Feature Setup

The Feature Setup windows let you configure a variety of IP camera features and functions. The following sections describe the Feature Setup windows in detail:

Streaming Window

The Streaming window provides options for configuring video streams from the IP camera. You can configure settings for the primary and an optional secondary video stream.

Configuring a secondary stream is useful for providing a video stream that is at a lower resolution than the primary stream to third-party devices or software.

The primary stream supports H.264 for video. The secondary stream supports MJPEG for video.

When configuring video streams, be aware of the following guidelines:

- The resolution of the primary stream must be higher than the resolution of the secondary stream.
- You cannot configure a maximum frame rate of 30 for the primary stream if the secondary stream is enabled.
- Multiple secondary frame rates are supported. Table 4-1 shows the frame rate combinations of primary and secondary streams with a 16:9 aspect ratio, and Table 4-2 shows the frame rate combinations of primary and secondary streams with a 4:3 aspect ratio. If a secondary frame rate that is not shown in this table is selected in Cisco Video Surveillance Manager, the IP camera uses the closest available frame rate.

Note If you configure the camera for 768 x 432, 704 x 400, and 352 x 208 resolutions and then downgrade the firmware, the camera might reboot. Before downgrading, change the resolution back to an older resolution.

Table 4-1 Cisco Video Surveillance 3000 Series IP Camera Video Stream Support for 16:9 Aspect Ratio

Primary (H264)	FPS	Bit Rate	Secondary (H264 or MJPEG)	FPS	Bit Rate
1280 x 800	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M, 6M, 8M, 10M	–	–	–
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M, 6M	–	–	–
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	1024 x 576	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M
			960 x 544	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M
			768 x 432	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			704 x 400	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			640 x 368	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			352 x 208	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			320 x 192	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K

Table 4-1 Cisco Video Surveillance 3000 Series IP Camera Video Stream Support for 16:9 Aspect Ratio (continued)

Primary (H264)	FPS	Bit Rate	Secondary (H264 or MJPEG)	FPS	Bit Rate
1280 x 720	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M, 6M, 8M, 10M			
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M, 6M			
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	1024 x 576	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M
			960 x 544	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M
			768 x 432	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			704 x 400	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			640 x 368	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			352 x 208	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			320 x 192	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K

Table 4-1 Cisco Video Surveillance 3000 Series IP Camera Video Stream Support for 16:9 Aspect Ratio (continued)

Primary (H264)	FPS	Bit Rate	Secondary (H264 or MJPEG)	FPS	Bit Rate
1024 x 576	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M, 6M	1024 x 576	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M	960 x 544	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M
			768 x 432	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			704 x 400	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			640 x 368	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			352 x 208	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			320 x 192	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
960 x 544	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M, 6M	960 x 544	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M

Table 4-1 Cisco Video Surveillance 3000 Series IP Camera Video Stream Support for 16:9 Aspect Ratio (continued)

Primary (H264)	FPS	Bit Rate	Secondary (H264 or MJPEG)	FPS	Bit Rate
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M	768 x 432	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			704 x 400	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			640 x 368	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			352 x 208	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			320 x 192	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
768 x 432	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	768 x 432	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M	704 x 400	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			640 x 368	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			352 x 208	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K

Table 4-1 Cisco Video Surveillance 3000 Series IP Camera Video Stream Support for 16:9 Aspect Ratio (continued)

Primary (H264)	FPS	Bit Rate	Secondary (H264 or MJPEG)	FPS	Bit Rate
			320 x 192	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
704 x 400	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	704 x 400	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M	640 x 368	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			352 x 208	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			320 x 192	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
640 x 368	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	640 x 368	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	352 x 208	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			320 x 192	10, 15	64K, 128K, 256K, 384K, 768K

Table 4-1 Cisco Video Surveillance 3000 Series IP Camera Video Stream Support for 16:9 Aspect Ratio (continued)

Primary (H264)	FPS	Bit Rate	Secondary (H264 or MJPEG)	FPS	Bit Rate
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
352 x 208	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M	352 x 208	10, 15	64K, 128K, 256K, 384K, 768K
	10, 15	64K, 128K, 256K, 384K, 768K		1, 3, 5, 6, 8	64K, 128K, 256K, 384K
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K	320 x 192	10, 15	64K, 128K, 256K, 384K, 768K
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K
			192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
320 x 192	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M	320 x 192	10, 15	64K, 128K, 256K, 384K, 768K
	10, 15	64K, 128K, 256K, 384K, 768K		1, 3, 5, 6, 8	64K, 128K, 256K, 384K
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K	192 x 112	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
			160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
192 x 112	20, 25, 30	64K, 128K, 256K, 384K	192 x 112	10, 15	64K, 128K, 256K
	10, 15	64K, 128K, 256K		1, 3, 5, 6, 8	64K, 128K
	1, 3, 5, 6, 8	64K, 128K	160 x 96	10, 15	64K, 128K, 256K
				1, 3, 5, 6, 8	64K, 128K
160 x 96	20, 25, 30	64K, 128K, 256K, 384K	160 x 96	10, 15	64K, 128K, 256K
	10, 15	64K, 128K, 256K		1, 3, 5, 6, 8	64K, 128K
	1, 3, 5, 6, 8	64K, 128K			

Table 4-2 Cisco Video Surveillance 3000 Series IP Camera Video Stream Support for 4:3 Aspect Ratios

Primary (H264)	FPS	Bit Rate	Secondary (H264 or MJPEG)	FPS	Bit Rate
720 x 576	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	720 x 576	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M	704 x 576	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			352 x 288	10, 15	64K, 128K, 256K, 384K, 768K, 1M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K
704 x 576	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	704 x 576	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M	352 x 288	10, 15	64K, 128K, 256K, 384K, 768K, 1M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K
720 x 480	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	720 x 480	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M	704 x 480	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
			352 x 240	10, 15	64K, 128K, 256K, 384K, 768K, 1M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K
704 x 480	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M, 4M	704 x 480	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M, 2M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K, 1M	352 x 240	10, 15	64K, 128K, 256K, 384K, 768K, 1M
				1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K

Table 4-2 Cisco Video Surveillance 3000 Series IP Camera Video Stream Support for 4:3 Aspect Ratios

Primary (H264)	FPS	Bit Rate	Secondary (H264 or MJPEG)	FPS	Bit Rate
352 x 240	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M	352 x 240	10, 15	64K, 128K, 256K, 384K, 768K, 1M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K			
352 x 288	20, 25, 30	64K, 128K, 256K, 384K, 768K, 1M, 2M	352 x 288	10, 15	64K, 128K, 256K, 384K, 768K, 1M
	10, 15	64K, 128K, 256K, 384K, 768K, 1M		1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K
	1, 3, 5, 6, 8	64K, 128K, 256K, 384K, 768K			

To display the Streaming window, perform the following steps:

Procedure

Step 1 From the IP camera user interface, click the **Setup** link.

Step 2 Click **Feature Setup** to expand the menu.

Step 3 From the Feature Setup menu, click **Streaming**.

The Streaming window appears. If you change any options in this window, you must click the **Save** button to save the changes. If you do not click this button, changes are not retained when you exit the window. The **Save** button appears at the bottom of the window. You might need to scroll down to it.

Table 4-3 describes the options in the Streaming window.

Table 4-3 Streaming Window Options

Option	Description
Current Stream Area	
Stream	Choose the video stream (Stream 1 or Stream 2) to which the configuration settings in the Streaming window apply. Stream 1 is the primary stream, and Stream 2 is the secondary stream.
Enable Stream	Check this check box to cause the IP camera to send video data on the selected stream.
Streaming Area **Note** Each video stream uses its own set of streaming options. The settings shown in the **Streaming Area** apply to the currently selected stream only.	
RTSP Port	Transmission Control Protocol (TCP) port on which the IP camera receives Real-Time Streaming Protocol (RTSP) commands. You must configure this port if you want to allow third-party devices or software to access video streams from the IP camera. RTSP is a standard for connecting a client to control streaming data over the web. Valid values are 554 and 1024 through 65535. The default port is 554.
Video Source Port	Universal Datagram Protocol (UDP) port on which the IP camera transmits Video Real-Time Transport Protocol (RTP) data. Valid values are even numbers 1024 through 65534. The default port is 1024.
Audio Source Port	UDP port on which the IP camera transmits audio RTP data Valid values even numbers 1024 through 65534. The default value is 1026.
Max RTP Packet Size	Maximum number of bytes per data packets that are sent in each RTP request. Configure a lower number if you are streaming video to a cell phone that requires smaller data packets. Valid values are 400 through 1400. The default value is 1400.

Table 4-3 Streaming Window Options (continued)

Option	Description
Enable Multicast	Check this check box to send video data as a multicast stream. When multicast is enabled, the IP camera sends video to the multicast addresses that you designate. Multicast enables several devices to receive the video signal from the IP camera simultaneously.
Multicast Address	Enter the multicast IP address on which the IP camera sends a multicast video stream.
Multicast Video Port	Enter the port on which the IP camera sends a multicast video stream. Valid values are even numbers 1024 through 65532.
Multicast Audio Port	Enter the port on which the IP camera sends a multicast audio stream. Valid values are even numbers 1024 through 65532.
Time to Live	Enter the number of hops, which specifies the number of network devices that an video stream can pass before arriving at its destination or being dropped. Valid values are 1 through 255.
Video Area	
Note Each video stream uses its own set of video options. The settings shown in the **Video Area** apply to the currently selected stream only.	
Video Standard	Choose the system for video transmission: NTSC or PAL. The setting that you make affects each channel that is enabled.
Video Codec	*Display only*: Shows the codec for video transmission: H.264 for the primary stream and MJPEG for the secondary stream.
Video Resolution	Choose the resolution for video transmission. The resolutions in this drop-down list depend on the video standard that you selected. You can also change the resolution for video transmission by using the Video Resolution drop-down list in the Camera Video & Control window, as described in Table 3-1.
Maximum Frame Rate	Choose the maximum frame rate of the video stream.
Video Quality	Choose an option for the video quality of the video stream from the IP camera: • **Constant Bit Rate**—Available for the primary stream only. Specifies that the video stream is output at or close to the constant bit rate that you choose. The default value is 4 Mbps. A higher bit rate provides better video quality but consumes more bandwidth. • **Fixed Quality**—Specifies that video is output at a fixed quality, which ranges from Very High to Low. The bit rate may vary to maintain this quality. The default fixed quality is Normal. A higher fixed quality provides better video quality but consumes more bandwidth. You can use these options to help manage bandwidth use in your network. For example, if the IP camera is focused on an area with little movement, such as an emergency exit, you can configure it with a low fixed quality.

Table 4-3 Streaming Window Options (continued)

Option	Description
Analog Video Area	
Note This option applies to the primary stream only.	
Enable Analog Video Port	Check this check box if you if you want the IP camera to enable analog video for installation purposes. To enable analog video, the following settings are required: • The primary video stream frame rate must be set to 15 fps or lower. • The secondary video stream must be disabled.
Audio Area	
Enable Audio	Check this check box if you want to enable audio.
Audio Codec	Choose the audio codec to use for encoding audio: • **G.711 A-Law**—Encodes 14-bit signed linear PCM samples to logarithmic 8-bit samples. • **G.711 u-Law**—Encodes 13-bit signed linear PCM samples to logarithmic 8-bit samples. **Note** The G.711 A-law algorithm provides more quantization levels at lower signal levels whereas the G.711 μ-law algorithm tends to give more resolution to higher range signals.
Audio Sampling Rate	Choose the sampling rate of the audio stream.
Audio Resolution	Choose the resolution for audio transmission. The resolutions in this drop-down list depend on the audio codec that you selected.

Camera Window

The Camera window provides options for making certain video adjustments, exposure control, and configuring the operation of the IP camera day and night filters.

The IP camera day and night filters allow the IP camera to optimize its video image for various lighting conditions. When the IP camera uses its day filter, it is operating in *day mode*. In this mode, the camera displays video images in color. When the IP camera uses its night filter, it is in *night mode*. In this mode, the camera displays video images in black and white.

To display the Camera window, perform the following steps:

Procedure

Step 1 From the IP camera user interface, click the **Setup** link.

Step 2 Click **Feature Setup** to expand the menu.

Step 3 From the Feature Setup menu, click **Camera**.

The Camera window appears. If you change any options in this window, you must click the **Save** button to save the changes. If you do not click this button, changes are not retained when you exit the window. The **Save** button appears at the bottom of the window. You might need to scroll down to it.

Table 4-4 describes the options in the Camera window.

Table 4-4 Camera Window Options

Option	Description
Microphone	
Microphone Type	The Cisco IP camera supports only an external microphone. Audio is captured by an optional external microphone, available from third-parties.
Day Night Filter Area	
Switch Mode	Choose the day/night mode for the IP camera: • **Day**—IP camera always remains in day mode. • **Night**—IP camera always remains in night mode. • **Auto**—IP camera automatically switches between day and night mode based on the lighting condition threshold that you specify. • **Night External**—IP camera switches to night mode based on external Input port. It switches to day mode when the external Input port is not in the triggered status. Check the external Input port of "Alarm I/O Ports." Output port is optional and can be used to trigger devices connected externally. • **Night Schedule**—IP camera switches to and from Night mode based on the Start and End times. Start Time - Enter the time, in 24 hour format, when camera enters Night mode. End Time - Enter the time, in 24 hour format, when camera exists Night mode. **Note** If you configure a Night Schedule, make sure that the time on the IP camera is set correctly.
Day to Night Threshold	The Day to Night Threshold option is available only when the Switch Mode is set to Auto. Choose a value that specifies the relative light threshold at which the IP camera switches from day to night mode. A lower value designates that the IP camera switches from day to night mode in brighter conditions. A higher value designated that the IP camera switches modes in darker conditions. The default value is 10.
Night to Day Threshold	The Night to Day Threshold option is available only when the Switch Mode is set to Auto. Choose a value that specifies the relative light threshold at which the IP camera switches from night to day mode. A lower value designates that the IP camera switches from night to day mode in darker conditions. A higher value designated that the IP camera switches modes in lighter conditions. The default value is 15.
Input	The Input option is available only when the Switch Mode is set to Night External. Choose the Input port that is connected an external device that is to trigger the switch to night mode.

Table 4-4 Camera Window Options (continued)

Option	Description
Output	The Output option is available only when the Switch Mode is set to Night External. Choose the Output port that is connected to an external device that is to be triggered.
Start Time	The Start Time option is available only when the Switch Mode is set to Night Schedule. Enter the time, in 24 hour format, when the camera enables its night filter.
End Time	The Start Time option is available only when the Switch Mode is set to Night Schedule. Enter the time, in 24 hour format, when the camera disables its night filter.

Video Overlay Window

The Video Overlay window provides options for configuring overlay information that appears on the video image in the Camera Video & Control window.

To display the Video Overlay window, perform the following steps:

Procedure

Step 1 From the IP camera user interface, click the **Setup** link.

Step 2 Click **Feature Setup** to expand the menu.

Step 3 From the Feature Setup menu, click **Video Overlay**.

The Video Overlay window appears. If you change any options in this window, you must click the **Save** button to save the changes. If you do not click this button, changes are not retained when you exit the window. The **Save** button appears at the bottom of the window. You might need to scroll down to it.

Table 4-5 describes the options in the Video Overlay window.

Table 4-5 Video Overlay Window Options

Option	Description
Text Overlay Area	
Enable Date/Time Display	Check this check box to display the time from the internal clock of the IP camera as an overlay on the video image from the IP camera.
Date/Time alignment in Overlay	Choose whether the Date/Time is to be aligned to the **Left**, **Center**, or **Right**
Enable Text Display	Check this check box to display the text that you enter in the Display Text field as an overlay on the video image from the IP camera. This option can be useful for identifying this IP camera in an installation with several IP cameras.
Text Alignment in Overlay	Choose whether the text overlay is to be aligned to the **Left**, **Center**, or **Right**.

Table 4-5 Video Overlay Window Options (continued)

Option	Description
Text Format	Specifies the text format to use for the text overlay. Currently, English (ASCII) is the only available text format.
Display Text	If you check the Enable Text Display check box, the text that you enter in this field appears as an overlay on the video image from the IP camera. The text can contain up to 26 characters, which can include letters, numbers, spaces, and these characters: ! $ % ( ) + , - . / : = @ ^ _ ` { } ~
Overlay Placement	Choose whether the text overlay is to appear at the **Top of Image** or **Bottom of Image**.

IO Ports Window

The IO Ports window lets you configure various options for the two input and two output ports on the IP camera. A state change of an input ports triggers a camera to take configured actions. Output ports send signals that can control external devices, such as alarms or door switches.

The IP camera can trigger an action only when the input that is received on an input port comes from a contact that is in a normally closed condition. The camera triggers the action when the contact changes to an open condition.

To display the IO Ports window, perform the following steps:

Procedure

Step 1 From the IP camera user interface, click the **Setup** link.

Step 2 Click **Feature Setup** to expand the menu.

Step 3 From the Feature Setup menu, click **IO Ports**.

The IO Ports window appears. If you change any options in this window, you must click the **Save** button to save the changes. If you do not click this button, changes are not retained when you exit the window. The **Save** button appears at the bottom of the window. You might need to scroll down to it.

Table 4-6 describes the options in the IO Ports window.

Table 4-6 IO Ports Window Options

Option	Description
Input Ports Area	
Port #	*Display only.* Indicates input port 1.
Current State	*Display only.* Indicates the current state (high or low) of the corresponding port.

Table 4-6 IO Ports Window Options (continued)

Option	Description
Event Trigger	Choose the state (Rising or Falling) that triggers designated camera actions. When an input port changes to the configured state, the camera determines that an event has occurred and takes the actions that you have configured.
Output Ports	
Port #	*Display only.* Indicates output port 1 and output port 2.
Current State	*Display only.* Indicates the current state (high or low) of the corresponding port.
Default State	Choose the state (low or high) to which the corresponding port is set when the IP camera powers on or resets. The port changes to this state when you click **Save**. The default setting is High.
Event Action	*Display only.* Indicates the current state (high or low) to which the output port changes when an event occurs.
Automatic Reset	Check this check box if you want the corresponding output port to go back to its default state after an event occurs.
Duration	If you checked the Automatic Reset check box, enter the amount of time, in milliseconds, that elapses before the port goes back to its default state after an event changes it from the default state.

Event Notification Window

The Event Notification window provides options for how the IP camera handles events. An event is any of the following:

- A change of state from low to high or from high to low on an input port of the IP camera. For related information about input ports, see the "IO Ports Window" section on page 4-15.
- Motion that the IP camera detects. For related information about motion detection, see the "Motion detection controls" rows in Table 3-1.
- Loss of video signal.

When an event occurs, it triggers the IP camera to take certain configured actions:

- HTTP notification—IP camera sends notification to a remote system via HTTP. This information includes the following:
  - Device ID—ID of the IP camera.
  - Device name—Name of the IP camera.
  - IP address—IP address of the IP camera.
  - MAC address—MAC address of the IP camera.
  - Channel ID—Channel identification number (1 for primary stream or 2 for secondary stream).
  - Channel name—Name that is configured for the channel.
  - Date and time—Date and time that the event occurred.

  - Active post Count—Sequence number of the notification for this event.
  - Event type—Type of event.
  - Event state—Indicates whether the event is active or inactive at the time that the event was detected for this notification.
  - Event description—Description of the event.
  - Input port ID—If the event was triggered by an input port state change, port ID of the port.
  - Region index—If the event was triggered by motion detection, identification number of the region in which the IP camera detected motion.
  - Sensitivity level—If the event was triggered by motion detection, sensitivity that is configured for the region in which motion was detected.
  - Detection threshold—If the event was triggered by motion detection, threshold that is configured for the region in which motion was detected.
- Output port state change—Changes the state of an IP camera output port from low to high or from high to low.
- Syslog server message—Sends a notification message to the designated Syslog server.

The Event Notification window also allows you to designate schedules. If an event takes place within a designated schedule, the IP camera takes the actions that you configure.

Procedure

Step 1 From the IP camera user interface, click the **Setup** link.

Step 2 Click **Feature Setup** to expand the menu.

Step 3 From the Feature Setup menu, click **Event**.

The Event Notification window appears. If you change any options in this window, you must click the **Save** button to save the changes. If you do not click this button, changes are not retained when you exit the window. The **Save** button appears at the bottom of the window. You may need to scroll down to it.

Table 4-7 describes the options in the Event Notification window.

Table 4-7 Event Notification Window Options

Option	Description
Event Triggering Area	
Triggered by	Check the desired check boxes to designate the events that trigger actions: **Input 1**—Event is triggered when input port 1 on the IP camera changes state from high to low. **Motion Detection**—Event is triggered when the camera detects motion, if motion detection is configured as described the "Motion detection controls" rows in Table 3-1. **Video Loss**—Event is triggered if the IP camera loses input to its codec sensor module.

Table 4-7 Event Notification Window Options (continued)

Option	Description
Actions	Check the desired check boxes to designate that actions that the IP camera takes when the corresponding trigger occurs. • **Email**—Sends information about the event in an e-mail message to the designated recipient. You design the recipient and configure other e-mail options in other fields in this window. • **Output 1**—Changes the state of the output 1 port on the IP camera as defined in the Port window. • **Syslog**—Sends information about the event to a designated Syslog server. **Note** **HTTP**—Sends information about the event as an HTTP stream to a remote system.
Interval	Choose the time interval (in minutes) from the drop-down list to wait after an event occurs before detecting the next event.
Event Scheduling Area	
Scheduling Grid	Designate the times at which an event causes the IP camera to take the designed actions. If an event occurs during a time that is not designated, the IP camera does not take any action. Each cell in this grid represents one hour on the corresponding day, starting at 12:00 a.m. (0:00). To designate times, click the desired cells. Selected cells appear shaded. To select all times, click the **Set All** button. To deselect all times, click the **Clear All** button. To change the scheduling settings to the last saved configuration, click **Undo**.
Set All button	Selects all cells in the scheduling grid.
Clear All button	Deselects all cells in the scheduling grid.
Undo All button	Deselects cells in the scheduling grid that you selected since last saving Event Notification window settings.
HTTP Notification Area	
High Availability	Check this check box if you want to send HTTP messages to a secondary HTTP server in the event that the primary HTTP server is unreachable.
Primary HTTP Server	Identify the primary server to which HTTP messages are sent by choosing **IP Address** or **Hostname** from the drop-down list and entering the IP address or host name in the corresponding field.
URL Base	Enter a string to be used as the prefix in the HTTP URL. The HTTP URL is sent in this format: http://<*IP address*>/<*URL Base*>?<*system-provided-name-value-pairs*> where *IP address* is the IP address of the destination server, *URL Base* is the string that you enter, and *system-provided-name-value-pairs* is information about the event.

Table 4-7 Event Notification Window Options (continued)

Option	Description
Port Number	Enter the port number that receives messages on the primary server to which HTTP messages are sent.
User Name	If authentication is required on the primary server to which HTTP messages are sent, enter the user name.
Password	If authentication is required on the primary server to which HTTP messages are sent, enter the password.
HTTP Authentication	If authentication is required on the primary server to which HTTP messages are sent, choose the authentication method from the drop-down list.
Secondary HTTP Server	If the High Availability check box is checked, you can identify an optional secondary server to which HTTP messages are sent by choosing **IP Address** or **Hostname** from the drop-down list and entering the IP address or host name in the corresponding field.
URL Base	Enter a string to be used as the prefix in the HTTP URL for the secondary server. The HTTP URL is sent in this format: http://<*IP address*>/<*URL Base*>?<*system-provided-name-value-pairs*> where *IP address* is the IP address of the destination server, *URL Base* is the string that you enter, and *system-provided-name-value-pairs* is information about the event.
Port Number	Enter the port number that receives messages on the secondary server to which HTTP messages are sent.
User Name	If authentication is required on the secondary server to which HTTP messages are sent, enter the user name.
Password	If authentication is required on the secondary server to which HTTP messages are sent, enter the password.
HTTP Authentication	If authentication is required on the secondary server to which HTTP messages are sent, choose the authentication method from the drop-down list.
Email Notification Area	
Primary SMTP Server	Identify the primary SMTP server that is used for sending e-mail by choosing **IP Address** or **Hostname** from the drop-down list and entering the IP address or host name in the corresponding field.
Primary SMTP Port	Enter the port number for the primary SMTP server. The default SMTP port number is 25.
POP Server	Identify the primary POP server that is used for sending e-mail by choosing **IP Address** or **Hostname** from the drop-down list and entering the IP address or host name in the corresponding field. This field is dimmed if you do not choose **Requires POP Before SMTP** in the Authentication field that follows.
Authentication	If the primary SMTP server requires authentication to send e-mail, choose the appropriate authentication type from the drop-down list. The authentication type typically is the same as that for the POP3 server that you use to receive e-mail.

Table 4-7 Event Notification Window Options (continued)

Option	Description
Account Name	If the primary SMTP server requires authentication, enter the account name for the server.
Password	If the primary SMTP server requires authentication, enter the account password for the server.
Secondary SMTP Server	Identify an optional secondary SMTP server that is used for sending e-mail by choosing **IP Address** or **Hostname** from the drop-down list and entering the IP address or host name in the corresponding field.
Secondary SMTP Port	Enter the port number for the secondary SMTP server. The default SMTP port number is 25.
POP Server	Identify an optional secondary POP server that is used for sending e-mail by choosing **IP Address** or **Hostname** from the drop-down list and entering the IP address or host name in the corresponding field. This field is dimmed if you do not choose **Requires POP Before SMTP** in the Authentication field that follows.
Authentication	If the secondary SMTP server requires authentication to send e-mail, choose the appropriate authentication type from the drop-down list. The authentication type typically is the same as that for the POP3 server that you use to receive e-mail.
Account Name	If the secondary SMTP server requires authentication, enter the account name for the server.
Password	If the secondary SMTP server requires authentication, enter the account password for the server.
Send To	Enter an e-mail address to which an e-mail message is sent when an event occurs.
Show From Address As	Enter the e-mail address to be shown in the From field for the e-mail message that is sent when an event occurs.
Subject	Enter the text to be shown in the Subject field for the e-mail messages that the IP camera sends when events occur. The subject can contain up to 118 characters, including spaces.
Attach Video Streaming URL Address	Check this check box to include in the e-mail message body the URL from which the recipient can access the live video stream from the camera on which the event was detected.
Attach Snapshot	Check this check box to include with the e-mail message a still picture from the beginning of the event. This snapshot is stored on the IP camera until the message is sent. This functionality is available only when the secondary video stream is enabled.