



VideoXpert Enterprise v 3.0 Installation Manual



VideoXpert™

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Introduction

The VideoXpert Enterprise System is a highly-customizable, distributed system comprised of hardware and software components that can include: VxCore Servers, Media Gateways, load balancers, VxOpsCenter, VxToolbox, VxStorage, and VxPortal.

Prerequisites

- If you have purchased a software-only solution and are installing VideoXpert on your own hardware, ensure that all aspects of the system meet the hardware and software specifications listed on www.Pelco.com.
- Assign static IP addresses, or obtain them from your system administrator:
 - For all equipment, assign a static IP address.
 - For dual-core cluster virtual IP, assign an additional static IP address.



Caution: Do not change the IP address of any VX component (Core, MG, CMG, etc.) after the system has been installed and configured. If the IP address is changed, functionality will cease and the unit must be reimaged.

- Ensure that the computer name is set on all equipment.
- Ensure that the time and timezone is set on all equipment.
- Ensure that you have administrative privileges on all workstations.
- Ensure that Microsoft Internet Information Services (IIS) is not installed on any of the Core servers.
- Ensure that all network interfaces except the primary NIC are disabled. Additional network interfaces might prevent the system from discovering devices.

Installation and Configuration Order

The system must be installed and configured in the order presented below on either Pelco factory-installed systems or software-only installations on your own hardware.

1. Ensure that your system meets the prerequisites identified in the section titled *Prerequisites*.
2. Install and configure an NTP client application as instructed in the section titled *Installing an NTP Client Application*

3. Install and configure all instances of VxCore, Media Gateway (MG), or VxCore with Media Gateway (CMG) as instructed in the section titled *Installing VxCore, Media Gateway, VxStorage, and VxToolbox*.

If a Core and Media Gateway are installed on the same computer, it can be referred to as a CMG.

4. Install and configure VxStorage as instructed in the section titled *Configuring Advanced Storage Using VideoXpert Storage Portal*.
5. In VxToolbox, create a cluster using the Cores you installed previously. See section titled *Configuring Clusters and Media Gateway Communications*.
 - For single-server installations, you can host both the Core and Media Gateway server applications on the same physical server or on separate servers. You cannot have more than one of each server active on the network unless the servers are clustered behind a load balancer.
 - For clustered installations, complete each operation for each server in the cluster before moving on to the next operation.
6. If you have more than one VxCore or VxCore with Media Gateway (CMG), set up load balancing.

Load balancing is performed using third-party equipment and software or using VX Accessory Server.

- If you are using third-party equipment and software, use the documentation from the vendor to perform this step. If necessary, contact Pelco Customer Support for assistance.
- If you are using VX Accessory Server, install and configure it as instructed in the section titled *Configuring the VideoXpert Accessory Server*.



Caution: Ensure that you have already created clusters on the system before you install and configure the VX Accessory Server.

7. In VxToolbox, install the licenses as instructed in the section titled *Licensing the System*.

You must apply licensing to continue using VideoXpert past the 60-day grace period.

8. In VxToolbox, add devices to the system and perform other system setup activities. See the current version of the *VideoXpert Toolbox User Guide*.

Installing an NTP Client Application

All servers in your VideoXpert system must reference a time server to ensure that all devices belonging to the system use the same time. Time disparities may result in errors when recording and recalling video. It is recommended that your NTP server be independent of your VideoXpert servers.

As a part of the setup process, you must install an NTP application separate from VideoXpert. VideoXpert has been tested with Meinberg NTP client software, versions 2.4.6 and later. The software is available at https://www.meinbergglobal.com/english/sw/ntp.htm#ntp_stable.

1. Run the Meinberg installer as an administrator.
2. Follow the installation process.
3. When prompted, ensure that you specify the predetermined address of the Core or Core Media Gateway (CMG) as the IP Address.
4. When the option is presented, click to select *Add local clock as a last resort reference, Stratum*.
5. When requested, select *Create an initial configuration file with the following settings*, specify the address of your NTP server, and then click **Next**. You may add or edit servers later directly from the NTP.conf file.
6. When setting up NTP services, it is recommended that you select *Create and use a special NTP account*, and then click **Next**. This account is used only for NTP services.
7. Under *Use specific NTP servers*, remove the words "iburst minpoll 6 maxpoll 7".
8. Specify the name and password for the Windows user account that will run NTP services.
9. Finish the installation process.
10. It will take approximately 5-10 minutes for the service to start. There will be an asterisk next to the word LOCAL while this is in process.

Installing VxCore, Media Gateway, VxStorage, and VxToolbox

After you have ensured that your hardware and network meet the prerequisites, install the VxCore, Media Gateway, VxStorage, and VxToolbox.

 **Caution:** Do not run Microsoft Internet Information Services (IIS) on your Core server.

Pelco recommends that you install all instances of VxCore server and Media Gateway applications immediately, and then perform other installation and configuration tasks.

1. On each Core server, install VxCore. To do so, run the exe installer, and follow the prompts in the installation wizard.
 - a. Click **Install** to begin.
 - b. Click to select the checkbox to accept the terms of the End-User License Agreement, and then click **Next**.
 - c. Select installation directories for Core, data, database, and export locations, and then click **Next**.

You can select a location other than the default to store exports to a network location off of the Core. This saves space and bandwidth on the Core server(s).

In a clustered environment, exports are stored only on a single Core. Storing exports in an alternate location ensures that the loss of a Core will not prevent you from accessing any of your recordings.

- d. Click **Install**.
 - e. Click **Finish**.
 - f. Click **Close**.
2. On each Media Gateway server, install Media Gateway software. To do so, run the exe installer and follow the prompts in the installation wizard.
 - a. Click **Install** to begin.
 - b. Click **Next**.
 - c. Click to select the checkbox to accept the terms of the End-User License Agreement, and then click **Next**.
 - d. Select the installation directory for Media Gateway, and then click **Next**.

- e. Click **Install**.
 - f. Click **Finish**.
 - g. Click **Close**.
3. On each storage server, install VxStorage. To do so, run the exe installer and follow the prompts in the installation wizard.
 - a. Click **Install** to begin.
 - b. Click **Next**.
 - c. Click to select the checkbox to accept the terms of the End-User License Agreement, and then click **Next**.
 - d. Select installation directories for VxStorage, Database, DatabaseBackup, and RecordingRoot; and then click **Next**.

Pelco recommends that you keep all default paths, except for RecordingRoot. The default for RecordingRoot is C:\, but there might not be enough disk space on C:\. Ensure that there is enough disk space on the path designated for RecordingRoot.
 - e. Click **Install**.
 - f. Click **Finish**.
 - g. Click **Close**.
4. On a client machine, install VxToolbox. To do so, run the exe installer and follow the prompts in the installation wizard.
 - a. Click to select the checkbox to accept the terms of the End-User License Agreement.
 - b. (Optional) Click **Advanced Options**, select the appropriate VxToolbox Installation Directory, and then click **OK**,
 - c. Click **Begin Installation**.
 - d. Click **Close**.

Configuring Advanced Storage Using VideoXpert Storage Portal

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

To use the VideoXpert Enterprise system, you must configure storage.

Accessing VideoXpert Storage Portal

Access VxStorage Portal via VxPortal.

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

Using Volumes and Volume Groups

You can organize your device video storage by creating and managing volumes and volume groups.

- A volume is a logical directory in which you want to store video.
- A volume group is a group of volumes to which cameras are assigned and distributed. You can use volume groups to:
 - Separate types of storage (like internal vs. external).
 - Set different retention parameters for different sets of drives.
 - Write video to more than one volume. When all volumes are full, the system will overwrite volume containing the oldest stored video.

The system ships with a volume group called Default Volume Group. You can rename or delete this volume group.

- An archive volume group is a volume group to which the recorder will move the oldest video from the other volume groups, instead of deleting the oldest video. See [Using External NAS Storage \(Archive Volume Group\)](#) for more information about the archive volume group.

Using External NAS Storage (Archive Volume Group)

By connecting an external volume (network storage/NAS), you can extend your retention time for VideoXpert Storage recorders. When your VideoXpert Storage

recorder achieves its maximum capacity and would normally begin to delete the oldest video, it will send video to the NAS instead. Video will still adhere to retention parameters, even when moved to external storage. The experience in accessing video is the same, whether a recording is served from a the VideoXpert Storage recorder or an external server.



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

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

As video transfers from a VideoXpert Storage recorder to an external storage server, bandwidth of your incoming cameras is equal to the bandwidth out to external storage. When using external storage, you should plan storage distribution to ensure bandwidth availability for incoming cameras, storage overflow, and user impact in viewing recorded video.



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

Configuring the Server

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

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

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

Creating a New Volume Group

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

Creating a New Volume

1. In VideoXpert Storage Portal, click the **Volumes** tab.
2. In the *Volume Groups* panel, click to select a Volume Group to which the new Volume will be assigned.
3. At the bottom right of the *Volumes* (center) panel, click the plus sign icon.
4. In the *Create New Volume* dialog box:
 - a. Enter a value in the *Path* field.
 - b. Click to select or deselect the checkbox for *Requires credentials*. If you

select this checkbox, enter values in the *Username*, *Password*, and *Domain* fields.

- c. Enter or select a value in the *Buffer Size* field.
- d. Click to select or deselect the checkbox for *Reserve bandwidth for this volume*.
- e. Click **OK**.

Configuring Clusters and Media Gateway Communications

When you are configuring clusters, you will also configure Media Gateway Communications.

To configure clusters, you must add one or more VX Systems, configure the clusters and Media Gateway communications, and then manually edit device discovery settings, as explained in the following sections.

Working with Clusters

A clustered environment requires at least two Core or CMG servers and an accessory server which will act as a load balancer.

- When configuring a cluster, you must first fully configure a single Core, including the virtual IP address and addresses of other Cores. After configuring the first core, you can configure the accessory server.
- As part of the clustering process, the system might configure additional services.

For more information about clustering an environment, see the current version of the *VideoXpert System Design Guide*.

Working with Media Gateways

The Media Gateway trans-casts to suit the network topology and needs. While the system is configured to get multicast streams from sources and to issue multicast streams to clients, you can select the appropriate communication method both from sources to the Media Gateway and from the Media Gateway to clients. The network topology and need for users to access sources simultaneously will inform your choice.

Adding Systems

VxToolbox allows you to administer systems remotely.



Note: To add a system to VxToolbox, you must have network access to the system and your user account must be assigned the administrative role.

1. Click the menu icon () at the upper right corner of the window, and then click **Manage VX System Connections**.
2. Click the *Add a new VX System* icon ()
3. Enter an IP address in the *Server Address* field.
4. Enter a value in the *Server Port* field, or use the default port.
5. Enter the *Admin Username* and *Password* for the system you are adding.

6. If an SSL/TLS certificate has been uploaded and configured, click to select the checkbox for *Check SSL/TLS Certificate...* to validate the certificate.
7. Click **Add**.
8. Click the close icon () at the top left of the *Manage VX System Connections* window to close it.

Configuring General Settings

1. Click the **System** tab.
2. Click **General Settings**.
3. Enter a value in the *VideoXpert System Name* field.
4. For VideoXpert Enterprise Systems only, configure clusters:
 - a. In the *Cluster Configuration* area, click to select or deselect the checkbox for *Multiple VxCores*.
 - b. Enter a value in the *VxCORE Virtual IP Address* and *VxCORE IP Address* fields.
 - c. If you selected Multiple VxCores, click **Add Another VxCORE**, and then enter another value in the new *VxCORE IP Address* field. Do this as many times as is needed.
 - d. Enter a value in the *VxMediaGateway IP Address* field.
 - e. Click to select or deselect the checkbox for *Multiple VxMediaGateways*.
 - f. If you selected Multiple VxMediaGateways, enter a value (associated with the initial VxMediaGateway IP Address) in the *VxMediaGateway Virtual IP Address* field, and then enter a value for another gateway in the new *VxMediaGateway IP Address* field. To add more VxMedia Gateways, click **Add Another VxMediaGateway**, and then enter a value for another gateway in the new *VxMediaGateway IP Address* field.
5. Complete the System Configuration information:
 - a. In the *System Configuration* area, enter a value in the *NTP Server Address* field.
 - b. (Optional, only available on VideoXpert Enterprise systems) Specify a *Transmission Method* by clicking to select the appropriate radio button for the *Allow Multicast Communication to Camera*, *Allow Multicast Communication to Client*, or *Enable stream proxying through recorder*.

- c. Specify an *RSTP Port*, either by typing in a number or selecting one using the up and down arrows.
 - d. Specify an *HTTPS Port*, either by typing in a number or selecting one using the up and down arrows.
 - e. Click to select or deselect the checkbox for *Store exports in an alternate location*. If you select the checkbox, then enter values in the *Network Storage Location*, *Username* (if required) and *Password* (if required) fields.
 - f. Under *Clip Lock Expiration*, click to select the radio button for either *Keep Clips Locked*; or *Unlock Clips after [#] Days*, and then select the number of days either by typing in a value or using the up and down arrows.
6. (Optional) In the *HTTPS Certificate* area:
 - a. Click **Show current certificate details** to view information including *Issued to*, *Issued by*, and *Period of Validity*. To close this field, click **Hide current certification details**.
 7. (Optional) To cancel any changes you have made before saving the settings, click **Revert** at the bottom of the panel.
 8. Click **Save Settings**.

Configuring the VideoXpert Accessory Server and Services

If you have more than one VxCore or CMG, set up load balancing.

Load balancing is performed using third-party equipment and software or using VX Accessory Server.

- If you are using third-party equipment and software, use the documentation from the vendor to perform this step. If necessary, contact Pelco Customer Support for assistance.
- If you are using VX Accessory Server, install and configure as follows.

Before setting up a VideoXpert Accessory Server, you should have already set up and configured your Core or CMG servers. If using multiple servers in a small cluster, all servers must have their virtual IP address configured before you begin configuring the Accessory Server.



Note: You cannot change the address after initial setup, as it becomes an integral part of your VideoXpert network.

Before you start the Accessory Server, ensure that it is connected to the same network as your VideoXpert resources.

- The accessory server(s) must have network connectivity to other VX resources; however, the AS(s) do not have to be on the same subnetwork.
- The virtual IP of Cores and Media Gateways must be on the same subnetwork as the accessory servers. The virtual IP does not have to be on the same subnetwork as the Core or Media Gateway servers.

For more information about using the Accessory Server, see the current version of the *VideoXpert Accessory Server User Guide*.

Configuring the VideoXpert Accessory Server

To configure the VX Accessory Server:

1. Start the VX Accessory Server.
2. Provide the IP address to assign to the VX Accessory Server.
3. Provide the Netmask and Gateway of the VX Accessory Server.

The system completes the setup process and returns you to a command prompt. You can now connect to the VX Accessory Server's Web interface using the IP address you assigned to it, through which you can configure services supporting your VideoXpert network.

Configuring the VideoXpert Accessory Server Services

The accessory Server's web interface allows you to select the support services you want to run. If, after configuring a service, you want to turn it off, simply deselect the option in the web interface.

Load Balancer functionality requires all servers in the cluster to use the same virtual IP address. You do not need to enable the functionality; the load balancer takes effect as soon as you point the accessory Server to the address of a CMG server in the cluster.

To configure Accessory Server services:

1. Open a web browser and go to the IP address of your accessory Server.
2. Provide the IP address of a Core server.
3. Provide the password of the admin user for VideoXpert.
4. Select the support services you want to employ.
5. Select an NTP option. The accessory Server can act as an NTP client, or an NTP server for your VideoXpert network.

Enabling a Second VideoXpert Accessory Server for Failover

Select *Enable 2nd VX Accessory Server* if running two Accessory Servers in a failover (high-availability) configuration. In a high-availability configuration, the accessory Server that you configure first will act as the primary Accessory Server; the secondary server will come online only if the primary falls offline.

You only need to run the initial setup on the primary server. The primary server automatically transfers settings to the secondary server. You cannot configure the secondary server independently from the primary server; in the event of a failover, you must wait until the original primary server comes back online to make configuration changes to the Accessory Server.



Note: The failover model supports failure of a single server in a dual CMG environment. It does not provide protection against more than one failed server (that is: 2 CMGs, 2 Accessory Servers, or a CMG and an Accessory Server) in this sort of environment.

Licensing the System

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

You can license the system automatically or manually.

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

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

Manually Activating Licenses

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

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

1. Open VxToolbox and click the **Licensing** tab.
2. At the lower right corner of the *Entitlements* table (top panel), click the *Add License* icon (.
3. Enter your activation ID in the *Activation ID* box.
4. If necessary, click to deselect the checkbox to *Automatically activate online*.
5. You will be prompted to save an activation request .bin file. Select a folder (optional) type in a file name or maintain the default file name (recommended), and then click **Save**.

 Caution: The file must have the extension .bin. Using any other file extension will result in an error.

An Entitlement Request File (named either what you typed in or the same name as the *Activation ID*) with a .bin extension is downloaded to your computer.

6. Click **Enter**.
 - The *Entitlement Pending* status message appears at the top of the *Entitlements* table.
 - An entitlement named *Pending* will be listed in the table. At the far right of the *Pending* entitlement row will be two icons: *Download a new request (.bin) file*  and *Remove this activation ID* .
7. On a system connected to the Internet, open a new browser window or tab and go to the Pelco licensing server at <http://licensing.pelco.com>.
8. Under *Login*, click to select logging in **With User Name, With Entitlement ID**, or **With Activation ID**. You can also register as a **New User**.
9. Enter your credentials, and then click **Login** to access the Pelco licensing server.
10. On the *Start* page, click **Generate Offline License**, navigate to the to request file to upload. The Entitlement File, named *response.bin*, will be available for downloaded to your computer. Copy the file and save it to the system on which you are hosting VxToolbox.
11. Return to the *Licensing* page within VxToolbox.
12. Click **Choose file** under the *Entitlements* section.
13. Select your Entitlement File (response.bin), and then click **Open**.
14. Click **Import License File**.

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

Automatically Activating Licenses

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

1. Open VxToolbox and click the **Licensing** tab.
2. At the lower right corner of the *Entitlements* table (top panel), click the *Add License* icon .
3. Enter your activation ID in the *Activation ID* box.

4. If necessary, click to select the checkbox to *Automatically activate online*.
5. Click **Enter**.
The system logs in to the Pelco licensing server and performs several tasks. Do not navigate away from this page until you see the *Add License* dialog box.
6. Click **OK**.
VxToolbox will display the installed license(s) in the *Entitlements* table.

Using VideoXpert Enterprise

You can now use the VX system.

- Perform additional system configuration in VxToolbox using the current version of the *VideoXpert Toolbox User Guide*.
- Begin monitoring the system in VxOpsCenter using the current version of the *VideoXpert OpsCenter User Guide*.

Working With Permissions

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

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

Understanding Permission Resource Restrictions

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

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

Using Plugin Permissions

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

Permission	Actual Resource	Any	Selected	Description
Use eConnect	eConnect plug-in	X		This permission provides access to eConnect data. The permission is for “Any Resource” but operates in accordance with the “View Video Sources” permission. If a user has access to “View Video Sources” for a particular camera, and this permission is enabled, a user can view eConnect data for that camera.
Use Map	Mapping plugin	X		Allows users to access the mapping plug-in.

Permission	Actual Resource	Any	Selected	Description
View Maps	Drawing (map)	X	X	Determines the maps to which a user has access. Maps only show cameras for which the user possesses the "View Video Sources" permission.
Manage Map Files				Allows users to upload, delete, and select available map layers
Place Cameras on map				Allows users to add and arrange cameras on the map; camera availability is limited by the "View Video Sources" permission.

Using Supervision and Reports Permissions

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

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

Using Device Management Permissions

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

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

Using Event Management Permissions

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

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

Using System Management Permissions

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

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

Using Surveillance Permissions

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

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

Using Investigation Permissions

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

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

Using Special Case Permissions

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

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

Understanding Event Types and Reporting

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

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

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

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

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

Event	Event Type	Online/ Offline	User Actions	Event History
Drawing Image Retrieved	Admin		X	X
Drawing Marker Added	Admin		X	X
Drawing Marker Modified	Admin		X	X
Drawing Marker Removed	Admin		X	X
Drawing Modified	Admin		X	X
Drawing Removed	Admin		X	X
License Expired	Admin		X	X
Notification Added	Admin		X	X
Notification Added Role	Admin		X	X
Notification Removed	Admin		X	X
Notification Removed Role	Admin		X	X
Privilege Added	Admin		X	X
Privilege Modified	Admin		X	X
Privilege Removed	Admin		X	X
Role Added	Admin		X	X
Role Modified	Admin		X	X
Role Removed	Admin		X	X
Schedule Added	Admin		X	X
Schedule Modified	Admin		X	X
Schedule Removed	Admin		X	X
Situation Added	Admin		X	X
Situation Modified	Admin		X	X
Situation Notification Added	Admin		X	X
Situation Notification Removed	Admin		X	X
Situation Removed	Admin		X	X
User Added	Admin		X	X
User Modified	Admin		X	X
User New Password	Admin		X	X
User Removed	Admin		X	X
User Role Added	Admin		X	X
User Role Removed	Admin		X	X
Abandoned Object	Analytic			X

Event	Event Type	Online/ Offline	User Actions	Event History
No Abandoned Object	Analytic			X
Adaptive Motion	Analytic			X
No Adaptive Motion	Analytic			X
Directional Motion	Analytic			X
No Directional Motion	Analytic			X
Loitering	Analytic			X
No Loitering	Analytic			X
Object Count	Analytic			X
No Object Count	Analytic			X
Object Removal	Analytic			X
No Object Removal	Analytic			X
Sabotage	Analytic			X
No Sabotage	Analytic			X
Stopped Vehicle	Analytic			X
No Stopped Vehicle	Analytic			X
Motion Detected	Analytic			X
No Motion Detected	Analytic			X
User Logged Off	Client		X	X
User Logged On	Client		X	X
Client Snoozed Event	Client		X	X
Saved View Accepted	Client		X	X
Saved View Recieved	Client		X	X
Saved View Sent	Client		X	X
Client Tab Added	Client		X	X
Client Tab Modified	Client		X	X
Client Tab Removed	Client		X	X
Client Workspace Added	Client		X	X
Client Workspace Modified	Client		X	X
Client Workspace Removed	Client		X	X
CPU Load	Hardware			X
Disk Failure	Hardware			X
Fan Failure	Hardware			X

Event	Event Type	Online/ Offline	User Actions	Event History
Input Loss	Hardware			X
Input Restored	Hardware			X
Link Speed Changed	Hardware			X
Memory Load	Hardware			X
Packet Loss	Hardware			X
Power Supply Failure	Hardware			X
Temperature Issue	Hardware			X
UPS Low	Hardware			X
Volume Full	Hardware			X
Alarm Active	System			X
Alarm Inactive	System			X
Bookmark Added	System		X	X
Bookmark Modified	System		X	X
Bookmark Removed	System		X	X
Client Push	System			X
Client Push Acknowledged	System			X
database_fault	System			X
Device Offline	System	X		X
Device Online	System	X		X
Export Deleted	System		X	X
Export Download	System		X	X
Export Failure	System			X
Export Started	System		X	X
Export Successful	System			X
Fault	System			X
PTZ Lock	System		X	X
PTZ Pattern Triggered	System		X	X
PTZ Preset Triggered	System		X	X
PTZ Unlock	System		X	X
Quick Report Downloaded	System		X	X
Retention Low	System			X
Stream Loss	System			X

Event	Event Type	Online/ Offline	User Actions	Event History
Stream View Denied	System			X
Stream View Started	System		X	X
Stream View Stopped	System		X	X
Stream View Timeout	System			X
Tag Added	System		X	X
Tag Linked	System		X	X
Tag Merged	System		X	X
Tag Modified	System		X	X
Tag Removed	System		X	X
Tag Unlinked	System		X	X

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