

Working with XDCAM Video in Vegas Pro 12.0

Vegas Pro 12.0 software provides all the tools you need to edit proxy and full-resolution HD and SD XDCAM MXF files natively, with no transcoding required. Vegas Pro supports all HD and SD XDCAM compression types, all frame rates, all aspect ratios, multichannel audio, and essence marks. All proxy and full-resolution XDCAM source file types can be mixed in a single timeline, edited, and transferred back to XDCAM.

The following sections provide workflows for efficient editing of video from an XDCAM EX camera or an XDCAM/XDCAM HD camera or deck.

XDCAM EX Workflow

The following section provides a workflow for efficient editing of video from an XDCAM EX camera.

XDCAM EX differs from XDCAM/XDCAM HD in several key areas.

- XDCAM EX cameras record to SxS flash memory rather than optical disc.
- XDCAM EX cameras record full-HD video to MPEG-2 (MP4) format.
- XDCAM EX video is not visible in the XDCAM Explorer window. Use the Device Explorer window to import clips from an XDCAM EX device.

For more information, see "[Using the Device Explorer](#)" on page 11.

- When editing XDCAM EX video, you'll edit full-resolution MP4 files unless you create proxy files. For more information, see "[Creating Proxy Files for High-Definition Editing](#)" on page 13.

1. Shoot your video with your XDCAM EX camera.
2. Transfer your clips from your camera to your computer.
 - a. Install the SxS device driver.
 - b. Connect your camera (or card reader) to your computer with a USB cable.
 - c. Your camera will prompt you to **Connect USB Now?** Choose **Execute**.
 - d. Use the Device Explorer window to import clips from your XDCAM EX device to the Project Media window.



Previous versions of Vegas Pro required you to convert XDCAM EX clips to MXF format before editing.

This conversion is no longer required, but the workflow is still supported. If you want to wrap your XDCAM EX clips in MXF format, please use XDCAM EX Clip Browsing Software.

3. Drag your imported clips from the Project Media window to the timeline to create events.
4. Edit your project as needed.

5. Render your project for your destination format. You can also render to XDCAM EX format by choosing **XDCAM EX (*.MP4)** in the Output Format box in the Render As dialog.



The following notes apply when rendering XDCAM EX format files:


- Only embedded XML metadata is included with rendered files. Embedded XML metadata supports markers and regions; title, author, and description summary information; recording date/time; and timecode in/out.
- When you intend to transfer files back to SxS media, select the **Write segmented files if output exceeds 4 GB** check box on the Video page of the Custom XDCAM EX Settings dialog (click the Custom button in the Render As dialog and then click the Video tab). When this check box is selected, large files will be segmented at 4 GB for compatibility with the SxS file format.
- XDCAM EX supports no-recompress rendering (smart rendering) across the following formats when the source and destination MPEG-2 video match in frame size, bit rate, profile, and level. Frames that have effects, compositing, or transitions applied will be rendered.
 - SP 18.3 Mbps CBR 1280x720p to/from XDCAM EX and HDV HD-1
 - SP 25 Mbps CBR 1440x1080i to/from XDCAM EX, XDCAM HD, and HDV HD-2
 - HQ 35 Mbps VBR 1440x1080 to/from XDCAM EX and XDCAM HD
 - HQ 35 Mbps VBR 1280x720p to/from XDCAM EX
 - HQ 35 Mbps VBR 1920x1080 to/from XDCAM EX

The **Enable no-recompress long-GOP rendering** check box on the General tab of the Preferences dialog must be selected to enable smart rendering.

XDCAM and XDCAM HD Workflow


You can use MXF files from an XDCAM camera or deck just like any other supported media type. The following sections provide workflows for efficient editing.




The XDCAM deck is not available for external monitor or print to tape while in XDCAM Media Drive mode. Click the **Safely Remove Hardware** icon  in the Windows system tray and choose your XDCAM device from the menu to disconnect the device. You can then switch to AV/C mode and reconnect to enable external monitor and print to tape functionality.

Setting up an XDCAM Device

Use the following procedure if you need to set up an XDCAM deck or camera for transferring clips, replacing proxy files with full-resolution clips, or exporting video to an XDCAM device.


1. Click the **Device** button in the Export Video to XDCAM Disc or Import XDCAM Disc dialog. The XDCAM Device Settings dialog is displayed.
 - To display the Export Video to XDCAM Disc dialog, click the **Export Video to Sony XDCAM Disc** button  in the XDCAM Explorer window.

- To display the Import XDCAM Disc dialog, click the **Import XDCAM Disc** button  in the XDCAM Explorer window.

2. Choose the XDCAM device where you want to import/export clips.

- Select the **XDCAM Media Drive** radio button if your XDCAM camera or deck is connected directly to your computer. In this mode, your camera or deck is accessible much like an external drive.

Click the **Browse** button and choose the drive letter of the camera or deck.


 Choose the drive letter of the camera or deck only; do not navigate into the folders on the disc.

- Select the **FTP (Ethernet)** radio button if your camera or deck is connected to your network.


Type the camera or deck's IP address in the **IP Address** box.

In the **Username** box, type **admin**.

In the **Password** box, type the device/model number of your camera or deck. For example, if you're exporting clips to a PDW-1500 deck, type **PDW-1500**.

 The XDCAM deck is not available for external monitor or print to tape while in XDCAM Media Drive mode. Using FTP transfers allows you to export to a remote device and use the device's XDCAM Media Drive connection in AV/C mode for external monitor previewing.


3. Click **OK**.

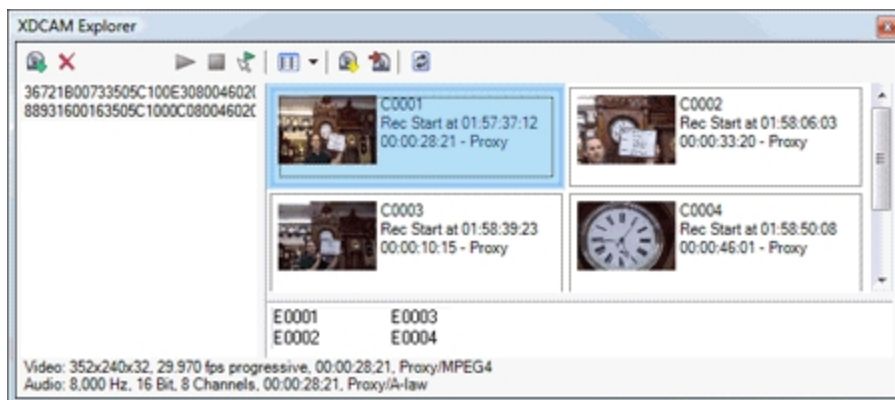
 For information about using your camera or deck, please refer to its documentation.







Using the XDCAM Explorer Window


From the **View** menu, choose **XDCAM Explorer** to toggle the display of the XDCAM Explorer window.




You can use this window to export, manage, and export XDCAM clips.

 XDCAM EX video is not visible in the XDCAM Explorer window. Use the **Device Explorer** window to import clips from an XDCAM EX device. For more information, see "[Using the Device Explorer](#)" on page 11.



Item	Description
Disc List	<p>Displays a list of all XDCAM discs from which you've imported clips. Select a disc name to display its clips in the right side of the window.</p> <p>The imported disc is not associated with the current project. Imported discs are available in the XDCAM Explorer window until you delete them from your computer.</p> <p>Right-click a disc and choose Rename from the shortcut menu to change a disc's name.</p> <p>For example, if you've written "Joe's Tire Spot" on your XDCAM disc, you can type that name so you don't have to try to identify the disc in the XDCAM Explorer window using its 32-digit identifier.</p>
Contents Pane	<p>Displays the clips from the selected disc.</p> <p>Full-resolution clips are labeled Full, and proxy files are labeled Proxy.</p> <p>If you've transferred proxy files only, you can right-click a proxy file and choose Import Full Resolution Files from the shortcut menu to transfer the full-resolution version of the proxy clip to your computer. Files are imported to the same folder where you transferred the proxy files.</p> <p>If you've transferred metadata only without transferring clips, no thumbnail is displayed. Right-click a metadata entry and choose Import Full Resolution Files or Import Proxy Files from the shortcut menu.</p> <p>If the disc contains edit lists that you created on your deck or camera, they are displayed at the bottom of the contents pane. Click the down arrow ▼ next to the Views button  and choose Edit Lists from the menu to show or hide edit lists.</p> <p>For more information, see "Importing XDCAM Discs" on page 6.</p>
 Import XDCAM Disc	Click to import clips from an XDCAM disc. You can choose to import proxy-resolution clips, full-resolution clips, or both.
 Delete Selected XDCAM Disc from Capture Folder	Select a disc in the left pane and click this button to delete the disc's clips from your computer.
 Play Clip	Click to play the selected clip.
 Stop	Click to stop playback.
 Auto Preview	Automatically preview media files when you click them in the Explorer window.



Item	Description
 Views	<p>Click the down arrow ▼ and choose a command from the menu to change the way clips are displayed in the XDCAM Explorer.</p> <ul style="list-style-type: none"> <li>■ All Essence Marks: displays a separate thumbnail for each essence marker in a clip. <li>■ Shot Marks 1 & 2: displays a separate thumbnail for each shot marker in a clip. <li>■ Clips: displays a single thumbnail for each clip. <li>■ Custom: displays the Custom Essence Mark Filter dialog. Select the check box for each essence mark you want to display as thumbnails, and then click OK to close the dialog. <ul style="list-style-type: none"> <li>○ Record Start/End: Created when recording begins and stops. <li>○ Shot Mark 1/2: created manually during recording. <li>○ Flash: created when a sudden change in brightness occurs. <li>○ Filter Change: created when the filter is changed on the camera. <li>○ Gain Change: created when the gain value is changed on the camera. <li>○ Shutter Speed Change: created when the shutter speed is changed on the camera. <li>○ White Balance Change: created when the white balance is changed on the camera. <li>○ Over Audio Limiter: created when the audio level exceeds 0 dB. <li>■ Edit Lists: if you've created an edit list on your camera or deck, you can display those edit lists in the XDCAM Explorer. Edit lists are displayed in the lower half of the XDCAM Explorer. <li>■ Right-click an edit list and choose Add to Current Project Using Proxy Files or Add to Current Project Using Full Resolution Files from the shortcut menu to add the edit list to the timeline at the cursor position.

Item	Description
 Conform XDCAM Media in Current Project	<p>Click to replace proxy-resolution files with full-resolution files before rendering your project or exporting your video to an XDCAM disc.</p> <p>If the full-resolution clips are not available on your computer, the Conform XDCAM Media in Current Project dialog is displayed. Insert the specified disc and click Continue to import the full-resolution clips to your computer.</p> <p>Clips are imported if necessary, and the events on the timeline are updated to use the full-resolution files.</p> <p>If you need to choose a different XDCAM device or transfer method, click the Device button. For more information, see "Setting up an XDCAM Device" on page 2.</p>
 Export Video to XDCAM Disc	<p>Click to transfer video to an XDCAM disc in a camera or deck.</p> <p>You can choose to render the current project to MXF or export an already-rendered MXF file.</p> <p>For more information, see "Exporting Video to XDCAM Discs" on page 9.</p>
 Refresh XDCAM Discs by Examining Capture Folders	<p>Click to examine capture folders for files that have been added since the application was started. You can use this button to view files that you copy manually from an XDCAM disc to your computer.</p>

Importing XDCAM Discs

You can use the XDCAM Explorer window to import full- or proxy-resolution clips from XDCAM discs to your computer for editing.

 **Tips:**

- If you delete XDCAM clips from your computer, those clips will appear offline in your projects. You can reimport the clips by right-clicking the clips in the Project Media window and choosing **Recapture** from the shortcut menu.
 - The XDCAM deck is not available for external monitor or print to tape while in XDCAM Media Drive mode. Click the **Safely Remove Hardware** icon  in the Windows system tray and choose your XDCAM device from the menu to disconnect the device. You can then switch to AV/C mode and reconnect to enable external monitor and print to tape functionality.
 - Use the Device Explorer window to import clips from an XDCAM EX camera. For more information, see "[Using the Device Explorer](#)" on page 11
1. From the View menu, choose **XDCAM Explorer** to display the XDCAM Explorer window if it isn't already visible.
 2. Click the **Import XDCAM Disc** button  in the XDCAM Explorer window. The Import XDCAM Disc dialog is displayed.

3. The **XDCAM Device** box displays the current XDCAM camera or deck.

If you need to choose a different XDCAM device or transfer method, click the **Device** button. For more information, see "[Setting up an XDCAM Device](#)" on page 2.



For information about using your camera or deck, please refer to its documentation.

4. In the **Clip Resolutions** box, select check boxes to indicate which clips you want to import:

- Clear both check boxes if you want to import clip information (metadata) only without importing clips.

You can import clips later by right-clicking a clip in the XDCAM Explorer and choosing **Import Full Resolution Files** or **Import Proxy Files** from the shortcut menu.

- Select the **All full resolution files** check box to import full-resolution clips.
- Select the **All proxy resolution files** check box to import low-resolution clips for quick timeline editing and preview.

If you're working on a system with limited disk space or processing power, you can edit the smaller proxy files on the timeline and replace the proxies with full-resolution files before rendering. For more information, see "[Editing XDCAM Clips on the Timeline](#)" on page 8.

5. The **Capture Folder** box displays the path to the folder where clips will be imported. Click the **Browse** button to choose a folder.



You can also copy XDCAM discs to the capture folder manually. Simply copy the files and folders to the specified capture folder (preserving the XDCAM disc whatfolder/file structure). The next time you start Vegas Pro, the disc will be available in the XDCAM Explorer window.

6. Type a name in the **Optional Disc Name** box if you want to assign a friendly name to the disc.

For example, if you've written "Joe's Tire Spot" on your XDCAM disc, you can type that name so you don't have to try to identify the disc in the XDCAM Explorer window using its 32-digit identifier.

7. Click the **OK** button to start importing clips. The disc label is added to the left pane in the XDCAM Explorer window, and the clips are displayed in the right pane.

You're ready to start editing your XDCAM clips on the timeline. For more information, see "[Editing XDCAM Clips on the Timeline](#)" on page 8.

 Notes:

- Select the **Import MXF as multichannel** check box on the General tab of the Preferences dialog if you want to import MXF files from XDCAM cameras and decks with multichannel audio. When the check box is cleared, audio from MXF files will be imported as stereo, but you can access the other channels by right-clicking the event and choosing **Channels** from the shortcut menu.
- The imported disc is not associated with the current project. Imported discs are available in the XDCAM Explorer window until you delete them from your computer.
- Imported clips are not added to the Project Media window. Drag a clip to the timeline to add it to your project or right-click a clip and choose **Add to Project Media List** from the shortcut menu.

Editing XDCAM Clips on the Timeline


You can use MXF files just like any other supported media type on the timeline. Depending on your workflow, you may want to use proxy or full-resolution files on the timeline.



Proxy files are much smaller than the full-resolution versions. If you're working on a system with limited disk space or processing power, you can edit the smaller proxy files on the timeline and replace the proxies with full-resolution files before rendering.

Proxy editing is ideal for storyboarding or rough-cut editing.

1. Import the clips from your XDCAM camera or deck to your local hard drive. For more information, see "[Importing XDCAM Discs](#)" on page 6.
2. Select an imported XDCAM disc on the left side of the XDCAM Explorer window. The imported clips are displayed in the right pane.

If the disc contains edit lists that you created on your deck or camera, they are displayed at the bottom of the contents pane. Click the down arrow ▼ next to the **Views** button  and choose **Edit Lists** from the menu to show or hide edit lists.


3. Drag clips from the XDCAM Explorer window to the timeline if you want to create events, or drag them to the Project Media window to add to your project without creating events.

Right-click an edit list and choose **Add to Current Project Using Proxy Files** or **Add to Current Project Using Full Resolution Files** from the shortcut menu to add the edit list to the timeline at the cursor position.




Essence marks from the MXF files are displayed as named media markers (media markers are visible in the timeline events and in the Trimmer window). Choose **View > Event Media Markers > Show Markers** to toggle their display.

4. Edit your project as needed.

5. If you're working with proxy-resolution clips, replace them with full-resolution clips before rendering your project or exporting it to an XDCAM disc:
 - a. Click the **Conform XDCAM Media in Current Project** button  in the XDCAM Explorer window.
 - b. If the full-resolution clips are not available on your computer, the Conform XDCAM Media in Current Project dialog is displayed.
 - c. Insert the specified disc.


If the events on the timeline have been trimmed, you can select the **Trim clips to used regions when possible** check box to import only the portions of the media files required for the events.

If you need to choose a different XDCAM device or transfer method, click the **Device** button. For more information, see "[Setting up an XDCAM Device](#)" on page 2.
 - d. Select the **Trim clips to used regions when possible** check box if you want to trim full-resolution clips to import only the portions used in your project.

 Some XDCAM decks may require updated firmware to support trimming clips when connecting via Ethernet (FTP).
 - e. Click **Continue** to import the full-resolution clips.
 - f. Repeat steps 5c and 5d as needed.



Clips are imported to your computer if necessary, and the events on the timeline are updated to use the full-resolution files.
6. You can now render your project or export it to an XDCAM deck or camera.

Exporting Video to XDCAM Discs

Choose **File > Export > XDCAM Disc** (or click the **Export Video to XDCAM Disc** button  in the XDCAM Explorer window) to save your project to a disc in an XDCAM camera or deck.

Exporting video from the timeline

Use this procedure to export the current project to an XDCAM disc.

-  If you are exporting a rendered file to an XDCAM disc, the file must precisely conform to the target disc format, or the export will fail.
1. If you want to export only a portion of your project, create a time selection that includes the section of your project.
 2. Choose **File > Export > XDCAM Disc** (or click the **Export Video to XDCAM Disc** button  in the XDCAM Explorer window). The Export Video to XDCAM Disc dialog is displayed.

3. The XDCAM Device box displays the current XDCAM camera or deck.

If you need to choose a different XDCAM device or transfer method, click the **Device** button. For more information, see "[Setting up an XDCAM Device](#)" on page 2.



For information about using your camera or deck, please refer to its documentation.

4. Choose render settings:

- a. Select the **Render format** radio button.
- b. In the **File path** box, type the path to the file you want to render, or click the **Browse** button to browse to the folder you want to use and then type a file name.

This path is used to render an MXF file to your hard drive before transferring to your XDCAM device. You can delete the file after the transfer is complete.

- c. Select the **Enable multichannel mapping** check box if you want to map render multiple channels of audio.

You can click the **Channels** button if you want to map the busses in your project to channels in the rendered file. If you don't specify a channel mapping, Vegas Pro will not render a multichannel file.
- d. In the Channel Mapping dialog, select the check box for each bus you want to include in the rendered file. Each stereo bus will be saved to two channels in the rendered file. If you want to save a bus to a single channel, select the **(Mono downmix)** check box for that bus.
- e. If you want to change the channel mapping for a bus, select the bus and click the **Move Up** or **Move Down** button.
- f. Click **OK** to close the Channel Mapping dialog and return to the Export Video to XDCAM Disc dialog.

5. From the **Template** drop-down list, choose the setting that matches your destination disc.

Information about the selected rendering template is displayed in the **Description** box.

If you choose **Default Template**, the number of channels will match the number of channels specified in the Channel Mapping dialog.

6. Select the **Render loop region only** check box if you want to export only the portion of your project that you selected in step 1.
7. Select the **Delete file after print** check box if you want to delete the rendered file from your hard drive after successfully exporting it to disc.

If the export fails, the rendered file remains on disk so you can adjust your XDCAM device settings and export again without having to render again.


8. Select the **Use project output rotation setting** check box if you're rendering a rotated project and want to use the **Output rotation** setting from the Project Properties dialog for your rendered file.


When the check box is cleared, the media is rotated according to its Media Properties setting, but the project itself is unrotated—you can use this setting to proof your project on an unrotated display.

9. Click **OK**. Your project is rendered and transferred to your camera or deck.

Exporting a rendered file

Use this procedure when you have a rendered MXF file that you want to save to an XDCAM disc.

 If you are exporting a rendered file to an XDCAM disc, the file must precisely conform to the target disc format, or the export will fail.

1. Choose **File > Export > XDCAM Disc** (or click the **Export Video to XDCAM Disc** button  in the XDCAM Explorer window). The Export Video to XDCAM Disc dialog is displayed.
2. The **XDCAM Device** box displays the current XDCAM camera or deck.

If you need to choose a different XDCAM device or transfer method, click the **Device** button. For more information, see "[Setting up an XDCAM Device](#)" on page 2.

 For information about using your camera or deck, please refer to its documentation.

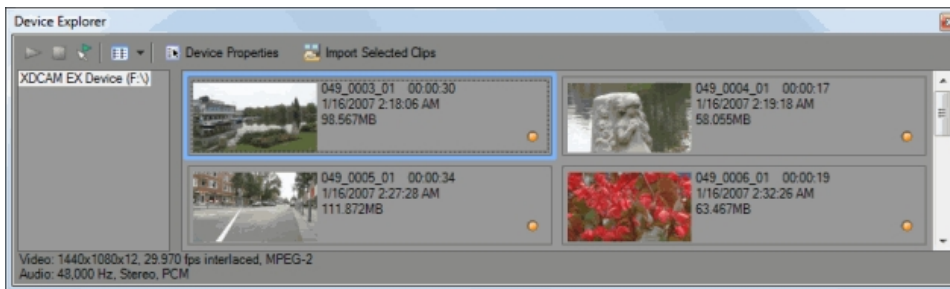
3. Choose the file you want to export:
 - a. Select the **Use an existing file** radio button.
 - b. In the **File path** box, type the path to the file you want to print, or click the **Browse** button to choose the file you want to print.
4. Click **OK**. The selected file is transferred to your camera or deck.

Using the Device Explorer

The Device Explorer allows you to browse and import clips from AVCHD, XDCAM EX, NXCAM, Panasonic P2, and RED ONE/EPIC/SCARLET devices; CompactFlash-based memory recording units such as the HVR-MRC1; and hard-disk-based recording units such as the HVR-DR60.

1. From the View menu, choose **Device Explorer**. The Device Explorer window is displayed.
2. Connect your camera to a USB 2.0 port on your computer. The camera is displayed on the left side of the Device Explorer window.

3. Select your camera on the left side of the Device Explorer window. The camera's clips are displayed on the right side of the window, and clips that have not yet been imported are indicated with an 🟡 icon.





Tips:

- If you want to use clips from a folder on your computer, right-click the left pane of the Device Explorer window and choose **Browse** from the shortcut menu.
- In order for some devices to appear in the Device Explorer window, you may need to change the device's USB Connect setting from **Automatic** or **MTP** to **Mass Storage**.

Previewing clips

Select your camera on the left side of the Device Explorer window. The camera's clips are displayed on the right side of the window, and clips that have not yet been imported are indicated with an 🟡 icon.

If the **Auto Preview** button  is selected, you can click a clip in the Device Explorer to audition it. You can stop the preview by clicking the **Stop Preview** button , or you can turn off the preview feature by deselecting the **Auto Preview** button.





Video is previewed in the Trimmer window. If you want to preview in the Video Preview window, right-click the Trimmer window and deselect the **Show Video Monitor** command.

When the **Auto Preview** button is not selected, click the **Start Preview** button  to start preview.



Choosing the folder where you want to import clips




1. Select your camera on the left side of the Device Explorer window and click the **Device Properties** button .

The Device Properties dialog is displayed, and the **Capture Folder** box displays the path to the folder where imported clips will be saved.

2. Click the **Browse** button to display the Capture Folders dialog. This dialog lists the available folders for saving your imported video:
 - Select a folder's check box to save your imported video in that folder.
 - Click the **Add Folder** button  and browse to a folder to add a new folder.
 - Select a folder in the list and click the **Delete** button  to remove it from the list.


Importing clips

1. Select your camera on the left side of the Device Explorer window. The camera's clips are displayed on the right side of the window, and clips that have not yet been imported are indicated with an  icon.
 2. Click the **Import All New Clips** button  to import clips to the Project Media window:
 - If clips are selected in the Device Explorer window, only the selected clips are imported (you can hold Ctrl while clicking to select multiple clips).
 - If no clips are selected in the Device Explorer window, all new clips are imported.

 Right-click a clip in the Device Explorer window and choose **Open in Trimmer** or **Import and Add to Project** to choose how you want to import clips.
 3. You can then use the Project Media window to organize your clips and add the imported video to your project just like any other media file.
-  5.1-channel audio will be downmixed to stereo when importing into a stereo project. When importing into a 5.1 surround project, audio will be added to separate tracks for the center, front, rear, and LFE channels.
-  You can also drag a clip from the Device Explorer directly to the Project Media window, Trimmer, or timeline. Vegas Pro begins importing the clip when you release the mouse, and an event is created on the timeline when importing is finished.

Creating Proxy Files for High-Definition Editing

If you're working on a system with limited processing power, creating a proxy file will streamline the editing process and allow you to preview your project.

 Video proxy files are not used for rendering your project.

1. Capture or import your high-definition clips.
2. Start a new project.
3. Add your high-definition clips to the Project Media window.

4. Right-click the clips in the Project Media window and choose **Create Video Proxy** from the shortcut menu.

Vegas Pro creates video proxy files (.sfvp0) alongside the original files in Windows Explorer. You will not see these files in the Project Media window or Vegas Pro Explorer.

5. Add your high-definition clips to the timeline and edit your project as usual.

The **Preview Quality** setting in the Video Preview window determines whether the proxy files or original files are used for editing and preview:

- When the preview quality is set to **Draft** or **Preview**, the proxy file is used.
- When the preview quality is set to **Good** or **Best**, the original file is used.