



## CHAPTER 3

# Managing Devices

---

This chapter describes how to use the VSOM Device area in the VSOM Administration pages to set up your video surveillance network and equipment.

- [About Device Management, page 3-1](#)
- [Managing Servers, page 3-7](#)
- [Managing Encoders, page 3-20](#)
- [Managing Analog Cameras, page 3-26](#)
- [Managing IP/Network Cameras, page 3-32](#)
- [Configuring PTZ and Joystick Settings, page 3-41](#)
- [Managing Monitors, page 3-46](#)

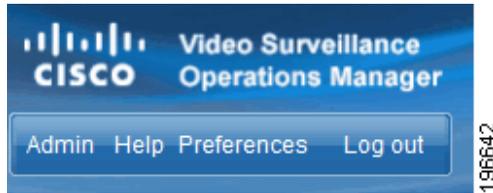
## About Device Management

This section describes the tasks that you perform under Devices in the VSOM Administration area.

## Using the Device Management Pages

When you open VSOM, the Operator page opens. To open the Administration pages, click the **Admin** link, which appears near the top left of the page (see [Figure 3-1](#)).

Figure 3-1 Admin Link



When you choose an item under Devices in the side menu, the page opens to list the devices of that type that are configured in the system, and to provide links to perform functions and obtain help. For example, [Figure 3-2](#) shows the table and links on the IP/Network Cameras panel.

Figure 3-2 IP/Network Cameras Page

A screenshot of the "IP/Network Cameras" page in the Cisco Video Surveillance Operations Manager. The page has a dark blue header with the Cisco logo and "Video Surveillance Operations Manager". Below the header is a navigation bar with "Admin Help Preferences Log out". On the left is a side menu with categories like "Devices", "Video Feeds", "Accounts", "System", and "Utilities". The main content area is titled "IP/Network Cameras" and contains a list of cameras. Three numbered callouts are present: 1 points to the side menu, 2 points to the "Add a New IP/Network Camera" link, and 3 points to the "List of IP/Network Cameras" table. A vertical number "196643" is on the right side of the image.

1	Side menu	3	Main panel for information, interaction
2	Links to perform functions		

Table 3-1 lists the general tasks that you can perform on the Device Management pages. For additional information and detailed instructions regarding these tasks, see the specified sections.

**Table 3-1**      **Device Management Tasks**

Task	Action
Search for devices in the table	<p>Enter a text and click <b>Search</b> to search all of the fields in the table for the entered text. Results are returned if any one of the fields matches the text.</p> <p>The text is not case-sensitive, and there are no special search characters. The search matches any text within the field name. For example, “df7” matches “Sony SNC-DF70 Network Camera.”</p>
Obtain help for a specific topic	Click the <b>Help</b> icon  for the topic.
Export data to a CSV file	Export data from VSOM to a CSV <sup>1</sup> file. See the <a href="#">“Exporting Data from the Administration Pages”</a> section on page 4-1.
Add a new device	<p>Click the <b>Add a New...</b> link. See the following topics:</p> <ul style="list-style-type: none"> <li>• <a href="#">Adding a New Server, page 3-8</a></li> <li>• <a href="#">Adding a New Encoder, page 3-21</a></li> <li>• <a href="#">Adding a New Analog Camera, page 3-27</a></li> <li>• <a href="#">Adding a New IP/Network Camera, page 3-33</a></li> <li>• <a href="#">Adding a New Monitor, page 3-46</a></li> </ul>

**Table 3-1** *Device Management Tasks (continued)*

<b>Task</b>	<b>Action</b>
Modify settings for an existing device	<p>Click the <b>Edit</b> icon  in the Actions column for the item. See the following topics:</p> <ul style="list-style-type: none"> <li>• <a href="#">Editing or Deleting a Server, page 3-11</a></li> <li>• <a href="#">Editing or Deleting an Encoder, page 3-22</a></li> <li>• <a href="#">Editing or Deleting an Analog Camera, page 3-29</a></li> <li>• <a href="#">Editing or Deleting an IP/Network Camera, page 3-37</a></li> <li>• <a href="#">Editing or Deleting a Monitor, page 3-47</a></li> </ul>
Modify settings for multiple analog or IP/network cameras	<p>Check the check boxes for the items that you want to modify, or check the check box at the top of the table to modify all the devices of that type.</p> <p>Click the <b>Edit</b> button to the right of the <b>Search</b> button and choose <b>Update Selected</b>. This action opens a page that contains the settings that can be modified for multiple devices at once.</p>
Copy settings for an existing device to a new device (encoders and IP/network cameras only)	<p>Click the <b>Copy</b> icon  for the item. See the following topics:</p> <ul style="list-style-type: none"> <li>• <a href="#">Copying an Encoder, page 3-23</a></li> <li>• <a href="#">Copying an IP/Network Camera, page 3-38.</a></li> </ul>
Remove an existing device from the VSOM database	<p>Click the <b>Delete</b> icon  for the item. See the following topics:</p> <ul style="list-style-type: none"> <li>• <a href="#">Editing or Deleting a Server, page 3-11</a></li> <li>• <a href="#">Editing or Deleting an Encoder, page 3-22</a></li> <li>• <a href="#">Editing or Deleting an Analog Camera, page 3-29</a></li> <li>• <a href="#">Editing or Deleting an IP/Network Camera, page 3-37</a></li> <li>• <a href="#">Editing or Deleting a Monitor, page 3-47</a></li> </ul>

**Table 3-1** *Device Management Tasks (continued)*

<b>Task</b>	<b>Action</b>
Remove multiple cameras from the database	<p>Check the check boxes for the items that you want to delete, or check the check box at the top of the table to delete all the devices of that type.</p> <p>Click the <b>Edit</b> button to the right of the <b>Search</b> button and choose <b>Delete Selected</b>. When prompted to confirm, click <b>Yes</b> to delete the item or <b>No</b> to return to the page without deleting.</p> <p>Some confirmation pages also allow you to decide whether to retain archive and event history data after the device is removed.</p>
Display the current settings for a device	<p>Click the underlined device name. See the following topics:</p> <ul style="list-style-type: none"> <li>• <a href="#">Displaying Server Information, page 3-13</a></li> <li>• <a href="#">Displaying Encoder Information, page 3-24</a></li> <li>• <a href="#">Displaying Analog Camera Information, page 3-30</a></li> <li>• <a href="#">Displaying IP/Network Camera Information, page 3-39</a></li> <li>• <a href="#">Displaying Monitor Information, page 3-48</a></li> </ul>
Define custom field labels for cameras	<p>Custom field labels allow you to specify custom fields to record additional information about the device. See the <a href="#">“Creating Custom Field Labels for Cameras”</a> section on page 3-30.</p>

1. CSV = comma separated value.

## Performing Device Configuration Tasks

Table 3-2 lists the activities that are required to set up and configure the video surveillance equipment in your VSM deployment.

**Table 3-2**      **Device Setup Activities**

	Activity	Reference
<b>Add Servers</b>		
<b>Step 1</b>	Configure information about each host that runs VSMS and each host that runs VSVM.	<a href="#">Managing Servers, page 3-7</a>
<b>Note</b>	If you are adding several cameras or encoders at one time, Cisco recommends that you use the batch administration option instead of entering data directly in the Analog Camera and IP/Network Camera panels as described in this chapter. See the <a href="#">“Performing Batch Administration Functions”</a> section on page 5-16. Steps 2-4 in this table are not needed if you use batch administration.	
<b>Add Encoders and Analog Cameras</b>		
<b>Step 2</b>	If your deployment includes analog cameras, configure information about encoders, which convert analog video into digital video that can be used by VSM.	<a href="#">Managing Encoders, page 3-20</a>
<b>Step 3</b>	Configure information about the individual analog cameras in your VSM deployment.	<a href="#">Managing Analog Cameras, page 3-26</a>
<b>Add IP/Network Cameras</b>		
<b>Step 4</b>	Configure information about the individual IP/network cameras in your VSM deployment.	<a href="#">Managing IP/Network Cameras, page 3-32</a>

**Table 3-2** Device Setup Activities (continued)

	Activity	Reference
<b>Set up archives, motion detection, PTZ settings, and events</b>		
<b>Step 5</b>	Complete the setup by configuring the capabilities that you want to support for the installed servers, cameras, and encoder.	<a href="#">Managing Monitors, page 3-46</a> <a href="#">Managing Archives, page 5-26</a> <a href="#">Configuring PTZ and Joystick Settings, page 3-41</a> <a href="#">About Events, page 6-1</a>

## Managing Servers

The **Servers** page allows you to set up the following server types:

- Video Surveillance Media Server (VSMS)—Manages cameras, records and archives video, and provides access to live and recorded video.
- Video Surveillance Virtual Matrix Server (VSVM)—Enables the display and control of live and recorded video on remote monitors.
- Video Surveillance Backup Server (VSMS-Backup)—Allows you to configure a secondary server to use if a VSMS becomes unavailable. You can specify any VSMS as a backup server.

The term *VSM host* is used generically to refer to any of these server types. VSM hosts can be installed on the same Cisco Physical Security Multiservices Platform or on different platforms. For more information, see *Installing and Upgrading Cisco Video Surveillance Manager (VSM)*.

[Table 3-3](#) lists the tasks you can perform from the Managing Servers page.

**Table 3-3** Server-Related Tasks

Task	Description	Reference
Add a New Server	Define a new VSMS, VSVM, or VSMS-Backup	<a href="#">Adding a New Server, page 3-8</a>

**Table 3-3** Server-Related Tasks (continued)

Task	Description	Reference
Edit or delete a server	Change the settings for a server or delete a server	<a href="#">Editing or Deleting a Server, page 3-11</a>
Display server information	Display the settings for a specified server	<a href="#">Displaying Server Information, page 3-13</a>

## Adding a New Server

Adding servers is the process of configuring information about each VSM host that is used in your deployment. This information includes the name and IP address or host name of each server. If a single host runs both VSMS and VSVM, you must add the server twice, once for each component.

All VSOM clients that access VSMS must use same IP address. You must configure a host name rather than an IP address for access to VSMS if clients access VSMS through a system that translates the VSMS IP address, such as through another network or through a firewall that performs network address translation (NAT). In this case, make sure that each client can resolve the host name. For example, you can configure DNS or edit the Windows Hosts file on each VSOM client (see your DNS or Microsoft Windows documentation for details).

### Before You Begin

- Determine the type of server that you want to configure: VSMS, VSVM, or VSMS-Backup.
- Obtain the IP address or host name of each server that you are adding. The IP address must be accessible by VSOM.

To add a new server, follow these steps:

### Procedure

- 
- Step 1** In the Administrator pages, click **Servers**.
  - Step 2** Click **Add a New Server**.
  - Step 3** Choose the type of server (VSMS, VSVM, or VSMV-backup).

See the [“Managing Servers” section on page 3-7](#) for a description of the server types.



---

**Note** To back up video archives, the system must have at least one VSMS-Backup server. After backups have started, you can click the **Backup** tab for an archive and display the information under Backup Details (see the [“Editing or Deleting an Archive” section on page 5-35](#)). The information is for the last executed backup for that archive. The VSMS-Backup server must have a repository for archive backups from other servers.

---

**Step 4** Enter a name to identify the server (up to 30 characters, including spaces).

**Step 5** (Optional) Enter a description (up to 1,024 characters, including spaces).

For example, enter the location of the server or its primary use. The name can include any combination of characters and spaces.

**Step 6** Enter the host name or IP address of the server.

This address is used by VSOM and all VSOM clients to access video from the system. If the server is accessed using more than one IP address, you must enter a host name instead of an IP address, and you must configure the VSOM server and all VSOM clients to resolve the provided host name with the correct IP address. The host name or IP address must be accessible by the VSOM server and all VSOM clients.

If you are adding a VSVM server, you must include the server port in the Host IP/Name. To do so, follow the IP address or host name by a colon (:) and the port number. “:8086” is the default port number and appears in this field by default.

Example: 192.168.3.1:8086

**Step 7** Click the **Rights** tab and verify the access designations.

For information about assigning rights, see the [“Adding a Role” section on page 7-12](#).

**Step 8** Click **Submit** to add the server and redisplay the list of servers.

**Step 9** (VSVM servers only) Modify the display settings for the Virtual Matrix client by clicking the **Edit** icon  in the Actions column for the server and specifying the following settings:

- Border Size—Width of the video window border (0 to 10 pixels)

- Colors—Enter colors in standard hexadecimal format for fixed and highlighted background (BG), text, and rotating video panes. If you enter a hexadecimal number and press **Enter**, the background and text field are updated to show the background and text in the new color.
- Title Height—Height of the title in the title bar of the server window (1 to 20 pixels).
- Server Defaults: Restores all the hexadecimal settings to the server defaults.

Table 3-4 shows example settings.

**Table 3-4** *Display Setting Defaults*

Item	Description	Default
Border Size	0	Width of the display border. Value of 0 means that there is no border
Fixed BG Color	e0e0e0	Color of background in a fixed video pane.
Fixed Text Color	000000	Color of text in a fixed video pane.
Highlight BG Color	A0EFA0	Color of background in a highlighted video pane.
Highlight Text Color	000000	Color of text in a highlighted video pane.
Rotate BG Color	e0e0e0e	Color of background in a rotating video pane.
Rotate Text Color	000000	Color of background in a rotating video pane.
Title Height	20	Height of the camera or archive name text, in pixels.

**Step 10** When you have finished modifying the display settings, click **OK**.

## Editing or Deleting a Server

You can edit or delete server settings on the Servers panel.

To edit settings, click the **Edit** icon  in the Actions column and then make changes on any of the tabs. You can change the server name, description, and assignment of rights. For VSVM servers, you can also change display characteristics after the server is defined. See the [“Adding a New Server” section on page 3-8](#) for information on the available settings.

To delete a server from the VSOM database, click the **Delete** icon  for the server. When you delete a server, all of the associated encoders, cameras, child feeds, and event profiles are deleted by default. The system provides you with the option of keeping the following items on the server. Check the check boxes for the items that you want to retain, and then click **Yes** to delete the server.

- Leave running feeds on the server—Does not delete currently running camera feeds from the server.
- Leave running and stored archives on the server—Does not delete currently running or stored archives from the server.
- Leave event histories on the server—Does not delete event histories from the server.



---

**Caution**

Deleting a VSMS deletes all of the live connections, recordings, and view information for that server.

---

## Importing Archives to a Server

At times, the information that is stored in the VSOM database may not match the information that is stored in VSMS. This situation occurs if a change is made to the VSOM database that is not reflected in VSMS, such as removing a camera from the VSOM database.

To understand what does not match, open the System Overview panel, as described in the [“Displaying System Overview Information” section on page 6-30](#). This page lists the numbers of camera feeds and archives that are missing and out of sync as a fraction of the total number of camera feeds and archives:

- Missing means that an expected camera feed or archive is on VSOM but not on VSMS. To address this issue, identify whether there is a problem with the deployed equipment. If the equipment is not needed, you can remove it from the VSOM database, as described in the [“Editing or Deleting an Analog Camera” section on page 3-29](#) or the [“Editing or Deleting an IP/Network Camera” section on page 3-37](#).
- Out of Sync means that the camera feed or archive is on VSMS but not on VSOM. The out of sync condition typically occurs if a user installs and reinstalls VSOM, but has not yet imported archives from VSMS. To address this issue, click the **Server Import** icon  for the server on the Servers panel.

During the import operation, camera feeds and archives are obtained from the VSMS and new camera, encoder, and archive information is automatically added to VSOM.

**Note**

---

Server import is supported only when archives are from a single VSMS.

---

## Displaying Server Information

You can obtain information about a VSM server at any time. To do so, click an underlined server name link on the Servers panel. [Table 3-5](#) describes the server information that you can display.

**Table 3-5**      **Server Information**

Item	Description
<b>Details Tab</b>	
Server Type	Type of server: <ul style="list-style-type: none"> <li>• Video Surveillance Media Server (VSMS)</li> <li>• Video Surveillance Virtual Matrix Server (VSVM)</li> <li>• Video Surveillance Backup Server (VSMS-Backup)</li> </ul>
Server Name	Name assigned to the server.
Host IP/Name	IP address or host name of the server.
Status	Not used.
Health State (VSMS servers only)	Indicates the status of the connection between the server and VSOM. <b>Up</b> indicates that the connection is active. <b>Down</b> indicates that either the server is down or there is a connection problem between VSOM and the server.
Console	Link to open the Management Console in a new browser window. See <a href="#">Chapter 10, “Using the VSM Management Console.”</a>

**Table 3-5** *Server Information (continued)*

Item	Description
Disk Usage	<ul style="list-style-type: none"> <li>• Repository—A mounted location on the VSMS host that is dedicated to storing media data</li> <li>• Size—Amount of disk space available to that particular repository</li> <li>• Used (DF)—Amount of actual used disk space at the current time</li> <li>• Free (DF)—Amount of actual free disk space at the current time</li> <li>• Used Space—Amount of disk space (bytes) that VSMS has reserved for all of its requested archive recordings and clips</li> <li>• Free Space—Amount of free disk space (bytes) that the VSMS server has available to reserve for future archive recordings or clips</li> </ul>

**Table 3-5** *Server Information (continued)*

Item	Description
<b>Server Info Tab</b>	
Installed Version	Version information for VSMS.
Configuration	<p>Configuration information:</p> <ul style="list-style-type: none"> <li>• Storage Configuration—Percentage of storage used for archiving, including all available repositories.</li> <li>• PTZ Configuration—Length of time (seconds) that a lower priority PTZ command is rejected in favor of a higher priority command.  PTZ priority determines what happens when simultaneous attempts are made to control the same PTZ camera. The command with the highest PTZ priority prevails and the others are blocked.</li> <li>• Local Repositories—Partition mount locations on the server that are available for video storage.</li> <li>• Clipping—Repository mount location where BWM and BWX clips are saved.</li> <li>• Archiving—Information about the partition mount locations on the server that are available for selection of a back-up repository.</li> </ul> <p>For additional information see <a href="#">Chapter 10, “Using the VSM Management Console.”</a></p>
<b>Camera Feeds Tab</b>	
Feed Name	Name of the camera feed with a link to open the Camera Feed panel for the specified camera. See the <a href="#">“Managing Camera Feeds” section on page 5-9.</a>
Status	Indication of whether the camera feed is currently running or suspended.
Type	Type of feed, as determined by the camera model.

**Table 3-5** *Server Information (continued)*

<b>Item</b>	<b>Description</b>
Source	Host name or IP address of the video source, such as an external video device, internal encoder, or another VSMS host.
Media Type	Format of the camera feed. Types include H264, JPEG, MPEG-2, MPEG-2 Elementary, MPEG-4, and H.263.
Resolution	Video resolution of the camera feed.
F/B Rate	Frame rate and bit rate, which determine the amount of video data transmitted in a given amount of time. Frame rate applies to MJPEG streams, and bit rate applies to MPEG-2 and MPEG-4 streams.  Higher values result in smoother video and a more accurate representation of what is happening, but also result in increased system resource use.
Quality	Setting that determines the quality of an MJPEG feed. Higher values result in smoother video and a more accurate representation of what is happening, but also result in increased system resource use.
Exists in VSOM	Indication of whether VSOM recognizes the camera feed. If the feed is not recognized, it is not available for viewing, archiving, or associating with events.
Exists in VSMS	Indication of whether VSMS recognizes the camera feed. If the feed is not recognized, it is not available for viewing, archiving, or associating with events.
<b>Archives Tab (VSMS only)</b>	
Name	Camera and archive name. Click the link to open the Archive panel. See the <a href="#">“Managing Archives” section on page 5-26</a> . Archive names are of the form a_<feed>_a_<archive> where <feed> is the name of the camera feed and <archive> is the name of the archive.  Example:  a_p_53_60-axis_-_a_arch_1.2

**Table 3-5** *Server Information (continued)*

<b>Item</b>	<b>Description</b>
Status	Indication of whether the archive is shelved (available but not currently used) or running.
Type	Archive type. Types include loop, recur(ring) or regular.
First Frame Time	Time stamp for the first frame in the archive (yyyy-mm-dd hh:mm format).
Last Frame Time	Time stamp for the last frame in the archive (yyyy-mm-dd hh:mm format).
Start	Date and time that the archive was created.
End	Date and time when the archive was stopped. This entry has no value if the archive is running.
Expires	Number of days after which a shelved archive expires and is removed.
Exists in VSOM	Indication of whether VSOM is able to recognize and manage this archive.
Exists in VSMS	Indication of whether VSMS is able to recognize and manage this archive.
<b>Events Tab (VSMS only)</b>	
Name	Name assigned to the event.
Device	Host name or IP address of the device that is associated with the event.
Source	Camera or component name of the device that is associated with the event.
Channel	Encoder channel (hardware connection) of the device that is associated with the event.

Table 3-5 Server Information (continued)

Item	Description
Type	Type of event: <ul style="list-style-type: none"> <li>• (Blank)—Motion configuration event.</li> <li>• Alarm—Soft event (with archive clipping). A soft event is a URL notification from a third party application or device.</li> <li>• Motion—Device trigger event with (archive clipping).</li> </ul>
State	State for device trigger events: <ul style="list-style-type: none"> <li>• Rising—Increasing state on device trigger. Useful only for device trigger events.</li> <li>• Falling—Declining state on device triggers. Useful only for device trigger events.</li> </ul>
Action	Action that the system takes in response to the event: <ul style="list-style-type: none"> <li>• None—Do not take any action</li> <li>• Archive Clip—Create an archive clip</li> </ul> <p><b>Note</b> This parameter is set in the event/actions module and is not available for soft triggers. See the <a href="#">“Adding an Event”</a> section on <a href="#">page 6-5</a> for information about soft triggers.</p>
Camera Feeds	Name assigned to the camera feed.
Framerate	Frame rate at which the event clips are recorded when an event occurs.
Days to Live	Number of days between the time that the event video is saved and the time that it is removed from the system.

**Table 3-5** *Server Information (continued)*

Item	Description
<b>Rights Tab</b>	
Rights	Access rights for the device: <ul style="list-style-type: none"> <li>• Name—Role name with a link that opens the Roles panel for the specified role.</li> <li>• Rights—Indication of the rights that are assigned to the role.</li> </ul>

## Changing Server IP Addresses

You cannot change the address of a VSMS or VSVM server in VSOM after a server has been added to VSOM. If you need to change the IP address of a server, follow these steps:

### Procedure

- Step 1** In VSOM, delete the server and check the check boxes to leave feeds, archives, and event histories on the server. See the [“Editing or Deleting a Server” section on page 3-11](#).
- Step 2** Make the necessary hostname or IP address changes on the VSMS server.
- Step 3** In VSOM, add the server using the updated IP address or hostname. See the [“Adding a New Server” section on page 3-8](#).
- Step 4** On the Servers page in VSOM, click the **Import** icon for the newly added server. The camera feeds and archives are obtained from the server and new camera, encoder, and archive information is automatically added to VSOM.



**Note** The import process does not retain camera PTZ settings, motion events, motion detection configuration, camera feeds from Views, camera group settings for each camera, or camera user names and passwords (VSMS retains the user credentials to connect camera feeds).

# Managing Encoders


**Note**

Encoders are required only if your deployment includes analog cameras.

Encoders convert video from analog cameras into digital video that VSOM can interpret and display. VSOM identifies an encoder by its IP address and encoder type. It is common for encoders to be secured by a user name and password, and these credentials should be added if required. VSOM supports encoders for MJPEG and MPEG-4 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 MPEG-4 feed. To support multiple streams on the same channel of an encoder, you can configure two feeds in VSOM using the 1\_1 and 1\_2. Encoder channel 1\_1 represents encoder channel 1, stream 1 and 1\_2 represents encoder channel 1, stream 2.

All configured cameras are included in camera listings in VSOM and populate all layouts in the default camera group order as set by administrators.

To open the Encoders panel, click **Encoders** on the side menu in the Administrator pages. [Table 3-6](#) lists the tasks that you can perform on the panel. For a general description of encoder actions, see [Table 3-1](#).

**Table 3-6 Encoder-Related Tasks**

Task	Description	Reference
Add a New Encoder	Define a new encoder to support analog cameras in your deployment	<a href="#">Adding a New Encoder, page 3-21</a>
Edit or delete an encoder	Change the settings for an encoder or delete an encoder	<a href="#">Editing or Deleting an Encoder, page 3-22</a>
Copy an encoder	Create new encoders with settings based on a specified encoder	<a href="#">Copying an Encoder, page 3-23</a>
Display encoder information	Display the settings for a specified encoder	<a href="#">Displaying Encoder Information, page 3-24</a>

## Adding a New Encoder

Adding encoders is the process of configuring information about each encoder that operates in your VSM deployment. You can add encoders individually, as described in this section, or copy the settings from an existing encoder to a new encoder or encoders. For instructions, see the [“Copying an Encoder” section on page 3-23](#).

### Before You Begin

- Determine the brand and model of the encoder that you want to add. Choose a naming convention for your encoders, if you do not want to use IP addresses as the encoder names.
- Obtain the IP address or host name of each encoder that you want to add.

To add a new encoder, follow these steps:

### Procedure

---

- Step 1** In the Administrator pages, click **Encoders**.
- Step 2** Click **Add a New Encoder**.
- Step 3** Choose the model of the encoder that you are adding from the **Encoder Type** drop-down list.
- Step 4** In the Encoder name field, enter a descriptive name that can help you identify the device (up to 30 characters, including spaces).
- Step 5** (Optional) In the Description field, enter a description of the device (up to 1,024 characters, including spaces).
- Step 6** In the Host IP/Name field, enter the host name or IP address of the encoder that you are adding.
- Step 7** If the encoder allows access from VSMS only if VSMS provides valid authentication credentials, take the following actions in the Authentication area:
  - a.** In the Username field, enter the user name that VSMS provides when accessing the encoder. The user name is configured on the encoder and the value that you enter in this field must match the configured name exactly. The user name can contain alphabetic and numeric characters only and is case sensitive.



## Copying an Encoder

You can copy encoder settings to create a new encoder with the same configuration settings as an already configured encoder.

To copy encoder settings, follow these steps:

### Procedure

- 
- Step 1** In the Administrator pages, click **Encoders**.
- Step 2** Click the **Copy** icon  for the encoder from which you want to copy settings.
- Step 3** In the Number of Copies field, enter the number of new encoders that you want to create based on the configuration settings of the existing encoder.
- Step 4** In the IP Start field, enter an IP address for the first copy.

If you are creating multiple copies, the IP addresses are assigned consecutively, beginning with this specified address.



**Note** The system does not check for duplicate IP addresses. Make sure that consecutive addresses are available in the range that begins with the address that you specify.

---

- Step 5** Check the **Use IP Address as Name** check box to use the IP address of the copy as the encoder name.
- Step 6** If you do not want to use the IP address as the name, take these actions:
- In the Common Name field, enter a name to identify this set of copies. The name is used with a prefix or suffix that you specify.
  - From the **Append As** drop-down list, specify whether the sequence numbers or letters are added before the common name (Prefix) or after the common name (Suffix).
  - From the **Type** drop-down list, choose **Numbers** or **Letters** to designate the type of characters in a prefix or suffix.

For example, if you make two copies, enter **-myencoder** as the common name and choose **Prefix** and **Letters**, the copies are named **a-myencoder** and **b-myencoder**. If you choose **Suffix** and **Numbers**, the copies are named **-myencoder1** and **-myencoder2**.

**Step 7** Click **Copy Encoders** to create the new encoders and add them to the encoder list.

## Displaying Encoder Information

You can obtain information about an encoder at any time. Click an underlined encoder name link on the Encoders panel to display detailed information about the encoder, as described in [Table 3-7](#).

**Table 3-7 Encoder Information**

Item	Description
<b>Details Tab</b>	
Encoder Name	Name assigned to the encoder.
Encoder Type	Encoder brand and model.
Host IP/Name	IP address or name of the encoder. Click the link to open the default configuration page for the encoder (if available).
Health State	Indicates the status of the encoder. <b>Up</b> indicates that the encoder is reachable, active, and working. <b>Down</b> indicates that there is a problem with the encoder, that it is not active or not reachable.
Status	Not used.
Requires Authentication	Indication of whether a user name and password are required to access the encoder.
<b>Cameras Tab</b>	
Camera Name	Name assigned to the camera. Click the link to open the Camera panel for the specified camera. See the <a href="#">“Managing Analog Cameras”</a> section on page 3-26 or the <a href="#">“Managing IP/Network Cameras”</a> section on page 3-32.
Camera Type	Camera brand and model.
PTZ Enabled	Indication of whether PTZ functionality is enabled on the camera.

Table 3-7 Encoder Information (continued)

Item	Description
Status	Indication of whether the camera is administratively enabled or disabled. This setting determines whether VSOM treats the camera as active (enabled), but has no affect on the operation of the camera.
<b>Camera Feeds Tab</b>	
Feed Name	Name assigned to the camera feed. Click the link to open the Camera Feed panel. See the <a href="#">“Managing Camera Feeds” section on page 5-9</a> .
Media Type	Media format for the camera feed. Media types include H264, JPEG, MPEG-2, MPEG-2 Elementary, MPEG-4, and H.263.
F/B Rate	Frame rate and bit rate, which determine the amount of video data transmitted in a given amount of time. Frame rate applies to MJPEG streams, and bit rate applies to MPEG-2 and MPEG-4 streams.  Higher values result in smoother video and a more accurate representation of what is happening, but also result in increased system resource use.
Quality	Setting that determines the quality of an MJPEG feed. Higher values represent higher quality frames, which also are associated with larger frame file sizes.  <b>Note</b> A child feed inherits the quality setting from the parent feed.
<b>Rights Tab</b>	
Rights	Access rights for the device: <ul style="list-style-type: none"> <li>• Name—Role name with a link that opens the Roles panel for the specified role.</li> <li>• Rights—Indication of the rights that are assigned to the role.</li> </ul>

# Managing Analog Cameras

Analog cameras provide analog video to encoders, which convert the analog signals into digital video that VSOM can interpret and display. Matching an analog camera to an encoder creates a camera feed (video stream). Some analog cameras also support PTZ functions.

Some encoders permit multiple streams with different attributes from the same video input. For example, the same video input may be available as a JPEG feed and an MPEG-4 feed.

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

[Table 3-8](#) lists the tasks that you can perform on the panel. For a general description of device actions, see [Table 3-1 on page 3-3](#).

**Table 3-8** *Analog Camera-Related Tasks*

Task	Description	Reference
Add a new analog camera	Define the settings for a new analog camera	<a href="#">Adding a New Analog Camera, page 3-27</a>
Edit or delete an analog camera	Change the settings for an analog camera or delete an analog camera	<a href="#">Editing or Deleting an Analog Camera, page 3-29</a>
Create custom field labels for the camera	Define custom fields to store additional information about the analog cameras in your system	<a href="#">Creating Custom Field Labels for Cameras, page 3-30</a>
Display analog camera information	Display the settings for a specified analog camera	<a href="#">Displaying Analog Camera Information, page 3-30</a>

## Adding a New Analog Camera

When you add an analog camera, you include the name of the camera and information about its video stream and encoder.

### Before You Begin

- Choose a naming convention for your cameras. See the [“Organizing Information in VSM” section on page 1-8](#).
- Determine which of the encoders in the system is used to encode the camera analog signals and the encoder channel to be used. For a list of encoders or to add a new encoder, see the [“Managing Encoders” section on page 3-20](#).
- Determine the VSMS that is used to manage the camera. For a list of VSMS hosts or to add a new VSMS, see the [“Managing Servers” section on page 3-7](#).
- Determine the desired characteristics of the camera feed, including media type, format, resolution, method to be used to send video information to VSOM, frame rate, and quality. The type of camera determines the available values for these parameters.

To add a new analog camera, follow these steps:

### Procedure

---

- Step 1** In the Administrator pages, click **Analog Cameras**.
- Step 2** Click **Add a New Analog Camera**.
- Step 3** In the Camera Name field, enter a descriptive name for the camera that is consistent with your naming conventions (up to 30 characters, including spaces).
- Step 4** (Optional) In the Description field, enter a description (up to 1,024 characters, including spaces).  
For example, the description could include the location or type of the camera.
- Step 5** From the **Encoder** drop-down list, choose the encoder that is used to convert the cameras signals from analog to digital.
- Step 6** From the **Encoder Channel** drop-down list, choose the encoder input port that the camera connects to.

**Step 7** In the Camera Feed area in the Camera Type tab, specify the following settings:

- **Server**—Choose the VSMS that manages this camera. This list displays the servers that you configured as described in the [“Adding a New Server” section on page 3-8](#).
- **Media Type**—Choose the digital video encoding type for the video stream from the camera. The options in this list depend on the encoder that you chose for this camera.
- **Format**—Choose the format for the video stream from the camera. The options in this list depend on the encoder that you chose for this camera.
- **Resolution**—Choose the resolution for the video stream from the camera. The options in this list depend on the encoder that you chose for this camera.
- **Transport**—Choose the protocol that VSMS uses to obtain video from the encoder (the available choices depend on the encoder that you chose for this camera). To choose UDP multicast, click the **UDP** radio button, then in the Multicast Address, field enter the multicast address that the encoder should use to multicast the video to VSMS. For unicast transmission, leave the Multicast Address field blank.
- **Framerate**—Choose the framerate or bit rate for transporting the video data. Frame rate and bit rate determine the amount of video data transmitted in a given amount of time. Frame rate applies to MJPEG streams, and bit rate applies to MPEG-2 and MPEG-4 streams.  
  
Higher values result in smoother video and a more accurate representation of what is happening, but also result in increased system resource use.  
  
The standard bit rate selection is for constant bit rate (CBR), which specifies a fixed amount of data sent per second. For Cisco cameras with variable bit rate (VBR) support, you can conserve bandwidth by checking the **Variable bitrate** check box. The VBR option uses the amount of data in the video itself when determining the amount of data to send per second. For example, sending video of a white screen does not require much bandwidth, and that is taken into account with VBR. With VBR, the selected bit rate is treated as the maximum bit rate and is adjusted to be lower if a lower bit rate is sufficient. To use the VBR option, the camera must support VBR.
- **Quality**—Use the scroll bar to set video quality for camera feeds.

For MJPEG camera feeds (MPEG-2 or MPEG-4), this parameter sets the MJPEG quality (compression) setting of the video source. 1 is the lowest quality (highest compression) and 100 is the highest quality (least compression). A setting of 50 is the default and produces a good balance between visual quality and size of the video data.

For MPEG camera feeds, a setting of 1 through 49 sets the video source to favor a higher frame rate over compression and visual quality. A setting of 50 through 100 sets the video source to favor less compression and better visual quality over frame rate.

See [Table 3-11](#) for a description of VBR quality settings for different camera and encoder vendors.



---

**Note** If you are using batch administration to add Cisco cameras, you must use the following range of quality values: CBR (0-100) and VBR (101-200). For information on using batch administration, see the [“Performing Batch Administration Functions”](#) section on page 5-16.

---

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

**Step 9** Click **Submit**.

The camera is added to the system and included in the table on the Analog Cameras panel.

---

## Editing or Deleting an Analog Camera

You can edit or delete analog camera settings on the Analog Cameras panel.

To edit settings, click the **Edit** icon  in the Actions column and then make changes on any of the tabs. See the [“Adding a New Analog Camera”](#) section on page 3-27 for information on the available settings.

To delete a camera from the VSOM database, click the **Delete** icon  for the camera. When you delete a camera, all of the associated camera feeds and event configurations are deleted by default. The system provides you with the option of keeping the archive data files on the server. Check the check box if you want to retain the archive files, and click **Yes**.

## Creating Custom Field Labels for Cameras

Custom field labels allow you to specify custom fields to record additional information about a camera. These fields appear on the Custom Fields tab when you edit a camera record.

To create custom fields labels, follow these steps:

### Procedure

- 
- Step 1** Click the **Edit Camera Custom Field Labels** link above the list of cameras to open the Custom Fields configuration page.
- Step 2** Enter up to 20 field labels in the order in which you want them to appear. Labels that are left blank are ignored.
- Step 3** Click **Submit**.
- 

## Displaying Analog Camera Information

Click an underlined camera link on the Analog Cameras panel to display detailed information about the camera, as described in [Table 3-9](#).

**Table 3-9** *Analog Camera Information*

Item	Description
<b>Details Tab</b>	
Preview Image	Preview of the video. Click + to enlarge the image and – to reduce the preview image size.
Camera Name	Name that identifies the camera.
Encoder Name	Name assigned to the encoder that is associated with the camera. Click the link to open the Encoder panel. See the <a href="#">“Displaying Encoder Information”</a> section on page 3-24.
Encoder Channel	Channel on which the encoder that is associated with the camera receives video from the camera.

**Table 3-9** *Analog Camera Information (continued)*

<b>Item</b>	<b>Description</b>
PTZ Information	PTZ settings, if PTZ is supported and enabled on the camera. Click a PTZ preset to set the area of the video that is shown initially in the Operator page. When you click a PTZ preset, that area is shown in the preview image. Use the – and + icons for the image to enlarge or shrink the preview.
<b>Camera Feeds</b>	
Feed Name	Name assigned to the camera feed. Camera feed names are assigned automatically, but can be changed.
Media Type	Media type of the camera feed. Media types include H264, JPEG, MPEG-2, MPEG-2 Elementary, MPEG-4, and H.263.
F/B Rate	Frame rate and bit rate, which determine the amount of video data transmitted in a given amount of time. Frame rate applies to MJPEG streams, and bit rate applies to MPEG-2 and MPEG-4 streams.  Higher values result in smoother video and a more accurate representation of what is happening, but also result in increased system resource use.
Quality	Video quality value for the camera feed. 1 is the lowest quality (highest compression) and 100 is the highest quality.  Higher values represent more video data every second, which means smoother video and a more accurate representation of what is happening. However, higher values also result in larger file sizes.
VBR	Indicates whether support for variable bit rate (VBR) is enabled or disabled (only for cameras that support VBR).
<b>Custom Fields</b>	
Custom Fields	Values for user-defined custom fields.

**Table 3-9** Analog Camera Information (continued)

Item	Description
<b>Rights Tab</b>	
Rights	<p>Access rights for the device:</p> <ul style="list-style-type: none"> <li>• Name—Role name with a link that opens the Roles panel for the specified role.</li> <li>• Rights—Indication of the rights that are assigned to the role.</li> </ul>

## Managing IP/Network Cameras

An IP/network camera connects directly to a network and appears to VSOM as an analog camera and encoder in a single package. Adding an IP camera to VSOM creates a camera feed (video stream) that you can display in VSOM.

Many IP/network cameras are PTZ capable. In addition, some support dual streaming, which allows you to specify a secondary feed that has different attributes than the primary feed.

Click **IP/Network Cameras** on the side menu in the Administrator pages to open the IP/Network Cameras panel.

[Table 3-10](#) lists the tasks that you can perform on this panel. For a general description of device actions, see [Table 3-1 on page 3-3](#).

**Table 3-10** IP/Network Camera-Related Tasks

Task	Description	Reference
Add a new IP/network camera	Define the settings for a new IP/network camera	<a href="#">Adding a New IP/Network Camera, page 3-33</a>
Edit or delete an IP/network camera	Change the settings for an IP/network camera or delete an IP/network camera	<a href="#">Editing or Deleting an IP/Network Camera, page 3-37</a>
Copy an IP/network camera	Create new IP/network cameras with settings based on a specified camera	<a href="#">Copying an IP/Network Camera, page 3-38</a>

**Table 3-10** *IP/Network Camera-Related Tasks (continued)*

Task	Description	Reference
Create custom field labels for the camera	Define custom fields to store additional information about the IP/network cameras in your system	<a href="#">Creating Custom Field Labels for Cameras, page 3-30</a>
Display IP/network camera information	Display the settings for a specified camera	<a href="#">Displaying IP/Network Camera Information, page 3-39</a>

## Adding a New IP/Network Camera

When you add an IP/Network camera, you include the name of the camera and information about its video stream.

### Before You Begin

- Choose a naming convention for your cameras.
- Determine the VSMS that is used to manage the camera. For a list of VSMS hosts or to add a new VSMS, see the [“Managing Servers” section on page 3-7](#).
- Obtain authentication information for the cameras, if required by the cameras.
- Determine the characteristics of the camera feed, including media type, format, resolution, method to be used to send video information to VSOM, frame rate, and quality. The type of camera determines the available values for these parameters.
- If the camera supports dual streaming and you want to specify a secondary feed, determine the secondary stream characteristics.
- Determine the transport method that VSMS uses to obtain feeds from the cameras.

## Procedure

---

- Step 1** In the Administrator pages, click **IP/Network Cameras**.
- Step 2** Click **Add a New IP/Network Camera**.
- Step 3** In the Camera Name field, enter a descriptive name for the camera that is consistent with your naming conventions (up to 30 characters, including spaces).
- Step 4** (Optional) Enter a description (up to 1,024 characters, including spaces).
- Step 5** From the **Camera Type** drop-down list, choose the camera brand and model.
- Step 6** In the Host IP/Name field, enter the host name or IP address of the camera.
- Step 7** In the Camera Feed section, specify the following settings:
- **Server**—Choose the VSMS that manages this camera.
  - **Media Type**—Choose the media type from the drop-down list (H264, JPEG, MPEG-2, MPEG-2 Elementary, MPEG-4, or H.263). If you configured UDP to be on for the camera, leave the multicast address blank to enable unicast.

**Note** Audio is embedded in a media stream from the camera if the camera supports MPEG. MPEG streams do not display a preview.

- **Format**—Choose the media format (NTSC or PAL) from the drop-down list.
- **Resolution**—Choose the resolution from the drop-down list. Resolutions under 1,024 (for example, 800 x 600) display scrollbars and an undersized Operator page pane.
- **Transport**—Choose the protocol that VSMS uses to obtain video from the encoder (the available choices depend on the encoder that you chose for this camera). To choose UDP multicast, click the **UDP** radio button, then in the Multicast Address, field enter the multicast address that the encoder should use to multicast the video to VSMS. For unicast transmission, leave the Multicast Address field blank.
- **Framerate or Bitrate**—From the drop-down list, choose the framerate or bit rate for transporting the video data.

Frame rate and bit rate determine the amount of video data transmitted in a given amount of time. Frame rate applies to MJPEG streams, and bit rate applies to MPEG-2 and MPEG-4 streams.

Higher values result in smoother video and a more accurate representation of what is happening, but also result in increased system resource use.

The standard bit rate selection is for constant bit rate (CBR), which specifies a fixed amount of data sent per second. For Cisco cameras and encoders with variable bit rate (VBR) support, you can conserve bandwidth by checking the **Variable bitrate** check box. The VBR option uses the amount of data in the video itself when determining the amount of data to send per second. For example, sending video of a white screen does not require much bandwidth, and that is taken into account with VBR. With VBR, the selected bit rate is treated as the maximum bit rate and is adjusted to be lower if a lower bit rate is sufficient. To use the VBR option, the camera must support VBR.

- **Quality**—Use the scroll bar to set video quality for camera feeds.

For MJPEG camera feeds (MPEG-2 or MPEG-4), this parameter sets the MJPEG quality (compression) setting of the video source. 1 is the lowest quality (highest compression) and 100 is the highest quality (least compression). A setting of 50 is the default and produces a good balance between visual quality and size of the video data.

For MPEG camera feeds, a setting of 1 through 49 sets the video source to favor a higher frame rate over compression and visual quality. A setting of 50 through 100 sets the video source to favor less compression and better visual quality over frame rate.

See [Table 3-11](#) for a description of VBR quality settings for different camera and encoder vendors.



---

**Note** If you are using batch administration to add Cisco cameras, you must use the following range of quality values: CBR (0-100) and VBR (101-200). For information on using batch administration, see the “[Performing Batch Administration Functions](#)” section on page 5-16.

---

- Step 8** Check the **Camera requires authentication** check box if authentication is required to access the camera. Enter a user name and password, and reenter the password to confirm.
- Step 9** If the camera is capable of dual streaming and you want to specify a secondary feed, click the **Secondary Feed** tab, check the **Secondary Feed** check box, and specify the feed characteristics according to the descriptions in [Step 7](#).
- Step 10** Click the **Camera Groups** tab to assign the camera to a group.

Choose the group or groups, or choose **Top Level (No Group)** if you do not want to place the camera in a group. Click **Expand All** to show the full group hierarchy or **Collapse All** to hide the hierarchy.

- Step 11** Click the **Advanced Configuration** tab if you need to set PTZ options for the camera, and configure the following settings:
- Camera is PTZ-enabled—Choose if the camera supports PTZ.
  - Status—Choose **Enabled** to permit PTZ camera control. Choosing **Disabled** turns the PTZ control off without removing the PTZ configurations from the list.
  - Manufacturer—Choose the camera make and model from the drop-down list.
  - PTZ Preset Labels—Enter PTZ labels to map to USB joystick buttons. Labels should identify the camera view or location, such as Front Lobby or Parking Garage A. You cannot map PTZ labels to mouse buttons.
- Step 12** (Optional) Click the **Map Info** tab to designate the physical location of the camera. The settings on this tab are for reference only and are not used by VSOM.
- Step 13** (Optional) Click the **Custom Fields** tab to add additional information about the camera.
- See the “[Creating Custom Field Labels for Cameras](#)” section on page 3-30.
- Step 14** Click the **Rights** tab and verify the access designations.
- See the “[Adding a Role](#)” section on page 7-12.
- Step 15** Click **Submit**.

[Table 3-11](#) describes the supported VBR quality settings for different camera and encoder vendors.

**Table 3-11** VBR Quality Settings

Camera or Encoder Vendor	Value in Media Type Field	Quality Slider Values
<b>IP Cameras</b>		
Any (Cisco or non-Cisco)	JPEG	1 through 100

**Table 3-11 VBR Quality Settings (continued)**

Camera or Encoder Vendor	Value in Media Type Field	Quality Slider Values
Non-Cisco	Any value other than JPEG	1 through 100
Cisco	Any value other than JPEG	<ul style="list-style-type: none"> <li>• If the Variable Bitrate check box is unchecked, cannot change the quality slider</li> <li>• If the Variable Bitrate check box is checked, quality slider values are: Very Low, Low, Normal, High, Very High</li> </ul>
<b>Analog Cameras</b>		
Any (Exac or non-Exac)		1 through 100
Non-Exac	Any value other than JPEG	1 through 100
Exac	Any value other than JPEG	<ul style="list-style-type: none"> <li>• If the Variable Bitrate check box is unchecked, cannot change the quality slider</li> <li>• If the Variable Bitrate check box is checked, quality slider values are:</li> <li>• 1 through 100</li> </ul>

## Editing or Deleting an IP/Network Camera

You can edit or delete IP/Network camera settings on the IP/Network Cameras panel.

To edit settings for an IP/network camera, click the **Edit** icon  in the Actions column and then make changes on any of the tabs. See the [“Adding a New IP/Network Camera” section on page 3-33](#) for information on the available settings.

To delete an IP/network camera from the VSOM database, click the **Delete** icon  for the camera. When you delete a camera, all of the associated camera feeds and event configurations are deleted by default. 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)—Retains archive files for the deleted item on the server.
- Keep event history records from this device—Retains event history records for the deleted item on the server.

## Copying an IP/Network Camera

You can copy IP/network camera settings to create a new camera or cameras with the same configuration settings as an already configured camera. When you do so, the permissions are inherited from the originating camera.

To copy IP/network camera settings, follow these steps:

### Procedure

- 
- Step 1** In the Administrator pages, click **IP/Network Cameras**.
  - Step 2** Click the **Copy** icon  for the camera from which you want to copy settings.
  - Step 3** In the Create Fields on Server field, choose the VSMS that manages the new cameras.
  - Step 4** In the Number of Copies field, enter the number of new cameras that you want to create based on the configuration settings of the existing camera.
  - Step 5** In the IP Start field, enter an IP address for the first copy.  
If you are creating multiple copies, the IP addresses are assigned automatically, beginning with this specified address.




---

**Note** The system does not check for duplicate IP addresses. Make sure that consecutive addresses are available in the range that begins with the address that you specify.

---

**Step 6** Check the **Use IP Address as Name** check box to use the IP address of the copy as the camera name.

**Step 7** If you do not want to use the IP address as the name, specify the following:

- a. In the Common Name, enter a name to identify this set of copies. The name is used with a prefix or suffix that you specify.
- b. From the **Append As** drop-down list, specify whether the sequence numbers or letters is added before the common name (Prefix) or after the common name (Suffix).
- c. From the Type drop-down list, choose **Numbers** or **Letters** to designate the type of characters in a prefix or suffix.

For example, if you make two copies, enter **-mycamera** as the common name and choose **Prefix** and **Letters**, the copies are named **a-mycamera** and **b-mycamera**. If you choose **Suffix** and **Numbers**, the copies are named **-mycamera1** and **-mycamera2**.

**Step 8** Click **Copy IP/Network Camera** to create the new cameras.

---

## Displaying IP/Network Camera Information

To display detailed information about a camera, click an underlined camera link on the IP/Network Cameras panel. [Table 3-12](#) describes the camera information.

**Table 3-12** *IP/Network Camera Information*

Item	Description
<b>Details tab</b>	
Preview Image	Shows a preview of the video image from the camera. Click + to enlarge the image and – to reduce the preview image size.
Camera Name	Displays the name assigned to the camera.

**Table 3-12 IP/Network Camera Information (continued)**

Item	Description
Camera Type	Displays the camera brand and model.
Host/IP Name	Displays the host name or IP address of the camera. Click the link to open the default configuration page for the camera (if available).
PTZ Information	Displays the PTZ configuration if PTZ is supported and enabled for the camera. Click a PTZ preset to move the camera to that preset location. Use the + and - icons below the video pane to enlarge or shrink the preview.
Health State	Indicates the status of the connection between the camera and VSOM. <b>Up</b> indicates that the connection is active. <b>Down</b> \ indicates that either the camera is down or there is a connection problem between VSMS and the camera.
<b>Camera Feeds tab</b>	
Feed Name	Displays the name of the camera feed. Click the link to open the Camera Feed panel. See the <a href="#">“Managing Camera Feeds” section on page 5-9</a> .
Media Type	Displays the media type of the camera feed. Media types include H264, JPEG, MPEG-2, MPEG-2 Elementary, MPEG-4, and H.263.  Audio is embedded if the camera is MPEG ready. MPEG media types do not display a preview.
F/B Rate	Frame rate and bit rate, which determine the amount of video data transmitted in a given amount of time. Frame rate applies to MJPEG streams, and bit rate applies to MPEG-2 and MPEG-4 streams.  Higher values result in smoother video and a more accurate representation of what is happening, but also result in increased system resource use.
Quality	Displays the video quality value for the camera feed. 1 is the lowest quality (highest compression) and 100 is the highest quality.

**Table 3-12** IP/Network Camera Information (continued)

Item	Description
<b>Camera Feeds tab</b>	
Custom Fields	Displays the values for any custom fields that have been defined (see the <a href="#">“Creating Custom Field Labels for Cameras”</a> section on page 3-30).
<b>Rights tab</b>	
Rights	Access rights for the device: <ul style="list-style-type: none"> <li>• Name—Role name with a link that opens the Roles panel for the specified role.</li> <li>• Rights—Indication of the rights that are assigned to the role.</li> </ul>

## Configuring PTZ and Joystick Settings



### Note

PTZ functions require that Cisco IP/Network cameras be installed with a motorized zoom/focus lens and in a pan/tilt mount that supports the Pelco D protocol.

VSOM supports the movement, configuration, and control of analog PTZ cameras that are connected to video encoders or PTZ IP cameras. For cameras that support PTZ functionality, you can configure and use PTZ presets in addition to pan (left-right), tilt (up-down) and zoom (in-out) movements. Other camera options such as iris and focus settings also can be controlled, depending on the camera model.



### Note

PTZ presets are stored in the PTZ camera, not in VSOM or in encoders.

A PTZ camera is listed on the PTZ Configuration panel only if all of the following apply:

- The camera supports PTZ functionality
- PTZ functionality is enabled for the camera

- PTZ settings are configured

For information about enabling PTZ functionality, see the “[Managing Analog Cameras](#)” section on page 3-26 and the “[Managing IP/Network Cameras](#)” section on page 3-32. For information about configuring PTZ settings, see the “[Configuring PTZ Settings](#)” section on page 3-42.

When PTZ is enabled and configured, operators can use embedded PTZ controls or a USB joystick to quickly move a specified camera. See the “[Using the Camera PTZ Controls](#)” section on page 8-53.

Operators must choose the PTZ camera to control by clicking a video pane or selecting a radio button within the PTZ tool to transfer control from the previously controlled PTZ camera. The operator can also *lock* a camera using the Lock PTZ Source option on the Operator page. See the “[Using the Camera PTZ Controls](#)” section on page 8-53. If a camera is locked, the operator continues to control that camera, even if the feed from another camera is shown in the Display panel.

PTZ preset commands are mapped to USB joystick buttons, but not to mouse buttons. If the joystick has zoom controls, twist buttons 1 and 2 are mapped to zoom-in and zoom-out, and the rest of the buttons are mapped to presets in order. The Windows Game Controller in the Control Panel shows the numbers of the buttons if they are not labeled on the USB joystick.

You can enter preset labels on the PTZ Configuration panel for the IP/network or analog camera. VSOM supports the additional of up to 99 preset labels per camera.

## Configuring PTZ Settings

Click PTZ Configuration on the side menu in the Administrator pages to open the PTZ Configuration panel. For a general description of tasks you can perform on this panel, see [Table 3-1](#).

### Before You Begin

- Determine the PTZ settings that are needed for each camera (only for cameras that support PTZ functions such as setting preset labels for a camera, setting up preset schedules, and associating PTZ actions for events).

To configure PTZ settings for a camera, follow these steps:

### Procedure

---

- Step 1** In the Administrator pages, click **PTZ Configuration**.
- Step 2** Click the **Edit** icon  in the Actions column for the camera.
- Step 3** Choose from the **PTZ Status** drop-down list to enable or disable PTZ settings.  
For the PTZ settings to be active, both the camera and the PTZ settings must be enabled.
- Step 4** Configure pan and tilt settings by using the Pan and Tilt controls in the crosshair box and the vertical scale zoom controls to the right of the crosshairs.

To zoom in, move the cursor up on the vertical scale. To zoom out, move down.

Availability of the following PTZ settings depends upon the camera model:

- **Focus**—Toggle between a close-up view and distant view, or choose the Auto adjustment option, as determined by the camera capabilities.
- **Iris**—Toggle between the light and dark iris, or choose the Auto adjustment option.
- **Night**—Toggle between On (night) and Off (day), or choose the Auto focus option, as determined by the camera capabilities.
- **Backlight**—Turn backlighting on or off, as determined by the camera capabilities.
- **Digital Zoom**—Enable or disable digital zoom, as determined by the camera capabilities.
- **White Balance**—Activates an automatic mechanism to adjust for indoor and outdoor environments.
- **Admin**—Click the **INIT** button to send an initialization command to VSMS or click **Reset** to return the PTZ view to the default configuration. Depending upon the camera model, the INIT command can set the camera point to a default position or restart the PTZ driver.
- **OSP**—On-screen Programming (OSP) uses built-in camera menus overlaid on the video to configure settings for the camera. This setting is for use with analog cameras. These controls are visible only if the camera driver indicates that the camera may support OSP. For example, the Pelco D driver currently enables this option, but a specific Pelco camera model may not. Click **OSP** to

enter OSP mode and display the controls in the preview window. Use the **Up** and **Down** buttons, up and down cross-hair virtual joystick controls, or up and down functions on an attached USB joystick (easiest) to navigate the on-screen menu in the video, and use **Select** and **Cancel** to enter or exit the current menu.




---

**Note** OSP is available only in the Administrator pages. In the Operator page, you can access different patterns that the camera supports, but cannot access OSP options.

---

- Patterns (cameras that support the Pelco D protocol)—A pattern is a range of motion over a field of view that you can save as a recorded pattern on the camera, if the camera supports this capability (for example, Pelco Spectra IV cameras support patterns). In VSOM, you can record a pattern by moving the joystick over a field of view and performing PTZ actions while recording. You can then save the resulting pattern. You may be able to save up to eight patterns, depending on the camera model. After a pattern is saved, you can associate the patterns to schedules.

To add or edit a PTZ pattern:

- Choose a PTZ pattern from the drop-down menu (up to eight patterns may be available).
- Click **Record** to record the pattern and **Stop** to stop the recording.

The pattern is saved on the camera and played back when you click **Go**.




---

**Note** Pattern recording is available only on the Administrator pages. Operators can play back but not record patterns. Some cameras may not support this feature. See your camera documentation for information regarding the pattern feature.

---

**Step 5** Choose the following PTZ settings for the mouse and joystick:

- Pan (x)—Choose a relative speed for moving across the image in response to mouse or joystick input (range 0 to 100, 100 fastest).
- Tilt (y)—Choose a relative speed for tilting the image in response to mouse or joystick input (range 0 to 100, 100 fastest).

- Zoom (z)—Choose a relative speed for zooming the image in response to mouse or joystick input (range 0 to 100, 100 fastest).

**Step 6** Set the PTZ preset configuration:

- Use the PTZ crosshairs function or use the mouse to pan to the required view. When the position is attained, enter a description for the first preset label (for example, West Lobby, or East Staircase).
- Click the **Set Preset** button to save the parameters. Zoom levels are maintained for the created preset. Preset labels should indicate the camera view or location. Click **Test** to show and then reset a current preset view.

Repeat the actions that this step describes to set additional presets.

**Step 7** Click the **Schedules** tab and specify the following options to assign a PTZ preset according to a schedule.



---

**Note** Schedules are available only if they are preconfigured by using the Schedules settings and the camera is PTZ-ready. See the [“Managing Schedules”](#) section on page 6-21.

---

- Enable—Activate the specified schedule.
- Simple Schedule—Choose a predefined simple schedule from the drop-down list.
- Recurring Schedule—Choose a predefined recurring schedule from the drop-down list.
- Default State Preset—Choose the default preset to use when the video appears.
- Default State Pattern—Choose the default pattern to use if a schedule is not in effect. After the scheduled time, the pattern reverts to the default.
- Active State Preset—Choose the preset to use when the video is active.
- PTZ Priority—Determine the PTZ priority this camera has relative to other cameras with set PTZ priorities. This functionality is used for simultaneous attempts to control the same PTZ camera. The command with the highest PTZ priority prevails and the others are blocked.

**Step 8** To add preset schedules, click **Add Another Preset** and configure the settings described in [Step 7](#).

**Step 9** Click the **Rights** tab and verify the access designations.

For information about assigning rights, see the [“Adding a Role” section on page 7-12](#).

**Step 10** Click **Finished** to save the settings.

---

## Managing Monitors

Digital monitors are used as displays for predefined views. Views can be sent to a digital monitor either manually or automatically via Event Actions.

The Virtual Matrix client allows security managers and operators to select and control video displayed on digital monitors. When you install the Virtual Matrix client on a PC, you can define a single monitor or multiple monitors for the PC. For example, each operator might have a PC with a single Virtual Matrix client, while the manager has a PC with two Virtual Matrix clients, one for normal operations and one to display the video that results when an event is triggered.

For information on installing and configuring the Virtual Matrix client see *Cisco Video Surveillance Virtual Matrix Client Configuration Guide*.

## Adding a New Monitor

Use the Monitor panel to configure the screens that display camera feeds and archives.

### Before You Begin

- Add a VSVM to your VSM deployment. See the [“Adding a New Server” section on page 3-8](#).
- If your installation has multiple monitors, determine a naming and numbering convention. See the [“Organizing Information in VSM” section on page 1-8](#).
- Determine the layout to use for each monitor.

To add a monitor, follow these steps:

### Procedure

---

- Step 1** In the Administrator pages, click **Monitors**.
- Step 2** Click **Add a New Monitor**.
- If there are no VSMS hosts defined, an error message appears, indicating that you must first define a server. Follow the instructions in the [“Adding a New Server” section on page 3-8](#) and then return to the Monitors page.
- Step 3** In the Monitor Number field, enter an optional number to identify this monitor.
- Step 4** In the Monitor Name field, enter a descriptive name for the monitor that is consistent with your naming conventions (up to 30 characters, including spaces).
- Step 5** (Optional) In the Description field, enter applicable information about the monitor, such as location or type (up to 1,024 characters, including spaces).
- Step 6** Choose a server name from the **Virtual Matrix** drop down list.
- The servers are configured on the Servers panel, as described in the [“Managing Servers” section on page 3-7](#).
- Step 7** In the Seed View area, choose the predefined view to be displayed on the monitor.
- For information about configuring views, see the [“Managing Predefined Views” section on page 5-36](#).
- Step 8** Click the **Rights** tab and verify the access designations. See the [“Adding a Role” section on page 7-12](#).
- Step 9** Click **Submit**.
- 

## Editing or Deleting a Monitor

You can edit or delete monitor settings on the Monitors panel.

To edit settings, click the **Edit** icon  in the Actions column and then make changes on any of the tabs. See the “[Adding a New Monitor](#)” section on page 3-46 for information on the available settings.

To delete a monitor from the VSOM database, click the **Delete** icon  for the monitor. Check the check box if you want to keep the monitor setup information on the server, and then click **Yes**.

## Displaying Monitor Information

Click an underlined monitor name link on the Monitors panel to display detailed information about the monitor, as described in [Table 3-13](#).

**Table 3-13**      *Monitor Information*

Item	Description
Monitor Information	<p>Displays the following information;</p> <ul style="list-style-type: none"> <li>• Monitor Number—Optional number that identifies this monitor within a group of monitors.</li> <li>• Monitor Name—Assigned monitor name.</li> <li>• VSVM Client Viewer Name—Assigned name for an associated Virtual Matrix client.</li> <li>• Virtual Matrix Server—VSVM that controls this monitor. Click the link to open the server information panel for the monitor. See the “<a href="#">Displaying Server Information</a>” section on page 3-13.</li> </ul>

**Table 3-13** *Monitor Information (continued)*

Item	Description
Current View	Displays the following information: <ul style="list-style-type: none"> <li>• Dwell time—Amount of time in seconds between switching rotating camera feeds, or Do Not Tour if the view does not rotate between camera feeds. A rotating view is one in which camera feeds are displayed on a rotating basis in one or more video panes.</li> <li>• Layout—Operator page layout used for the monitor</li> <li>• Fixed Windows—Number of fixed windows in the Operator page layout</li> <li>• Rotating Source List—List of camera feeds that are displayed on a rotating basis. Camera rotation refers to the process of changing the camera feeds that are displayed by cycling through the list of camera feeds.</li> </ul>
<b>Rights tab</b>	
Rights	Access rights for the device: <ul style="list-style-type: none"> <li>• Name—Role name with a link that opens the Roles panel for the specified role.</li> <li>• Rights—Indication of the rights that are assigned to the role.</li> </ul>

