



CHAPTER 5

Managing Video Feeds

This chapter describes how to use the VSOM Video Feeds area to set up and manage camera groups and feeds, import camera configurations into VSOM using batch administration, and set up archives and predefined views.

This chapter includes these topics:

- [About Video Feeds, page 5-1](#)
- [Managing Camera Groups, page 5-2](#)
- [Managing Camera Feeds, page 5-6](#)
- [Performing Batch Administration Functions, page 5-11](#)
- [Managing Archives, page 5-17](#)
- [Managing Predefined Views, page 5-24](#)

About Video Feeds

Video feeds are the flows of video from your surveillance cameras or from archives that are stored in VSOM. Camera feeds are video feeds directly from a camera.

This section describes the tasks that you can perform on the Video Feeds panels in the VSOM Administration pages.

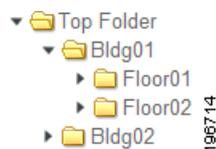
- Set up camera groups to display and work with camera feeds that have common characteristics such as location or model. See the [“Managing Camera Groups” section on page 5-2](#).
- Display or customize camera feeds. See the [“Managing Camera Feeds” section on page 5-6](#).
- Import new cameras and encoders into a VSM system using batch administration. See the [“Performing Batch Administration Functions” section on page 5-11](#).
- Set up video archives to store camera feeds for a specified time. See the [“Managing Archives” section on page 5-17](#).
- Set up views to display camera feeds in the Operator page. See the [“Managing Predefined Views” section on page 5-24](#).

To access the Video Feeds panels, open the Administrator pages and choose items under Video Feeds in the side menu.

Managing Camera Groups

Camera groups allow you to display and work with cameras feeds that have common characteristics, such as location or type. Camera groups are organized hierarchically under the Top Folder. By default, all cameras are in the Top Folder group unless they are placed into another camera group or groups. The resulting hierarchy may include multiple levels of parent and child camera groups. For example in [Figure 5-1](#), Bldg01 is a child folder relative to the Top Folder and the parent of the Floor01 and Floor02 folders.

Figure 5-1 Camera Groups Hierarchy



Cisco recommends that you create camera groups as appropriate for your deployment and place cameras into the groups when you add the cameras to VSOM.

You can manage camera groups using either the drag-and-drop interface or the search-based interface, both of which are accessible from the Group Overview menu item in the side menu in the Administrator pages. The interfaces are compatible, and you can use them interchangeably.

Best Practices

- Use the drag-and-drop interface for initial setup of camera groups. The drag-and drop interface allows you to easily add and organize camera groups and displays the camera group folder hierarchy clearly.
- Use the drag-and-drop interface on an ongoing basis if you have a small number of cameras to manage.
- Use the search-based interface to add cameras to camera groups if you have many cameras and a consistent naming convention that makes searching convenient. For example, if your cameras are named by location with prefixes BLDG01-, BLDG02-, and so on, you can easily search for cameras with those prefixes and add them to appropriate camera groups.

[Table 5-1](#) describes the camera group management tasks that you can perform.

Table 5-1 Camera Group Management Tasks

Task	Description	Reference
Use drag-and-drop to manage camera groups.	Add, modify, or delete groups of camera feeds. Add camera feeds as members of camera groups or delete feeds from camera groups.	Managing Camera Groups by Using the Drag-and-Drop Interface, page 5-3.

Table 5-1 Camera Group Management Tasks (continued)

Task	Description	Reference
Use the search-based interface to manage camera groups.	Add, modify, or delete groups of camera feeds. Add camera feeds as members of camera groups or delete feeds from camera groups.	Manage Camera Groups by Using the Search-Based Interface, page 5-5.
Edit settings for multiple camera feeds.	Make changes to multiple camera feeds at one time.	Editing or Deleting a Camera Feed, page 5-8.

Managing Camera Groups by Using the Drag-and-Drop Interface

The drag-and-drop interface for camera groups allows you to set up initial camera groups, move cameras in and out of groups, and edit basic information for all of the cameras in a group at one time. Choose **Group Overview > Drag-and-Drop Camera Groups** to open the Drag-and-Drop Camera Groups panel.

For operations that affect many cameras, you might find it more convenient to use the search-based interface, as described in the “[Manage Camera Groups by Using the Search-Based Interface](#)” section on [page 5-5](#).

This section describes how to set up camera groups using the drag-and-drop interface and add cameras to the groups.

Before You Begin

- Determine the camera groups that you want to create and which camera feeds to add to the groups.
- Choose a naming convention for the camera groups. See the “[Organizing Information in VSM](#)” section on [page 1-7](#).

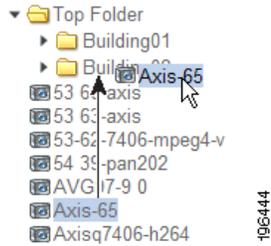
To create a camera group and add cameras to it by using the drag-and-drop interface, follow these steps:

Procedure

-
- Step 1** In the Administrator pages, click **Group Overview**.
 - Step 2** Click **Drag-and-Drop Camera Groups**.
 - Step 3** Click the camera group that is the parent group (shown with a folder icon ) , or click the arrow for Top Folder if there is no parent group.
 - Step 4** Choose **Group > Add Group**, enter the group name, and click **OK** to add the camera group.
 - Step 5** Repeat [Step 2](#) and [Step 3](#) to add additional camera groups as needed.
 - Step 6** To add a camera to a camera group, locate the camera in the list on the left side of the Drag-and-Drop Camera Groups panel and drag it to the group folder.

[Figure 5-2](#) shows how to drag and drop a camera into a group.

Figure 5-2 Using the Drag-and-Drop Interface to Add Cameras to a Group



Step 7 Repeat [Step 6](#) to add more cameras to the camera group.

Modifying and Deleting Camera Groups and Feeds

To rename a camera group on the Drag-and-Drop Camera Groups panel, highlight the group and choose **Group > Rename Group**. Enter the new name, and click **OK**.

To remove a camera group, highlight the group and choose **Group > Delete Group**. A prompt indicates that any subgroups or camera feeds will be moved back to the Top Folder. Click **OK** to acknowledge the message and complete the removal.

To modify settings for multiple camera feeds at one time by using the drag-and-drop interface, follow these steps:

Procedure

- Step 1** In the Administrator pages, click **Group Overview**.
- Step 2** Click **Drag-and-Drop Camera Groups**.
- Step 3** Drag the cameras and camera groups from the column on the left to the area on the right of the panel.
- Step 4** Click **Batch Edit** to open an editing window to modify any of the following settings:
- In the Name field, you can modify the camera name. For example, you could add a prefix to all of the cameras in a specific camera group.
 - In the Camera No. field, enter a unique camera number. When multiple operator workstations are in use, Cisco recommends that each workstation use a unique camera number and feed name.
 - In the Description field, you can enter or modify descriptions for the camera.
- Step 5** Click **Submit** to save the changes and return to the Drag-and-Drop Camera Groups panel.
- Step 6** To remove the list of cameras specified for batch editing, click **Clear List**.

Clearing the list does not remove the cameras from the list on the left, only from the list of cameras intended for batch edit on the right side of the panel.

Manage Camera Groups by Using the Search-Based Interface

The Search-Based Camera Groups panel allows you to perform operations on multiple camera groups or camera feeds at one time. Choose **Group Overview > Search-based Camera Groups** to open the panel.



Note

For initial setup of camera groups, Cisco recommends that you use the drag-and-drop interface, as described in the [“Managing Camera Groups by Using the Drag-and-Drop Interface”](#) section on page 5-3.

In the camera list on the panel, numbers in parentheses following the camera group name indicate the number of groups and cameras within that group. For example, (5/20) indicates that there are 5 groups in the specified group and that a total of 20 cameras in the group.

Table 5-2 lists the tasks you can perform on the Search-Based Camera Groups panel.

Table 5-2 Tasks for Search-Based Camera Groups

Task	Steps	Description
Show or hide the side menu	Click Toggle .	Shows or hides the side menu.
Adjust the height of the panel window	Click the Larger or Smaller link repeatedly to resize the preview window while keeping the same aspect ratio.	Make the camera groups and preview window areas bigger or smaller.
Check feed matches	Enter a search string and click Check Feed Matches to display the matching feed entries.	Display the camera feed entries that match the search string. Matching is case-sensitive, and wild card characters are not permitted.
Uncheck camera feeds	Click Uncheck All .	Unchecks all previously checked cameras in all camera groups. The camera groups remain checked.
Add a camera group	Enter a new camera group name and click Add Group .	Adds a new camera group within the specified camera group.
Change a camera group name	Choose a camera group from the list, enter the new name, and click Update Group Name .	Changes the name of the camera group.
Copy feeds to a specified camera group	<ol style="list-style-type: none"> 1. Click the radio button for the camera group to receive the copies. 2. Click the camera feeds that you want to copy. 3. Click the Copy Feeds button  to copy the specified feeds to the specified camera group. 	Copies the feeds to the specified camera group.

Table 5-2 Tasks for Search-Based Camera Groups (continued)

Task	Steps	Description
Move camera feeds to a specified camera group	<ol style="list-style-type: none"> 1. Click the radio button for the camera group to receive the copies. 2. Choose the camera feeds that you want to move. 3. Click the Move Feeds button  to move the feeds from the current location to the specified camera group. 	Moves the feeds from the current location to the specified camera group.
Delete a camera group	<ol style="list-style-type: none"> 1. Click the radio button for the camera group. 2. Click the Delete Group button . 3. Click OK to confirm. 	Removes a camera group. Cameras that are in only that group are moved to the Top Folder.
Delete camera feeds	<ol style="list-style-type: none"> 1. Check the check boxes for the camera feeds. 2. Click the Delete Feeds icon . 3. Click OK to confirm. 	Removes the camera feeds from the specified camera group, but keeps the feeds in the system and in any other camera groups to which they are assigned.

Managing Camera Feeds

A camera feed is the stream of video from a camera. When a camera is added to VSOM, the associated camera feed is added automatically and assigned the same name as the camera. Unless you require additional changes to the camera feeds, you do not need to configure them individually. All of the needed configuration is supplied automatically when the camera is added.

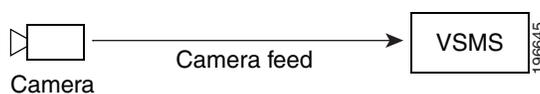
VSOM supports the following camera feed configurations:

- [Simple Configuration, page 5-6](#)
- [Dual Streaming Configuration, page 5-7](#)
- [Child Feed Configuration, page 5-7](#)

Simple Configuration

In the simple camera feeds configuration, a VSMS manages a camera that has a single camera feed. [Figure 5-3](#) illustrates this arrangement.

Figure 5-3 Simple Camera Feed Configuration

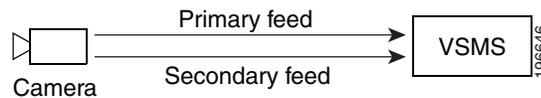


Dual Streaming Configuration

In the dual streaming camera feeds arrangement, a VSMS manages a camera that supports and has dual streaming enabled. The camera generates both a primary and a secondary feed (which may be at lower resolution than the primary feed). Batch administration is supported to add the camera with the primary feed; however, you must set up the secondary feed individually.

You can improve operational efficiency with dual streaming cameras by setting up multiple views in VSOM. For example, you can set up a normal operational view with the lower resolution secondary feed, and then switch to a view of the higher resolution primary stream to examine video more closely following an event trigger.

Figure 5-4 Dual Streaming Camera Feed Configuration



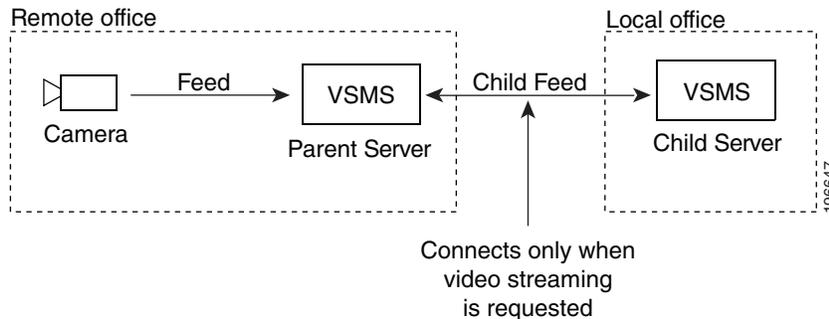
Child Feed Configuration

In a child feed configuration, a VSMS is connected to a camera and to another VSMS. The VSMS that directly manages the camera serves as the source or parent for that camera feed, and the other VSMS serves as the child. The child feed is the video stream that is sent from the first VSMS to the second. A parent camera feed can be on the same host as the child feed or on another host.

Child feeds can contribute to effective network utilization by allowing you to distribute video feeds closer to the video monitors that display the video. Efficient utilization is important in environments such as remote branch offices where limited network bandwidth is available for video delivery. By sending a single video feed to a location with several monitors, you can reduce the bandwidth requirements over the limited network. To conserve bandwidth, the child feed connects only when video streaming is requested.

Figure 5-5 shows an example in which the camera and VSMS are in a remote office, and a child feed is set up between the VSMS in the remote office and the VSMS in the local office.

Figure 5-5 Child Feed Configuration



A child feed inherits the same resolution, quality, and media type of its parent; however, in the case of MJPEG video streams, you can configure a lower frame rate for the child feed. Batch administration is not supported for adding child feeds.

**Note**

To add cameras, see the [“Adding a New Analog Camera”](#) section on page 3-17 and the [“Adding a New IP/Network Camera”](#) section on page 3-21.

Configuring a Camera Feed

The Camera Feeds page displays the available camera feeds in the system. The default camera feed names are derived from the camera names.

If possible, avoid changing the names of your camera feeds from the default names. If you need to change the name of a camera or camera feed, make the same change to both the camera and the camera feed records.

To prevent users from having PTZ access when using child feeds, grant permission to display the child feed but not the parent.

Before You Modify Camera Feeds

- Make sure that camera groups are set up. See the [“Managing Camera Groups”](#) section on page 5-2.
- Make sure that all the cameras are added to the system. See the [“Performing Batch Administration Functions”](#) section on page 5-11.

Click **Camera Feeds** on the side menu in the Administrator pages to open the Camera Feeds panel. [Table 5-3](#) lists the tasks you can perform on this panel.

Table 5-3 Camera Feeds Panel Links and Buttons

Item	Description	Reference
Edit names or descriptions multiple feeds.	Choose one or more items in the list and click Edit to modify the specified items.	—
Edit settings for a specified camera feed.	Allows you to modify feed information, camera group membership, and rights for a specified camera feed.	Editing or Deleting a Camera Feed, page 5-8.
Delete a specified camera feed.	Allows you to remove a specified camera feed from the VSOM database.	Editing or Deleting a Camera Feed, page 5-8.
Create a new child feed.	Create a new camera feed based on an existing camera feed.	Adding a Child Camera Feed, page 5-10.

Editing or Deleting a Camera Feed

To edit camera feed settings, click the **Edit** icon  for the camera feed in the Actions column on the Camera Feeds panel and modify any of the settings that [Table 5-4](#) describes.

To delete a camera feed from the VSOM database, click the **Delete** icon . The system provides you with the option of keeping the following items on the server. Check the check boxes for the items to retain on the server, and click **Yes**.

- Leave archive data files on the server(s)—Does not delete archive files for the deleted item from the server.
- Keep event history records from this device—Does not delete event history records for the deleted item from the server.

Table 5-4 Camera Feed Settings

Item	Description
Feed Info tab	
Camera Number	Enter an optional, unique camera number to identify the camera within a group of cameras. When multiple operator workstations are in use, Cisco recommends that each workstation use unique camera numbers and feed names.
Feed Name	Specify a name for the feed that is consistent with your naming convention.
Description	Enter an optional description of the camera feed.
Server	Choose the server to manage the camera feed.
Stream Type	Indicates whether the stream is a direct or child stream.
Frame Rate or Bit Rate	<p>If the Bitrate drop-down list appears, choose the bit rate for the video stream from the camera. The Bitrate drop-down list appears only if you chose MPEG-2, MPEG-4, or H.264 for the media type.</p> <p>If the Frame Rate drop-down list appears, choose the frame rate per second for the video stream from the camera. The Frame Rate drop-down list appears only if you chose JPEG for the media type.</p> <p>Higher values represent more video data every second, which means smoother video and a more accurate representation of what is happening. However, higher values result in higher bandwidth load and larger archive file sizes.</p>
VBR	Indicates whether support for variable bit rate (VBR) is enabled or disabled (only for cameras that support VBR).
Camera Groups tab	
Camera Groups	Add this camera to a camera group, or choose Top Folder (No Group) to indicate that you are not placing the camera in a group. Click a camera group link to display the subgroups and feeds in the group. See the “Managing Camera Groups” section on page 5-2 for more information about camera groups.
Rights Tab	
Rights	<p>Verify the access rights for this server:</p> <ul style="list-style-type: none"> • Name—Role name with a link that opens the Roles panel for the specified role. • Rights—Indication of the rights that are assigned to the role.

Adding a Child Camera Feed

A child feed is a stream of video from a camera that is sent by one VSMS to another. In a child feed configuration, a VSMS is connected to a camera and also to another VSMS. The main camera feed is the video stream that is sent to the first VSMS, and the child feed is the video stream that is sent from the first VSMS to the second. See the [“Child Feed Configuration” section on page 5-7](#).



Note

To add dual streams from the Steam Manager encoder, log in to Cisco Stream Manager Configuration. Enable the secondary stream first. You can then add the secondary stream in VSOM Administration page using the 1_1 and 1_2 channels.

Use the Camera Feeds panel to add a child feed to an existing camera feed.

To add a new child feed, follow these steps:

Procedure

-
- Step 1** In the Administrator pages, click **Camera Feeds**.
 - Step 2** Click **Create a New Child Feed**.
 - Step 3** In the Camera Number field, enter an optional, unique camera number to identify the camera within a group of cameras.
 - Step 4** In the Feed Name field, enter a name that is consistent with your naming conventions (up to 30 characters, including spaces).
 - Step 5** (Optional) Enter a description of the feed (up to 1,024 characters, including spaces).
 - Step 6** From the **Server** drop-down list, choose the server to manage the child feed.
 - Step 7** From the **Parent Source** list, choose the camera to use as the source of the feed.
Click **Expand All** to show the cameras in all camera groups or **Collapse All** to hide all of the camera group members.
 - Step 8** In the Media Setup section, specify the following:
 - JPEG camera—Choose the frame rate for the video stream from the camera. The Frame Rate drop-down list appears only if JPEG is the media type.
 - MPEG-2, MPEG-4, or H.264 camera—Choose the bit rate for the video stream from the camera. The Bitrate drop-down list appears only if MPEG-2, MPEG-4, or H.264 is the media type.
 - Step 9** Click the **Camera Groups** tab and check the check boxes for the camera groups to which you want to add this feed, or choose **Top Folder/No Group** to indicate that you are not placing the camera in a camera group.
Click a camera group link to display the subgroups and feeds. See the [“Managing Camera Groups” section on page 5-2](#) for more information about camera groups.
 - Step 10** Click the **Rights** tab and verify the access designations.
See the [“Adding a Role” section on page 7-8](#).
 - Step 11** Click **Submit**.
-

Enabling Motion Detection

The ability to detect motion is a function encoding source device (IP camera or encoder), which identifies movement based on pixel changes within the image. You must enable motion detection to be able to set up events that respond to physical movement. For additional information about motion detection as it relates to events, and instructions for setting up motion detection events, see the [“About Motion Detection Events” section on page 6-10](#).

You enable motion detection for a feed from a camera or encoder. When dual streaming, motion detection can be supported on only one feed.

Before You Begin

- Identify which of your installed encoding source devices support motion detection.

To enable motion detection for a camera feed on a camera, follow these steps:

Procedure

-
- Step 1** In the Administrator pages, click **Camera Feeds**.
 - Step 2** Click the **Edit** icon  in the Actions column for the feed.
 - Step 3** Check the **Enable Motion Detection** check box.
 - Step 4** Click **Submit**.

The camera feed is now set up to support motion events. See the [“About Motion Detection Events” section on page 6-10](#).

Performing Batch Administration Functions

Batch administration is the recommended method for adding multiple cameras and encoders to the VSOM database. You can populate an Excel spreadsheet with camera and encoder settings and then import the information in the spreadsheet into VSOM. After importing cameras and encoders, you can modify settings by making entries on the Batch Administration panel.

The result is the same as if you add or modify cameras and encoders using Encoders, Analog Cameras, and IP/Network Cameras panels, as described in the [“Managing Encoders” section on page 3-12](#), the [“Managing Analog Cameras” section on page 3-16](#), and the [“Managing IP/Network Cameras” section on page 3-20](#). The advantage of using batch administration is that you can add multiple cameras or encoders at one time and make changes from a single panel.

Batch administration import does not support child feeds. You must set up child feeds individually after importing the cameras. See the [“Adding a Child Camera Feed” section on page 5-10](#).

For cameras that support motion detection, the default motion settings are included when you import the camera using batch administration. You cannot change the default motion settings on the Batch Administration page. To modify the default settings, see the [“Setting Up Windows for Motion Detection” section on page 6-14](#).

The Batch Administration page lists only the archives that were created using batch administration. You can create new archives or modify some settings (such as media type) for archives that were created using batch administration, but you cannot view or modify archives that were created elsewhere in VSOM.

This section describes how to use the Batch Administration panel to perform the following tasks:

- Import cameras and encoders—See the [“Managing Archives” section on page 5-17](#).
- Perform other batch administration tasks—See the [“Performing Other Batch Administration Tasks” section on page 5-16](#).

Importing Cameras and Encoders Using Batch Administration

VSOM allows you to copy and paste values from an Excel spreadsheet template into the Batch Administration page. You can download the template, enter the camera configuration, and then copy the results into the Batch administration page.

The template includes the following worksheets:

- CameraSetup—Use this worksheet to enter camera configuration information for multiple cameras. The worksheet includes drop-down lists from which you can choose appropriate parameters based on camera types and models. When naming cameras and encoders, follow the guidelines in [“Organizing Information in VSM” section on page 1-7](#).
- Glossary—Open this worksheet to review camera parameters and values.

To import and encoders using batch administration, follow these steps:

Procedure

-
- Step 1** In the Administrator pages, click **Batch Administration**.
- Step 2** Click the **spreadsheet template** link at the top of the page and right-click to save the latest template on your computer.



Note Make sure that you download the latest template from the Batch Administration page. Templates from previous releases may not be compatible.

- Step 3** Open the spreadsheet template and choose **Save As** to save the template as a .xls file on your local computer.
- Step 4** Make sure that macros are enabled in the xls file.



Note The batch administration copy and paste feature works only if macros are enabled in the spreadsheet.

- Step 5** Add configuration information for the cameras that you want to add to VSOM on the CameraSetup worksheet of the xls file.

Use separate spreadsheet templates for the cameras that are managed by different VSMS hosts.

The spreadsheet includes drop-down lists to help you specify the supported parameters. [Table 5-5](#) describes the parameters. They also are also included on the spreadsheet Glossary tab.

- Step 6** Test the copy and paste process before using it to import multiple cameras:
- a. Choose a single row in the spreadsheet, and click **Copy for Import** to copy it. A pop-up message indicates that the rows have been copied for import.
 - Do not copy rows, headings, or other non-camera data into the Batch Administration page. If you do, VSOM generates an error when you try to save the data on the panel.
 - You must use the **Copy for Import** button, not the Copy menu item on the Edit menu.
 - b. On the Batch Administration page, click in the **Add A New Record** field, and press **Ctrl+V** to paste the copied information.

The new camera is automatically added to the table on the Batch Administration panel.
 - c. Any errors are listed on the panel. Modify the spreadsheet as needed to address the errors and repeat the testing steps if needed.
- Step 7** When you have verified that you can successfully import a row of the spreadsheet into VSOM ([Step 6](#)), you are ready to import multiple entries.
- You can import up to 20 devices at one time; however, Cisco recommends that you import a maximum of 10 devices at one time to limit the amount of time that it takes to troubleshoot any issues that arise.
- a. Choose the rows and click **Copy for Import** to copy them. A pop-up message indicates that the rows have been copied for import.
 - Do not copy rows, headings, or other non-camera data into the Batch Administration page. If you do, VSOM generates an error when you try to save the data on the panel.
 - You must use the **Copy for Import** button, not the Copy menu item on the Edit menu.
 - b. On the Batch Administration page in VSOM, click in the **Add A New Record** field, and press **Ctrl+V** to paste the copied information.

The new cameras are automatically added to the table on the Batch Administration panel.
- Step 8** Choose the entries you want to save and click **Save Selected**.
- Step 9** Click the **Verify Feed** icon  for each camera to verify that the expected video is shown.
- Step 10** Edit or delete any rows that have reported errors. To remove blank rows or other non-camera entries from the list on the Batch Administration page, choose the entries and click **Delete Selected**.

Table 5-5 Batch Administration Parameters

Item	Description	Type of Value
Name	Name that identifies the camera.	text
Source Type	For IP/network cameras, a list of camera models. For analog cameras, a list of encoders.	Automatically populated from the supported device types in VSOM.
Description	Text description of the camera.	text
Hostname/IP Address	For IP/network cameras, the hostname or IP address of the camera. For analog cameras, the IP address of its encoder.	text
User Name	User ID for access to the camera, if the camera supports log in.	Alphanumeric text

Table 5-5 Batch Administration Parameters (continued)

Item	Description	Type of Value
Password	Optional password for access to the camera, if the camera supports log in.	Alphanumeric text
Channel	Encoder port (analog camera) or numeric identifier for the feed (IP/network camera)	Integer value
Media Server	VSMS for the VSMS that manages the camera.	Integer value
Media Type	Video format.	MPEG-4, JPEG
Format	Media format.	NTSC, PAL
Resolution	Video resolution of the camera feed.	Fixed set of options from drop-down list
Transport	Transport protocol for the camera feed.	TCP, UDP
Multicast Address	Multicast address used if UDP is the transport mechanism for communication with the camera.	
Framerate/Bitrate	Frame rate or bit rate of the camera feed (seconds).	Frame rate: 30, 29, ..., 1 Bit rate: 56, 128, 255, 256, 384, 511, 512, 640, 768, 1024, 1500, 2000, 3000, 4000, 5000, 6000, 8000, 10000, 12000, 15000
Quality	<p>Setting that determines the quality of an MJPEG feed. Higher values represent higher quality frames, but also result in higher file sizes and greater bandwidth load on your network. For optimal performance in most networks, we recommend the value 50.</p> <p>If the camera supports VBR, you can use the Quality column to specify whether or not the bit rate is variable. If Quality is 0, CBR is used.</p> <p>Note When adding Cisco cameras using batch administration, you must use the following range of quality values: CBR (0-100) and VBR (101-200).</p>	Integer: 0 through 100
PTZ	Indication of whether PTZ functionality is enabled (not supported for analog cameras).	Check box
Archive	Indication of whether an archive is created automatically.	Check box

Table 5-5 *Batch Administration Parameters (continued)*

Item	Description	Type of Value
Archive Duration (days)	Duration for a continuous archive (such as 1 or 1.5 days).	Numeric value
Archive Expiration	Days after which the archive expires. Forever means that the archive does not expire.	1, 2 Week(s), 1, 2, 3, 6 Month(s) 1 Year, Forever
Motion Configuration	Indication of whether VSOM sets up a motion configuration event (0 = no and 1 = yes). If you create a motion configuration event, VSOM creates a default window that covers the full video pane, using default settings. To modify the settings, you must use the Events page. See the “Setting Up a Motion Detection Event” section on page 6-11.	Check box
Reuse Archive for Motion	Indication of whether the original archive is used for the motion event	Check box
Motion Archive Expiration	Time after which the motion archive expires. Disabled when Reuse Archive for Soft is specified (see below in this table). Forever means that the archive does not expire.	1, 2 Week(s), 1, 2, 3, 6 Month(s) 1 Year, Forever
Soft Trigger	Text that you enter to create a soft event trigger. A soft event trigger is a URL notification from a third-party application or device. See the “Type of Event Triggers” section on page 6-1.	text
Reuse Archive for Soft	Indication of whether the original archive is used for the soft event trigger.	Check box
Soft Archive Expiration	Days after which the soft trigger event expires. Forever means that the event does not expire.	1, 2 Week(s), 1, 2, 3, 6 Month(s) 1 Year, Forever
Custom Fields	Custom fields (displayed only if custom fields have been defined for the camera). See the “Creating Custom Field Labels for Cameras” section on page 3-18.	text

Performing Other Batch Administration Tasks

To perform tasks on the Batch Administration panel, click **Batch Administration** on the side menu in the Administrator pages.

You must have one or more VSMS hosts configured in VSOM to be able to view information about the Batch Administration page. If no VSMS hosts are defined, the page is blank. See the “[Adding a New Server](#)” section on page 3-5 for information about adding servers.

The panel lists all of the cameras and feeds in the VSOM database. Some columns are hidden by default. To see the full list of columns and change column visibility, move your cursor over a column header to display a selection arrow. Click the arrow and then choose **Columns** from the drop-down list. The available columns are listed with check boxes, and the check boxes for the visible columns are checked. Check or uncheck any of the check boxes to customize the table. Changes made to the column visibility are not retained when the Batch Administration page is closed.

[Table 5-6](#) lists the tasks you can perform on the Batch Administration panel.

Table 5-6 *Batch Administration Tasks*

Item	Description
Download the spreadsheet template.	Download the VSM Excel template to use to add the camera information for batch import. For detailed information, see the Managing Archives, page 5-17 .
Apply a value to a particular column across multiple rows	Follow these steps on the Batch Administration page: <ol style="list-style-type: none"> 1. Check the check boxes for the rows and click Apply Value. 2. Choose a column and enter a value in the pop-up window. 3. Click Update All to apply the value to all visible rows or Click Update Selected to apply the value to the rows that have check boxes checked. <p>Note Changes made using the Apply Value button apply only to the cameras that are listed on the current page within Batch Administration. Use the paging controls at the bottom of the table to display and apply values on other pages.</p>
Display a short description of a column	Move your cursor over an entry in the table.
Import cameras and encoders.	Copy camera and encoder settings from the spreadsheet into VSOM. See the Managing Archives, page 5-17 .
Filter the camera list.	Choose a parameter from the Filter drop-down list, enter a keyword to match, and click Search . Keywords are not case-sensitive, and there are no special search characters. The search matches any string within the field name. For example, “df7” matches “Sony SNC-DF70 Network Camera”. Click Clear to remove any keywords you have entered.
Open a preview window for the camera	Click the icon to the left of the camera name to display a preview image in a new window.
Add a new camera	Add a camera by entering data on this page, as a alternative to using the Analog Cameras or IP/Network panel to add individual cameras.

Table 5-6 Batch Administration Tasks (continued)

Item	Description
Modify parameters for a camera	<p>Scroll to the parameter field that you want to modify and click the entry and enter or choose a new value.</p> <p>Note If a parameter appears with a lock icon, it means that the field is not applicable, or that users are not allowed to change the value.</p> <p>If you change a high definition resolution to a standard definition resolution for a video analytics-enabled IP camera for which video analytics rules are configured, the rules may become corrupted. In this situation, use the camera web interface to delete the rules from the camera and then reconfigure the rules. For more information, see the <i>Cisco Video Analytics User Guide</i>.</p>
Save settings for a specified camera	Check the check boxes for individual cameras, and click Save Selected .
Save settings for all listed cameras	Click Save All .
Discard unsaved changes for specified rows.	Click Revert Selected .
Delete cameras	Check the check boxes for the cameras, and click Delete Selected to delete the camera from the VSOM database.
Reload the table, discarding any unsaved changes.	Click Cancel .
Refresh the display on this page	Click Refresh to repopulate the panel with the latest information from the VSOM database.
Page through the batch administration list	Use the paging controls at the bottom of the camera list.

Managing Archives

VSOM allows you to configure video clips as archives and to shelve them for later viewing. To view the list of archives, open the Archives panel. The panel lists the archives that are viewable, currently running, scheduled, and pending.

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

If you plan to back up your archives, Cisco recommends that you configure the settings on the Backup tab when you first create the archive. After backups have started, you can click the Backup tab for the archive and display the information in the Backup Details area. The information is for the last executed backup for that archive. For more information about backing up archives, see the [“Creating Archive Backups” section on page 5-22](#).

You can synchronize stopped or shelved archives from another VSMS on a given VSOM by adding the server and using the Server Import option. See the [“Importing Archives to a Server” section on page 3-8](#).

[Table 5-7](#) provides information about configuring video archives.

Table 5-7 Archives: Configuration and Generation

Page/Method	System Action	Configuration
Video Archive Configuration Options on Batch Administration Page		
Looping	Creates a continuous looping archive.	Check the Archive check box for the camera on the Batch Admin page.
Soft Trigger	Creates an archive when the specified URL is received in VSOM.	Enter the URL in the Soft Trigger column for the camera on the Batch Administration page. See the “Performing Batch Administration Functions” section on page 5-11 and the “About Events” section on page 6-1.
Motion Configuration	Enables motion detection events for the camera. When a motion event is triggered, the system generates an archive, if specified in the motion event configuration.	<ul style="list-style-type: none"> • Check the Motion Configuration check box for the camera on the Batch Admin page to enable motion detection on the camera. • Set up the motion detection event to include archives. See the “Setting Up a Motion Detection Event” section on page 6-11.
Archive Page		
Scheduled - Simple	System generates one-time archives of the specified duration at the specified times.	Configure the archive, specifying the simple schedule type with the specified durations and times. See the “Adding a New Archive” section on page 5-20.
Scheduled - Recurring	System generates recurring archives of the specified duration at the specified times.	Configure the archive, specifying the recurring schedule type with the specified durations and times. See the “Adding a New Archive” section on page 5-20.
Looping	System generates a looping archive.	Configure a looping archive on the Archive page. See the “Adding a New Archive” section on page 5-20.
Events Page		
Motion Configuration	System generates an archive when a motion detection event is triggered. Video taken just before and after the event (typically 5 seconds) is included in the archive.	After creating the event, specify archive settings on the Motion Start and Motion Stop tabs. See the “Adding an Event” section on page 6-4 and the “Setting Up a Motion Detection Event” section on page 6-11.

Setting Up and Scheduling Archives

Use the Archives panel to set up and schedule video archives. Click **Archives** on the side menu in the Administrator pages to open the Archives panel. [Table 5-8](#)

Table 5-8 Archives Panel Links and Buttons

Item	Description
Start/Schedule a New Archive	Create and schedule a new archive. See the “Adding a New Archive” section on page 5-20.
Display currently defined archives	Click There are (N) Viewable Archives to open the list of archives. <i>N</i> refers to the number of defined archives in the list.
Display currently running archives	Click There are (N) Running Archives to open the list of archives. <i>N</i> refers to the number of running archives in the list.
Display scheduled archives	Click There are (N) Scheduled Archives to open the list of archives. <i>N</i> refers to the number of archives in the list for which a schedule is currently active.
Display pending archives	Archives are pending if they subject to a schedule or are in progress but are not yet complete. Click There are (N) Pending Archives or Clips to open the list of archives. <i>N</i> refers to the number of pending archives or clips. A clip is a portion of an archive that is created in the Operator page by using the Archive Clip button. See the “Understanding Video Archives” section on page 8-10.

Displaying Archive Lists

Archive lists appear when you click one of the **There are...** links on the Archives panel. [Table 5-9](#) describes the columns that are included in each list.

Table 5-9 Archives List Columns

Item	Description
Type	Variety of archive: <ul style="list-style-type: none"> • Regular—Scheduled archive • Loop—Continuous looping archive. • Clip—Portion of an archive on demand (using Archive Clip function on the Operator page) • BWM—Clip in BWM format • Backup—Portion of an archive with start and end time
Archive Name	Name assigned to the archive. Click the link to display archive details, type, backup settings, and rights.
Feed Name	Name assigned to the camera feed, if there is an associated feed.

Table 5-9 Archives List Columns (continued)

Item	Description
Server Name	Name of the VSMS for this archive. Click the link to open the Server panel. For more information, see the “Managing Servers” section on page 3-5 .
Health State	Indicates the status of the connection between VSMS and VSOM. Up indicates that the connection is active. Down indicates that either the VSMS is down or there is a connection problem between VSOM and VSMS. Also see the entry for Archive State in this table.
Start Time	Date and time that the archive schedule becomes active. When a schedule is active, archives are recorded at the times that the schedule specifies.
Duration	Length of time of the archive recording.
End Time	Date and time that the archive clip stops being active. When a schedule stops being active, archives are no longer recorded.
Expiration	Termination time for the archive based on the archive schedule. The archive is automatically removed from the archived video list on the expiration date. If an archive is set to never expire, it remains on the list until it is deleted.
Archive State	Indicates the status of the archive from the perspective of VSOM. Also see the entry for Health State in this table. <ul style="list-style-type: none"> • If Health State is Up and Archive State is Running, the archive is actively running. • If Health State is Down and Archive State is Running, then the archive is configured to record, but may not be recording. If the health state issue is resolved, VSOM automatically starts receiving the archive video again and begin recording. • If Archive State is Stopped, then the archive is not being recorded.
Actions	Includes icons to edit or delete the archive.

Adding a New Archive

When you add a new archive, you specify information about the camera, camera feed, and schedule for that archive.

Before You Begin

- Select a local archive repository for the VSMS host. See the [“Media Server Configuration Page” section on page 10-17](#).
- Determine the cameras and camera feeds for which you want to create archives.
- Determine the schedule for the archive and how long you want to keep the archive on the server.
- Choose a naming convention for the archives. See the [“Organizing Information in VSM” section on page 1-7](#).

- If you plan to back up your archives (recommended), make sure that a backup VSMS is defined. See the “[Managing Servers](#)” section on page 3-5 and the “[Creating Archive Backups](#)” section on page 5-22.

To add a new archive, follow these steps:

Procedure

- Step 1** In the Administrator pages, click **Archives**.
- Step 2** Click **Start/Schedule a New Archive**.
- Step 3** Choose the camera feed that is to be the archive source.
- Click a camera group link to expand it, or click **Expand All** to display all of the camera group and subgroup members.
- Step 4** Click **Next**.
- The archive source that you selected is shown on the page in the Archive Source area.
- Step 5** In the Archive Name field, enter a name for the archive that is consistent with your naming conventions (up to 30 characters, including spaces).
- Step 6** (Optional) enter a description of the archive (up to 1024 characters, including spaces).
- Step 7** Determine if the archive is to be enabled or disabled.
- Enabled** permits the archive to run as scheduled. **Disabled** means that the archive is retained in the archive list but does not run even if it has a schedule configured.
- Step 8** In the Force Start field, choose **Default** if you want the system to check whether there is enough space to store the archive on the VSOM server.
- If you use the Default option, the archiving operation does not start if there is insufficient storage space. Choose **Force** to start the operation even if there is not enough space. If you choose **Force**, you must provide additional space before the archive creations fills up the remaining disk space or the archive overwrites existing data.
- Step 9** In the Keep on Server field, specify the length of time (days, weeks, months or years) after recording that the archive should be stored on the VSOM server.
- The length of time that you can keep an archive depends on available storage space on the VSOM server. Use the System Overview panel to see the current storage usage, as described in the “[Displaying System Overview Information](#)” section on page 6-22.
- Step 10** (MJPEG media type cameras only) In the Media Setup area, choose the frame rate at which the archive records (must be equal to or less than the frame rate that is configured for the camera feeds on the camera).
- To preserve archive and backup space, you can configure a low frame rate for MJPEG feeds. For example, if you have an archive that was created from an event, you can edit the archive and reduce the frame rate to reduce the archive size.
-  **Note** The archive source that you selected in [Step 3](#) is displayed near the bottom of the tab.
-
- Step 11** Specify the type of archive schedule:
- Simple schedule—Choose a start and end date and time to generate the archive. To specify additional dates and times, click **Add Date(s)**. The default schedule is a simple schedule that begins at the current time and ends one day later.

- **Recurring schedule**—Specify information for a recurring archive. A recurring archive is repeated according to a defined schedule for a set period time or number of iterations. Choose 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 a continuously running archive. Video is continuously recorded in a loop of this duration, and the video that is recorded in each period is overwritten during the next period. For example, for a continuous loop archive of one hour, only the previous hour of video is retained. Looping schedules start as soon as they are submitted.



Note If a motion detection event occurs while a continuous loop archive is recording, the video for the period containing the event is retained. If you view the archive at a later time, you see the video segment containing the motion detection event followed by the most recent continuous loop segment. See [“About Motion Detection Events” section on page 6-10](#) for more information on motion detection events.

Step 12 To set up a backup server and schedule for the archive, see the instructions in the [“Creating Archive Backups” section on page 5-22](#).

Cisco recommends that you set up archive backups when you first create archives.

Step 13 Click the **Rights** tab and verify the access designations.

For related information, see the [“Adding a Role” section on page 7-8](#).

Step 14 Click **Submit**.

Creating Archive Backups

An archive backup is a copy of an archive that you save on a specified VSMS host. It is important to configure backups if you want to preserve content in the event of system failure.

Archives that are backed up to another VSMS host are available on the Operator page under **Video Archives > Shelved Archives**. They are not organized by camera group.

You can arrange to back up archives to your backup VSMS. Before configuring backups, the backup VSMS must be defined. See the [“Adding a New Server” section on page 3-5](#).

Each backup is for a 24 hour period, and subsequent backups are added to the same backup file. Cisco recommends that you configure backups when you first define an archive to assure that there are no gaps in the backup for the first 24 hour period.

You can choose to back up full archives or back up only events:

- Backing up full archives saves all of the specified video.
- Backing up event only saves only the portions of the specified video that are involved in triggered events.

When you create an archive, you can see the Backup tab and explicitly set up the backup. However, if an archive is created automatically, for example, when Record Now is used (see the [“Recording Live Video” section on page 8-18](#)), the Backup tab is not visible and the archive is not backed up. In this case, you must open the created archive and configure the Backup tab manually.

Guidelines

- To back up all data without any interruption, configure the backup within 24 hours of creating the archive.
- After backups have started occurring, you can click the **Backup** tab for the archive and display the information in the Backup Details area. The information is for the last executed backup for that archive.

To create a backup schedule, follow these steps:

Procedure

-
- Step 1** Click the **Backup** tab for the archive when you are first creating the archive (recommended) or by clicking **There are (N) viewable archives** on the Archives panel and then clicking the Edit icon  for the archive.
 - Step 2** Check the **Backup this Archive** check box to activate the fields on this tab.
 - Step 3** Choose the backup server from the Backup Server list.
 - Step 4** In the Backup Start Time field, configure a start time for the backups (in HH:MM, 24-hour format).
For example, enter 23:00 to start the backups at 11 p.m.
 - Step 5** Check the **Backup Expires** check box and enter a number of days if you want the backup schedule to expire after the specified number of days. If you do not specify expiration, the archive runs indefinitely.
After the expiration period, the system deletes the backups.
 - Step 6** Check the **Backup Events Only** check box if you want to back up only events.
If you do not check this check box, the entire archive is backed up.
 - Step 7** Click **Submit**.
-

Editing or Deleting an Archive

You can change the name and description of a 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.

If an archive is created automatically, you must open the created archive to 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 archives in the list with the same name are unaffected, as are any previous archive backups.

To change archive settings, follow these steps:

Procedure

-
- Step 1** In the Administrator pages, click **Archives**.
 - Step 2** Choose the archive list to open (Viewable, Running, Scheduled, or Pending).
 - Step 3** Click **Edit** icon  for the archive.
 - Step 4** Modify information in each tab as described in the [“Adding a New Archive” section on page 5-20](#).



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

Step 5 Click **Submit**.

To delete an archive, choose the archive and click the **Delete** icon . Check the check box if you want to leave the portions of the archive that are already recorded on the server for future reference, and click **Yes**.

Understanding Grooming

VSM performs automatic grooming to ensure that archives do not completely fill up the storage capacity that is available in a system. The system performs two primary types of grooming:

- Retention-based grooming—This grooming process runs every 10 minutes and deletes archives that have passed their retention period. (For information about configuring the retention period, see the [“Configuring System Settings” section on page 6-18.](#))
- Default grooming—Runs immediately when the archives exceed the storage space that is defined by the Max Storage % option in the Media Server Configuration page (see the [“Media Server Configuration Page” section on page 10-17.](#)) In this situation, the system deletes the oldest archives 200 files at a time until the maximum storage space is no longer exceeded.

Managing Predefined Views

A view consists of the video sources, layouts, and associated behavior that an operator sees in the video panel on the Operator page. A predefined view is a view that is configured in VSOM.

Click **Views** on the side menu in the Administrator pages to open the Views panel.

The following sections describe the tasks that you can perform from the Views panel:

- [Adding a New View, page 5-24](#)
- [Editing or Deleting a View, page 5-26](#)
- [Displaying View Settings, page 5-26](#)

Adding a New View

When you add a new view, you specify the camera sources, layout, and other display options for the view.

Before You Begin

- Determine the views that are needed to support your operations. For example, you may want to specify a view for each of the buildings on a campus.
- If multiple operator workstations are in use, choose a naming convention with unique view numbers and names for each workstation. See the [“Organizing Information in VSM” section on page 1-7.](#)
- Identify the camera feeds that you want to include in each view.

To add a new view, follow these steps:

Procedure

-
- Step 1** In the Administrator pages, click **Views**.
- Step 2** Click **Add a New View**.
- Step 3** In the View Number field, enter an optional view number to identify the specific view within the overall set of views.
- Cisco recommends that when multiple operator workstations are in use, each workstation use unique view numbers and names. The view number must be unique and greater than or equal to 1.
- Step 4** In the View Name, enter a name to identify the view that is consistent with your naming conventions (up to 30 characters, including spaces).
- Step 5** (Optional) In the Description field, enter a description of the view (up to 1,024 characters, including spaces).
- Step 6** In the Camera Tour area, choose one of the following options. For information about using fixed and rotating views in the Operator page, see the [“Using Predefined Views” section on page 8-5](#).
- **Do Not Tour**—Choose this default option if you do not want to rotate the view through video from a pool of cameras.
 - **Rotate Every xx Seconds** (dwell time)—Choose this option to rotate or cycle through video from a pool of cameras and specify the number of seconds that a view displays before it rotates to the next view. Cisco recommends that you choose this option if a multiple layout view is specified. The view dwell time can be increased or decreased by using the toolbar on the Operator page. For rotation, the number of selected feeds must be greater than the number of panes.
- Step 7** In the Choose Layout area, click a layout to choose it.
- For each of the red highlighted panes, choose the view to designate whether the view displays live or archived video. Check **Fixed** for each pane that you want to remain fixed. Fixed means that the red-highlighted pane does not cycle video through a pool of cameras, and always shows only the video that is assigned to it. After checking the check boxes, click **Live** or **Archive** to assign either a live camera feed or archive to each red highlighted pane.
- Step 8** From the Default Framerate drop-down list, choose a value to implement a frame rate cap for all configured MJPEG streams.
- Reducing the frame rate reduces the bandwidth of the video signal and improves viewing performance, but may reduce the quality.
- Step 9** In the Operator Lists field, check the check box to display all views available to operators in their view list.
- When unchecked, views are not listed as views that the operator can switch to, but are displayed in the events and administrator lists.
- Step 10** For Default Display Options, choose the title bars, video tools, timestamps, scrollbars, and fixed aspect that are presented as default view option check boxes on the Operator page. For more information, see the [“Understanding View Option Check Boxes” section on page 8-30](#).
- Step 11** In the Rotating Source List area, choose the camera feeds that you want to include in a source rotation.
- Source rotation (or cycling) is a reservoir of randomly rotating camera views from which display panes are shown. Source rotation 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 display all configured camera feeds and check the applicable boxes to associate the feed to the view layout.

Step 12 Click the **Rights** tab and verify the access designations. See the [“Adding a Role” section on page 7-8](#).

Step 13 Click **Submit**.

If fixed panes are assigned to the view, a new panel opens to allow you to select the live or archive feed for each fixed pane. For each fixed pane, click a radio button to choose a source for the fixed pane. For archive sources, click the underlined link to display the available archives for a camera feed. Then Click **Submit** to save the settings.

Editing or Deleting a View

To edit view settings, click the **Edit** icon  for the view in the Actions column on the Views panel and make changes on the View Info or Rights tab.

To delete the view from the VSOM database, click the **Delete** icon  and then click **Yes** to confirm. When a view is deleted, it is no longer available on the Operator page.

Displaying View Settings

To display settings for a view, click the underlined link for the camera in the View Name column in the Views panel. [Table 5-10](#) describes the information that appears.

Table 5-10 View Details

Item	Description
Details tab	
View Number	User-assigned number to identify a view within a set of views.
View Name	User-assigned view name.
Status	Not used.
Camera Tour	Indication of whether the view rotates and, if so, how frequently.
Layout	Visual representation of the layout for the video. Example: 
Fixed Windows	Visual representation of location of the fixed panes in the layout. The fixed panes are shown in red. Example: 
Default Framerate	Indication of the maximum configured frame rate. No cap means that the rate is determined by the video source.
Operator Lists	Indication of whether the view is shown in the list of views on the Operator page.

Table 5-10 View Details (continued)

Item	Description
Default Display Options	List of the display elements that are included on the Operator page for this view, including video tools, timestamps, scrollbars, and fixed aspect ratio.
Rotating Source List	Indication of which feed is used as the rotating video source. Click the link to open the camera feed panel for that source.
Rights tab	
Rights	Displays the access rights for this view: <ul data-bbox="781 583 1511 722" style="list-style-type: none">• Name—Displays the role name. Click the name link to open the Roles panel for the specified role. See the “Adding a Role” section on page 7-8.• Rights—Indicates the rights assigned to the role.

