PELCO
a Motorola Solutions Company

VideoXpert® OpsCenter v 3.14
Operations Manual

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Installing and Configuring VideoXpert® OpsCenter

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

Installing VxOpsCenter (VideoXpert Enterprise only)

Caution: Your system must meet the minimum requirements before you can install the VxOpsCenter Client application.

If you are reinstalling VxOpsCenter Client, uninstall the previous version.

1. Run the VxOpsCenter EXE installer.
2. Click **Uninstall**.
3. Click **Close**.

To install VxOpsCenter Client for the first time:

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

To repair an existing installation:

1. Run the VxOpsCenter EXE installer.
2. Click **Repair**.
3. Click **Restart** to restart your computer.

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 will 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.

   Note: If you are using single sign-on (SSO) and are accessing the VideoXpert system through a browser, use the Fully Qualified Domain Name (FQN) instead of the IP address.

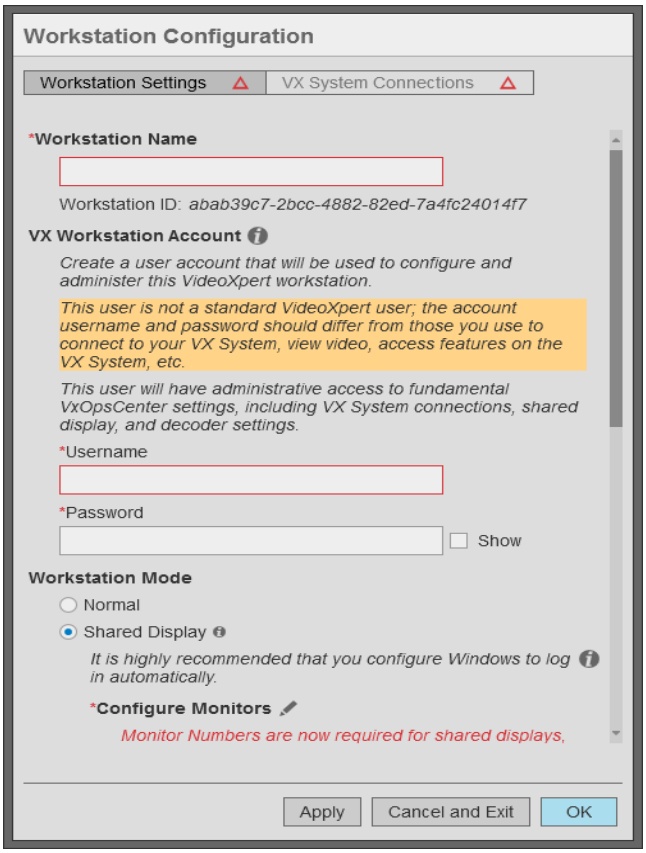
3. Create your *Workstation Configuration* account.

   - 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 VideoXpert 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 VideoXpert Workstation

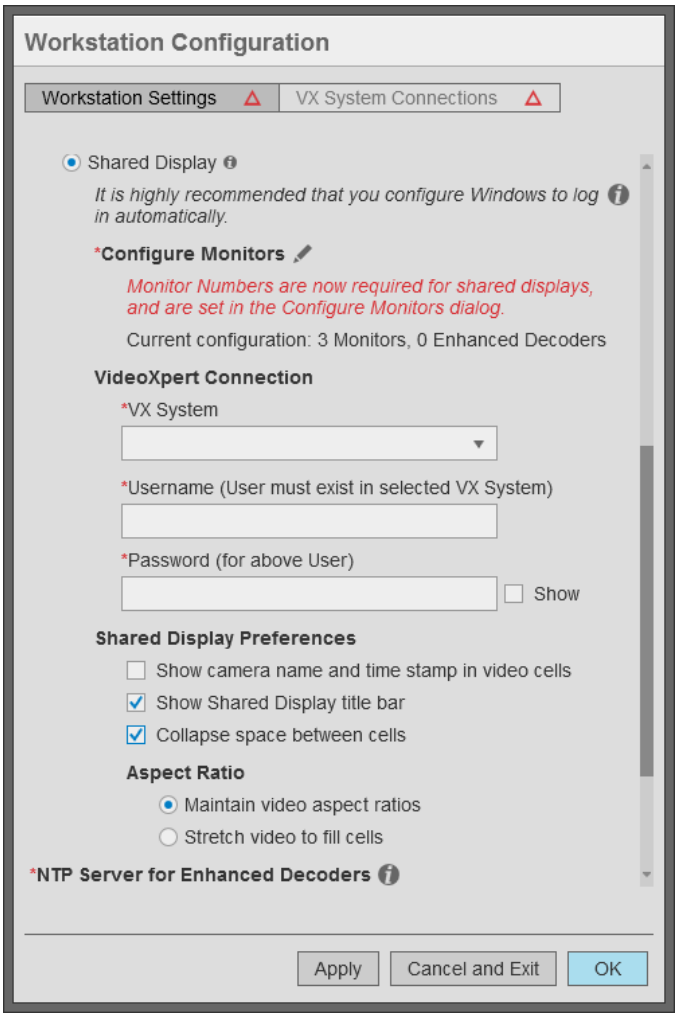
VideoXpert Workstation settings determine the basic behavior of the system. These instructions apply to the initial configuration only. You can re-configure the workstation at any time using the instructions in the section titled *Reconfiguring Your VideoXpert Workstation*.



Note: This screen will look different after initial configuration. If you do not see the red triangles on the **Workstation Settings** and **VX System Connections** buttons, see the instructions in the section titled *Reconfiguring Your VideoXpert Workstation*.

1. Enter a *Workstation Name*. This is the name by which VideoXpert Core will recognize the workstation and the name by which other users will recognize the workstation when sending video, responding to workstation-related events, etc.
2. Enter values in the *Username* and *Password* fields under *Vx Workstation Account*.

3. Under, *Workstation Mode*, select *Normal* or *Shared Display* mode. *Shared Display* mode provides monitor-wall functionality for one or more monitors. See the section titled *Configuring Shared Display Mode* for more information about *Shared Display* mode.



4. 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* to learn more about monitor configuration.
5. If you are going to control a monitor remotely, assign a number to the monitor. To do so:
   a. Click the *Configure Monitors* icon ( ) to the right of *Configure Monitors* to open the *Configure Monitors* window for the workstation.
   b. Follow the instructions for assigning a number to each monitor to control. For example: assign a number to any monitor that will be included on a shared display.
6. On a VideoXpert Enterprise system, in the *NTP Server for Enhanced Decoder* area, do one of the following:
   - Click to select the radio button for *Use Windows Time Service time server (time.windows.com)*.

- Click to select the radio button for *Manually specify a time server*, and then enter your *NTP Server Address*.

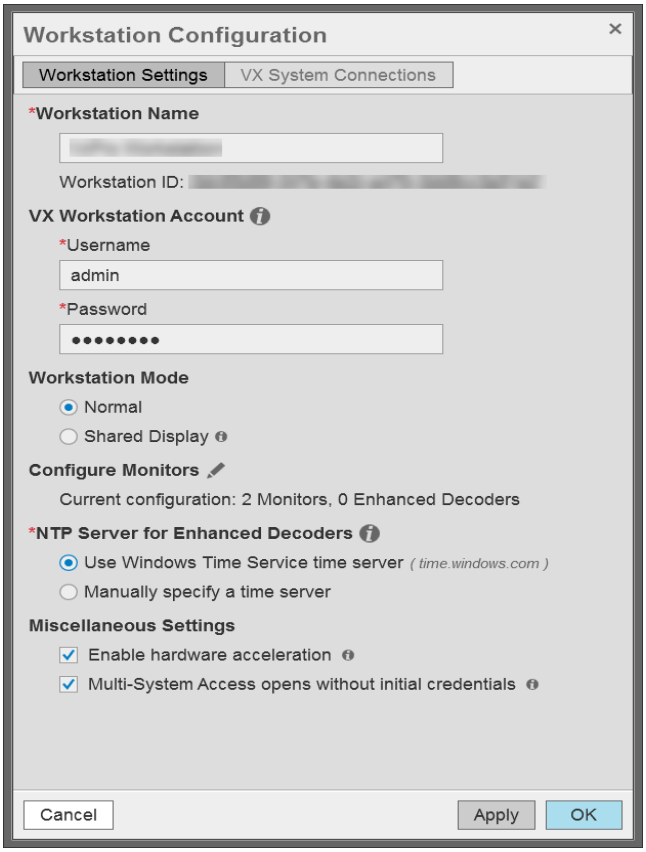
7. (Optional) Click the checkbox to select or deselect *Enable hardware acceleration*. Hardware acceleration is enabled by default and should only be disabled if your workstation uses an unsupported graphics chipset, or if you need to troubleshoot graphics issues that may result from your graphics drivers and chipset.

   Note: Hardware acceleration of H.265 is supported on the Shared Displays VX-A3-SDD and newer, and Enhanced Decoders VX-A3-DEC and newer.

8. (Optional) Click the checkbox to select or deselect *Multi-System Access opens without initial credentials* (MSA). In MSA mode, VxOpsCenter will open with no VX Systems connected. Credentials will be required when you connect to a VX system.
9. Click **Apply** to save your workstation configuration settings.
10. Click **VX System Connections** and follow the instructions in the section titled *Configuring VX System Connections*.

Reconfiguring Your VideoXpert Workstation

Workstation settings determine the basic behavior of the system. These instructions help you reconfigure the system. If this is the initial setup, see *Setting Up Your VideoXpert Workstation*.



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. Launch the *Workstation Configuration* dialog box: In Mission Control, click the *User Menu* icon (▼), and then select **Configure Workstation**.
3. (Optional) Enter a new string in the *Workstation Name* field. This is the name by which VideoXpert Core 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. (Optional) Enter new values in the *Username* and *Password* fields under *Vx Workstation Account*.
5. (Optional) Under *Workstation Mode*, select *Normal* or *Shared Display* mode. *Shared Display* mode provides monitor-wall functionality for one or more monitors. See the section titled *Configuring Shared Display Mode* for more information about *Shared Display* mode.
6. 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* to learn more about monitor configuration.
7. (Optional) In the *NTP Server for Enhanced Decoder* area, do one of the following:
   - Click to select the radio button for *Use Windows Time Service time server (time.windows.com)*.
   - Click to select the radio button for *Manually specify a time server*, and then enter your *NTP Server Address*.
8. (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.

   Note: Hardware acceleration of H.265 is supported on the Shared Displays VX-A3-SDD and newer, and Enhanced Decoders VX-A3-DEC and newer.
9. (Optional) Click the checkbox to select or deselect *Multi-System Access opens without initial credentials* (MSA). In MSA mode, VxOpsCenter will open with no VX Systems connected. Credentials will be required when you connect to a VX system.
10. Click **Apply**.
11. To change the VX System Connections, click **VX System Connections**, and then see the section titled *Configuring VX System Connections*.
12. When you are done with the reconfiguration, click **OK**.

Configuring Monitors

VxOpsCenter supports remote control of monitors by another instance of VxOpsCenter on your system. VxOpsCenter also supports monitors connected through Enhanced Decoders over the network for VideoXpert Enterprise systems. For each of these purposes, you must configure monitors.

Note: For best performance, it is recommended that you run Windows® 10 or later on workstations operating decoder-driven monitors (VideoXpert Enterprise-only).

To configure monitors:

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 **Workstation Settings**, and then click the *Configure Monitors* icon ( ) . If you have already performed initial configuration for the system, log in as the VxOpsCenter local administrator first, and then navigate to *Configure Monitors*.
3. For each monitor:
   a. Click to select the monitor.
   b. Click to select the radio button for either *Direct* or *Decoder* (VideoXpert Enterprise-only).
   c. If you selected *Decoder*, enter the IP address of the decoder, and then click **Connect**.

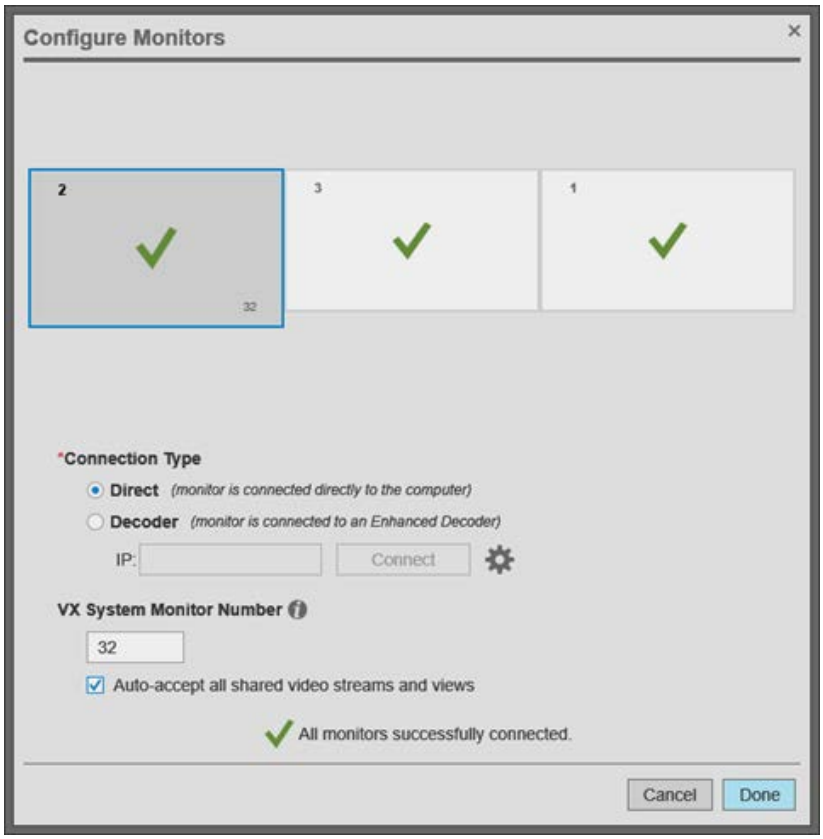


Figure 1: Connecting Monitors to Enhanced Decoders

   d. To allow remote control of a selected monitor, 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: You must assign a unique number to a monitor (workstation or shared display) if you will send video to it remotely. However, Pelco recommends that you do so *only* under these circumstances. When 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.

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

4. 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*.

Working With Systems

Note: The *Systems* section is only present in Mission Control when you are using multi-system access (MSA) mode.

The *Systems* section of Mission Control shows the list of systems you are authorized to access.

1. In Mission Control, click to expand **Systems**.
   The *Systems* panel lists the systems that are available and whether sources, maps, and plugins from the systems are being included in the *Content* list (selected or deselected checkbox). It also enables you to filter the systems, view the systems list in a standalone window, and edit the systems.
2. To use the System List *Filter*:
   a. Click **Filter** to expand the filter panel.
   b. Type a value in the *Filter by* field.
   c. To clear the filter, do one of the following:
      - Click the clear filter icon ( ) at the right of the *Filter by* field.
      - Click **Clear** at the upper right of the *Systems* panel.
3. To see more details about each system, click the *Open as standalone window* icon ( ) to the right of *Systems*.
   Settings in the standalone window are reflected in the *System* panel.
4. To change the systems for which you are showing content (sources, maps, and plugins) in the *Systems* panel or standalone window:

a. In the *System* list, click to select and deselect the checkbox for each system.
b. If the *Enter User Credentials for the System* dialog box opens, enter values in the *Username* and *Password* fields for the appropriate system, and then click **OK**.
c. If you see a *Time Synchronization Error*, acknowledge it by clicking **OK**.

5. To change the columns displayed in the System List:
   a. In the standalone window, if necessary, click to expand **Show Columns** in the left panel.
   b. Click to select and deselect the checkboxes for the columns to include and exclude.
6. In the standalone window, click the up or down arrow in the column heading to sort the systems by in ascending or descending order.
7. To edit the system list:
   a. Click the Edit icon ( ) at the lower right of the *Systems* panel or standalone window.
   b. In the *Authenticate for Administrative Access* dialog box, enter values in the *Username* and *Password* fields for the appropriate system, and then click **Authenticate**.
8. To add a system:
   a. Click the *Add System Connection* icon ( ) at the lower right of the window.
   b. Use the *Configure System Connection* window as described in *Adding Servers to VxOpsCenter*
   c. Click **Save**.
9. In the standalone window, to export a System List.
   a. Click the menu icon ( ) at the lower left of the standalone window.
   b. Click **Export System List**.
   c. In the *Export System List* dialog box, enter a value in the *System List File Name* field.
   d. In the *To Location* field, click *Browse*, and then browse to the location to which the file will be saved.
   e. Click **Export**.
10. In the standalone window, to import a System List:
    a. Click the menu icon ( ) at the lower left of the standalone 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**.

11. To delete a system from the System List:
    a. Click to select the system to delete.
    b. Click the trash bin icon ( ) at the lower right corner of the window.
    c. In the confirmation dialog box, click **OK**.
12. At the lower right of the standalone window, click **Save**.
13. To close the standalone window, click the close window icon ( ) at the upper left corner of the window.

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

Multi-system access (MSA) allows you to access multiple VideoXpert systems simultaneously using your VideoXpert system credentials. This can be enabled when you log in; however, you can also enable it during system configuration.

Note: The multi-system access option is available if you have more than one server connection added to VxOpsCenter.

To enable multi-system access:

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. In the *Workstation Configuration* window, click **VX System Connections**.
3. (Optional) To use a shared system list:
    a. Click to select the checkbox for *Use and manage a shared Systems List*.
    b. Click **Browse**, browse to a file to enter in the *System List Location* field, and then click **Open**.
    c. If required, enter values in the *Username* and *Password* fields.
    d. Click **Load Systems**.
4. To add a server (if you are not using a shared system list):
    a. Click the *Add System Connection* icon ( ) at the lower right of the *Workstation Configuration* window.
    b. (Optional) Enter information about the server in the *Notes* field. The notes are only available to the Workstation Configuration account.
    c. Provide the IP of the server, or the FQN of the server if you are using single sign-on (SSO), 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) If there are custom fields, enter a value in each field.
    g. (Optional) To add custom fields (columns) to the *System List* by which you can sort, in the *Configure System Connections* window, below *Custom Fields*, click *Add Another Custom Field (Column)*, enter a value in the *Enter a new header name* field (for example: City), enter an appropriate value for the system (for example: Denver) in the field

below the new header name, and then click **Save**. The column and the value are shown in the *System List*.

h. (Optional) Type values in the *Username* and *Password* fields.

i. 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.

j. Click **Save**.

5. Click **OK**.

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

Adding Servers to VxOpsCenter

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. In the *Workstation Configuration* window, click **VX System Connections**.
3. To import an existing system list:
   a. Click to select the checkbox for *Use and manage a shared Systems List*.
   b. Click **Browse**, browse to a file to enter in the *System List Location* field, and then click **Open**.
   c. If required, enter values in the *Username* and *Password* fields.
   d. Click **Load Systems**.
4. To export the current system list:
   a. At the lower left of the *Workstation Configuration* window, do one of the following, depending on which icon is present:
      - If you are not using a shared system list, click the menu icon ( ), and then click **Export System List**.
      - If you are using a shared system list, click the export system list icon ( ).
   b. In the *Export System List* dialog box, enter a value in the *System List File Name* field, click **Browse**, browse to the location to which you will save the file, click **OK**, and then click **Save**.
5. To add a server (if you are not using a shared system list):
   a. Click the *Add System Connection* icon ( ) at the lower right of the *Workstation Configuration* window.
   b. (Optional) Enter information about the server in the *Notes* field. The notes are only available to the Workstation Configuration account.
   c. Provide the IP of the server, or the FQN of the server if you are using single sign-on (SSO), 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) If there are custom fields, enter a value in each field.

g. (Optional) To add custom fields (columns) to the *System List* by which you can sort, in the *Configure System Connections* window, below *Custom Fields*, click *Add Another Custom Field (Column)*, enter a value in the *Enter a new header name* field (for example: City), enter an appropriate value for the system (for example: Denver) in the field below the new header name, and then click **Save**. The column and the value are shown in the *System List*.

h. (Optional) Type values in the *Username* and *Password* fields.

i. 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.

j. Click **Save**.

6. When you have added all appropriate connections, click **OK**.
7. 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. 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. In the *Workstation Configuration* window, click **VX System Connections**.
3. Click to select the system connection to be edited.
4. Click the *Edit System Connection* icon ( ) at the lower right of the *Workstation Configuration* dialog box.
5. In the *Configure System Connection* dialog box, make all necessary updates, and then click **Save**.
6. In the *Workstation Configuration* dialog box, click **OK** to save the settings.
7. 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. 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. In the *Workstation Configuration* window, click **VX System Connections**.
3. Click to select the system connection to be deleted.
4. Click the *Delete System Connection* icon ( ) at the lower right of the window to delete the connection to the server.
5. In the *Delete System Server Connection* dialog box, click **OK** to confirm the deletion.
6. In the *Workstation Configuration* window, click **OK** to save the settings.
7. 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.
- **Maximum Buffer Size** limits the size of the buffer allocated to streaming.
  - This setting is only applicable to live UDP streams while not in PTZ control mode.
  - Larger values minimize packet loss and provide the smoothest possible frame-rate on the display; larger values also result in longer end-to-end latency, and require more memory per stream.
  - The default *Variable buffer size* setting allows VxOpsCenter to automatically find the lowest buffering level that yields high-quality presentation on a per-stream basis.
  - The *Fixed buffer size* setting is for customers who want tighter control over per-stream memory usage and/or end-to-end latency of live streams.
- **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 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.

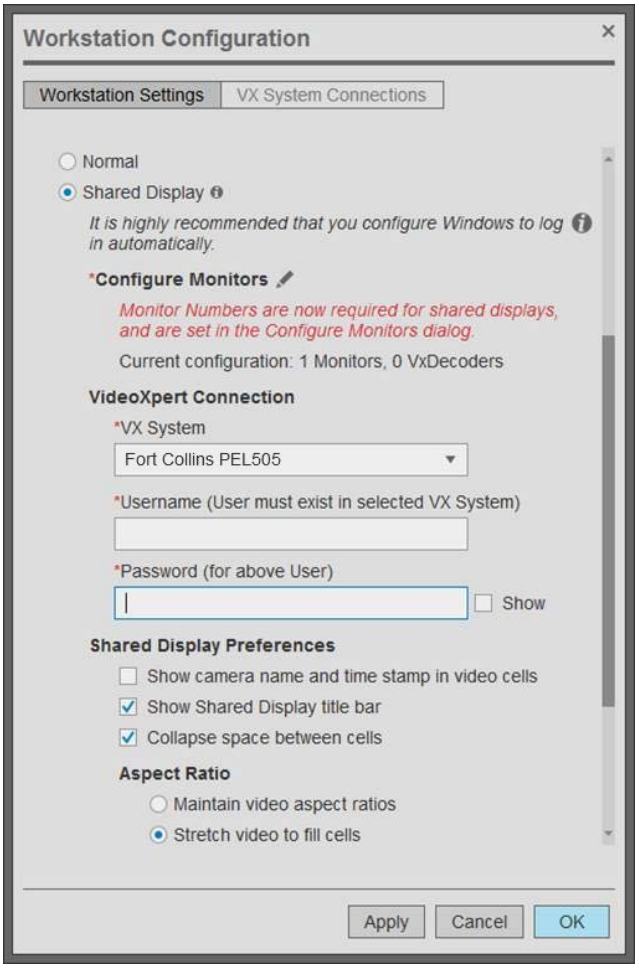
Your workstation must have one or more, locally-connected monitor(s) to support Shared Display mode. Putting the VxOpsCenter in Shared Display mode causes the VxOpsCenter application to start and log-in automatically when Windows starts. Because the workstation is intended to start without user interaction, 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* and *Manage Display Devices* permissions. The account should also have rights to view and control any cameras you send to the monitors; 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. At the top of the window, click to select the checkbox for *Shared Display*.



4. Click the *Configure Monitors* icon ( ), and then configure the monitors.

   a. Click to select the monitor.
   b. Click to select the radio button for either *Direct* or *Decoder* (VideoXpert Enterprise-only).
   c. If you selected *Decoder*, enter the IP address of the decoder, and then click **Connect**.

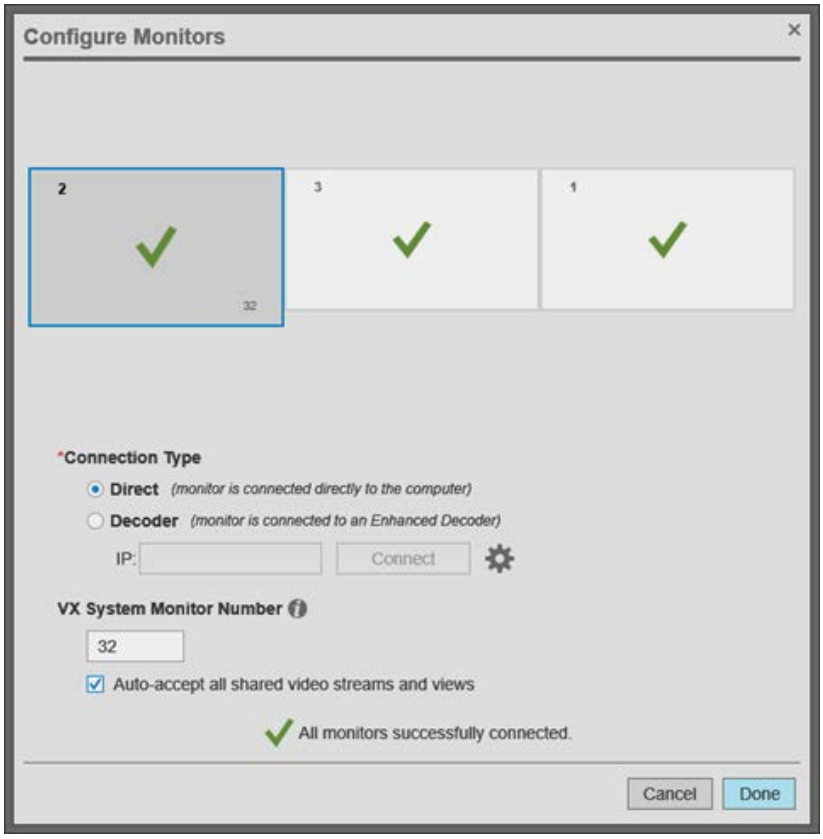


Figure 2: Connecting Monitors to Enhanced Decoders

d. If you are going to allow remote control of a selected monitor, 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: You must assign a unique number to a monitor (workstation or shared display) if you will send video to it remotely. However, Pelco recommends that you do so *only* under these circumstances. When 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.

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

5. 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.
6. (Optional) Enter or select a *VX System* to create a VideoXpert Connection. Selecting this option opens a dialog to configure system server connections.
7. 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, and must have the *Manage Display Devices* permission enabled (via VxToolbox in > **Users** > **Users** > *Device Management* > *Manage Display Devices*).

8. (Optional) Click the checkbox to select or deselect *Show camera name and time stamp 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.
9. (Optional) Click the checkbox to select or deselect *Show Shared Display title bar*.
10. (Optional) Click the checkbox to select or deselect *Collapse space between cells*.
11. In the *Aspect Ratio* area, click to select the radio button to either *Maintain video aspect ratios* or *Stretch video to fill cells*.
12. On a VideoXpert Enterprise system, in the *NTP Server for Enhanced Decoder* area, do one of the following:
    - Click to select the radio button for *Use Windows Time Service time server (time.windows.com)*.
    - Click to select the radio button for *Manually specify a time server*, and then enter your *NTP Server Address*.
13. (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.

    Note: Hardware acceleration of H.265 is supported on the Shared Displays VX-A3-SDD and newer, and Enhanced Decoders VX-A3-DEC and newer.
14. (Optional) Click the checkbox to select or deselect *Multi-System Access opens without initial credentials* (MSA). In MSA mode, VxOpsCenter will open with no VX Systems connected. Credentials will be required when you connect to a VX system.
15. Click **Apply**.
16. Click **OK**.

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.

Caution: 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. Refer to the white paper Configure VxOpsCenter Kiosk mode.
3. From the white paper, download OpsCenterLauncher.zip and kiosk_mode_script_v2.ps1.
4. 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.

5. 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.

6. Run kiosk_mode_script_v2.ps1 as the Windows Administrator.

Logging In

Open the VxOpsCenter application.

1. (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*.
2. (Optional) If VxOpsCenter is configured for multi-system access, select **Multi-System Access Mode** from the drop-down list in the *Connect to System* field.
   - The first time you login to the system using *Multi-System Access Mode*, you will be asked to select a system for authentication.
   - When you log in subsequently using *Multi-System Access Mode*, you will be connected to the systems to which you've connected before.
   - If *Mutli-System Access opens without initial credentials* is enabled in VxToolbox, you can log in using *Multi-System Access Mode* without using any credentials, but you will not be connected to a VX system. When you connect to a VX system, credentials are required.
3. Enter your credentials.
4. 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 **Language settings**.

   Note: These steps might be different, based on the operating system you are using.
3. Click to select a language from the *Windows display language* drop-down menu.
4. If the appropriate language is not present, click **Add a windows display language in Microsoft Store**. Follow the prompts to add the appropriate language, and if appropriate, click to select the checkbox for *Set as my Windows display language*.
5. Close the **Settings** window.
6. Run the VxOpsCenter Client.

Changing Your Workstation Account Password

If a password expiration policy is in place (for example: your password expires every 90 days), you will see a warning dialog box when your password must be changed.

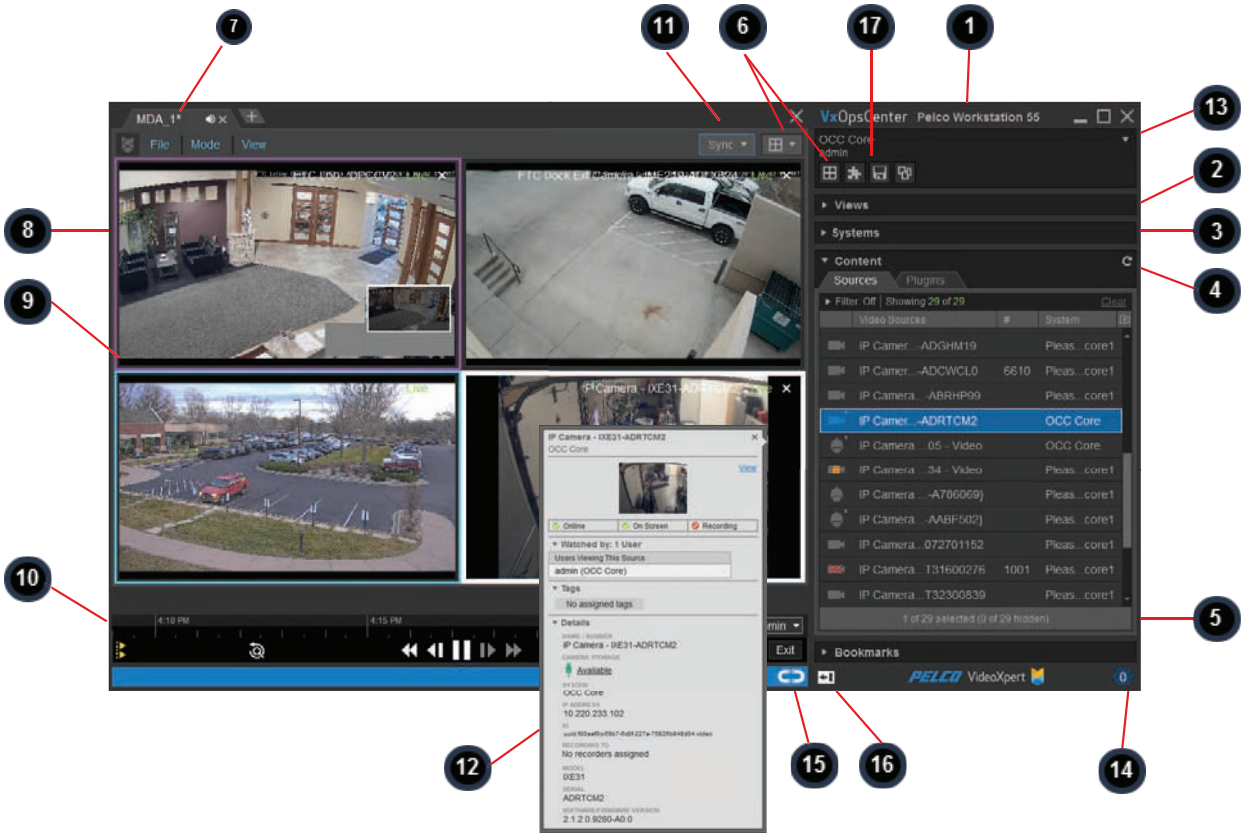
Note: Password expiration is not used with Single Sign-On (SSO). If your system is configured to use SSO, or if the expiration policy is set to *Passwords never expire*, then you will never see the warning dialog box.

1. In the warning dialog box, click **Change Password**.
2. In the *Change Password* dialog box, enter values in the *Current Password*, *New Password*, and *Retype New Password* fields.
3. Click **Save**.

If you are resetting the password, and are not doing so from the password expiration warning dialog box:

1. In Mission Control, click the *User Menu* icon ( ), and then select **Configure Workstation**.
2. If necessary, enter an administrative *Username* and *Password*, and then click **Authenticate**.
3. Click **Workstation Settings**.
4. In the *VX Workstation Account* area, in the *Password* field, enter a new password.
5. Click **Apply**.
6. 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 plugins. 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 plugins.
3	The **Systems** panel enables you to add or edit system connections. It also provides access to the Systems List window, which enables you to filter and sort the systems to which you are connected. This panel 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. The **Maps** tab provides access to Maps that are available on the system. The **Plugins** tab contains content and overlay plugins. Some plugins consume a cell, like the **Image Viewer** plugin. **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 plugin within VideoXpert. Cell highlights and borders indicate 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 open 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 (right panel), and moves it to the left panel. The *Move Mission Control to the Right* icon ( ) is visible when Mission Control is in 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* ( ).

Note: Camera-sensitive information is not available to users without the necessary View Full Camera Details permission. Camera-sensitive information includes data source and device IP addresses; device hostname, mac address, port, serial number, version, and VIP; and target recorders.

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) tools icons.

Using Context Menus

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 Workstations or Shared Displays*.
- **Quick Export** lets you export a recording of the **Previous 5 minutes**, the **Previous Minute**, or a **Custom** start and end date and time, from either the item in the *Sources* panel for from a cell timeline. From the timeline, you can also export a recording of the **Next minute** and the **Next 5 minutes**. See the section titled *Using Quick Export*.
- **Edit Source** enables you to assign the selected source a new name or number.
- **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 *VideoXpert® Toolbox Operations Manual* (for VideoXpert Enterprise systems) or to the VxToolbox section of the *VideoXpert® Professional Operations Manual*.
- **Rotate** lets you select the default rotation, 180 degrees, or plus or minus 90 degrees. See the section titled *Rotating the Camera*.
- **Analytic Overlays**, **Simple & Enhanced** lets you toggle **Simple Motion Detection** and **Analytic Drawing Data** on and off to display or hide analytics overlays on some Pelco cameras. See the section titled *Viewing Analytics Overlays*.
- **Analytic Overlays**, **Advanced** lets you toggle **Object Bounding Boxes**, **Object Detection Zones**, and **Counting Lines** on and off to display or hide these analytics on some Pelco cameras. If you toggle **Counting Lines** on, you can also toggle **Display Counts** on and off. See the section titled *Viewing Analytics Overlays*.
- **Diagnostics** lets you toggle:
  - **Statistics** to display or hide camera statistics including such things as bitrates, mode, source, and call-up time. See the section titled *Displaying Statistics*.
  - **Measure Latency** to determine the end-to-end latency of the source. See the section titled *Measuring Latency*.
- **Relays & Aux** activates or deactivates auxiliary options and functions on the device, including: relay functions, IR illumination, washer and wiper functions, and other options and functions, depending on the camera model.
- **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 Views to Workstations or 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 (VideoXpert® Professional Only)*.

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(s) of the device or data sources
- The date and time at the middle of the bookmark recording time
- The type of event received (if any)
- 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: previous names (if there are any and the feature is enabled), 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**, if present, 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*.

Using Previous Camera Names

If *Show previous camera names* is enabled in VxToolbox, the VideoXpert System can list the current name and up to nine previous names assigned to the camera during the last one year. For each name, the system also lists the dates on which the names were changed.

If your system uses previous camera names, users can view the list of names for a specific camera. To do so:

1. Hover over the device symbol on the camera in the *Sources* panel.
2. In the device information window, click to expand **Previous Names**.

VxOpsCenter identifies a camera by the name it was assigned at the time period matching the action. For example, a camera that was previously named "Hall SW" but is now named "Hall SE" will be identified as "Hall SW" in bookmarks taken before the name was changed.

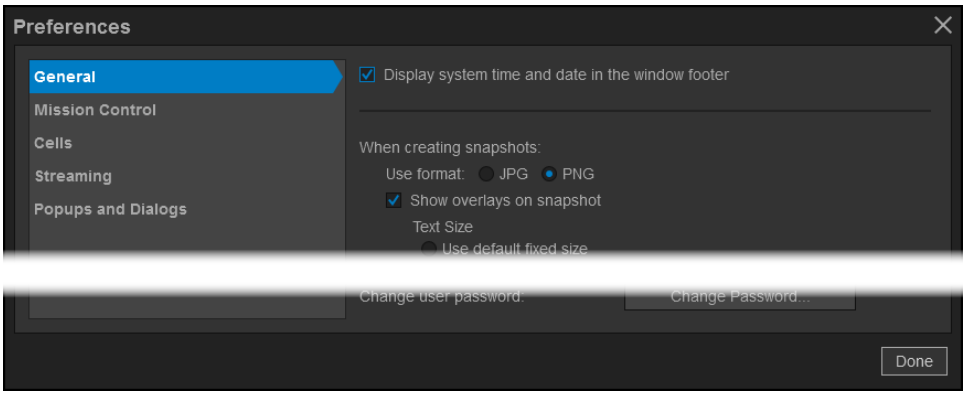
- In **Normal** mode, the camera names at the time of the action are identified as follows:
  - During playback, the name is displayed at the upper right corner of the cell, corresponding to the name of the camera at the time of the recording.
  - A snapshot file name defaults to include the camera name at the time that the snapshot was taken. You can change the file name.
  - An export file name defaults to include the camera name at the time that the recording was taken. You can change the file name.
  - A bookmark identifies the camera name at the time that the bookmark was created.
- In **Investigation** mode, the camera names at the time of the recording are identified in the same locations as in **Normal** mode, but also in the following additional locations:
  - Timeline ribbon
  - Retrim window
  - Clip in a playlist (the name of the camera at the start of the recording)

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 to select the checkbox to enable *Display system time and date in the window footer*.

5. (Optional) In the *When creating snapshots* area:
   a. Click to select the radio button for *JPG* or *PNG*.
   b. Click to select or deselect the checkbox for *Show overlays on snapshot*. If you select this option, also configure the following settings:
      - Under *Text Size*, click to select the radio button for either *Use default fixed size* or *Scale text as a percentage of snapshot height*. If you select scaling the text, enter a percentage in the field, either by typing-in a number or selecting one using the up and down arrows.
      - Select a *Position* from the drop-down menu.
      - Use the slider bar or type in a value to select the *Opacity of Text Background*.
      - In the *Text color* area, click to select the radio button for *Use default colors* or *Use white for both camera name and timestamp*.
      - Click to select or deselect the checkbox for *Auto-save snapshots*. If you select this option, use the default folder location to which the snapshots will be saved, or enter the folder location either by typing in the path or using the **Browse** button.
6. (Optional) Click **Reset Tips and Warnings**, and then click **OK** in the *Reset Warnings* confirmation window.
7. (Optional) Click **Change Password**, complete all fields in the *Change Password for [user]* dialog box, and then click **Change Password**.
8. 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. In the *Display camera info in video cells as* section, click to select the radio button for *Camera Name*, *Camera Number*, *Camera Name / Camera Number*, or *Camera Number / Camera Name*.

5. (Optional) Click to select or deselect the checkbox for *Always show camera info in cell*. If you select this option, you can also select *Show overlay behind persistent camera info in cell*.
6. (Optional) Click to select or deselect the checkbox for *Display "Live" rather than timestamp in cell when showing live video*.
7. (Optional) Click to select or deselect the checkbox for *Automatically enter PTZ mode upon loading source in cell*.
8. (Optional) Click to select or deselect the checkbox for *Display in-cell feedback for playback controls*.
9. (Optional) Click to select or deselect the checkbox for *Collapse space (gutters) between cells*.
10. (Optional) Click to select or deselect the checkbox for *Display timestamp above timeline playhead*.
11. 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*.
12. (Optional) Click to select or deselect the checkbox for *Automatically play audio when available*.
    - If you selected it, click to select the radio button for *From selected cell only* or *From all visible cells*.
    - If you deselected it, the *From selected cell only* or *From all visible cells* radio buttons are not available.
13. (Optional) In the *Advanced Analtyics* area, click to select or deselect the checkbox for *Always show zones in alarm state*. This option will always show zones that are in an alarmed state, for all video cells that are streaming configured Advanced Analytic cameras.
    For example: when this preference is checked, any detection-zone that is occupied will show up as an overlay in an alarmed state and will disappear when the zone is no longer occupied. If a user selects the *Show Object Bounding Boxes* and/or the *Show Object Detection Zones* context-menu items in a video cell, those selections take precedence over this setting, and will show all overlays for the user-selected options in that cell. If these cell-based options are deselected, this will return the cell to the configured user preference.
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 Streaming Settings

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Preferences**.
3. In the *Preferences* window, click **Streaming**.
4. Click to select or deselect the checkbox for *Decrease video buffer for live streams when in PTZ mode*.

5. 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*.
6. 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.

Updating Shortcut Keys

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Preferences**.
3. In the *Preferences* window, click **Shortcut Keys**.
4. Select a profile to view and edit from the *Selected Profile* drop-down menu.
   - Click **Personal** to view and edit the shortcuts that apply to your user login. After the *Personal* profile has been modified, it does not inherit changes made to the *Global* profile.
   - Click **Global** to view and edit the shortcuts available to all users on the system. Any user that has not modified the *Personal* profile will use the *Global* profile. Editing the *Global* profile can be done only by system administrators or to users who have the *Manage Views & Global Shortcuts* permission.

   Note: If you logged in with Multi-System Access, the only profile available is Workstation; custom shortcuts will apply only to the current workstation.
5. For each shortcut to update:
   a. If necessary, click to expand the category list (for example: click **General**).
   b. In the left column of the table, click to select the action for which to set the keystrokes (for example: click **Iris close**).
   c. In the field in the right column of the table, type the keystrokes (for example: type Shift + X). When you complete the keystrokes, an orange square ( ) is displayed at the far right of the left column of the table, to the left of the updated keystrokes. This indicates that the *Shortcut has been reassigned but not saved*.
   d. If VxOpsCenter detects a conflict with one or more existing shortcuts, the *Reassign Shortcut* dialog box opens and identifies the action(s) currently using the keystrokes. Do one of the following:
      - Click **Reassign** to close the dialog box, bind the keystroke to the current action, and display an empty cell as the keystrokes for the previously-assigned action.
      - Click **Close** to close the dialog box and retain the current keystrokes for the current and already-assigned action.
   e. (Optional) To undo changes that have not been applied, click **Cancel** at the lower-left corner of the window.

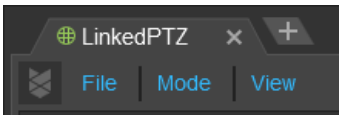
6. To save the changes, click **Apply Changes** in the lower-right corner of the window.
   - A green square () is displayed at the far right of the left column of the table, to the left of the updated keystrokes. This indicates that the *Shortcut has been reassigned from the default*.
   - The green square persists after you close the window. This indicates that the keystrokes are not the default.
7. (Optional) To remap a personal profile to the current global profile, or to remap the global profile to the VideoXpert defaults:
   a. Click **Restore Defaults** at the upper-right corner of the window, and then click **Restore**. For each shortcut that is being remapped to the default, an orange square () is displayed at the far right of the left column of the table, to the left of the updated keystrokes. This indicates that the *Shortcut has been reassigned but not saved*.
   b. Click **Apply Changes**.
8. 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 plugins. 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.
  - **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 a maximum video quality of secondary for all cameras.
  - **Tertiary Stream** forces the tab to display a maximum video quality of tertiary for all cameras. (The cameras can display tertiary or the highest available video quality below tertiary.)
  - **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.
  - **Thumbnails** 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.

  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.
- (Optional) Click to select either **Stretch video to fill cells** or **Maintain video aspect ratios**, whichever is not currently selected.
- (Optional) 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 plugins and are not available when multi-server access is enabled.
  - Collaborative tabs are always public 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. See the section titled *Creating a Live Sequence Mode*.
- **Alarm Sequence** mode allows you to designate cameras that you want to watch only when a meaningful event occurs. See the section titled *Creating an Alarm Sequence Mode*.

Creating a New Tab

Creating a tab allows you to recall the complete tab, including all cameras, viewing states (live or recorded video), and plugins. 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 plugins. 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 public tab*.
   d. (Optional) If you have the correct permissions, 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 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.
2. Click the *Select Grid Layout* menu next to the grid icon ( ) in the top right of the tab task bar.
3. Select the new layout for the tab.

   Note: If you are using a 6 x 6 (36 streams) or an 8 x 8 (64 streams) layout, Pelco recommends that secondary streams are set to a maximum resolution of 640 x 480 and a maximum framerate of 30 fps. For more information, see the current version of the *VideoXpert System Design Guide*, section titled *Understanding VxOpsCenter 6 x 6 and 8 x 8 Layout Requirements*.
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**.

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**.

Creating a New Workspace

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

1. In Mission Control, click **Views**, and then click **Workspaces**.
2. Double-click the 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. If necessary, click the **Workspaces** tab again.
   b. Click the *Save Workspace As* icon ( ).
   c. Enter a value in the *Name* field.
   d. (Optional) Select a value in the *Shortcut* field from the drop-down menu.
   e. (Optional) If you have the correct permissions, to make the workspace available to all users in the VideoXpert environment, click to select the checkbox for *Save as public workspace*.
   f. 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 **Views**, and then click **Workspaces**.
2. Double-click the workspace to open.
3. If the *Recall a saved workspace* dialog box opens, click to select **Keep Open Windows** or **Close Your Open Windows**.

Updating a Saved Workspace

You can update a saved workspace if the workspace is not a global workspace, or if you have permission to edit/update the workspace.

1. In Mission Control, click **Views**, and then click **Workspaces**.
2. Open 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. If necessary, click the **Workspaces** tab.
   b. Click the *Save Workspace* icon ( ).
   c. In the *Save Workspace* confirmation dialog box, click **Save**.

Editing 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, click **Views**, and then 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 Workspace from the System

1. In Mission Control, click **Views**, and then click **Workspaces**.
2. Do one of the following:
   - 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 (), and then double-click or click and drag the monitor wall tab icon ().
   - 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 monitor cell.
     Only monitors for which you have permission can receive camera streams.
   - 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.
   - Remotely control a cell in live and playback modes, using a standard keyboard, a KBD500 keyboard, and/or a 3D spacemouse.
   - When you are controlling a cell:
     – The numeric keypad on either keyboard (standard or KDB5000) brings up the call-up dialog. In a monitor wall, the call-up dialog is at the lower center of your monitor instead of in the cell you are controlling.
     – More than one user (VxOpsCenter) can control cells in the monitor wall at one time. The cells outlined in green are being controlled by another user. The cell outlined in white is being controlled by you.

     You cannot select cells on a monitor for which you do not have permissions.
   - To refresh the tab, click the *Refresh* icon () at the upper right of the tab.

Working with Maps

Maps 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: Maps supports world drawings, DWG, JPEG (raster), and PNG (raster) images.

Before you use Maps, configure Maps in VxToolbox. Refer to the current version of the *VideoXpert® Toolbox Operations Manual* (for Enterprise systems) or the VxToolbox section of the *VideoXpert® Professional Operations Manual*.

Understanding Maps Permissions

Maps uses the 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.

Viewing a Map

To view a map:

1. In Mission Control, click **Content**, and then click **Maps**.
2. (Optional) Filter the maps that are displayed. To do so, enter a value in the *Filter* search box. To reset the filter, click the clear filter icon ( ) or **Clear**.
3. Select the map by one of the following methods:
   - Click and drag a map from the *Maps* panel to a cell.
   - Double-click the map in the *Maps* panel.

Working In a Map

To use the map:

1. View a map as described in the section titled *Viewing a Map*
2. (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.
3. (Optional) Use the scroll wheel on your mouse to zoom in and out.
4. (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 Maps*.
5. (Optional) Hover over a map to view the map name.
6. (Optional) Click on a camera in the map to view data for the camera. This opens a panel on the right of the cell. 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).
7. (Optional) Notice the status of the icons on the map.
   - An plain icon (gate, door, alarm, etc.) is online, with no events in progress.

- An icon that has additional or different symbols—for example: it has a red X through it or a question mark over it; or it has been replaced by another symbol (alarm symbol, open door or gate, etc.)—indicates special status. View device data for details.

8. (Optional) Open a camera from the map. Double-click a camera icon to open it in a new cell.
9. (Optional) Press Ctrl and then double-click on a linked map icon ( ) to open the map in a new cell.
10. (Optional) Click a linked map icon ( ) to open the map in the current cell.
11. (Optional) If you have more than one map available, you can select a different map to view in the current Map cell. In the *Map* field at the upper left of the cell, select a map from the drop-down list.

Setting User Preferences for Maps

At any time, you can change the user preferences for Maps.

1. View a map as described in the section titled *Viewing a Map*
2. At the upper right of the Maps cell, click the gear icon ( ).
3. (Optional) Under *Automatic Map Display*:
   a. Click to select or deselect the checkbox for *Center on Alarm*.
   b. If you selected *Center on Alarm*, click to select or deselect *Switch map on alarm*.
   c. If you selected *Switch Map on Alarm*, click to select the checkbox for either *Ask every time* or *Automatically switch*.
   d. Change the *Map zoom level* by clicking and dragging the slider bar (if present).

      Note: You cannot change the *Map zoom level* for world maps.

4. (Optional) Under *Appearance of this map*:
   a. Click to select or deselect *Show camera numbers*.
   b. If you selected *Show camera numbers*, select a *Camera number color* from the drop-down menu.
   c. Adjust the *Map Background Color* by selecting a color from the drop-down menu.
   d. Change the *Scale of Icons* by clicking and dragging the slider bar.
   e. (Optional) Click **Restore Defaults** to return to the default settings for the map.
5. Click to select or deselect the checkbox for *Show video thumbnail on hover*.
6. Click outside the *Preferences* panel to close it.

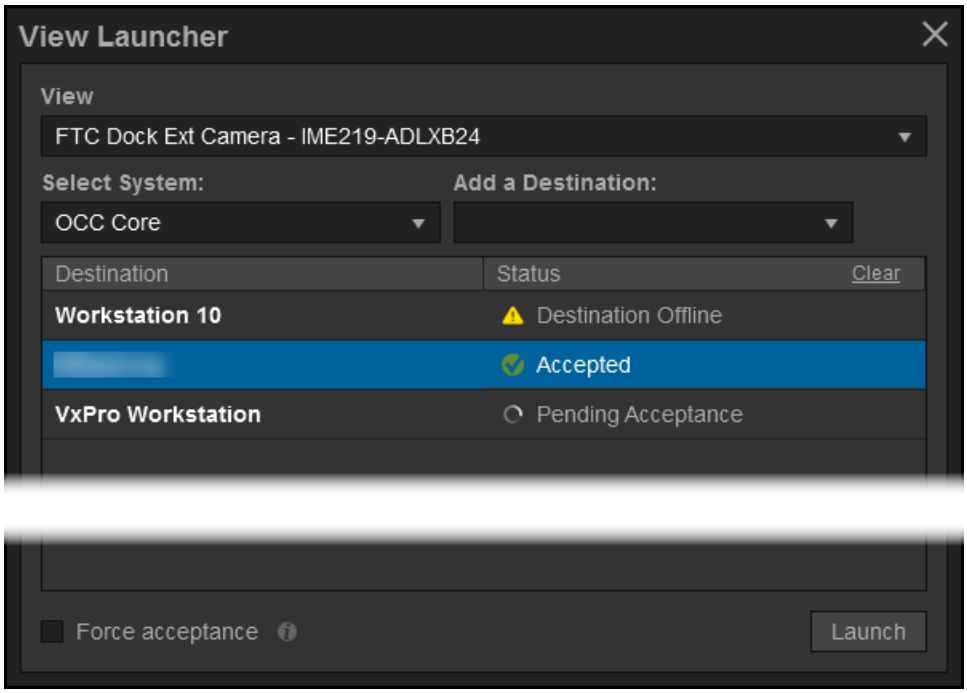
Sending Views to Workstations or Shared Displays

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. If present, 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.
10. Click the close window icon ( ) to exit the *View Launcher*.

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. (Optional) If you are sending the currently streaming camera (you will click 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.
2. To access *Quick Launch*, click the cell to be sent, and then press the Insert key.

3. In the black box at the center of the dialog box:
   - 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. Sources that come online after you log in or perform a search will not appear until you refresh the list. If the source 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 or tertiary 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 or tertiary stream.

All-frame reverse playback enables frames to be displayed at up to eight times the normal speed. This will make the playback smoother.

When playing forward or reverse at high speeds (greater than +/-8X), only iFrames will be shown. At lower speeds, all frames will be shown whenever possible, but for reverse playback, some additional limitations apply:

- For systems that use enhanced decoders, this is available for up to four streams per monitor.
- For systems with multiple monitors on a single host, this is available for up to four streams total on the host PC.
- Reverse playback may be noticeably choppy for cameras configured with dynamic-GOP-length (a smart-compression feature) or for cameras with fixed-length, but unusually long GOPs. All cameras should work well with fixed-length GOPs up 15, or up to 30 for cameras with resolution less than 4K.

To watch live or recorded video, in Mission Control:

1. (Optional) If VxOpsCenter is configured for multi-system access, you can shorten the list of sources available in the *Content* panel, and then limit the systems with which you are working:
   a. In Mission Control, click **Systems**.
   b. Click **Filter** to expand the filter panel.
   c. If there is an active filter, clear it.
   d. Click to select and deselect the systems to access.
   The items in *Sources* page of the *Content* panel are updated immediately.
   See the section titled *Working With Systems*.
2. Click **Content**, and then click **Sources**.
3. Find the source you want to watch. To use the *Filter* to search for sources:
   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) Click to expand **Advanced Filter Options**, and then refine the filter using the *Tags*, *Online*, *Recording*, *On Screen*, and *Storage* filters.
   d. (Optional) To save a filter, under *Advanced Filter Options*, in the *Saved Filter Sets* drop-down menu, click **Save Filter**.

4. 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.

Note: If you add a PTZ camera that is offline, the cell displays the *PTZ controls are currently unavailable* error message. Click **OK** to acknowledge the message. The cell will display *Video source is offline* until the source comes back online.

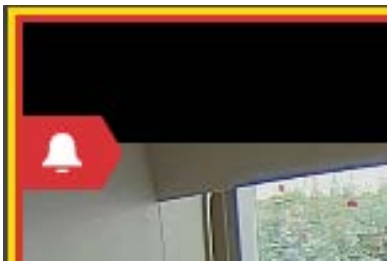
Understanding Cell Borders

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.
- In monitor walls only, a green border indicates that the cell is being controlled by another instance of VxOpsCenter.

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 types of analytics overlays are **Simple & Enhanced** and **Advanced**.

Simple & Enhanced overlays are as follows.

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

Advanced overlays are as follows.

- **Object Bounding Boxes** outlines and follows persons detected in the configured Person Detection Zones or vehicles detected in the configured Vehicle Detection Zones. Bounding boxes are shown for any object (person/vehicle) that is detected in the camera's view.
- **Object Detection Zones** shows the configured Person Detection Zones and Vehicle Detections Zones, and Counterflow zones (person or vehicle).
  - **Person In Zone** bounding boxes are outlined in blue; when occupied, the corners of the bounding boxes will be red, as will the zone border. An event will be named *Person in Zone " [name of zone]"*.
  - **Vehicle In Zone** bounding boxes are outlined in orange; when occupied, the corners of the bounding boxes will be red, as will the zone border. An event will be named *Vehicle in Zone " [name of zone]"*.
  - A **Person Counterflow** or **Vehicle Counterflow** zone has green and red arrows in the center of the zone to show correct and wrong directions. The zones for person detection are outlined in blue; the zones for vehicle detection are outlined in orange. When one or more people or vehicles are moving in the wrong direction, the bounding boxes for each person or vehicle change to red and will show the full rectangular border. An event will be named *Person Counterflow in "[name of zone]"* or *Vehicle Counterflow in "[name of zone]"*.
- **Counting Lines** shows directional traffic across a defined line.
  - Enabled **Person Counter** lines are blue.
  - Enabled **Vehicle Counter** lines are orange.
  - A counter can be uni-directional, bi-directional, or omni-directional, such that any person or vehicle crossing the line in the selected direction(s) will be detected. The direction is indicated by arrows along the line.
  - **Uni-Directional** lines record one count for each crossing of the line in the selected direction of the line.

- **Bi-Directional** lines record two separate counts, one for each crossing of the line in both directions of the line.
- **Omni-Directional** lines record one count for each crossing of the line in any direction.
- Click to select or deselect **Display Counts** to display or hide the line count—how many people or vehicles have crossed the line in the appropriate direction(s).
- Users with Admin permissions can right-click a counter line to reset the counter to zero (for that line only).

  Note: Users can perform counter resets for streams running on VxOpsCenter client (the local decoder); users cannot perform counter resets for streams running on an Enhanced Decoder.

A cell containing a detection zone in which an appropriate object is detected will have an yellow border around the cell.

Object detection events are shown in VxPortal, but the overlays are not.

Note: For PTZ cameras, these are in presets that contain analytic configurations.

Note: Overlays are not available in exported recordings.

Overlays are configured at the camera level. Configuration parameters include the type of overlays that are enabled, the shape of each overlay in the overlay type, and sensitivity to motion. Refer to the operations manual for the camera to configure simple-motion data analytics and analytics drawing data. Refer to the current version of the *VideoXpert® Toolbox Operations Manual* to configure Advanced 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.

Viewing Analytics Overlays in a Cell

To view an analytics overlay in a cell:

1. Open the camera in a cell.
2. Right-click the cell, click **Analytic Overlays**, click **Enhanced**, and then click to select **Object Bounding Boxes**, **Object Detection Zones**, and/or **Counting Lines**. If you select **Counting Lines**, you can also click to select **Display Counts**.

   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 another 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.

   Note: Overlays will still be recorded even when they are disabled, so you can view them in playback mode.

   Note: Enhanced and Advanced Analytic Overlays can not be used in the same cell at the same time. Selecting one type of overlay will deselect the other.

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 ( ).
2. Click **Preferences**.
3. In the *Preferences* dialog box, click **Cells**.
4. Click to select or deselect the checkbox for *Automatically play audio when available*.
5. Click to select *From selected cell only* or *From all visible cells*.
6. 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 ( ) or press Alt+Enter.
   - 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.
   - Use the playback controls to direct video playback.
   - Click the *Jump Back 30 Seconds* icon ( ) to jump back 30 seconds from the currently selected spot in the timeline.
   - Click the *Jump to Now* icon ( ) to jump to live 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.

The timeline shows the date and time in the top row. The bottom row is color-coded.

- A green bar indicates a scheduled recording.
- An orange bar indicates an event recording.
- A red bar indicates an alarm recording.
- A blue bar indicates a motion recording.
- A yellow bar indicates a manual recording.
- A checkered blue bar indicates the results of a requested pixel search that detected motion.
- A cyan bar indicates that an analytic was triggered.
- A purple bar along the very bottom of the timeline indicates an audio recording.
- A full-height bar indicates standard-quality recording.
- A half-height bar indicates an iframe/low-quality recording.
- No bar (all black) indicates that there is no recording for that date and time.
- A gray bar indicates a future time.

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), and you have the correct permissions, 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 Investigation 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 *VideoXpert® Toolbox Operations Manual* 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.

Using Bookmarks

When watching recorded video, you can create a private or public bookmark to note a moment in video to reference later. Bookmarks appear in a section in Mission Control. Public bookmarks are global resources; all users can see the public 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.

Creating Bookmarks

To create a 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. Click to select the checkbox to make this a *Private* or *Public* bookmark.
5. (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.

6. 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. (Optional) 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 tab or 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 ( ) at the lower right of the panel, you cannot change the date, time, or camera.

To delete a bookmark, select it in Mission Control, click the *Delete Bookmark* icon ( ) at the lower right of the panel, 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.

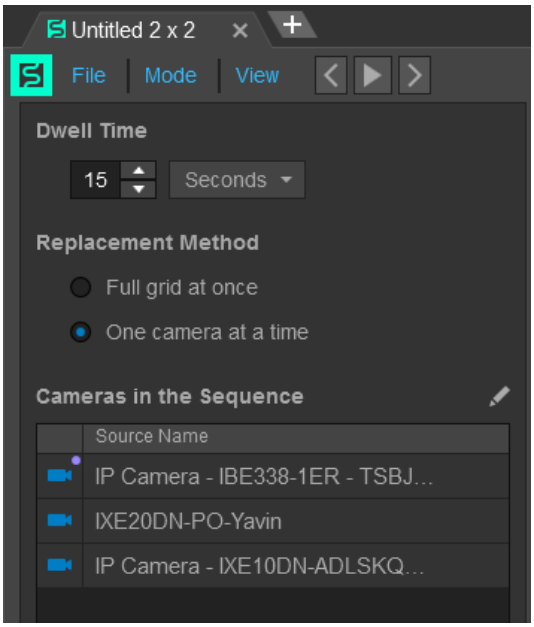
1. Click **Sync** in the tab containing the cells to synchronize.
2. Select the cells you want to synchronize, and then click **Sync**, or select **Sync All** to select all cells in the tab.
3. If necessary, click the *Play* icon ( ) to playback video. Cells will remain synchronized until you click **Sync** again or click **Unsync All**, 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.
   - 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 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. In the *Replacement Method* area, click to select the radio button for *Full grid at once*, or *One camera at a time*. This determines how many cameras you want to replace at the end of each dwell period. 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**, 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 the *Resume Sequence* icon ( ).

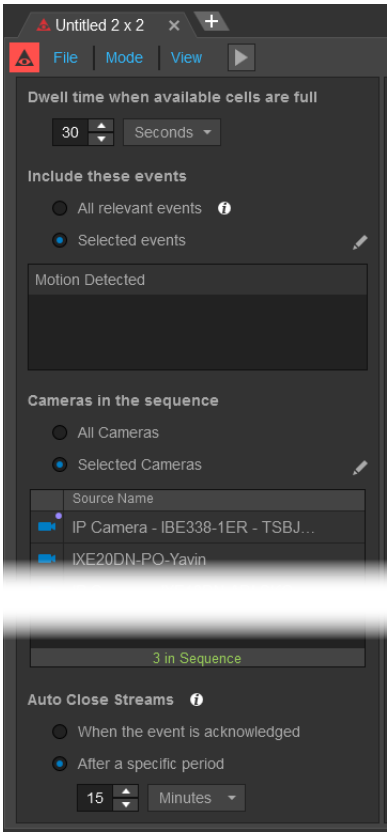
Creating an Alarm Sequence Mode

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, drag cameras into the sequence (the order does not matter for alarm sequences), and then click **Save**; 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 the *Resume Sequence* icon ( ).

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

Setting up Snapshots

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

1. In Mission Control, click the *User Menu* icon ( ).
2. Click **Preferences**.
3. Click *General*.
4. In the *When creating snapshots* area:
   a. Click to select the radio button for *JPG* or *PNG*.
   b. Click to select or deselect the checkbox for *Show overlays on snapshot*. If you select this option, also configure the following settings:
      - Under *Text Size*, click to select the radio button for either *Use default fixed size* or *Scale text as a percentage of snapshot height*. If you select scaling the text, enter a percentage in the field, either by typing-in a number or selecting one using the up and down arrows.
      - Select a *Position* from the drop-down menu.
      - Use the slider bar or type in a value to select the *Opacity of Text Background*.
      - In the *Text color* area, click to select the radio button for *Use default colors* or *Use white for both camera name and timestamp*.
      - Click to select or deselect the checkbox for *Auto-save snapshots*. If you select this option, enter the folder location to which the snapshots will be saved either by typing in the path or using the **Browse** button.
5. Click **Done** to exit the *Preferences* window.

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**, and then click **Statistics**. Perform this step again to hide the information.

Most statistics presented are self-explanatory; but a few statistics require some explanation:

- *Call-up Time* is a measure of how long it took between launching a stream and displaying the first frame.
- *Pipeline Latency* is the amount of buffering used by the client. This directly adds to the end-to-end latency between the camera and the display.
  For example: If you have a camera with a 3-second GOP that does not force out iFrames upon new client connections, it might take 3 seconds to call up the first frame, but you could still have very low end-to-end latency thereafter.

  Pipeline Latency is independent of *Call-up Time*.
- *Displayed Frame Rate* is the average number of frames displayed over a small time period. If frames are dropped by the client, the value could be lower than the camera's configured frame-rate. Because of those differences and because actual frame-rates are rarely whole numbers, the rate is displayed to the second decimal point.
  For example: the NTSC standard is 29.7fps, not the 30fps typically shown in a camera configuration UI. If the measured frame-rate is reporting higher than expected, it might be due to a short averaging window. That is, it could be slower or faster at different points in time, but still at the expected average rate over a longer time period.
- *Display Jitter* is a measure of "jittery" (unsmooth) is the frame presentation. Ideally, frames are displayed smoothly (no jitter) at the exact frame interval of the camera.

  For example: Frames from a 30fps source should be displayed at 1/30 second intervals, but if the display is jittery, you will see a noticeable pattern of slow/fast, long/short intervals even though the average frame-rate is still 30.

  On many systems, client-side buffering is customer-configurable. Customers can hand-tune the buffering by starting with the smallest value and increasing until visible jitter is minimized. VideoXpert performs this configuration automatically; streams typically start with a small *Pipeline Latency* value, and then the value will increase during the first few seconds of playback to reduce jitter. Entering PTZ input mode forces the latency back to the minimum value, so that PTZ control latency is minimized, potentially at the expense of presentation smoothness.

Measuring Latency

Note: This feature is available to Admin users only. It is used to measure the performance (latency) of your system using a camera on the system. You must have access to the camera and a monitor to which you can point the camera.

To measure end-to-end latency[1] of the system using any camera:

1. Right-click the cell for the camera to view.
2. Click **Diagnostics**, click to select **Measure Latency**, and then click in the cell.
3. (Optional) Open the same camera in another cell, but do not dislpay the *Measure Latency* view. This helps you better aim the camera at the barcode.
4. Point the camera at the barcode on the VxOpsCenter screen.
   When the camera is able to read the barcode, the *Scanning Success* progress bar (green) begins to fill in.

5. Slightly adjust the camera position as needed to get the progress bar to 100%, and then read the *Average end-to-end latency* measurement above the bar.

6. To exit the *Measure Latency* feature:
   a. Right-click the cell, click **Diagnostics**, and then click to deselect **Measure Latency**.
   b. Click the play icon ( ) in the cell.

[1]US patent pending, docket number CLO-0186-US-NP/1005700.785US1.

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*, 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. Folders behave like tags in that you can use them to filter and search.

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

A folder is a tag that enables you to group other tags to view in a directory-like structure; you can filter and search using a folder, as you would any other tag.

1. Access the *Manage Tags* window.
2. Access the *Create New Folder* dialog box by doing one of the following:
   - Click the **Folders** tab, right-click in the *Folder View* area, and then click **Add**.
   - Click 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**.

- Right-click the camera, click **Delete**, 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. Click 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. Click 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.

Table 1: Playback controls (from left to right)

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.
	Create 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
	Play video at normal speed.
	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.

Table 2: PTZ mode icons

Icon	Description
	If present, activates Linked PTZ. (Pelco Camera Link)
	If present, deactivates Linked PTZ. (Pelco Camera Link)
	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.
	If present, the *Cell Layout Menu Options* icon is located in the cell heading, to the right of the *Zoom In* and *Zoom Out* icons. When you click the icon, you can then click to select **Panoramic**, **Immersive**, or **Panomersive** views.

Icon	Description
	If present the system connection icon is located in the cell heading, to the left of the IP address and/or date and time. When present, the icon indicates that your connection to the system is configured to allow only MJPEG video.
	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) 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. If necessary for some wall-mounted fisheye cameras, manually switch the orientation in VxOpsCenter from the **Ceiling (default)** mount setting to the **Wall** mount setting. To do so, right-click the camera cell, click **Orientation**, and then click **Wall**.
4. 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.
5. To exit PTZ mode, click the *Deactivate Digital PTZ Mode* icon (or) or the *Deactivate PTZ Mode* icon ( ), whichever is present.

Using 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.

Using PTZ Zoom to Box

When PTZ mode is enabled, you can draw a box to which the camera will recenter and will zoom in so that the box fills the entire cell that contains the camera stream. Zoom to Box functionality is not supported for all cameras.

When PTZ mode is enabled within a cell:

1. Click the *Zoom to Box* icon ( ) to the right of the PTZ and lock icons.
   This icon is only available if the camera supports Zoom to Box.
2. In the cell, draw a box to indicate the area to which you will zoom.

To exit the *Zoom to Box* view, click the *Zoom to Box* icon again.

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 ( ) or press Ctrl + Enter.
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) 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) 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) 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) 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 Quick Export

Use Quick Export to export a recording of one or more sources using predefined or custom dates and times.

To use Quick Export from the *Sources* panel:

1. Right-click the source, and then click **Quick Export**.
2. Click to select **Previous 5 minutes**, **Previous Minute**, or **Custom**.
3. If you selected **Custom**, in the *Custom Quick Export* dialog box, enter clip start and end dates and times either by typing them in or selecting them from the calendar and/or clock in each field. As you change the dates and times, the export size estimate below the start and end times fields is updated. After you have entered the correct dates and times, click **OK**.
4. In the *Export Playlist As* dialog box:

a. (Optional) Enter a new string in the *Export Name* field.
b. View the export size estimate and verify that you have enough space on the location to which you are exporting the clip.
   - The maximum clip size estimate is 11 GB; the size of the clip itself is not limited to 11 GB.
   - Playlists with multiple clips will be the estimated sum of the clips.
   - The export size estimate does not include VxPlayer. If you are downloading VxPlayer, add the size of the player to the estimate.
c. (Optional) If present, click to select the checkbox for *Export to alternate location*. If you select this option:
   - Type a valid network path in the *Export Location* field.
   - If necessary, type in a *Username* and *Password* in the appropriate fields.
   - If appropriate and available, click **Copy VxPlayer to This Location**.
d. (Optional) If the *Encrypt this export* is not already selected, and it is appropriate to do so, click to select the checkbox and then type a value in the *Password* and *Confirm Password* fields.

   Note: If forced export encryption is enabled (in VxToolbox), this option will be selected and grayed-out. All exports are encrypted, unless you export to an alternate location.
e. Click **Start Export**.

5. In the *Export Playlist As* dialog box, click **View Exports** to locate the export in the *Export Archive*, or click **Close**.

To use Quick Export from a timeline:

1. Right-click timeline for a cell or for synchronized cells, and then click **Quick Export**.
2. Click to select **Previous 5 minutes**, **Previous minute**, **Next minute**, **Next 5 minutes**, or **Custom**.
3. If you selected **Custom**, in the *Custom Quick Export* dialog box, enter clip start and end dates and times either by typing them in or selecting them from the calendar and/or clock in each field. As you change the dates and times, the export size estimate below the start and end times fields is updated. After you have entered the correct dates and times, click **OK**.
4. In the *Export Playlist As* dialog box:
   a. (Optional) Enter a new string in the *Export Name* field.
   b. View the export size estimate and verify that you have enough space on the location to which you are exporting the clip.
      - The maximum clip size estimate is 11 GB; the size of the clip itself is not limited to 11 GB.
      - Playlists with multiple clips will be the estimated sum of the clips.
      - The export size estimate does not include VxPlayer. If you are downloading VxPlayer, add the size of the player to the estimate.
   c. (Optional) If present, click to select the checkbox for *Export to alternate location*. If you select this option:

- Type a valid network path in the *Export Location* field.
- If necessary, type in a *Username* and *Password* in the appropriate fields.
- If appropriate and available, click **Copy VxPlayer to This Location**.

d. (Optional) If the *Encrypt this export* is not already selected, and it is appropriate to do so, click to select the checkbox and then type a value in the *Password* and *Confirm Password* fields.

Note: If forced export encryption is enabled (in VxToolbox), this option will be selected and grayed-out. All exports are encrypted, unless you export to an alternate location.

e. Click **Start Export**.

5. In the *Export Playlist As* dialog box, click **View Exports** to locate the export in the *Export Archive*, or click **Close**.

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 populated with recording information for each camera. You can use the timeline to navigate the composite recording.

In the timeline:

- A green bar above the recording indicates continuous recording.
- A blue bar above the recording indicates a motion detection recording.
- A red bar above the recording indicates an alarm or analytics recording.
- A thin purple bar under the video recording bar indicates audio recording.

Entering Investigation Mode

Investigation mode provides robust, synchronized playback controls with any number of 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.

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), and you have the correct permissions, 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.

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.

Using Auto-backfill Recording Gaps

For cameras on your VideoXpert system that have Edge Storage, Auto-backfill Recording Gaps functionality detects when a gap in recording occurs, queries the camera for recordings, and automatically downloads video and audio (if present) to fill the gap.

Note: This feature must be enabled in order to work. It is enabled and disabled in VxToolbox.

When the recording server has been down, either due to a hardware/software fault or for maintenance, there can be a gap in the recording. When the recording server is online again, the VideoXpert system queries the SD card on the camera for missing video. Recordings are retrieved automatically for the down period.

To use this feature:

1. Click on the camera timeline to display the camera storage icon ( ), and then click the icon to open an investigation tab showing separate timelines for the camera:
   - Default Recorder—on VxStorage only
   - Downloaded from Camera—on the camera (Edge Recording)
   - Camera Storage—on the camera's SD card
2. If necessary, add cameras of interest to the investigation.
   When you add a camera to an investigation by dragging and dropping from the *Source* panel in Mission Control, the **All Recordings** option is selected by default.
3. For the appropriate timeline listed in the *Camera Name / Number* list, click the down arrow icon ( ) to access the drop-down menu, and then click **All Recordings**.

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.
  - In the playlist, click to select a clip, 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.

If you are logged in as an administrator or have been granted the necessary permissions, you can export a playlist to an alternate location, such as a USB thumb drive or network share. You can view the export in the *Export Archive* window, but you cannot download the export from the *Export Archive* window.

You must have created a playlist and be in the investigation mode to export a playlist.

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. (Optional) If present, click to select the checkbox for *Export to alternate location*. If you select this option:
   - Type a valid network path in the *Export Location* field.
   - If necessary, type in a *Username* and *Password* in the appropriate fields.
   - If appropriate and the available, click **Copy VxPlayer to This Location**.
4. (Optional) If the *Encrypt this export* is not already selected, and it is appropriate to do so, click to select the checkbox and then type a value in the *Password* and *Confirm Password* fields.

   Note: If forced export encryption is enabled (in VxToolbox), this option will be selected and grayed-out. All exports are encrypted, unless you export to an alternate location.
5. Click **Start Export**.
6. (Optional) Click **View Exports** to view the status of your export and view the *Export Archive* window.
7. (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.
8. 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.

Note: If forced export encryption is enabled (in VxToolbox), all exports will be encrypted unless they are exported to an alternate location.

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**.

Previewing Exports

You can preview exports without downloading them from the *Export Archive*, which appears automatically when you export a playlist. You can also access the *Export Archive* at any time. See the section titled *Using the Export Archive*.

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.

To preview the export

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 preview the archive:
   a. In the right column (untitled), to the right of *Download*, click the *Export Archive Menu* icon ( ).
   b. Click **Stream Export**.
   The export opens in a new window. Exports that are not still in storage might take a few minutes to access.

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. See the section titled *Using the Export Archive*.

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 right column (untitled), to the right of *Download*, 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.

Getting the Password for an Encrypted Export

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. In the right column (untitled), to the right of *Download*, click the *Export Archive Menu* icon ( ).
4. Click **Get Password**.
5. In the *Test Export* dialog box, click **Copy to Clipboard**.
   The dialog box closes, and you can paste the password to another 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**.
   If there are no failed exports, the option will not be present.
7. To exit the window, click the **X** in the upper-right corner of the window, or click outside the window.

Working with Plugins

Plugins are components that 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.

Installing Plugins

Close the 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. VxOpsCenter 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.

Installing and Using the BriefCam Plugin

The BriefCam Plugin converts unstructured video into structured data that is searchable, actionable, and quantifiable. It performs object tracking and assigns metadata. It enables you to quickly review only video that is relevant, based on the metadata.

To use the BriefCam Plugin:

1. Install BriefCam Plugin. To do so, launch the plugin installation wizard, and follow the prompts in the *BriefCam Plugin By Pelco Setup* window.
2. Launch and log in to VxOpsCenter.
3. Click to expand the *Content* area, click **Plugins**, and then click **BriefCam Plugin by Pelco**.

4. In the *BriefCam Settings* dialog box, enter the appropriate values in the *Web Host*, *Username*, and *Password* fields, and then click **Save**.

The *BriefCam Insights* window opens. See the instructions for BriefCam Insights created and maintained by BriefCam.

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:
   - Click in the *Event Source* area of the panel, and then click the source from the drop-down menu. Add event sources to the filter, as needed. To remove a source from the list, click the remove icon ( ) to the immediate right of the source name; to remove all sources from the list, click the *Clear the current filter settings* icon ( ) to the right of *Event Source*.
   - 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 *No Action Needed*.
   - Enter or select a *Range* for the *Severity* of events to display.
   - 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*.
   - In the *Type* area, select an event category from the drop-down menu, and then select the event type from the drop-down menu below *-AND-* (if present).
   - To clear the filter, click **Clear**.
3. (Optional) Click to select the *Pause Events* checkbox to stop the list from updating. 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) To view details about an event, click to select the event from the list in the center panel. The event details panel (right panel of the *Event Viewer*) provides event information.
   - Click to expand **Event** to see basic information, which can include event name, date and time of the event, severity, notification type(s), and actions.
   - Click to expand **Event Source** to see source device information, which can include the IP address, device name, device type, and other event type-specific details.
   - Click to expand **Event Specifics** to see information for exported clips, which can include the camera name, start and end times, and the clip length for each clip. It also provides the total export length for all of the clips listed.
6. (Optional) To change an event from *Needs Attention* to *In Progress*, click to select the event, and then click to select the checkbox for *In Progress* at the upper upper left corner of the event details (right) panel. To change an event from *In Progress* to *Needs Attention*, click to deselect the checkbox for *In Progress* at the upper upper left corner of the event details (right) panel.

7. (Optional) To acknowledge one or more selected events that are identified with *Needs Attention*, click to select the event(s), and then click **Acknowledge** at the upper right corner of the event details (right) panel.
8. (Optional) To copy details of an event to paste into another application, click **Copy Details** at the bottom of the *Event Details* panel, 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 VxOpsCenter, 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 Web Browser Plugin

The Chromium web browser plugin provides a means to access web resources from within VxOpsCenter.

To add the plugin to your workspace:

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).
4. (Optional) To select the whole URL, triple-click in the cell.

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 Plugin or the Admin Portal Events Tab, however, user images, door controls and enhanced Event filters are provided through the Access Control System Viewer Plugin.

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 events*. 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.
   - To copy details of an event to the clipboard: 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.

Using the VideoXpert® Plates ALPR Plugin

The VideoXpert Plates ALPR Plugin is a software-based Automatic License Plate Recognition system for video streams. It provides detection and capturing of vehicle license plates, and then compares the

captured plates against lists of license plates to provide identification of suspect vehicles, VIPs, parking lot access, authorized vehicles, or unauthorized vehicles; or to identify unknown vehicles.

The plugin is distributed as a compiled binary, and is dependent on the following being present and running:

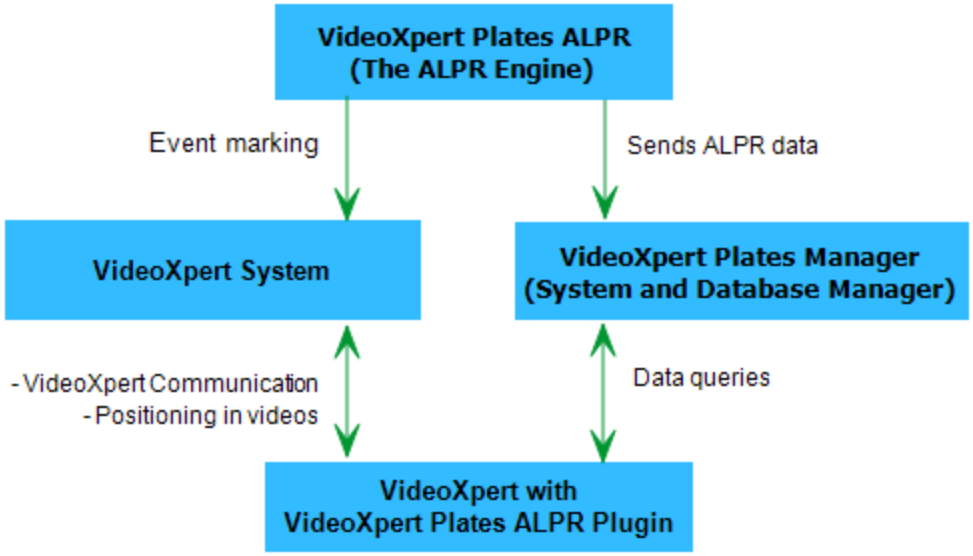
- Pelco VideoXpert software
- VideoXpert Plates ALPR and VideoXpert Plates Manager applications

To properly install the components of the VideoXpert Plates APLR plugin, follow the instructions in the current version of each of these documents, available on Pelco.com:

- *VideoXpert Plates™ Software Installation Manual*
- *VideoXpert Plates™ Quick Start Guide*
- *VideoXpert Plates™ ALPR User Manual*
- *VideoXpert Plates™ Manager User Manual*

Understanding VideoXpert Plates ALPR Plugin Architecture

The flow of information between the software components involved in using VideoXpert Plates is shown in the diagram below.

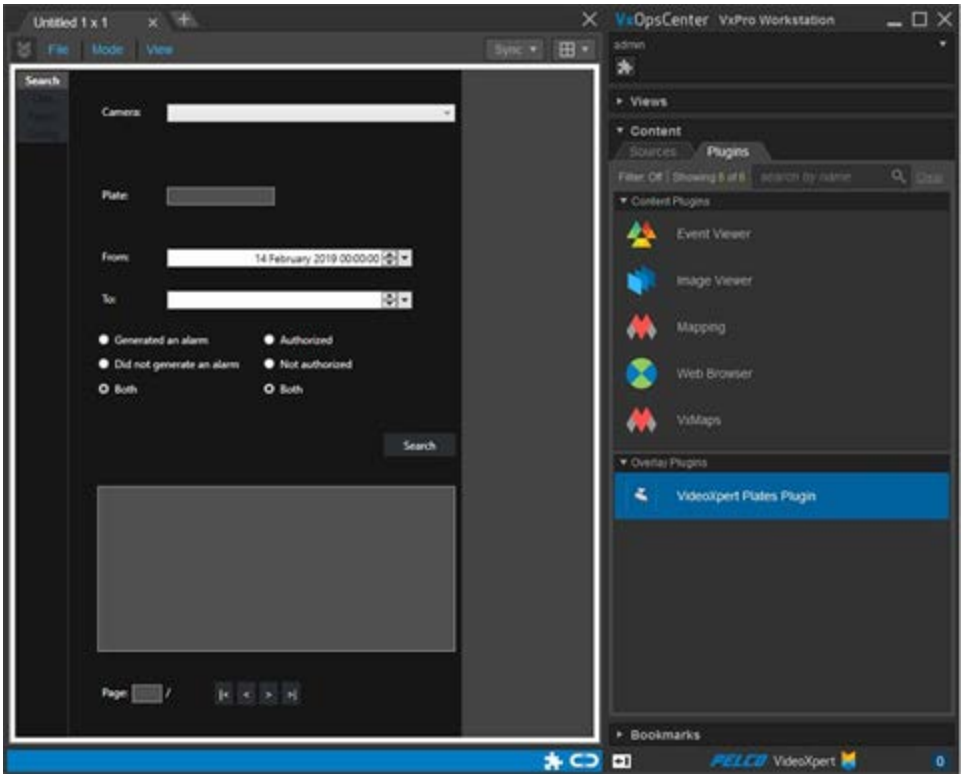


- VideoXpert Plates ALPR recognizes license plates, and then sends information to the VideoXpert Plates Manager. The event (plate capture) is also sent to and marked in the VideoXpert System.
- VideoXpert Plates Manager returns data to VideoXpert Plates ALPR Plugin, based on the search criteria. This accesses the requested VideoXpert video fragment at the timestamp associated with the license plate capture.
- Meta-data is stored and retrieved via the VideoXpert Plates Manager System.

Launching the VideoXpert Plates ALPR Plugin

To begin using the plugin:

1. In VxOpsCenter, open *VideoXpert Plates Plugin*.
2. When you first run the plugin:
   a. Enter a valid string in the *VideoXpert Plates Manager URL* field.
      – The URL must refer to the location where the VideoXpert Plates Manager service is installed.
      – The format will be similar to "http://ipaddress:portnumber/VideoXpertPlates".
   b. Enter a valid string in the *ApiKey* field:
      – This is the key used to validate communication with the VideoXpert Plates Manager service.
      – Obtain the key in the VideoXpert Plates Manager user interface. Access the **Settings** menu, and then access the *Users* window. In the *API Key* field, copy the key. Paste it into the *ApiKey* field in the VideoXpert Plates ALPR Plugin. For more information, see the current version of the *VideoXpert Plates™ Manager User Manual*.
3. Click **Login**.
   A new window opens, showing that *VideoXpert Plates Plugin* is running.



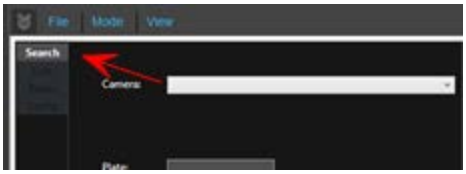
If you see the error message "Error connecting to VideoXpert Plates Manager", it means that communication between the two programs is corrupt. To fix the problem:

- If you are prompted to enter new credentials, enter the API key as instructed above.
- If you did not receive the prompt, or entering the key did not work:
  1. Return to VideoXpert Plates Manager.
  2. Access the **Settings** menu, and then access the *Users* window.
  3. Use the slider *Rest API Key*, and copy the new key.
  4. Return to the plugin, stop it, and then restart it by closing the plugin window.
  5. When prompted, paste the new key into the *ApiKey* field, and then click **Login**.
     A new window opens, showing that *VideoXpert Plates Plugin* is running.

Searching Plates

After launching the VideoXpert Plates ALPR Plugin, you can search for plates. To do so:

1. At the upper left of the plugin window, click the **Search** tab.

   The *Search* panel will open. It contains search criteria fields, the **Search** button, and the plate list area.

2. In the *Search* panel, enter the following search criteria:

   a. Use the drop-down menu in the *Cameras* field so select a specific camera or to click **All** cameras.

      - If you have a dual-camera (Infrared and color environmental camera), and would like to view an image of the plate in color, select the color camera.
      - Cameras are available in this field if they have been linked between VideoXpert Plates and VideoXpert, and if they are also active in VideoXpert Plates.

   b. Type a partial or complete plate number in the *Plate* field.
      You can use the "?" as a wildcard for a single character, or the "*" as a wildcard for multiple characters. For example: type "?J*" to get a list of all plates in the correct time range that have a "J" as the second character.

   c. In the *From* and *To* fields, specify a date and time for the search period, either by using the up and down arrows or the calendar.

   d. Click to select the appropriate radio button for the *Alarm* flag. Select *Generated an alarm* to show only plates that generated an alarm, *Did not generate an alarm* to show only plates that did not generate an alarm, or *Both* to show all plates that meet the rest of the search criteria.

   e. Click to select the appropriate radio button for the *Authorized* flag. Select *Authorized* to show only plates that are allowed in a specific zone, *Not authorized* to show only plates that are not allowed in a specific zone, or *Both* to show all plates that meet the rest of the search criteria.

3. Click **Search**.

4. View the list of plates that match the search criteria in the plate list area. The following information is shown:
   - A list of the plate capture records—Each capture in the list includes the date and time of the capture, the plate number, an image of the plate, and the authorization flag.
   - The current page and total number of pages (50 results per page)
   - Navigation buttons to move through the pages
   - The total number of records that match the search criteria—If no records matched, you will see the message *No records found*.
5. (Optional) To display a larger image of the vehicle and plate and to access the video clip associated with the plate read,click the capture in the plate list.
   - Access the video clip by moving the cursor to an appropriate time in the green video timeline beneath the capture image, and then click **Play**.
   - To increase the length of the video that is displayed before the point of capture, see the section titled *Configuring User Preferences*.

Managing the Black and White Lists

The VideoXpert Plates ALPR plugin includes a List Manager for White and Black lists.

- A Black List is a list of license plates (vehicles) that can cause an alarm to be triggered if the plate is seen. For example, if a company has a list of ex-staff, the security manager might want to receive an email or see an alarm on his screen when any of these vehicles are seen by a camera.
- A White List is a list of license plates that are permitted to enter an area or zone. The system might be set up so that when one of these plates is seen at a camera, a relay device is triggered to open a barrier to let them enter the site.

These lists must be initially created in the VideoXpert Plates Manager program. They will then automatically appear here. However, once they have been created, they can be edited from this menu. The user can also add plates to a list, with notes and *From* and *To* dates and times during which the lists will be active—when they are allowed in, or when they will trigger an alarm.

To use the Black and White Lists:

1. In the upper left corner of the plugin window, click the **Lists** tab.
2. In the *List* field, click to select a list from the drop-down menu.
3. (Optional) Type a partial or complete plate number in the *Plate* field.
   You can use the "?" as a wildcard for a single character, or the "*" as a wildcard for multiple characters. For example: type "?J*" to get a list of all plates in the correct time range that have a "J" as the second character.
4. Click **Search**.
5. View the list of plates that match the search criteria in the plate list area. If matches are found, the following information is shown:
   - A list of the plate capture records
   - The current page and total number of pages (50 results per page)
   - Navigation buttons to move through the pages
   - The total number of records that match the search criteria—If no records matched, you will see the message *No records found*.

6. (Optional) Click a record to diplay and/or edit the vehicle details, or to delete the item.
   - If you edit the details, click **Save changes**.
   - To delete the item, click **Delete item**.
7. (Optional) To add a vehicle to the list:
   a. Click **New Item**.
   b. Enter information into the following fields:
      - *List name*
      - *Plate number*
      - *Description*
      - *Comments*
      - *Active from*
      - *Active to*
   c. Click **Add item**.

For more advanced list options, such as importing preexisting lists from .csv files, see the current version of the *VideoXpert Plates™ Manager Operations Manual*.

Viewing Reads

To veiw plate captures as soon as they are read, click the **Reads** tab in the upper left corner of the plugin window. The following information is displayed in the panel:

- Capture details, including:
  - Time and date
  - Camera ID
  - Plate number with a plate patch image
  - Status (authorized or not)
- List of recently captured plates, with the most recent at the top of the list

Click on a plate from the list to diplay the vehicle image on the right of the screen.

Configuring User Preferences

Each user can configure and save preferences for what to display when a capture is selected/viewed. These preferences are associated with the current user, and will be saved for for the user's next session. To configure preferences:

1. In the upper left corner of the plugin window, click the **Config** tab.
2. (Optional) If you will view license plate captures as video, in the *Video prebuffer (sec)* field, type in a number of seconds that will be included in video before the point of plate capture.
   For example: Enter a value of 3 to start the video three seconds before the plate was captured.
   The default value of zero (0) starts the video at the moment that the plate was captured.
3. (Optional) If you will view license plate captures as still images, click to select the checkbox for *Enable image mode*.

Logging Out

To log out of *VideoXpert Plates Plugin*:

1. In the upper left corner of the plugin window, click the **Config** tab.
2. Click **Logout**.

Using the Occupancy Counting Plugin

Occupancy Counting is available as a plugin to VideoXpert or as a standalone application, allows you to configure regions within the VideoXpert system, count traffic into and out of the regions, and calculate the number of occupants within the regions. It also sends real-time information to a web browser so that people who want to enter the region can see the current occupancy count and know whether they can enter the region.

To launch Occupancy Counting and connect it to a VideoXpert System:

1. Ensure that you have created counting lines on the VideoXpert system to mark entrance and exit points of each region for which the system will be counting occupancy. Refer to the section titled *Configuring a Camera for the Pelco Advanced Analytics Suite* in the current version of the *VideoXpert® Toolbox Operations Manual* (for Enterprise systems) or the VxToolbox section of the *VideoXpert® Professional Operations Manual*.
2. Launch **Occupancy Counting** to open the *Occupancy Counting Configuration* window.
3. Connect to a VideoXpert system. To do so:
   a. Enter the appropriate values in the *Host*, *Port*, *Username*, and *Password* fields.
   b. Click **Save**.
   c. If any of the information is incorrect, an error message displays. Correct the information, and then click **Save**.
   d. When the *Connected* message is displayed, click **Continue**.

To create a new region:

1. In the *Regions* (left) panel, click the *Create a new region* icon ( ).
2. In the [region name] (right) panel:
   a. Type a string in the *Region Name* field.
   b. Under *Counters*, click the *Edit the "in" counters* icon ( ).
   c. In the *Edit "In" Counters for Region* dialog box, click to select the checkboxes for the *Available Lines* (right panel) to add to the *Selected Lines* (left panel), and then click **Save**.
   d. Under *Counters*, click the *Edit the "out" counters* icon ( ).
   e. In the *Edit "Out" Counters for Region* dialog box, click to select the checkboxes for the *Available Lines* (right panel) to add to the *Selected Lines* (left panel), and then click **Save**.
   f. Under *Event Thresholds*, click the *Edit the regions' thresholds* icon ( ).
      A threshold is used to trigger an event that will be injected into VideoXpert. This allows you to set up associated rules.
   g. In the *Edit Event Thresholds for Region* dialog box:
      i. Click the *Create a new threshold* icon ( ).
      ii. Click to select **Over** or **Under** in the *Trigger if capacity is* drop-down menu.

iii. Type in a number for the capacity trigger.
iv. Type a string in the *Event label* field.
v. Create any other thresholds needed for the region.
vi. Click **Save**.

h. (Optional) View the *Total In* and *Total Out* values. Click **Reset Totals** to reset both the *Total In* and *Total Out* to zero.
i. (Optional) View the maximum *Occupancy*. The denominator is the maximum capacity of the region, and is shown on the web page.
   - Type a new value in the denominator field to change the maximum capacity of the region.
   - Click **Reset Occupancy** to change the numerator to zero.
j. Under *Browser Images*:
   i. To the right of the *Under Capacity* field, click **Browse**, navigate to and click on an image file to use when the region is under capacity, and then click **Open**.
   ii. To the right of the *Over Capacity* field, click **Browse**, navigate to and click on an image file to use when the region is over capacity, and then click **Open**.
k. (Optional) To cancel changes to the region, click **Cancel**.
l. Click **Save Changes**.
m. (Optional) Click **Open Browser** to view the current occupancy and the image you associated with the corresponding threshold.

   Note: Each region generates a unique URL, so that users can have web pages open for more than one region at a time.
n. When you have finished adding, editing, or deleting the *Regions*, click **Done**, and then click **OK** in the *Confirm* dialog box. This will restart the system using the configured settings.
o. Click the ✕ in the upper right corner of the *Occupancy Counting Configuration* window to close it.
p. Click **Back** to enter *VideoXpert System Credientials* for the same or another system.

To view information for or edit an existing region:

1. In the *Regions* (left) panel, click to select the name of the region.
2. In the [region name] (right) panel, view the existing settings.
3. (Optional) Edit the settings as described above in "To create a new region".
4. When you have finished adding, editing, or deleting the *Regions*, click **Save Changes**, click **Done**, and then click **OK** in the *Confirm* dialog box. This will restart the system using the configured settings.
5. Click the ✕ in the upper right corner of the *Occupancy Counting Configuration* window to close it.
6. Click **Back** to enter *VideoXpert System Credientials* for the same or another system.

To delete a region:

1. In the *Regions* (left) panel, click to select the region to delete.
2. Click the *Delete the selected region* icon ( ).

   Caution: There is no confirmation dialog box. When you click the*Delete the selected region* icon ( ), the region is immediately deleted.
3. When you have finished adding, editing, or deleting the *Regions*, click **Save Changes**, click **Done**, and then click **OK** in the *Confirm* dialog box. This will restart the system using the configured settings.
4. Click the in the upper right corner of the *Occupancy Counting Configuration* window to close it.
5. Click **Back** to enter *VideoXpert System Credientials* for the same or another system.

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.
- Recorded alarm events that are triggered by the *Rules Engine* will show up in the timeline. The color indicates the type of alarm.

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 Operations Manual* for VideoXpert Enterprise systems or the VideoXpert Toolbox section of the *VideoXpert® Professional Operations Manual* 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 () at the lower right of the window, and then click to select the notification. Click again to close the list of notifications.
   - Click **Event Log** to open the event(s) in the *Event Viewer* window.
   - If there is more than one notification, 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 severity of the event, the device (for example, the specific camera) on which the event occurred, and the date and time 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. To copy details of an event to the clipboard: click **Copy Details**, and then click **Copy all to clipboard**.You can then paste the information into another application.
6. (Optional) If you accessed an event from the event notification pop-up window, you can click **Acknowledge Selected**, and then click **OK** in the confirmation dialog box, to clear the selected event from the event notification window.

Logging Out

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

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 plugin 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 plugin applications before it can close. Depending on the number of plugins 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 plugins 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**.

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