the View is in full screen mode, click .

Cycling Through Views

If you have multiple Views open, you can cycle through the View tabs by displaying each one for a few seconds. This is useful when monitoring a large number of cameras.


- To activate the Cycle Views feature, click .

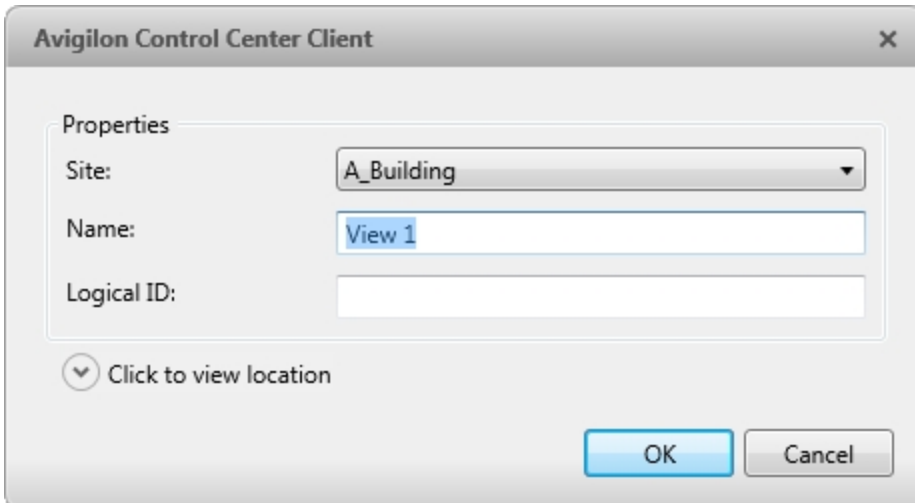
To change the amount of time each View is displayed for, change the Cycle dwell time: setting. For more information, see [General Settings](#).

Saved Views

Once you have set up a View you like, you can save the View to share with other users in the Site. A saved View remembers the current View layout, the cameras displayed in each image panel, and the image panel display settings.


Saving a View

1. In the toolbar, click .
2. In the dialog box which appears, complete the following:



The image shows a dialog box titled "Avigilon Control Center Client" with a close button (X) in the top right corner. Inside the dialog, there is a section labeled "Properties" containing three fields: "Site:" with a dropdown menu showing "A_Building", "Name:" with a text box containing "View 1", and "Logical ID:" with an empty text box. Below these fields is a button with a dropdown arrow and the text "Click to view location". At the bottom right of the dialog are two buttons: "OK" and "Cancel".

Figure 102: Edit View dialog box

- a. Select the Site that the View should be added to.
- b. Give the saved View a name.
- c. Assign a **Logical ID**: to the View. The logical ID is a unique number that is used to open the saved View through keyboard commands.
- d. Click  to choose where the saved View appears in the System Explorer.
 - If your Site includes virtual sub-sites, select a location for the saved View. The list on the right updates to show what is stored in that directory.
 - In the Site directory, drag the saved View up and down to set where it is displayed.
- e. Click **OK**.


Your saved View is added to the System Explorer under the selected Site. You can now manage the saved View as a part of your Site.

Opening a Saved View

Do one of the following

- In the System Explorer, double-click the saved View.
- In the System Explorer, right-click the saved View and select **Open**.
- Drag the saved View from the System Explorer to the current View in the application or new window.

Editing a Saved View

1. Open a saved View.
2. Make any required changes to the View tab.
3. Click .

Renaming a Saved View

1. In the System Explorer, right-click the saved View and select **Edit...**
2. In the Edit View dialog box, enter a new name or logical ID and click **OK**.


Deleting a Saved View

1. In the System Explorer, right-click the saved View and select **Delete**.
2. In the confirmation dialog box, click **Yes**.

Collaborating

If you want to show another user an incident or need help investigating an event, you can share your current View with another user. You will both be able to control the View and show each other your findings.

Sharing a View

1. In the toolbar, click .
2. In the following dialog box, select the user you want to collaborate with, then click **OK**.

The users are listed by username and computer name. The computer name is used to help you identify a specific user if the username is shared by several people. Only users who are currently logged in to the Site are displayed.

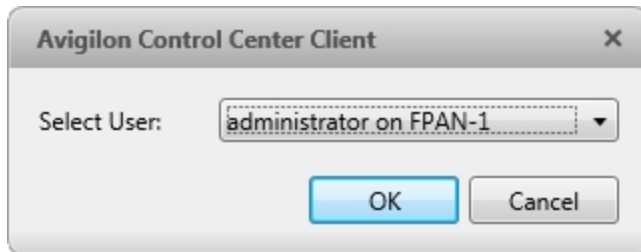


Figure 103: The Select User: dialog box

- a. The user you select will see a pop-up message with your invitation to collaborate and may choose to accept or decline.
- b. You will receive a pop-up message with the user's response to your invitation.

If they say Yes, the View you are looking at is automatically opened as a new tab in your collaborator's window.

3. Repeat this procedure to collaborate with multiple users.

While you are collaborating, any changes made to the current View by a collaborator are shared with the other collaborators. Anything that you can do in a standard View can be done in a shared View.

Leaving a Shared View


- To leave a shared View, just close the View tab. The remaining users stay in collaboration mode.

Virtual Matrix

The optional Virtual Matrix feature allows you to control the View displayed on multiple monitors, or a video wall, from any instance of the application. To use this feature, the Virtual Matrix software must be installed on the system that all the displays are connected to.

A copy of the Virtual Matrix software can be downloaded from the Avigilon website.

For more information about the Virtual Matrix software, see *The Avigilon Control Center Virtual Matrix User Guide*.

Once the Virtual Matrix has been installed and loaded, the monitors connected to the system are automatically added to a Site. All monitors linked by the Virtual Matrix software are displayed in the System Explorer as  followed by the monitor name.

Adding and Removing Virtual Matrix Monitors



You can only add or remove Virtual Matrix monitors through the Virtual Matrix software.

For more information, see the *Avigilon Control Center Virtual Matrix User Guide*.

Controlling Virtual Matrix Monitors

In the System Explorer, each  represents a View that is displayed on a connected Virtual Matrix monitor.

To control what is displayed on each Virtual Matrix monitor, you need to open the monitor:

- In the System Explorer, right-click  and select **Open**.
- Double-click or drag  from the System Explorer to the current View.

The Virtual Matrix monitor is opened in a new tab and can be controlled like any View -- you can change the View layout, control video display, and use any active PTZ controls. The changes you make should automatically appear on the Virtual Matrix monitor.

When you are done, you can close the Virtual Matrix monitor tab. The monitor will continue to display the View you have configured until you make new changes or the Virtual Matrix is shut down.

Monitoring Video

Inside a View tab, you can monitor and control video from multiple cameras. Once you open a camera in a View tab, you can control the camera's live and recorded video stream. You also have access to the camera's PTZ controls, connected audio devices, digital outputs, and other playback settings.

To organize how video is displayed in the View tab, see [What are Views?](#).



NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

Zooming and Panning in a Video

Use the zoom and pan tools to focus on specific areas in the live or recorded video stream.


Using the Zoom Tools

There are two ways to digitally zoom in and zoom out of a video image:

- Move your mouse over the video image, then rotate your mouse wheel forward and backward.
- On the toolbar, select  or , then click the image panel until you reach the desired zoom depth.

Using the Pan Tools

There are two ways to pan through the video image:


- Right-click and drag inside an image panel
- On the toolbar, select , then click and drag the video image in any direction inside the image panel.

Maximizing and Restoring an Image Panel

You can maximize an image panel to enlarge the video display.


Maximizing an Image Panel

Do one of the following:

- Right-click an image panel and select **Maximize**.
- Inside the image panel, click .
- Double-click the image panel.

Restoring an Image Panel

In a maximized image panel, do one of the following:

- Right-click the maximized image panel and select **Restore Down**.
- Inside the image panel, click .
- Double-click the image panel.

Making Image Panel Display Adjustments

You can change the image panel display settings to bring out video details that are hard to see with the image panel's default settings.

1. Right-click an image panel and select **Display Adjustments...**

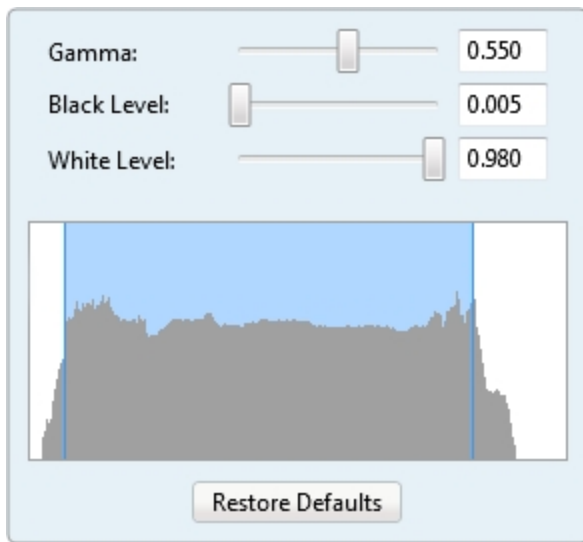


Figure 104: The Display Adjustments... panel


The Display Adjustments... settings are displayed in a floating pane immediately beside the image panel.


2. Move the sliders to adjust the **Gamma**:, **Black Level**: and **White Level**:

The image panel displays a preview of your changes.


3. Click **Restore Defaults** to clear your changes.

Listening to Audio in a View

If there is an audio input device linked to a camera, the  button is displayed in the image panel when you watch the camera's video. To listen to the streaming audio, make sure there are speakers connected to your computer. By default the audio is muted.

The camera's microphone must be enabled before you can listen to any audio. The  button is not displayed if the microphone is disabled.

To control audio playback, do any of the following:

- In the lower-right corner of the image panel, click  to mute or activate the audio.
- Move the slider to change the volume.

To enable the camera's microphone, see [Microphone](#) for more information.

Triggering Custom Keyboard Commands

If your system has custom keyboard commands set up to run specific rule events, you can activate the keyboard commands by doing the following:



1. Press **Ctrl + K** on your keyboard.
2. Enter the custom keyboard command number to begin running the rule event.


Consult your system administrator for details about the custom keyboard commands that are available in your system. Custom keyboard commands are set up as rule events through the Rules engine. For more information about setting up rule events, see [Rules](#).


Controlling Live Video

In this section are features that are only available while monitoring live video.

Broadcasting Audio in a View

If there are speakers linked to a camera, the  button is displayed in the image panel when you watch the camera's video. The  button allows you to broadcast your verbal response to what is occurring in the video, like a Public Address (P.A.) system.

The camera's speakers must be enabled before you can broadcast any audio. The  button is not displayed if the speakers are disabled.

- To broadcast audio, hold  and speak into your microphone. The red bar moves to show the microphone's audio input levels. If the level is low, speak louder or adjust the microphone volume in the Windows Control Panel.
- Release the button to stop the broadcast.

To set up two-way audio, see [General Settings](#).

To enable the camera's speakers, see [Speaker](#) for more information.

Using Instant Replay

To review an event that just occurred, you can immediately access recently recorded video through the instant replay feature.

- Right-click the image panel and select one of the instant replay options:
 - **Replay - 30 Seconds**
 - **Replay - 60 Seconds**
 - **Replay - 90 Seconds**

The image panel immediately plays back the camera's most recently recorded video.

PTZ Cameras

PTZ cameras can be controlled through the image panel on-screen controls or by using the tools in the PTZ Controls pane.



Some tools and features may not be displayed if they are not supported by your camera.

Controlling PTZ Cameras

Pan, Tilt, Zoom (PTZ) controls allow you to control cameras with PTZ features. You can control a PTZ camera by using the on-screen controls or by using the tools in the PTZ Controls pane.

For other ways to use the PTZ Controls, see [Keyboard Commands](#).

NOTE: For video analytics devices, classified object detection only works when the camera is in its Home position.

1. In the toolbar, click . PTZ controls are now enabled in image panels that are displaying PTZ video.
2. In the image panel, click .

The PTZ Controls are displayed in a floating pane immediately beside the image panel.

NOTE: The controls may appear differently depending on the camera. Some options are disabled or hidden if they are not supported by the camera.

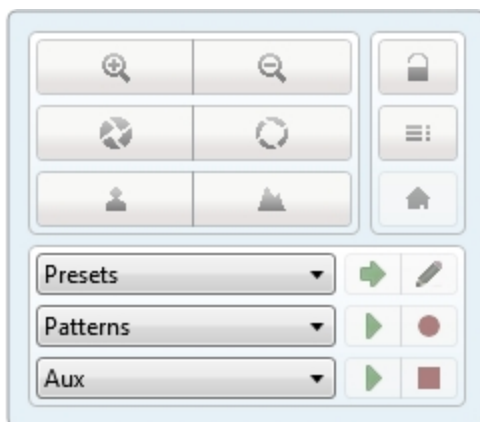


Figure 105: The PTZ Controls








3. To pan or tilt, do one of the following:
 - In the image panel, drag your mouse from the center to move the camera in that direction. The farther the cursor is from the center of the image panel, the faster the camera will move.















- If the camera supports Click to Center, click anywhere on the image panel to center the camera to that point.



Figure 106: PTZ On-screen controls

4. Use the other PTZ controls to perform any of the following:

To...	Do this...
Zoom	<ul style="list-style-type: none"> • Click  to zoom in. • Click  to zoom out. • Click the image panel and use the mouse scroll wheel to zoom in and out. • If the camera supports Drag to Zoom, click and drag to create a green box to define the area you want to zoom in and see. • Right-click the image panel and select Zoom Out Full.
Control the iris	<ul style="list-style-type: none"> • Click  to close the iris. • Click  to open the iris.
Control the focus	<ul style="list-style-type: none"> • Click  to focus near the camera. • Click  to focus far from the camera.
Program a PTZ preset	<ol style="list-style-type: none"> 1. Move the camera's field of view into position. 2. In the Presets drop down list, select a number then click . 3. In the dialog box, enter a name for the preset.


To...	Do this...
	<ol style="list-style-type: none"> 4. Select the Set as home preset check box if you want this to be the camera's Home preset. 5. Click OK.
Activate a PTZ preset	Select a preset then click  .
Return to the Home preset position	If the PTZ camera supports a Home preset position, click  to return the camera to its Home position.
Program a PTZ pattern	<ol style="list-style-type: none"> 1. In the PTZ Controls pane, select a pattern number and click . 2. Use the PTZ controls to move the camera and create the pattern. 3. Click  to stop recording the pattern.
Activate a PTZ pattern	<p>In the PTZ Controls pane, select a pattern number and click .</p> <p>The pattern will repeat until the pattern is stopped or another pattern is run.</p>
Program a PTZ tour	For more information, see Programming PTZ Tours .
Activate a PTZ tour	<p>In the PTZ Controls pane, select a tour number and click .</p> <p>The tour will repeat until stopped or until other PTZ controls are used.</p>
Activate an auxiliary command	<ol style="list-style-type: none"> 1. Select an aux command number and click . 2. Click  to turn off the auxiliary output.
Display the PTZ camera on-screen menu	<ol style="list-style-type: none"> 1. Click . 2. To move through the menu options, click any of the following: <ul style="list-style-type: none"> • Click  to move down the options. • Click  to move up the options. • Click  to confirm your selection. • Click  to cancel your selection.
Lock the PTZ controls	<p>Click .</p> <p>Other users will be unable to use the PTZ controls for this camera until you unlock the controls or log out.</p>

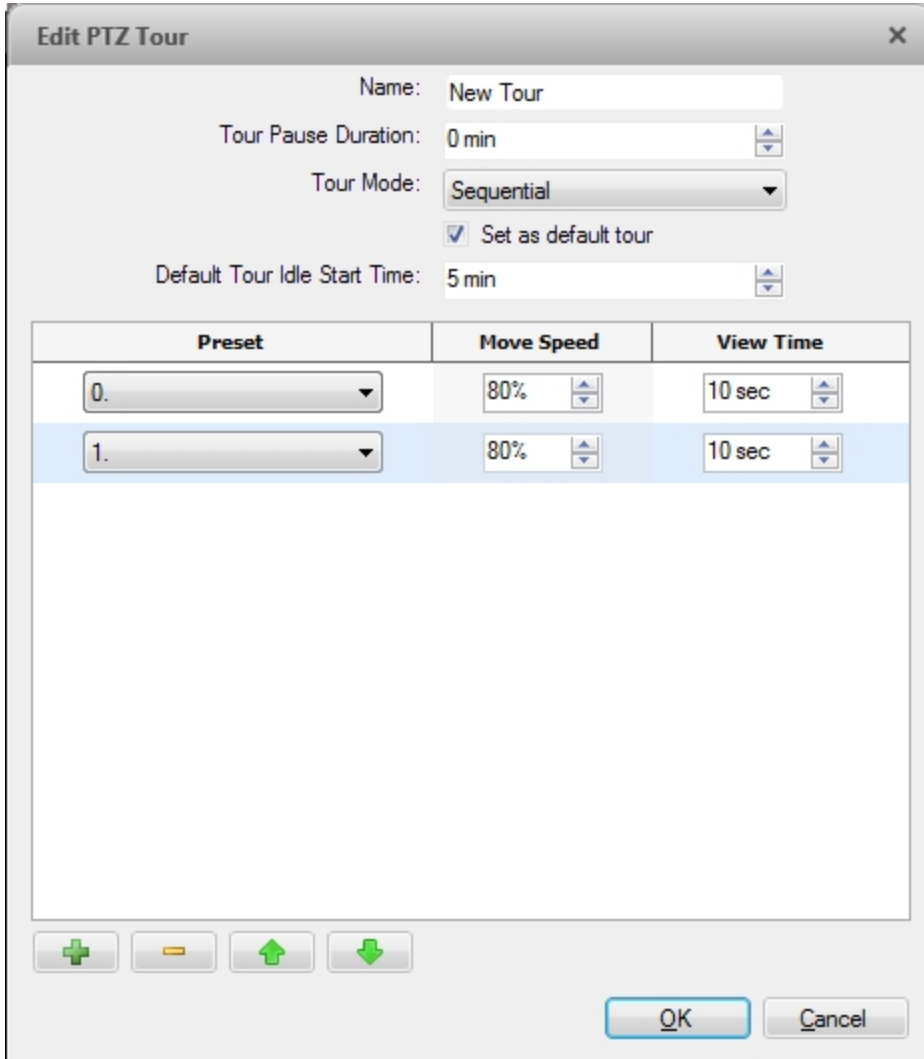
Programming PTZ Tours

If the PTZ camera supports guard tours, the tours can be programmed through the PTZ controls pane. Tours allow the PTZ camera to automatically move between a series of preset positions, and can be set to pause at

each preset for a specific amount of time for video monitoring.

NOTE: For video analytics devices, classified object detection only works when the camera is in its Home position.

1. Create all the PTZ presets you need for this tour.
2. In the PTZ Controls pane, select a tour number then click . The Edit PTZ Tour dialog box is displayed.







The 'Edit PTZ Tour' dialog box is shown. It has a title bar with a close button. Inside, there are several fields: 'Name' (text box with 'New Tour'), 'Tour Pause Duration' (spin box with '0 min'), 'Tour Mode' (dropdown menu with 'Sequential'), a checked checkbox for 'Set as default tour', and 'Default Tour Idle Start Time' (spin box with '5 min'). Below these is a table with three columns: 'Preset', 'Move Speed', and 'View Time'. The table has two rows: one with '0.' in the preset column, '80%' in the move speed column, and '10 sec' in the view time column; the second row is highlighted in blue and contains '1.', '80%', and '10 sec'. At the bottom of the table are four buttons: a green plus sign, a yellow minus sign, a green up arrow, and a green down arrow. At the bottom right are 'OK' and 'Cancel' buttons.

Preset	Move Speed	View Time
0.	80%	10 sec
1.	80%	10 sec

Figure 107: The Edit PTZ Tour dialog box

3. In the Edit PTZ Tour dialog box, give the tour a name.
4. In the **Tour Pause Duration:** field, enter the amount of time before a tour repeats. Tours repeat until manually stopped, or until other PTZ controls are used.
5. In the **Tour Mode:** drop down list, select one of the following:
 - **Sequential:** the PTZ camera will go to each preset in the set order.
 - **Random:** the PTZ camera will go to each preset in random order.

6. Select the **Set as default tour** check box if you want this tour to run automatically.
 - The **Default Tour Idle Start Time:** field is now enabled. Enter the amount of time the PTZ camera must be idle before this tour automatically starts.
7. To add a preset to the list, click .
 - a. In the **Preset** column, select a preset from the drop down list.
 - b. In the **Move Speed** column, enter how fast you want the PTZ camera to move to this preset. The higher the %, the faster the camera moves.
 - c. In the **View Time** column, enter the amount of time you want the PTZ camera to stay at this preset position. The view time is 10 seconds by default.
 - d. Repeat step 7 until all the presets for this tour have been added.
8. To remove a preset, select the preset then click .
9. To re-order a preset, select the preset then click  or . The preset order only affects tours that use Sequential mode.
10. Click **OK** to save the tour.

Triggering Manual Recording

Cameras are set to follow a recording schedule. If an event occurs outside the camera's recording schedule, you can click the record indicator icon to force the camera to record the event. For more information about recording schedules, see [Recording Schedule](#).



The Record Indicator overlay must be enabled to use manual recording. For more information, see [Video Display Settings](#).

Camera Recording States

		
Recording	Recording triggered by an event	Not recording

Starting and Stopping Manual Recording

In an image panel that is displaying video, do either of the following:

- In the top-left corner of the image panel, click  to start manual recording.
 The recording indicator is highlighted in blue to show that the camera is recording. Manual recording continues until it is stopped or until the maximum manual recording time is reached.
- Click  to manually stop video recording.


The maximum manual recording time is configured in the Manual Recording dialog box. For more information, see [Manual Recording](#).

Triggering Digital Outputs

While you monitor live video in an image panel, you can manually trigger any digital output that is connected to the camera.


Digital outputs are configured in the Digital Inputs and Outputs dialog box. For more information, see [Setting Up Digital Outputs](#).

To trigger a digital output:

1. Open the camera's live video in an image panel.
2. In the image panel, click .
3. If there is more than one digital output linked to the camera, you will be prompted to select the digital output you want to trigger.

Monitoring Live POS Transactions


If a camera is linked to a point of sale (POS) transaction source, you can monitor live POS transactions while you monitor video from the linked camera.

1. Open the camera's video in an image panel.
2. In the image panel, click .

NOTE: If the camera is not linked to a POS transaction source, the icon is not displayed.

If there is more than one POS transaction source linked to the camera, you will be prompted to select one. The POS transactions are displayed in the next image panel.

Each transaction is separated by date and time, and the most recent transaction is highlighted in blue.

3. To display cameras that are linked to the POS transaction source, click  in the POS transaction image panel.

If multiple cameras are connected to the POS transaction source, you will be prompted to select one.

Controlling Recorded Video

In this section are features that are only available while monitoring recorded video.

Playing Back Recorded Video

The Timeline displays when video was recorded and lets you control video playback.

The colored bars on the Timeline show the camera's recording history:

- A red bar shows the camera has recorded a motion event.
- A blue bar shows the camera has recorded video.
- White areas show periods of time during which the camera has not recorded any video.
- An yellow bar is a bookmark in the camera's recording history.

For more information about bookmarks, see [Bookmarking Recorded Video](#).

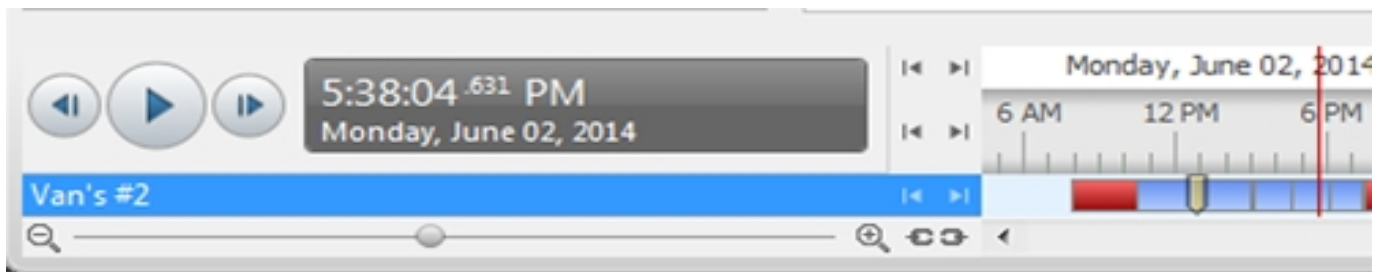









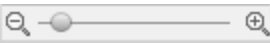
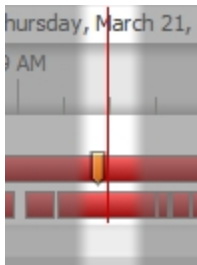
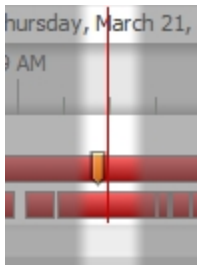


Figure 108: Playback controls on the Timeline

To...	Do this...	
Select a playback time	<ul style="list-style-type: none"> Click the dark gray date display and select a specific date and time. Click a point on the Timeline. 	
Start playback	<p>Click .</p> <ul style="list-style-type: none"> Click  to fast forward. Tap the arrow again to increase the playback speed. Click  to rewind. Tap the arrow again to increase the playback speed. <p>You can play the video up to eight times the original speed.</p>	
Stop playback	<p>Click .</p> <ul style="list-style-type: none"> Click  to step forward one frame. Click  to step backward one frame. 	
Jump forward or backward on the Timeline		On the Timeline, click  or  to move to set points on the Timeline.
Zoom in or out of the Timeline		<ul style="list-style-type: none"> Move the slider on the bottom left to zoom in or out on the Timeline. Place your mouse over the Timeline and use the scroll wheel to zoom in or out on the Timeline. <p>You can zoom in to a quarter of a second, and zoom out to see years if recorded video exists.</p>
Center the Timeline on the time marker		Right-click the Timeline, and select Center on Marker .
Pan the Timeline		<ul style="list-style-type: none"> Click and drag the time marker through the Timeline. Move the horizontal scroll bar under the Timeline. Right-click and drag the Timeline.


Synchronizing Recorded Video Playback

Synchronizing recorded video playback allows you to synchronize Timelines across multiple View, Alarm, and Search tabs while they are in recorded mode.

Synchronized recorded video playback is disabled by default. Once it is enabled, it will remain enabled until it is manually disabled.


NOTE: Tabs can only be synchronized to one time. You cannot synchronize groups of tabs to separate times.

Enabling Synchronized Recorded Video Playback

- To enable synchronized recorded video playback in all new View tabs, select  > **Client Settings...** > **General** > **Synchronize recorded video playback**.


Timelines will be automatically centered on the current time.

Enabling synchronized recorded video playback in the Client Settings... dialog box will not synchronize the Timelines of previously opened tabs. It will only synchronize new tabs that are opened after enabling synchronized recorded video playback. Previously opened tabs need to be synchronized individually.

- To synchronize playback between specific or previously opened tabs, click the gray  button on the tab Timeline.

Disabling Synchronized Recorded Video Playback

- Synchronized recorded video playback can be disabled for all new tabs by clearing the **Synchronize recorded video playback** check box in the Client Settings... dialog box. Previously synchronized tabs will remain synchronized.
- Synchronized recorded video playback can also be disabled in individual tabs.

On a synchronized Timeline, click the blue  button. The button will turn gray to show that it is no longer synchronized. The Timeline will stay where it is, but will no longer be synchronized with other Timelines.

Bookmarking Recorded Video

You can add bookmarks to recorded video to help you find and review an event later. Bookmarked video can be protected against scheduled data cleanup so that the video is never deleted.

Adding a Bookmark

Tip: You can add a bookmark any time the Timeline is displayed.

1. Drag the time marker to where you want to start the bookmark, then right-click the Timeline and select **Add Bookmark**.

The Edit Bookmark dialog box appears, and the bookmark time range is highlighted on the Timeline.

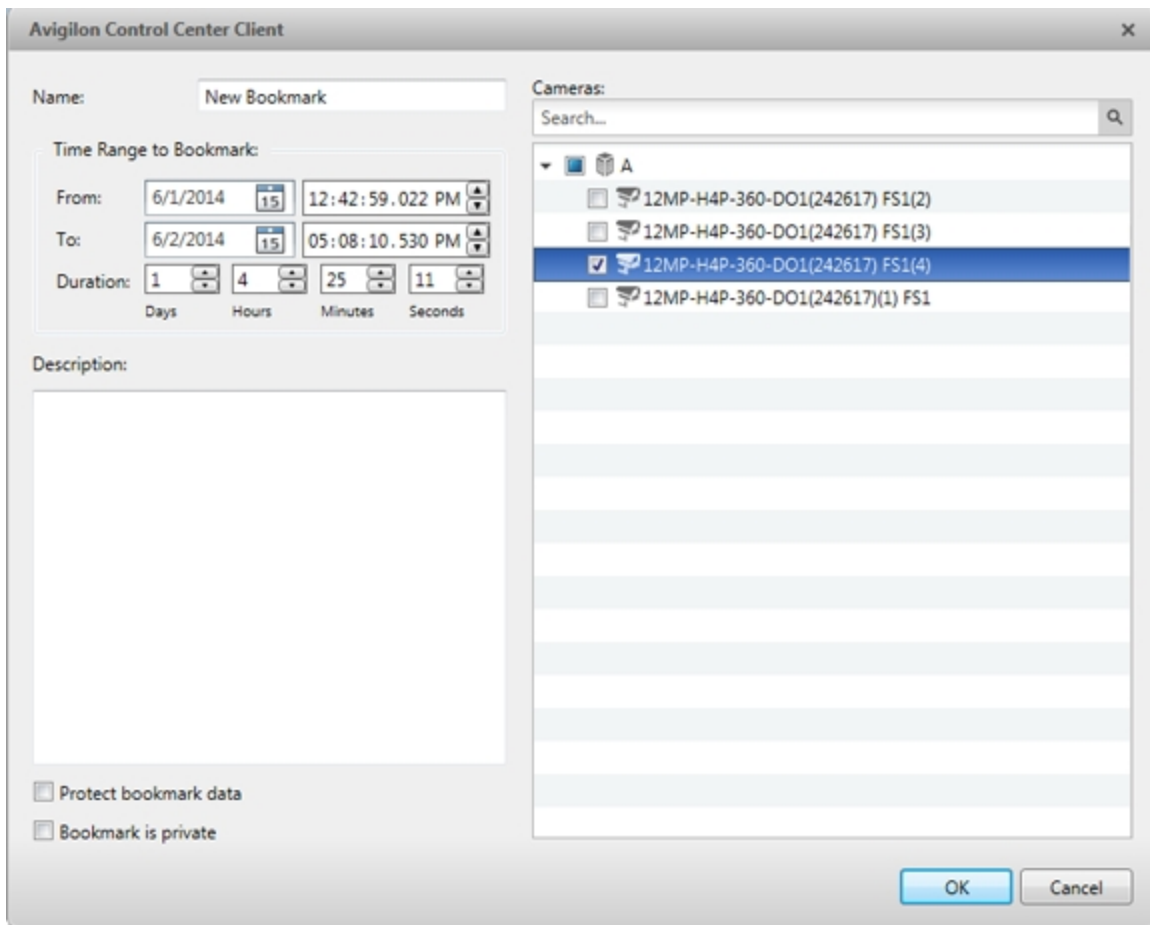


Figure 109: Edit Bookmark dialog box

2. Enter a **Name:** for the bookmark.
3. In the **Cameras:** pane, select all the cameras that need to be attached to this bookmark.

NOTE: You can only bookmark multiple cameras from the same Site.

4. In the **Time Range to Bookmark:** area, enter the full duration of the bookmark.

You can also move the black time range markers on the Timeline to adjust the time range.

5. In the **Description:** field, enter extra any information you want to include with the bookmark.
6. To protect the bookmark video from being deleted, select the **Protect bookmark data** check box.

NOTE: Protected bookmarks are never deleted. Be aware that bookmarked videos take up space and can become the oldest video on the server.

7. To make the bookmark private, select the **Bookmark is private** check box. Private bookmarks are only visible to the user who marked the bookmark as private, and the system administrator. No one else will have access to the bookmark.
8. Click **OK**.

Exporting, Editing, or Deleting a Bookmark

1. Click the bookmark on the Timeline, then do one of the following:

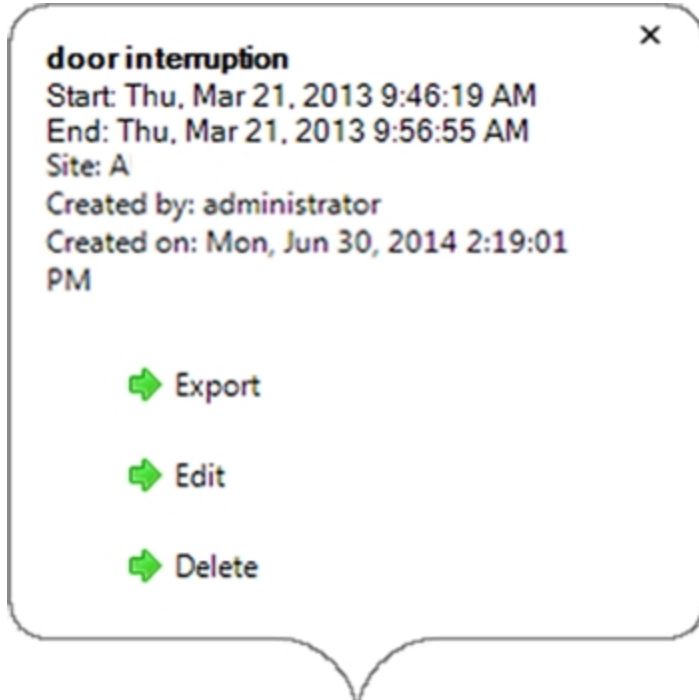


Figure 110: Pop-up Bookmark properties


To	Do this...
Export a bookmark	Click Export , then complete the Export tab.
Edit a bookmark	Click Edit , then make your changes.
Delete a bookmark	Click Delete . When the confirmation dialog box appears, click Yes .

When editing a bookmark, refer to [Adding a Bookmark](#) for details about the editable options.

When exporting a bookmark, refer to [Export](#) for information about the export options.


Reviewing Recorded POS Transactions

While you watch recorded video, you can review POS transactions that occur at the same time.

1. Select a camera that is linked to the POS transaction source and display the camera's recorded video
2. In the image panel, click .

If there is more than one POS transaction source linked to the camera, you will be prompted to select one. The POS transactions are displayed in the next image panel.

- Each transaction is separated by date and time.
- When you select a transaction, the video jumps to that event on the Timeline.
- Scroll up or down to see other recorded POS transactions.

3. To display cameras that are linked to the POS transaction source, click  in the POS transaction image panel.

If multiple cameras are connected to the POS transaction source, you will be prompted to select one.

4. Use the Timeline to review the video in more detail.

For more information about Timelines, see [**Playing Back Recorded Video**](#).

If you want to find a specific POS transaction, see [**Performing a POS Transaction Search**](#).

Working with Maps

A map is a graphical reference of your surveillance site. You can create a map out of any image of your location, then add cameras, encoders, saved Views, and other maps to the image to help you quickly navigate through your surveillance site.

Adding a Map

You can create a map from any image in JPEG, BMP, PNG, or GIF format. The image is used as the map background and cameras are added on top to show where they are located in your surveillance Site.

1. In the System Explorer, right-click a Site or Site folder and select **New Map...**
2. In the Map Properties dialog box, click **Change Image...** and locate your map image.

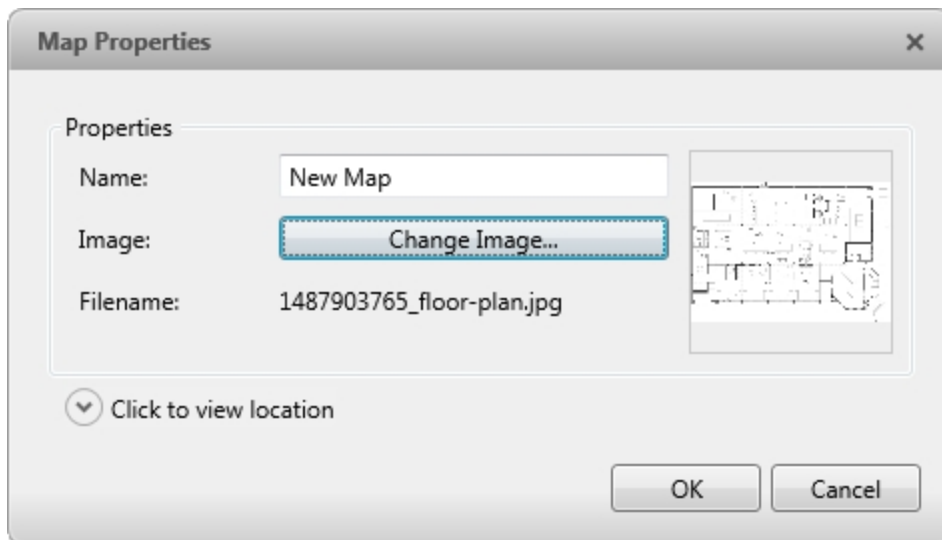



Figure 111: The Map Properties dialog box

3. In the **Name:** field, enter a name for the map.
4. Click  to choose where the map appears in the System Explorer. By default, the map is added to the Site that you initially selected.
 - If your Site includes virtual sub-sites, select a location for the map. The list on the right updates to show what is stored in that directory.
 - In the Site directory, drag the map up and down to set where it is displayed.
5. Click **OK**.

In the following Editing: Map tab, you can click **Edit Properties...** to open the Map Properties dialog box again.

6. Drag and place cameras from the System Explorer onto the map.



Figure 112: The Editing: Map tab

By default a camera is displayed as an icon with a yellow triangle to represent its field of view.

- Drag the black points at the end of the yellow field of view to re-size and position the camera angle.
7. Drag encoders, saved Views, Virtual Matrix monitors, and other maps that you need from the System Explorer onto the map.
 8. In the **Map Icon Properties** options, you can change the way icons are displayed on the map. Select any icon on the map then do the following:

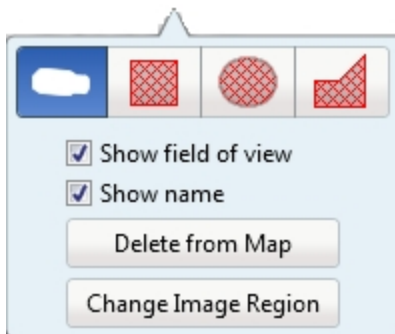



Figure 113: Map Icon Properties options

- a. To replace an icon with a clickable shape region, select one of the shape buttons. You can replace the icon with a rectangle, ellipse, or polygon region.
- b. Select the **Show name** check box to display the object's name on the map.
- c. Click **Delete from Map** to remove the object from the map.

- d. (Cameras only) Select the **Show field of view** check box to display the camera's yellow field of view. This option is only available when the camera icon is used.

Drag the corners of the yellow triangle to expand the field of view. Drag the black circle at the end of the triangle to rotate the field of view.

9. Click  to save your new map.

Using a Map

You can open a map in any image panel, then open video or alarms from the map.




1. To open a map in an image panel, do one of the following:
 - Double-click  in the System Explorer.
 - Drag  from the System Explorer to an image panel.
 - In the System Explorer, right-click  and select **Add To View**
2. When the map appears in an image panel, do any of the following:




Figure 114: Map in an image panel.

To...	Do this...
Review an alarm	When a camera flashes in red, an alarm linked to the camera has been triggered.

To...	Do this...
	<ul style="list-style-type: none"> Click the camera to monitor the live alarm video.
Display video from a camera on the map	<ul style="list-style-type: none"> Drag a camera from the map to a different image panel, or Click the camera on the map.
Open a linked map	<ul style="list-style-type: none"> Click the map icon on the map. <p>You can use the Forward and Back buttons to move between maps.</p>
Open a linked View	<ul style="list-style-type: none"> Click the saved View on the map.

Editing and Deleting a Map

You can update a map or delete an old map anytime.

- In the System Explorer, right-click  then select one of the following:
 - To edit the map, select **Edit...**. Refer to [Adding a Map](#) for details about the editable options.
 - To delete the map, select **Delete**. When the confirmation dialog box appears, click **Yes**.

Working with Web Pages

You can quickly review online content while monitoring videos by adding web pages to the System Explorer.

NOTE: Web pages will not load if you do not have internet access.

Adding a Web Page

You can add web pages to a Site for quick access to internet content that is related to your surveillance system.

1. In the System Explorer, right-click a Site or Site folder and select **New Web Page...**

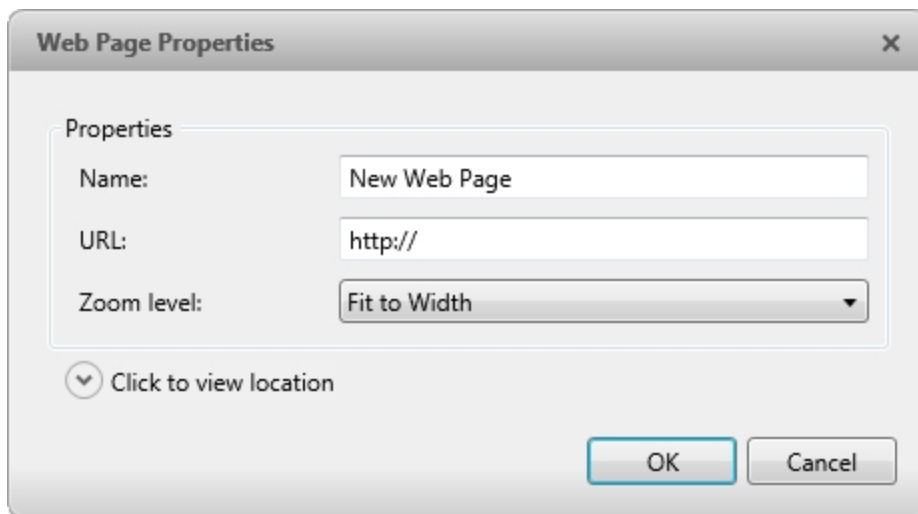






Figure 115: The Web Page Properties dialog box

2. Enter a **Name:** for the web page.
3. Enter the web page URL in the **URL:** field.
4. Select a **Zoom level:** for viewing the web page inside an image panel.
5. Click  to choose where the web page appears in the System Explorer. By default, the web page is added to the Site you initially selected.
 - If your Site includes virtual sub-sites, select a location for the web page. The list on the right updates to show what is stored in that directory.
 - In the Site directory, drag the web page up and down to set where it is displayed.
6. Click **OK**.

Using a Web Page

To open a web page, do one of the following:

- Double-click  in the System Explorer.
- Drag  from the System Explorer to an image panel.
- In the System Explorer, right-click  and select **Add To View**.


The web page is displayed in one of the image panels. Use the web browser buttons to navigate through the internet.



Figure 116: Web Page controls.

Editing and Deleting a Web Page



Whenever a web page address becomes out of date, you can choose to update the web page or delete the web page from the Site.

1. In the System Explorer, right-click  then select one of the following:
 - To edit the web page, select **Edit...** Refer to [Adding a Web Page](#) for information about the editable options.
 - To delete the web page, select **Delete**. When the confirmation dialog box appears, click **Yes**.

Monitoring Alarms

The Alarms tab allows you to monitor and acknowledge alarms. You can quickly review video of the event, bookmark the recorded incident, and export alarm video for further investigation.

Accessing the Alarms Tab

At the top of the application window, click  .

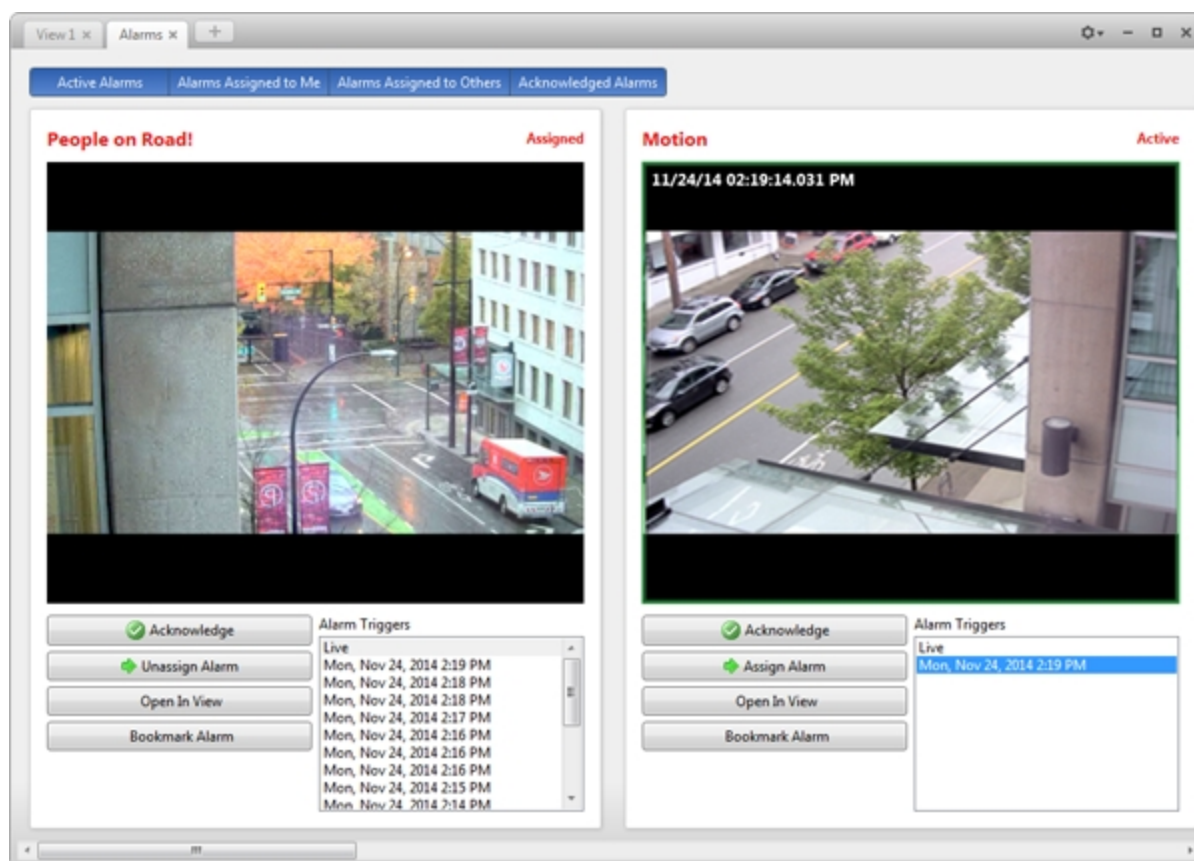


Figure 117: The Alarms tab

The Alarms tab is divided into a series of vertical alarm panels. The panels display alarms that are currently active, acknowledged, or assigned to a user.

To view more alarm panels, use the scroll bar at the bottom of the Alarms tab.

Tip: The most relevant alarm is in the leftmost panel. Alarm names that are displayed in red indicate alarms that have not been acknowledged.

Panels are sorted from left to right by:

- Alarm status: Alarms Assigned to Me, Active Alarms, Alarms Assigned to Others, Acknowledged Alarms
- Priority
- Most recent alarm trigger time

The alarm panel is divided into the following areas:

- The top of the panel lists the alarm name and status.
- The middle of the panel displays video from all of the cameras linked to the alarm.
- At the bottom of the panel, the Alarm Triggers area displays every time the alarm was triggered since you logged in.

Reviewing Alarms

In the Alarms tab, you can review and manage alarms. Active alarms can be assigned to yourself, and acknowledged alarms can be exported or purged as required.

Reviewing Alarm Video

You can review active and acknowledged alarms in detail through the alarm panel, or by opening the alarm video in a new View.

Each panel in the Alarms tab displays a different alarm.

1. At the top of the tab, click any of the **Filters** to choose what type of alarms are displayed. Alarms can be filtered by **Active Alarms**, **Alarms Assigned to You**, **Alarms Assigned to Others**, and **Acknowledged Alarms**.
2. In the Alarm Triggers list, select an alarm trigger to display the image for that instance of the alarm. Select **Live** to display live video in the image panels.
3. You can zoom and pan in the image panels like you would in a regular image panel. For information, see [Zooming and Panning in a Video](#)
4. Click **Open In View** to open the alarm video in a new View.

Acknowledging an Alarm

Acknowledging an alarm shows that an alarm has been reviewed and is no longer active. You can acknowledge any alarm that is active or assigned to you.

Tip: To hide Acknowledged alarms without purging them, disable the **Acknowledged** filter at the top of the tab.

1. If required, enter notes describing the nature of the alarm in the **Acknowledge Alarm** text box.
2. Click **Acknowledge**.
3. If there is a digital output linked to the alarm, a dialog box may appear to ask for permission to activate the digital output. Activate the digital output as required.

The Alarm is given an Acknowledged status.

Assigning an Alarm

You can assign an alarm to yourself to let others know that the alarm is being reviewed.

Although you can only assign alarms to yourself, you can unassign the alarm at any time. You can also reassign alarms assigned to others to yourself.

1. In the alarm panel, click **Assign Alarm**.
2. To unassign an alarm, in the alarm panel click **Unassign Alarm**.

Bookmarking an Alarm

You can bookmark active and acknowledged alarm video.

1. In the alarm panel, click **Bookmark Alarm**.
2. When the Edit Bookmark dialog box appears, define the details of your bookmark.

The Edit Bookmark dialog box automatically selects all the cameras that are linked to the alarm, and sets the time range to span the first and last alarm trigger. After you make any required changes, click **OK**.

For more information about the bookmark options, see [Bookmarking Recorded Video](#).

Purging an Alarm

Purging an alarm removes the alarm from the Alarms tab until the alarm is activated again. Although purged alarms are no longer visible, you can still search through the alarm's history.

- In the alarm panel, click **Purge Alarm**.

Searching Alarms

You can search through an alarm's history to review other instances of the alarm.

- In the alarm panel, click **Search Alarm**.

For more information about the alarm search options, see [Performing an Alarm Search](#).

Exporting Alarms

You can export alarm video for review on other computers.

- In the alarm panel, click **Export Alarm**.

For information about the export options, see [Export](#).

Arming Image Panels

Arming an image panel reserves the image panel specifically for displaying video linked to alarms or rules.




Armed image panels allow you to review and acknowledge alarms while monitoring video in a View. Any image panel can be armed or disarmed as required.

If there are no armed image panels, alarm video will appear in the next empty image panel in the current View, or in a new View if all current image panels are in use.



Figure 118: Armed image panel

Tip: You can still use the features that are common to all image panels in an armed panel, like taking snapshots or maximizing the image panel.

To...	Do this...
Arm an image panel	In an image panel, click  . The image panel is given a red border and an alarm label to show that it is armed.
Acknowledge an alarm	Click  .
Move between linked alarm video	If the alarm is linked to multiple cameras, use the green arrows to move between the linked cameras.
Disarm an image panel	In an armed image panel, click  .

If multiple alarms are triggered at the same time, the linked videos are queued inside the armed image panel. The alarm videos are displayed by order of alarm priority, then time. Once an alarm is acknowledged or assigned to a user, the alarm video is removed from the armed image panel.

NOTE: If you choose to close a video in the armed image panel, the video is removed but the alarm continues to be active.

Videos triggered by a rule are queued in the armed image panel after alarms, with the most recent video displayed first. Rule videos are not labeled and do not need to be acknowledged.

Monitoring License Plates

License Plate Recognition (LPR) is a licensed feature that allows you to monitor vehicle license plates that are detected by the Avigilon Control Center.

You can use the license plate overlay to monitor license plates as they are detected. You can also use the License Plate Watch List feature to alert you when specific license plates are detected.


To set up License Plate Recognition, see [License Plate Recognition](#).

License Plate Overlay

While you monitor video in an image panel, you can also monitor license plates as they are detected by the Avigilon Control Center.

When the license plate overlay is enabled, detected license plate numbers are displayed in the bottom right corner of the image panel.

To enable the License Plate overlay:

1. In the top-right corner of the Client window, select  > **Client Settings...** > **Display**.
2. In the Image Overlays: area, select the **License Plate** check box.
3. Click **OK**.

When you display live video for a camera that is configured for license plate recognition, the detected license plates are displayed by the overlay.

Reviewing License Plate Matches

If your system is configured to track specific license plates through the Watch List, you will be notified by a pop-up dialog box when matches are detected.

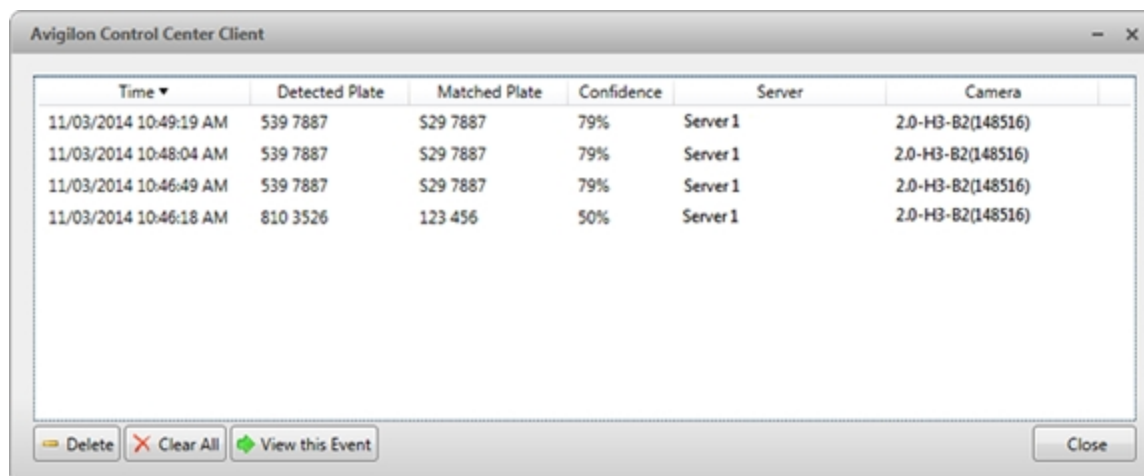


Figure 119: The License Plate Matches dialog box.

Select one of the license plate matches and do any of the following:

- Click **View this Event** or double-click the selected license plate to open a snapshot of the detected license plate in a new View.
- Click **Delete** to delete the license plate from the list.
- Click **Clear All** to empty the current match list. The list will be repopulated as new license plates are detected.




Search

You can quickly search for recorded video that is linked to an event or search through a camera's recording history.

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

Performing an Alarm Search

The Alarm Search allows you to search through an alarm's history.

1. In the New Task menu, under Search, click .

The Search: Alarms tab is displayed.

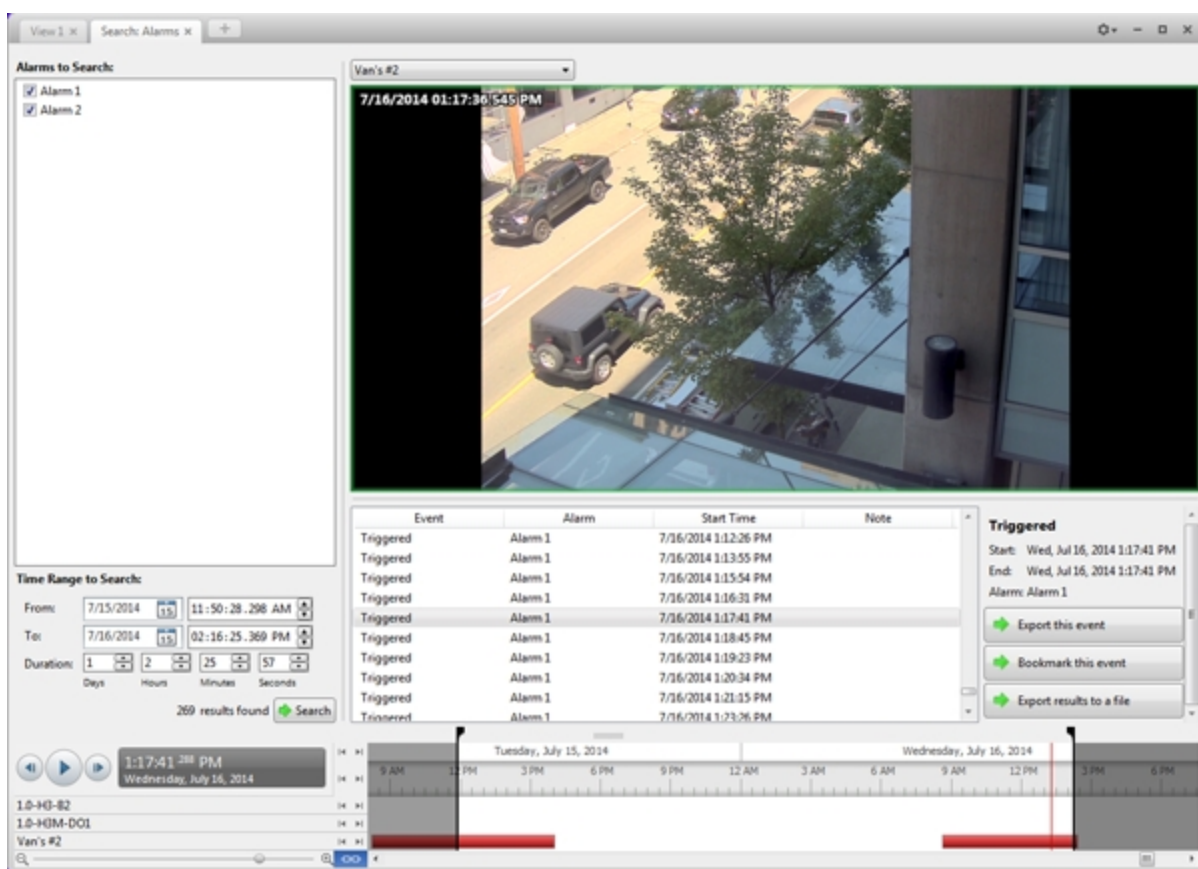


Figure 120: The Search: Alarms tab

2. In the **Alarms to Search** list, select all the alarms you would like to include in the alarm search.
3. In the **Time Range to Search** area, set the date and time range of your search. The time range is

highlighted on the Timeline by the black time range markers. You can also drag the time range markers to modify the time range.

4. Click **Search**.

Viewing Alarm Search Results

1. In the **Search Results** area, select a search result. The event is highlighted on the Timeline and the video is displayed in the image panel. Details about the search result are displayed to the right.
2. Use the Timeline controls to review the event.

For more information, see [Playing Back Recorded Video](#).

3. If the search result is linked to multiple cameras, select a camera from the drop down list above the image panel to change the video that is displayed.
4. Click **Export this event** to export the selected event video.

For more information, see [Export](#).

5. Click **Bookmark this event** to bookmark the selected search result.

For more information, see [Bookmarking Recorded Video](#).

6. To export all listed search results, click **Export results to a file** and save the file. The search results can be saved as either a CSV or Text file.

Performing a Bookmark Search

The Bookmark Search allows you to search for a specific bookmark.



1. In the New Task menu, click

The Search: Bookmark tab is displayed. All available bookmarks are listed on the left.

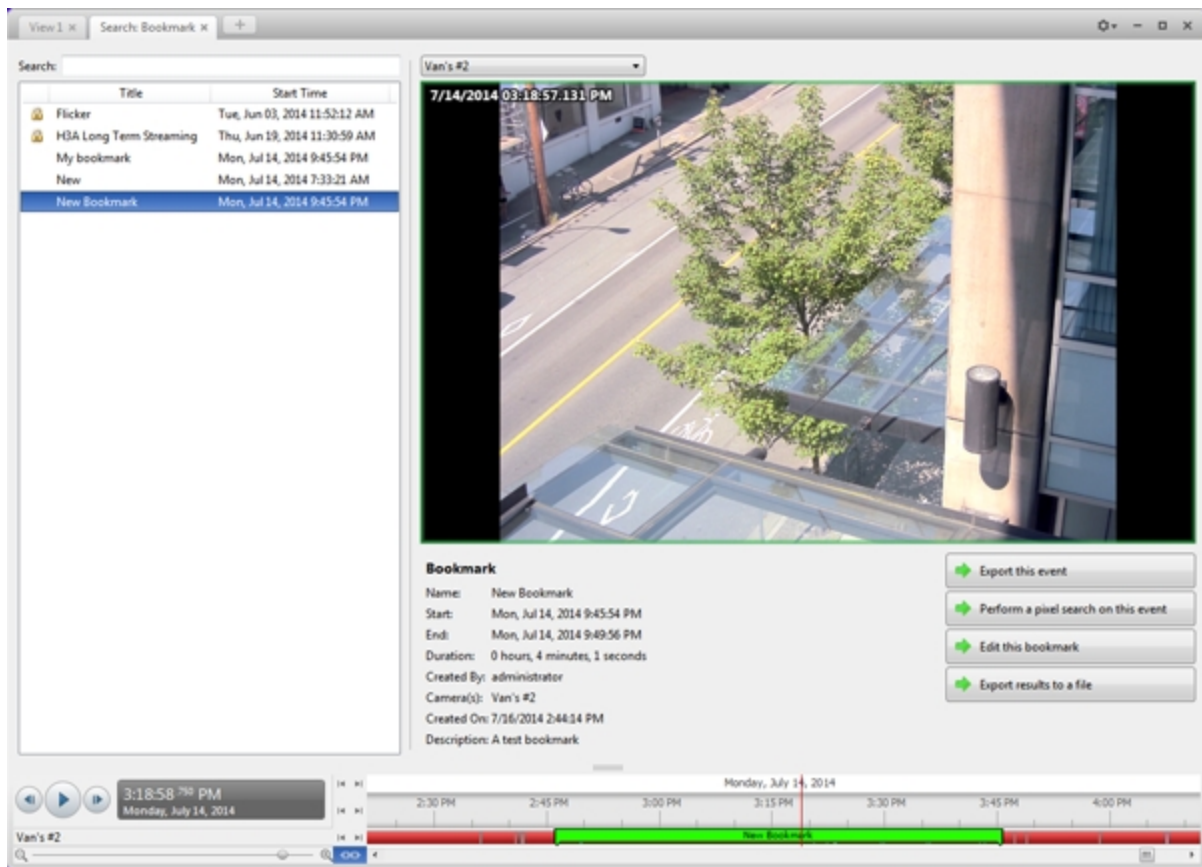


Figure 121: The Search: Bookmark tab

2. In the **Search:** field, enter any text that may appear in the bookmark's title, description, linked camera name, or the name of the user who created the bookmark.

The search is automatically performed on all the listed bookmarks until only the matches are displayed.

Viewing Bookmark Search Results

1. In the Bookmark list, select a bookmark. The bookmark is highlighted on the Timeline and the video is displayed in the image panel. Details about the bookmark are displayed under the image panel.
2. Use the Timeline controls to review the event.

For more information, see [Playing Back Recorded Video](#).

3. If the search result is linked to multiple cameras, select a camera from the drop down list above the image panel to change the video that is displayed.
4. Click **Export this event** to export the selected bookmark.
5. If you want to further refine your search, click **Perform a pixel search on this event**. You can now search for pixel changes in the selected bookmarked video.

For more information, see [Performing a Pixel Search](#).

6. Click **Edit this bookmark** to edit the bookmark.

For more information, see [Bookmarking Recorded Video](#).

Performing an Event Search

The Event Search allows you to search for specific motion events and digital input events.



1. In the New Task menu, click

The Search: Event tab is displayed.

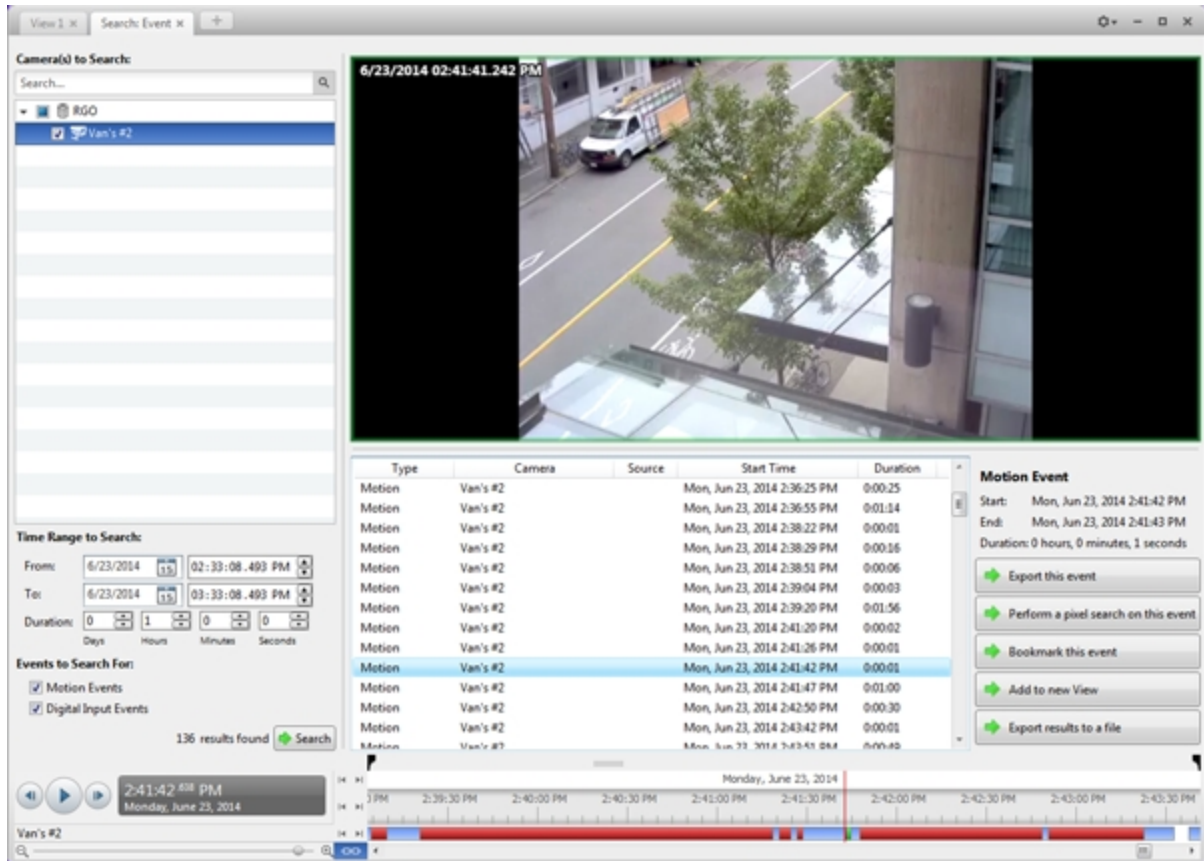


Figure 122: The Search: Event tab

2. In the **Camera(s) to Search:** area, select all the cameras you want to include in the search.
3. In the **Time Range to Search:** area, set the date and time range of your search. The time range is highlighted on the Timeline by the black time range markers. You can also drag the time range markers to modify the time range.
4. In the **Events to Search For:** area, select the types of events to include in the search.
5. Click **Search**.

Viewing Event Search Results

1. In the **Search Results** area, select a search result. The event is highlighted on the Timeline and the video is displayed in the image panel. Details about the search result are displayed to the right.
2. Use the Timeline controls to review the event.

For more information, see [Playing Back Recorded Video](#).

3. Click **Export this event** to export the selected event video.

For more information, see [Export](#).

4. If you want to further refine your search, click **Perform a pixel search on this event**. You can now search for pixel changes in the selected search result.

For more information, see [Performing a Pixel Search](#).

5. Click **Bookmark this event** to bookmark the selected search result.


For more information, see [Bookmarking Recorded Video](#).

6. To export all listed search results, click **Export results to a file** and save the file. The search results can be saved as either a CSV or Text file.

Performing a License Plate Search

The License Plate Search allows you to search for detected license plates.

NOTE: The License Plate Search is only available if the License Plate Recognition feature is installed.

1. In the New Task menu, under Search, click 

The Search: License Plates tab is displayed.

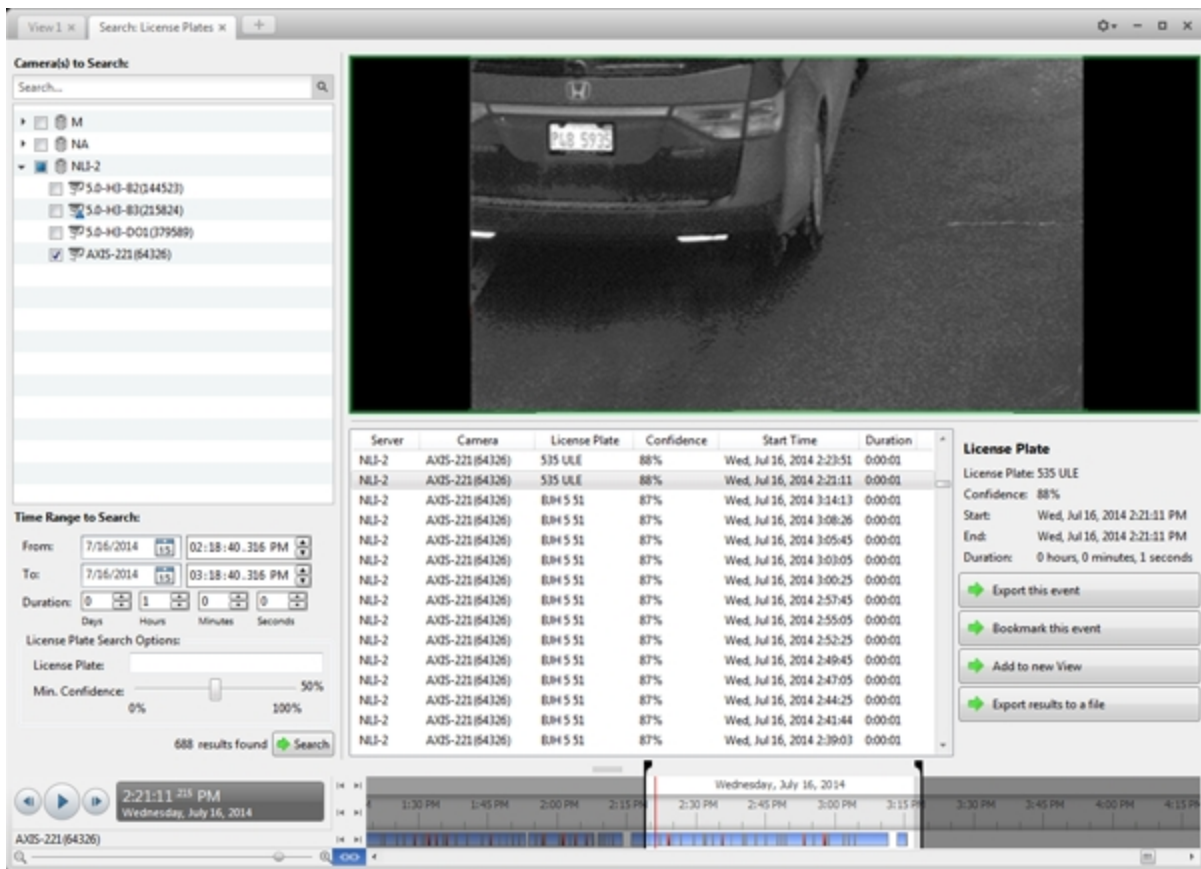


Figure 123: The Search: License Plates tab

2. In the **Camera(s) to Search:** area, select all the cameras you want to include in the search.
3. In the **Time Range to Search:** area, set the date and time range of your search. The time range is highlighted on the Timeline by the black time range markers. You can also drag the time range markers to modify the time range.
4. In the **License Plate Search Options:** area, enter the license plate you want to find and a minimum confidence of a match.
5. Click **Search**.

Viewing License Plate Search Results

1. In the **Search Results** area, select a search result. The event is highlighted on the Timeline and the video is displayed in the image panel. Details about the search result are displayed to the right.
2. Use the Timeline controls to review the event.

For more information, see [Playing Back Recorded Video](#).

3. If the search result is linked to multiple cameras, select a camera from the drop down list above the image panel to change the video that is displayed.
4. Click **Export this event** to export the selected event video.

For more information, see [Export](#).

- Click **Bookmark this event** to bookmark the selected search result.

For more information, see [Bookmarking Recorded Video](#).

- To export all listed search results, click **Export results to a file** and save the file. The search results can be saved as either a CSV or Text file.

Performing a Pixel Search

The Pixel Search allows you to search for tiny pixel changes in specific areas in the camera's field of view.



- In the New Task menu, click

The Search: Pixel tab is displayed.

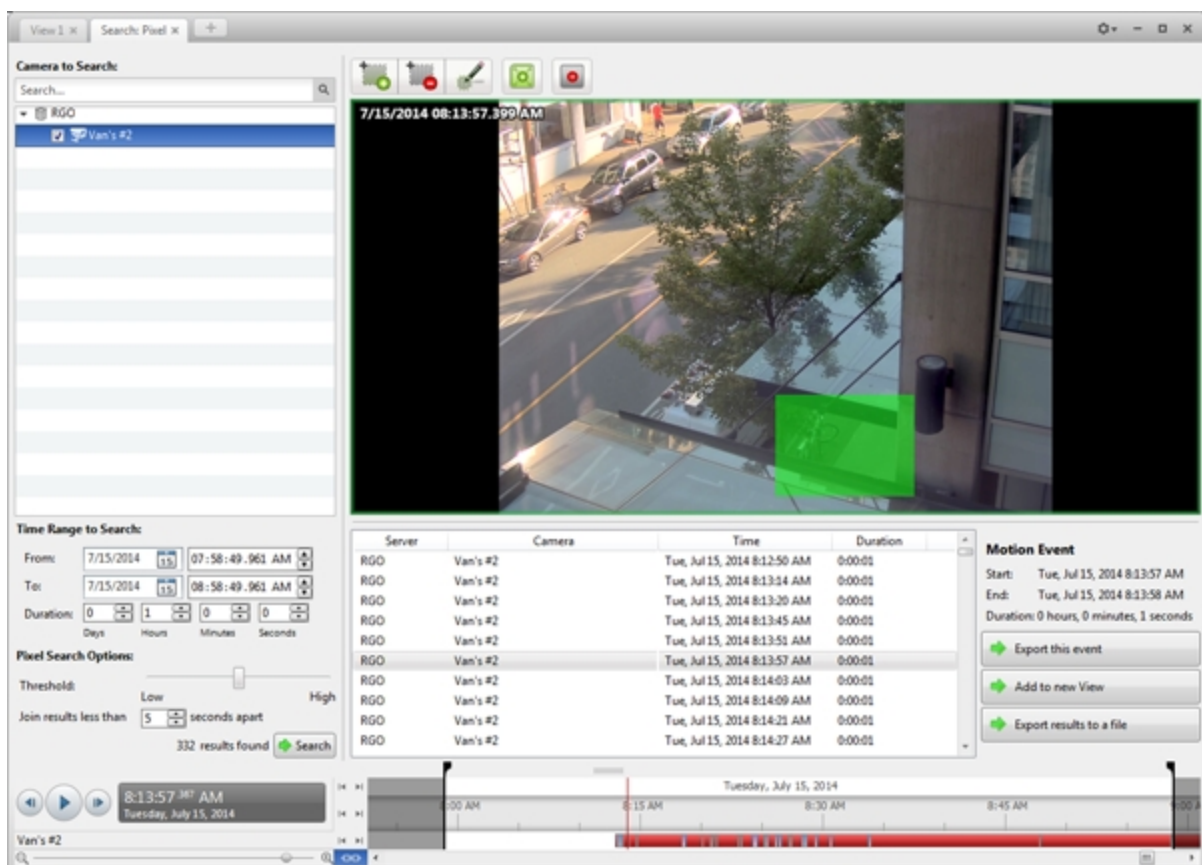


Figure 124: The Search: Pixel tab

By default, the entire search image panel is highlighted in green.

- In the **Camera to Search:** area, select a camera.
- In the **Time Range to Search:** area, set the date and time range of your search. The time range is highlighted on the Timeline by the black time range markers. You can also drag the time range markers to modify the time range.

4. Define the pixel search area by using the motion detection tools above the image panel.

Tip: If you are looking for something very specific, limit the green area to a dot to find what you're looking for more quickly.

5. In the Pixel Search Options: area, drag the **Threshold:** slider to select the amount of motion required to return a search result.

A high threshold requires more pixels to change before results are found.

6. Enter a number in the **Join results less than** field to set the minimum number of seconds between separate search results. You can enter any number between 1-100 seconds.

7. Click **Search**.

Viewing Pixel Search Results

1. In the **Search Results** area, select a search result. The event is highlighted on the Timeline and the video is displayed in the image panel. Details about the search result are displayed to the right.

2. Use the Timeline controls to review the event.

For more information, see [Playing Back Recorded Video](#).

3. Click **Export this event** to export the selected event video.

For more information, see [Export](#).

4. To export all listed search results, click **Export results to a file** and save the file. The search results can be saved as either a CSV or Text file.

Performing a POS Transaction Search

The POS Transaction Search allows you to search for specific transactions.



1. In the New Task menu, click .

The Search: POS Transactions tab is displayed.

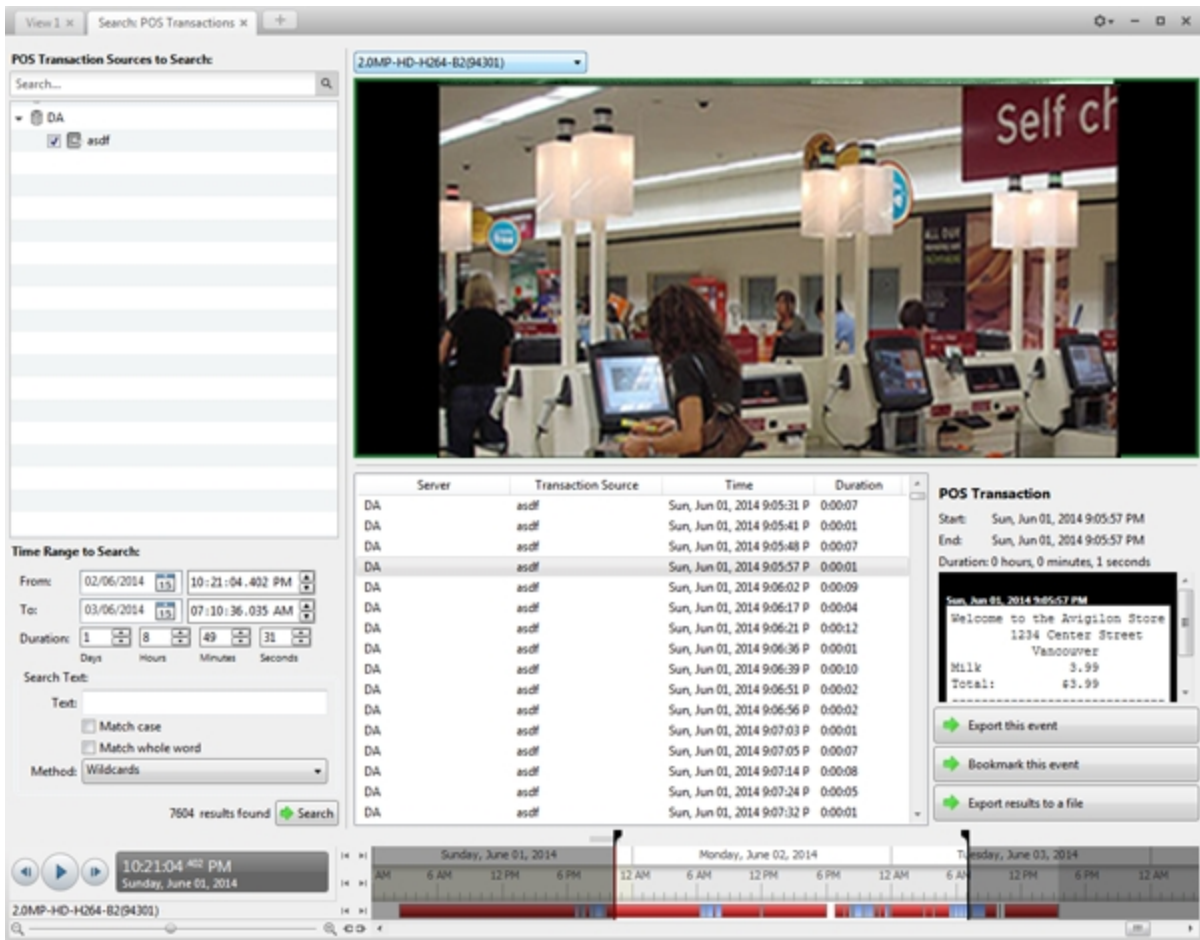


Figure 125: The Search: POS Transactions tab

2. In the **POS Transaction Sources to Search:** area, select all the POS transaction sources you would like to include in the search.
3. In the **Time Range to Search:** area, set the date and time range of your search. The time range is highlighted on the Timeline by the black time range markers. You can also drag the time range markers to modify the time range.
4. In the **Search Text:** area, enter any text that will help you filter the search results. For example, you can enter product names or transaction values.

Use the **Wildcards** and **Regular expressions** search methods to find a range of results. Leave the **Text:** field blank to find all transactions.

5. Click **Search**.

Viewing POS Transaction Search Results

1. In the **Search Results** area, select a search result. The event is highlighted on the Timeline and the video is displayed in the image panel. Details about the search result are displayed to the right.
2. Use the Timeline controls to review the event.

For more information, see [Playing Back Recorded Video](#).

3. If the search result is linked to multiple cameras, select a camera from the drop down list above the image panel to change the video that is displayed.

4. Click **Export this event** to export the selected event video.

For more information, see [Export](#).

5. Click **Bookmark this event** to bookmark the selected search result.


For more information, see [Bookmarking Recorded Video](#).

6. To export all listed search results, click **Export results to a file** and save the file. The search results can be saved as either a CSV or Text file.

Performing a Thumbnail Search

The Thumbnail Search is a visual search that displays search results as a series of thumbnail images.



1. In the New Task menu, click .

The Search: Thumbnails tab is displayed.

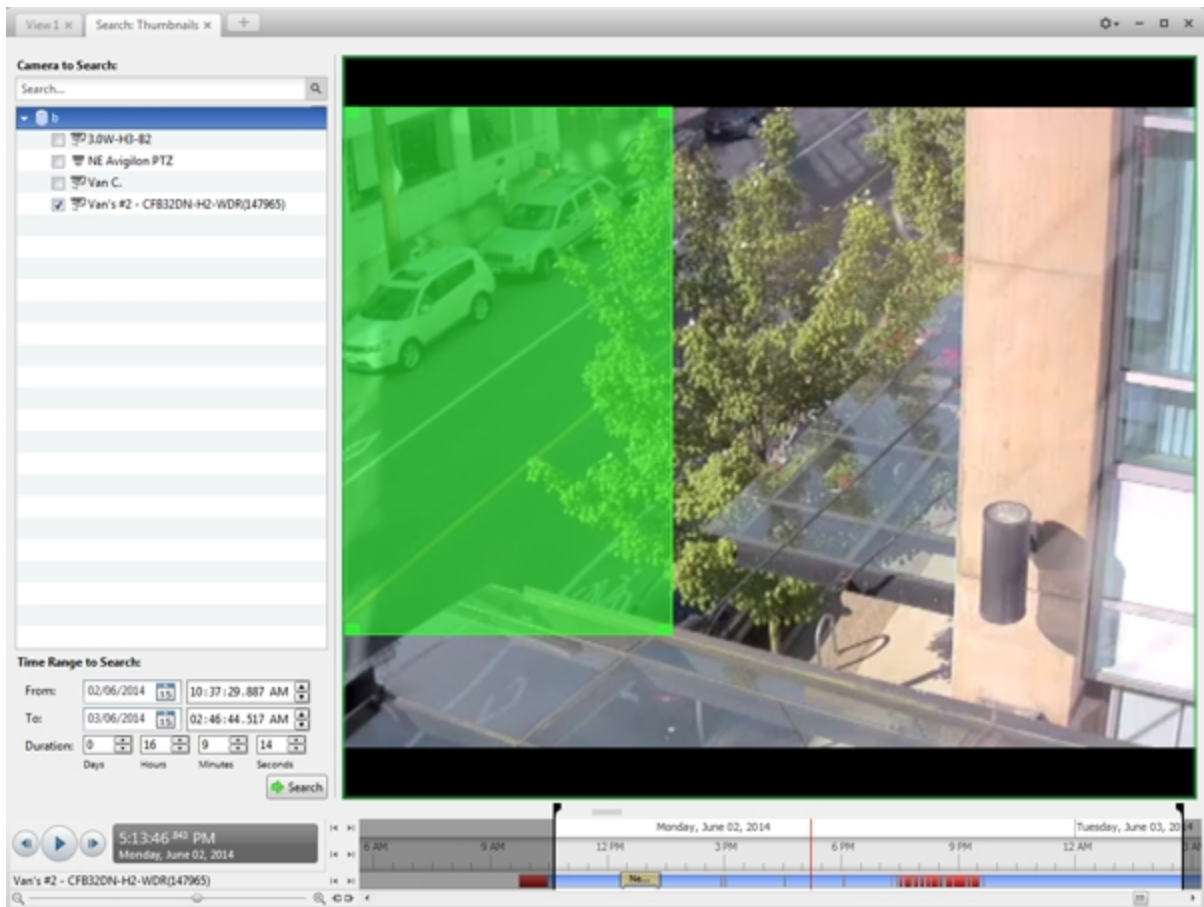


Figure 126: The Search: Thumbnails tab

2. In the **Camera to Search:** area, select a camera.
3. In the **Time Range to Search:** area, set the date and time range of your search. The time range is highlighted on the Timeline by the black time range markers. You can also drag the time range markers to modify the time range.
4. In the image panel, move or drag the edges of the green overlay to focus the search on one area in the video image. Only the area highlighted in green will be searched.
5. Click **Search**.

Viewing Thumbnail Search Results

The search results display thumbnails at equal intervals on the Timeline.

1. To change the size of the search result thumbnails, select **Large Thumbnails**, **Medium Thumbnails**, or **Small Thumbnails** from the menu above the search results.

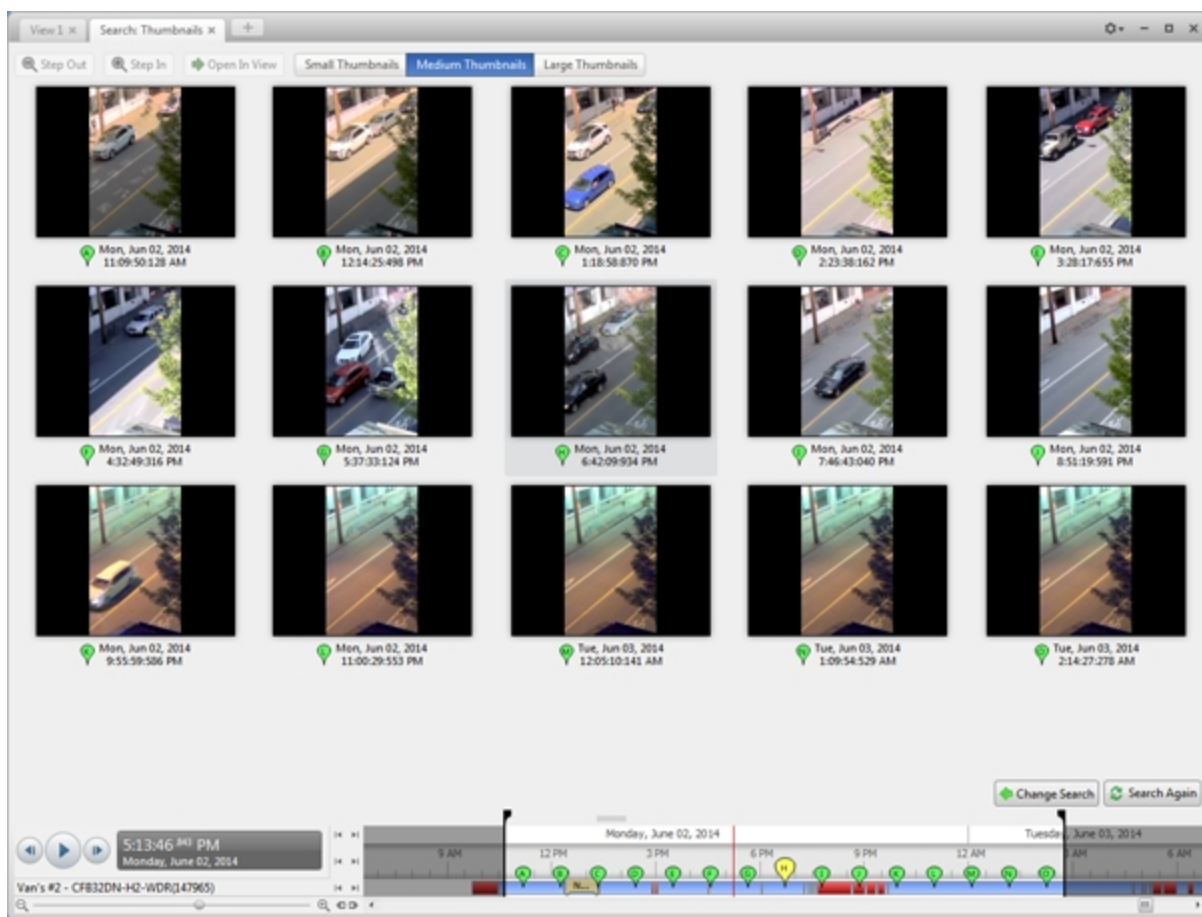


Figure 127: The Search: Thumbnails results tab

2. Select a thumbnail to highlight the video on the Timeline.
3. Click **Step In**, or double-click the thumbnail to perform another search around the thumbnail.

Click **Step Out** to return to the previous results page.

4. Click **Open In View** (after selecting a thumbnail) to open the recorded video in a new View.
5. Click **Change Search** to change the search criteria.



Export

You can export video in multiple video and image formats. The Export tab can be accessed from bookmark options, the Alarms tab, the New Task menu, and any Search tab.

You can also export snapshots of an image panel as you monitor video.

It is recommended that you export video of individual events and back up video for your archives. For more information, see [**Backup**](#).

Exporting Native Video

The Native (AVE) format is the recommended format for exporting video. You can export video from multiple cameras in a single file, and the video maintains its original compression. AVE video is played in the Avigilon™ Control Center Player, where the video can be authenticated against tampering and re-exported to other formats.

If there is audio linked to the video, the audio is automatically included in the export.

If you are exporting a large amount of video for your records, back up the video instead. For more information, see [**Backing Up Recorded Video On Demand**](#).

1. In the New Task menu, click  . The Export tab opens.

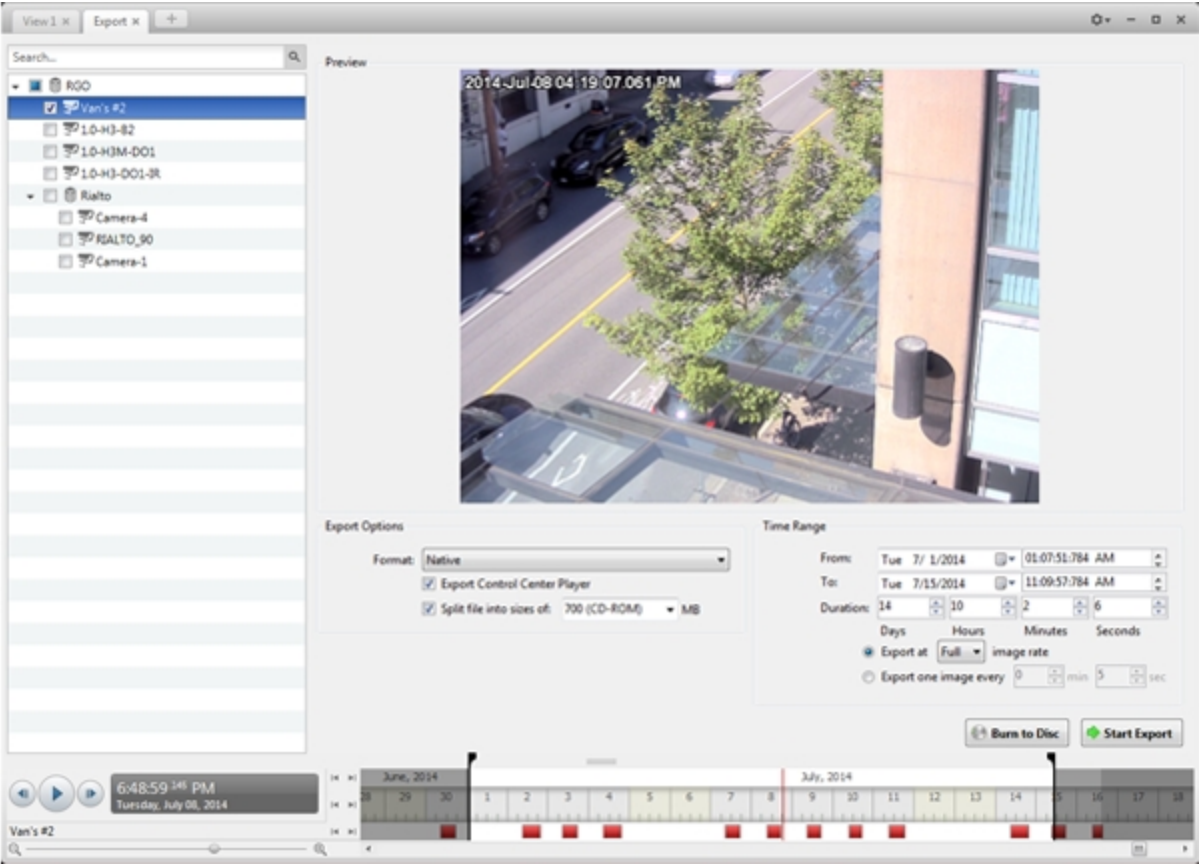


Figure 128: The Export tab for AVE export

2. In the **Format**: drop down list, select **Native**.
3. In the System Explorer, select the camera video you want to export.
4. To automatically divide the export into separate files, select the **Split file into sizes of**: check box, then select one of the options from the drop down list, or manually enter the size of each file in MB.

This option allows you to export smaller files for storing in a flash drive or on optical media.

This setting is automatically disabled if you choose to burn the export to disc because the system auto-detects the disc size.

5. Enter the **Time Range** you want to export. The **Time Range** is highlighted on the Timeline by black time range markers. You can also drag the time range markers to modify the time range.
6. Set the export image rate:

Option	Description
Export at _ image rate	Select this option to control how many images per second are exported. For example, the video is streaming at 30 images per second. If you select 1/2 , only

Option	Description
	15 images for that second will be exported.
Export one image every _ min _sec	<p>Select this option to control the time between each exported video image.</p> <p>For example, if you enter 5 min. 0 sec., only one image will be exported for every 5 minutes of video.</p>

7. Click one of the following:

- **Start Export:** to save the file locally.
 - In the Save As dialog box, name the export file and click **Save**.
- **Burn to Disc:** to burn the file directly to disc media.

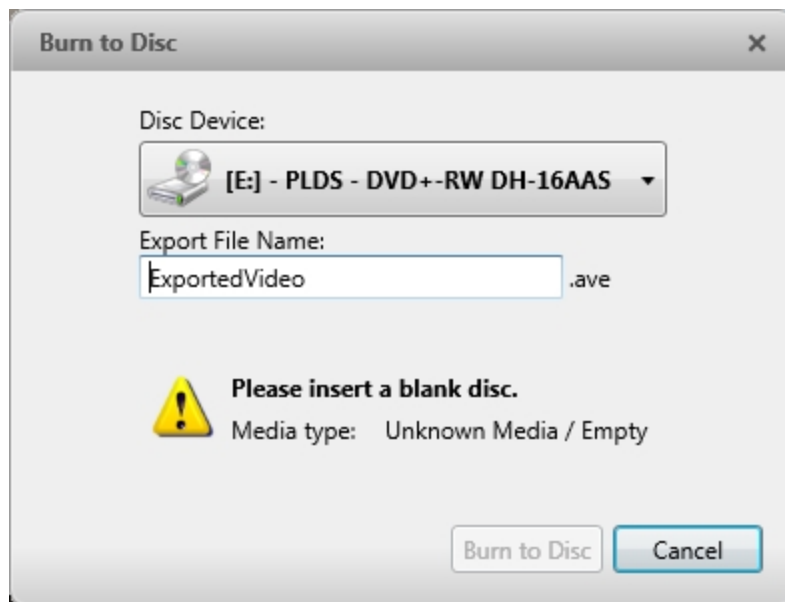


Figure 129: The Burn to Disc Dialog Box

- When the dialog box appears, insert a disc and select the media burning drive.
- Name the export file. The file name is automatically given a numbered suffix to help identify which file you are playing if the export spans multiple discs.
- Click **Burn to Disc** to start the export. If this button is disabled, the disc may be corrupt or full.
- Monitor the export progress to see if extra discs are required. When a disc is full, the export automatically pauses and you are asked to insert a new disc. After you insert a new disc, click **Resume Export**.

The number of discs required to export a video varies widely depending on the type of camera and disc used. Video is stored on the server with minimal compression to maximize the function of Avigilon's

HDSM™ technology, so the size of an export can be quite large due to the camera's high megapixel resolution and frame rate.

Generally, if you export a 2 minute video from a 2MP H.264 HD camera into AVE format, you will export a 93 MB file. To reduce the number of discs required, you can lower the frame rate or use a disc type with a larger capacity. Be aware that reducing the frame rate too much may cause the exported video to be jerky or missing data.

8. When the export is complete, click **OK**.

Exporting AVI Video

Video exported in Audio Video Interleave (AVI) format can be played in most media players. Be aware that you can only export one video at a time in this format.

If there is audio linked to the video, the audio is automatically included in the export.

1. In the New Task menu, click . The Export tab opens.

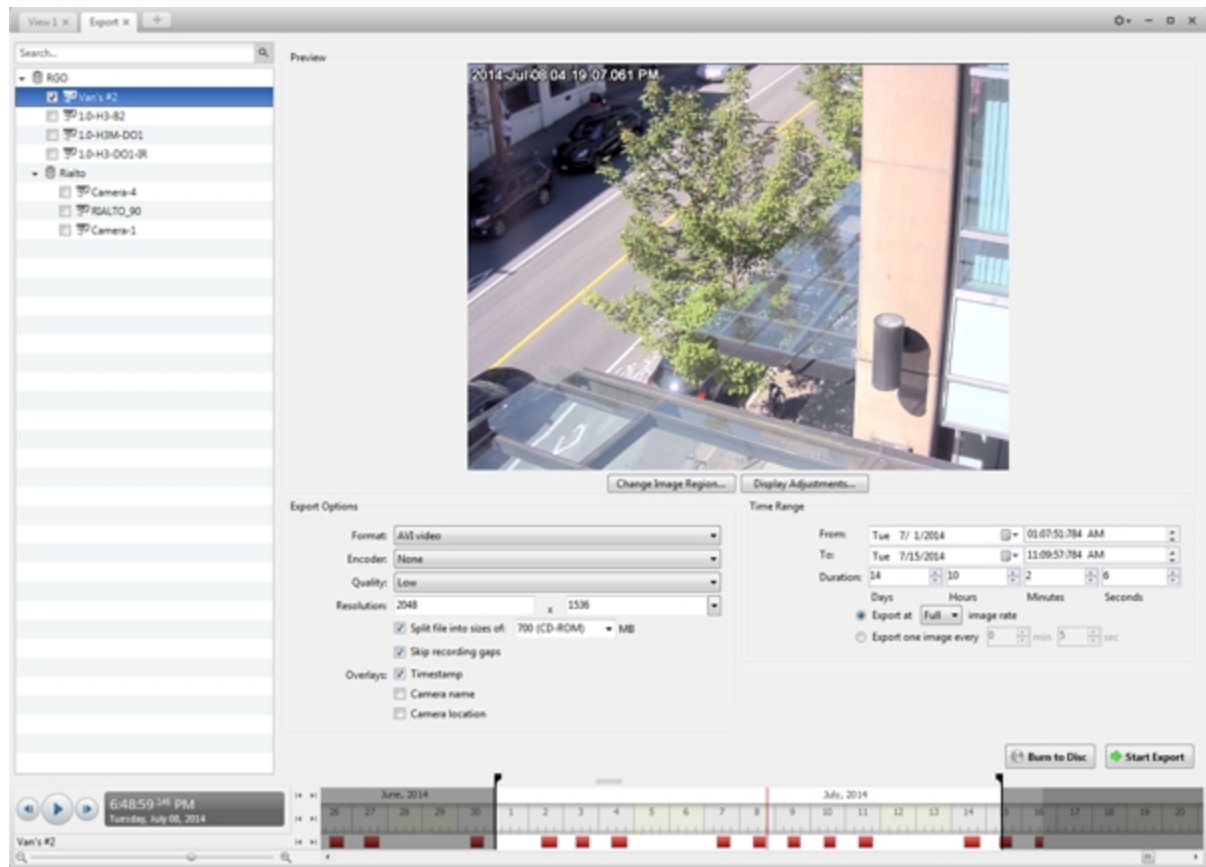


Figure 130: Export tab for AVI export

2. In the **Format:** drop down list, select **AVI video**.
3. In the System Explorer, select the camera video you want to export.
4. In the **Encoder:** field, select the compression used. The VC-1 (Windows Media Video) compression is

included by default because it is tailored for high-resolution AVI encoding.

If you are planning to burn the export to disc, it is important to select a compression method to help reduce the export size and maintain video quality.

5. In the **Quality:** drop down list, select the exported image quality level.
6. In the **Resolution:** field, select a resolution for the video image. You can manually enter the resolution or click the drop down arrow to select a standard resolution.

NOTE: The Resolution: field automatically maintains the image aspect ratio.

7. To automatically divide the export into separate files, select the **Split file into sizes of:** check box, then select one of the options from the drop down list, or manually enter the size of each file in MB.

This option allows you to export smaller files for storing in a flash drive or on optical media.

This setting is automatically disabled if you choose to burn the export to disc because the system auto-detects the disc size.

8. Select the **Skip recording gaps** check box to avoid pauses in the video caused by gaps in the recording.
9. Select the image overlays you want: **Timestamp**, **Camera name**, and **Camera location**.

Select the **Video Analytics Activity** overlay to include video analytics bounding boxes with the video. These boxes cannot be hidden or removed from the exported video.

10. Enter the **Time Range** you want to export. The **Time Range** is highlighted on the Timeline by black time range markers. You can also drag the time range markers to modify the time range.
11. Set the export image rate:

Option	Description
Export at _ image rate	Select this option to control how many images per second are exported. For example, the video is streaming at 30 images per second. If you select 1/2 , only 15 images for that second will be exported.
Export one image every _ min _sec	Select this option to control the time between each exported video image. For example, if you enter 5 min. 0 sec., only one image will be exported for every 5 minutes of video.

12. Click **Change Image Region...** to only export part of the video image. In the **Change Image Region...** dialog box, move and resize the green overlay to select the region you want to export, then click **OK**. Only areas highlighted in green will be exported.
13. Click **Display Adjustments...** to adjust the **Gamma**, **Black Level**, and/or **White Level**.
14. Click one of the following:

- **Start Export:** to save the file locally.
 - In the Save As dialog box, name the export file and click **Save**.
- **Burn to Disc:** to burn the file directly to disc media.

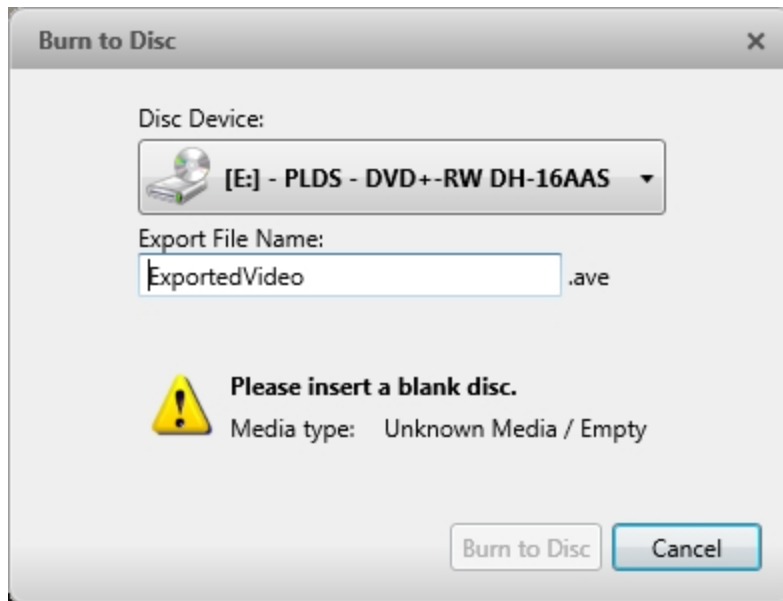


Figure 131: The Burn to Disc Dialog Box

- When the dialog box appears, insert a disc and select the media burning drive.
- Name the export file. The file name is automatically given a numbered suffix to help identify which file you are playing if the export spans multiple discs.
- Click **Burn to Disc** to start the export. If this button is disabled, the disc may be corrupt or full.
- Monitor the export progress to see if extra discs are required. When a disc is full, the export automatically pauses and you are asked to insert a new disc. After you insert a new disc, click **Resume Export**.

The number of discs required to export a video varies widely depending on the type of camera and disc used. Video is stored on the server with minimal compression to maximize the function of Avigilon's HDSM technology, so the size of an export can be quite large due to the camera's high megapixel resolution and frame rate.

Generally, if you export a 2 minute video from a 2MP H.264 HD camera into uncompressed AVI format, you will export a 2.7 GB file. If you select an **Encoder:** format and compress the video, you can export a 224 MB video at high quality. It is recommended that you always select an Encoder: format for AVI export to help significantly reduce the file size.

To further reduce the file size you can select a lower quality setting, lower the export frame rate, reduce the video resolution, or focus the export on a specific image region. Be aware that reducing each of the available settings too much may cause the export to be blurry or missing frames.

If it is important to have a high quality and full frame rate export, it is recommended that you use the AVE export format instead. AVE export intelligently compresses the video to create a smaller export file while

maintaining video data so that you can search, re-export video, and authenticate the video against tampering through the Avigilon Control Center Player software.

15. When the export is complete, click **OK**.

Exporting a Print Image

You can export a frame of video directly to your printer or as a PDF, and include notes related to the image.

To print a photo of the video you are currently watching, take a snapshot. For more information, see [Exporting a Snapshot of an Image](#).

1. In the New Task menu, click . The Export tab opens.

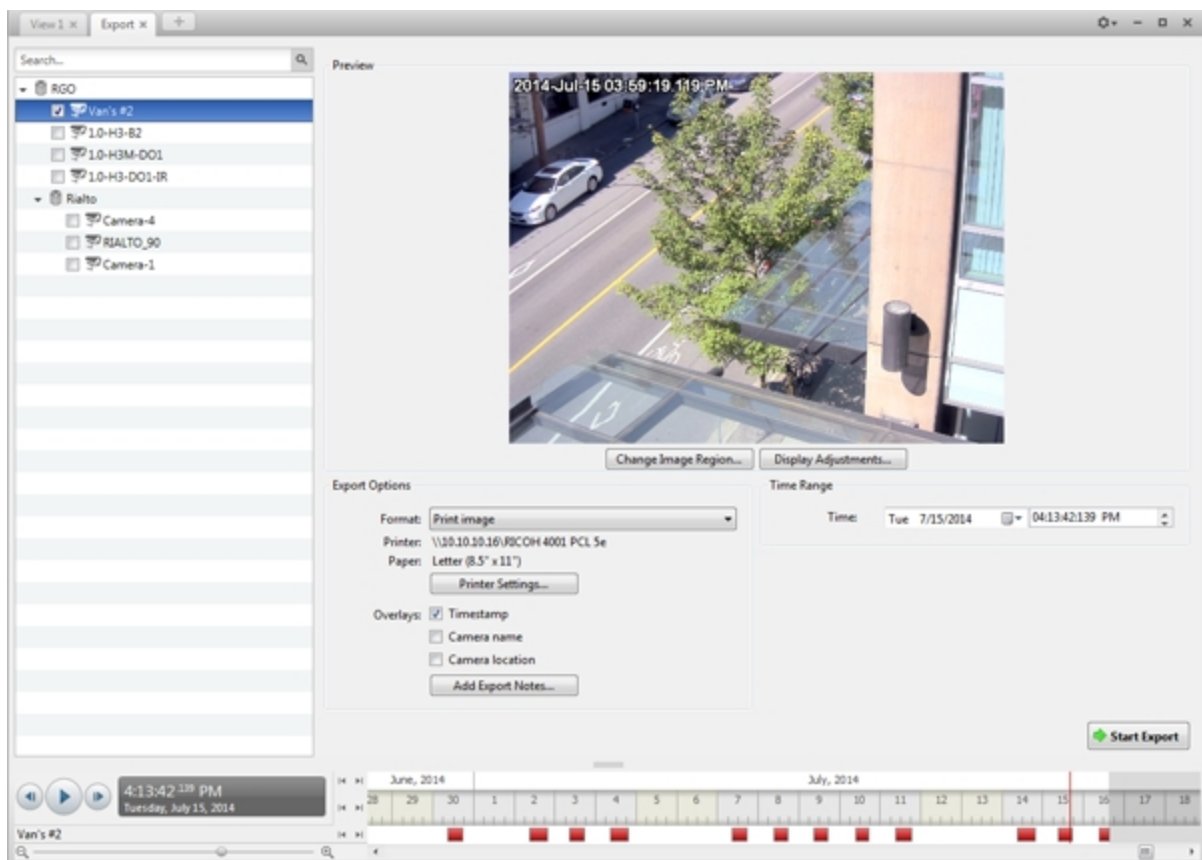


Figure 132: Export tab for print image export

2. In the **Format** drop down list, select **Print image** or **PDF file**.
3. In the System Explorer, select the camera video you want to export.
4. (Print Image Only) Click **Printer Settings...** to change the printer and paper size that the image is printed on.
5. Select the image overlays you want: **Timestamp**, **Camera name**, and **Camera location**.


6. Click **Add Export Notes...** to add notes about the exported image. The notes are added below the image.
7. In the **Time Range** box, enter the exact date and time of the video image you want to export.
8. Click **Change Image Region...** to only export part of the video image. In the **Change Image Region...** dialog box, move and resize the green overlay to select the region you want to export, then click **OK**. Only areas highlighted in green will be exported.
9. Click **Display Adjustments...** to adjust the **Gamma**:, **Black Level**: and/or **White Level**:
10. Click **Start Export**.
 - If you are exporting a Print image, the image is sent to the printer.
 - If you are exporting a PDF file, save the image.

The Preview area displays the video you are exporting.

11. When the export is complete, click **OK**.

Exporting a Snapshot of an Image

You can export a snapshot of any image panel with video. When you export a snapshot, you are exporting what the image panel is currently displaying.

1. To export a snapshot, do one of the following:
 - In the image panel, click .
 - Right-click the image panel and select **Save Snapshot**.

The snapshot Export tab is opened, and the image you want to export is displayed.

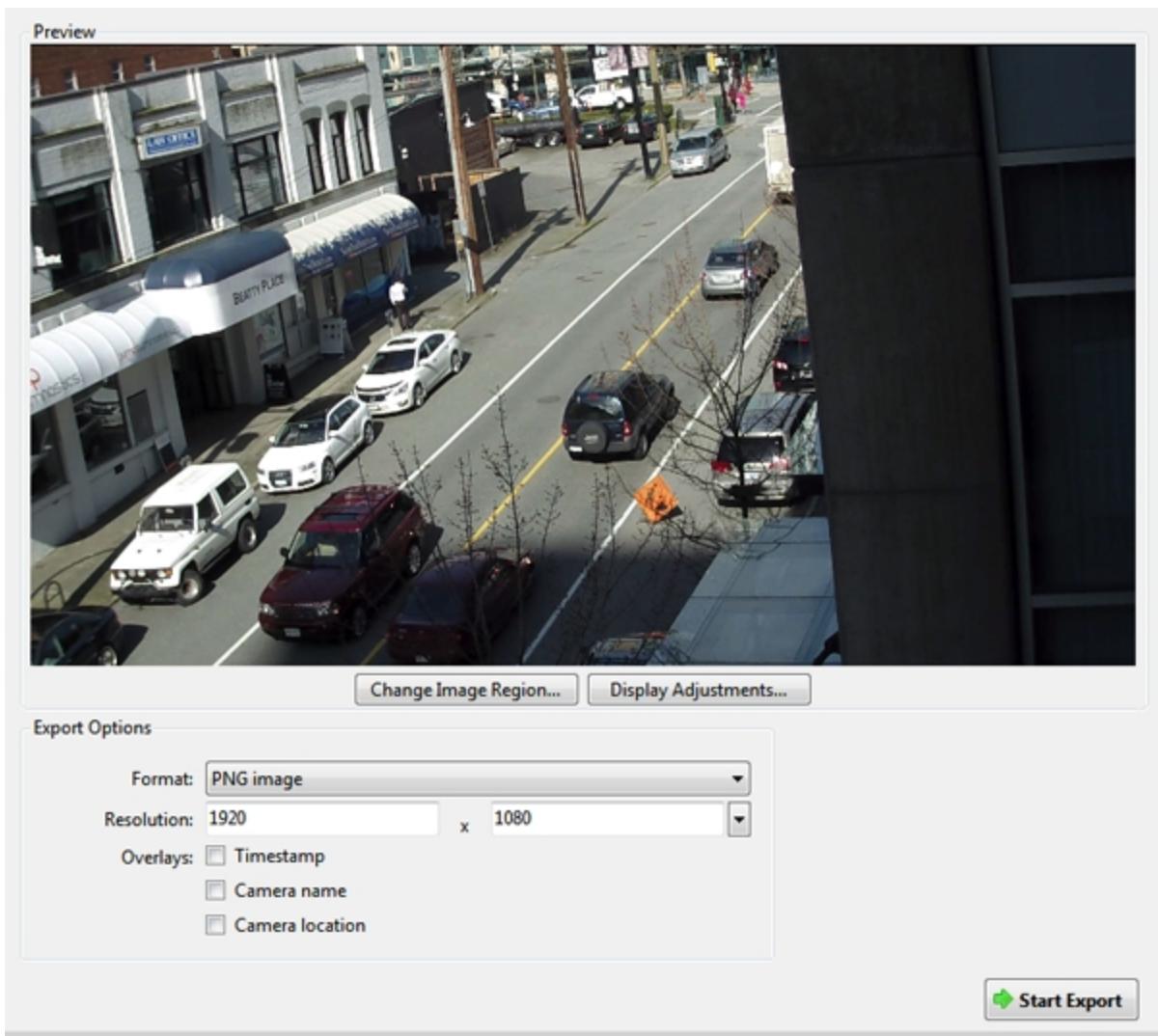


Figure 133: The Export tab for snapshot export

2. In the **Format** drop down list, select an export format.
3. For the selected export format, define your preferences:

Format	Export options
Native NOTE: The Native format requires the Avigilon Control Center Player to view.	<p>This is the recommended export format because the exported image maintains its original compression and can be authenticated against tampering in the Avigilon Control Center Player.</p> <ul style="list-style-type: none"> Select the Export Control Center Player check box if you want a copy of the Avigilon Control Center Player to be distributed with your Native image file.
PNG image	<ol style="list-style-type: none"> In the Resolution field, select a resolution for the video image. You can manually enter the resolution or click the drop down arrow to select a standard resolution. <p>NOTE: The Resolution: field automatically maintains the</p>

Format	Export options
	<p>image aspect ratio.</p> <ol style="list-style-type: none"> 2. Select the image overlays you want: Timestamp, Camera name, and Camera location. 3. Click Change Image Region... to only export part of the video image. In the Change Image Region dialog box, move and resize the green overlay, then click OK. Only areas highlighted in green are exported. 4. Click Display Adjustments... to adjust the Gamma:, Black Level:, and/or White Level:
JPEG image	<ol style="list-style-type: none"> 1. In the Quality: drop down list, select the exported image quality level. 2. Set the image Resolution: 3. Select the image overlays you want. 4. Click Change Image Region... to only export a part of the video image. 5. Click Display Adjustments... to modify the image quality.
TIFF image	<ol style="list-style-type: none"> 1. Set the image Resolution: 2. Select the image overlays you want. 3. Click Change Image Region... to only export a part of the video image. 4. Click Display Adjustments... to modify the image quality.
Print image	<ol style="list-style-type: none"> 1. Click Printer Settings... to change the selected printer and paper size. 2. Select the image overlays you want. 3. Click Add Export Notes... to add notes about the exported image. The notes are printed below the image. 4. Click Change Image Region... to only export a part of the video image. 5. Click Display Adjustments... to modify the image quality.
PDF file	<ol style="list-style-type: none"> 1. Select the image overlays you want. 2. Click Add Export Notes... to add notes about the exported image. 3. Click Change Image Region... to only export a part of the video image. 4. Click Display Adjustments... to modify the image quality.

4. Click **Start Export**.

5. In the Save As dialog box, name the export file and click **Save**. If you are printing the snapshot, the image is sent to your printer instead.

The Preview area displays the snapshot you are exporting.

6. When the export is complete, click **OK**.

Exporting Still Images

Video can be exported as a series of still PNG images, JPEG images, or TIFF images. When you export a series of still images, you are exporting each frame of video as an independent file.

If you only want one photo of the video you are watching, take a snapshot. For more information, see [Exporting a Snapshot of an Image](#).

1. In the New Task menu, click . The Export tab opens.

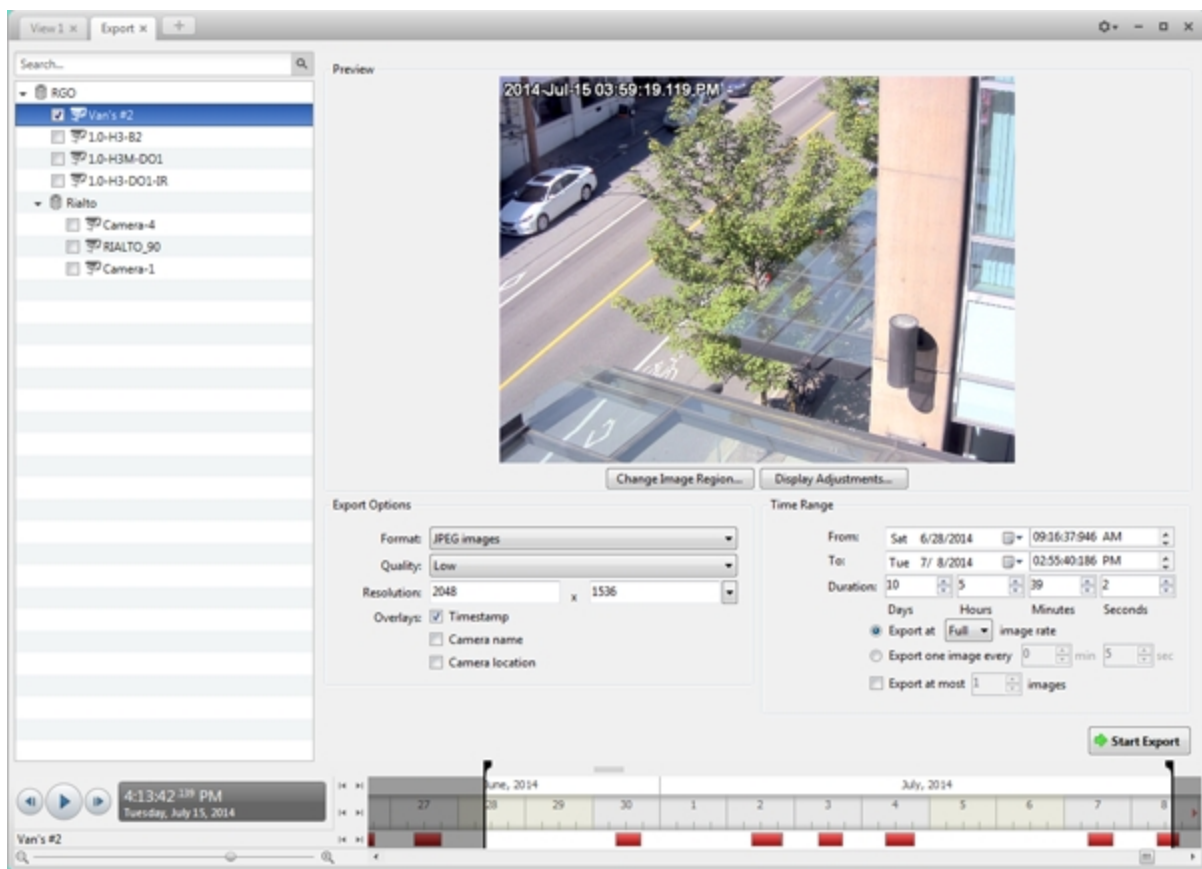


Figure 134: Export tab for still image export

2. In the **Format:** drop down list, select **PNG images**, **JPEG images**, or **TIFF images**.
3. In the System Explorer, select the camera video you want to export.
4. (JPEG only) In the **Quality:** drop down list, select the exported image quality level.
5. In the **Resolution:** field, select a resolution for the video image. You can manually enter the resolution or click the drop down arrow to select a standard resolution.

NOTE: The Resolution: field automatically maintains the image aspect ratio.

6. Select the image overlays you want: **Timestamp**, **Camera name**, and **Camera location**.
7. Enter the **Time Range** you want to export. The **Time Range** is highlighted on the Timeline by black time range markers. You can also drag the time range markers to modify the time range.
8. Set the export image rate:

Option	Description
Export at _ image rate	<p>Select this option to control how many images per second are exported.</p> <p>For example, the video is streaming at 30 images per second. If you select 1/2, only 15 images for that second will be exported.</p>
Export one image every _ min _sec	<p>Select this option to control the time between each exported video image.</p> <p>For example, if you enter 5 min. 0 sec., only one image will be exported for every 5 minutes of video.</p>

9. To limit the number of images that are exported, select the **Export at most _ images** check box and enter a number.
10. Click **Change Image Region...** to only export part of the video image. In the **Change Image Region...** dialog box, move and resize the green overlay to select the region you want to export, then click **OK**. Only areas highlighted in green will be exported.
11. Click **Display Adjustments...** to adjust the **Gamma**:, **Black Level**: and/or **White Level**:
12. Click **Start Export**.
13. In the Save As dialog box, name the export file and click **Save**.
The Preview area displays the video you are exporting.
14. When the export is complete, click **OK**.

Exporting WAV Audio

If you want to export audio with video, simply export the video in Native or AVI format. Any audio that is linked to the video is automatically included in the export file.

This procedure exports the audio alone.

1. In the New Task menu, click  . The Export tab opens.

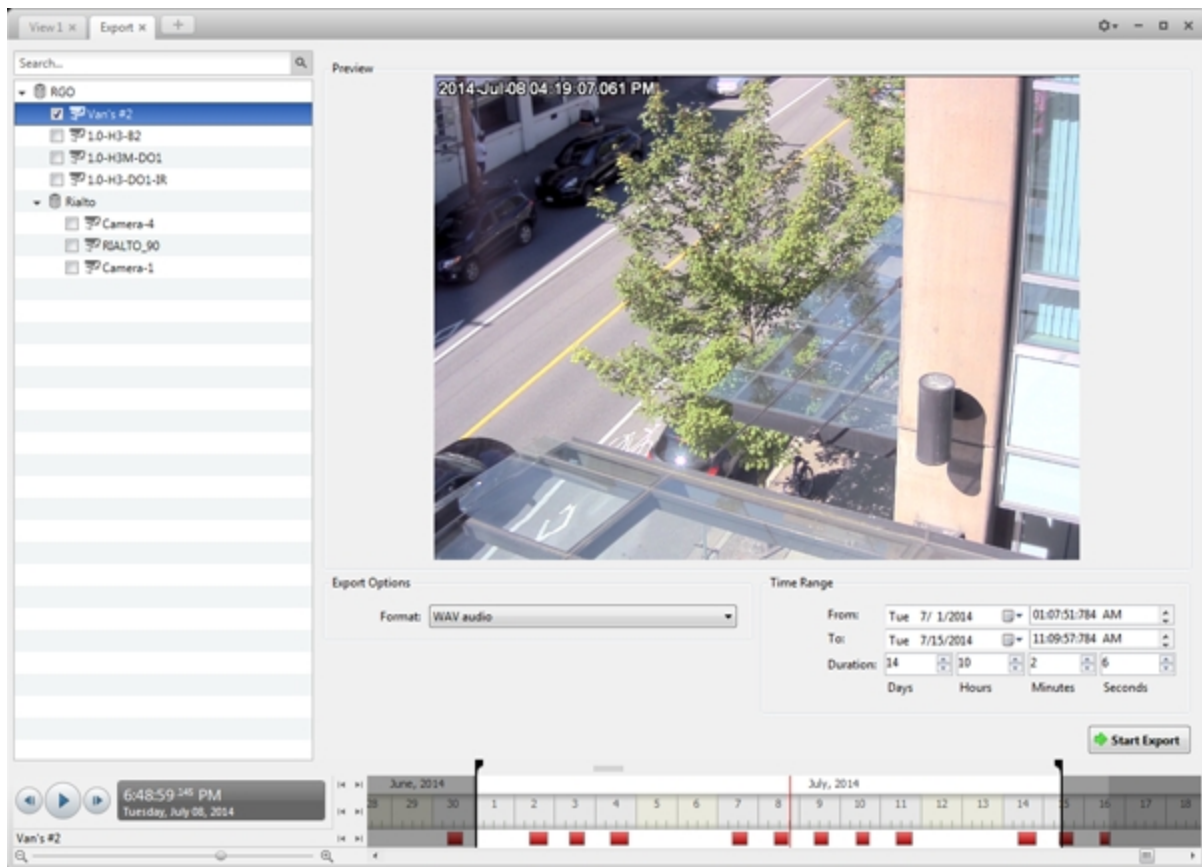


Figure 135: Export tab for audio export

2. In the **Format** drop down list, select **WAV audio**.
3. In the System Explorer, select the camera that the audio is linked to.
4. Enter the **Time Range** you want to export. The **Time Range** is highlighted on the Timeline by black time range markers. You can also drag the time range markers to modify the time range.
5. Click **Start Export**.
6. In the Save As dialog box, name the export file and click **Save**.
The Preview area displays the video linked to the audio you are exporting.
7. When the export is complete, click **OK**.

Backup

If you need to export a large amount of camera video, it is faster to back up the content into Avigilon Backup (AVK) format. AVK files can be opened in the Avigilon™ Control Center Player and re-exported as needed.

It is recommended that you export video of individual events and back up video for your archives. For more information, see [Export](#).



In the Enterprise Edition of the software, you can set the system to back up files automatically on a schedule. For information about configuring automatic backup, see [Scheduled Backup](#).

Backing Up Recorded Video On Demand

If you want a copy of the recorded video in your system, use the backup feature. Video is always backed up in Avigilon Backup (AVK) format. You can review the backed up video in the Avigilon Control Center Player.

If you want backups to occur automatically at a scheduled time, see [Scheduled Backup](#). This feature is only available in the Enterprise Edition.

The backup files are stored in a backup folder set by the Avigilon™ Control Center Admin Tool. For information about changing the backup folder, see *The Avigilon Control Center Server User Guide*.

1. In the application window, click  > .

The Backup tab is displayed.

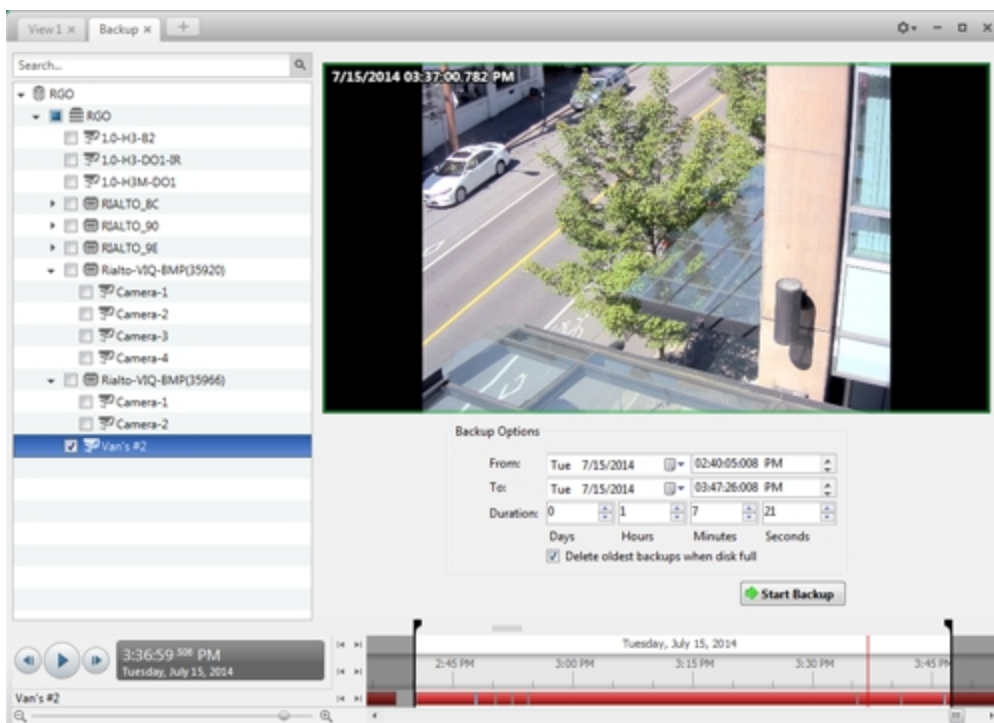


Figure 136: The Backup tab

2. In the System Explorer, select all the cameras you want to back up.
3. In the **Backup Options** area, set the time range you want to back up. The time range is highlighted on the Timeline by the black time range markers. You can also drag the time range markers to change the time range.
4. Select the **Delete oldest backups when disk full** check box to allow the application to automatically overwrite old backup files when the backup folder is full.
5. Click **Start Backup**.
6. When the backup is complete, click **OK**.

Appendix

Event and Trigger Descriptions

NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

In this section are descriptions of the options available in the Site setup when configuring Alarm triggers, Email Notification triggers, Group Permissions, and Rule Events and Actions.

Video Analytics Event Descriptions

The following table shows the Activity: options that can be used as triggers when configuring video analytics events. These triggers are based on the activity of detected classified objects.

NOTE: All events are reset when their duration reaches the specified Timeout: period.

For more information, see [Adding Video Analytics Events](#).

Activity:	Description
Objects in area	The event is triggered when the specified Number of Objects: is detected in the region of interest. NOTE: Additional objects past the specified Number of Objects: that are detected in the region of interest will not trigger the event until it is reset. The event is reset when the Number of Objects: in the region of interest falls below the specified Number of Objects:.
Object loitering	The event is triggered after an object is detected in the selected region of interest for longer than the specified Threshold Time:. The event is reset when the object leaves the region of interest.
Objects crossing beam	The event is triggered when the specified Number of Objects: have crossed the beam that has been placed in the camera's field of view. The beam can be unidirectional or bidirectional. NOTE: Additional objects past the specified Number of Objects: that cross the beam will not trigger the event until it is reset. The event is reset when it times out.
Object appears or enters area	The event is triggered by each object that enters the region of interest. This event can be used to count objects.
Object not present in area	The event is triggered when no objects are present in the region of interest.
Objects enter area	The event is triggered when the specified Number of Objects: have entered the region of interest.
Objects leave area	The event is triggered when the specified Number of Objects: have left the region of interest.
Object stops in area	The event is triggered when an object in a region of interest stops moving for the specified Threshold Time:.

Activity:	Description
Direction violated	The event is triggered when an object moves in the direction specified by the Prohibited Direction: wheel in the Video Analytics Configuration dialog box.

Alarm Trigger Source Descriptions

The following table shows the Alarm Trigger Source: options that are available when you set up an alarm. For more information about setting up an alarm, see [Adding a New Alarm](#).

Alarm Trigger Source:	Description
Motion Detection	The alarm is triggered when motion is detected by the selected cameras.
Video Analytics Event	The alarm is triggered when a video analytics event is detected by the selected cameras.
Digital Input Activation	The alarm is triggered when the selected digital inputs are activated.
License Plate Watchlist Match	The alarm is triggered when a license plate on the Watch List is detected.
POS Transaction Exception	The alarm is triggered when a POS transaction exception has occurred.
Camera Error	The alarm is triggered when a camera error occurs.
System Error	The alarm is triggered when a system error occurs.
External Software Event	The alarm is triggered by third party integration software.

Email Notification Trigger Descriptions

The following table shows the email notification trigger options that are available when you set up an email notification. For more information about setting up an email notification, see [Configuring Email Notifications](#).

Email Notification Trigger	Description
System event	<p>Email notifications are sent when one of the following rule events occurs:</p> <ul style="list-style-type: none"> • Server application starting up • Server application shutting down • Server application terminated unexpectedly • Server application low on resources • Server application installation error • Server connection lost • Server hardware event • Connection created to standby server • Connection removed from standby server • Connection failure

Email Notification Trigger	Description
	<ul style="list-style-type: none"> • Connection restored • Network connection found • Network connection lost • Network packet loss acceptable • Network packet loss unacceptable • License expires soon • License expired • Database error • Data initialization error • Data volume size reduced • Data write error • Data upgrade started • Data upgrade completed • Data upgrade failed • Data volume failed • Data volume recovered • Data recovery started • Data recovery completed • Data recovery failed • Firmware upgrade failed • Recording interrupted • Recording resumed
Motion detected on _	An email notification is sent when camera motion detection has started. You can select the camera.
Digital input activated on _	An email notification is sent when a digital input has been activated. You can select the digital input.
POS transaction exception on _	An email notification is sent when a POS transaction exception occurs. You can select the transaction source.

Group Permission Descriptions

The following table shows the options that are available when you set up a permission group. For more information about setting up a permission group, see [Adding Groups](#).

Group Permission		Description
View live images		Allows users to watch a camera's live video stream in a View.
	Use PTZ controls	Allows users to use a camera's PTZ controls.
	Lock PTZ controls	Allows users to lock a camera's PTZ controls.
	Trigger manual recording	Allows users to trigger manual recording while

Group Permission		Description
		watching video in a View.
	Trigger digital outputs	Allows users to trigger digital outputs while watching video in a View.
	Broadcast to speakers	Allows users to broadcast audio through speakers that are connected to a camera.
View recorded images		Allows users to watch a camera's recorded video in a View.
	Export images	Allows users to export recorded images.
	Backup images	Allows users to back up recorded images.
	Teach by example	Allows users to access the Teach By Example tab.
Manage saved views		Allows users to add and edit saved Views.
Manage maps		Allows users to add and edit maps.
Manage web pages		Allows users to add and edit web pages.
Manage virtual matrix monitors		Allows users to add and edit Virtual Matrix monitors.
Initiate collaboration sessions		Allows users to initiate collaboration sessions with other users on the same network.
Manage user sessions		Allows users to log other users out of the Site.
Listen to microphones		Allows users to listen to microphones that are connected to a camera.
Setup cameras		Allows users to configure cameras.
	Setup general settings	Allows users to edit a camera's General dialog box.
	Setup network settings	Allows users to edit the Network dialog box.
	Setup image and display settings	Allows users to edit the Image and Display dialog box.
	Setup compression and image rate settings	Allows users to edit the Compression and Image Rate dialog box.
	Setup image dimension settings	Allows users to edit the Image Dimensions dialog box.
	Setup motion detection settings	Allows users to edit the Motion Detection dialog box.
	Setup privacy zone settings	Allows users to edit the Privacy Zones dialog box.
	Setup manual recording settings	Allows users to edit the Manual Recording dialog box.
	Setup digital input & output settings	Allows users to edit the Digital Inputs and Outputs dialog box.

Group Permission		Description
	Setup microphone settings	Allows users to edit the Microphone dialog box.
	Setup speaker settings	Allows users to edit the Speaker dialog box.
	Setup analytics settings	Allows user to edit the Video Analytics Configuration dialog box.
Setup sites		Allows users to configure Sites.
	Setup name	Allows users to edit the Site name.
	Manage site	Allows users to add servers to the Site.
	Setup site view	Allows users to organize the order of cameras in the System Explorer.
	Setup user and group settings	Allows users to edit the Users and Groups dialog box.
	Setup Active Directory Synchronization	Allows users to set up Active Directory Synchronization.
	Setup corporate hierarchy	Allows users to edit the Edit Corporate Hierarchy dialog box.
	Setup alarm management settings	Allows users to edit the Alarms dialog box.
	Setup POS transaction settings	Allows users to edit the POS Transactions dialog box.
	Setup LPR settings	Allows users to edit the License Plate Recognition dialog box.
	Setup email settings	Allows users to edit the Email Notifications dialog box.
	Setup rule engine settings	Allows users to edit the Rules dialog box.
	View site logs	Allows users to view Site Logs.
	Connect and disconnect cameras	Allows users to connect and disconnect cameras to servers.
	Import and export settings	Allows users to import and export configuration settings.
	View Server Status	Allows users to see Server Status details.
Setup servers		Allows users to configure servers.
	Setup name	Allows users to edit the server name.
	Setup schedule settings	Allows users to edit the camera Recording Schedule .
	Setup recording and bandwidth settings	Allows users to edit the camera Recording and Bandwidth settings.
	Setup scheduled backup settings	Allows users to set up Scheduled Backup .



Rule Event and Action Descriptions

The following tables describe the trigger events and actions that are available when you set up a rule. For more information about setting up a rule, see [Adding a Rule](#).

Rule Events

Rule events are the events that trigger a rule.

Rule Events		Description
Server Events		
	Server application starting up	The server software starts up.
	Server application shutting down	The server software shuts down.
	Server application terminated unexpectedly	The server software shuts down unexpectedly.
	Server application low on resources	The server software is low on memory or storage.
	Server application installation error	The server software was installed incorrectly.
	License expires soon	The server software license expires soon.
	License expired	The server software license has expired.
	Database error	The server database has generated an error.
	Data initialization error	The server database has generated an error during initialization.
	Data volume failed	The server data volume has failed.
	Data volume recovered	The server data volume was recovered.
	Data volume size reduced	The server data volume size was reduced.
	Data write error	The server generated an error while writing data.
	Data upgrade started	A server data upgrade has started.
	Data upgrade completed	A server data upgrade has completed.
	Data upgrade failed	A server data upgrade has failed.
	Data recovery started	Server data recovery has started.
	Data recovery completed	Server data recovery has completed.
	Data recovery failed	Server data recovery has failed.
	Bookmark save failed	A bookmark failed to save.
	Network connection found	The server network connection was found.
	Network connection lost	The server network connection was lost.
	Email send error	An error was generated while sending an email notification.
	Server hardware event	A server hardware error has occurred.
	Backup started	Server backup has started.
	Backup completed	Server backup has completed.
	Backup failed	Server backup has failed.

Rule Events		Description
	Server connection lost	The server connection to the Site was lost.
Device Events		
	Connection created	A camera or device has connected to a server.
	Connection removed	A camera or device has disconnected from a server.
	Connection created to standby server	A camera or device has connected to a standby server.
	Connection removed from standby server	A camera or device has disconnected from a standby server.
	Connection failure	A camera or device connection has failed.
	Connection restored	A camera or device connection has been restored.
	Network packet loss unacceptable	A camera or device network packet loss is unacceptable.
	Network packet loss acceptable	A camera or device network packet loss is acceptable.
	Motion detection started	Motion detection has started on a camera.
	Motion detection ended	Motion detection has ended on a camera.
	Video analytics event started	A video analytics event has started.
	Video analytics event ended	A video analytics event has ended.
	Tampering detected	Tampering with a camera has been detected.
	Recording started	A camera or device recording has started.
	Recording ended	A camera or device recording has ended.
	Recording interrupted	A camera or device recording was interrupted.
	Recording resumed	A camera or device recording has resumed.
	Digital input activated	A camera or device digital input was activated.
	Digital input deactivated	A camera or device digital input was deactivated.
	Firmware upgrade started	A camera or device firmware upgrade has started.
	Firmware upgrade completed	A camera or device firmware upgrade has been completed.
	Firmware upgrade failed	A camera or device firmware upgrade has failed.
User Events		
	User login	A user has logged in.
	User logout	A user has logged out.
	Server setting changed	A user has changed the server settings.
	Site setting changed	A user has changed the Site settings.
	Device setting changed	A user has changed the camera or device

Rule Events		Description
		settings.
	Device connected	A user has connected a camera or device to a server.
	Device disconnected	A user has disconnected a camera or device from a server.
	Digital output triggered	A user has manually triggered a digital output.
	Bookmark added	A user has added a bookmark.
	Bookmark updated	A user has updated a bookmark.
	Bookmark deleted	A user has deleted a bookmark.
	PTZ moved	A user has moved a PTZ camera.
	PTZ idle	A user has left a PTZ camera idle.
	Export performed	A user has performed a video export.
	Speaker activated	A user is broadcasting audio through camera or device speakers.
	Speaker deactivated	A user has stopped broadcasting audio.
	Virtual matrix monitor opened	A user has opened a Virtual Matrix monitor in the View.
	Map added	A user has added a new map.
	Map updated	A user has updated a map.
	Map deleted	A user has deleted a map.
	View added	A user has added a saved View.
	View updated	A user has updated a saved View.
	View deleted	A user has deleted a saved View.
	Web Page added	A user has added a new web page.
	Web Page updated	A user has updated a web page.
	Web Page deleted	A user has deleted a web page.
	Site View updated	A user has updated the way cameras are organized in the System Explorer.
	Custom keyboard command triggered	A user has triggered a custom keyboard command.
Alarm Events		
	Alarm acknowledged	An alarm has been acknowledged.
	Alarm auto acknowledged	An alarm has been acknowledged automatically.
	Alarm triggered	An alarm has been triggered.
	Alarm assigned	An alarm has been assigned to a user.
	Alarm unassigned	An alarm has been unassigned from a user.
	Alarm purged	An alarm has been purged.

Rule Events		Description
POS Transaction Events		
	POS transaction started	A POS transaction has started.
	POS transaction ended	A POS transaction has ended.
	POS transaction exception	A POS transaction exception has occurred.
License Plate Recognition Events		
	License plate detection started	License plate detection has started.
	License plate detection ended	License plate detection has ended.
	License plate watchlist match	A license plate on the LPR Watch List has been detected.

Rule Actions

Rule actions are the response to a rule event.

Rule Actions		Description
User Notification Actions		
	Display on-screen message	An on-screen message is displayed about the rule event.
	Send email	An email notification is sent about the rule event to the selected recipient(s).
	Play a sound	A notification sound is played within the Client when the rule event occurs.
Monitoring Actions		
	Start live streaming	The linked live video stream is displayed when the rule event occurs.
	Create Bookmark	The recorded video of the rule event is bookmarked.
	Open a saved view	The selected saved View is automatically displayed.
	Start live streaming on a virtual matrix monitor	The live stream from the selected camera is automatically displayed on the selected Virtual Matrix monitor.
	Open a map on a virtual matrix monitor	The selected map is automatically displayed on the selected Virtual Matrix monitor.
	Open a web page on a virtual matrix monitor	The selected web page is automatically displayed on the selected Virtual Matrix monitor.
Device Actions		
	Reboot camera	The camera or device reboots when the rule event occurs.
	Trigger digital output	A digital output is triggered when the rule event occurs.

Rule Actions		Description
PTZ Actions		
	Go to Preset	The selected PTZ camera(s) moves to the selected preset position when the rule event occurs.
	Run a Pattern	The selected PTZ camera(s) runs a selected pattern when the rule event occurs.
	Set Auxiliary	The selected PTZ camera(s) starts the selected auxiliary command when the rule event occurs.
	Clear Auxiliary	The selected PTZ camera(s) ends the selected auxiliary command when the rule event occurs.
Alarm Actions		
	Trigger an alarm	An alarm is triggered when the rule event occurs.
	Acknowledge an alarm	An alarm is acknowledged when the rule event occurs.

Updating the Client Software

Avigilon™ Control Center Client software updates are typically included with the Avigilon™ Control Center Server update packages. When you first open the Client software, the following dialog box will appear if a Client software update is available:

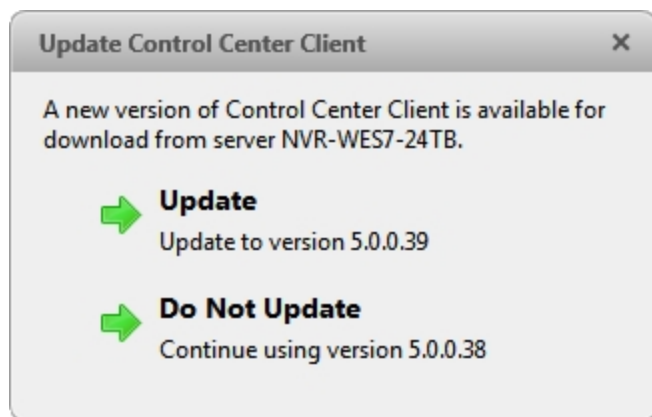


Figure 137: The Update Control Center Client dialog box

- Click **Update** to allow the Client software to update. The software update is automatically downloaded. The following dialog box will appear to show the download progress:

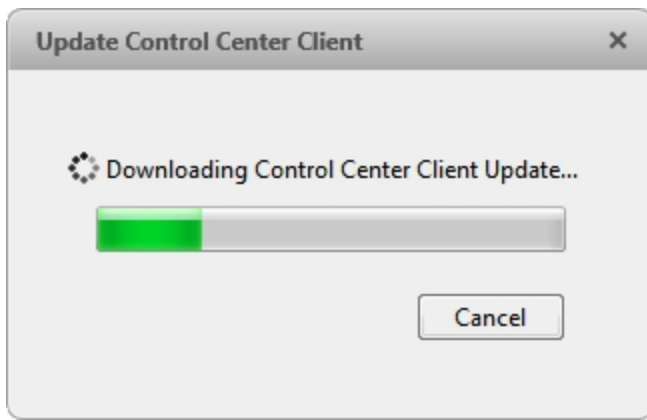


Figure 138: The Update Progress dialog box

When the update has finished downloading, click **Update Control Center Client**. When the installation wizard appears, follow the prompts to complete the update.

- Click **Do Not Update** to continue working with the Client software without updating. The Client software will not be updated, and you can continue working with the software as before.

The Client software can also be downloaded from the Software Updates & Downloads page of the Avigilon website: <http://avigilon.com/support-and-downloads/for-software/software-updates-and-downloads/>

Updating the Help Files

The help files for the Control Center Client software and Virtual Matrix software are all stored with the Control Center Server application.

If one of these components is ever updated before the others, the help files may become out of date or describe features that are not currently supported by your system.

- If the help files become out of date, download and install the latest help files from the Avigilon website. The help files are available in different installer packages divided by language and related software components.
- If the help files describe a feature that is not currently supported by your copy of the software, upgrade to the latest version.

Accessing the Control Center Web Client

You have the option of accessing cameras in your Site through the Web Client. The Web Client is a simplified version of the Client software. It allows you to monitor your surveillance system, search for video events and export recorded video outside the Client software.

NOTE: You cannot modify any system settings through the Control Center Web Client.

To access the Web Client, you need the IP address and port number of the server in your Site. The IP address is listed in the server's Setup tab in the Avigilon Control Center Client. The port number can be found in the Admin Tool under **Settings > Network**.

If you are running a multi-server Site, you only need to access one of the servers in your Site to have access to all the available cameras.

1. To access the Web Client, open Internet Explorer (version 6+) and enter the address of your Web Client in the following format:

`http://<server ip address>:<port number>/`

(For example, `http://192.168.2.62:38880/`)

If you have not accessed the Web Client before, you may be prompted to install the required plug-in software before the Web Client will open.

2. When the login screen appears, enter your username and password for the Site.

The Web Client will open in your browser, and you can access the video and cameras that are connected to the server.

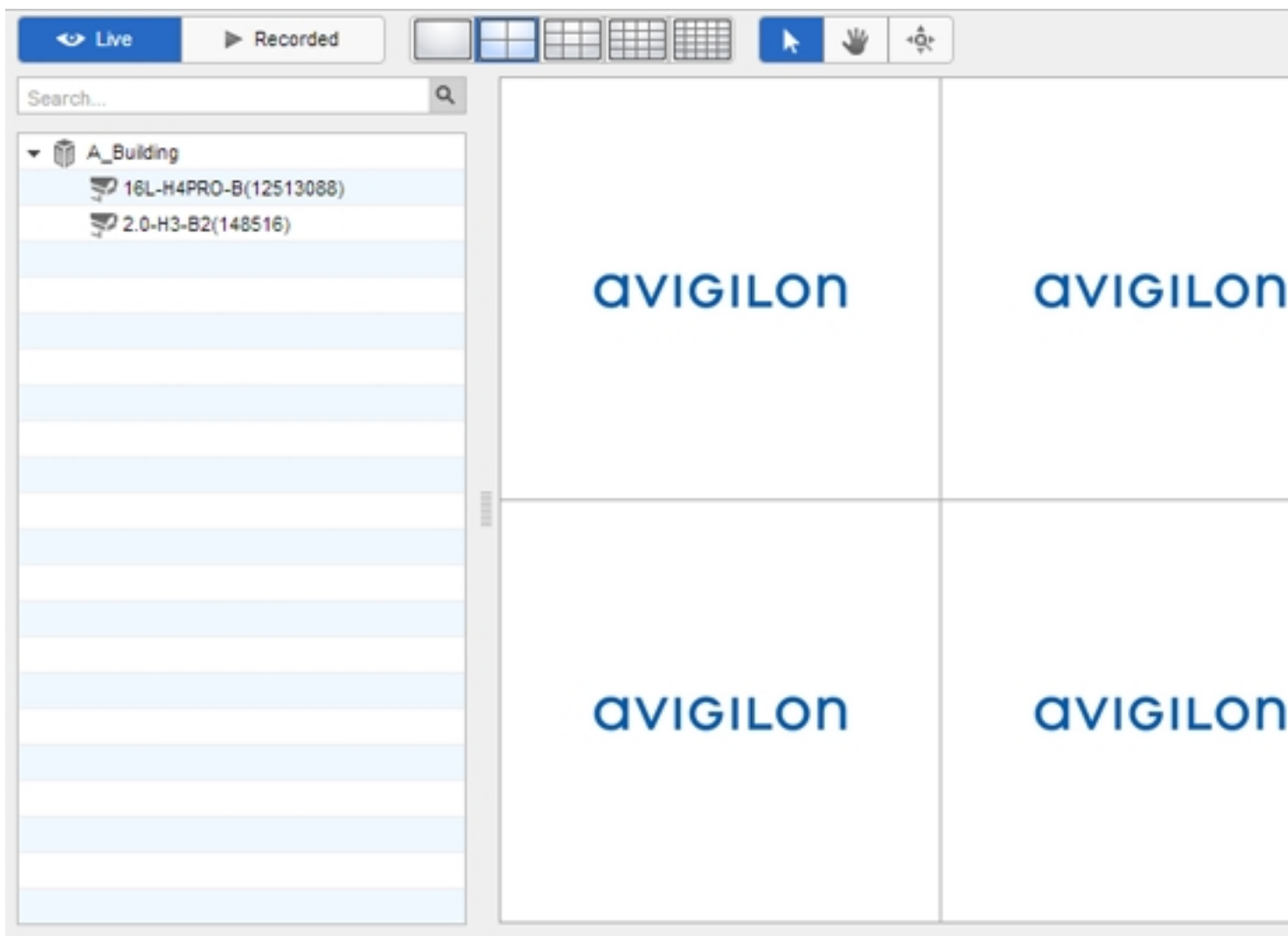


Figure 139: The Avigilon Control Center Web Client

Supported License Plates

The following license plates are currently supported by the Avigilon Control Center License Plate Recognition (LPR) feature. If the license plate format you need is not listed, you can email Avigilon Technical Support at support@avigilon.com and request an LPR Font Template.

To configure one of the following license plates for LPR, see **License Plate Recognition**.

- Africa
 - Morocco
 - South Africa
- Asia
 - China
 - Pakistan
 - Singapore
 - South Korea
 - Thailand
- Australia
- Europe
 - Belarus
 - Belgium
 - Bulgaria
 - Croatia
 - Estonia
 - France
 - Germany
 - Hungary
 - Ireland
 - Italy
 - Netherlands
 - Poland
 - Portugal
 - Romania
 - Spain



- Switzerland
- United Kingdom
- BE-DE-NL
- BG-DE
- BG-DE-RO
- HRV-DEU-HUN-ITA
- UK-IE
- UK-FR
- Middle East
 - Bahrain
 - Dubai
 - Israel
 - Jordan
 - Kuwait
 - Lebanon
 - Qatar
 - Saudi Arabia
- New Zealand
- North America
 - Canada
 - British Columbia
 - New Brunswick
 - Ontario
 - Quebec
 - Mexico
 - USA
 - Alaska
 - Arizona
 - California
 - Florida

- Illinois
- Indiana
- Kansas
- Louisiana
- Massachusetts
- Michigan
- Minnesota
- Missouri
- Montana
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- Ohio
- Pennsylvania
- South Carolina
- Texas
- Utah
- Virginia
- Washington
- Wisconsin
- Wyoming
- AZ-CA
- MI-IN-OH
- NY-VA-MD
- MO-KS
- MT-WY
- NC-VA-MD
- NY-NJ
- Russia




- South America
 - Argentina
 - Brazil
 - Chile

Reporting Bugs

If an error occurs in the Avigilon Control Center, you can contact Avigilon Technical Support at support@avigilon.com or +1.888.281.5182 option 1.

To help diagnose your problem, the Avigilon Technical Support team may ask you to provide a System Bug Report. The System Bug Report is a zip file generated by the Avigilon Control Center Client software that contains the system log and error reports for each of the servers that you can access.

To generate a System Bug Report:

1. Select  > **System Bug Report...**
2. When the Download System Bug Report dialog box appears, click **Download**.
3. In the Save As dialog box, name the file and click **Save**.
4. Once the System Bug Report has downloaded successfully, click **Close**.





Keyboard Commands











Use any of the keyboard commands below to help you navigate the Avigilon™ Control Center Client software.

The Key Combination column shows the commands used on a standard keyboard, while the Keypad Combination column shows the commands used on an Avigilon USB Professional Joystick Keyboard.












NOTE: Some features are not displayed if the server does not have the required license, or if you do not have the required user permissions.

Image Panel & Camera Commands

Command	Key Combination	Keypad Combination (Image Panel buttons)
Select an image panel Image panel # is displayed after pressing the first key.	* + <image panel #> + Enter	 + <image panel #> + 
Add a camera to the View The camera's logical ID is required.	/ + <logical ID> + Enter	 + <logical ID> + 
Select the next image panel	Tab	
Select the previous image	Shift + Tab	









Command	Key Combination	Keypad Combination (Image Panel buttons)
panel		
Clear image panel selection	* + 0 + Enter	 + 0 + 
Remove camera from the selected image panel	Backspace	
Maximize/Restore the selected image panel	Ctrl + E	
Replay 30 seconds	Ctrl + ,	
Replay 60 seconds	Ctrl + .	
Replay 90 seconds	Ctrl + /	
Add a bookmark for selected camera NOTE: For recorded video only.	Ctrl + B	
Start/Stop manual recording for the selected camera	R	
Activate/Mute audio for the selected camera	A	
Broadcast audio	S Hold to speak. Release to stop broadcasting.	 Hold to speak. Release to stop broadcasting.
Take a snapshot of the selected image panel	F4	
Display linked POS transaction source/camera	Ctrl + I	
Enable digital output	K	
Acknowledge the alarm currently displayed in an armed image panel	L	
Trigger custom keyboard command	Ctrl + K	

View Tab Commands

Command	Key Combination	Keypad Combination (View buttons)
Select the next View	Ctrl + Tab	
Select the previous View	Ctrl + Shift + Tab	
Jump to View #_	Ctrl + 1 to 9	
Start/Stop cycle Views	Ctrl + Y	
Open a new View	Ctrl + T	
Close current View	Ctrl + W	
Open a new window	Ctrl + N	
Switch current View to display live video	Ctrl + L	
Switch current View to display recorded video	Ctrl + P	
Remove all cameras from the current View	Ctrl + Backspace	
Full screen a View/End full screen	F11	
Open a saved View The saved View's logical ID is required.	Ctrl + G + <logical ID>	 + <logical ID> + 
Open a Virtual Matrix monitor The Virtual Matrix monitor's logical ID is required.	Ctrl + G + <logical ID>	 + <logical ID> + 

View Layout Commands



NOTE: Customized View layouts are linked to their position in the Layouts list. For example, if your custom layout is placed at the top of the Layouts list, you can use the keyboard command for layout 1 to select the custom layout.

Command	Key Combination	Keypad Combination (View buttons)
Change to layout 1	Alt + 1	 + 
Change to layout 2	Alt + 2	 + 
Change to layout 3	Alt + 3	 + 
Change to layout 4	Alt + 4	 + 




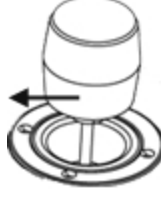
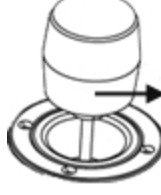
Command	Key Combination	Keypad Combination (View buttons)
Change to layout 5	Alt + 5	
Change to layout 6	Alt + 6	
Change to layout 7	Alt + 7	
Change to layout 8	Alt + 8	
Change to layout 9	Alt + 9	
Change to layout 10	Alt + 0	
Change to next layout	Alt +]	
Change to previous layout	Alt + [


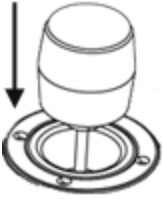











Playback Commands

Command	Key Combination	Keypad Combination (Timeline buttons)
Play/Pause video playback	Spacebar	
Increase playback speed	Page Up	
Decrease playback speed	Page Down	
Step to next frame	Shift + →	
Step to previous frame	Shift + ←	
Go to next event	Alt + →	
Go to previous event	Alt + ←	
Go forward one second	Ctrl + →	
Go forward five seconds	Ctrl + Shift + →	
Go backward one second	Ctrl + ←	
Go backward five seconds	Ctrl + Shift + ←	
Zoom in on the Timeline	Ctrl + Alt + +	
Zoom out on the Timeline	Ctrl + Alt + -	
Scroll forward on the Timeline	Ctrl + Alt + →	

Command	Key Combination	Keypad Combination (Timeline buttons)
Scroll backward on the Timeline	Ctrl + Alt + ←	
Move the Timeline marker forward		
Move the Timeline marker backward		
Go to the start of the Timeline	Ctrl + Alt + Home	
Go to the end of the Timeline	Ctrl + Alt + End	
Center the Timeline on the time marker	Ctrl + C	

PTZ Commands (Digital and Mechanical)

Command	Key Combination	Keypad Combination (PTZ buttons)
Toggle PTZ controls	Ctrl + D	
Zoom in	+	
Zoom out	-	
Pan center	←	
Pan right	→	

Command	Key Combination	Keypad Combination (PTZ buttons)
Tilt up	↑	
Tilt down	↓	
Open iris	Home	
Close iris	End	
Focus near	Insert	
Focus far	Delete	
PTZ menu left	←	
PTZ menu right	→	
PTZ menu up	↑	
PTZ menu down	↓	
Activate preset	Q + <Preset #>	 + <Preset #> + 
Run pattern		 + <Pattern #> + 
Start auxiliary	W + <Aux #>	 + <Aux #> + 
Stop auxiliary	E + <Aux #>	 + <Aux #> + 