VideoXpert Professional
v 3.1 Operations Manual

VideoXpert™

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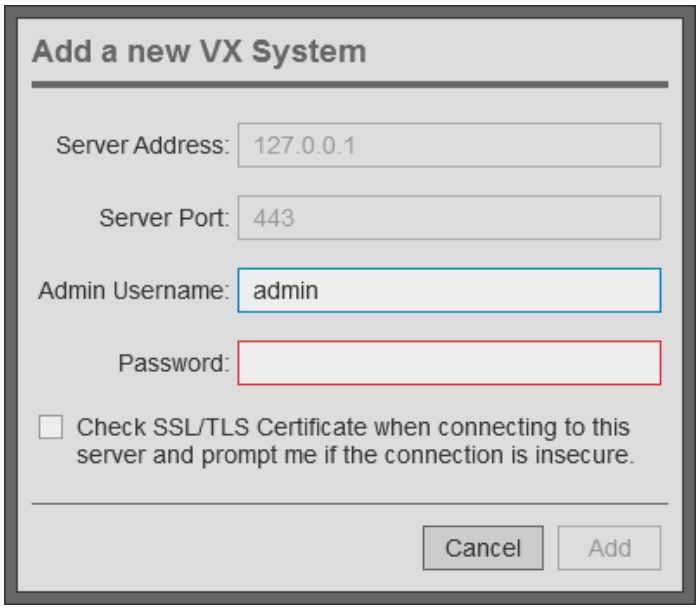
Using VideoXpert Toolbox

Performing Initial VideoXpert Server Configuration Using VxToolbox

VideoXpert Enterprise and VideoXpert Professional each come with a time-limited trial license. During this trial, you have access to all VideoXpert features, and you can ignore the **Licensing** tab within VideoXpert.

To use VideoXpert beyond the trial, you must apply a license to the server. Licensing requires either an Internet connection on the VideoXpert server itself, or access to a separate computer with Internet access.

1. After installing VideoXpert, click *Configure* or run VxToolbox for the first time on your system.
2. For VideoXpert Professional systems, in the *VideoXpert Basic System Setup* dialog box, type values in the *Company Name* and *Name Your System* fields, and then click **Save**.
3. For VideoXpert Professional system only, perform steps in the section titled *Configuring General Settings*.
4. Perform the steps in the section titled *Adding Systems*.
5. For VideoXpert Professional systems, set the VxToolbox password:
   a. Click the menu icon (☰), and then click **Set VxToolbox Password**.
   b. Type a value in the *Password* and *Reset Password* fields.
   c. Click **Save**.
6. For VideoXpert Enterprise systems:
   a. Set the password for the *admin* user on your system.



Note: The default user name is admin. You must set a new password.

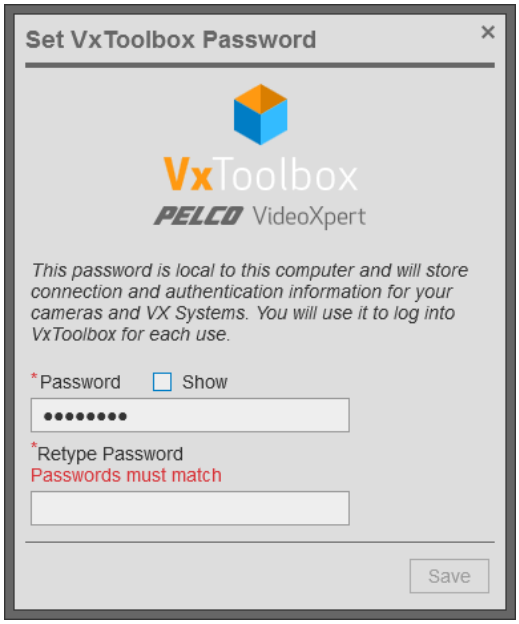
   b. (Optional) Click to select the checkbox to ensure that the system checks the SSL/TLS Certificate when connecting to the server.

Enable this feature if your organization uses signed HTTPS certificates and the certificate has already been loaded using VxToolBox.

c. Click **Add**.

d. In the *VxToolbox Password Confirmation Window*, click **Set Password** (recommended) or **No Thanks**.

e. If you clicked **Set Password**, in the *Set VxToolbox Password* dialog box, enter a password in the *Password* and *Retype Password* fields, and then click **Save**.

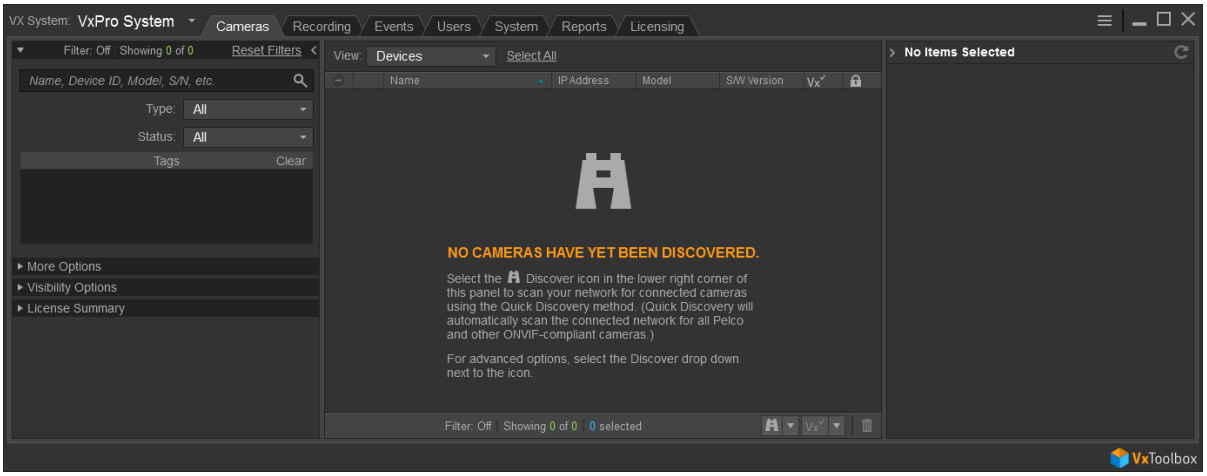


f. In the *Configure VxToolbox* dialog box, click **OK**.

g. If you enabled SSL/TLS Certificate checking, you might be required to interact with more dialog boxes. If so, follow the prompts.

h. In the *Configuration Required* dialog box, enter a *Company Name*. This is the name by which the Pelco licensing portal will recognize your VX server. The name cannot be changed later.

i. Click **Save & Continue**.
The VxToolbox application opens.



Logging Out

1. Click the menu icon (), and then click **Exit**.
2. In the *Exit* confirmation dialog box, click **Exit**.

Changing the VxToolbox Password

When starting VxToolbox, the application requests credentials. These credentials are local to the workstation and your VxToolbox installation; they do not log you in to any system or camera. Rather, your VxToolbox credentials protect your settings and the credentials for the individual cameras and systems you want to access from other users on the same workstation.

After logging in to VxToolbox, you can add systems with independent credentials, and pass credentials to cameras requiring them (closed authentication or third-party cameras).

Because your local VxToolbox environment may connect you to multiple systems and cameras, it is recommended that you protect your credentials and log out when you have finished using the application.

To change your VxToolbox password:

1. Click the menu icon (☰), and then select **Change VxToolbox Password**.
2. In the *Account Settings* dialog box, enter a new password, and then click **Save Changes**.

Licensing Your System

VideoXpert is licensed for the system, for upgrades, and by channel--the video streams you view and record. It comes with one (1) license to start. A Lite license (VideoXpert Professional only) has four channels, and a Demo license has unlimited channels. These are active only the first time you install the software, or if the software was pre-installed, the first time you start up the system. You must license additional channels to view or record additional streams.

You can license the system automatically or manually.

- Manual licensing allows you to license a system that does not have an Internet connection.
- Automatic licensing requires your VideoXpert system to be connected to the Internet and have access to the Pelco licensing server.

VxToolbox allows you to apply licenses to various systems. For assistance, contact Pelco Product Support at 1-800-289-9100 (USA and Canada) or+1-559-292-1981 (international).

Manually Activating Licenses

For manual licensing, you must have your activation ID and a separate computer with access to the licensing server at http://licensing.pelco.com. During the manual licensing process, you will need to transfer your Licensing Request File to a computer with Internet access during the activation process. If you received multiple activation IDs for VideoXpert products, you must complete the process below for each individual activation ID.

As a part of this process, you will download an Entitlement Request File and a Entitlement File; both files are specific to the product for which they were requested. It is recommended that you rename both files to reflect the system for which they are intended to prevent confusion during the licensing process.

1. Open VxToolbox and click the **Licensing** tab.
2. At the lower right corner of the *Entitlements* table (top panel), click the *Add License* icon (+).
3. Enter your activation ID in the *Activation ID* box.
4. If necessary, click to deselect the checkbox to *Automatically activate online*.
5. You will be prompted to save an activation request .bin file. Select a folder (optional) type in a file name, and then click **Save**.
   An Entitlement Request File (named either what you typed in or the same name as the *Activation ID*) with a .bin extension is downloaded to your computer.
6. Click **Enter**.
   - The *Entitlement Pending* status message appears at the top of the *Entitlements* table.
   - An entitlement named *Pending* will be listed in the table. At the far right of the *Pending* entitlement row will be two icons: *Download a new request (.bin) file* ( ) and *Remove this activation ID* ( ).
7. On a system connected to the Internet, open a new browser window or tab and go to the Pelco licensing server at http://licensing.pelco.com.
8. Under *Login*, click to select logging in **With User Name**, **With Entitlement ID**, or **With Activation ID**. You can also register as a **New User**.
9. Enter your credentials, and then click **Login** to access the Pelco licensing server.

10. Click the **Manage Devices** tab, and then click **Generate License** The Entitlement File, named *response.bin*, will be downloaded to your computer. Copy the file and save it to the system on which you are hosting VxToolbox.
11. Return to the *Licensing* page within VxToolbox.
12. Click **Choose file** under the *Entitlements* section.
13. Select your Entitlement File (response.bin), and then click **Open**.
14. Click **Import License File**.

When the process is complete, VxToolbox will display the installed license(s) in the *Entitlements* table.

Automatically Activating Licenses

If your system has an active Internet connection with access to http://licensing.pelco.com, you can automatically activate licenses for your system.

1. Open VxToolbox and click the **Licensing** tab.
2. At the lower right corner of the *Entitlements* table (top panel), click the *Add License* icon (+).
3. Enter your activation ID in the *Activation ID* box.
4. If necessary, click to select the checkbox to *Automatically activate online*.
5. Click **Enter**.
   The system logs in to the Pelco licensing server and performs several tasks. Do not navigate away from this page until you see the *Add License* dialog box.
6. Click **OK**.

VxToolbox will display the installed license(s) in the *Entitlements* table.

Viewing the License Summary

Entitlements are associated with licenses. A license might be a consolidation of several entitlements.

1. Open VxToolbox and click the **Licensing** tab.
2. In the *License Summary* table (bottom panel), view the list of licenses. For each license:
   - The license *Name* is listed. Unactivated *Entitlements* are listed as one license with the name *Pending*. The names in the *License Summary* table correspond to the names in the *Entitlements* table.
   - The *Total* column lists how many licenses and channels (sources) are included.
   - The *In Use* column identifies how many of the licenses and channels are in use.
   - The *Remaining* column identifies how many of the licenses and channels are not currently in use.

Installing Entitlements After Restoring Your System

It is highly recommended that you back up your system and save the response file used to apply your initial entitlement.

- If restoring your system after uninstalling VideoXpert, you can re-apply your initial entitlement or license.
- If you re-image your system, you cannot apply your previous entitlement. If you have re-imaged your system, contact Pelco Product Support at 1-800-289-9100 (USA and Canada) or+1-559-292-1981 (international) for assistance.

Managing the System

For VideoXpert Enterprise, you must perform certain administrative actions from VxPortal; but for VideoXpert Professional, you can perform all administrative actions from VxToolbox. For all VideoXpert Systems, VxToolbox provides a single interface from which to manage and configure both cameras and your VideoXpert Systems. From VxToolbox, you can manage any system that you can access by IP address.

Selecting a system (by name) from the *VX System* menu allows you to configure that system; the settings you see are relevant to the system, and any discovery operations you perform are issued directly from that system.

Use the *VX System* menu to switch between various VideoXpert systems.

Adding Systems

VxToolbox allows you to administer systems remotely. To add a system to VxToolbox, you must have network access to the system and your user account must be assigned the administrative role.

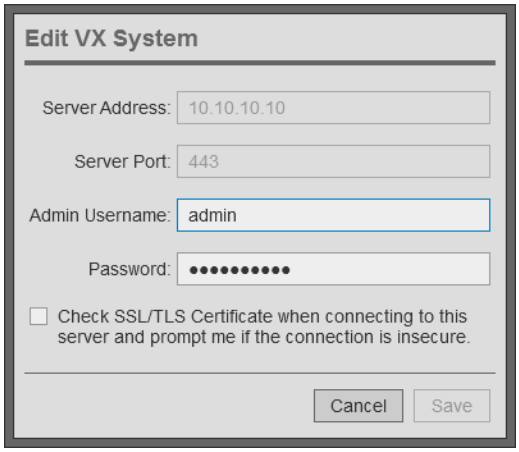
1. Access the Add a new VX system dialog box by one of these methods:
   - Click the menu icon ( ) at the upper right corner of the window, click **Manage VX System Connections**, and then click the *Add a new VX System* icon ( ).
   - At the upper left corner of the window, use the *VX System* drop-down menu to select *Add a VX system*.
2. Enter an IP address in the *Server Address* field.
3. Enter a value in the *Server Port* field, or use the default port.
4. Enter the *Admin Username* and *Password* for the system you are adding.
5. If an SSL/TLS certificate has been uploaded and configured, click to select the checkbox for *Check SSL/TLS Certificate...* to validate the certificate.
6. Click **Add**.
7. Click the at the top left of the *Manage VX System Connections* window to close it.

Editing the System Validation

You can change whether the SSL/TLS certificate is validated when connecting to a system from VxToolbox. Editing a system only affects your settings within your local VxToolbox installation.

1. Click the menu icon ( ) at the upper right corner of the window, and then click **Manage Vx System Connections**.
2. Select the system you want to edit.
3. In the right panel of the *Manage Vx System Connections* window, view the system connection information.
4. Click the *Edit VX System* icon ( ) to edit system settings.
   a. Enter the *Admin Username*.
   b. Enter the *Password*.

c. Click to select or deselect the checkbox for *Check SSL/TLS Certificate...*



5. Click **Save**.
6. In the *Update* dialog box, click **OK**.
7. Click the ✕ at the top left of the *Manage VX System Connections* window to close it.

Removing a System

You can remove a system from VxToolbox. It can be re-added at any time.

1. Click the menu icon (☰) at the upper right corner of the window, and then click **Manage Vx System Connections**.
2. Select the system you want to remove.
3. Click the *Delete* icon (🗑) to remove the system.
4. In the *Delete System* dialog box, click **OK** to confirm the deletion.
5. Click the ✕ at the top left of the *Manage VX System Connections* window to close it.

Discovering Devices

VxToolbox can search the local network or the network belonging to any particular VideoXpert system for devices, or you can add devices manually to the VxToolbox list. Through VxToolbox, you can manage device settings for all the devices on the network, without having to go to individual device interfaces.

VxToolbox can discover Pelco cameras or third-party cameras supporting ONVIF.

Note: You must be connected to a VideoXpert system to add devices to the system.

Finding Devices (Quick Discovery)

Use Quick Discovery to discover devices, but not add them. If you use Quick Discovery, you must add devices manually. Alternatively, use the *Quick Discovery and Add* option described in the section titled Finding and Adding Devices (Quick Discovery and Add). To use Quick Discovery, click **Devices**, and then do one of the following:

- Click the *Quick Discovery* icon ( ) to perform a quick search for devices.
- Click the *Advanced Discovery Options* icon ( ) to the right of the *Quick Discovery* icon, and then click **Quick Discovery**.

Finding and Adding Devices (Quick Discovery and Add)

1. Click **Devices**, and then click the *Advanced Discovery Options* icon ( ) to the right of the *Quick Discovery* icon.
2. Click **Quick Discovery and Add**.
   All Devices and Data Sources that are discovered by VxToolbox are added to the VX System to which you are connected.
3. If the *Recorder Assignment* dialog box opens, assign the third-party devices to a recorder.
   a. Select an option from the *Select Recorder* drop-down menu.
   b. Click **Add**.
   c. If the devices cannot be added to the VX System, the *Operation Failure* dialog box opens. Make a note of the information in the box, click **OK**, and then try to add the devices to a different recorder. If necessary, contact Pelco Customer Support.

Finding Devices (Advanced Discovery)

Using Advanced Discovery, you can search for devices by protocol type or you can add individual devices by IP address. You may want to add devices that do not support ONVIF or Pelco discovery methods using the IP address.

1. Click **Devices**, and then click the *Advanced Discovery Options* icon ( ) to the right of the *Quick Discovery* icon.
2. Click **Advanced Discovery**.
3. To use Quick Discovery, but specify using either SSDP (Simple Service Discovery Protocol) or WS-Discovery (Web Services Dynamic Discovery):

a. From the *Discovery Method* drop-down menu, select *Quick Discovery*.
b. Click to select or deselect the checkbox for *SSDP*.
c. Click to select or deselect the checkbox for *WS-Discovery*.
d. (Optional) Click to select the checkbox for *Add discovered devices to the VX system*.

4. If you want to discover devices by IP address or hostname:
   a. From the *Discovery Method* drop-down menu, select *Discover by IP or Hostname*.
   b. Enter a value in the *Host* field.
   c. (Optional) Enter a value in the *Port* field.
   d. (Optional) Type values in the *Username* and *Password* fields.
   e. (Optional) Click **Add Host Address**, and repeat the previous three steps.
   f. (Optional) Click to select the checkbox for *Add discovered devices to the VX system*.
5. Click **Discover**.

Note: While this feature adds devices to the system, it does not commission them. To commission the devices, add them, then select them, right-click a device that is selected, and then click **Commission**.

Adding an RTSP Device

To add a device that uses RTSP:

1. Click **Devices**, and then click the *Advanced Discovery Options* icon ( ) to the right of the *Quick Discovery* icon.
2. Click **Add RTSP Device**.
3. Type a value in the *Device Name* field.
4. (Optional) Click to select the checkbox for *Set Credentials*, and then enter values in the *Username* and *Password* fields.
5. Enter a value in the *URI* field.
6. (Optional) Click **Add Another URI to this Device**, and then enter a value in the *URI* field.
7. When you have added all URIs, click **Create**.

Recognizing Device Credentials

Some devices require credentials for you to access their video or change their settings. The Authentication status column provides the status of each device, using the following icons:

Icon	Description
	Device requires authentication.
	Device does not require authentication.
	VxToolbox has authenticated to this device.
	This device is authenticated in VxToolbox, but not on the system with which it is associated. Click the icon to attempt to authenticate the device with the system.
	This device is authenticated on a particular system with which it is associated, but not in VxToolbox. You must first authenticate to view and/or edit the device.

Adding Credentials to a Device

To add credentials to a device:

Click **Devices**.

1. Select the device requiring credentials.
2. Enter credentials in the appropriate fields, and then click **Submit**.

Managing Devices on a System

You must add a device to VideoXpert to make it visible within the system and to manipulate device settings. VxToolbox enables you to add a device or change device settings.

You must commission a device to view its video or to use its video or resources within VideoXpert. VideoXpert typically commissions devices automatically when you add them to the system. In many cases, commissioning a device requires a license; the type of license required depends on the type of device you are commissioning.

Add or commission operations are available from the **Devices** tab for the selected system. Commissioning information is shown in the Added/Commissioned ( ) column; you can expose this column by selecting *Added/Commissioned* from *Show Data Columns* in the filtering panel.

Symbols in the *Added/Commissioned* column are:

Icon	Status
	Not added; not commissioned
	Added; not commissioned
	Added; commissioned

Adding and Commissioning Devices

VxToolbox will only provide adding and commissioning options applicable to the camera(s) you have selected. Add and Commission operations are relevant to the system you have selected from the *VX System* menu.

1. In the center panel of the *Devices* tab, select the devices you want to add and commission.
2. Perform one of the following steps:
   - Right-click the device, and then select **Add and Commission to [VX System name]**.
   - Click to select the device, and then click the *Add, Commission, and Assign Cameras to a recorder* icon ( ) at the lower right of the center panel.
   - Click to select the device, click the *Addition, Commission and Assignment options* icon ( ), and then click **Add and Commission to [VX System name]**.
3. If the *Authentication Notice* dialog box opens, follow the instructions in the dialog box.
4. If the *Recorder Assignment* dialog box opens, select a recorder from the drop-down menu, and then click **Add**.
   The icon for the device changes from *Not added; not commissioned* ( ) to *Added; commissioned* ( ).

Adding Devices Without Commissioning

The Add operation is relevant to the system you have selected from the *VX System* menu.

1. In the center panel of the *Devices* tab, select the devices you want to add.
2. Perform one of the following steps:
   - Right-click the devices, and then select **Add to [VX System name]**.
   - Click the *Addition, Commission and Assignment options* icon (▼), and then click **Add to [VX System name]**.
3. If the *Recorder Assignment* dialog box opens, select a recorder from the drop-down menu, and then click **Add**.
   The icons for the devices change from *Not added; not commissioned* (🚫) to *Added; not commissioned* (Vx*).

Commissioning Devices that were Added Previously

VxToolbox will only provide commissioning options applicable to the camera(s) you have selected, and which were already added. Commission operations are relevant to the system you have selected from the *VX System* menu.

1. In the center panel of the *Devices* tab, select the devices you want to commission.
2. Perform one of the following steps:
   - Right-click the devices, and then select **Commission**.
   - Click the *Addition, Commission and Assignment options* icon (▼), and then click **Commission**.

   The icons for the devices change from *Added; not commissioned* (Vx*) to *Added; commissioned* (Vx✓).

Decommissioning Devices

VxToolbox can decommission the camera(s) you have selected, on system you have selected from the *VX System* menu.

1. In the center panel of the *Devices* tab, select the devices you want to decommission.
2. Perform one of the following steps:
   - Right-click the devices, and then select **Decommission**.
   - Click the *Addition, Commission and Assignment options* icon (▼), and then click **Decommission**.

   The icons for the devices change from *Added; commissioned* (Vx✓) to *Added; not commissioned* (Vx*).

Removing Devices

After a device is discovered, it will persist in the system's device registry until it is removed, even if the device no longer exists on the network.

Removing a device will prevent you from retrieving any associated recordings through VideoXpert Storage. To preserve access to recordings on VideoXpert Storage devices, decommission the devices until video for the device has expired or you are sure you will no longer need to access recordings for the device, then remove the device.

From VxToolbox, you can remove the device(s) you have selected, on the system you selected from the *VX System* menu.

1. In the center panel of the *Devices* tab, select the devices you want to remove.
2. Perform one of the following steps:
   - Right-click the devices, and then select **Remove**.
   - Right-click the devices, and then click the *Remove cameras from the list and/or VX System* icon ( ) at the bottom right of the center panel.
   - Right-click the devices, click the *Addition, Commission and Assignment options* icon ( ), and then click **Remove**.
3. In the *Remove Device(s)* confirmation dialog box, click **OK**.
   The devices are removed from the list. They can be discovered again at any time.

Viewing Devices, Data Sources, or Alarms & Relays

The audio and video sources produced by a device (for example, a camera) are referred to as **data sources**.

A device can have more than one data source. For example, a multi-channel encoder may have multiple cameras connected to it, each with its own data source; a camera may have a microphone, producing audio and video data sources.

A device can have one or more alarms and relays, depending on the device. For example: an encoder typically has one alarm and one relay per device channel; a camera might have only one alarm and one relay for the device. Alarms are configured and relays are enabled on the *Devices* page.

- To view all devices on the system, in the *View* field drop-down menu, at the top of the center panel, select **Devices**.
- If a device and its data sources are distinguishable, you can see the individual data sources, alarms, and relays. To see the data sources, alarms, and relays that are associated with a specific device:
  a. In the *View* field drop-down menu, select **Devices**.
  b. Click to select a device (camera).
  c. Click the expand icon ( ) to the left of the device.
     Data sources, alarms (if any) and relays, (if enabled) are listed directly below the device.
- To view all data sources on the system, in the *View* field drop-down menu, at the top of the center panel, select **Data sources**.
- To view the list of alarms and relays on the system, in the *View* field drop-down menu, at the top of the center panel, select **Alarms & Relays**.

You can determine the status of an alarm or relay by the icons in the *State* column.

Icon	State
	Alarm is active
	Alarm is inactive
	Relay is active
	Relay is inactive

You can determine whether an alarm or relay is enabled or disabled by the icons in the *Enabled* column.

Icon	Enabled
	Yes
	No

Finding and Filtering Existing Sources

Use filtering options to show the devices and data sources relevant to you within the system or environment you have selected. Filters appear in the left-most panel of the *Devices* tab and in some other tabs.

- Click to expand, and then enter values in, the *Filters Devices* field to filter by criteria including the device name, ID, model, IP address, serial number, vendor, or software version.
- Click to expand, and then click to select and deselect checkboxes in, the *Filter by Type* area.
- Click to expand, and then click to select and deselect checkboxes in, the *Filter by Status* area.
- Click in the *Filter by Tags* field, and type in or select a tag for which to filter. Tags are set in VxOpsCenter. Refer to the *VxOpsCenter User Guide* for more information.
- Click **Reset Filters** to clear the filters.

Controlling the Columns Displayed in the Devices Window

On the *Devices* page, in the left panel, below the filter areas, click to select and deselect checkboxes in the *Show Data Columns* area.

Viewing the License Summary

On the *Devices* page, in the left panel, below *Show Data Columns*, click to expand **License Summary**. View the system license information.

Configuring the Rules Engine

The *Rules* tab allows you to configure events generated by a source to trigger a response. Rules can have one or more triggers, zero or more schedules, and one or more responses. There can be multiple rules on the system.

Managing Rules

Use VxToolbox to create, duplicate, edit, or delete rules in the rules engine.

Creating a Rule

1. Click the **Rules** tab.
2. In the left panel, click the *Create a new Rule* icon ( ). The *Edit Mode* (right) panel is activated.
3. Enter a value in the *Name of Rule* field.
4. Click to select the radio button for *Active* or *Inactive*.
5. Add one or more triggers for the rule. See the section titled *Adding a Trigger*.
6. (Optional) Add one or more schedules to the rule. See the section titled *Adding a Schedule*.
7. Add one or more responses to the rule. See the section titled *Adding a Response*.
8. When you have finished configuring triggers, schedules, and responses, click **Save**.

Duplicating a Rule

To use an existing rule as a starting point to create a new rule:

1. Click the **Rules** tab.
2. (Optional) In the left panel, enter a value in the *Search Rules* field to filter the rules.
3. Click to select the rule to duplicate.
4. Click the *Duplicate the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
5. Enter a value in the *Name of Rule* field.
6. Click to select the radio button for *Active* or *Inactive*.
7. (Optional) Add, duplicate, edit, or delete one or more triggers for the rule. See the sections titled *Adding a Trigger*, *Duplicating a Trigger*, *Editing a Trigger*, and *Deleting a Trigger*.
8. (Optional) Add, create a copy of, edit, or delete one or more schedules for the rule. See the sections titled *Adding a Schedule*, *Creating a Copy of a Schedule*, *Editing a Schedule*, and *Deleting a Schedule*.
9. (Optional) Add, duplicate, edit, or delete one or more responses for the rule. See the sections titled *Adding a Response*, *Duplicating a Response*, *Editing a Response*, or *Deleting a Response*.
10. When you have finished configuring triggers, schedules, and responses, click **Save**.

Editing an Existing Rule

1. Click the **Rules** tab.
2. (Optional) In the left panel, enter a value in the *Search Rules* field to filter the rules.
3. Click to select the rule to edit.
4. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.

5. Click to select the radio button for *Active* or *Inactive*.
6. (Optional) Add, duplicate, edit, or delete one or more triggers for the rule. See the sections titled *Adding a Trigger*, *Duplicating a Trigger*, *Editing an Existing Trigger*, and *Deleting a Trigger*.
7. (Optional) Add, create a copy of, edit, or delete one or more schedules for the rule. See the sections titled *Adding a Schedule*, *Creating a Copy of an Existing Schedule*, *Editing an Existing Schedule*, and *Deleting a Schedule*.
8. (Optional) Add, duplicate, edit, or delete one or more responses for the rule. See the sections titled *Adding a Response*, *Duplicating an Existing Response*, *Editing an Existing Response*, or *Deleting a Response*.
9. When you have finished editing triggers, schedules, and responses, click **Save**.

Deleting a Rule

1. Click the **Rules** tab.
2. In the left panel (list of rules), click the rule to delete.
3. Click the *Delete the selected Rule* icon ( ).
4. In the confirmation dialog box, click **Delete**.

Managing Triggers

Add, duplicate, edit, or delete triggers from a rule to control the type of events that will trigger one or more responses.

Adding a Trigger

To add an entirely new trigger to a rule:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. In the *Triggers* panel, click the *Add New Rule Trigger* icon ( ).
5. (Optional) In the *Select an Event to trigger this Rule* dialog box, narrow the list of events. To do so, you can select a category from the *Show* drop-down menu; you can also type a value in the *Search* field.
6. In the *Select an Event to trigger this Rule* dialog box, click to select an event.
7. In the *Select Event Sources to limit this Trigger for Rule* dialog box, click to select the appropriate radio button. The options vary depending on the trigger you have chosen. If you are prompted to do so, make any other necessary selections, and then click **Save**.
8. When you have finished configuring the rule, click **Save**.

Duplicating a Trigger

To use an existing trigger as a starting point to create a new trigger:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. In the *Triggers* panel, click to select a trigger to duplicate.

5. Click the *Duplicate Rule Trigger* icon ( ).
6. (Optional) Edit the *When this event* settings, associated with the duplicate trigger:
   a. In the *When this event* column, click the edit icon ( ) in the appropriate trigger.
   b. (Optional) In the *Select an Event to trigger this Rule* dialog box, narrow the list of events. To do so, you can select a category from the *Show* drop-down menu; you can also type a value in the *Search* field.
   c. Click to select the event.
   d. Click **Save**.
7. (Optional) Edit the *is generated by* settings, associated with the duplicate trigger:
   a. In the *is generated by* column, click the edit icon ( ) in the appropriate trigger.
   b. In the *Select Event Sources to limit this Trigger for Rule* dialog box, click to select the appropriate radio button. The options vary depending on the trigger you have chosen. If you are prompted to do so, make any other necessary selections, and then click **Save**.
8. When you have finished configuring the rule, click **Save**.

Editing a Trigger

To use an existing trigger as a starting point to create a new trigger:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. In the *Triggers* panel, click the trigger to edit.
5. (Optional) Edit the *When this event* settings, associated with the duplicate trigger:
   a. In the *When this event* column, click the edit icon ( ) in the appropriate trigger.
   b. (Optional) In the *Select an Event to trigger this Rule* dialog box, narrow the list of events. To do so, you can select a category from the *Show* drop-down menu; you can also type a value in the *Search* field.
   c. Click to select the event.
   d. Click **Save**.
6. (Optional) Edit the *is generated by* settings, associated with the duplicate trigger:
   a. In the *is generated by* column, click the edit icon ( ) in the appropriate trigger.
   b. In the *Select Event Sources to limit this Trigger for Rule* dialog box, click to select the appropriate radio button. The options vary depending on the trigger you have chosen. If you are prompted to do so, make any other necessary selections, and then click **Save**.
7. When you have finished configuring the rule, click **Save**.

Deleting a Trigger

If a trigger is no longer needed, delete it.

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. In the *Edit Mode* panel, click to select the trigger to delete.
5. Do one of the following:
   - Click the at the left of the trigger entry.
   - Click the delete icon ( ).
6. When you have finished configuring the rule, click **Save**.

Managing Schedules

You can set one or more schedules to limit the times during which an event triggers a response; or you can leave the *Schedules* panel unpopulated to allow the trigger/response combination at all times.

Adding a Schedule

To create an entirely new schedule:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. At the bottom of the *Schedules* panel, click the *Edit Rule Schedules* icon ( ).
5. Click to select the *Add a new schedule* icon ( ).
6. In the *Create Schedule* dialog box, enter a value in the *Display Name* field.
7. Click to select the radio button for the increments.
8. (Optional) Click to select the checkbox for *24-Hr.*Time.
9. Click and drag in the calendar to select the times.
10. (Optional) Click to select the checkbox for *Within limited date range*, if you selected *Within limited date range*, you must also select the *Start on* and *End after* values.
11. Click **Add**.
12. In the *Select Schedules for Rule* dialog box, click to select the checkbox for the schedule to apply to the rule.
13. When you have finished configuring schedules, click **Save Changes**.
14. When you have finished configuring the rule, click **Save**.
15. (Optional) To quickly view the scheduled times, click to select the schedule, and then click the *View selected Rule Schedule* icon ( ). Click outside the calendar to close it.

Creating a Copy of a Schedule

To use an existing schedule as a starting point to create a new schedule:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. Click the *Edit the selected Schedule* icon ( ).
5. Click to select (highlight) the schedule to copy.
6. Click the *Create a copy of the selected Schedule* icon ( ).
7. In the *Duplicate Schedule* dialog box, enter a new value in the *Display Name* field. If you do not enter a new value, the schedule will be saved as *[Original name] - Copy*.
8. Click to select the radio button for the increments.
9. Click to select or deselect the checkbox for *24-Hour Time*.
10. Click and drag in the calendar to select the times.
11. Click to select or deselect the checkbox for *Within limited date range*, if you select *Within limited date range*, you must also select the *Start on* and *End after* values.
12. Click **Add**.
13. When you have finished configuring schedules, click **Save Changes**.
14. When you have finished configuring the rule, click **Save**.
15. (Optional) To quickly view the scheduled times, click to select the schedule, and then click the *View selected Rule Schedule* icon ( ). Click outside the calendar to close it.

Editing a Schedule

To edit an existing schedule:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. Click to select (highlight) the schedule to edit.
5. Click the *Edit Rule Schedules* icon ( ).
6. In the *Select Schedules for Rule* window, click to highlight the schedule to edit.
7. Click the *Edit the selected Schedule* icon ( ).
8. (Optional) In the *Edit the Schedule* dialog box, enter a new value in the *Display Name* field. If you do not enter a new value, the schedule will be saved with the original name.
9. Click to select the radio button for the increments.
10. Click to select or deselect the checkbox for *24-Hour Time*.
11. Click or click and drag in the calendar to select the times.
12. Click to select or deselect the checkbox for *Within limited date range*, if you select *Within limited date range*, you must also select the *Start on* and *End after* values.
13. Click **Save**.
14. When you have finished configuring schedules, click **Save Changes**.

15. When you have finished configuring the rule, click **Save**.
16. (Optional) To quickly view the scheduled times, click to select the schedule, and then click the *View selected Rule Schedule* icon ( ). Click outside the calendar to close it.

Deleting a Schedule

1. Click to select the **Rules** tab.
2. Click to select the rule to delete.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. Click the *Edit the selected Schedule* icon ( ).
5. In the *Edit the Schedule* dialog box, click to select the schedule to delete.
6. Click the *Delete Schedule* icon ( ).
7. In the *Delete Schedule* confirmation dialog box, click **Delete Schedule**.
8. When you have finished configuring schedules, click **Save Changes**.
9. When you have finished configuring the rule, click **Save**.
10. (Optional) To quickly view the scheduled times, click to select the schedule, and then click the *View selected Rule Schedule* icon ( ). Click outside the calendar to close it.

Managing Responses

Set one or more responses to the events in the rule.

Adding a Response

To add an entirely new response for a trigger:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. In the *Responses* panel, click the edit icon ( ) to the right of *then this will happen*. The *Edit the Responses triggered by Rule* dialog box opens.
5. Click the *Add a new Response* icon ( ).
6. Click to select an option from the *Response Category* drop-down menu.
7. Select the appropriate options requested in the dialog box. These will vary depending on the *Response Category* that you chose in the previous step.
8. (Optional) If you selected a response type that is not Custom Script, you can change it to a custom script. To do so, click **Convert to Custom Script**, and then click **Convert** in the confirmation dialog box. The name of the response is changed to *Custom Script*, and the code is displayed.
9. When you have finished configuring responses, click **Save**.
10. When you have finished configuring the rule, click **Save**.

Duplicating an Existing Response

To use an existing response as a starting point to create a new response:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. In the *Responses* panel, click the edit icon ( ) to the right of *then this will happen*. The *Edit the Responses triggered by Rule* dialog box opens.
5. Click to select the response to duplicate.
6. Click the *Duplicate the selected Response* icon ( ).
7. With the duplicate highlighted, select the appropriate options requested in the dialog box. These will vary depending on the *Response Category* of the response you duplicated.
8. (Optional) If you selected a response type that is not Custom Script, you can change it to a custom script. To do so, click **Convert to Custom Script**, and then click **Convert** in the confirmation dialog box. The name of the response is changed to *Custom Script*, and the code is displayed.
9. When you have finished configuring responses, click **Save**.
10. When you have finished configuring the rule, click **Save**.

Editing a Response

To edit an existing response:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. In the *Responses* panel, click the edit icon ( ) to the right of *then this will happen*. The *Edit the Responses triggered by Rule* dialog box opens.
5. Click to select the response to edit.
6. Select the appropriate options requested in the dialog box. These will vary depending on the *Response Category*.
7. (Optional) If you selected a response type that is not Custom Script, you can change it to a custom script. To do so, click **Convert to Custom Script**, and then click **Convert** in the confirmation dialog box. The name of the response is changed to *Custom Script*, and the code is displayed.
8. When you have finished configuring responses, click **Save**.
9. When you have finished configuring the rule, click **Save**.

Deleting a Response

To delete a response:

1. Click to select the **Rules** tab.
2. Click to select the rule to edit.
3. Click the *Edit the selected Rule* icon ( ). The *Edit Mode* (right) panel is activated.
4. In the *Responses* panel, click the edit icon ( ) to the right of *then this will happen*. The *Edit the Responses triggered by Rule* dialog box opens.

5. Click to select the response to delete.
6. Click the *Delete the selected Response* icon ( ).
7. In the confirmation dialog box, click **Delete**.
8. When you have finished configuring responses, click **Save**.
9. When you have finished configuring the rule, click **Save**.

Configuring Recording

The *Recording* tab allows you to assign data sources (video and audio) to recorders within the *VX System* you have selected.

You can assign devices to recorders and create recording schedules through VxToolbox and VxStorage Portal; assigning data sources to a recorder without creating a schedule will prevent data sources from recording. You can perform advanced VxStorage configuration by connecting to the recorder using its IP address on port 9091.

Configuring a Recorder

1. Click the **Recording** tab.
2. At the top of the left panel, click **Recorders**.
3. Click to select the recorder to configure.
4. If available at the bottom of the left panel, click to expand **Recorder Configuration**. Not every recorder has configurable settings. Update recorder configuration settings, depending on which are available for the recorder type.
   a. (Optional) To change the recorder name, enter a new value in the *Name* field.
   b. (Optional) Under *Maximum Retention Period*, enter a number in the *Discard Video after [#] Days* field, either by typing in a value or selecting a value using the up and down arrows.
   c. Click to select the radio button for the *Transmission Method* field: *Multicast* or *Unicast*.
   d. Click to select the radio button for the *Stream to Record* field: *Primary*, *Secondary*, or *Primary+Secondary*.
   e. Click **Save Changes**.

Assigning Cameras to a Recorder

The recorders and cameras you see in the *Recording* tab are relevant to the *VX System* you have selected.

1. Click the **Recording** tab.
2. At the top of the left panel, click **Recorders**.
3. Click to select the recorder to which you want to add or remove data sources. (Optional) Use filters to find the sources you want to add to the recorder. The data sources already associated with the recorder are listed in the *Data Sources Recording to [recorder name]* column.
4. In the *All Data Sources* area of the right panel, click to select the checkboxes for the devices you want to add to the recorder; click to deselect the checkboxes for the devices you want to remove from the recorder.

The update is immediately reflected in the *Data Sources Recording to [recorder name]* column.

Adding a Recording Group to a Recorder

1. Click the **Recording** tab.
2. At the top of the left panel, click **Schedules**.
3. In the *What to Record* (left) panel, click the *Create a New Recording Group* icon (), or click to select a recording group similar to the one you will create, and then click the *Duplicate selected Recording Group* icon ().
4. Enter a value in the *Name of Recording Group* field of the *New Recording Group* dialog box.
5. Click to select the radio button for *All Resources* or *Selected Resources*.

6. If you selected *Selected Resources*, in the *Add / Remove Cameras from Group* table, click to select the checkboxes for the sources to include in the recording group; click to deselect the checkboxes for the sources to exclude from the recording group. (Optional) Use the filter to find the sources you want to add to the group. You can also sort on the *Name* and #columns in the *Add / Remove Cameras from Group* table.
7. Click **Save**.

Creating a Recording Schedule for a Recording Group

1. If necessary, click the **Recording** tab, and then click **Schedules**.
2. In the *What to Record* (left) panel, click to select the recording group for which create a recording schedule.
3. In the *When to Record* (center) panel, click the *Edit the Recording Schedules* icon ( ) to open the *Select Schedules for Recording Group* dialog box.
4. In the *Select Schedules for Recording Group* dialog box, click to select the checkboxes to build the schedule you want to apply to the recording group.
5. (Optional) To create and select a schedule that is not in the list:
   a. Click the *Add a New Schedule* icon ( ); or click the *Create a copy of the selected schedule* icon ( ) to start with a schedule that is close to what you want.
   b. Enter a value in the *Display Name* field.
   c. Click the appropriate radio button to the right of *Increments*, to select the available increments of time to record.
   d. Click to select or deselect the checkbox for *24-Hr. Time*. Deselecting the checkbox results in 12:00-11:59 AM and 12:00-11:59 PM recording timestamps.
   e. Indicate the times and days to record by clicking to select boxes corresponding to a days and times. You can also click and drag to select a contiguous range of times and days. Click to deselect any days and times that you do not want to record.
   f. (Optional) Click the checkbox to select *Within limited date range*, enter a date in the *Start on* and *End after* fields, either by selecting the dates from the calendars or by typing in a date using the mm/dd/yy format. You can deselect the checkbox to make the schedule unlimited by date.
   g. Click **Add**.
   h. In the *Select Schedules for Recording Group* dialog box, click to select the checkbox for the schedule you just created.
   i. Click **Save Changes**.
6. (Optional) You can quickly view the recording schedule by clicking the *View selected Recording Schedule* icon ( ) at the bottom left corner of the center panel.
7. Click to select one of the *Recording Schedules*.
8. In the *Recording Behaviors* (right) panel, click the *Create a new Recording Behavior* icon ( ).
9. Click to select the radio button for either *Continuous Recording* or *Event-Triggered Recording (Full Frame Rate)*.
10. If you selected *Continuous Recording*, click to select the radio button for either *Full Frame Rate* or *Reduced Frame Rate*.

11. If you selected *Event-Triggered Recording (Full Frame Rate)*:
    a. In the *Start Full Frame Rate Recording on* table, click to select the radio button for the type of event associated with the recording. Select an option in the *Associated Events* area or in the *Analytic Events* area.
    b. Select a value in the *Start* field either by typing-in a number or selecting one using the up and down arrows.
    c. In the *Stop Full Frame Rate Recordings on* table, click to select the radio button for *Timeout* or *No [analytic name]*, and then enter a value in the *Stop Recording* field, either by typing in a number or selecting one using the up and down arrows.
12. Click **Add & Create Another** or **Add**.
13. If you clicked **Add & Create Another**, repeat steps 9-12.
14. Repeat steps 7-12 for each recording schedule created.

Creating a Bump on Alarm Recording Schedule

A Bump on Alarm records continuous reduced frame rate (i-frame only) video during normal situations, and records full frame rate video during an alarm or event. The video timeline for cameras set to record using a Bump on Alarm schedule shows a small green bar for continuous recording and a larger blue bar during event- or alarm-driven recording.

To configure a Bump on Alarm schedule:

1. If necessary, click the **Recording** tab, and then click **Schedules**.
2. In the *What to Record* (left) panel, click to select the recording group for which create a recording schedule.
3. In the *When to Record* (center) panel, click to highlight the schedule to which you will add the bump on alarm behavior.
4. If there is no Continuous Recording (Reduced Frame Rate) recording scheduled, create one. See the section titled *Creating a Recording Schedule for a Recording Group*.
5. Click to select the appropriate schedule.
6. Create a schedule for an alarm- or event-triggered recording:
    a. In the *Recording Behaviors* (right) panel, click the *Create a new Recording Behavior* icon ( ).
    The *Recording Mode and Trigger* will already be set to *Event-Triggered Recording (Full Frame Rate)*.
    b. Update the settings as described in the section titled *Creating a Recording Schedule for a Recording Group*.

Editing a Recording Group

1. Click the **Recording** tab.
2. At the top of the left panel, click **Schedules**.
3. In the *Recording Groups* (left) panel, click to select the recording group to edit.
4. Click the *Edit selected Recording Group* icon ( ) to open the *Edit Recording Group* window.
    a. (Optional) Enter a new value in the *Name of Recording Group* field.
    b. Click to select the radio button for *All Resources* or *Selected Resources*.

c. If you selected *Selected Resources*, in the *Add / Remove Cameras from Group* table, click to select the checkboxes for the sources to include in the recording group; click to deselect the checkboxes for the sources to exclude from the recording group.

d. Click **Save**.

Editing a Recording Schedule

1. Click the **Recording** tab.
2. At the top of the left panel, click **Schedules**.
3. In the *What to Record* (left) panel, click to select the recording group for which to configure the schedule.
4. (Optional) Edit the recording schedule.
5. In the *Sources* (center) panel, click the *Edit the Recording Schedule* icon ( ).
6. In the *Select Schedules for Recording Group* dialog box, click to select and deselect the checkboxes for schedules to associate with the recording group.
7. Click **Save Changes.**
8. (Optional) To create and select a schedule that is not in the list:

   a. In the *Sources* (center) panel, click the *Edit the Recording Schedule* icon ( ).

   b. Click the *Add a New Schedule* icon ( ); or click the *Create a copy of the selected schedule* icon ( ) to start with a schedule that is close to what you want.

   c. Enter a value in the *Display Name* field.

   d. Click the appropriate radio button to the right of *Increments*, to select the available increments of time to record.

   e. Click to select or deselect the checkbox for *24-Hour Time*. Deselecting the checkbox results in 12:00-11:59 AM and 12:00-11:59 PM recording timestamps.

   f. Indicate the times and days to record by clicking to select boxes corresponding to a days and times. You can also click and drag to select a contiguous range of times and days. Click to deselect any days and times that you do not want to record.

   g. (Optional) Click the checkbox to select *Within limited date range*, enter a date in the *Start on* and *End after* fields, either by selecting the dates from the calendars or by typing in a date using the mm/dd/yy format. You can deselect the checkbox to make the schedule unlimited by date.

   h. Click **Add**.

   i. In the *Select Schedules for Recording Group* dialog box, click to select the checkbox for the schedule you just created.

9. Click **Save Changes**.
10. In the *Recording Behaviors* (right) panel, click to select an existing trigger.
11. Click the *Edit Selected Behavior* icon ( ).
12. In the *Edit Recording Behavior for Recording Group [group name]* dialog box, click to select the radio button for the *Recording Mode and Triggers*: *Continuous Recording* or *Event-Triggered Recording (Full Frame Rate)*.
13. If you selected *Continuous Recording*, click to select the radio button for either *Full Frame Rate* or *Reduced Frame Rate*.

14. If you selected *Event-Triggered Recording (Full Frame Rate)*:
    a. In the *Start Full Frame Rate Recording on* table, click to select the radio button for the type of event associated with the recording. Select an option in the *Associated Events* area (*Motion Detected* or *Alarm Active*) or in the *[camera] Analytic Events* area.
    b. Select a value in the *Start* field either by typing in a number or selecting one using the up and down arrows.
    c. In the *Stop Full Frame Rate Recordings on* table, click to select the radio button for *Timeout* or *No [analytic name]*, enter a value in the *Stop Recording* field, either by typing-in a number or selecting one using the up and down arrows.
15. Click **Update**.

Deleting a Recording Group

Deleting a Recording Group will also delete the associated Recording Schedules and Recording Behaviors.

1. Click the **Recording** tab.
2. At the top of the left panel, click **Schedules**.
3. In the *What to Record* (left) panel, click to select the recording group to delete.
4. Click the *Delete selected Recording Group* icon ( ).
5. In the *Delete [recording group name]* dialog box, click **OK**.

Deleting a Recording Schedule

This will delete the selected *Recording Schedule*, and the associated *Recording Behaviors*.

1. Click the **Recording** tab.
2. At the top of the left panel, click **Schedules**.
3. In the *What to Record* (left) panel, click to select the recording group for which to delete the schedule.
4. In the *When to Record* (center) panel, click to select the schedule to delete.
5. At the bottom of the *When to Record* (center) panel, click the *Remove selected Recording Schedule* icon ( ).
6. In the *Remove Schedule from Recording Group* dialog box, click **Delete**.

Deleting a Recording Behavior (Trigger)

If you delete all *Recording Behaviors* for a *Recording Schedule*, the *Recording Schedule* is also deleted.

1. Click the **Recording** tab.
2. At the top of the left panel, click **Schedules**.
3. In the *What to Record* (left) panel, click to select the recording group for which to delete the trigger.
4. In the *Recording Behaviors* (right) panel, click to select the *Trigger* to delete.
5. At the bottom of the *Recording Behaviors* (right) panel, click the *Delete selected Recording Behavior* icon ( ).
6. In the *Delete [behavior name]* dialog box, click **OK**.
7. Repeat this procedure as necessary.

Managing Users and Roles

A role is a group of permissions defining abilities and responsibilities within a system. A user must be assigned at least one role to perform actions within the system.

If you are authenticating using LDAP, you are not required to manage users and roles, but you can in order to control settings that are not specified in LDAP.

Understanding Internal and Restricted User Accounts

VideoXpert contains some hard-coded user accounts that are integral to the system. You cannot edit, disable, or delete these accounts, nor can you change roles or permissions for these users. You can, however, change the password for these accounts in the case of the admin and aggregator accounts, it is recommended that you change the password from the default.

User	Description
admin	This is the basic administrative user for VideoXpert. This user account possesses the “administrator” role is granted all available permissions within the system.
internal	This role is used internally within the system to perform server-side tasks. It is not visible in the *Users* page, under the *Users* tab.
rule_engine	This role supports the rules engine.
snmp	This role is used to collect diagnostic information for the SNMP service that is available on the product.

Creating a Role

There are four default roles within VideoXpert:

- **Administrator** has full rights to the system.
- **Manager** has all Supervisor rights and the ability to configure recorders and devices within the system, including tags, recorder assignment, etc. Managers can also assign roles to users. (This role is available on VxPro Systems only.)
- **Supervisor** has advanced access to live and recorded video including investigations, PTZ control, and plug-ins. Supervisors can use plug-ins, configure events, and access workspaces configured by other users. (This role is available on VxPro Systems only.)
- **User** has basic rights to view live and recorded video. (This role is available on VxPro Systems only.)

Custom roles can also be created and assigned. To create a custom role:

1. Click the **Users** tab, and then click **Roles & Permissions** at the top left of the window.
2. Click the *Add a new role* icon ( ).
3. In the *Create a new Role on the VX system* dialog box, enter a value in the *Role Name* field.
4. (Optional) Add one or more permissions individually for the role:
   a. In the *Enabled Permissions* section of the window, click **Add a Permissions Category**.
   b. Click to select a permissions category from the available categories.

c. Click to select the radio button to *Allow ALL [Category] Permissions* or *Allow Selected [category] Permissions*.

d. If you selected *Allow Selected [Category] Permissions*, click **Add a Permission**; click to select a permission from the drop-down list (including **Select All [Category] Permissions**); if a confirmation dialog box opens, click **OK**.

e. In the permissions table that is displayed beneath *Allow Selected [Category] Permissions* click the *Select Resource* icon ( ) to change the resource restrictions for the permission. In the *Manage Resource Restriction for* window, select **Match Parent Resources** (if present); **Allow All Resources**; **Allow Selected Resources**, and then select the resources to allow; or **Allow All Resources Except Selected**, and then select the resources to disallow.

The table provides the list of permission, resources allowed for each permission, and the number of devices that are allowed.

f. (Optional) To delete a permission from the category, click the *Delete* icon ( ).

g. (Optional) Click **Add Another Permission**, and repeat the process.

5. (Optional) Add all available permissions to the role:

a. In the *Enabled Permissions* section of the window, click **Add a Permissions Category**.

b. Click to select **Add All Categories**.

c. Click to expand one of the categories, and then click the radio button to *Allow ALL [Category] Permissions* or *Allow Selected [Category] Permissions*.

d. If you selected *Allow Selected [Category] Permissions*, click **Add a Permission**; click to select the permission (including **Select All [category] Permissions**).

e. In the permissions table that is displayed beneath *Allow Selected [Category] Permissions* click the *Select Resource* icon ( ) to change the resource restrictions for the permission. In the *Manage Resource Restriction for* window, select **Match Parent Resources** (if present); **Allow All Resources**; **Allow Selected Resources**, and then select the resources to allow; or **Allow All Resources Except Selected**, and then select the resources to disallow.

The table provides the list of permission, resources allowed for each permission, and the number of devices that are allowed.

f. (Optional) To delete a permission from the category, click the *Delete* icon ( ).

g. Repeat steps c through f for each of the categories.

6. To delete a category from the *Enabled Permissions* area, click the *Delete* icon ( ) in the category title.

7. Click **Save**.

Editing a Role

Renaming a role does not affect the users to whom the role is assigned.

1. Click the **Users** tab, and then click **Roles & Permissions** at the top left of the window.
2. Click to select the role to edit.
3. Click the *Edit the selected Role* icon ( ).
4. In the *Edit the Role* dialog box, change the role name and/or permissions as needed.

5. For detailed instructions, see the section titled *Creating a Role*.
6. Click **Save**.

Duplicating a Role

By default, a duplicate role retains the permissions of the original role. You can edit the permissions.

1. Click the **Users** tab, and then click **Roles & Permissions** at the top left of the window.
2. Click to select the role to duplicate.
3. Click the *Create a copy of the selected Role* icon ( ).
4. Enter a name for the duplicated role and edit the permissions as needed.
5. For detailed instructions, see the section titled *Creating a Role*.
6. Click **Save**.

Deleting a Role

1. Click the **Users** tab, and then click **Roles & Permissions** at the top left of the window.
2. Click to select the role to delete.
3. Click the *Delete Role* icon ( ).
4. In the confirmation dialog box, click **Delete**.

Viewing Details of a Role

To quickly view the permissions assigned to a specific role:

1. Click the **Users** tab, and then click **Roles & Permissions** at the top left of the window.
2. In the right panel, click to select the role to view.
3. In the *Permissions of Role: [Role]* (right) panel, view the permissions for each category.
   The information in the *Permission of Role: [Role]* panel is the same information displayed in the permission tables when you created or edited a role.
4. (Optional) To see the users who are assigned to the role, click the expand icon ( ) to the left of the role to display the list of users. To view the user's information in the *Users* page, hover over the user's name, and then click the change view icon ( ) to the right of the name.

Adding Users

When adding users to the system, you give them a temporary password.

You can also provide additional user information, to make it easier to associate user names with personnel; *Name* fields appear anywhere the system provides a user name.

1. Click the **Users** tab, and then click **Users** at the top left of the window.
2. Click the *Create a new User* icon ( ).
3. Enter a value in the *Username* field.
4. (Optional) Enter values in the *First Name* and *Last Name* fields.
5. Enter a value in the *Password* field.
6. (Optional) To require a user to change the password the first time the user logs in, click to select the checkbox for *Must change password on first login with new password*.

7. Choose a *Role* for the user from the drop-down menu.
8. (Optional) Click **Add another role**, and then choose a role for the user from the drop-down menu.
9. (Optional) To delete a role, click the *Remove this role from the selected user* icon ( ). This option is only available if more than one role is assigned to the user.
10. (Optional) To make the resources on this system available for aggregation (if this is an aggregated system), click to select the checkbox for *Allow this User to be used for Aggregation*.
11. (Optional) Enter a value in the *User ID#*, Email Address, *Phone*, and *Notes* fields.
12. Click **Add**.

Searching for Users

1. Click the **Users** tab, and then click **Users** at the top left of the window.
2. Enter a value in the *Search Users* field.

   The search applies to user name, first name, and last name values.

   The search begins as soon as you enter the first character; results are further refined as you enter more characters.
3. Add or delete characters to change the search results.
4. (Optional) To clear the search field, either delete all characters or click the *Clear* icon ( ) at the right of the *Search Users* field.

Assigning Roles

VideoXpert contains pre-defined roles that you can assign to users. You cannot change these roles but you can create new roles (see *Creating a Role*); each user must be assigned a role to use VideoXpert. Any locking features or competing actions performed by users are prioritized by user level.

To assign roles to an existing user:

1. Click the **Users** tab, and then click **Users** at the top left of the window.
2. Select the user to whom you are assigning a role, and then click the *Edit the selected User* icon ( ).
3. Select a *Role* from the drop-down menu.
4. (Optional) To add another role to the user, click **Add another role**, and then select a *Role* from the drop-down menu.
5. (Optional) If appropriate, edit additional user information from this dialog box. See sections titled *Editing a Role* and *Resetting Passwords*.
6. Click **Save**.

Resetting Passwords

Users with appropriate permissions can either reset users' passwords or force users to change their passwords.

Resetting a user's password will allow you to grant the user a temporary password. You may want to reset a user's password if a user does not remember his or her password, or the user is locked out of the system because of failed login attempts or because of letting the password change timer lapse.

Users with appropriate permissions can also reset other users' passwords and force users to change their passwords.

1. Click the **Users** tab, and then click **Users** at the top left of the window.
2. Select the user whose password you want to reset, and then click the *Edit the selected User* icon ( ).
3. Click **Change Password**
4. Enter a new value in the *New Password* and *Re-Enter New Password* fields.

   If you decide not to change the password, you must click **Do Not Change Password** in order to continue.
5. (Optional) If appropriate, edit additional user information from this dialog box. See sections titled *Editing a Role* and *Assigning Roles*.
6. Click **Save**.

Deleting Users

1. Click the **Users** tab, and then click **Users** at the top left of the window.
1. Click to select the user you want to remove.
2. Click the *Delete User* icon ( ).
3. In the confirmation dialog box, click **Delete** to confirm your selection.

Configuring VX System Settings

From VxToolbox, you can configure most settings on the VX System to which you are connected. Setting types include General Settings, Aggregation, LDAP, Backup, and SMTP settings. These are described in the following sections.

Aggregating Systems (VX Enterprise only)

VideoXpert Enterprise systems support an aggregation server, providing centralized access to a series of member systems and cameras.

When you add a system to the VideoXpert Enterprise aggregation server, the video for the member system becomes available at the aggregation level. However, you may not be able to change settings for the member system and some components from the aggregation level; you might have to access the member system directly to change the settings.

As a prerequisite to adding an aggregated system to VxToolbox, the aggregation server must be configured. See the current *VideoXpert Enterprise Installation and Configuration Guide*.

1. Click the **System** tab.
2. Click **Aggregation**.
3. (Optional) To add or edit a system:
   a. Click **Add System**, or click the *Edit this aggregated member system* icon ( ) at the right of the appropriate server address row to edit an existing system.
   b. In the *Server Address* field, provide the IP address of the system you want to aggregate. If aggregating a clustered system, enter the IP address of the load balancer governing the cluster of systems you want to aggregate.
   c. In the *Port* field, enter the port number the system uses for HTTP/HTTPS communications.
   d. (Optional) In the *Streaming Configuration / Connection Type* area, click to select the checkbox for *Allow RTSP/RTP*. (Optional) You can then click the checkbox to select *Allow UDP*. (Optional) Further, you can click the checkbox to select Allow *Mutlicast*.
   e. In the *Bandwidth* field, provide the connection speed between the aggregation server and the VideoXpert system you are aggregating. The higher the connection speed, the better aggregated devices will perform within VideoXpert. Selecting speeds lower than 100 Mbps will cause all cameras for the aggregated system to return MJPEG video.

      Note: The Media Gateway transcodes MJPEG video, and returns the full I-Frame rate requested by the camera. Cameras configured to deliver more than 2 I-frames per second will stress the performance of the Media Gateway and consume more bandwidth. It is recommended that cameras expected to return MJPEG video are configured to deliver no more than 2 I-frames per second to prevent cameras from taxing the Media Gateway.

   f. Enter a value in the *Aggregation Username* field.
   g. Enter a value in the *Password* field.
   h. Click **Test Connection**. If the connection test fails, correct the information, and then click **Test Connection** again.
   i. When the connection test passes, click **Add System**.

4. To refresh an aggregated member system so that the aggregating and member systems are synchronized, click the *Refresh this aggregated member system.* icon ( ) at the right of the appropriate server address row.
5. To delete a system from aggregation, click the *Remove this member system.* icon ( ) at the right of the appropriate server address row.

Configuring General Settings

1. Click the **System** tab.
2. Click **General Settings**.
3. Enter a value in the *VideoXpert System Name* field.
4. For VideoXpert Enterprise Systems only, configure clusters:
   a. In the *Cluster Configuration* area, click to select or deselect the checkbox for *Multiple VxCores*.
   b. Enter a value in the *VxCore Virtual IP Address* and *VxCore IP Address* fields.
   c. If you selected *Multiple VxCores*, click **Add Another VxCore**, and then enter another value in the new *VxCore IP Address* field. Do this as many times as is needed.
   d. Enter a value in the *VxMediaGateway IP Address* field.
   e. Click to select or deselect the checkbox for *Multiple VxMediaGateways*.
   f. If you selected *Multiple VxMediaGateways*, enter a value (associated with the initial *VxMediaGateway IP Address*) in the *VxMediaGateway Virtual IP Address* field, and then enter a value for another gateway in the new *VxMediaGateway IP Address* field. To add more VxMedia Gateways, click **Add Another VxMediaGateway**, and then enter a value for another gateway in the new *VxMediaGateway IP Address* field.
5. Complete the System Configuration information. In the *System Configuration* area:
   a. Specify a *Transmission Method* by clicking to select the appropriate radio button for the *Allow Multicast Communication to Camera*, *Allow Multicast Communication to Client*, or *Enable stream proxying through recorder*.
   1. Click to select or deselect the checkbox for *Store exports in an alternate location*. If you select the checkbox, then enter values in the *Network Storage Location*, *Username (if required)* and *Password (if required)* fields.
   2. Under *Clip Lock Expiration*, click to select the radio button for either *Keep Clips Locked*; or *Unlock Clips after [#] Days*, and then select the number of days either by typing in a value or using the up and down arrows.
   3. (Optional, VideoXpert Professional only) Click to select or deselect the checkbox for *Prefer Hostnames*. When selected, the server will try to resolve IP addresses into hostnames.
6. (Optional) In the *HTTPS Certificate* area, click **Show current certificate details** to view information including *Issued to*, *Issued by*, and *Period of Validity*. To close this field, click **Hide current certification details**.
7. (Optional) To cancel any changes you have made before saving the settings, click **Revert** at the bottom of the panel.
8. Click **Save Settings**.

Configuring Authentication

You can select the authentication method used.

- VideoXpert Authentication--see the section titled *Enabling VideoXpert Authentication*.
- LDAP authentication using simple search authentication--see the section titled *Configuring LDAP Authentication: Simple Search*.
- LDAP authentication using two-stage binding--see the section titled *Configuring LDAP Authentication: Two-Stage Bind Authentication*.
- LDAP authentication by retrieving users and roles from LDAP-see *Configuring LDAP Authentication: Retrieving Users and Roles From LDAP*.

Enabling VideoXpert Authentication

VideoXpert Authentication uses the internal VX system authentication instead of LDAP.

1. Go to the *System* page and click *LDAP*.
2. Click to select the radio button for *VideoXpert Authentication*.
3. Click **Save Settings**.

Configuring LDAP Authentication: Simple Search

LDAP authentication using simple search authentication requires only the LDAP server name, port, Base DN, and search attributes.

1. Go to the *System* page and click *LDAP*.
2. (VideoXpert Professional only) If necessary, click to deselect the radio buttons for *Two-Stage Binding Authentication* and *Retrieve users and Roles From LDAP*.
3. Enter the host name or IP address of the LDAP server in the *LDAP Server* box.
4. (Optional) Click the *SSL/TLS* box if your LDAP server requires SSL/TLS authentication.
5. (Optional) Edit the server *Port* if the LDAP server is not on the default port (389).
6. Type a distinguished name (DN) that will be combined with a user attribute key and value pair in the *Base DN* box.
7. Type an attribute key name that is combined with the User Name attribute in the *Search Attributes*box. When inputting multiple entries in a box, separate entries with commas.
8. Click *Test Connection* to verify that your LDAP connection and search settings are correct.
9. Click **Save Settings**.

Configuring LDAP Authentication: Two-Stage Bind Authentication

Two-stage bind authentication uses the parameters of simple search, but adds a superuser domain name and password.

1. Go to the *System* page and click *LDAP*.
2. Click to select the radio button for *Two-Stage Binding Authentication*.
3. Enter the host name or IP address of the LDAP server in the *LDAP Server* box.
4. (Optional) Click the *SSL/TLS* box if your LDAP server requires SSL/TLS authentication.
5. Edit the server *Port* if the LDAP server is not on the default port (389).

6. Type a distinguished name (DN) that will be combined with a user attribute key and value pair in the *Base DN* box.
7. Type an attribute key name that is combined with the User Name attribute in the *Search Attributes* box. When inputting multiple entries in a box, separate entries with commas.
8. Type a value in the *Superuser DN* field.
9. Type a value in the *Superuser DN Password* field.
10. Click *Test Connection* to verify that your LDAP connection and search settings are correct.
11. Click **Save Settings**.

Configuring LDAP Authentication: Retrieving Users and Roles From LDAP

Retrieving Users and Roles From LDAP uses the parameters of two-stage binding, but adds a root VX DN and a VX system DN. These enable your system to use the LDAP server to manage Users and Role assignments. Permissions for each role will be managed in the Roles and Permissions tab of VxToolbox. You can create groups under the Root VideoXpert DN which will apply to all VX Systems. If multi-system access is being used, you can also create a VideoXpert System DN to give specified users elevated permissions on a specific VX System.

1. Go to the *System* page and click *LDAP*.
2. Click to select the radio button for *Retrieve Users and Roles From LDAP*.
3. Enter the host name or IP address of the LDAP server in the *LDAP Server* box.
4. (Optional) Click the *SSL/TLS* box if your LDAP server requires SSL/TLS authentication.
5. (Optional) Edit the server *Port* if the LDAP server is not on the default port (389).
6. Type a distinguished name (DN) that will be combined with a user attribute key and value pair in the *Base DN* box.
7. Type an attribute key name that is combined with the User Name attribute in the *Search Attributes* box. When inputting multiple entries in a box, separate entries with commas.
8. Type a value in the *Superuser DN* field.
9. Type a value in the *Superuser DN Password* field.
10. (Optional) Type a value in the *Root VideoXpert DN* field.
    - If you are setting up only one VX System, you can leave this field blank.
    - If you are setting up multiple systems, this is the LDAP container under which all of the VX System information is stored for all of the systems. When determining which roles should be assigned to a user, the VX System will look for group entries within the VideoXpert System DN sub-container, and navigate up the LDAP tree until it reaches the Root VideoXpert DN container.
11. Type a value in the *VideoXpert System DN* field.

    This is the LDAP container for the VideoXpert System. It can be nested inside sub-containers in any configuration. When determining which roles should be assigned to a user, the VX System will look for group entries within the VideoXpert System DN sub-container and navigate up the LDAP tree until it reaches the Root VideoXpert DN container.
12. Click *Test Connection* to verify that your LDAP connection and search settings are correct.
13. Click **Save Settings**.

Configuring System Backups

Pelco recommends that you back up your system after initial setup, when you have configured a significant number of users and devices, and after significant changes to your system configuration.

A system backup contains the system database, including the previous 30 days' events. Backups do not capture exported video or any settings that you might have changed outside of VxToolbox (for example: changes made directly to configuration scripts). The speed of each backup depends on the size of the VideoXpert database, network bandwidth, and other variables.

To configure system backups:

1. Click **System**, and then click **Backup**.
2. In the *Location* area:
   a. Enter a value in the *Specify a Path* field.
   b. (Optional) Enter values in the *Username* and *Password* fields.
   c. Click **Test Connection**.
      - If the *Test Successful!* dialog box opens, click **OK**.
      - If the *Test Failed* dialog box opens, click **OK**, correct the information in the *Location* fields, and then click **Test Connection** again.
3. Enter a value in the *Retain (# of Backups)* field, either by typing in the number or selecting it using the up and down arrows.
4. (Optional) To trigger backups automatically:

   Note: Ensure that you have correctly configured the backup location before you attempt to schedule backups.

   a. Click to select the checkbox for *Backup Automatically*.
   b. Enter a value in the *Time of Day* field, either by typing in the time or selecting it using the clock icon ( ).
   c. Enter a value in the *Expiration (Days)* field, either by typing in the number or selecting it using the up and down arrows.
5. (Optional) After you have correctly configured backups, you can make a backup immediately. To do so, click **Backup Now**.
   a. At the top of the window, a green checkmark and "Backup is currently in progress…" message is displayed. It will disappear when the backup is complete. If the backup fails, an error message is displayed.
   b. To cancel the backup, click the trash bin icon ( ) directly below the backup message.
6. (Optional) To cancel the changes and return to the previously saved settings, click **Revert**.
7. Click **Save Settings**.

Restoring the Database—Replacing a Member of a Cluster (VX Enterprise only)

Before you attempt to restore a database, you must install, but not configure, VideoXpert Core on all servers to which you want to restore the database. You cannot restore a database backup on a system that has already been configured.

1. Select one node in your cluster to be the primary node.
2. Copy the desired database backup from your configured network storage location to the primary node.
3. Shut down VideoXpert Core and VideoXpert Core Database services on all but the primary node.
4. On the primary node, open a command window as an Administrator.
5. In the command window, navigate to the installation directory of Core (typically “C:\Program Files\Pelco\Core”).
6. Set the full path to the database backup as a variable for the cmd session with the “set” command. For example: “set DbBackup=C:\Path\To\My\Backup\core-123124124.sql”
7. Run the restore script using the command “utils\manual_restore_db.bat %DbBackup%”
8. After this script has completed, which may take several minutes, start the VideoXpert Core service on all other nodes in your cluster.

Note: When an entire unit is replaced (the database is restored), you must re-add the unit to the cluster and remove the old unit manually. The new unit will not have the same device ID as the old unit.

Restoring the Database—Replacing an Entire Environment (VX Enterprise only)

Before you attempt to restore a database, you must install, but not configure, VideoXpert Core on all servers to which you want to restore the database. You cannot restore a database backup on a system that has already been configured.

The servers to which you restore the database should use the same IP addresses as the servers from which you took your backup. Attempting to restore the backup on servers with different IP addresses than the servers recorded by the backup will result in incorrect configuration information on your restored servers.

Use this process to recover from a catastrophic failure of all VideoXpert servers in an environment. Following this process will restore all Core instances in a VideoXpert environment. Do not use this process to restore one or more Core servers in a clustered VideoXpert environment that is still operational. Pay careful attention; some steps are specific to certain versions of the VideoXpert Core software.

All file paths specified assume that you have installed the Core server application to the default directory, C:\Program Files\Pelco\Core. When running commands or opening a command prompt as a part of this process, you must execute commands as an administrator.

1. Configure the Windows instance(s) to which you will restore VideoXpert; the server(s) should use the same IP address(es) as the environment from which you took your backup.
2. Install VideoXpert on all Cores to which you will restore the database; do not configure VideoXpert.
3. Make your backup directory available to the Core server(s) to which you are restoring VideoXpert if it is not already.
4. Mount the network share containing the backup to the Core server(s).
5. Copy the contents of the backup directory to a local disk on each Core server.
6. On each server, open a command prompt and run: "c:\program files\pelco\core\tools\restoreUtil.bat" —backup <path-to-configuration.txt>

   When the restore process has completed, the utility starts Core and other applicable services.

7. Go to the *Devices* page in VxOpsCenter, and remove, and then re-discover all Media Gateway devices. Failing to remove and re-discover Media Gateways may prevent video streaming in the newly-restored VideoXpert environment.

Configuring the SMTP Server

You can configure the SMTP server to send email from the host to an email address. To do so:

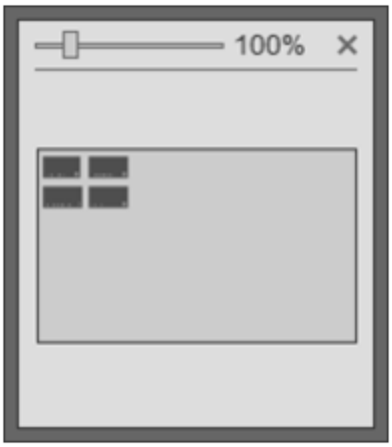
1. Click **System**, and then click **SMTP**.
2. If the *Mail From* field is not already populated with the correct value, enter a valid email address in the *Mail From* field.
3. Enter a value in the *SMTP Host* field.
4. Enter a number in the *SMTP Port* field.
5. (Optional) Click to select the checkbox for *Enable SMTPS*.
6. (Optional) Click to select the checkbox for *Enforce validation of the server's certificate*.
7. Enter a value in the *Username* field.
8. Enter a value in the *Password* field.
9. Click **Send Test Email**, enter an email address in the *Send Test Email* dialog box, in the *Send to Email* field, and then click **Send Email**.
   - If the *Send Test Email* dialog box returns "Test email sent successfully!", click **OK**.
   - If the *Send Test Email* dialog box returns "Test email failed...", click **Try Again**, either correct the email address, and then click **Send Email**; or click **Cancel**, correct any errors in the SMTP configuration, and then try to send a test email again.
10. (Optional) To cancel the changes and return to the previously saved settings, click **Revert**.
11. Click **Save Settings**.

Using Monitor Walls

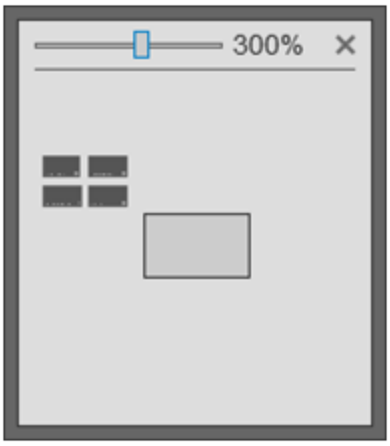
You can use existing monitors to configure several monitor walls.

Creating a Monitor Wall

1. Click **Monitor Walls** to access the page.
2. At the bottom of the left panel, click the *Add a new Monitor Wall* icon ( ).
3. In the *Add a Monitor Wall* field at the upper left corner of the monitor wall window, enter a name for the monitor wall.
4. In the *Drag Monitors to assign* (right) panel, click and drag a monitor to the location you would like it to appear on the monitor wall. Repeat this step for each monitor that you want to add.
   - To refresh the list of monitors, in the upper right corner of the *Drag Monitors to assign* (right) panel, click the *Refresh* icon ( ).
   - To filter the list of monitors, in the *Drag Monitors to assign* (right) panel, enter a value in the *Search Monitors* field.
5. (Optional) To delete a monitor from the monitor wall, in the left panel, click the *Delete* icon ( ) in the monitor to delete.
6. (Optional) Scale the monitors:
   - To resize the monitors individually, click on a monitor and drag a corner to resize it.
   - To zoom in and out on all monitors by the same percentage, in the preview window, drag the selector bar to the appropriate magnification level. The images below show the monitor wall preview at 100% magnification and at 300% magnification. Notice that the monitors are no longer included in the frame.



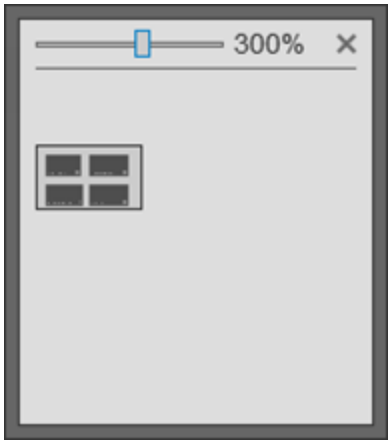
100% Magnification



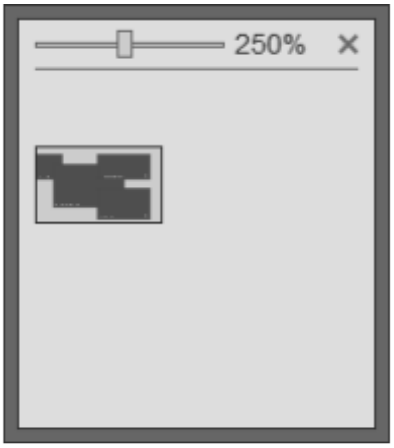
300% Magnification

7. (Optional) If necessary, move the monitors into the monitor wall frame:
   - Use the scroll bars at the bottom and right edges of the monitor wall window to bring the monitors into view.

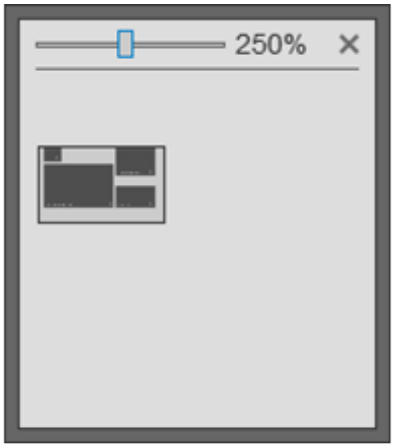
- In the preview window, drag the monitor wall frame so that the appropriate monitors are in the frame. The image below shows the monitors at 300% magnification, but they are now included in the monitor wall frame.



8. (Optional) Rearrange the monitors in any configuration by dragging them to the desired locations on the monitor wall. The image below shows the monitor wall with overlapping monitors and without overlapping monitors.



With Overlapping Monitors



Without Overlapping Monitors

9. When you are satisfied with the look of the monitor wall, click **Save**.

Editing a Monitor Wall

1. Click **Monitor Walls** to access the page.
2. In the left panel, click to select the monitor wall to edit.
3. At the bottom of the left panel, click the *Edit the selected Monitor Wall* icon ( ).
4. Update the monitor wall as needed, using the steps in the section titled *Creating a Monitor Wall*.
5. When you are satisfied with the look of the monitor wall, click **Save**.

Deleting a Monitor Wall

1. Click **Monitor Walls** to access the page.
2. In the left panel, click to select the monitor wall to delete.

3. At the bottom of the left panel, click the *Delete the selected Monitor Wall* icon ( ).
4. In the confirmation dialog box, click **Delete**.

Using Reports

From the *Reports* page, you can create and generate reports, and export them from the system. Reports are exported in CSV format.

- Report Templates preloaded to VxToolbox are:
- Default Camera Report
- Default Device Report
- Default Event Report
- Default Recording Gap Report
- Default Role Report
- Default Camera Role Access Report
- Default Storage Report
- Default User Report
- Default User Action Report

You can edit an existing report template, or create a new one and edit the template details to include only the information needed.

Generating reports containing a large number of events might take some time. You can navigate away from the *Reports* page while the system generates your report. If your report parameters are too large, the request might time-out and the system might ask you to narrow your search.

Creating a Report Template

You can generate reports either manually or automatically from any of the templates in the *Report Templates* panel. To create a new template.

1. Click the **Reports** tab.
2. In the *Report Templates* list in the left panel, create a new report template using one of the following methods:
   - To make a copy of an existing template from the *Report Templates* panel, select the template in the *Report Templates* panel, and then click the *Create a copy of the selected Report Template* icon ( ). A new template (named the same as the original template - *Copy*) is added to the list.
   - To make a copy of an existing template from the *Template Details for [template name]* panel, select the template, and then click the **Save as New Template** button at the lower left of the *Template Details for [template name]* window (upper left panel). In the *Save New Template* dialog box, enter a value in the *Template Name* field, and then click **Save**.
   - To start with a blank template, click the *Create a new Report Template* icon ( ). A *New Unsaved Template* is added to the list.
3. Click to select the new report template.
4. If the *Report Type* drop-down menu is available, select from the report type.

   The report type can only be selected if you started with a blank template; if you copied an existing template, the copy is assigned the same report type as the original.

5. If the *Include [report type] (rows)* field is displayed:
   a. Click to select **All** or **Selected** from the drop-down menu.
   b. If you clicked *Selected*, click the *Select [report type] sources* icon ( ) under the drop-down menu; in the *Select [report type]* window, click to select and deselect the appropriate options, and then click **OK**.
6. In the *Include Info (columns)* field, click to select and deselect the checkboxes for information to include in the report template.

   As you select and deselect this information, you can preview the report in the *Column Preview for [report template name]* panel in the (vertical) center of the window.
7. If the *Time Range* field is displayed, select an option from the drop-down menu. If you select *Custom*, set start and end dates and times in the *Date & Time* fields, either by typing in values (mm/dd/yy and hh:mm AM or PM formats) or by using the selectors available by clicking the date icon ( ) or the time icon ( ).
8. (Optional) To generate a report for this template automatically:
   a. Click to select the checkbox for *Automatically Generate this Report*.
   b. From the drop-down menu below the option, select the day of the week on which the report will be generated.
   c. Type or select a time in the *at* field.
   d. (Optional) Click to select the checkbox for *Automatically Export to .csv*. If you select this, enter a *Network Storage Location*, *Username*, and *Password*. The user name and password are optional.
9. Click **Save template changes** or **Save as new template**.
10. If the *Save New Template* dialog box is displayed, type a new name in the *Template Name* field, and then click **Save**.

Editing a Report Template

If appropriate, you can edit an existing template.

1. Click the **Reports** tab.
2. In the *Report Templates* list in the left panel, click to select the template to edit.
3. In the *Template Details for [template name]* (right) panel, make any changes needed to the template, except for the *Report Type*. The *Report Type* cannot be edited.
4. To save this over the existing template, click **Save template changes**.

   If you do not want to overwrite the existing template, you can click **Revert** to cancel the changes, or click **Save as new template** to save the settings as a new template.

Deleting a Report Template

If appropriate, delete a template.

1. Click the **Reports** tab.
2. In the *Report Templates* list in the left panel, click to select the template to delete.
3. Click the *Delete Template* icon ( ).
4. In the confirmation dialog box, click **OK**.

Generating a Report Manually

Even if a report is generated automatically, you can generate the report manually, as needed.

1. Click the **Reports** tab.
2. In the *Report Templates* list in the left panel, click to select the report to generate.
3. In the *Column Preview for [report template name]* panel (vertical center of the window), at the right of the panel:
   a. Type a value in the *Name your report* field, or keep the default report name.
   b. Click **Generate Report**.
      The report is listed in the *Generated Reports* table at the bottom of the window.

Exporting a Generated Report

To export a report from the Generated Reports table:

1. Click the **Reports** tab.
2. In the *Generated Reports* table at the bottom of the window, click to select the report to export.
3. Click **Export to .csv**.
4. Browse to a file location and, if appropriate, type a new value in the *File name* field.
5. Click **Save**.

Deleting a Generated Report

To delete a report from the *Generated Reports* table:

1. Click the **Reports** tab.
2. In the *Generated Reports* table at the bottom of the window, click to select the report to delete.
3. Click the *Remove report file* icon ( ).
4. In the confirmation dialog box, click **OK**.

Managing Events

From the Events tab, you can configure event details and notifications to ensure that the right users are notified when the system records a particular action or alarm.

Setting Event Log Retention Periods

By default, events expire every 30 days. However, you can opt to keep events for up to 90 days, and you can set different expiration periods for both events local to the system and events from aggregated sites. These event retention settings are listed in the upper right corner of the page in a statement: *System events discarded after <x> days. <y> days for events coming from remote systems*.

Note: Event retention settings for aggregated events only affect the event log on the local system. The event log on the remote system has its own event log and may have different retention settings.

To change event retention settings:

1. Click **Events**.
2. Click the *Event Configuration* icon ( ) at the upper left of the page.
3. Set the retention periods for both local events and events coming from remote systems, either by typing in numbers or selecting them using the up and down arrows.
4. If you reduce the number of days to retain event information, read the warning that is displayed in the *Global Event Configuration* dialog box and adjust the values accordingly.
5. Click **Save Changes**.

Finding and Filtering Events

Use filtering options to show the events relevant to you. Filters appear in the left-most panel of the *Events* tab and in some other tabs. Click the expand the *Filter* panel, and then do one or more of the following.

- Enter values in the *Filters Devices* field to filter by name, ID, model, IP address, serial number, vendor, or software version.
- Select an event *Category* from the pull-down menu.
- Select an event *Notification* from the pull-down menu.
- Enter a range in the *Severity* fields. To do so, either type in the severity to and from values. or select them using the up and down arrows.
- Select the event *Roles* from the pull-down menu.
- Click **Reset Filters** to clear the filters.

The events matching the filter criteria will be listed in the main panel.

Viewing and Configuring Event Details

1. Click **Events**.
2. In the center panel, click to select the event you want to view or modify. You can use the filter, as described in the section titled *Finding and Filtering Events*.
3. Event details are shown in the right column. If necessary, click to expand **Event Details**.

4. To edit the event details settings, access the *Event Details for* dialog box by one of these methods:
   - In the right panel, click the edit icon ( ) to the right of *Event Details*.
   - Right-click the event name, and then click **Edit Event Details**.
5. In the *Event Details for* dialog box, change event settings as necessary.
   - Click to select or deselect the checkbox for *Active* to determine whether VideoXpert will report the event. If you select *Active*, VideoXpert will report the event.
   - Click to select or deselect the *Use Custom Display Name*.
   - If you selected *Use Custom Display Name*, enter a name in the corresponding field.
   - The *Custom Display Name* is how VideoXpert will represent the event.
   - Change the *Severity*, if necessary, either by typing a value in the *Severity* field, or by using the up and down arrows to select a value. The severity may help users determine whether or not they need to act on an event.
6. Click **Save Changes**.

Viewing and Configuring Event Notifications

1. Click the **Events** tab.
2. In the center panel, click to select the event you want to view or modify. You can use the filter, as described in the section titled *Finding and Filtering Events*.
3. Event notification settings are shown in the right column. If necessary, click to expand **Notification Settings**, and view the notification information.
4. To edit the event notification settings, access the *Notification Settings* dialog box by one of these methods:
   - In the right panel, click the edit icon ( ) to the right of *Notification Settings*.
   - Right-click the event name, and then click **Edit Notification Settings**.
5. Click to select the radio box for the appropriate *Notification Type*.
6. If you selected *Pop-Up Banner*, configure these notification settings:
   a. Scroll to the bottom of the dialog box.
   b. Click the checkbox to select or deselect *Play Sound With Banner*.
   c. Select the radio button for either *Standard Chime* or *Custom Sound*. If you select *Custom Sound*, browse to the *Audio File*, and then click **Open**.
   d. Type or select a value for *Play Sound [#] times*.
   e. Type or select a value in the *Delay Sound Playback For [#] seconds between iterations* field.
   f. In the *Auto-Acknowledge After* area (automatically selected, and cannot be deselected), type or select a number, and then select a unit of time (for example, **Minutes**) from the drop-down menu.
   g. Click to select or deselect the checkbox for *Do Not Hide Cell Alerts*. Events associated with individual video sources provide alerts within VxOpsCenter cells; these alerts hide after three seconds. Select this option to prevent the alert from hiding.
   h. Click to select and deselect the checkboxes for the *User Roles to Notify*.

7. If you selected *Pop-Up Banner; Requires Acknowledgment*, configure these notification settings:
   a. Click the checkbox to select or deselect *Play Sound With Banner*.
   b. If you selected *Play Sound with Banner*, select the radio button for either *Standard Chime* or *Custom Sound*. If you select *Custom Sound*, browse to the *Audio File*, and then click **Open**.
   c. If you selected *Play Sound With Banner*, type or select a value for *Play Sound [#] times*.
   d. If you selected *Play Sound With Banner*, type or select a value in the *Delay Sound Playback For [#] seconds between iterations* field.
   e. (Optional) Click to select the checkbox for *Auto-Acknowledge After*, type or select a number, and then select a unit of time (for example, **Minutes**) from the drop-down menu.
   f. (Optional) Click to select the checkbox for *Allow Snooze (And Set Snooze Time)*, and then click the checkboxes to select and deselect the available intervals.
   g. Click to select or deselect the checkbox for *Do Not Hide Cell Alerts*. Events associated with individual video sources provide alerts within VxOpsCenter cells; these alerts hide after three seconds. Select this option to prevent the alert from hiding.
   h. Click to select and deselect the checkboxes for the *User Roles to Notify*.
8. If you selected *No Pop-Up Banner; Requires Acknowledgment*, configure these notification settings:
   a. Click the checkbox to select or deselect *Play Sound With Banner*.
   b. If you selected *Play Sound with Banner*, select the radio button for either *Standard Chime* or *Custom Sound*. If you select *Custom Sound*, browse to the *Audio File*, and then click **Open**.
   c. If you selected *Play Sound with Banner*, select a value for *Play Sound [#] times*.
   d. If you selected *Play Sound with Banner*, select a value in the *Delay Sound Playback For [#] seconds between iterations* field.
   e. (Optional) Click to select the checkbox for *Auto-Acknowledge After*, select a number either by typing in a value or using the up and down arrows, and then select a unit of time (for example, **Minutes**) from the drop-down menu.
   f. Click to select or deselect the checkbox for *Do Not Hide Cell Alerts*. Events associated with individual video sources provide alerts within VxOpsCenter cells; these alerts hide after three seconds. Select this option to prevent the alert from hiding.
   g. Click to select and deselect the checkboxes for the *User Roles to Notify*.
9. Click **Save Changes**.

Using VideoXpert Maps Import Utility

The VxMaps Import Utility is used to import AutoCAD 2013 DWG files, allowing customers to use their pre-existing building maps with the VideoXpert VxMaps plug-in.

- In VxToolbox, ensure that your system is set up for VxMaps. You can then create a new map, view or edit an existing map, manage permissions for maps, and remove an existing map. Prerequisites are:
  - VideoXpert Enterprise or VideoXpert Professional v 2.5 or later
  - ArcGIS Desktop Basic license
  - .dwg files in AutoCAD 2013
- In VxOpsCenter, the operator can launch and configure the mapping plug-in, select a map file, add cameras to the map, manage available maps, set user preferences for mapping, and view an existing map. Refer to the current version of the *VideoXpert OpsCenter User Guide* (for Enterprise systems) or the *VideoXpert OpsCenter* section of the current version of the *VideoXpert Professional User Guide*.

Preparing Your System

The VxMaps Import Utility requires the following prerequisites to function properly:

- If you are using a Windows 7 Operating System, ensure that the platform update is installed. It can be found at https://www.microsoft.com/en-us/download/details.aspx?id=36805.
- Ensure that Visual C + + Redistributable for Visual Studio 2015 is installed. It can be found at https://www.microsoft.com/en-us/download/details.aspx?id=48145.
- Install Esri's ArcGIS Pro and ArcMap software, with at least the "ArcGIS Desktop Basic Single Use Term License" license level applied to the software.
- Install VideoXpert Enterprise v 2.2 or greater and the latest version of VxToolbox (1.4.1.x).
- AutoCAD files must use the 2013 format.
- Camera blocks in AutoCAD must be placed on one or more layers that only include the camera blocks.
- Camera blocks in AutoCAD must include specific attributes so that VxMaps can represent the camera appropriately:
  - Attribute "VxCameraNumber" must be populated with the VideoXpert camera number. If VxCameraNumber is not populated, the map will represent the camera as a "FIXED" camera with a "?" in the center.
  - Attribute "VxCameraType" must be populated with the VideoXpert camera type. Available types are "FIXED", "PTZ", and "IMMERSIVE". If VxCameraType is not populated, cameras will display as FIXED cameras on the map.
- The DWG file must not include any symbol which is larger than 40kB for Polylines and 10kB for Polygons; any Polyline which is larger than 40kB and any Polygon which is larger than 10kB will be removed from the map.

Creating a New Map

1. If you have not already done so, start VxToolbox on the PC where ArcGIS Pro is installed, click the **Maps** tab.
2. In the left panel, click the add icon (+).

3. In the *Add a Map* dialog box, click to select the appropriate radio button:
   - For an outdoor map, select *Add a World Map (ESRI Street Map)*.
   - For an indoor map, select *Add GeoDB Map from a DWG file(s)*.
   - To use a jpeg or png file, select *Add a Raster Map (jpeg or png)*.
4. If you selected an indoor map:
   a. In the *Select DWG file(s) to convert* area, click **Browse**, select all files (including all xref dwg files), and then click **Open**.
   b. Wait for the map to convert.
   c. This can take an hour or more for large files. Progress is indicated in the *Processing...* bar.

      Note: At any time during this process, you can click **Start Over** to return to the initial *Add a Map* dialog box, where you can select the map type, etc. You can also click **Back**, when it is enabled, to return to the previous step in this process.

   d. In the *Conversion Complete* screen, click the checkboxes to select all layers to include in and deselect all layers to exclude from the map, and then click **Next**.
   e. In the *Designate which included layers will serve as CAMERA layers* area, click the checkboxes to select the layers dedicated to cameras and deselect the layers that are not, and then click **Next**.
   f. In the *Name your map and save to your VX System* area, click **Download CSV Report** to see details about which cameras were found, and which were not.
   g. If the map is correct, click to select the radio button for either *Update Existing Map* or *Save New Map*.
   h. If you selected *Update Existing Map*, select a map from the *Select Existing Map* drop-down menu, click the map you wish to update, and then click **Save to VX System**.
   i. If you selected *Save New Map*, type a name in the *Map Name* field, and then click **Save to VX System**.
   j. When you have added all needed maps, click the **X** at the top, right of the *Add a Map* dialog box to close it.
5. If you selected an outdoor map:
   a. Type a value in the *Name* field.
   b. Click **Save**.
6. If you selected a raster map:
   a. Type a value in the *Name* field.
   b. Click **Browse...**, navigate to and select the file, and then click Open.
   c. Click **Save**.

Viewing an Existing Map

1. Start VxToolbox on the PC on which ArcGIS Pro is installed, and then select your VideoXpert system from the top left drop down-menu.

   Ensure that the user logging in is assigned the “administrator” role or has all of the maps permissions assigned.
2. Click the **Maps** tab.

3. From the list of maps in the left panel, click the map to preview.

   The selected map is displayed in the right panel.

Editing an Existing Map

1. If you have not already done so, start VxToolbox on the PC where ArcGIS Pro is installed, click the **Maps** tab, and then (in the left panel) click to select the map.
2. Click the edit icon ( ).
3. (Optional) To rename the map, type a new name in the *Edit Map* field.
4. (Optional) To add cameras to the map, drag them from the *Cameras* tab in the left panel to the appropriate location on the map.
5. (Optional) To add a link from the current map to another map, drag a map name from the *Maps* tab in the left panel to the appropriate location on the current map.
6. (Optional) To move a camera or linked map on the map press and hold Ctrl, click the camera or map to be moved, and move it to the appropriate location.
7. To rotate a camera, right-click it, and then select a value in the *Set Rotation* window, either by using the slider bar or by typing a value in the field.
8. To remove a camera or a linked map from the map, right click it, and then click **Remove From Map**.
9. (Optional) To replace an AutoCAD map file:
   a. Above the map in the right panel, click **Edit/Replace Map File**.
   b. Follow the instructions in the section titled *Creating a New Map*.
   c. Click the **X** in the upper right corner of the *Edit/Replace Map File* dialog box to close it.
10. Click **Save**.

Removing an Existing Map

1. If you have not already done so, start VxToolbox on the PC where ArcGIS Pro is installed, click the **Maps** tab, and then (in the left panel) click to select the map.
2. Click the delete icon ( ).

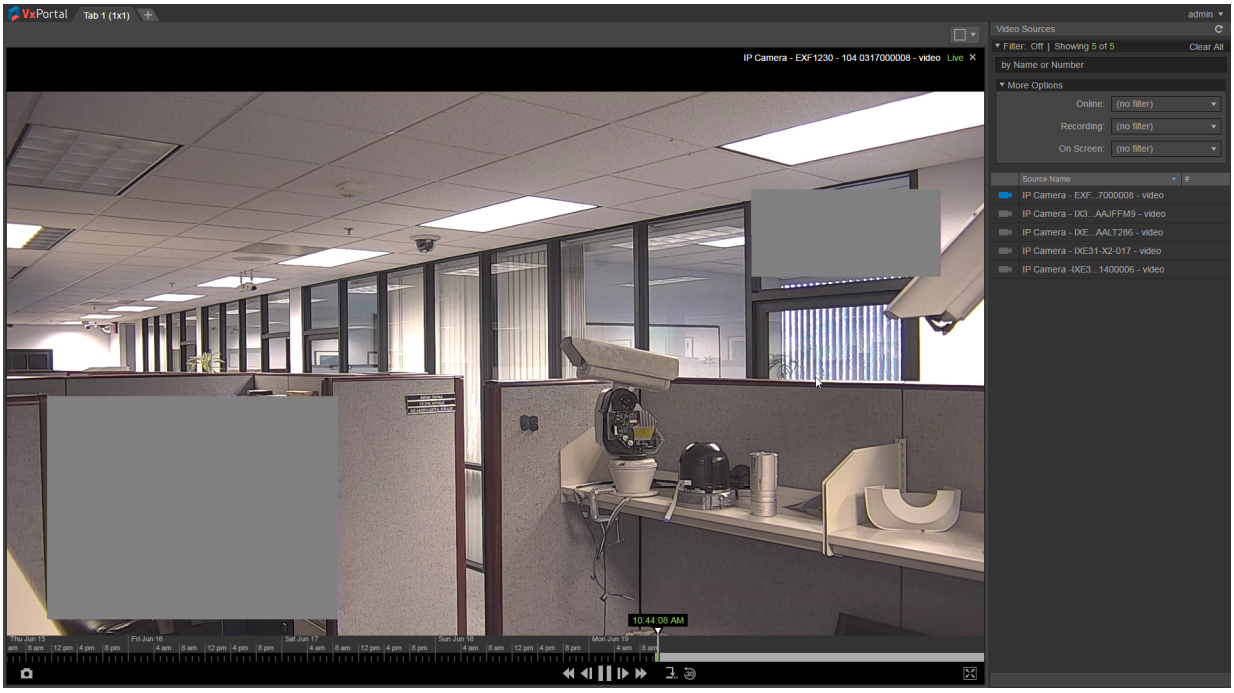
Managing Permissions for Maps

After you have created maps, use VxToolbox to assign map permissions to different roles.

1. If you have not already done so, start VxToolbox on the PC on which ArcGIS Pro is installed.
2. Refer to the section titled *Managing Users and Roles* for instructions to add, edit, and assign roles.

Using VxPortal

VxPortal is a Web interface that enables you and other users to view live and recorded video from your VxPro system without using the hard VxOpsCenter client.



VideoXpert Portal requires Google Chrome 50+, Mozilla Firefox 50+, Microsoft Edge 14+, or Safari 600+ with Javascript enabled.

VxPortal operates as a simplified version of VxOpsCenter.

- To view cameras, simply double-click or drag them into the cell you want to view them in.
- Roll over a cell to engage playback controls.
- Change layouts, use filters, create bookmarks perform other operations as you would in VxOpsCenter. Refer to the chapter Using VxOpsCenter for instructions.

Accessing VxPortal

1. Launch VxPortal by one of the following methods:
   - Click the *VxPortal* icon on the desktop.
   - Open a web browser and go to the IP address of VxPortal (for example: https://[ip address of VxPro]).

   Note: If the server(s) on which the VideoXpert system is installed are configured for FIPS mode, VxPortal might not work in Chrome and Firefox browsers. Use Microsoft® Edge.

2. Enter your *Username* and *Password*, and then click **Log In**.

Changing the System Password in VxPortal

For security purposes, you should change the default password for your system. To change it using VxPortal:

1. Click **admin** in the upper-right of the window to access the pull-down menu.
2. Click **Change Password**.
3. In the *Change Password* dialog box, enter the requested information in the fields, and then click **Save**.

Managing Exports

1. Click **admin** in the upper-right of the window to access the pull-down menu.
2. Click **Manage Exports**.
3. In the *Export Archive* window, view the list of exports in the table.
   - (Optional) Click on any column title (except *Action*), to sort by the values in that column.
   - (Optional) Click to expand **Filter**, and then do one of the following: enter a file name or creator; select *From* and *To* start and end dates and times; and/or select a *Status* to view a subset of all exports. Click **Clear** to clear the filter fields.
4. (Optional) To download an Export Archive record, click **Download** in the *Action* column for the archive row, right-click the file name at the lower left corner of your monitor, and then click **Open**.
5. (Optional) To edit the export name, click the pencil icon ( ) in the *Action* column for the archive row; in the *Edit Export Name* dialog box, type a value in the *New Name* field, and then click **Save**.
6. (Optional) To delete an export, click the trashcan icon ( ) in the *Action* column for the archive row; in the confirmation dialog box, click to select or deselect the checkbox to *Delete Permanently*, and then click **Yes**.
   - If you did not select *Delete Permanently*, the archive is removed from the current list, and is added to the *Export Trash Bin*.
   - If you did select *Delete Permanently*, the archive is deleted, but not added to the *Export Trash Bin*.
7. If you want to view deleted exports, click the down arrow to the right of *Export Archive*, and then select **View Trash Bin**.
   - To move an export from the *Export Trash Bin* to the *Export Archive* window, click the export **Restore** button.
   - To delete one item in the *Export Trash Bin*, click the export **Delete** button. In the confirmation dialog box, the checkbox *for Delete Permanently* is already selected. Click **Yes**.
   - To delete the items in the *Export Trash Bin*, click the down arrow to the right of *Export Trash Bin*, and then click **Empty Trash Bin**. In the confirmation dialog box, the checkbox for *Delete Permanently* is already selected. Click **Yes**.
   - To return to the *Export Archive* window, click the down arrow to the right of *Export Trash Bin*, and then click **Close Trash Bin**.
8. If you want to delete failed exports, click the down arrow to the right of *Export Archive*, and then click **Delete All Failed Exports**. In the confirmation dialog box, click to select or deselect the checkbox for *Delete Permanently*, and then click **Yes**.
9. To exit the window, click the ✕ in the upper-right corner of the window, or click outside the window.

Configuring the Server

To configure the VideoXpert Server:

1. Click **admin** in the upper-right of the window to access the pull-down menu.
2. Click **Configure Server**.
   This launches VideoXpert StoragePortal.
3. Log in to the server, and see the section titled *Configuring Advanced Storage Using VideoXpert Storage Portal* for instructions on using the interface.

Viewing Keyboard Shortcuts

To view a list of keyboard shortcuts for VxPortal:

1. Click **admin** in the upper-right of the window to access the pull-down menu.
2. Click **Keyboard Shortcuts**.
3. To exit the window, click the **X** in the upper-right corner of the window, or click outside the window.

Logging Out

To properly exit VxPortal:

1. Click **admin** in the upper-right of the window to access the pull-down menu.
2. Click **Log Out**.

Configuring Advanced Storage Using VideoXpert Storage Portal

VideoXpert Storage Portal provides advanced settings and status that can help you fine-tune and monitor your VideoXpert Storage devices.

Accessing the VideoXpert Storage Portal

1. Login to VxPortal.
2. Click **admin** in the upper-right of the window to access the pull-down menu.
3. Click **Configure Server**.
4. Enter the *Username* and *Password*, and then click **Log In**. The default *Username* and *Password* are both “admin”.

Checking VideoXpert Storage Status

The *Status* page provides basic status information about your storage/recorder to help you determine whether you are under-utilizing or over-burdening the recorder.

1. In VideoXpert Storage Portal, click the **Status** tab.
2. View the available information.

Generating and Downloading Storage Logs

Storage logs can provide insight to an anomaly with the recorder or one of the sources recording to it. When requesting support from Pelco, a Pelco technician might request logs from the recorder. To generate and download Storage logs:

1. In VideoXpert Storage Portal, click the **Status** tab.
2. Click **Generate Log Archive**.
3. In the *Generate Logs* dialog box, click **Generate**.
4. When the log has been successfully generated, click **Download Log Archive** (to the left of the *Generate Log Archive* button).
5. Open the zip file and then save it to an appropriate location.

Configuring the Server in VideoXpert Storage Portal

Use the *Configure* page to assign an NTP address to the recorder. You should assign the recorder to the same NTP server as the rest of your VideoXpert network to ensure time is properly synchronized.

From this page, you can also change the transmission method and retention period for the recorder.

1. In VideoXpert Storage Portal, click the **Configure** tab.
2. Enter an appropriate number of days in the *Maximum Retention Period* field.
3. In the *Transmission Method* field, click to select the radio button for *Multicast* or *Unicast*.
4. Click **Save**.

Backing Up and Restoring Databases on VideoXpert Enterprise Systems (VideoXpert Enterprise only)

Configuring VideoXpert Enterprise System Backups Using VxToolbox

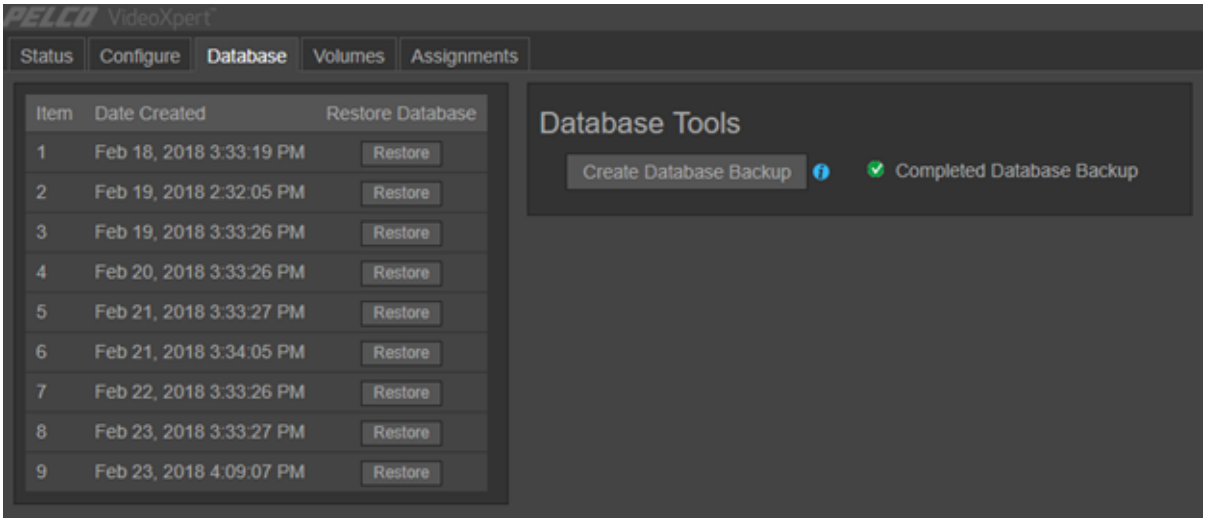
For VideoXpert Enterprise Systems, you must configure backups using VxToolbox. See the current version of the *VxToolbox User Guide*, section titled *Configuring System Backups*.

Manually Restoring a Database Backup on VideoXpert Enterprise Systems

1. Select one node in the cluster to be the primary node.
2. Copy the appropriate database backup from your configured network storage location to the primary node.
3. Shut down the VideoXpert Core and VideoXpert Core Database services on everything except the primary node.
4. On the primary node, open and command prompt (cmd) window as Administrator. In the cmd window:
   a. Navigate to the installation directory of Core, typically “C:\Program Files\Pelco\Core”.
   b. Run the set command to set the full path to the database backup as a variable. For example: “set DbBackup=C:\Path\To\My\Backup\core-123124125.sql”.
   c. Run the restore script using the command “utils\manual_restore_db.bat%DbBackup%”.
   d. The script might take several minutes to complete.
5. After the script has completed, start the VideoXpert Core service on all other notes in the cluster.

Backing Up and Restoring the Database on VideoXpert Professional Systems (VideoXpert Professional only)

VideoXpert Storage takes database recovery points daily, and stores these points for eight days. You can also initiate a manual backup, an example of which is shown as *Item 9* in the screen capture below. If your database enters an error state, you can restore to one of the available points from the *Database* page.



Manually Backing Up the Database on VideoXpert Professional Systems

1. In VideoXpert Storage Portal, click the **Database** tab.
2. In the *Database Tools* area, click **Create Database Backup**.
3. In the *Backup Database* confirmation dialog box, click **Backup**.

When the backup is complete, *Completed Database Backup* will be displayed in the *Database Tools* area of the window.

Restoring the Database on VideoXpert Professional Systems

Restoring the database restores camera associations (provided the camera still exists within the VideoXpert environment) and storage settings. Restoring the database will not affect video directly; you will not lose video when restoring to an earlier time. However, if you have added cameras to the recorder after a backup was taken, and restore to that backup, you will lose access to video for any cameras the database restore process removes from the database.

Note: The NTP server address is not recovered during backup or restore. The NTP address must be reset manually after the backup or restore is complete.

1. In VideoXpert Storage Portal, click the **Database** tab.
2. In the table, locate the backup to be restored, and then click the corresponding **Restore** button.
3. In the *Backup from [identifier]* confirmation dialog box, click **Restore**.
   Restoring can take several minutes, and there is no way to cancel a restoration that is in progress.

When the restore operation is complete, *Completed Restore for Backup [#]* will be displayed in the *Database Tools* area of the window.

Using Volume Groups and Volumes

You can organize your device video storage by creating and managing Volumes and Volume Groups.

- A volume is a logical directory in which you want to store video.
- A volume group is a group of volumes to which cameras are assigned and distributed. You can use volume groups to:
  - Separate types of storage (like internal vs. external)
  - Set different retention parameters for different sets of drives.
  - Write video to more than one volume. When all volumes are full, the system will overwrite volume containing the oldest stored video.
- The system ships with a volume group called *Default Volume Group*. You can rename or delete this volume group.
- An archive volume group is a volume group to which the recorder will move the oldest video from the other volume groups, instead of deleting the oldest video. See the section titled *Using External NAS Storage (Archive Volume Group)* for more information about the archive volume group.

Using External NAS Storage (Archive Volume Group)

By connecting an external volume (network storage/NAS), you can extend your retention time for VideoXpert Storage recorders. When your VideoXpert Storage recorder achieves its maximum capacity and would normally begin to delete the oldest video, it will send video to the NAS instead. Video will still adhere to retention parameters, even when moved to external storage. The experience in accessing video is the same, whether a recording is served from a the VideoXpert Storage recorder or an external server.

Note: We support SMB1 NAS servers when using anonymous access. For systems that require a username/password for NAS access, you must use SMB2 or higher.

The external storage server must reside on the VideoXpert network. You can select whether to require login credentials. If the server requires and is provided login credentials, NAS Authentication is enabled.

As video transfers from a VideoXpert Storage recorder to an external storage server, bandwidth of your incoming cameras is equal to the bandwidth out to external storage. When using external storage, you

should plan storage distribution to ensure bandwidth availability for incoming cameras, storage overflow, and user impact in viewing recorded video.

Note: While each VideoXpert Storage recorder can only have a single archive group, multiple VideoXpert Storage recorders can use the same NAS server. In this case **each VideoXpert Storage must point to a different path/folder on the NAS server**; pointing multiple VideoXpert Storage recorders to the same archive group network path will cause video to expire earlier than expected and without warning. You can individually select whether each path uses NAS Authentication.

Creating a New Volume Group

1. In VideoXpert Storage Portal, click the **Volumes** tab.
2. At the bottom right of the *Volume Groups* panel, click the plus sign icon ( ).
3. In the *Create New Volume Group* dialog box:
   a. Enter a value in the *Name* field.
   b. Click to select or deselect the checkbox for *Designate this Volume Group as the Archive Volume Group*.
   If there is already a designated Archive Volume Group, a dialog box opens.Read the message, click **OK**, and then either remove the archive designation from the existing volume group and re-add the new volume group, or re-add the new volume group but do not designate it as the Archive Volume Group.
   c. Click **OK**.
4. If you selected this volume group to be the archive volume group, and there is already a designated archive volume group, the *Attention* dialog box will inform you of this, and instruct you to remove the current archive volume group.To proceed:
   a. Click **OK**
   b. Identify the current archive volume group by the *Archive Volume Group* icon ( ) to the left of the volume group name.
   c. Select the volume group that is the current archive volume group, click the pencil icon ( ), deselect the checkbox, and then click **Save**.
   d. Add the new volume group, and select the checkbox to set it as the *Archive Volume Group*.

Editing a Volume Group

1. In VideoXpert Storage Portal, click the **Volumes** tab.
2. At the bottom right of the *Volume Groups* panel, click the pencil icon ( ).
3. In the *Edit Volume Group* dialog box:
   a. (Optional) Enter a value in the *Name* field.
   b. Click to select or deselect the checkbox for *Designate this Volume Group as the Archive Volume Group*.
   c. Click **Save**.
4. If you selected this volume group to be the archive volume group, and there is already a designated archive volume group, the *Attention* dialog box will inform you of this, and instruct you to remove the current archive volume group.To proceed:

a. Click **OK**
b. Identify the current archive volume group by the *Archive Volume Group* icon ( ) to the left of the volume group name.
c. Select the volume group that is the current archive volume group, click the pencil icon ( ), deselect the checkbox, and then click **Save**.
d. Add the new volume group, and select the checkbox to set it as the *Archive Volume Group*.

Deleting a Volume Group

1. In VideoXpert Storage Portal, click the **Volumes** tab.
2. Click to select the volume group to be deleted.
3. At the bottom right of the *Volume Groups* panel, click the trashcan icon ( ).
4. In the *Delete Volume Group* dialog box, click **OK**.
5. If you deleted the archive volume group, edit another volume group and select the checkbox to set it as the *Archive Volume Group*.
6. If there is no designated archive volume group, the system will not archive video.

Creating a New Volume

1. In VideoXpert Storage Portal, click the **Volumes** tab.
2. In the *Volume Groups* panel, click to select a *Volume Group* to which the new Volume will be assigned.
3. At the bottom right of the *Volumes* (center) panel, click the plus sign icon ( ).
4. In the *Create New Volume Group* dialog box:
   a. Enter a value in the *Path* field.
   b. Click to select or deselect the checkbox for *Requires credentials*.If you select this checkbox, enter values in the *Username*, *Password*, and *Domain* fields.
   c. Enter or select a value in the *Buffer Size* field.
   d. Click to select or deselect the checkbox for *Reserve bandwidth for this volume*.
   e. Click **OK**.

Editing a Volume

1. In VideoXpert Storage Portal, click the **Volumes** tab.
2. In the *Volumes* (center) panel, click to select the volume to edit.
3. At the bottom right of the *Volumes* panel, click the pencil icon ( ).
4. In the *Edit Volume Path* dialog box:
5. (Optional) Enter a value in the *Path* field.
6. (Optional) Click to select or deselect the checkbox for *Requires credentials*.If you select this checkbox, enter values in the *Username*, *Password*, and *Domain* fields.
7. (Optional) Enter or select a value in the *Buffer Size* field.
8. Click to select or deselect the checkbox for *Reserve bandwidth for this volume*.
9. Click **Save**.

Deleting a Volume

1. In VideoXpert Storage Portal, click the **Volumes** tab.
2. In the **Volumes** (center) panel, click to select the volume to be deleted.
3. At the bottom right of the *Volumes* panel, click the trashcan icon ( ).
4. In the *Delete Volume* dialog box, click **OK**.

Associating Devices With a Volume

If you have more than one non-archive volume group, you can associated devices (cameras) with specific volume groups.This enables you to control data streams between the system and the volume groups.

1. In VideoXpert Storage Portal, click the **Volumes** tab.
2. In the *Volume Groups* (left) panel, click to select the volume group with which you will associate devices.
3. In the *Associated Devices* (right) panel, click the pencil icon ( ).
4. In the *Edit Devices in Volume Group "[group name]"* dialog box, click to select or deselect the checkboxes for the devices to associate with the volume group, and then click **Save**.
5. (Optional) Use the filter to show a subset of the devices in a volume group:
   a. In the *Volume Groups* (left) panel, click to select the volume group.
   b. In the *Associated Devices* (right) panel, in the *Filter* field, type in a value (for example "IP").

Viewing Storage Assignments

You can check the status of individual streams and whether or not they are recording from the VideoXpert Storage Portal Assignments page.

1. In VideoXpert Storage Portal, click the **Assignments** tab.
2. In the *Recorders* (left) panel, click to select a recorder.
3. Scroll through the device list to see the *Name*, *ID*, *IP address*, and *Status* of each device.
4. Hover over a device name or ID to see the full text.

Changing the Password

1. In VideoXpert Storage Portal, in the upper right corner of the window, click **Change Password**.
2. Enter the current password and new password in the appropriate fields.
3. Click **Change Password**.
4. In the *Success* dialog box, click **OK**.
5. Login to VideoXpert Storage Portal using the new password.

Logging Out

To log out of VideoXpert Storage Portal, in the upper right corner of the window, click **Logout**.

Using VideoXpert OpsCenter

Installing and Configuring VxOpsCenter

On VideoXpert Enterprise systems you must install VxOpsCenter. On both VideoXpert Enterprise and VideoXpert Professional systems, you must configure VxOpsCenter before use.

Installing VxOpsCenter (VideoXpert Enterprise only)

Your system must meet the minimum requirements and have Microsoft®.NET 4.6.1 or later installed before you can install the VxOpsCenter Client application.

1. Run the VxOpsCenter EXE installer.
2. Read and accept the terms of the End User License Agreement, and then click **Next**.
3. Click **Begin Installation**.
4. Follow the instructions in the Installation Wizard to complete the installation.
5. Click **Close**.

Running the Application for the First Time

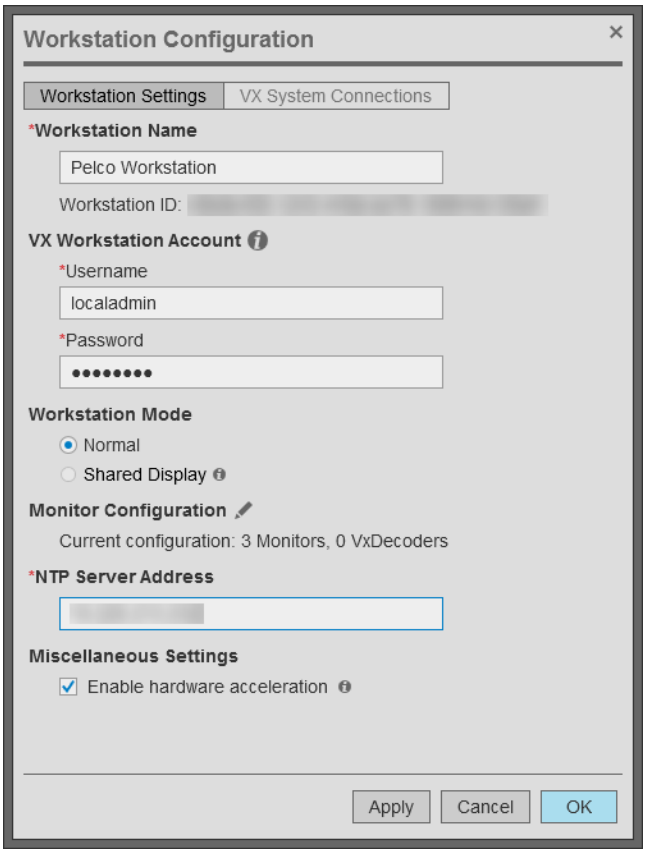
When you run the application for the first time, you will create your user account, configure basic VxOpsCenter and video behaviors, and, most importantly, point VxOpsCenter to the VideoXpert system(s) you want to use. Some steps in initial setup are optional; you only need to access these options if your workstation and network differ from default settings. The general work flow is as follows:

1. If VxToolbox is open, close it.

   Note: Do not run VxToolbox and VxOpsCenter at the same time. Doing so might cause memory-related issues.
2. Run VxOpsCenter.
3. Create your *Workstation Configuration* account.
   - This account is local to the workstation and preserves your configuration and your VideoXpert system credentials from other users who might access your workstation.
   - Your workstation configuration account credentials may be the same as your VideoXpert user credentials, though you may want to use different credentials for your workstation configuration account to maximize security.
4. Configure your workstation, including your monitor layout. See the section titled *Setting Up Your Workstation*.
5. Configure *System Server Connections*. See the section titled *Configuring VX System Connections*.
6. Indicate whether or not to allow multi-system access. See the section titled *Enabling or Disabling Multi-System Access (Simultaneous Server Connections)*.
7. Login to VideoXpert with your standard credentials (not the Workstation Configuration credentials) to begin using VideoXpert.

Setting Up Your Workstation

Workstation settings determine the basic behavior of the system. You can re-configure the workstation at any time.



1. In the VxOpsCenter *Login* window, from the *Connect to System* drop-down menu, select **None - Configure Workstation**; enter values in the *Username* and *Password* fields; and then click **Log In**.
2. If the *Workstation Configuration* dialog box does not open, or to update the configuration later, launch the *Workstation Configuration* dialog box: In Mission Control, click the *User Menu* icon ( ), and then select **Configure Workstation**.
3. Enter a *Workstation Name*. This is the name by which VxCore will recognize the workstation and the name by which other users will recognize the workstation when sending video, responding to workstation-related events, etc.
4. Enter values in the *Username* and *Password* fields under *Vx Workstation Account*.
5. Under, *Workstation Mode*, select *Normal* or *Shared Display* mode. *Shared Display* mode provides monitor-wall functionality for a workstation operating a single monitor. See the section titled *Configuring Shared Display Mode* for more information about *Shared Display* mode.
6. For VideoXpert Enterprise systems only, if your workstation will support multiple monitors through VxDecoder, click the *Configure Monitors* icon ( ) to the right of *Configure Monitors* to open the *Configure Monitors* window for the workstation. See the section titled *Configuring Monitors for VideoXpert Workstations (VideoXpert Enterprise Only)* to learn more about monitor configuration.
7. In the *NTP Server for Enhanced Decoder* area, do one of the following:
8. Click to select the radio button for *Use Windows Time Service time server (time.windows.com)*.

9. Click to select the radio button for Manually specify a time server, and then enter your *NTP Server Address*.
10. (Optional) click the checkbox to select or deselect *Enable hardware acceleration*. Hardware acceleration is enabled by default and should only be disabled if your workstation uses an unsupported graphics chipset, or if you need to troubleshoot graphics issues that may result from your graphics drivers and chipset.
11. Click **Apply**, **OK**, or **VX System Connections** to save your workstation configuration settings. If you clicked **VX System Connections**, see the section titled *Configuring VX System Connections*.

Configuring Monitors for VideoXpert Workstations (VideoXpert Enterprise Only)

The VxOpsCenter supports monitors connected directly or monitors connected through Enhanced Decoders over the network for VideoXpert Enterprise workstations. For best performance, it is recommended that you run Windows® 8 or later on workstations operating decoder-driven monitors.

For workstations using multiple monitors driven by Enhanced Decoders, TightVNC server mirrors Windows elements on the monitors that are driven by Enhanced Decoders over the network. Video decoding processes are handled by the decoders driving each monitor, but the user experiences what appears to be a single, unified Windows desktop.

1. Log in using the Workstation Configuration Account.
2. In Mission Control, click the *User Menu* icon ( ) , and then select **Configure Workstation**.
3. Select **Configure Monitors**. If you have already performed initial configuration for the system, log in as the VxOpsCenter local administrator first, and then select **Configure Monitors**.
4. For each monitor:
   a. Click to select the monitor.
   b. Click to select the radio button for either *Direct* or *Decoder*.
   c. If you selected *Decoder*, enter the IP address of the decoder, and then click **Connect**.

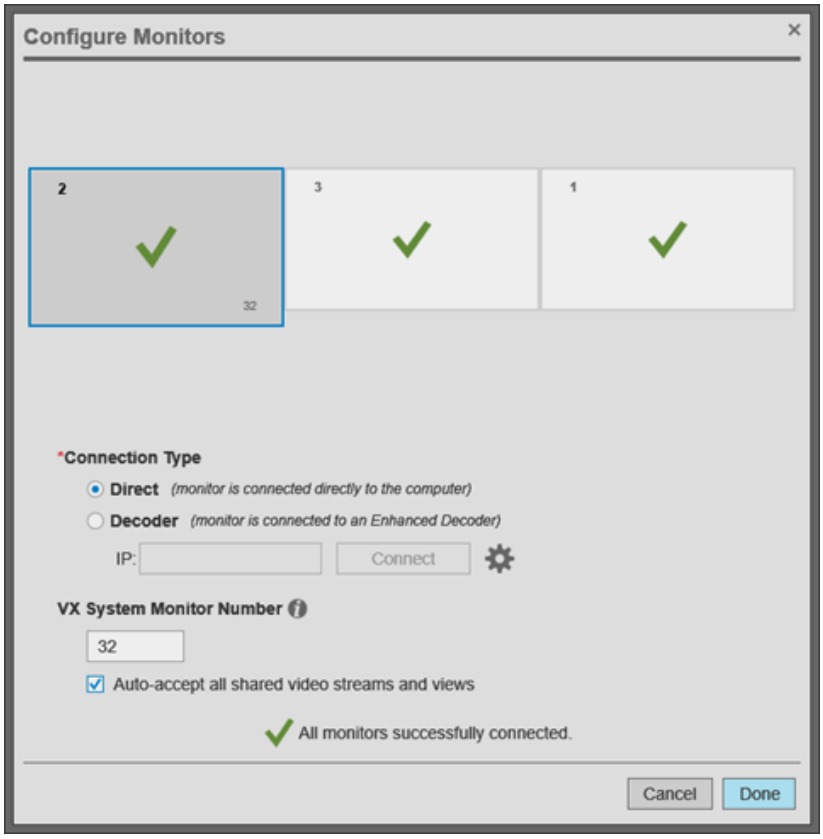


Figure 1: Connecting Monitors to Enhanced Decoders

d. The example above shows the assigned monitor number (32) in the lower right corner of the monitor.

e. (Optional) If you are going to send video to a monitor remotely, assign a number to the monitor. To do so: enter a number in the *VxSystem Monitor Number* field, and then click to select or deselect the checkbox for *Auto-accept all shared video streams and views*. When *Auto-accept all shared video streams and views* is selected, the monitor will automatically accept video streams and views that have been sent by another workstation or shared display; when it is not selected, a user must manually accept shared video streams and views on the monitor.

Note: Pelco recommends that you only assign a unique number to a monitor (workstation or shared display) if you will send video to it remotely. If you set a monitor number, every change made to that window will be sent to the server. This is an unnecessary load if you are not using the monitor as part of a monitor wall.

5. When you have configured all monitors, click **Done**.

Configuring VX System Connections

The list of *VX System Connections* determines the VideoXpert environments to which your VxOpsCenter can connect. When users log in with their VideoXpert system credentials, VxOpsCenter will connect them to relevant VideoXpert environments. If a server is not in the list of system server connections, users will not be able to connect to it using VxOpsCenter.

Only the Workstation Configuration account can define system server connections. When you add systems using the Workstation Configuration account, and you are working in MSA mode, you can elect to

provide credentials. If you add credentials for systems, then your Workstation Configuration account will also immediately connect you with your systems. If you do not provide credentials, then you must manually enter credentials for each system after you log in as the workstation configuration user. If you are using Single Server Access mode (non-MSA mode), you must always provide the credentials when logging in.

When setting up a connection to a server, you can determine streaming performance to the system. By default, system connections use the best possible streaming options, but you may need to disable settings or adjust your connection speed to account for the network between the workstation and the system to which you will connect. See the section titled *Understanding System Streaming Performance Settings*.

Note: To optimize decoder performance in Windows 7, download and install the DFMirage mirror driver. Do not install the DFMirage driver if running a version of Windows other than Windows 7.

Enabling or Disabling Multi-System Access (Simultaneous Server Connections)

Multi-system access allows you to access multiple VideoXpert environments simultaneously using your Workstation Configuration account. When enabled, your Workstation Configuration account will store credentials for your VX systems, acting like a master key for VideoXpert (on this workstation). When you log in with your Workstation Configuration account, you will be able to select and access video from all of your VX systems without having to provide credentials for each of your systems.

Note: The multi-system access option takes effect whether or not you have configured the workstation to connect to multiple systems.

To enable multi-system access:

1. Select the system to which you will connect; to log in as the *Workstation Configuration User*, you must select **None - Configure Workstation**.
2. Log into VxOpsCenter with the Workstation Configuration credentials.
3. In Mission Control, click the *User Menu* icon (▼), and then select **Configure Workstation**
4. Click **VX System Connections**.
5. Click to select or deselect the checkbox for *Enable simultaneous access to multiple systems*. When you select this checkbox, the *Multi-System Access Login* dialog box opens. Click **OK** to acknowledge the information and close the dialog box.

With multi-system access enabled, the *Systems* section is available within VxOpsCenter. You can select or deselect systems to show or hide sources belonging to your various systems.

If the *Enable simultaneous access to multiple systems* setting is disabled, before you log in, you must select the system to which you will connect; to log in with the *Workstation Configuration* credentials, you must select **None - Configure Workstation**.

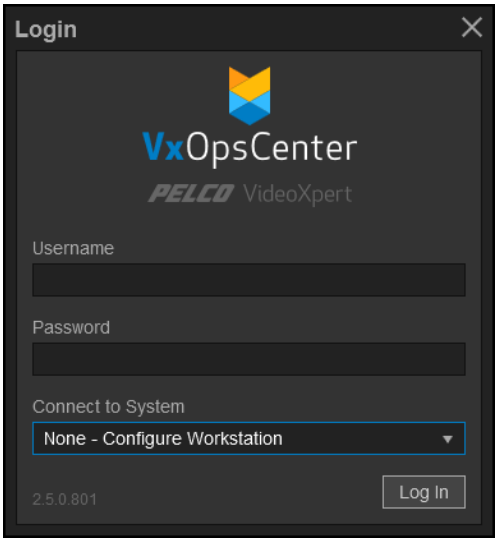


Figure 2: Login prompt with simultaneous system access disabled

Adding Servers to VxOpsCenter

1. Log into VxOpsCenter with the Workstation Configuration Account.
2. In Mission Control, click the *User Menu* icon (▼), and then select **Configure Workstation**.
3. Click **VX System Connections**.
4. If there is an existing system list, import it.
   a. Click the menu icon (≡) at the lower left of the *Workstation Configuration* window.
   b. Click **Import System List**.
   c. Click **Browse**, and then select the appropriate file.
   d. Review the information in the *Import System List* window, and do one of the following:
      - Click to select the radio button for *Replace List*.
      - Click to select the radio button for *Merge Lists*, and then click to select the checkboxes for each system that you want to replace with the imported information.
   e. Click **Import**.
5. To add another server:
   a. Click the *Add System Connection* icon (+) at the lower right of the *Workstation Configuration* window.
   b. (Optional) Provide notes about the server. The notes are only available to the Workstation Configuration account.
   c. Provide the IP of the server in the *Server Address* field, and adjust the HTTPS *Port* value if different from the default.
   d. (Optional) Adjust *System Streaming Performance* settings. See the section titled *Understanding System Streaming Performance Settings*
   e. (Optional) Click to select or deselect the checkbox for *Validate SSL/TLS Certificate*...
   f. (Optional) Type values in the *Username* and *Password* fields.

g. Click *Test Connection* to verify that you have provided the correct server address; testing the connection will require you to provide credentials to the server.

h. Click **Save**.

6. If you want to export the System List:

   a. Click the menu icon ( ) at the lower left of the *Workstation Configuration* window.

   b. Click **Export System List**.

   c. In the *Export System List* window, enter a value in the *System List File Name* field,

   d. In the *To Location* field, click **Browse** and browse to the location to which the file will be saved.

   e. (Optional) Click to select *Include Username & Password for each System*.

   f. Click **Save**.

7. When you have added all appropriate connections, click **OK**.
8. If the *Log Out Required* dialog box opens, click **OK**. You will be logged out. The configuration changes are applied when you log back in.

Editing a System Connection

1. Log into VxOpsCenter with the Workstation Configuration Account.
2. In Mission Control, click the *User Menu* icon ( ), and then select **Configure Workstation**.
3. Click **VX System Connections**.
4. Click to select the system connection to be edited.
5. Click the *Edit System Connection* icon ( ) at the lower right of the *Workstation Configuration* dialog box.
6. In the *Configure System Connection* dialog box, make all necessary updates, and then click **Save**.
7. In the *Workstation Configuration* dialog box, click **OK** to save the settings.
8. If the *Log Out Required* dialog box opens, click **OK**. You will be logged out. The configuration changes are applied when you log back in.

Deleting a System Connection

- 1. Log into VxOpsCenter with the Workstation Configuration Account.
  2. In Mission Control, click the *User Menu* icon ( ), and then select **Configure Workstation**.
  3. Click **VX System Connections**.
  4. Click to select the system connection to be deleted.
  5. Click the *Delete System Connection* icon ( ) at the lower right of the window to delete the connection to the server.
  6. In the *Delete System Server Connection* dialog box, click **OK** to confirm the deletion.
  7. In the *Workstation Configuration* window, click **OK** to save the settings.
  8. If the *Log Out Required* dialog box opens, click **OK**. You will be logged out. The configuration changes are applied when you log back in.

Understanding System Streaming Performance Settings

System streaming performance settings determine the quality of streams you receive or, in some cases, whether you receive a stream at all from a particular system. These settings affect frame rate and latency of video, typically for the better with each subsequent setting. However, these options may not be available for your network. VxOpsCenter uses the deepest selected option that is provided by the server.

If you deselect all Streaming Performance options, you will engage JPEG Pull streaming. JPEG Pull streaming is always available and works on virtually all network types (anywhere a TCP connection is available). It works even on slow connections, in part because of its lower quality (low frame rate and high latency).

To set the *System Streaming Performance*, log in with the Workstation Configuration account and add or edit a system.

- **Allow RTSP/RTP** is recommended for most system configurations. Select this to enable RTSP streaming over TCP (or Unicast or Multicast UDP, depending on subsequent settings). This option provides a higher quality stream than JPEG Pull on all but the slowest networks.
- **Allow UDP** is recommended for most LAN configurations. This setting enables Unicast streaming over UDP. Streaming over UDP is more efficient and has lower latency than streaming over TCP. However, UDP traffic is blocked by some WAN networks, and by fewer LAN networks. If you encounter streaming problems, try deselecting it.
- **Allow Multicast** is recommended for most enterprise-level networks whose switches allow multicast traffic. This setting enables Multicast streaming over UDP. Multicast UDP streaming is even more efficient than unicast UDP streaming. However, multicast traffic is blocked by most WAN networks, and by some LAN networks.
- **Connection Speed** determines the type and resolution of video available to you; at slower connection speeds, you will receive video transcoded into lower resolutions. When streaming JPEGs, your connection speed determines the compression of JPEG images (the lower the speed, the greater the compression).
  - 512k restricts you to JPEG streaming.
  - 1 Mbps restricts video to CIF resolution (352 x 240) or smaller.
  - 5 Mbps restricts video to D1 resolution (720 x 480) or smaller.
  - 10 Mbps restricts video to secondary streams when available.
  - Connection speeds greater than 10 Mbps can access full resolution video. Options are 50 Mbps, 100 Mbps, 1 Gbps, and 10 Gbps.

Configuring Shared Display Mode

A **Shared Display** is a single-monitor workstation that provides monitor wall functionality within VideoXpert. In this mode, local controls are disabled; you will not control the application locally. Rather, you and other users will send tabs and video to the shared display and control the shared display remotely.

Your workstation must have only one, locally-connected monitor to support Shared Display mode. (If more than one monitor is connected to the workstation, you will be unable to put the workstation into Shared Display mode.) Putting the VxOpsCenter in Shared Display mode causes the VxOpsCenter application to start and log-in automatically when Windows starts. Because the workstation is intended to start without user interaction, it is recommended that you configure Windows to start and log-in automatically for shared displays.

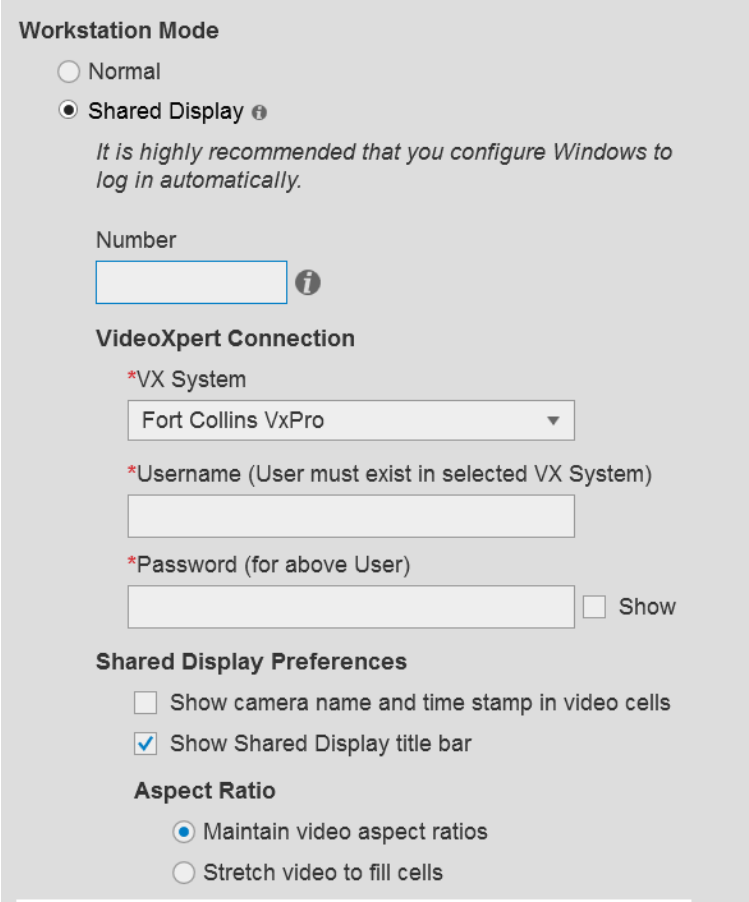
The user account you provide when setting up Shared Display mode must have the *Setup Edge Devices* permission. The account should also have rights to view and control any cameras you send to the monitor;

the shared display cannot display cameras it does not have permission to access, even if the user sending something to the shared display has permission to view those cameras.

Note: Shared display is not available if multi-system access is enabled.

To configure an VxOpsCenter for Shared Display mode:

1. If you have not already done so access the *Configure Workstation* window:
   a. Log into VxOpsCenter with the Workstation Configuration account.
   b. In Mission Control, click the *User Menu* icon (▼), and then select **Configure Workstation**.
2. Click the **Workstation Settings** tab.
3. In the *Workstation Mode* section of the window, click to select the checkbox for *Shared Display*.



4. Provide a number for the monitor. The number will allow you to set rules to send video to your shared display, or to send video to the shared display by number.
5. (Optional) Enter or select a *VX System* to create a VideoXpert Connection. Selecting this option opens a dialog to configure system server connections. See the section titled *Configuring VX System Connections*.
6. Provide the user name and password of an account with credentials to view video; the account provided must have access to cameras and functions you want to use through the shared monitor.

7. (Optional) Click the checkbox to select or deselect *Show camera names and timestamps in video cells.* Whether the user sharing video has names and timestamps enabled, the shared display uses this preference to determine whether or not to display overlays.
8. (Optional) Click the checkbox to select or deselect the *Show Shared Display title bar*.
9. In the *Aspect Ratio* area, click to select the radio button to either *Maintain video aspect ratios* or *Stretch video to fill the cells*. If you select *Stretch video to fill the cells*, an option appears that allows you to collapse space between cells.
10. Click **Save**.

Configuring VxOpsCenter Kiosk Mode (Optional)

You can run VxOpsCenter in kiosk mode, so that only VxOpsCenter Client will be run without access to any other Windows applications.

- The launcher and script are not included in the default installer of VxOpsCenter.
- To run in kiosk mode, install VxOpsCenter on a machine with Windows 10 operating system using VxOpsCenter 2.5 or later.

Note:If not done properly, this process might result in a loss of critical data. In addition, the process has several complex steps that, if not done properly, might result in unforeseen results. Before beginning this process, ensure that all important data is backed up. If you are uncertain of this process or are unfamiliar with the requirements, contact Product Support Services for assistance.

To install and configure VxOpsCenter to run in kiosk mode:

1. Install VxOpsCenter v 2.5 or later on a Windows 10 PC.
2. Download OpsCenterLauncher.zip and kiosk_mode_script_v2.ps1.
3. Unzip OpsCenterLauncher.zip and copy the files to the VxOpsCenter directory at c:\Program Files\Pelco\VideoXpert\VxOpsCenter.

   Note: The path must be the same as the path specified in kiosk_mode_script_v2.ps1.

   Note: If the OpcCenter Client kiosk mode is updated to a newer version, copy the contents of OpsCenterLauncher.zip to the folder again.

4. Create a local standard user account called “Operator”.

   Note: The account must be the same as the account specified in kiosk_mode_script_v2.ps1.

5. Run kiosk_mode_script_v2.ps1 as the Windows Administrator.

Logging In

Open the VxOpsCenter application.

1. Enter your credentials.
2. (Optional) If VxOpsCenter is configured to connect to a single system at a time, select the system you want to access. See the section titled *Understanding User Account Types*.
3. Click **Log In**.

Understanding User Account Types

VxOpsCenter supports two types of users:

- The Workstation Configuration account provides access to VxOpsCenter settings and allows you to configure connections to VX systems. The configuration account should be reserved for administrators, especially if multiple users will share the same workstation.
- Logging in as a standard VX system user provides access to standard VX features - viewing video, controlling cameras, etc.

Note: If multi-system access is enabled, only Workstation Configuration accounts are supported.

If your user account is both the Workstation Configuration account and a VX system user, VxOpsCenter will log you into applicable VX systems and allow access to workstation configuration settings.

When you log in as a standard VX system user, the system will only populate sources and options you have permissions to see (determined by the roles assigned to your user account). If a system or camera does not appear when you log in, then the system or camera might be offline, or you might lack the appropriate permissions.

Setting Your Display Language

The localization presented by the VxOpsCenter client is based on the Region and Language settings within Windows.

Note:You must have the appropriate Windows language pack to expose display languages in the VxOpsCenter Client.

To set or change your VxOpsCenter display language:

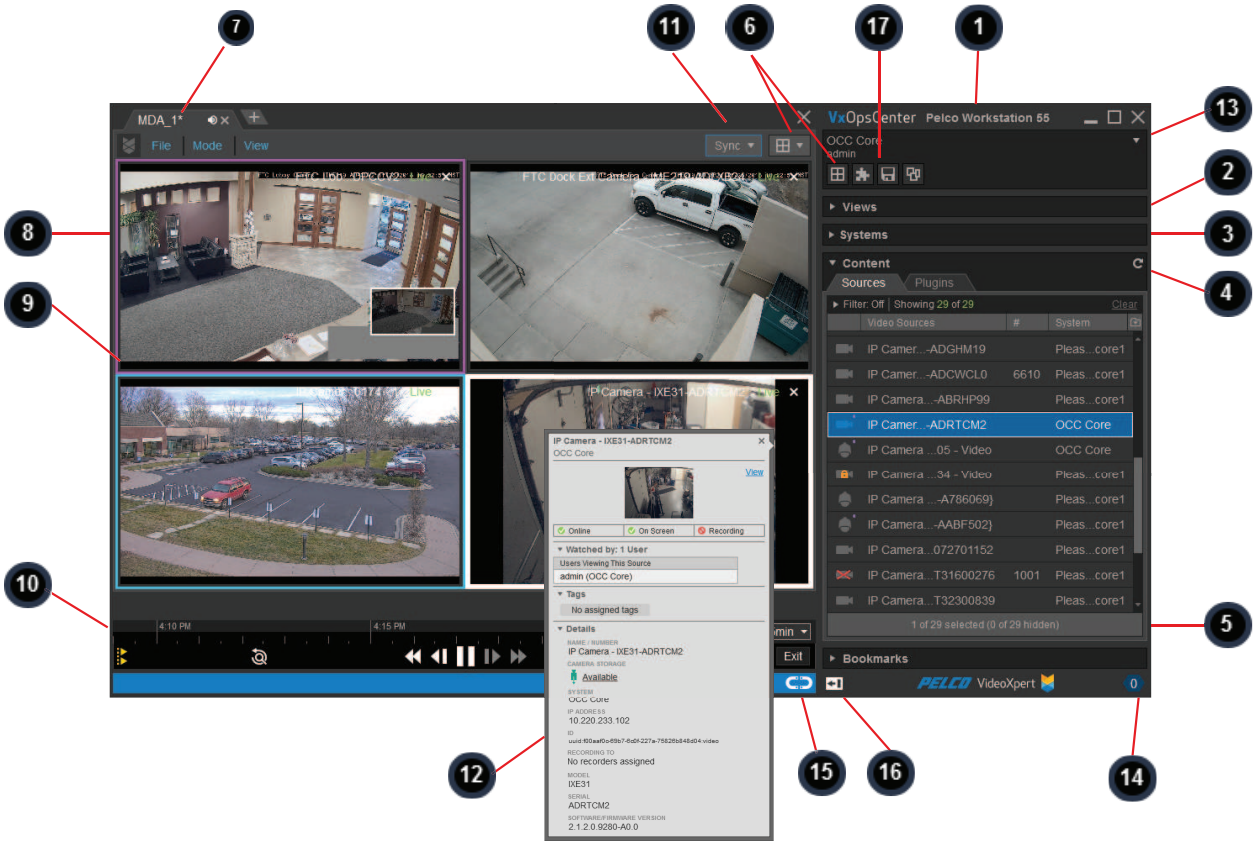
1. Close the VxOpsCenter software if it is already running.
2. Click **Start** (if necessary), and then search for and click to open **Region & language settings**.
3. In the *Languages* area, if the appropriate language is not present, click **Add a language**. Follow the prompts to add the appropriate language.
4. In the *Languages* area, click on the appropriate language, then click **Set as default**.
5. Close the **Settings** window.
6. Run the VxOpsCenter Client.

Changing Your Workstation Account Password

Log into VxOpsCenter with the Workstation Configuration Account.

1. In Mission Control, click the *User Menu* icon (▼), and then select **Configure Workstation**
2. Click **Workstation Settings**.
3. In the *VX Workstation Account* area, in the *Password* field, enter a new password.
4. Click **Apply**.
5. Click **OK**.

Using the VxOpsCenter Interface



1	**Mission Control** contains settings, and all the items with which you may populate workspaces.
2	The **Views** panel provides access to **New Tabs**, **Saved Tabs**, and **Workspaces**. Your workspace consists of tabs and monitors populated with cameras or plug-ins. You may have one active workspace at a time containing some number of tabs (typically one tab per monitor, but that is not a limitation); each tab contains some number of video streams or plug-ins.
3	The **Systems** panel enables you to add or edit system connections. This is available only when running in multi-system access (MSA) mode.
4	The **Content** panel provides access to the **Sources** tab, which shows all the video sources that the current user can access. Use the filters in the panel to sort the list in real time. It also provides access to the **Plugins** tab, which contains content and overlay plugins. **Content** plug-ins consume a cell, like the **Mapping** or **Image Viewer** plugins. **Overlay** plugins operate in the same cell as video, providing additional information about the video in question.
5	The **Bookmarks** panel shows clips of video that you or other users have bookmarked. Use the filters in the panel to sort the list in real time.
6	The **Select Grid Layout** controls or the **New Tabs** panel determine the number of cells in a tab.
7	A **Tab** is a window of the VxOpsCenter containing cells.

8	A **Cell** displays a single camera or plug-in within VideoXpert. Cell highlights determine whether a cell is selected, playing-back video, or is in PTZ mode.
9	**Playback Controls** and the timeline in a selected cell applies to that cell only.
10	**Playback Controls** and the timeline at the bottom of the tab applies to all synchronized cells within the tab.
11	**Synchronous Play** enables you to select cells for which playback is synchronized.
12	**Tooltips** show additional information about your video sources. Hover over entries in the *Sources* and *Bookmarks* panels to reveal tooltips.
13	The **User Menu** contains preferences and controls specific to the current user. Through this menu, you can reach application *Preferences*, the *Export Archive*, the *View Launcher*, and other user options.
14	The **Event Counter** shows how many active events that require response from you or someone with similar permissions.
15	The *Undock Mission Control* icon ( ) undocks Mission Control from its current location. When it is undocked, the *Dock Mission Control* icon ( ) docks it to any tab in the workspace.
16	The *Move Mission Control to the Left* ( ) icon is visible when Mission Control is in the default position--the right panel, and moves it to the left panel. The *Move Mission Control to the Right* icon ( ) is visible when Mission Control is the left panel, and moves it to the right panel.
17	Quick access to frequently used tools are provided in Mission Control, just above the *Views* panel. Click the corresponding symbol to get to *New Tabs* ( ), *Plugins* ( ), *Saved Tabs* ( ), and *Workspaces* ( ).

Adding Quick Access Icons to Mission Control

Quick access to frequently used tools are provided in Mission Control, just above the *Views* panel. They can be added and removed. To add or remove the quick access icons:

1. In Mission Control, right-click in the space above *Views*.
2. Click to select (to add) or deselect (to remove) a tools icon.
3. Repeat these steps to add or remove another tools icon.

Using Context Menus

You can right-click entries in the source list or cameras in your active workspace to reveal additional options available to your user and the devices you want to use. VxOpsCenter provides users with only the options available to you at any given time; availability may be limited by factors including your user permissions, the types of cameras you use, and whether or not PTZ mode is engaged. Options include the following.

- **Send To** enables you to choose a view to send (a saved tab, saved investigation, or workspace), a destination for the view, and whether to force acceptance of the sent view. See the section titled *Sending Views to Users, Workstations, or Shared Displays*.
- **Edit Source** enables you to assign the selected source a new name or number. See the section titled *Editing the Name or Number of a Source*.

- **Manage Tags** shows you what tags are assigned to the selected camera(s), system, and folders; and lets you filter which tags to show. See the section titled *Managing Tags*.
- **Open Camera Configuration in Browser** opens the camera Web UI, and enables you to login and make changes to the camera configuration. Refer to the camera operations manual.
- **Open in VxToolbox** opens VxToolbox to the corresponding system, and highlights the source in the *Devices* (center) panel. Refer to the current version of the *VxToolbox User Guide* (for VideoXpert Enterprise systems) or to the VxToolbox section of the *VideoXpert Professional User Guide*.
- **Rotate** lets you select the default rotation, 180 degrees, or plus or minus 90 degrees. See the section titled *Rotating the Camera*.
- **Diagnostics and Analytics** lets you toggle:
  - **Show Statistics** to display or hide camera statistics including such things as bitrates, mode, source, and call-up time. See the section titled *Displaying Statistics*.
  - **Show Simple-Motion Data** or **Show Analytics Drawing Data** to display or hide analytics overlays on some Pelco cameras. See the section titled *Using Analytics Overlays*.
- **Relays** to activate or deactivate a relay on the device.
- **Home Preset** returns the camera to the home position. See the section titled *Executing PTZ Presets and Patterns*.
- **Presets** lets you select an existing preset position, edit an existing preset position, and create a new preset position. See the section titled *Executing PTZ Presets and Patterns*.
- **Pattern** enables you to run an existing pattern. Patterns must be created on the camera. Refer to the camera operations manual.
- **Refresh Presets and Patterns** retrieves the list of presets and patterns from the camera. It does not overwrite or delete any patterns created from VxOpsCenter.
- **Send Preset Number** will send a preset to a specified cell in a specified monitor; and can display the data source, jump to a specified time, and trigger a preset. See the section titled *Sending Cells to Shared Displays.*
- **Search Recordings for Motion (Pixel Search)** is available in VideoXpert Professional only, and allows you to quickly find search for motion in a camera recording. See the section titled *Using Pixel Search*.

Using Tooltips

Hover over any bookmark in a cell or in the *Bookmarks* panel to reveal additional information about the bookmark. This information might include:

- The name of the bookmark
- The name of the device
- The date and time at the middle of the bookmark recording time
- An image from the recorded bookmark

Hover over the device symbol on any source in the *Sources* panel to reveal additional information about the source, including:

- The name of the source
- The current image of the source (if enabled)
- Whether or not the camera is *Online*, *On Screen*, and *Recording*, and whether PTZ is locked (if the camera has PTZ).

- *Watched by* information
- *Tags* associated with the source (if any)
- Technical *Details* such as: whether or not there is camera storage, the IP address, the camera ID, the target location for recording (if any), the camera model, the camera serial number, and the camera software version

Click on **View** to display the source in a cell.

Using Watched By

If you have the "Multiview" permission, you will see a *Watched by* field in tooltips throughout the VxOpsCenter interface. The *Watched by* field shows users watching live video from a particular video source; the *Watched by* field does not show users playing back video recorded from a video source.

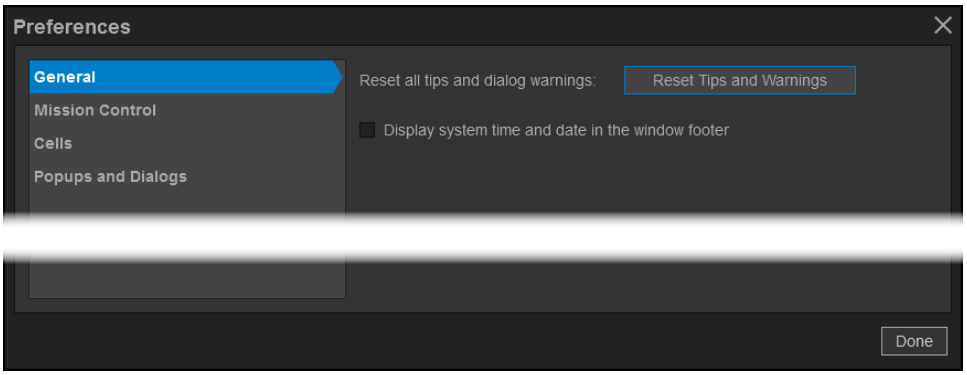
If the users listed in the *Watched by* field are viewing video from a different site than you, the tooltip will also attempt to indicate the site from which other users are watching video. If users are watching video from an aggregated site, the tooltip will state the site name in parenthesis. If you are watching video from an aggregated site, and the users listed in the *Watched by* field are accessing VideoXpert from the Aggregation (parent) site, then the tooltip will simply list *parent site*.

Setting User Preferences

When logged in to VideoXpert, you can set some basic preferences for behaviors within the VxOpsCenter application.To access the *Preferences* window:

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Preferences**.

   The *Preferences* window opens.



Updating General Settings

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Preferences**.
3. In the *Preferences* window, click **General**.
4. (Optional) Click **Reset Tips and Warnings**, and then click **OK** in the *Reset Warnings* confirmation window.
5. (Optional) Click to select the checkbox to enable *Display system time and date in the window footer*.
6. Click **Done** to exit the *Preferences* window.

Updating Mission Control Settings

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Preferences**.
3. In the *Preferences* window, click **Mission Control**.
4. (Optional) Click to select and deselect radio buttons in the *When double-clicking a source...* area, to control how a source is opened.
5. (Optional) Click the checkbox to select or deselect *Allow docking Mission Control via drag-and-drop*.
6. (Optional) Click the checkbox to select or deselect *Highlight source of the selected cell in the source list*.If you select this option, you can also select *Automatically scroll source list to reveal highlighted source*.
7. (Optional) Click the checkbox to select or deselect *Show video thumbnails on hover in the source list*.
8. Click **Done** to exit the *Preferences* window.

Updating Cells Settings

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Preferences**.
3. In the *Preferences* window, click **Cells**
4. (Optional) Click to select or deselect the checkbox for *Always show source names in videos*.If you select this option, you can also select *Show overlay behind persistent source names in videos*.
5. (Optional) Click to select or deselect the checkbox for *Display "Live" rather than timestamp in cell when showing live video*.
6. (Optional) Click to select or deselect the checkbox for *Automatically enter PTZ mode upon loading source in cell*.
7. (Optional) Click to select or deselect the checkbox for *Display in-cell feedback for playback controls*.
8. (Optional) Click to select or deselect the checkbox for *Collapse space (gutters) between cells*.
9. (Optional) Click to select or deselect the checkbox for *Display timestamp above timeline playhead*.
10. (Optional) In the *When placing multiple cameras* area, click to select the radio button for *Replace video content and create new tabs as needed* or *Only fill empty cells and create new tabs as needed*.
11. (Optional) In the *When playing back over a low-bandwidth connection* area, click to select the radio button for *Decrease frame-rate to match the network capability* or *Play at full frame-rate, but stop playback to buffer as needed*.
12. (Optional) In the *When creating snapshots* area:
    a. Click to select the radio button for *JPG* or *PNG*.
    b. Click the checkbox to select or deselect *Show overlays on snapshot*.
    c. Click to select or deselect the checkbox for *Auto-save snapshots*.If you select it, the *to folder* field is displayed.Browse to and select the folder.

13. (Optional) Click to select or deselect the checkbox for *Automatically play audio when available*.
    a. If you selected it, click to select the radio button for *From selected cell only* or *From all visible cells*.
    b. If you deselected it, *From all visible cells* is not available.
14. (Optional) In the *Video aspect ratio* area, click to select the radio button for *Maintain video aspect ratios* or *Stretch video to fill cells*.
15. (Optional) For PTZ cameras, in the *Immersive/Panoramic Video* area:
    a. Click to select or deselect the checkbox for *Show immersive PTZ reference on panoramic image*.
    b. If there are Optera cameras on your system, the *Start Optera streams as* option is displayed.Click to select the radio button for *Immersive only*, *Panoramic only*, or *Panomersive*.This sets the default streaming state.
16. Click **Done** to exit the *Preferences* window.

Updating Popups and Dialogs Settings

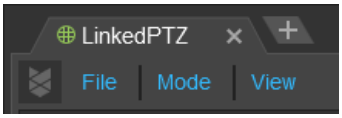
1. In Mission Control, click the *User Menu* icon (▼).
2. Click **Preferences**.
3. In the *Preferences* window, click **Popups and Dialogs**.
4. Click to select or deselect the checkbox for *Sort alerts by severity level instead of timestamp*.
5. Click **Done** to exit the *Preferences* window.

Using Tabs and Workspaces

A workspace is comprised of tabs; each tab consists of a layout populated with sources and plug-ins. You can save your entire workspace or individual tabs for easy access later. Users with appropriate permissions can even make their workspaces or tabs arrangements available to other users. The server automatically saves your workspace when you log out, and recalls it when you log in again.

Using Tab View Options and Modes

For each tab, use the *Mode* and *View* menus to control the display.



Configuring Tab View Options

To update view options for a tab, select the tab (in the image above, the tab is named LinkedPTZ), click **View**, and then select one or more of the following options:

- (Optional) Select whether to display the tab in **Full Screen** mode--the tab controls and outer borders vanish, maximizing the size of video and cells.
- (Optional) Set the **Max Video Quality** within the tab. Unless the tab is in collaborative mode, video quality settings affect video locally; they will not determine the behavior of a tab displayed on another user's workspace or a shared display, nor do they affect the quality of recorded video.
  - **Highest Available Quality** sets the tab to behave normally; it will display the camera's primary stream when possible, as dictated by cell size and system resources.
  - **Secondary Stream** forces the tab to display secondary streams for all cameras.
  - **D1 (720 x 480)** displays video at 720 x 480 resolution.
  - **SIF (352 x 240)** displays video at 352 x 240 resolution.
  - **JPEG Stream** sets the tab to have all streams transcoded into JPEG frames. The rate of the JPEG stream is dependent on network bandwidth and Media Gateway availability; this setting can be stressful on your Media Gateway.
  - **Thumbnail** sets the tab to images that refresh roughly every 30 seconds, rather than video. This mode uses few resources and significantly reduces the impact of the tab on your workstation. Use this mode for large areas in which a low frame rate is still enough to capture activity within the scene.
  - **No Video** prevents the tab from displaying video locally. Use this mode when controlling a tab on a monitor wall, so that the tab has little or no impact on your local workstation resources.

  If necessary, the system will downgrade one or more video streams that are displayed in the cells. When this happens, the orange downgraded stream icon ( ) is displayed to the right of *View* in the tab task bar. Click the icon to allow the system to attempt to restore the initial video quality to each cell.
- Click to select either **Stretch video to fill cells** or **Maintain video aspect ratios**, whichever is not currently selected.
- Click to select either **Collapse space between cells** or **Show space between cells**, whichever is not currently selected.

Changing Tab Modes

Tab modes determine the features available to you within a tab. Changing tab modes without saving the current tab will cause you to lose your settings. Modes are exclusive; for example: a tab cannot support a sequencing mode and also the collaborative mode. Putting the tab in either mode will remove the abilities granted by the previous mode. To change the mode, click **Mode**, and then click to select one of these options:

- **Normal** mode sets the tab to behave normally.
- **Collaborative** mode allows you and other users to view and affect changes in the tab simultaneously; use this mode to collaborate with other users.
  - Collaborative tabs do not support plug-ins and are not available when multi-server access is enabled.
  - Collaborative tabs are always global tabs; you cannot restrict the users who have access to the collaborative tab.
  - Tabs marked with the *Collaborative Tab* icon ( ) are collaborative, and allow multiple users to view and affect changes in the tab simultaneously. User commands against the collaborative tab are performed on a first-come, first-served basis. Users should account for latency and the total number of collaborative users when affecting the tab to coordinate efforts.
- **Live Sequence** mode allows you to add more cameras to a tab than the layout would traditionally support, and to rotate cameras through the tab at a particular interval.
- **Alarm Sequence** mode allows you to designate cameras that you want to watch only when a meaningful event occurs.

Creating a New Tab

Creating a tab allows you to recall the complete tab, including all cameras, viewing states (live or recorded video), and plug-ins. Save tabs that you or other users will recall frequently.

1. Select a layout for a new tab by one of the following methods.
   - At the top of the workspace, to the right of all open tabs, click the *New Tab* icon ( ), and select a layout.
   - In Mission Control, in the quick access icons area, click the *New Tabs* icon ( ), and then click to select a layout.
   - In Mission Control, in the *Views* panel, click **New Tabs**, and then click to select a layout.
2. Populate the tab with sources or plug-ins. Use the filter function, if necessary, in Mission Control to find cameras to add to your workspace:
   a. Click **Filter** to expand the view.
   b. Type a value in the *Filter by* field.
   c. Double-click a source or drag it to an empty cell.

   Note: You can also drag cells to rearrange your workspace.
3. While viewing the tab to be saved, click **File** at the upper left corner of the window, and then click **Save As**.

4. Enter the following information:
   a. A *Name* for the tab.
   b. (Optional) Select a keyboard *Shortcut*.
   c. (Optional) To make the tab available to all users in the VideoXpert environment, click to select the checkbox for *Save as global tab*.
   d. (Optional) To make the tab globally available, and allow multiple users to view and simultaneously manipulate the contents of the tab, click *Save as collaborative tab*.
5. Click **Save**.

Opening a Saved Tab

To open a saved tab:

1. In the Mission Control, click to expand the *Views* area.
2. Click **Saved Tabs** .
3. Double-click the tab you want to open, or drag a tab into the monitor in which you want it to open.

Updating an Existing Tab

You can make changes to an existing tab and then save the changes.

1. In the tab you wish to update, make all necessary changes.
2. Click **File** at the upper left corner of the window, and then click **Save**.

Changing Tab Layouts

The grid icon in any tab shows your current layout. Click it to select a new layout option. If you select a layout with fewer cells than your current layout, the client will retain camera-cell assignments and repopulate cells accordingly if you return to the original layout or a layout with more cells than the original.

1. Select the tab to be changed, or open a new tab.
2. Do one of the following:
   - Click the *Select Grid Layout* menu next to the grid icon ( ) in the top right of the tab task bar.
   - In Mission Control, in the quick access icons area, click the *New Tabs* icon ( ).
   - In Mission Control, under *Views*, click **New Tabs**.
3. Select the new layout for the tab.
4. (Optional) Click **File**, and then click **Save** to update the existing tab layout.
5. (Optional) To create a new tab layout, click **File**, click **Save As**, update information in the *Save Tab As* dialog box, and then click **Save**.

Editing the Metadata of an Existing Tab

To edit the name, hotkey, or description for tabs:

1. In Mission Control, under *Views*, click **Saved Tabs**.
2. Do one of the following to open the Edit Tab dialog box:
   - Click to select the tab to edit, and then click the *Edit Tab* icon ( ).
   - Right-click the tab to edit, and then click **Edit Tab**.
3. In the *Edit Tab* dialog box, edit the values as appropriate.
4. When complete, click **Save**.

Creating a New Workspace

Creating a workspace allows you to recall the complete workspace, including all cameras, viewing states (live or recorded video), and plug-ins. Save workspaces that you or other users will recall frequently.

1. In Mission Control, in the *Views* panel, click **Workspaces**.
2. Double-click or click and drag to open an existing workspace that is similar to the one you are creating.
3. To delete tabs from the workspace, click the **X** at the right of each tab that you do not want (to close the tab). Leave at least one tab open.
4. Make appropriate changes to each remaining tab, if necessary.
5. Add more tabs, as appropriate, using one of the following methods:
   - To add a new tab, see the section titled *Creating a New Tab*.
   - To add an existing tab: in Mission Control, under *Views*, click **Saved Tabs**, and then double-click the tab name.
6. Make any other changes to the workspace. For example: undock, dock, or move Mission Control; change the mode; or change the view,
7. Save the new workspace:
   a. Click the *Save Workspace As* icon ( ).
   b. Enter a value in the *Name* field.
   c. (Optional) Select a value in the *Shortcut* field from the drop-down menu.
   d. (Optional) To make the workspace available to all users in the VideoXpert environment, click to select the checkbox for *Save as global workspace*.
   e. Click **Save**.

Opening a Saved Workspace

Opening a saved workspace will close your current workspace; you can save your current workspace before you open a new one. If you set a shortcut for a saved item, you can also recall it using keyboard shortcuts. To open a saved workspace:

1. In Mission Control, click to expand the *Views* area.
2. Click **Workspaces**.

3. Double-click the workspace you want to open, or drag a workspace into the monitor in which you want it to open.
4. If the *Recall a saved workspace* dialog box opens, click to select **Keep Open Windows** or **Close Your Open Windows**.

Updating a Saved Workspace

1. In Mission Control, in the *Views* panel, click **Workspaces**.
2. Select the workspace to update.
3. To delete tabs from the workspace, click the **X** at the right of each tab that you do not want (to close the tab).
4. Make appropriate changes to each remaining tab, if necessary.
5. Add more tabs, as appropriate, using one of the following methods:
   - To add a new tab, see the section titled *Creating a New Tab*.
   - To add an existing tab: in Mission Control, under *Views*, click **Saved Tabs**, and then double-click the tab name.
6. Make any other changes to the workspace. For example: undock, dock, or move Mission Control; change the mode; or change the view.
7. If this is not a global workspace, or if you have permission to edit/update the workspace, save the updated workspace:
   a. Click the *Save Workspace* icon ( ).
   b. In the *Save Workspace* confirmation dialog box, click **Save**.

Edit the Metadata of an Existing Workspace

You can edit the name or shortcut of a workspace, or change whether it is saved as a global workspace at any time.

1. In Mission Control, under *Views*, click **Workspaces**.
2. Click to select the workspace to edit, and then click the *Edit Workspaces* icon ( ), or right-click the name of the workspace and then click *Edit Workspace*
3. In the *Edit Workspace* dialog box, make any needed changes, and then click **Save**.

Deleting a Saved Tab from the System

1. In Mission Control, under *Views*, click **Saved Tabs**.
2. Do one of the following:
   - Click to select the tab, and then click the *Delete Tab* icon ( ).
   - Right-click the tab, and then click **Delete Tab**.
3. In the *Delete Tab* dialog box, click **OK**.

Deleting a Workspace from the System

1. In Mission Control, under *Views*, click **Workspaces**.
2. Do one of the following:
   - Click **Workspaces**, click to select the workspace, and then click the *Delete Workspace* icon ( ).
   - Right-click the workspace, and then click **Delete Workspace**.
3. In the *Delete Workspace* dialog box, click **OK**.

Viewing a Monitor Wall

Monitor walls are specific groups of monitors that are frequently viewed or used together, and have been configured in VxToolbox as a tab so that users can easily access them.

The monitor wall is used to send cameras or streams to workstations or shared displays. The user opens the monitor wall and makes changes to the monitors in the wall. The changes are sent to the monitors instantaneously.

To access and use a monitor wall:

1. Open a workspace to which you would like to add a monitor wall.
2. Open a the monitor wall tab by one of the following methods:
   - In Mission Control, click the *New Tabs* quick access button ( ).
   - In Mission Control, click to expand the *Views* area, click **New Tabs**, and then double-click or click and drag the monitor wall tab icon ( ).
   - At the tab bar at the top of the window, click the *New Tab* icon ( ), in the *Open New Tab* area click the monitor wall tab icon ( ).
3. At the upper left corner of the monitor wall tab, select a pre-configured monitor wall from the drop-down menu.
4. For each monitor in the wall, you can:
   - Drag sources into a cell.
   - Change the tab grid layout by selecting an option from the *Select Grid Layout* drop-down menu or by dragging and dropping them from the *New Tabs* panel to the monitor.
   - Click on the source name to display the tooltip for the source.
5. To refresh the tab, click the *Refresh* icon ( ) at the upper right of the tab.

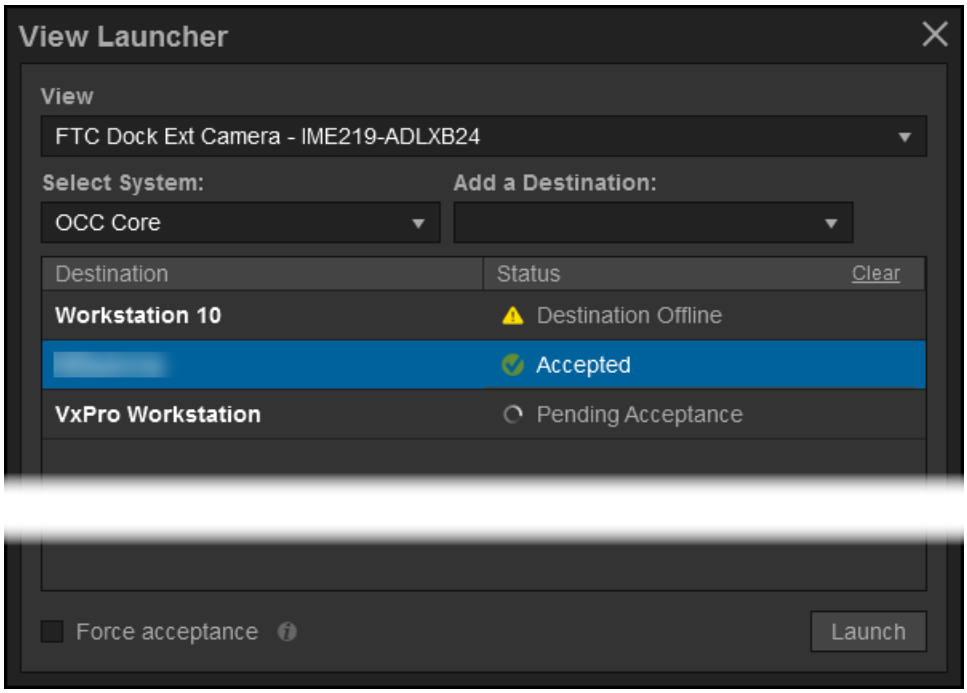
Sending Views to Workstations or Shared Displays

You can send cameras or tabs to other workstations or shared displays (destinations) in your VideoXpert network using *View Launcher* or *Quick Launch*.

Using View Launcher to Send Views to Workstations or Shared Displays

To use the **View Launcher** to send cameras or tabs to other workstations or shared displays in your VideoXpert network:

1. Open the *View Launcher* using one of the following methods:
   - In Mission Control, click the *User Menu* icon (▼), and then select **View Launcher**.
   - Click the source in the active cell, click **File**, and then click **Send To**.
   - Right-click the source in the active cell, and then select **Send To**.
   - Right-click the device icon in of the appropriate source in the *Sources* list, and then select **Send To**.



2. Use the drop-down menu to select the *View* that you want to send if it is not already selected. If present, you can also select *Saved Tabs*, *Saved Investigations*, or *Workspaces*.
3. Use the drop-down menu under *Select System* to select the system on which resides the destination for the view you want to send.
4. Use the drop-down menu under *Add a Destination* to select destination for the view you want to send; destinations marked by are shared displays. You can select multiple destinations. When you have added all appropriate destinations, click outside the drop-down menu.
5. (Optional) To clear a single destination from the list, click the **x** at the right of the destination row.
6. (Optional) To clear the destination list, click **Clear**.

7. (Optional) Select *Force Acceptance* to automatically launch the view in the active window of the destination.
   The destination user might have to manually accept the view you send, the destination might be set to accept the view automatically, or you can force the destination to accept the view.
8. Click **Launch**.
9. The disposition of the sent view is listed in the *Status* column.

Using Quick Launch to Send Cells to Workstations or Shared Displays

Note: The *Quick Launch* dialog box has other functionality, which is explained in the tasks associated with those functions.

To use the quick launch feature, your shared displays must be assigned numbers. See the section titled *Configuring Shared Display Mode*.

1. To access *Quick Launch*, (optional) click the cell to be sent, and then press the Insert key.

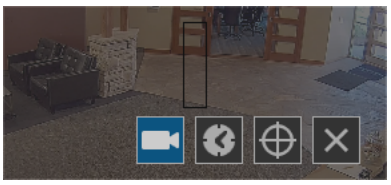


Figure 1: Quick Launch dialog box

2. (Optional) If you are sending the currently streaming camera (you clicked to select the cell to be sent), put the camera in the mode you would like to send. That is, you can leave the camera in live mode, select playback mode, and select a specific time in the recording to begin playback. When the cell is sent, the destination will appear as you set it now.
3. In the black box at the center of the dialog box:
   - Enter enter the target monitor number and then **m** to indicate the destination
   - (Optional) Enter the target cell number and then **c**. If you want the stream to appear in the 1st cell of the destination, you do not have to specify the cell number.
   - If you want to specify a source other than a currently streaming camera in which you have clicked before opening Quick Launch, enter the camera number. If you specify the camera number, the destination will receive the cell in live mode.

   Entering *6m3c222* would send camera 222 to cell 3 of monitor 6; entering 6m would send the currently selected camera to cell 1 of monitor 6
4. Click the *Call Up Camera* icon ( ) or press the Enter key.
5. To close the *Quick Launch* dialog box, click the *Cancel* icon ( ).

Watching Video

The *Sources* section of Mission Control shows the list of video and audio sources you are authorized to access.

If a particular source is online but does not appear in your source list, try refreshing the list. Cameras that come online after you log in or perform a search will not appear until you refresh the list. If the camera still does not appear, request access to the source from your administrator.

When watching live video, cells 1/4 the size of the tab or larger will use the primary stream from a video source. Cells smaller than 1/4 the size the tab will use the secondary video stream. In a 2x2 layout, for example, all cells will use the primary stream. In a 1+12 tab, the largest cell will use the primary stream and the other twelve will use the secondary stream.

When watching recorded video, cells 1/4 the size of the tab or larger will display full-framerate video. Cells smaller than 1/4 the size of the tab will playback only iFrames.

1. In Mission Control, click to expand **Content**, and then click **Sources**.
2. Find the camera you want to watch. To use the *Filter* to search for cameras:
   a. Click **Filter** to expand the filter panel.
   b. Type a value in the *Filter by* field or select a saved filter from the *Advanced Filter Options* drop-down menu.
   c. (Optional) To save a filter, under *Advanced Filter Options,* in the *Advanced Filter Options* drop-down menu, click **Save Filter**.
3. Add the camera to your workspace.
   - Drag a camera to the cell in which you want it to appear.
   - Double-click a camera to add it to the next available cell in the current tab.

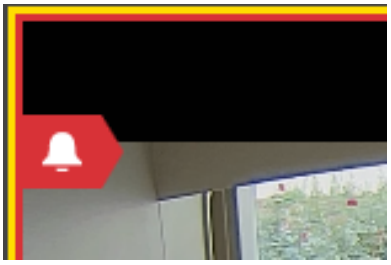
Understanding Cell Borders

The color of the inner and outer border of a cell indicates the status of the cell.

- A white outer border indicated that the cell is active (selected); a black outer border indicates that the cell is not active.
- A white inner border indicates that the cell is in live mode.
- A yellow border indicates that the cell is in playback mode.
- A purple border indicates that the cell is in Digital PTZ mode.
- A blue border indicates that the cell is in PTZ mode.
- A flashing red border indicates that there is a notification for the device. To close the flashing red border, respond to the event notification.

Responding to an Alarm in a Cell

If your workspace has been configured do to so, it will display a red alarm symbol for each active alarm at the left margin of a cell for a camera you are viewing. The inner cell border will flash red.



Hover over the alarm symbol to see the alarm type.

To respond to the alarm:

1. The event notifications pop-up window will display. If it does not, click the event counter at the bottom right corner of the VxOpsCenter window. When there are one or more active alarms, the event counter is red.
2. Click on **Event Log** in the *Event Notification* window.
3. Use the *Event Notification* dialog box or the *Event Viewer* cell to manage the alarm(s). To do so, see the section titled *Using the Event Notifications Dialog Box*.

Rotating the Camera

You can rotate the view of PTZ cameras. To do so:

1. Right-click in the cell in which the camera is streaming, and then click Rotate.
2. Click to select one of the following options:
   - Maintain the **Default Rotation**
   - Rotate 90°
   - Rotate 180°
   - Rotate -90°

Viewing Analytics Overlays

Pelco's Sarix cameras provide for an overlay of analytics on live and recorded video that can be displayed in VxOpsCenter. The two types of analytics overlays are:

- Show Simple-Motion Data Analytics, which shows a red-tinted shape overlaying the video where motion is present.
- Show Analytics Drawing Data, which shows lines, boxes, and text to track areas of motion within the scene.

The overlays are configured at the camera level. Configuration parameters include the type of overlay that is enabled (one, both, or neither), the shape of each overlay in the overlay type, and sensitivity to motion. Refer to the Operations Manual for the camera to configure analytics overlays.

Analytics overlays can be enabled on a per-cell basis. That is, you can have more than one cell streaming video for the same camera, and set each cell to display (or not display) different analytics.

To view an analytics overlay in a cell:

1. Open the camera in a cell.
2. Right-click the cell, click to select **Diagnostics & Analytics**, and then click to select **Show Simple-Motion Data** or **Show Analytics Drawing Data**.

   A check mark is displayed to the left of the option you select, indicating that the overlay is enabled.

3. If appropriate, repeat the previous step and select the other overlay.
4. (Optional) To disable an analytics overlay, perform the steps above, but click to deselect the overlay (s) that you do not want to display.

Enabling and Disabling Audio

Video sources marked with a small blue or gray dot (•) are associated with an audio source. In any cell containing or associated with an audio source, click the *Mute/Unmute* icon ( ) to enable or disable audio within a cell; you can control volume through Windows' standard audio controls.

To change the audio preferences on one or more cells:

1. In Mission Control, click the *User Menu* icon ( ), and then click **Preferences**.
2. In the *Preferences* dialog box, click **Cells**.
3. Click to select or deselect the checkbox for *Automatically play audio when available*.
4. Click to select *From selected cell only* or *From all visible cells*.
5. Click **Done**.

Expanding a Cell to Full-Screen

In the source cell, double-click the cell or click the *View Video in Full-Screen* icon ( ) to expand a cell to the full-screen. Click the same icon, now labeled *Exit Full Screen*, double-click the cell, or press the Esc key to exit full-screen mode.

Watching Recorded Video With VideoXpert

Users with sufficient permissions can access recorded video from any video source in a workspace. Placing the pointer on a cell containing a source with recorded video will reveal playback controls.

1. Place your cursor over the cell containing the source with recordings that you want to watch.
2. Navigate to the date and time in the recording that you want to view using one of the following methods:
   - Click the *Jump to Specific Date/Time* icon ( ), specify or select the date and time, and then click **Go**.
   - Click in the cell with the recording to playback, enter a value in military time (for example: for 9:45PM, enter 2145). As you do this, the *Quick Launch* dialog box opens. When the time is displayed in the black box at the center of the *Quick Launch* dialog box, click the *Jump to Time* icon ( ).
   - Click at the appropriate spot in the timeline to quickly navigate to a different time in the recording. Green areas on the timeline represent recorded video.
   - Drag the timeline into position to navigate to a different time in the recording. Green areas on the timeline represent recorded video.

   Note: If a user changes a camera from http to https settings or the opposite, there might be a recording gap of between five seconds and five minutes.
3. Use the playback controls to direct video playback.
4. Click the *Jump to Now* icon ( ) to jump to live video.

Watching Recorded Video with Edge Storage

If your camera or video source is recording video locally (using a micro SD card or in concert with ONVIF Profile G), the timeline will display the camera storage icon ( ); the device tooltip will also alert you to multiple recording locations.

Click on the camera timeline to display the camera storage icon ( ), and then click the icon to open an investigation tab showing the camera's various recording locations as separate timelines.

You cannot view video while it is stored on the camera; you must push video from the camera to a VideoXpert Storage recorder, to view video stored on a camera. See the section titled *Using Investigations to View Video Stored on a Camera's Local Storage*.

Using Pixel Search (VideoXpert Professional Only)

Pixel Search enables you to quickly access motion detection events on a specific camera for a selected range of time in a recording.

1. For the specific camera (one at a time) that has the events you want to view, ensure that you have set the Motion Detection analytic, *Detect Motion* setting to *On Server* in VxToolbox. See the current version of the *VxToolbox User Guide* for instructions.
2. Display the camera in a cell in VxOpsCenter; expand the cell, if appropriate.
3. Right-click the cell, and select **Search Recordings for Motion (Pixel Search).**
4. In the dialog box, click to select the checkbox for *Don't show again* (if appropriate), and then click **OK**.
5. In the grid that now overlays the camera view in the cell, select one or more zones (squares) in the grid, using one of these methods:
   - Click to select a single zone.
   - Click and drag to select multiple adjoining zones in a rectangular pattern.
   - Hold down the Shift key on your keyboard, and click to select each zone. These do not need to be adjoining zones.
   - Hold down the Shift key on your keyboard, click individual zones, and click and drag to also select groups of adjoining zones.
   - To clear the selected zones, click the *Clear Selected Zones* icon ( ) at the upper left of the cell.
   - To search in the zones that you did not choose, instead of the zones you chose, click the *Invert Selected Zones* icon ( ) at the upper left of the cell.
6. To select a different date and time range than what is currently selected, click the edit icon ( ) at the upper right corner of the cell, to the right of the date range; in the *Set Time Range* window, select a start date, start time, end date, and end time; and then click **Set**.
7. The length of time included in the default time range is based on the current time bar selection. For example, if **1hr** is selected in the time bar drop-down menu at the bottom of the workspace, then one hour will be the default time included in the search range. To change the length of time included, in the default time range, click the drop-down menu for the current time bar selection, and then click the appropriate time range.
8. (Optional) To exit the Pixel Search, click the *Cancel* icon ( ) at the upper left of the cell.

9. In the upper right of the cell, click **Search**.
   - The first event (chronologically) plays immediately.
   - Clips with motion events detected are indicated by blue bars in the timeline in the playback controls area.
   - The blue pixel search bars are half-height; motion is full-height.
   - To jump to the next event, click the Alt key, and then click the *Next Clip* icon ( ) in the playback controls area.
   - To jump to any event, select an event from the *Jump to Event* drop-down menu at the top of the window, or click the blue bar associated with the event in the playback controls area.
10. When finished, click **Done** in the top right corner of the window.

Creating Bookmarks

When watching recorded video, you can implement a bookmarks to note a moment in video to reference later. Bookmarks appear in a section in Mission Control, and are global resources; all users can see the bookmarks you create. Within Mission Control, bookmarks behave like cameras; you can add a bookmark to a tab or workspace to recall the portion of video captured by the bookmark.

1. While watching a recorded video, click the *Create Bookmark* icon ( ).
2. Provide a *Title* for the bookmark. The title can be searched within Mission Control.
3. (Optional) Enter information in the *Notes* field.
4. (Optional) Apply a lock to segments of video/audio recordings, called clips, to prevent them from being deleted unless they are purposely unlocked. To do so:
   a. Click to select the checkbox for *Lock Video*.
   b. Use the date and time selectors to set the start and end parameters for the lock.
5. Click **Save**.

Finding and Recalling Bookmarks

Bookmarks behave like any other camera or video source. Adding a bookmark to a workspace adds the camera to the workspace in playback mode, paused at the date and time specified by the bookmark.

1. Click *Bookmarks* in Mission Control to expand bookmark resources.
2. Use the filters to search for a bookmark. The list of results only displays the source, date, and time for the bookmark in question, but you can also search by the plain-text note attached to the bookmark. Hover the cursor over a bookmark to get more information about it.
3. Add the bookmark to a workspace.
4. To see the lock on the timeline, scroll to a time within the lock, and notice the white bar at the top of the timeline, with arrows pointing down to indicate the start and stop times.

Editing, Unlocking, and Deleting Bookmarks

To edit the plain text for the bookmark or to lock or unlock the bookmark, select the bookmark in Mission Control and click the *Edit Bookmark* icon ( ), you cannot change the date, time, or camera.

To delete a bookmark, select it in Mission Control, click the *Delete Bookmark* icon ( ), and then click **Delete**.

Synchronizing Video Playback

You can synchronize playback across multiple cells within a tab to provide different perspectives for a single recording event.

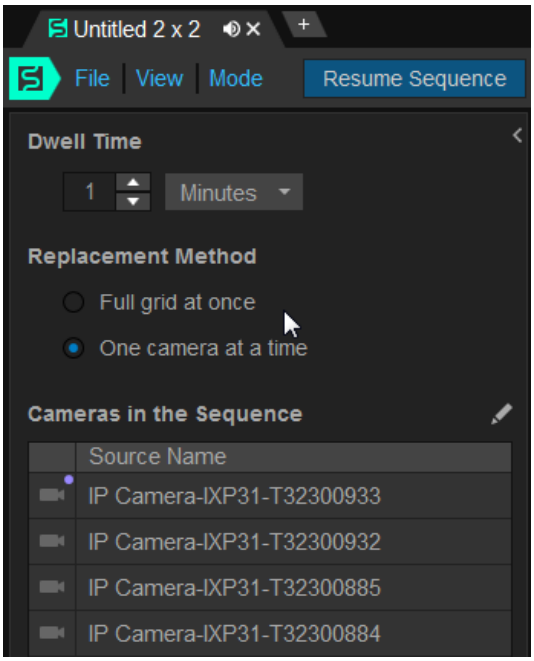
1. Click *Sync* in the tab containing the cells you want to synchronize.
2. Select the cells you want to synchronize, and then click **Sync**, or select **Sync All** to select all cells in the tab.
3. If necessary, click the *Play* icon ( ) to playback video. Cells will remain synchronized until you click *Sync* again, even if you jump to live video and re-engage playback.
   - When using sync playback on any of your current monitors, click the *Activate Synchronous Play for This Cell* icon ( ) in the bottom left corner of the tab to add a tab to the sync group. The icon turns yellow when the cell is added to a sync group. The controls in any monitor belonging to the sync group will affect playback for all cells and tabs in the group.
   - Click the *Add to Multi-Tab Sync Group* icon ( ) to add cells in a tab to the global sync group.
   - If you want to add individual cells in a monitor to the global sync group, click **Sync** to open the *Select Cells for Synchronized Playback* box, select the cells you want to add to the group, and then click **Sync**.
   - To remove a cell from the group, click the *Deactivate Synchronous Play for this Cell* icon ( ). The icon returns to white when it is removed from a sync group.

Creating a Live Sequence Mode

A video sequence, indicated by the sequence symbol ( ), is a series of cameras set to rotate through a tab at a user-defined period of time. When you configure a sequence, you can determine which cameras appear in the sequence; how often the cameras rotate; and whether or not to rotate an entire set of cameras, or just one at a time. A sequence may be helpful when you have more locations to track than you have monitors or attention.

To create a sequence:

1. In any tab, click *Mode* and select **Live Sequence**.



2. Set the *Dwell Time* period. This is the length of time that the tab will dwell on cameras before advancing to the next camera(s) in the sequence.
3. Set the *Replacement Method*. This determines how many cameras you want to replace at the end of each dwell period: all of the cameras in the grid, or one camera at a time. When replacing a single camera at a time, the cameras rotate through the grid, left-to-right, top-to bottom. (The next camera in the sequence moves into the top-left cell; the camera formerly in the top-left cell moves to the right, and so on. The bottom-right cell is bumped off the grid, until it re-enters the sequence.)
4. To add cameras to the **Live Sequence**:
   a. To the right of *Cameras in the Sequence*, click the edit icon ( ) to enter the *Edit Mode*.
   b. Either double-click cameras, or drag cameras into the *Cameras in the Sequence* box.
5. To delete cameras from the **Live Sequence**:
   a. To the right of *Cameras in the Sequence*, click the edit icon ( ) to enter the *Edit Mode*.
   b. Click the **x** to the right of the name of the camera to delete in the *Cameras in the Sequence* box.
6. Click **Save**.
7. Click **Resume Sequence**.

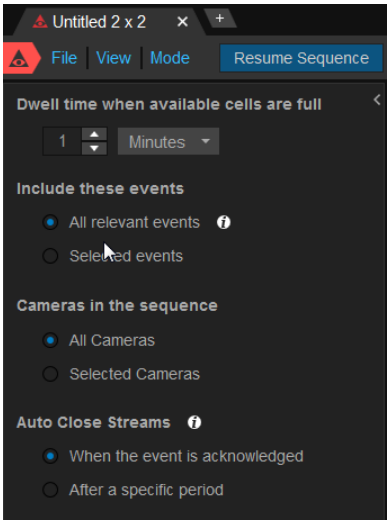
Creating an Alarm Sequence Mode

Alarm Sequence mode, indicated by the alarm symbol ( ), allows you to designate cameras that you want to watch only when meaningful events occur, so that you never miss activity relevant to your surveillance operations.

By default, the sequence will any camera-associated events that have been configured to provide a notification for your user account and role. You can refine the sequence to a subset of system cameras and a subset of camera-associated events that you want to watch.

To create an alarm sequence:

1. In any tab, click **Mode** and then click **Alarm Sequence**.



2. If the *Tab Mode Change Confirmation* dialog box opens, click **OK**.
3. Type in a value or select a value using the up and down arrows for *Dwell time when available cells are full*. This indicates how quickly video rotates through the sequence when you have more current events than available cells in the sequence.
4. (Optional) In the *Include these events* area, click to select the radio button for *Selected Events* if you only want to use a subset of events in your sequence, click the *Edit* icon (), click to select or deselect checkboxes for the *Event Types* to include, and then click **Save**; otherwise, leave the *All relevant events* radio button selected.
5. (Optional) In the *Cameras in the Sequence* area, click to select the radio button for *Selected Cameras* if you want the sequence to follow a specific subset of cameras, and then drag cameras into the sequence (the order does not matter for alarm sequences); otherwise, leave the *All Cameras* radio button selected.
6. (Optional) In the *Auto Close Stream* area, click to select the radio button for *After a specific period*, and then enter or select the time period; otherwise, leave the *When the event is acknowledged* radio button checked.
7. Click **Resume Sequence** to run the sequence.

Editing Sequences

Click the *Edit* icon () to edit the cameras, events, and other settings belonging to a sequence.

You do not need to pause the sequence to edit the cameras in the sequence.

Pausing and Resuming Sequences

Click **Pause Sequence** to stop cameras from rotating in or out of the sequence. The cameras in the tab will continue to play until you click **Resume Sequence**.

Setting up Snapshots

You can automatically save snapshots in a folder of your choosing.

1. In Mission Control, click the *User Menu* icon (▼), select *Preferences*, and click *Cells* to find snapshot options.
2. In the *When creating snapshots* area:
   a. Click to select the radio button for either *JPG* or *PNG* in the *Use format* field.
   b. Click to select or deselect the checkbox for *Show overlays on snapshot.*
   c. Click to select or deselect the checkbox for *Auto-save snapshots*. If you select this feature, click **Browse**, if necessary click **Make New Folder** and type in a folder name; select the folder in which you want to save snapshots; and then click **OK**.
3. Click **Done**.

Taking Snapshots

1. Click the *Take Snapshot* icon (📷) to take a snapshot of the current frame.
2. If you have not set up a location for saved snapshots, provide a location and file name for the snapshot, and then click **Save**.
3. If you have set up a location for saved snapshots using the instructions in the section titled *Setting up Snapshots*, the snapshot will be saved to that location without further interaction.

Displaying Statistics

To display camera statistics over live video in the pane, right-click the cell for which you want to see statistics, click **Diagnostics & Analytics**, and then click **Show Statistics**. Perform this step again to hide the information.

Viewing and Filtering Sources

In Mission Control, click to expand **Content**, and then click the **Sources** tab to see a list of all video and audio sources that you are authorized to access.

- Click to expand the *Filter* area, and use it to shorten the list of sources.
  - Enter a Source Name, Model, Number or IP address in the *Filter by* field.
  - In the *Advanced Filter Options* field, select a filter from the *Save and Recall Source List Filter Sets* pull-down menu.
  - Click to expand *Advanced Filter Options* to reveal additional options; you can find cameras by *Tags*, *System*, whether they are *Online*, whether they are *Recording*, whether they are *On Screen*, and whether they are equipped with *Storage*.

    When you use two or more tags, the filter will find only those sources that have all of the tags assigned to them.
- To find a filter, click to expand *Advanced Filter Options*, click **Saved Filter Sets**, and then click the appropriate filter.
- To save a filter, click to expand *Advanced Filter Options*, populate the filter, click **Saved Filter Sets**, and then click **Save Filter**.

- To toggle between the *Folder View* and the *Video Sources* view, click the *Show Folder View* icon ( ) or the *Show List View* icon ( ), whichever is visible. These are located at the far right of the window, below the *Filter*.

See the section titled *Managing Tags* to create and manage folders.

Managing Tags

The *Manage Tags* window enables you to see information about a selected camera or cameras, create tags in the system, and organize cameras in a folder structure.

To access the *Manage Tags* window, do one of the following:

- In Mission Control, click the *User Menu* icon ( ), and then select **Manage Tags**.
- Right-click a video source, either in a cell or in the *Sources* list, and then select **Manage Tags**.

Viewing Tags in the Selected Camera(s) Panel

The *Selected Camera(s)* panel in the *Manage Tags* window displays folder tag information.It also allows you to create new tags.

1. In Mission Control, in the *Content* area, in *Sources* list, select the sources for which to manage tags.
2. Access the *Manage Tags* window.
3. Click the **Selected Camera(s)** tab.
4. Click to select or deselect the checkboxes in the *Show* field, for *My tags*, *Global tags*, and *Personal Tags*.Not all of these will be present for all cameras.
   - Global tags are signified by the *Global* icon ( ).These tags are available to all users within the system.All users can filter sources, exports, and bookmarks according to the listed tags.
   - Personal tags created by you are indicated by the *My Tag* icon ( ).These tags are only available to you and administrator-level users.You can use your personal tags to assign and sort resources in a way that best reflects how you use VideoXpert.
   - Folder tags are indicated by the *Folder Tag* icon ( ).
5. In the *Show tags applicable to selected camera(s)*, select **Any** or **All**.
   - **Any** shows tags that are assigned to any of the selected cameras.
   - **All** shows only those tags that are assigned to all of the selected cameras.
6. (Optional) To clear the tag(s) from the selected camera(s), do one of the following:
   - Remove a single tag by clicking the **x** at the right of the tag itself.
   - Remove all tags by clicking **Remove All**, and then click **Clear** in the confirmation dialog box.
7. Click **Done** to exit the window.

Creating and Assigning Tags in the Selected Camera(s) Panel

You create tags while assigning them.It is important to have a strategy for tags and camera organization before you begin creating and assigning tags.

1. Click to select one or more cameras for which to create and apply a tag.
2. Access the *Manage Tags* window.
3. Click within the tag field and type the name of the tag you want to assign; if the tag exists, you can select it and it will autofill.
4. If the tag does not exist, do one of the following:
   - Click **Create this tag (personal)** to create a tag that is private to your user account.
   - Click **Create this tag (global)** to create a tag that other users can see and use.
5. Click **Done** to exit the window.

Deleting Tags in the System Panel

Through OpsCenter, users with sufficient rights can delete global tags.

1. Access the *Manage Tags* window.
2. Select the **System** tab.
3. (Optional) Click to select the checkboxes in the *Show* field to enable or disable *My tags*, *Global tags*, or *Personal tags*.

   In addition to the tags included in the *Selected Camera(s)* panel, you will also see *Personal tags* which are indicated by the personal tag icon ( ).These tags are only visible to the creator and to administrator-level users.For this reason, there might not be any *Personal Tags*.
4. Do one of the following:
   - Select the tag you want to delete, and then click the *Delete* icon ( ).
   - Right-click the tag you want to delete, and then click **Delete**.
5. In the confirmation dialog box, click **Delete**.
6. Click **Done** to exit the window.

Creating Folders in the Folders Panel

1. Access the *Manage Tags* window.
2. Access the *Create New Folder* dialog box by doing one of the following:
   - Select the *Folders* tab, right-click in the *Folder View* area, and then click **Add**.
   - Select the *Folders* tab, and then in the *Folder View* area, click the *Add New* folder icon ( ).
3. In the *Create New Folder* dialog box, enter a folder name in the *Name* field.
4. In the *Create as* field, click to select either the *Top-level folder* or *Child of* radio box.If you select *Child of*, use the drop-down menu to select the appropriate parent folder.
5. Click **OK**.
6. In the *Drag Cameras To and From Folders* area:
   a. (Optional) Use the filter to find the appropriate camera(s).
   b. Click and drag the camera(s) to the new folder.

      A camera can be assigned to only one folder at a time.

7. To remove a camera from the folder, do one of the following:
   - Click and drag it to the *Drag Cameras To and From Folders* area.
   - Click to select the camera, click the *Delete* icon ( ), and then click **OK**.
8. To assign a camera to a different folder, click and drag it to the appropriate folder in the *Folder View* area.
9. Click **Done** to exit the window.

Renaming a Folder in the Folders Panel

1. Access the *Manage Tags* window.
2. Select the **Folders** tab.
3. To rename a folder, do one of the following:
   - Right-click the existing folder, click **Edit**.In the *Edit Folder* dialog box, enter a new value in the *Name* field, and then click **Save**.
   - Click to select the existing folder, click the *Edit* icon ( ).In the *Edit Folder* dialog box, enter a new value in the *Name* field, and then click **Save**.
4. Click **Done** to exit the window.

Deleting a Folder in the Folders Panel

1. Access the *Manage Tags* window.
2. Select the *Folders* tab.
3. To delete a folder, do one of the following:
   - Right-click the existing folder, click **Delete**, and then, in the *Delete Folder?*dialog box, click **OK**.
   - Click to select the existing folder, click the *Delete* icon ( ), and then, in the *Delete Folder?*dialog box, click **OK**.
4. Click **Done** to exit the window.

Playback Controls

Playback controls appear when you hover over a cell containing recorded video. From left to right, the controls are:

Icon	Description
	Click (when white) to activate or (when yellow) to deactivate synchronous play for a cell; select in all cells that you want to synchronize within a tab.
	Add a bookmark
	Take a snapshot of the current frame.
	Enter investigation mode for all selected cells.
	Mute or unmute audio on a source. If there is no audio for the source, the icon is not shown.
	Rewind video. Click again to increase speeds from 2x, 4x, 8x, 16x, 32x, 64x, or 128x.

Icon	Description
	Pause playback and rewind video a single frame.
	Play video at normal speed.
	Pause playback and move video forward a single frame.
	Fast-forward video. Click again to increase speeds from 2x, 4x, 8x, 16x, 32x, 64x, or 128x.
	Rewind video 30 seconds and initiate playback.
	Select the date and time of video you want to watch
	Forward video to live playback.
	View video in full-screen or exit the full-screen and return to the tab view.

Controlling Cameras (PTZ)

Engaging PTZ control changes the color of the border around the cell containing the source (camera) you want to control: blue indicates native PTZ control, and purple indicates digital PTZ mode.

- **PTZ mode** functions when PTZ cameras are operating in live mode.
- **Digital PTZ** engages when you:
  - Engage PTZ controls for cameras.
  - Attempt to place PTZ cameras in playback mode; return to live video to engage native mode for supported cameras.
  - Press Alt+Enter to force digital PTZ mode

In **Digital PTZ** mode, all PTZ controls affect their digital equivalents. Pan or tilt commands to a camera in digital PTZ mode cause the camera to digitally zoom in the requested direction (as opposed to physically moving the camera's field of view). Zoom commands will digitally zoom the camera from the center of the field of view. Digital PTZ enhancements may affect video quality.

PTZ mode icons are:

Icon	Description
	Locks or unlocks PTZ controls for other users. If present, this icon is located in the cell heading.
	The *Zoom In* icon is located in the cell heading.
	The *Zoom Out* icon is located in the cell heading.
	In the cell video, this icon engages the click-to-center mode. • Click to center video. • Double-click to center video and zoom in.

1. Select the cell you want to control.
2. Engage PTZ controls by one of the following methods:
   - In the upper left corner of the cell, click the *Activate Digital PTZ Mode* icon ( ) or the *Activate PTZ Mode* icon ( ), whichever is present.

- Press Alt+Enter to force digital PTZ mode, or enter PTZ mode when standard PTZ controls are unavailable.

The cell border will turn blue or purple depending on the PTZ mode supported by the source.

3. Control the camera by one of the following methods. Use the joystick or mouse to affect broad motions, and the keyboard to perform more precise movements.
   - Move the joystick up and down to tilt the camera; press the up and down arrows to nudge the camera vertically.
   - Move the joystick left and right or press to pan the camera; press the left and right arrows to nudge the camera laterally.
   - Twist the joystick right to zoom in and left to zoom out; press + or Page Up to zoom in and - or Page Down to zoom out. When zooming the camera in, video may jump briefly when the camera switches from physical to digital zoom; to prevent this behavior, disable the camera's digital zoom feature.
   - Use the mouse to pan and zoom. Click on the region to which you want to pan, and double-click to zoom in to the region.
4. To exit PTZ mode, click the *Deactivate Digital PTZ Mode* icon ( ) or the *Deactivate PTZ Mode* icon ( ), whichever is present.

Click-to-Center PTZ

When PTZ mode is enabled, you can click within the cell to center a camera's field of on any point on which you click, within the cell. Click-to-center functionality is not supported for all cameras.

When PTZ mode is enabled within a cell:

- Click in the cell to center the camera's field of view on the location that you clicked.
- Double-click to center video and zoom in on the location that you clicked.
- Hold Alt and double-click, to zoom out.

Executing PTZ Presets and Patterns

A PTZ preset is a defined PTZ position; you can send the camera to the defined position by calling the preset. A PTZ pattern (or a preset tour) is a series of presets; you can configure most patterns to dwell at each preset for a specific period of time.

If a pattern or preset exists on the camera, to execute it:

1. Click the cell in which the camera video is being displayed.
2. (Optional) Execute a preset using one of the following methods:
   - Right-click the cell displaying the camera, select *Presets*, and then select the preset you want to execute.
   - Click the cell displaying the camera, begin entering the preset number. As you do this, the *Quick Launch* dialog box opens. When the preset number is displayed in the black box at the center of the *Quick Launch* dialog box, click the *Trigger Preset* icon ( ).
3. (Optional) To execute a pattern, right-click, select *Pattern*, and then select the pattern you want to execute.

4. To exit a preset or a pattern:
   - To stop a preset or a pattern, click the *Deactivate Digital PTZ Mode* icon ( ) or the *Deactivate PTZ Mode* icon ( ), whichever is present.
   - To stop a pattern only, right-click the cell, select **Pattern** and then select **Stop Pattern**.

Creating Presets

VideoXpert does not store presets. Any presets or patterns you create through VxOpsCenter are created and stored camera-side. When you create a preset through VideoXpert, you will assign the preset a numerical value; the preset will appear in the camera or encoder interface as “Preset <value>”. Some cameras and encoders have limitations -- a maximum value for presets or reserved values that you cannot change.

If you want to assign a non-numerical, friendly name to a preset, you must change the name of the preset from within the camera interface.

Note: For Pelco NET5500 and NET5400 series encoders, you can edit presets, but you cannot create new ones.

1. In the upper left corner of the cell, click the *Activate Digital PTZ Mode* icon ( ) or the *Activate PTZ Mode* icon ( ), whichever is present.
2. Move the camera to the position you want to mark as a preset.
3. Right click, select *Preset*, and then click Add Preset.
4. Enter or select a number for the preset. The maximum number for the preset is determined by the camera or encoder on which you are creating a preset. Some cameras have reserved values that you cannot use to set a new preset.
5. Click **OK**.

Editing Presets

Some presets are pre-defined by the camera or encoder; you cannot edit these presets.

Note: For Pelco NET5500 and NET5400 series encoders, you can edit presets, but you cannot create or delete presets.

1. In the upper left corner of the cell, click the *Activate Digital PTZ Mode* icon ( ) or the *Activate PTZ Mode* icon ( ), whichever is present.
2. Position the camera to the location that you will make the preset.
3. Right-click in the cell, click **Presets**, and then hover over the preset you want to change.
4. Click the *Reposition the preset to the current PTZ spacial coordinates* icon ( ).
5. Click **OK**.

Deleting Presets

Some presets are pre-defined by the camera or encoder; you cannot delete these presets.

Note: For Pelco NET5500 and NET5400 series encoders, you can edit presets, but you cannot create or delete presets.

1. In the upper left corner of the cell, click the *Activate Digital PTZ Mode* icon ( ) or the *Activate PTZ Mode* icon ( ), whichever is present.
2. Right click in the cell, click **Presets**, and hover over the preset you want to delete.
3. Click the *Delete* icon ( ).
4. Click **Delete**.

Using Investigation Mode

Investigation mode provides a more detailed interface for synchronized playback and video search in a single window, making it easier to investigate a scene. From investigation mode, users can also trim and export video clips from the system's network video recorders for evidentiary safe keeping.

As you add cameras to the investigation window, the cameras appear in a detailed timeline at the bottom of the tab populates with recording information for each camera. the green areas for each camera indicate recorded video. You can use the timeline to navigate the composite recording.

Entering Investigation Mode

Investigation mode provides robust, synchronized playback controls with up to nine total cells, allowing users to fully investigate an incident across multiple cameras simultaneously. Investigation mode always opens in a new tab.

1. Synchronize the cells you want to investigate. To investigate a single cell, do not synchronize any cells; if there cells are already synchronized, then apply **Sync** to only the cell that you want to investigate.
2. Click in a cell in the **Sync** group, and then click the *Investigate* icon ( )
3. (Optional) Add cameras to the layout. As you add cameras, they will appear in the cells of the investigation tab, and in the camera list at the bottom of the workspace. A timeline is included in the playback controls area, indicating the availability of recorded video for all cameras.

Creating Clips

Operators can create clips of recorded information, trim video clips, save them to a playlist for safekeeping, or delete them.

The trim tool [ ] enables users to select a portion of a recording and save it to a within an investigation as a clip. Clip selections persist in the timeline, even if you choose not to add the clip to the playlist. Once you've selected a clip, you can resize or delete the selection using the time-box controls on the timeline.

1. When in Investigation Mode, click on the timeline where you want to select a clip.
2. Drag to select the start and end time of the clip you want to add to a playlist.
3. To add a clip to a playlist, click on the clip you want to select to expose the down arrow symbol ( ), and then select **Add to Playlist**.
4. To delete a clip, click on the clip to expose the down arrow symbol ( ), and select **Delete**.
5. When you delete the clip, it will be removed from any playlists that you have not exported.
6. If you have changed a clip, but would like to undo the change, click on the clip to expose the down arrow symbol ( ), and then select **Revert Changes**.

Creating a Playlist

A **playlist** is a series of recorded clips. Operators can trim video clips and save them to a playlist for safekeeping. Playlists are saved locally. You can reference your playlist later, but if you absolutely want to be sure that you don't lose the clips or video in your investigation playlist, you should export the playlist to your Core server.

1. When in Investigation Mode, click the selection arrow ( ) above the clip symbol.
2. On the timeline, click on the clip to expose the down arrow symbol ( ), and select *Add to Playlist*. Repeat as necessary.
3. Refer to the following sections to preview, edit, or export the playlist.

Previewing and Editing Playlists

- You can preview your playlist at anytime to ensure that it adequately captures your investigation. If it does not, you can reorganize the clips in the playlist or re-trim clips to refine the action captured by each clip.
- Click and drag clips in the playlist to reorder them.
- Click the playlist tools icon ( ), and then click **Preview Playlist** to playback your playlist. Clips are stitched together in the order that they appear in the playlist.
- Re-trim a clip by either of the following methods:
  - In the playlist, right-click a clip, select **Re-trim clip**, and then adjust the start and/or end times of the clip. Click **Apply** when complete to save your changes back to the clip and playlist.
  - Click the playlist tools icon ( ), click **Re-trim clip**, and then adjust the start and/or end times of the clip. Click **Apply** when complete to save your changes back to the clip and playlist.
  - In the timeline, click and drag the start time and/or end time of the clip, click the down arrow symbol ( ), and then select **Apply To Playlist**. This updates the listing that is already in the playlist.
- Delete a clip from the playlist and from the timeline by one of the following methods:
  - In the playlist, click to select one or more clips, right-click one of the selected clips, and then click **Delete selected clips**.
  - In the playlist, click to select one or more clips, click the playlist tools icon ( ), and then click **Delete selected clips**.
  - In the timeline, click on a clip to expose the down arrow symbol ( ), and then select **Delete**.

Exporting a Playlist

Exporting a playlist allows you to save a collection of video clips, so that you can easily find and download your investigation later. Exporting video from network storage to your Core allows you to store video independently of your VideoXpert recorders for quick access later. The system exports unencrypted files in the MKV format, and encrypted files in ZIP format.

If you do not have permission to export video for the video sources in your investigation video, or the recordings saved to your playlist are no longer available from network storage, you will not be able to export a full playlist. You can still export a playlist with missing clips.

1. At the upper right corner of the playlist (left) panel, click the *Export Playlist* icon ( ).
2. In the *Export Playlist As* dialog box, enter a value in the *Export Name* field.
3. Click to select or deselect the checkbox for *Encrypt this export*; if you select encryption, enter a password in the fields. See the section titled *Encrypting Export Files*.
4. Click **Save**.

5. (Optional) Click **View Exports** to view the status of your export and view the *Export Archive* window.
6. (Optional) When your export is complete, you can download it locally:
   a. In the *Export Playlist As* dialog box, click **View Exports**
   b. In the entry for the export, click **Download**.
   c. Navigate to the folder in which you want to save the export; enter a new value in the *File name* field, or accept the default; and then click **Save**.
   d. (Optional) After the file is saved, click **Show File** to open the file location, and then open the file.
7. At any time, you can view, edit, download, and delete exports from the Export Archive. See the section titled *Using the Export Archive*.

Encrypting Export Files

When you export a playlist, the VxOpsCenter gives you the option to encrypt the file. Encrypting the file ensures that no one can tamper with your exported video. To decrypt and playback an export, you must have the password used when generating the export and the **VideoXport Player**; you cannot playback encrypted exports with another video player.

Encrypted exports appear as ZIP archives containing the playlist file, video clips (MKV) and a signature file. When you attempt to open an encrypted export, it will prompt you for the password. The password will allow the player to decrypt the export. The player will then use the signature file and public key (within the signature) to validate the export and verify that it has not been tampered with. It will then playback the file.

If you lose or forget the password to an export, your administrator can recover it for you by returning to the export archive and selecting the export for which you need a password.

Using the Export Archive

From the *Export Archive* window, you can download, edit the name of, or delete exports. to access the window:

- If you are still in the *Export Playlist As* dialog box, click **View Exports**.
- In Mission Control, click the *User Menu* icon (▼), and then select **Show Export Archive**.

Downloading Exports

You can download exports from the *Export Archive*, which appears automatically when you export a playlist. You can also access the *Export Archive* at any time, as described below.

Note: If you are using VxOpsCenter on a VxPro server, you do not need to download exports; you can browse to the exports directory on your data drive to access exports.

Unencrypted exports use the MKV format. Encrypted exports are ZIP files; if the export file has been encrypted, you must use the VideoXpert Player to decrypt and playback the file.

1. Access the *Export Archive*.
2. (Optional) Use the filters or sort the list of available exports by camera tag or other data associated with the export (camera name, ID, exporting user, etc).
3. To download the archive without VideoXpert Player:
   a. Click **Download** for the archive row.
   b. Browse to a location and type a value in the *File name* field.
   c. Click **Save**.
   d. (Optional) When the archive has been downloaded, click **Show File** to open the browser to the file location.
4. To download the archive and the VideoXpert Player executable:
   a. In the left column (untitled), click the *Export Archive Menu* icon (▼).
   b. Click **Download with VideoXpert Player**.
   c. Browse to a location and type a value in the *File name* field.
   d. Click **Save**.
   e. (Optional) When the archive has been downloaded, click **Show File** to open the browser to the file location.

Editing an Export Name

1. To access the *Export Archive*, click the *User Menu* icon (▼) in mission control, and then select **Show Export Archive**.
2. (Optional) Use the filters to sort the list of available exports by camera tag or other data associated with the export (camera name, ID, exporting user, etc).
3. Click the pencil icon (✎) in the left column for the archive row.
4. In the *Edit Export Name* dialog box, type a value in the *New Name* field.
5. Click **Save**.

Deleting One or More Exports

Deleting an export from the *Export Archive* sends it to the Trash Bin; you must delete an export from the Trash Bin to permanently remove it from the system. This two-step process prevents users from inadvertently removing exported files from the system.

1. To access the *Export Archive*, click the *User Menu* icon ( ) in mission control and select **Show Export Archive**.
2. In the *Export Archive* window, view the list of exports in the table.
   - (Optional) Sort by any column title.
   - (Optional) Click to expand **Filter**, type a value in the search field; and/or click in the *Camera Tags* field, and then click to select the tags. Click **Clear** in the *Camera Tags* field to clear the tags, or click **Clear Filters** at the upper right of the *Export Archive* window to clear both of the filter fields.
3. (Optional) To delete an export, click the trashcan icon ( ) in the left column for the archive row; in the confirmation dialog box, click to select or deselect the checkbox to *Delete Permanently*; and then click **Yes**.
   - If you did not select *Delete Permanently*, the archive is removed from the current list, and is added to the *Export Trash Bin*.
   - If you did select *Delete Permanently*, the archive is deleted, but not added to the *Export Trash Bin*.
4. (Optional) To delete multiple exports:
   a. Click to select the exports to delete (use the Ctrl or Shift keys).
   b. Click the trashcan symbol ( ) in one of the selected rows.
   c. Click to select or deselect the checkbox to *Delete Permanently*, and then click **Yes**.
      - If you did not select *Delete Permanently*, the archive is removed from the current list, and is added to the *Export Trash Bin*.
      - If you did select *Delete Permanently*, the archive is deleted, but not added to the *Export Trash Bin*.
5. If you want to view deleted exports, click the down arrow to the right of *Export Archive*, and then select **View Trash Bin**.
   - To move an export from the *Export Trash Bin* to the *Export Archive* window, click the export **Restore** button.
   - To delete multiple exports from the trash bin, click to select the exports (use Ctrl or Shift), click the *Export Archive Menu* icon ( ), click **Delete Selected Exports**, and then click **Delete Permanently** in the confirmation dialog box.
   - To return to the *Export Archive* window, click the **X** symbol in the upper right corner of the *Export Trash Bin* window.
6. If you want to delete failed exports, click the down arrow to the right of *Export Archive*, and then click **Delete All Failed Exports**. In the confirmation dialog box, click to select or deselect the checkbox for *Delete Permanently*, and then click **Yes**.
7. To exit the window, click the **X** in the upper-right corner of the window, or click outside the window.

Using Investigation to View Video Stored on a Camera's Local Storage

If your camera or video source is recording video locally (using an SD card or in concert with ONVIF Profile G), the timeline will display the ; the device tooltip will also alert you to multiple recording locations. You cannot view video while it is stored on the camera; you must first push video from the camera to a VideoXpert Storage recorder in order to view a camera's local recordings.

Note: Refer to documentation for your camera to enable and setup local recording. The process to enable and use local recordings may differ by camera model.

Click to open an investigation tab showing the camera's various recording locations as separate timelines. The timelines are labeled as follows:

- **Default Recorder**: Video recorded by your VideoXpert Storage recorder. These are the recordings you would normally see when you playback video.
- **Downloaded from Camera**: Video pushed from the camera to the recorder does not overwrite video already stored on the recorder; the video recorded on the camera and the video recorded on the VXS recorder coexist. This timeline shows video that has been pushed from the camera to the recorder. You can only view these recordings when in the multi-recording investigation tab.
- **Camera Storage**: Displays thumbnails representing video stored on the camera. You must use the timeline to create and push video clips to default storage to view it.

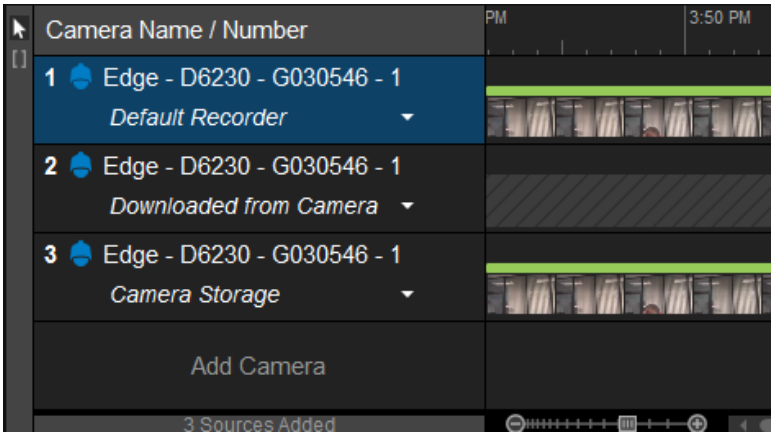


Figure 1: Investigation with Edge Storage

Pushing Video From the Camera to Storage

This process assumes your camera is recording video locally.

1. Click to enter an investigation with timelines representing VideoXpert Storage, the camera's local storage, and video pushed from the camera to the recorder.
2. Within the *Camera Storage* timeline, click and drag along the section of the Camera Storage timeline to indicate the clip or section of video that you want to view.
3. Click on the clip to expose the down arrow symbol (), and then select **Add to Default Recorder**.
4. Click **OK**.

You can now play video that was moved from the camera to storage; it will appear in the *Downloaded from Camera* timeline.

Playing Back Video After Moving it to Storage

Video that has been copied from the camera to Storage will appear in the second timeline, title *Downloaded from Camera*. Select the section of video you want to play from here and play back. Video is synchronized between your default recorder and the *Downloaded from Camera* timeline.

Working with Plugins

Plugins are components that add enhance the capabilities of VxOpsCenter Client. VxOpsCenter Client supports two types of plugins:

- **Overlay** plugins provide information supplemental to video and audio sources, and are meant to be used in conjunction with a source; both a source and overlay plugin will populate the same cell.
- **Content** plugins consume a cell by themselves; adding a content plugin to a cell that is already populated will replace whatever was in the cell.

Note: You can add more than one plugin to a workstation, but you should not run more than one mapping plugin per workstation.

Installing Plugins

Close VxOpsCenter application before installing plugins.

To install a plugin, run the plugin installer, typically an MSI file.

Plugins install under C:\ProgramData\Pelco\OpsCenter\Plugins. The Ops Center application searches this directory recursively on start-up to populate the plugins available to it.

Note: The Access Control System Viewer plugin is not automatically available. Obtain the installer from PartnerFirst.pelco.com, and see the installation instructions in the current version of the *VideoXpert Installation Manual*.

Adding a Plugin to Your Workstation

To add a plugin to your workspace:

1. (Optional) Select the cell in which you want to add a plugin.
2. Access the available plugins by one of the following methods:
   - In Mission Control, click to expand *Content*, and then click **Plugins**.
   - In Mission Control, click the *Plugins* icon ( ).
3. If necessary, click to expand **Content Plugins** or **Overlay Plugins**.
4. If the plugin you need is not present in the *Plugins* panel, install it. See the section titled *Installing Plugins*.
5. Double-click the plugin to add it to the selected cell (if you selected a cell), or drag the plugin to a different cell. Double clicking a plugin will open the plugin in a manner that is consistent with video sources, as defined by the *When double-clicking a source* setting, available under *Preferences*.
6. If a dialog box opens, respond to any prompts.

Using the Event Viewer Plugin

The Event Viewer plugin allows you to view all events, and filter and sort the events. To use Event Viewer:

1. Click **Event Log** or open the *Event Viewer* plugin to open the *Event Viewer* in a cell of the workspace.
2. (Optional) In the Filter (left) panel of the cell, make one or more of the following selections:
   - Enter or select a From date, From time, To date, and To time.
   - In the *Show events with status* area, click to select or deselect checkboxes for *Needs Attention*, *In-Progress*, *Acknowledged*, and/or *Logged*.

- (Optional) Enter or select a *Range* for the *Severity* of events to display.
- (Optional) Select a *User* from the drop-down menu. To show only those actions related to the selected user, click to select the checkbox for *Only show user related actions*.
- (Optional) In the *Events* area, select an event category from the drop-down menu, and then select the event type from the drop-down menu below *-AND-*.
- (Optional) To clear the filter, click **Reset Filter**.

3. (Optional) The *Pause Events* checkbox is selected by default. To allow the list to update, click to deselect the checkbox.
4. (Optional) To sort, select the criterion from the drop-down menu to the right of *Sort by*, and then select **Ascending** or **Descending** order from the drop-down menu.
5. (Optional) If you selected the *Needs Attention* in the S*how events with status* field, click to select one or more of the events, and then click **Acknowledge Selected**.
6. (Optional) To copy details of an event to paste into another application, double-click to select the event, click **Copy Details**, and then click **Copy all to clipboard**. Navigate to the target application and paste the content.

Using the Image Viewer Plugin

The Image Viewer Content plugin allows you to display a directory of images within a cell of the Ops Center Client. The images rotate at a designated interval, or you can manually tab through the images. You can use the Image Viewer to scroll through important snapshots from your Ops Center, or to display a series of important images (persons of interest, etc) in the same workspace that you use for video.

Note: The Image Viewer path is stored on the Core, and will follow your account across workstations; if you set a path local to a particular workstation, you will not be able to view your images on another workstation.

1. Open the *Image Viewer* plugin.
2. (Optional) Select an existing picture directory containing the images you want to view; this directory can be local or a network location.To do so:
   a. Click the menu icon ( ) and then click **Select picture directory**.
   b. Navigate to the folder.
   c. Click **OK**.
3. (Optional) If there is no directory, or if you want to save images to a new directory, create one. To do so:
   a. Click the menu icon ( ) and then click **Select picture directory**
   b. Browse to an appropriate location, and then click **Make New Folder**.
   c. Type in a name for the folder, and then click **OK**.
4. (Optional) To select the speed at which to scroll through the images, click the menu icon ( ), click **Cycle images every...**, and then click one of the options.
5. (Optional) Click the menu icon ( ), and then click to select or deselect **Show Date/Time**.
6. (Optional) Click the menu icon ( ), and then click to select or deselect **Show Title**.
7. (Optional) Click the menu icon ( ), and then click to select or deselect **Fade between images**.

8. (Optional) Control scrolling through the images by using the back icon (), the pause icon (), and the forward icon () at the lower right of the Image Viewer plugin.

Using the VxMaps Plugin

The VxMaps Plugin provides an interface to arrange cameras according to their physical locations on a map, making it easier to find the right camera and view to suit your needs.

Note: VxMaps supports world drawings as geodatabase. It also supports Dwgs, and jpeg and png (raster) images.

Note: You should not run more than one VxMaps plugin per workstation.

If running the VxOpcCenter software on Windows 8N, you may have to install the Media Player and Visual C++ redistributables to run the VxMaps Plugin.

Before you use the plugin, configure the VxMaps Import Utility in VxToolbox. Refer to the current version of the *VideoXpert Toolbox User Guide* (for Enterprise systems) or the *VideoXpert Professional User Guide*.

Understanding VxMaps Permissions

The VxMaps plugin uses th View Maps permission within the VX System. Camera permissions are applied to maps as well. If a user lacks permissions to a particular camera, it will not appear on the map or in the list of cameras the user can add to a map.

Launching the VxMaps Plugin

1. In VxOpsCenter, open the *VxMaps* plugin.
2. When you first run the VxMaps plugin, it will prompt you to add a map. In the *Select the map that you would like to load* field, select a DWG, JPEG, or GIF file from the drop-down menu; in the *When launching VxMaps* field, click to select the appropriate radio button; and then click **Ok**.

Selecting a Map File

You can view a different map at any time.

1. Click the menu icon () at the upper right corner of the VxMaps window.
2. Select the map from the drop-down menu.

Working In a Map

To use the map:

1. Open a map in VxMaps.
2. (Optional) Filter the cameras that are displayed. To do so, click the expand icon () beside the *Filter* title, and then do one or more of the following:
   - Enter values in the search field to filter by camera name, IP address, number, etc.
   - Click in the *Tags* field, and type in or select a tag for which to filter.
   - Click **Clear** to reset the filters.
   - To close the filter panel, click the collapse icon () beside the *Filter* title.
3. (Optional) Move the field of view of the map. To do so, click on the map and drag it until the appropriate view is displayed.

4. (Optional) Use the scroll wheel on your mouse to zoom in and out. You can also zoom into an area of the map by holding down the Shift key and using the mouse to select a region. VxMaps will zoom in to show only the selected region of the map.

   Cameras will not block or impede areas of the map at different zoom levels.

5. (Optional) Choose which layers to include and exclude from the view.
   a. Ensure that VxMaps is displayed in a one-cell tab.
   b. At the upper right corner of the VxMaps cell, click the menu icon ( ).
   c. In the *Base Layers* list (if present), click to select and deselect the checkboxes to indicate which layers to include and exclude.
   d. Click to select or deselect the checkbox for *Feature layers*, and any checkboxes in the *Feature layers* list to indicate which layers to include and exclude.
   e. When you have finished selecting the layers to display, click the menu icon ( ) again to close the panel.

6. (Optional) Hover over a camera to view the camera name and a thumbnail.

   If the hover option is not working, it has been disabled. Enable it in the *Preferences* panel. See the section titled *Setting User Preferences for VxMaps*.

7. (Optional) View camera data. To view data for a specific camera, click the camera on the map. Data includes: the camera name, status, *Watched by* information, *Tags*, and *Details* (IP address, ID, recording data, model and serial numbers, and software/firmware version).
8. (Optional) Open a camera from the map. Double-click a camera to open it in a new cell.

Setting User Preferences for VxMaps (VxEnterprise Only)

At any time, you can change the user preferences in the VxMaps plugin.

1. At the upper right of the VxMaps cell, click the gear icon ( ).
2. (Optional) Click to select the appropriate radio button in the *On load* area. If you select *Always load a specific map*, select a value from the drop-down menu in the in the associated field.
3. Choose a *Selection Tool* from the drop-down menu (if present).
4. (Optional) Update the alarm behaviors.
   a. Click to select or deselect the checkbox for *Center on Alarm*.
   b. Click to select or deselect the checkbox for *Switch Map on Alarm*. If you select it, you must also select the checkbox for either *Ask every time* or *Automatically switch*.
   c. Choose the *Center On Alarm Scale* by clicking and dragging the slider bar (if present).
5. (Optional) Adjust the *Map Background Color* by selecting a color from the drop-down menu.
6. (Optional) Adjust the *Camera Number Color* by selecting a color from the drop-down menu (if present).
7. (Optional) Adjust the *Camera Number Placement* by selecting an option from the drop-down menu (if present).
8. (Optional) Change the *Icon Scale* by clicking and dragging the slider bar (if present).
9. (Optional) Click to select or deselect the checkbox for *Show camera thumbnail on hover*.
10. Click the gear icon ( ) again to close the *Preferences* panel.

Using the Mapping Plugin

The Mapping Plugin provides an interface to arrange cameras according to their physical locations on a map, making it easier to find the right camera and view to suit your needs.

Note: The Mapping plugin supports Dwgs and raster images. VxMaps supports world drawings as geodatabase as well as jpeg and png (raster) images. If you have geodatabase images, see the section titled *Using the VxMaps Plugin*.

Note: You should not run more than one mapping plugin per workstation.

If running the Ops Center software on Windows 8N, you may have to install the Media Player and Visual C++ redistributables to run the Mapping Plugin.

Before you use the Mapping Plugin, configure the VxMaps Import Utility in VxToolbox. Refer to the current version of the *VideoXpert Toolbox User Guide* (for Enterprise systems) or the *VideoXpert Professional User Guide*.

Understanding Mapping Permissions (VideoXpert Enterprise Only)

The Mapping plugin has its own unique, cascading permissions within the VX System. Aside from the Use Map permission, all other permissions allow resource restrictions. “Resources” in this case refers to the maps themselves. However, camera permissions are applied to maps as well. If a user lacks permissions to a particular camera, it will not appear on the map or in the list of cameras the user can add to a map.

Permission	Description	Resource Access (Maps)
Use Map	Allows use of the mapping plugin.	Any
View Maps	Determines which maps a user can access.	Any, Selected
Manage Map Files	The user can add, update, and delete maps.	Any, Selected
Place cameras on map	The user can add cameras to maps, move cameras on maps, and delete cameras from maps.	Any, Selected

Launching the Mapping Plugin

1. In VxOpsCenter, open the *Mapping* plugin.
2. When you first run the mapping plugin, it will prompt you to add a map. In the *Select the map that you would like to load* field, select a DWG, JPEG, or GIF file from the drop-down menu; in the *When launching Mapping* field, click to select the appropriate radio button; and then click **OK**.

Configuring the Mapping Plugin

At any time, you can use the Edit Mode to configure Mapping. Options include: selecting a map file, adding and deleting maps, adding cameras to maps.

Selecting a Map File

When you update or change a map file, the map is added to or updated in the Available Maps. See the section titled *Managing Available Maps*.

1. Click **Edit Mode**.
2. Click to expand **Map File**.
3. Click **Update or change map file**, navigate to the map file to use, and then click **Open**.

4. In the *Load New Map* dialog box, enter a value in the *Name Your Map* field to save it as a new map, or retain the current map name to update the existing map.
5. Click **Open**. If adding a DWG file, select the layers that you want to import.
6. (Optional) To revert to the previously saved version of the map, click **Cancel and Exit**. You will exit Edit Mode.
7. When you have finished configuring Mapping, click **Save**, and then click **OK** in the *Drawing* confirmation dialog box.

Adding Cameras to a Map

While in *Edit Mode*, you can place cameras on the map and rotate them to reflect their orientation within the environment. Cameras marked with a green "M" are already placed on the current map. When adding, moving, and rotating cameras, you must save before you **Exit Edit Mode** or you will lose all of your changes.

Note: Do not try to add cameras to the map from Mission Control. You must add cameras to the map from the *Edit Mode*, *Cameras* area. Dragging cameras from Mission Control will replace the mapping plugin with a video source rather than placing a camera on the map.

1. Click **Edit Mode**.
2. Click to expand **Cameras**.
3. (Optional) Type a value into the *Filter* field to shorten the list of cameras to from which to choose. You can also click to select or deselect the checkbox for *Apply Filter to Map*.
4. (Optional) Click to expand **Advanced Filter Options**, and then select values from the drop-down menus for one or more or the following options: *Online*, *Recording*, *On Screen*, or *On Map*. You can also type or select values in the *Tags* field.
5. (Optional) To sort the sources by name, click **Source Name**. To toggle between ascending and descending order, click **Source Name** again. To sort the sources by number, click **#**. To toggle between ascending and descending order, click **#** again.
6. From the list of sources, drag sources to the appropriate location on the map.
7. (Optional) To revert to the previously saved version of the map, click **Cancel and Exit**. You will exit Edit Mode.
8. When you have finished configuring Mapping, click **Save**, and then click **OK** in the *Drawing* confirmation dialog box.

Managing Available Maps

In the *Available Maps* area of **Edit Mode**, you can add or delete maps. Maps are backed up as a part of Core backups. If you delete a map in error, you can recover the map along with camera associations by performing a Core recovery.

To view, add, or delete available maps:

1. Click **Edit Mode**.
2. Click to expand **Available Maps**.
3. (Optional) To add a map:
   a. Click the *Add* icon (**+**), navigate to the map, and then click **Open**.
   b. In the *Load New Map* dialog box, enter a value in the *Name Your Map* field, and then click **Open**.

4. (Optional) To delete a map: In the list of available maps, click to select a map; click the *Delete* icon (**-**); and then click **Yes** in the *Delete Map?* confirmation dialog box.
5. (Optional) To revert to the previously saved version of the map, click **Cancel and Exit**. You will exit Edit Mode.
6. When you have finished configuring Mapping, click **Save**, and then click **OK** in the *Drawing* confirmation dialog box.

Setting User Preferences for Mapping

At any time, you can change the user preferences from the Mapping plugin.

1. At the upper right of the Mapping plugin cell, click the gear icon ( ).
2. (Optional) Click to select the appropriate radio button in the *Launching Preferences* area. If you select *Always load a specific map*, select a value from the drop-down menu in the *Choose Map* field.
3. (Optional) Click to select or deselect the appropriate checkboxes in the *Map Recentering* area. If you select *Allow recentering on a different map*, you can also select *Prompt me before recentering on a different map*.
4. Click **Save Changes**.

Viewing a Map

When using the Mapping plugin, you can change the view in the following ways:

- (Optional) Select an available map: If you have more than one map available on the Mapping plugin, you can select which map to view. In the Map field at the upper left of the Mapping cell, select a map from the drop-down list.
- To add a map, see the section titled *Managing Available Maps*.
- (Optional) Show or hide cameras. Cameras are saved as a separate layer on the map. This enables you to hide maps, for an unobstructed view of the map itself. To show cameras, click to select the checkbox for *Show Cameras*; to hide cameras, click to deselect the checkbox.
- (Optional) View camera data. To view data for a specific camera, click the camera on the map. Data includes: the camera name, status, *Watched by* information, *Tags*, and *Details* (IP address, ID, recording data, model and serial numbers, and software/firmware version).
- (Optional) Move the field of view of the map. To do so, click on the map and drag it until the view is displayed.
- (Optional) Move and rotate a camera. Click to select a camera. This enables a handle ( ), which allows you to turn the icon to reflect its field of view or to “pick it up” and move it to another location on the map.
- (Optional) Zoom in and out by one of the following methods:
  - Use the scroll wheel on your mouse.
  - On the map, click to zoom in; click to zoom out.
  - On your keyboard, press the + key to zoom in; press the - key to zoom out.

  Cameras will not block or impede areas of the map at different zoom levels.
- (Optional) Open a camera from the map. Double-click a camera or a group of cameras to open them in a new tab.

- To select multiple cameras, press the Ctrl key while dragging to select a region that includes the cameras to select.

Using the Web Browser Plugin

The browser plug-in provides a means to access web resources from within VxOpsCenter.

To add the plug-in to your workspace: type value (key word by which to search or URL) into the search field.

1. Click to expand the *Content* area, click **Plugins**, and then drag the **Web Browser** plugin into a cell.
2. You can also double-click **Web Browser** to open a new single-cell tab containing the plugin.
3. Type a value into the search field (a keyword by which to search or a known URL).

Using the Access Control System Viewer Plugin (Optional)

Note: This plugin is not automatically available. Obtain the installer from PartnerFirst.pelco.com, and see the installation instructions in the current version of the *VideoXpert Installation Manual*.

The Access Control System Viewer Plugin enables the communication and data exchange from various Access Control Systems to the VideoXpert System.A server component, called an Access Control Server, communicates directly to the Access Control System and relays information to the Access Control System Viewer while relaying events between the Access Control System and VideoXpert.While the ACS Server handles events, it also provides other information to the Access Control System Viewer, such as user images that the Access Control System Viewer may display in association with events injected by the ACS Server.

An Access Control Server will provide value without the use of the Access Control System Viewer.Events may be passed to/from the ACS and VX and these events may be viewed with the Event Viewer OCC Plug-in or the Admin Portal Events Tab, however, user images, door controls and enhanced Event filters are provided through the Access Control System Viewer Plug-in.

Launching the Access Control System Viewer Plugin

1. Double-click the plugin or drag and drop it into a cell.
2. If an Info dialog box opens, make note of the information, and then click **OK** to close the box.

Filtering the Events in the Access Control System Viewer

1. Click the **Filter** tab.
2. Use the following filter settings to control which events are displayed in the Viewer.
   - (Optional) Enter start and end dates and times:
     - Select or type in a date and time in the *End Time* fields--the time before which you want to see filter results.
     - Select or type in either the the number of *Minutes Before* to include in the filtered time range OR select or type in a date and time in the *Start Time* fields.
     - To select a different *End Time*, click **Clear End**.
   - In the *Show events with status* area, click to select or deselect checkboxes for *Needs Attention*, *In-Progress*, *Acknowledged*, and/or *Logged*.
   - (Optional) Select a *Property Display Filter* from the drop-down menu.This selects what is displayed for an event when it is expanded (center panel).Selecting **None** displays all

properties, selecting **Remove IDs** displays all properties except those IDs that are unnecessary for the users to see, and **Minimal** displays only minimal details about the event.

- (Optional) Enter or select a *Range* for the *Severity* of events to display.
- (Optional) Select a user from the *VMS Users* drop-down menu.To show only those actions related to the selected user, click to select the checkbox for *Only show user related actions*.
- (Optional) In the *Events* area, select an event category from the drop-down menu, and then select the event type from the drop-down menu below *-AND-*.
- (Optional) To clear the filter, click **Reset Filter**.

Configuring Access Control

From the Access Control tab, you can configure communication to an Access Control Server and display information that is not available elsewhere in VideoXpert.

Adding, Editing, and Deleting Access Control Servers

1. Click the **Access Control** tab.
2. If you do not see the *Access Control Server* list, click the gear icon ( ).
3. To add an access control server:
   a. Click the *Add access control system* icon ( ).
   b. Type a descriptive string in the **Server Name** field.
   c. Type in the *IP Address* of the server to add.
   d. Enter or select the *Port* number.of the server to add.
   e. (Optional) Click to select the checkbox for *Auto Select Events*.When selected, the most recently added event in the event window is automatically selected and expanded.
   f. Click **Save**.
   g. (Optional) Repeat this procedure to add another server.
4. To edit an existing access control server:
   a. Click the *Edit access control system* icon ( ).
   b. (Optional) Type a new descriptive string in the **Server Name** field.
   c. Type in the *IP Address* of the server to add.
   d. Enter or select the *Port* number.of the server to add.
   e. (Optional) Click to select the checkbox for *Auto Select Events*.When selected, the most recently added event in the event window is automatically selected and expanded.
   f. Click **Save**.
5. To delete an access control server, click the *Delete access control system* icon ( ), and then click **Yes**.
6. When you have finished configuring the servers, click **Close**.

Filtering on Access Points

An access point can be anything that the Access Control Server reports as an access point, whether it is a door, gate, or other entryway.All *Access Points* are listed along with the current known state of the

each.The *Lock/Unlock* button shows the current state and allows the user to toggle Lock/Unlock the door by dragging the button – left for lock, right for unlock.The unlock state appears with a green background.

1. Click the **Access Control** tab.
2. Click to expand **Access Points**.
3. Select one or more Access Points from the *Access Point* list.
4. Click to select the checkbox for **Add Access Points to Filter**.
5. In the Event Window, click to select an event that has an access point.
   - Only events with that access point ID will be included in the Event Window.
   - The associated access point(s) are added to the *Access Points* list in the *Access Control* panel.

Filtering on Access Control Users

The *Access Control Users* section contains a list of known users of the Access Control System.A user may be selected at any time to display their associated image (if available).

1. Click the **Access Control** tab.
2. Click to expand **Access Control Users**.
3. From the drop-down menu, click to select an access control user.
4. (Optional) Click to select the checkbox for one of the following:
   - **Add Access Control User to Filter** will display only those events that are associated with the selected *Access Control User*.
   - **Update User on Event Selection** will cause the selected Access Control user to change when an event is selected that has a user associated with it.To choose an event, double-click the event in the Event Window.If you did not deselect the checkbox for Auto Select Events when you configured an Access Control Server, the event will be chosen automatically.

Using the Access Control System Viewer Event Window

The Event Window is the list of events that meet the criteria of the filter and Access Control configuration.

1. Click the **Access Control** tab.
2. Use the following options to find the information you need:
   - (Optional) Click to select or deselect the checkbox to *Pause incoming notifications*.Deselect this checkbox to automatically display events as they are received by the VideoXpert System.
   - (Optional) In the *Sort by* field, select **Time** or **Severity** from the drop-down menu, and then select **Descending** or **Ascending** order from the drop-down menu.
   - Click an event to expand it; double-click the event to collapse it.
   - To copy details of an event to the clipboard: right-click the event, click **Copy Details**, and then click **Copy all to clipboard**.You can then paste the information into another application.
   - View video associated with the event by dragging the viewer icon ( ) to a cell.

Closing a Plugin

If you close a plugin without saving your changes, you will lose the changes.

Close a plugin by one of the following methods:

- Click the ( ) icon in the upper right corner of the plugin.
- Click the *Close Plugins* icon ( ) to the immediate left of the *Dock/Undock Mission Control* icon at the bottom of the window, and then click the close icon ( ) associated with the plugin you are closing.

Responding to Events

Events in VxOpsCenter are reported in several locations of the UI, depending on how each alarm is configured. Notification methods include:

- The cell that displays the camera for which there is an event will have a flashing red inner border and a red alarm bar at the upper left of the cell.
- In the *Content* area, in the *Sources* list, the source item will display with a red background.
- The *Event Notifications* window enables you to research, snooze, and acknowledge current events.
- The *Event Viewer* lists all events, and allows you to filter and sort the full list of events to include only those that you want to view.

Using the Event Viewer

The *Event Viewer* lists events on the system. To use Event Viewer, see the section titled *Using the Event Viewer Plugin*.

Using the Event Notifications Dialog Box

Note: This section only applies to events that are configured with notifications.

When an event occurs that is pertinent to your user account and has a notification configured, an event notification dialog box will pop-up on your monitor and present ways in which you can respond to the event. Event notifications requiring acknowledgment persist until you or other users with the same role acknowledge them. Other notifications persist based on the configuration of the alarm. See the current version of the *VideoXpert Toolbox User Guide* for VideoXpert Enterprise systems or the VideoXpert Toolbox section of the *VideoXpert Professional User Guide* for VideoXpert Professional systems.

The events icon in the lower-right corner of your workspaces also shows the number of active events that require your attention.

1. Access an event notification by one of the following methods:
   - Click the notification icon (4) at the lower right of the window, and then click to select the notification. Click again to close the list of notifications.
   - Click the *Expand* icon ( ) in the bottom left corner of the event notification window that pops-up on your screen, and then click to select the notification on which to act. Click the icon again, now labeled *Collapse*, to close the window.

     The event notification includes the type of event, the device (for example, the specific camera) on which the event occurred, the date and time of the event, and the severity of the event.
2. (Optional) If the alarm is set with snooze enabled, click **Snooze** to temporarily remove the visual notifications, but have them reappear at the preconfigured interval.
3. (Optional) Click **In-Progress** to indicate that you are either investigating the event or are in the process of correcting an event condition.
4. Click **Acknowledge** to indicate that the event is no longer relevant; or that the event condition has been accounted for or corrected. Acknowledging an event clears the event notification.
5. (Optional) If you accessed an event from the event notification pop-up window, you can click **Acknowledge All**, and then click **OK** in the confirmation dialog box, to clear all existing events from

the event notification window.

6. (Optional) Click **Event Log** to open the event in the *Event Viewer* window.

Logging Out

When you log out, the application saves your desktop configuration, including video stream and plug-ins.

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Log Out**.
3. In the *Log Out* confirmation dialog box, click **Log Out**.

Closing the Application

It is important to close the application gracefully.Attempting to close the application through the start bar or by other means will leave the application processes open, continuing to consume resources.

All plug-in processes must be closed before the application itself can close.When you attempt to exit the application, the application will first save and close all plug-in applications before it can close.Depending on the number of plug-ins populating your workspace, this may take a few moments; do not attempt to forcefully close the application while it is shutting down, or you may lose unsaved workspace information or leave plug-ins and application processes open.

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Exit VxOpsCenter**.
3. In the *Exit VxOpsCenter* dialog box, click **Exit**.

Appendix A: Working With Permissions

Permissions define the actions a user can perform within the system. Where necessary, permissions are defined in a parent-child hierarchy; to assign a child permission, you must first define the parent permission.

Some features are not mapped to an obvious permission; in some cases, a feature might require compounding permissions. For example, users may have the “Place Cameras on Map” permission. However, users must also possess the “View Video Sources” permission for cameras they want to place in order to view video thumbnails and verify that they are placing maps in the right locations on the map. Pay attention to compound or complex cases listed below to ensure that your users have the permissions they require to perform their surveillance roles within VideoXpert.

Understanding Permission Resource Restrictions

Permissions grant access to resources. Some permissions allow all-or-nothing access, using the “Any” setting; some permissions allow you to select the resources to which a user has access using the “selected resource” settings.

"Any" indicates that a permission is available in all cases. If the permission does not support restrictions, but is an “on/off” permission, “Any” is the only resource option; if the permission allows “Selected Resources,” selecting “Any” allows a user to access all resources covered by the permission. For example, selecting “Any” for the “View Video Sources” permission grants a user access to view live video from all video sources within VideoXpert. If that same user was restricted to “Selected Resources” for the “Use PTZ Mode” permission, then the user would be able to view video from all cameras but could only initiate PTZ controls for the cameras to which he or she had access.

Using Plugin Permissions

Plugin permission provide access to plugins and related features within plugins. Plugins operate in accordance with the “View Live Video” surveillance permission; even if a user has access to a plugin, the user might not be able to effectively use the plugin without access to related cameras.

Permission	Actual Resource	Any	Selected	Description
Use eConnect	eConnect plug-in	X		This permission provides access to eConnect data. The permission is for “Any Resource” but operates in accordance with the “View Video Sources” permission. If a user has access to “View Video Sources” for a particular camera, and this permission is enabled, a user can view eConnect data for that camera.
Use Map	Mapping plugin	X		Allows users to access the mapping plug-in.
View Maps	Drawing (map)	X	X	Determines the maps to which a user has access. Maps only show cameras for which the user possesses the “View Video Sources” permission.
Manage Map Files				Allows users to upload, delete, and select available map layers
Place Cameras on map				Allows users to add and arrange cameras on the map; camera availability is limited by the “View Video Sources” permission.

Using Supervision and Reports Permissions

Supervision and Report permissions provide access to supervisors checking user activities auditing the system. These permissions are not hierarchical.

Permission	Actual Resource	Any	Selected	Description
Multiview	Users	X		Enables a supervisor to see users that are viewing a camera in real time.
Access Reports	Reports	X		Allows users to export reports.
Audit User Activity	User Action Report	X		Allows users to export User Actions reports.
Access User Views	Users	X	X	Provides access to workspaces and tabs created by other users. Note that you can restrict this permission by user, but not by tab or workspace. Users with this permission can access all tabs or workspaces created by selected users.
Manage System Views	Views	X		Allows users to delete or rename user views, and perform other relevant actions.

Using Device Management Permissions

These permissions grant users the ability to edit devices on the devices page, or tags at the system level.

Permission	Actual Resource	Any	Selected	Description
Configure Monitor Wall Decoders	Decoders/ Workstations	X	X	Provides the ability to configure decoders.
Setup Edge Devices	Devices	X	X	Allows configuration of devices.
Manage System Tags	Tags	X		Provides the ability to create, edit, delete, and assign System/Global tags. This permission does not apply to personal tags created or assigned through VxOpsCenter; personal tags only appear to the creating user and only the creating user can assign, modify, or delete his or her own personal tags.

Using User Management Permissions

These permissions grant users the ability to manage user account settings.

Permission	Actual Resource	Any	Selected	Description
Manage User Accounts	Users	X	X	Grants the ability to create, update, or delete user accounts.
Manage Aggregator Accounts	Aggregator User	X		Grants the ability to manage (change the password for) the "Aggregator" user account.

Permission	Actual Resource	Any	Selected	Description
Assign Roles to Users	Users	X		Grants the ability to assign roles to users.
Manage Roles	Roles	X		Grants the ability to create, delete, and assign permissions to roles.

Using Event Management Permissions

Event management permissions enable users to view, act on, and configure event notifications. There is no hierarchy for these permissions, but in most cases, a user that can configure events should have access to the event log and be able to handle events.

Permission	Actual Resource	Any	Selected	Description
Handle Events	Event notifications	X		Allows a user to act on event notifications, marking them as “in progress” or acknowledging them. **Note:** this permission does not guarantee that a user will receive events, only that the users with this permission can act on event notifications the receive. event notifications are defined within each event; the ability to modify events is granted by the “Configure Events” permission.
Configure Events	Events	X		Provides the ability to configure events.
View Event History	Events	X		Allows users to view the event history.

Using System Management Permissions

System Management permissions should be reserved for administrators. Users with these permissions can modify system configuration settings; these changes should be carefully planned by administrators to ensure that they do not interfere with video recording or interrupt surveillance operations.

Permission	Actual Resource	Any	Selected	Description
Configure Recording	Recorders	X		Allows configuration of recording, including recording schedules, camera assignments, and retention periods; this permission does not affect access to the VXS Recorder interface.
Manage System Servers	Core	X		Provides the ability to edit settings.

Using Surveillance Permissions

Surveillance permissions are common permissions required by operators in your VideoXpert environment. These permissions grant access to view live or recorded video, control cameras, and bookmark moments of interest.

Permission	Actual Resource	Any	Selected	Description
View Video Sources	Cameras/ Audio Sources	X	X	Enables users to access live video or audio. Audio sources are tied to video sources; granting access to a video source automatically grants access to associated audio sources.
Launch Saved Views Remotely	Views	X		Allows a user to send a view to another user. Users with this permission can also force recipients to accept views.
Create System Bookmarks	Bookmarks	X		Allows a user to create or edit bookmarks.
Delete System Bookmarks	Bookmarks	X		Allows a user to delete bookmarks.
Use PTZ Mode	Cameras	X	X	Provides the ability to pan, tilt, and zoom a camera. This permission includes a priority; priority determines who can control a camera in the event of competing users. If two or more users attempt to control a camera, the user with the highest priority will take command and lower priority users will be locked out.
Manage PTZ Mode	Cameras	X	X	Provides the ability to set PTZ priorities.
Lock PTZ Mode	Cameras	X	X	Provides the ability to lock a camera into a particular PTZ position. PTZ locks may be overridden by users with higher priority than the user who set the lock.

Using Investigation Permissions

Investigation permissions grant access to recorded video and the ability to export video from the system. Typical setups will want to assign the same access level to “view recorded video” permissions as to “view video sources”.

Permission	Actual Resource	Any	Selected	Description
View Recorded Video	Cameras/Audio Sources	X	X	Enables users to access live video or audio. Audio sources are presently tied to video sources; granting access to a video source automatically grants access to associated audio sources.
Manage Exports	Exports	X		Allows a user to edit or delete entries in the “Manage Exports” window.
Export Media Clips	Exports	X		Allows a user to export and download recorded video; a user can only export recorded video for sources defined in the “View Recorded Video” permission.

Using Special Case Permissions

Some features don't map directly to a permission; they may either require compound permissions, or a permission that is not plainly apparent. To use the following features, ensure that the user has the listed permissions.

Feature	Required Permission(s)
Collaborative Tabs	Manage System Views
Bookmarking	View Video Sources; View Recorded Video; Create System Bookmarks

Appendix B: Understanding Event Types and Reporting

You can pull reports (in CSV format) containing events and configuration information to audit your system and VideoXpert users. Reports requiring a start date and time include an event history; reports that do not require a start date and time provide current configuration information only. Depending on the date and time range you set, some reports may take several minutes for the system to process.

Event types typically refer to who or what is the cause of an event, and do not necessarily determine the report in which an event will appear.

- Admin events typically occur at the administrative level.
- Analytic events are the result of software analytics.
- Client events that are reported by the client.
- External events, which are injected into the system by a third party.
- Hardware events resulting from physical hardware issues and sensor readings.
- System events are typically the result of normal operator actions.

The system holds events for 30 days. You cannot obtain reports past the 30 day threshold.

Event	Event Type	Online/ Offline	User Actions	Event History
Core DB Backup Failed	Admin			X
Core DB Backup Halted	Admin		X	X
Core DB Backup Removed	Admin		X	X
Core DB Backup Restore	Admin		X	X
Core DB Backup Started	Admin		X	X
Core DB Backup Success	Admin			X
Device Added	Admin		X	X
Device Commissioned	Admin			
Device Decommissioned	Admin			
Device Modified	Admin		X	X
Device Removed	Admin		X	X
Drawing Added	Admin		X	X
Drawing Image Modified	Admin		X	X
Drawing Image Removed	Admin		X	X
Drawing Image Retrieved	Admin		X	X
Drawing Marker Added	Admin		X	X
Drawing Marker Modified	Admin		X	X
Drawing Marker Removed	Admin		X	X
Drawing Modified	Admin		X	X

Event	Event Type	Online/ Offline	User Actions	Event History
Drawing Removed	Admin		X	X
License Expired	Admin		X	X
Notification Added	Admin		X	X
Notification Added Role	Admin		X	X
Notification Removed	Admin		X	X
Notification Removed Role	Admin		X	X
Privilege Added	Admin		X	X
Privilege Modified	Admin		X	X
Privilege Removed	Admin		X	X
Role Added	Admin		X	X
Role Modified	Admin		X	X
Role Removed	Admin		X	X
Schedule Added	Admin		X	X
Schedule Modified	Admin		X	X
Schedule Removed	Admin		X	X
Situation Added	Admin		X	X
Situation Modified	Admin		X	X
Situation Notification Added	Admin		X	X
Situation Notification Removed	Admin		X	X
Situation Removed	Admin		X	X
User Added	Admin		X	X
User Modified	Admin		X	X
User New Password	Admin		X	X
User Removed	Admin		X	X
User Role Added	Admin		X	X
User Role Removed	Admin		X	X
Abandoned Object	Analytic			X
No Abandoned Object	Analytic			X
Adaptive Motion	Analytic			X
No Adaptive Motion	Analytic			X
Directional Motion	Analytic			X
No Directional Motion	Analytic			X

Event	Event Type	Online/ Offline	User Actions	Event History
Loitering	Analytic			X
No Loitering	Analytic			X
Object Count	Analytic			X
No Object Count	Analytic			X
Object Removal	Analytic			X
No Object Removal	Analytic			X
Sabotage	Analytic			X
No Sabotage	Analytic			X
Stopped Vehicle	Analytic			X
No Stopped Vehicle	Analytic			X
Motion Detected	Analytic			X
No Motion Detected	Analytic			X
User Logged Off	Client		X	X
User Logged On	Client		X	X
Client Snoozed Event	Client		X	X
Saved View Accepted	Client		X	X
Saved View Received	Client		X	X
Saved View Sent	Client		X	X
Client Tab Added	Client		X	X
Client Tab Modified	Client		X	X
Client Tab Removed	Client		X	X
Client Workspace Added	Client		X	X
Client Workspace Modified	Client		X	X
Client Workspace Removed	Client		X	X
CPU Load	Hardware			X
Disk Failure	Hardware			X
Fan Failure	Hardware			X
Input Loss	Hardware			X
Input Restored	Hardware			X
Link Speed Changed	Hardware			X
Memory Load	Hardware			X
Packet Loss	Hardware			X

Event	Event Type	Online/ Offline	User Actions	Event History
Power Supply Failure	Hardware			X
Temperature Issue	Hardware			X
UPS Low	Hardware			X
Volume Full	Hardware			X
Alarm Active	System			X
Alarm Inactive	System			X
Bookmark Added	System		X	X
Bookmark Modified	System		X	X
Bookmark Removed	System		X	X
Client Push	System			X
Client Push Acknowledged	System			X
database_fault	System			X
Device Offline	System	X		X
Device Online	System	X		X
Export Deleted	System		X	X
Export Download	System		X	X
Export Failure	System			X
Export Started	System		X	X
Export Successful	System			X
Fault	System			X
PTZ Lock	System		X	X
PTZ Pattern Triggered	System		X	X
PTZ Preset Triggered	System		X	X
PTZ Unlock	System		X	X
Quick Report Downloaded	System		X	X
Retention Low	System			X
Stream Loss	System			X
Stream View Denied	System			X
Stream View Started	System		X	X
Stream View Stopped	System		X	X
Stream View Timeout	System			X
Tag Added	System		X	X

Event	Event Type	Online/ Offline	User Actions	Event History
Tag Linked	System		X	X
Tag Merged	System		X	X
Tag Modified	System		X	X
Tag Removed	System		X	X
Tag Unlinked	System		X	X

Pelco, Inc.
625 W. Alluvial, Fresno, California 93711 United States
(800) 289-9100 Tel
(800) 289-9150 Fax
+1 (559) 292-1981 International Tel
+1 (559) 348-1120 International Fax
www.pelco.com