

Reality Studio™

User's Guide



LIVE PICTURE

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A special thanks

To David Woodward, Panoramic Imaging Ltd., for the tutorial vistas.

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Introduction

Reality Studio lets you create interactive, panoramic worlds for the Web quickly and easily. At the touch of a button, you can design walk-throughs of homes, scenes of vacation spots, stores and online catalogs with products you can view in 3D detail, galleries with viewable art, and much more.

This manual describes how to use Reality Studio to create projects that you can publish on the Web or for CD-ROM content. The other components of the Reality Studio suite are:

- Live Picture PhotoVista, to stitch digital photos into panoramas
- Live Picture Object Modeler, to create 3D image objects that you can rotate to view on all sides
- Limited-license version of the Live Picture Image Server, to deliver high-resolution FlashPix images and objects
- Live Picture Viewer 3.0—plug-in or Java version, to view Reality Studio content
- Live Picture FlashPix™ Photoshop Plug-in, to convert images to FlashPix using Adobe® Photoshop®

Note: The Reality Studio CD-ROM includes the PC version of the FlashPix Photoshop Plug-in. You can download the Macintosh version of this plug-in from the download section of the Live Picture Web site at www.livepicture.com.

This manual describes how to create projects in Reality Studio. For information about using the other components, refer to the online documentation on the CD-ROM, starting with the file *ReadMe.htm*.

Using this manual

This user's guide contains the information you need to install and use Reality Studio. The first two chapters take you through the installation and the beginning steps of creating a project. Later chapters describe how to add and link elements in your project, and give some advanced techniques for experienced Web designers.

- Chapter 1, “Getting Started.” includes system requirements, installation instructions, and an overview of the Reality Studio application, menus, and toolbars.
- Chapter 2, “Using Reality Studio Features.” describes the parts of a Reality Studio project, how to work with assets in the Asset Browser, the different view modes, and detailed information about the main application features.
- Chapter 3, “Creating and Previewing a Sample Project.” provides five lessons as a quick, hands-on introduction to using Reality Studio.
- Chapter 4, “Working with Elements.” describes the types of elements you can add to your projects and how to add, size, position, and edit elements in Flat, 3D, and Overlay mode.
- Chapter 5, “Linking Vistas and Elements.” describes how to create links between vistas, and link elements to URLs and other HTML pages.
- Chapter 6, “Publishing Your Project.” describes how to export your project files to publish your finished project on the Web.
- Chapter 7, “Behind the Scenes.” presents an overview of Virtual Reality Modeling Language (VRML) and the Live Picture extensions to VRML 2.0, and provides advanced techniques for editing the IVR files that Reality Studio exports.
- Appendix A, “Troubleshooting.” provides some answers to typical situations that might occur while working in Reality Studio.
- The Glossary provides definitions of terms used in this book and in Reality Studio.

Viewing the online tutorial

The ideal way to get tips for working with Reality Studio is to work through the online tutorial, which has features that are useful to novice and expert Web designers. To view the online tutorial, insert your Reality Studio CD-ROM and choose *Programs\Live Picture\Reality Studio\Tutorial* from the Windows Start menu.

Using the online Help

The online Help is designed to give you concise information that you can access quickly while you're working.

To access the online Help:

- From the Help menu, choose Help Topics.

Getting technical support

The first place to look for solutions is Appendix A, "Troubleshooting." For the most current information and answers to frequently asked questions (FAQs), visit the Help Desk section of the Live Picture Web site at www.livepicture.com. To reach the Live Picture technical support team:

- Send e-mail to support@livepicture.com
- Call technical support directly at (408) 558-4455. Regular technical support hours are Monday through Friday between the hours of 9 A.M. and 5 P.M. Pacific Standard Time (PST); you can leave a message at anytime to receive a return call.

Note: If you are unable to access the technical support phone number, call the Live Picture main number: (408) 371-4455.

CHAPTER 1

Getting Started

This chapter gets you started with Reality Studio by providing system requirements and installation instructions. After you install Reality Studio, take a few minutes to read through the rest of this chapter for an overview of Reality Studio, including descriptions of:

- The main features, which let you achieve a wide variety of effects using vistas, links, and other project elements
- The components of the application that you use to build your projects: Viewport, Project Manager, Asset Browser, and World Map
- The menu commands, keyboard shortcuts, and toolbar buttons

System requirements

Before you install Reality Studio, make sure you have at least the minimum system requirements. This will ensure that you get the best performance from your software.

Note: These requirements are for the Reality Studio application only. For the hard disk space and RAM requirements for additional components in the suite, refer to the file *ReadMe.html* on your Reality Studio CD-ROM.

- 486/DX
- Windows 95 or NT 4.0
- 35 MB hard disk space for the minimal install; 200 MB for the full install
- 16 MB RAM required; 32 MB RAM highly recommended for working with multimedia elements and FlashPix (FPX) images
- Netscape Navigator® or Microsoft Internet Explorer®; versions 3.0 or later

Installation instructions

The instructions in this section are for installing only the Reality Studio application program. When you install Reality Studio, you have the choice to install some or all of the applications included in the suite. For information about where to find the installation instructions for each component of the suite, refer to the file *ReadMe.html* on your Reality Studio CD-ROM.

To install Reality Studio:

1. On your Reality Studio CD-ROM, open the Reality Studio folder and double-click the file *install.exe*.
2. Click Next to start the installation, then click Accept to accept the license agreement terms and proceed.
3. In the Registration Information screen, type your name, e-mail, and the serial and activation key numbers available on your Reality Studio CD-ROM.
4. Click Next to select the components to install.
 - Select Reality Studio and the Live Picture Viewer to create and view projects.
5. Click Next. The Reality Studio installation begins.
6. Follow the prompts of the installer until you come to the directory to install Reality Studio. The default directory is *Program Files\Live Picture\Reality Studio*. To choose a different directory, click Browse and navigate to the directory you want.
7. Click Next and choose one of the installation options:
 - Minimal—installs the application, the minimal Live Picture asset collection, and Microsoft DirectX, a set of high-performance drivers for your computer's audio and video hardware. Additional asset collections are available on the Reality Studio CD-ROM.
 - Full—installs the application, the full Live Picture and third-party asset collections from the Reality Studio CD-ROM, and Microsoft DirectX.
8. Click Next and follow the prompts to finish the installation.

Note: If you chose to install multiple applications, each installation will run in succession.

Reality Studio features

Reality Studio makes it easy for you to create and manage your projects, while helping you enhance your Web sites with a variety of rich effects. Using the range of features, you can:

- Link vistas together to create dynamic environments that site visitors can “walk” through.
- Link vistas and project elements to URLs to provide related information on the Web and in other HTML pages.
- Add images, movies, sounds, and image objects to panoramas in Flat, 3D, and Overlay modes for a variety of uses, including voice-over narratives and objects you can manipulate to view on all sides and from different perspectives.
- Program actions to show, hide, toggle, play, loop, and stop elements and multimedia.
- Save working project files and create a group of exported files for publishing on the Web in plug-in or Java applet form.
- Preview your project in an internal viewer or in an HTML page running the Live Picture Viewer to help you as you design your interactive world.

Reality Studio components

The main window comprises a Viewport and three dockable panes that you can size and position independently as you work. You can hide or show a status bar at the bottom of the main window.



Viewport

The Viewport is your main working area and displays the vistas in your project in scrollable windows that you can minimize and maximize as you work. The vista windows have three view modes that you switch between to add elements to your project.

The following table describes the three view modes and their functions:

View mode	Function
Flat	Add, position, and size panels (images and movies) and hotspots in the panoramic space. For example, you could have a photo on a wall that is only visible when you pan into that portion of the panorama.
3D	Place 3D elements into a vista and position them in the 3D space. For example, you could have an image object (IMOB) of a camera that you can rotate to view on all sides.

View mode	Function
Overlay	Place elements on top of the vista in groups and layers. For example, you could have a group of photos that appears when you click a button and disappears when you click it again. When you pan and zoom in the vista, the overlay elements do not shift out of view.

Note: For more information about the view modes, see Chapter 4, “Working with Elements,” on page 45.

Asset Browser and asset collections

Assets are media files that have been prepared for use in Reality Studio. The Asset Browser organizes all of the assets available to your projects, using tabs that make it easy for you to switch back and forth between the different types of assets.

Reality Studio comes with a set of Live Picture assets and some collections from third-party vendors. You can also create asset collections from directories of media files on your hard drive. The asset collections appear in folders in the left pane of the Asset Browser and thumbnail images, when available, appear in the Preview pane on the right. The middle pane shows the available assets, represented by icons.

The asset icons act as links to the media files on your hard drive. You drag these links from the Asset Browser into your vistas to create elements in your project. For more information, see “Using the Asset Browser,” on page 26.

Project Manager

The Project Manager shows a list of the elements contained within each scene in your project, organized in expandable folders as in a standard Windows Explorer directory. The top level folder is your project, with folders below for each vista. Each vista folder contains a Flat, 3D, and Overlay folder. These folders correspond with the three view modes and organize the elements in your project. For more information, see “Using the Project Manager,” on page 29.

World Map

The World Map shows a schematic representation of all of the scenes in your project, with each one appearing as a round node on a plane. Using the World Map, you can link vistas, view links between vistas, and get an overview of your project. For more information, see “Using the World Map,” on page 31.

Menus

This section gives you an overview of the main menu commands and keyboard shortcuts.

File menu

The following table describes the File menu commands and keyboard shortcuts.

Command	Description	Keyboard Shortcut
New	Prompts to save, then closes the current project to start a new one.	CTRL + N
Open	Opens an existing Reality Studio project (RSD file).	CTRL + O
Close Project	Closes the current project. If closing for the first time, prompts for a name and location to save the project as an RSD file. If there are unsaved changes, prompts to Save before closing.	
Save	Saves your project as an RSD file.	CTRL + S
Save As	Saves a copy of the RSD file (with a different name or location).	
Revert	Reverts to the previously saved version of your RSD file, eliminating any unsaved changes.	
Assets Up Folder Refresh Add Collection Remove Collection	<ul style="list-style-type: none"> • Moves up one level to the next folder. • Refreshes the Asset Browser. • Adds an asset collection to the Asset Browser. • Removes the selected asset collection from the Asset Browser. 	
Export Plug-in Target Java Applet Target	Exports your project to an IVR and HTML file. You can choose to export the HTML with a plug-in target or Java applet.	
Preview Quick Browser	<ul style="list-style-type: none"> • Quick preview plays your project in the internal viewer. • Browser preview plays your project in an HTML page using the Live Picture Viewer. 	
Recent File List	Lists the recently opened project files.	

Command	Description	Keyboard Shortcut
Exit	Prompts to save, then exits.	

Edit menu

The following table describes the Edit menu commands and keyboard shortcuts.

Command	Description	Keyboard Shortcut
Undo	Undoes the most recent edit.	CTRL + Z
Insert Vista Hotspot Panel Geometry Sound URL	Inserts an element or hotspot into the project, or browses for a URL link to insert.	
Delete	Deletes the selected element in the project.	Delete
Properties	Shows the Properties dialog box for the selected element in the Viewport or Project Manager.	
Launch Editor	Launches the associated editing application for the selected element in the Viewport or Project Manager.	

View menu

The following table describes the View menu commands and keyboard shortcuts.

Command	Description	Keyboard Shortcut
Vista Flat 3D Overlay	Sets the view mode in the current vista in the Viewport. For a complete description of the view modes, see Chapter 4, "Working with Elements," on page 45.	
Toolbar Project Vista Asset	Shows or hides each toolbar.	
Zoom In	In Flat mode, decreases the field of view.	
Zoom Out	In Flat mode, increases the field of view.	
Pause	Pauses the selected multimedia.	

Command	Description	Keyboard Shortcut
Project Manager	Shows or hides the Project Manager.	
Asset Browser	Shows or hides the Asset Browser.	
World Map	Shows or hides the World Map.	
Status Bar	Shows or hides the Status bar.	

Tools menu

The following table describes the Tools menu commands and keyboard shortcuts.

Command	Description	Keyboard Shortcut
PhotoVista	Launches PhotoVista, which you use to create digital panoramas.	
Object Modeler	Launches Object Modeler, which you use to create and edit 3D image objects (IMOBs).	
Web Browser	Launches your default Web browser.	

Window menu

The following table describes the Window menu commands and keyboard shortcuts.

Command	Description	Keyboard Shortcuts
Cascade	Displays the open windows in cascade style.	
Tile	Displays the open windows as tiles.	
Arrange Icons	Organizes minimized windows.	
Close All	Closes all the vista windows in the Viewport.	
Open Vista List	Lists the open vistas in the Viewport.	

Help menu

The following table describes the Help menu commands and keyboard shortcuts.

Command	Description	Keyboard Shortcut
Help Topics	Launches the online Help.	
Live Picture Home Page	Launches your default Web browser to show the Live Picture home page.	

Command	Description	Keyboard Shortcut
About Reality Studio	Shows version and copyright information about Reality Studio.	

Toolbars

Reality Studio has two main toolbars that let you quickly accomplish tasks, without using menu commands. When you first launch Reality Studio, these toolbars appear at the top of the main window:





- Project toolbar for standard tasks, such as opening and saving projects
- Vista toolbar for changing view modes, adding hotspots, zooming in and out, and pausing multimedia







Note: For a description of the toolbar attached to the Asset Browser, see “Using the Asset Browser,” on page 26.

You can choose to show or hide these toolbars in the Reality Studio main window or use them as individual, floating panes. Double-click the toolbar to switch between docking and floating.

Project toolbar









Use the Project toolbar to open, close and create new projects, to preview your project, and to perform editing tasks. The following table shows the Project toolbar buttons and describes their actions:

Button	Action
New 	Closes the current project to start a new one.
Open 	Opens an existing RSD file.
Save 	Saves your project as an RSD file.
Quick Preview 	Plays your project in the internal viewer.

Button	Action
Browser Preview 	Creates temporary files that play your project in the Live Picture Viewer.
Delete 	Deletes the selected element.
Toggle Project Manager 	Shows or hides the Project Manager.
Toggle Asset Browser 	Shows or hides the Asset Browser.
Toggle World Map 	Shows or hides the World Map.
Help 	Launches the online Help.

Vista toolbar

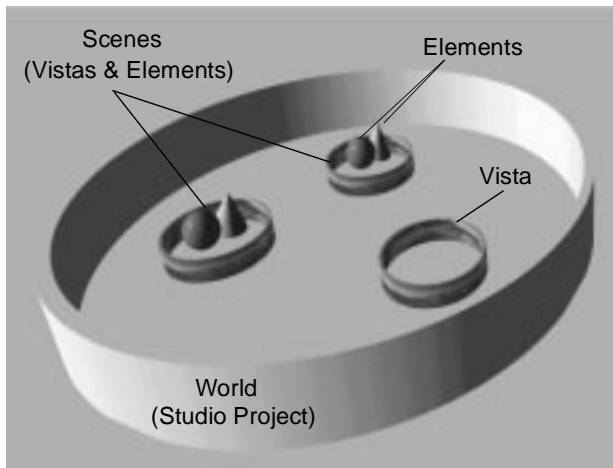
Use the Vista toolbar to change view modes, add hotspots, zoom in and out, and move and size elements in your vistas. The following table shows the Vista toolbar buttons and describes their actions:

Button	Action
Scroll 	Lets you scroll open vistas.
Add Hotspot 	Add hotspots into the current vista.
Flat View 	Changes the view mode to Flat.
3D View 	Changes the view mode to 3D.
Overlay View 	Changes the view mode to Overlay.
Zoom In 	Decreases the field of view.
Zoom Out 	Increases the field of view.
Pause 	Pauses the multimedia (movie or sound).

CHAPTER 2

Using Reality Studio Features

Think of each finished Reality Studio project as a world consisting of various scenes with elements, such as photos on a wall and hotspot links to other scenes. The background for each scene is a panoramic image with field of view information, called a vista. For example, you might want to create a tour of a tropical island, including different locations, such as a hotel, beach, and marketplace. Your project is the whole island and each scene is one of the island locations. Some of the elements you can add to your scenes include images and movies, links to other locations, musical and narrative sounds, and objects you can rotate to view on all sides, such as merchandise for sale in the marketplace.



The sections in this chapter include:

- An overview of the assets and elements you can add to your Reality Studio projects
- An introduction to Flat, 3D, and Overlay mode
- A description of using the Asset Browser to add elements to your project and manage asset collections, and the media types Reality Studio supports

- A description of using the Project Manager to organize the vistas and elements in your project
- A description of using the World Map to get an overview of the vistas and inter-vista links in your project

About assets and elements

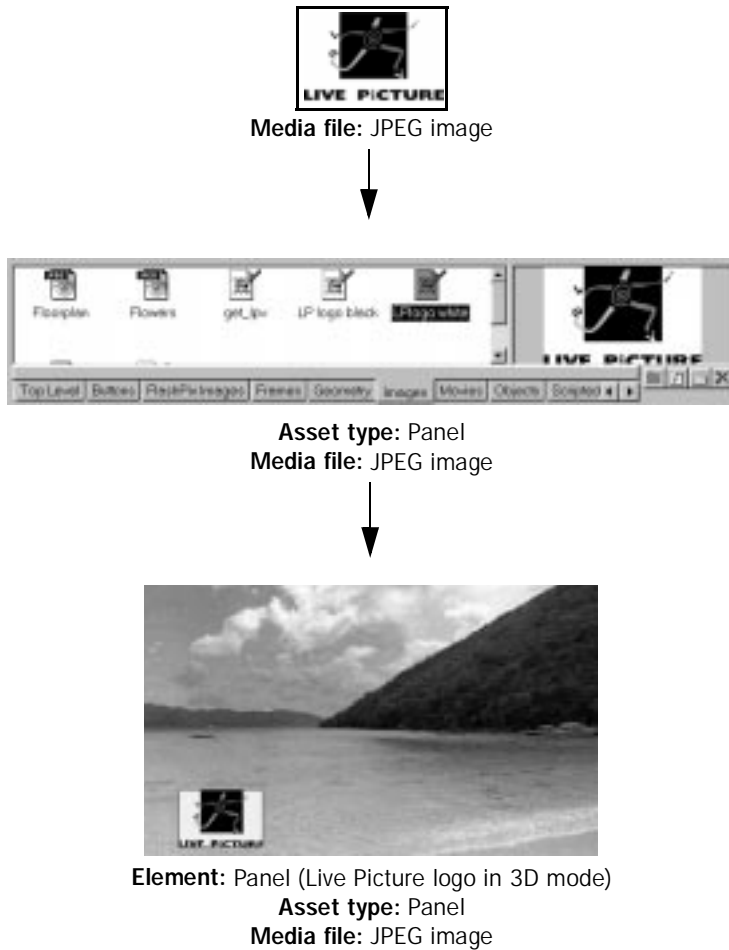
Assets are media files (such as images, sounds, and movies) that you add to Reality Studio to create elements in your projects. You can drag media files from your local directories into your projects, or use the asset collections that come with Reality Studio. The following table describes the types of assets you can use:

Asset	Description
Frames	A rectangular picture frame image used as a border around the Live Picture Viewer.
Geometry	3D object represented by geometric primitives and texturemaps.
Image Objects (IMOBs)	<p>A series of photographic images of a real-world 3D object, taken from various angles. During playback, you can manipulate the IMOB to change which image displays. This simulates the experience of examining an actual 3D object.</p> <p>Note: You can create IMOBs using Object Modeler, which is included in the Reality Studio suite.</p>
Panels Images Movies	<p>Rectangular objects that you can position and size in the three view modes (Flat, 3D, and Overlay).</p> <ul style="list-style-type: none"> • In Flat mode, you can warp the panel to conform to the contours of the vista; the panel remains fixed in its position and moves out of view when you pan. • In 3D mode, you can position the panel in the 3D space. • In Overlay mode, you place the panels on top of the vista and they remain visible on the screen no matter where you pan.

Asset	Description
Sounds	<p>Audio-sampled media files.</p> <ul style="list-style-type: none"> • Point-source sounds vary in volume according to proximity in the view. You can add point-source sounds in 3D mode. • Ambient sounds have the same volume regardless of your position in the view. You can add ambient sounds in Overlay mode.
Vistas	<p>Panoramic backgrounds for the scenes in your project; a new VRML ExternProto node created by Live Picture as an extension to VRML 2.0. You can use IVR files created by PhotoVista that use standard or FlashPix images.</p> <p>Note: When you use an IVR file that has multiple vista nodes, Reality Studio reads the first vista in the file and disregards the rest.</p>

When you place an asset into your project and it becomes an element, the basic media file of the asset does not change. However, the element acquires additional attributes that describe how it is used in the project, such as a position in the panoramic, screen, or 3D space.

The following diagram shows the relationship of a media file, an asset, and an element in a Reality Studio project.



Note: For details about adding elements to your projects and working with them in Flat, 3D, and Overlay mode, see Chapter 4, “Working with Elements,” on page 45.

About the view modes

The view modes correspond to different spatial areas in your vistas and the attributes of an element depend on where you place it in that space. The active view mode in the vista window determines the type of elements you can add.

Note: You can only change view modes when a vista is open in the Viewport.

The three view modes are:

- Flat —places elements, such as images and movies, into the panoramic space; the elements appear attached to a fixed place on the vista, moving in and out of view as you pan the vista.
- 3D—places elements, such as image objects (IMOBs) and sounds, in 3D space; the perspective of the elements changes as you navigate the vista.
- Overlay—places elements, such as images and sounds, on top of the vista in the screen space; the elements remain visible on the viewer screen no matter where you navigate in the vista.

Changing the view modes

As you work in Reality Studio, you'll be switching view modes often to add, size, and position elements in your vistas.



- From the View menu, choose Vista > Flat to add images, movies, and hotspots to the panoramic space.



- From the View menu, choose Vista > 3D to add and view images, movies, sounds, image objects (IMOBs), and geometry objects in the 3D space.



- From the View menu, choose Vista > Overlay to add images, movies, IMOBs, and sounds onto the screen space.

Note: For details about using the three view modes to add elements to your projects, see Chapter 4, “Working with Elements,” on page 45.

Using the Asset Browser

The Asset Browser organizes all of the asset collections and makes it easy for you to drag assets into your projects. The left pane of the Asset Browser shows the asset collections, the middle pane shows asset icons that act as links, and the right pane shows a thumbnail preview of a selected asset, when available. Tabs show the types of assets in the collection, such as images, movies, and sounds. Each tab represents a subfolder in a main directory of media files.







The following table describes how to view the asset collections:

To do this	Use this procedure
Select an asset collection to view	Scroll through the asset collection icons, then click the collection you want to view. The asset tabs and icons appear.
Switch between asset types	Click the tabs below the asset icons.
View a thumbnail preview of an asset	Click the asset icon. The thumbnail appears in the right pane of the Asset Browser.

Asset toolbar

An Asset toolbar appears below the thumbnail preview pane in the Asset Browser. The following table describes the buttons in the Asset toolbar and their actions:

Button	Action
Back 	Returns to the previous location; if you switched asset tabs, this will return you to the previous tab.
Refresh 	Refreshes the Asset Browser contents.
Add Collection 	Browses for a local folder to add an asset collection.
Remove Collection 	Removes the selected asset collection.

When you launch Reality Studio, the Asset Browser appears. You can hide the Asset Browser if you want more space to work on your scenes. You can also undock the Asset Browser to use it as a floating pane.

To show or hide the Asset Browser:



- From the View menu, choose Asset Browser. The Asset Browser appears (if it was hidden) or disappears (if it was showing).

To undock and dock the Asset Browser:

- To undock the Asset Browser, double-click one of its outer edges to release it to a floating pane. You can also click and drag to move the Asset Browser out of the main window to a floating pane.
- To dock a floating Asset Browser pane, drag it to the bottom edge of the Reality Studio main window and release the mouse button.

Note: When moving a floating pane, press CTRL as you drag to prevent it from docking.

Creating custom asset collections

Reality Studio comes with a Live Picture asset collection and some collections from third-party vendors. Most likely, you'll want to add custom asset collections from your local directories of media files, such as the panoramas you generate using PhotoVista or the 3D image objects you create in Object Modeler.

When you add an asset collection, a tab appears in the middle pane of the Asset Browser for each subfolder in the directory of media files. For example, if your directory is named *Model House* and the subfolder of panorama files is named *Rooms*, the asset collection will be *Model House* and the tab you see in the middle pane of the Asset Browser will be *Rooms*.

Note: If there are no subfolders in the directory you added as an asset collection, the assets appear in the middle pane of the Asset Browser, but no tabs will appear below them.

To create a custom asset collection:

1. In the Asset toolbar, click Add Collection. The Browse for Folder dialog box appears.
2. Navigate to the folder that contains the media files you want to add to the Asset Browser and click OK. The new asset collection icon appears in the left pane of the Asset Browser and the media files appear as icons in the middle pane.

Supported media types

For creating assets, Reality Studio supports media types that the Live Picture Viewer can display. The media types include FlashPix™, a digital image file format that lets you zoom in to high-level detail in your images.

The following table describes the supported media types:

Media type	Description
Animated GIF	An animation created from a Graphics Interchange Format (GIF) image.
AVI	Microsoft's Audio/Video format. You can use these files as movie panels.
Bitmap (BMP)	A pixel-based image file format that you can use for image panels or panoramas.
FlashPix™ (FPX)	A digital image file format that lets you view a screen resolution of an image and zoom in for high levels of detail. You can use FlashPix images for vistas and image objects (IMOBs).
Graphics Interchange Format (GIF)	A popular Internet format for 256 color images; best suited for icons, logos, and diagrams. GIFs are usually smaller file sizes that display well even over low-bandwidth Internet connections.
Joint Photographic Experts Group (JPEG)	A preferred format for the Internet, because: <ul style="list-style-type: none"> • JPEG provides the best compression available. • You can download and display JPEG files progressively, which lets you view the image as it is downloading.
QuickTime	Apple Computer's Audio/Video format. You can use these files as movies, sounds, panoramas, or slide shows. Note: To use these files, you must have QuickTime installed on your computer.
Waveform (WAV)	A Windows standard audio file format.

Using FlashPix™

FlashPix is a hierarchical image file format that provides multi-resolution imaging for fast, realistic presentations on CD-ROMs and the Internet. You can view the image at one resolution on your computer screen and zoom in to higher resolutions to see greater levels of detail. FlashPix works with the Live Picture Image Server to deliver high-quality image performance over low bandwidth for the Internet.

Using FlashPix in your Reality Studio projects adds greater depth to your finished worlds. For example, if use a FlashPix image as a picture on a wall in a vista, you can zoom in to view small details in the picture. When you use a FlashPix image object (IMOB) created using Object Modeler, you can examine the object on all sides and zoom in to view minute features, such as text on a label. FlashPix vistas created using PhotoVista let you zoom in to see details like patterns on a floor tile. For more technical information about FlashPix, see the Glossary on page 97.

Note: Using FlashPix over the Internet requires access to a Live Picture Image Server. A limited-license version of the Live Picture Image Server is included on your Reality Studio CD-ROM. You can use this version for testing purposes on your workstation or on your company intranet. For general publishing purposes, ask your Internet Service Provider (ISP) for information on publishing FlashPix images to their Live Picture Image Server. For more details, see the *Live Picture Image Server Startup Guide* in the Documentation folder on your Reality Studio CD-ROM.

The next section introduces the Project Manager, which organizes your project vistas and elements as you work.

Using the Project Manager

The Project Manager is a hierarchical representation of the vistas and elements in your project. Each time you add a new vista, a group of folders appears; these folders organize all of the elements and hotspot links that you add in Flat, 3D, and Overlay mode.

You can drag vistas into the Project Manager from the Asset Browser to add new vistas to your project. When you add a vista to the Project Manager, it opens in the Viewport. The currently selected vista or element in the Viewport is always highlighted in the Project Manager.



- To expand or collapse a folder, click on the + or - sign in front of the folder, or double-click the folder.
- To edit the properties of the project or an element, right-click the project folder or the element you want to edit and choose Properties from the shortcut menu. A Properties dialog box appears for you to edit the attributes.
- Right-click a vista or an element to show a shortcut menu, then choose a command to:
 - Launch an editing application for that media type
 - View the vista or element properties
 - Delete the vista or element
 - Change the view mode for the vista
- To display a vista on top of the other open windows in the Viewport, click the vista you want to view.

When you launch Reality Studio, the Project Manager appears docked to the left side of the main window. You can dock the Project Manager to the right side if you prefer, or undock it to use it as a floating pane.

To undock and dock the Project Manager:

- To undock the Project Manger, double-click one of its outer edges to release it to a floating pane.
- To reposition the Project Manager or dock it when it's floating, drag it to the right or left edge of the Reality Studio main window and release the mouse button.

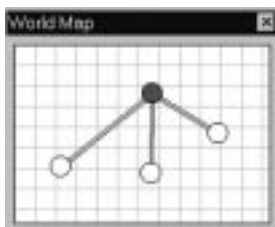
Note: When moving a floating pane, press CTRL as you drag to prevent it from docking.

Using the World Map

The World Map represents the entire project schematically, with each scene displayed as a round node on a plane. This overview helps you organize and keep track of the many vistas in your projects. You can add a new vista and place it in relationship to the other vistas in your project.

Each time you add a vista to your project, a new round node appears in the World Map. Using the World Map you can:

- To show the vista name, pass the pointer over a node.
- To select a node and show any links to other vistas, double-click the node. That vista appears in the Viewport and appears selected in the Project Manager, as well.



When you launch Reality Studio, the World Map appears as a floating pane. You can dock the World Map if you prefer.

To dock and undock the World Map:

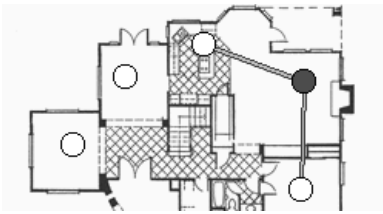
- To dock a floating World Map pane, drag it to the bottom edge of the Reality Studio main window and release the mouse button.
- To undock the World Map, double-click one of its outer edges to release it to a floating pane.

Note: When moving a floating pane, press CTRL as you drag to prevent it from docking.

Setting the background image

The default background for the World Map is a grid, which gives spatial reference to the vistas in your project. You can set a different background image, as well. For example, if you're creating a real estate walk-through, you might choose a blue-print image of the house as the background image for the World Map. This gives you an overview of the vistas of each room and the links between them.

Note: If there is a background image in the World Map, when you do a Browser Preview or export your project, the World Map will appear in the preview or exported HTML page. However, it won't appear on your finished Web page, because it's not included in the HTML to copy. See "Placing the HTML code in your Web page," on page 85.



To change the background image:

- Drag an image from the Asset Browser or your desktop into the World Map. To save this image to the World Map, from the File menu, choose Save.

Now that you understand the basics about Reality Studio projects, take some time to follow the online tutorial lessons or the lessons in Chapter 3, "Creating and Previewing a Sample Project." The online tutorial is on your Reality Studio CD-ROM.

CHAPTER 3

Creating and Previewing a Sample Project

These five short lessons give you a quick, hands-on introduction to using Reality Studio. The lessons in this chapter use some of the vistas, images, sounds, and objects that are in the online tutorial on your Reality Studio CD-ROM.

- Lesson 1 covers adding vistas to start your project, after which you'll save it.
- Lesson 2 shows you how to link your vistas using the drag-and-drop method and the hotspot button.
- Lesson 3 guides you through adding elements in Flat, 3D, and Overlay mode, including setting some element properties.
- Lesson 4 describes how to assign an action to an element and trigger events.
- Lesson 5 details how to preview your project in the Live Picture Viewer and interact with the links and elements you added in the first four lessons.

Note: For a more in-depth overview of the sophisticated effects you can create in a Reality Studio project, view the online tutorial. The tutorial is on your Reality Studio CD-ROM at *Reality Studio\Tutorials*. Insert your CD-ROM and choose *Live Picture\Reality Studio\Tutorial* from the Windows Start menu.

Lesson 1: Adding vistas and saving your project

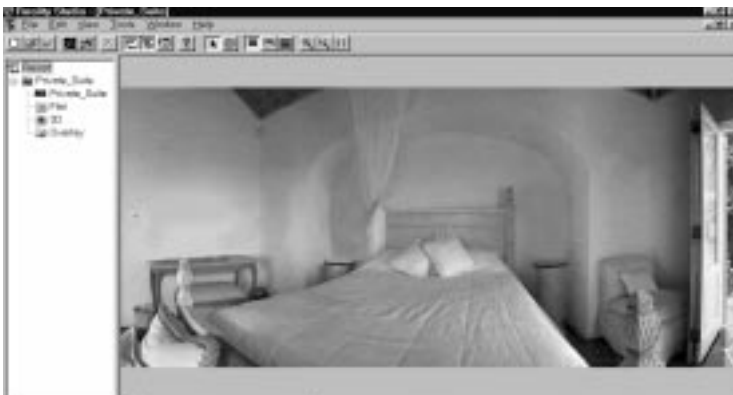
Starting a Reality Studio project is as simple as adding some vistas to the Viewport or Project Manager to create the first scenes. You can add vistas from the Asset Browser or your desktop files. For this lesson you'll be using the Live Picture asset collection.

To add vistas:

1. Get Reality Studio up and running from the Windows Start menu by choosing Programs > Live Picture > Reality Studio.
2. Show the Live Picture asset collection by clicking the Live Picture icon in the left pane of the Asset Browser. The Vista tab appears by default.



3. Drag the Private Suite vista from the Asset Browser into the Viewport. You'll see a vista folder appear in the Project Manager as the vista opens in the Viewport in Flat mode. The Flat, 3D, and Overlay folders appear within the vista folder.



4. Next, drag the Beach vista and the Market vistas from the Asset Browser into the Project Manager. You should see three vista folders in the Project Manager, named *Private Suite*, *Beach*, and *Market*.
5. Bring the Private Suite vista to the front in the Viewport by clicking the vista icon in the Project Manager. You can also press CTRL + Tab to switch between open vistas in the Viewport.
6. Maximize the vista window by clicking the Maximize button in the upper right corner of the window.

You're set to proceed to "Lesson 2: Linking vistas," but first you're going to save your project.

Saving your project


When you save your project, Reality Studio creates an RSD project file. This is your working project file, which you will later export along with the associated media files. When you save, you set the name of your project that appears in the Project Manager.

1. From the File menu, choose Save. The Save As dialog box appears.
2. Navigate to the folder where you want to save your project files.
3. Type a name for your project in the File Name field and click OK to save your project.

Lesson 2: Linking vistas

When you create links between vistas, you're setting up the navigation for your project. In this step, you'll use two different methods for linking vistas: adding a hotspot link and dragging a vista from the Project Manager into the Viewport. Proceeding from Lesson 1, the Private Suite vista should now be open and maximized in the Viewport.

To link the vistas:

1. To insert a hotspot link between vistas, do one of the following:
 - From the Edit menu, choose Insert > Hotspot. The Event Properties dialog box appears.
 -  Click the Hotspot button in the Vista toolbar, then click the Private Suite vista in the Viewport and drag to size the hotspot. When you release the mouse button, the Event Properties dialog box appears.



2. In the Element Name field, type “To Beach.”
3. Click the Vista Link option and from the Destination drop-down list, choose Beach.
4. Click Transition. The Link Transition dialog box appears.



5. Set the exit view for Private Suite and the entry view for Beach by clicking on each vista and panning until you see the view you want. The pitch and yaw values change as you pan. For this lesson, leave the field of view settings as they are.

Note: For more information about pitch, yaw, and field of view, see “Setting the link transition,” on page 72.

6. From the Transition Type drop-down list, choose Pan and Zoom. Leave the Duration set to 1 second, which is the amount of time it will take for the link transition.
7. Click OK to close the Link Transition dialog box, then click OK to close the Event Properties dialog box. In the Viewport, you’ll see a tracker with corner handles for the link. In the Project Manager, you’ll see the hotspot in the Flat folder within the Private Suite folder.
8. Bring the Beach vista to the front in the Viewport by selecting its icon in the Project Manager.
9. Drag the Market vista icon from the Project Manager onto the Beach vista in the Viewport. The Link Transition dialog box appears.
10. Repeat steps 5 and 6 above to finish linking the Market vista to the Beach vista. You’ll see the link in the Project Manager in the Flat folder within the Beach folder.

11. To name this link, right-click the link in the Project Manager or double-click the link in the Viewport. The Event Properties dialog box appears.
12. In the Element Name field, type “To Market” and click OK.
13. From the File menu, choose Save to save your work.

In the Project Manager, you should now see a vista link in the Flat folders within the Private Suite folder and the Beach folder. Lesson 3 describes how to add some elements to your vistas in Flat, 3D, and Overlay mode.

Lesson 3: Adding elements in Flat, 3D, and Overlay mode

Things get really exciting when you add elements to your scenes. The three view modes let you place elements into different spatial areas of your vistas. In this lesson, you’ll add:

- A movie panel to the TV screen in the Private Suite vista in Flat mode
- Two IMOBs of tourists to the Beach vista in 3D mode
- An IMOB of a Kalimba, the sound of Kalimba music, and a starfish image panel to the Market vista in Overlay mode

Flat mode

When you place elements in Flat mode, they appear as if they are stuck to the surface of the panorama and move out of view as you pan your vista. In this section, you’ll place a movie onto the TV screen in the Private Suite vista, then you’ll view it in 3D mode.

Note: In Flat mode, you see only the element’s tracker; to view the image content for flat elements, you need to switch to 3D mode.

To add an element in Flat mode:

1. Bring the Private Suite vista to the front in the Viewport by clicking its icon in the Project Manager. Then click the vista and drag the pointer to pan to the right until you see the TV.
2. Make sure the Live Picture asset collection appears in the Asset Browser by clicking its icon in the left pane of the Asset Browser.
3. Click the Movies tab and drag the Hoola movie icon onto the TV. The tracker appears quite a bit larger than the TV screen.

4. Drag the corner and side handles of the movie tracker to size it to the TV screen.
5. Click the 3D button in the Vista toolbar to switch to 3D mode. You'll see the movie playing on the TV screen and hear the audio track.
6. Double-click the movie in the Viewport to show the Panel Properties dialog box.



7. Deselect the Loop checkbox and click OK. This ensures that the movie sound plays only once, then stops. Otherwise, the sound would play continuously while you're working.
8. From the File menu, choose Save to save your work.

3D mode

In 3D mode, elements have the appearance of depth and you can move around them when you pan your vistas in the Live Picture Viewer. In this section, you'll add 3D image objects (IMOBs) of tourists to the Beach vista.

To add elements in 3D mode:

1. Bring the Beach vista to the front in the Viewport by clicking its icon in the Project Manager.
2. Click the 3D button in the Vista toolbar to switch the mode.
3. In the Asset Browser, click the Objects tab and drag the BeachGoer1 icon into the Viewport. When you release the mouse button, the man IMOB appears.
 - To set the size and proximity of the IMOB, click the IMOB and drag the pointer vertically.
 - To set the horizontal position of the IMOB in the vista, click the IMOB and drag the pointer horizontally.

- To position the IMOB vertically in the vista, press ALT while dragging the pointer across the IMOB vertically.
 - To rotate the IMOB, press ALT while dragging the pointer across the IMOB horizontally.
4. Drag the BeachGoer2 icon from the Asset Browser into the Viewport. The woman IMOB appears.
 5. Repeat the sizing and positioning procedures in Step 3 for the woman IMOB.
 6. From the File menu, choose Save to save your work.

Overlay mode

In Overlay mode, elements appear on top of the vista on the viewer screen space. In this lesson, you'll add an IMOB of a Kalimba instrument, a Kalimba music sound, and a starfish image to the Market vista.

To add elements in Overlay mode:

1. Bring the Market vista to the front in the Viewport by clicking its icon in the Project Manager.
2. Click the Overlay button in the Vista toolbar to switch the mode.
3. In the Asset Browser, click the Objects tab and drag the Kalimba icon into the Viewport.
4. Double-click the Kalimba. The Overlay Properties dialog box appears.



- In the Scale field, type 50 to scale the Kalimba 50%.
- In the Group field, type 1 to assign the Kalimba to group 1.
- In the Layer field, type 1 to assign the Kalimba to layer 1.

- Click OK to finish.
5. Click the Group 2 button at the top of the vista window. You won't see the Kalimba, since it is in Group 1.
 6. In the Asset Browser, click the Images tab and drag the starfish icon into the Viewport. The starfish image appears aligned to the upper left corner.
 7. Double-click the starfish icon in the Viewport. The Overlay Properties dialog box appears.



- In the Chroma Key field, select Black.
 - The Group field shows that you've added the starfish into Group 2.
 - In the Layer field, type 2 to assign the starfish to layer 2.
 - Click OK. The starfish appears without the black background in the upper left corner of the Market vista.
8. Click the All button at the top of the vista window to show all Groups and see both the Kalimba and the starfish.
 9. Click the starfish and drag it across the Kalimba to see how the layers work. The starfish should move behind the Kalimba as you drag it, since the Kalimba is in the first layer.
 10. In the Asset Browser, click the Sounds tab and drag the Kalimba icon into the Viewport. You'll hear the sound playing in the background, but you won't see the sound in the Viewport, because you can't position a sound in the vista space in Overlay mode.
 11. In the Project Manager, right-click the Kalimba sound icon and choose Properties from the shortcut menu. The Sound Properties dialog box appears.



12. Deselect the Initially On checkbox, then deselect Loop. This sets the sound to off when you first view the vista and to play once when you turn it on.
13. Click OK. The sound should stop playing.
14. From the File menu, choose Save to save your work.

In the next lesson, you'll assign an action to the starfish image so that when you click it, the Kalimba sound will play.

Lesson 4: Assigning actions to elements

The actions you can assign to elements in Reality Studio are: Show, Hide, Toggle Show, Play, Loop, and Stop. In addition, you can specify a target for the action, so when you click one element, it triggers an action for another element. In this lesson, you'll assign the Play action to the starfish, which will act as an on/off button to play the Kalimba music.

To assign an action to an element:

1. In the Viewport, double-click the starfish. The Overlay Properties dialog box appears.
2. Click the Actions button. The Event Properties dialog box appears.



- Select Action.
 - From the Action drop-down list, choose Play.
 - From the Target drop-down list, choose Kalimba.
 - Click OK to close the Event Properties dialog box, then click OK to close the Overlay Properties dialog box.
3. From the File menu, choose Save to save your work.

The last lesson describes how to preview your project in the Live Picture Viewer. You'll navigate the hotspots to view each vista, rotate the IMOBs of the people on the beach, rotate the Imob of the Kalimba in the market, and play the Kalimba sound by clicking on the starfish.

Lesson 5: Previewing your project

Now comes the fun part where you get to see your links and elements in action. You can do a quick preview to see your project in the internal Live Picture viewer, or you can do a browser preview to display your project in an HTML page that is running the Live Picture Viewer plug-in.

When you preview, Reality Studio creates a Temporary Files folder in the same directory as your Reality Studio application with all of the files necessary for the Live Picture Viewer to display your world. When you finish previewing, Reality Studio will delete the temporary files.

Note: When you preview, you'll see the Live Picture logo in the lower left corner of your vistas in the viewer window. When you click this logo, the toolbar for the Live Picture Viewer appears. Pass your pointer over each toolbar button for a few seconds to see a tool tip that describes the function of each one. For more information, view the Live Picture Viewer readme file. You can open this file from the Windows Start menu at Programs > Live Picture Viewer > *ReadMe*.

To preview your project:

1. Choose Quick Preview or Browser Preview as follows:



- To preview your project in the internal Live Picture Viewer, choose Preview > Quick from the File menu. Your project preview appears in Reality Studio in an internal version of the Live Picture Viewer.



- To launch your Web browser and preview your project in an HTML page that is running the Live Picture Viewer, choose Preview > Browser from the File menu.

2. Click the Private Suite vista and pan to the right to view the movie playing on the TV screen.
3. Press the spacebar as you pan the vista, then click the hotspot, which appears as a red bull's eye. The Beach vista appears in the viewer, replacing the Private Suite.
4. Click the vista and pan until you see your IMOBs of the people on the beach, then click each one and drag to the right to rotate and view them on all sides.
5. Press the spacebar as you pan the vista, then click the hotspot. The Market vista appears. You'll immediately see the Kalimba and the starfish, since these are Overlay elements that appear on top of the vista in the screen space.
6. Click the Kalimba IMOB and rotate to view it on all sides.
7. Click the starfish to hear the sound of the Kalimba playing.
8. When you're done previewing, close the internal viewer window or the HTML page preview.

Congratulations for taking the time to complete these introductory lessons, which provided a very small snapshot of the multitude of effects you can create using Reality Studio. The remaining chapters detail the procedures for working with each type of element in the view modes, linking vistas and URLs, and publishing your projects on the Web.

CHAPTER 4

Working with Elements

The elements you create in your projects add depth and richness to your site visitors' interactive experience. This chapter provides a breakdown of which assets you can add in each view mode, the elements they create, and how to edit those elements to achieve many sophisticated effects.

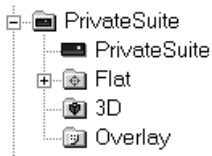
This chapter includes how to:

- Add and display vistas
- Use Flat, 3D, and Overlay modes to add elements
- Use groups and layers to achieve effects for Overlay elements
- Edit vista and element properties
- Assign actions to elements
- Edit the media files of vistas and elements

Note: If you haven't already done so, take a few minutes to view the Reality Studio online tutorial for excellent ideas and tips about creative uses for elements in your projects. The online tutorial is on your CD-ROM at *Reality Studio\Tutorial*. Chapter 3, "Creating and Previewing a Sample Project," also contains some hands-on examples of adding elements in each view mode.

Working with vistas

Vistas set the panoramic backgrounds for the scenes in your projects. Each time you add a vista, a new folder appears in the Project Manager and the vista opens in the Viewport. Each vista folder contains a Flat, 3D, and Overlay folder for the links and elements you add in each view mode.



Note: For more technical information about vistas, see “Live Picture Image Worlds nodes,” on page 90.

Adding a vista to your project

When you add a vista, the view mode automatically sets to Flat and a new vista folder appears in the Project Manager.

To add a vista:

- Drag a vista (IVR file) from the Asset Browser or a local directory into the Project Manager. The vista opens in the Viewport and a new vista folder appears in the Project Manager with a Flat, 3D, and Overlay folder beneath it.
 - To navigate the vista, click on the vista in the Viewport and drag the pointer horizontally and vertically.
 - To resize the vista window, click the Maximize button in the upper right corner of the window.



- To zoom in and out of the vista, from the View menu, choose Zoom In or Zoom Out.

Displaying a vista in the Viewport

When you add a vista to your project it appears in an open window in the Viewport. When you open an RSD project file that has multiple vistas, the project folder appears in the Project Manager, but you have to open each vista individually.

To display a vista in the Viewport:

1. In the Project Manager, click the + sign next to the vista folder to expand it, then double-click the vista element. The vista opens in the Viewport and appears in front of the other open vistas. To switch between open vistas in the Viewport, press CTRL + Tab.
2. To arrange the vista windows in the Viewport, from the Window menu, choose:
 - Cascade to show all of the vista windows stacked so you can see a portion of each one

- Tile to show all of the vista windows as separate tiles within the Viewport
- Arrange Icons to view all of the title bars for minimized vistas
- Close All to close all of the open vista windows in the Viewport

The next sections describe the elements you can add in Flat, 3D, and Overlay mode and how to add, position, and size them.

Adding Elements in Flat, 3D, and Overlay mode

The behavior and characteristics of elements vary between Flat, 3D, and Overlay mode. For example, a panel in Flat mode has a position in the panoramic space, while a panel in Overlay mode only has a position on top of the vista in the screen space. In Flat mode, you can warp the contours of the panel to conform to the shape of the panorama, while in Overlay mode, you can only have a rectangular panel on the screen space.

The following table shows an overview of the elements you can add, position, and size in each view mode.

Element	Flat mode	3D mode	Overlay mode
Frame	N/A	N/A	Add, position, and size.
Geometry	N/A	Add, position, and size.	N/A
Image Objects (IMOBs)	N/A	Add, position, and size.	Add, position, and size.
Panels* (Images & movies)	Add, position, warp, and size. * Shared with 3D mode.	Add, position, and size. * Shared with Flat mode.	Add, position, and size. * Not shared with any other mode.
Sounds	N/A	Add point-source sounds; the volume varies relative to your position in the vista.	Add ambient-source sounds; the volume remains constant regardless of your position in the vista.

Note: Vistas automatically open in Flat mode, but you can drag a vista into the Project Manager regardless of which view mode is active.

Adding elements in Flat mode.

The elements you add in Flat mode are in the panoramic space, which means that they appear as if they are fixed to the surface of the panorama. For example, you can position a picture on a wall in a vista and when you view your project in the Web page, the picture on the wall moves in and out of view as you navigate around the vista. You can size, position, and warp panels to conform to the shape of the vista, which can be a sphere, cylinder, or cube.

The following table shows the asset you can add in Flat mode and the type of element it creates in the project:

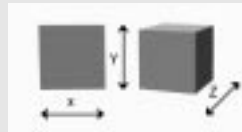
Asset	Element
Panel (Images & movies)	Rectangular object, such as: <ul style="list-style-type: none">• Picture on a wall• Movie playing on a TV screen

Adding elements in 3D mode

In 3D mode, you add elements into the 3D space. In this mode, elements appear to have depth and you can move around them when you pan the vista. For example, if you place an image panel in 3D mode, when you pan the vista, it appears as if you are able to move around the panel and view it from various perspectives.

In 3D mode, you have three positioning coordinates:

- x (horizontal/width)
- y (vertical/height)
- z (depth)



For example, a square-shaped panel in Flat mode would have horizontal (x) and vertical (y) coordinates for the height and width. In 3D mode the square becomes a cube, because it has the depth (z) coordinate.

The following table shows each asset you can add in 3D mode and the type of element each one creates in the project:

Asset	Element
Geometry	3D object represented by geometric primitives and texture maps.
Image Object (IMOB)	A collection of photographic images that represent an object in 3D space, such as a bottle or a person you can rotate and view on all sides.
Panel (Images and movies)	Rectangular object, such as: <ul style="list-style-type: none"> • Picture on a wall • Movie playing on a TV screen Panels appear to be “floating” in 3D mode. Note: You can see, move, and size the panels you added in Flat mode.
Sound	Point-source sound; the volume and directional quality varies according to where you pan in the vista.

Adding elements in Overlay mode

The elements you add in Overlay mode appear on top of the vista on the screen space. No matter where you pan in the vista, the element stays visible on the screen. For example, you could place your company logo over a vista so it shows on the screen all the time.

The following table shows the assets you can add in Overlay mode and the elements they create:

Asset	Element
Frame	A rectangular image to be used as a border around the Live Picture Viewer.
Image Object (IMOB)	A collection of photographic images that represent an object in 3D space, such as a bottle you can rotate and view on all sides; in Overlay mode, the IMOB always remains visible no matter where you navigate in the vista. This is a Screen IMOB, rather than the IMOB you add in 3D mode, which is a World IMOB.
Panel (Images & movies)	Rectangular shape, such as: <ul style="list-style-type: none"> • Button or logo that stays on the screen no matter where you navigate in the vista

Asset	Element
Sound	Ambient-source sound; the volume and directional quality remains the same regardless of where you pan in the vista.

Groups and layers

In Overlay mode, you can assign elements to groups and layers to achieve complex effects, especially when combined with the actions you can assign to them. For example, you could click a button to show a group of shirts or blouses for sale, then click another button to hide that group of garments or show a different group of garments.

To work through a hands-on example of assigning groups and layers to Overlay elements, see Chapter 3, “Lesson 3: Adding elements in Flat, 3D, and Overlay mode,” on page 37.

Note: This section describes the basic concepts about groups and layers and how to assign them to elements. For information about assigning actions, see “Assigning actions to elements and Overlay groups,” on page 65.

Adding an Overlay element to a group

Each time you add an element in Overlay mode, it becomes part of the current Overlay group. You can set the current group by clicking one of the group number buttons above the vista window in Overlay mode.

You can target Overlay groups with actions to hide, show, and play multiple elements and sounds. For more information, see “Assigning actions to elements and Overlay groups,” on page 65.

To add an element to a group:




1. From the View menu, choose Vista > Overlay to set the mode.
2. Click one of the numbered buttons above the vista to add elements to that group.
3. Place the Overlay elements you want into that group using the procedure for the type of element you're adding.
4. To continue assigning elements to different groups, click a numbered button for each element or group of elements you want to add.
5. To view all of the groups at once, click the All button in the toolbar above the vista window in Overlay mode.

Adding an Overlay element to a layer

Layering lets you assign a placement for elements so they appear in front of or behind other elements. In Reality Studio, you can use layers 1 to 1,000, with each successive layer appearing behind the previous layer. This lets you control the ordering of overlapped images. For example, you could add a shirt image panel to layer 5, an IMOB of a person to layer 10, and a starfish image panel to layer 3. The starfish would appear in front of the shirt, which would appear in front of the person.


To add an Overlay element to a layer:

-  1. From the View menu, choose Vista > Overlay.
2. Double-click the element to set its layer. The properties dialog box appears for that type of element.
3. In the Layer field, type a number from 1 to 1,000, depending on the number of layers you want to create.
4. Click OK to finish.

Working with frames

Frames provide a border around the vista in the Live Picture Viewer. What you actually do is add the frame image, then scale it to the same size as the vista and use the Chroma Key setting to key out the inside color of the frame so the vista and elements show through.

To add a frame in Overlay mode:

-  1. From the View menu, choose Vista > Overlay to set the mode. The group buttons appear above the vista in Overlay mode. The default is to show all groups.
2. If you wish, click a numbered group button to assign the frame to a specific group. Otherwise, it will appear in group 1.
3. In the Asset Browser, click the Frames tab to show the frame assets or open a local directory that contains a frame file.
4. Drag the frame into the open vista in the Viewport. The frame appears in the vista and its icon appears in the Overlay folder within the vista folder in the Project Manager.
 - To scale the frame in proportion, click inside the frame and press the S key while dragging.

- To position the frame, click inside the frame and drag horizontally or vertically.
- To key out the background color in the frame, double-click the frame in the Viewport to show the Overlay Properties dialog box. In the Chroma Key field, select the color to key out, then click OK. To edit other frame properties, see “Geometry and Image objects (IMOBs) in 3D mode,” on page 60.

Working with geometry elements

You can create geometry objects in 3D rendering programs or in Virtual Reality Modeling Language (VRML) files that contain a Shape node. Simple examples of geometry elements are balls and boxes, or tables and chairs. You can only add geometry elements in 3D mode.

The Live Picture assets installed with Reality Studio include some geometry objects for you to use in your projects. The third-party asset collections on the Reality Studio CD-ROM include geometry objects, as well.

To add a geometry element in 3D mode:



1. From the View menu, choose Vista > 3D to set the mode.
2. In the Asset Browser, click the Geometry tab to show the geometry assets or open a local directory that contains a geometry file.

Note: You can also add custom asset collections to Reality Studio. See “Creating custom asset collections,” on page 27.

3. Drag the geometry asset or file into the open vista window in the Viewport. The geometry element appears in the vista and in the 3D folder within the vista folder in the Project Manager.
 - To move the geometry element along the horizon, click inside the geometry element and drag the pointer horizontally.
 - To move the geometry element closer or farther away in proximity, click inside the geometry element and drag the pointer vertically. The size of the element appears to increase and decrease according to where you move it in the 3D space.
 - To position the geometry element vertically, click inside the geometry element and press ALT while dragging the pointer vertically.

- To rotate the geometry element around its vertical axis, press ALT while dragging the pointer horizontally across the element.
- To scale the geometry element, press the S key while dragging the pointer diagonally across the element.

Working with image objects (IMOBs)

Image objects (IMOBs) enhance the interactive experience of your projects, because you can rotate them to view details on all sides. For example, your site visitors can pull a product, such as a camera, off of a shelf and see more of its features than a 2D image can deliver. You can add IMOBs in 3D and Overlay mode.

Object Modeler, which is included in your Reality Studio CD-ROM, easily creates IMOBs from a series of photos of a real-world object. For information, see the online Help for Object Modeler.

Note: Image objects are one of the Live Picture extensions to VRML 2.0. For more information about this node type, see Chapter 7, “Behind the Scenes.”

Adding an IMOB in 3D mode

In 3D mode, the IMOBs you add move in the view as you pan your vista. These can be referred to as World IMOBs, which means that they have a position in the 3D space.

To add an IMOB in 3D mode:



1. From the View menu, choose Vista > 3D to set the mode.
2. In the Asset Browser, click the Objects tab or open a local directory that has an IVR file with an IMOB in it, such as a file created using Object Modeler.
3. Drag the IMOB asset or IVR file into the open vista window in the Viewport. The IMOB appears in the vista and the 3D folder within the vista folder in the Project Manager. A bounding box appears around the IMOB.
 - To position the IMOB horizontally (X axis) or move it closer or farther away in proximity (Z axis), click inside the IMOB and drag. The size of the IMOB appears to increase and decrease according to where you move it in the 3D space.
 - To position the IMOB vertically (Y axis), press ALT while dragging the pointer up and down.

- To rotate the IMOB, press ALT while dragging the pointer horizontally around the IMOB.
- To scale the IMOB, press the s key while dragging the pointer diagonally across the element.

Adding an IMOB in Overlay mode

In Overlay mode, image objects are fixed onto the screen space and won't move out of view when you pan your vista as they do in 3D mode. For this reason, they can be referred to as Screen IMOBs. You can scale the IMOBs in Overlay mode and rotate them to view the details from all sides.

To add an IMOB in Overlay mode:



1. From the View menu, choose Vista > Overlay to set the mode. The group buttons appear above the vista in Overlay mode. The default is to show all groups.
2. If you wish, click a numbered group button to assign the IMOB to a specific group. Otherwise, it will appear in group 1.
3. In the Asset Browser, click the Objects tab to show the IMOB assets or open a local directory that has an IVR file that contains an IMOB.
4. Drag the IMOB asset or IVR file into the open vista window in the Viewport. The IMOB appears in the vista and the Overlay folder in the Project Manager.
 - To scale the IMOB, click inside the IMOB and press the s key while dragging.
 - To position the IMOB, click inside the IMOB and drag horizontally or vertically.

Working with panels

Panels are rectangular elements, such as pictures on a wall or movies playing on a TV screen. You can add panels in Flat, 3D, and Overlay mode and the panel characteristics and appearance vary according to the mode. Panels appear as trackers in Flat mode, but you can see the image content when you switch to 3D mode.

Adding a panel in Flat mode

When you add a panel in Flat mode, it appears as a tracker in the Viewport with four corner handles for sizing and positioning. You can only see the image or movie content when you preview or switch to 3D mode.

Note: Panels in Flat mode are shared with 3D mode; you can size and position the panel in both modes. It is useful to switch between the two modes to see how the panel behaves in each one, and to fine-tune its position in the vista.

To add a panel in Flat mode:



1. From the View menu, choose Vista > Flat to set the mode.
2. In the Asset Browser, click the tab for the type of panel you want to add (image or movie) or open a local directory that contains the media file you want to use.
 - To view a thumbnail image of the panel in the Asset Browser, click the asset icon. The thumbnail appears in the right pane of the Asset Browser.

Note: You can click the Add Assets button in the Asset toolbar to create a new asset collection from a local directory. See “Creating custom asset collections,” on page 27.

3. Drag the image or movie icon from the Asset Browser or your desktop into the open vista window in the Viewport. The panel appears in the vista and in the Flat folder in the Project Manager. In Flat mode, you see the panel tracker with a handle in each corner. To view the media file, switch to 3D mode.
 - To position the panel, click inside the element and drag.
 - To change the shape of the panel, place the pointer over one of the corner handles until the pointer changes to an arrow, then click and drag.
 - To scale the panel size while maintaining its proportions, press the S key while dragging.
 - To warp the panel so its contours conform to the shape of the panorama, press the ALT key while dragging the panel in the vista. You’ll see the shape of the panel change as you move it in the panoramic space.

Adding a panel in 3D mode

Panels are shared between Flat and 3D mode. You can see the image in 3D mode, but when you switch to Flat mode, you only see the tracker. It is useful to switch back and forth between the two modes to see how a panel behaves in each one, and to fine-tune its position in the vista.

To add a panel in 3D mode:



1. From the View menu, choose Vista > 3D to set the mode.
2. In the Asset Browser, click the Panel tab to show the panel assets or open a local directory that contains an image or movie file on your hard drive.
3. Drag the panel into the open vista window in the Viewport. The panel appears in the vista and in the 3D folder in the Project Manager.
 - To change the shape of the panel, click inside one of the corners and drag.
 - To scale the panel proportionately, click inside the panel and press the S key while dragging.
 - To position the panel, click the center of the panel and drag. To constrain the panel within its own plane, press the ALT key while dragging.
 - To move the panel closer or farther away, press the N key while dragging.

Adding a panel in Overlay mode

When you add a panel in Overlay mode, the panel appears on the viewer screen no matter where you navigate in the vista. This is useful for adding such things as logos or navigation buttons.

Note: For information about using groups and layers, see “Groups and layers,” on page 50.

To add a panel in Overlay mode:



1. From the View menu, choose Vista > Overlay to set the mode. The Group buttons appear above the vista in Overlay mode. The default is to show all groups.
2. If you wish, click a numbered group button to assign the panel to a specific group.
3. Drag an image or movie from the Asset Browser or a local directory into the open vista window in the Viewport. The panel appears in the vista and in the Overlay folder in the Project Manager.
 - To position the panel, click inside the panel and drag to position.
 - To scale the panel, click inside the panel and press the S key while dragging.

Working with sounds

Sounds add a rich, atmospheric touch to your projects and provide such things as narratives for travel tours or selling products, and background music. You can add sounds in 3D mode, where the volume and position of the sounds change as you pan your vistas, or in Overlay mode, where the sounds play at a constant volume and position.

Adding a sound in 3D mode

When you add a sound in 3D mode, it has a position in the 3D space, which means that the volume varies as you pan around the vista and the sound moves between the left and right speaker.

To add a sound in 3D mode:



1. From the View menu, choose Vista > 3D to set the mode.
2. In the Asset Browser, click the Sounds tab to show the sound assets or open a local directory that contains a sound file on your hard drive. To add an asset collection from a local directory, see “Creating custom asset collections,” on page 27.
3. Drag the sound file into the open vista in the Viewport. The sound icon, which resembles a speaker, appears.
4. Adjust the volume of the sound by clicking on the icon and dragging the pointer up and down. The volume increases as the sound icon appears larger and decreases as the sound icon appears smaller.
5. Set the sound position in the vista by clicking the sound icon and dragging horizontally. You’ll hear the sound move between your left and right speakers as you drag.
6. To rotate the sound to change the volume and projection quality, press the ALT key while dragging the pointer horizontally.

Adding a sound in Overlay mode

A sound in Overlay mode plays in the background at a constant volume level. You won’t see a sound icon in the Viewport, since the sound doesn’t have a specific position anywhere on the vista.

To add a sound in Overlay mode:



1. From the View menu, choose Vista > Overlay to set the mode. The Group buttons appear above the vista in Overlay mode. The default is to show all groups.

2. If you wish, click a numbered button to assign the sound to a specific group.
3. Drag a sound asset from the Asset Browser or a local directory into the Viewport. The sound icon appears in the Project Manager in the Overlay folder within the vista folder. You'll hear it playing, but you won't see a sound icon on the vista in the Viewport.

Editing element properties

After you add vistas and elements to your project, each one has a set of properties you can customize to set or adjust such things as field of view, scaling, alignment, chroma key masking, offset, and so on. After you edit the vista or element properties, the changes appear in the Viewport. You can continue to fine-tune the element properties as you work on your project.

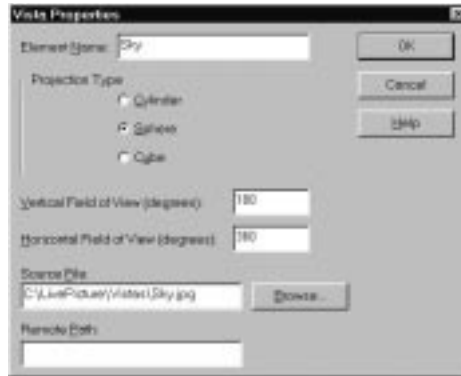
Note: For details about editing the underlying media files, see “Editing the media files for vistas and elements,” on page 67.

Vistas

The shape of a vista and the field of view settings determine the degree of the horizontal and vertical view. The panoramic images in vistas are warped in a sphere, cube, or cylinder shape. You can reset the field of view for your vista by editing the vista properties, but the shape is determined by the source file.

To edit the vista properties:

1. Select the vista in the Project Manager and from the Edit menu, choose Properties. You can also right-click the vista in the Project Manager and choose Properties from the shortcut menu. The Vista Properties dialog box appears.



2. To rename the vista, type a name in the Element Name field.

Note: The Projection Type field shows the current projection type of the panorama; changing this setting will update a corresponding field in the exported IVR file, but will not modify the vista's image media. To change the vista's projection setting and media, open the vista (IVR file) in PhotoVista and save the panorama using a different projection type.

3. To set the horizontal or vertical field of view, type the number of degrees.
4. To change the source panorama associated with the vista, click Browse and navigate to the panoramic image file you want. The Source File field shows the full path to the image file associated with the vista.
5. If you're using a FlashPix vista and creating content for the Web, in the Remote Path field, type the URL for FlashPix images on your Live Picture Image Server. If you're using any other type of image file or creating content for a CD-ROM, you don't need to specify a remote path. See "Specifying remote path names," on page 82.
6. When you're finished editing the vista properties, click OK.

Panels in Flat and 3D mode

The panels you add in Flat and 3D mode share a set of properties, even though their position and behavior in the vista space is different. Anything related to scaling and positioning must be done manually.

To edit panel properties in Flat and 3D mode:

1. Double-click the panel in the Viewport or right-click the panel icon in the Project Manager and choose Properties from the shortcut menu. The Panel Properties dialog box appears.



2. To rename the panel, type a name in the Element Name field.
3. To choose a different source file for the panel, click Browse and navigate to the file you want in a local directory or a CD-ROM.
4. If you're using FlashPix image panels and creating content for the Web, in the Remote Path field, type the URL for FlashPix images on your Live Picture Image Server. If you're using any other type of image file or creating content for a CD-ROM, you don't need to specify a remote path. See "Specifying remote path names," on page 82.
5. To initially hide the panel, deselect the Initially Visible checkbox.
6. If you're working with a movie panel or an animated GIF, deselect Loop to have the panel stop playing after the first cycle.
7. Select one of the Chroma Key colors to eliminate a specific color from the panel so the element behind the panel shows through that area.
8. To assign an action to the panel, see "Assigning actions to elements and Overlay groups," on page 65.
9. When you're done setting properties, click OK.

Geometry and Image objects (IMOBs) in 3D mode

Geometry and 3D IMOBs have a set of properties related to their position in the 3D space, such as direction, distance, rotation, and height. To edit Overlay IMOBs, see the next section, "Panels, frames, and Image objects (IMOBs) in Overlay mode," on page 62.

To edit geometry or IMOB properties in 3D mode:

1. Double-click the element in the Viewport or right-click the element in the Project Manager and choose Properties from the shortcut menu. The Geometry Properties dialog box appears.



2. To rename the element, type a name in the Element Name field.
3. To choose a different source file for the element, click Browse and navigate to the file you want in a local directory or a CD-ROM.
4. If you're using a FlashPix image object (IMOB) and creating content for the Web, in the Remote Path field, type the URL for FlashPix images on your Live Picture Image Server. If you're using any other type of image file or creating content for a CD-ROM, you don't need to specify a remote path. See "Specifying remote path names," on page 82.
5. To initially hide the element, deselect the Initially Visible checkbox.
6. To change the scale of the element, type a number in the Scale field.
7. The direction, distance, rotation, and height settings for the element represent your manual positioning, rotation, and sizing of the element. You can fine-tune these by adjusting the numbers in each field.

Distance—element's horizontal distance from the center of the vista, in Virtual Reality Modeling Language (VRML) units (meters).

Direction—element's horizontal position in relation to the starting point of the vista; in degrees about the vertical axis of the vista.

Rotation—element's orientation about its own vertical axis, in degrees.

Height—element's vertical position in relation to the equatorial plane (ground) of the vista, in VRML units (meters).

8. To assign an action to the element, see "Assigning actions to elements and Overlay groups," on page 65.

9. When you're done setting properties, click OK.

Panels, frames, and Image objects (IMOBs) in Overlay mode

Overlay elements have a specific set of properties related to their position on the screen space, such as the X, Y offset, as well as the option to assign the element to a group or layer.

To edit element properties in Overlay mode:

1. Double-click the element in the Viewport or right-click the element in the Project Manager and choose Properties from the shortcut menu. The Overlay Properties dialog box appears.

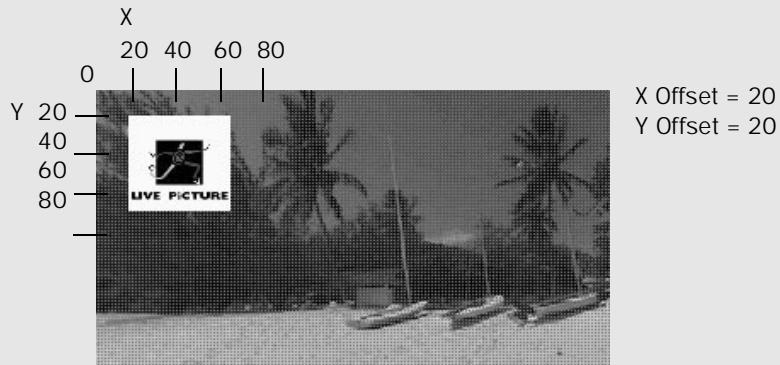


2. To rename the element, type a name in the Element Name field.
3. To choose a different source file for the element, click Browse and navigate to the file you want in a local directory or a CD-ROM.
4. If you're using a FlashPix image panel or image object (IMOB) and creating content for the Web, in the Remote Path field, type the URL for FlashPix images on your Live Picture Image Server. If you're using any other type of image file or creating content for a CD-ROM, you don't need to specify a remote path. See "Specifying remote path names," on page 82.
5. To initially hide the element, deselect the Initially Visible checkbox.
6. To have the element disappear when you click it, select the Click-Away checkbox.
7. To change the scale of the element, type a number in the Scale field.
8. To assign the element to a different group or layer, type a number in the Group and Layer fields.

9. To reposition the element, type a number in the X and Y Offset fields. The numbers that appear show your current settings.

For Overlay elements, the X, Y offset zero point is at the upper left corner of the element. When you type a positive number in the X Offset field, the element moves to the right from the zero point. When you type a positive number in the Y Offset field, the element moves downward from the zero point.

Note: The diagram below shows the offset for a panel aligned to the left. The behavior is the same for all Overlay elements.



10. Select one of the Chroma Key colors to eliminate a specific color from the element. This is particularly useful for editing out the background color in an element.
11. Select an alignment option, if desired.
12. To assign an action to the element, see “Assigning actions to elements and Overlay groups,” on page 65.
13. When you’re done setting properties, click OK.

Note: Since frames provide a border around the Live Picture Viewer, you might also want to set the size of the viewer window when editing frames. To do so, in the Project Manager, right-click the project icon and choose Properties from the shortcut menu to show the Project Properties dialog box. Set the width and height dimensions and click OK. For more details, see “Setting Project Properties,” on page 79.

Sounds

Sounds have slightly different properties in 3D and Overlay mode. In 3D mode a sound has a position in the 3D space, while in Overlay mode the sound is on top of the vista in the screen space and has no specific position in the vista.

To edit sound properties in 3D and Overlay mode:

1. Right-click the sound icon in the Project Manager and choose Properties from the shortcut menu. (For sounds in 3D mode you can double-click the sound icon in the Viewport, as well.) The Sound Properties dialog box appears.



2. To rename the sound, type a name in the Element Name field.
3. To choose a different source file for the sound, click Browse and navigate to the file you want in a local directory or a CD-ROM.
4. In the Remote Path field, you can type the path to a remote sound file. However, this field is mainly for specifying the URL for FlashPix images, which will be uploaded to the Live Picture Image Server if you're creating content for the Web. See "Specifying remote path names," on page 82.
5. To stop the sound from playing initially, deselect the Initially On checkbox. This step is important if you're mixing sound files (such as WAV, AVI, and MOV) in the same project and want to play sounds only when triggered by an action, such as clicking a button.
6. To have the sound stop playing after the first cycle, deselect the Loop checkbox.

- For sounds in 3D mode, the distance, rotation, orbit, and height settings represent your manual positioning, rotating, and sizing of the sound. Adjust these settings as you wish. For sounds in Overlay mode, these fields will appear dimmed, because the Overlay sound is positioned only on the screen space.

Distance—sound’s horizontal distance from the center of the vista, in Virtual Reality Modeling Language (VRML) units (meters).

Direction—sound’s horizontal position in relation to the starting point of the vista; in degrees about the vertical axis of the vista.

Rotation—sound’s orientation about its own vertical axis, in degrees.

Height—sound’s vertical position in relation to the equatorial plane (ground) of the vista, in VRML units (meters).

- When you’re done setting properties, click OK.

Assigning actions to elements and Overlay groups

You can achieve sophisticated, interactive effects by assigning actions to elements or groups of Overlay elements. A simple example is clicking a button to play a movie or sound. A more complex example is to initially hide a whole group of Overlay elements, then show that group by clicking a button.

The following table describes the actions that you can trigger when you click an element or group of Overlay elements:

Action	Description
Show	Shows the element or its target.
Hide	Hides the element or its target.
Toggle Show	Alternates between showing and hiding the element or its target.
Play (movies, sounds, animated GIFs)	Plays the element or its target through one cycle.
Loop (movies, sounds, animated GIFs)	Causes the element or its target to play continuously.
Stop (movies, sounds, animated GIFs)	Stops the play cycle for the element or its target.

Note: To work through an example of assigning actions to elements, see “Lesson 4: Assigning actions to elements,” on page 41. You can see an example in the online tutorial on your Reality Studio CD-ROM.

Setting up the trigger element

The element that causes the action when clicked is the trigger element. An example is a button that you click to turn on a movie or sound.

To set up the trigger element:

1. In the Viewport, double-click the element, or in the Project Manager, right-click the element and choose Properties from the shortcut menu. The Properties dialog box appears for that type of element.
2. Click Action. The Event Properties dialog box appears.



3. Select Action, then choose an action from the drop-down list. For example, to toggle between showing and hiding an element or group, choose Toggle Show.
4. In the Target drop-down list, choose a target element or group for the action.
5. Click OK to close the Event Properties dialog box, then click OK to close the element properties dialog box. When you preview your project, the pointer turns into a hand when you pass it over the triggering element.

Setting up the target element or group

Sometimes you need to set up the target element or group for the trigger action. For example, to play a sound or movie when you click a button, you have to make sure the sound or movie is turned off when you first view the vista.

To set up the target element or group:

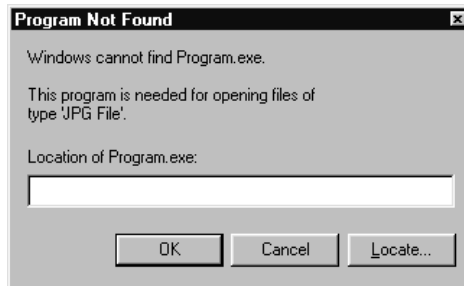
1. In the Viewport, double-click the element, or in the Project Manager, right-click the element and choose Properties from the shortcut menu. The element properties dialog box appears. For a group of elements, you need to do this for each element in the group.
2. The default is to show or play the element. To hide or stop the element when you first view the vista, deselect the Initially Visible or Initially On checkbox.
3. Click OK to save your setting.

Editing the media files for vistas and elements

When you edit the media file associated with a vista or element, the changes appear in your project. However, the changes only affect the copy of the media file Reality Studio creates when you save your project; the changes don't affect the original asset file.

To edit the media files for vistas and elements:

1. Select the vista or element icon in the Project Manager and from the Edit menu, choose Launch Editor. You can also right-click the vista or element in the Project Manager and choose Launch Editor from the shortcut menu.
 - If there is no application associated with the file type, the Program Not Found dialog box appears.



- Click Locate and navigate to the directory for the editing application, then click OK to launch the application.

Note: To associate an application with a file type, refer to your Windows print documentation or Windows online Help.

2. Make the changes to the media file and save the changes, then exit the editing application. The changes appear in the corresponding vista or element in your project.

CHAPTER 5

Linking Vistas and Elements

Links between vistas are the foundation of your interactive Web sites, letting your site visitors “move” through rooms and other locations. Reality Studio makes it easy for you to link vistas together, and to create external links from vistas and elements to URLs and other HTML pages.

This chapter describes how to:

- Link vistas together within your project
- Link to a new view within the same vista
- Link vistas to external URLs and HTML pages so you can show descriptive text and Web graphics or other Web sites
- Link elements to vistas and URLs
- Edit vista and element links after you create them

Creating vista links

You can create multiple links within and between vistas to change views. You can position the links wherever you want in the vistas and set exit and entry views for each one. When you set the exit and entry views, you can click on an area, such as a doorway, to go to a specific point in another vista or to a new view in the same vista. For example, you can enter a vista of a tropical beach at the sand’s edge, looking out at the ocean, then click a hotspot to a view farther down the beach toward the palm trees.

Note: To view your links when you preview your project in the Live Picture Viewer, press the spacebar; the links appear as red bull’s eyes.

This section describes how to link vistas using:

- The drag-and-drop method
- The Hotspot button in the Vista toolbar

Using the drag-and-drop method

When you drag a vista from the Project Manager onto a vista in the Viewport, Reality Studio creates a link between the two vistas. You can also drag a vista icon onto an open copy of the same vista in the Viewport to create a link to a new view within that vista.

To create a vista link using the drag-and-drop method:

1. In the Project Manager, click the vista to which you want to add a link. The vista appears in front of the other windows in the Viewport.
2. From the View menu, choose Vista > Flat.
3. From the Project Manager, drag the vista icon you want to link onto the open vista in the Viewport. The Link Transition dialog box appears.



Note: If you don't want to set the link transition, press CTRL while dragging the vista from the Project Manager into the Viewport. This prevents the Link Transition dialog box from appearing.



- To set link transition properties, go directly to “Setting the link transition,” on page 72
- To leave the settings as they are, click OK. The link appears on the open vista and in the Flat folder in the Project Manager.

The finished link shows the name of the vista to which it is linked and appears in the Viewport surrounded by a tracker with a handle at each corner.

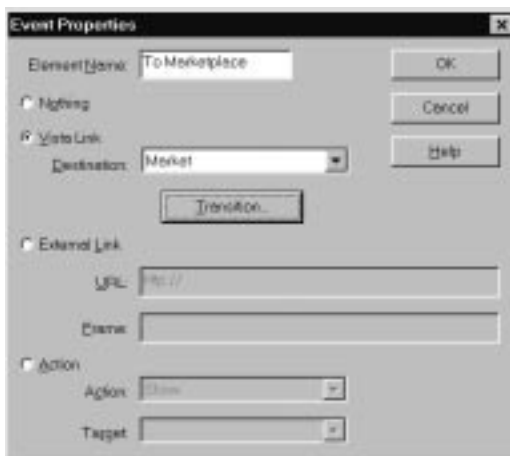
- To position the link, pass the pointer over the tracker until the pointer changes to a crosshair, then drag the hotspot into position.
- To resize the link, pass the pointer over one of the sides or corners of the tracker until the pointer changes to a double arrow, then drag to size.

Using the Hotspot button

The Hotspot button in the Vista toolbar is another convenient way to add links between vistas. You must be working in Flat mode to use the Hotspot button.

To link vistas using the Hotspot button:

1. In the Project Manager, click the vista to which you want to create a link. The vista appears in front of the other windows in the Viewport.
2. From the View menu, choose Vista > Flat.
3. Click the Hotspot button in the Vista toolbar, then click the vista where you want to create the link and drag to size the hotspot rectangle. When you release the mouse button after sizing the rectangle, the Event Properties dialog box appears.



4. Click Vista Link, then choose the vista to link from the drop-down menu. This menu lists the vistas that are in your project.
5. Click the Transition button. The Link Transition dialog box appears.
6. Choose one of the following options:

- To set link transition properties, go directly to the next topic, “Setting the link transition,” on page 72 Follow the procedure to finish adding your hotspot link.
- To leave the settings as they are, click OK, then click OK in the Hotspot Properties dialog box.

Note: The Nothing option is only an indicator that there is no event associated with a particular vista or element. You can create a hotspot and leave Nothing selected if you want to temporarily not assign the hotspot to a target.

The finished hotspot shows the name of the vista to which it is linked and appears in the Viewport surrounded by a tracker with a handle at each corner.

- To position the hotspot, pass the pointer over the tracker until the pointer changes to a crosshair, then drag the hotspot into position.
- To resize the hotspot, pass the pointer over one of the sides or corners of the tracker until the pointer changes to a double arrow, then drag to size.

Setting the link transition

You have the option of setting an entry and exit view for each vista link, the field of view, and the speed and presentation of the link. These settings enhance the experience of changing views, so take some time to experiment with the effects you can achieve. For example, when you use a Pan and Zoom transition type, the vista pans, then zooms into the next vista or view at the duration time you set.

To set the link transition:

1. If the Link Transition dialog box is open, proceed to Step 2. If the Link Transition dialog box is not open, double-click the link in the open vista or in the Project Manager. The Event Properties dialog box appears.
2. If desired, type a new name for the link in the Element Name field.



3. Click Transition. The Link Transition dialog box appears.



4. To set the viewpoint for the exit and entry views of the link, click on the Exit View or Entry View and drag the pointer over the vista until you see the viewpoint you want. The degrees in the Pitch and Yaw fields change as you pan.

The pitch, yaw, and field of view settings determine the vista viewpoint in the Live Picture Viewer.

- Pitch—sets the vertical position or tilt
- Yaw—sets the horizontal starting position for panning the vista
- Field of View—sets the size of the view; the view decreases as you zoom in and increases as you zoom out

5. Click the Exit or Entry view and press Shift to decrease the field of view (zoom in) or CTRL to increase the field of view (zoom out). The field of view values change accordingly.
6. From the Transition Type drop-down list, select one of the types and enter a number of seconds for the duration, if applicable.

- Cut—closes the vista view you're exiting and loads the vista view you're entering. The Duration field appears dimmed, because the transition is immediate.
 - Pan and Zoom—pans the vista view you're exiting and zooms gradually into the vista view you're entering. In the Duration field, type the number of seconds for the transition.
7. When you're done choosing settings, click OK in the Link Transition dialog box, then click OK in the Event Properties dialog box. The link appears on the open vista and in the Flat folder in the Project Manager; the link has the same name as the vista to which it links.
- To position the link, pass the pointer over the tracker until the pointer changes to a crosshair, then drag the link into position.
 - To resize the link, pass the pointer over one of the sides or corners of the tracker until the pointer changes to a double arrow, then drag to size.

Linking vistas to URLs

External links let you link a vista or an element to a URL by replacing the current browser content, opening a new Web page, or targeting a specific HTML frame. For example, you could click a hotspot on a vista of a beach and show the home page of a nearby resort, or you could click a frame on an HTML page to display driving directions to the beach.

Using the drag-and-drop method

You can create shortcuts to HTML pages and drag the shortcuts onto an open vista in the Viewport to create a link to that page. The Live Picture asset collection has a URL tab in the Asset Browser that shows some of these shortcuts.

To drag-and-drop a shortcut to link a URL:



1. From the View menu, choose Vista > Flat to set the mode.
2. Drag a URL shortcut from the Asset Browser or a local directory onto the open vista in the Viewport. A small rectangle appears on the vista with four corner handles and the name of the URL inside. A hotspot link appears in the Project Manager in the Flat folder within the vista folder.
3. Double-click the link in the Viewport or right-click the link in the Project Manager and choose Properties from the shortcut menu. The Event Properties dialog box appears. The External Link option is selected and your URL appears in the URL field.



4. Type a name for the link in the Element Name field.
5. To change the URL for the link, type a new URL.
6. To set this HTML page to appear in a new browser window or to target a specific frame in the page, type a name in the Frame field.
7. When you're done setting properties, click OK.

Using the Hotspot button

If you don't have shortcuts for the URLs you want to link, you can use the Hotspot button in the Vista toolbar to create the link, then use the Event Properties dialog box to type the URL and frame information.

To use the Hotspot button to link a URL:

1. From the View menu, choose Vista > Flat to set the mode.
2. Click the Hotspot button in the Vista toolbar, then click the vista and drag to size the hotspot link. When you release the mouse button, the Event Properties dialog box appears.



3. Select the External Link option.
4. In the Element Name field, type a name for the link.
5. In the URL field, type the URL you want to link.
6. To set this HTML page to appear in a new browser window or to target a particular HTML frame in the page, type a name in the Frame field.
7. When you're done setting properties, click OK.

Linking elements to vistas and URLs

You can link elements to vistas and URLs in Flat, 3D, and Overlay mode. For elements that appear in Flat mode, you can use the Hotspot button to create the links, as described in “Creating vista links,” on page 69 and “Linking vistas to URLs,” on page 74.

When you link elements to vistas and URLs in 3D and Overlay mode, you won't see a hotspot when you press the spacebar as you pan the vistas in the Live Picture Viewer. Since you can't see these links in the viewer, they are best used for things like navigation buttons to move back and forward between vistas, or for a company logo that, when clicked, displays the company's home page.

To link elements to a vista or URL:

1. In the Viewport, double-click the element you want to link. You can also right-click the element in the Project Manager and choose Properties from the shortcut menu. The properties dialog box appears for the type of element.
2. Click Action. The Event Properties dialog box appears.

- To create a vista link, select the Vista Link option and choose a vista to link in the Destination drop-down list. Then click Transition to display the Link Transition dialog box. Finish the link procedure as described in “Setting the link transition,” on page 72.



- To create a link to a URL or another HTML page, select the External Link option. In the URL field, type the URL; in the Frame field, type a name if you want the HTML page to appear in a new browser frame, or to target a specific HTML frame.



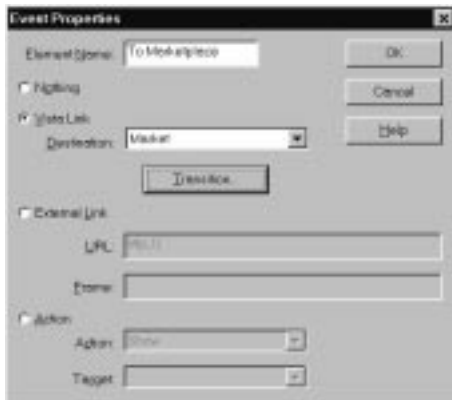
3. When you're done setting link properties, click OK.

Editing links

You can change any link by editing the link properties. This is handy for easily rerouting your links to vistas and HTML pages. For example, you might want to change the navigation between vistas or open a different Web page from a particular element in your project.

To edit a link:

1. Display the Event Properties dialog box by doing one of the following:
 - Double-click a link in the Viewport, or select a link icon in the Project Manager and choose Properties from the shortcut menu. The Event Properties dialog box appears.
 - Double-click an element in the Viewport, or select an element icon in the Project Manager and choose Properties from the shortcut menu. The Properties dialog box appears for that type of element. Click Action to display the Event Properties dialog box.



2. To change the vista to which you're linking, choose a vista from the Destination drop-down list.
3. To change the link transition settings, click the Transition button and follow the procedure as described in "Setting the link transition," on page 72.
4. To change the external link, type a new URL in the URL field and change or delete the name in the Frame field.
5. When you're done editing properties, click OK.

CHAPTER 6

Publishing Your Project

Reality Studio makes it easy for you to export all of the files you need to publish your finished world on the Web. Reality Studio exports IVR and HTML files, along with the associated files necessary to play your world in the Live Picture Viewer plug-in or Java applet in a Web page.

The IVR file contains all of the information that the Live Picture Viewer uses to display your world, and the HTML file contains the HTML code that loads the Live Picture Viewer plug-in or Java applet. After you export your files, you can copy the HTML from the exported file into the HTML file for your Web page.

Note: For more information about IVR files, see “About the IVR file,” on page 90.

Setting Project Properties

Before you export your files, check and adjust your project properties, since these settings affect how your project appears in the Web page and plays in the Live Picture Viewer plug-in version or Java version. It’s important to set the dimensions for the Live Picture Viewer window in your Web page, since the size of the viewer window determines the viewing area for your world.

Note: For specific tips on setting the size of the viewer window and other ways to enhance your plug-in target or Java applet, refer to the *Live Picture Viewer Guide* and the *Live Picture Viewer—Java Version Guide* in the Documentation folder on your Reality Studio CD-ROM.

To set project properties:

1. In the Project Manager, right-click the project folder and choose Properties from the shortcut menu. The Project Properties dialog box appears.



2. Set the dimensions for the Live Picture Viewer in the Web page by typing the number of pixels for the width and height. The default viewer dimensions are 400 pixels wide by 300 pixels high.
3. The Orbit field is an advanced Reality Studio feature that lets you “walk” around objects positioned at the center of the vista. The default orbit radius is 0°, which means that you’ll be pivoting at the the center of the vista. To set the orbit at a greater distance from the center of the vista, enter a larger value for the orbit radius.
4. To set the vistas to rotate automatically when they first appear in the viewer, leave the Auto-rotate checkbox selected. To set the vistas to rotate only when you use the pointer to pan across them manually, deselect the Auto-rotate checkbox.
5. From the Initial Vista drop-down list, select the first vista to display in the viewer.
6. To set the initial view, click View Direction. The Initial View dialog box appears.



7. Drag the pointer to navigate the vista and set the pitch and yaw values. These values change as you pan around the vista. You can also type in the values for each one.
8. To set the field of view value (proximity of the viewpoint), press Shift to decrease the field of view (zoom in) and CTRL to increase the field of view (zoom out), or type in the values.
9. When you're finished setting the initial view, click OK.

Pitch, yaw, and field of view values describe the viewpoint of the vista horizontally (X axis), vertically (Y axis), and in depth or proximity (Z axis).

Pitch—Moves the view up or down (rotates the viewpoint around the X axis by degrees).

Yaw—moves the view right or left (rotates the viewpoint around the Y axis by degrees). For example, if your panorama has a 360° field of view, the Yaw values span from 0° to 360°.

Field of view—sets the viewpoint closer or farther away.

For more information about the X, Y, and Z axes, see “Adding elements in 3D mode,” on page 48.

10. If desired, type copyright and note information in the appropriate fields in the Project Properties dialog box.
11. Click OK to save your settings and close the Project Properties dialog box.

Note: If you're exporting for CD-ROM content only and not for the Web, you can skip the next section, “Specifying remote path names,” and proceed to “Exporting the files,” on page 83.

Specifying remote path names

Although you can specify a remote path name for any element, it's most important and most often used for elements that use FlashPix images, since these images must be uploaded to the Live Picture Image Server document root directory. Be sure to use remote path names for:

- FlashPix vistas
- FlashPix image panels in Flat, 3D, or Overlay mode
- FlashPix image objects (IMOBs)

The exported IVR file that the Live Picture Viewer reads references each FlashPix image in your project, so make sure you've specified the correct and complete remote path for each one. You must use the entire URL to the document root directory and not just the relative path. Specify the port number for the Live Picture Image Server, which is configurable; the default port number is 8087. Here's a sample URL for a FlashPix image on a Live Picture Image Server:

http://hostname:8087/imagdirectory/FlashPix/myFlashPix.fpx

In addition, when you specify a remote path name for FlashPix images, they appear in the Export folder in the same directory as your other exported files. This makes it simple for you to upload your FlashPix images to the Live Picture Image Server.

Note: If you're running your own Web and Live Picture Image Server, it will simplify things to create a special directory for all FlashPix images.

To specify remote path names:

1. Launch Reality Studio and open your project.
2. For each element that uses FlashPix, click the element icon in the Project Manager and choose Properties from the shortcut menu. The Properties dialog box appears for the type of element.
3. In the Remote Path field, type the complete URL for the FlashPix image on the Live Picture Image Server, including the port number, which is configurable. The Image Server port number will generally be 8087. For information on server configuration, see the *Live Picture Image Server Administrator's Guide* on your Reality Studio CD-ROM in the Documentation folder.
4. When you're done, click OK. After you export your files, check to make sure that all of your FlashPix images are in the Export folder.

Exporting the files

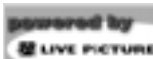
When you export your files, you can choose to export for either the plug-in version of the Live Picture Viewer or the Java version. The plug-in version supports all of the features available in Reality Studio, so you should choose this option if you added elements to your world in addition to hotspots. If you only used vistas with hotspot links between them, you can export for the Java version.

Exporting for the Live Picture Viewer Plug-in

When you export for the Live Picture Viewer Plug-in, your site visitors will use the plug-in with Netscape Navigator® or Microsoft Internet Explorer®. Reality Studio exports a button graphic for your Web pages that makes it easy for your visitors to download the viewer from the Live Picture Web site.

To export for the Live Picture Viewer plug-in:

1. Save your project to make sure any recent changes are in effect.
2. From the File menu, choose Export > Plug-in Target. Reality Studio creates a folder with the name *Myproject_IVR* in the same directory as your RSD project file, and exports the following files:
 - An Image Worlds (IVR) file with the same name as your RSD file, for the Live Picture Viewer to use to play your world.
 - An HTML file with the same name as your RSD project file, that shows your initial vista playing in the Live Picture Viewer and contains the HTML code for you to copy into the HTML file for your Web page.
 - All of the media files and IVR files associated with your project vistas and elements.
 - The “Live Picture Viewer” button graphic, which you can link to the download section of the Live Picture Web site to make it easy for your site visitors to download the Live Picture Viewer.
 - The “Powered by Live Picture” graphic for your HTML pages.
 - A separate folder named “Export” that contains FlashPix images with specified remote paths. If you haven’t used remote paths, you won’t see an “Export” folder. See “Specifying remote path names,” on page 82.



Exporting for the Live Picture Viewer—Java version

If your finished project consists only of vistas that are linked together by hotspots, you can export as a Java applet, to be used with the Live Picture Viewer—Java Version. When you export as a Java applet, your site visitors don't need to download or install a plug-in to view your vistas; the Live Picture Viewer and your Reality Studio world appear automatically in your Web pages. Because the viewer is automatically stored in your browser's cache, your site visitors only download it once, regardless of how many of your Web pages contain Reality Studio worlds.

Note: There are some simple tips you can follow to enhance the performance of your world in the Java version of the Live Picture Viewer. For details, see the *Live Picture Viewer—Java Version Guide*, which is on your Reality Studio CD-ROM in the Documentation folder.

To export for the Java version of the Live Picture Viewer:

1. Save your project to make sure any recent changes are in effect.
2. From the File menu, choose Export > Java Applet Target. Reality Studio creates a folder with the name *Myproject_Java* in the same directory as your RSD project file and exports the following files:
 - Image Worlds (IVR) files for each vista in your project.
 - A sample HTML file with the same name as your project; this file shows the initial vista in your project, playing in the Live Picture Viewer.
 - Individual HTML files for each vista in your project.
 - The “Powered by Live Picture” graphic for your HTML pages.
 - An *rspano.cab* file that contains all of the Java applet files for the Internet Explorer client.
 - The *Rspano.zip* and *rspanoNS3.zip* files that contain all of the Java applet files for Netscape Navigator. *Rspano.zip* is for Navigator version 4.0 and *RspanoNS3.zip* is for Navigator version 3.0 or earlier.
 - An Export folder that contains FlashPix images, which must have specified remote paths. If you haven't specified remote paths for FlashPix images, you won't see an Export folder. See “Specifying remote path names,” on page 82.



Note: It's important to leave the *rspano.zip*, and *rspanoNS3* files zipped; if you unzip them, the Live Picture Viewer won't be able to use the Java applet information they contain.

Placing the HTML code in your Web page

The exported HTML file with the same name as your project shows your finished world in the Live Picture Viewer plug-in version or Java version. You can use any text editor to open that file, copy the HTML, and paste it into the HTML file for your Web page.

Note: It's especially useful to assign this HTML to a specific frame or table cell in your Web page, so each time the viewer content reloads or refreshes, the rest of your Web page isn't affected.

Here's a sample of the HTML exported for a Java applet; copy only the HTML between the copy command lines:

```

<!--//-----Begin Copy Here-----//-->

<center>
<script language="JavaScript">
<!--//
var browser = navigator.appName;
var version = parseFloat(navigator.appVersion);
if (browser == 'Netscape' && version < 4.0) {
document.write('<applet name="pano" code="pano.class"
archive="rspanoNS3.zip" width=400 height=300>');
}
else {
document.write('<applet name="pano" code="pano.class"
archive="rspano.zip" width=400 height=300>');
}
document.write('<param name=cabbase value="rspano.cab">');
document.write('<param name=file value="Beach.ivr">');
document.write('<param name=initialView value="0.000000,
180.000033, 49.999967">');
document.write('<param name=hotspot2 value="0.041, 0.329,
0.058, 0.411, http://www.livepicture.com/
To_Live_Picture_2 New">');
document.write('<param name=hotspot3 value="0.101, 0.105,
0.129, 0.250, .html?initialView=0.000,180.000,50.000
hs">');
document.write('</applet>');
//-->
</script>
</center>

<!--//-----End Copy Here-----//-->

```

This is some sample HTML from an exported plug-in target; copy only the HTML between the copy command lines:

```
<!--//-----Begin Copy Here-----//-->

<center>
<embed src="Resort.ivr" type="i-world/i-vrml" width=400
height=300 autospin=2 name="panoComponent">
</center>

<!--//-----End Copy Here-----//-->
```

This HTML assumes that all of your exported Reality Studio media and related files for your Web pages are in the same directory. If you have your Web pages in a separate directory, be sure to specify the path to all of the exported files referenced by the HTML you're copying. If you don't, the Live Picture Viewer won't be able to retrieve and display your entire world.

Placing your files on the Web

If you haven't used any FlashPix images in your project, you can upload all of your exported files and HTML files to your Web server root directory, as usual. However, if you've used FlashPix images, you must upload them to the Live Picture Image Server document root directory. For details about specifying the remote path for FlashPix images, see "Specifying remote path names," on page 82.

Note: When you export your files, those with remote path names specified are saved to an Export folder. This places all of your FlashPix images in one folder that you can easily upload to the Live Picture Image Server.

Configuring the MIME type

To configure a Web server to recognize and display the IVR files Reality Studio exports, you need to add the Multi-part Internet Mail Extension (MIME type). If you're using an Internet Service Provider (ISP), you can give them the Live Picture IVR MIME type to add to their server. If you administer your own Web server, consult your server software documentation for instructions on adding and configuring MIME types.

IVR MIME type	IVR file extension
i-world/i-vrml	.ivr

For details about configuring and running the Live Picture Image Server, refer to the *Live Picture Image Server Administrator's Guide* in the Documentation folder on your Reality Studio CD-ROM.

CHAPTER 7

Behind the Scenes

Reality Studio uses Virtual Reality Modeling Language (VRML) and the Live Picture extensions to VRML 2.0 to create the IVR files the Live Picture Viewer uses to display your worlds on the Web. If you are familiar with VRML, you can edit the exported IVR file to add more features to your world. For those of you who do not know VRML, this chapter gives you a brief summary of VRML and resources you can consult to learn more. It also describes the Live Picture extensions to VRML 2.0 that Reality Studio supports, and provides advanced techniques for enhancing your worlds.

Note: This chapter gives you an introduction to the Live Picture extensions to VRML 2.0 as they relate to Reality Studio. To view the complete *Live Picture Image Worlds Specification*, visit the Developer section of the Live Picture Web site at www.livepicture.com.

About Virtual Reality Modeling Language (VRML)

Virtual Reality Modeling Language (VRML) is an International Standards Organization (ISO) standard for describing three-dimensional virtual worlds on the Internet. The IVR file that Reality Studio exports contains is a standard VRML 2.0 file with `EXTERNPROTO` nodes for the Live Picture extensions.

Note: For information about the Live Picture extensions to VRML 2.0, see “Live Picture Image Worlds nodes,” on page 90.

The Live Picture Viewer displays IVR files and supports core VRML 2.0 nodes, with limited support for VRMLScript. You can find many books about VRML in the computer section of your local book store. For more information and a list of links to other VRML sites, consult the following Web resources:

- The VRML 2.0 Specification is at <http://webpace.sgi.com/moving-worlds/spec/index.html>.
- The most up-to-date information about VRML is on the VRML Repository site at www.sdsc.edu/vrml.

How Reality Studio uses VRML

When you use Reality Studio to create a world with various scenes and elements, Reality Studio automatically writes the VRML file for you, which saves you time and lets you concentrate on the visual design of your project. The Live Picture Viewer reads this file to display your world.

About the IVR file

The IVR files Reality Studio exports are VRML 2.0 compliant and have the `.ivr` file extension. Each element you add to your project generates corresponding VRML code. Some elements use the Live Picture Image Worlds extensions, via the VRML 2.0 `EXTERNPROTO` interface. Live Picture PhotoVista and Object Modeler also create IVR files for use with the Live Picture Viewer.

Live Picture Image Worlds nodes

Using the Live Picture Image Worlds nodes, you can add unique features to your virtual worlds. For example, you can rotate an object to view all sides or use photographic panoramas as the background for your scenes. The Image Worlds nodes that Reality Studio currently uses are:

- `IMOBsensor`
- `ScreenElement`
- `SlideShowTexture`
- `Vista`

`IMOBsensor`

An `ImobSensor` works with an image object (`IMOB`) in 3D mode (also referred to as a `World IMOB`), which is a collection of images of a 3D object, taken from various angles around the object. During playback, you can manipulate the `IMOB` to change which image displays, which gives the impression of examining an actual 3D object. Reality Studio creates an `IMOBsensor` for each `World IMOB` in your project.

Note: Object Modeler, which is part of your Reality Studio suite, lets you create IMOBs easily. See the *Object Modeler User's Guide* or online Help for information.

The primary function of the IMOBSensor is to determine which image to show based on various factors, including the object's position, animation, and interaction with the user. The IMOBSensor also generates events when you interact with the World IMOB in any way.

ScreenElement

A ScreenElement has no equivalent in VRML 2.0. It is a piece of geometry that lives in a screen space, not in the 3D environment. Its texture coordinates are in pixels, not in Cartesian units. It responds to translation transformations, but ignores the "z" value of the translation. Reality Studio uses ScreenElements for panels and image objects (IMOBs) in Overlay mode (also referred to as Screen IMOBs).

SlideShowTexture

A SlideShowTexture is a cross between a standard VRML ImageTexture and MovieTexture. The SlideShowTexture contains multiple frames, similar to the MovieTexture, but is played differently than a MovieTexture in that you can either set the SlideShowTexture to show a frame or advance by a specified number of frames. Reality Studio uses SlideShowTextures for IMOBs in 3D mode.

Vista

A Vista defines an image panorama, which you navigate by pivoting the view from a centerpoint. Typically, several Vistas are at the top level of the VRML file along with some script nodes so you can jump between panoramas by adding links between the vistas. Vistas are the backbone of all Reality Studio projects.

Supported Image Worlds and VRML nodes

Reality Studio supports all of the standard VRML 2.0 nodes and most of the Live Picture Image Worlds nodes. The following table describes the nodes associated with each element in a Reality Studio project.

Element	Generated VRML nodes
Vista	<ul style="list-style-type: none"> • Vista node with an ImageTexture attribute • Switch node, which turns on the Vista's children (panels, for example) when you view the Vista • Viewpoint node, which controls your field/direction of view when you view the Vista

Element	Generated VRML nodes
Hotspot	Special VRMLScript, which activates the vista switch and viewpoint for the destination
Image panel in Flat mode	Shape node composed of a four-point (rectangular) IndexFaceSet Geometry element with an ImageTexture Appearance
Image panel in Overlay mode	Shape node, composed of a ScreenElement Geometry element with an ImageTexture appearance node and a script node that turns it on/off, and optionally triggers events when clicked
Movie panel in Flat mode	<ul style="list-style-type: none"> • Shape node composed of a four-point (rectangular) IndexFaceSet Geometry element with a MovieTexture Appearance • Sound node
Movie panel in Overlay mode	Shape node, composed of a ScreenElement Geometry element with a MovieTexture appearance node and a script node that turns it on/off and optionally triggers events when clicked
IMOB in Overlay mode	Shape node with a ScreenElement Geometry element and a SlideShowTexture node
IMOB in 3D mode	IMOBsensor node, SlideShowTexture node, and Billboard node.
Geometry object in 3D mode	Inline node
Sound	Sound node

Note: Reality Studio supports third-party VRML authoring tools that generate core VRML 2.0 files. You can use these VRML (WRL) files by adding them to your Reality Studio projects in 3D mode. The VRML content created by some VRML tools might not be supported.

Adding Image Worlds nodes to WRL files

You can add the Image Worlds nodes to VRML 2.0 (WRL) files by including the `EXTERNPROTO` declaration for the image world nodes at the beginning of the WRL file. When you're done, change the file extension to `.ivr` so the Live Picture Viewer will be able to display it. For examples of `EXTERNPROTO` declarations for each of the Image Worlds nodes, view the *Live Picture Image Worlds Specification* in the Developer section of the Live Picture Web site at www.livepicture.com.

Here's an example of the `EXTERNPROTO` declaration for a vista from a Reality Studio exported IVR file:

```
#VRML V2.0 utf8
EXTERNPROTO Vista [
  exposedField SFString type
  exposedField MFNode texture
  exposedField MFVec2f vFov
  exposedField MFVec2f hFov
  exposedField SFVec2f pitchRange
  exposedField SFVec2f yawRange
  exposedField SFVec2f zoomRange
  exposedField MFColor groundColor
  exposedField MFFloat groundRange
  exposedField MFColor skyColor
  exposedField MFFloat skyRange

  exposedField MFNode children

  eventOut SFVec2f clickPt
  eventOut SFVec2f overPt
  eventOut SFBool isBound
  eventIn SFBool set_bind
] "http://www.livepicture.com/proto/
vistaprotol5.wrl#Vista"
```

Reality Studio exported IVR files comply with version 1.5 of the *Image Worlds Specification*. The URL at the end of the example above indicates this compliance as `vistaprotol5`.

Advanced techniques

If you know how to write VRML, there are additional functions you can add to your world. This section gives you some tips on achieving some of the most commonly desired effects.

Editing the IVR file

The IVR files Reality Studio creates are compliant with core VRML 2.0 and you can use any text editor to edit the exported IVR file. However, make sure you're done working on your project before you do this, because Reality Studio will overwrite the changes to your IVR file when you save or export your project again.

Note: This release of Reality Studio will only load the vista nodes in IVR files, such as those files created in PhotoVista. Reality Studio will not load any other node that is in the IVR file.

Achieving multiple effects from a single hotspot

You can have multiple actions occur when you click a hotspot. For example, you can click a hotspot to display an image, open an HTML frame, and play a sound—all at the same time.

Reality Studio creates a VRMLScript node with `eventOut` fields that you can route to one or more events. After you're done working on your project and export the final IVR file, you can use any text editor to add additional routes as defined in the VRML 2.0 Specification.

Remember that once you've added any additional VRML to your IVR file, you can't import it back into Reality Studio. This version of Reality Studio overwrites the IVR file each time you export the project.

Note: For more advanced techniques and the latest tips for Web and CD-ROM content designers, visit the Developer section of the Live Picture Web site at www.livepicture.com.

APPENDIX A

Troubleshooting

This troubleshooting section describes the solutions to some of the common situations you might encounter when working in Reality Studio. For the latest troubleshooting tips and the answers to frequently asked questions (FAQs) about Reality Studio, visit the Help Desk section of the Live Picture Web site at www.livepicture.com.

Situation	Solution
I can't drag an asset into the Viewport or Project Manager to create an element.	Make sure you're working in the correct view mode to add that type of asset. For example, to add 3D objects, you must be working in 3D mode. See "Adding Elements in Flat, 3D, and Overlay mode," on page 47.
I can't see the content of the panel; the tracker appears empty.	You're viewing the panel in Flat mode. To see the image content of the panel, switch to 3D mode. See "Adding Elements in Flat, 3D, and Overlay mode," on page 47.
The hotspot button on the Vista toolbar appears dimmed.	You can only add hotspots in Flat mode. See "Adding Elements in Flat, 3D, and Overlay mode," on page 47.
When I click a tab in the Asset Browser, the asset icons appear dimmed.	Switch to the view mode that accepts that type of asset and the icons will no longer appear dimmed. See "Adding Elements in Flat, 3D, and Overlay mode," on page 47.
I added a geometry element to my project and I can see it in the Project Manager, but it doesn't appear in the Viewport.	The distance is set too close to the origin of the viewpoint or the object is too small to appear. Right-click the element in the Project Manager to show the Geometry Properties dialog box, then reset the distance and scale properties.
I can't use Reality Studio to open IVR files I created using PhotoVista.	Reality Studio only opens and displays RSD project files. If you drag your IVR file into the Viewport, it will read the vista node to add a vista to your project.
My VRML 1.0 objects don't appear when I drag them into the Viewport in 3D mode.	Reality Studio supports VRML 2.0 and the Live Picture Image Worlds File Extensions. See Chapter 7, Behind the Scenes.

Situation	Solution
I added an element that is so large I can't see my vista.	Double-click the element to show the properties dialog box, then type a smaller number in the Scale field.
Why is the World Map showing in my browser preview and the exported HTML page?	When you add a background image to the World Map, it appears in the HTML page when you do a browser preview or export. When you copy the specified HTML code from the exported file into your own Web page to show your project, the World Map won't appear.
When I click a hotspot to an HTML page (external link), it replaces the browser content and I can't see my project.	Double-click the link in the Viewport to show the Event Properties dialog box. Type a name in the Frame field to open a new browser frame when you click the link, then click OK.
I added a sound in Overlay mode and I don't see a sound element in the Viewport.	Sounds are ambient in Overlay mode and don't have a position in the space, so you won't see the sound element in the Viewport. An Overlay sound plays at the same volume no matter where you pan in the vista. If you want to change sound volume and position, add a sound in 3D mode. See "Adding a sound in 3D mode," on page 57.

Glossary

3D mode

One of the view modes for vistas. Lets you place, position, and size elements in the 3D space. The elements appear to have dimension within the 3D space, rather than fixed in position on the background panorama.

Animated GIF

A series of Graphics Interchange Format (GIF) images used to create an animation optimized for Web viewing. See GIF.

Asset

A media file that has been prepared for use in Reality Studio, such as creating thumbnail images for previewing the asset in the Asset Browser.

Asset Browser

Shows and organizes the asset collections available for all of your Reality Studio projects. You can drag assets from the Asset Browser into the Project Manager or onto vistas in the Viewport.

AVI

Microsoft's Audio/Video format. You can use these files as movies, sounds, panoramas, or slide shows.

Bitmap (BMP)

Native Windows image files. For the Internet, GIF and JPEG images provide better compression and are more widely used.

Browser preview

Previewing your Reality Studio project in an HTML page with the Live Picture Viewer.

Chroma key

The chroma key lets you choose a color to “key out” of an image, thus permitting the background image to show through. For example, if you have an image of a bird in flight against a black background, you can place that image as a panel onto a panorama of the sky and key out the color black. The black background in the image panel becomes invisible and the bird appears against the background of the sky.

Element

When you add an asset, such as an image or movie, to a Reality Studio project, it becomes an element in the project. Each element has properties related to the view mode in which you add it—Flat, 3D, or Overlay—and appears in the Project Manager, as well as the Viewport.

External link

A link to a URL or another HTML page. By specifying the frame for an external link, you can replace the content of the current browser window or open a new browser window to display the page.

Field of view

The size of the angle you can see from a given perspective. When you increase the field of view for a vista, you decrease the vista view (as when you zoom in to see more detail, but less of the panoramic image). When you decrease the field of view for a vista, you increase the vista view (as when you zoom out to see a larger portion of the panoramic image).

File extensions

Windows applications use file extensions to recognize and open files. The following table shows the file extensions for the media types that Reality Studio uses.

Media type	File extension
Bitmap	.bmp
FlashPix™	.fpx
GIF	.gif
JPEG	.jpg
Microsoft's Audio/Video format	.avi
QuickTime	.mov
Waveform	.wav

FlashPix

A hierarchical image file format that provides multi-resolution imaging for fast, photo-realistic presentations on CD-ROMs and the Internet. You can view the image at one resolution on your computer screen and zoom in to higher resolutions to see greater levels of detail. The FlashPix file format lets you work with high-quality images without using a significant amount of memory and storage space.

The following graphic illustrates the FlashPix image hierarchy, also referred to as an image pyramid.



The base of the pyramid represents the source image, such as a GIF or JPEG. What makes the FlashPix file unique are the other levels in the pyramid. As you move up through the pyramid, each image is half the size (in both width and height) of the image below. In addition, each image in the pyramid is split into tiles that are 64 x 64 pixels.

You can create FlashPix images or convert images to FlashPix using:

- The Live Picture FlashPix plug-in for Adobe Photoshop® (PC and Power Macintosh), which is on your Reality Studio CD-ROM
- The Live Picture LivePix™ digital imaging software (PC and Power Macintosh)
- The Live Picture FlashView application, which converts images to FlashPix

In order to use FlashPix images on the Internet, your Web server must be running the Live Picture Image Server. For more information about FlashPix, visit Kodak's Web site at www.kodak.com.

FlashPix object

An image object (IMOB) that is composed of FlashPix images, so you can zoom in to access higher resolutions and more details when viewing. See FlashPix and Image object.

FlashPix vista

A vista that has a FlashPix image for the panorama, so you can zoom in to access higher resolutions and more details when viewing. See FlashPix and Vista.

Flat mode

One of the view modes for vistas. Lets you place, position, and size elements in the panoramic space.

FOV

See Field of view.

Frame

A rectangular image to be used as a border for the Live Picture Viewer window in the Web page.

Geometry object

3D object represented by geometric primitives and texture maps. You add, position, and size geometry objects in 3D mode.

Group

A way of organizing Overlay elements in order to achieve effects such as hiding or showing elements at different times.

GIF

Graphics Interchange Format. This popular image file format, created by CompuServe, Inc., is used for 256 color images in Web pages. This format is best suited for use with icons, logos, and diagrams.

Hotspot

An area in a vista that, when clicked in the Live Picture Viewer, causes a new action to happen. For example, you can use hotspots to link panoramas, load a new HTML page, and play audio clips.

Image object (IMOB)

A collection of photographic images of a real-world 3D object, taken from various angles around the object. During playback, you can manipulate the IMOB to determine which image to display. This simulates the experience of examining an actual 3D object.

Image Worlds nodes

The Live Picture extensions to VRML 2.0.

Image Worlds Specification

A document that describes the Live Picture extensions to VRML 2.0, shows examples of each new node, and lists scripts that work with the Live Picture Viewer.

IMOB

See Image object.

Initial view

The first viewpoint in the vista to appear. When you set the initial view, you can also set the viewpoint for the vista. See [Viewpoint](#).

In-viewer link

A link that, when clicked, causes an action in the Live Picture Viewer, such as clicking a doorway to move to another vista. The content changes in the viewer only. When you link vistas, you are creating in-viewer links.

IVR file

Image-based Virtual Reality file. A text file in VRML 2.0 format that contains the Image Worlds Extensions to VRML 2.0. Reality Studio exports an IVR file, which the Live Picture Viewer uses to play the world you created. You can view the Image Worlds Specification in the Developer section of the Live Picture Web site at www.livepicture.com.

Java applet

Applet written in Java programming language; in Reality Studio, exported files for use with the Live Picture Viewer—Java Version. Java applets display in Web pages without using browser plug-ins.

Note: The Live Picture Viewer—Java version only supports JPEG panoramas and hotspot linking, ignoring all other elements in your project.

JPEG

Joint Photographic Experts Group. The preferred image format for the Internet, because JPEG provides the best compression available and you can download and display JPEGs progressively, which lets you view the image as it is downloading.

Layer

A way of organizing Overlay elements numerically to appear in front of or behind each other.

Linking

Creating a hypertext link between vistas, objects, and HTML pages. For example, linking lets you switch between vistas or show the home page of a hotel when you view a vista of one of the hotel rooms. You can denote a link with a hotspot that appears as a bull's eye in the Live Picture Viewer when you press the spacebar.

Media types

The media that Reality Studio uses to create assets. Media types can be images, movies, panoramas, and so on.

Object Modeler

Live Picture's application for creating and editing object movies, which are composed of a series of digital images of a 3D object.

Orbit radius

The orbit radius designates the offset of the user's viewpoint relative to the center of a vista. This lets users "walk" around objects placed at the center of a vista.

Overlay mode

Overlay mode lets you place stationary elements on top of a vista, so the elements always remain visible wherever you scroll.

Panel

Rectangular objects that you insert into vistas in Flat and Overlay modes. You can position and warp panels in Flat mode, but they stay fixed on top of the scene when you insert them in Overlay mode.

Panorama

A photograph with a wide view along the horizon. Panoramas are the background images for the vistas in Reality Studio. See Field of view for more information.

Panoramic space

The background space of a panorama. When you add, position, and warp elements in the panoramic space they appear attached to the background panorama. An example is an image that appears fixed in a position on a wall.

PhotoVista

Live Picture's application for stitching digital images into panoramas.

Pitch

A value that moves the vista viewpoint up or down (rotates the viewpoint around the X axis by degrees). You set the pitch for a vista in the Initial View dialog box, which you access through the Project Properties dialog box.

Plug-in target

Exported files in Reality Studio that play in the Live Picture Viewer plug-in for Web browsers. Browser plug-ins load and play media, such as movies and sounds.

Project

A Reality Studio project consists of one or more vistas with elements and links. When you save your project, Reality Studio outputs an RSD file.

Project Manager

Shows an overview of all of the scenes in your project, organized in a directory-like structure with folders you can expand and collapse to view the elements inside. Each top-level folder contains a vista with Flat, 3D, and Overlay folders.

Publish

For publishing your project on the Web, you export an IVR and HTML file and all of the media files that make up the elements in your project. The Live Picture Viewer reads the IVR file to display your world in the HTML page.

Quick preview

Previewing your Reality Studio project in an internal viewer window running the Live Picture Viewer.

QuickTime

Apple Computer's Audio/Video format. You can use these files as movies, sounds, panoramas, or slide shows.

Remote path

The path to a remote file for an element or to the Live Picture Image Server for FlashPix images; the remote path appears in the Properties dialog box for vistas and elements.

RSD file

Reality Studio Designer file. This is the file that Reality Studio outputs when you save your project. The file extension is *.rsd*.

Scenes

A scene comprises a vista with all of its elements. A project consists of scenes that you link together to create a world.

Scripted movie

VRML (WRL) files that contain VRML Script that adds behaviors, such as a bird that appears to fly closer and farther away in a vista.

Sound

A sound file, usually WAV, used as an asset.

URL

Uniform Resource Locator. The URL is a map to a Web object. It describes the location and name of the object file, and the path used to access it.

Viewpoint

The point in the vista you see when you view it in the Live Picture viewer. The viewpoint consists of pitch, yaw, and field of view values. See Field of view, Pitch, and Yaw.

Viewport

The main window of Reality Studio, where the open vistas appear. You can drag and drop assets into vistas in the Viewport to create elements in your project.

Vista

A vista defines an image panorama that you view by “standing in its center” and pivoting the view direction. Vistas are the foundation of Reality Studio projects and make up the scenes in your world. A vista node is one of the Live Picture extensions to VRML 2.0. For more technical information, see the Image Worlds File Specification in the Developer section of the Live Picture Web site at www.livepicture.com.

Vista link

A link between two vistas.

VRML

Virtual Reality Modeling Language. A scene description language for creating and exploring 3D environments on the Web. The current version that Reality Studio supports is VRML 2.0.

Warping

Moving a panel in Flat mode so it conforms to the contours of the panorama that is the background in the vista. To warp a panel, press Alt while dragging the panel into position.

Waveform (WAV)

A Windows standard audio file format.

World

Your world is all of the scenes in your project and any elements contained within the scenes. For example, if you are creating a house, the world is your finished house with all the rooms that you can walk through.

World Map

A pane in Reality Studio that shows an overhead view of the vistas in your project, representing each vista as a round node on a plane. The World Map gives you perspective on the scenes in your world and shows the links between each vista.

Yaw

A value that moves the vista viewpoint right or left (rotates the viewpoint around the Y axis by degrees). For example, if your panorama has a 360° field of view, the Yaw values span from -360° (left side of the panorama) to +360° (right side of the panorama). You set the yaw for a vista in the Initial View dialog box, which you access through the Project Properties dialog box.

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