



# CHAPTER 6

## Local Storage

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The Local Storage window allows you to enable storing video on a local storage device in case of a network loss. You can download these video recordings from the Local Storage window.

When you use local storage, be aware of the following:

- You can configure the IP camera to save all recordings (*continuous recording mode*) to the SD or MicroSD card, or to save only recording that are made when the IP camera loses network connectivity (*network loss mode*).
- The IP camera supports an SD or MicroSD card with a maximum storage capacity of 64 GB. For efficiency and performance of the local storage feature, Cisco recommends that you use an SD or MicroSD card with a storage capacity of 32 GB or 64 GB. Do not use an SD or MicroSD card with a storage capacity of less than 8 GB.
- 1 GB of the storage capacity on an SD or MicroSD card is reserved for system use and is not available to store recordings.
- When you put an SD or MicroSD card in the IP camera for the first time, the card is formatted automatically if the card does not have the ext2 file system and if the directory structure that is required for recording is not present on the card. A card with a storage capacity of 64 GB can take up to 30 minutes to format.
- If you move an SD or MicroSD card from one IP camera to another, the IP camera to which you moved the card does not format the card automatically. This feature allows you to manually recover any video that is stored on the card by downloading the video from the IP camera user interface. You must format the card before you enable recording for it in the new IP camera.
- If you are not using the IP camera with Cisco VSM, set the system time and time zone from the IP camera user interface before you enable recording to an SD or MicroSD card. If you are using the IP camera with Cisco VSM, enable recording through the Cisco VSM user interface, which synchronizes the camera time with the NTP server. Changing the system time after recording starts can cause issues.
- The continuous recording feature enables VSM to “auto-merge” video archive that has gaps due to network or other issues (assuming that camera was not affected), using camera storage as a temporary archiving medium. It also enables archiving only video that is close to generated events. Either the primary stream or secondary stream can be recorded in this mode.
- Grooming starts when continuous recording is enabled and operates as follows:
  1. Groom files that are marked as deleted.
  2. Groom the oldest files on the local SD or MicroSD card when available space on the card is less than 1 GB.

- An IP camera has limited bandwidth for simultaneous reading from and writing to an SD or MicroSD card, which can affect the amount of data that you can copy from the card when recording to the card is enabled. For optimum performance of the IP camera, set the maximum bit rate for the recorded stream to 6 Mbps or lower. At higher bit rates, video may not be copied from the card before the video is groomed.
- Recording MJPEG streams to an SD or MicroSD card is not recommended because the relatively high bit rate of these streams can affect system performance. If you do record MJPEG streams, Cisco recommends that you stop recording before you use the IP camera user interface to copy MJPEG recordings from the card.
- The system allows one active download of video from an SD card or MicroSD card at a time. If VSM is copying data from a card (due to a user or system initiated copy operation), you cannot initiate another download from the IP camera user interface until the VSM download completes. Similarly, if you are using the IP camera user interface to download video from an SD or MicroSD card, video cannot be downloaded from VSM until this download completes.

To display the Local Storage window, perform the following steps:

#### Procedure

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**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 **Local Storage**.

The Local Storage 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.

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[Table 6-1](#) describes the options in the Local Storage window.



#### Note

To use the features in the Recordings area, ActiveX must be installed on your client PC. If ActiveX is not installed, the Recordings area displays a message with this information. To install ActiveX, from the window IP camera web-based interface that instructs you to install the Cisco Camera UI Control, click **Install** in the yellow banner. If a Security Warning dialog box appears, click **Install**.

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#### Caution

To prevent corruption to data on an SD or MicroSD card or the inability of the IP camera to detect the card again, before removing an SD or MicroSD card from an IP camera, stop recording to the card and use the **Unmount** button (described in [Table 6-1](#)) to prepare the card for ejection. In addition, use care when inserting, removing, and handling the card to avoid damaging the card.

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**Table 6-1** Local Storage Window Options

Option	Description
<b>SD/MicroSD Information Area</b>	
Serial Number	<i>Display only.</i> Serial number of the SD or MicroSD card that is installed in the IP camera.

**Table 6-1 Local Storage Window Options (continued)**

<b>Option</b>	<b>Description</b>
Total Size	<i>Display only.</i> Total storage capacity in megabytes of the SD or MicroSD card.
Free Space	<i>Display only.</i> Free storage space in megabytes of the SD or MicroSD card.
Model	<i>Display only.</i> Model number of the SD or MicroSD card.
Manufacturer	<i>Display only.</i> Manufacturer of the SD or MicroSD card.
Mount/Unmount (toggle button)	Mount button—When you insert an SD or MicroSD card, the IP camera typically mounts it automatically. If you see a message that indicates that the card is not mounted, click this button to mount it.  Unmount button—Click on this button to prepare an SD or MicroSD card for ejection from the IP camera.
Format	Formats an SD or MicroSD card.  Use this button to format a card if you switch recording modes or switch the video stream configuration.
Quick Format	Click this button to permanently delete all data on an SD or MicroSD card. This function is useful when you switch between recording modes. (Recording mode options are Local Storage on Network Loss and Continuous.)
Details	Displays the percentage of total memory on an SD or MicroSD that is consumed by network loss recordings, continuous recordings, or event records.
<b>Settings Area</b>	
Enable recording to Local Storage on network loss	This option causes the IP camera to save video recordings to its local SD or MicroSD card if the IP camera loses network connectivity. When the network connectivity is restored, recording to the card stops.  This option and the <b>Enable continuous recording</b> option cannot be enabled at the same time.
Enable Encryption	Available only if <b>Enable recording to Local Storage on network loss</b> is enabled. Check to encrypt video that is recorded to the local SD or MicroSD card during a loss of network connectivity.
Encryption Method	When encryption is enabled, choose one of the following encryption methods: <ul style="list-style-type: none"> <li>• AES 256</li> <li>• AES 128</li> <li>• RC2 64</li> </ul>
Enable continuous recording	This option causes the IP camera to save all recordings to its local SD or MicroSD card.  This option and the <b>Enable recording to Local Storage on network loss</b> option cannot be enabled at the same time.

Table 6-1 Local Storage Window Options (continued)

Option	Description
Continuous recording stream	Choose which video stream is recorded with continuous recording is enabled. Options are: <ul style="list-style-type: none"> <li>Stream 1</li> <li>Stream 2</li> </ul>
Enable audio recording	When continuous recording is enabled, saves audio recordings to the camera local SD or MicroSD card. <b>Note</b> Audio-only recordings are not supported.
Save	Click this button to save changes that you make in the <b>Settings</b> area.
<b>Status Area</b>	
Video Recording	<i>Display only.</i> Displays whether video recording is on or off. On means that the Enable continuous recording check box is checked in the Local Storage > Settings window.
Audio Recording	<i>Display only.</i> Displays whether audio recording is on or off. On means that the Enable Audio check box is checked on the Streaming window, and that the Enable continuous recording and the Enable audio recording check boxes are checked in the Local Storage > Settings window.
<b>Storage Clean Up</b>	
Delete All Records For	To delete recordings from the camera SD or MicroSD card, click one of the following radio buttons and then click <b>Delete</b> : <ul style="list-style-type: none"> <li><b>Network Loss</b>—Deletes all recordings that relate to network loss recording mode</li> <li><b>Continuous</b>—Deletes all recordings that relate to continuous recording mode</li> <li><b>Event History</b>—Deletes all video recordings that relate to event history</li> </ul>
<b>Recordings Area</b>	
File Decryption Password	Enter the key that is used to decrypt encrypted video recording files. This field is available only when the Enable recording to Local Storage on network loss mode check box is checked.

Table 6-1 Local Storage Window Options (continued)

Option	Description
Recordings list	<p>Displays a list of video recording on the local SD or MicroSD card and the following information and options for each recording:</p> <ul style="list-style-type: none"> <li>• Select check box. Check the check box next to a recording to select that recording for download or deletion.</li> <li>• Size—Size of the recording in MB.</li> <li>• Name—System-assigned name of the recording.</li> <li>• Start Time (UTC)—Start time of the recording in UTC format.</li> <li>• End Time (UTC)—End time of the recording in UTC format.</li> <li>• Download From (UTC)—To download a recording or part of a recording to your local drive or a network drive, enter the time in UTC format that the video that you want from the recording started.</li> <li>• Duration—To download a recording or part of a recording to your local drive or a network drive, enter the duration of the video that you want from the recording is in hh:mm:ss format. The recording begins from the time that you entered in the Download From field and lasts for the time that you enter in the Duration field.</li> <li>• Progress(%)—The percentage of a video file download operation that has completed.</li> <li>• Status—The status of a video file download or delete operation.</li> </ul>
Download	<p>To download a video recording to your local drive or a network drive, check the Select check box for the recording that you want, then click the <b>Download</b> button. Follow the on-screen prompts to save the recording.</p> <p>When you save a recording, the system creates a directory called <i>Recordings_TimeStamp</i> in the location that you choose and saves recordings in that directory. If the recording that you download contains more than 10 minutes of video, the system divides the recording into separate files that contains 10 minutes of video each.</p> <p><b>Note</b> If you are using Microsoft Internet Explorer on a system that is running Microsoft Windows 8 or 10 and the recording that you download does not display properly, make the Internet Explorer configuration updates as described in the “<a href="#">Browser Notes</a>” section on page 1-5.</p> <p>Network-loss recordings that are created on an IP camera that is running firmware 2.0.0 cannot be downloaded with the 1.4.1 SD utility.</p>
Delete	<p>To delete a video recording from the SD or MicroSD card in the IP camera, check the Select check box for the recording that you want, then click the <b>Delete</b> button.</p> <p>You can quickly select all video recordings in the list by right-clicking in the Recordings list and then choosing <b>Select All</b>.</p>

**Table 6-1** *Local Storage Window Options (continued)*

<b>Option</b>	<b>Description</b>
Refresh	To refresh the list of video recording so that the list shows the latest information about the recordings on the SD or MicroSD card in the IP camera, click the <b>Refresh</b> button.
Cancel	This button appears when a video recording is downloading. To cancel the download operation, click the <b>Cancel</b> button.