XPression • User Guide

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For the most recent information, refer to the XPression Online Help.

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Before using this product and any associated equipment, refer to the "Important Safety Instructions" listed below so as to avoid personnel injury and to prevent product damage.

Products may require specific equipment, and /or installation procedures be carried out to satisfy certain regulatory compliance requirements. Notices have been included in this publication to call attention to these Specific requirements.

Symbol Meanings

[Image of Protective Earth symbol]

**Protective Earth** — *This symbol identifies a Protective Earth (PE) terminal, which is provided for connection of the supply system’s protective earth (green or green/yellow) conductor.*
Important Safety Instructions

1) Read these instructions.
2) Follow all instructions and heed all warning.
3) Refer all servicing to qualified service personnel.
4) The equipment's AC appliance inlets are the means to disconnect the product from the AC Mains and must remain readily operable for this purpose.
5) Parts of the equipment's power supplies can still present a safety hazard even when the product is in the "OFF" state. To avoid the risk of electrical shock and to completely disconnect the apparatus from the AC Mains, remove all power supply cords from the product's AC appliance inlets prior to servicing.
6) The product chassis is to be rack mounted only. To ensure safe operation and maintain long-term system reliability, proper installation requires that the front and back area of the chassis remain clear of obstructions so as not to restrict airflow.
7) Indoor Use: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
8) This apparatus when equipped with multiple power supplies can generate high leakage currents. To reduce the risk of electric shock to operator and service personnel the following requirements must be met:
a) The equipment is to be installed in a restricted access area. A restricted access area is one where access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.
b) The building installation shall provide a means for connection to protective earth and;
c) The product's protective earth terminal is connect to facility's protective earth using a 1.5mm² (14AWG) conductor and a #8 1.5mm² ring terminal and;
d) A SERVICE PERSON shall check whether or not the socket-outlet from which the equipment is to be powered provides a connection to the building protective earth.

Caution
9) This apparatus contains a Lithium battery, which if replaced incorrectly, or with an incorrect type, may cause an explosion. Replace only with the same type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instruction by qualified service personnel.

EMC Notices
US
FCC Part 15
This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a Commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice
Changes or modifications to this equipment not expressly approved by Ross Video Ltd. could void the user’s authority to operate this equipment.

CANADA
This Class “A” digital apparatus complies with Canadian ICES-003.
Cet appareil numerique de la classe “A” est conforme a la norme NMB-003 du Canada.

EUROPE
This equipment is in compliance with the essential requirements and other relevant provisions of CE Directive 93/68/EEC.

INTERNATIONAL
This equipment has been tested to CISPR 22:1997 along with amendments A1:2000 and A2:2002 and found to comply with the limits for a Class A Digital device.

Notice
This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.

Warranty and Repair Policy
Ross Video Limited (Ross) warrants its XPression systems to be free from defects under normal use and service for the following time periods from the date of shipment:

- XPression Server — 12 months
- XPression Software Upgrades — 12 months free of charge
- System and Media hard drives — 12 months
If an item becomes defective within the warranty period Ross will repair or replace the defective item, as determined solely by Ross.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug-in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross’ notification of change of ownership.

**Extended Warranty**

For customers that require a longer warranty period, Ross offers an extended warranty plan to extend the standard warranty period by one year increments. For more information about an extended warranty for your XPression system, contact your regional sales manager.

**Environmental Information**

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.
## Company Address

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Introduction

XPression is a full featured broadcast graphics application with the necessary tools to create stunning graphics and animations that will meet the requirements set by today's graphics and animation designers.

About This Guide

This user guide describes the two main sections of XPression: an editor section and a sequencer section. The toolbar contains two buttons to switch between these sections. The layout section serves to create scenes with graphics and animations. The sequence section serves to set scenes in a sequence list and to play out the scenes. Both sections contain a number of dockable and non-dockable windows; to be used in the process of creating scenes, templates, and animations.

If, at any time, you have a question pertaining to the installation or operation of XPression, please contact us at the numbers listed in the section “Contacting Technical Support” on page 1–2. Our technical staff are always available for consultation, training or service.

For More Information on...

• XPression system hardware, refer to the Maintenance Guide.

Documentation Conventions

Special text formats are used in this guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and submenus that must be followed to reach a particular command.

**Bold text**

Bold text is used to identify a user interface element such as a dialog box, menu item, or button.

For example:

In the 3D Model Files section, use the Mode list to select the folder used to store 3D model files.

**Courier text**

Courier text is used to identify text that a user must enter.

For example:

Enter localhost when the DataLinq server is running on the same computer as XPression.

> Menu arrows are used in procedures to identify a sequence of menu items that you must follow.

For example, if a step reads “Display > Widgets,” you would click the Display menu and then click Widgets.

Getting Help

The XPression Online Help system is accessed by selecting Help Topics from the Help menu in any component of XPression. Alternatively, press the F1 key while working in a window or dialog box. Online Help opens in an Help Viewer window.

The Online Help system contains the following navigation tabs to locate information contained in Online Help topics and the User Guide:

• Contents — table of contents
• Index — keyword reference
• Search — full text search
• Favorites — preferred information storage and access
The XPression Online Help system displays, by default, the Contents pane. To access the Index or Search panes, click the Index or Search button on the top toolbar in the Online Help system.

The XPression Maintenance Guide and XPression User Guide are also supplied as print-ready PDF files. From the desktop, use the following commands to open a guide PDF in Adobe® Reader® for viewing or printing:

- **Maintenance Guide**
  Start > All Programs > XPression Studio > Help > XPression Maintenance Guide

- **User Guide**
  Start > All Programs > XPression Studio > Help > XPression User Guide

**Contacting Technical Support**

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel. During business hours (eastern time), technical support personnel are available by telephone any time. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support person who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. This team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- **Technical Support:** (+1) 613-652-4886
- **After Hours Emergency:** (+1) 613-349-0006
- **E-mail:** techsupport@rossvideo.com
- **Website:** http://www.rossvideo.com
User Interface Overview

The XPression interface is made up of two sections: an layout section, and a sequencer section. Both sections contain specific windows, as well as common windows. The layout section is the interface used to create and edit graphics and animations. The sequencer section is used output graphics and animations placed on a sequence timeline.

The following topics are discussed in this section:

• The Layout Interface
• The Sequencer Interface
The Layout Interface

The following screen capture displays the main elements of the XPression Layout section user interface. Descriptions of individual elements are contained in the legend below the diagram.

1) **Menu Bar** — use this menu bar to access the File, Edit, Windows, Projects, Animation, Display, Tools, and Help menus.
2) **Toolbar** — use this toolbar to quickly access XPression tools.
3) **Position** — this section displays various position values related to the Main viewport.
4) **Scene Manager** — use this window to view and manage the scenes and scene groups contained in a project.
5) **Main Viewport** — use this window as an editor to design scenes using objects from the Object Library.
6) **Material Manager** — use this window to view, apply, and manage the materials in a project.
7) **Object Library** — use this window to select the objects with which to build scenes.
8) **Scene Director** — use this window to create and manage tracks for animation controllers and audio files.
9) **Output Monitors** — use this window to select the output framebuffer. Each output framebuffer contains seven layers, and each layer can contain a scene. The hierarchical order for scene visibility runs from +3 to -3, with layer +3 being the top layer and layer -3 the lowest layer.
10) **Object Manager** — use this window to view and manage the objects contained in a scene.
11) **Object Inspector** — use this window to edit the properties of a selected object. The tabs displayed in this window depend on the type of object selected.
12) **Animation Controller** — use the controller in this window to playback individual animations.
The Sequencer Interface

The following screen capture displays the main elements of the XPression Sequence section user interface. Descriptions of individual elements are contained in the legend below the diagram.

1) **Menu Bar** — use this menu bar to access the File, Edit, Windows, Projects, Animation, Display, Tools, and Help menus.

2) **Toolbar** — use this toolbar to quickly access XPression tools.

3) **Position** — this section displays various position values related to the Main viewport.

4) **Sequencer** — use this window to view and control a list of scenes or scene groups to be played in the order from top to bottom. A list is built by adding scenes from the Scene Manager.

5) **Scene Manager** — use this window to view and manage the scenes and scene groups contained in a project.

6) **Take Inspector** — use this window to edit the properties of a selected group or take item.

7) **Sequencer Playlist** — use this window to view a list of all scenes and or scene groups in the sequencer.

8) **Output Monitors** — use this window to select the output framebuffer. Each output framebuffer contains seven layers, and each layer can contain a scene. The hierarchical order for scene visibility runs from +3 to -3, with layer +3 being the top layer and layer -3 the lowest layer.
System Setup

Before you start using XPression to create projects, XPression needs to be configured for your environment. In addition to describing how to set preferences for XPression, this section also describes how to configure GPIs, video framebuffers, audio devices, video preview, and audio monitor.

The following topics are discussed in this section:

- Set Preferences
- Configure an AJA Video FrameBuffer
- Configure a Black Magic Design FrameBuffer
- Configure a Matrox FrameBuffer
- Configure an XPression AVI Recorder
- Configure an XPression Virtual Output
- Change the Order of Video Inputs / Outputs
- Delete a Video Input / Output
- Configure an Audio Device
- Delete an Audio Device
- Configure Video Preview and Audio Monitor
- Configure GPI for RS232
- Configure GPI for TCP/IP
Set Preferences

1. In XPression, use the Edit menu to select Preferences.
   The Preferences dialog box opens.
2. Click the Editor panel to set project preferences for the Editor section of XPression.

   ![Preferences Dialog Box]

   a. In the On Startup section, select the Load Most Recent Project check box to automatically load the last opened project after starting XPression.
   b. In the Confirmation section, select the On Object Deletion check box to display a Confirmation dialog box and request confirmation when deleting an object from a project.
   c. In the Confirmation section, select the On Object Has Children check box to display a Confirmation dialog box and request confirmation when child objects belong to the object selected for deletion.

   Deleting an object also deletes any related child objects.

3. Click the Hardware Renderer panel to select the graphics device used by XPression to render scenes to output framebuffers.

   ![Hardware Renderer Panel]

   a. Use the Adapter list to select the graphics device installed in the XPression computer.
   b. Use the Anti-Alias list to select the Multi-sampling value used to control the visual quality of rendered output.
The higher the multi-sampling value, the smoother the rendered graphic edges. The <none> option is equal to 1x multi-sampling. For most situations, set the multi-sampling value according to the best quality/performance ratio, usually around 8x.

4. Click the Viewports panel to set the visual quality of scenes rendered to XPression viewports.

![Viewports Panel]

a. Select the Render Using Anti-Alias check box to use the multi-sampling value selected from the Anti Alias list in the Hardware Renderer panel to control the visual quality of scenes rendered to viewports. The higher the Multi-sampling value, the smoother graphic edges are rendered in a viewport.

This check box is only available when the multi-sampling value set in the Hardware Renderer panel is higher than <none>.

5. Click the Path Persistence panel to set the folder locations used by XPression to search for and store XPression resources and files.

![Path Persistence Panel]

a. In the Project Files section, use the Mode list to select the folder to open after selecting Open from the File menu. The available options are as follows:

- **Last Used** — open the folder last used to save an XPression project file.
- **Fixed** — open the folder specified in Fixed box.

Enter the full path to the project folder in the Fixed box, or click Browse (...) to the right of the box to use the Browse for Folder dialog box to select the project folder.
b. In the Image Files section, use the Mode list to select the folder used to store image files. The available options are as follows:

- **Project | Last Used** — first search for image files in the folder set as the project folder, and if no image files are found, then look in the folder lasted used by XPression.
- **Last Used** — search for image files in the folder that was last used by XPression.
- **Fixed** — search for image files in the folder specified in Fixed box.

Enter the full path to the image folder in the Fixed box, or click Browse (...) to the right of the box to use the Browse for Folder dialog box to select the image folder.

c. In the Video Files section, use the Mode list to select the folder used to store video files. The available options are as follows:

- **Project | Last Used** — first search for video files in the folder set as the project folder, and if no video files are found, then look in the folder lasted used by XPression.
- **Last Used** — search for video files in the folder that was last used by XPression.
- **Fixed** — search for video files in specified in Fixed box.

Enter the full path to the video folder in the Fixed box, or click Browse (...) to the right of the box to use the Browse for Folder dialog box to select the video folder.

d. In the Audio Files section, use the Mode list to select the folder used to store audio files. The available options are as follows:

- **Project | Last Used** — first search for audio files in the folder set as the project folder, and if no audio files are found, then look in the folder lasted used by XPression.
- **Last Used** — search for audio files in the folder that was last used by XPression.
- **Fixed** — open the folder specified in Fixed box.

Enter the full path to the audio folder in the Fixed box, or click Browse (...) to the right of the box to use the Browse for Folder dialog box to select the audio folder.

e. In the 3D Model Files section, use the Mode list to select the folder used to store 3D model files. The available options are as follows:

- **Project | Last Used** — first search for 3D model files in the folder set as the project folder, and if no 3D model files are found, then look in the folder lasted used by XPression.
- **Last Used** — search for 3D model files in the folder that was last used by XPression.
- **Fixed** — open the folder specified in Fixed box.

Enter the full path to the 3D model folder in the Fixed box, or click Browse (...) to the right of the box to use the Browse for Folder dialog box to select the 3D model folder.

6. Click the Folders panel to set the folder used by XPression to store files created by the Input Grabber.
a. Enter the full path to the folder in which to save files created using the Input Grabber in the **Path** box, or click **Browse (...)** to the right of the box to use the **Browse for Folder** dialog box to select the grab folder.

7. Click the **In Memory Cache** panel to set the folder locations used by XPression to store cache files in memory.

![Image of In Memory Cache panel](image)

- **Texture & Image Cache** section:
  - Select the **Limit allocated memory pool to** check box to limit the total size of texture and image files stored in the cache folder.
  - Enter or select the size limit in MB for the total of all the cache files stored in the cache folder.

- **Start caching on project load** check box to start caching texture and image files when a project starts loading.

8. Click the **On Disk Cache** panel to set the folder locations used by XPression to store cache files on disk.

![Image of On Disk Cache panel](image)

- **Shader Objects** section:
  - Use the **Path** box to enter the full path to the folder in which to cache shader object files or click **Browse (...)** to the right of the box to use the **Browse for Folder** dialog box to select the cache folder.

- **Max Size** box, enter or select the size limit in MB for the total of all the cache files stored in the cache folder.

- **MipMap Objects** section:
  - Use the **Path** box to enter the full path to the folder in which to cache MipMap object files or click **Browse (...)** to the right of the box to use the **Browse for Folder** dialog box to select the cache folder.

- **Limit Size** check box to limit the total size of MipMap object files stored in the cache folder.
In the **Max Size** box, enter or select the size limit in MB for the total of all the cache files stored in the cache folder.

e. In the **Script Engine** section, use the **Path** box to enter the full path to the folder in which to cache script engine files or click **Browse (..)** to the right of the box to use the **Browse for Folder** dialog box to select the cache folder.

f. In the **Max Size** box, enter or select the size limit in MB for the total of all the cache files stored in the cache folder.

9. Click the **Sequencer** panel to control sequence lists.

![Sequencer panel](image)

a. In the **Take Item List** section, select the **Loop At End** check box to automatically loop a sequence list when the end is reached manually.

b. Select the **Center Online In View** check box to position the active scene in a sequence list in the middle of the view, provided the sequence list extends the size of the view.

c. Select the **Disable Fast Recall Input Timeout** check box to turn off the user entered input timeout for Take IDs in the sequencer.

d. Select the **Fast Recall enabled on startup** check box to automatically enable fast recall in the sequencer on startup.

e. Select the **Enable sorting by clicking column headers** check box to sort the information in the columns of the sequencer by heading.

f. Select the **Don’t move to the next take item until all pause events are taken** check box to play all pause events before moving to the next take item in the sequencer.

g. In the **Advanced** section, select the **Disable thumbnail rendering for take items created by automation** check box to disable displaying scene thumbnails in the Sequencer Playlist.

h. Select the **Save MOS created items to the project** check box to save MOS items in the sequencer.

10. Click the **XML Take Item List** panel to configure the path and settings for XML Take Items.
a. In the XML Take Item List Watch Folder section, select the Enabled check box to use XML Take Items from a folder.

b. Select the Delete source file after parsing check box to delete XML Take Items after they are parsed from the selected folder.

c. Enter the full path to the folder in the Folder box, or click Browse (...) to the right of the box to use the Browse for Folder dialog box to select the folder.

d. In the XML Take Item List Importer section, select the Allow deletion of online items check box to enable the removal of take items that are currently active on an output.

e. Use the After import sort items on list to sort the imported take items. The available options are as follows:
   • <do not sort> — do not sort the take items.
   • take item id — sort the take items by ID.
   • take item state — sort the take items by state.
   • take item scene name — sort the take items by scene name.
   • take item name — sort the take items by name.
   • take item layer — sort the take items by layer.
   • take item framebuffer — sort the take items by framebuffer.

f. Select the Include groups when sorting check box to import the XML Take Items according to the groups that the items have been assigned.

11. Click the Fonts panel to control gamma correction and anti-aliasing for fonts.
a. In the **Factor** box, enter or select the gamma correction value. The gamma correction value influences the degree of transparency used to anti-alias font edge steps. Changes to this factor are visible after re-rendering characters (e.g. changing font size).

b. Select the **Gamma Correction** check box to apply gamma correction when changing the font factor.

c. In the **Anti-Aliasing** section, use the **Steps** list to select the anti-alias size step to use when rendering fonts. An anti-alias step size of 256 is the recommended setting.

12. Click the **Remote Server** panel to configure the TCP server and the CII settings.

   a. In the **TCP Server** section, enter or select the port number for the remote server.

   b. In the **CII Page Recall** section, select the **Use Unique Gateway ID instead of Take Item ID** to recall a page using a Unique Gateway ID.

   c. In the **CII** section, select the **Create All Take Items in Group** check box to create the CII Take Items in a specific group.

   d. Enter a group name for the CII Take Items in the **Group Name** box.

   e. Use the **After create sort items by** list to sort the imported take items. The available options are as follows:

      • `<do not sort>` — do not sort the take items.
      • **take item id** — sort the take items by ID.
      • **take item state** — sort the take items by state.
• **take item scene name** — sort the take items by scene name.
• **take item name** — sort the take items by name.
• **take item layer** — sort the take items by layer.
• **take item framebuffer** — sort the take items by framebuffer.

13. Click the **Video Engine** panel to configure the cache size and select the CPU core of the video clients.

![Video Engine panel](image)

   a. In the **Maximum Cache Size Per Video Client** section, enter or select the maximum cache size in MB per video client.

   b. In the **Video Decoder Engine CPU Affinity** section, select the CPU core of the video client.

14. Click the **OpenMAM** panel to configure the cache settings for items retrieved from remote asset management systems.

![OpenMAM panel](image)

   a. In the **Local Cache Settings** section, enter the full path to the folder in the **Path** box, or click **Browse (...)** to the right of the box to use the **Browse for Folder** dialog box to select the folder.

   b. In the **Max Size** box, enter or select the maximum size limit in MB for the total of all the cache files stored in the cache folder.

15. Click the **Advanced** panel to manage screen settings.
a. In the **XPression Process** section, use the **Priority** list to select the CPU usage priority for XPression. The available CPU usage priorities are as follows:

- **Normal** — evenly distribute the CPU time between system processes with the similar priority.
- **High** — give XPression preference and allocate the majority of the CPU time to XPression.
- **Real-Time** — allocate all CPU time to XPression.

Use the Real-Time CPU usage priority with caution, as this priority may cause other applications running on the XPression computer to freeze.

b. Select the **Allow Monitor Power Saving** check box to allow the monitor to run into sleep mode.

c. Select the **Allow Screen Saver** check box to allow the screen saver to run. A screen saver may compromise output performance. For maximum performance, clear this check box to stop the screen saver from running on the XPression computer.

d. Select the **Disable Initialization of Human Interface Devices** check box to ignore a 3Dconnexion 3D mouse connected to an XPression system.

e. Use the **Override User Locale** list to select a place to override the local settings.

16. Click **OK**.

The **Preferences** dialog box closes.
Configure an AJA Video FrameBuffer

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.

2. Click the Inputs / Outputs tab.

3. Click the Add.
   The Add New FrameBuffer Board dialog box opens.

4. Select AJA Video from the Brand list.

5. Click OK.
   The AJA Video - Framebuffer Setup dialog box opens.
6. Click the **Board** tab to configure hardware and genlock settings.

   ![Board tab configuration](image)

   **a.** In the **Hardware** section, use the **Board** list to select the installed XENA 2KE card to configure.

   **b.** In the GenLock section, use the Source list to select the source of the genlock signal with which to synchronize XPression. The available genlock signal sources are as follows:
   - **External Reference** — Synchronize with a genlock signal received from an external application through the GenLock In port of the XPression computer. Ross Video recommends using an external reference for the genlock signal source.
   - **Input 1** — Sync to Video In 1 source signal.
   - **Input 2** — Sync to Video In 2 source signal.
   - **Free Running** — Do not synchronize XPression with an external source.

7. Click the **Output** tab to configure output settings.

   ![Output tab configuration](image)
a. In the **Video Mode** section, use the **Standard** list to select the video format in which to output an XPression project. The available video formats are as follows:

- `<dynamic>` — automatically switch to the output video format to the video format of the currently loaded project.
  
  The project video format is ignored when a specific output video format is selected, and the selected video format is used to playout scenes.
- **PAL, 720x576, 25 frames/second**
- **NTSC, 720x486, 29.97 frames/second**
- **HD 1080i, 1920x1080, 25 frames/second**
- **HD 1080i, 1920x1080, 29.97 frames/second**
- **HD 1080p, 1920x1080, 23.976 frames/second**
- **HD 720p, 1280x720, 59.94 frames/second**

b. In the **Keying** section, use the **Mode** list to select how graphics are output to a video stream. The available modes are as follows:

- **External** — Output the key and fill graphics as separate video signals. Graphics mixing occurs in an external keyer/mixer.
- **Internal** — Key and fill graphics are mixed internally and output as a single video signal from the framebuffer. In this mode the framebuffer functions as the keyer/mixer.

c. When **External** is selected in the **Mode** list, use the **Fill** list to select the method used to process fill graphics before output. The available processing methods are as follows:

- **Shaped (premultiplied)** — Multiply/shape the fill signal color information by the luminance information in the key signal.
- **Unshaped** — Output fill and key signals “as is”.

d. In the **Hardware Buffers** section, use the **Queue Size** box to enter or select the number of frames to buffer in memory before sending to the output. Use this setting to avoid buffer under runs, which may cause frame skipping. Larger queue sizes ensure smooth playout of generated graphics, but add delay to the output.

e. In the **Up/Down Conversion** section, use the **Conversion** list to enable or disable output conversion to a predefined signal.

f. Use the **Path** list to select the source display on the output.

g. Use the **Up** list to select the format for up converted output. The available output formats are as follows:

- **Anamorphic** — Display a full-screen image.
- **Pillar box 4:3** — Display a 4:3 image in the center of the screen with black sidebars.
- **Zoom 14:9** — Display a 4:3 image zoomed to fill a 14:9 image with black sidebars.
- **Letterbox** — Display an image zoomed to fill full screen.
- **Zoom Wide** — Display an image zoomed and horizontally stretched to fill full screen.

h. Use the **Down** list to select the format for down converted output. The available output formats are as follows:

- **Letterbox** — Display a reduce image with black bars added to the top and bottom of the image area with the aspect ratio preserved.
- **Crop** — Crop the image to fit the new screen size.
- **Anamorphic** — Display a 16:9 image in a 4:3 box.
8. Click the **Input** tab to configure input settings.

![Input Tab](image)

**a.** In the **Video Mode** section, use the **Standard** list to select the analog video format in which to receive video.

**b.** In the **Hardware Buffers** section, use the **Queue Size** box to enter or select the number of frames to buffer in memory before sending to XPression.

9. Click the **Misc** tab to configure analog, timing, startup, shutdown, and audio settings.

![Misc Tab](image)

**a.** In the **Analog Output Mode** section, use the **Mode** list to select the video format in which to output an analog video signal.

**b.** In the **Digital Output Timing Offset** section, use the **Horizontal** box to enter or select the number of nanoseconds for horizontal timing offset with regards an external reference.

**c.** In the **Vertical** box, enter or select the number of lines for vertical delay timing offset with regards an external reference.

**d.** In the **Initialization / Finalization** section, use the **Startup** list to select the video state at startup. The available states are as follows:

- **Retain Current State** — Retain resources to use once again.
- **Clear Framebuffers** — Clear all framebuffers from the output framebuffer.

**e.** Use the **Shutdown** list to select the video state at shutdown. The available states are as follows:

- **Retain Current State** — Retain resources to use once again.
• Clear Framebuffers — Clear all framebuffers from the output framebuffer.

f. In the Audio section, select the Audio Loop Through check box to enable embedded audio loop through.

10. Click OK.

The configured AJA Video framebuffer board is added to the Inputs / Outputs tab of the Hardware Setup dialog box.

11. In the Hardware Setup dialog box, click Close.

The Hardware Setup dialog box closes.
Configure a Black Magic Design FrameBuffer

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.

2. Click the Inputs / Outputs tab.

3. Click the Add.
   The Add New FrameBuffer Board dialog box opens.

4. Select Blackmagic Design from the Brand list.

5. Click OK.
   The Blackmagic Design - Framebuffer Setup dialog box opens.
6. Click the **Board** tab to configure hardware settings.

![Board Settings](image)

a. In the **Hardware** section, use the **Board** list to select the installed DeckLink Studio card to configure.

b. In the **Input / Output Options** section, use the **Output** list to select when to activate video output from the Blackmagic Design framebuffer. The options are as follows:
   - **Always Active** — Always output video.
   - **Active on Use Only** — Only output video when the card is in use.

c. Use the **Input** list to select when to activate video input through the Blackmagic Design framebuffer. The available options are as follows:
   - **Will Deactivate the Output When Activated** — automatically deactivate the output when the input is activated.
   - **Can Only be Activated When the Output is Not Active** — input can only be activated when the output is not active.
   - **Always disabled** — disable the input to prevent it from deleting other inputs.

⚠️ Input grabbing may compromise output performance.

7. Click the **Output** tab to configure output settings.

![Output Settings](image)
a. In the Video Mode section, use the Standard list to select the video format in which to output an XPression project.

b. In the Keying section, use the Mode list to select how graphics are output to a video stream. The modes are as follows:
   - **External** — Output the key and fill as separate video signals. Graphics and video mixing occurs in an external keyer/mixer.
   - **Internal** — Key and fill are mixed internally. Graphics and video are output as a single video signal from the framebuffer. In this mode the framebuffer functions as the keyer/mixer.
   - **Off** — Only output a video signal. In this mode, graphics are excluded from the output.

c. When External is selected in the Mode list, use the Fill list to select the method used to process fill graphics before output. The available processing methods are as follows:
   - **Shaped (premultiplied)** — Multiply/shape the fill signal color information by the luminance information in the key signal.
   - **Unshaped** — Output fill and key signals “as is”.

d. In the Software Buffers section, use the Queue Size box to enter or select the number of frames to buffer in memory before sending to the output.

   Use this setting to avoid buffer underruns, which may cause frame skipping. Larger queue sizes ensure smooth playout of generated graphics, but add delay to the output.

e. In the Analog Output section, use the Mode list to select the type of analog video signal to output. The available output video signals are as follows:
   - **Composite** — output a single video signal that combines luminance and chroma.
   - **Component** — output three channels (Y, R-Y, and B-Y).
   - **S-Video** — output a video signal that carries the video data as two separate signals (brightness and color), unlike composite video which carries the entire set of signals through a signal line.

f. When Component is selected in the Mode list, use the Component Level list to select the output component analog level. The available levels are as follows:
   - **SMPTE** — use this level for monitoring component analog video.
   - **Betacam** — use this level for output to Sony Betacam SP decks.

g. Use the Black Level list to select the default black level analog video signal. The available levels are as follows:
   - **7.5 IRE (USA)** — standard black level for all NTSC countries except Japan.
   - **0.0 IRE (Japan)** — standard black level for Japan.
8. Click the **Input** tab to configure input settings.

   a. In the **Video Mode** section, use the **Standard** list to select the analog video format in which to receive video.

9. Click **OK**.

   The configured Blackmagic Design framebuffer board is added to the **Inputs / Outputs** tab of the **Hardware Setup** dialog box.

10. In the **Hardware Setup** dialog box, click **Close**.

    The **Hardware Setup** dialog box closes.
Configure a Matrox FrameBuffer

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.

2. Click the Inputs / Outputs tab.

   ![Hardware Setup dialog box]

3. Click the Add.
   The Add New FrameBuffer Board dialog box opens.

   ![Add New FrameBuffer Board dialog box]

4. Select Matrox from the Brand list.
5. Click OK.
   The Matrox XMIO - Framebuffer Setup dialog box opens.

6. Select the Board tab to choose and configure an installed X.mio2 card.

   ![Matrox XMIO - Framebuffer Setup dialog box]
Steps

a. In the **Hardware** section, use the **Board** list to select the installed X.mio2 card to configure.

b. In the **GenLock** section, use the **Source** list to select the source of the genlock signal with which to synchronize XPression. The available genlock signal sources are as follows:
   - **Internal** — generate internal sync on the video card for all output channels.
   - **Blackburst** — sync to analog black.
   - **SDI Input 1** — sync to SDI Input 1 source signal.
   - **SDI Input 2** — sync to SDI Input 2 source signal.
   - **SDI Input 3** — sync to SDI Input 3 source signal.
   - **SDI Input 4** — sync to SDI Input 4 source signal.

c. Use the **Standard** list to select the format of the incoming genlock signal.

d. In the **Timing Offset** section, use the **Horizontal** box to enter or select the number of nanoseconds for horizontal timing offset with regards an external reference.

e. In the **Vertical** box, enter or select the number of lines for vertical delay timing offset with regards an external reference.

7. Select an **Output** tab to configure the parameters of the selected output.

а. In the **Video Mode** section, use the **Standard** list to select the video format for the output.

b. In the **Keying** section, use the **Mode** list to select a keying mode for the output. The available modes are as follows:
   - **External** — select to output video and alpha channels.
   - **Internal** — select to key XPression scenes to the associated input.

c. Use the **Fill** list to select the fill mode. The available fill options are as follows:
   - **Shaped (premultiplied)** — select to use an additive key to cut precise holes for the fill.
   - **Unshaped** — select to use a multiplicative key based on the gradient values of the alpha.

d. In the **Watchdog** section, select the **Route Input To Output On Application Failure & System Reboot** check box to route the input to an output in the event of application failure or a system reboot.
e. Use the **Key Channel** list to select a transparent or opaque key channel. The available key channels are as follows:
   
   - **On Failure Set to 0% Key (transparent)** — select to set the key channel to transparent in the event of failure.
   
   - **On Failure Set to 100% Key (opaque)** — select to set the key channel to opaque in the event of failure.

f. In the **Hardware Frame Buffer Queue** section, use the **Queue Size** box to enter or select the framebuffer queue size. The framebuffer queue size can be between two and seven.

g. Use the **Pre Queue** box to enter or select the pre-queue size. The pre-queue size can be between one and six.

h. In the **Horizontal Timing Offset (ns)** section, use the **Fill Offset** box to enter or select the offset of the fill.

i. Use the **Key Offset** box to enter or select the offset of the key.

j. In the **Misc** section, select the **Clip Chroma Levels** check box to limit the chroma levels in the output.

k. Select the **Allow Super Black** check box to enable Super Black in the output.

8. Select an **Input** tab to configure the parameters of the selected input.

   ![Input tab configuration](image)

   a. In the **Video Mode** section, use the **Standard** list to select the video format for the input.

   b. In the **Audio Channel Mapping** section, use the **Capture** list to select the audio type for the input.

   c. In the **AES/EBU Pair Mapping** area, use the **Pair** lists to define the mapping of the AES/EBU inputs.

9. Click **OK**.

   The configured Matrox framebuffer board is added to the **Inputs / Outputs** tab of the **Hardware Setup** dialog box.

10. In the **Hardware Setup** dialog box, click **Close**.

    The **Hardware Setup** dialog box closes.

**Note:**

- A maximum of two inputs and two outputs can be configured for the Matrox framebuffer.
Configure an XPression AVI Recorder

The XPression AVI Recorder is used to render scenes or scene groups and save the output as an AVI file. Before using this functionality, the AVI Recorder must be configured as a video output in the Hardware Setup dialog box.

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.
2. Click the Inputs / Outputs tab.

   ![Hardware Setup Dialog Box](image)

3. Click the Add.
   The Add New FrameBuffer Board dialog box opens.

   ![Add New FrameBuffer Board](image)

4. Select XPression AVI Recorder from the Brand list.
5. Click OK.
   The AVI Recorder - Setup dialog box opens.

   ![AVI Recorder - Setup](image)

6. Use the Fill Mode list to select the method used to process fill graphics before output. The available processing methods are as follows:
   - Unshaped Video — Output fill and key signals “as is”.
   - Shaped Video (premultiplied fill) — Multiply/shape the fill signal color information by the luminance information in the key signal.
7. Click OK.
   An XPression Virtual Output is added to the **Inputs / Outputs** tab of the **Hardware Setup** dialog box.

8. In the **Hardware Setup** dialog box, click **Close**.
   The **Hardware Setup** dialog box closes.

**For More Information on...**

- rendering output to an AVI file, refer to the procedure “**Render Output to an AVI File**” on page 15–3.
Configure an XPression RossLinq Connector

The RossLinq feature allows you to connect XPression directly to the media-store channels of CrossOver over ethernet. Have XPression render images and graphics into the media-store channels of CrossOver without using any of the video input BNC on CrossOver.

1. In XPression, use the Edit menu to select Hardware Setup.

   The Hardware Setup dialog box opens.

2. Click the Inputs / Outputs tab.

   ![Hardware Setup Dialog Box]

3. Click Add.

   The Add New FrameBuffer Board dialog box opens.

4. In the Brand list, select XPression RossLinx Connector from the Brand list.

5. Click OK.

   The Rosslix - Setup dialog box opens.

6. Enter the IP address of the CrossOver switcher in the Host box.

7. In the Channel box, enter the Media-Store channel (1 or 2) on CrossOver that you want to upload images to.

   Media-Store channels 3 and 4 are for alpha channels only. If you load an image or animation with an embedded alpha channel, the switcher automatically places the alpha channel in the paired Media-Store channel.
8. Click OK.
Configure an XPression Virtual Input

The XPression Virtual Input enables XPression to create Live Source materials without a physical input card installed in the XPression computer.

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.
2. Click the Inputs / Outputs tab.

![Hardware Setup dialog box]

3. Click the Add.
   The Add New FrameBuffer Board dialog box opens.

![Add New FrameBuffer Board dialog box]

4. Select XPression Virtual Input from the Brand list.
5. Click OK.
   An XPression Virtual Input is added to the Inputs / Outputs tab of the Hardware Setup dialog box.
6. In the Hardware Setup dialog box, click Close.
   The Hardware Setup dialog box closes.
Configure an XPression Virtual Output

The XPression Virtual Output enables XPression software to run without any framebuffer cards installed in the XPression computer. In this case, the Virtual Output is used to display output in a window on the XPression computer.

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.

2. Click the Inputs / Outputs tab.

3. Click the Add.
   The Add New FrameBuffer Board dialog box opens.

4. Select XPression Virtual Output from the Brand list.

5. Click OK.
   An XPression Virtual Output is added to the Inputs / Outputs tab of the Hardware Setup dialog box.

6. In the Hardware Setup dialog box, click Close.
   The Hardware Setup dialog box closes.
Change the Order of Video Inputs / Outputs

1. In XPression, use the Edit menu to select Hardware Setup. The Hardware Setup dialog box opens.

2. Click the Inputs / Outputs tab.

3. In the Inputs / Outputs list, select the Framebuffer Board, Virtual Output, or AVI Recorder to move in the list.

4. At the bottom of the dialog box, click Move Down to move the selected device down one position in the Inputs / Outputs list, or Move Up to move up one position in the list.

   The Move Up button is not available when the selected device is positioned at the top of the list. The Move Down button is not available when the selected device is positioned at the bottom of the list.

5. Click Close.

   The Hardware Setup dialog box closes.
Delete a Video Input / Output

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.
2. Click the Inputs / Outputs tab.

3. In the Inputs / Outputs list, select the Framebuffer Board, Virtual Output, or AVI Recorder to delete.

4. Click Delete at the bottom of the dialog box.
   A Warning dialog box opens.
5. Click Yes.
   The selected video device is deleted from Inputs / Outputs list.
6. Click Close.
   The Hardware Setup dialog box closes.
Configure an Audio Device

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.

2. Click the Audio Devices tab.

3. Click the Add.
   The Add Audio Device dialog box opens.

4. Use the Engine list to select engine used to produce audio.

5. Use the Device list to select the sound card to output audio.

6. Click OK.
   The Audio Engine Setup dialog box opens.

7. In the Configuration section, use the Sample Rate list to select the sample rate for the audio signal.
   The selected sample rate defines the number of samples per second taken from analog signal to make a digital signal. A sample rate of 48 kHz is the recommended setting.
8. In the **Delay (frames)** box, enter or select the number of frames to delay the audio signal.

   XPression delays video 6 frames when used as material.

9. Click **OK**.

   The configured audio device is added to the **Audio Devices** tab of the **Hardware Setup** dialog box.

10. In the **Hardware Setup** dialog box, click **Close**.

    The **Hardware Setup** dialog box closes.

**Note:**

- Adding an audio device is not required to output embedded or AES audio.
Delete an Audio Device

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.

2. Click the Audio Devices tab.

3. In the Audio Devices list, select the Audio Device to delete.

4. Click Delete at the bottom of the dialog box.
   A Warning dialog box opens.

5. Click Yes.
   The selected audio device is deleted from Audio Devices list.

6. Click Close.
   The Hardware Setup dialog box closes.
Configure Video Preview and Audio Monitor

1. In XPression, use the Edit menu to select Hardware Setup.

   The Hardware Setup dialog box opens.

2. Click the Preview & Monitor tab.

3. In the Preview Output section, use the Output list select the video output device on which to preview video. All framebuffers can be used to preview video.

   When <none selected> is the selected preview output, video preview is only possible within XPression.

4. In the Audio Monitor section, use the Device list to select the audio output device from which to monitor audio.

5. Click Close.

   The Hardware Setup dialog box closes.
Configure GPI for RS232

1. Ensure that a USB-232 dongle is installed and assigned to a Communication port before configuring GPI for RS-232.

2. In XPression, use the Edit menu to select Hardware Setup.

   The Hardware Setup dialog box opens.

3. Click the GPI tab.

4. In the RS232 GPI Settings section, select Enable from the State list. Select Disabled to turn off GPI.

   When enabled, GPI (General Purpose Interface) is used to control functions of XPression in sequencer mode. GPI can trigger the state of the next take of scenes and scene groups from top to bottom of a sequence.

5. Use the Trigger Mode list to select the method used to trigger GPI. The available triggers are as follows:

   • On CTS High — trigger GPI when the XPression computer receives a Clear-To-Send signal through an RS232 (serial) connection.
   • On DSR High — trigger GPI when the XPression computer receives a Data-Set-Ready signal through an RS232 (serial) connection.
   • On Smart Command — trigger GPI when the XPression computer receives a command through a TCP/IP network connection.

6. Use the Port list to select the Communication port that receives GPI signals.

7. Use the Baudrate list to select the communication speed for GPI signals.

8. Use the Data Bits list to select the number of bits used to represent one character of data for GPI signals.

9. Use the Parity list to select the method used to check for lost data in a GPI signal.

10. Use the Stop Bits list to select the number of bits used to indicate the end of a byte in a GPI signal.

11. Use the Flow Control list to select the data transmission rate controller for a GPI signal.

   When using CTS or DSR GPs, the flow control must be set to Hardware. When using Smart GPs, the flow control can be set to Hardware or None, but it must be set the same in both XPression and the transmitting device.

12. In the Debounce Time box, enter or select the amount of milliseconds between sequential GPI pulses.

13. Click Close.

   The Hardware Setup dialog box closes.
For More Information on...

- configuring and working with GPIs, refer to the *GPI White Paper* available from Ross Video.
Configure GPI for TCP/IP

1. In XPression, use the Edit menu to select Hardware Setup.
   The Hardware Setup dialog box opens.
2. Click the GPI tab.

![Hardware Setup dialog box]

3. In the TCP/IP GPI Settings section, select Enable from the State list. Select Disabled to turn off GPI.
   When enabled, GPI (General Purpose Interface) is used to control functions of XPression in sequencer mode.
   GPI can trigger the state of the next take of scenes and scene groups from top to bottom of a sequence.
4. In the Port box, enter or select the communication port that receives GPI signals.
5. Click Close.
   The Hardware Setup dialog box closes.

For More Information on...

• configuring and working with GPIs, refer to the GPI White Paper available from Ross Video.
Scenes

Within in an XPression project, scenes are the containers that hold all of the objects and animations you build to form your graphical creation.

The following topics are discussed in this section:

• Create a Project
• Create a Scene
• Duplicate a Scene
• Delete a Scene
• Create a Scene Group
• Duplicate a Scene Group
• Delete a Scene Group
• Create a Roll/Crawl from a Scene Group
• Customize a Scene Group Roll/Crawl
Create a Project

1. In XPression, use the File menu to select New.

   The Confirm dialog box opens.

2. Select one of the following options for the current project:
   
   - Yes — save changes to the current project, then close the project.
   - No — close the project without saving changes.
   - Cancel — continue working on the project.

   After selecting Yes or No, the New Project dialog box opens.

3. In the Presets tree view, expand any video format node to view the available settings presets for the selected video format.

   The available settings presets are displayed for the selected video format.

4. Select a setting preset to define video format setting for the new project.

   The settings in the selected preset are displayed in the Settings section.

5. Click Browse to the right of the Location box to select a folder in which save the new project.

   The Browse for Folder dialog box opens.

6. In the Folder tree view, locate and select a folder in which save the new project.

7. Click OK.
In the **New Project** dialog box, the full pathname of the selected folder is displayed in the **Location** box.

**8.** Enter in the **Name** box a name for the new project.

Project names may only contain letters, numbers, spaces, hyphens, or underscores. Project files are saved with the extension `.xpf`.

**9.** Select the **Create Project Structure** check box to automatically create folders within the project folder to store project items (audio, video, dedicated fonts, images, models, etc.).

**10.** Click **OK**.

The new project is saved in the project folder and the **New Project** dialog box closes.
Create a Scene

1. In the Scene Manager window, select the scene or scene group below which to add a new scene.

2. Click the New Scene button in the toolbar.
   
   A new scene is added to the Scene Manager window below the scene or scene group selected in the scene list.

3. In the title bar of the new scene, right-click the scene name and select Rename from the shortcut menu.
   
   The scene name is selected for editing.

4. Enter a new name for the scene.

5. Press the Return key to save the new scene name.
   
   The scene title bar displays the entered name.

For More Information on...

- adding text objects to a scene, refer to the procedure “Create a Text Object” on page 5–2.
- adding text objects to a scene, refer to the procedure “Create a Quad Object” on page 8–2.
- adding text objects to a scene, refer to the procedure “Create a Sphere Object” on page 8–5.
- adding text objects to a scene, refer to the procedure “Create a Cube Object” on page 8–8.
- adding text objects to a scene, refer to the procedure “Import a 3D Model into a Scene” on page 8–20.
Create a Custom Size Scene

1. In the Scene Manager window, right-click the scene or scene group below which to add a new scene.
   The shortcut menu opens.

2. Select New > Custom Size Scene from the shortcut menu.
   The New Scene dialog box opens.

3. In the Virtual Dimensions section, use the Width box to enter or select the width in pixels of the new scene.
4. In the Height box, enter or select the height in pixels for the new scene.
5. Click **OK** to create a new scene with the defined settings and close the New Scene dialog box.

A new scene is added to the **Scene Manager** window below the scene or scene group selected in the scene list.

![Scene Manager window](image)

6. In the title bar of the new scene, right-click the scene name and select **Rename** from the shortcut menu.

The scene name is selected for editing.

7. Enter a new name for the scene.

8. Press the **Return** key to save the new scene name.

The scene title bar displays the entered name.
Duplicate a Scene

1. In the **Scene Manager** window, right-click the scene to duplicate.
   
   The shortcut menu opens.
   
2. Select **Duplicate** from the shortcut menu.
   
   A new scene is added to the **Scene Manager** window below the scene selected to duplicate.
   
3. In the title bar of the new scene, right-click the scene name and select **Rename** from the shortcut menu.
   
   The scene name is selected for editing.

4. Enter a new name for the scene.

5. Press the **Return** key to save the new scene name.
   
   The scene title bar displays the entered name.
Delete a Scene

1. In the **Scene Manager** window, right-click the scene to delete.
   The shortcut menu opens.

2. Select **Delete** from the shortcut menu.
   The **Warning** dialog box opens.

3. Click **Yes**.
   The selected scene is deleted from the **Scene Manager** window.

🌟 Deleting a scene also deletes all of the objects contained in the scene.
Create a Scene Group

A scene group is a collection of scenes that when played out, displays a vertical rolling credits effect or a horizontal crawling ticker effect.

1. In the Scene Manager window, select the scene or scene group above which to add a new scene group.

2. Click the New Scene Group button in the toolbar.

   A new scene group is added to the Scene Manager window above the scene or scene group selected in the scene list.

3. In the title bar of the new scene group, right-click the scene group name and select Rename from the shortcut menu.

   The scene group name is selected for editing.

4. Enter a new name for the scene group.

5. Press the Return key to save the new scene group name.

   The scene group title bar displays the entered name.

For More Information on...

- rendering output to an AVI file, refer to the procedure “Create a Roll/Crawl from a Scene Group” on page 4–12.
Duplicate a Scene Group

1. In the Scene Manager window, right-click the scene group to duplicate.
   The shortcut menu opens.

2. Select Duplicate from the shortcut menu.
   A new scene group is added to the Scene Manager window below the scene group selected to duplicate. All of the scenes contained in the original scene group are duplicated in the new scene group.

3. In the title bar of the new scene group, right-click the scene group name and select Rename from the shortcut menu.
   The scene group name is selected for editing.

4. Enter a new name for the scene group.

5. Press the Return key to save the new scene group name.
   The scene group title bar displays the entered name.
Delete a Scene Group

1. In the Scene Manager window, right-click the scene group to delete.
   The shortcut menu opens.

2. Select Delete from the shortcut menu.
   The Warning dialog box opens
   ★ Deleting a scene group also deletes all of the scenes contained in the scene group.

3. Click Yes.
   The selected scene group is deleted from the Scene Manager window.
Create a Roll/Crawl from a Scene Group

1. Create a new XPression project or open an existing XPression project to add a roll/crawl effect.

2. In the Scene Manager window, select the scene or scene group above which to add a new scene group.

3. Click the New Scene Group button in the toolbar.

   A new scene group is added to the Scene Manager window above the selected scene or scene group. By default, new scene groups are configured to play a Roll (bottom to top) effect.
4. Add objects to the scene group scene that need to be seen for the entire duration of the roll/crawl effect. For example, add objects to the scene group scene that comprise the background for a roll/crawl effect.

5. Click the **New Scene** button in the toolbar to add the first scene for the roll/crawl effect. A new scene is added below the scene group.

6. On the new scene, click and hold the left mouse button.
7. Drag the selected scene on top of the scene group scene.
8. Release the left mouse button.

   The new scene is added to scene group. Scenes contained in a scene group are indented and connected to the scene group by a leader line.

9. Add objects to the scene that are to move as part of the roll/crawl effect.

   For example, add a text object to the scene to represent the first line of text for a set of credits played by the roll/crawl effect.

10. Add additional scenes to the scene group as required.

   Duplicating the first scene added to a scene group is a quick way to add the scenes required for a roll/crawl effect. Scene duplication enables object reuse and object alignment to be maintained between scenes.

11. Add objects to and/or edit existing objects in the scenes that were added to the scene group.

   For example, each scene could contain a text object that represents one line of text in a set of credits played by the roll/crawl effect.

12. If the position of a scene in the scene group needs to be changed, click on the scene and drag it the required position in the scene group.

13. Double-click the scene group to playout the defined roll/crawl effect.

   The selected scene group is sent to the default output.

14. Press the **Spacebar** to start the scene group playout.

   The defined roll/crawl effect plays out through the default output.

**For More Information on...**

- duplicating scenes, refer to the procedure “**Duplicate a Scene**” on page 4–7
- customizing a scene group roll/crawl effect, refer to the procedure “**Customize a Scene Group Roll/Crawl**” on page 4–15 or the Online Help for the **Scene Group** tab of the **Object Inspector**.
Customize a Scene Group Roll/Crawl

1. In the **Scene Manager** window, select the scene group to customize.

   The selected scene group and the objects contained in it are listed in the **Object Manager** window.

   ![Scene Manager](image)

2. In the **Object Inspector - Scene Object** window, click the **Scene Group** tab.

   The **Scene Group** tab opens with the properties for the selected scene group.

   ![Object Inspector](image)

3. Use the properties in the **Group** section to set roll/crawl effect properties for a scene group.

   **Properties**

   **Effect** — use this list to select the roll/crawl effect with which to playout scenes in a scene group. The available effects are as follows:
   - **Roll** — move scene objects vertically.
   - **Crawl** — move scene objects horizontally.

   **Direction** — use this list to select the direction for the selected roll/crawl effect. The available directions depend on the selected **Effect**, and are as follows:

<table>
<thead>
<tr>
<th>Roll Effect</th>
<th>Crawl Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom To Top</td>
<td>Right To Left</td>
</tr>
<tr>
<td>Top To Bottom</td>
<td>Left To Right</td>
</tr>
</tbody>
</table>

   ![Property Table](image)
4. Use the properties in the **Duration** section to set the playout duration for the selected roll/crawl effect.

**Properties**

**Speed** — select this option to define the roll/crawl effect playout duration in pixels per second. Use the box to the right of this option to enter or select the number of pixels per second to playout a roll/crawl effect.

**Seconds** — select this option to define the roll/crawl effect playout duration in seconds. Use the box to the right of this option to enter or select the number of seconds in which to playout a roll/crawl effect.

**Frames** — select this option to define the roll/crawl effect playout duration in frames. Use the box to the right of this option to enter or select the number of frames in which to playout a roll/crawl effect.

5. Use the properties in the **Global Margins** section to set the spacing between scenes displayed in a roll/crawl effect.

**Properties**

**Top** — in this box, enter or select the size in pixels of the margin placed above objects in a scene. This margin is used to control vertical spacing between consecutive scenes played out in a roll effect. This box is only available when **Roll** is selected from the **Effect** list.

**Bottom** — in this box, enter or select the size in pixels of the margin placed below objects in a scene. This margin is used to control vertical spacing between consecutive scenes played out in a roll effect.

**Left** — in this box, enter or select the size in pixels of the margin placed to the left of objects in a scene. This margin is used to control horizontal spacing between consecutive scenes played out in a crawl effect.

**Right** — in this box, enter or select the size in pixels of the margin placed to the right of objects in a scene. This margin is used to control horizontal spacing between consecutive scenes played out in a crawl effect. This box is only available when **Crawl** is selected from the **Effect** list.

6. Use the properties in the **Loop** section to set the number of times to playout a roll/crawl effect.

**Properties**

**Enable Looping** — select this check box to loop the playout of a roll/crawl effect. Clear this check box to only playout the roll/crawl effect one time.

**Number of Shows Per Scene** — in this box, enter or select the number of times to loop the playout of a roll/crawl effect. Enter **0** to infinitely loop the playout.

This box is only available when the **Enable Looping** check box is selected.

7. Use the properties in the **Header/Footer** section to set the type of page with which to start and end a roll/crawl effect.

**Properties**

**Blank Page on Start** — select this check box to start the roll/crawl effect with a blank page before displaying the scenes in the roll/crawl effect. Clear this check box to start the roll/crawl effect with the first scene in the scene group.

**Blank Page on End** — select this check box to end the roll/crawl effect with a blank page after displaying the scenes in the roll/crawl effect. Clear this check box to end the roll/crawl effect with the last scene in the scene group.

**Treat Last Page as Full** — select this check box to display the last scene in a roll/crawl effect as a full page.
8. Use the properties in the **Start/Stop** section to control the start and end playout speed of a roll/crawl effect.

**Properties**

- **Ease In** — select this check box to slow the playout speed at the start of a roll/crawl effect.
  
  **Frames** — in this box, enter or select the number of frames at which to return a roll/crawl effect to normal playout speed.

- **Ease Out** — select this check box to slow the playout speed at the end of a roll/crawl effect.
  
  **Frames** — in this box, enter or select the number of frames from the end of a roll/crawl effect at which to slow the playout speed.

9. Use the property in the **Rendering** section to control lighting for a roll/crawl effect.

**Property**

- **Per Scene Lighting** — select this check box to use a different lighting source for each scene in a roll/crawl effect. Clear this check box to use the lighting source in the first scene of the scene group for all of the other scenes in the roll/crawl effect.

10. Double-click the scene group to preview the customized roll/crawl effect.

    The selected scene group is sent to the default output.

11. Press the **Spacebar** to start the scene group playout.

    The customized roll/crawl effect plays out through the default output.
Text

In XPression, text can be linked to various sources and formatted using defined styles.

The following topics are discussed in this section:

• Create a Text Object
• Publish Template Links
• Use Tabs in a Text Object
• Align Text Objects to Build a Table
• Apply a Material to a Text Object
Create a Text Object

1. In the **Scene Manager** window, select the scene or scene group to add a text object. The selected scene or scene group is displayed in the active **Viewport**.

2. In the **Base Objects** section of the **Object Library** window, click the **Text** button. A new text object is added to the upper left corner of the active **Viewport**.

3. In the **Object Inspector - Text Object** window, click the **Scene Fonts** tab. The **Scene Fonts** tab opens.

4. Select a font for the text object from the **Used** or **Stock** font list.

5. Type the text for the text object. The entered text is displayed in the text object.

6. To move the text object to a new position in the **Viewport**, place the cursor on the text object, press the **Ctrl** key, then click and drag the text object to a new position.
The settings on the **Transform** tab of the **Object Inspector - Text Object** window can be used to precisely position a text object.

For More Information on...

- fonts, refer to the section “**Fonts**” on page 12–1.
Publish Template Links

1. Add a text object to a scene.

2. Select the new text object.

3. In the Object Inspector - Text Object window, click the Template Links tab.
   
   The Template Links tab opens.

   ![Object Inspector - Text Object window](image)

   The Template Links tab lists the attributes associated with the selected object that can be published to the Template Data section in the Sequencer, where they are used in output mode to replace the template values.

4. In the Template Links section, select the Publish Object check box to publish the selected object.
   
   The object attribute information available for publishing and automation is listed below the Publish Object check box.

5. Select the check box in the Published column for each object attribute to publish.
   
   Text objects are published by default. This default can be disabled in the Project Properties.

6. If required, use the ↑ and ↓ button in the Published Object Order section to change the position of a selected object in the publishing hierarchy.
   
   The publishing hierarchy determines the order in which the published parameters are listed in the Take Inspector - Group window. Objects higher in the hierarchy are displayed higher in the list of published parameters.

For More Information on...

- adding a text object to a scene, refer to the procedure “Create a Text Object” on page 5–2.
- modifying template content for playout, refer to the procedure “Modify Template Content” on page 14–3.
Use Tabs in a Text Object

Tab are used to align text at set positions.

1. Add a text object to a scene.
2. Enter some text in the new text object, then press the Tab key.

   After the entered text, the cursor is positioned at the tab that follows the text. By default, five tabs are set for a text object. In a text object, tab positions are marked by a vertical line with an square on top.

3. To edit the tabs set for a text object, click the Tabs & Options tab in the Object Inspector - Text Object window.

   The Tabs & Options tab opens.

   The Tabs section lists the five default tab positions.

4. Use the Tabs section to edit, add, or delete tabs.
   a. To edit the position of a tab, click in the Position column and enter or select a new tab position in pixels.
      The text associated with the edited tab automatically moves to the new tab position.
   b. To edit the alignment of a tab, click in the Alignment column and select a new text alignment for the tab.
      The text associated with the edited tab automatically move to match the new text alignment set for the tab.
      The first tab sets the justification of a text object when no other tab are used.
   c. To add a new tab, click New.
      The new tab is added to the end of the tab list. Edit the values in the Position and Alignment columns to modify the new tab.
   d. To delete a tab, select the tab to delete in the tab list then click Delete.
      After a tab is deleted, text is reformatted to align with the remaining tabs.

5. Use the Auto Squeeze section to set the size settings of the text object.
   a. Select the Enabled check box to scale the text content within the maximum width of the text object.
   b. In the Max Width box, enter or select the maximum width of the text object.
   c. Click Set To Current to set the maximum width to the current width of the text object.
d. Use the **Scaling** list to select the scaling condition of the auto squeeze. The available scaling options are as follows:
   - **Width Only** — select to apply auto squeeze to the width of the text object.
   - **Height & Width** — select to apply auto squeeze to the height and width of the text object.

6. Use the **Auto Scale** section to set the scaling of the children to the parent text object.
   a. Select the **Enabled** check box to scale children according to the auto squeeze settings of the selected text object.
   b. Use the **Target** list to select the children to scale according to the auto squeeze configuration of the parent text object. The available target options are as follows:
      - **First Child** — scale the first child according to the auto squeeze configuration of the parent text object.
      - **Children** — scale the children according to the auto squeeze configuration of the parent text object.
   c. Use the **Mode** list to select the scaling condition of the auto scale. The available mode options are as follows:
      - **Width & Height** — select to apply auto scale to the width and height of the first child or children.
      - **Width Only** — select to apply auto scale to the width of the of the first child or children.
      - **Height Only** — select to apply auto scale to the height of the of the first child or children.

For More Information on...
   - adding a text object to a scene, refer to the procedure “Create a Text Object” on page 5–2.
Align Text Objects to Build a Table

1. In the **Scene Manager** window, select the scene or scene group to add a table.
2. Create a text object for each column heading in the table.

3. Position the text object of the first column heading in the scene to set the top left corner of the table.

4. In relation to the first column heading text object, position the text object of the last column heading to set the table width.

5. Use the **Selection** tool to select the text object of the first column heading.
6. Shift-click each of the remaining column heading text objects.

7. Click the **Align Bottom Edges** button in the toolbar.
   The bottom edges of all the column headings are aligned with the first column heading.
8. Click the **Distribute Objects Horizontally** button in the toolbar.

The column heading text objects are evenly distributed between the first and last column heading.

9. Below the column heading text objects, create a text object for each column value in the first row of the table.

10. Use the **Selection** tool to select the text object of the first column value.

11. Shift-click each of the remaining column value text objects.

12. Click the **Align Bottom Edges** button in the toolbar.
13. To create additional table rows, repeat steps 9 to 12.

14. Use the Selection tool to select the text object of the first column heading.

15. Shift-click each of the remaining text objects in the first column of the table.

16. Click the Align Left Edges button in the toolbar.

The left edges of all the text objects in the first column of the table are aligned with the first column heading.

17. Click the Distribute Objects Vertically button in the toolbar.
All the text objects in the first column of the table are evenly distributed between the column heading and the last table row.

18. For each of the remaining table columns, repeat steps 14 to 17.

For More Information on...
- creating text objects, refer to the procedure “Create a Text Object” on page 5–2.
Apply a Material to a Text Object

1. Select the characters in the text object to apply a material.

![Text object with selected characters](image)

2. Use the Display menu to select Material Manager.

The Material Manager window opens.

![Material Manager window](image)

The Material Manager contains text materials and materials, which can be applied to text and other objects.

3. In the Face column, select one or more text elements to apply a material.

After selecting the initial text element, Shift-click another element to select all elements between the two selections or Ctrl-click individual elements to add them to the original selection.

4. Select the thumbnail of the material to apply to the selected text.
5. Double click the thumbnail to apply the selected material to the selected text.
   The selected text elements of the selected text are updated with the selected material. The applied material does not affect the text font style.

6. To remove an applied material from a text element, Right-click the text element name in the Face column and select Unbind from the shortcut menu.
   The selected text element reverts to the material used by the text font style.

For More Information on...
- how to add a text object to a scene, refer to the procedure “Create a Text Object” on page 5–2.
Widgets

XPession widgets are used to generate clocks, timers, and counters for scenes.

The following topics are discussed in this section:

• Add a Realtime Clock Display to a Scene
• Customize the Time Format of a Widget
• Rename a Widget
Add a Realtime Clock Display to a Scene

1. In XPression, use the Display menu to select Widgets.
   The Widgets window opens.

2. In the Widgets window, select New Widget > Clock Timer.
   A realtime clock widget is added to the Widgets window.

3. Add a text object to a scene.

4. In the Object Manager window, select the text object for the realtime clock widget.

5. Click the Data Source tab in the Object Inspector - Text Object window.
   The Data Source tab opens.

6. Select the Widget option.
   A Widget list is displayed below the options.
7. Use the **Widget** list to select a realtime clock widget, for example **ClockTimer1**. Since widget names can be modified, the names of realtime clock widgets vary between XPression systems.

   A **Warning** dialog box opens.

8. Click **Yes**.

   The text in the selected text object is replaced with the time of day generated by the selected realtime clock widget.

9. Double-click the scene containing the text object linked to the realtime clock widget.

   The selected scene is sent to the default output, and the clock in linked text object starts running.

**For More Information on...**

- adding a text object to a scene, refer to the procedure “**Create a Text Object**” on page 5–2.
- customizing the time displayed by a widget, refer to the procedure “**Customize the Time Format of a Widget**” on page 6–4.
Customize the Time Format of a Widget

1. In a scene, select a text object that is associated with a realtime clock widget.

2. Click the **Data Source** tab in the **Object Inspector - Text Object** window.

   The **Data Source** tab opens.

3. In the **Select Data Source** section, note the name of the widget associated with the selected text object.

4. From the **Display** menu, select **Widgets**.

   The **Widgets** window opens.

5. In the **Widgets** window, right-click the widget associated with the selected text object.

   The shortcut menu opens.

6. Select **Properties** from the shortcut menu.

   The **Widget Properties (Realtime Clock, Timer)** dialog box opens
7. In the **Format** list, select or type the time format in which to display the current time and/or date. The available time formats are as follows:
   - **HH:NN** — 16:35
   - **HH:NN:SS** — 16:35:40
   - **HH:NN:SS.ZZZ** — 16:35:40.765
   - **HH:NN AM/PM** — 04:35 PM
   - **HH:NN:SS AM/PM** — 04:35:40 PM
   - **HH:NN:SS.ZZZ AM/PM** — 04:35:40.765 PM
   - **DD-MM-YY** — 27-11-09
   - **DD-MM-YY HH:NN** — 27-11-09 16:35
   - **DD-MM-YY HH:NN:SS** — 27-11-09 16:35:40
   - **DD/MM/YY** — 11/27/09
   - **DD/MM/YY HH:NN** — 11/27/09 16:35
   - **DD/MM/YY HH:NN:SS** — 11/27/09 16:35:40

   The characters used to separate the date and time strings can be changed for each time format.

8. Use the **Date Sep** list to select the character displayed between the elements of a date string.

9. Use the **Time Sep** list to select the character displayed between the elements of a time string.

10. In the **Time Offset** section, use the **Hours** box to enter or select the number of hours to offset the time displayed by a widget from the current local time.

11. In the **Mins** box, enter or select the number of minutes to offset the time displayed by a widget from the current local time.

12. In the **Secs** box, enter or select the number of seconds to offset the time displayed by a widget from the current local time.

13. In the **MS** box, enter or select the number of milliseconds to offset the time displayed by a widget from the current local time.

14. Click **OK**.

   The new settings are saved, and the **Widget Properties** dialog box closes.

15. Double-click the scene containing the text object linked to the realtime clock widget.

   The selected scene is sent to the default output, and the customized clock in the liked text object starts running.
Rename a Widget

1. From the Display menu, select Widgets.
   The Widgets window opens.

2. In the Widgets window, right-click the widget to rename.
   The shortcut menu opens.

3. Select Rename from the shortcut menu.
   The Rename Widget dialog box opens.

4. In the Name box, enter a new name for the selected widget.

5. Click OK.
   The selected widget is updated with the new name.
Add a Timer Display to a Scene

1. In XPression, use the Display menu to select Widgets.

   The Widgets window opens.

2. In the Widgets window, select New Widget > Clock Timer.

   A clock timer widget is added to the Widgets window.

3. In the Widgets window, right-click the widget associated with the selected text object.

   The shortcut menu opens.

4. Select Properties from the shortcut menu.

   The Widget Properties (Realtime Clock, Timer) dialog box opens
5. Use the **Mode** list to select **Timer**.

The **Widget Properties** dialog box displays the settings for a timer.

![Widget Properties dialog box]

6. In the **Start At** box, enter the hours, minutes, seconds, and hundredths of seconds of the time from which to start the timer. The maximum start time is 23:59:59.999.

7. In the **Stop At** box, enter the hours, minutes, seconds, and hundredths of seconds of the time at which to stop the timer. The maximum stop time is 23:59:59.999.

8. Use the **Direction** list to select the timer direction. The available directions are as follows:
   - **Up** — increase the time value from the time set in the Start At box until the timer is stopped.
   - **Down** — decrease the time value from the time set in the Start At box until the timer is stopped.

9. In the **Format** list, select or type the time format used by the widget to display the current time value. The available time formats are as follows:
   - **S** — 16545
   - **SS** — 16545
   - **S.ZZZ** — 16545.765
   - **SSS.ZZZ** — 16545.765
   - **HH:NN** — 04:35
   - **HH:NN:SS** — 04:35:40
   - **HH:NN:SS.ZZZ** — 04:35:40.765
   - **NN:SS** — 35:40
   - **NN:SS.ZZZ** — 35:40.765

10. Use the **Start** list to select the method used to start the timer. The available methods are as follows:
   - **Manual** — in the Widget window, click the Start button associated with the timer widget to start the timer.
   - **When Online** — start the timer when the scene goes online.
   - **Ctrl + 1** — press the Ctrl and 1 key at the same time to start the timer.
   - **Ctrl + 2** — press the Ctrl and 2 key at the same time to start the timer.
   - **Ctrl + 3** — press the Ctrl and 3 key at the same time to start the timer.
   - **Ctrl + 4** — press the Ctrl and 4 key at the same time to start the timer.
   - **Ctrl + 5** — press the Ctrl and 5 key at the same time to start the timer.
   - **Ctrl + 6** — press the Ctrl and 6 key at the same time to start the timer.
   - **Ctrl + 7** — press the Ctrl and 7 key at the same time to start the timer.
   - **Ctrl + 8** — press the Ctrl and 8 key at the same time to start the timer.
   - **Ctrl + 9** — press the Ctrl and 9 key at the same time to start the timer.
11. Use the **Stop** list to select the method used to stop the timer. The available methods are as follows:
   - **Manual** — in the Widget window, click the Stop button associated with the timer widget to stop the timer.
   - **When Offline** — stop the timer when the scene goes offline.
   - **Ctrl + 1** — press the Ctrl and 1 key at the same time to stop the timer.
   - **Ctrl + 2** — press the Ctrl and 2 key at the same time to stop the timer.
   - **Ctrl + 3** — press the Ctrl and 3 key at the same time to stop the timer.
   - **Ctrl + 4** — press the Ctrl and 4 key at the same time to stop the timer.
   - **Ctrl + 5** — press the Ctrl and 5 key at the same time to stop the timer.
   - **Ctrl + 6** — press the Ctrl and 6 key at the same time to stop the timer.
   - **Ctrl + 7** — press the Ctrl and 7 key at the same time to stop the timer.
   - **Ctrl + 8** — press the Ctrl and 8 key at the same time to stop the timer.
   - **Ctrl + 9** — press the Ctrl and 9 key at the same time to stop the timer.

12. Use the **Reset** list to select the method used to reset the timer. The available methods are as follows:
   - **Manual** — in the Widget window, click the Reset button associated with the timer widget to reset the timer to the start time set for the timer widget.
   - **When Online** — reset the timer when the scene goes online.
   - **When Offline** — reset the timer when the scene goes offline.
   - **Ctrl + 1** — press the Ctrl and 1 key at the same time to reset the timer.
   - **Ctrl + 2** — press the Ctrl and 2 key at the same time to reset the timer.
   - **Ctrl + 3** — press the Ctrl and 3 key at the same time to reset the timer.
   - **Ctrl + 4** — press the Ctrl and 4 key at the same time to reset the timer.
   - **Ctrl + 5** — press the Ctrl and 5 key at the same time to reset the timer.
   - **Ctrl + 6** — press the Ctrl and 6 key at the same time to reset the timer.
   - **Ctrl + 7** — press the Ctrl and 7 key at the same time to reset the timer.
   - **Ctrl + 8** — press the Ctrl and 8 key at the same time to reset the timer.
   - **Ctrl + 9** — press the Ctrl and 9 key at the same time to reset the timer.

13. Click **OK**.

   The new settings are saved, and the updated widget is displayed in the **Widget** window.

14. Add a text object to a scene.
15. In the **Object Manager** window, select the text object for the clock timer widget.

![Object Manager](image1.png)

16. Click the **Data Source** tab in the **Object Inspector - Text Object** window.

   The **Data Source** tab opens.

![Object Inspector - Text Object](image2.png)

17. Select the **Widget** option.

   A **Widget** list is displayed below the options.

18. Use the **Widget** list to select a timer widget, for example **ClockTimer2**. Since widget names can be modified, the names of timer widgets vary between XPression systems.

   A **Warning** dialog box opens.

19. Click **Yes**.

   The text in the selected text object is replaced with a time generated by the selected timer widget.

20. Double-click the scene containing the text object linked to the timer widget.

   The selected scene is sent to the default output, and the linked text object displays the timer.

21. Use the start method set in step 10 to start the timer.

**For More Information on...**

- adding a text object to a scene, refer to the procedure “**Create a Text Object**” on page 5–2.
Add a Counter Display to a Scene

1. In XPression, use the Display menu to select Widgets.
   The Widgets window opens.

2. In the Widgets window, select New Widget > Counter.
   A counter widget is added to the Widgets window.

3. In the Value box, enter or select the number at which to start the counter.

4. Add a text object to a scene.

5. In the Object Manager window, select the text object for the counter widget.

6. Click the Data Source tab in the Object Inspector - Text Object window.
   The Data Source tab opens.

7. Select the Widget option.
   A Widget list is displayed below the options.
8. Use the Widget list to select a counter widget, for example Counter1. Since widget names can be modified, the names of counter widgets vary between XPression systems.

   A Warning dialog box opens.

9. Click Yes.

   The text in the selected text object is replaced with the starting number set for the counter in step 3.

10. Double-click the scene containing the text object linked to the counter widget.

    The selected scene is sent to the default output, and the linked text object displays the counter starting number.

11. In the Widget window, click the Up button associated with the timer widget increase the counter value. To decrease the counter value, click the Down button associated with the timer widget

For More Information on...

- adding a text object to a scene, refer to the procedure “Create a Text Object” on page 5–2.
- customizing the counter displayed by a widget, refer to the procedure “Customize the Time Format of a Widget” on page 6–4.
Customize the Counter Format of a Widget

1. In a scene, select a text object that is associated with a counter widget.
2. Click the Data Source tab in the Object Inspector - Text Object window.
   The Data Source tab opens.

3. In the Select Data Source section, note the name of the widget associated with the selected text object.
4. From the Display menu, select Widgets.
   The Widgets window opens.

5. In the Widgets window, right-click the widget associated with the selected text object.
   The shortcut menu opens.
6. Select **Properties** from the shortcut menu.

The **Widget Properties (Counter)** dialog box opens

![Widget Properties (Counter) dialog box]

7. Use the **Count Up** list to select the method used to increase the counter value. The available methods are as follows:

   - **Manual** — in the Widget window, click the Up button associated with the counter widget to increase the counter value.
   - **When Online** — increase the counter value when the scene goes online.
   - **Ctrl + 1** — press the Ctrl and 1 key at the same time to increase the counter value.
   - **Ctrl + 2** — press the Ctrl and 2 key at the same time to increase the counter value.
   - **Ctrl + 3** — press the Ctrl and 3 key at the same time to increase the counter value.
   - **Ctrl + 4** — press the Ctrl and 4 key at the same time to increase the counter value.
   - **Ctrl + 5** — press the Ctrl and 5 key at the same time to increase the counter value.
   - **Ctrl + 6** — press the Ctrl and 6 key at the same time to increase the counter value.
   - **Ctrl + 7** — press the Ctrl and 7 key at the same time to increase the counter value.
   - **Ctrl + 8** — press the Ctrl and 8 key at the same time to increase the counter value.
   - **Ctrl + 9** — press the Ctrl and 9 key at the same time to increase the counter value.

8. Use the **Count Down** list to select the method used to decrease the counter value. The available methods are as follows:

   - **Manual** — in the Widget window, click the Down button associated with the counter widget to decrease the counter value.
   - **When Offline** — decrease the counter value when the scene goes offline.
   - **Ctrl + 1** — press the Ctrl and 1 key at the same time to decrease the counter value.
   - **Ctrl + 2** — press the Ctrl and 2 key at the same time to decrease the counter value.
   - **Ctrl + 3** — press the Ctrl and 3 key at the same time to decrease the counter value.
   - **Ctrl + 4** — press the Ctrl and 4 key at the same time to decrease the counter value.
   - **Ctrl + 5** — press the Ctrl and 5 key at the same time to decrease the counter value.
   - **Ctrl + 6** — press the Ctrl and 6 key at the same time to decrease the counter value.
   - **Ctrl + 7** — press the Ctrl and 7 key at the same time to decrease the counter value.
   - **Ctrl + 8** — press the Ctrl and 8 key at the same time to decrease the counter value.
   - **Ctrl + 9** — press the Ctrl and 9 key at the same time to decrease the counter value.
9. Use the **Reset** list to select the method used to reset the counter. The available methods are as follows:
   - **Manual** — in the Widget window, click the Reset button associated with the counter widget to reset the counter to the set starting value.
   - **When Online** — reset the counter when the scene goes online.
   - **When Offline** — reset the counter when the scene goes offline.
   - **Ctrl + 1** — press the Ctrl and 1 key at the same time to reset the counter.
   - **Ctrl + 2** — press the Ctrl and 2 key at the same time to reset the counter.
   - **Ctrl + 3** — press the Ctrl and 3 key at the same time to reset the counter.
   - **Ctrl + 4** — press the Ctrl and 4 key at the same time to reset the counter.
   - **Ctrl + 5** — press the Ctrl and 5 key at the same time to reset the counter.
   - **Ctrl + 6** — press the Ctrl and 6 key at the same time to reset the counter.
   - **Ctrl + 7** — press the Ctrl and 7 key at the same time to reset the counter.
   - **Ctrl + 8** — press the Ctrl and 8 key at the same time to reset the counter.
   - **Ctrl + 9** — press the Ctrl and 9 key at the same time to reset the counter.

10. In the **Value Increment** box, enter or select the amount to change the counter value when the counter value is increased or decreased.

11. In the **Max Value** box, enter or select the number at which the counter stops increasing the counter value.

12. In the **Min Value** box, enter or select the number at which the counter stops decreasing the counter value.

13. Click **OK**.

   The new settings are saved, and the **Widget Properties** dialog box closes.

14. Double-click the scene containing the text object linked to the counter widget.

   The selected scene is sent to the default output, and the linked text object displays the counter starting number.

15. Use the increment methods set in steps 7 and 8 to change the counter value.
Add a Text List to a Scene

1. In XPression, use the Display menu to select Widgets.
   The Widgets window opens.

2. In the Widgets window, select New Widget > Text List.
   A text list widget is added to the Widgets window.

3. Add a text object to a scene.

4. In the Object Manager window, select the text object for the text list widget.

5. Click the Data Source tab in the Object Inspector - Text Object window.
   The Data Source tab opens.

6. Select the Widget option.
   A Widget list is displayed below the options.
7. Use the **Widget** list to select a text list widget, for example **TextList1**. Since widget names can be modified, the names of text list widgets vary between XPression systems.

   A **Warning** dialog box opens.

8. Click **Yes**.

   The selected scene is sent to the default output.

**For More Information on...**

- adding a text object to a scene, refer to the procedure “**Create a Text Object**” on page 5–2.
DataLinq™

DataLinq enables live templates to be automatically filled with external data from XML files, RSS feeds, SMS servers, Text files, or any ODBC data source; like Access, MS SQL, Interbase, Firebird, or MySQL.

The XPression DataLinq Server software runs on either the XPression system itself, or one or more other computer systems to gather data from external sources and make it available to XPression systems. XPression systems use the XPression DataLinq Manager to connect to one or more DataLinq Servers (Figure 7.1). The XPression DataLinq Manager enables objects in an XPression project to link to any of the external data sources gathered by the connected DataLinq Servers.

![Diagram of DataLinq Connections to External Data Sources](image)

Figure 7.1 DataLinq Connections to External Data Sources

The following topics are discussed in this section:

- Start the DataLinq Server
- Connect XPression to a DataLinq Server
- Link a Text Object to a DataLinq Data Source
**Start the DataLinq Server**

1. Use one of the following methods to start the DataLinq Server.
   - Double-click the **XPression DataLinq Server** icon on the desktop.
   - Use the **Start** menu to select **All Programs > XPression > XPression DataLinq Server**.

   The **XPression DataLinq Server** window opens.

   ![DataLinq Server Window](image)

   The port number used by the DataLinq Server to communicate with other XPression clients is displayed in the window title bar.

2. Click **Add New**.

   The **Add DataLinq Source** dialog box opens.

   ![Add DataLinq Source Dialog](image)

3. From the list of DataLinq sources, select the type of external data source to access. The available types of DataLinq sources are as follows:
   - **ADODB DataLinq Source** — access data contained in OLEDB, ODBC, Access, and other database sources.
   - **Daktronics** — access data from the Daktronics sports feed database.
   - **Excel DataLinq Source** — access data contained in Excel files stored on disk.
   - **GSIS DataLinq Source** — access data from the NFL Game Statistics & Information System.
   - **RSS Feed DataLinq Source** — access data through a RSS (Really Simple Syndication) feed. RSS feeds use a standard format to publish frequently updated works; such as, news headlines, blog entries, audio, and video.
   - **Text DataLinq Source** — access data contained in delimited text files stored on disk.
   - **XML DataLinq Source** — access data contained in XML files stored on disk.

4. Click **OK**.

   The dialog box that opens to define data source settings depends on the selected data source.

5. Configure the selected DataLinq source.
**ADODB DataLinq Source**

The **ADODB Linq - Configuration** dialog box opens.

![ADODB Linq - Configuration dialog box](image)

**a.** Enter in the **Connection String** box the connection string of the DataLinq Source, or click **Templates** to select an existing connection string.

**b.** Click **Test Connection** to view the status of the connection string.

**c.** Select the **Table** option and use the list to select a table from the connected database.

**d.** Select the **SQL Query** option and modify the string to query the database.

**e.** Click **Refresh** to update the data retrieved from the database.

**f.** Enter or select a time in seconds in the **Refresh Every** box to update the data retrieved from the database.

**g.** Select the **Wrap Indices** check box to wrap the indices above the record count within record count limits. This check box should be selected when using looping queries.

**h.** Click **OK**.

The **ADODB DataLinq - Configuration** dialog box closes and the new DataLinq Source is added to the **DataLinq Sources** section of the **XPression DataLinq Server** window.

**Daktronics DataLinq Source**

The **Daktronics Linq - Configuration** dialog box opens.

![Daktronics Linq - Configuration dialog box](image)
a. Use the **Game Feed** list to select a Daktronics sports feed. The available sports feeds are as follows:

- Baseball
- Basketball
- Football
- Hockey
- Soccer
- Volleyball

b. Select the **Trim Text** check box to trim the text.

c. In the **Connection Options** section, use the **Connection Type** options to select the connection to the Daktronics device:

- **UDP** — select this option to use a UDP port as the connection type and configure the following:
  - **Port** — enter or select the UDP port number for the Daktronics device.
- **Serial** — select this option to use a serial port as the connection type and configure the following:
  - **Port** — enter or select the serial port number for the Daktronics device.
  - **Baudrate** — use the list to select the communication speed for the signals.
  - **Data Bits** — use the list to select the number of bits used to represent one character of data for the signals.
  - **Parity** — use the list to select the method used to check for lost data in a signal.
  - **Stop Bits** — use the list to select the number of bits used to indicate the end of a byte in a signal.
  - **Flow Control** — use the list to select the data transmission rate controller for a signal.

d. Click OK.

The Daktronics Linq - Configuration dialog box closes and the new DataLinq Source is added to the DataLinq Sources section of the XPression DataLinq Server window.

**Excel DataLinq Source**

The Excel Linq - Configuration dialog box opens.

a. Enter in the **Filename** box the full pathname of the Excel file that contains the data for the DataLinq source, or click **Browse (…)** to use the **Open** dialog box to locate and open the Excel file.

b. Use the **Open Mode** setting to select the method used by the DataLinq server to open the selected Excel file for data access. The available modes are as follows:

- **Open in background** — select this option to open the Excel file in the background, without starting an instance of the Excel program.
- **Open in new Excel instance** — select this option to open the Excel file in a new instance of the Excel program.
• **Open in existing Excel instance** — select this option to open the Excel file in an existing instance of the Excel program. A new instance of the Excel program is started when there is no existing instance of the Excel program.

c. Use the **Worksheet** list to select the worksheet in the Excel file that contains the data for the DataLinq source.

d. Click OK.

The **Excel Linq - Configuration** dialog box closes and the new DataLinq Source is added to the **DataLinq Sources** section of the **XPression DataLinq Server** window.

**GSIS DataLinq Source**

The **GSIS Linq - Configuration** dialog box opens.

![GSIS Linq - Configuration dialog box](image)

a. In the **Message Queue Path** box, enter the full pathname of the message queue folder.

> It is essential that the **Message Queue Path** matches the information sent from GSIS

b. In the **Message Label** box, enter a name for the message queue.

c. Select the **Wrap Indices** check box to wrap the indices above the record count within record count limits. This check box should be selected when using looping queries.

d. Select the **Cache Results To Disk** check box to cache query results to disk. This check box should be selected when using looping queries.

e. Click OK.

The **GSIS Linq - Configuration** dialog box closes and the new DataLinq Source is added the **DataLinq Sources** section of the **XPression DataLinq Server** window.

**RSS Feed DataLinq Source**

The **RSS Linq - Configuration** dialog box opens.

![RSS Linq - Configuration dialog box](image)

a. In the **URL** box, enter the URL used to access the RSS feed.

b. In the **Update Interval** box, enter or select the number of milliseconds to wait between RSS feed update checks.

c. Select the **Wrap Indices** check box to wrap the indices above the record count within record count limits. This check box should be selected when using looping queries.

d. Select the **Use Basic Authentication** check box to set a username and password for the DataLinq Source.

e. In the **User Name** box, enter a username for the basic authentication.
f. In the **Password** box, enter a password for the basic authentication.

g. Click **OK**.

The **RSS Linq - Configuration** dialog box closes and the new DataLinq Source is added the **DataLinq Sources** section of the **XPression DataLinq Server** window.

### Text DataLinq Source

The **Text Source - Setup** dialog box opens.

![Image of Text DataLinq Source dialog box]

**a.** Enter in the **Filename** box the full pathname of the text file that contains the data for the DataLinq source, or click **Browse (...)** to use the **Open** dialog box to locate and open the text file.

**b.** In the **Format** section, use the **Delimiter** list to select the character used to divide the data values on each line in the text file. The available delimiters are as follows:

- Comma (,)
- Colon (:)
- Semicolon (;)
- Tab
- None
- Other

When **Other** is selected delimiter, enter the delimiter character to use in the box to the right of this list.

**c.** Use the **Text Quotation** list to select the character used to enclose quotations. The available characters are as follows:

- Normal Quotation Mark (“)
- Apostrophe (’)

**d.** Use the **Escape Quotes in Text Using** setting to select the method used to treat quotation marks in the text file as a regular character. The available modes are as follows:

- Two Quotation Marks — select this option to treat two quotation marks (""") as a single quotation mark ("”) character with no special meaning.
- Backslash Prefix — select this option to treat backslash character followed by a quotation mark ("”) as a single quotation mark ("”) character with no special meaning.

HTML character entity references are converted to the correct symbol, such as &copy (©) and &reg (®).

**e.** Click **OK**.
The **Text Linq - Configuration** dialog box closes and the new DataLinq Source is added to the **DataLinq Sources** section of the **XPression DataLinq Server** window.

**XML DataLinq Source**

The **XML Linq - Configuration** dialog box opens.

![XML Linq - Configuration dialog box](image.png)

a. Enter in the **Filename** box the full pathname of the XML file that contains the data for the DataLinq source, or click **Browse (...)** to use the **Open** dialog box to locate and open the XML file.

b. Select the **Wrap Indices** check box to wrap the indices above the record count within record count limits. This check box should be selected when using looping queries.

c. Click **OK**.

The **XML Linq - Configuration** dialog box closes and the new DataLinq Source is added to the **DataLinq Sources** section of the **XPression DataLinq Server** window.

6. In the **Name** column of the **XPression DataLinq Server** window, click a DataLinq Source name to select the DataLinq name.

7. Enter a new name for the selected DataLinq source.

**For More Information on...**

- connecting to a DataLinq Server from XPression, refer to the procedure “**Connect XPression to a DataLinq Server**” on page 7–8.
- creating a text object from a DataLinq source, refer to the procedure “**Link a Text Object to a DataLinq Data Source**” on page 7–9.
Connect XPression to a DataLinq Server

1. In the Editor window, select Project > DataLinq Manager. The XPression DataLinq Manager dialog box opens.

2. Click Add. The DataLinq Server - Properties dialog box opens.

3. In the Name box, enter a name for the new DataLinq server connection.

4. In the Host Address box, enter a the IP address of the computer running the DataLinq server to which to connect. Enter localhost when the DataLinq server is running of the same computer as XPression.

5. In the Port box, enter or select the port number used to communicate with the computer running the DataLinq server. The default port number is 8888.

6. Click OK. The defined DataLinq server connection is added to the DataLinq Servers section of the XPression DataLinq Manager dialog box. The DataLinq sources made available by the new DataLinq server connection are listed in the Available DataLinq Sources section.

7. To connect to additional DataLinq servers, follow steps 2 to 6.

For More Information on...

- running a DataLinq server and configuring DataLinq sources, refer to the procedure “Start the DataLinq Server” on page 7–2
- creating a text object from a DataLinq source, refer to the procedure “Link a Text Object to a DataLinq Data Source” on page 7–9.
Link a Text Object to a DataLinq Data Source

1. Add a text object to a scene.
2. In the **Object Manager** window, select the text object for the DataLinq.

3. Click the **Data Source** tab in the **Object Inspector - Text Object** window.
   The **Data Source** tab opens.

4. Select the **DataLinq** option.
   DataLinq information and a **Set** button are displayed below the options.

5. Click **Set**.
   The **Set DataLinq Properties** dialog box opens.

6. Select the **Enabled** check box to enable DataLinq property configuration for the text object.

7. Use the **DataLinq** list to select the DataLinq source that contains the data for the text object to display.

8. Click **Browse** to use the **Select DataLinq Field** dialog box to select the column and row that contain the text object data, or use the **Column** and **Row** boxes to enter the names of the column and row that contain the text object data.

9. Use the **<n> Increment** box to select or enter a value other than 0 when the <n> increment differs from the number of templates.

10. Select the **Live Update** check box to immediately update an online text object with changes from the associated DataLinq source changes when the scene is on-air.

11. Select the **Entity Decoding** check box to translate HTML character entity reference codes into the correct corresponding characters.
For example, the HTML character entity reference code &copy; is translated into the © character for a text object.

12. Click OK.

Data from the selected DataLinq source is displayed by the selected text object.

For More Information on...
• adding a text object to a scene, refer to the procedure “Create a Text Object” on page 5–2.
• running a DataLinq server and configuring DataLinq sources, refer to the procedure “Start the DataLinq Server” on page 7–2.
• connecting to a DataLinq Server from XPression, refer to the procedure “Connect XPression to a DataLinq Server” on page 7–8.
Shapes

The shapes available in XPression to build a graphic creation include quads, spheres, cubes, and 3D models imported from external 3D applications.

The following topics are discussed in this section:

- Create a Quad Object
- Create a Sphere Object
- Create a Cube Object
- Set the Culling Mode for a Cube Object
- Import a 3D Model into a Scene
- Group Scene Objects
- Position an Object
Create a Quad Object

1. In the **Scene Manager** window, select the scene or scene group to add a quad object. The selected scene or scene group is displayed in the active **Viewport**.

2. In the **Primitives** section of the **Object Library** window, click the **Quad** button. A new quad object is added to the center of the active **Viewport**.

   ![Quad Object Example]

   The new quad object is invisible until a material applied to it.

3. In the **Object Inspector - Quad Object** window, click the **Quad** tab. The **Quad** tab opens.

![Quad Object Tab]

4. In the **Options** section, use the **Width** box to enter or select a value in pixels to set the width of the quad object.

5. In the **Height** box, enter or select a value in pixels to set the height of the quad object. Select the **Lock Aspect** check box to maintain the aspect ratio between the width and height of a quad object when changing the value in the **Width** or **Height** box.
6. Use the **Display** menu to select **Material Manager**. The **Material Manager** window opens.

![Material Manager Window](image1.png)

7. Double-click the thumbnail of the material to apply to the quad object. The surface of the quad object is covered with the selected material.

![Quad Object with Material](image2.png)

8. To remove the material from a quad object, Right-click the quad object name in the **Face** column and select **Unbind** from the shortcut menu. Without a material, quad objects are displayed as a wire frame mesh.
9. To move the quad object to a new position in the Viewport, place the cursor on the quad object, press the Ctrl key, then click and drag the quad object to a new position.

To precisely position the quad object, use the settings on the Transform tab of the Object Inspector - Quad Object window.
Create a Sphere Object

1. In the **Scene Manager** window, select the scene or scene group to add a sphere object. The selected scene or scene group is displayed in the active **Viewport**.

2. In the **Primitives** section of the **Object Library** window, click the **Sphere** button. A new sphere object is added to the center of the active **Viewport**.

   ![Sphere Object in XPression](image)

   The new sphere object is invisible until a material applied to it.

3. In the **Object Inspector - Quad Sphere** window, click the **Sphere** tab. The **Sphere** tab opens.

4. In the **Options** section, use the **Diameter** box to enter or select a value in pixels to set the diameter of the sphere object.

5. In the **Tesselation** box, enter or select the number of vertices used to construct the sphere object. The number of vertices used to construct a sphere object is directly related to the quality and smoothness of the sphere object. More vertices equals a higher quality sphere object with a smoother surface, but may compromise output performance.
6. Use the Display menu to select Material Manager.

The Material Manager window opens.

7. Double-click the thumbnail of the material to apply to the sphere object.

The surface of the sphere object is covered with the selected material.

8. To remove the material from the sphere object, Right-click the sphere object name in the Face column and select Unbind from the shortcut menu.

Without a material, sphere objects are displayed as a wire frame mesh.
9. To move the sphere object to a new position in the **Viewport**, place the cursor on the sphere object, press the **Ctrl** key, then click and drag the sphere object to a new position.

To precisely position a sphere object, use the settings on the **Transform** tab of the **Object Inspector - Sphere Object** window.
Create a Cube Object

1. In the **Scene Manager** window, select the scene or scene group to add a cube object. The selected scene or scene group is displayed in the active **Viewport**.

2. In the **Primitives** section of the **Object Library** window, click the **Cube** button. A new cube object is added to the center of the active **Viewport**.

![Image of a cube object in a viewport]

The new cube object is invisible until a material applied to it.

3. In the **Object Inspector - Cube Object** window, click the **Cube** tab.

The **Cube** tab opens.

![Image of the Object Inspector - Cube Object window]

4. In the **Options** section, use the **Width** box to enter or select a value in pixels to set the width of the cube object.

5. In the **Height** box, enter or select a value in pixels to set the height of the cube object.

6. In the **Depth** box, enter or select a value in pixels to set the depth of the cube object.

   Select the **Lock Aspect** check box to maintain the aspect ratio between the width, height, and depth of a cube object when changing the value in the **Width**, **Height**, or **Depth** box.
7. Use the **Display** menu to select **Material Manager**.

   The **Material Manager** window opens.

![Material Manager Window](image1)

8. In the **Face** column, select one or more cube faces to apply a material.

   After selecting the initial cube face, Shift-click another face to select all faces between the two selections or Ctrl-click individual faces to add them to the original selection.

9. Double-click the thumbnail of the material to apply to the cube object.

   The selected cube faces are covered with the selected material.

![Cube with Material](image2)

10. To remove the material from a cube face, Right-click the cube face in the **Face** column and select **Unbind** from the shortcut menu.

    Without a material, cube faces are displayed as a wire frame mesh.

11. To move the cube object to a new position in the **Viewport**, place the cursor on the cube object, press the **Ctrl** key, then click and drag the cube object to a new position.
To precisely position a cube object, use the settings on the Transform tab of the Object Inspector - Cube Object window.
Create a Cylinder Object

1. In the Scene Manager window, select the scene or scene group to add a cylinder object. The selected scene or scene group is displayed in the active Viewport.

2. In the Primitives section of the Object Library window, click the Cylinder button. A new cylinder object is added to the center of the active Viewport.

The new cylinder object is invisible until a material is applied to it.

3. In the Object Inspector - Cylinder Object window, click the Cylinder tab.

The Cylinder tab opens.

4. In the Options section, use the Diameter 1 and Diameter 2 box to enter or select a value in pixels to set the diameters of the cylinder object.

Select the Lock Aspect check box to maintain the aspect ratio between the diameters of a cylinder object when changing the value in the Diameter 1 or Diameter 2 box.

5. In the Length box, enter or select a value in pixels to set the length of the cylinder object.

6. In the Tessellation box, enter or select a number of vertices to construct the cylinder object.

7. Select the End Caps check box to add a Face to the ends of the cylinder object.
8. Use the Display menu to select Material Manager. 

The Material Manager window opens.

9. In the Face column, select one or more cylinder faces to apply a material. 

After selecting the initial cylinder face, Shift-click another face to select all faces between the two selections or Ctrl-click individual faces to add them to the original selection.

10. Double-click the thumbnail of the material to apply to the cylinder object.

The selected cylinder faces are covered with the selected material.

11. To remove the material from a cylinder face, Right-click the cylinder face in the Face column and select Unbind from the shortcut menu.

Without a material, cylinder faces are displayed as a wire frame mesh.
12. To move the cylinder object to a new position in the Viewport, place the cursor on the cylinder object, press the Ctrl key, then click and drag the cylinder object to a new position.

To precisely position a cylinder object, use the settings on the Transform tab of the Object Inspector - Cylinder Object window.
Create a Torus Object

1. In the Scene Manager window, select the scene or scene group to add a torus object. The selected scene or scene group is displayed in the active Viewport.

2. In the Primitives section of the Object Library window, click the Torus button. A new torus object is added to the center of the active Viewport.

The new torus object is invisible until a material applied to it.

3. In the Object Inspector - Torus Object window, click the Torus tab. The Torus tab opens.

4. In the Options section, use the Main Diameter box to enter or select a value in pixels to set the diameter of the center of the torus object.

5. In the Tube Diameter box, enter or select a value in pixels to set the diameter of the tube of the torus object.

6. In the Tesselation box, enter or select a number of vertices to construct the torus object.
7. Use the Display menu to select **Material Manager**.
   The **Material Manager** window opens.

8. Double-click the thumbnail of the material to apply to the torus object.
   The torus face is covered with the selected material.

9. To remove the material from a torus face, Right-click the torus face in the **Face** column and select **Unbind** from the shortcut menu.
   Without a material, the torus face is displayed as a wire frame mesh.

10. To move the torus object to a new position in the **Viewport**, place the cursor on the torus object, press the **Ctrl** key, then click and drag the torus object to a new position.
    To precisely position a torus object, use the settings on the **Transform** tab of the **Object Inspector - Torus Object** window.
Set the Culling Mode for a Cube Object

1. Add a cube object to a scene.
2. Select the new cube object.
3. Click the Rendering tab in the Object Inspector - Cube Object window.

The Rendering tab opens.

4. Use the Culling Mode list to select the culling mode for the selected cube object. The available culling modes are as follows:
   - None — do not cull back faces of a cube. This mode renders all faces of a cube object, even the faces that are not visible.
   - Clockwise — cull the back faces of a cube object that have clockwise vertices. In this mode, material is applied to the inside of a cube object.
   - Counter Clockwise — cull the back faces of a cube object that have counter clockwise vertices. In this mode, material is applied to the outside of a cube object.

The Clockwise and Counter Clockwise culling modes decrease the time required to render a scene.
5. Use the Depth Writes list to control whether or not to render the hidden parts of a cube object. The available options are as follows:
   - Enabled — do not display the hidden parts of a cube object.
   - Disabled — display the hidden parts of a cube object.
   - Automatic — use the set rendering method to control determine whether or not to display the hidden parts of a cube object.
6. Select the Depth Testing check box to use depth values to determine whether an object is displayed on top or behind other objects.
7. Clear this check box to disable depth testing and use the render order of an object to determine whether an object is displayed on top or behind other objects.

For More Information on...
- how to add a cube object to a scene, refer to the procedure “Create a Cube Object” on page 8–8.
Import a 3D Model into a Scene

1. In the **Scene Manager** window, select the scene or scene group to add a 3D model object. The selected scene or scene group is displayed in the active **Viewport**.

2. In the **Primitives** section of the **Object Library** window, click the **3D Model** button. The **Open** dialog box opens.

3. Use the **Open** dialog box to locate and select the 3D model file to import into the current scene. 3D model files are created using 3D applications outside of XPression.

4. Click **Open**. The **XPression Model Importer** dialog box opens.

5. In the **Node Tree** section, expand the 3D model folder. The components of the 3D model are displayed.

6. Clear the check box to the left of each component to not import.
7. Click **Import**.
   The 3D model is imported into XPression and placed at the center of the active **Viewport**.

8. In the **Viewport**, select the 3D model.
   The selected 3D model is highlighted. Depending on how the 3D model was built, clicking on the 3D model selects the entire 3D model or just a component of the 3D model.

9. Use the **Display** menu to select **Material Manager**.
   The **Material Manager** window opens.

10. In the **Face** column, select one or more of the elements from the selected 3D model or component to apply a material.
    After selecting the initial element, Shift-click another element to select all elements between the two selections or Ctrl-click individual elements to add them to the original selection.

11. Double-click the thumbnail of the material to apply to the 3D model or component.
The selected elements are updated with the selected material.

12. To remove an applied material from an element, Right-click the element name in the **Face** column and select **Unbind** from the shortcut menu.

   All material is removed from the selected element.

13. To move the 3D model object to a new position in the **Viewport**, select the main 3D Object in the **Object Manager**, press the Ctrl key, then click and drag the 3D model object to a new position.

   To precisely position the 3D model object, use the settings on the **Transform** tab of the **Object Inspector - Model 3D Object** window.
Group Scene Objects

1. In the Scene Manager window, select the scene or scene group to add a group object.
   The selected scene or scene group is displayed in the active Viewport.

2. In the Misc section of the Object Library window, click the Group button.
   A new group object is added to Object Manager window as part of the scene displayed in the active Viewport.

3. In the Object column of the Object Manager window, click and hold the left mouse button on an object to add to the new group object.

4. Drag the selected object to the new group object.

5. Release the left mouse button.
   The selected object is added to the new group object. Objects contained in a group object are indented and connected to the group object by a leader line.

6. To select a group object, click the group object in the Object column of the Object Manager window.
   The order of objects in a group is changed by clicking and dragging the object to reorder, or using the Arrow buttons in the toolbar to move the object to reorder.

For More Information on...
- positioning group object in a scene, refer to the procedure “Create a Text Object” on page 5–2.
Position an Object

In addition to the Object Inspector Transform tab, the Move Tool and Rotate Tool can be used to position objects.

1. In the Object Manager window, select a group or object group to move or rotate.

2. To move the selected object, click the Move Tool in the Editor window toolbar.
   The Move Tool axis is displayed at the pivot point of the selected group object.

3. Use the Move Tool as follows to move the selected object:
   • Click and drag the Red (X), Green (Y), or Blue (Z) axis displayed at the object pivot point to move the object along the selected axis.
   • Click and drag the Yellow center of the axis displayed at the object pivot point to move the object horizontally and/or vertically in the scene.
4. To rotate the selected object, click the **Rotation Tool** in the **Editor** window toolbar. The **Rotation Tool** axis is displayed at the pivot point of the selected object.

5. Use the **Rotate Tool** as follows to move the selected group object:
   - Click and drag the **Red** (X), **Green** (Y), or **Blue** (Z) axis ring displayed at the object pivot point to rotate the object around the selected axis.
   - Click and drag the **Yellow** center of the axis rings displayed at the object pivot point to rotate the object about the scene.

6. To precisely position a group object, use the settings on the **Transform** tab of the **Object Inspector - Group Object** window.

For More Information on...
- how to add a group object to a scene, refer to the procedure “**Group Scene Objects**” on page 8–23.
Lights

The objects in an XPression scene are made visible by the light emitted by directional, point, and spot light objects.

The following topics are discussed in this section:

• Add a Directional Light Source to a Scene
• Add a Point Light Source to a Scene
• Add a Spot Light Source to a Scene
Add a Directional Light Source to a Scene

1. In the **Scene Manager** window, select the scene or scene group to add a directional light source. The selected scene or scene group is displayed in the active **Viewport**.

2. In the **Primitives** section of the **Object Library** window, click the **Directional Light** button. A new directional light object (center dot) is added to the center of the active **Viewport**.

3. In the **Object Inspector - Light Object** window, click the **Directional Light** tab. The **Directional Light** tab opens.

4. Click **Diffuse** to set the color of light projected by the directional light object. The diffuse color is set using the color controls to the right.

5. Use the **Color Mode** list at the far right to select the color definition mode. The available modes are as follows:
   - **HSL** — define color by setting hue, saturation, and lightness values.
   - **RGB** — define color by setting red, green, and blue values.

6. Use the selected color definition mode to set the diffuse color.

   **HSL Color Selection Mode**

   a. Select the **H** option, then use one of the following methods to set the hue value for the new color:
      - Place the slider along the hue scale to set the hue value.
      - In the box to the right of the **H** option, enter or select the hue value (0 to 359).

     After setting the **H** value, the **S** and **L** color values can be set by clicking a color in the **Color Box**.
b. Select the **S** option, then use one of the following methods to set the saturation value for the new color:
   - Place the slider along the saturation scale to set the saturation value.
   - In the box to the right of the **S** option, enter or select the saturation value (0 to 100).
   After setting the **S** value, the **H** and **L** color values can be set by clicking a color in the **Color Box**.

c. Select the **L** option, then use one of the following methods to set the lightness value for the new color:
   - Place the slider along the lightness scale to set the lightness value.
   - In the box to the right of the **L** option, enter or select the lightness value (0 to 100).
   After setting the **L** value, the **S** and **H** color values can be set by clicking a color in the **Color Box**.

To select a color on the screen as the new color, click and drag the eye dropper icon to a color on the screen then release the mouse button. The **H**, **S**, and **L** color values are set to match the color selected from the screen.

**RGB Color Selection Mode**

a. Select the **R** option, then use one of the following methods to set the red value for the new color:
   - Place the slider along the red scale to set the red value.
   - In the box to the right of the **R** option, enter or select the red value (0 to 255).
   After setting the **R** value, the **G** and **B** color values can be set by clicking a color in the **Color Box**.

b. Select the **G** option, then use one of the following methods to set the green value for the new color:
   - Place the slider along the green scale to set the green value.
   - In the box to the right of the **G** option, enter or select the green value (0 to 255).
   After setting the **G** value, the **R** and **B** color values can be set by clicking a color in the **Color Box**.

c. Select the **B** option, then use one of the following methods to set the blue value for the new color:
   - Place the slider along the blue scale to set the blue value.
   - In the box to the right of the **B** option, enter or select the blue value (0 to 255).
   After setting the **B** value, the **R** and **G** color values can be set by clicking a color in the **Color Box**.

To select a color on the screen as the new color, click and drag the **Dropper Tool** to a color on the screen then release the mouse button. The **R**, **G**, and **B** color values are set to match the color selected from the screen.

7. Click **Ambient** to set the color of the light from other sources that blends with the directional light.
   Follow steps 5 and 6 to set the ambient color for the directional light object.

8. Click **Specular** to set the color of light emitted by an object on which the directional light shines.
   Follow steps 5 and 6 to set the ambient color for the directional light object.

9. To move the directional light to a new position in the **Viewport**, place the cursor on the directional light object, press the **Ctrl** key, then click and drag the directional light object to a new position.
   To precisely position the directional light object, use the settings on the **Transform** tab of the **Object Inspector - Light Object** window.
Add a Point Light Source to a Scene

1. In the Scene Manager window, select the scene or scene group to add a point light source. The selected scene or scene group is displayed in the active Viewport.

2. In the Primitives section of the Object Library window, click the Point Light button. A new point light object (center dot) is added to the center of the active Viewport.

3. In the Object Inspector - Light Object window, click the Point Light tab. The Point Light tab opens.

4. In the Light section, use the Falloff box to enter or select the intensity of light as it spreads out from the point light object.

5. In the Range box, enter or select the overall size in pixels that is lit by the point light object.

6. In the Attenuation section, use the Constant box to enter or select the constant attenuation factor for the gradual loss in intensity for the point light object. The default value is 1.

7. In the Linear box, enter or select the linear attenuation factor times the distance between the light and the vertex being illuminated. The default value is 0.

8. In the Quadratic box, enter or select the quadratic attenuation factor times the square of the distance between the light and vertex. The default value is 0.

9. In the Color section, click Diffuse to set the color of light projected by the point light object. The diffuse color is set using the color controls to the right.

10. Use the Color Mode list at the far right to select the color definition mode. The available modes are as follows:
   - HSL — define color by setting hue, saturation, and lightness values.
   - RGB — define color by setting red, green, and blue values.
11. Use the selected color definition mode to set the diffuse color.

**HSL Color Selection Mode**

a. Select the H option, then use one of the following methods to set the hue value for the new color:
   - Place the slider along the hue scale to set the hue value.
   - In the box to the right of the H option, enter or select the hue value (0 to 359).

After setting the H value, the S and L color values can be set by clicking a color in the **Color Box**.

b. Select the S option, then use one of the following methods to set the saturation value for the new color:
   - Place the slider along the saturation scale to set the saturation value.
   - In the box to the right of the S option, enter or select the saturation value (0 to 100).

After setting the S value, the H and L color values can be set by clicking a color in the **Color Box**.

c. Select the L option, then use one of the following methods to set the lightness value for the new color:
   - Place the slider along the lightness scale to set the lightness value.
   - In the box to the right of the L option, enter or select the lightness value (0 to 100).

After setting the L value, the S and H color values can be set by clicking a color in the **Color Box**.

To select a color on the screen as the new color, click and drag the eye dropper icon to a color on the screen then release the mouse button. The H, S, and L color values are set to match the color selected from the screen.

**RGB Color Selection Mode**

a. Select the R option, then use one of the following methods to set the red value for the new color:
   - Place the slider along the red scale to set the red value.
   - In the box to the right of the R option, enter or select the red value (0 to 255).

After setting the R value, the G and B color values can be set by clicking a color in the **Color Box**.

b. Select the G option, then use one of the following methods to set the green value for the new color:
   - Place the slider along the green scale to set the green value.
   - In the box to the right of the G option, enter or select the green value (0 to 255).

After setting the G value, the R and B color values can be set by clicking a color in the **Color Box**.

c. Select the B option, then use one of the following methods to set the blue value for the new color:
   - Place the slider along the blue scale to set the blue value.
   - In the box to the right of the B option, enter or select the blue value (0 to 255).

After setting the B value, the R and G color values can be set by clicking a color in the **Color Box**.

To select a color on the screen as the new color, click and drag the eye dropper icon to a color on the screen then release the mouse button. The R, G, and B color values are set to match the color selected from the screen.

12. Click Ambient to set the color of the light from other sources that blends with the point light.

   Follow steps 10 and 11 to set the ambient color for the point light object.

13. Click Specular to set the color of light emitted by an object on which the point light shines.

   Follow steps 10 and 11 to set the ambient color for the point light object.
14. To move the point light to a new position in the Viewport, place the cursor on the point light object, press the Ctrl key, then click and drag the point light object to a new position.

To precisely position the point light object, use the settings on the Transform tab of the Object Inspector - Light Object window.
Add a Spot Light Source to a Scene

1. In the **Scene Manager** window, select the scene or scene group to add a spot light source. The selected scene or scene group is displayed in the active **Viewport**.

2. In the **Primitives** section of the **Object Library** window, click the **Spot Light** button. A new spot light object (center dot) is added to the center of the active **Viewport**.

3. In the **Object Inspector - Light Object** window, click the **Spot Light** tab. The **Spot Light** tab opens.

4. In the **Light** section, use the **Falloff** box to enter or select the intensity of light as it spreads out from the spot light object.

5. In the **Range** box, enter or select the overall size in pixels that is lit by the spot light object.

6. In the **Spotlight Cone** section, use the **Inner Angle** to enter or select the size in degrees of the inner light (beam) emitted from the spot light object. Inner angle values range from 0 to 180 degrees.

7. In the **Outer Angle** box, enter or select the size in degrees of the outer light (blur light) emitted from the spot light object. Outer angle values range from 0 to 180 degrees.

   In order to display the entire the outer angle, this value must be less than the value set for the Range box in the Light section.

8. In the **Color** section, click **Diffuse** to set the color of light projected by the spot light object. The diffuse color is set using the color controls to the right.

9. Use the **Color Mode** list at the far right to select the color definition mode. The available modes are as follows:
   - **HSL** — define color by setting hue, saturation, and lightness values.
   - **RGB** — define color by setting red, green, and blue values.
10. Use the selected color definition mode to set the diffuse color.

**HSL Color Selection Mode**

a. Select the \( H \) option, then use one of the following methods to set the hue value for the new color:
   - Place the slider along the hue scale to set the hue value.
   - In the box to the right of the \( H \) option, enter or select the hue value (0 to 359).
   After setting the \( H \) value, the \( S \) and \( L \) color values can be set by clicking a color in the **Color Box**.

b. Select the \( S \) option, then use one of the following methods to set the saturation value for the new color:
   - Place the slider along the saturation scale to set the saturation value.
   - In the box to the right of the \( S \) option, enter or select the saturation value (0 to 100).
   After setting the \( S \) value, the \( H \) and \( L \) color values can be set by clicking a color in the **Color Box**.

c. Select the \( L \) option, then use one of the following methods to set the lightness value for the new color:
   - Place the slider along the lightness scale to set the lightness value.
   - In the box to the right of the \( L \) option, enter or select the lightness value (0 to 100).
   After setting the \( L \) value, the \( S \) and \( H \) color values can be set by clicking a color in the **Color Box**.

To select a color on the screen as the new color, click and drag the eye dropper icon to a color on the screen then release the mouse button. The \( H \), \( S \), and \( L \) color values are set to match the color selected from the screen.

**RGB Color Selection Mode**

a. Select the \( R \) option, then use one of the following methods to set the red value for the new color:
   - Place the slider along the red scale to set the red value.
   - In the box to the right of the \( R \) option, enter or select the red value (0 to 255).
   After setting the \( R \) value, the \( G \) and \( B \) color values can be set by clicking a color in the **Color Box**.

b. Select the \( G \) option, then use one of the following methods to set the green value for the new color:
   - Place the slider along the green scale to set the green value.
   - In the box to the right of the \( G \) option, enter or select the green value (0 to 255).
   After setting the \( G \) value, the \( R \) and \( B \) color values can be set by clicking a color in the **Color Box**.

c. Select the \( B \) option, then use one of the following methods to set the blue value for the new color:
   - Place the slider along the blue scale to set the blue value.
   - In the box to the right of the \( B \) option, enter or select the blue value (0 to 255).
   After setting the \( B \) value, the \( R \) and \( G \) color values can be set by clicking a color in the **Color Box**.

To select a color on the screen as the new color, click and drag the eye dropper icon to a color on the screen then release the mouse button. The \( R \), \( G \), and \( B \) color values are set to match the color selected from the screen.

11. Click **Ambient** to set the color of the light from other sources that blends with the spot light.
    Follow steps 9 and 10 to set the ambient color for the spot light object.

12. Click **Specular** to set the color of light emitted by an object on which the spot light shines.
    Follow steps 9 and 10 to set the ambient color for the spot light object.
13. To move the spot light to a new position in the **Viewport**, place the cursor on the spot light object, press the **Ctrl** key, then click and drag the spot light object to a new position.

To precisely position the spot light object, use the settings on the **Transform** tab of the **Object Inspector - Light Object** window.
Cameras

The point of view for an XPression scene is set by a camera object.

The following topic is discussed in this section:

- Add a Perspective Camera to a Scene
- Add an Orthographic Camera to a Scene
Add a Perspective Camera to a Scene

A perspective camera provides the possibility to view the scene from a different angle.

1. In the **Scene Manager** window, select the scene or scene group to add a perspective camera object.
   
The selected scene or scene group is displayed in the active **Viewport**.

2. In the **Cameras** section of the **Object Library** window, click the **Persp. Camera** button.
   
   A new perspective camera object is added to the center of the active **Viewport**.

3. In the **Object Inspector - Perspective Camera Object** window, click the **Camera** tab.
   
The **Camera** tab opens.

4. In the **Position** section, enter coordinates in the **X**, **Y**, and **Z** boxes to set the position of the perspective camera object in scene.

5. In the **Direction** section, click one of the following tabs to set the direction of view for the perspective camera object:
   
   • **Direction** — set the direction of view by setting the orientation of the perspective camera object.
   
   • **Fixed** — set the direction of view by pointing the perspective camera object at a fixed point.
   
   • **Object** — set the direction of view by pointing the perspective camera object at an object in the scene.

6. Use the selected **Direction** tab to set the direction of view for the perspective camera object.

   **Direction**

   Use the settings in this section to set the direction that the camera observes by orienting the perspective camera object.

   a. In the **Tilt** box, enter or select the degrees to rotate the perspective camera object upwards or downwards, around the X axis. Positive angles point the perspective camera object view upwards, while negative angles point the perspective camera object view downwards.
b. In the **Pan** box, enter or select the degrees to rotate the perspective camera object to the right or left, around the Y axis. Positive angles point the perspective camera object view to the right, while negative angles point the perspective camera object view to the left.

c. In the **Rotate** box, enter or select the degrees to twist the perspective camera object to the right or left, around the Z axis. Positive angles twist the perspective camera object view to the right, while negative angles twist the perspective camera object view to the left.

**Fixed**

Use the settings in this section to set the fixed point to always face the perspective camera object.

a. In the **X** box, enter or select the X coordinate in pixels of the fixed point to face the perspective camera object.

b. In the **Y** box, enter or select the Y coordinate in pixels of the fixed point to face the perspective camera object.

c. In the **Z** box, enter or select the Z coordinate in pixels of the fixed point to face the perspective camera object.

d. In the **Rotate** box, enter or select the degrees to twist the view of perspective camera object to the right or left, around the Z axis. Positive angles twist the perspective camera object view to the right, while negative angles twist the perspective camera object view to the left.

**Object**

Use this section to select the object to always face the perspective camera object.

a. Use the **Object** list to select the object to face the perspective camera object.

7. In the **Flags** section, select the **Active** check box.

The new perspective camera object is set as the active camera object for the scene. Only one camera object can be active in a scene at any time.

8. Double-click the scene containing the perspective camera object.

The selected scene is sent to the default output, and displayed using the active perspective camera object.
Add an Orthographic Camera to a Scene

The view from an orthographic camera results in a flat display (no perspective) of the scene.

1. In the Scene Manager window, select the scene or scene group to add an orthographic camera object.
   The selected scene or scene group is displayed in the active Viewport.

2. In the Cameras section of the Object Library window, click the Ortho. Camera button.
   A new orthographic camera object is added to the center of the active Viewport.

3. In the Object Inspector - Orthographic Camera Object window, click the Camera tab.
   The Camera tab opens.

4. In the Position section, enter coordinates in the X, Y, and Z boxes to set the position of the orthographic camera object in scene.

5. In the Direction section, click one of the following tabs to set the direction of view for the orthographic camera object:
   • Direction — set the direction of view by setting the orientation of the orthographic camera object.
   • Fixed — set the direction of view by pointing the orthographic camera object at a fixed point.
   • Object — set the direction of view by pointing the orthographic camera object at an object in the scene.

6. Use the selected Direction tab to set the direction of view for the orthographic camera object.

   Direction

   Use the settings in this section to set the direction that the camera observes by orienting the orthographic camera object.

   a. In the Tilt box, enter or select the degrees to rotate the orthographic camera object upwards or downwards, around the X axis. Positive angles point the orthographic camera object view upwards, while negative angles point the orthographic camera object view downwards.
b. In the Pan box, enter or select the degrees to rotate the orthographic camera object to the right or left, around the Y axis. Positive angles point the orthographic camera object view to the right, while negative angles point the orthographic camera object view to the left.

c. In the Rotate box, enter or select the degrees to twist the orthographic camera object to the right or left, around the Z axis. Positive angles twist the orthographic camera object view to the right, while negative angles twist the orthographic camera object view to the left.

**Position**

Use the settings in this section to set the position to face the orthographic camera object.

a. In the X box, enter or select the X coordinate in pixels of the position to face the orthographic camera object.

b. In the Y box, enter or select the Y coordinate in pixels of the position to face the orthographic camera object.

c. In the Z box, enter or select the Z coordinate in pixels of the position to face the orthographic camera object.

d. In the Rotate box, enter or select the degrees to twist the view of orthographic camera object to the right or left, around the Z axis. Positive angles twist the orthographic camera object view to the right, while negative angles twist the orthographic camera object view to the left.

**Object**

Use this section to select the object to always face the orthographic camera object.

a. Use the Object list to select the object to face the orthographic camera object.

7. In the Flags section, select the Active check box.

The new orthographic camera object is set as the active camera object for the scene. Only one camera object can be active in a scene at any time.

8. Double-click the scene containing the orthographic camera object.

The selected scene is sent to the default output, and displayed using the active orthographic camera object.
Materials

In XPression, materials are used to define the look and style of objects in a scene.

The following topics are discussed in this section:

• Create a 2D Texture Material
• Create a Video Material
• Create a Live Source Material
• Create a Window Capture Material
Create a 2D Texture Material

1. In XPression, select Display > Material Manager.

   The Material Manager window opens. To prevent the Material Manager window from getting covered by other windows, click the Pin button in the window title bar.

2. In the Material Manager window, click the Create New Material button in the toolbar.

   The Material Editor dialog box opens.
3. Enter in the **Name** box a name for the new material.

4. In the **Preview** section, select **Texture 2D** from the **Shader** list.
   A Texture 2D shader is added to the material.

5. In the **Tree View**, select the new **Texture2D** shader.
   The **Texture File** section opens.

6. Enter in the **Filename** box the full path to the image file to use as a texture, or click **Browse** to use the **Texture Explorer** dialog box to select the image file.
   The **RGB** thumbnail displays the selected image file.

7. Click **OK**.
   The new material is added to the **Material Manager**, and is ready to be applied to text, background, quad, sphere, or cube objects.

   When a 2D texture material is applied to a new quad object, the quad is resized to the texture image of the 2D texture material. When applied to an existing quad, the texture image of the 2D texture material is resized to fit the quad.

   **For More Information on...**
   - how to apply a material to a text object, refer to the procedure “Apply a Material to a Text Object” on page 5–11.
   - how to apply a material to a quad object, refer to the procedure “Create a Quad Object” on page 8–2
   - how to apply a material to a sphere object, refer to the procedure “Create a Sphere Object” on page 8–5
   - how to apply a material to a cube object, refer to the procedure “Create a Cube Object” on page 8–8
Create a Video Material

1. In XPression, select Display > Material Manager.
   The Material Manager window opens. To prevent the Material Manager window from getting covered by other windows, click the Pin button in the window title bar.

2. In the Material Manager window, click the Create New Material button in the toolbar.
   The Material Editor dialog box opens.
3. Enter in the Name box a name for the new material.

4. In the Preview section, select Video from the Shader list. A Video shader is added to the material.

5. In the Tree View, select the new Video shader. The Video and Run Mode sections open.

6. In the Video section, enter the full path to the video file in the Video File box, or click Browse to use the Open dialog box to select the video file.

7. Use the Source Mode list to select the mode used by the video source to define transparency. The available modes are as follows:
   - Shaped Video Source (premultiplied) — the video file uses a shaped key, where the key alpha cuts a hole based on the monochrome value of the alpha. Shades of gray are translated into either white or black, giving the key a hard edge.
   - Unshaped Video Source — the video file uses an unshaped key, where the key alpha cuts a hole based on the gradient values of the alpha. Shades of gray are translated into transparency levels, giving the key a soft edge.

8. In the Run Mode section, use the Mode list to select the play mode for the video file. The available play modes are as follows:
   - Stopped — display the first frame in the video file, but do not play the video file.
   - Play Once — only play the video file once, then display the last frame in the video file.
   - Loop — continuously play the video file from start to finish.
   - Ping Pong — continuously play the video file back and forth.

9. Select the Auto Start check box to enable the video to start immediately when the scene comes on-air.

   The start time of the video file may also be controlled from the Scene Director by dragging the video material to a Scene Director track.

10. Click OK.

    The new material is added the Material Manager, and is ready to be applied to text, background, quad, sphere, or cube objects.

    When a video material is applied to a new quad object, the quad is resized to the video file played by the video material. When applied to an existing quad, the video file of the video material is resized to fit the quad.
For More Information on...

- how to apply a material to a text object, refer to the procedure “Apply a Material to a Text Object” on page 5–11.
- how to apply a material to a quad object, refer to the procedure “Create a Quad Object” on page 8–2
- how to apply a material to a sphere object, refer to the procedure “Create a Sphere Object” on page 8–5
- how to apply a material to a cube object, refer to the procedure “Create a Cube Object” on page 8–8
- how to apply a material to a cube object, refer to the procedure “Create a Cube Object” on page 8–8
- controlling Scene Director tracks, refer to the procedure “Add Keyframe Animation to an Object” on page 13–5
Create a Live Source Material

1. In XPression, select Display > Material Manager.
   The Material Manager window opens. To prevent the Material Manager window from getting covered by other windows, click the Pin button in the window title bar.

![Material Manager Window]

2. In the Material Manager window, click the Create New Material button in the toolbar.
   The Material Editor dialog box opens.

![Material Editor Dialog Box]
3. Enter in the **Name** box a name for the new material.

4. In the **Preview** section, select **Live Source** from the **Shader** list.

   A Live Source shader is added to the material.

5. In the **Tree View**, select the new **LiveSource** shader.

   The **Video** section opens.

6. In the **Video** section, use the **Input Source** list to select the source from which to capture live video.

7. Click **OK**.

   The new material is added the **Material Manager**, and is ready to be applied to text, background, quad, sphere, or cube objects.

   ✤ When a live source material is applied to a new quad object, the quad is resized to the input source streamed by the live source material. When applied to an existing quad, the input source of the live source material is resized to fit the quad.

**For More Information on...**

- how to apply a material to a text object, refer to the procedure “Apply a Material to a Text Object” on page 5–11.
- how to apply a material to a quad object, refer to the procedure “Create a Quad Object” on page 8–2
- how to apply a material to a sphere object, refer to the procedure “Create a Sphere Object” on page 8–5
- how to apply a material to a cube object, refer to the procedure “Create a Cube Object” on page 8–8
Create a Window Capture Material

1. Outside of XPression, start Windows Internet Explorer.

2. Position the Windows Internet Explorer window on the screen so that it and the XPression window are visible at the same time.

3. In the Windows Internet Explorer window, navigate to the web site for the window capture material.

4. In XPression, select Display > Material Manager.

The Material Manager window opens. To prevent the Material Manager window from getting covered by other windows, click the Pin button in the window title bar.
5. In the **Material Manager** window, click the **Create New Material** button in the toolbar. The **Material Editor** dialog box opens.

![Material Editor](image)

6. Enter in the **Name** box a name for the new material.

7. In the **Preview** section, select **Window Capture** from the **Shader** list. A Window Capture shader is added to the material.

8. In the **Tree View**, select the new **WindowCapture** shader. The **Window Capture** section opens.

![Window Capture](image)

9. On the **Preview** thumbnail in the **Window Capture** section, click and hold the left mouse button.
10. Position the mouse pointer over the content in the Windows Internet Explorer window to capture for the window capture material.

A red box highlights the selected content.

11. When the required content is highlighted, release the left mouse button.

A snapshot of the selected content is displayed in the Preview thumbnail.

For objects that use the window capture material to display the selected content, the Windows Internet Explorer window containing the selected content must remain open while the objects are online. Closing the Windows Internet Explorer window removes the content from the online objects. Also, to not compromise the output, ensure that no other window covers the captured window.

12. Select the Capture Mouse Pointer check box to display the mouse pointer along with the content from the captured window.

13. Select the Disable Warning When Loading Shader check box to hide the Warning dialog box when loading the Window Capture shader.

14. Click OK.

The new material is added the Material Manager, and is ready to be applied to text, background, quad, sphere, or cube objects.

When a window capture material is applied to a new quad object, the quad is resized to the window captured by the window capture material. When applied to an existing quad, the captured window of the window capture material is resized to fit the quad.
For More Information on...

• how to apply a material to a text object, refer to the procedure “Apply a Material to a Text Object” on page 5–11.
• how to apply a material to a quad object, refer to the procedure “Create a Quad Object” on page 8–2
• how to apply a material to a sphere object, refer to the procedure “Create a Sphere Object” on page 8–5
• how to apply a material to a cube object, refer to the procedure “Create a Cube Object” on page 8–8
Fonts

In XPression, fonts are used to define the look and style of text objects in a scene.

The following topics are discussed in this section:

• Add a Private Font to a Project
• Apply a Material to a Font
Add a Private Font to a Project

The fonts installed in the Windows system font directory are available to all XPression projects. Private fonts are kept in a Fonts folder within an XPression project folder, and are only available to that project.

1. In XPression, click the Explorer button to open the project folder.
2. In the project folder, create a new folder named Fonts.
3. For each private font to add to the project, copy the associated True Type Font file into the new Fonts folder.

4. In XPression open the project that contains the added private fonts.
5. In the Scene Manager window, select a scene or scene group that contains a text object.

The objects contained in the selected scene or scene group are listed in the Object Manager.

6. In the Object Manager window, select a text object.
7. In the **Object Inspector - Text Object** window, click the **Scene Fonts** tab.

The **Scene Fonts** tab opens.

![Scene Fonts tab](image)

8. In the **Fonts** section, click **New**.

A new font is added to the **Stock** list.

![Add new font](image)

9. Right-click the new font and select **Rename** from the shortcut menu.

![Rename font](image)

10. Enter a name for the new font.

11. Select the **Face** check box.

   The **Font Face** tab opens.

12. Use the **Face** list to select a private font face, indicated by the *(private)* tag following the font face name, for the new font.

   The new font is ready to be applied to text objects.

**For More Information on...**

- how to apply a font to a text object, refer to the procedure “**Create a Text Object**” on page 5–2
Apply a Material to a Font

1. In the Scene Manager window, select a scene or scene group that contains a text object.

The objects contained in the selected scene or scene group are listed in the Object Manager.

2. In the Object Manager, select a text object.

3. In the Object Inspector - Text Object window, click the Scene Fonts tab.

   The Scene Fonts tab opens.

4. In the Used or Stock list, select the font to apply a material.
5. Select a font attribute to apply a material. Font attributes are as follows.

<table>
<thead>
<tr>
<th>2D Fonts</th>
<th>3D Fonts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>Face</td>
</tr>
<tr>
<td>Border</td>
<td>Bevel</td>
</tr>
<tr>
<td>Stroke</td>
<td>Extrusion</td>
</tr>
<tr>
<td>Neon</td>
<td>Back Bevel</td>
</tr>
<tr>
<td>Shadow</td>
<td>Back Face</td>
</tr>
</tbody>
</table>

6. Click Edit Material.

The Material Editor dialog box opens.

7. Use the Material Editor to edit the material of the selected font attribute.

8. Click OK.

The edited material is applied to the font attribute to change the style of the selected font. Materials applied to fonts in this manner are not displayed in the Material Editor.

All of the text objects in the project that were created with the edited font are changed to match the new style of the font.

For More Information on...
- how to create a 2D texture material to a scene, refer to the procedure “Create a 2D Texture Material” on page 11–2.
- how to create a video material, refer to the procedure “Create a Video Material” on page 11–4.
- how to create a live source material, refer to the procedure “Create a Live Source Material” on page 11–7.
- how to create a window capture material, refer to the procedure “Create a Window Capture Material” on page 11–9.
Animations

Continuous animation and keyframe animation are the methods used in XPression to add movement to objects in a scene.

The following topics are discussed in this section:

• Add Continuous Animation to an Object
• Add Keyframe Animation to an Object
• Trigger Clips and Audio
• Create Animation with Multiple Controllers
• Copy Keyframes to Animate an Object
Add Continuous Animation to an Object

1. In the Scene Manager window, select a scene or scene group that contains an object to animate.

   ![Scene Manager Window](image1)

   The objects contained in the selected scene or scene group are listed in the Object Manager.

2. In the Object Manager window, select an object to animate.

   ![Object Manager Window](image2)

3. Click the Continuous Anim tab in the Object Inspector window.

   The Continuous Anim tab opens.

   ![Object Inspector Window](image3)

4. Click New Track.

   A new continuous animation track is added the Tracks table.

   ![Tracks Table](image4)
5. In the **Waveform** column, use the list to select the continuous animation movement for the object. The available movement options are as follows:

- **Sine**
- **Cosine**
- **Triangle**
- **Square**
- **Sawtooth**
- **Random**

The selected waveform is displayed in the **Graph** column.

6. In the **Mode** column, use the list to select the mode used to continue the animation when it reaches the set **Amplitude** value. The available modes are as follows:

- **Symmetric** — the amplitude value is copied after reaching the set value end.
- **Asymmetric** — the animation flips over to the starting position after reaching the set amplitude value.

7. In the **Channel** column, use the list to select the channel to animate. The available channels are as follows:

- **Position X** — move the object along the X axis.
- **Position Y** — move the object along the Y axis.
- **Position Z** — move the object along the Z axis.
- **Rotation X** — rotate the object around the X axis.
- **Rotation Y** — rotate the object around the Y axis.
- **Rotation Z** — rotate the object around the Z axis.
- **Scaling X** — scale the object along the X axis.
- **Scaling Y** — scale the object along the Y axis.
- **Scaling Z** — scale the object along the Z axis.
- **Pivot X** — pivot the object along the X axis.
- **Pivot Y** — pivot the object along the Y axis.
- **Pivot Z** — pivot the object along the Z axis.
- **Alpha** — fade the alpha channel of the object in and out. The key fades translucency until it disappears.

8. In the **Amplitude** column, use the box to enter or select the degree of movement for an object. For example, a value of 180 set for **Rotation Z** rotates an object 180 degrees around the Z axis.

9. In the **Amp Offset** column, use the box to enter or select the vertical starting point for the Amplitude setting.

10. In the **Phase Offset** column, use the box to enter or select the horizontal starting point for the Amplitude setting.

11. In the **Cycle** column, use the box to enter or select the speed of the animation cycle.

12. In the **Pause** column, use the box to enter or select the amount of frames to pause before the next animation cycle.

13. In the **Sync** column, use the list to select the method used to start a continuous animation track. The available options are as follows:

   - **Reset** — start a continuous animation track at the starting point of the animation.
   - **Clock** — base the start of a continuous animation track on the clock. Select this method to synchronization a continuous animation track with previous animations.

14. In the **Enabled** column, select the check box to enable the continuous animation track. Clear this check box to turn off the continuous animation track.
15. To add additional continuous animation tracks to an object, repeat steps 4 to 14.

16. Double-click the scene containing the animated object.

   The selected scene is sent to the default output and the object continuous animation tracks start running to animate object. To preview continuous animations in the active Viewport, click the Show or Hide Continuous Animations and Other Effects button in the Viewport toolbar.
Add Keyframe Animation to an Object

1. In the **Scene Manager** window, select a scene or scene group that contains an object to animate.

   ![Scene Manager Window](image)

   The objects contained in the selected scene or scene group are listed in the **Object Manager** window.

2. In XPression, select **Animation > Scene Director**.

   The **Scene Director** window opens.

   ![Scene Director Window](image)

3. Place the pointer in the **Timeline** area to the right of an empty track, and move it to the position to start the new animation controller.

4. Right-click and select **Add Clip > Animation Controller** from the shortcut menu.
An animation controller is added the selected track.

5. Double-click the new animation controller to select as the active animation controller for animating objects in the current scene.

6. In the Animation Controller window at the bottom of the Editor, use the Total Range box to enter or select the number of key frames in the animation.

7. In the Working Range Start box, enter or select the key frame for the start of the key frame scale.

8. In the Working Range End box, enter or select the key frame for the end of the key frame scale.

9. In active Viewport, position the object to animate at the start position of the animation.

10. Press the Ctrl and K key at the same time. The Set Keyframe dialog box opens.

   The attributes highlighted in green (Position, Rotation, and Scale) are captured. Red highlighted attributes (Alpha) are not captured.

11. In the Set Key at Time box to enter or select the key frame for the start position of the animation.

12. Click Set & Close.

   The set key frame is marked by a vertical line on the Key Frame Scale in the Animation window and in the active animation controller.

13. In active Viewport, position the object to animate at the next position in the animation.

14. Press the Ctrl and K key at the same time. The Set Keyframe dialog box opens.

15. In the Set Key at Time box to enter or select the key frame for the next position in the animation.

16. Click Set & Close.

   The set key frame is marked by a vertical line on the Key Frame Scale in the Animation window.
17. To add object position to the animation, repeat steps 13 to 16.

18. Double-click the scene containing the animated object.
   The selected scene is sent to the default output.

19. Click the Play button.
   The defined animation starts playing in the default output.
Trigger Clips and Audio

1. In the Scene Manager window, select a scene or scene group that contains an object to animate.

The objects contained in the selected scene or scene group are listed in the Object Manager window.

2. In XPression, select Animation > Scene Director.

The Scene Director window opens.

3. In the Editor, select Display > Audio Files.

The Audio Files window opens.

4. In Audio Files window, right-click and select Import File from the shortcut menu.

The Open dialog box opens.

5. In the Open dialog box, locate and select a Waveform Audio File Format (.WAV) audio file to import into the project.
6. Click **Open**.
   The selected .WAV audio file is added to the **Audio Files** window.

7. Drag the .WAV audio file from the **Audio Files** window onto an audio track in the **Scene Director**.

8. In **Scene Director**, click and drag the audio track into the required position.

9. Click the **Play** button.
   The defined animation starts playing in the default output.

For More Information on...
- creating a keyframe animation for an object, refer to the procedure “**Add Keyframe Animation to an Object**” on page 13–5
Create Animation with Multiple Controllers

1. In the Scene Manager window, select a scene or scene group that contains two or more objects to animate.

2. In XPression, select Animation > Scene Director.

   The Scene Director window opens.

3. Select an object to animate.

4. In the Scene Director, right-click in an empty track and select Add Clip > Animation Controller from the shortcut menu to add an animation controller to the selected track.

5. Use the new animation controller to animate the selected object in the current scene.

6. Select a second object to animate.
7. In the **Scene Director**, right-click in an empty track and select **Add Clip > Animation Controller** from the shortcut menu to add an animation controller to the selected track.

![Scene Director interface with animation controllers](image)

8. Use the new animation controller to animate the selected object in the current scene.

9. In the two tracks, click and drag the animation controllers to set the relative timing for the associated objects. Both objects move at the same time where the two animation controllers overlap on the timeline.

10. Click the **Play** button.

    The defined animations start playing in the default output.

**For More Information on...**
- creating a keyframe animation for an object, refer to the procedure “**Add Keyframe Animation to an Object**” on page 13–5
Copy Keyframes to Animate an Object

1. In the **Scene Manager** window, select a scene or scene group that contains two or more objects to animate.

   The objects contained in the selected scene or scene group are listed in the **Object Manager**.

2. In XPression, select **Animation > Scene Director**.

   The **Scene Director** window opens.

3. Select an object to animate.

4. In the **Scene Director**, right-click in an empty track and select **Add Clip > Animation Controller** from the shortcut menu to add an animation controller to the selected track.

5. Select the new animation controller.

6. Create a keyframe based animation for selected object.
7. In the Editor, select **Animation > Key Graph Editor**.

   The **Key Graph Editor** window opens.

8. In the Objects list, double-click the name of the object displayed in **bold** face type.

   The selected object is added to the **Channels** list.

9. If required, expand the object added to the **Channels** list.

   The object channels are displayed below the expanded object.
10. Select one or more of the object channels displayed in **bold** face type.

Only the object channels displayed in **bold** face type can be copied to another object.

11. On the selected object channels, right-click and select **Copy** from the shortcut menu.

The values of the selected channels are copied for each keyframe of the select object.

12. Collapse the object in the **Channels** list.

13. In the **Objects** list, double-click the object to which to copy the keyframes and object channels.

The selected object is added to the **Channels** list.
14. In the **Channels** list, right-click the new object and select **Paste** from the shortcut menu.

![Image of Paste option in shortcut menu]

The copied keyframes and object channel values are pasted into the selected object. The updated object channels are displayed in **bold** face type.

15. If required, edit the keyframes copied to the object.

   a. In the **Channels** list, select the channel to edit for an object.

   ![Image of Graph displaying keyframes]

   The **Graph** displays the keyframes for the selected object channel. Each white square in the **Graph** represents a keyframe.

   b. In the **Graph**, select the keyframe to edit.

   ![Image of selected keyframe in Graph]

   c. To move the selected keyframe vertically in the **Graph**, hold down the **CTRL** key then click and drag the keyframe up or down. To move the selected keyframe horizontally in the **Graph**, hold down the **CTRL + Shift** keys then click and drag the keyframe to the right or left.

   d. Use the displayed properties to set the required values for the selected keyframe.

   ![Image of displayed properties]

   The properties of the selected keyframe are displayed below the **Graph**.

   e. For each keyframe that requires editing, repeat steps b and d.

16. Close the **Key Graph Editor** window.

17. Click the **Play** button.

   The edited animation starts playing in the default output.

**For More Information on...**

- creating a keyframe animation for an object, refer to the procedure "Add Keyframe Animation to an Object" on page 13–5
Sequences

XPression uses the Sequencer to play out the scenes in a project.

The following topics are discussed in this section:

• Create a Sequence
• Modify Template Content
• Control Sequence Playout
• Playout a Sequence in Manual Mode
• Playout a Sequence in Automatic Mode
• Create a Roll/Crawl from a Take Item Group
• Customize a Take Item Group Roll/Crawl
Create a Sequence

1. Use XPression to create a number of scenes or scene groups from which to build a sequence.

2. Click Sequence at the top of the window to use the Sequencer to place scenes or scene groups on a sequence timeline for playout.

3. In the Scene Manager, click and drag the scenes or scene groups to playout into the Sequencer.

   Each scene or scene group added to the Sequencer list is given a Take ID and becomes a take item.

4. To reorder take items in the Sequencer list, click and drag a take item to a new position in the list.

   Toolbar tools, shortcut menu commands, and keyboard shortcuts can also be used to reorder take items.

5. Organize take items by adding a take item group to the Sequencer list. A group can be configured to automatically playout the take items contained in the group.

   a. Click the Create a New Group button in the toolbar.

      A take item group is added to the Sequencer.

   b. Click in the Name column for the group to enter a new name for the group.

   c. Click and drag take items from the Sequencer list into the new group.

6. Highlight take items by adding color to the Sequencer list.

   a. Select one or more take items and/or take item groups to highlight with a colored background.

   b. Right-click and select the Color command.

      The Color menu opens.

   c. Select a highlight color from the Color menu.

      The background of the selected take items in the Sequencer list is shaded with the selected color. Coloring the background of a take item group also colors each take item in the group.

For More Information on...

• creating scenes, refer to the procedure “Create a Scene” on page 4–4.

• controlling sequence playout, refer to the procedure “Control Sequence Playout” on page 14–5.
Modify Template Content

1. In XPression, use the **Scene Manager** window to select a scene or scene group that contains objects to use as a template in a sequence.

   The objects contained in the selected scene or scene group are listed in the **Object Manager** window.

2. In the **Object Manager**, select an object to use as a template.

3. Click the **Template Links** tab in the **Object Inspector** window.

   The **Template Links** tab opens.

4. In the **Template Links** section, select the **Publish Object** check box.

   The table in the **Template Links** section lists the attributes of the selected object that can be published to the **Sequencer**. The values of published attributes can be changed for playout through the **Sequencer**.

5. In the **Published** column, select the check boxes associated with the object attributes to publish.

   Text objects are published by default with the text attributed selected as replaceable.

6. Note the name of the template object.

7. Click **Sequence** at the window to use the **Sequencer** to place the scene or scene group containing the template object on a sequence timeline for playout.

8. Add the template object scene or scene group to the **Sequencer**.

9. In the **Sequencer**, select the take item created for the template object scene or scene group.
10. Click the **Template Data** tab in the **Take Inspector - Item** window.

   The **Template Data** tab opens.

11. In the **Objects** column, expand the template object.

   The attributes published for the template object are displayed.

12. Select the attribute to set a value for playout.

   The box to the right displays the value of the select attribute.

13. In the box, enter a new value for the attribute.

14. In the **Sequencer**, double-click the template object take item.

   The selected take item plays out through the default output using the entered attribute values.

15. To stop playout, right-click the template object take item and select **Take Offline** from the shortcut menu.

For More Information on...

- creating sequences, refer to the procedure “Create a Sequence” on page 14–2.
- controlling sequence playout, refer to the procedure “Control Sequence Playout” on page 14–5.
Control Sequence Playout

1. In the Sequencer, click the Create a New Group \(\text{>Create a New Group}\) button in the toolbar to create a take item group to contain the scenes or scene groups to playout.

2. In the Scene Manager, click and drag the scenes or scene groups to playout into the new take item group in the Sequencer.
   
The selected scene or scene groups are added to the take item group as take items.

3. To reorder a take item in a take item group, click and drag a take item to a new position in the group.

4. Select the take item group that contains the take items to playout.

5. In the Take Inspector - Group window, select Manual from the Playout Mode list.

6. In the Sequencer, double-click a take item to playout the selected take item.
   
The selected take item plays out through the default output, and the State changes to online for take items or Active for take item groups.
7. To stop playout of an online or Active take item, right-click the take item and select **Take Offline** from the shortcut menu.

Keyboard Control

The keyboard number pad can also be used to control the playout of a sequence. The following keyboard shortcuts are available in the Sequencer:

- **Cursor Up Arrow** — select the previous take item in the sequence.
- **Cursor Down Arrow** — select the next take item in the sequence.
- **Ctrl-Home** — select the first take item in the sequence.
- **Ctrl-End** — select the last take item in the sequence.
- **Number Pad +** — playout the selected take item and select the next take item in the sequence.
- **Number Pad -** — skip the currently selected item and select next take item in the sequence.
- **Number Pad Enter** — playout the selected take item. This shortcut requires the **Fast Recall** button to be enabled.
Playout a Sequence in Manual Mode

1. In the **Sequencer**, select the take item group that contains the take items to playout.

2. In the **Take Inspector - Group** window, select **Manual** from the **Playout Mode** list.

3. In the **Sequencer**, double-click the take item group that contains the take items to playout.

   The selected take item group plays out through the default output, and the **State** changes to **Active**.

4. To stop playout of an **Active** take item, right-click the take item and select **Take Offline** from the shortcut menu.

For More Information on...
- creating sequences, refer to the procedure “Create a Sequence” on page 14–2.
- controlling sequence playout, refer to the procedure “Control Sequence Playout” on page 14–5.
Playout a Sequence in Automatic Mode

1. In the **Sequencer**, select the take item group that contains the take items to playout.

![Sequencer Table]

- **Take ID**, **Scene**, **Name**, **Context**, **Transition In/Out**, **Layer**, **Output**, **Start**, **End**, **Duration**

<table>
<thead>
<tr>
<th>Take ID</th>
<th>Scene</th>
<th>Name</th>
<th>Context</th>
<th>Transition In/Out</th>
<th>Layer</th>
<th>Output</th>
<th>Start</th>
<th>End</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>0002</td>
<td>Scene 1</td>
<td>Take Item Scene 1</td>
<td>XPression™</td>
<td>Cut / Cut</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
</tr>
<tr>
<td>0003</td>
<td>Scene 2</td>
<td>Take Item Scene 2</td>
<td>InStyle UI...</td>
<td>Cut / Cut</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
</tr>
<tr>
<td>0004</td>
<td>Scene 3</td>
<td>Take Item Scene 3</td>
<td>Flexible Gr...</td>
<td>Cut / Cut</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
</tr>
<tr>
<td>0005</td>
<td>Scene 4</td>
<td>Take Item Scene 4</td>
<td>PerfTrak A...</td>
<td>Cut / Cut</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
</tr>
<tr>
<td>0006</td>
<td>Scene 5</td>
<td>Take Item Scene 5</td>
<td>UseFriend...</td>
<td>Cut / Cut</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
</tr>
<tr>
<td>0007</td>
<td>Scene 6</td>
<td>Take Item Scene 6</td>
<td>Realtime 2...</td>
<td>Cut / Cut</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
</tr>
<tr>
<td>0008</td>
<td>Scene 7</td>
<td>Take Item Scene 7</td>
<td>ElitePr...</td>
<td>Cut / Cut</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
<td>00:00:00:00</td>
</tr>
</tbody>
</table>

2. In the **Take Inspector - Group** window, select **Timed** from the **Playout Mode** list.

![Take Inspector - Group]

3. Use the **Start At** list to set the playout start time for the take item group. The available options are as follows:
   - **Immediate** — start playout immediately upon selecting a take item group for playout.
   - **Clock Time** — start playout at the time set in the **Start Time** box after selecting a take item group for playout.

4. Use the **Item Timing** list to select the item level on which to base playout duration. The available options are as follows:
   - **Per Item** — use the playout durations set for the items in the item group. The playout duration for the item group equals the total of all the item durations.
   - **Per Group** — set a playout duration for the entire item group. The duration is set in the **Group Duration** box.

5. Use the **Repeat** list to set the number of times to repeatedly playout the item group. The available options are as follows:
   - **Never** — do not repeat playout, only playout the item group once.
   - **When Done** — repeat the playout of an item group when the playout ends. With this option, playout continually repeats until it is manually stopped.
   - **After** — repeat the playout of an item group after the time set using the **Time Value box** and **Time Unit** list. With this option, playout continually repeats until it is manually stopped.
   - **Every** — repeat the playout of an item group at a time interval set using the **Time Value box** and **Time Unit** list.

6. Use the **When Finished** list to set the action to complete after finishing the playout of the take item group. The available options are as follows:
   - **Keep Online** — leave the take item group status as Active, making the group available for immediate playout.
   - **Take Offline** — change the take item group status to Offline.
7. In the **Sequencer**, double-click the take item group that contains the take items to playout.

   The selected take item group plays out through the default output, and the **State** changes to **Active**.

**For More Information on**...

- creating sequences, refer to the procedure **“Create a Sequence”** on page 14–2.
- controlling sequence playout, refer to the procedure **“Control Sequence Playout”** on page 14–5.
Create a Roll/Crawl from a Take Item Group

1. Create a new XPression project or open an existing project to add a roll/crawl effect.
2. Create one or more scenes or scene groups to contain the objects displayed by the roll/crawl effect.
3. Select a scene and scene objects to it that are to move as part of the roll/crawl effect.
   For example, add a text object to a scene to represent the first line of text for a set of credits to be played by the roll/crawl effect.
4. Add objects to additional scenes as required.
   For example, each scene contains a text object that represents one line of text in a set of credits played by the roll/crawl effect.
5. Click Sequence at the top of the window to use the Sequencer to place scenes or scene groups on a sequence timeline for playout.
6. In the Sequencer, click the Create a New Group button in the toolbar to create a take item group to contain the scenes or scene groups that comprise the roll/crawl effect.

7. In the Scene Manager, click and drag the scenes or scene groups for the roll/crawl effect into the new take item group in the Sequencer.

8. To reorder take items in the roll/crawl effect, click and drag a take item to a new position in the take item group.
9. Select the take item group that contains the roll/crawl effect.

<table>
<thead>
<tr>
<th>Take ID</th>
<th>Scene</th>
<th>Name</th>
<th>Context</th>
<th>Transition In/Out</th>
<th>Layer</th>
<th>Output</th>
<th>Start</th>
<th>End</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001</td>
<td>Scene3</td>
<td>Take Item 3</td>
<td>XPression™</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:06:00</td>
<td>00:00:06:00</td>
</tr>
<tr>
<td>0002</td>
<td>Scene3</td>
<td>Take Item 3</td>
<td>Intuitive</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:06:00</td>
<td>00:00:06:00</td>
</tr>
<tr>
<td>0003</td>
<td>Scene4</td>
<td>Take Item 4</td>
<td>Flexible Gr.</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:06:00</td>
<td>00:00:06:00</td>
</tr>
<tr>
<td>0004</td>
<td>Scene4</td>
<td>Take Item 4</td>
<td>Spine Fr. A</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:06:00</td>
<td>00:00:06:00</td>
</tr>
<tr>
<td>0005</td>
<td>Scene6</td>
<td>Take Item 6</td>
<td>Realtime 2</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00:00:00:00</td>
<td>00:00:06:00</td>
<td>00:00:06:00</td>
</tr>
</tbody>
</table>

10. In the Take Inspector - Group window, select Roll/Crawl from the Playout Mode list.

11. In the Sequencer, double-click the take item group that contains the roll/crawl effect to playout the defined roll/crawl effect.

   The selected take item group plays out through the default output, and the State changes to Active.

For More Information on...

- customizing a sequence roll/crawl effect, refer to the procedure “Customize a Take Item Group Roll/Crawl” on page 14–12.
- controlling sequence playout, refer to the procedure “Control Sequence Playout” on page 14–5.
Customize a Take Item Group Roll/Crawl

1. In the **Sequencer**, select the take item group that contains the roll/crawl effect to customize.

<table>
<thead>
<tr>
<th>Take ID</th>
<th>Scene</th>
<th>Scene Name</th>
<th>Take Item Scene</th>
<th>Transition In/Out</th>
<th>Layer</th>
<th>Output</th>
<th>Start</th>
<th>End</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0002</td>
<td>Scene3</td>
<td>Scene3</td>
<td>XPression™</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00000000.00</td>
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<td>00000000.00</td>
</tr>
<tr>
<td>0003</td>
<td>Scene4</td>
<td>Scene4</td>
<td>XPression™</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00000000.00</td>
<td>00000000.00</td>
<td>00000000.00</td>
</tr>
<tr>
<td>0004</td>
<td>Scene4</td>
<td>Scene4</td>
<td>XPression™</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00000000.00</td>
<td>00000000.00</td>
<td>00000000.00</td>
</tr>
<tr>
<td>0005</td>
<td>Scene5</td>
<td>Scene5</td>
<td>XPression™</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00000000.00</td>
<td>00000000.00</td>
<td>00000000.00</td>
</tr>
<tr>
<td>0006</td>
<td>Scene7</td>
<td>Scene7</td>
<td>Use friend...</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00000000.00</td>
<td>00000000.00</td>
<td>00000000.00</td>
</tr>
<tr>
<td>0007</td>
<td>Scene8</td>
<td>Scene8</td>
<td>XPression™</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00000000.00</td>
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<tr>
<td>0008</td>
<td>Scene9</td>
<td>Scene9</td>
<td>XPression™</td>
<td>Cut / Out</td>
<td>0 (middle)</td>
<td>Framebuffer 1</td>
<td>00000000.00</td>
<td>00000000.00</td>
<td>00000000.00</td>
</tr>
</tbody>
</table>

The properties of the selected take item group are displayed in the **Take Inspector - Group** window.

2. Use the properties in the **Group** section to set roll/crawl effect properties for a take item group.

   **Properties**

   **Effect** — use this list to select the roll/crawl effect with which to playout take items in a take item group. The available effects are as follows:
   
   • **Roll** — move take items vertically.
   
   • **Crawl** — move take items horizontally.

   **Direction** — use this list to select the direction for the selected roll/crawl effect. The available directions depend on the selected **Effect**, and are as follows:

<table>
<thead>
<tr>
<th>Roll Effect</th>
<th>Crawl Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom To Top</td>
<td>Right To Left</td>
</tr>
<tr>
<td>Top To Bottom</td>
<td>Left To Right</td>
</tr>
</tbody>
</table>

3. Use the properties in the **Duration** section to set the playout duration for the selected roll/crawl effect.

   **Properties**

   **Speed** — select this option to define the roll/crawl effect playout duration in pixels per second. Use the box to the right of this option to enter or select the number of pixels per second to playout a roll/crawl effect.

   **Seconds** — select this option to define the roll/crawl effect playout duration in seconds. Use the box to the right of this option to enter or select the number of seconds in which to playout a roll/crawl effect.

   **Frames** — select this option to define the roll/crawl effect playout duration in frames. Use the box to the right of this option to enter or select the number of frames in which to playout a roll/crawl effect.
4. Use the properties in the **Global Margins** section to set the spacing between take items displayed in a roll/crawl effect.

**Properties**

- **Top** — in this box, enter or select the size in pixels of the margin placed above take items. This margin is used to control vertical spacing between consecutive take items played out in a roll effect.

- **Bottom** — in this box, enter or select the size in pixels of the margin placed below take items. This margin is used to control vertical spacing between consecutive take items played out in a roll effect.

- **Left** — in this box, enter or select the size in pixels of the margin placed to the left of take items. This margin is used to control horizontal spacing between consecutive take items played out in a crawl effect.

- **Right** — in this box, enter or select the size in pixels of the margin placed to the right of take items. This margin is used to control horizontal spacing between consecutive take items played out in a crawl effect.

5. Use the properties in the **Loop** section to set the number of times to play out a roll/crawl effect.

**Properties**

- **Enable Looping** — select this check box to loop the play out of a roll/crawl effect. Clear this check box to only play out the roll/crawl effect one time.

- **Number of Shows Per Scene** — in this box, enter or select the number of times to loop the play out of a roll/crawl effect. Enter 0 to infinitely loop the play out.

   This box is only available when the Enable Looping check box is selected.

6. Use the properties in the **Header/Footer** section to set the type of page with which to start and end a roll/crawl effect.

**Properties**

- **Blank Page on Start** — select this check box to start the roll/crawl effect with a blank page before displaying the take items in the roll/crawl effect. Clear this check box to start the roll/crawl effect with the first take item in the take item group.

- **Blank Page on End** — select this check box to end the roll/crawl effect with a blank page after displaying the take items in the roll/crawl effect. Clear this check box to end the roll/crawl effect with the last take item in the take item group.

- **Treat Last Page as Full** — select this check box to display the last take item in a roll/crawl effect as a full page.

7. Use the properties in the **Start/Stop** section to control the start and end playout speed of a roll/crawl effect.

**Properties**

- **Ease In** — select this check box to slow the play out speed at the start of a roll/crawl effect.

  - **Frames** — in this box, enter or select the number of frames at which to return a roll/crawl effect to normal playout speed.

- **Ease Out** — select this check box to slow the play out speed at the end of a roll/crawl effect.

  - **Frames** — in this box, enter or select the number of frames from the end of a roll/crawl effect at which to slow the play out speed.

8. Use the property in the **Rendering** section to control lighting for a roll/crawl effect.

**Property**

- **Per Scene Lighting** — select this check box to use a different lighting source for each take item in a roll/crawl effect. Clear this check box to use the lighting source in the first take item of the take item group for all of the other take items in the roll/crawl effect.

9. Double-click the take item group to play out the customized roll/crawl effect.

   The selected take item group is sent to the default output.
Output

The output of an XPression project can be sent to various locations, including being saved in an Audio Video Interleave format (.AVI) video file.

The following topic is discussed in this section:

- Preview Output in a Virtual Output
- Render Output to an AVI File
Preview Output in a Virtual Output

1. Use the Hardware Setup dialog box to configure an XPression Virtual Output.

2. Use XPression to create a scene or scene group.

3. Click Sequence at the top of the window to use the Sequencer to place the new scene or group on a sequence timeline for playout.

4. In the Scene Manager, click and drag the scene or scene group to output into the Sequencer.

5. In the Output Monitors window, note the framebuffer number of the Virtual Output output monitor.

6. Use the list in the Output column of the Sequencer to select the framebuffer number of the Virtual Output for the scene or scene group to output.

7. Double-click the scene or scene group in the Sequencer to take it “online”.

   The XPression Virtual Output window opens to display the output of the selected scene or scene group.

   Right-click the output in the XPression Virtual Output window and select Full Screen to use full screen display.

For More Information on...

- configuring an XPression Virtual Output, refer to the procedure “Configure an XPression Virtual Output” on page 3–29.
- creating scenes, refer to the procedure “Create a Scene” on page 4–4.
Render Output to an AVI File

1. Use the **Hardware Setup** dialog box to configure an XPression AVI Recorder.

2. Use the XPression to create a scene or scene group to output to an Audio Video Interleave format (.AVI) video file.

3. Click **Sequence** at the top of the window to use the **Sequencer** to place the new scene or group on a sequence timeline for playout.

4. In the **Scene Manager**, click and drag the scene or scene group to output to an AVI file into the **Sequencer**.

5. In the **Output Monitors** window, note the framebuffer number of the **AVI Output** output monitor.

6. Use the list in the **Output** column of the **Sequencer** to select the framebuffer number of the **AVI Output** for the scene or scene group to output.

7. Double-click the scene or scene group in the **Sequencer** to take it “online”.
   
   The **Export AVI As** dialog box opens.

8. Locate and select a folder in which to save the AVI file, then enter a name for the AVI file in the **File Name** box.
9. Click **Save**.

   The **Video Compression** dialog box opens.

![Video Compression dialog box](image)

10. Use the **Compressor** list to select the video compressor with which to output the AVI file.

11. Based on the selected video compressor, use the available controls to configure video compression settings.

12. Click **OK**.

   The **AVI Recorder - Preview** window opens to display the output being rendered to the selected AVI file.

   Depending on the selected scene or scene group, rendering an AVI file may take some time to complete.

**For More Information on...**

- configuring an XPression AVI Recorder, refer to the procedure “**Configure an XPression AVI Recorder**” on page 3–23.
- creating scenes, refer to the procedure “**Create a Scene**” on page 4–4.
Appendix A: Keyboard Shortcuts

Use the keyboard shortcuts to perform various functions in XPression.

The following topics are discussed in this section:

• Menu Shortcuts
• Toolbar Shortcuts
• Scene Manager Shortcuts
• Object Manager Shortcuts
• Text Objects Shortcuts
• Keyframe Editor Shortcuts
• Sequencer Shortcuts
• Material Manager Shortcuts
## Menu Shortcuts

<table>
<thead>
<tr>
<th>Menu</th>
<th>Keyboard Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>File</td>
<td>CTRL + ALT + N</td>
<td>New project</td>
</tr>
<tr>
<td></td>
<td>CTRL + O</td>
<td>Open project</td>
</tr>
<tr>
<td></td>
<td>F9</td>
<td>Revert project</td>
</tr>
<tr>
<td></td>
<td>CTRL + S</td>
<td>Save project</td>
</tr>
<tr>
<td></td>
<td>CTRL + ALT + S</td>
<td>Save project as...</td>
</tr>
<tr>
<td></td>
<td>CTRL + SHIFT + ALT + S</td>
<td>Increment and save project</td>
</tr>
<tr>
<td>Edit</td>
<td>CTRL + Z</td>
<td>Undo</td>
</tr>
<tr>
<td></td>
<td>CTRL + SHIFT + Z</td>
<td>Redo</td>
</tr>
<tr>
<td></td>
<td>CTRL + Q</td>
<td>Select object tool</td>
</tr>
<tr>
<td></td>
<td>CTRL + W</td>
<td>Move object tool</td>
</tr>
<tr>
<td></td>
<td>CTRL + E</td>
<td>Rotate object tool</td>
</tr>
<tr>
<td></td>
<td>CTRL + R</td>
<td>Scale object tool</td>
</tr>
<tr>
<td></td>
<td>CTRL + T</td>
<td>Pivot object tool</td>
</tr>
<tr>
<td>Windows</td>
<td>F12</td>
<td>Set main viewport as active</td>
</tr>
<tr>
<td>Project</td>
<td>CTRL + ALT + E</td>
<td>Display project path in Windows Explorer</td>
</tr>
<tr>
<td>Animation</td>
<td>CTRL + SHIFT + C</td>
<td>Open Animation Controller</td>
</tr>
<tr>
<td></td>
<td>CTRL + D</td>
<td>Open Scene Director</td>
</tr>
<tr>
<td></td>
<td>CTRL + SHIFT + K</td>
<td>Open Keyframe Editor</td>
</tr>
<tr>
<td></td>
<td>CTRL + ALT + L</td>
<td>Open Clip Info window</td>
</tr>
<tr>
<td></td>
<td>CTRL + K</td>
<td>Open Set Keyframe window</td>
</tr>
<tr>
<td>Display</td>
<td>CTRL + M</td>
<td>Display Material Manager</td>
</tr>
<tr>
<td></td>
<td>CTRL + ALT + W</td>
<td>Display Widgets pane</td>
</tr>
<tr>
<td></td>
<td>CTRL + ALT + O</td>
<td>Display Object Library</td>
</tr>
<tr>
<td></td>
<td>CTRL + ALT + A</td>
<td>Display Audio Files pane</td>
</tr>
<tr>
<td></td>
<td>CTRL + ALT + B</td>
<td>Display Object toolbar</td>
</tr>
<tr>
<td>Tools</td>
<td>CTRL + SHIFT + U</td>
<td>Force engine unlock</td>
</tr>
<tr>
<td></td>
<td>CTRL + ALT + I</td>
<td>Display Input Grabber</td>
</tr>
<tr>
<td>Help</td>
<td>F1</td>
<td>Display Online Help</td>
</tr>
</tbody>
</table>

## Toolbar Shortcuts

<table>
<thead>
<tr>
<th>Keyboard Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTRL + ALT + M</td>
<td>Display DataLinq Manager</td>
</tr>
</tbody>
</table>

## Scene Manager Shortcuts

<table>
<thead>
<tr>
<th>Keyboard Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTRL + N</td>
<td>Create new scene</td>
</tr>
</tbody>
</table>
### Object Manager Shortcuts

<table>
<thead>
<tr>
<th>Keyboard Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTRL + SHIFT + G</td>
<td>Insert new group object</td>
</tr>
<tr>
<td>CTRL + UP ARROW</td>
<td>Move object up in object tree</td>
</tr>
<tr>
<td>CTRL + DOWN ARROW</td>
<td>Move object down in object tree</td>
</tr>
<tr>
<td>CTRL + LEFT ARROW</td>
<td>Move object left in object tree</td>
</tr>
<tr>
<td>CTRL + RIGHT ARROW</td>
<td>Move object right in object tree</td>
</tr>
<tr>
<td>CTRL + I</td>
<td>Toggle object visibility</td>
</tr>
<tr>
<td>CTRL + L</td>
<td>Lock object</td>
</tr>
<tr>
<td>F2</td>
<td>Rename object</td>
</tr>
<tr>
<td>DEL</td>
<td>Delete object</td>
</tr>
</tbody>
</table>

### Text Objects Shortcuts

<table>
<thead>
<tr>
<th>Keyboard Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTRL + L</td>
<td>Locked lines</td>
</tr>
</tbody>
</table>
| CTRL + NUMPAD +/− | Adjust character spacing
|                  | (adjusts kerning when characters are selected) |
| CTRL + NUMPAD +/− | Adjust kerning for selected characters        |
| CTRL + ALT + UP ARROW | Move line up (moves single character if one is selected) |
| CTRL + ALT + DOWN ARROW | Move line down (moves single character if one is selected) |
| CTRL + ALT + LEFT ARROW | Move line left (moves single character if one is selected) |
| CTRL + ALT + RIGHT ARROW | Move line right (moves single character if one is selected) |
| CTRL + HOME       | Move cursor to first character of text object |
| CTRL + END        | Move cursor past last character of text object |
| CTRL + LEFT ARROW | Move cursor to previous word                  |
| CTRL + RIGHT ARROW| Move cursor to next word                      |
| CTRL + SHIFT + LEFT ARROW | Select previous word                          |
| CTRL + SHIFT + RIGHT ARROW | Select next word                             |
| SHIFT + HOME      | Select to beginning of line                   |
| CTRL + SHIFT + HOME | Select to beginning of text object            |
| SHIFT + END       | Select to end of line                         |
| CTRL + SHIFT + END | Select to end of text object                  |
| CTRL + NUMPAD KEYS | Set current font by ID                        |
| CTRL + TAB        | Selects next text object                      |
| CTRL + SHIFT + TAB | Selects previous text object                  |
| CTRL + ALT + TAB  | Selects next object                           |
| CTRL + SHIFT + ALT + TAB | Selects previous object                      |
### Keyframe Editor Shortcuts

<table>
<thead>
<tr>
<th>Keyboard Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPACE</td>
<td>Play animation</td>
</tr>
<tr>
<td>CTRL + A</td>
<td>Select all keyframes</td>
</tr>
<tr>
<td>RIGHT ARROW</td>
<td>Move Time Locator forwards</td>
</tr>
<tr>
<td>LEFT ARROW</td>
<td>Move Time Locator backwards</td>
</tr>
<tr>
<td>HOME</td>
<td>Jump to first keyframe</td>
</tr>
<tr>
<td>END</td>
<td>Jump to end of animation</td>
</tr>
<tr>
<td>CTRL + RIGHT ARROW</td>
<td>Jump to next keyframe</td>
</tr>
<tr>
<td>CTRL + LEFT ARROW</td>
<td>Jump to previous keyframe</td>
</tr>
<tr>
<td>CTRL + HOME</td>
<td>Jump to first keyframe</td>
</tr>
<tr>
<td>CTRL + END</td>
<td>Jump to last keyframe</td>
</tr>
</tbody>
</table>

### Sequencer Shortcuts

<table>
<thead>
<tr>
<th>Keyboard Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP ARROW</td>
<td>Select previous take item</td>
</tr>
<tr>
<td>DOWN ARROW</td>
<td>Select next take item</td>
</tr>
<tr>
<td>CTRL + UP ARROW</td>
<td>Move selected take item up the list</td>
</tr>
<tr>
<td>CTRL + DOWN ARROW</td>
<td>Move selected take item down the list</td>
</tr>
<tr>
<td>HOME</td>
<td>Select first take item</td>
</tr>
<tr>
<td>END</td>
<td>Select last take item</td>
</tr>
<tr>
<td>CTRL + PAGE UP</td>
<td>Select previous take item</td>
</tr>
<tr>
<td>CTRL + PAGE DOWN</td>
<td>Select next take item</td>
</tr>
<tr>
<td>CTRL + SHIFT + PAGE UP</td>
<td>Select previous template data field</td>
</tr>
<tr>
<td>CTRL + SHIFT + PAGE DOWN</td>
<td>Select next template data field</td>
</tr>
<tr>
<td>ALT + PAGE UP</td>
<td>Select previous scene template</td>
</tr>
<tr>
<td>ALT + PAGE DOWN</td>
<td>Select next scene template</td>
</tr>
<tr>
<td>ALT + INSERT</td>
<td>Transfers scene from take item list</td>
</tr>
<tr>
<td>ALT + DELETE</td>
<td>Removes scene from take item list</td>
</tr>
<tr>
<td>ALT + Fn KEY</td>
<td>Set selected take item online to framebuffer represented by the F$n$ key</td>
</tr>
<tr>
<td>CTRL + Fn KEY</td>
<td>Remove selected take item from the framebuffer represented by the F$n$ key</td>
</tr>
</tbody>
</table>

### Material Manager Shortcuts

<table>
<thead>
<tr>
<th>Keyboard Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTRL + M</td>
<td>Open Material Manager</td>
</tr>
<tr>
<td>ENTER</td>
<td>Open selected material in the Material Editor</td>
</tr>
</tbody>
</table>