Video Surveillance Operations Manager

VSOM User Guide

September 2008

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GETTING STARTED IN VSOM

What's New

The Cisco Video Surveillance Operations Manager (VSOM) permits real-time remote monitoring and virtual management by providing multiple live and archived video streams. Authorized users can view camera feeds from multiple locations simultaneously, control PTZ cameras, and review and clip archives using the operator interface.

New Features

- Recording enhancements
- Archive enhancements
- Backup enhancements
- Support for RTSP for streams from the Media Server
- Smooth reverse play of MPEG4
- New device support
- Support for H264
- Integration with third party DVRs
- Management console extensions
- Extended device model support

Recording Enhancements

Support is provided for flexible recording, including record on motion and record on event.

Archive Enhancements

Enhanced support is provided for backing up archives.

Support for RTSP/RTP for Streams from the Media Server

Media Server now provides the ability to access media H264, MPEG4, MJPEG and audio feeds through third party players such as QuickTime and VLC.

Smooth Reverse play of MPEG4

The Media Server now provides the ability to play both MJPEG and MPEG4 Fast and Slow, Forward and Reverse , and stepping frame

by frame. The reverse playback of MPEG4 includes I-frames and reverse play of all frames.

New Device Support

Device support:

- Audio & MJPEG for Teleste MPC/MPX encoder series
- TCP from Sony CS50, DF50, DF80, RZ50, RX530, RX550, RX570, CS20, DS10, DS60, CM120, DM110, DM160 cameras
- Multicast from Indigo encoders

Motion detection configuration and reception of events support:

- Axis: 209M, 210, 211, 214, 215, 211M, 221M, 223M, 232D, 233D, 241Q, 241S, 241SA, 243Q, 243SA, 247
- IQEye: 501, 511, 701, 702, 703, 705, 752, 753, 755, 802, 803, 805, 852, 853, 855, 712d
- Panasonic: NP244, NP302, NW484
- Sony: CS50, DF50, DF80, RZ50, RX530, RX550, RX570, CS20, DS10, DS60, CM120, DM110, DM160

Support for H264

- Cisco Analog Video Gateway
- Sony CS50, DF50, DF80, RZ50, RX530, RX550, RX570
- Axis P3301 and Q7401

All functionality provided with MPEG4 streams is also provided to H264 streams, including:

- Live & recorded media access
- Smooth forward and reverse play
- Clipping
- Record on Motion or Event
- Playback via VSVM Clients

Integration with Third Party DVRs

Support for Pelco Endura and NICE DVRs including:

- Discovering Live & Recorded feeds
- Playing Live & Recorded feeds
- PTZ of connected PTZ cameras

Management Console Extensions

- Monitoring of Archiving, Outbound Media & DVR gateways

- Configuration of 6.0 features without Linux Shell access
- Rebooting the Server at an OS level
- Query status of the Cisco processes running on the Server
- Access to Log files
- Configuration of the server's Home page.

Extended Device Model Support

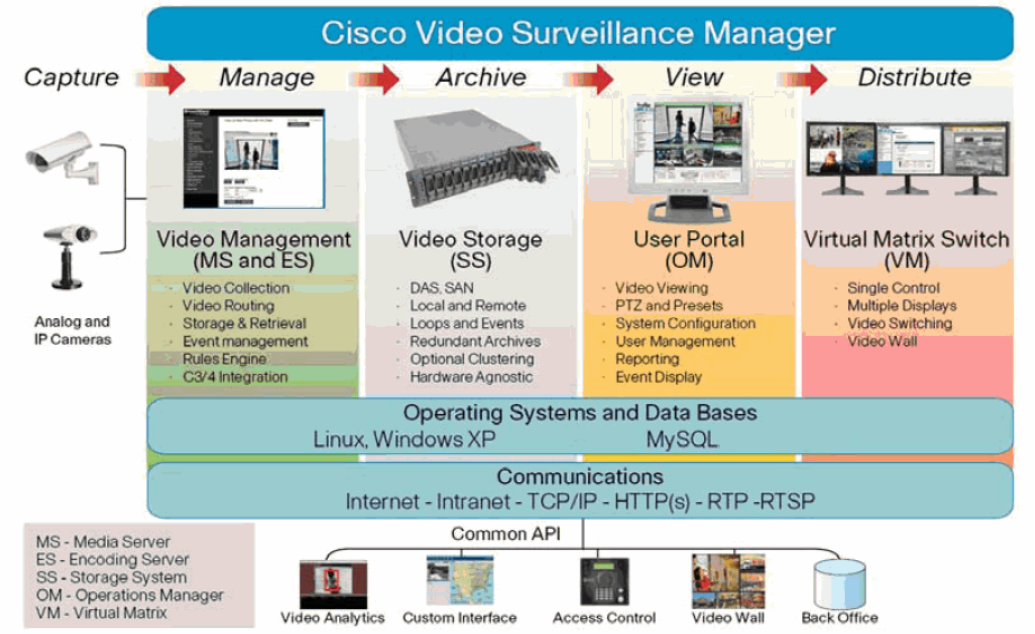
- IQEye: 702, 705, 752, 753, 755, 802, 803, 805, 852, 853, 855, 712d
- Sony: CS20, DS10, DS60, CM120, DM110, DM160
- Axis: 209M, 211M, 216M, 247, P3301, Q7401
- Panasonic: 202A, NP302, NW484, NS-954, NS-964, CS-954

How It Works

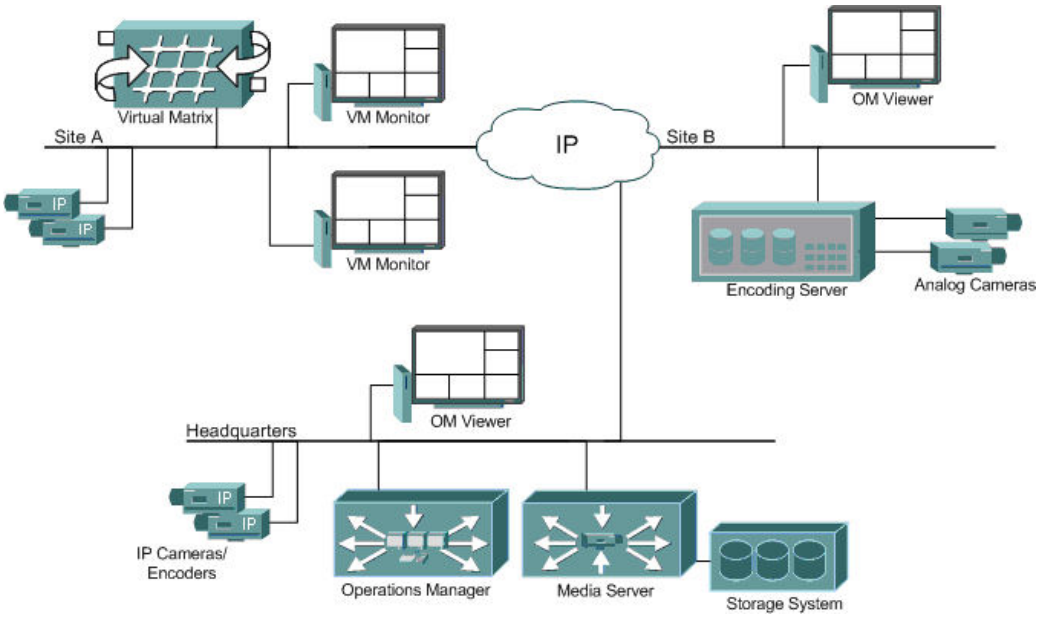
The Cisco Video Surveillance Operations Manager (VSOM) provides a simple-to-use management console to set up and manage multiple servers, cameras, and encoders.

VSOM is scaled to support thousands of users and cameras across multiple physical locations. All system usage is logged and authorized users can generate reports to monitor usage, verify access to video, review event history, and check run-time statistics.

VSOM can also reside on the Cisco Video Surveillance Media Server (VSMS) based on the server configurations. Displayed below is the Cisco Video Surveillance Manager solution and using Intelligent IP infrastructure as a transport.



The VSOM is designed to preside over multiple VSMS, Cisco Video Surveillance Encoding Server (VSES), and Cisco Video Surveillance Virtual Matrix (VSVM) servers. VSOM configures and manages the encoders, cameras, camera feeds, archives, and events on each VSMS server and configures and manages the monitors and views for each VSVM server.



Note: VSVM, VSMS, and VSOM may all be installed on the same physical server for a small installation or multiple physical VSMS and VSVM servers in a large installation.

The most common setup scenario will be where the VSOM software will have been previously installed and started on the VSMS and VSVM servers but have not yet been configured. VSOM will be used to perform the following basic configuration steps:

- Add the VSMS, VSES, and VSVM servers to VSOM
- Add encoders to VSOM
- Add analog cameras to VSOM while specifying encoder, channel, and VSMS server is to be used to create a new camera feed.
- Add IP cameras to VSOM while specifying which VSMS server is to be used to create a new camera feed
- Start required archives from the camera feeds
- Create views to be displayed on the main operator screen and VSVM monitors
- Configure PTZ settings and presets for PTZ cameras
- Create event triggers via OM while specifying the MS server and encoder to be used for the event source

ActiveX Controls

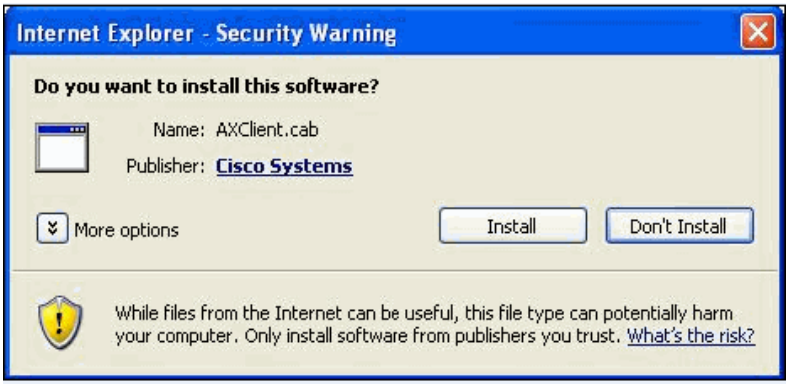
Follow these steps to configure Internet Explorer

1. Click Tools, Internet Options, Security tab.
2. Click Trusted Sites, Sites.
3. Enter the hyperlink address of the host to add to the trusted site zone and click Add.
4. Repeat until all hosts have been added. Click OK twice.

Installing the ActiveX Controls

Navigate to the Browser Setup page. When asked to install these ActiveX controls, click Yes for each control. If controls are not installed, then verify administrator status by clicking My Computer, Manage from the menu.

Note: Permission will be denied to all non administrators.



Enabling

To enable ActiveX Internet controls:

1. Click Tools, Internet Options, Security tab.
2. Click Internet in the Select a Web content zone to specify security settings.
3. Click Custom Level.
4. In the ActiveX controls and plug-ins section, for option Run ActiveX controls and plug-ins. click Enable and click OK.

To enable ActiveX Intranet controls:

1. Click Tools, Internet Options, Security tab.
2. Click Local Intranet in the Select a Web content zone to specify security settings.
3. Click Custom Level.
4. In the ActiveX controls and plug-ins section, for option Run ActiveX controls and plug-ins. click Enable and click OK.

Installing the ActiveX Controls for SmartSearch

Users may be prompted to install the IntelliVision ActiveX control prior to the display of the operator page. This control is part of the VSOM product and users should Install when prompted.

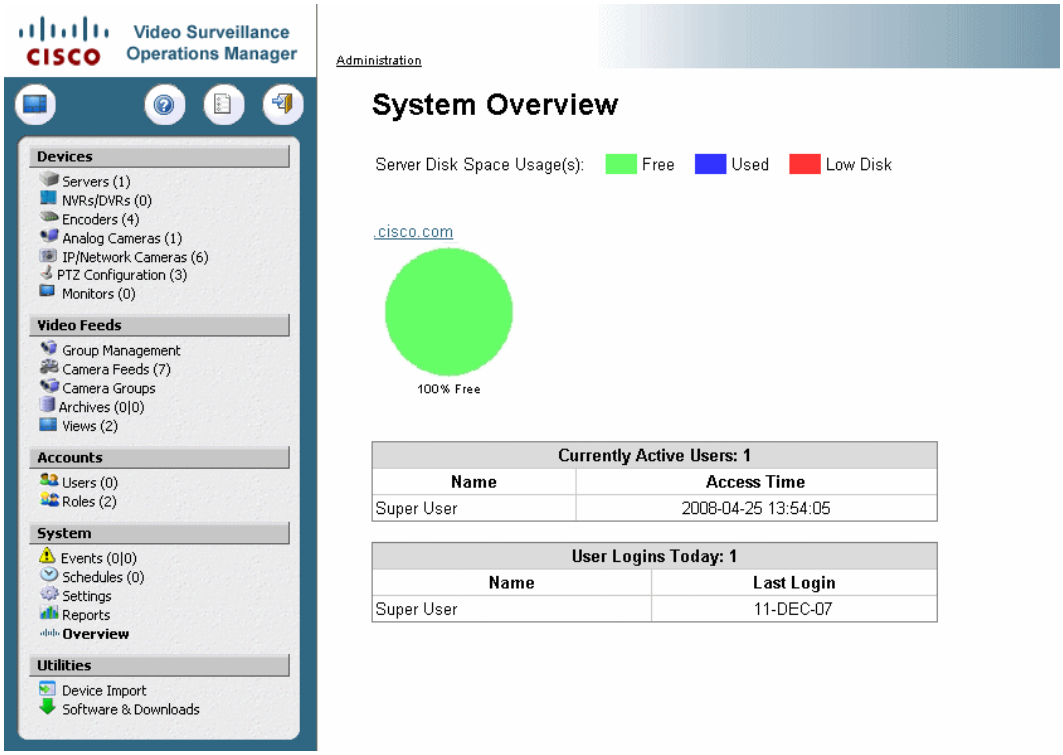
Note: This prompt will not be displayed if the SmartSearch application is set to "Do Not Use" on the settings page.

ADMINISTRATIVE FUNCTIONS

Administrative Overview

The user interface is designed to permit administrators and operators to view and manage live video feeds for multiple views based on their user authorizations. Each view can be managed independently or in groups by using pre-defined, custom setups that define layout, content, and behavior for matching a setup with a view. Administrators can setup the default view as the administrator view or the operator view, both displayed below, as applicable.

Administration View



Getting Started

The Cisco Video Surveillance Operations Manager (VSOM) is a full-featured video surveillance management application that runs on top of the Cisco Video Surveillance Media Server (VSMS) and Cisco Video Surveillance Virtual Matrix (VSVM) server platforms. VSOM enables administrators and system operators to access live and archived sources, track events, customize views, and simplify day-to-day tasks and operations. This application features modifiable predefined layouts such as camera and archive lists, camera groups and toggle tools for video-only

viewing, pan-tilt-zoom control (PTZ), archive clipping, and snapshots from the current view. VSOM also provides full management console capabilities for multiple VSMS and VSVM servers, permitting the creation and management of a large scale, video surveillance network. As a web application, VSOM permits multiple users to access and use the application from anywhere on the network via a web browser.

Administration

The administration user interface is comprised of various modules and tabs designed to permit administrators to manage and control all aspects of the VSOM system. This interface is only available to users with administrator privileges.

The server, camera, and encoder modules are for adding, configuring and managing system hardware. Other modules permit the configuration and management of video streams from cameras called camera feeds. The remaining areas are for configuring and managing user roles, permissions and rights within the VSOM system. These permissions and rights determine what users can view and manage. Each client location can be managed independently or in groups by using pre-defined, custom views that determine layout, content, and behavior for matching a view with a monitor. Upon installation, a default camera group is available.

This application provides administrators with:

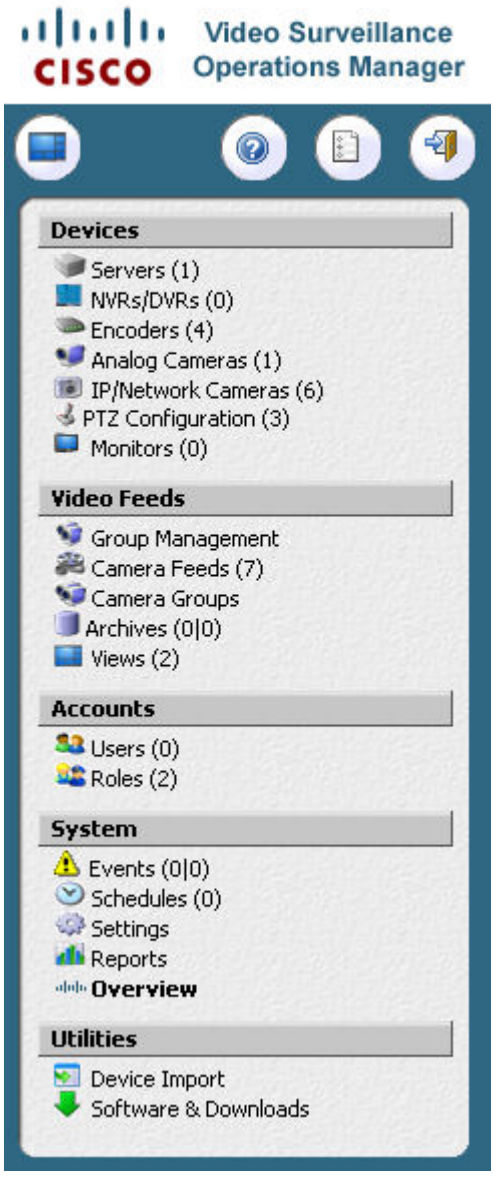
- Server, Encoder, and Camera administration
- User defined Views consist of flexible screen layouts and lists of camera feeds and archives
- Scheduled and event-based video recording
- User and role management with full control of permissions and rights to individual cameras
- Customizable branding and look and feel via preferred skin designs
- Configurable event triggers and event-driven actions
- Activity reports

Shortcut Buttons

The following shortcut buttons are displayed above the menu options on the left panel.

- When displayed, use  to rapidly switch to the operator view.
- When displayed, use  to display the tools administrator page.
- Use  to display the searchable help file.
- Use  to permit operators and other users to set their login settings such as passwords, personal information, and default systems settings.
- Use  to logout of the system.

The administration page permits administrators to configure VSOM as follows. The available selections depend upon the rights granted to the user.



Devices

- Servers - Configure and manage Medial Servers, Virtual Matrix servers, and archive/backup servers.
- NVRs/DVRs - Users can add and set permissions for new NVRs/DVRs.
- Encoders - Users can add and set permissions for new encoders.
- Cameras - Users can add and set permissions for new analog and IP/Network cameras.
- PTZ and Joysticks - Users can configure and set permissions for existing PTZ-enabled cameras.
- Monitors - Use to view configured views, set up layout panes which can include single and multiple views, and add and set permissions for new monitors.

Video Feeds

- Camera Feeds and Groups - Use to add, set permissions for and view camera feeds and groups.
- Archives - Users can start, stop, and schedule new archives and view a list of scheduled or running archives on analog and

IP/Network cameras.

- 0/0 - Number of scheduled archives, number of viewable archives (does not include pending archives).
- looping archives are viewable and running.

- Views - Users can add, set permissions for, and display the operator view(s).

Accounts

- Users and Roles - Users can configure and set permissions for new users and applicable roles.

System

- Events - Users can set operator view(s), event triggers, set up alert criteria, and add and set permissions for events. Users can also set up and view event history reports. Events and event notifications can be viewed for up to the previous two weeks. A variety of configurable actions are available via an event. These include on-screen alerts, switching the video display view on the operator page, generating a clip from an archive, sending an email, and generating an HTTP URL request to another application. VSOM supports the capture of events from multiple sources and uses them to trigger

various selected actions.

- Schedules - Permits administrators to enable/disable specific events, user accounts and roles on a pre-determined schedule.
- Settings - Permits administrators and operators to configure administration functions based on their login permissions. Users can select applications settings such as default views (skin) and language; determine application customization such as logos and images, and other administrative settings as applicable.
- Reports - Administrators can create user activity reports.
- Overview - Users can view real time system information such as user activity, logins, and disk usage based on applicable permissions.

Utilities

- Device import - Organize and input device information for automatic inclusion into the VSOM database.
- Software and downloads - Users

can download documentation, clients, or special tools.

Managing Parent/Child Servers

VSOM servers can create parent/child relationships and push user accounts to child servers.

User accounts are permitted to be synchronized with roles on additional VSMS hosts. When a role is related to a remote (additional VSMS host) role, the user accounts (user names and login information) will be synchronized. New users added to a role will be pushed to the child role.

Use the Manage Parent/Child Servers link on the parent server to define parent/child relationships. Go to the Users module to Synchronize Child Accounts . This will push the parent server users to the child server user module.

The following rules must be applied for successful Parent/Child server management:

- Parent/child servers can be associated with VSOM 2.4.0 and above.
- Child accounts can be assigned to only one parent and only one role.
- Governed accounts have limited edit functionality.
- Child user's roles must be predefined.
- Child to child servers are not cascaded.
- Parent users cannot delete child accounts or change the rights of child roles.

How It Works

Video feeds can originate from the direct proxy or from a different Media Server. A proxy video feed can be the parent to another video feed served by a different Media Server. Parent proxies may be from remote or local hosts and may be nested in a hierarchy with inheritance rights.

A direct proxy becomes a parent when a child proxy is created. A child proxy receives its video directly from a parent proxy. A child proxy has the same resolution, quality, and media type of its parent, but in the case of MJPEG video streams, a lower frame rate may be configured for the child feed.

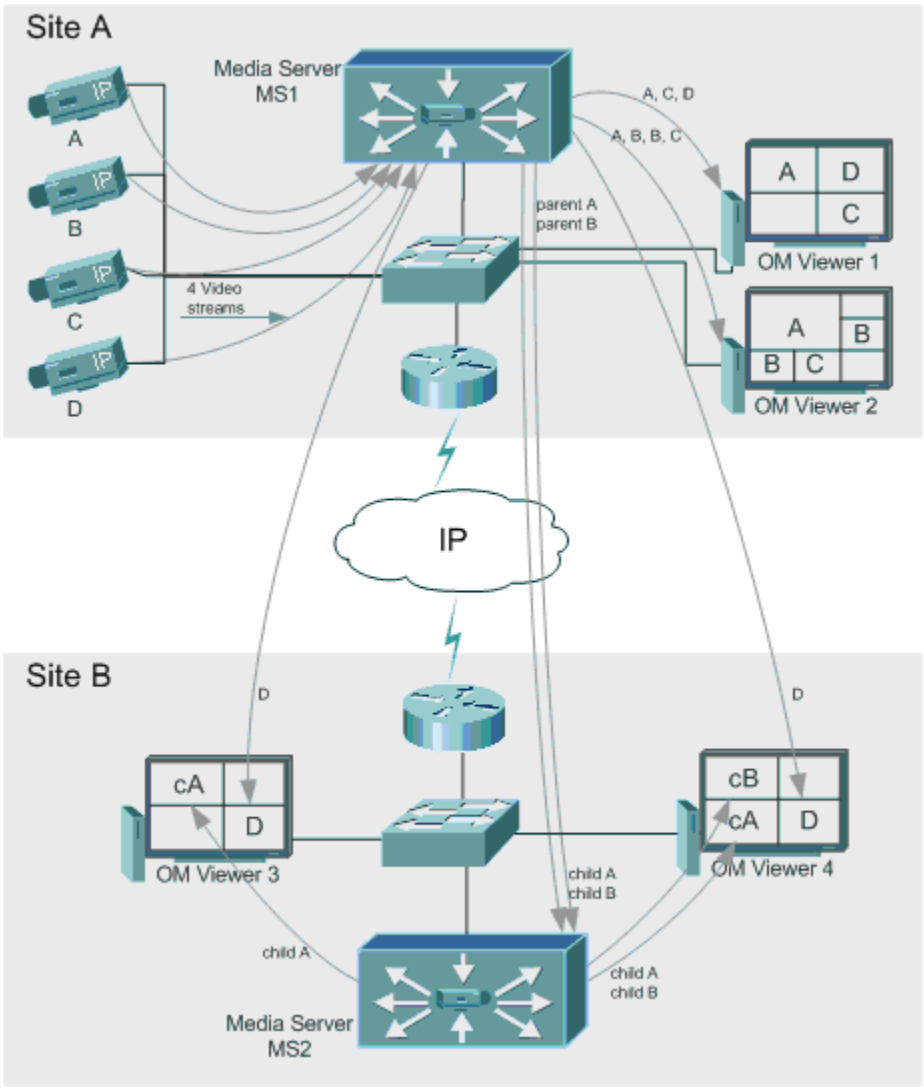
Parent-child proxies permit more efficient network utilization by distributing video feeds closer to the viewers. This is very important in environments with remote branch offices or with limited bandwidth available for video delivery. By replicating a single video feed to a

location with several viewers, the bandwidth requirements throughout the network are reduced.

In order to conserve bandwidth, the child process connects to the parent source only when video streaming is requested by a viewer.

In the illustration below, Media Server MS1 is acting as the parent for two feeds that are served by Media Server MS2. Video feeds from cameras A and B are replicated to Media Server MS2, which in turn can be served to a large number of users or other child feeds. The environment has generated a total of six proxy processes:

- Media Server MS1 is the direct proxy to four edge devices but also replicates eleven different video streams to other viewers or child feeds.
- Media Server MS2 has created two child proxy feeds, child A and child B. These feeds can be propagated to any viewers locally on Site B, reducing the bandwidth requirements across the wide area connections.



Configuring the Servers

1. Add the parent server. This differs from the server currently being used.

The parent server must be permitted to be the parent of a child server as setup in the Roles Users section. Multiple parents are permitted. VSOM can authorize additional VSOM parents to add itself as a Child VSOM; however, external parents must be recognized (in the list).

2. Define the Child server roles on the child server prior to pairing with a parent server. Child servers can be assigned to one parent server, one child role who is the only role able to modify this server, and have limited permissions. VSOM can add an additional child to a VSOM server and manage the child VSOM server user accounts.
3. Check the Authorize box as applicable.
4. Add the child server to the parent server. Verify the availability.
5. Click user to sync the child accounts. Synchronization is one level deep and the parent and child must have the same password to sync. Pushing child users from the parent does not override existing user setups.

It is recommended that user accounts be entered by local users to avoid affecting child user accounts. Child users are permitted to update child accounts.

Note: Parent and child proxies each count as a channel.

Deleting Parent and Child Servers

If a user deletes a parent feed with multiple child feeds running, all child feeds will be deleted via a cascade effect.

Deselecting the Authorize Parent Servers and Add Child Servers checkboxes will remove the entries in those fields.

Roles that have a parent user assigned cannot be deleted.

Users cannot delete a role that has a parent user logged in. When the role the user was assigned to is deleted and the user was not part of any other roles, all permissions are removed.

Parent servers cannot delete child users but parent servers can release the child user from the parent server to perform self edits or deletions.

Configuring Media Servers

VSOM displays detailed information on each VSMS in the system including storage, license keys, live video streams, archives and events.

These servers must be added to the system and are the source for analog and IP cameras, archives and events. Users may be

required to manually enter user specific or local settings. Additionally, VSVM servers can be added. VSOM supports importing live video stream configuration previously set up on a MS server.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use to export data to an MS Excel worksheet.
- Use to access the Cisco VS Management Console.
- Use to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use to synchronize the applicable server. Users may be required to check applicable items for synchronization. This is useful to synchronize VSMS, VSVM, and VSOM servers and to incorporate previously configured monitors, child proxies, and archivers. This operation cannot be undone.
- Use to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.

Add and Edit a Server

Note: Checked and auto-filled parameters are the recommended defaults for this page.

1. Click the server icon on the left navigation bar.
2. Click Add a New server.

Select the server type (VSMS, VSVM, or VSMS-Backup), enter the server name, description, and host IP/name. Set the server authentication as applicable. It is recommended that the roles and rights defaults be verified/configured when setting up the server.

Note: To create backups, at least one backup server must be defined in the system. After backups have started occurring, you can open the Backup tab for the archive and view the information in the Backup Details area (see Editing and Deleting Archives). The information is for the last executed backup for that archive.

Note: A VSMS-backup server must be configured with a repository for archive backups from other servers.

4. Click submit.

Server Type	Select the server type as applicable.
Server Name	Enter the server name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the server such as location or type. This field is optional.
Host IP/Name	Enter the Host/IP address or name.

Rights

Rights control access to content creation, modification and site administration. Administrators assign rights to roles, and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

View Server Information

Click the server name to view details, information, feeds, archives, events, and rights. Server pages will send a test for server availability whenever users request the details page.

Details

Server Details	**Server Type** - Displays the server type: virtual matrix, media, or encoder. **Server Name** - Displays the server name being viewed. **Host IP/Name** - Displays the IP address or name. **Status** - Displays enabled/disabled server status. **Console:** Displays applicable available console to for use in setup and configuration.
Disk Usage	**Repository** - A mounted location on the VSMS host that has been dedicated to storing media data. **Size** - The amount of disk space available to that particular repository. **Used (DF)** - The amount of actual used disk space at the current time. **Free (DF)** - The amount of actual free disk space at the current time. **Used Space** - The amount of disk space (bytes) that VSMS has reserved for all of its requested archive recordings and clips. **Free Space** - The amount of free disk space (bytes) that the VSMS server has available to reserve for future archive recordings or clips.

Server Info

Installed Version	Displays version information for the Media server.
License Information	Displays License key activation/expiration dates, media output, client and server authorized quantities, and IP address information.
Configuration	Displays the Media Server configuration information.

Camera Feeds

Feed Name	Displays the feed name.
Status	Displays the current status. May include running and suspended.
Type	Displays the VSMS driver for the listed camera feed.
Source	Displays the hostname or IP address of the video source, such as an external video device, internal video encoder, or another Media server.
Media Type	Displays the media type. Available media types include: • H264 • JPEG • MPEG2 • MPEG2 Elementary • MPEG4 • MPEG H263 - Recommend TCP, UDP, and multicast defaults remain as populated. • D1
Resolution	Displays the video resolution of the camera feed. Common resolutions are: • CIF (approx. 320 x 240) • 2CIF (approx. 640 x 240) • 4CIF (approx. 640 x 480) - De-Interlacing is supported. • QCIF (approx. 160 x 120) • D1 - De-Interlacing is supported. • 1M, 3M, 5M etc. (Megapixel Resolutions)
F/B Rate	The frame rate and bitrate determine the amount of video data seen in a given amount of time. Frame rate is used to measure MJPEG streams, while bitrate is used with MPEG2 and MPEG4. Higher values represent more video data every second, which means smoother video and a more accurate representation of what is happening. In

	archive feeds, higher values result in larger file sizes.
Quality	Displays the quality setting of an MJPEG feed. Higher values represent higher quality frames at the cost of higher frame file sizes (which may result in a stream more difficult to stream in some cases)

Archives

Name	Displays the camera/archive name.
Status	Displays the current status. May include shelved or running.
Type	Displays the archive type. Types include loop, recur(ring) or regular.
Size	Displays the archive size.
Reserved Space	Displays the amount of space set aside for the archive to be stored.
Start	Displays the date the archive will begin or has begun.
End	Displays the date the archive will end or has ended.
Expires	Displays the date the archive will be deleted and no longer available. • Lifetime - Indicates the archive will not be deleted. • -- Indicates the archive has not run or is not completed.
Delete	Click to remove the archive. This function is **not** reversible.

Events

Name	Displays the event name.
Device	Displays the Host IP/Name.
Source	Displays the camera/component name.
Channel	Displays the encoder channel. This is a hardware connection.
Type	Displays the event type:  - Indicates an alarm  - Indicates information available on a motion alarm
State	Displays a rising or falling state. This is the event default.
Action	Displays any of the following: • None

	• Archive Clip and/or • Accelerate This option is not available for soft triggers. This parameter is set in the event/actions module.
Camera Feeds	Displays the camera feed name.
Total Events	Displays the total number of events that have occurred during the month.
Framerate	Displays the framerate at which the event clips will be recorded when an event occurs.
Days to Live	Displays the number of days until an event and/or video clip is saved before it is removed from the system.
Notification URL	Displays the URL that is notified when a) an event trigger occurs and b) when an event clip is finished being created. This field is useful for notifying external applications that an event has occurred.

Delete a Server

Verify the server to be deleted. Preserved items from a deleted VSOM server will be available on VSMS.

Administrators will be required to specifically designate items not to be removed when a server is deleted. Select the applicable check boxes for items to be preserved.

Synchronizing Servers

When servers are imported/synchronized, information will populate only the applicable servers and camera feeds. When deleting a feed from a server after the server has been imported, all related archive, event, and feed records will be deleted unless otherwise specified on the delete screen.

Configuring Virtual Matrix Servers

VSMS servers must be added to the system prior to using VSOM and are the source for analog and IP cameras, archives and events. Users may be required to manually enter user specific or local settings. Server pages will send a test for server availability whenever users request the details page.

Action Icons

Action icons are available based on user permissions.

- Where available, use  to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.

- Use  to export data to an MS Excel worksheet.
- Use  to access the Cisco VS Management Console.
- Use  to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use  to synchronize the applicable server. Users may be required to check applicable items for synchronization. This is useful to synchronize VSMS, VSVM, and VSOM servers and to incorporate previously configured monitors, child proxies, and archivers. This operation cannot be undone.
- Use  to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.

Add and Edit a New Server

Note: Checked and auto-filled parameters are the recommended defaults for this page.

1. Click the server icon on the left navigation bar.
2. Click Add a New server.

Select the server type as VSVM, enter the server name, description, and specify the host IP/name.

Note: This must end in :8086 because VSVM runs on this port number.

Users may be required to manually enter other user specific or local settings as applicable. It is recommended that the roles and rights defaults be verified/configured when setting up the server.

4. Click submit.
5. Click the server icon on the left navigation bar and click the Edit icon for the server that you just added.
6. Enter display settings by selecting from the drop-down lists and entering values in the spaces provided, as in the following example:

    Border Size: 0

    Fixed BG Color: #e0e0e0

    Fixed Text Color: #000000

    Highlight BG Color: #A0EFA0

    Highlight Text Color: #000000

    Rotate BG Color: #e0e0e0

    Rotate Text Color: #000000

    Title Height: 20

Note: Previously configured VSVM monitors are automatically imported into VSOM.

Server Type	Select the server type as VSVM.
Server Name	Enter the server name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the server such as location or type. This field is optional.
Host IP/Name	Enter the Host/IP address or name. Must end in :8086.
Display Settings	**Border Size:** 0-10 (px) **Colors:** Enter colors in HEX format. **Title Height:** 1-20 (px) **Server Defaults:** Restores the HEX settings to the server defaults.

Rights

Rights control access to content creation, modification and site administration. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

View Server Information

Click the server name to view current details, display settings, and configured monitors. Server pages will send a test for server availability whenever users request the details page.

Server Details	**Server Type** - Displays the server type: command, media, or encoder. **Server Name** - Displays the server name being viewed. **Host IP/Name** - Displays the IP address or name. **Status** - Displays enabled/disabled server status. **Display Settings** - Displays various view settings by HEX colors. **Monitors** -Displays currently configured monitors.

Delete a Server

All monitors associated with the server will be deleted. The configurations will remain on the VSVM server.

Synchronizing Servers

When servers are imported/synchronized, information will populate only the applicable servers and camera feeds. When deleting a feed from a server after the server has been imported, all related archive, event, and feed records will be deleted unless otherwise specified on the delete screen.

Configuring NVRs and DVRs

NVRs (Pelco) and DVRs (Nice) transform analog video signals from security cameras into digital format suitable for storage on hard drives, increasing storage options for administrators. They also aid in managing the stored video files, provide motion detection settings, and PTZ security camera control.

The primary function is the simultaneous recording and remote access of live video streams. NVRs and DVRs can be software based and managed remotely, making them suitable for use with IP cameras.

A DVR or NVR can connect to different types of feeds. The recording configuration is specified on the NVR/DVR device.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use to export data to an MS Excel worksheet.
- Use to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use to synchronize the applicable NVRs/DVRs and servers. This is useful to synchronize VSMS, VSVM, and VSOM servers and to incorporate previously feeds and archivers. This operation cannot be undone.
- Use to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules. If deleting an entity that produces a feed (encoders, IP/analog cameras, or camera feeds), the delete action will delete all associated archives (running or not). There is a checkbox option to keep the archive data file on the VSMS servers, but the association in VSOM will be deleted and users will not be able to view those archives using VSOM.

Add and Edit a NVR/DVR

1. Click the NVRs/DVRs icon on the left navigation bar.
2. Click Add a new NVR or DVR.
3. Select the server and NVR/DVR type (Nice or Pelco),.
4. Enter a name, for the NVR or DVR, description, and the host/IP address or name.
5. Enter the user name and password for access to the NVR or DVR.

6. Open the Rights tab and verify that the desired rights are assigned.
7. Click Submit.
8. Open the Servers page and click the Synchronize icon to locate feeds on the NVR/DVR and automatically create records for them in the system.

Details

Server	Select the server type from the drop down list. All supported servers are listed.
NVR/DVR Type	Select the NVR/DVR from the drop down list. All supported NVRs/DVRs are listed.
NVR/DVR Name	Enter the NVR/DVR name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the NVR/DVR such as location or type. This field is optional.
Host IP/Name	Enter the NVR/DVR Host/IP address or hostname. Use the DVR gateway IP address rather than the server or actual DVR.
Authentication	A user id and password are required. Enter the NVR/DVR user id and password required for access to the NVR or DVR. ***Note: The user id and password are set during the device installation process.***

Advanced Configuration

Camera is PTZ enabled	Selec the check box to enable PTZ functions.
Manufacture	Choose the NVR or DVR manufacturer from the drop-down list.

Viewing NVR/DVR Feeds

When the synchronization is complete, open the VSOM Operator View. The imported channels are displayed on the left navigation bar under camera feeds.

The NVR/DVR archive is also imported under a folder with the name assigned to the NVR or DVR. You can delete individual feeds or archives on the camera feeds page. You can also use

PTZ controls for the device by selecting the device under PTZ Sources.

Rights

Rights control access to content creation, modification and site administration. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

Delete

Verify the NVR/DVR to be deleted is correct. Preserved items from a deleted VSOM server will be available on VSMS. Preserved items from a deleted VSMS server only removes the items from VSOM. They will still be accessible on VSMS.

Configuring Encoders

Encoders are used to convert analog video from analog cameras into digital video that can be used by the system. Encoders are defined by an IP address and an encoder type. It is common for encoders to be secured by a username and password and should be added as required. VSOM supports encoders for MJPEG and MPEG4 video.

Some encoders permit multiple streams with different attributes from the same video input. For example, the same video input may be available both as a JPEG feed and a MPEG4 feed. This is setup by permitting multiple analog cameras on the same input channel, even though there is only a single analog camera or video source. All configured cameras are listed and populate all layouts in the default camera group order as set by administrators.

Action Icons

Action icons are available based on user permissions.

- Where available, use  to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use  to export data to an MS Excel worksheet.
- Use  to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use  to rapidly copy and duplicate similar encoder, camera, and role configurations.
- Use  to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules. If deleting an entity that produces a feed (encoders, IP/analog cameras, or camera feeds), the delete action will delete all

associated archives (running or not). There is a checkbox option to keep the archive data file on the VSMS servers, but the association in VSOM will be deleted and users will not be able to view those archives using VSOM.

Add and Edit an Encoder

Note: Each VSES board MUST have a configured encoder. Recommended naming conventions include: VSES Board 1, VSES Board two, VSES Board 1 Camera location, etc.

1. Click the encoder icon on the left navigation bar.
2. Click Add a New Encoder.
3. Select the encoder type, enter the name, description, and the host/IP address or name. The host/IP address or name is the same as the server name.
4. Set the password authentication as applicable. It is recommended that the roles and rights defaults be verified/configured when setting up the encoder.
5. Click submit.

Encoder Type	Select the encoder type as VSES from the drop down list. All supported encoders are listed.
Encoder Name	Enter the encoder name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the encoder such as location or type. This field is optional.
Host IP/Name	Enter the encoder Host/IP address or name.
Status	Determine if the server is to be enabled or disabled. Enabled - Permits encoder/camera control. Disable - Turns the encoder/camera control off without removing the encoder from the list.
Encoder Required Authentication	A user id and password are required. Enter the server user id and password as provided. ***Note: The user id and password would have been supplied during the installation process.***

Rights

Rights control access to content creation, modification and site administration. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

Details

Encoder Information	**Encoder Name** - Displays the encoder name. **Encoder Type** - Displays the encode type i.e. Video Server. **Host IP/Name** - Displays the IP address or name. **Status** - Displays enabled/disabled encoder status. **Requires Authentication** - Displays whether user login information is required.

Cameras

Camera Name	Displays the camera name.
Camera Type	Displays the camera type. May be the same or similar to the camera name.
PTZ Enabled	Displays PTZ status only, not if camera is PTZ capable. This is determined during camera setup.
Status	Displays camera status.

Camera Feeds

Feed Name	Displays the feed name.
Media Type	Displays the media type. Available media types include: JPEG and MPEG4 ***Note: A child feed must have the same quality value as or equal to the parent feed.***
Framerate or Bitrate	The framerate and bitrate determine the amount of video data seen in a given amount of time. Framerate refers to MJPEG streams, while bitrate is used with MPEG2 and MPEG4. Higher values represent more video data every second, which means smoother video and a more accurate representation of what is happening. In archive feeds, higher values result in larger file sizes.
Quality	Displays the quality setting of an MJPEG feed. Higher values represent higher quality frames at the cost of higher frame file sizes (which may result in a

	stream more difficult to stream in some cases.) ***Note: A child feed must have the same quality value as or equal to the parent feed.***

Copy an Encoder

Encoder permissions are inherited from the originating encoder.

Delete

Verify the encoder to be deleted is correct. Preserved items from a deleted VSOM server will be available on VSMS. Preserved items from a deleted VSMS server only removes the items from VSOM. They will still be accessible on VSMS.

Administrators will be required to specifically designate items not to be removed when an encoder is deleted. Select the applicable checkboxes for items to be preserved.

Configuring Analog Cameras

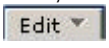
Administrators can configure and control various camera types without requiring extensive control protocol knowledge. Analog cameras provide analog video to encoders and may also support PTZ functions. Matching an analog camera to an encoder creates a camera feed (video stream). Up to 64 streams can be configured at any one time.

Some encoders permit multiple streams with different attributes from the same video input. For example, the same video input may be available both as a JPEG feed and a MPEG4 feed. This is setup by permitting multiple analog cameras on the same input channel, even though there is only a single analog camera or video source. All configured cameras are listed and populate all layouts in the default camera group order as set by administrators.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use to export data to an MS Excel worksheet.
- Use to edit single component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties. Use and 

to update or delete multiple items.
- Use to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules. If deleting an entity that produces a feed (encoders, ip/analog cameras, or camera feeds), the delete action will delete all associated archives (running or not). There is a checkbox option to keep the archive

data file on the VSMS servers, but the association in VSOM will be deleted and users will not be able to view those archives using VSOM.

Add and Edit an Analog Camera

Note: Checked and auto-filled parameters are the recommended defaults for this page.

1. Click the analog camera icon on the left navigation bar.
2. Click Add a New Analog Camera.
3. Enter the camera name, description, select the status, encoder, and channel (for multi-channel encoders). Select a server to define where the camera feed is to be created.
4. Select the video resolution, format, media type, bitrate or framerate, and quality for the camera feed.
5. Open the Adv Config tab and select the PTZ settings.
6. If the camera supports motion detection, select the Camera is motion detected check box to enable record on motion functionality. To record on motion when after you have set up the camera, see Enabling Record on Motion.
7. Open the Rights tab and verify the access rights for the camera.
6. Click Submit.

Note: Use [–] [+] to zoom the camera feed preview.

Camera Name	Enter the camera name. It is recommended that camera names be created based on existing naming conventions.
Description	Enter applicable information about the camera such as location or type. This field is optional.
Status	Determine if the analog camera is to be enabled or disabled. Enabled - Permits camera control. Disable - Turns the camera control off without removing the camera from the list.
Encoder	Select the encoder type from the drop down list. All supported encoders are listed.
Encoder Channel	Based on the encoder model, select a number referring to the video port numbers. A single analog feed can be connected to any video port on the encoder. (i.e. video input 3 can be used on the encoder without having to use ports 1 and 2 first)

	1 - One feed is configured, one can be viewed 2 - Two feeds are configured, one can be viewed 3 - Three feeds are configured, one can be viewed 4 - Four feeds are configured, one can be viewed quad - View four feeds simultaneously 5... etc. up to 64 Channel can also be manually entered (i.e. 1_1). Each encoder can be configured with multiple feed views.

Note: The following fields will be dynamically populated based on the device parameters and previously configured settings.

Server	Select the server the camera feed will be linked with. Select the checkbox if the required feed has already configured to the above selected server.
Media Type	Select from the following supported types: • H264 • JPEG • MPEG2 • MPEG2 Elementary • MPEG4 - When selecting UDP on, leave the multicast address blank to enable unicast. • MPEG H263 ***Note: Audio is embedded if the camera is MPEG ready.*** ***Note: MPEG types will not display a preview.***
Format	Select the analog video standard: • NTSC - 60 Hz standard framerate • PAL - 50 Hz standard framerate
Resolution	Select the resolution the camera feed should be set to. Sample resolutions may include: • CIF (approx. 320 x 240) • 2CIF (approx. 640 x 240) • 4CIF (approx. 640 x 480) - De-Interlacing is supported. • QCIF (approx. 160 x 120) • D1 - De-Interlacing is supported.

	• 1M, 3M, 5M etc. (Megapixel Resolutions) ***Note: Resolutions under 1024 (i.e. 800 x 600) will display scrollbars and an undersized operator viewing pane.***
Transport	The following protocols will be dynamically selected based on the camera type. • TCP • UDP • Multicast Address
Framerate or Bitrate	The framerate and bitrate determine the amount of video data seen in a given amount of time. Framerate refers to MJPEG streams, while bitrate is used with MPEG-2 and MPEG4. Higher values represent more video data every second, which means smoother video and a more accurate representation of what is happening. In archive feeds, higher values result in larger file sizes. ***Note: If the quality parameter is set to less than 50, the framerate has priority and the requested framerate is as per the proxy_axis_mpeg4.xml file. If the quality parameter is set greater than 50, the generated image quality has priority (while maintaining the bitrate) and lower framerates are returned.*** ***Any number between 1 and 49 indicates the same priority for the framerate. Any number between 50 and 99 indicates the same priority for the image quality. The higher the bitrate, the higher the image quality.***
Quality Scroll Bar	Use the scroll bar to set the framerate (image) quality. This is most applicable to JPEG media types.

Camera Groups

The Top Level (No Group) option means that the administrator or user does not want to place the camera in a specific group. Select the Top Group check box to view the Top Level cameras and relocate the cameras as applicable. Refer to the feeds module to edit Camera Groups.

Adv. Config

These entries are only applicable if the camera has PTZ and motion detection capabilities and if the checkboxes are selected.

Note: Checked and auto-filled parameters are the recommended defaults for this page.

Enable Motion Detection	Select if the camera/encoder is motion detection capable.
Enable Camera PTZ	Select if the camera is PTZ capable. Enabled - Permits PTZ camera control. Disable - Turns the PTZ control off without removing the PTZ configurations from the list.
Status	Select if the camera is enabled/disabled. This dropdown does not apply to the PTZ portion of the camera functionality.
Manufacturer	Select the camera make and model. All currently available/configured cameras will be listed.
COM Port	Select the applicable COM port this PTZ camera is to be configured to.
Chain Number	Enter the chain (order) number this device is within the configuration.
COM IP/Host Name	Enter the IP address of a single port encoder.
PTZ Preset Labels	PTZ preset commands can be mapped to USB joystick buttons, but not to mouse buttons. Labels should be indicative of camera view or location. Some examples include: • Front Lobby • Main Hall • Kitchen Door • Employee Entrance • Parking Garage A ***Note: Preset labels can be deleted by clearing the text field and clicking submit.***
Rights	Rights control access to content creation, modification and site administration. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

Map Info

Latitude	Enter the distance north or south of the equator.
Longitude	Enter the distance east or west of the meridian.
Altitude	Enter the height in the atmosphere above sea level.

Floor/Level	Enter the building floor number.

Delete

Verify the camera to be deleted as correct. Select the Leave all Archive Data Files on the Server box as applicable.

Configuring IP/Network Cameras

Administrators can configure and control various camera types without requiring extensive control protocols knowledge. IP Cameras connect directly to the network and appear to VSOM as a combination of an analog camera with an encoder in a single package. Adding an IP camera to VSOM creates a camera feed which is a video stream that can be viewed on VSOM. Additionally, some IP cameras are PTZ capable.

Some IP Cameras permit multiple streams with different attributes simultaneously. This is setup by adding the same IP camera to the system multiple times but with different video parameters. All configured cameras are listed and populate all layouts in the default camera group order as set by administrators.

Action Icons

Action icons are available based on user permissions.

- Where available, use  to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use  to export data to an MS Excel worksheet.
- Use  to edit single component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties. Use  and 

to update or delete multiple items.
- Use  to rapidly copy and duplicate similar encoder, camera, and role configurations.
- Use  to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules. If deleting an entity that produces a feed (encoders, ip/analog cameras, or camera feeds), the delete action will delete all associated archives (running or not). There is a checkbox option to keep the archive data file on the (VSMS servers, but the association in VSOM will be deleted and users will not be able to view those archives using VSOM.

Add and Edit IP/Network Cameras

Note: Checked and auto-filled parameters are the recommended defaults for this page.

1. Click the IP/Network camera icon on the left navigation bar.
2. Click Add a New IP/Network.
3. Enter the camera name, description, select the status, encoder, and channel (for multi-channel encoders). Select a server to define where the camera feed is to be created.
4. Select the video resolution, format, media type, bitrate or framerate, and quality for the camera feed. Set the password authentication as applicable.
5. Open the Camera Groups tab and choose the group or groups.
6. Open the Adv Config tab and choose PTZ settings.
7. If the camera supports motion detection, select the Camera is motion detected check box to enable record on motion functionality. To record on motion when after you have set up the camera, see Enabling Record on Motion.
8. Open the Rights tab and verify the access rights for the camera.
9. Click Submit.

Note: Use [–] [+] to zoom the camera feed preview.

Camera Name	Enter the camera name. It is recommended that camera names be created based on existing naming conventions.
Description	Enter applicable information about the camera such as location or type. This field is optional.
Camera Type	Drop down lists displays all currently supported cameras.
Host IP/Name	Enter the Host IP/name.
Status	Determine if the camera is to be enabled or disabled. Enabled - Permits camera control. Disable - Turns camera control off without removing the camera from the list.

Note: The following fields will be dynamically populated based on the device parameters and previously configured settings.

Server	Select the server the camera feed will be linked with.
Media Type	Select from the following supported types: • H264 • JPEG • MPEG2

	• MPEG2 Elementary • MPEG4 • MPEG H263 - Recommend TCP, UDP, and multicast defaults remain as populated. • D1 ***Note: Audio is embedded if the camera is MPEG ready.*** ***Note: MPEG types will not display a preview.***
Format	Video standards: • NTSC - 60 Hz standard framerate • PAL - 50 Hz standard framerate
Resolution	Select the resolution the camera feed should be set to. Sample resolutions may include: • CIF (approx. 320 x 240) • 2CIF (approx. 640 x 240) • 4CIF (approx. 640 x 480) - De-Interlacing is supported. • QCIF (approx. 160 x 120) • D1 - De-Interlacing is supported. • 1M, 3M, 5M etc. (Megapixel Resolutions) ***Note: Resolutions under 1024 (i.e. 800 x 600) will display scrollbars and an undersized operator viewing pane.***
Transport	The following protocols will be dynamically selected based on the camera type. • TCP • UDP • Multicast Address
Framerate or Bitrate	The framerate and bitrate determine the amount of video data seen in a given amount of time. Framerate refers to MJPEG streams, while bitrate is used with MPEG2 and MPEG4. Higher values represent more video data every second, which means smoother video and a more accurate representation of what is happening. In archive feeds, higher

	values result in larger file sizes. ***Note: If the quality parameter is set to less than 50, the framerate has priority and the requested framerate is as per the proxy_axis_mpeg4.xml file. If the quality parameter is set greater than 50, the generated image quality has priority (while maintaining the bitrate) and lower framerates are returned.*** ***Any number between 1 and 49 indicates the same priority for the framerate. Any number between 50 and 99 indicates the same priority for the image quality. The higher the bitrate, the higher the image quality.***
Quality Scroll Bar	Use the scroll bar to set the framerate (image) quality. For JPEG archive sources, the play rate and skip frames can be adjusted as required.
Camera Authentication Required	A user id and password are required. Enter the server user id and password as provided. ***Note: The user id and password would have been supplied during the installation process.***

Camera Groups

The Top Level (No Group) option means that the administrator or user does not want to place the camera in a specific group. Select the Top Group check box to view the Top Level cameras and relocate the cameras as applicable. Refer to the feeds module to edit Camera Groups.

Adv. Config

These entries are only applicable if the camera has PTZ capabilities and if the checkbox has been selected. Preset labels can be entered here or on the PTZ Configuration page.

Note: Checked and auto-filled parameters are the recommended defaults for this page.

Camera is motion enable	Select if the camera/encoder is motion detection capable.
Enable Camera PTZ	Select if the camera is PTZ capable. Enabled - Permits PTZ camera control.

	Disable - Turns the PTZ control off without removing the PTZ configurations from the list.
Status	Select if the camera is enabled/disabled. This dropdown does not apply to the PTZ portion of the camera functionality.
Manufacturer	Select the camera maker and model. All currently available/configured cameras will be listed.
PTZ Preset Labels	PTZ preset commands can be mapped to USB joystick buttons, but not to mouse buttons. Labels should be indicative of camera view or location. Some examples include: • Front Lobby • Main Hall • Kitchen Door • Employee Entrance • Parking Garage A ***Note: Preset labels can be deleted by clearing the text field and clicking Submit. Empty or unused labels will be removed in blocks of eight.***
Rights	Rights control access to content creation, modification and site administration. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

Map Info

Latitude	Enter the distance north or south of the equator.
Longitude	Enter the distance east or west of the meridian.
Altitude	Enter the height in the atmosphere above sea level.
Floor/Level	Enter the building floor number.

Delete

Verify the camera to be deleted as correct.
Associated archives will remain on the server.

Configuring the PTZ and Joystick

VSOM supports the configuration of PTZ cameras as analog cameras connected to encoders or as IP cameras. PTZ presets can be defined and camera options such as iris and focus settings controlled.

The PTZ controls and joystick can be used to quickly move or PTZ a specific camera. A combination of video sources and built-in PTZ controls are used to move the cameras. Users can select a PTZ camera source from the list and move the camera associated with that source. PTZ settings can be recalled based on camera and user information.

Note: If a camera is not listed, then PTZ functionality is either not configured, not available, or the user does not have manage permission. Go to the Analog or IP Cameras administration pages to enable the PTZ.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use to export data to an MS Excel worksheet.
- Use to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.

Add and Edit Presets

Preset labels can be entered here or on the PTZ Configuration page of the IP/Network or Analog camera. Presets can be configured to PTZ based on event triggers and schedules and have a maximum of 99 presets labels available per camera. PTZ preset commands can be mapped to USB joystick buttons, but not to mouse buttons.

Note: If schedules are not used, disable the schedule on the Schedules tab prior to configuring any presets.

1. Click the PTZ Configuration icon on the left navigation bar. . Cameras with available PTZ settings will be displayed.
2. Click the edit icon of the applicable camera to set up/modify the PTZ presets. Use the PTZ crosshairs  function or use the mouse to pan to the required view. When the position has been attained, type in topmost Preset Label (i.e. West Lobby, East Staircase, etc.) to name the view.
3. Click the Set Preset button to save the parameters. Zoom levels will be maintained for the created preset. Preset labels should be indicative of camera view or location.
4. Click the Schedules tab to enable/disable cameras to PTZ to a preset based on a schedule.

5. Click Finished. It is recommended that the roles and rights defaults be verified/configured when setting up the presets.

To test and reset a current preset view, click the test button. The camera will pan to the preset location. To edit additional PTZ configurations, navigate to the applicable analog or IP camera and perform edits under the PTZ Config tab.

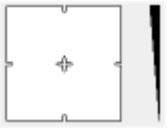
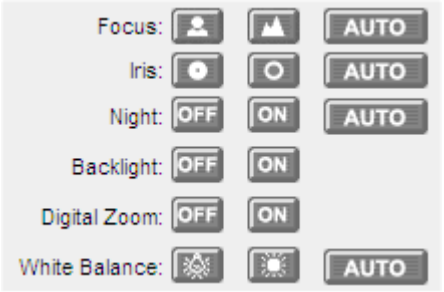
Use Pan-Tilt-Zoom

Pan-Tilt-Zoom (PTZ) consolidates camera control commands and permits users to customize button commands on all PTZ configured cameras. Users can move a selected camera by clicking the web controls, selecting a preset from the drop down menu, or using a USB joystick attached to the client work station.

Note: Once a view has been configured by the administrator, the application will recall the view and any authorized changes to the view based on user login authorizations.

PTZ Operations

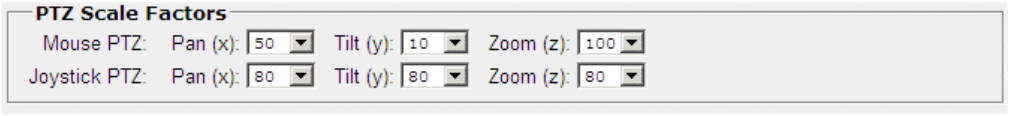
PTZ operations involve panning (left/right), tilting (up/down), and zooming (in/out) the camera and can be defined by commands or the PTZ control on the operator page.

PTZ Control	The PTZ (joystick) control can be toggled on/off in the operator view to enable the PTZ crosshair  functionality. Operators must select the PTZ control in the active frame each time to transfer control from the previously controlled PTZ camera. Pan and Tilt can be used via the crosshair box. Zoom can be used via the vertical scale to the right of the crosshairs. To zoom in, scale up, to zoom out, scale down.
These functions are dynamic in nature and may or may not be displayed for configuration based on the devices' supported options.	 Focus - Toggle or auto adjust focus. Iris - Toggle or auto adjust iris. Night - Toggle on/off or auto adjust night mode. Bckalight - Enable/disable backlight. Digital Zoom - Enable/disable

		digital zoom. White Balance - Toggle on/off or auto adjust indoor/outdoor white balance. Init - Sends an initialization command to VSMS and initializes settings for PTZ control. Reset - Click the reset button to return the PTZ view to the admin configured default.

PTZ Scale Factors

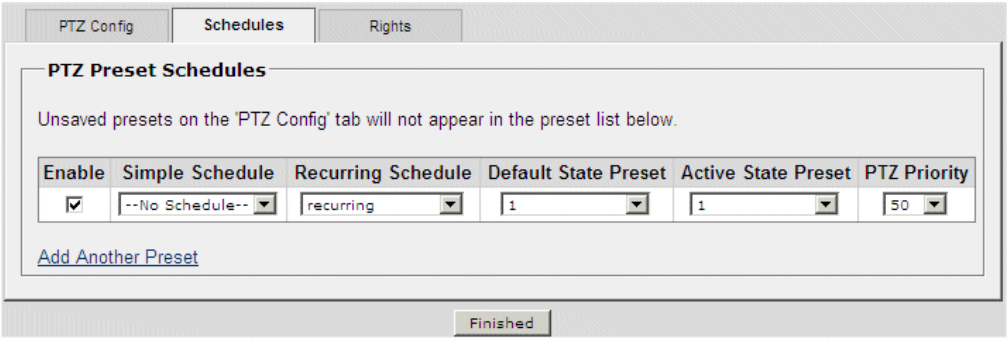
Use the scale factors to set the xyz PTZ factors for the mouse or joystick controls.



Pan (x)	Tilt (y)	Zoom (z)
Select the percentage speed the mouse or joystick can pan (move) the camera to.	Select the percentage speed of tilt the mouse or joystick can move the camera feed to.	Select the percentage speed the mouse or joystick can zoom to.

Schedules

The following drop options have been previously configured in the Schedules module and are only available if a camera is PTZ ready.



Simple Schedule	Simple schedules are a basic scheduled occurrence with a specific start and stop date and time.
Recurring Schedule	Recurring schedules are repeated on a defined schedule for a set period time or number of iterations. When running a recurring schedule for multiple days, weeks, months, etc., the schedule is considered running and pending during the run time.
Default/Active State Presets	Select the default or inactive state and the active or running state.
PTZ Priority	Select a priority for the current camera.

Rights

Rights control access to content creation, modification and site administration. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

Delete

Users can delete cameras via the analog or IP/Network camera lists and preset labels can be deleted by clearing the text field and clicking Finished.

Joystick

Cameras can be moved with a USB joystick installed on the client computer. The joystick control uses DirectInput and must be able to communicate with the main application. Keyboard presets are supported and has a default button which maps to camera presets.

PTZ preset commands can be mapped to USB joystick buttons, but not to mouse buttons.

Note: It is possible to use a USB joystick when using other pages of the application.

Configuring Monitors

The monitor is the physical viewing screen (component). By configuring a monitor, users are creating a component by which to view feeds. VSMS feeds can be synchronized with VSOM. Monitor settings will be available for modification as required. Users will be required to manually enter user specific or local settings.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use to export data to an MS Excel worksheet.
- Use to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.

Add and Edit a Monitor

It is recommended that the roles and rights defaults be verified/configured when setting up the monitor. When changes are made to a single view that has multiple monitors, the view for only that monitor will be updated.

Note: Checked and auto-filled parameters are the recommended defaults for this page.

1. Click the monitor icon on the left navigation bar.
2. Click Add a New Monitor.

   Enter the monitor name, description; the server to define where the camera feed coming from.

3. Select the view.

   It is recommended that the roles and rights defaults be verified/configured when setting up the monitor.

4. Click submit.
5. Click **Download the VSVM Client** to download and install the VSVM Client as applicable.

Monitor Number	Enter the monitor number. This number is for assignments on the CCTV keyboard. It is recommended that when multiple operator workstations are in use, each workstation use unique VSVM monitor numbers/names.

	Duplicate and "0" numbers are not permitted. This field is optional.
Monitor Name	Enter the monitor name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
VSVM Client Viewer Name	Displays the monitor name of the downloaded VSVM client. When a monitor is added to VSOM, the VSVM client viewer name is the same as the monitor name. However, when the monitor is edited, the monitor name will change but not the VSVM client viewer name.
Description	Enter applicable information about the monitor such as location or type. This field is optional.
Virtual Matrix	Select a server name from the drop down box. Available servers have been configured in the Add a New Server page.
Seed View	Select a layout configuration. These layouts have been configured previously from Add a New View page.
Rights	Rights control access to content creation, modification and site administration. Administrators assign rights to roles, and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

Delete

When deleting a monitor from VSOM check the box to keep the monitor on the VSVM state as applicable.

Group Management

Permits administrators to perform batch updates to camera groups, move cameras between groups by utilizing web drag and drop behavior, and perform normal group operations such as add, rename and delete.

Features include:

- Drag and drop cameras or camera groups to batch edit list.
- Batch edit camera names, numbers, statuses and descriptions and clear the batch list all at once.
- Drag and drop camera and camera groups in between camera groups.
- Add rename and delete camera groups.

Editing Camera Information

1. Click + next to the group name to expand the camera group(s) folders.
2. Drag the applicable camera names to edit from the camera tree (left) to the batch edits list (right). The camera property information and preview will be displayed.
3. Click Batch Edit to display the edit mode.
4. Perform camera edits to name, number, status, and description as applicable.
5. Click Submit or cancel as applicable.

To remove a camera, drag the applicable camera to the camera tree (left) or remove multiple cameras by clicking Clear List.

Editing Group Information

1. Click + next to the group name to expand the camera group(s) folders.
2. Click the applicable group on the tree list (left).
3. Click the Group button to display the menu.
4. Perform edits to add, rename, or delete a group. When adding a group, the new group will become a child group of the group selected. When deleting a group, all subgroups and cameras in the subgroup will be moved to the top level.

Moving Cameras and Camera Groups

1. Drag a camera or camera group to the top of the destination group. Upon dragging, the destination group will be highlighted to indicate that it is ready receive a camera or group.

Configuring Camera Feeds

Administrators use Camera feeds to list available camera feeds in the system. This includes feeds from analog cameras with encoders and IP cameras.

Note: To add analog or IP cameras, refer to the add new analog cameras with encoders or IP cameras modules.

Use Create a New Child Feed to create a new feed that is a child of another camera feed. Child refers to a new feed that uses another feed's parameters as its source. When creating a child feed, specify the source (parent) feed and the camera group membership and rights for the new feed as applicable.

Action Icons

Action icons are available based on user permissions.

- Where available, use  to display help popups.

- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use  to export data to an MS Excel worksheet.
- Use  to edit single component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties. Use  and 

to update or delete multiple items.
- Use  to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules. If deleting an entity that produces a feed (encoders, ip/analog cameras, or camera feeds), the delete action will delete all associated archives (running or not). There is a checkbox option to keep the archive data file on the VSMS servers, but the association in VSOM will be deleted and users will not be able to view those archives using VSOM.

Add and Edit a Child Camera Feed

Multiple child feeds can be added to a parent source. Additional child feeds can be added to existing child feeds. It is recommended that the roles and rights defaults be verified/configured when setting up the feed. To add a child feed:

1. Click Camera Feeds icon on the left navigation bar.
2. Click Add a new child feed.
3. Enter the camera name, description, server to define where the camera feed is coming from.
4. Configure the Camera Groups and verify the roles and rights defaults.
5. Enter the required parameters and select the parent source.

To prevent users from having PTZ access, grant permission to view the child feed but not the parent.

Use the edit icon to modify camera feed parameters such as JPEG framerate, camera group membership, and camera feed rights. Fields such as resolution and media type can only be changed by stopping the feed and creating a new one.

Camera Number	Enter the camera number. This number is for assignments on the CCTV keyboard. It is recommended that when multiple operator workstations are in use, each workstation use unique VSVM camera numbers/names. Duplicate and "0" numbers are not permitted. This field is optional.
Feed Name	Enter the feed name. It is recommended that naming convention standards be utilized for ease of use throughout the application.

Description	Enter applicable information about the feed such as location or type. This field is optional.
Server	Select the server the camera feed will be linked to.
Status	Determine if the feed is to be enabled or disabled. Enabled - Permits feed control. Disable - Turns the feed control off without removing the feed from the list.
Parent Source	Select the camera to use as the source.
Media Setup	Select the framerate that the archive will record at (equal to or less than the parent framerate) if the selected parent source is a motion JPEG media type camera.
Framerate	The framerate determines the amount of video data seen in a given amount of time. Framerate refers to MJPEG streams, while bitrate is used with MPEG2 and MPEG4. Higher values represent more video data every second, which means smoother video and a more accurate representation of what is happening. In archive feeds, higher values result in larger file sizes.

Camera Groups

The Top Level (No Group) option means that the administrator or user does not want to place the camera in a specific group. Select the Top Group check box to view the Top Level cameras and relocate the cameras as applicable. Refer to the feeds module to edit Camera Groups.

Rights

Rights control access to content creation, modification and site administration. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

Details

Feed Information	**Feed Name** - Displays the feed name. **Server Name** - Displays the name. **Camera Name** - Displays the camera name. **Camera Groups** - Displays the camera group the feed is assigned to. This area may be blank.
Media Setup	**Resolution** - Displays the monitor resolution. **Format** - Displays the analog video standard.

	Media Type - Displays the media type. Available media types include: JPEG, MPEG2, MPEG4 **Framerate** - Displays the video framerate. **Quality** - Displays the quality setting of an MJPEG feed.

Delete

Use this function to remove a feed from the operator view. If additional sources are available, the next one available via the rotating source list will be displayed in the vacated pane. Feeds can be deleted but the view configurations will remain.

Note: All associated archives for the feed will be deleted and no longer available.

Managing Camera Groups

Camera groups are an organizing tool permitting cameras to be added to groups for viewing in the navigation window. The camera groups functionality permits administrators and other users to organize cameras into groups based on parameters such as location, type, view, etc. The Top Level (No Group) option means that the administrator or user does not want to place the camera in a specific group. If the camera is to be placed in a group at a later time, the administrator or user can select the Top Group check box to view the Top Level cameras and relocate the cameras as applicable.

Users can add, delete, and rename cameras, groups, and previews based on standard Windows functionalities. indicates a separate camera feed configuration window will be displayed.

(0/0) indicates the number of groups and cameras within the top level group (i.e. (5/2) = 5 groups and 2 cameras are available). It is possible for groups within groups to list additional cameras and groups based on administrator preferences.

Note: It is highly recommended that administrators place cameras into their applicable groups as they are configured. In doing so, searches can be conducted prior to entering new cameras, alleviating potential duplication of names or cameras.

The Preview checkbox checks/unchecks all camera feeds on the right table for deletion.

Sidebar: Toggle	Use this link to toggle on/off the left navigation bar.
Window Height	Use this link to make the camera groups and preview window areas longer or shorter. For large camera lists, users

	may still be required to scroll down to view the entire list. Repeated clicks will continuously resize the preview window. Adjust the width by placing the cursor over the scroll bar and dragging the arrow until the required size is attained.
Check Feed Matches	Users can enter a search parameter to search for specific feeds or leave the text box blank and click the button to select all feeds. This is useful for moving all cameras simultaneously. Wild card characters are not permitted. This functionality is additive in nature, meaning previously selected matches will remain selected upon a revised search.
Uncheck All	Unchecks all previously selected cameras in all groups. Groups will remain selected.
Add Group	Enter a new group name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Update Group Name	Select a group from the list to rename. It is recommended that naming convention standards be utilized for ease of use throughout the application.

Copy Feeds	Click to copy a camera feed. Make sure to have the camera feed to be copied selected in the group window and the group to copy to selected.
Move Feeds	Click to move a camera feed. Make sure to have the camera feed to be copied selected in the group window and the group to move to selected.
Delete Group	Click to delete a group. Make sure to have the group to be deleted selected in the group window.
Delete Feeds	Click to delete a camera feed. Make sure to have the camera feed to be deleted selected in the group or preview window. Deleted cameras will be removed only from the specified group. The camera will still reside in the system or other groups as previously assigned.

Working with Archives

Administrators can set up scheduled and loop archives.

Action Icons

Action icons are available based on user permissions.

- Where available, use  to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use  to export data to an MS Excel worksheet.

- Use to edit single component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties. Use and to update or delete multiple items.

- Use to halt a running or pending archive. This will change the archive's end time to now instead of its scheduled recording end time. In the case of a loop archive, it will no longer loop. A stopped archive remains on the archive list until it is deleted.

- Use to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.

Backing Up Archives

When you create archives, the mechanism is in place to save video content. It is important to configure backups as part of the process if you want to preserve content in the event of system failure.

Note: When you create an archive, you can see the Backup tab and can configure remote backups. However, if an archive is created automatically, for example, when Record Now is used (see Enable Record Now Event), the Backup tab is not visible and the archive is not backed up unless you open the created archive and configure the Backup tab (see Editing and Deleting Archives). To back up all data without any interruption, you must configure the Backup tab within 24 hours of creating the archive.

You can back up archives to a backup server. Each backup is for a 24 hour period, and subsequent backups are added to the same backup file. Because each backup is for 24 hours only, the parts of an archive that are older than 24 hours are not backed up. For this reason, it is recommended that you configure backups when you first define an archive.

To create backups, at least one backup server must be defined in the system. To add a backup server:

1. In the Administration view, click Servers on the left navigation bar.
2. Click Add a New Server.
3. Select Video Surveillance Backup Server as the Server Type.
4. Enter a name to identify the server, description, and the hostname or IP address.
5. Click Submit.

Note: After backups have started occurring, you can open the Backup tab for the archive and view the information in the Backup Details area. The information is for the last executed backup for that archive.

Create/Schedule a New Archive

1. In the Administration view, click Archives on the left navigation bar.

2. Choose Start/Schedule a New Archive.
3. Choose the archive source and click Next.
4. Enter the archive name.
5. Configure the settings described in the next table.
6. Open the Archive Type tab.
7. Choose one of the following schedule options:
    - Simple schedule: Choose a start and end date and time to generate the archive. To specify additional dates and times, click Add Date(s).
    - Recurring schedule: Choose a date on which the recurring schedules will begin. Select one or more days of the week, and choose the start time and end time. To include additional start and end times for the same day, click Add Time Range. To specify schedules for additional days of the week, click Next Weekdays and enter information for a different day. Finally, choose an option for ending the schedule.
    - Continuous loop: Choose a duration for the continuously running archive. Video is continuously recorded in a loop of this duration. Looping schedules start as soon as they are submitted.

Note: The default schedule is a simple schedule that begins at the current time and ends one day later.

7. Open the Backup tab if you want to create backups of your archives. (Doing so requires that you have set up a backup server, as described above in this section.)
    a. Select the Backup this Archive check box.
    b. Choose the backup server from the Backup Server list.
    c. Configure a start time for the backups (HH:MM).
    d. If you want the backup schedule to expire after a specified number of days, Select the Backup Expires check box and enter the number of days. After the expiration period, the system will delete the backups.
    e. Select the Backup Events Only check box if you want to back up only events. If you do not select the check box, the entire archive is backed up.
8. Open the Rights tab and verify that the desired rights are selected.
9. Click Submit.

Note: if a user tries to create a new archive with the same name and source as that of an existing archive, the video data will be appended to the existing archive and a new archive will not be created. If the existing archive is still running, the user will see an error message indicated that it is a duplicate archive.

Details

Archive Name	Enter the archive name. It is recommended that naming convention standards be utilized for ease of use throughout the application. Use the Tokens feature to dynamically modify the date and datetime when the archive is started/scheduled. Enter date and datetime exactly as shown in the example. (i.e. {DATE} {DATETIME}) ***Note: VSMS will rename the feeds to include an <a_> in the file name and will convert special characters to compatible formats.***
Description	Enter applicable information about the archive such as location or type. This field is optional.
Status	Determine if the archive is to be enabled or disabled. Enabled - Permits the archive to run as scheduled. Disable - Turns the archive off without removing the archive from the schedule list.
Force Start	Choose Default if you want the system to check whether if there is enough room for the archive. With the default option, the archiving operation will not start if there is insufficient space. Choose Force Start to start the operation even if there is not enough space. If you choose Force start, you must then provide additional space before the archive creations fills up the remaining disk space.
Keep on server	Determine and select the length of time (days, weeks, months or years) after recording that the archive should be stored on the server.
Archive Source	Displays the selected archive source.
Media Setup	Select the frame rate that the archive will record at (equal to or less than the parent framerate) if the selected parent source is a motion JPEG media type camera. ***Note: To preserve archive and backup space, you can configure a low frame rate for JPEG feeds. If you have an archive that was created from an event, you can edit the archive and adjust the frame rate.***

Archive Type

Archive Type	• Simple schedule: Choose a start and end date and time to generate the archive. To specify additional dates and times, click Add Date(s). • Recurring schedule: Choose a date on which the recurring schedules will begin. Select one or more days of the week, and choose the start time and end time. To include additional start and end times for the same day, click Add Time Range. To specify schedules for additional days of the week, click Next Weekdays and enter information for a different day. Finally, choose an option for ending the schedule. • Continuous loop: Choose a duration for the continuously running archive. Video is continuously recorded in a loop of this duration. Looping schedules start as soon as they are submitted.
Start On	Choose the date on which the schedule will become active.
End On	Choose the date on which the schedule will stop being active.
Weekdays	Choose a day of the week for a recurring schedule.
Range End	Choose to end after one occurrence, on or before a selected date, or never end.
Loop Duration	Choose the duration for each video loop. Loop archives reuse the space (first-in/first-out) allocated after every completion of the specified loop time. When the archive is started as a loop, it will be displayed in the viewable and running archives list.

Backup

Backup This Archive	• Simple schedule: Choose a start and end date and time to generate the archive. To specify additional dates and times, click Add Date(s). • Recurring schedule: Choose a date on which the recurring schedules will begin. Select one or more days of the week, and choose the start time and end time. To include additional start and end times for the same day, click Add Time Range. To specify schedules for additional days of the week, click Next Weekdays and enter information for a different day. Finally, choose an option for ending the schedule. • Continuous loop: Choose a duration for the continuously running archive. Video is continuously recorded in a loop of this duration. Looping schedules start as soon as they are submitted.
Backup Server	Choose the backup server from the Backup Server list.
Backup Start Time	Configure a start time for the backups (HH:MM).
Backup Expires	If you want the backup schedule to expire after a specified number of days, Select the Backup Expires check box and enter the number of days. After the expiration period, the system will delete the backups.
Backup Events Only	Select the Backup Events Only check box if you want to back up only events. If you do not select the check box, the entire archive is backed up.

Rights

Rights control access to content creation, modification and site administration. Administrators assign rights to roles, and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

Viewable Archives

To view archives:

1. In the Administration view, click Archives on the left navigation bar.
2. Click the Viewable Archives link to display the archive list.
3. You can sort the columns in the list and search by archive name, type, or by date range. The expiration column indicates the date a particular archive expires. The expiration is defined based on when the archive was scheduled. The archive will automatically be removed form the archived video list on the expiration date. If an archive is set to be never expired, it will remain on the list until the delete icon is clicked.

Editing and Deleting Archives

You can edit or delete archives that are in the Viewable Archives list. Click the Edit or Delete icon in the Actions column.

When editing, you can change the name and description of the archive, backup settings, and settings for schedules that have not yet been activated. For schedules that have started, you can change only the end date.

Note: If an archive has been created automatically, you must open the created archive and configure the Backup tab. To back up all data without any interruption, you must configure the Backup tab within 24 hours of creating the archive.

When an archive is edited or deleted in the viewable archive list, other same-named archives in the list remains unaffected.

Note: The Details tab includes a View Video Settings button. When you click the button, the system reads the video setting information that is actually being used to create the archive. For MPEG files, bit rate is shown; for JPEG files, frame rate is shown.

Running Archives

Any archive that is currently recording data. Once an archive has started, it can be viewed in the running list.

Scheduled Archives

Recurring archives are one-time archives that are repeated on a defined schedule for a set period time or number of iterations. Modify the auto-filled start date, start time, and length of archive. Select a time range, number of occurrences, stop date, number of hours, days, weeks, months or years and days as required. When running a recurring archive for multiple days, weeks, months, etc., the archive will be displayed as viewable and scheduled during the run time.

Looping schedules do not appear in the scheduled archives list. They are listed in the Viewable Archives list.

Shelved Archives

You can synchronize stopped or shelved archives from another server on a given VSOM simply by importing the server and synchronizing. After adding the server, the system checks every 10 minutes for stopped archives and automatically loads them.

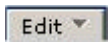
You can recognize a shelved archive by opening the Viewable Archives list. The archive state is Stopped and the feed name column is blank.

Pending Archives

Pending scheduled archives start in the future. Once an archive has been scheduled, it can be viewed in the scheduled list. Archives can also be deleted. When an archive is edited or deleted in the scheduled archive list, other same-named archives in the running archive list will remain unaffected.

Also known as any remote clipping that has been initiated, but the "clip notification" has not yet been received from Cisco Video Surveillance Media Server (MS). Displays a list of archives or clips being compiled by the server. Archives are no longer pending once started and will be listed in running archives.

Deleting Archives

Archives and their histories will be stored for 30 days and automatically deleted when the time has expired unless otherwise configured. Use 

and 

to delete multiple archives. Select the Leave all Archive Data Files on the Server box as applicable.

Configuring Views

Administrators can configure layouts and custom views for operators and other users. Based on these permissions, users can set their default views. All layouts are displayed in the default camera group order. User settings can be recalled based on login information.

A view displays configured video sources, their display layout, and length of rotation or cycle. A view simply displays a selected configuration. Creating a distinction between views enables rapid changing of displayed views. In this manner, several or singular views may share properties, but if at any given time, a specific view is required, it can be changed independently.

Users can toggle on/off the video pane controls as required. By default, the source drop-down menus and scrolls are hidden and button rows and timestamps are visible.

Action Icons

Action icons are available based on user permissions.

- Where available, use  to display help popups.

- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use  to export data to an MS Excel worksheet.
- Use  to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use  to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.

Add a View

To add a view:

1. Click the view icon.
2. Click Add a New View.
3. Enter a view name, description, select a status, determine if the view should be fixed or rotating. If rotating is required, enter the rotation intervals. The rotate selection refers to how often a frame rotates. For example, a 16 camera view rotating every 10 seconds will have a feed totaling 160 seconds. Select the layout, pane properties, and camera source.

   It is recommended that the roles and rights defaults be verified/configured when setting up the view.
4. Click submit.

View Number	Enter the view number. This number is for assignments on the CCTV keyboard. It is recommended that when multiple operator workstations are in use, each workstation use unique view numbers and names. Duplicate and 0 numbers are not permitted.
View Name	Enter the view name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the view such as location or type. This field is optional.
Camera Tour	Select the camera tour type. Fixed - Select if only a single point of view is required to be displayed in the pane. Fixed is the default selection. Rotate (dwell time) - Select if a rotating view is required every x seconds prior to rotating to the next source/view. Recommended if a multiple layout view is selected. The view dwell time/seconds can be increased/decreased via the operator toolbar. The default is five seconds. This field is optional.
Choose Layout	Click the required view to select it. 

	Upon view selection, pane properties will be displayed as follows: Fixed - Source will display a single point of view. Live - Source will display a live (rotating or fixed) view. Archive - Source will display an archived view. The DVR mode is available for the following layouts: • 1x1 (pane 1) • 1x2 (pane 1) • 1x2x3 (pane 1) • 1x3x4 (pane 1) • 2-1 (pane 1) • 2-4 (pane 1) • 2x1 (pane 1) • 2x2 (pane 1) • 2x3x6 (pane 1)
Pane Properties	For the red highlighted panes, determine and select the view to be fixed live or fixed archive view.
Default Framerate	Set this parameter to permit views to have a framerate cap for all configured MJPEG streams. This is useful in limiting the bandwidth requirements of remote users. ***Note that when the operator toggles to the enlarged mode, framerate caps will be removed.***
Operator Lists	Select this box to display all views available to operators in their view list. When unselected, views will not display in the operator's list but will be displayed in the events and administrator lists.
Default Display Options	Determine what title bars (must be selected to view status), video tools, timestamps, scrollbars, and fixed aspect are to be available to operators select during view run times. These are set up in the operator view.
Rotating Source List	Source rotation is the randomly rotating reservoir of camera views from which viewing panes are displayed and works by randomly displaying previously configured views in the operator layout widow. Source rotation is useful for operators who are required to monitor more camera locations than the currently configured view permits. Expand the list to view all configured feeds and check the applicable boxes to associate the feed to the view layout.

Edit a View

A view can be changed by deleting associated feeds or adding new views. When a camera is deleted from a view (removed from the source list), the feed will no longer be part of the view. VSVM will not be updated.

View Name	Enter the view name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the view such as location or type. This field is optional.

Camera Tour	Select the camera tour type as follows: Fixed - Select if only one view is required. Rotate (dwell time) - Select if a rotating view is required every x seconds prior to rotating to the next camera. Recommended if a multiple layout view is selected. The view dwell time/seconds can be increased/decreased via the operator toolbar.
Status	Determine if the view is to be enabled or disabled.
Default Display Options	Displays the selected options for the default view. Options include: Show Status Bars Show Status Icons Show Timestamps Show Scroll Bars
Rotating Source List	Expand the list to view all configured feeds. Click the check boxes to configure the feed to the view layout.

Details

Server Details	**View Name** - Displays the view name and properties: fixed, live, and archive. **Status** - Displays enabled/disabled view status. **Camera Tour** - Displays the camera tour type. **Layout** - Displays current pane layout.  **Fixed Windows** - Displays number of fixed windows in the layout. **Operator Lists** - Indicates if the view will be displayed on the operator list. Roles and permissions are the predominate authority of displayed views. **Default Display Options** - Displays the available operator options. **Rotating Source List** - Displays all configured feeds.

Rights

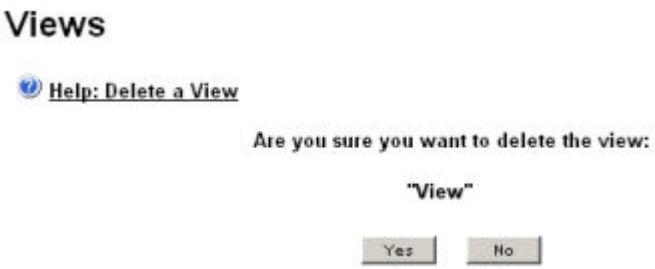
Rights control access to content creation, modification and site administration and are inherited from camera feeds. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator.

View Only

Administrators can configure views for viewing only. No archive, event, or other toolbars or features will be available to users with a

view only role. Users will be able to switch between views via the drop down box.

Delete



Configuring Users

Within VSOM, there is a single super user account identified as Root. This account is not a member of any role and has full access and control over all of VSOM and its resources. The root account should be used to create the initial roles and users on VSOM and for the addition and configuration of new devices such as cameras and encoders as required.

Note: The root account can manage the rights of each role, the correlating system resources, and configure the roles and resources to be managed by the root account only.

Administrators have the rights to create, read, update, and delete administrator, operator, and user accounts. These rights include feature access controls, application authentication, rights administration to include access to media sources, PTZ, archives, and monitors and other user management functions.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use to export data to an MS Excel worksheet.
- Use to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.
- Indicates a separate configuration window will popup to display the role permissions.

Add and Edit Users

Note: Checked and auto-filled parameters are the recommended defaults for this page.

Administrators with manage rights for users can create new user accounts. These accounts consist of a username, password and first and last name. An email address should be entered and a default view specified for use in the operator view.

1. Click the user icon on the left navigation bar.
2. Click Add a New User.
3. Enter the user name, password, and select the status. Enter the first name, last name, description (i.e. location, position of user, etc.) email address, and select the default view of the user.
4. Click the scheduling tab.
5. Set the parameters as applicable.
6. Click the roles tabs.
7. Determine and select if the user is to be an administrator, operator, or viewer only or will be authorized to perform all roles.
8. Click submit.

To edit an existing user:

1. Click the user icon on the left navigation bar.
2. Click the user to edit from the list of users.
3. Modify as applicable.
4. Click submit.

User Name	Enter the user's user id. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Local Password or LDAP	Local - Enter and confirm the user's password. Passwords are required to contain a minimum combination of six characters. LDAP - Optional user authentication via LDAP server. Refer to the LDAP module for additional information on configuring LDAP against the VSOM application.
First Name	Enter the user's first name.
Last Name	Enter the user's last name.
Description	Enter applicable information about the user such as location or job position. This field is optional.
Email	Enter the user email address. This field is optional.

Status	Determine if the user is to be enabled or disabled. Enabled - Permits users to navigate the system based on their permissions. Disable - Turns user access off without removing the user from the system. Users will be immediately logged out when the user status becomes disabled.
Default View	Select the preferred default view from the drop down box. These views have been previously configured in the views module of the application.

Scheduling

Only one schedule, per user, per configuration, can be assigned at a time.

Default State - Determine the state entities should return to when the schedule is not running.

Simple Schedule - Assign to simple schedule as applicable.

Recurring Schedule - Assign to recurring schedule as applicable.

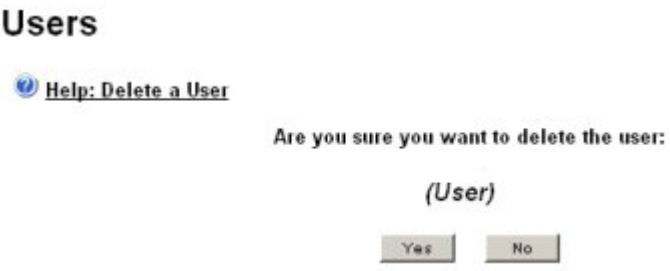
Roles

The roles tab is used to select the role(s) for the user. It is possible for a user to be a member of multiple roles. Users are members of roles in order to specify their permissions and rights within VSOM. Users that do not have rights or permissions to network resources will not see them during their login periods.

Note: If a user creates a role, they automatically become a member of the role.

User accounts may be enabled or disabled. This permits login of individual users to the system to be controlled. For example, user logins can be restricted to only the times that they are on site.

Delete



Deleting Parent Users

This user must be deleted from the parent server. Return to the Users module to synchronize accounts.

The user parent user (parent user) is governed by the parent server.

Users that are governed by a parent server cannot be deleted.

LDAP

LDAP is used to access directory servers. These servers access a specific type of database that holds information in a tree structure, similar to a hard disk directory structure. Administrators can navigate to the subdirectory using path names similar to /usr/local/myapp/docs.

Use the VSMC to setup VSOM to work against an LDAP server.

The following parameters are used to configure the application to work against LDAP:

LDAP_HOST_NAME	The Server host/ip address of the LDAP server. Example: `ds.cisco.com`
LDAP_HOST_PORT	Optional parameter. If the `LDAP_HOST_PORT` is not specified, the connection will default to port 389. Example: `3268`
LDAP_RDN_DN	LDAP Distinguished Name or Relative Distinguished Name. The string `%username%` will be replaced dynamically, based on the username provided in the OM login screen. This parameter is unique per company. Example: `CN=%username%,OU=Employees,OU=cisco users`
LDAP_DCS	A ";" separates the list of domain controllers in order of precedence. The system will verify the authentication bind against the first domain controller (in the example below `DC=amer,DC=cisco,DC=com`). If authentication fails, verification against the DCs will continue until a successful bind has been achieved or there are no more domain controllers. Example: `DC=amer,DC=cisco,DC=com;DC=euro,DC=cisco,DC=com`

VSOM does not import groups or users from the LDAP server. Each LDAP user should be created using VSOM and assigned an LDAP authentication (not local authentication). The username assigned for VSOM must be identical to the username in the LDAP system.

Configuring Roles

A role defines a group of permissions and rights and defines a user's permissions and rights within the system. Users are granted system permissions and rights by being members of roles. All users must be a member of at least one role and can be a member in up to 100 roles.

Administrators define user roles by specifying rights and assigning users to various roles. Users that do not have rights or permissions to network resources will not see them during their login periods.

Default roles include:

- Administrator: A role with authority to manage and view most all system resources. Can assign root-level access.
- Operator: A role with limited authority, normally only to view a limited portion of system resources such as cameras and archives they are tasked with monitoring.
- View Only: A role with no authority, can only switch between views.

Note: The role with the most permissions and rights will take precedence over any other role.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use to export data to an MS Excel worksheet.
- Use to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use to rapidly copy and duplicate similar encoder, camera, and role configurations.
- Use to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.

Roles with Administrator Privileges

For these roles, the permissions settings determine the management authorizations for the system functions on the administration page. The administration/system overview page displays icons for the following management functions:

- Servers
- Encoders
- Analog Cameras
- IP/Network Cameras
- PTZ Configuration
- Monitors
- Views
- Users
- Roles
- Events
- Schedules
- Settings
- Reports
- License
- Overview

- Camera Feeds
- Camera Groups
- Archives

There are separate permissions for controlling the use of each of these functions with several exceptions. There is a single permission for cameras that controls permissions for analog and IP Cameras. There are permissions for archive clips, archive local clips, and preferences. Each permission may be set to: None, View or Manage.

Without view permissions, the administrative icon for the function will not be displayed. With view permissions, the administrative icon will be displayed but the settings will be only viewable, not editable. With manage permissions, it will be possible to add and edit settings of functions that already exist.

The rights settings for roles with administrator privileges function similarly to roles without with several exceptions. These exceptions occur where permissions and rights overlap for various system resources. Permissions set management authorizations, while rights determine specific instances of devices that can be viewed or managed.

For example, it is possible to have manage permissions for camera feeds but have no rights for others. This mean that some camera feeds will not be listed in the left menu of the operator screen or displayed in camera feeds in the administration pages. Therefore, this role would be able to only manage the camera feeds for the rights given.

Roles without Administrator Privileges

If the role does not have administrator privileges, only the preferences permissions settings will be available. If this is set to manage, users who are members of the role will be able to view and modify their preferences. The rights settings are important for roles without admin privileges and will determine which system resources they will be able to view or modify. The system resources controlled by rights include:

- Servers
- Encoders
- Analog Cameras
- IP/Network Cameras
- Monitors
- Camera Feeds
- Archives
- Events

For example, use the camera feeds rights to control what camera feeds are viewable by a role. Set the rights to none for camera feeds that are not to be viewed by the role and view for camera feeds that should be viewed.

Add, Edit, and Configure Roles

When adding a new role, determine first if the user is to have administrator privileges and configure as applicable. This permits members of the role to view the administration pages. Use the permissions and rights tabs to set the permissions and rights for the role. If the check box is not checked, the administration pages will not be viewable.

Note: Checked and auto-filled parameters are the recommended defaults for this page.

Note: Selecting this box will display the administrative link in the upper navigation toolbar.

1. Click the role icon on the left navigation bar.
2. Click Add New Role to configure a new role..
3. Enter the role details, administrative preferences, and operator's preferences as applicable.

Role Name	Enter the name assigned to a group that has specific permissions and rights. Authorized users will be granted access to this role during user configuration.
Description	Enter the role explanation. Useful in identifying the type of devices, events, feeds, archives, etc. that the roles is authorized to administer and/or view.
Status	Select to disable the role temporarily without removing the entire configuration. Users will be **immediately** logged out when the user status becomes disabled. Select enable to activate the role for administration purposes. This action will not enable/disable a user, schedule, permission, or right, only the role and its specific configurations.
PTZ Priority	Determine the PTZ priority this role will have over/under other roles with set PTZ priorities. This functionality is used for simultaneous attempts to control the same PTZ camera. The role with the highest PTZ priority will prevail and the other will be blocked. Roles with PTZ priority of 0 will not be able to control PTZ cameras.
Pseudo Root	Check this box if the role (and all assigned users) are to have system wide access to all functions. Permits the same authorizations as the root user but permits personalization of login information. (i.e. change userid and password to something more recognizable to user)

Administrative Preferences	Check this box to permit the role (and all assigned users) to have access to the administrative pages. Users within the role may or may not have view and manage rights based on the assigned permissions.
View Only	Check this box to permit this role view only functionality. View only settings are created during user and view configurations.
View Options	Check this box to disable view override options for the role. This role (and all assigned users) will/will not be permitted to modify the operator view page configurations. Leave this box unchecked to permit operators to create their own views from the operator page.

4. Click the users tab.
5. Determine and select the listed users are to be part of this role.
6. Click the scheduling tab.
7. Set the parameters as applicable.
8. Click the permissions tab.
9. Set the rights as applicable.
10. Click the rights tab.
11. Select the access rights for this role.
12. Click submit.

To edit an existing user:

1. Click the role icon on the left navigation bar.
2. Click the role to edit from the list of roles.
3. Modify as applicable.
4. Click submit.

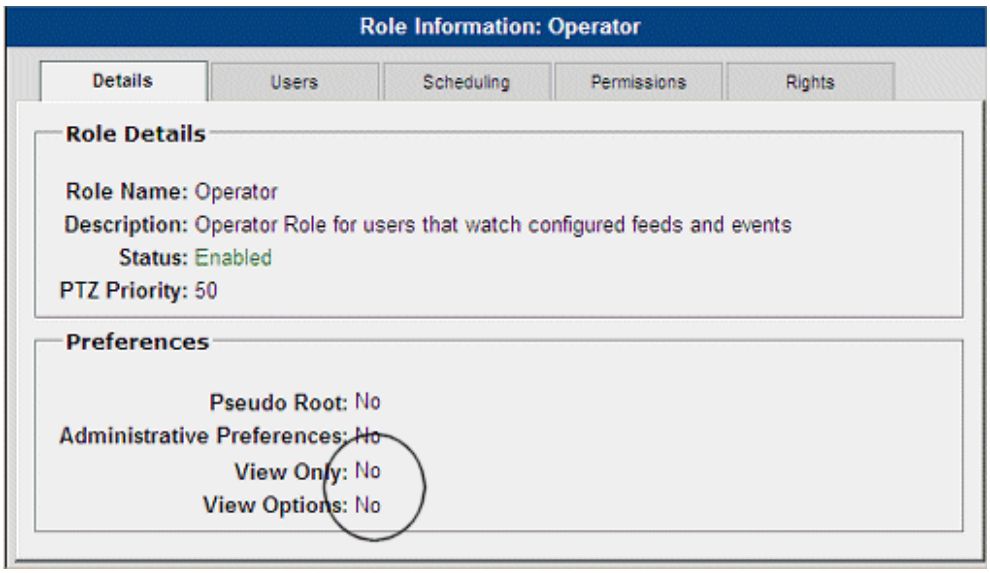
Roles

When a role is created, it can be granted administrator privileges by checking the Administrative Preferences check box. When selected, this role will be permitted to view the administration pages where the various management functions reside. For users with administrator privileges, roles are used to control which system management functions they will be permitted to use and how they will be able to use them.

With few exceptions, there are separate rights for controlling the use of these functions. There is one role for cameras that controls the rights for analog and IP cameras. There are separate roles for archive clips, archive local clips and preferences. Each role may be set to one of three values as follows:

- None

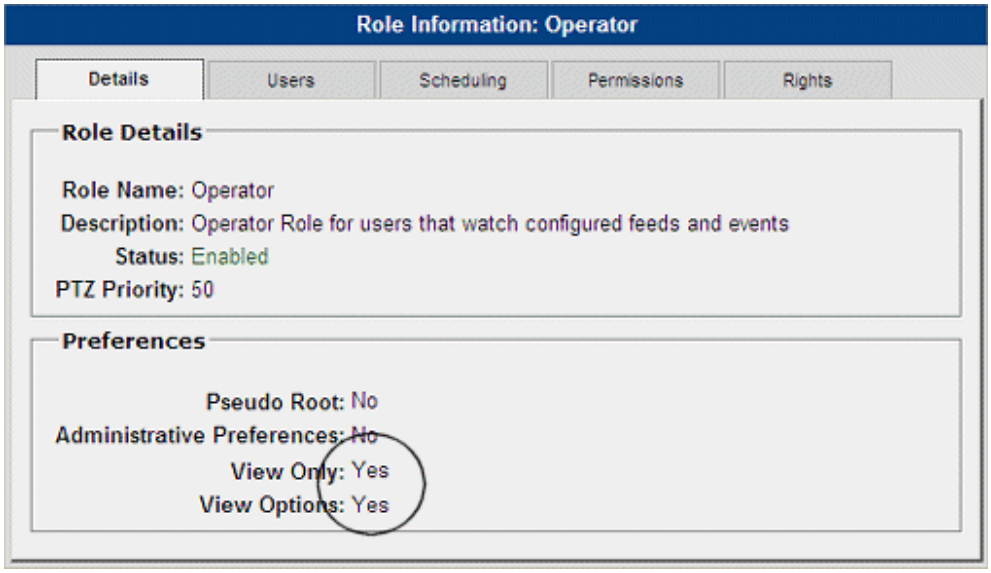
This role is not permitted to view the administrative pages controlled by the permission. Any associated GUI elements such as preferences, archive clips, and archive local clips will not be displayed. For example, when adding a user to a role, the admin must determine what the user is authorized to view or manage, if at all. The below example displays that the role has no rights to feeds or events and is permitted to view only. This type of role is recommended for operators who are required to only monitor, not manage or maintain camera feeds.



- View

  This role is permitted to view the administrative pages controlled by the permission. Any associated icon can be clicked to open the administrative page. Within the administrative screens, the role will only be permitted to view the settings for that function. Add, edit or delete functions will not be authorized and icons and links for these functions will not be displayed. The archive clip and archive local clip GUI elements will remain hidden. View-only functionality is supported.

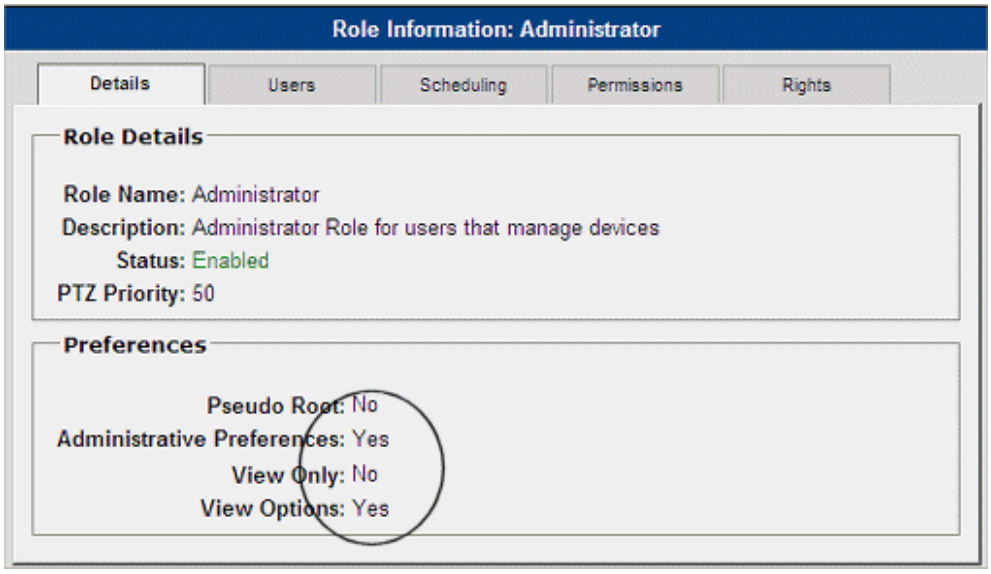
  This example displays that the role has rights to view cameras and feeds but not perform any administrative functions.



- Manage

  This role is permitted full authorization for the administrative pages controlled by the permission. All associated icons will be displayed on the administration screen in addition to add, edit, and delete functionalities. The preferences link will be displayed and system preferences will be editable. The archive clip and archive local clip function and GUI will be present on the operator screen. Users with manage server permissions have the ability to synchronize.

  This example displays that the role has rights to manage cameras and feeds and perform administrative functions.



Users

Role users are granted membership to the selected role and can be modified only by administrators of the parent server based on permissions. Users that belong to a child server cannot be modified

from the parent server. Administrators must select an available user in order to configure the user role rights.

Schedules

Roles may be enabled or disabled on a schedule. This permits permissions and rights for an entire class of users to be controlled on a schedule. For example, if users are members of two roles and one role is disabled on a schedule, the users will lose the permissions and rights associated with the disabled role during the time the schedule has disabled that role. This could be used to grant administrator privileges to users only on certain days or times. The users would be members of two roles: one with administrator privileges and one without. When the administrator role as disabled by the schedule, the users would still be able to login to the system, but would only be granted the rights of their non-administrator role.

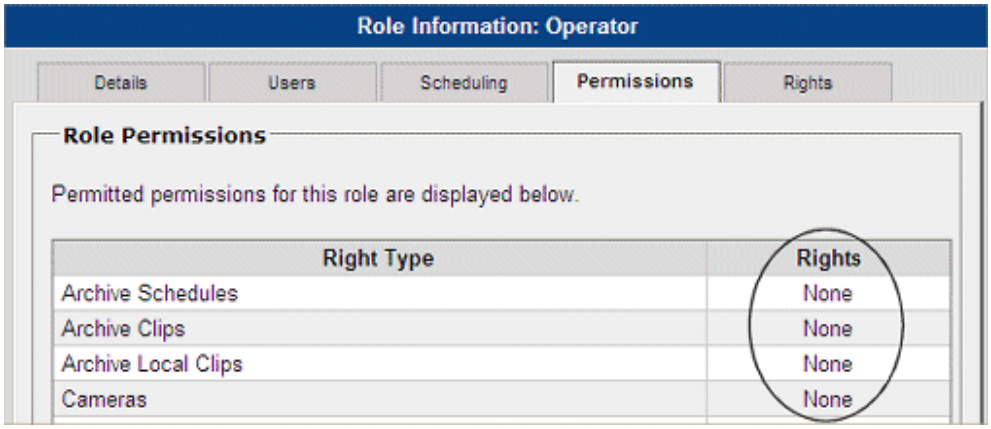
Permissions

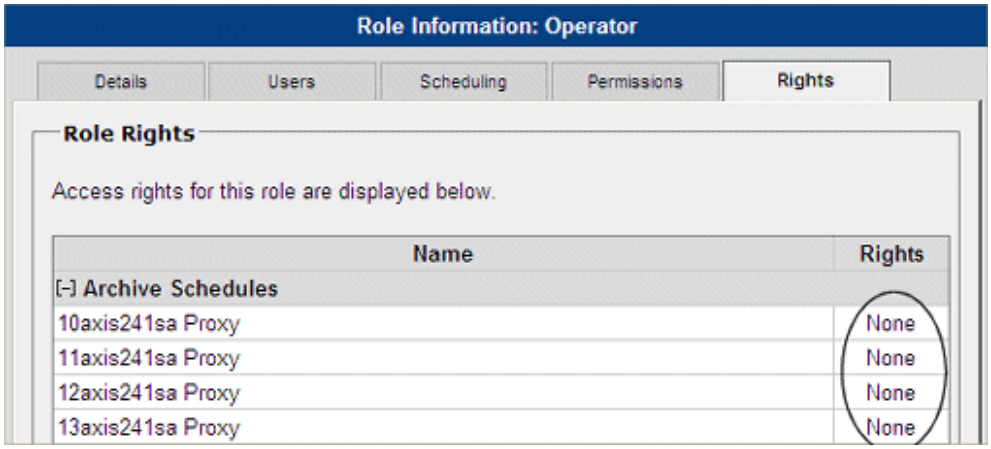
For roles with administrator privileges, roles always take precedence over the rights. This means that when a role has administrative permissions but different rights via the rights tab, the configuration of the role, the permissions tab, will be recognized first.

The following scenarios are possible:

- Permissions: None, Rights: None

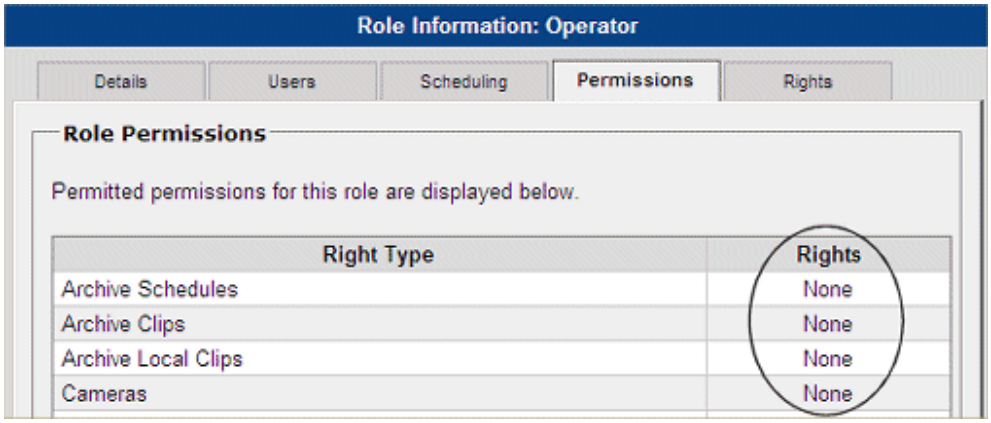
The administrative icons for the resource will not be displayed and individual items will not be displayed in the left navigation toolbar.

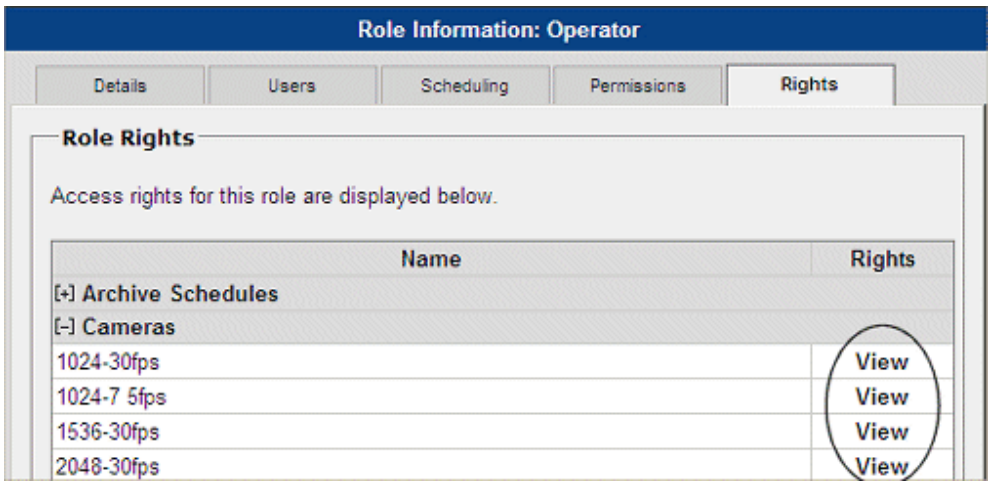




- Permissions: None, Rights: View

The administration icons for the resource will not be displayed and the individual items with view rights will be displayed in the left navigation toolbar. In this example, only camera view rights are granted.

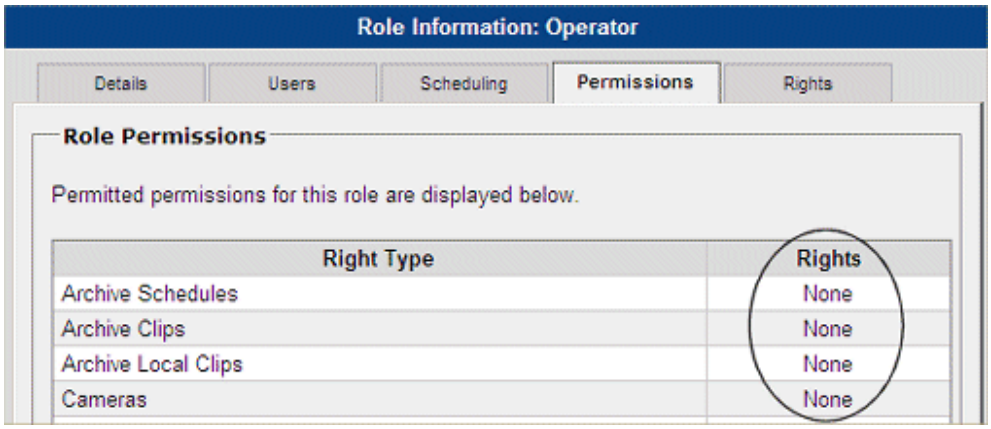


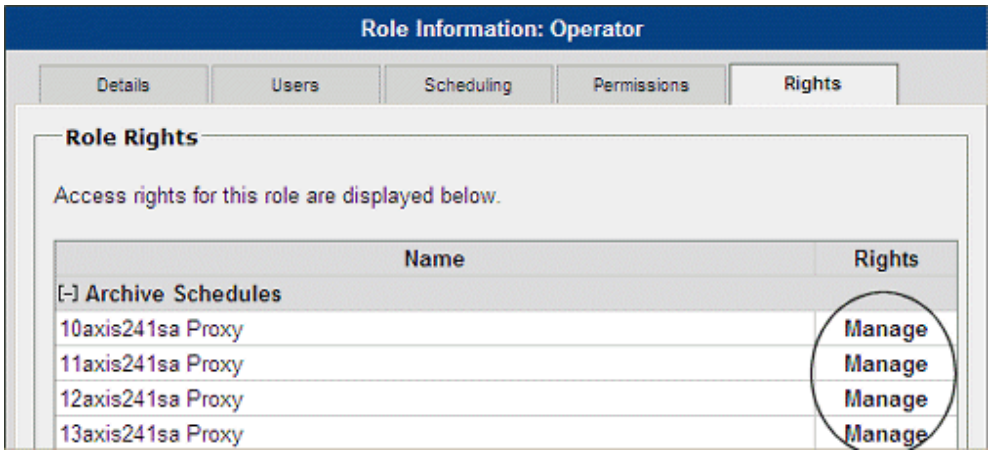


- Permissions: None, Rights: Manage

The administration icons for the resource will not be displayed and the individual items with view

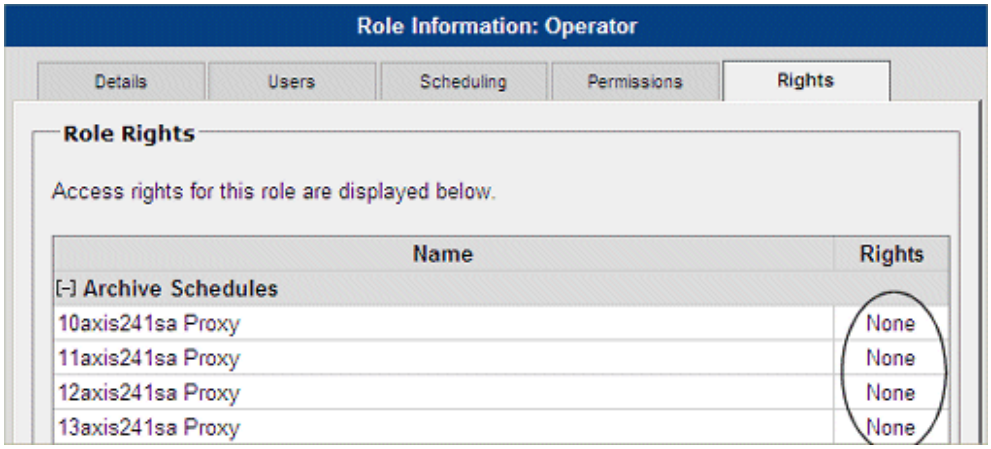
rights will be displayed in the left navigation toolbar. Note that the use of Manage rights in this case adds no additional capabilities.





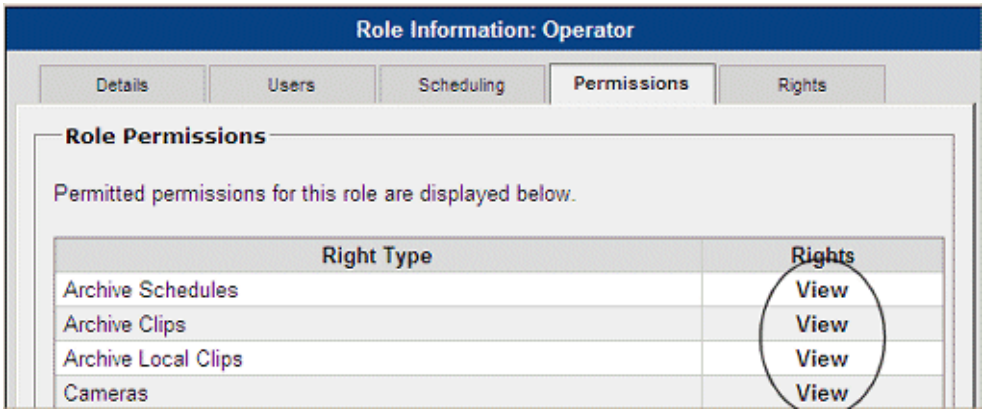
- Permissions: View, Rights: None

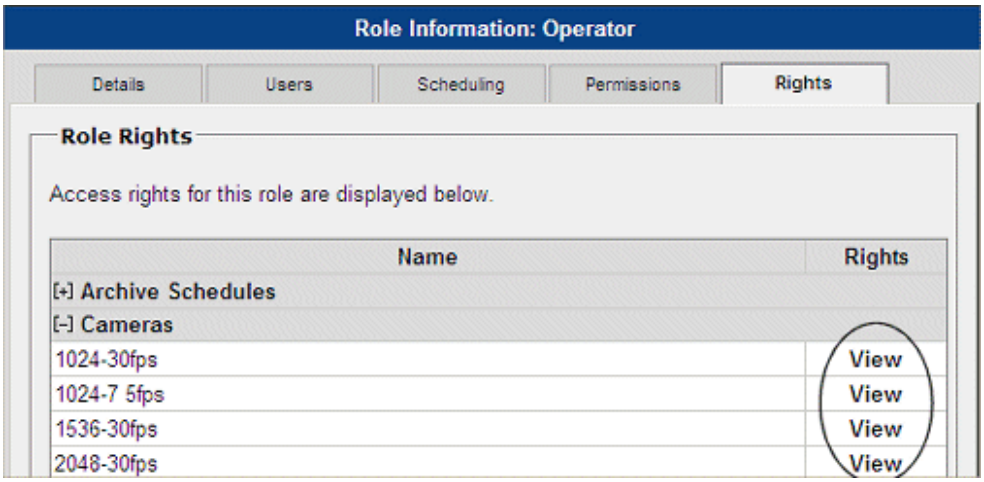
The administration icons for the resource will be displayed and the individual items will not be displayed in the left navigation toolbar.



- Permissions: View, Rights: View

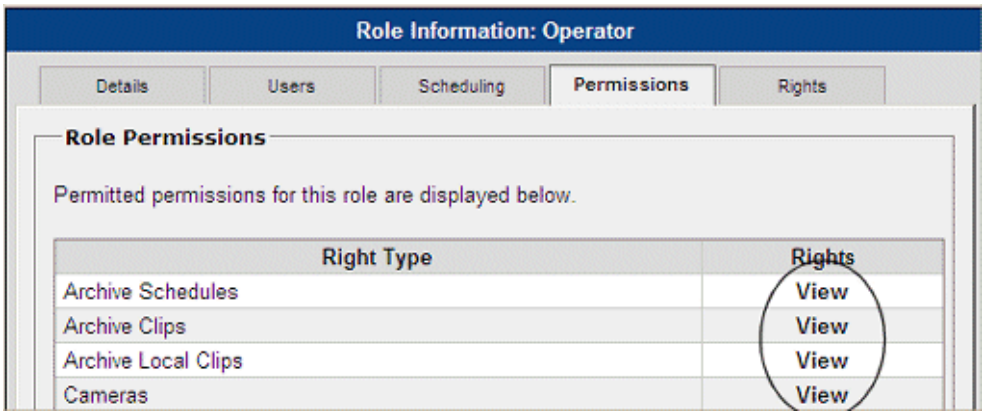
The administration icons for the resource will be displayed and the individual items with view rights will be displayed. This permits a role with administration privileges to view the settings for some resources but not others with no rights.

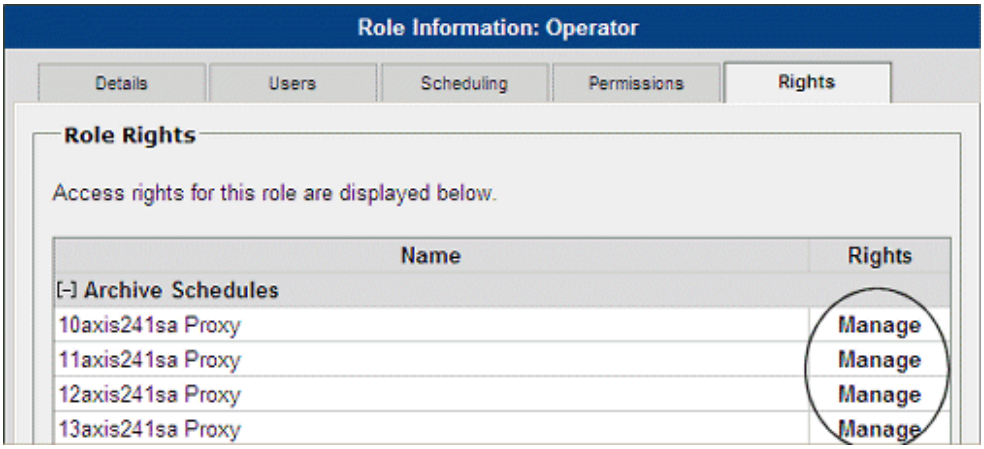




- Permissions: View, Rights: Manage

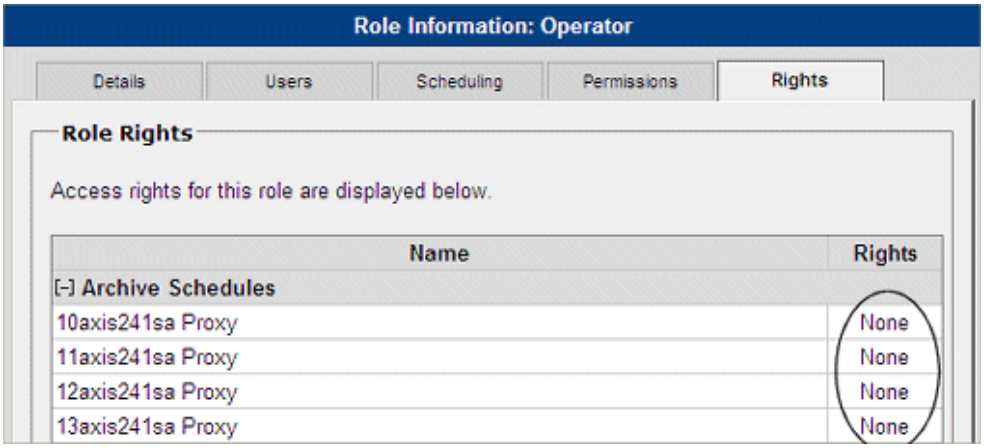
Same as the previous case as view permissions take precedence over manage rights.

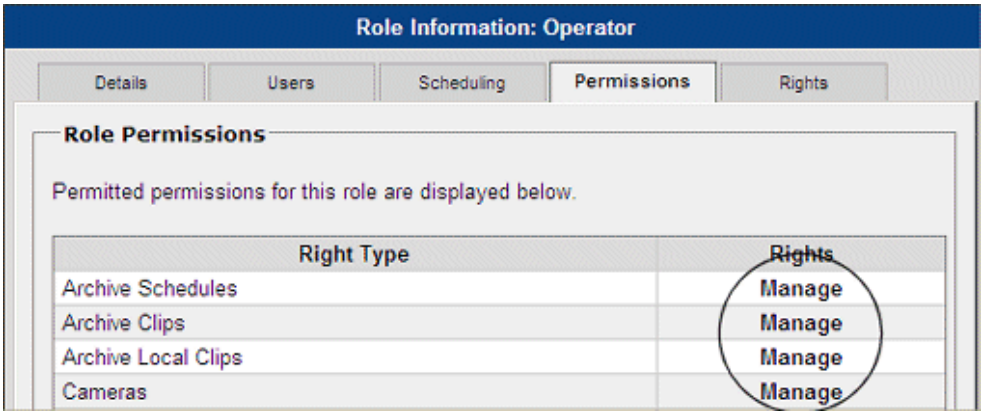




- Permissions: Manage, Rights: None

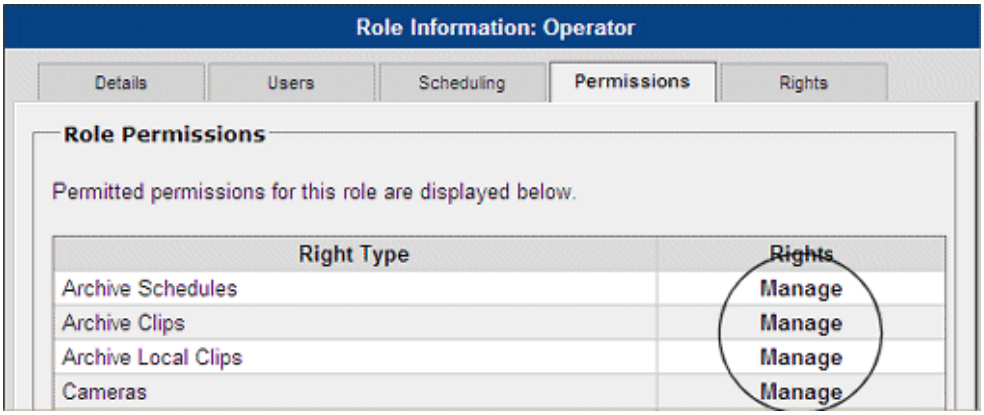
The administration icon for the resource will be displayed and the individual items with no rights will not be listed in the administration icon or in the left navigation toolbar.

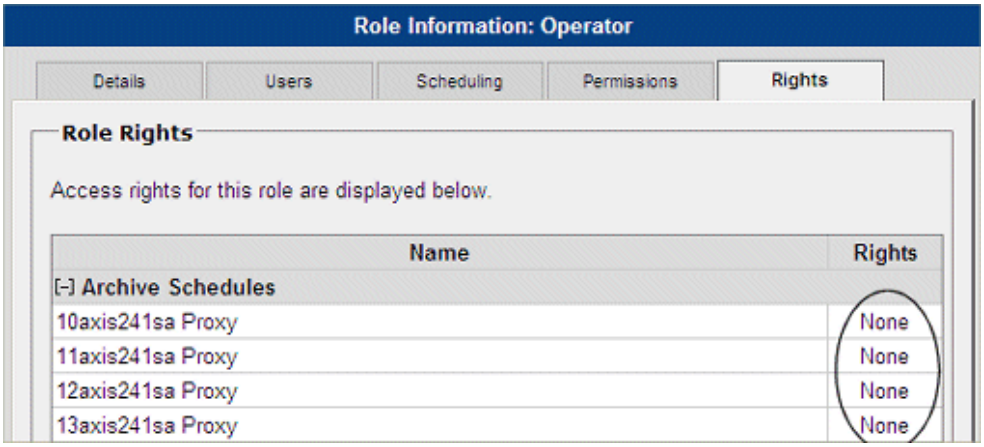




- Permissions: Manage, Rights: None

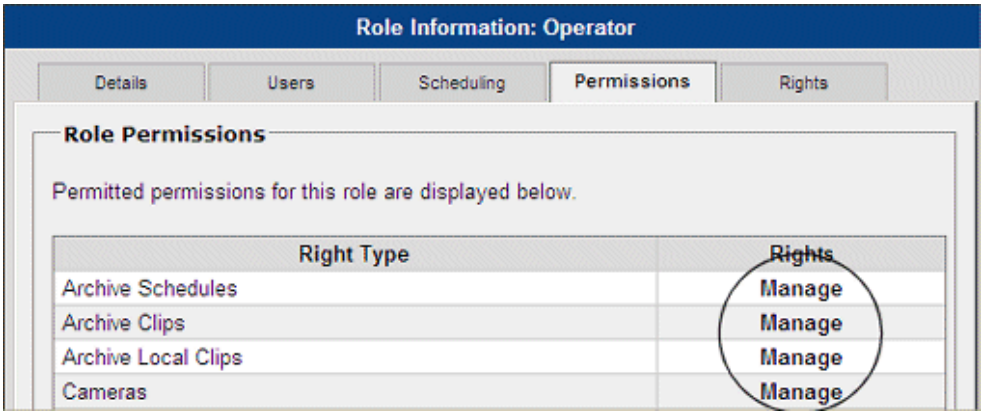
The administration icon for the resource will be displayed and the individual items with no rights will not be listed in the administration icon or in the left navigation toolbar.

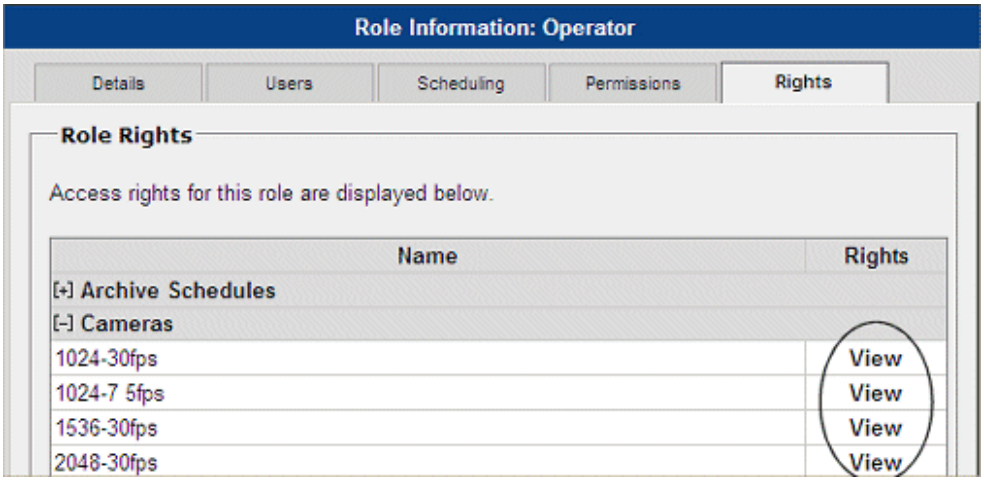




- Permissions: Manage, Rights: View

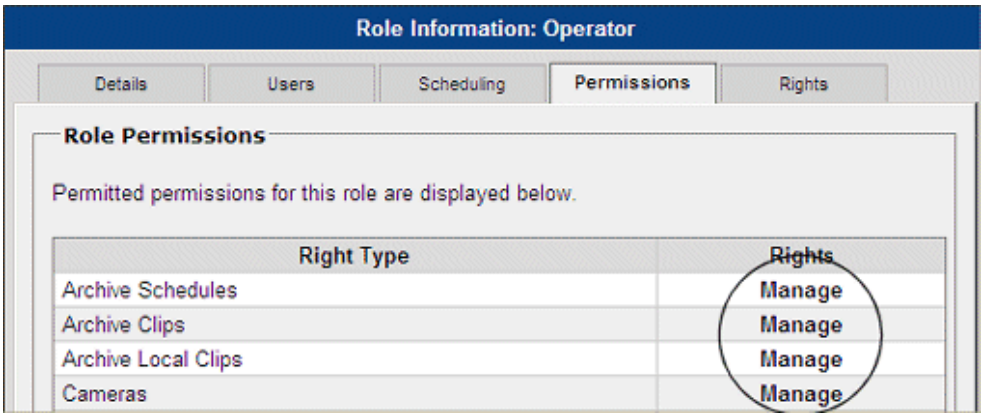
The administration icon for the resource will be displayed and the individual items with view rights will be listed inside the administration icon and in the left navigation toolbar. This permits a role with administration privileges to view the settings for some resources.

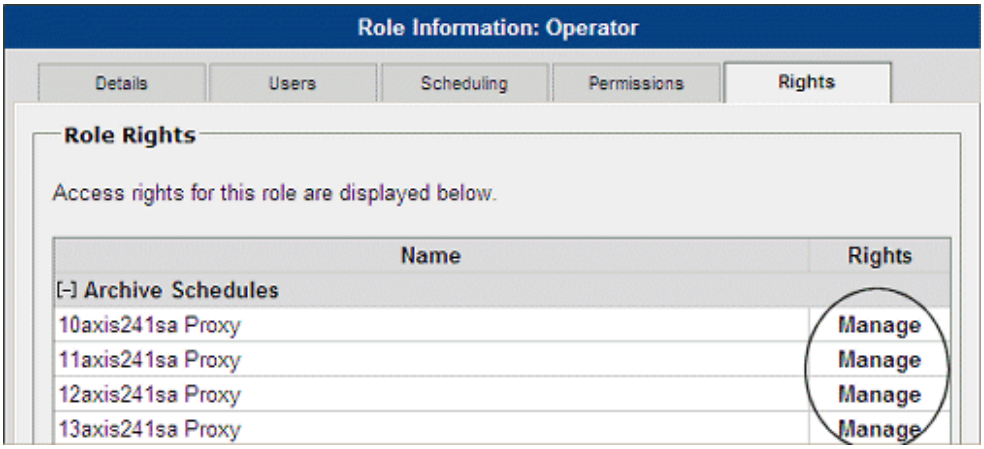




- Permissions: Manage, Rights: Manage

The administration icon for the resource will be displayed and the individual items with manage rights will be listed inside the administration icon and the settings will be editable. The resources will also be displayed in the left navigation toolbar. If some of the individual resources have view rights, the settings will viewable but not editable.



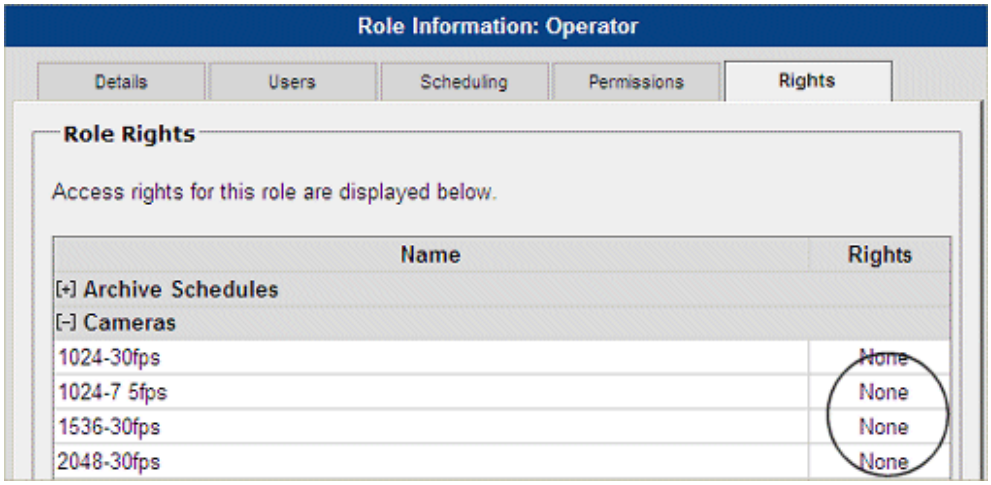


Rights

Rights apply to roles with or without administrator privileges. Rights are used to control access to individual management functions and are listed under the rights tab of the add or edit role screen: Archives, Cameras, Camera Feeds, Encoders, Monitors and Servers. By selecting None, View, or Manage for each instance of a function, rights are controlled by individual resource. As with roles, rights can be set to None, View, or Manage.

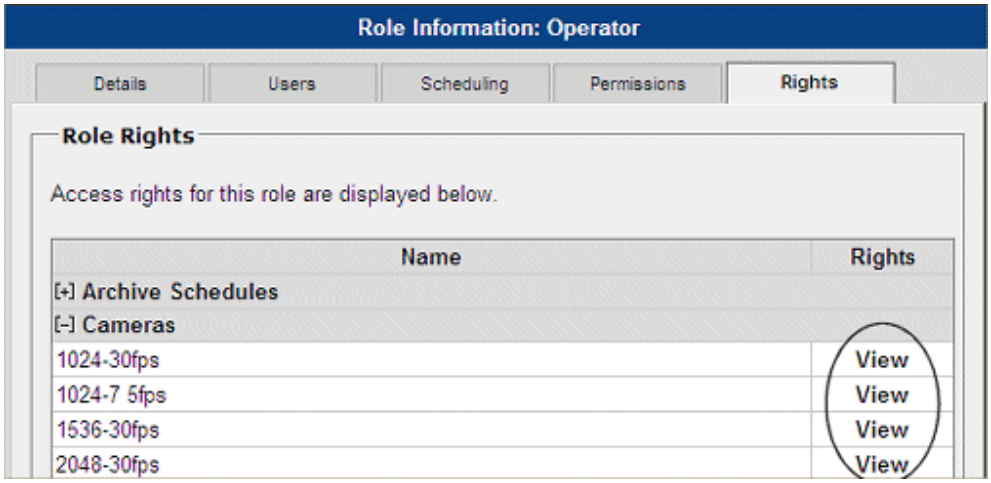
- None

  This role is not permitted to view the specific resource.



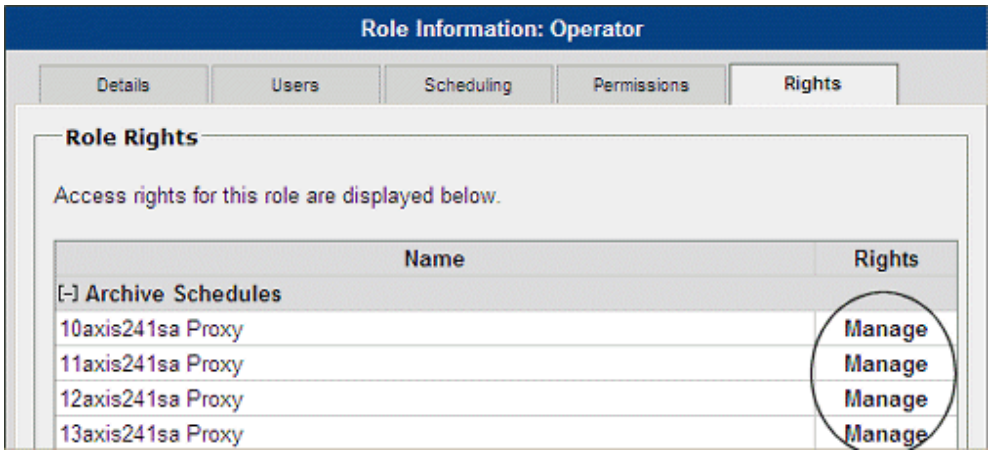
- View

  This role is permitted to view the specific resource.



- Manage

  This role is authorized full use of the specific resource including viewing and changing the settings.



Rights are based on the role's administrator privileges and what rights are set for the correlating management function. For roles without administrator privileges, only the rights for Archives, Camera Feeds, Monitors, and Encoders are useful. The Camera Feed rights determine which Camera Feeds are visible in the left navigation toolbar. For example, camera rights determine which cameras are permitted to be listed for the authorized role, encoders rights determine which events are displayed, etc.

Events

Configuring Events

Administrators can define event notification actions such as audible and visual alarms, updates to the event notification log, switching monitor views, and sending preset commands.

Events listen for incoming trigger notifications. When a trigger is received from an event notification, a notice is sent to a designated URL or email. Administrators can set up pre-defined views, move PTZ cameras, start

archives, and send instant email alerts when an event notification is received.

Action Icons

Action icons are available based on user permissions.

- Where available, use  to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use  to export data to an MS Excel worksheet.
- Use  to send a test trigger.
- Use  to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use  to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.

Enable Record Now Event

To use the Record Now feature in the Operator View, you must enable the feature on the Events page in the Administration View.

1.Click Events on the left navigation bar.

2.Click Enable Record Now Event. The event is created and added to the events list on the page.

Add an Event

Operator views can be set up to receive alerts when an event is triggered.

1. Click Events on the left navigation bar.
3. Click Add a New Event.
4. Enter a name and description and select the server the event will be triggered from. It is recommended that the roles and rights defaults be verified/configured when setting up the event.
5. Determine the event type: Device trigger, Soft trigger, or Motion Configuration.
    - Device Trigger - Used to set triggers via alarm or motion detection. Return to the event list to send a test event.
    - Enable Soft Trigger - Used to permit external programs to trigger events. Return to the event list to send a test event.
    - Enable Motion Configuration - Used to permit actions or movements to trigger a motion detection event. If you

select this option, you must also select a feed. See Motion Configuration for more on motion configuration.

6. Click Submit.

Note: Use the Event History Report to view the test or actual events.

7. Open each of the new tabs that are displayed below in this topic to view and configure information about the event that you created.

Event Information

Event Name	Displays the event name. It is recommended that event names be created based on existing naming conventions. ***Note: VSOM will modify feed names to include a <p_>, events to include an <e_>, and will convert special characters to compatible formats.***
Description	Displays applicable information about the event such as location or job position. This field is optional.
Server	Displays the list of available servers. Select the server where the event should be configured.
Status	Displays the status of the event setup. ***Note: Deleting an event setup will removed all event histories.***
Default Flag/Labels	Select a flag from the drop down box to associate with this type of event. Displays the flag associated with this type of event. (i.e. red - fire, yellow - warning, etc.) This flag will appear on the operator events toolbar.
DeviceTrigger	Select if the trigger will be a device trigger (building fire systems and outdoor motion sensors): Select the encoder/IP Camera from the previously configured components drop down list. Channel numbers are as follows: 1 - One feed is configured, one can be viewed 2 - Two feeds are configured, one can be viewed

	3 - Three feeds are configured, one can be viewed 4 - Four feeds are configured, one can be viewed quad - View four feeds simultaneously Trigger type (alarm or motion). The default state is set based on Rising/Falling as related to a surge or decline in power to initiate an event notification.
Enable Soft Trigger	Select if the trigger will be a soft event (URL, email, and/or screen message). External triggers may include badge readers, door openings/closings, etc. ***Note: This trigger does not affect PTZ operations.***
Enable Motion Configuration	This function initiates recording upon motion detection and stops recording after the motion has ceased. 1. Select the feed for motion detection from the drop down box. This event will be displayed as a Motion Detection Event. Define the motion start and motion ceased actions separately. 2. Click Submit. ***Note: Only one event setup should be associated with a motion feed at any one time.***

Edit an Event

1. Click Events on the left navigation bar.
2. Select the event from the event list, and click the Edit Icon in the Actions column to edit the event.
3. Refer to the tables below for each tab to modify the event configuration. Click Submit to save your changes.

Details

Event Information	**Event Name** - Displays the event name. **Description** - Displays event information such as location or job position. This field is optional.

	Server - Displays the server on which the feed is configured. **Status -** Event status (enabled or disabled) **Default Flag -** Displays the action icon of the type of event.

Motion Config

Navigate to the Motion Configuration module of this document for configuration information.

Motion Start

Operator View	Select the check box to enable operator view notification and select a view. This function changes the operator view based on the configured layout.
Archives	To create an archive clip when the trigger is activated, select the Start Archives check box to set the archive settings. Select up to 10 archives to automatically start clipping upon an event trigger. This is useful when only event data must be backed up for an archive. See Backing Up Archives for more details on backups. ***Note: The number of days to store archives applies only to the selected feeds. For clips that are created by events on running archives, the number of days is the same as for the archive.*** Specify the server options, record time before and after the event, and # of days to store the archive. Set motion JPEG sources as applicable. • Server Options - Select to save clips. • Data Options- Select the amount of time recorded and archived prior to and after the event. • Storage Options - Select the number of days the archived event will be stored. The archive can be set to never expire.

	• Overlap - Select if you want to permit archiving of overlapping events. • Record At - Select the framerate to record. Archive framerates generated from events can be changed as required for motion JPEG sources. However, the framerate cannot exceed the framerate of the source.
Alerts	**Web-based Alerts** Determine if events notification will be sent via an on-screen message on the operator view or logged in the Event History Report. Operators will be notified only if the event is to be logged. **Enable URL Notification** Enter the URL where the event notification will be sent. Unlimited URL notifications are permitted and priority is based on input order. These notifications will be sent prior to email notifications. When there is a software trigger, the camera will PTZ to preset. The value input here is the same URL that instructs the to PTZ the camera to the applicable preset. Use the Tokens feature to dynamically modify the event notification UTC and MUTC when an event is triggered. Enter UTC and MUTC exactly as shown in the example. (i.e. {EVENT_UTC} {EVENT_MUTC}) **Enable Email Notification** Enter the event notification recipient(s), subject, and body text sent when an event is triggered. All fields are required.
PTZ Presets	Enable the PTZ preset option and select the camera name, preset label, and PTZ priority as applicable. Drop downs will only be available if the camera and presets have been previously configured. To add additional presets, click Add Another Preset.
Monitors	Select the monitor and view to be displayed when an event is triggered. The operator view will be changed. Events can

	trigger multiple monitors to switch to specified views. If no monitors are defined, click Add a New Monitor and Associated View.

Motion Stop

Operator View	Select the check box to enable operator view notification. This function changes the operator view based on the configured layout.
Archive	All archive clipping is stopped on a motion stop event. No configuration is required.
Alerts	**Enable URL Notification** Enter the URL where the event notification will be sent. Unlimited URL notifications are permitted and priority is based on input order. These notifications will be sent prior to email notifications. When there is a software trigger, the camera will PTZ to preset. The value input here is the same URL that instructs the to PTZ the camera to the applicable preset. Use the Tokens feature to dynamically modify the event notification UTC and MUTC when an event is triggered. Enter UTC and MUTC exactly as shown in the example. (i.e. {EVENT_UTC} {EVENT_MUTC}) **Enable Email Notification** Enter the event notification recipient(s), subject, and body text sent when an event is triggered. All fields are required.
PTZ Presets	Select the camera name, preset label, and PTZ priority as applicable. Drop downs will only be available if the camera and presets have been previously configured.
Monitor	Select the monitor and view to be displayed when an event is triggered. The operator view will be changed. Events can trigger multiple monitors to switch to specified views. If no monitors are defined, click Add a New Monitor and Associated View.

Schedules

Schedules	**Default State** - Displays the schedule state. Enabled - Permits the schedule to run as configured. Disable - Turns schedule off without removing the schedule from the log. **Simple schedules** - Displays a list of start/end date/times available to assign. **Recurring schedules** - Displays a list of start/stop times associated with each day of the week available to assign.

Setup Rights

Setup Rights	Set the event setup rights based on which roles will have access to the specified event. ***Note: Deleting an event setup will removed all event histories.*** For example, an administrator should have rights to manage specific or multiple events while an operator only needs to view events within a specific viewing area.

History Rights

History Rights	Event Histories are lists of events that have occurred in the past. Set the event history rights based on which roles will have access to the events created by this profile. For example, an administrator should have rights to manage specific or multiple event histories while an operator only needs to view event histories within a specific viewing area.

Enabling Record on Motion

If you have an IP or analog camera that supports motion detection, you can configure VSOM to automatically record or stop recording when motion is detected. After the camera is added, you can create an event and enable the motion configuration option. To add a camera and enable motion detection on it, see Adding and Configuring Analog Cameras or Adding and Configuring an IP/Network Camera.

Then add an event for the record on motion event.

1. Click Events on the left navigation bar.
2. Choose Add a New Event.
3. When you configure the event, select the Enable Motion Configuration button on the Event Information tab.
4. Select a feed from the drop-down list.
5. Click Submit.

You can now edit the event to configure settings for recording on motion.

1. Click Events on the left navigation bar.
2. Choose the event and click the Edit icon.
3. Open the Motion Config tab and configure settings as described in Motion Configuration.
4. Open the Motion Start tab and Motion Stop tabs and specify the following settings on the sub tabs:
    - Operator View: Indicate if you want the Operator View display to change when motion starts and stops.
    - Archives: Select up to 10 archives to automatically start clipping upon an event trigger. This is useful when only event data must be backed up for an archive. See Backing Up Archives for more details on backups.

Note: The number of days to store archives applies only to the selected feeds. For clips that are created by events on running archives, the number of days is the same as for the archive.

Note: When you save the archive settings, an continuous loop archive is automatically create. If you are adding to an existing archive, make sure it is an archive that will capture the motion. If you are not sure, then select a feed for a new archive. Because record on motion is an event, you can choose to update archive only when the event occurs.

    - Web alerts: Configure these as you would for other events.
    - PTZ presets: Enable PTZ as you would for other events. When the record on motion event is triggered, the camera is positioned to these settings. If you are creating archives for more than one camera, you can specify multiple PTZ settings.
    - Monitors: Configure these as you would for other events, if you are using monitors.
5. Click Submit.

When motion is detect, an event is listed in the events table in the operator view. If you selected a feed, then the display shows the associated archives on the video archive tree (left menu). Make sure that you click Refresh to update the display, if necessary. If you defined an operator view, an icon is displayed.

Clipping Events

You can take clips of one or more events and save them as BWM or BWX files.

1. In the Operator's View, select the events from the events list.
2. Choose Create BWM clips or Create BWX clips from the Actions menu in the event table area.
3. For BWX clips, the system prompts you to create a password to view the clip.

A system message above the event list indicates the status of the request. The system creates a clip for each of the included events, including a buffer of a few seconds before and after the event occurs. The clips are created for all the feeds and archives selected during setup.

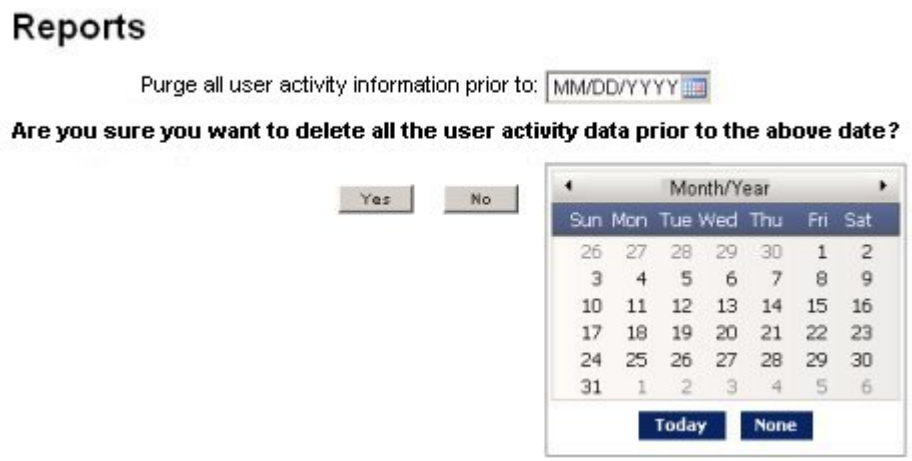
When the event clipping is complete, the refresh button turns green. Click the button to play the event on your screen.

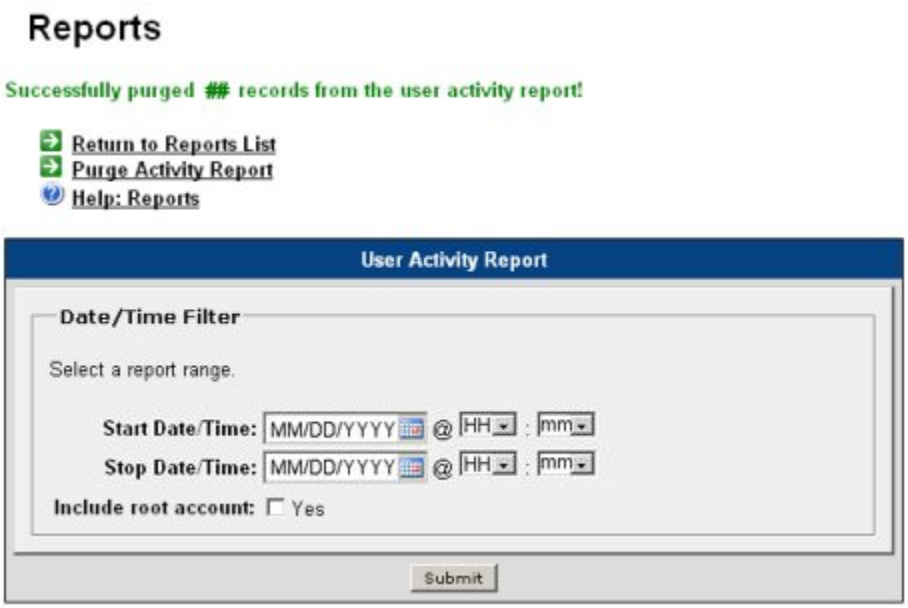
Note: You can create a clip on a on a motion stop event but not on a motion start event. Clipping fails if you try to clip the same event twice.

Purge Event History

Use the purge function to remove previously reported event activity.

Note: It may take several minutes for the purge to actually occur.





Enable Record Now Event

To use the Record Now feature in the Operator View, you must enable the feature on the Events page in the Administration View.

1. Click Events on the left navigation bar.
2. Click Enable Record Now Event. The event is created and added to the events list on the page.

Delete Events

Although event(s) can be deleted, the archive(s) will still be available.

Motion Configuration

Each video channel on VSES supports configurable motion detection. Motion detection window parameters and other related settings are set using VSOM. Motion detection generates user-configured soft triggers, configured in the Events module of this document, including clips, operator alerts, and emails.

Multiple windows and masks can be configured and used simultaneously and can overlap each other.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.
- Enter a component name in 

for sorting lengthy lists. Wildcard characters are not applicable. Partial and no entries will also display results.
- Use to export data to an MS Excel worksheet.
- Use to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.

Window creation order is very important. When a mask new window is created below an active (not masked) window in the window list, the mask window affects only the active window immediately above it. If a mask window is created prior a new active (not masked) window, the mask window will not affect that or any window.

Setting up Mask Windows

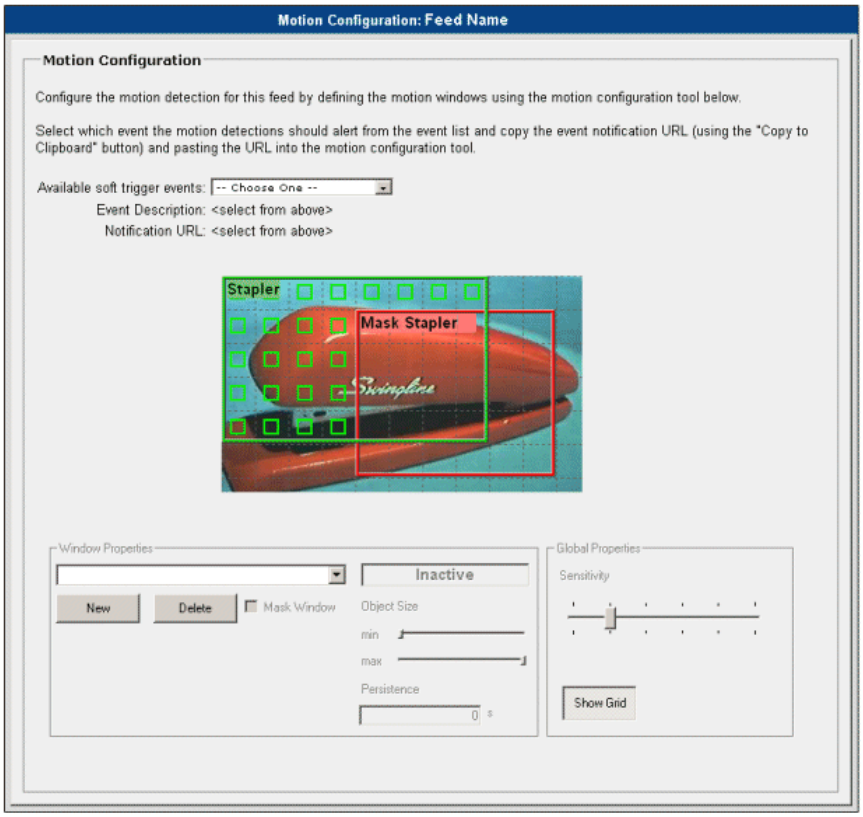
Configure mask windows as follows:

1. Make sure an analog camera has been configured.
2. Go to events to enable motion detection.
3. Click of the applicable event to modify/set the motion configuration settings.
4. To create a new, not masked (green) window click New and enter the new window name.

Window - The active portion of the camera view.

To create a new, mask (red) window, click New, enter the window name, and check the Mask Window checkbox.

Mask Window - To mask, or make inactive, a portion of the camera view.



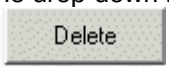
Window Properties

Drop Down List Box (Window Name)

Click 

to enter the new window name. All mask and active windows are resizable by clicking and dragging the lower right corner of the window to expand or collapse the size. Windows can be moved by clicking and dragging on any other part of the window edge.

Users can change which window to configure by selecting the window in the drop-down list box or by clicking the window to select it. For multiple stacked windows, it is recommended that the drop-down list box be used.

Click 

to delete windows. Windows must be deleted to rename them. It is recommended that naming convention standards be utilized for ease of use throughout the application.

Windows must also be deleted to turn off motion detection. Note that the camera configuration will remain in the motion detection module and will be marked as Yes in the motion column of the feeds list.

Mask Window

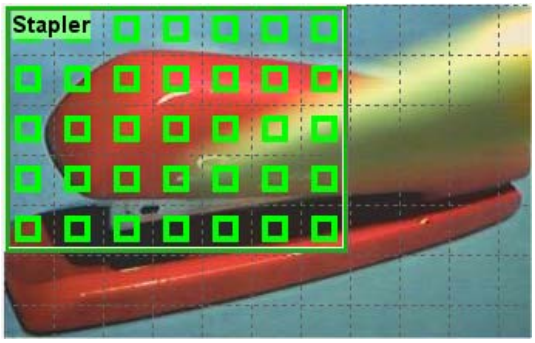
Select this box to create a mask (red) window. Masking creates a window to deactivate (mask) a portion of the camera view. Masked windows can be moved in and out of an active (green) window. Note that the active area indicators (green boxes) will not be displayed in the mask portion of the window.

Add multiple masks to mask multiple areas inside the active window.

Active/Inactive

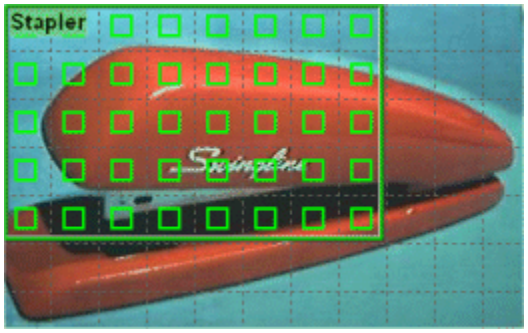
Action is based on movement in the camera view window. The static text box 

will display the current status.



Active - Movement currently detected

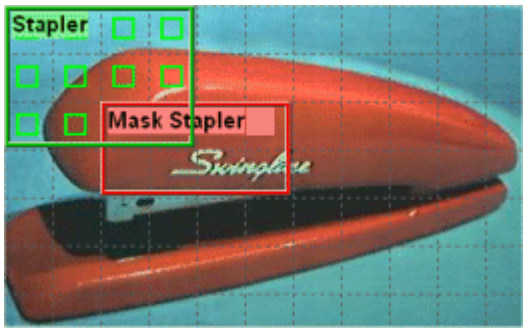
Note that the active area indicators (green squares) are now bold.

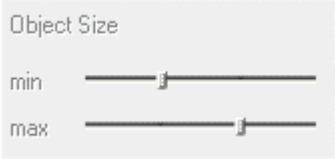


Inactive - No movement currently detected

Object Size

Adjust the ratio or percentage of the total active area (all green boxes outside the mask (red) areas) required to be active in order for the motion to be considered valid. The size applies to both mask and active(object) views. Use the following example for further clarity:





In the above example, the minimum object size is set at 1/4 or 25% of the object's true size and the maximum object size is set at 3/4 or 75% of the object's true size. This means VSOM can only detect motion in least 1/4, and at most 3/4, of the active area of the active window displaying the object in order for the motion to be considered valid.

Persistence

Set the number of seconds that movement must be occurring in order to record a motion. For example:

0.5 for a half-second or 3.25 for three-and-one-quarter seconds
Motion will be reported after it has been continuously sustained for XX seconds.

Global Properties

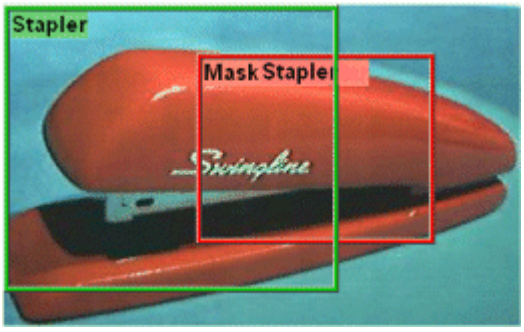
Sensitivity

Set the level of sensitivity that will cause a motion to be reported.

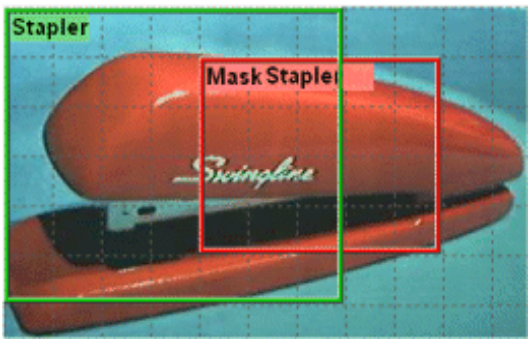
0 - Detects no motion
5 - Most sensitive to motion

Click to change the grid display options for the feed view as shown below:

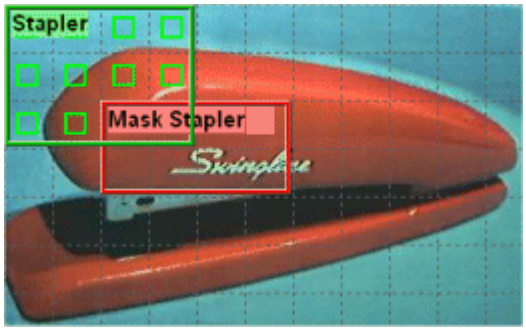
This window displays an unconfigured view.



This window displays a view with a mask section and no grid lines.



This window displays a view with a mask section and grid lines.



This window displays a view with a mask section, grid lines, and active area indicators (green boxes).

Schedules

Schedules permits administrators to enable and disable specific events, user accounts, and roles on a pre-determined schedule. Schedules can be used to control the enable/disable of scheduled entities, including events, user accounts and roles. Each schedule can control multiple entities and the schedule assigned to an entity can be changed at any time.

Schedules are active or inactive. A simple schedule is active when the current date/time falls between the start/end date/times. A recurring schedule is active when the current weekday is a day defined in the recurring schedule and the current time falls between one of the start/stop times for that day. The schedules are considered inactive during all other date/times.

Administrators can configure one simple or one recurring schedule at a time, not both simultaneously.

Action Icons

Action icons are available based on user permissions.

- Where available, use to display help popups.

- Use to edit component properties such as details, rights, alerts, configurations, users, roles, views, windows, actions, and other group properties.
- Use to delete servers, encoders, cameras, feeds, users, roles, views, monitors, events, archives, and schedules.

Add a Simple Schedule

Simple schedules are a list of start/end date/times. Feeds are recorded until the end time is reached. Administrators can add a one-time or loop archive. Simple schedules are useful for defining one-time control of an entity's status or a list of exceptions (i.e. holidays) on which unique schedule rules are to be applied.

Note: Checked and auto-filled parameters are the recommended defaults for this page.

To define a simple schedule:

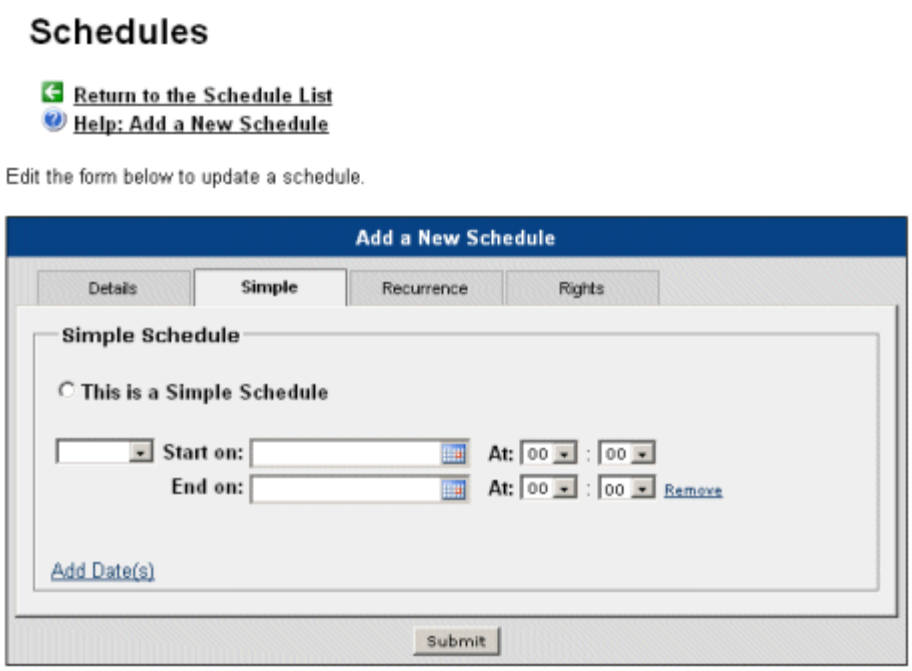
1. Click the schedules icon on the left navigation bar.
2. Click Add a New Schedule.
3. Enter the schedule name, description, and select the status.
4. Click the Simple tab.
5. Select the radio button and enter the start/end date/times.

   Use the Add Dates link if additional start/end date/times are required.

   It is recommended that the roles and rights defaults be verified/configured when setting up the view.

7. Click submit.

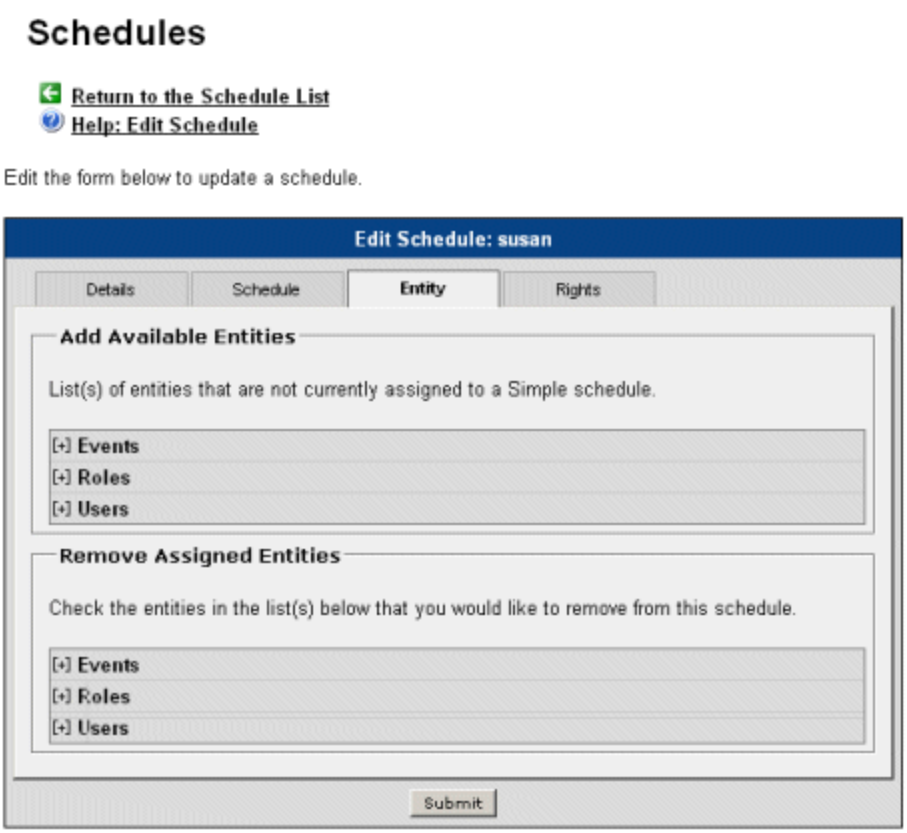
Schedule Name	Enter the schedule name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the schedule such as location or type. This field is optional.
Status	Determine if the schedule is to be enabled or disabled. Enabled - Permits the schedule to run as configured. Disable - Turns schedule off without removing the schedule from the log. The archive will disable after the current running schedule is complete.



Manual enable/disable	Manually enable/disable overrides schedule behaviors. Determine if the simple schedule is to be enabled or disabled. If this selection differs from the configuration on the details screen, that entry will override the simple schedule configuration. Enabled - Permits the schedule to run as configured. Disable - Turns schedule off without removing the schedule from the log.
Start/end date/times	Enter the start/end date/times or use the calendar and drop down boxes to fill these fields.

Schedule Entities

Administrators can schedule entities, or roles, user accounts, and events. Each entity may be linked with a simple schedule, a recurring schedule, or one of each.



Expand and check the boxes to select the entities to be associated with this schedule. If an entity is already associated with a simple schedule, it will be displayed in the remove assigned entities list. Use the check boxes to deselect entities that should be assigned to the applicable schedule.

If there is a schedule currently active on an entity, the manual enable/disable will be overridden by the enable/disable applied by the active schedule. If there is no currently active schedule, the manual enable/disable will work as expected. However, as soon as a schedule becomes active again, the active schedule will determine the state of the entity and when the schedule becomes inactive; the entity will be returned to the default state of the entity, not to the state of the manual enable/disable.

Default State

When a scheduled entity has no active schedules, it returns to a default state that can be enabled or disabled. This permits schedules to turn on/off an entity that is normally on/off.

If an entity has a default state of enabled and a schedule is set to disable when it is active, the entity is disabled when the schedule is active and returns to the default state of enabled when the schedule becomes inactive.

The default state can be set by editing the entity and navigating to the scheduling tab.

Precedence and Overlap

The simple schedule takes precedence over the recurring schedule. If simple and recurring schedules are active simultaneously, the simple schedule becomes active and the recurring schedule becomes inactive. When both become inactive, the entity returns to its default state.

Add a Recurring Schedule

Recurring schedules are a list of start/stop times associated with each day of the week. The schedule repeats weekly on those days. A recurring schedule begins on a specific date and can run forever, end after a fixed number of occurrences, or end on a specific date.

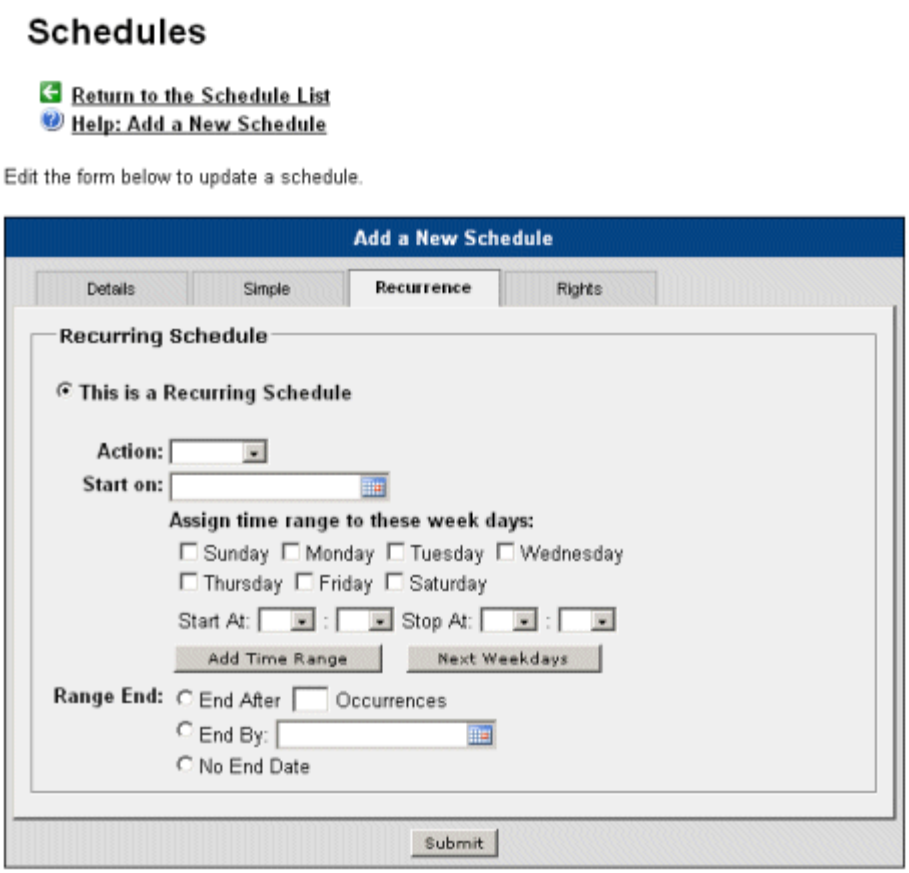
Note: Checked and auto-filled parameters are the recommended defaults for this page.

To define a recurring schedule:

1. Click the schedules icon on the left navigation bar.
2. Click Add a New Schedule.
3. Enter the schedule name, description, and select the status.
4. Click the Recurring tab.
5. Select the action.
6. Enter the start date.
7. Modify the auto-filled start on date, day(s), and time range.

   Additional time ranges can be added by clicking the buttons.
8. Modify the auto-filled number of occurrences and stop date or no end date.
9. Click submit.

   It is recommended that the roles and rights defaults be verified/configured when setting up the view.

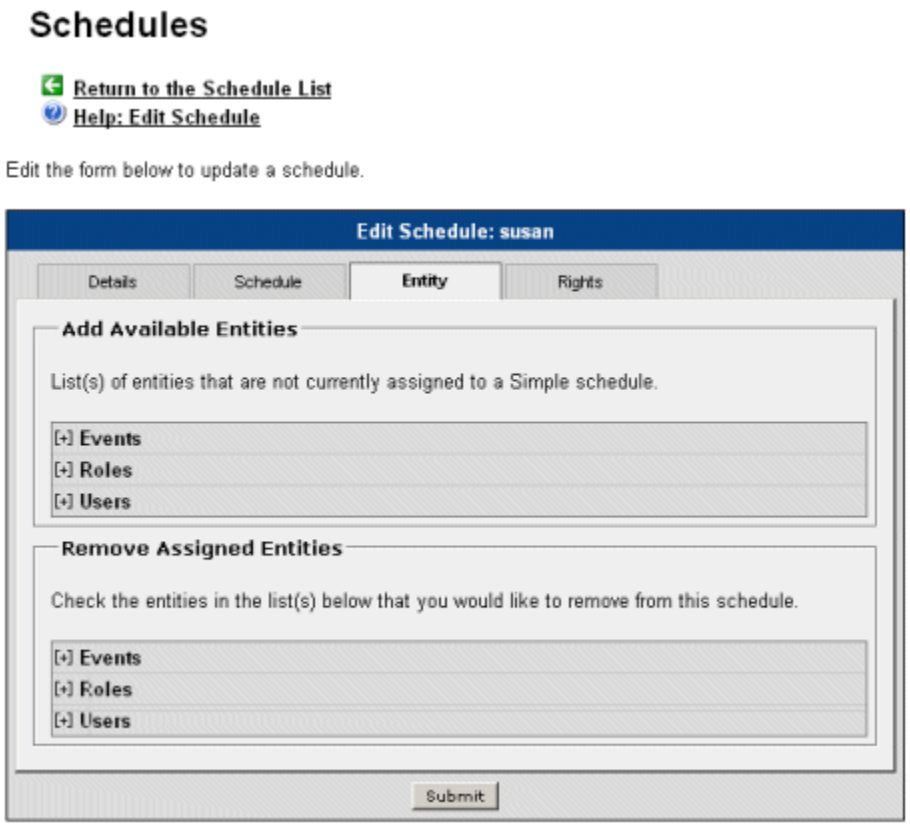


Recurring Schedule	One-time schedules that are repeated on a defined schedule for a set period time or number of iterations. Modify the auto-filled start on date, day(s), and time range. Additional time ranges can be added by clicking the buttons. Modify the auto-filled number of occurrences and stop date or no end date. When running a recurring schedule for multiple days, weeks, months, etc., the schedule is considered running and pending during the run time.
Action	When a schedule is assigned to an entity, it can be used to either enable/disable that entity when the schedule is active. Determine if the schedule is to be enabled or disabled. Enabled - Permits the schedule to run as configured. Disable - Turns schedule off without removing the schedule from the log.

Rights	Rights control access to content creation, modification and site administration. Administrators assign rights to roles and then assign users to roles. There are three types of rights: none, view, and manage. Authority is given by the system administrator. Schedules have individual rights so that viewing and editing of schedules can be controlled by roles with administrator privileges.

Schedule Entities

Administrators can schedule entities, or roles, user accounts, and events. Each entity may be linked with a simple schedule, a recurring schedule, or one of each.



Expand and check the boxes to select the entities to be associated with this schedule. If an entity is already associated with a simple schedule, it will be displayed in the remove assigned entities list. Use the check boxes to deselect entities that should be assigned to the applicable schedule.

If there is a schedule currently active on an entity, the manual enable/disable will be overridden by the enable/disable applied by the active schedule. If there is no currently active schedule, the manual enable/disable will work as expected. However, as soon as a

schedule becomes active again, the active schedule will determine the state of the entity and when the schedule becomes inactive; the entity will be returned to the default state of the entity, not to the state of the manual enable/disable.

Default State

When a scheduled entity has no active schedules, it returns to a default state that can either be enabled or disabled. This permits schedules to turn on/off an entity that is normally on/off.

If an entity has a default state of enabled and a schedule is set to disable when it is active, the entity is disabled when the schedule is active and returns to the default state of enabled when the schedule becomes inactive.

The default state can be set by editing the entity and navigating to the scheduling tab.

Precedence and Overlap

The simple schedule takes precedence over the recurring schedule. If simple and recurring schedules are active simultaneously, the simple schedule becomes active and the recurring schedule becomes inactive. When both become inactive, the entity returns to its default state.

Settings

Use this page to set company specific system parameters. The default logo can be replaced by a custom image file. .CSS style sheets can be used to change the color scheme and changing graphic files.

Note: Checked and auto-filled parameters are the recommended defaults for this page.

Skin	Use this to set the customized, company specific GUI appearance of the application. The default skin used at startup can be used.
Language	Select the applicable language.
Default Paging	Select the number of records per page to be displayed. A selection of No Paging will display all available records. The following will be displayed on the applicable pages: (x) results found, displaying 1 - x **1** x ALL
Session Timeout	Select the amount of time a session will remain active without user action. When the session time is reached without user activity, the session will log the user out. The timer will reset upon a

	View/Source switch.
Show Previews	Click this checkbox to set the camera image previews. These previews will be displayed in Analog Cameras, IP/Network Cameras, PTZ and Joystick, Camera Feeds, and Camera Groups lists other and update screens.
Enable Secure Login	Click this checkbox to require users to login using SSL. A valid certificate will be required.
Max Record Length Now	Select the maximum default amount of time view recording will occur for archives. This functionality is found in the operator view. Operators will be permitted to set the record time to this length or less.
Historical Events	Set the number of events viewable by operators in the operator view.
User Activity Maintain Length	Determine the amount of time user activity logs are to be stored.
Use VMR	Click this checkbox to enable/disable the enlarged VMR mode in the first viewing pane when using multiple panes. If VMR is enabled, the timestamp display is on all streams. If VMR is disabled, the timestamp will be displayed for MPEG2 feeds only.
Use DVR	Click this checkbox to enable/disable the DVR mode in the first viewing pane when using multiple panes.
Display Video Timestamp	Click this checkbox to display the timestamp on the primary pane in the applicable view.
Use SmartSearch	Click this checkbox to enable the SmartSearch function in the operator page.
Application Name	Enter the application/program name. This will be displayed in the upper left corner of the user interface.
Logo	Upload the company specific logo. This will be displayed in the upper left corner of the user page under the application name.
Logo Link	Select the checkbox and enter the company web address. This site will be displayed when a user clicks the company logo.
Logo Image	Upload the logo to be displayed on the user login page. This setting can be left blank.

Reports

Administrators can generate detailed activity reports, typically 100,000+ items, to view user-initiated actions including login/logout, addition, removal, update, and deleting of data and system resources. All root, user (operator), and system activities are logged and reports can be exported to a .csv file. Reports can be sorted by columns including user name, actions, type, name, date/time, and IP address.

User Activity Report

User activity reports log the activities of the users on the system such as login/logout and various changes made to the system. Administrators can select a time range or click submit to accept the default to view the previous month.

Device Configuration Report

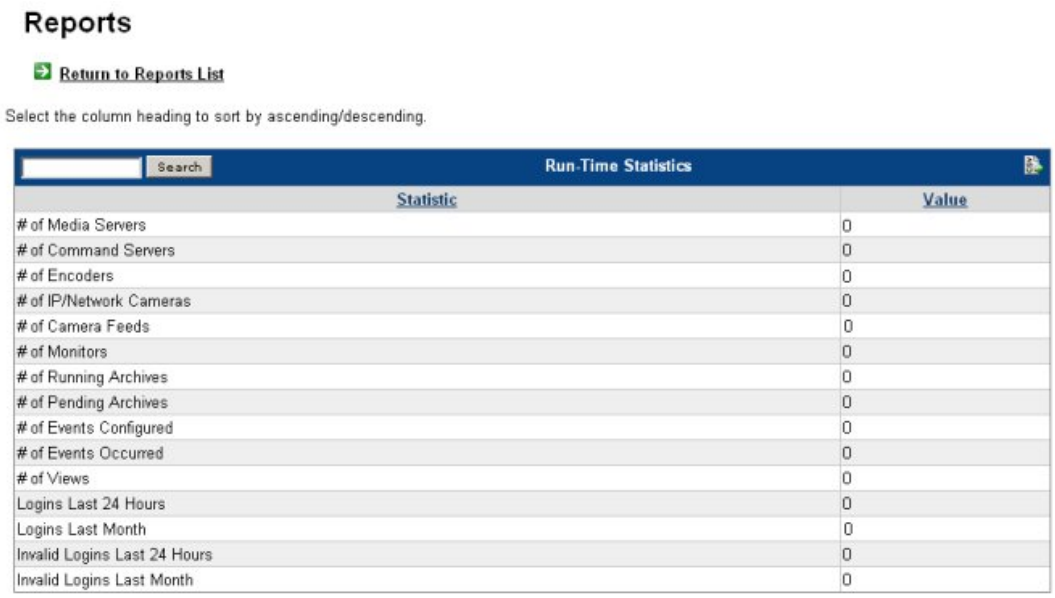
The device configuration report displays the configuration of all devices in the system being used to provide a feed such as servers, encoders, analog and IP cameras. If no feed has been configured, device details will not be displayed.

Server Name	Displays the server name.
Server IP	Displays the Host/IP address or name.
Version	Displays the version information of the server. May include the server, client, and documentation information.
Expiration	Displays the License key expiration dates.
Capacity	Displays the server's full capacity amount in GB, KB, TB, or MB.
Available	Displays the available server space in GB, KB, TB, or MB.
Encoder Name	Displays the encoder name. If an encoder has not been configured, the IP camera information will be displayed.
Encoder Type	Displays the encoder type. If an encoder has not been configured, the IP camera information will be displayed.
Encoder IP	Displays the encoder Host/IP address or name. If an encoder has not been configured, the IP camera information will be displayed.
Encoder Channel	Displays the encoder channel number that refers to the video port numbers. 1 - One feed is configured, one can be viewed

	2 - Two feeds are configured, one can be viewed 3 - Three feeds are configured, one can be viewed 4 - Four feeds are configured, one can be viewed quad - View four feeds simultaneously Each encoder can be configured with multiple feed views. If an encoder has not been configured, the IP camera information will be displayed.
Camera Name	Displays the camera name.
Resolution	Displays the resolution the camera feed. Sample resolutions may include: • CIF (approx. 320 x 240) • 2CIF (approx. 640 x 240 • 4CIF (approx. 640 x 480) • QCIF (approx. 160 x 120)
Format	Displays the analog camera framerate: • NTSC - 60 Hz standard framerate • PAL - 50 Hz standard framerate
Media Type	Displays the following types: • JPEG • MPEG-2 • MPEG-4
Bitrate/Framerate	Displays the MPEG bitrate or Displays the JPEG framerate.
Quality	Displays the framerate quality.
PTZ Manufacturer	Displays the PTZ manufacturer.
COM Port	Displays the COM port applicable to this PTZ.
Chain Number	Displays the chain (order) number this device is within the configuration.
Protocol	Displays the protocol applicable to Pelco cameras only.

Run-Time Statistics

The statistics report is a summary report of system run-time statistics. This report is used to display the number of resources or occurrences for each statistic.



Application Log File

Viewable via the user interface log file.

Event History Report

The events report lists the events that have occurred on the system such as alarms, motion detection, and soft triggers. Use the button to remove multiple applicable events from history.

Note: Deleting an event setup will removed all event histories.

Device Import

This module discusses how to organize and input device information for automatic inclusion into the VSOM database. Refer to the correlating device modules to determine how an entry affects specific devices and/or parameters.

Notes: Tab entries should be entered in numerical order as subsequent tab entries are auto-filled based on previous entries.

> ***Use the MS Excel feature"link" references/ Edit, Paste Special, Links whenever details are shared from one tab to another. This functionality performs updates across the entire spreadsheet when a single item is edited. This is useful when making changes to host and encoder video feed names.***

Only the following entities can be imported at this time:

- Hosts (VSMS or VSVM Servers)
- Encoders
- Camera Groups (feed groups)
- Direct Feeds

Hosts - (VSMS or VSVM Servers)

The following device parameters must be manually entered. Data requirements for the remaining and uneditable gray areas will be auto-generated and transferred to VSOM by MS Excel after the page has been completed.

Name	Enter the server name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the server such as location or type.
Host IP/Name	Enter the Host/IP address or name.

Encoders

The following device parameters must be manually entered. Data requirements for the remaining and uneditable gray areas will be auto-generated and transferred to VSOM by MS Excel after the page has been completed.

Name	Enter the encoder name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the encoder such as location or type.
Host IP/Name	Enter the Host/IP address or name.
Username	Enter the encoder username. User authentication was assigned during the initial installation.
Password	Enter the encoder username. User authentication was assigned during the initial installation.

-

Camera Groups (Groups of direct feeds)

The following device parameters must be manually entered. Data requirements for the remaining and uneditable gray areas will be auto-generated and transferred to VSOM by MS Excel after the page has been completed.

- Enter the Camera Group names on each row and select the applicable parent folder. Root or parent folders are selected as the Top.

Direct Feeds

The following device parameters must be manually entered. Data requirements for the remaining and uneditable gray areas will be auto-generated and transferred to VSOM by MS Excel after the page has been completed.

Name	Enter the feed and camera name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Description	Enter applicable information about the feed and camera such as location or type.
Primary Camera Group	Enter the primary camera group name. It is recommended that naming convention standards be utilized for ease of use throughout the application.
Host IP/Name	Enter the Host/IP address or name.
Hostname/IP	Enter the VSMS Server name or IP address.
Host IP/Name	Enter the encoder or IPCamera IP address or name.
Input	Enter the encoder input number.
Multicast	Enter the UDP multicast. Unicast is the default.
UDP	Enter the UDP transport. TCP is the default.
PTZ driver	Enter the PTZ manufacture.
Chain number	Enter the chain (order) number this device is within the configuration.
COM port	Enter the applicable COM port this PTZ camera is to be configured to.

Upon completion, click the Summary sheet and click the Prepare Import button. When prompted, provide a file name and navigate to the VSOM import module to upload the file.

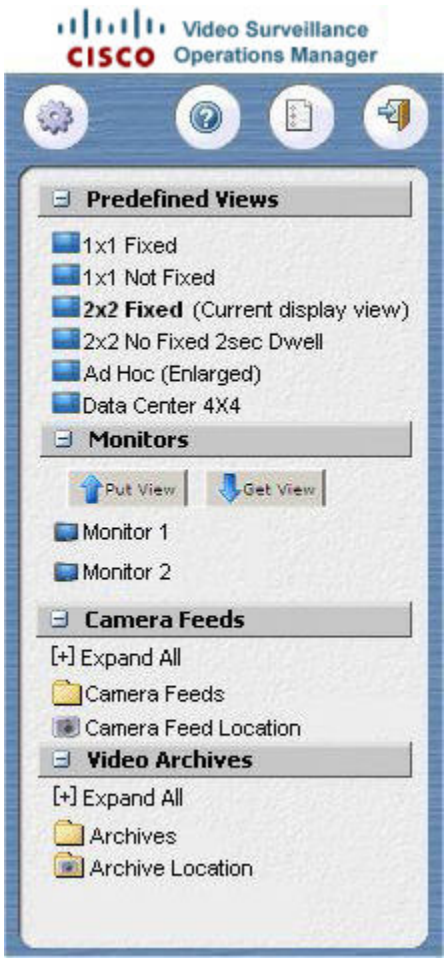
OPERATOR FUNCTIONS

Operator Overview

The user interface is designed to permit administrators and operators to view and manage live video feeds for multiple views based on user authorizations. Each view can be managed independently or in groups by using pre-defined, custom setups that define layout, content, and behavior for matching a setup with a view.

The following features are available to operators based on their user login permissions:

- Secure login
- Flexible video displays
- PTZ controls and presets
- Archive review and clipping
- Event notification
- Utilities (Snapshots, clipping, adding views, etc.)



Quick Keys

Click to switch to the Administrator's module as applicable.

Click to display the searchable help file.

Click to set login and other preferences and settings such as passwords, personal information, and default view settings.

Click to logout of the system.

Note: Users must click logout to terminate the session prior to closing the browser.

Predefined Views

Predefined views are collections of camera feeds and sometimes archives in a set layout. Views also have attributes

for status bars, state icon, timestamps and scrollbars. A view may have a dwell time for how often video in the panels will cycle or rotate. When cycling, fixed panes will not change. An operator can click a video panel to focus it in which case it will not cycle. An operator can determine the pane state/status by the highlight color around it.

Monitors


VSVM-powered monitors permit authorized operators to push the current display to a selected monitor. This permits rapid sharing of situations across a wide network instantaneously. Select a target monitor radio button and click the put view 

icon.

Camera Feeds


Camera feeds permit operators to view live video feeds from associated cameras. Feeds are grouped together in folders 
and sub-folders  . Feeds may be associated with Analog Cameras  , IP or Network Cameras  , and pan-tilt-zoom (PTZ) cameras  .

Video Archives


Video archives permit operators to view the historical records of associated cameras. Archives are grouped in folders 
and sub-folders  that mirror the camera feed groups. The camera level of the groups archives are contained within a

	camera feed folder. Same event types are displayed in same folders. Archives may be master-loops that run continuously for a set period of time. For example, a master-loop archive that is three days long will display up to the previous three days. Additionally, archives may be static segments of time, such as last Thursday to last Tuesday.

Preferences

Preferences are available to users that do not have administrative rights and are available to operator-only role types. Authorizations must be set by the administrator. Based on their login information, users can change their password, update their name and email addresses, and select a default view. Passwords are required to contain a minimum combination of six characters.

Note: It is highly recommended that users change their passwords every 30 days.

Note: Checked and auto-filled parameters are the recommended defaults for this page.

Username	Enter the user's user id. It is recommended that naming convention standards be utilized for ease of use throughout the application.
First/Last name	Enter the user's first and surname as applicable.
Email	Enter the user's email address.
Password/Confirm Password	Enter and confirm the user's password. Passwords are required to contain a minimum combination of six characters.
Status	Determine if the user is to be enabled or disabled. Enabled - Permits users to navigate the system based on their permissions. Disable - Turns user access off without removing the user from the system.
Description	Enter applicable information about the user such as location or job position. This

	field is optional.
Default View	Select the preferred default view from the drop down box. These views have been previously configured in the views section of the application.
Invert Joystick Y-Axis	Select to determine Y-axis inversion via the a joystick.

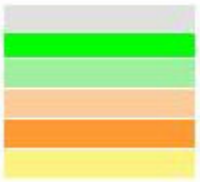
Operator's View

Features and Functions

Using the Operator's View

Views display the included video sources, selected layouts, and length of rotation or cycle. A monitor displays a selected view. Sample layout configurations are shown below:

Operators can click an icon to view the properties of the view status as shown below:

Pane Display 	Displayed colors indicate the following: • Gray - default color • Green - Live stream/synch/active pane ***Note: The video pane must be selected to make it active.*** • Light green - Pane has focused • Light orange - Fixed window (live and archive) • Orange - Fixed window/active (live and archive) • Yellow - Feed has alert
play replay streaming info available search Push to VM/upload source to monitor	Enable Digital Zoom mode ***Note: This mode will remain off in the 'toggle enlarge' mode.*** alert stop state off message available

	minimize/maximize the pane size
 ***Note: Use to return to the administrator page.***	The drop down menus will only be available if there are views, monitors, feeds, or archives to view. Predefined Views - Operators can add, modify, and display view(s) based on their user authorizations. Monitors - Select a monitor to: o Get View - Display the view on the desktop (locally) only. Synchronizes the monitor with the view. o Put View - Push the display to a public view (video wall). Permits operators to rapidly move from a configured and/or multiple pane view to a single view. Camera Feeds - Operators can add, modify, or view camera feeds and groups based on their user authorizations. Video Archives - Operators can start, stop, and schedule new archives and view a list of scheduled or running archives based on their user authorizations.
	Toggles the left navigation bar on/off (narrow/wide screen display). Toggles the left navigation bar and archive toolbar on/off. Toggles the archive toolbar on/off.

Display Options	**Use the icons as follows:**  **-** Displays the archive toolbar and controls.  - Displays the preset console, configured PTZ sources, and camera options.  **-** Displays the events list.  - When colored green, indicates the view or left navigation pane has been updated. Click to refresh the view and pane. This is useful when administrators have modified operator views or a newly saved clip has been added to the left navigation list.
Record Now	With the archive toolbar and controls displayed: - Press to begin recording. <<Add images>>  - When recording begins, the button turns red with a bluish background.
Record on Motion	 - Press to begin recording.  - When recording begins, the button turns red with a bluish background.

Digital Zoom

Digital Zoom permits users to digitally zoom and pan in the video window to any location. This mode uses feed-based settings and permissions, not user. Click the title/video tool boxes to display the instant replay toolbar.

Note: Some capabilities such as PTZ may be disabled in this mode.

The instant replay mode is available for the following layouts:

- 1x1 (pane 1)
- 1x2 (pane 1)
- 1x2x3 (pane 1)
- 1x3x4 (pane 1)
- 2-1 (pane 1)
- 2-4 (pane 1)

- 2x1 (pane 1)
- 2x2 (pane 1)
- 2x3x6 (pane 1)

Settings

VMR permits digital zoom and image overlays on actively running videos. The transparent color allows the entire video to be viewed through the overlay. Translucency degree is controlled by the alpha level. Any translucent image can be placed over any location on the video. Some capabilities such as PTZ may be disabled in this mode.

The digital zoom toolbar is an example of an overlay placed over an active window.

Use  to display and set zoom settings for the toolbar as applicable:

Digital Zoom Toolbar

'L' indicates the live or current view is currently displayed.

Located at the top of the viewing pane, the functionalities are as follows:

1. Displays the magnification level.
2. Zoom In - Not available when paused.
3. Zoom Out
4. Use to restore the default view without leaving the zoom mode.
5. Use to create and save a snapshot to the local server. The zoom toolbar will be unavailable during this operation.
6. Click to engage the zoom mode.
7. Click to restore the defaults and exit the zoom mode.

Instant Replay Settings

Left to right:

- Reverse - Use to play the buffered file backwards.
- Pause - Use to pause the live feed. The feed must be paused prior to reverse viewing.
- Play - Use to play the buffered file forward.
- Stop - Use to stop the live feed. (L -returns to live video)
- Reverse/Forward Step - Use to view a single buffered frame.

Note: Reverse play is not supported for MPEG4.

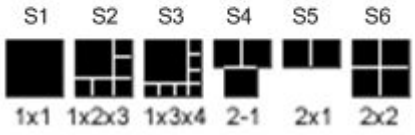
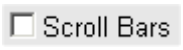
The buffer saves to the local temp file. Maximum buffer time is 5 minutes. The scrollbar slider will initiate save to buffer when in a paused state.

- Green = full buffer
- Blue = empty buffer

Feeds, Archives, and Utilities

Displaying Live Feed Parameters

Note: Checked and auto-filled parameters are the recommended defaults for this page.

Operator Display Console- Use  to display the following Feed/Archives Control Features:	
	Dwell time is configured in New and Edit Views. Users can change the view dwell time based on how long a view is required and user preference. Pane rotation is based on a random rotating source list order. (S1=Source (pane) 1)   Use the  arrows or text box to increase/decrease dwell time (seconds).
Title Bars	Check this box to display the state/status of the pane.
Video Tool Icons	Check this box to display the status icons on the status bar. 
	Check this box to display the timestamp toolbar. The default is off. ***Note: All time stamps use a 24 hour clock and use the stream's local time. The timestamp will display the stream time regardless of camera location.***
	Check this box to display the scroll bar at the bottom of the video pane. The scrollbar permits operators to fast forward or reverse archived views for viewing or clipping. 
	Use to increase/decrease dwell time (seconds).

☐ Fixed Aspect	Check this box to adjust the view to a fixed view. Permits the operator to view directly straight forward and to fit the view to the screen. The view will be displayed based on the monitor configurations. The recommended resolution is 1280/1024. The default is checked and all tool and status bars are off.
☐ Full Source	Check this box to view the source in full size. If no pane is selected, an error will be displayed as follows: No video panes have been selected. This action requires a target pane.

Viewing Video Archives

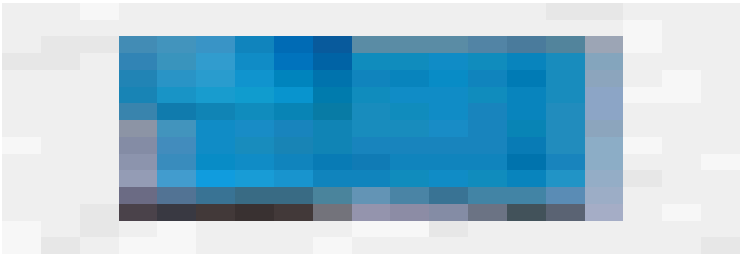
Archives can be created at multiple locations and can be recorded at different framerates and durations. The operator toolbar permits users to search, play, scan, rewind, and pause the recording, and save clips of video on remote servers or their own workstation. Archives are viewable based on the rights of each camera feed.

Archive Toolbar

Users can select and control an archive by clicking the applicable video pane. The status bar will indicate which panes are being controlled. All configured cameras will have running archives listed in the left navigation pane. As more cameras are added, the applicable archives will be automatically included.

Note: An archive MUST be available and/or selected for the archive controls to be enabled.

This toolbar contains standard controls such as play (the initial play back framerate is defaulted to the recording framerate), stop, pause, scroll forward, scroll back, etc. Users can set the start/stop times to play, pause, and seek within a selected archive. For each archive, the required play back framerate can be viewed slower and/or faster by using the scrollbar. Use the icons and toolbar features for archive viewing and controlling. Users can also speed up or slow down the playback by using the action buttons under the toolbar.



Use the control and buttons as follows to pause/play/stop live feeds and archive (see figure):

1. Synchronize - Permits operators to configure multiple archives for viewing simultaneously. Archives must have same date/times to work.

2. Loop Archives - Loops clips from the archives and event lists. Refer to the save archive clip section for instructions to create a clip and set pre and post times.

3. Control Buttons -

Stop - Resets to the start of the archive or clip
Step Reverse - Plays back one frame
Play Reverse - Applies only to all archives
Pause - Pauses feeds. ***Note: To resume play, users must reload the archive.***
Play Forward - Plays the clip at the set framerate
Step Forward - Plays one frame

4. Archive Controls -

    Seek to start

    Playrate Adjustment - Permits operators to speedup or slow down the previously configured framerate on a currently displayed archive.

    Seek to end

    Seek XX Minutes - Use the to jump forward or backwards in a currently displayed archive. The closer to the middle the smaller the jump. The maximum jump is 2.5 minutes.

    Date/Time fields - Use the calendar and arrows to select a specific day and time to seek.

    DST/ST - The video controls seek one hour ahead for Daylight Savings Time (DST) and seek to one hour prior the intended time for Standard Time (ST).

    For ST, there will seem to be a missing hour between 1 and 3 AM. Operators will view the timestamp jumping from 1 to 3 AM but should note that the archives continually record without interruption and the times and time zones on the servers and clients remain correct.

    For archives, a DST or ST stamp will be displayed at the end of the archive timestamp and on the tooltip of the scrollbar which indicates the applicable time zone. For unaffected archives, these indications will not be displayed.

5. Record Now - Choose the camera feed, and then click the Record Now button to start recording live feeds (default duration 5 minutes). Upon completion, the recorded archive will be displayed in the left navigation toolbar. An event is created each time the Record Now button is clicked. Click the Refresh icon to refresh the view. An archive is also generated, which you can view in the Archives list on the Operator View.

6. Player/Control Settings - Used to set minimum record now length and archive looping.

7. Highlight - Click to highlight or select all panes in the view.

8. Swap - Permits operators to switch between live feeds and loop archives and between viewing panes.

9. Bookmark Event - User-inserted reference marks used to create tags in a recorded media stream. Permits operators to enter a name and description of a current event. Use naming conventions with caution as events cannot be renamed.

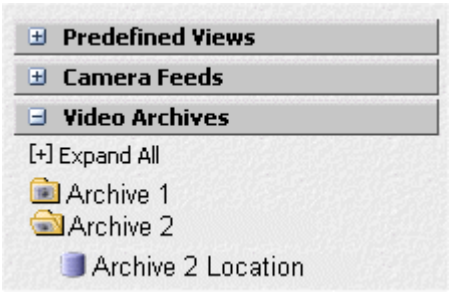
Utilities

Clipping and Viewing

VSOM supports generation of clips from archives from the operator screen in several ways. Clips can be saved on the VSMS servers as archives or exportable media files (.BWM) or downloaded and saved locally as .WMV, .BMX, or .AVI files. Snapshots can be generated from any video window in a view or by using control/click to select all panes.

If the clip does not display or play, refresh/reload the camera and verify the camera status. Contact the system administrator if only a portion of the clips (i.e. two out of four feeds) are displayed.

Use these links to view all available views, feeds, and archives on previously configured cameras. The drop down menus will only be available if there are views, feeds, or archives to view.



To clip multiple events:

1. Select the events from the events list.
2. Choose Actions > BWM or BWX.

The system creates a clip for each of the included events. When event clipping is done, click the Refresh icon to play the event on the screen.

The following rules apply to multiple file clips:

- BWX clips are password protected. When you clip in BMX format, the system prompts you to create a password.
- You can clip on a motion stop event, but not on a motion start event.
- After a clip is created, you can play it by selecting from the side menu. Clipping fails it you try to clip the same event twice.

Taking a Snapshot

Displays a popup windows for operators to save clips to the local workstation. This is applicable only to the currently selected view.

CiscoVSS (SmartSearch)

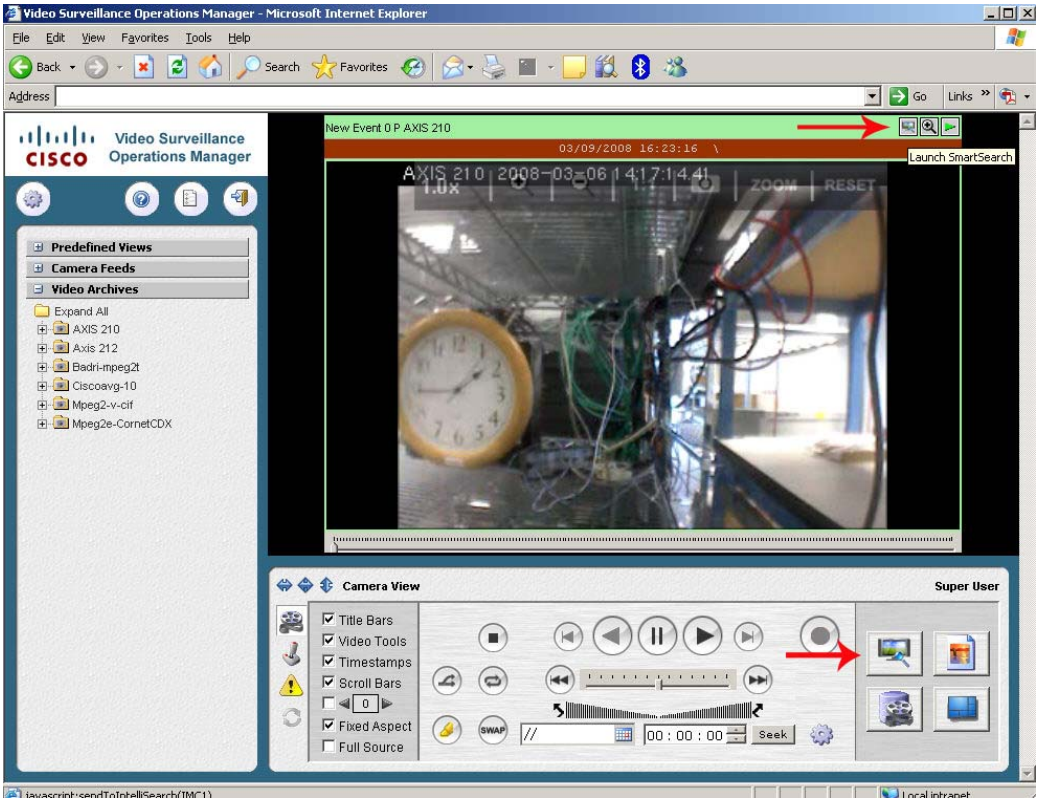
CiscoVSS provides a live and recorded video searching utility which permits operators to search recorded video locating specific occurrences where motion has been detected. It works by streaming the selected video from the VSMS host to the client running the CiscoVSS application where the video motion data is indexed.

Using CiscoVSS

First time users will be required to install and run the CiscoVSS ActiveX client. Follow the Installation Wizard prompts as applicable.

After installation:

1. Login and navigate to the operator's view.
2. Select the clip from the Video Archives list to be viewed.
3. Select the Title Bars and Video Tools as applicable.
4. Click either CiscoVSS icon.



A separate application window will be displayed. If not already viewable, click View, Toolbar to display the video tool icons  .

- Blue arrow - Starts playing the clip
- Blue bars - Pauses the clip
- Green button - starts indexing
- Red button - stop indexing

Defining the Search Area

1. Click Search to select the camera.
2. Use the Select All, Clear All, and drawing tool to select the areas in which to detect motion.
3. Click OK.
4. CiscoVSS will display a list of search results with video thumbnails. If there are no records, the search results window will not be displayed.

Select motion events in the Search Results window

1. Click the motion event thumbnail once and then the Send Event button to seek the archive 10 seconds prior to the motion event.
2. Click the motion event thumbnail twice to view a short portion of the event video within the SmartSearch application.

Searching Clips that Reside Outside of VSOM

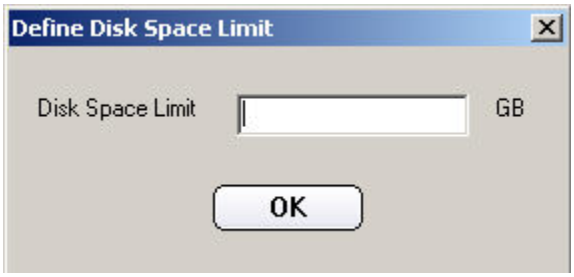
Click File, Open clip and navigate to the applicable clip. Viewable clips may include .AVI, .MPG, and .WMV. After opening, users will be required to associate the clip via the Motion Indexing Settings. Indexing is useful for viewing frames within specified motion detection areas.

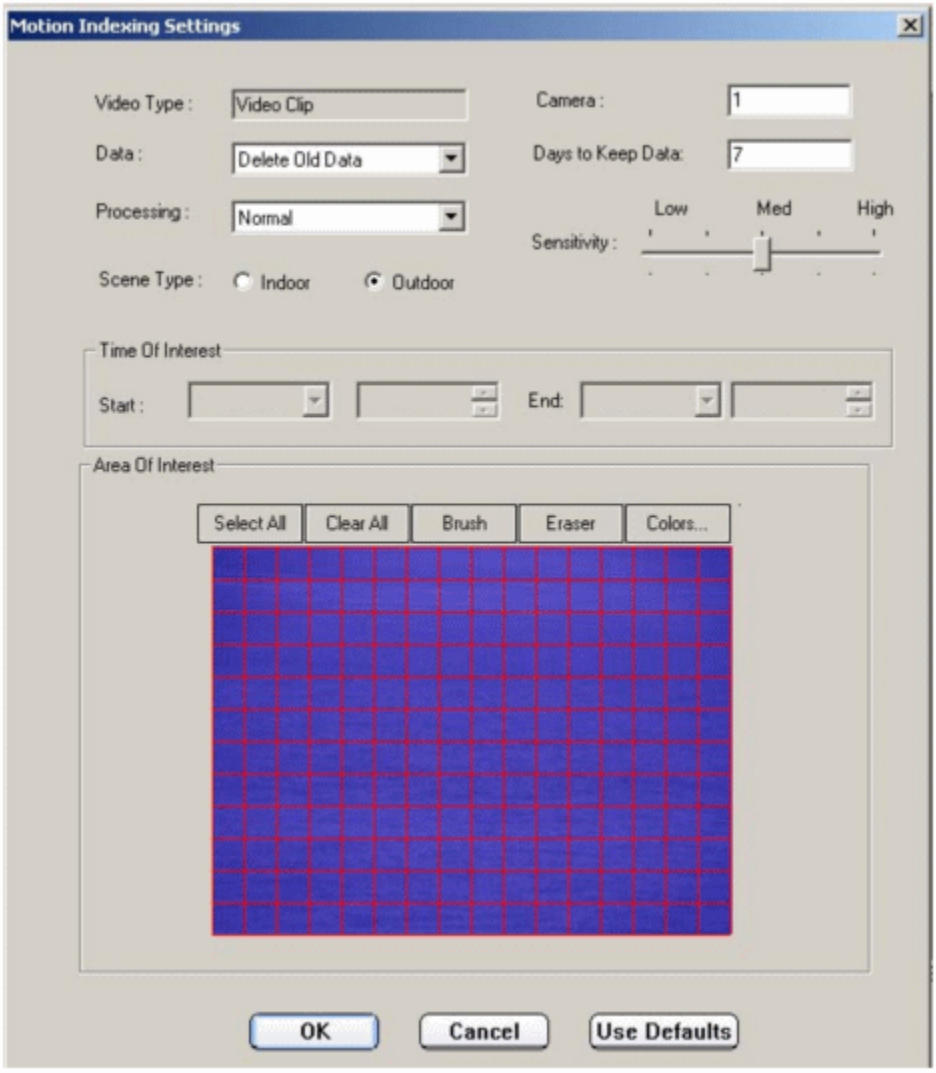
Click View, Progress bar to display the feed parameters as displayed under the feed.

Indexing

Users can set the minimum Disk Space Limit via the CiscoVSS toolbar. Smart Search will use all available disk space when limited to 3GB.

1. Select Input, Set Minimum Disk Space.





- Video types (not names): Enter the type of video being viewed. This may include live or archive clips.
- Camera: Enter the Camera ID from the camera module in VSOM.
- Data: Indicate whether to modify or delete the currently displayed data. This does not remove the data from the saved directory, only from the current view.
- Days to keep data: Maximum of 7 (stored on the local desktop for up to 7 days)
- Processing: Normal or fast (frame or stream speed)
- Scene type: Indoor/outdoor (for indexing of motion detection)
- Time of Interest: For live feeds, this will be disabled.
- Select all: Click first to select all masked areas.
- Clear all: Click first to clear all selections.
- Brush: Click first to select specified areas in the view to detect for indexing.
- Eraser: Click first to unselect the specified areas highlighted for indexing.
- Colors: Click first to display the color palette and select the highlight color.

To view the index, users must close the CiscoVSS and reopen it. If the camera is recognized, users will be asked to Index the Stream Again (open again) or Search Existing Records (find a new clip). Select as applicable to start or search feeds.

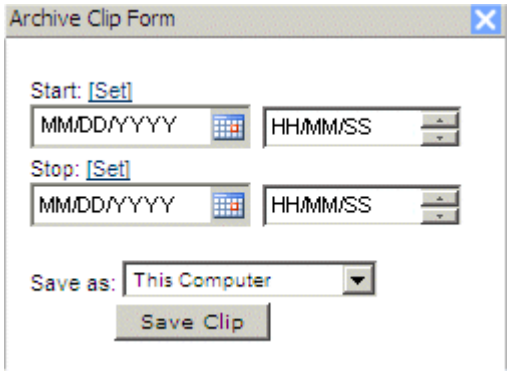
Refer to the embedded CiscoVSS/SmartSearch Help for specific information on the UI, toolbar functionalities, and tutorials on opening clips, digital cameras, searching, and various other features and functions.

Saving Archive Clips

Displays the Archive Clip Form start/stop time window. Operators can set start/stop dates and times of specified clips to the local computer or the server. Looping revolves around the entered dates and times set as discussed below.

1. Place the scrollbar indicator to the start time and click set in the form window. The calendar feature must be used to modify the stop day.

   Move the scrollbar to the stop time and click set in the form window as shown below:



3. Determine where the clip will be saved:
   - This Computer - saved to the local desktop.
     - **AVI** - A standard file format for storing audio/video data on a PC.

- **WMV** - A standard file format for downloading and playing audio/video data or to stream data on a PC.

- Server-side - saved to a previously configured server.
  - **Streamable** - Compressed real time video or audio downloaded over the Internet.

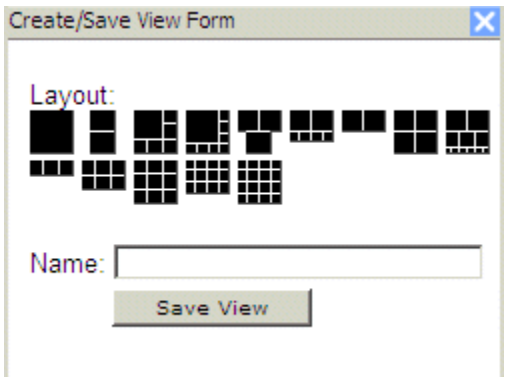
4. Click  to refresh the archive list and view. Note that it can take several minutes/hours for the clip to compile based on the required time.
5. Navigate to the applicable icon (.WMV, .BMW, .AVI) and clip name in the left navigation bar (BWM/X clips will not be displayed) to view the saved clip.

The Cisco ReView Player will automatically display when opening and viewing clips. This permits operators and users to view clips forwards, backwards, and by frame. Refer to the Cisco ReView Player Help for additional information.

Creating a View

Displays the Create/Save View Form layout window. Views created by operators are created based on the rights and permissions of the operator's currently assigned role(s). This list of views are determined by the rights and permissions of the currently assigned roles. The saved view will be displayed in the left navigation pane under Predefined Views. Operators cannot modify a view once it has been set. Select a pane (feed) to create a new duplicate layout and archive view.

1. Click  to refresh the archive list and views. Note that it can take several minutes/hours for the clip to compile based on the required time.
2. Select the applicable layout and enter the name as shown below:



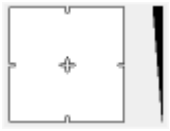
3. Refresh the page to view the new view.

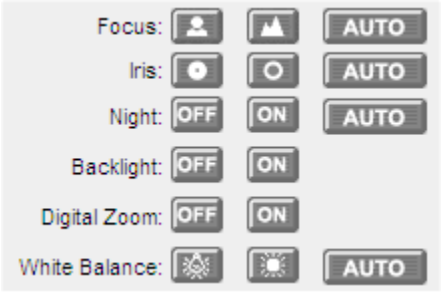
Using the PTZ

Real-time remote monitoring and virtual management is provided by multiple video streams with high JPEG or MPEG video images. Authorized users can simultaneously view live and archived videos from multiple locations and can control PTZ cameras via a joystick.

Note: Checked and auto-filled parameters are the recommended defaults for this page.

When  is displayed to the left of the feed name, the camera is PTZ capable.

	 Toggles the left navigation bar on/off (narrow/wide screen display)  Toggles the left navigation bar and archive toolbar on/off.  Toggles the archive toolbar on/off.
Operator PTZ Console - Use  to display the following PTZ controls: ***Note: The PTZ and pane MUST be selected/active to use the PTZ functions.***	
	Pan and Tilt can be used via the crosshair box. Zoom can be used via the vertical scale to the right of the crosshairs. To zoom in, scale up; to zoom out, scale down. Indicates that the camera is PTZ configured. Additionally, users can right-click the pane in the view to activate and PTZ control. ***Note: The PTZ and pane MUST be selected/active to use the associated PTZ functions.***
	Presets can be selected from the drop down box or a mouse, touch pad, or joystick can be used to control the camera. Preset labels should be indicative of camera view or location. Some examples include: • Front Lobby • Main Hall • Kitchen Door

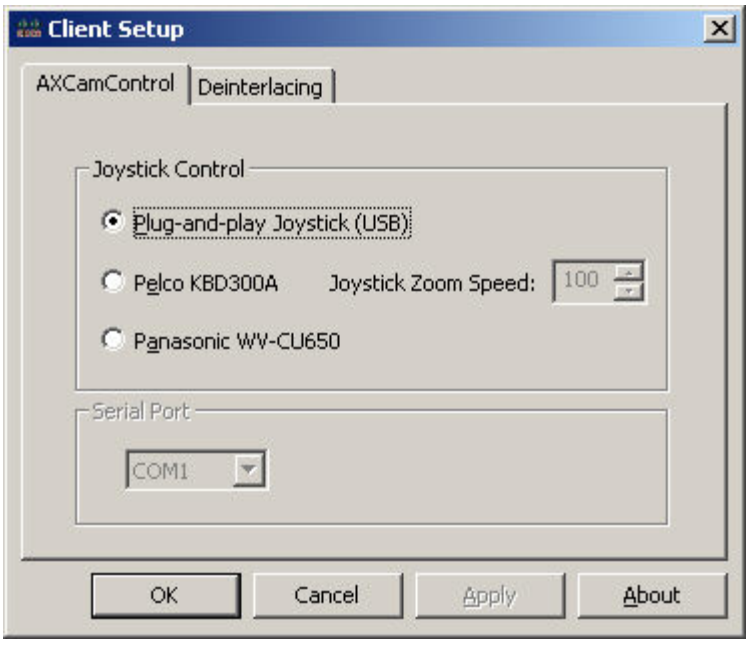
	• Employee Entrance • Parking Garage A
Check Boxes	PTZ Preview Feed - Select this box to view a thumbnail of the feed. Checked by default. Lock PTZ Source - Select this box to prevent accidental switching of views. Checked by default.
PTZ Sources	Select a PTZ enabled camera as applicable. Only PTZ capable cameras will be displayed.
Camera Options 	These functions are dynamic in nature and may or may not be displayed for use based on the devices' supported options. Use the camera controls to pan the camera near, far, dim, bright, etc. as applicable. Focus - Toggle or auto adjust focus. Iris - Toggle or auto adjust iris. Night - Toggle on/off or auto adjust night mode. Backlight - Enable/disable backlight. Digital Zoom - Enable/disable digital zoom. White Balance - Toggle on/off or auto adjust indoor/outdoor white balance.
Pane Selection	A selected pane does not rotate. To deselect a selected pane, click another pane or enter Ctrl-click in an already selected pane. You can determine that a pane is selected by the highlight color: a rotating pane is grey, a selected would-be-rotating pane is pale green, a fixed window is pale orange, and a selected fixed window is bright orange. During synchronization, the color is bright green.

Supported Keyboards for CCTV

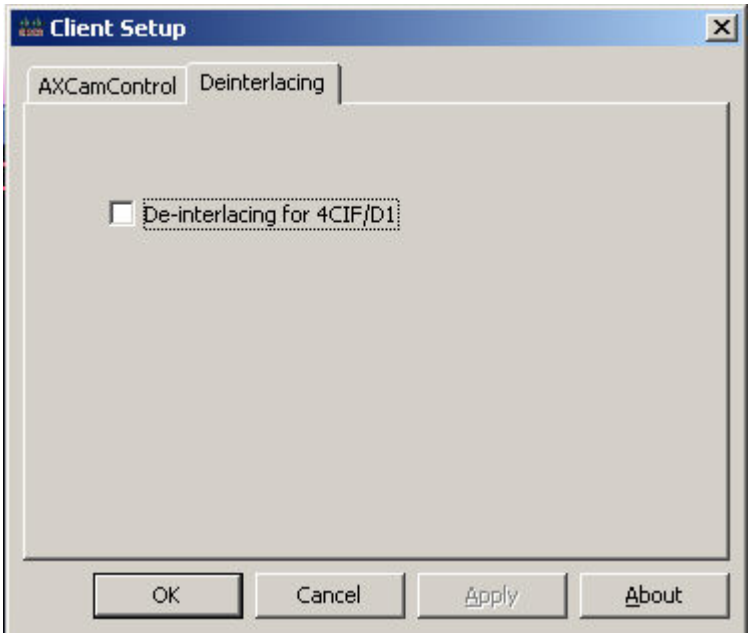
Setting up the Client

This module assumes the system administrator has installed the Cisco Video Surveillance Virtual Matrix Client.

1. Click Start >> All Programs >> Cisco Video Surveillance >> Client >> Client Setup Configuration to display the Client Setup/AXCamControl window as shown below:



2. Select the joystick as applicable.
3. Select the De-interlacing tab.
4. Select De-interlacing as applicable. Selecting this feature improves the visual quality of feeds at 4CIF and D1 resolutions under high-activity and is optional.



Panasonic WV-CU650

The CCTV keyboard is used to select monitors, cameras, views and panes and to switch views and cameras to selected monitors and panes. The keyboard has a joystick and configurable buttons to control PTZ cameras. Additional features include:

- Integrated System Control
- Universal Design for Right or Left Hand Use
- System Management Capability
- Easy to use key sequences for keyboard control
- Joystick control via the CCTV keyboard
- PTZ zoom button controls

Note: All keyboards and joysticks must be plugged in prior to using the system. The selection of a Panasonic keyboard permits any plug and play joystick to supersede that selection.

Key sequences on the keyboard permit cameras, views, and monitors to be selected and controlled. This includes moving a camera to a specific VSVM monitor or VSOM operator page and moving a specific view to a VSVM monitor or VSOM operator page.

Panasonic WV-CU650

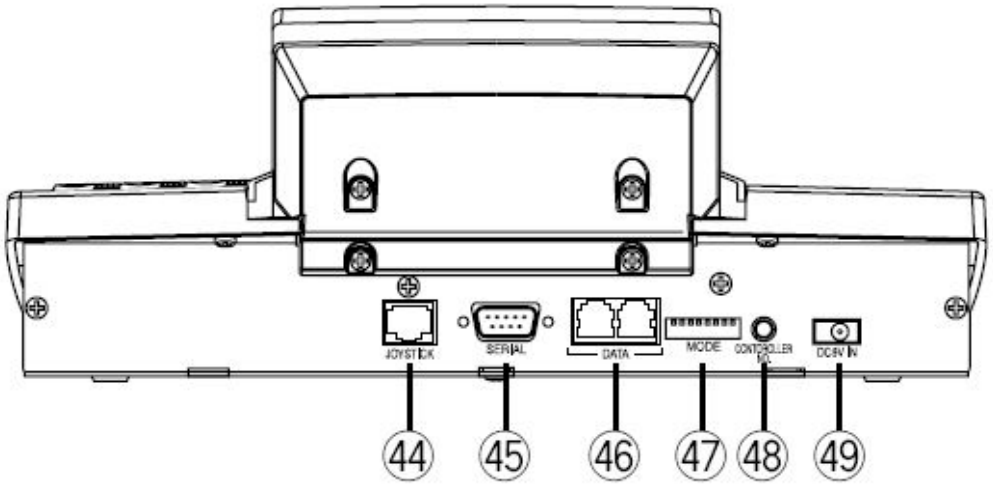
The Jog Dial and Shuttle Ring, provide quick, smooth, total control of every search operation and system setting. One-touch access is available to record, replay, and search functions. The detached joystick permits operators to pan, tilt and zoom, seamlessly. Use the larger numeric keypad for direct access to the camera of choice when using cascade-linked WJ-HD300 Series recorders.

Keyboard Shortcuts

Key	Function
# Mon	Select a monitor.
# Cam (set)	Select a camera and push to the selected monitor.
# F1	Select a pane on a monitor. Repeated pressing of F1 will step forward to the next pane in the view. Key sequence N+F1 permits operators to jump to the pane on the current monitor by number. Panes are numbered from 1 to 9 and 10 to 99 starting at the upper left pane and counting up to the lower right.
# F2	Select a view and push to the selected monitor. View numbers are assigned in the Views module.
# F4	Pushes a camera from the selected pane to the monitor. Camera numbers are assigned in the Analog or IP Camera Feeds modules.
# F3	Pressing the monitor layout button ☐will switch the currently selected pane to the full screen mode on the selected monitor.
+/-	Use to zoom up/down and wide and wide/tight.
# Preset	Move to a preset view/location.

# Cam Posi	Pushes a camera to a selected pane. Camera numbers are assigned in the Analog or IP Camera Feeds modules.

DIP Switch Settings



44. Joystick Connector
45. Serial Port
46. Data Ports
47. Mode Selection Switches
48. Controller Number Switch
49. DC 9v Input Jack

10001000 Terminal Mode

● **Setting for Terminal Mode**

Set the MODE Switch #1 and #5 to ON.

Pelco KBD300A

The CCTV keyboard is used to select monitors, cameras, views and panes and to switch views and cameras to selected monitors and panes. The keyboard has a joystick and configurable buttons to control PTZ cameras. Additional features include:

- Automatically Recognizes Mode of Operation
- Preset Position and Pattern Control
- Auxiliary Operation

- Auto/Random/Frame Scanning
- Easy to use key sequences for keyboard control
- Joystick control via the CCTV keyboard

Note: All keyboards and joysticks must be plugged in prior to using the system. The selection of a Pelco keyboard permits any plug and play joystick to supersede that selection.

Key sequences on the keyboard permit cameras, views, and monitors to be selected and controlled. This includes moving a camera to a specific VSVM monitor or VSOM operator page and moving a specific view to a VSVM monitor or VSOM operator page.

Pelco KBD300A

Keyboard Shortcuts

Key	Function
# Mon	Select a monitor.
# Cam	Select a camera and push to the selected monitor.
# F2	Select a pane on a monitor. Repeated pressing of F1 will step forward to the next pane in the view. Key sequence N+F1 permits operators to jump to the pane on the current monitor by number. Panes are numbered from 1 to 9 and 10 to 99 starting at the upper left pane and counting up to the lower right.
# Pattern	Select a view and push to the selected monitor. View numbers are assigned in the Views module.
Hold # Mon	Pushes a camera from the selected pane to the monitor. Camera numbers are assigned in the Analog or IP Camera Feeds modules.
# F1	Pressing the monitor layout button ☐will switch the currently selected pane to the full screen mode on the selected monitor.
Prev/Next	Use to zoom up/down and wide and wide/tight.
# Preset	Move to a preset view/location.
Hold # Cam	Pushes a camera to a selected pane. Camera numbers are assigned in the Analog or IP Camera Feeds modules.

DIP Switch Settings

00000111 6800 ASCII Mode

	CM6700/CM6800**	Direct P**	CM6700 ASCII***	CM6800 ASCII***	Direct D***	CM9760-MDA*
Switch 5	OFF	ON	OFF	OFF	ON	ON
Switch 6	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF
Switch 7	OFF	OFF	ON	ON	ON	OFF
Switch 8	OFF	OFF	OFF	ON	OFF	ON

*Firmware version 4.00 and higher.
**Firmware version 4.20 and higher automatically recognizes CM6700/CM6800 and Direct P Mode.
***Firmware version 5.00 and higher.

Example

- Pressing ”r;Prev” key twice on the KBD300 will step the selected pane forward 2 panes on the currently selected monitor. On a 2x2 view, if the currently selected pane is the upper right pane, the selected pane will move ahead to the lower right.

Viewing Events

Administrators define event notification actions to include audible and visual alarms, switching monitor views, event bookmarking, and sending preset commands.

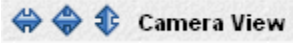
Events monitor for incoming trigger notifications. When a trigger is received, new events will be displayed, in bold, on the operator toolbar based on previously configured parameters. When a new event notification is received, operators can click the event or  for viewing. Events and event notifications can be viewed for up to the previous two weeks.

Note: Not all events are displayed simultaneously. Contact the administrator if additional historical logs are required.

When on operator clicks an event name, the archive will seek to the exact moment of the event. The  icon will also display similar behavior.

Highlight colors indicate:

- New events are displayed in bold.
- Read events are displayed as unbold.
- Selected events are displayed in light grey.
- Multiple selected events are displayed in yellow.
- Viewing or seeking events are displayed in red.

	Toggles the left navigation bar on/off (narrow/wide screen display) Toggles the left navigation bar

	and archive toolbar on/off. Toggles the archive toolbar on/off.
Operator Events Console - Use to display the following Event features:	
Filter	Click Filter to view specific or all event types.
Event Flag	Displays the flag associated with this type of event such as red = fire and yellow = warning.
Actions	Click  to set alert view.
Events Time	Displays hour, minute, and second of event, up to the previous two weeks.
Event Name	Displays the event type; soft trigger (email or on screen message) or device (building fire systems and outdoor motion sensors). The event type has been previously entered by the system administrator.
Description	Displays the soft trigger description information. This description has been previously entered by the system administrator.
View	- Displays the current, active view. This may differ from the event view.
Seek	- Jump-to-date for events. Seeks and displays the event.
Loop	- : Loops clips from a specific event. Permits the operator to create continuous playback loops from specific start and stop times. Click the loop feed in the pane to exit/stop the loop.

TIPS AND TROUBLESHOOTING

No Video Display

- Can you ping the camera?
- Are you using the Web Browser which supports ActiveX?
- Do you have the correct video card on your PC?
- Did you configure the camera to VW2500 in VSOM?
- Did you install the driver pack in VSM?
- Did you follow the driver installation notes?
- Did you uninstall the old driver before installing the new one (dp_cisco-1.2-04d_5.0.0-30d, post-EFT check the release notes for the correct DP version number)?Did you uninstall the old driver before installing the new one (dp_cisco-1.2-04d_5.0.0-30d, post-EFT check the release notes for the correct DP version number)?
- Did you logout of the camera Admin using the "logout" button on the camera? If the "logout" button is not used and the browser is clicked closed, VSMS will not be able to communicate with the camera to get the video stream.
- Use the YAST utility to disable the firewall on the VSM/SLES10 server. Use the IP Connectivity for port 80 to rule out firewall and NAT issues.
- Connect via another PC and verify no video stream.

Rebooting the Camera

When the camera view displays, do not use the browser to connect directly to the IP address of the camera.

- Stop/start the Cisco applications by /etc/init.d/Cisco stop(start).
- Get a snap shot of installed packages at VSMC page: http://server/vsmc.html
- Verify they match the following (post-EFT, check the release notes for the correct version numbers)
- Verify currently installed packages as most current available.

Additional Driver Packages

dp_acti 1.0-04d [installed]

dp_asta 1.0-03d [installed]

dp_autodome 1.0-02d [installed]

dp_axis 1.3-04d [installed]

dp_cisco 1.1-03d

dp_cisco 1.2-04d [installed]

dp_cohu 1.0-03d [installed]
dp_cornet 1.3-03d [installed]
dp_indigo 1.0-03d [installed]
dp_iqeye 1.0-06d [installed]
dp_ivc 1.0-02d [installed]
dp_lumenera 1.0-03d [installed]
dp_mango 1.0-10d [installed]
dp_panasonic 1.0-11d [installed]
dp_pelco 1.0-03d [installed]
dp_smartsight 1.0-04d [installed]
dp_sony 1.0-08d [installed]
dp_teleste 1.0-09d [installed]
dp_toshiba 1.0-04d [installed]
dp_vbrick 1.0-05d [installed]
dp_vcs 1.1-13d [installed]
dp_vision 1.0-03d [installed]

Using VSM logs for troubleshooting

1. Log into the VSM server and type:

```
# tail -f /usr/BWhttpd/logs/ims.log
```

Example of IMS.log displaying administrator currently in use

```
2008-02-25 20:22:48.168 [ proxy(24601).p_NJ-
wall-SD-cam1 BE_PROXY=1 <Proxy.cxx:152> ]
Unable to configure or handshake with the
device

2008-02-25 20:23:03.256 [ proxy(24601).p_NJ-
wall-SD-cam1 BE_PROXY=1 <Proxy.cxx:152> ]
Unable to configure or handshake with the
device

2008-02-25 20:23:07.023 [ httpd(26362)
FE_INFO=1 <fnf_io.cpp:2277> ] Timed out
waiting for mpeg4 headers for proxy 'p_NJ-
wall-SD-cam1'

2008-02-25 20:30:45.627 [ proxy(24934).p_NJ-
wall-SD-cam1 GL_UTIL=1 <RtspClient.cxx:526>
] connect(addr='10.87.98.96:554', fd=4):
Connection refused

2008-02-25 20:30:45.628 [ proxy(24934).p_NJ-
wall-SD-cam1 BE_PROXY=1 <Proxy.cxx:152> ]
```

Example of IMS.log displaying repositories not configured

```
2008-02-06 16:36:58.338 [ smanager.bwt(6486)
STORAGE_MGR=1 <repos_st.cpp:218> ] ERROR
```

```
[sysmon.initialize]: no partition names
found

2008-02-06 16:36:58.339 [ smanager.bwt(6486)
STORAGE_MGR=1 <bwt_repos.cpp:3964> ] error
in opening /usr/BWhttpd/conf/BWTsysinfo.bin
file
```

2. Verify VSMS repositories are configured.
3. Go to -> http://Server/vsmc.html - have to configure the repos so that the above errors are not seen.

Example of IMS.log displaying archive process successfully started:

```
2008-02-25 18:40:41.770 [ httpd(26362)
FE_COMMANDER=1 <fco_main.cpp:798> ] started
archiver 'a_p_NJ-SD-CiscoCam-
1_2_20080225184040'
```

Example of IMS.log displaying archives configuration failed due to insufficient storage

```
2008-02-25 18:39:54.742 [ httpd(16185)
FE_COMMANDER=1 <fco_archivercmd.cpp:935> ]
INSUFFICIENT DISK SPACE... <REQUESTED SPACE:
67065292800, AVAILABLE SPACE: 65751296737>

2008-02-25 18:39:54.742 [ httpd(16185)
FE_COMMANDER=1 <fco_main.cpp:794> ] Could
not start Archiver! INSUFFICIENT DISK
SPACE... <REQUESTED SPACE: 67065292800,
AVAILABLE SPACE: 65751296737>

!
```

Example of IMS.log displaying archives configuration failed due to ”r;Permission denied”:

```
('/media0/a_p_CAM2_10_20080225161027'):
Permission denied

2008-02-25 16:10:28.409 [ httpd(25257)
FE_COMMANDER=1 <fco_archivercmd.cpp:1005> ]
[ERROR] could not start archiver
"archiver.a_p_CAM2_10_20080225161027"

2008-02-25 16:10:28.409 [ httpd(25257)
FE_COMMANDER=1 <fco_archivercmd.cpp:1008> ]
Removing setup file

2008-02-25 16:10:28.409 [ httpd(25257)
FE_COMMANDER=1 <fco_main.cpp:794> ] [ERROR]
could not start archiver
"archiver.a_p_CAM2_10_20080225161027"

2008-02-25 16:18:24.422 [
archiver(16730).a_p_CAM2_11_20080225161823
BE_ARCHIVER=1 <bar_mpeg4.cpp:450> ]
mkdir('/media0/a_p_CAM2_11_20080225161823'):
Permission denied
```

Example of IMS.log showing no viewing of video at client.

```
20:37:05.631 [ httpd(15909) FE_STREAM=1
<fst_init.cpp:133> ] EXIT

2008-02-25 20:37:08.196 [ httpd(26362)
FE_STREAM=1 <fst_main.cpp:112> ] FSM_INIT

2008-02-25 20:37:09.881 [ httpd(26362)
FE_STREAM=1 <fst_io.cpp:109> ] WARNING:
proxy 'p_NJ-wall-SD-cam1' write to client
'10.82.240.15' took 238.0 msecs

2008-02-25 20:37:09.881 [ httpd(26362)
FE_STREAM=1 <fst_io.cpp:45> ] client
'10.82.240.15' missed frame(s): prev=4954,
curr=4961

2008-02-25 20:37:11.947 [ httpd(26362)
FE_STREAM=1 <fst_io.cpp:109> ] WARNING:
proxy 'p_NJ-wall-SD-cam1' write to client
'10.82.240.15' took 1229.0 msecs

2008-02-25 20:37:11.947 [ httpd(26362)
FE_STREAM=1 <fst_io.cpp:117> ] client
disconnect

2008-02-25 20:37:11.947 [ httpd(26362)
FE_STREAM=1 <fst_init.cpp:133> ] EXIT
```

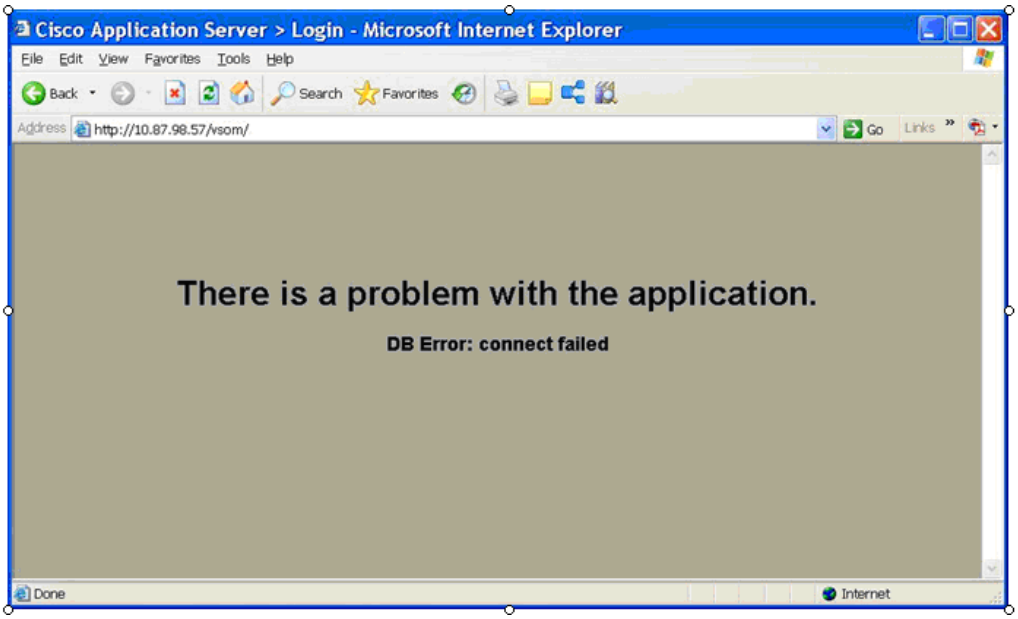
Using MySQL for troubleshooting

Unable to configure or handshake with the device

Is mysql running?

Note: The MySQL server must be manually started /etc/init.d/mysql start and set to start on boot through YaST, System, System Services.

For mysql password enter <CR> unless another password has been setup.

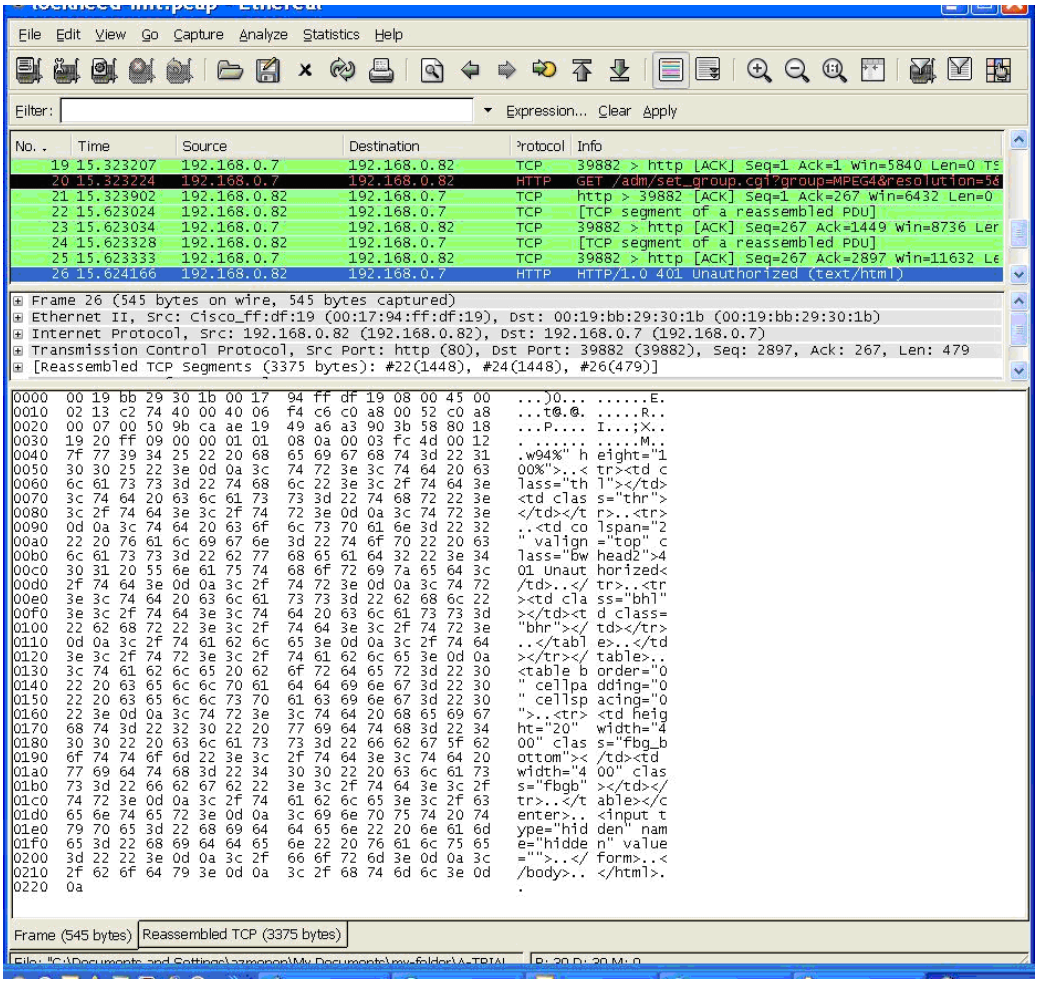


Using tcpdump for troubleshooting

Use tcpdump to capture network traffic for analysis on the VSM server:

```
# tcpdump -s 0 host Ipaddress-of-camera -w name-
of-file-to-write-to
```

Use Ethereal or other decoding tool for analysis e.g using ethereal



Issue

Poor Video Quality due to Lighting Conditions

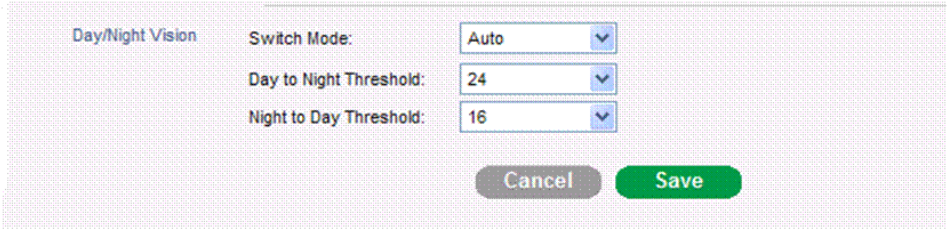
The quality of the video from the camera may be affected if there is too much light.

Resolution

The camera threshold needs to be configured for day/night setting. Other settings may require modification to accommodate the amount of light in the area.

Lower the Night to Day threshold or change the compression bitrate and frame repeat rate:
"Setup -> Video/Audio -> Video" page

Enclosed is a brief description of how the feature works:



Issue

VSVM Pane Highlights

CCTV pane highlights on Virtual Matrix monitors do not un-highlight when browser is closed.

Resolution

Pane highlighting on Virtual Matrix (VSVM) monitors will not automatically un-highlight when a browser page is unloaded and reloaded. These highlights should be cleared as follows:

Select the monitor # (+ enter) of each VSVM client to select the monitor's 1st pane. Repeat this for all monitors. This will restore all the monitors to a 'cleared' state and make them ready for CCTV use.

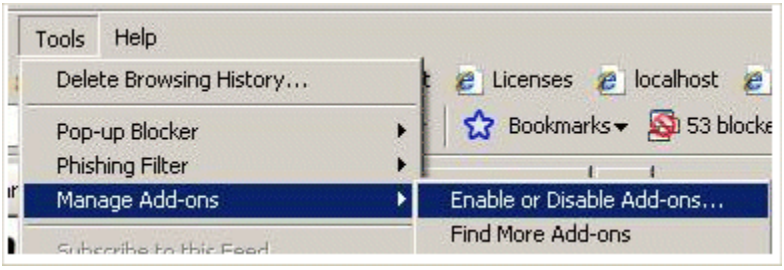
Issue

The Slider Bar Appears Broken

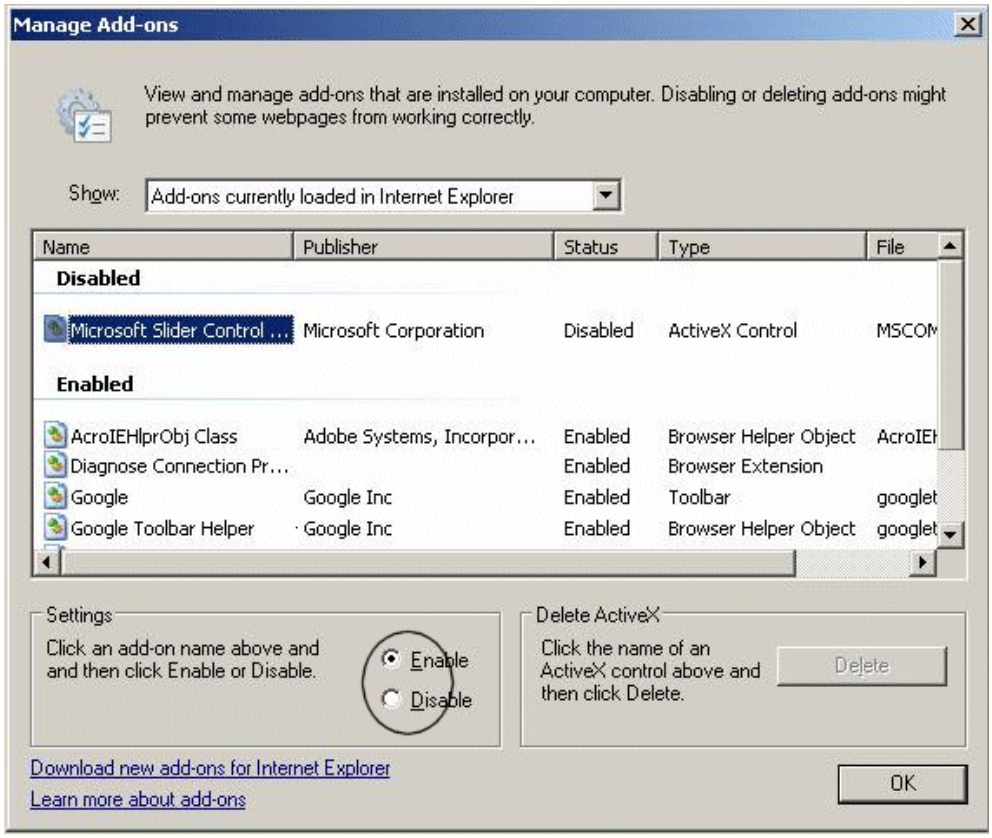
When the web page loads, a broken image icon and/or red background appears where the slider bar widget should be. This is most likely due to the Slider Bar ActiveX Control being disabled within Internet Explorer. To enable this control, follow the steps below:

Resolution

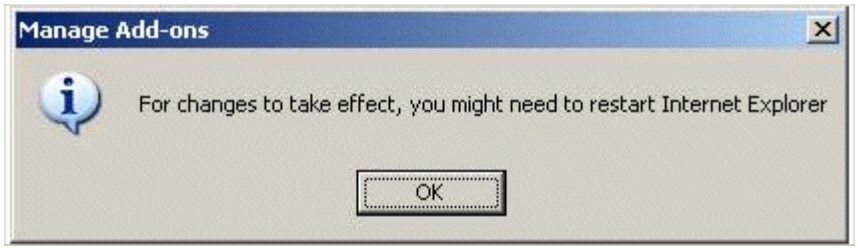
1. In Internet Explorer 7, Go to Tools >> Manage Add-ons >> Enable or Disable Add-ons&ldots;.



2. Highlight Microsoft Slider Control.
3. Click Settings >> Enable.



4. Click OK.
5. Click OK again after the following message:



6. Restart the browser.

Issue

The VMR Framerate is Slow and/or the Video Quality is Poor

Resolution

The VMR mode requires the graphics-processing capabilities of the computer's display card. When blending multiple video streams and/or application images, the performance is dependent on the capabilities of the graphics card being used.

Issue

Incomplete VMR System Requirements

- Support for YUV and "non-power of 2" Direct3D texture surfaces.
- The ability to StretchBlt from YUV to RGB DirectDraw surfaces.
- Min 16MB of video memory if multiple video streams are to be blended. The actual amount of memory required is based on the image size of the video streams and resolution of the display mode being used.
- Support for an RGB overlay or the ability to blend to a YUV overlay surface.
- Hardware-accelerated video (support for DirectX Video Acceleration) decoding.
- High pixel fill rates.
- VMR requires the system monitor be set for a color depth of at least 16 bits. The VMR cannot be put into a run state if the monitor is set for 256 colors. Additionally, some video cards cannot perform Direct3D operations when the display is set to 24 bits per pixel.

Resolution

To validate the graphics card VMR capabilities:

1. Update the video driver to the latest vendor specific video driver, for example:
    a. For an ATI card, update with a driver from the ATI website.
    b. For an NVidia card, update with a driver from the NVidia website.
    c. Do not under any circumstances update with a driver from the Microsoft website.
2. Run the supplied program VMRPlayer9.exe
3. Load the file: VMRtest.avi
    4. Click Menu, VMR Properties.
    5. Select, Static App Image &ldots; .

6. A dialog box will display the caption: App Image Control. Select Display App Image.

7. Click Close.

8. Click Play.

9. If video appears with a VMR logo in the center of the screen, the video card supports VMR9.

Issue

Configuration Required for SD-Camera, VSM Interoperability

Resolution

Managing Users/Logins and Sessions

Due to security measures eliminating concurrent sessions for a single username, it is necessary to create a login account with appropriate privileges for different tasks.

To create users for viewing:

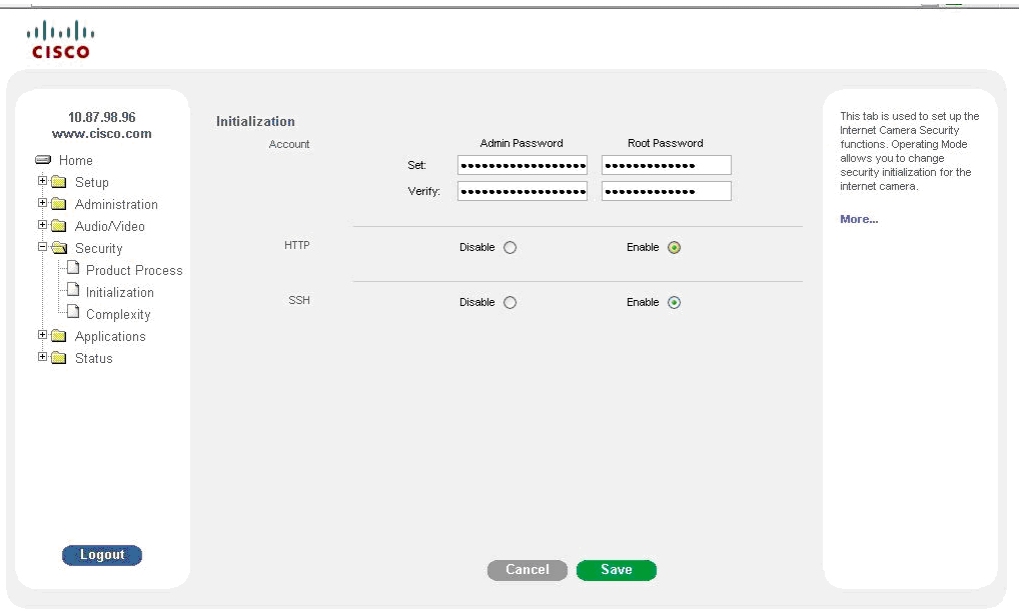
1. For viewing the video stream in Camera Web UI, setup a user account (with admin privileges) to view the video stream from camera UI.
2. Create an Admin User for Each Media Server.
3. For managing SD Cameras with VSM create an account for each Media Server that will connect directly to the SD Camera. The configuration connections for Media Server are limited like User sessions.

Enabling the HTTP Configuration on SD Camera

To manage SD Camera using VSM it is necessary to enable "HTTP" configuration. The SD Camera uses SSL/HTTPS by default, which is not supported by VSMS.

To enable HTTP configuration:

1. Login in with Administrator Privileges.
2. Click "Setup" (if this is the first time the SD Camera is configured, the Setup page will load by default).
3. Go to "Security".
4. Go to "Initialization".
5. Select the "enable" radio-button next to "HTTP".
6. Click "Save".
7. Verify the new settings.
8. Click "Logout" button when finished (browser will close).



Issue

No Video with SD Camera and VSM

Resolution

1. Log in as an admin to make parameter changes to the camera.
2. Navigate to the camera to enable HTTP**. This permits VSM to communicate with the camera. VSM does not support HTTPS by default so it must be enabled for the camera and VSM to communicate.
3. The version of driver currently running on the VSM does not automatically set the PAL/NTSC setting. Verify the video feed on the camera is set to NTSC. If NTSC is not selected, the video feed will not be displayed in VSM.

   a) Go to setup.

   b) Select the video selection and verify NTSC is selected. PAL will not work.

4. Click "Logout" to end the Admin session. The SD camera permits only one Admin user at any time. Use the Logout button on the GUI PRIOR to logging out of VSM.

By accomplishing the NTSC and HTTP configuration and Admin logout, VSM can now be configured and used for camera viewing.

GLOSSARY

A

alarm: The action or event that triggers an alarm for which an event profile is logged. Events can be caused by an encoder with serial contact closures, a motion detected above defined thresholds, or another application using the soft-trigger command API.

alarm trigger: The action or event that triggers an alarm for which an event profile is logged. Events can be caused by an encoder with serial contact closures, a motion detected above defined thresholds, another application using the soft-trigger command API, or a window or door opening/closing.

alert: The action or event that triggers an alarm for which an event profile is logged. Events can be caused by an encoder with serial contact closures, a motion detected above defined thresholds, or another application using the soft-trigger command API.

API: Application Programming Interface

archive: A place in which records or historical documents are stored and/or preserved. An archive is a collection of video data from any given proxy source. This enables a feed from a camera-encoder to be stored in multiple locations and formats to be viewed at a later time. There are three types of archives: Regular - where the archive recording terminates after a pre-set time duration lapses and is stored for the duration of its Days-to-Live. Loop - where the archive continuously records until the archive is stopped. Loop archives reuse the space (first-in-first-out) allocated after every completion of the specified loop time. Clip - the source of the archive is extracted from one of the previous two types and is stored for the duration of its Days-to-Live.

Archive Clip: The source of the archive that is extracted from one of the other two types and stored for the duration of its Days-to-Live.

archive command: A URL-based API that is neither application-platform nor programming language specific. Commands are sent to dynamically loaded modules (e.g. info.bwt, command.bwt, event.bwt, &c.) using arguments in the form of name-value pairs.

Archive Server: Programs which receive incoming video streams or loops, interprets them, and takes the applicable action.

archiver: An application that manages off-line storage of video/audio onto back-up tapes, floppy disks, optical disks, etc.

AVI: Audio Video Interleave

AX Client: The ActiveX client name that displays the video. Each video panel can switch between multiple video streams.

B

buffer archive: An archive used to extract event triggered clips. When an event profile includes triggered clips, an archive is started for each of the

proxy sources associated with the event profile. The duration of these buffer archives includes the combined values of the pre-buffer and post-buffer times from the event profile.

C

camera controls: Permits users to change the camera lens direction and field view depth. Panning a camera moves its field of view back and forth along a horizontal axis. Tilting commands move it up and down the vertical axis. Zooming a camera moves objects closer to or further from the field of view. Many of these cameras also include focus and iris control. A camera may have a subset of these features such as zoom, pan, or tilt only.

camera drivers: Responsible for converting standardized URL commands supported by the module into binary control protocols read by a specific camera model.

child proxy: An agent, process, or function that acts as a substitute or stand-in for another. A proxy is a process that is started on a host acting as a source for a camera and encoder. This enables a single camera-encoder source to be viewed and recorded by hundreds of clients. There are three types of proxies: A "direct" proxy is the initial or direct connection between the edge camera-encoder source. By definition at least one direct proxy exists for a given video source. A "parent" proxy is the source of a nested or child proxy. Parent proxies may be from remote or local hosts. Proxies are nested in a hierarchy with inheritance rights. A "child" proxy is the result of a nested or parent proxy. Child proxies run on the local host. Proxies are nested in a hierarchy with inheritance rights. A child proxy has the same resolution, quality, and media type of its parent, but can have a lower framerate for motion JPEG.

clip: A place in which records or historical documents are stored and/or preserved. An archive is a collection of video data from any given proxy source. This enables a feed from a camera-encoder to be stored in multiple locations and formats to be viewed at a later time. There are three types of archives: Regular - where the archive recording terminates after a pre-set time duration lapses and is stored for the duration of its Days-to-Live. Loop - where the archive continuously records until the archive is stopped. Loop archives reuse the space (first-in-first-out) allocated after every completion of the specified loop time. Clip - the source of the archive is extracted from one of the previous two types and is stored for the duration of its Days-to-Live.

COM: Communications Port

Command API: A URL-based API that is neither application-platform nor programming language specific. Commands are sent to dynamically loaded modules (e.g. info.bwt, command.bwt, event.bwt, &c.) using arguments in the form of name-value pairs.

D

date/time: An international and universal time system. Representation of time used by computers and many programming languages are most often

accurate down to the millisecond. UTC values are used to track and archive date/time values and records when events are triggered.

Days-to-Live: The amount of time an archive is shelved or stopped and will remain in allocated storage. An archive that has passed its Days-to-Live is removed by a routine maintenance process.

direct proxy: An agent, process, or function that acts as a substitute or stand-in for another. A proxy is a process that is started on a host acting as a source for a camera and encoder. This enables a single camera-encoder source to be viewed and recorded by hundreds of clients. There are three types of proxies: A "direct" proxy is the initial or direct connection between the edge camera-encoder source. By definition at least one direct proxy exists for a given video source. A "parent" proxy is the source of a nested or child proxy. Parent proxies may be from remote or local hosts. Proxies are nested in a hierarchy with inheritance rights. A "child" proxy is the result of a nested or parent proxy. Child proxies run on the local host. Proxies are nested in a hierarchy with inheritance rights. A child proxy has the same resolution, quality, and media type of its parent, but can have a lower frame rate for motion JPEG.

DVR: Digital Video Recorder/Recording - broadcasts on a hard disk drive which can then be played back at a later time.

E

Encoder driver: Sends the output of a camera driver to the encoder to which the camera is attached (via the network protocol supported by a particular type of encoder).

event: When an incident or event occurs, it is captured by a device or application and is tagged. An event is a collection of information about an incident, including name, associated video sources, and a timestamp. If the event setup includes triggered clips, an event will have trigger tracking or video data associated directly with it. Users will need to use the event log to refer to times within a referenced archive, typically a master loop. By using the API to seek to a specific UTC timestamp, events can be used to look up occurrences in an archive that were not necessarily associated with the original event.

event buffer loop: An archive used to extract event triggered clips. When an event profile includes triggered clips, an archive is started for each of the proxy sources associated with the event profile. The duration of these buffer archives includes the combined values of the pre-buffer and post-buffer times from the event profile.

event command: A URL-based API that is neither application-platform nor programming language specific. Commands are sent to dynamically loaded modules (e.g. info.bwt, command.bwt, event.bwt, &c.) using arguments in the form of name-value pairs.

event profile: A collection of processes and configurations designed to track and notify when alarms or alerts are triggered. Types of event profiles includes event trigger tracking only, event triggers with archive clips, and motion detection. When an event profile includes a trigger from an encoder, part of the profile includes scripts copied to the encoder which release an event notification. When an event profile includes event triggered clips, a pre-post buffer archive is started from the proxies

associated with the event profile. Once a trigger occurs, a clip is extracted from the pre-post buffer.

event setup: A collection of processes and configurations designed to track and notify when alarms or alerts are triggered. Types of event profiles includes event trigger tracking only, event triggers with archive clips, and motion detection. When an event profile includes a trigger from an encoder, part of the profile includes scripts copied to the encoder which release an event notification. When an event profile includes event triggered clips, a pre-post buffer archive is started from the proxies associated with the event profile. Once a trigger occurs, a clip is extracted from the pre-post buffer.

event source archive: An archive used to extract event triggered clips. When an event profile includes triggered clips, an archive is started for each of the proxy sources associated with the event profile. The duration of these buffer archives includes the combined values of the pre-buffer and post-buffer times from the event profile.

event trigger: The action or event that triggers an alarm for which an event profile is logged. Events can be caused by an encoder with serial contact closures, a motion detected above defined thresholds, or another application using the soft-trigger command API.

event with timestamp: When an incident or event occurs, it is captured by a device or application and is tagged. An event is a collection of information about an incident, including name, associated video sources, and a timestamp. If the event setup includes triggered clips, an event will have trigger tracking or video data associated directly with it. Users will need to use the event log to refer to times within a referenced archive, typically a master loop. By using the API to seek to a specific UTC timestamp, events can be used to look up occurrences in an archive that were not necessarily associated with the original event.

expiration: The amount of time an archive is shelved or stopped and will remain in allocated storage. An archive that has passed its Days-to-Live is removed by a routine maintenance process.

F

feed: The transmission of a video signal from point to point.

FPS: Frames Per Second

framerate: The rate at which the source is being recorded. For motion JPEG sources, the play rate is the number of frames-per-second or fps. For MPEG sources, the play rate is the number of megabits-per-second or Mbps and kilobits per second or Kbps.

framerate fps: An agent, process, or function that acts as a substitute or stand-in for another. A proxy is a process that is started on a host acting as a source for a camera and encoder. This enables a single camera-encoder source to be viewed and recorded by hundreds of clients. There are three types of proxies: A "direct" proxy is the initial or direct connection between the edge camera-encoder source. By definition at least one direct proxy exists for a given video source. A "parent" proxy is the source of a nested or child proxy. Parent proxies may be from remote or local hosts. Proxies are nested in a hierarchy with inheritance rights. A "child" proxy is the result of a nested or parent proxy. Child

proxies run on the local host. Proxies are nested in a hierarchy with inheritance rights. A child proxy has the same resolution, quality, and media type of its parent, but can have a lower framerate for motion JPEG.

G

Get Request: Used to retrieve a piece of management information.

H

hard-trigger: The action or event that triggers an alarm for which an event profile is logged. Events can be caused by an encoder with serial contact closures, a motion detected above defined thresholds, or another application using the soft-trigger command API.

HTTP: Hypertext Transfer Protocol

I

IMC: Interactive Media Client - Use this API for archive controls such as play, pause, and seek, and live controls such as pan, tilt, zoom, and presets.

incident: When an incident or event occurs, it is captured by a device or application and is tagged. An event is a collection of information about an incident, including name, associated video sources, and a timestamp. If the event setup includes triggered clips, an event will have trigger tracking or video data associated directly with it. Users will need to use the event log to refer to times within a referenced archive, typically a master loop. By using the API to seek to a specific timestamp, events can be used to look up occurrences in an archive that were not necessarily associated with the original event.

IP: Internet Protocol

J

J2EE: Java 2 Enterprise Edition

JPEG: JPEG (pronounced "jay-peg") stands for Joint Photographic Experts Group, the original name of the committee that wrote the standard. JPEG is designed for compressing full color or gray-scale images of natural, real-world scenes. JPEG is "lossy," meaning that the decompressed image is not exactly the same as the original. A useful property of JPEG is that the degree of lossiness can be varied by adjusting compression parameters. This means that the image maker can trade off file size against output image quality. The play rate is the number of frames-per-second or fps.

K

Kbps: The rate at which the source is being recorded. For motion JPEG sources, the play rate is the number of frames-per-second or fps. For MPEG sources, the play rate is the number of megabits-per-second or Mbps and kilobits per second or Kbps.

L

Layout: The geometric description of one or more video panes.

LDAP: Lightweight Directory Access Protocol

LOC: Lines of Code

logged event: When an incident or event occurs, it is captured by a device or application and is tagged. An event is a collection of information about an incident, including name, associated video sources, and a timestamp. If the event setup includes triggered clips, an event will have trigger tracking or video data associated directly with it. Users will need to use the event log to refer to times within a referenced archive, typically a master loop. By using the API to seek to a specific timestamp, events can be used to look up occurrences in an archive that were not necessarily associated with the original event.

loop: A loop is a hardware or software device which feeds the incoming signal or data back to the sender. It is used to aid in debugging physical connection problems.

M

Mask: To mask or make inactive, a portion of the camera view.

Mbps: The rate at which the source is being recorded. For motion JPEG sources, the play rate is the number of frames-per-second or fps. For MPEG sources, the play rate is the number of megabits-per-second or Mbps and kilobits per second or Kbps.

Media Server: A device that processes multimedia applications.

MIB: Management Information Base - Contains information to be monitored via Get / Set . A collection of SNMP Object Identifiers (OID) that are usually related.

MPEG: MPEG (pronounced "em-peg") stands for Moving Picture Experts Group and is the name of family of standards used for the compression of digital video and audio sequences. MPEG files are smaller for and use very sophisticated compression techniques. The play rate is the number of megabits-per-second or Mbps and kilobits per second or Kbps.

MRTG: Multi-Router Resource Grapher - Used to display MIB information in graphic form.

N

NMS: Network Management System. An application or suite of applications designed to monitor networks using SNMP. CiscoView is an example of NMS.

NTLM: Net Technology LAN Manager

NTSC: National Television System Committee

O

OID: A period delimited sequence of numbers of the form a.b.c...x.y.z. A unique identifier for an item of information that is part of a MIB.

P

PAL: Phase Alternating Line

pan-tilt-zoom controls: Permits users to change the camera lens direction and field view depth. Panning a camera moves its field of view back and forth along a horizontal axis. Tilting commands move it up and down the vertical axis. Zooming a camera moves objects closer to or further from the field of view. Many of these cameras also include focus and iris control. A camera may have a subset of these features such as zoom, pan, or tilt only.

parent proxy: An agent, process, or function that acts as a substitute or stand-in for another. A proxy is a process that is started on a host acting as a source for a camera and encoder. This enables a single camera-encoder source to be viewed and recorded by hundreds of clients. There are three types of proxies: A "direct" proxy is the initial or direct connection between the edge camera-encoder source. By definition at least one direct proxy exists for a given video source. A "parent" proxy is the source of a nested or child proxy. Parent proxies may be from remote or local hosts. Proxies are nested in a hierarchy with inheritance rights. A "child" proxy is the result of a nested or parent proxy. Child proxies run on the local host. Proxies are nested in a hierarchy with inheritance rights. A child proxy has the same resolution, quality, and media type of its parent, but can have a lower frame rate for motion JPEG.

PHP: PHP Hypertext Preprocessor

playrate: The rate at which the source is being recorded. For motion JPEG sources, the play rate is the number of frames-per-second or fps. For MPEG sources, the play rate is the number of megabits-per-second or Mbps and kilobits per second or Kbps.

Polling: System ability to periodically monitor MIBs for changes in state.

pre-post buffer: An archive used to extract event triggered clips. When an event profile includes triggered clips, an archive is started for each of the proxy sources associated with the event profile. The duration of these buffer archives includes the combined values of the pre-buffer and post-buffer times from the event profile.

proxy: An agent, process, or function that acts as a substitute or stand-in for another. A proxy is a process that is started on a host acting as a source for a camera and encoder. This enables a single camera-encoder source to be viewed and recorded by hundreds of clients. There are three types of proxies: A "direct" proxy is the initial or direct connection between the edge camera-encoder source. By definition at least one direct proxy exists for a given video source. A "parent" proxy is the source of a nested or child proxy. Parent proxies may be from remote or local hosts. Proxies are nested in a hierarchy with inheritance rights. A "child" proxy is the result of a nested or parent proxy. Child proxies run on the local host. Proxies are nested in a hierarchy with inheritance rights. A child proxy has the same resolution, quality, and media type of its parent, but can have a lower frame rate for motion JPEG.

proxy command: A URL-based API that is neither application-platform nor programming language specific. Commands are sent to dynamically loaded modules (e.g. info.bwt, command.bwt, event.bwt, &c.) using arguments in the form of name-value pairs.

proxy server: An agent, process, or function that acts as a substitute or stand-in for another. A proxy is a process that is started on a host acting as a source for a camera and encoder. This enables a single camera-encoder source to be viewed and recorded by hundreds of clients. There are three types of proxies: A "direct" proxy is the initial or direct connection between the edge camera-encoder source. By definition at least one direct proxy exists for a given video source. A "parent" proxy is the source of a nested or child proxy. Parent proxies may be from remote or local hosts. Proxies are nested in a hierarchy with inheritance rights. A "child" proxy is the result of a nested or parent proxy. Child proxies run on the local host. Proxies are nested in a hierarchy with inheritance rights. A child proxy has the same resolution, quality, and media type of its parent, but can have a lower frame rate for motion JPEG.

proxy source: An agent, process, or function that acts as a substitute or stand-in for another. A proxy is a process that is started on a host acting as a source for a camera and encoder. This enables a single camera-encoder source to be viewed and recorded by hundreds of clients. There are three types of proxies: A "direct" proxy is the initial or direct connection between the edge camera-encoder source. By definition at least one direct proxy exists for a given video source. A "parent" proxy is the source of a nested or child proxy. Parent proxies may be from remote or local hosts. Proxies are nested in a hierarchy with inheritance rights. A "child" proxy is the result of a nested or parent proxy. Child proxies run on the local host. Proxies are nested in a hierarchy with inheritance rights. A child proxy has the same resolution, quality, and media type of its parent, but can have a lower frame rate for motion JPEG.

PTZ: Pan Tilt Zoom - Permits users to change the camera lens direction and field view depth. Panning a camera moves its field of view back and forth along a horizontal axis. Tilting commands move it up and down the vertical axis. Zooming a camera moves objects closer to or further from the field of view. Many of these cameras also include focus and iris control. A camera may have a subset of these features such as zoom, pan, or tilt only.

R

rate: The rate at which the source is being recorded. For motion JPEG sources, the play rate is the number of frames-per-second or fps. For MPEG sources, the play rate is the number of megabits-per-second or Mbps and kilobits per second or Kbps.

record rate: The rate at which the source is being recorded. For motion JPEG sources, the play rate is the number of frames-per-second or fps. For MPEG sources, the play rate is the number of megabits-per-second or Mbps and kilobits per second or Kbps.

recording: A place in which records or historical documents are stored and/or preserved. An archive is a collection of video data from any given proxy source. This enables a feed from a camera-encoder to be stored in

multiple locations and formats to be viewed at a later time. There are three types of archives: Regular - where the archive recording terminates after a pre-set time duration lapses and is stored for the duration of its Days-to-Live. Loop - where the archive continuously records until the archive is stopped. Loop archives reuse the space (first-in-first-out) allocated after every completion of the specified loop time. Clip - the source of the archive is extracted from one of the previous two types and is stored for the duration of its Days-to-Live.

recording archive: An archive whose state is running/recording. A running regular archive gathers additional data and increases in size. A running loop archive gathers more data and reuses its allocated space. Regular archives that have not reached their duration and loops that are still recording are running. Running archives have a Days-to-Live value of v"-1" which does not update until they have stopped.

repository: A central place where data is stored and maintained. A repository can be a place where multiple databases or files are located for distribution over a network, or a repository can be a location that is directly accessible to the user without having to travel across a network.

role: A group of users created and setup for a specific purpose with the system such as administrators and operators.

running archive: An archive whose state is running/recording. A running regular archive gathers additional data and increases in size. A running loop archive gathers more data and reuses its allocated space. Regular archives that have not reached their duration and loops that are still recording are running. Running archives have a Days-to-Live value of v"-1" which does not update until they have stopped.

S

scheduled entities: Events, user accounts, and roles are items controlled by a schedule.

server information command: A URL-based API that is neither application-platform nor programming language specific. Commands are sent to dynamically loaded modules (e.g. info.bwt, command.bwt, event.bwt, &c.) using arguments in the form of name-value pairs.

server-side switch: Changes the registered information for a proxy source so that the proxy process will serve multiple videos as required. Once a proxy has been updated, all requests for that proxy will be served via the new feed. All clients requesting the feeds will be switched. Proxies are not trans-coded meaning some attributes may not be changed once registered.

Set Request: Used to initialize and make a change to a value of a network element.

shelved archive: An archive whose state is stopped. A shelved archive does not gather additional data or increase in size. Regular archives, clips, recordings, and loops that have reached their duration are considered shelved. Shelved archives are stored for the duration of their Days-to-Live.

SNMP: Simple Network Management Protocol - Used to manage/monitor devices on a network using MIBS containing the information to monitor.

soft-trigger: The action or event that triggers an alarm for which an event profile is logged. Events can be caused by an encoder with serial contact closures, a motion detected above defined thresholds, or another application using the soft-trigger command API.

stopped archive: An archive whose state has been halted. A shelved archive does not gather additional data or increase in size. Regular archives, clips, recordings, and loops that have reached their duration are considered shelved. Shelved archives are stored for the duration of their Days-to-Live.

storage duration: The amount of time an archive is shelved or stopped and will remain in allocated storage. An archive that has passed its Days-to-Live is removed by a routine maintenance process.

stored archive: An archive whose state is stopped. A shelved archive does not gather additional data or increase in size. Regular archives, clips, recordings, and loops that have reached their duration are considered shelved. Shelved archives are stored for the duration of their Days-to-Live.

stream: Any data transmission that occurs in a continuous flow.

SUSE: A server operating system for professional deployment in IT environments of all sizes and sectors.

T

tagged event: When an incident or event occurs, it is captured by a device or application and is tagged. An event is a collection of information about an incident, including name, associated video sources, and a timestamp. If the event setup includes triggered clips, an event will have trigger tracking or video data associated directly with it. Users will need to use the event log to refer to times within a referenced archive, typically a master loop. By using the API to seek to a specific timestamp, events can be used to look up occurrences in an archive that were not necessarily associated with the original event.

time stamp: An international and universal time system. Representation of time used by computers and many programming languages are most often accurate down to the millisecond. UTC values are used to track archive date/time values and records when events are triggered.

Trap: Used to report alerts or other asynchronous event s pertaining to a managed subsystem.

trigger: The action or event that triggers an alarm for which an event profile is logged. Events can be caused by an encoder with serial contact closures, a motion detected above defined thresholds, or another application using the soft-trigger command API.

trigger profile: A collection of processes and configurations designed to track and notify when alarms or alerts are triggered. Types of event profiles includes event trigger tracking only, event triggers with archive clips, and motion detection. When an event profile includes a trigger from an encoder, part of the profile includes scripts copied to the encoder which release an event notification. When an event profile includes event triggered clips, a pre-post buffer archive is started from the proxies associated with the event profile. Once a trigger occurs, a clip is extracted from the pre-post buffer.

U

UI: User Interface

UML: Unified Modeling Language

Universal Time Code: Coordinated Universal Time (UTC) - An international and universal time system. Representation of time used by computers and many programming languages are most often accurate down to the millisecond. UTC values are used to track archive date/time values and records when events are triggered.

update proxy: Changes the registered information for a proxy source so that the proxy process will serve multiple videos as required. Once a proxy has been updated, all requests for that proxy will be served via the new feed. All clients requesting the feeds will be switched. Proxies are not trans-coded meaning some attributes may not be changed once registered.

UTC: Coordinated Universal Time (UTC) - An international and universal time system. Representation of time used by computers and many programming languages are most often accurate down to the millisecond. UTC values are used to track archive date/time values and records when events are triggered.

V

video feed: The transmission of a video signal from point to point.

View: A layout, dwell time, and/or media source display.

VMR: Video Mixing Renderer

VSES: Video Surveillance Encoding Server

VSMS: Video Surveillance Media Manager

VSOM: Video Surveillance Operations Manager

VSVM: Video Surveillance Virtual Matrix

W

Window: All or a portion of the camera view. The display can contain multiple windows either by stacking (only the top one is entirely visible) or tiling (all are visible) or a combination of both.

WMV: Windows Media Video

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