

## Before You Begin

Before you connect and configure your system:

- Update your new workstation to the latest version of VxOpsCenter software, which is available at [www.pelco.com](http://www.pelco.com).
- Ensure that the Microsoft OS on each computer on your system, including this server, has the latest updates that address the most current known vulnerabilities. You can find this information at [www.microsoft.com](http://www.microsoft.com).

On a continual basis:

- Frequently update the OS to ensure newly discovered vulnerabilities are patched as soon as a patch is available.
- Frequently update anti-virus libraries with the latest patches.

## Connecting Your Workstation to the VideoXpert System

The VideoXpert Workstation connects to an already-configured VideoXpert System. To set up the Workstation:

1. Unpack the Workstation.
2. Install the Workstation in the rack using the rack mounting instructions provided separately.
3. Connect the system and its peripherals.
  - If you are configuring your workstation to use Enhanced Decoders, follow the instructions in the section titled *Preparing Your Workstation to be Used with VideoXpert Enhanced Decoders*
  - If you are not configuring your workstation to use Enhanced Decoders, connect the monitors to the Workstation using the Mini DisplayPort Connector (item 1 in *Locating Connections on the Back Panel*).
  - Connect the Workstation to your network using the Ethernet port (items 5 or 6 in *Locating Connections on the Back Panel*).
4. Connect the Workstation power supply (item 7 in *Locating Connections on the Back Panel*) to an electrical outlet.

## Preparing Your Workstation to be Used with VideoXpert Enhanced Decoders

The VideoXpert Workstation can be configured as a 4-monitor (VX-RKWKS) or an 8-monitor (VX-RKWKS8) workstation. Up to two of the monitors are connected directly to the VideoXpert Workstation and the rest are connected via VideoXpert Enhanced Decoders. To prepare the workstation:

1. Connect up to two monitors to the Workstation using the Mini DisplayPort Connectors (item 1 in *Locating Connections on the Back Panel*).

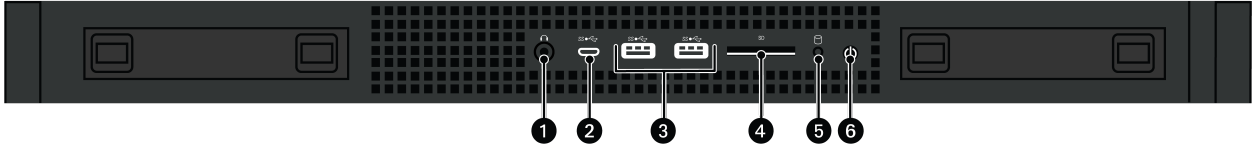


**Caution:** When connecting multiple native monitors to the VX-RKWKS8, balance the load of the monitor connections onto the two video cards. For example: if you are connecting two monitors, plug one monitor into video card 1 and the other monitor into video card 2.

## VideoXpert Rackmount Workstation Quick Start Guide

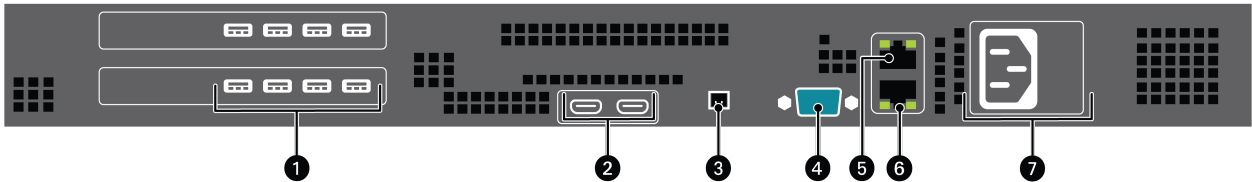
2. Locate the Mini DisplayPort emulators that were included with the VideoXpert Enhanced Decoder.
3. Connect the Mini DisplayPort emulators to the Workstation (item 1 in [Locating Connections on the Back Panel](#)).
4. Continue with the instructions in the section titled [Connecting Your Workstation to the VideoXpert System](#).

### Locating Connections on the Front Panel



1	Audio port	4	SD card reader slot
2	USB Type-C 3.1 Gen2 port	5	Drive activity light
3	USB Type-A 3.1 Gen1 port	6	Power button

### Locating Connections on the Back Panel



1	Mini DisplayPort ports	5	1 GB network port
2	USB Type-C 3.1 Gen2 ports	6	10 GB network port
3	Remote power switch	7	Power supply
4	Serial port		

## Setting Up Your Workstation

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 current version of the VxOpsCenter Operations Manual, in the section titled *Reconfiguring Your Workstation*.

**Workstation Configuration**

Workstation Settings ▲ VX System Connections ▲

**\*Workstation Name**

Workstation ID: abab39c7-2bcc-4882-82ed-7a4fc24014f7

**VX Workstation Account** ⓘ

Create a user account that will be used to configure and administer this VideoXpert workstation.

*This user is not a standard VideoXpert user; the account username and password should differ from those you use to connect to your VX System, view video, access features on the VX System, etc.*

*This user will have administrative access to fundamental VxOpsCenter settings, including VX System connections, shared display, and decoder settings.*

**\*Username**

**\*Password**  Show

**Workstation Mode**

Normal


Shared Display ⓘ

*It is highly recommended that you configure Windows to log in automatically.*

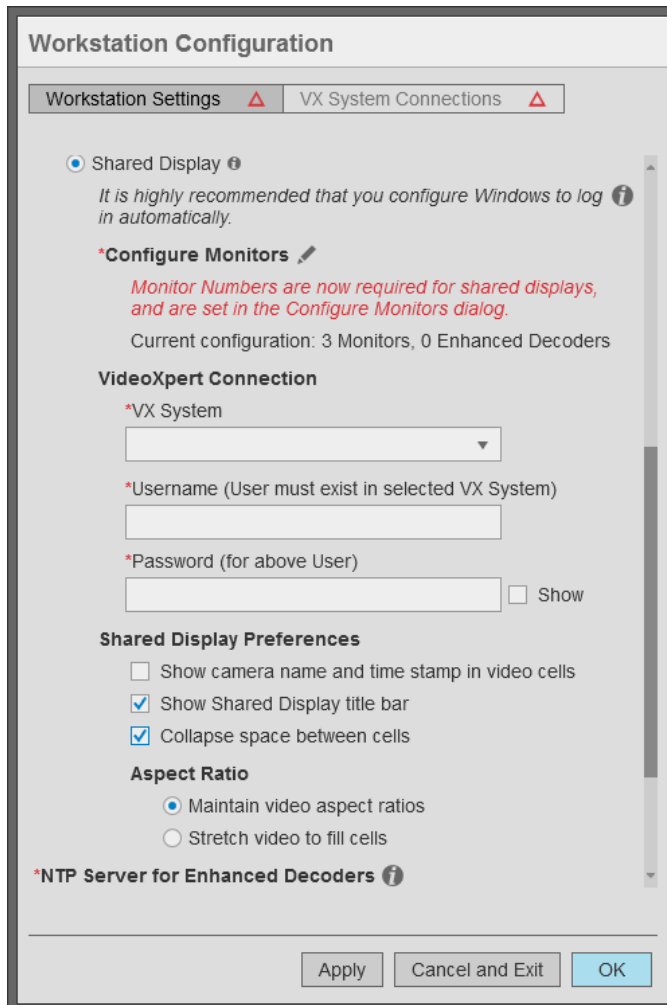
**\*Configure Monitors** ✎

*Monitor Numbers are now required for shared displays.*

Apply Cancel and Exit OK

 **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 current version of the VxOpsCenter Operations Manual, in the section titled *Reconfiguring Your 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. Click **Apply** to save your workstation configuration settings.
9. Click **VX System Connections** and follow the instructions in the section titled *Configuring VX System Connections*.

## 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*.

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

Multi-system access allows you to access multiple VideoXpert environments simultaneously using your VideoXpert system credentials.



**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. Click **OK**.

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



### 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*.



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- 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

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available). It works even on slow connections, in part because of its lower quality (low frame rate and high latency).

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

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

## Configuring Shared Display Mode

A **Shared Display** is a 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.



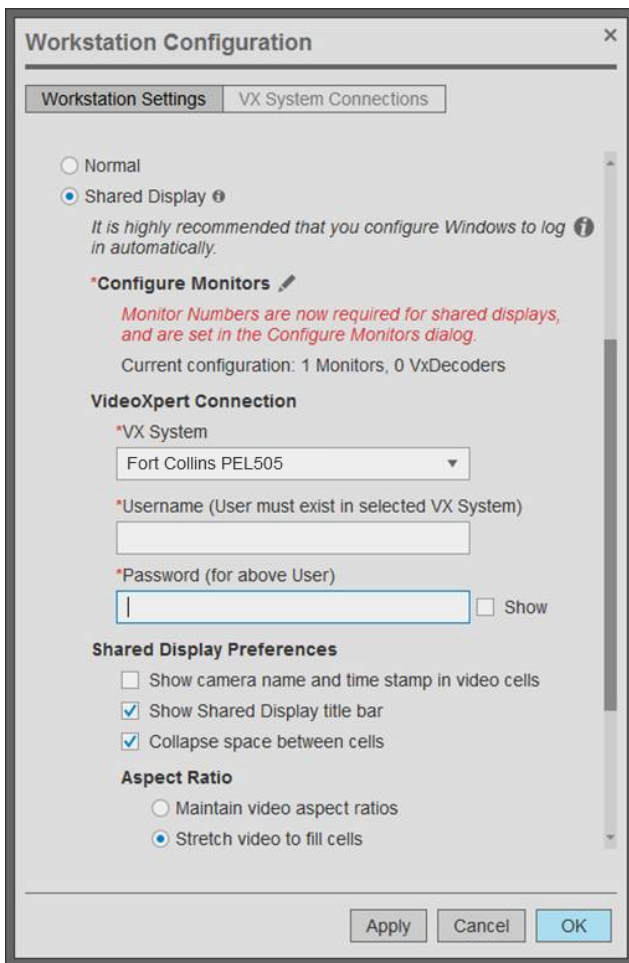
**Note:** Shared display is not available if multi-system access is enabled.



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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*.



The screenshot shows the 'Workstation Configuration' dialog box with the 'Workstation Settings' tab selected. The 'Shared Display' radio button is chosen. Below it, a message states: 'It is highly recommended that you configure Windows to log in automatically.' There is a 'Configure Monitors' link with a pencil icon. A note in red text says: 'Monitor Numbers are now required for shared displays, and are set in the Configure Monitors dialog.' The current configuration is '1 Monitors, 0 VxDecoders'. Under 'VideoXpert Connection', the 'VX System' dropdown is set to 'Fort Collins PEL505'. There are empty input fields for 'Username' and 'Password', with a 'Show' checkbox next to the password field. Under 'Shared Display Preferences', 'Show Shared Display title bar' and 'Collapse space between cells' are checked, while 'Show camera name and time stamp in video cells' is unchecked. Under 'Aspect Ratio', 'Stretch video to fill cells' is selected. At the bottom are 'Apply', 'Cancel', and 'OK' buttons.

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**.

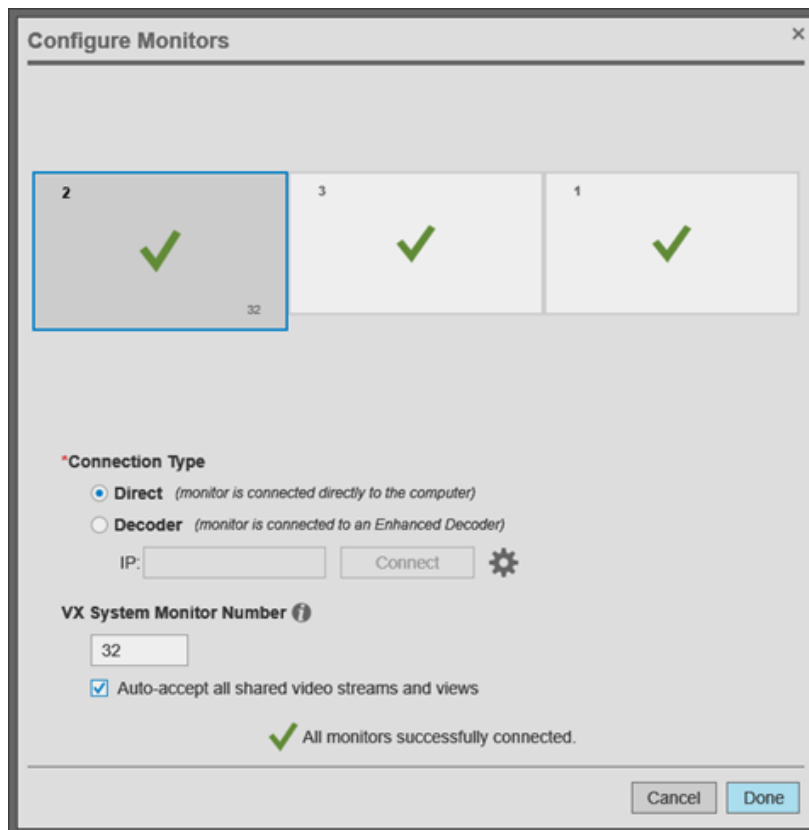



Figure 1: Connecting Monitors to Enhanced Decoders


- 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*).

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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 the 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. Click **Save**.

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